

# Application form

## Environmental Protection Act 1994

### Site-specific application for a new environmental authority for a prescribed ERA

*This is the approved form to make a site-specific application for an environmental authority (EA) under sections 124 and 125 of the Environmental Protection Act 1994 (EP Act) for an environmentally relevant activity (ERA) which is prescribed under section 19 of the EP Act.*

This application can be completed online via Connect. For more information and to register to use Connect go to [www.ehp.qld.gov.au/connect](http://www.ehp.qld.gov.au/connect)

**Note:** For applications to the Department of Environment and Heritage Protection, the only way to pay fees by credit card is by completing the application online using Connect. For other fee payment options see Question 11.

It is recommended that prior to making an application for a new environmental authority (EA) for an environmentally relevant activity (ERA), you read the information on what to provide with an application. This information is located on the Business Queensland website (formerly the Queensland Government's Business and Industry Portal) at [www.business.qld.gov.au](http://www.business.qld.gov.au) (use the search term "Environmental licence"). This website also has a diagnostic tool called the "forms and fees finder" which will help identify any fees and supporting information you need to make an application.

#### Only use this application form if you are applying for a new environmental authority (EA) where:

- ☒ All applicants are registered suitable operators<sup>1</sup>.
- ☒ The ERA/s being applied for do not form part of an ERA project under an existing EA.
- ☒ If more than one ERA is being applied for, the ERAs must be carried out as part of a single integrated operation:
  - the ERAs will be carried out under the day to day management of a single responsible individual (e.g. a site manager or operations manager); and
  - all of the ERAs are operationally interrelated, that is, the operation cannot function without all of the ERAs. Separate applications will need to be made for the ERAs that cannot be carried out as a single integrated operation; and
  - the ERA/s are, or will be, carried out at one or more places; and
  - the places where the ERAs will be carried out are close enough to make the integrated day to day management of the activities feasible.
- ☒ The ERA/s being applied for are prescribed under section 19 of the *Environmental Protection Act 1994* (EP Act).
- ☒ The ERA/s being applied for do not require a development permit for a material change of use under the *Sustainable Planning Act 2009*, unless an application for the required development permit has been made.
- ☒ If any of the ERAs being applied for are to be carried out on a parcel of land within a state development area and a particular use for the parcel of land is not stated in the approved development scheme, you have applied for, or hold a current approval for the use under section 84(4)(b) of the *State Development and Public Works Organisation Act 1971*.

<sup>1</sup> If you are not a registered suitable operator you cannot apply for a new environmental authority. To become a registered suitable operator apply online through Connect at [www.ehp.qld.gov.au/connect](http://www.ehp.qld.gov.au/connect) or request the form "Application to be a registered suitable operator - ESR/2015/1771" by emailing [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au) or phoning 1300 130 372 (option 4).

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- ☒ The application is not to dredge or extract more than 10,000 tonnes of material a year in the North Stradbroke Island region.

The Department of Environment and Heritage Protection and the Department of Agriculture and Fisheries are collecting the information on this approved form to process your application for an EA. The collection is authorised under Chapter 5 of the EP Act. Some of information may be disclosed to the Department of Natural Resources and Mines for the purpose of processing this application.

Please note that the administering authority is required to keep this application on a register of documents open for inspection by members of the public under section 540 of the EP Act, and must permit a person to take extracts from the register pursuant to section 542 of the EP Act. Your personal information will not be otherwise disclosed to any other parties unless authorised or required by law. For queries about privacy matters please email [privacy@ehp.qld.gov.au](mailto:privacy@ehp.qld.gov.au) or telephone: 13 74 68.

### **If you would like to have a pre-lodgement meeting:**

- for prescribed ERAs 2, 3 and 4—contact the Department of Agriculture and Fisheries by email at [livestockregulator@daf.qld.gov.au](mailto:livestockregulator@daf.qld.gov.au)
- for any other ERA—please complete and lodge the form “Application for pre-lodgement services” (ESR/2015/1664<sup>2</sup>), prior to lodging this standard application for an environmental authority.

<sup>2</sup> This application form is available at [www.qld.gov.au](http://www.qld.gov.au), using the publication number ESR/2015/1664 as a search term.

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The fields marked with an asterisk \* are mandatory, if they are not completed then your application may be considered not properly made under section 128 of the *Environmental Protection Act 1994*.

1. Applicant details

To nominate a site or application contact for this application please provide details at Questions 14 and 15.

|                                                                                                                    |                                                                                                                                                                                                                                                                       |  |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Is there more than one applicant? *                                                                                | <input checked="" type="checkbox"/> No—provide applicant's details below.<br><input type="checkbox"/> Yes—provide the principal applicant's details below and all other applicants' details in Attachment 1—"Joint applicants and appointment of principal applicant" |  |
| Name - individual or contact person if applicant is a organisation*<br>irrelevant inform                           | Suitable Operator Reference Number*<br>RSO001250                                                                                                                                                                                                                      |  |
| Organisation name, including any trading name (*if an organisation)<br>Yarranlea Solar Pty Ltd                     | ABN/ACN (*if an organisation)<br>609 850 553                                                                                                                                                                                                                          |  |
| Residential or registered business address (not a post office box)*<br>Level 2, 39 Sherwood Road, Toowong QLD 4066 | Phone*<br>07 3870 8888                                                                                                                                                                                                                                                |  |
| Postal address (if same as above, write "AS ABOVE")*<br>PO Box 878 Toowong QLD 4066                                | Facsimile                                                                                                                                                                                                                                                             |  |
| Email*<br>mail@yarranleasolar.com.au                                                                               | <input type="checkbox"/> Indicate if you want to receive correspondence via email                                                                                                                                                                                     |  |

1.1 Nomination of an agent for this application

I/we nominate the below agent to act on my/our behalf and to receive correspondence relating to this application.

|                                                                                                                                                                                                                                    |                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Do you want to nominate an agent for this application? *<br><input type="checkbox"/> No → Go to Question <b>Error! Reference source not found.</b><br><input checked="" type="checkbox"/> Yes → Complete the agent's details here. |                                                                                          |
| Name of agent – individual or contact person if agent is an organisation<br>73 irrelevant informatio                                                                                                                               |                                                                                          |
| Organisation name, including trading name if an organisation<br>icubed consulting                                                                                                                                                  | ABN/ACN (if an organisation)<br>89 106 675 156                                           |
| Postal address<br>PO Box 878 Toowong QLD 4066                                                                                                                                                                                      | Phone<br>07 3870 8888                                                                    |
| Email<br>3 irrelevant informati@icubed.com.au                                                                                                                                                                                      | <input type="checkbox"/> Indicate if you do not want to receive correspondence via email |

Site-specific application for a new environmental authority for a prescribed ERA

## 2. Details of the ERA(s) being applied for

Complete the table below by advising which ERA(s) you are applying for. If the ERA has eligibility criteria and standard conditions<sup>3</sup>, identify whether you can comply with them. Select "N/A" where there are no eligibility criteria and standard conditions for that ERA. If you cannot comply with all of the applicable standard conditions, select "no" and attach details of the standard conditions you cannot comply with.

| ERA number* | Threshold* | Name of ERA*                        | I can comply with the eligibility criteria*                          | I can comply with all the standard conditions*                      |
|-------------|------------|-------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------|
| 16          | 2(A)       | Extractive and screening activities | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> N/A | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
|             |            |                                     | <input type="checkbox"/> Yes <input type="checkbox"/> N/A            | <input type="checkbox"/> Yes <input type="checkbox"/> No            |

☐ I have attached details of the standard conditions that I cannot comply with.

## 3. Description of land where the ERA/s will be carried out

Where activities will be undertaken at more than one location, provide details in Appendix 2.

|                                                                                                                                 |                                                                                          |                |                                                               |           |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------|---------------------------------------------------------------|-----------|
| Will the ERA(s) be carried out at a fixed location?*                                                                            |                                                                                          |                |                                                               |           |
| <input checked="" type="checkbox"/> Yes<br><small>NOTE: If there is more than one location please complete Attachment 2</small> | Number*                                                                                  | Street Name*   | Suburb/Town*                                                  | Postcode* |
|                                                                                                                                 | 752                                                                                      | Murlaggan Road | Yarranlea                                                     | 4356      |
|                                                                                                                                 | Real Property Description*                                                               |                | Specific area within the location ie GPS or other descriptor* |           |
|                                                                                                                                 | Lot 2 Plan A34925                                                                        |                |                                                               |           |
|                                                                                                                                 | Port (*if applicable)                                                                    |                | Project Name (*if applicable)                                 |           |
|                                                                                                                                 | N/A                                                                                      |                | N/A                                                           |           |
| <input type="checkbox"/> No                                                                                                     | Where there is no fixed location, the location will be recorded as "State of Queensland" |                |                                                               |           |

<sup>3</sup> ERAs with eligibility criteria and standard conditions are listed at: [www.business.qld.gov.au](http://www.business.qld.gov.au) (use the search term "eligibility criteria").



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#### 4. Regulated waste transport ERA(s)

[illegible]

## 5. Details of contaminated land

|                                                                                                                                    |                           |                        |
|------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------|
| Is there a site management plan in effect for contaminated land that relates to the land that is the subject of this application?* |                           |                        |
| <input checked="checked" type="checkbox"/> No                                                                                      | Go to <i>Question 6</i> . |                        |
| <input type="checkbox"/> Yes                                                                                                       | Description of land*      |                        |
|                                                                                                                                    | Lot and plan number(s)    | Local Government Area* |
|                                                                                                                                    | Lot                       | Plan                   |
|                                                                                                                                    | Lot                       | Plan                   |
|                                                                                                                                    | Lot                       | Plan                   |
|                                                                                                                                    | Lot                       | Plan                   |

## 6. Existing environmental authorities at the location

|                                                                       |                           |                                                                                                                                   |
|-----------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Do you have any existing environmental authorities at this location?* |                           |                                                                                                                                   |
| <input checked="" type="checkbox"/> No                                | Go to <i>Question 7</i> . |                                                                                                                                   |
| <input type="checkbox"/> Yes                                          | Existing EA number(s)*    | Certification*                                                                                                                    |
|                                                                       |                           | <input type="checkbox"/> I certify that the ERA(s) being applied for do not form part of any existing environmental authority/ies |

## Site-specific application for a new environmental authority for a prescribed ERA

## 7. Other related approvals

To avoid the possibility of your environmental authority application being invalid, you need to ensure any other required applications have been made prior to lodging this application. If you are not sure what approvals are required you should contact the planning area of your local government authority or if the area is within a State development area, visit the Department of State Development website at:

<http://www.statedevelopment.qld.gov.au> (search for state development area).

|                                                                                                                                                                                                                                                                                                                                                                              |                                                          |                        |                     |              |                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------|---------------------|--------------|------------------|
| Are you required to obtain any of the following approvals to conduct the ERA(s)?*                                                                                                                                                                                                                                                                                            |                                                          |                        |                     |              |                  |
| <ul style="list-style-type: none"> <li>A development approval from your Local Government Authority (for ERA/s which may trigger within the local planning scheme the need for an approval under the <i>Sustainable Planning Act 2009</i>), or</li> <li>An approval for the use of land under the <i>State Development and Public Works Organisation Act 1971</i>?</li> </ul> |                                                          |                        |                     |              |                  |
| <input type="checkbox"/> No                                                                                                                                                                                                                                                                                                                                                  | Go to Question <b>Error! Reference source not found.</b> |                        |                     |              |                  |
| <input checked="" type="checkbox"/> Yes                                                                                                                                                                                                                                                                                                                                      | Approval name*                                           | Legislation*           | Application number* | Date lodged* | Approval status* |
|                                                                                                                                                                                                                                                                                                                                                                              | Operational Works                                        | S.60 Planning Act 2016 | 1708-906            | 17/08/17     | Approve          |

## 8. Environmental offsets

An environmental offset, under the *Environmental Offsets Act 2014*, may be required for an ERA where, despite all reasonable measures to avoid and minimise impacts on certain environmental matters, there is still likely to be significant residual impact on one or more of those matters.

You must verify the presence, whether temporary or permanent, of those environmental matters. For more information refer to the Queensland Environmental Offsets Policy and the Significant Residual Impact Guideline at the Queensland Government website at [www.qld.gov.au](http://www.qld.gov.au), using the search term "environmental offsets".

|                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Will the ERA(s) being applied for result in a significant residual impact to a matter of State environmental significance (MSES)?* |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <input checked="" type="checkbox"/> No                                                                                             | Go to Question 9.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <input type="checkbox"/> Yes                                                                                                       | <p>You <b>must</b> attach supporting information that:</p> <ol style="list-style-type: none"> <li>Details the magnitude and duration of the likely significant residual impact on each prescribed environmental matter (other than matters of local environmental significance) for the entire activity; and</li> <li>Demonstrates that all reasonable measures to avoid and minimise impacts on each of those matters will be undertaken.</li> </ol> |

## 8.1 Notice of election

|                                                                                                                            |                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Has a notice of election been submitted to the administering authority, or is being submitted as part of this application? |                                                                                                                                        |
| <input type="checkbox"/> No                                                                                                | Go to Question 8.2.                                                                                                                    |
| <input type="checkbox"/> Yes                                                                                               | <input type="checkbox"/> You can attach the notice of election, if it has not been submitted to the department.<br>Go to Question 8.3. |

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**8.2 Staged environmental offsets**

Offset delivery can be staged, however for this to occur, the condition of any approved environmental authority needs to state that both the activity and the offset may be staged. As part of your notice of election for each stage under the *Environmental Offsets Act 2014*, you are required to provide a detailed assessment of the quantum of impact of that stage and the offset obligation requirement to be delivered for that stage.

|                                                                                           |                                                                                                                      |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Will the proposed ERA(s) and delivery of an environmental offset be undertaken in stages? |                                                                                                                      |
| <input type="checkbox"/> No                                                               | Go to <i>Question 8.3</i>                                                                                            |
| <input type="checkbox"/> Yes                                                              | You <b>must</b> attach supporting information that details of how the activity/activities are proposed to be staged. |

**8.3 Nature conservation environmental offset**

|                                                                                                                                                                                                            |                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| Has another authority issued under the <i>Nature Conservation Act 1992</i> required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES? |                           |
| <input type="checkbox"/> No                                                                                                                                                                                | Go to <i>Question 8.4</i> |
| <input type="checkbox"/> Yes                                                                                                                                                                               | Provide permit number:    |

**8.4 Marine parks environmental offset**

|                                                                                                                                                                                                      |                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Has marine park permit issued under the <i>Marine Parks Act 2004</i> required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES? |                                                                                                       |
| <input type="checkbox"/> No                                                                                                                                                                          | Go to <i>Question 9</i>                                                                               |
| <input type="checkbox"/> Yes                                                                                                                                                                         | <input type="checkbox"/> You <b>must</b> attach a copy of the marine park permit to this application. |

**9. Matters of national environmental significance**

There are currently nine matters of national environmental significance (MNES) which have been defined in the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act). These are:

- world heritage properties
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)
- listed threatened species and ecological communities
- migratory species protected under international agreements
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- a water resource, in relation to coal seam gas development and large coal mining development

To determine whether the proposed ERA(s) will have a significant impact on MNES and for referral requirements, please refer to the guidance provided by the Federal Government's Department of Environment on [www.environment.gov.au](http://www.environment.gov.au).

|                                                                                                  |                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Would the carrying out of the proposed ERA(s) be likely to have a significant impact on a MNES?* |                                                                                                                                                                                                                                       |
| <input checked="" type="checkbox"/> No                                                           | Go to <i>Question 10</i> .                                                                                                                                                                                                            |
| <input type="checkbox"/> Yes                                                                     | Has the proposal been referred to the Federal Department of Environment for formal assessment and approval?<br><input type="checkbox"/> No → Go to <i>Question 10</i> .<br><input type="checkbox"/> Yes → Go to <i>Question 9.1</i> . |

## Site-specific application for a new environmental authority for a prescribed ERA

## 9.1 EPBC Act approval for environmental offsets

|                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Has an approval issued under the EPBC Act required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, MSES? |                                                                                                                                                                                                                                                                                                |
| <input type="checkbox"/> No                                                                                                                                               | Go to <i>Question 10</i> .                                                                                                                                                                                                                                                                     |
| <input type="checkbox"/> Yes                                                                                                                                              | I have attached a copy of the approval under the EPBC Act.                                                                                                                                                                                                                                     |
|                                                                                                                                                                           | <p>Are there any MNES which were assessed under the EPBC Act which are the same, or substantially the same as an MSES, but that were not conditioned in the approval?</p> <p><input type="checkbox"/> No → Go to <i>Question 10</i></p> <p><input type="checkbox"/> Yes → List these MNES:</p> |

## 10.Environmental impact statement under the *State Development and Public Works Organisation Act 1971*

Certain stages of the EA application process may not apply if the proposed activities were assessed as part of a coordinated project declared under the *State Development and Public Works Organisation Act 1971* (State Development Act), you are only required to answer Questions 10 to 10.1 if you have a current CG's evaluation report for the project.

|                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Has an environmental impact statement (EIS) process under State Development Act been completed?* |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <input checked="" type="checkbox"/> No                                                           | Go to <i>Question 11</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <input type="checkbox"/> Yes                                                                     | What is the title and project name of the completed EIS?*                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                                                  | <input type="checkbox"/> The EIS was <b>completed for all activities</b> that are the subject of this application.<br><input type="checkbox"/> The environmental risks or the way the activity/activities are proposed to be carried out <b>have not changed</b> since the EIS was completed.<br><input type="checkbox"/> The environmental risks or the way the activity/activities are proposed to be carried out <b>have changed</b> since the EIS was completed.     |
|                                                                                                  | <input type="checkbox"/> The EIS was <b>not completed for all activities</b> that are the subject of this application.<br><input type="checkbox"/> The environmental risks or the way the activity/activities are proposed to be carried out <b>have not changed</b> since the EIS was completed.<br><input type="checkbox"/> The environmental risks or the way the activity/activities are proposed to be carried out <b>have changed</b> since the EIS was completed. |
|                                                                                                  | Was the EIS completed for all activities that are the subject of this application?*                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                  | Please list the activities that were not included in the EIS or attach documentation with this information to this application:                                                                                                                                                                                                                                                                                                                                          |
| <input type="checkbox"/> I have attached the required supporting information.                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



## Site-specific application for a new environmental authority for a prescribed ERA

**10.1 Coordinator-General's conditions**

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Are there CG's conditions that relate to the ERA(s) being applied for?* |                                     |
| <input type="checkbox"/> No →                                           | Go to <i>Question 11</i> .          |
| <input type="checkbox"/> Yes →                                          | Name of the CG's evaluation report: |

**11. Assessment of the environmental impact**

This question is **not applicable** if an EIS process under the State Development Act has been completed for all the ERA(s) that are the subject of this application and the environmental risks of the activities **and** the way they are proposed to be carried out has not changed since the EIS was completed.

You must attach to this application an assessment of the likely impact of each ERA on environmental values (\*if applicable), including:

- a description of the environmental values likely to be affected by each relevant activity
- details of any emissions or releases likely to be generated by each relevant activity
- a description of the risk and likely magnitude of impacts on the environmental values
- details of the management practices proposed to be implemented to prevent or minimise adverse impacts
- details of how the land the subject of the application will be rehabilitated after each relevant activity ceases

☒ I have attached an assessment of the environmental impact and specific supporting information.

**12. Details of waste management**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Describe the proposed measures for minimising and managing waste generated by the activity/ies below *                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>There will be minimal waste generated from the proposed ERA. General waste associated with the works will be managed in accordance with the waste and resource management hierarchy under the Waste Reduction and Recycling Act 2011, and any waste requiring disposal will be done so off-site at a lawful point. For further details regarding waste management please refer to the Environmental Risk Assessment prepared by icubed consulting.</p> <p>No hazardous waste will be produced from the activity.</p> |

☒ I have attached the proposed measures.



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**13. Take effect date (when fees will commence being charged)**

You may nominate when the EA will take effect should it be approved. The date the environmental authority takes effect will be the date from which you can commence the activities as well as the date your annual fees will commence to be charged (your anniversary date). Under section 200 of the EP Act, if a development permit for a material change of use under the *Sustainable Planning Act 2009* or a State development area (SDA) approval is required in order to carry out the ERA the EA cannot take effect until the development permit or SDA approval takes effect (known as taking effect pending development approval).

|                                                                                                           |                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Do you want the EA to take effect on the decision date, nominated date, or pending development approval?* |                                                                                                                                                                   |
| <input checked="" type="checkbox"/> Decision date                                                         | The take effect date will be the date of the decision.                                                                                                            |
| <input type="checkbox"/> Nominated date                                                                   | Details of nominated take effect date:                                                                                                                            |
| <input type="checkbox"/> Pending development approval                                                     | The take effect date will be the day the development approval is granted. You must notify the administering authority when the development approval takes effect. |

**14. Nomination of site contact**

An alternative contact nominated by the legal entity which holds, or will in future hold, a relevant authority issued by the department. The department may direct correspondence relating to actual or potential compliance matters to the site contact.

|                                          |             |                                                                                              |
|------------------------------------------|-------------|----------------------------------------------------------------------------------------------|
| Do you want to nominate a site contact?* |             | <input type="checkbox"/> No                                                                  |
|                                          |             | <input checked="" type="checkbox"/> Yes, provide details below                               |
| Title*                                   | First Name* | Surname*                                                                                     |
| Mr                                       | levant info | levant info                                                                                  |
| Email Address*                           |             | <input checked="" type="checkbox"/> Indicate if you want to receive correspondence via email |
| mail@yarranleasolar.com.au               |             |                                                                                              |
| Phone                                    |             |                                                                                              |

**15. Nomination of application contact**

An alternative contact nominated by the legal entity which has submitted, or will in future submit, applications to be assessed by the department. All departmental correspondence relating to the assessment of applications will be directed to the application contact, however, if the application results in the issuing of a relevant authority, the relevant authority will be sent to the applicant.

|                   |
|-------------------|
| Name or Position* |
| Primary Phone*    |
| Secondary Phone   |
| Email Address*    |

## Site-specific application for a new environmental authority for a prescribed ERA

### 16. Payment of fees

You are required to pay an application fee at the time of application. If your application is approved you will be required to pay a fee annually. Each ERA has a regulated fee and the annual fee will be the highest annual fee of any ERA associated with the project. The first annual fee will be invoiced when the permit becomes effective. Information on fees is available on the Business Queensland website at [www.business.qld.gov.au](http://www.business.qld.gov.au).

The application fee is\*: \$5,764.00

Please select your payment method for the application fee below:

For fees payable to the Department of Environment and Heritage Protection:

- ☒ Cheque or money order payable to the Department of Environment and Heritage Protection (attached).
- ☐ For credit card payments for applications to the Department of Environment and Heritage Protection you must complete the application using Connect at [www.ehp.qld.gov.au/connect](http://www.ehp.qld.gov.au/connect)

For fees payable to the Department of Agriculture and Fisheries:

- ☐ Cheque or money order payable to the Department of Agriculture and Fisheries (attached).
- ☐ Credit card. Please provide contact details and we will contact you for payment to be made over the telephone.

Telephone number: \_\_\_\_\_

### 17. Applicant declaration

I declare that the information I have provided is true and correct. I understand that it is an offence under the *Environmental Protection Act 1994* to give information that I know is false, misleading or incomplete.

I will comply with all conditions on my environmental authority as well as any relevant provisions in the *Environmental Protection Act 1994*.

I understand that I am responsible for managing the environmental impacts of these activities, and that approval of this application is not an endorsement by the administering authority of the effectiveness of the management practices proposed or implemented.

|                                                       |                                   |
|-------------------------------------------------------|-----------------------------------|
| Applicant's full name*<br>irrelevant inform           | Applicant's position*<br>Director |
| Applicant's signature*<br>s.73 irrelevant information | Date*<br>21/09/2017               |

### Submit your completed application:

for ERA 2, ERA 3 or ERA 4 via email to [livestockregulator@daf.qld.gov.au](mailto:livestockregulator@daf.qld.gov.au) or:

**Post:**

Senior Environmental Scientist  
Department of Agriculture and Fisheries  
GPO Box 102  
TOOWOOMBA QLD 4350

**Further information:**

[www.business.qld.gov.au](http://www.business.qld.gov.au)  
Email: [livestockregulator@daf.qld.gov.au](mailto:livestockregulator@daf.qld.gov.au)  
Phone: 13 QGOV (13 74 68)

for all other ERAs via email to [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au) or:

**Post:**

Permit and Licence Management  
Department of Environment and Heritage Protection  
GPO Box 2454  
BRISBANE QLD 4001

**Courier or hand delivery:**

Permit and Licence Management  
Department of Environment and Heritage Protection  
Level 3, 400 George Street  
BRISBANE QLD 4000  
Hours: 8.30am–4.30pm business days

**Further information:**

[www.business.qld.gov.au](http://www.business.qld.gov.au)  
Email: [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)  
Phone: 13 QGOV (13 74 68)

## Site-specific application for a new environmental authority for a prescribed ERA

### Attachment 1

#### Joint applicants and appointment of principal applicant

We are joint applicants for this environmental authority application and hereby appoint \_\_\_\_\_ as the principal applicant to receive statutory documents relating to this application.

|                                                                      |                                                                                   |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Name - individual or contact person if applicant is an organisation* | Suitable Operator Reference Number*                                               |
| Organisation name, including trading name (*if an organisation)      | ABN/ACN (*if an organisation)                                                     |
| Residential or registered business address (not a post office box)*  | Phone*                                                                            |
| Postal address (if same as above, state "AS ABOVE") *                | Facsimile                                                                         |
| Email*                                                               | <input type="checkbox"/> Indicate if you want to receive correspondence via email |
| Signature*                                                           | Date*                                                                             |

|                                                                      |                                                                                   |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Name - individual or contact person if applicant is an organisation* | Suitable Operator Reference Number*                                               |
| Organisation name including trading name (*if an organisation)       | ABN/ACN (*if an organisation)                                                     |
| Residential or registered business address (not a post office box)*  | Phone*                                                                            |
| Postal address (if same as above, state "AS ABOVE")*                 | Facsimile                                                                         |
| Email*                                                               | <input type="checkbox"/> Indicate if you want to receive correspondence via email |
| Signature*                                                           | Date*                                                                             |

|                                                                      |                                                                                   |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Name - individual or contact person if applicant is an organisation* | Suitable Operator Reference Number*                                               |
| Business name including trading name (*if an organisation)           | ABN/ACN (*if an organisation)                                                     |
| Residential or registered business address (not a post office box)*  | Phone*                                                                            |
| Postal address (if same as above, state "AS ABOVE")*                 | Facsimile                                                                         |
| Email*                                                               | <input type="checkbox"/> Indicate if you want to receive correspondence via email |
| Signature*                                                           | Date*                                                                             |

Site-specific application for a new environmental authority for a prescribed ERA

**Attachment 2**

**List of locations where the ERA(s) will be carried out.**

Where there is more than one location list all locations and which ERA(s) will be conducted at each location.

|                                                             |              |                                                                                             |           |        |
|-------------------------------------------------------------|--------------|---------------------------------------------------------------------------------------------|-----------|--------|
| Number*                                                     | Street Name* | Suburb/Town*                                                                                | Postcode* | ERA/s* |
| Real Property Description*<br>Lot                      Plan |              | Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging) |           |        |
| Number*                                                     | Street Name* | Suburb/Town*                                                                                | Postcode* | ERA/s* |
| Real Property Description*<br>Lot                      Plan |              | Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging) |           |        |
| Number*                                                     | Street Name* | Suburb/Town*                                                                                | Postcode* | ERA/s* |
| Real Property Description*<br>Lot                      Plan |              | Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging) |           |        |
| Number*                                                     | Street Name* | Suburb/Town*                                                                                | Postcode* | ERA/s* |
| Real Property Description*<br>Lot                      Plan |              | Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging) |           |        |
| Number*                                                     | Street Name* | Suburb/Town*                                                                                | Postcode* | ERA/s* |
| Real Property Description*<br>Lot                      Plan |              | Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging) |           |        |
| Number*                                                     | Street Name* | Suburb/Town*                                                                                | Postcode* | ERA/s* |
| Real Property Description*<br>Lot                      Plan |              | Specific area within the location ie GPS or other descriptor (*if applicable e.g. dredging) |           |        |



Department of Environment and Heritage Protection (EHP)  
ABN 46 640 294 485  
400 George St Brisbane, Queensland 4000  
GPO Box 2454 Brisbane QLD 4001 AUSTRALIA  
www.ehp.qld.gov.au

**SEARCH RESPONSE**  
**ENVIRONMENTAL MANAGEMENT REGISTER (EMR)**  
**CONTAMINATED LAND REGISTER (CLR)**

Transaction ID: 50407024 EMR Site Id: 21 September 2017  
This response relates to a search request received for the site:  
Lot: 2 Plan: A34925

**EMR RESULT**

The above site is NOT included on the Environmental Management Register.

**CLR RESULT**

The above site is NOT included on the Contaminated Land Register.

**ADDITIONAL ADVICE**

All search responses include particulars of land listed in the EMR/CLR when the search was generated.  
The EMR/CLR does NOT include:-

1. land which is contaminated land (or a complete list of contamination) if EHP has not been notified
2. land on which a notifiable activity is being or has been undertaken (or a complete list of activities) if EHP has not been notified

If you have any queries in relation to this search please phone 13QGOV (13 74 68)

**Administering Authority**





Australia and New Zealand  
Banking Group Limited

TOOWONG 3 SHERWOOD RD QLD

Date 21/09/2017

This cheque is printed on specially watermarked paper. Hold it up to the light and the watermark could indicate a fraudulent cheque.

Pay DEPARTMENT OF ENVIRONMENT AND HERITAGE  
The sum of FIVE THOUSAND SEVEN HUNDRED AND SIXTY FOUR DOLLARS ONLY  
YARRANLEA SOLAR PTY LTD

PROTECTION  
or bearer

\$5,764.00-

s.73 irrelevant information

⑈001006 ⑈014⑈272⑈4591 84077⑈

Published on DES Disclosure Log  
RTI Act 2009



Department of Infrastructure,  
Local Government and Planning

Our reference: 1708-906 SDA  
Your reference: 11448

8 September 2017

s.73 irrelevant information

**Attention:** 73 irrelevant information

Dear [redacted] relevant int

**Decision Notice—Approved with Conditions—Development Permit—Operational Work—Taking of Overland Flow—Contaminated Agricultural Runoff**

(Given under section 63 of the *Planning Act 2016*)

The development application described below was properly made to the Department of Infrastructure, Local Government and Planning (DILGP) on 17 August 2017.

## Applicant details

Applicant name:

Applicant contact details:

s.73 irrelevant information

## Location details

Street address: 752 Murlaggan Road and 538 Yarranlea Road, Yarranlea QLD 4356

Real property description:

Lot 2 on A34925

Lot 2 on RP18242

Lot 2 on RP18249

Lot 2 on RP7475

Lot 3347 on A341649

Local government area:

Toowoomba Regional Council

## Decision

Date of decision:

8 September 2017

Decision details:

Approved subject to conditions

### Approval details

|                    |                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------|
| Development permit | Operational work for Drains, sumps and storage to collect Contaminated Agricultural Runoff |
|--------------------|--------------------------------------------------------------------------------------------|

### Conditions

This approval is subject to:

- the assessment manager conditions in Attachment 1.

DILGP has, for conditions of this approval, nominated an entity to be the enforcement authority for that condition under the *Planning Act 2016*.

### Rights of appeal

The rights of applicants to appeal to a tribunal or the Planning and Environment Court against decisions about a development application are set out in chapter 6, part 1 of the *Planning Act 2016* (the Act). For particular applications, there may also be a right to make an application for a declaration from a tribunal (see chapter 6, part 2 of the Act).

Copies of the relevant appeal provisions are attached.

### Currency period for the approval

This development approval will lapse if development is not started within the following period:

- 2 years.

### Approved plans and specifications

Copies of the following approved plans and specifications are enclosed.

| Drawing/report title                            | Prepared by   | Date      | Reference no. | Version/issue |
|-------------------------------------------------|---------------|-----------|---------------|---------------|
| <b>Aspect of development: Operational Works</b> |               |           |               |               |
| CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1   | RMA Engineers | 9/08/2017 | D-D0201       | 2             |
| CONTAMINATED WATER MANAGEMENT LAYOUT PLAN – 2.  | RMA Engineers | 9/08/2017 | D-D0202       | 2             |
| SECTIONS                                        | RMA Engineers | 9/08/2017 | D-D0203       | 2             |

For further information please contact Maria Johnson, Senior Planning Officer, on 46167302 or via email ToowoombaSARA@dilgp.qld.gov.au who will be pleased to assist.

Yours sincerely

s.73 irrelevant information

Andrew Foley  
Manager (Planning)

cc Toowoomba Regional Council, development@tr.qld.gov.au

enc Attachment 1—Assessment manager conditions  
Approved plans and specifications

Att Appeal provisions  
Statement of reasons

## Attachment 1—Assessment manager conditions

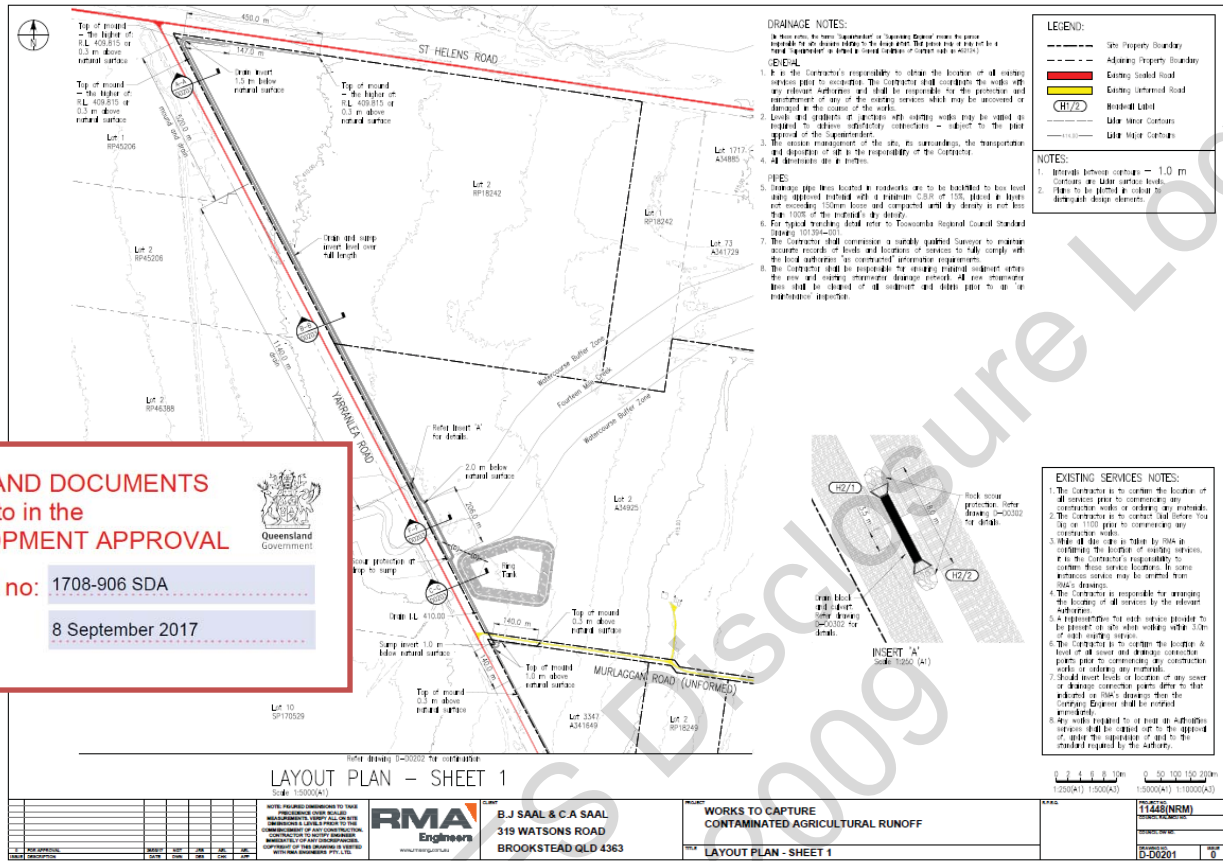
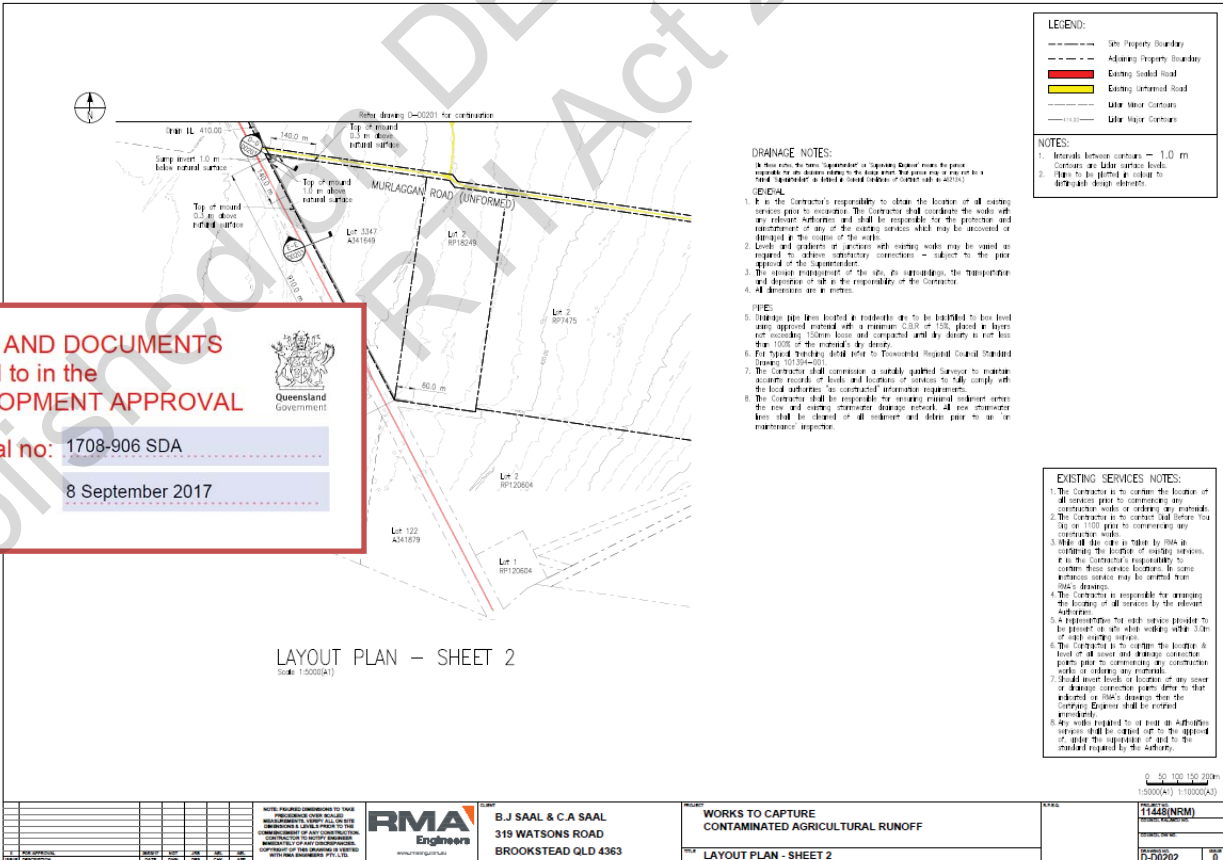
| No.                                                                                                                                                                                                                                                                                                                                                                   | Conditions of development approval                                                                                                                                                                                                                                                                                                                                                                                                                                              | Condition timing |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Development permit for operational works – taking of overland flow.</b>                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| Schedule 8, Table 4, Item 3 (k) —The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of Department of Natural Resources and Mines to be the enforcement authority for the development to which this development approval relates for the administration and enforcement of any matter relating to the following conditions: |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| <b>Construction of works on Lot 2 on RP18242, Lot 2 on A34925 and Lot 3347 on A341649.</b>                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |
| 1.                                                                                                                                                                                                                                                                                                                                                                    | Any person(s) contracted to construct the works authorised by this development approval, must be provided with a full copy of the development approval and made aware of the conditions.                                                                                                                                                                                                                                                                                        | At all times.    |
| 2.                                                                                                                                                                                                                                                                                                                                                                    | <p>Sump 1 on Lot 2 on RP18242 (<b>Works Number: 573751</b>) must have the maximum dimensions of figures in accordance with:</p> <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0201, Version 2;</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>SECTIONS within the certified report, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0203, Version 2.</li> </ul> | At all times.    |
| 3.                                                                                                                                                                                                                                                                                                                                                                    | <p>Sump 2 on Lot 2 on A34925 (<b>Works Number: 573752</b>) must have the maximum dimensions of figures in accordance with:</p> <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0201, Version 2;</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>SECTIONS within the certified report, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0203, Version 2.</li> </ul>  | At all times.    |
| 4.                                                                                                                                                                                                                                                                                                                                                                    | <p>Pump 1 on Lot 2 on A34925 (<b>Works Number: 573753</b>) must be constructed in accordance with in accordance with:</p> <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0201, Version 2;</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>With a maximum rate of take of 10 megalitres per day.</li> </ul>                                                             | At all times.    |
| 5.                                                                                                                                                                                                                                                                                                                                                                    | <p>Pump 2 on Lot 2 on A34925 (<b>Works Number: 573754</b>) must be constructed in accordance with:</p> <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1, prepared by RMA Engineers, dated 09/08/2017, Ref: D-</li> </ul>                                                                                                                                                                                                                    | At all times.    |

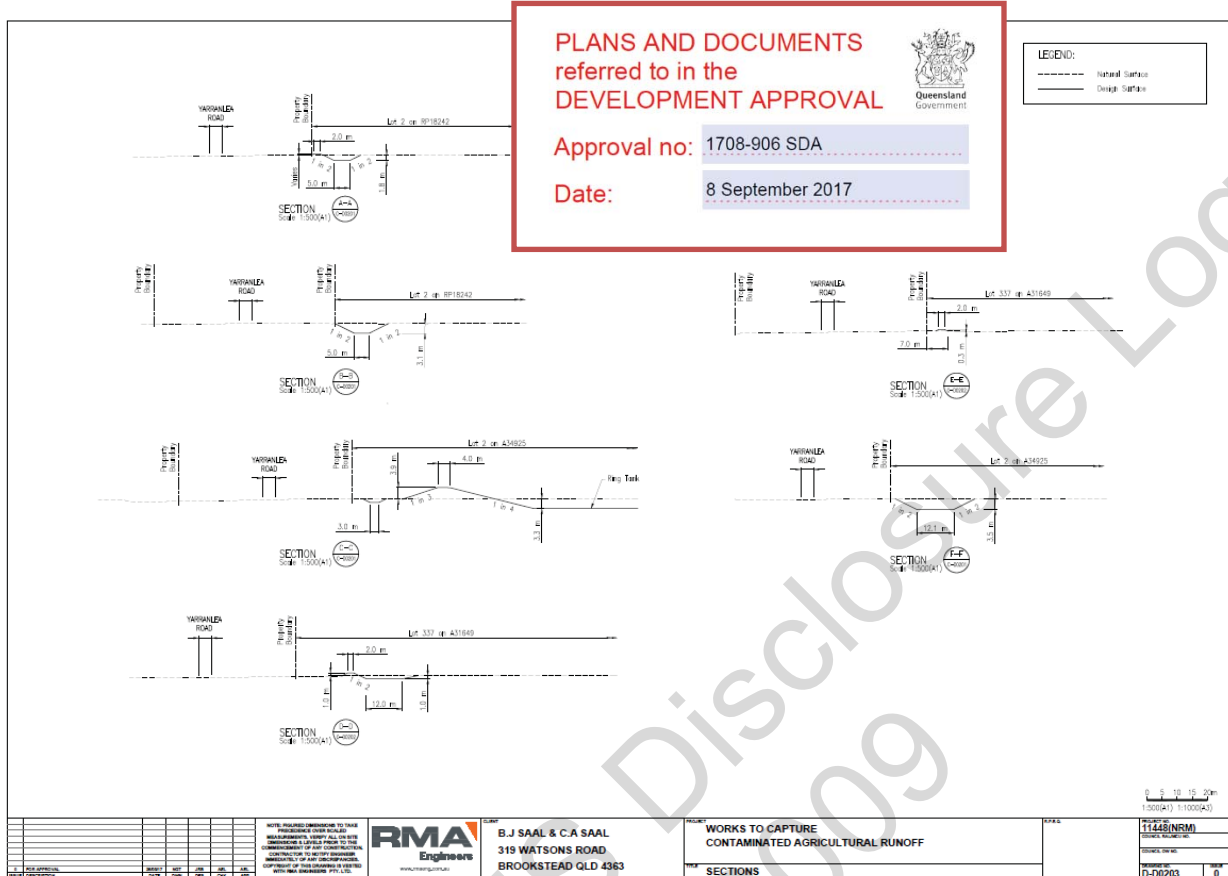


| No. | Conditions of development approval                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Condition timing |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
|     | D0201, Version 2;<br><br>AND<br><br><ul style="list-style-type: none"> <li>With a maximum rate of take of 10 megalitres per day.</li> </ul>                                                                                                                                                                                                                                                                                                                                                     |                  |
| 6.  | Drain 1 on Lot 2 on A34925 and Lot 2 on RP18242 ( <b>Works Number: 573755</b> ) must have the maximum dimensions of figures in accordance with: <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0201, Version 2;</li> </ul> AND<br><br><ul style="list-style-type: none"> <li>SECTIONS within the certified report, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0203, Version 2.</li> </ul> | At all times.    |
| 7.  | Drain 2 on Lot 2 on A34925 ( <b>Works Number: 573756</b> ) must have the maximum dimensions of figures in accordance with: <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0201, Version 2;</li> </ul> AND<br><br><ul style="list-style-type: none"> <li>SECTIONS within the certified report, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0203, Version 2.</li> </ul>                      | At all times.    |
| 8.  | Drain 3 on Lot 3347 on A341649 ( <b>Works Number: 573750</b> ) must have the maximum dimensions of figures in accordance with: <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN – 2, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0202, Version: 2;</li> </ul> AND<br><br><ul style="list-style-type: none"> <li>SECTIONS within the certified report, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0203, Version 2.</li> </ul>                 | At all times.    |
| 9.  | Drain 4 on Lot 2 on A34925 ( <b>Works Number: 573757</b> ) must have the maximum dimensions of figures in accordance with: <ul style="list-style-type: none"> <li>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN – Sheet 2, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0202, Version: 2;</li> </ul> AND<br><br><ul style="list-style-type: none"> <li>SECTIONS within the certified report, prepared by RMA Engineers, dated 09/08/2017, Ref: D-D0203, Version 2.</li> </ul>               | At all times.    |

| No. | Conditions of development approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Condition timing                                        |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 10. | <p>Provide a certification report prepared by a Registered Professional Engineer of Queensland including 'as constructed' plans of the works.</p> <p>The report is to include:</p> <ul style="list-style-type: none"> <li>• The following information should be provided for each sump: <ul style="list-style-type: none"> <li>o A survey of the storages and sumps as constructed including a long section plan of crest level elevation. All heights are to be specified using Australian Height Datum.</li> <li>o A data table identifying following details: <ul style="list-style-type: none"> <li>a) Crest level</li> <li>b) Maximum Height to Top</li> <li>c) Full Supply Level</li> <li>d) Freeboard</li> <li>e) Capacity at Full Supply Level</li> <li>f) Surface area at Full Supply Level.</li> <li>g) Maximum depth at Full Supply Level.</li> </ul> </li> </ul> </li> <li>• The following information should be provided for each drain: <ul style="list-style-type: none"> <li>o A survey of the drain works as constructed, including the escape. All heights are to be specified using Australian Height Datum.</li> <li>o A data table identifying the following details: <ul style="list-style-type: none"> <li>h) Channel Dimensions</li> <li>i) Channel Conditions</li> <li>j) Channel Slope</li> </ul> </li> </ul> </li> <li>• The following information should be provided for each control point (eg. Pumps): <ul style="list-style-type: none"> <li>k) Location of the pump (easting and northing GDA94)</li> <li>l) Height of the control point</li> <li>m) Location shown diagrammatically on the water flow diagram</li> <li>n) Maximum rate of take (ML/day) including pump dimensions and pump type</li> <li>o) Digital photographs of each pump.</li> </ul> </li> </ul> <p>The certified report must be provided to:</p> <p><a href="mailto:waterservices.toowoomba@dnrm.qld.gov.au">waterservices.toowoomba@dnrm.qld.gov.au</a></p> <p>OR</p> <p>WATER SERVICES TOOWOOMBA<br/>PO BOX 318<br/>TOOWOOMBA QLD 4350</p> | <p>Within 20 business days of completing the works.</p> |

#### Approved plans and specifications





# Notice

## Environmental Protection Act 1994

### Extension of decision period

This statutory notice is issued under section 168(2) of the Environmental Protection Act 1994 to advise you that the decision period for your environmental authority application has been extended. This extension can occur only once, without your written agreement.

To: YARRANLEA SOLAR PTY LTD  
PO Box 878  
TOOWONG DC  
QLD 4066  
Australia

Email: 73 irrelevant informati@icubed.com.au

ATTN: 73 irrelevant informatio

Our reference: APP0005420

### Extension to the decision period for environmental authority application

#### 1. Application details

The application for an environmental authority, made by YARRANLEA SOLAR PTY LTD was received by the administering authority on 21 September 2017.

The application reference number is: APP0005420

Land description: LOT 2/A34925

#### 2. Extension of the decision period

The administering authority has extended the period for deciding the application. The end of the period for deciding the application is now 17 January 2018. This is the only extension to the decision period that the administering authority can make without your agreement.

Should you have any questions about the notice, please contact Department of Environment and Heritage Protection on the details provided below.

Kylie Breaker  
Department of Environment and Heritage Protection  
Delegate of the administering authority  
Environmental Protection Act 1994

**Date issued: 01 December 2017**

#### Enquiries:

Extraction, Energy and Chemical Industries  
Assessment  
Department of Environment and Heritage Protection  
Phone: 1300 130 372  
Email: palm@ehp.qld.gov.au

# DRAFT Permit

## Environmental Protection Act 1994

### DRAFT Environmental authority APP0005420

Under Chapter 5 of the Environmental Protection Act

Environmental authority number: APP0005420

Environmental authority holder(s)

| Name(s)                 | Registered address                                |
|-------------------------|---------------------------------------------------|
| YARRANLEA SOLAR PTY LTD | Level 2 39 Sherwood Rd TOOWONG QLD 4066 Australia |

#### Environmentally relevant activity and location details

| Environmentally relevant activity/activities                                                                                                                    | Location(s)  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (a) 5,000t to 100,000t | LOT 2/A34925 |

Additional information for applicants

#### Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the Environmental Protection Act 1994 (EP Act).

#### Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- # the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- # a change in the condition of the contaminated land (notice must be given within 24 hours); or
- # a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days); that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website [www.qld.gov.au](http://www.qld.gov.au), using the search term 'duty to notify'.



## Environmental authority

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the Sustainable Planning Act 2009 or an SDA Approval under the State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Department of Environment and Heritage Protection  
Delegate of the administering authority  
Environmental Protection Act 1994

**Date issued: 17 January 2018**

**Enquiries:**  
Extraction, Energy and Chemical Industries  
Assessment  
Department of Environment and Heritage Protection  
Phone: 1300 130 372  
Email: palm@ehp.qld.gov.au

## Legislative Requirements and Conditions of Environmental Authority

### Legislative Requirements

#### PLR024 Development Approval

This permit is not a development approval under the *Planning Act 2016*. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment and Heritage Protection to ensure that you have the most current version of the environmental authority relating to this site.

## Condition

### General

- G1 Any activity operating under this environmental authority must not be conducted contrary to any of the following limitations:

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Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485



Permit  
Environmental authority

---

1. Extraction to take place only on Lot 2 Plan A34925 and within the polygon indicated in Attachment 1 – Site boundary for proposed ERA 16(2)(a).

G2 All reasonable and practicable measures must be taken to prevent or minimise environmental harm caused by the activities.

G3 Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.

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Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485



Permit  
Environmental authority

---

- G4 Any breach of a condition of this environmental authority must be reported to the administering authority as soon as practicable within 24 hours of becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions taken.
- G5 When required by the administering authority, monitoring must be undertaken in the manner prescribed by the administering authority to investigate a complaint of environmental nuisance arising from the activity. The monitoring results must be provided within 10 business days to the administering authority upon its request.

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Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485



Permit  
Environmental authority

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- G6 An appropriately qualified person(s) must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.
- G7 All records must be kept for a period of at least five years and provided to the administering authority upon request.
- G8 All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) certification, or an equivalent certification, for such analyses.

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Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485





G9 You must record the following details of all environmental complaints received:

1. date and time the complaint was received
2. name and contact details of the complainant when provided and authorised by the complainant
3. nature of the complaint
4. investigation undertaken
5. conclusions formed

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Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485



6. actions taken.

G10 Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system.

G11 The activity must be undertaken in accordance with written procedures that:  
1. identify potential risks to the environment from the activity during routine operations, closure and an emergency  
2. establish and maintain control measures that minimise the potential for environmental harm

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Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485



3. ensure plant, equipment and measures are maintained in a proper and effective condition
4. ensure plant, equipment and measures are operated in a proper and effective manner
5. ensure that staff are trained in and aware of their obligations under the Environmental Protection Act 1994
6. ensure that reviews of environmental performance are undertaken at least annually.

G12 All waste generated in carrying out the activity must be lawfully reused, recycled or removed to a facility that can lawfully accept the waste.

Page 8 of 27

Department of Environment and Heritage Protection  
[www.ehp.qld.gov.au](http://www.ehp.qld.gov.au) ABN 46 640 294 485



## Condition

### Acoustic

- N1 Noise from the activity must not exceed the levels identified in Table - Noise limits when measured in accordance with the associated monitoring requirements.

#### Table - Noise limits

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| Noise level measured in dB(A)        | Monday to Friday |          | Monday to Saturday | Saturday | Sunday   | All other times and public holidays |
|--------------------------------------|------------------|----------|--------------------|----------|----------|-------------------------------------|
|                                      | 7am - 6pm        | 6pm-10pm | 6am-7am            | 7am-12pm | 12pm-6pm | 6pm-10pm                            |
| Noise measured at a sensitive place  |                  |          |                    |          |          |                                     |
| L <sub>Amax</sub> adj, T             | Bkg +5           | Bkg      | Bkg +5             | Bkg +5   | Bkg      | Bkg                                 |
| Noise measured at a commercial place |                  |          |                    |          |          |                                     |

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|          |           |     |         |         |     |     |
|----------|-----------|-----|---------|---------|-----|-----|
| LAmaj, T | Bkg<br>+5 | Bkg | Bkg +10 | Bkg +10 | Bkg | Bkg |
|----------|-----------|-----|---------|---------|-----|-----|

**Bkg** = for a specified time interval, in relation to an investigation of a noise, means the A-weighted sound pressure level that is equalled or exceeded for 90% of that part of the interval in which the investigated noise is absent.

1. All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.
2. Any monitoring must be in accordance with the most recent version of the administering authority's Noise Measurement Manual.
3. Any monitoring of noise emissions from the activity must be undertaken when the activity is in operation.

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N2 When required by the administering authority, noise monitoring must be undertaken in accordance with the associated monitoring requirements of *Table - Noise Limits*, and the results notified within 14 days to the administering authority. Monitoring must include:

1. **LAeq, adj, T**
2. **Background** noise (Background) as **LA 90,adj, T**
3. **MaxLpA,T**

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4. the level and frequency of occurrence of any impulsive or tonal noise
5. atmospheric conditions including wind speed and direction
6. Effects due to extraneous factors such as traffic noise
7. recording of location, date and time of measurements.

N3 Blasting or the generation of substantial low frequency noise is not permitted.

### Condition

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## Air

- A1 Other than as permitted within this environmental authority, odours or airborne contaminants must not cause environmental nuisance at a sensitive place or commercial place.

## Condition

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## Land

- L1 Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:
1. suitable native species of vegetation for the location are established and sustained for earthen surfaces;
  2. potential for erosion is minimised;
  3. the quality of water released from the site, including seepage, does not cause environmental harm;
  4. potential for environmental nuisance caused by dust is minimised;
  5. the water quality of any residual water body does not have potential to cause environmental harm;
  6. the final landform is stable and protects public safety.

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## Condition

### Water

- W1 Erosion and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.

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W2 Stormwater contaminated by the activity must be managed to minimise or prevent any adverse impacts on the values of the receiving environment.

W3

Contaminants must not be released to groundwater or at a location where they are likely to release to groundwater.

## Definition

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Permit  
Environmental authority

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PD002 Activity means the environmentally relevant activity to which this environmental authority relates. An activity may be undertaken on the whole or a part of a site.

PD010 Contaminant(s) means as defined in Section 11 of the *Environmental Protection Act 1994*.

PD011 Environmental harm means as defined in Section 14 of the *Environmental Protection Act 1994*.

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PD012 Environmental nuisance means as defined in Section 15 of the *Environmental Protection Act 1994*.

PD016 Land means land excluding waters and the atmosphere. Land includes land on the authorised place.

PD018 Minimise means minimise by taking all reasonable and practical measures to minimise the adverse effect having regard to the following matters:

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- (a) the nature of the harm or potential harm
- (b) the sensitivity of the receiving environment
- (c) the current state of technical knowledge for the activity
- (d) the likelihood of successful application of different measures that might be taken to minimise the adverse effects
- (e) the financial implications of the different measures as they would relate to the type of activity
- (f) if the adverse effect is caused by the location of the activity being carrying out, whether it is feasible to carry out the activity at another location.

PD027 Waters means all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the

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sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

PD078 Administering authority means the Department of Environment and Heritage Protection or its successors or predecessors.

PD099

Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

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PD129 Groundwater means water that occurs naturally in, or is introduced artificially into, an aquifer.

PD163 Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

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- PD167 Release of a contaminant into the environment means to:
- (a) deposit, discharge, emit or disturb the contaminant
  - (b) cause or allow the contaminant to be deposited, discharged, emitted or disturbed
  - (c) fail to prevent the contaminant from being deposited, discharged emitted or disturbed
  - (d) allow the contaminant to escape
  - (e) fail to prevent the contaminant from escaping.

PD172

Secondary containment system means a system designed, installed and operated to prevent any release of contaminants from the system, or containers within the system, to land, groundwater, or surface waters.

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PD176

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

1. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
2. a motel, hotel or hostel; or
3. a kindergarten, school, university or other educational institution; or
4. a medical centre or hospital; or

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- 5. a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- 6. a public park or garden; or
- 7. for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

PD185 Substantial low frequency noise means a noise emission that has an unbalanced frequency spectrum shown in a one-third octave band measurements, with a predominant component within the frequency range 10 to 200 Hz. It includes any noise emission likely to cause an overall sound pressure level at a noise sensitive place exceeding 55 dB(Z).

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PD202      You means the holder of the environmental authority.

## Appendices

Attachment 1      Attachment 1 – Site boundary for proposed ERA 16(2)(a)

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Permit  
Environmental authority

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Department of Environment and Heritage Protection  
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# Notice

Environmental Protection Act 1994

## Decision on site specific application

This non-statutory notice is issued by the administering authority to advise you that your site specific application has been approved under section 172(2)(a) of the Environmental Protection Act 1994.

To: YARRANLEA SOLAR PTY LTD  
PO Box 878  
TOOWONG DC  
QLD 4066  
Australia

Email: 73 irrelevant informati@icubed.com.au

ATTN: 73 irrelevant informati

Our reference: APP0005420

## Decision on site specific application

### 1. Application details

The application for an environmental authority, made by YARRANLEA SOLAR PTY LTD was received by the administering authority on 21/09/2017.

The application reference number is: APP0005420

Land description: LOT 2/A34925

### 2. Decision

The administering authority has considered the abovementioned application and is writing to inform you that the application is approved subject to conditions.

### 3. Annual fee

The first annual fee is payable within 20 business days of the effective date shown in the attached environmental authority.

The anniversary day of this environmental authority is the same day each year as the effective date. An annual return and the payment of the annual fee will be due each year on this day.

Should you have any questions about the notice, please contact Department of Environment and Heritage Protection on the details provided below.

Kylie Breaker  
Department of Environment and Heritage Protection  
Delegate of the administering authority  
Environmental Protection Act 1994

### Enquiries:

Extraction, Energy and Chemical Industries  
Assessment  
Department of Environment and Heritage Protection  
Phone: 1300 130 372  
Email: palm@ehp.qld.gov.au

**Date issued: 17 January 2018**

## Attachments

Environmental authority APP0005420

# Permit

Environmental Protection Act 1994

Environmental authority EA0001103

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

**Environmental authority number: EA0001103**

**Environmental authority takes effect on 17 January 2018**

**Environmental authority holder(s)**

| Name(s)                 | Registered address                                |
|-------------------------|---------------------------------------------------|
| YARRANLEA SOLAR PTY LTD | Level 2 39 Sherwood Rd TOOWONG QLD 4066 Australia |

**Environmentally relevant activity and location details**

| Environmentally relevant activity/activities                                                                                                                    | Location(s)  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Prescribed ERA, ERA 16 - Extraction and Screening, 2: Extracting, other than by dredging, in a year, the following quantity of material, (a) 5,000t to 100,000t | LOT 2/A34925 |

## Additional information for applicants

### Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the Environmental Protection Act 1994 (EP Act).

### Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website [www.qld.gov.au](http://www.qld.gov.au), using the search term 'duty to notify'.

## Environmental authority

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or
- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the Planning Act 2016 or an SDA Approval under the State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Department of Environment and Heritage Protection  
Delegate of the administering authority  
Environmental Protection Act 1994

**Enquiries:**  
Extraction, Energy and Chemical Industries  
Assessment  
Department of Environment and Heritage Protection  
Phone: 1300 130 372  
Email: palm@ehp.qld.gov.au

**Date issued: 05 March 2018**

**Obligations under the Environmental Protection Act 1994**

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

## Legislative Requirements and Conditions of Environmental Authority

### Legislative Requirements

PLR024      Development Approval

This permit is not a development approval under the Planning Act 2016. The conditions of this environmental authority are separate, and in addition to, any conditions that may be on the development approval. If a copy of this environmental authority is attached to a development approval, it is for information only, and may not be current. Please contact the Department of Environment and Heritage Protection to ensure that you have the most current version of the environmental authority relating to this site.

### Condition

#### General

- G1      Any activity operating under this environmental authority must not be conducted contrary to any of the following limitations:
1. Extraction to take place only on Lot 2 Plan A34925 and within the polygon indicated in Attachment 1 – Site boundary for proposed ERA 16(2)(a).
- G2      All reasonable and practicable measures must be taken to prevent or minimise environmental harm caused by the activities.
- G3      Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.
- G4      Any breach of a condition of this environmental authority must be reported to the administering authority as soon as practicable within 24 hours of becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions taken.
- G5      When required by the administering authority, monitoring must be undertaken in the manner prescribed by the administering authority to investigate a complaint of environmental nuisance arising from the activity. The monitoring results must be provided within 10 business days to the administering authority upon its request.
- G6      An appropriately qualified person(s) must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.

- G7 All records must be kept for a period of at least five years and provided to the administering authority upon request.
- G8 All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) certification, or an equivalent certification, for such analyses.
- G9 You must record the following details of all environmental complaints received:
1. date and time the complaint was received
  2. name and contact details of the complainant when provided and authorised by the complainant
  3. nature of the complaint
  4. investigation undertaken
  5. conclusions formed
  6. actions taken.
- G10 Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system.
- G11 The activity must be undertaken in accordance with written procedures that:
1. identify potential risks to the environment from the activity during routine operations, closure and an emergency
  2. establish and maintain control measures that minimise the potential for environmental harm
  3. ensure plant, equipment and measures are maintained in a proper and effective condition
  4. ensure plant, equipment and measures are operated in a proper and effective manner
  5. ensure that staff are trained in and aware of their obligations under *the Environmental Protection Act 1994*
  6. ensure that reviews of environmental performance are undertaken at least annually.
- G12 All waste generated in carrying out the activity must be lawfully reused, recycled or removed to a facility that can lawfully accept the waste.

## Condition

### Acoustic

- N1 Noise from the activity must not exceed the levels identified in Table - Noise limits when measured in accordance with the associated monitoring requirements.

Table - Noise limits

| Noise level measured in dB(A)       | Monday to Friday |          | Monday to Saturday | Saturday | Sunday   | All other times and public holidays |
|-------------------------------------|------------------|----------|--------------------|----------|----------|-------------------------------------|
|                                     | 7am - 6pm        | 6pm-10pm | 6am-7am            | 7am-12pm | 12pm-6pm | 6pm-10pm                            |
| Noise measured at a sensitive place |                  |          |                    |          |          |                                     |

|                                      |        |     |         |         |     |     |
|--------------------------------------|--------|-----|---------|---------|-----|-----|
| L <sub>Amax</sub><br>adj, T          | Bkg +5 | Bkg | Bkg +5  | Bkg +5  | Bkg | Bkg |
| Noise measured at a commercial place |        |     |         |         |     |     |
| L <sub>Amax</sub><br>adj, T          | Bkg +5 | Bkg | Bkg +10 | Bkg +10 | Bkg | Bkg |

Bkg = for a specified time interval, in relation to an investigation of a noise, means the A-weighted sound pressure level that is equalled or exceeded for 90% of that part of the interval in which the investigated noise is absent.

1. All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.
2. Any monitoring must be in accordance with the most recent version of the administering authority's Noise Measurement Manual.
3. Any monitoring of noise emissions from the activity must be undertaken when the activity is in operation.

N2

When required by the administering authority, noise monitoring must be undertaken in accordance with the associated monitoring requirements of Table - Noise Limits, and the results notified within 14 days to the administering authority. Monitoring must include:

1. L<sub>Aeq</sub>, adj, T
2. Background noise (Background) as L<sub>A</sub> 90,adj, T
3. MaxL<sub>pA</sub>,T
4. the level and frequency of occurrence of any impulsive or tonal noise
5. atmospheric conditions including wind speed and direction
6. Effects due to extraneous factors such as traffic noise
7. recording of location, date and time of measurements.

N3

Blasting or the generation of substantial low frequency noise is not permitted.

## Condition

### Air

A1

Other than as permitted within this environmental authority, odours or airborne contaminants must not cause environmental nuisance at a sensitive place or commercial place.

## Condition

### Land

- L1 Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:
1. suitable native species of vegetation for the location are established and sustained for earthen surfaces;
  2. potential for erosion is minimised;
  3. the quality of water released from the site, including seepage, does not cause environmental harm;
  4. potential for environmental nuisance caused by dust is minimised;
  5. the water quality of any residual water body does not have potential to cause environmental harm;
  6. the final landform is stable and protects public safety.

## Condition

### Water

- W1 Erosion and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.
- W2 Stormwater contaminated by the activity must be managed to minimise or prevent any adverse impacts on the values of the receiving environment.
- W3 Contaminants must not be released to groundwater or at a location where they are likely to release to groundwater.

## Definition

- PD002 Activity means the environmentally relevant activity to which this environmental authority relates. An activity may be undertaken on the whole or a part of a site.
- PD010 Contaminant(s) means as defined in Section 11 of the Environmental Protection Act 1994.
- PD011 Environmental harm means as defined in Section 14 of the Environmental Protection Act 1994.
- PD012 Environmental nuisance means as defined in Section 15 of the Environmental Protection Act 1994.
- PD016 Land means land excluding waters and the atmosphere. Land includes land on the authorised place.
- PD018 Minimise means minimise by taking all reasonable and practical measures to minimise the adverse effect having regard to the following matters:



- (a) the nature of the harm or potential harm
- (b) the sensitivity of the receiving environment
- (c) the current state of technical knowledge for the activity
- (d) the likelihood of successful application of different measures that might be taken to minimise the adverse effects
- (e) the financial implications of the different measures as they would relate to the type of activity
- (f) if the adverse effect is caused by the location of the activity being carrying out, whether it is feasible to carry out the activity at another location.

PD027      Waters means all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, spring, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any waters, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.

PD078      Administering authority means the Department of Environment and Heritage Protection or its successors or predecessors.

PD099      Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

PD129      Groundwater means water that occurs naturally in, or is introduced artificially into, an aquifer.

PD163      Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

PD167      Release of a contaminant into the environment means to:  
(a) deposit, discharge, emit or disturb the contaminant  
(b) cause or allow the contaminant to be deposited, discharged, emitted or disturbed  
(c) fail to prevent the contaminant from being deposited, discharged emitted or disturbed  
(d) allow the contaminant to escape  
(e) fail to prevent the contaminant from escaping.

PD172      Secondary containment system means a system designed, installed and operated to prevent any release of contaminants from the system, or containers within the system, to land, groundwater, or surface waters.

PD176      Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:  
1. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or



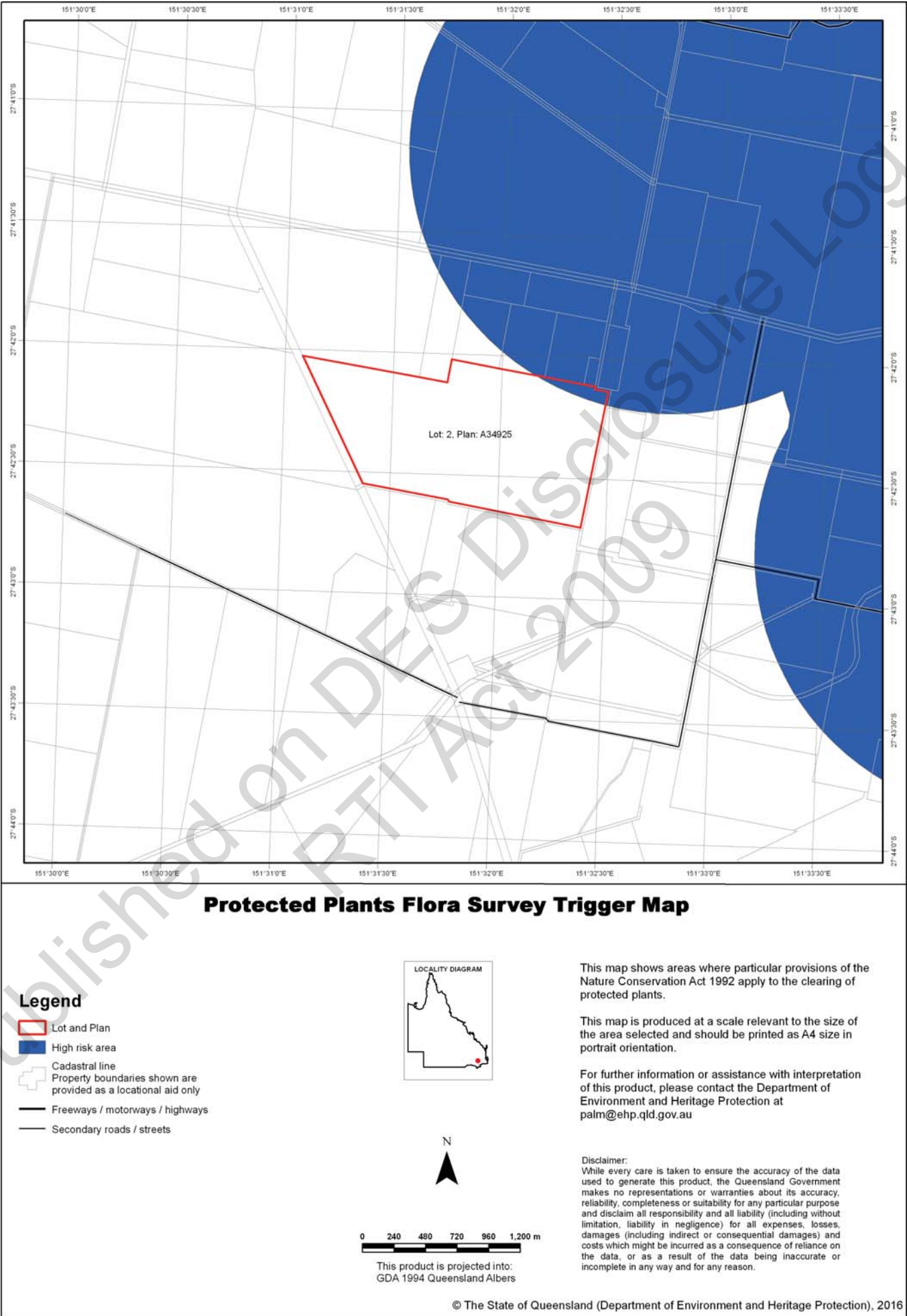
2. a motel, hotel or hostel; or
3. a kindergarten, school, university or other educational institution; or
4. a medical centre or hospital; or
5. a protected area under the Nature Conservation Act 1992, the Marine Parks Act 2004 or a World Heritage Area; or
6. a public park or garden; or
7. for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

PD185      Substantial low frequency noise means a noise emission that has an unbalanced frequency spectrum shown in a one-third octave band measurements, with a predominant component within the frequency range 10 to 200 Hz. It includes any noise emission likely to cause an overall sound pressure level at a noise sensitive place exceeding 55 dB(Z).

PD202      You means the holder of the environmental authority.

## Appendices

Attachment 1      Attachment 1 – Site boundary for proposed ERA 16(2)(a)



Final Report

# Ecological Assessment of the Proposed Yarranlea Solar Project, Yarranlea, Queensland

Prepared for

**Yarranlea Solar Pty Ltd**

August 2016



**Ecology and Heritage Partners Pty Ltd**

## ACKNOWLEDGEMENTS

---

We thank the following people for their contribution to the project:

- irrelevant inform(I<sup>3</sup> Consulting);
- Landowners for site access; and
- Department of Environment and Heritage Protection for biological database relevant for the project.

## DOCUMENT CONTROL

|                  |                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------|
| Assessment       | Ecological Assessment Report                                                                       |
| Address          | Lot 3347 on A341649, Lot 2 on RP18249, Lot 2 on RP7475, Lot 2 on A34925, Yarranlea Road, Yarranlea |
| Project number   | 7789                                                                                               |
| Project manager  | (Principal Ecologist)                                                                              |
| Report author(s) | (Principal Ecologist)                                                                              |
| Report reviewer  | ( Director / Principal Ecologist)                                                                  |
| Mapping          | (GIS)                                                                                              |
| File name        | 7789_EHP_Yarranlea_Solar_EAR_FINAL                                                                 |
| Client           | Yarranlea Solar Pty Ltd                                                                            |
| Bioregion        | Brigalow Belt South                                                                                |
| Council          | Toowoomba Regional Council                                                                         |

| Report versions | Comments                                                           | Comments updated by | Date submitted |
|-----------------|--------------------------------------------------------------------|---------------------|----------------|
| Draft 1         | Internal draft                                                     |                     | 18/3/2016      |
| Draft 2         | Draft for review                                                   |                     | 30/3/2016      |
| Final           | Issued for use                                                     |                     | 12/4/2016      |
| Final 2         | Issued for use – included clearing of RE 11.9.5 and Belson's Panic |                     | 22/06/2016     |
| Final 3         | Issued for use – updated for Biosecurity Act                       |                     | 12/08/2016     |

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## GLOSSARY

| Acronym  | Description                                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------------|
| DNRM     | Queensland Department of Natural Resources and Mines                                                                |
| DoEE     | Department of Environment and Energy                                                                                |
| DEHP     | Queensland Department of Environment and Heritage Protection                                                        |
| EAR      | Ecological Assessment Report                                                                                        |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i>                                                |
| EO Act   | <i>Environmental Offsets Act 2014</i>                                                                               |
| EVNT     | Endangered, Vulnerable and Near Threatened. Relates to the classification of species under the NC Act and EPBC Act. |
| LP Act   | <i>Land Protection (Pest and Stock Route Management) Act 2002</i>                                                   |
| NC Act   | <i>Nature Conservation Act 1992</i>                                                                                 |
| NES      | National Environmental Significance                                                                                 |
| TRC      | Toowoomba Regional Council                                                                                          |
| RE       | Regional Ecosystem                                                                                                  |
| SES      | State Environmental Significance. Listed under the EO Act.                                                          |
| SMP      | Species Management Program under the NC Act.                                                                        |
| SPRP     | State Planning Regulatory Provisions                                                                                |
| TEC      | Threatened Ecological Community. Listed under the EPBC Act.                                                         |
| TPS      | Toowoomba Planning Scheme                                                                                           |
| VM Act   | <i>Vegetation Management Act 1999</i>                                                                               |

## SUMMARY

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### Introduction

Ecology and Heritage Partners Pty Ltd was engaged by Yarranlea Solar Pty Ltd to conduct an Ecological Assessment Report (EAR) of a proposed solar utility farm (the proposed development) within several properties on Yarranlea Road, Yarranlea, Queensland. The purpose of the EAR is to provide a description of the existing environment within the properties and to identify any ecologically significant areas that may be impacted by the construction and operation of the proposed development.

The proposed development is located on rural land approximately 44 kilometres south-west of Toowoomba and 10 kilometres west of Pittsworth township. The study area is bound by Yarranlea Road to the west and rural properties to the north, east and south. The study area is located within intensive cropping areas on the fertile plains of the Condamine River Floodplain. This region has been farmed over a long period of time, which has resulted in the loss of much of the historical vegetation coverage. Remnant and regrowth vegetation exists in small patches on hills and rises in the east and along road reserves. The natural waterways within the study area have been cleared of riparian vegetation and exist as channelized drainage lines.

Yarranlea Solar is proposing to construct a Utility Scale Photovoltaic (PV) Solar farm. The PV Facility is estimated to generate up to 100 megawatts (MW) of energy and have an operational life of 30 years. The project will have a connection to the Queensland Electricity Market through an Ergon substation and will have on-site battery storage. The PV Facility is proposed to eventually cover up to 250 hectares of land and will be developed over four stages. The proposed development will be assessed under the Toowoomba Regional Planning Scheme.

### Methods

A desktop assessment and site inspection was completed by [irrelevant informa] (Principal Ecologist) to identify the vegetation communities and flora and fauna values (e.g. potential occurrence of threatened species) within the study area, and to confirm the vegetation mapping at the local and State government levels. The extent of the study area was inspected and the overall condition of vegetation and potential fauna habitat noted. A modified quaternary vegetation assessment was completed to assess the mapped remnant vegetation within the study area in terms of structure and dominant species and whether they were consistent with Regional Ecosystem (RE) types in the Regional Ecosystem Description Database. Given that a portion of the study area is mapped as a High Risk Area for protected plants on the flora survey trigger map, a survey in accordance with the Flora Survey Guidelines was completed. Several random meanders (Cropper 1993) were completed within the mapped area to search for significant flora species. Random meanders were also completed within other potential habitats.

The field assessment included a visual fauna assessment of the study area, with all observed fauna species recorded and the overall habitat condition noted. Birds and frogs vocalisations were noted, and searches were undertaken for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Habitat features, including ground cover and vegetation composition and structure, and the presence of hollows and fallen ground debris were also noted.

## Results

Desktop analysis of remnant native vegetation within the study area and surrounds showed a highly modified landscape with large areas cleared for agricultural purposes (predominately cropping), and residual, small, fragmented remnants of vegetation scattered throughout the landscape. One patch of remnant RE vegetation was identified within the study area and is mapped as regulated vegetation under the VM Act. This RE is sometimes included as in the Brigalow (*Acacia harpophylla* dominant and co-dominant) Threatened Ecological Community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, in this case the community is not consistent due to the absence of Brigalow.

One threatened flora species was detected within the study area (Belson's Panic *Homopholis belsonii*) which is listed as endangered under the Queensland *Nature Conservation Act 1992* and vulnerable under the EPBC Act. Twelve discrete patches were identified within the patch of RE 11.9.5 within the southern portion of study area, and one patch was identified adjacent to the eastern boundary of the study area within the Yarranlea-Murlaggan Road reserve. Each discrete patch covered an approximate area of several meters squared, and these areas were most often at the base of canopy trees and were in shaded areas created by shrubs.

Several significant flora and fauna species potentially occur within the study area, including Austral Cornflower, *Rhaponticum australe*, King Bluegrass *Dichanthium queenslandicum*, Condamine Earless Dragon *Tympanocryptis condaminensis*, Painted Honeyeater *Grantiella picta*, Five-clawed Worm-Skink *Anomalopus mackayi*, and Grey-headed Flying Fox *Pteropus poliocephalus*.

## Potential impacts and mitigation measures

The development is proposed over four stages and will involve complete coverage of the study area in solar PV panel arrays. The proposed development will result in the disturbance of cropped areas and the small patch of vegetation located within Stage 1. The removal of this vegetation will also result in the removal of the population of Belson's Panic. Vegetation along Yarranlea-Murlaggan Road will not be impacted, although a small number of remnant trees and other vegetation may be trimmed or cleared for duplication of the powerline along Yarranlea Road.

The removal of habitat for Belson's Panic has been assessed at the Queensland and Commonwealth levels. The removal of plants has been assessed as a significant impact under the relevant Queensland guidelines; however, the removal of plants is not a significant impact under the EPBC Act. This difference is primarily due to the different conservation status of the species under the NC Act (endangered) and EPBC Act (vulnerable).



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# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners Pty Ltd was engaged by Yarranlea Solar Pty Ltd to undertake an Ecological Assessment of a proposed solar utility farm (the proposed development) within several properties on Yarranlea Road, Yarranlea, Queensland.

The purpose of the assessment is to provide a description of the existing environment within the properties and to identify any ecologically significant areas that may be impacted by the construction and operation of the proposed development. The proposed development is located within the Toowoomba Regional Council (TRC) area and will be assessed under the Toowoomba Regional Planning Scheme 2015. Planning Scheme Policy No. 1 – Development Application Requirements: Appendix 1 Preparation of Ecological Assessment report (ERA) identifies the requirements for EAR. Further information regarding the EAR structure is provided below (Section 2).

This report presents the results of the desktop and site assessment, and discusses the potential ecological and legislative implications associated with the proposed development. Several recommendations to avoid, minimise or mitigate impacts associated with the proposed development are provided (Section 5).

## 1.2 Study Area

The proposed development is located on rural land approximately 44 kilometres south-west of Toowoomba and 10 kilometres west of Pittsworth township (Figure 1). The study area is described as Lot 2 on RP7475, Lot 2 on RP18249, Lot 3347 on A341649 and part of Lot 2 on A34925 and is bound by Yarranlea Road to the west and rural properties to the north, east and south. A connection to an Ergon Substation on the corner of Yarranlea Road and the Millmerran Branch Rail Line is also required and will traverse Lot 2 on RP120604 to the south of the study area.

The study area is located within intensive cropping areas on the fertile plains of the Condamine River Floodplain, and is currently used to grow crops (e.g. sorghum), which is the primary land use across the broader region (i.e. historically been farmed). This has resulted in the loss of remnant native vegetation across the study area. However, remnant and regrowth vegetation exists in small patches on hills and rises in the east and along road reserves. Most natural waterways have been cleared of riparian vegetation and exist as channelized drainage lines. .

The study area is flat to gently sloping towards the west, and contains several buildings and infrastructure, including a homestead and sheds. A small patch of remnant native vegetation is located within the central southern portion of the study area.



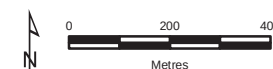
### Legend

- Study Area
- Roads and tracks
- Railway
- Minor watercourse
- Property boundaries



**Figure 1**

**Location of Study Area**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



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### 1.3 Proposed Development

Yarranlea Solar is proposing to construct a Utility Scale Photovoltaic (PV) Solar farm at Yarranlea. The PV Facility is estimated to generate up to 100 megawatts (MW) of energy and have an operational life of 30 years. The project will have a connection to the Queensland Electricity Market through an Ergon substation and may have on-site battery storage. The PV Facility is proposed to eventually cover up to 250 hectares of land and will be developed over four stages:

- Stage 1 – Installation of Solar PV panels to generate approximately 40MW over 100 ha. A Battery Storage Building, and Operations and Maintenance Building will also be constructed to support the operation. Connection to Ergon Substation will be completed at this stage via a new 1.5 kilometre powerline. Located in the southern half of the study area;
- Stage 2 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the north-east portion of the study area;
- Stage 3 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the northern portion of the study area; and
- Stage 4 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the north-western portion of the study area.

The proposed layout of the PV facility is shown below (Figure 2).

The PV Facility comprises several interlinked and integral components for the operation of the equipment and generation of electricity from solar radiation. These components include: solar modules, steel mounts for the modules, electrical transformers and inverters, electrical wiring, telecommunication equipment and electrical control enclosures. It is also likely that the PV Facility will include a battery/electrical storage enclosure, which would include batteries.

The panels utilised in the facility are similar to those used for domestic power generation purposes and will be supported on steel frames. The frames may operate under a solar tracking system to increase power generation through tracking the movement of the sun. An underground reticulation system will be used to collect the power to an internal substation which will transform the power voltage to 110 kV, compatible with the nearby Ergon Energy transmission infrastructure. Power will be connected to the grid, approximately 600m from the southern boundary of the development area using either an underground or overhead transmission line within the Yarranlea Road reserve and terminating at the existing Ergon Substation.

The solar panel arrays will be surrounded by informal grassed internal access ways which are designed to provide access to the inverter/transformer equipment pads located at the centre of the array blocks. A gravel access track shall be provided to the perimeter of the Stage 1 block and the block comprising Stages 2 to 4. This will act as a fire break and will be accessed from the western end of Yarranlea-Murlaggen Road. This track is proposed to be located inside of a 2.4 metre high chain wire security fence. Project site, substation, and other areas requiring controlled access will be appropriately restricted to private access during construction and operations.

The facility will be managed from a control building, located adjacent to the substation which will include formalised staff and visitor parking, and this will be accessed off Yarranlea-Murlaggen Road. The compound will also house an electrical switchroom and battery storage building. The access



driveway and parking will comprise a bitumen sealed surface. Permanent motion sensitive, directional security lights will also to be installed to provide adequate illumination around the substation area and points of ingress/egress. All lighting will be directed downward to minimise the potential for glare or spill-over onto adjacent properties. Lighting is proposed to be used from dusk to dawn once the facility is operational.

Stage 4 will require the removal of three existing farm buildings and these are to be replaced by a farm storage shed, located opposite the Operations and Maintenance facility on the northern side of Yarranlea-Murlaggen Road.

Appropriate landscaping is to be provided along the western boundary of the site, using native shrub species with a mature height of 4 – 5 metres, to assist in reducing any potential visual impacts of the PV Facility. The proposed landscaping treatment will be intensified in the vicinity of the Operations and Maintenance facility due to the taller structures which will be required in this part of the development.

The PV Facility has been designed in such a manner as to minimise the extent of civil works required to occur on the site. All existing overland drainage flow paths are intended to be maintained where practical so as to minimise the impact on the surrounding land uses. No formalised internal roads are envisaged to be provided between panels and the level of sealing required has been kept to a minimum. The existing soil will be retained and re-seeded with an appropriate blend of pasture grass and legume species, to provide vegetation coverage over the site. Grasses will be maintained through periodic slashing and potential grazing opportunities. Accordingly, it is intended that the facility will have minimal impact when decommissioned as the development components do not require substantial disturbance to the landscape.

#### *Construction Phase Schedule*

For each stage of the project, construction is to proceed in the manner outlined below. However, it should be noted that the Substation and 110 kV connection installation components will only occur as part of Stage 1, and will not be required in subsequent stages.

- Site Preparation, Substation and Grid Connection Installation (52 to 60 weeks in duration).
- Photovoltaic Panel System Installation (26 to 30 weeks in duration, beginning mid-way through the site preparation phase).
- Inverters, Transformers, and Electrical Collector System Installation (12 to 20 weeks, beginning mid-way through the PV System Installation Phase).

#### *Site Preparation, Substation and Grid Connection Installation*

A construction laydown area is to be established near the main site entrance and a second area to the east of the site, and equipment mobilised to the site. The site is then cleared, grubbed, graded, and compacted, with the on-site informal roadway system staked and established. Roads would be treated to create a durable, dust minimising surface to ensure minimisation of dust emissions, and security fencing would be installed around the site perimeter.

The substation facility would incorporate a number of concrete foundations for the electrical plant including the main transformer, Neutral Earth Transformer, Reactive Plant, Switchroom, Operations and Maintenance Building and Battery Storage Building. Following construction of these foundations,

the plant and structures would be installed in readiness for commissioning when the first of the PV modules have been installed in readiness for first power. During the construction of the substation facility the 110kV connection to the existing ergon substation will be installed as will the connection works by Ergon at the Yarranlea Substation. This 110kV line will be either direct buried underground, or alternately a traditional overhead line connecting the development to the existing Ergon Infrastructure.

It is expected that the Site Preparation, Substation and Grid Connection Phase will require the use of heavy equipment including: bulldozers, water trucks, graders, flatbed trucks, skid steers, front end loaders, roller compactors, trenchers, backhoes, gravel trucks, water buffaloes, cranes, and aerial lifts. However, it should be noted that the design of the facility is such that, where possible and practicable, on-site levelling and grading will be minimised.

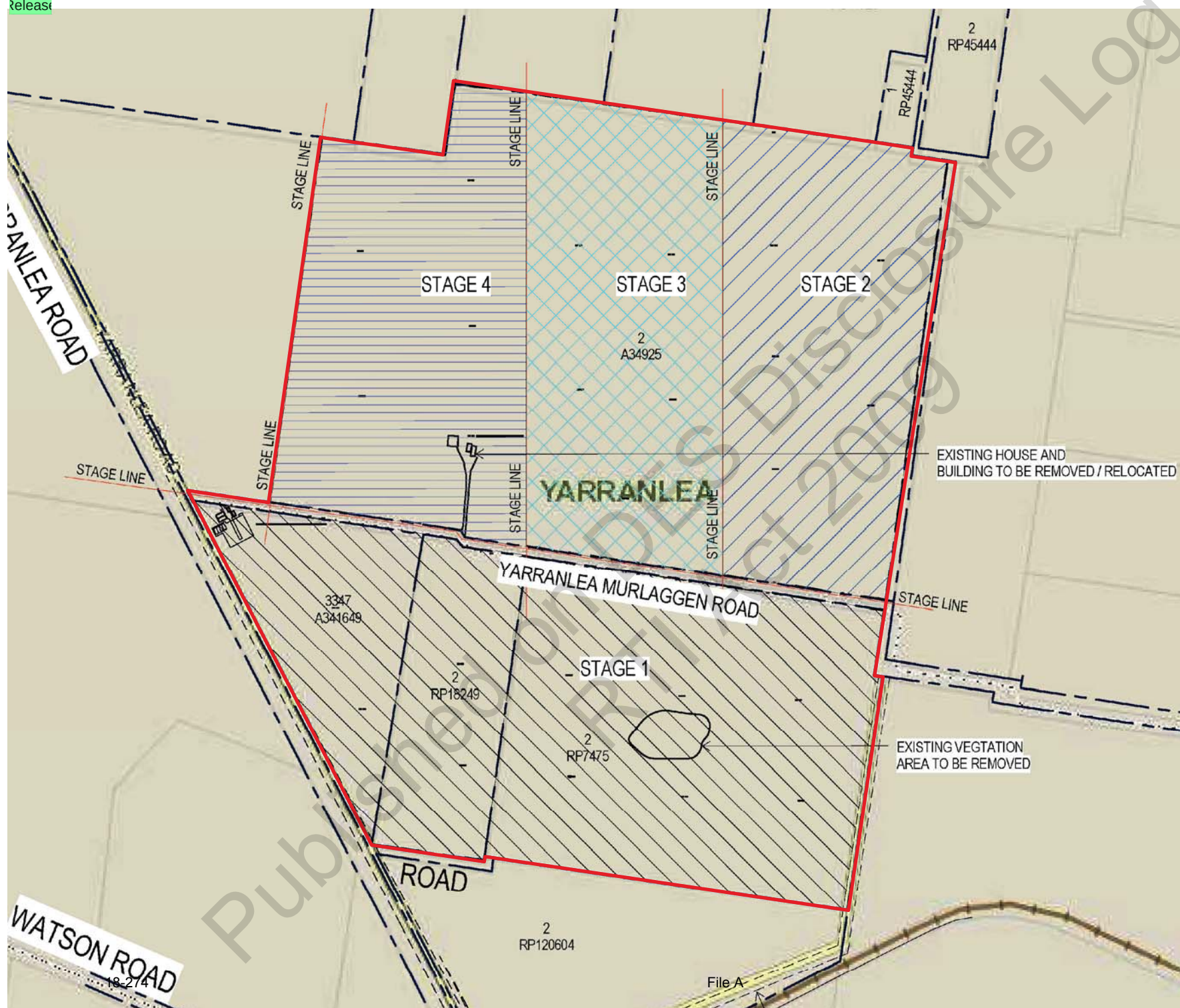
#### *Photovoltaic Panel System Installation*

Approximately 401,500 solar panels are to be installed in the development arranged in solar arrays consisting of linear strings of mounted modules organised into blocks of approximately two megawatts capacity. The solar panels are to be positioned 1.2 metres above ground level and mounted on monopole structures. These monopole structures are approximately 1.5 metres long and 1.5 metres high, and are connected in strings of 100 metres, with a seven metre gap between centres. The monopole structures will be supported on either steel screw piles, steel driven piles or FRP Composite Drive Piles, to a depth of between 2 – 3 metres below the existing ground surface level. These foundations will be readily removable at the end of life of the facility to enable the land to be restored to cultivated agricultural activities.

#### *Inverters, Transformers, and Electrical Collector System Installation*

Each power block is to include a central skid mounted inverter/transformer station that will convert the direct current (DC) energy into grid-compatible alternating current (AC) energy. Foundations for the inverter stations shall be similar screw pile or driven pile technology to the solar panel supports and removable at the end of the life of the project. The Medium Voltage, (33kV), collector system will be installed by direct burying to a depth of 1.0 metre below ground level. At the end of the project the cable metals will be recovered for recycling.





## Legend

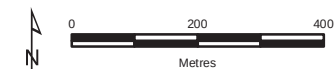
Study Area



**Figure 2**

**Proposed development layout**

*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the user shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

## 1.4 Objectives

The objectives of the assessment follows the requirements for an EAR in Planning Scheme Policy 1 – Appendix 1, which includes:

- Describe the location and extent of the proposed study area;
- Describe the physical characteristics of the study area;
- Outline the existing use of the study area and any previous uses;
- Outline the existing environment of the study area, including areas of ecological significance;
- Provide an overview of the proposed project;
- Identify the potential impacts of the proposed project on the existing environment;
- Outline other planning scheme codes, overlays and policies which apply to the site;
- List references used in the desktop assessment; and
- Include appendices for any additional supporting information.

## 1.5 Legislation

This section identifies biodiversity policy and legislation relevant to the proposed development, principally:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth), administered by the Department of the Environment and Energy (DoEE);
- *Nature Conservation Act 1992* (NC Act) (Queensland), administered by the Department of Environment and Heritage Protection (DEHP);
- *Vegetation Management Act 1999* (VM Act) (Queensland), administered by the Department of Natural Resources and Mines (DNRM);
- *Biosecurity Act 2014* , administered by the Department of Agriculture and Fisheries (DAF);
- *Environmental Offsets Act 2014* (EO Act) (Queensland), administered by DEHP;
- *Water Act 2000* (Queensland), administered by DNRM; and
- Toowoomba Regional Planning Scheme 2015, administered by Toowoomba Regional Council (TRC).

Background information on the above is provided in Appendix 1.

## 2 METHODS

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This section identifies the methods used to identify the ecological values occurring or likely to occur within the study area.

### 2.1 Nomenclature

Common and scientific names of vascular plants follow the Queensland Herbarium Census of the Queensland Flora (Bostock and Holland 2010). The following sources were used for names of fauna species:

- Reptiles and Frogs – Cogger (2014) Reptiles and Amphibians of Australia. Seventh Edition;
- Birds – Christidis and Boles (2008) Systematics and Taxonomy of Australian Birds; and
- Mammals – Van Dyck and Strahan (2008) The Mammals of Australia. Third Edition.

### 2.2 Desktop Assessment

The following resources were reviewed prior to undertaking the field assessment:

- Queensland Herbarium Regional Ecosystem Description Database (REDD) version 9.0 – April 2015 (DEHP 2016a);
- Current Regional Ecosystem (RE) mapping (Queensland Herbarium 2016);
- Regulated Vegetation Management Map and essential habitat map (DNRM 2016) under the *Vegetation Management Act 1999* (VM Act);
- Protected Plants Flora Survey Trigger Map (DEHP 2016b);
- Relevant flora and fauna databases (Qld Herbarium HERBRECS, Queensland Museum, Wildlife Online [WildNet], Atlas of Living Australia and Birds Australia Atlas [1998-2008]);
- Commonwealth EPBC Act Protected Matters Search Tool (DoEE 2016);
- Current aerial photography of the study area (Queensland Globe 2016);
- Toowoomba Regional Planning Scheme; and
- Relevant federal and state legislation and policies.

### 2.3 Field Assessment

A field assessment was conducted by 3 irrelevant informal (Principal Ecologist, Ecology and Heritage Partners) on 16 February 2016 to identify the vegetation communities, and flora and fauna values (e.g. potential occurrence of significant species) within the study area, and to confirm the vegetation mapping at the local and State government levels. The entire the study area was assessed and the overall condition of vegetation and potential fauna habitat noted.

A modified quaternary vegetation assessment (Neldner *et al.* 2012) was completed to assess the mapped remnant vegetation within the study area in terms of structure and dominant species and whether they were consistent with RE types (Sattler and Williams 1999) in the Regional Ecosystem (RE) Description Database (REDD). A vegetation transect was completed within the mapped patch of RE 11.9.5, and this transect involved:

- Laying out a 50 metre tape measure (a 100 metre transect could not be completed due to the small size of the patch);
- Measure the distance that the tree or shrub cover intercepted the tape if the cover was projected onto the ground;
- Estimate the height of each tree or shrub that intercepted the transect;
- Estimate the relative dominance of trees, shrubs and ground covers within 10 metres either side of the transect centreline;
- Estimate the relative abundance of native and exotic groundcovers, litter, bare ground and coarse woody debris within 1 metre by 1 metre quadrats spaced alternatively every 10 metres along the transect centreline.

The boundary of the patch was also mapped using a hand held GPS unit. A Property Map of Assessable Vegetation (PMAV) was submitted to the Department of Natural Resources and Mines (DNRM) on 15 April, 2016 to modify the boundary of this vegetation to more accurately reflect the on-ground boundary.

As a portion of the study area is mapped as a High Risk Area for protected plants on the flora survey trigger map, a survey in accordance with the Flora Survey Guidelines was completed. Several random meanders (Cropper 1993) were completed within the mapped area to search for significant flora species. Random meanders were also completed within other potential habitats.

The site assessment included a visual fauna assessment of the study area, with all observed fauna species recorded and the overall habitat condition noted. Birds and frogs vocalisations were noted and searches were made for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Habitat features, including ground cover and vegetation composition and structure, and the presence of hollows and fallen ground debris were also noted.

In addition, as fauna species are mobile, a visual assessment of the surrounding landscape was made to determine whether there was suitable habitat (principally for threatened species) in the immediate area, and to determine the likelihood that any of these species would either reside within the study areas for extended periods of time, or whether the sites contributed to a larger home range of a significant species.



## 3 RESULTS

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### 3.1 Matters of National Environmental Significance

The Protected Matters Search Tool identified several matters of National Environmental Significance (MNES) that are known to or are likely to occur within the study area and surrounds. These include:

- Four Wetlands of International Importance (Ramsar sites);
- Five listed Threatened Ecological Communities;
- 24 listed threatened species;
- 12 migratory species; and
- 15 marine species.

#### 3.1.1 Wetlands of International Importance

The study area is located within the catchment of four Ramsar sites with the sites themselves located between 400 kilometres and 1,500 kilometres downstream of the study area.

#### 3.1.2 Threatened Ecological Communities

The desktop assessment identified five EPBC Act-listed Threatened Ecological Communities (TEC) with the potential to occur within the study area. These communities are:

- Brigalow (*Acacia harpophylla* dominant and co-dominant);
- Coolibah – Black Box Woodland of the Darling River Plains and the Brigalow Belt South Bioregions;
- Natural Grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland;
- Weeping Myall Woodlands; and
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland, listed as critically endangered.

One TEC was mapped as potentially occurring within the study area, namely Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC. The field survey found that the vegetation was consistent with RE 11.9.5, however was dominated by Belah *Casuarina cristata* and Poplar Box *Eucalyptus populnea* and Brigalow was absent. To be considered part of the Brigalow TEC, Brigalow must be dominant or co-dominant within the vegetation community, therefore the Brigalow TEC does not occur within the study area. Similarly, areas of mapped RE 11.9.5 along Yarranlea Road adjacent to the study area are dominated by Belah and Poplar Box and therefore are not considered part of the TEC.

No other TECs were identified within or adjacent to the study area.

## 3.2 Vegetation Communities

### 3.2.1 Regional Ecosystems

Desktop analysis of remnant vegetation within the study area and surrounds showed a highly modified landscape with large areas cleared for agricultural purposes (predominately cropping) and residual, small, fragmented remnants of vegetation scattered throughout the landscape (Figure 3). One patch of remnant RE vegetation was identified within the study area and is mapped as regulated vegetation under the VM Act:

- RE 11.9.5 (VM Status - Endangered) - *Acacia harpophylla* and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks.

This RE is included in the description of the Brigalow TEC listed under the EPBC Act (DoEE, 2016), however field investigations showed that it is dominated by *Belah* and hence excluded from the Brigalow TEC listed community.

The patch of RE 11.9.5 mapped within the southern portion of the study area was assessed to confirm its remnant status and whether it met the listing criteria for the Brigalow TEC. As the patch of vegetation was below the area threshold to be mappable as a RE (the threshold is one hectare for non-linear features), the PMAV approved by DNRM on 15 June, 2016 resulted in the removal of this patch from the regulated vegetation map and consequently the vegetation is mapped as Category X vegetation.

A summary of the results of the vegetation transect and assessment are included below (Table 1). Transect photographs are included in Plates 1, 2, 3 and 4. The Queensland Herbarium maintains technical descriptions of the normal range of vegetation structure and floristic compositions of REs and are used to compare disturbed REs with their 'undisturbed' state. The technical description for RE 11.9.5 has not yet been made available by the Herbarium. However, an alternative resource, the BioCondition Benchmarks provide some compatible metrics for comparison with the RE 11.9.5 patch within the study area. The relevant BioCondition benchmarks are provided (Table 1).

**Table 1 Vegetation structure and composition of RE 11.9.5 patch**

| Variable                         | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BioCondition Benchmarks                                                                                                                                                                                                                                      |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Area (hectares)                  | 0.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                                                                                                                                                                                                                          |
| Dominant species                 | Canopy (T1 layer) - Belah, Poplar Box<br>Sub-canopy (T2 layer) – Weeping Pittosporum<br><i>Pittosporum angustifolium</i> , Belah<br>Tall Shrub (S1 layer) – Velvety Tree Pear <i>Opuntia tomentosa</i> , Wilga <i>Geijera parviflora</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Canopy (T1 layer) – Brigalow, Belah<br>Sub-canopy (T2 layer) – Brigalow, Belah<br>Tall Shrub (S1 layer) – Wilga, Smooth-barked Ironwood <i>Gossia bidwillii</i> , False Sandalwood <i>Eremophila mitchellii</i> , Ellangowan Poison Bush <i>E. deserti</i> . |
| Median height of the canopy (T1) | 18 metres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25 metres                                                                                                                                                                                                                                                    |
| Median height of sub-canopy (T2) | 5 metres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8 metres                                                                                                                                                                                                                                                     |
| Average canopy (T1) cover        | 57.4% cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 59%                                                                                                                                                                                                                                                          |
| Average sub-canopy (T2) cover    | 3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 48%                                                                                                                                                                                                                                                          |
| Other species present            | Trees - Sally Wattle <i>Acacia salicina</i><br>Native groundcovers - Small Saltbush <i>Atriplex eardleyae</i> , Mueller's Saltbush <i>Atriplex muelleri</i> , Currant Bush <i>Carissa ovata</i> , Ruby Saltbush <i>Enchylaena tomentosa</i> ,<br>Exotic groundcovers - Flax-leaf Fleabane <i>Conyza bonariense</i> , Mayne's Pest <i>Verbena aristigera</i> , Cobblers Pegs <i>Bidens pilosa</i> ,<br>Native grasses – Slender Chloris <i>C. divaricata</i> , Fairy Grass <i>Sporobolus caroli</i> , Curly Windmill Grass <i>Enteropogon acicularis</i> , Brigalow Grass <i>Paspalidium caespitosum</i> , Slender Bottlewashers <i>Enneapogon gracilis</i> ,<br>Exotic grasses - Rhodes Grass <i>Chloris gayana</i> , | Ground covers - Brigalow Grass <i>Paspalidium caespitosum</i><br>Exotic species – Velvety Tree Pear, Prickly Pear <i>Opuntia stricta</i>                                                                                                                     |
| Percentage weed cover            | 13% (averaged over 50 metre transect)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0%                                                                                                                                                                                                                                                           |
| Average ground cover             | Native grasses – 23.2%<br>Exotic grasses – 0%<br>Native herbs and forbs – 1%<br>Exotic herbs and forbs – 6%<br>Native shrubs – 1%<br>Exotic shrubs – 6.8%<br>Litter – 36%<br>Coarse woody debris – 7%<br>Bare ground – 18%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Native grasses – 4%<br>Litter – 66%                                                                                                                                                                                                                          |

To be considered remnant vegetation, the height of the canopy layer of the vegetation must be 70% or greater than the canopy height of an undisturbed community and must have 50% of the canopy cover of the undisturbed community. The vegetation must also include species that are generally found within the canopy of the undisturbed community. Using the BioCondition benchmarks, the undisturbed median canopy height is 25 metres and therefore 70% is 17.7 metres and the undisturbed canopy cover is 59% and therefore 50% is 29.5%. The vegetation also contains some species that are found in the undisturbed community benchmark. The small patch of vegetation just meets the canopy height requirement and easily meets the cover requirement and is therefore considered remnant vegetation. However, as discussed previously, as the area is below the mapping threshold used by the DNRM, this vegetation is not considered to be regulated vegetation.





Plate 1 – Transect looking north



Plate 2 – Transect looking east



Plate 3 – Transect looking south



Plate 4 – Transect looking west

Several small patches of remnant vegetation are mapped adjacent to the study area on the western side of Yarranlea Road, including:

- RE 11.9.5; and
- RE 11.3.2 (VM Status of Concern) - *Eucalyptus populnea* woodland on alluvial plains.

A larger patch of RE 11.3.2 is mapped adjacent to the north-eastern corner of the study area. This community is sometimes included in the Weeping Myall Woodlands TEC if patches of Weeping Myall



*Acacia pendula* form monotypic stands. No Weeping Myall was identified within this community during the survey.

There are no vegetated connections to the mapped remnant vegetation from the study area.

#### RE 11.9.5 and 11.3.2 along Yarranlea Road

Several patches of RE 11.9.5 and 11.3.2 are mapped on both sides of the Yarranlea Road reserve with extensive areas occurring on the western side of the road. The patches on the eastern side, and adjacent to the study area, were inspected although formal transects were not completed. This vegetation exists predominantly as a single line of trees with an exotic grassy understorey. The canopy is dominated entirely by Poplar Box with Belah forming a sub-canopy with Wilga and False Sandalwood. The ground cover is dominated by exotic grasses and herbs that are common along roadsides in the Darling Downs. Species include Rhodes Grass, Purple Pigeon Grass *Setaria incrassata*, Flax-leaf Fleabane, Balloon Cotton Bush *Gomphocarpus physocarpus*, Cobblers Pegs, Maynes Pest, Velvety Tree Pear, Spear Thistle *Cirsium vulgare* and Moth Vine *Araujia hortorum*. Native ground covers include Queensland Bluegrass *Dichanthium sericeum*, Curly Windmill Grass, Barb Wire Grass *Cymbopogon refractus*, Native Millet *Panicum decompositum* and Ellagowan Poison Bush.



**Plate 5** Mapped RE 11.9.5 and 11.3.2 along Yarranlea Road reserve

### **3.2.2 Non-remnant Communities**

The study area is located within a highly disturbed agricultural landscape where native vegetation exists as small patches within paddocks or linear strips within road reserves. A small patch of mapped RE 11.9.5 occurs within the southern portion of the study area and other patches of mapped RE 11.9.5 and 11.3.2 occur along Yarranlea Road (Figure 3). Isolated clumps of trees and shrubs occur along Yarranlea – Murlagan Road which traverses the centre of the study area. While isolated stands of Brigalow occur in the far north-east portion of the study area within a road easement, these do not form large enough patches to be considered part of the Brigalow TEC.

#### Non-remnant Roadside Vegetation

Several isolated patches of vegetation existing within the road reserve of Yarranlea Murlaggan Road which transects the study area. This vegetation exists as a single canopy tree or up to three trees with surrounding shrubs and grasses. Poplar Box is the dominant canopy species with Sally Wattle and Weeping Pittosporum also present. Ground covers generally include exotic grasses and herbs including Rhodes Grass, Cobblers Pegs, Mayne's Pest and Flax-leaf Fleabane.

#### Cropping Land

The majority of the study area is used for cropping of a variety of crops including sorghum, cotton and chickpeas. The southern portion of the study area had been recently harvested at the time of the survey although some crops were growing within the northern portion.

### 3.3 Significant Flora Species

The database searches identified nine threatened flora species that have been previously recorded or likely to occur within 10 kilometres of the study area (Table 2) and these are shown below (Figure 4). The potential occurrence of each species within the study area was assessed based on the criteria described below (Appendix 2). Two species have been assessed to have a moderate likelihood of occurrence within the study area; Austral Cornflower *Rhaponticum australe* and King Bluegrass *Dichanthium queenslandicum*, and one species was detected within the study area; Belson's Panic *Homopholis belsonii*.

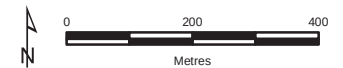
 Study Area

 Category B area  
(remnant vegetation)

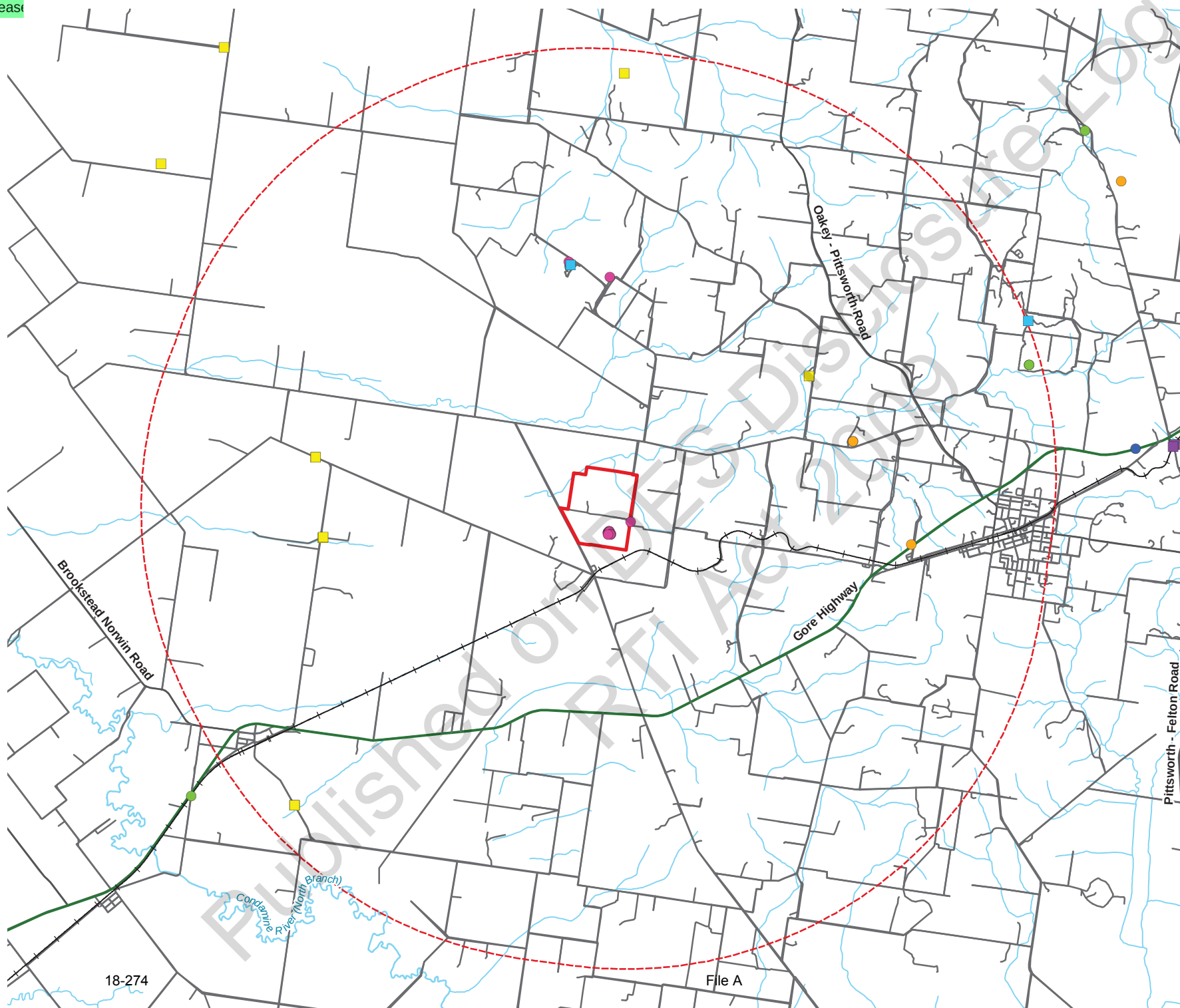
 Category X vegetation



**Figure 3**  
**Vegetation Management**  
**Map**  
*Ecological Assessment for the*  
*proposed Yarranlea Solar*  
*Farm, Yarranlea*



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the user shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



## Legend

- Study Area
- Search buffer (10km)

## Threatened fauna

- Long-legged Worm-skink *Anomalopus mackayi*
- Painted Honeyeater *Grantiella picta*
- Condamine Earless Dragon *Tympanocryptis condaminensis*

## Threatened flora

- King Blue-grass *Dichanthium queenslandicum*
- Belson's Panic *Homopholis belsonii*
- Hawkweed *Picris evae*
- Austral Cornflower *Rhaponticum australe*



**Figure 4**

**Threatened flora and fauna identified from database searches**

*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*

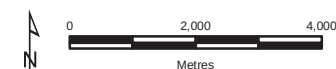


**Table 2** Threatened flora species identified from database searches

| Species Name                      | Common Name           | EPBC Status | NC Act Status | Preferred Habitat                                                                                                                                             | Likelihood of Occurrence                                                                                                                                                                                                          |
|-----------------------------------|-----------------------|-------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Rhaponticum australe</i>       | Austral Cornflower    | V           | V             | Heavy black or red-brown clays or clay-loams derived from basalt (land zone 8). Known from roadsides and cultivation headlands. Restricted to southern Qld.   | Moderate. Most records are located to the east of the study area with the closest being 6km away. Habitat occurs within Yarranlea-Murlaggan Road reserve, however the dominance of Rhodes Grass may preclude use of this habitat. |
| <i>Picris evae</i>                | Hawkweed              | V           | V             | Occurs in open grassy eucalypt woodlands on clay-loams and medium clay soils. Found in the Darling Downs region of Qld as well as NSW.                        | Low. Most records are from the east and preferred habitat occurs to the north-east of the study area within RE 11.3.2.                                                                                                            |
| <i>Picris barbarorum</i>          |                       | O           | V             | Occurs on riverbanks and floodplains (land zone 3) in southern Qld and central western NSW.                                                                   | Unlikely. The study area does not occur on a floodplain and suitable habitat is not present.                                                                                                                                      |
| <i>Clematis fawcettii</i>         | Stream Clematis       | V           | V             | Occurs in semi-evergreen vine thicket and vine forests of high altitude areas such as Bunya Mtn and Lamington National Park.                                  | Unlikely. No records from within 10km and suitable habitat does not occur within the study area.                                                                                                                                  |
| <i>Digitaria porrecta</i>         | Finger Grass          | Panic       | NT            | Occurs in native grasslands and open woodlands on soils derived from basalt (land zone 8). Known from southern and central Qld.                               | Unlikely. No records from within 10km of the study area and preferred habitat does not occur.                                                                                                                                     |
| <i>Homopholis belsonii</i>        | Belson's Panic        | V           | E             | Occurs in a variety of habitats including woodlands on poor quality soils, rocky hills, in Wilga woodland and in Poplar Box communities.                      | <b>Known.</b> Occurs within the small patch of RE 11.9.5 within the southern portion of the study area and a small population within the road reserve of Yarranlea-Murlaggan Road.                                                |
| <i>Dichanthium queenslandicum</i> | King Bluegrass        | E           | E             | Known from native grasslands and grassy eucalypt woodlands in central and southern Qld.                                                                       | Moderate. Most records are from Bowenville approx.. 40km to the north of the study area, although a recent record is from just east of Pittsworth. Potential habitat along Yarranlea-Murlaggan Road reserve.                      |
| <i>Lepidium peregrinus</i>        | Wandering Peppergrass | E           | LC            | Occurs in riparian open forests in disjunct populations in southern and south-east Qld. Also NSW.                                                             | Unlikely. No records from within 10km of the study area and suitable habitat does not occur.                                                                                                                                      |
| <i>Thesium australe</i>           | Austral Toadflax      | V           | V             | Is semi-parasitic on the roots of native grasses including Kangaroo Grass <i>Themeda australis</i> . Occurs in a range of habitats and shows a preference for | Low. No records from within 10km of the study area and habitat is marginal.                                                                                                                                                       |

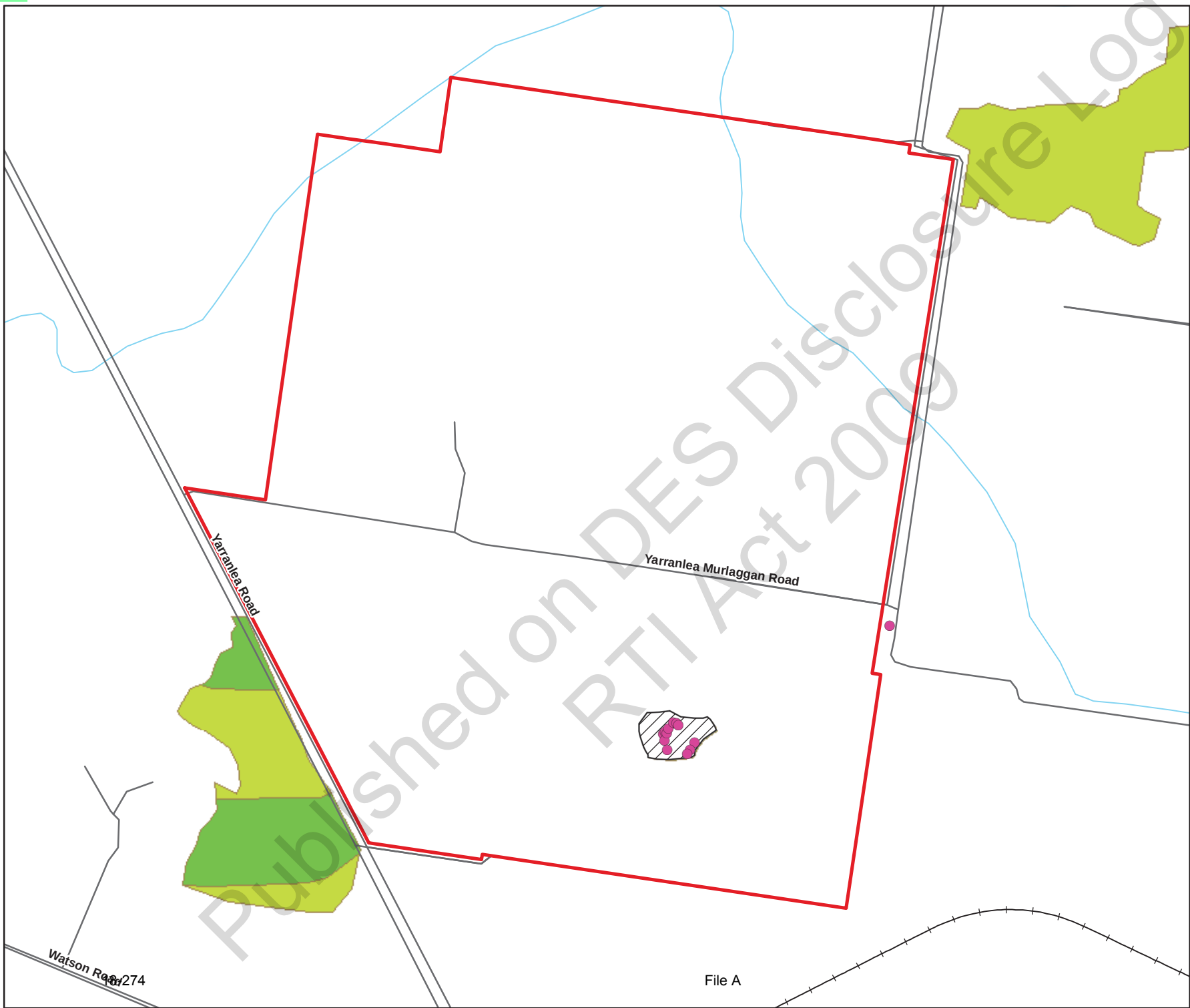
|  |  |  |  |             |  |
|--|--|--|--|-------------|--|
|  |  |  |  | damp sites. |  |
|--|--|--|--|-------------|--|

One threatened flora species was detected within the study area, Belson's Panic *Homopholis belsonii*, which is listed as endangered under the Queensland NC Act and vulnerable under the EPBC Act. Twelve discrete patches were identified within the patch of RE 11.9.5 within the southern portion of study area and one patch was identified adjacent to the eastern boundary of the study area within the Yarranlea Murlaggan Road reserve (Table 3, Figure 5). Each discrete patch covered an approximate area of several meters squared, and these areas were most often at the base of canopy trees and were in shaded areas created by shrubs..

**Table 3** Locations of Belson's Panic populations

| Population No.                   | Projected Coordinates (GDA, Zone 56J) |          | Geographic Coordinates (GDA) |           |
|----------------------------------|---------------------------------------|----------|------------------------------|-----------|
|                                  | Easting                               | Northing | Latitude                     | Longitude |
| 1                                | 355510                                | 6933562  | -27.71451                    | 151.53439 |
| 2                                | 355514                                | 6933567  | -27.71447                    | 151.53443 |
| 3                                | 355513                                | 6933547  | -27.71465                    | 151.53442 |
| 4                                | 355518                                | 6933564  | -27.7145                     | 151.53447 |
| 5                                | 355522                                | 6933575  | -27.7144                     | 151.53451 |
| 6                                | 355534                                | 6933589  | -27.71428                    | 151.53463 |
| 7                                | 355542                                | 6933588  | -27.71429                    | 151.53472 |
| 8                                | 355546                                | 6933583  | -27.71433                    | 151.53475 |
| 9                                | 355584                                | 6933542  | -27.71471                    | 151.53513 |
| 10                               | 355574                                | 6933525  | -27.71486                    | 151.53502 |
| 11                               | 355567                                | 6933516  | -27.71494                    | 151.53495 |
| 12                               | 355519                                | 6933524  | -27.71486                    | 151.53447 |
| Yarranlea-Murlaggan Road reserve | 356225                                | 6934864  | -27.70284                    | 151.54179 |





**Legend**

- Belson's Panic  
*Homopholis belsonii*  
locations
- ▭ Study Area
- Regional Ecosystems**
  - 11.3.2
  - 11.9.5
  - ▨ Category X vegetation



**Figure 5**  
**Locations of Belson's Panic**  
***Homopholis belsonii***  
*Ecological Assessment for the*  
*proposed Yarranlea Solar*  
*Farm, Yarranlea*

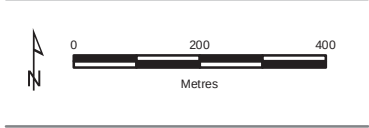






**Plate 1** Small patch of Belson's Panic growing underneath Belah

### 3.4 Flora Survey within High Risk Area

The Flora Survey Trigger Map (DEHP 2016c) was reviewed for the study area and surrounds. A High Risk Area for threatened flora species is mapped within the extreme north-eastern corner of the study area (Appendix 2). A random meander transect was completed within this area, as well as within 100 metres of the study area boundary in neighbouring properties (Figure 6). No significant flora species were found within the high risk area during the random meander despite a total flora survey effort of 40 minutes (Table 4). One individual of Lobed Bluegrass *Bothriochloa biloba* was identified along a fenceline along the northern boundary of the study area. Lobed Bluegrass was previously listed as threatened under the EPBC Act, however was removed from the list in 2013. The species is listed as Least Concern under the NC Act.

**Table 4** Flora survey effort within mapped High Risk Area

| Transect         | Easting | Northing | Time       |
|------------------|---------|----------|------------|
| Transect 1 Start | 356266  | 6934854  | 20 minutes |
| Transect 1 Stop  | 356214  | 6934830  |            |
| Transect 2 Start | 356178  | 6934920  | 20 minutes |
| Transect 2 Stop  | 356178  | 6934920  |            |

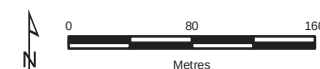


### Legend

- ..... Flora survey tracklog
- Study Area
- Property Boundaries
- High Risk Area within 100m of study area



**Figure 6**  
**Flora Survey Effort**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the user shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

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7789\_Fig0X - Flora survey map 8/07/2016

### 3.5 Significant Fauna Species

The desktop review indicated that 21 significant fauna species and nine special least concern species have been previously recorded or are predicted to occur within 10 kilometres of the study area (Appendix 2) and are shown on Figure 4. This comprises one fish, five reptiles, nine birds and six mammals threatened species. Additionally, 12 bird species are listed as migratory under the EPBC Act and consequently as special least concern under the NC Act. These are shown separately in Appendix 2.

A likelihood of occurrence assessment was completed to determine the suite of threatened and conservation significant species that may potentially occur within the study area. The assessment is included in Appendix 3 (Table 10) and the species with a high or moderate potential to occur within the study area are presented below.

#### Condamine Earless Dragon

Condamine Earless Dragon *Tympanocryptis condaminensis* is listed as endangered under the NC Act and EPBC Act. There are several records of this species along Saal Road and Watson Road to the west of the study area and further to the north and east (DEHP 2016). The dragon is known to inhabit cropping lands and native grasslands along roadsides and is therefore a high potential occurrence within the study area. Very little is known about the breeding and egg laying habits of the species, but anecdotal evidence suggests that the dragon escapes into adjacent grasslands during harvesting operations (Ashdown 2014).

#### Painted Honeyeater

Painted Honeyeater *Grantiella picta*, listed as vulnerable under the NC Act and EPBC Act. The Painted Honeyeater is known from the Irongate Conservation Park, approximately 10 kilometres to the north of the study area and north of Pittsworth (DEHP 2016). The honeyeater occurs in a variety of woodland and open forest communities and shows a preference for mistletoe. This species is considered a moderate potential occurrence within the study area.

#### Five-clawed Worm-Skink

Five-clawed Worm-Skink *Anomalopus mackayi*, listed as endangered under the NC Act and vulnerable under the EPBC Act. The Five-clawed Worm-Skink is known from several records approximately 13 kilometres to the east of the study area, near Pittsworth (DEHP 2016). The worm-skink prefers sites on heavy cracking clay soils and with coarse woody debris. Although the study area contains cracking clay soils preferred by this species, the majority of the soils are used for cropping and are continually disturbed and therefore there is an absence of woody debris and habitat. The skink may inhabit road reserves such as Yarranlea-Murlaggan Road and Yarranlea Road.

The patch of vegetation within the southern portion of the study area is analogous to RE 11.9.5 and occurs on land zone 9, described as fine grained sedimentary rocks. In contrast, the worm-skink is most often associated with communities on land zone 3 (recent Quaternary alluvial systems) and land zone 8 (soils derived from basalt). In addition, the patch contains a lower abundance of woody debris (approximately 7%) and a relatively high coverage of bare ground (18%) than would otherwise be expected in a similar community and is likely to be a result of the dominance of Belah in the community. Therefore, although the vegetation within the southern portion could theoretically



provide habitat, it is considered to be sub-optimal due to the small size of the patch and surrounding hostile land use.

#### Grey-headed Flying Fox

The Grey-headed Flying Fox is listed as vulnerable under the EPBC Act. The species is a highly mobile forager across a variety of vegetation communities and may travel up to 30 kilometres from camps. The study area contains some plant species that provide foraging resources within in flower and which may be utilised by the flying fox, although due to the small extent of such species the study area is unlikely to provide sufficient resources to maintain a population of Grey-headed Flying Fox.

#### Echidna

The Echidna is listed as special Least Concern fauna under the NC Act as it is considered culturally significant. The Echidna occurs in a variety of habitats throughout Queensland and may occasionally traverse the study area.

### 3.6 Other Fauna and Habitats

Due the disturbed nature of the study area and low diversity of plant species present, the existing habitat for fauna is in poor condition. The study area provides habitat and resources for open country species that can tolerate high levels of habitat modification such as common birds. Common species sighted included Australian magpie *Gymnorhina tibicen*, Pied Butcherbird *Cracticus nigrogularis*, Grey Butcherbird *Cracticus torquatus*, Pale-headed Rosella *Platycercus adscitus*, Torresian crow *Corvus orru*, Crested Pigeon *Ocyphaps lophotes* and Magpie-lark *Grallina cyanoleuca*. An European Rabbit *Oryctolagus cuniculus* was observed within the patch of RE 11.9.5.

Several large eucalypts occur within the study area, primarily within the road reserves and several were observed to contain hollows of various sizes, which are suitable for hollow-nesting birds and mammals such as possums.

The study area is unlikely to provide suitable habitat for a diversity of reptile species due to the agricultural land use and lack of fallen woody debris. Reptile diversity is likely to be limited to common skinks and snakes, particularly Eastern Brown Snakes *Pseudonaja textilis*, which frequent cropping lands. Similarly, the study area is unlikely to provide habitat for frogs due to the absence of ponds or dams and the diversion drain at the northern boundary of the study area does not hold water.

The study area is also unlikely to provide habitat for a diversity of native mammal species due to the absence of vegetation cover.

### 3.7 Weeds and Pest Animals

The pest plant Velvety Tree Pear *Opuntia tomentosa* was recorded prolifically within the RE 11.9.5 patch and throughout the road reserves. The study area also contains the suite of herbaceous and grassy weed species that are expected within an agricultural property in southern Queensland.

European Rabbit was observed within the patch of RE 11.9.5 within the southern portion of the study area. Rabbits would be expected to be relatively common within the surrounding landscape and their presence within the study area is not unexpected.

Tree pear and European Rabbit are listed as restricted matters under the *Biosecurity Act 2014*.

### 3.8 Essential Habitat

No essential habitat as mapped by DRNM (2016) is located within or adjacent to the study area.

### 3.9 Wetlands and Watercourses

No referrable wetlands, or wetland protected areas were identified within the study area during the desktop assessment, nor during the current field assessment.

Two watercourses are identified as occurring within the study area on the Vegetation Management Map (DNRM 2016c) in the northern portion of the study area. One watercourse traverses the north-western corner of the study area and is identified as a stream of order 4 and one watercourse traverses the north-eastern corner and is identified as a stream of order 1. Both watercourses have been significantly disturbed and diverted from its mapped path and currently do not resemble natural features due to the absence of a defined banks or channel and absence of riparian or aquatic vegetation.

## 4 POTENTIAL IMPACTS AND MITIGATION MEASURES

### 4.1 Proposed Impacts

The proposed development is proposed to be staged over four stages and will involve complete coverage of the study area in solar PV panel arrays. The development will involve the loss of all currently cropped areas and the small patch of RE 11.9.5 (Category X vegetation) located within Stage 1. This will also involve the loss of the population of Belson's Panic within this vegetation. Vegetation along Yarranlea-Murlaggan Road will not be impacted, however some trees and other vegetation may be trimmed or cleared for duplication of the powerline along Yarranlea Road.

Potential impacts to ecological values associated with the PV Facility will be limited to those during construction. Construction activities will involve:

- A construction laydown area will be established at the western end of Yarranlea-Murlaggan Road and a second area at the eastern end. The areas will be cleared, grubbed, graded and compacted;
- Construction of an informal internal road system, treated to minimise dust creation;
- Construction of a gravel access track from the western end of Yarranlea-Murlaggan Road and around the perimeter of the Stage 1 block and stages 2-4 blocks;
- Erecting a 2.4 metre high chain wire link security fence around the perimeter of the study area;
- Construction of a control building and substation on the corner of Yarranlea Road and Yarranlea-Murlaggan Road;
- Construction of an Operations and Maintenance Facility and farm storage shed on the northern side of Yarranlea-Murlaggan Road;
- Installing a 110 kV powerline to the existing Ergon substation by directly trenching and burying the line or by overhead powerline; and
- Installation of solar PV panels on monopoles supported by screw piles or similar that are driven into the ground.

Operational activities will be minimal and be largely restricted to use of the control building and operations and maintenance facility by staff. As the PV array frames have a minimal footprint on the ground surface, the soil will be seeded with an appropriate grass mix. Slashing of the grass would occur as appropriate and grazing would be considered.

Decommissioning activities would involve the removal of the panel arrays including monopole structures. The disturbance to the soil profile will be minimal and will be able to be returned to an agricultural land use.

There may be some trimming of regulated vegetation along Yarranlea Road adjacent to the existing powerline.

## 4.2 Mitigation Measures

Mitigation measures follow the impact mitigation hierarchy of avoid, minimise and mitigate (including offsets). This section identifies how the proposed development will mitigate impacts to ecological values.

### 4.2.1 Avoidance

No impacts to grassland or woody vegetation will occur within the Yarranlea-Murlaggan Road reserve.

The existing stand of RE11.9.5 (Category X vegetation) will be removed as will the population of Belson's Panic. As this patch is isolated within the centre of the Stage 1 area, avoidance of this impact is not possible.

Although the proposed development will not result in extensive ground disturbance, which would otherwise impact on the Condamine Earless Dragon, some ground disturbance may occur. To avoid impacts to the dragon, any crops remaining within the study area prior to construction commencing should be harvested and any other standing biomass (eg. grasses, weeds) should be slashed. This is to provide a disturbance stimulus to any dragons residing within the study area to retreat to existing habitats within adjacent road reserves.

### 4.2.2 Minimisation

Some clearing or trimming of regulated vegetation may be required along Yarranlea Road for the construction of an electricity connection to the Yarranlea Substation. Clearing will be limited to the minimise width necessary to safely construct and operate the electricity connection. Where possible, trees will be trimmed rather than felled.

Recommended measures to minimise impacts to terrestrial values present within the study area include:

- The extent of ground disturbance will be the minimum necessary to construct the access tracks, buildings and install the solar PV arrays;
- Construction stockpiles, machinery and other infrastructure should be wholly contained outside of the drainage channels to minimise the risk of sediments and pollutants being mobilised downstream; and
- Restricted weed species (i.e. Velvety Tree Pear) must be treated prior to the activity commencing. This is to ensure that weed propagative material is not spread to other areas. A weed control contractor who is licenced to use herbicides should be engaged to treat weed infestations.

### 4.2.3 Mitigation measures

Recommended measures to mitigate impacts on terrestrial values present within the study area include:

- Provision on an environmental offset to compensate for the loss of the population of Belson's Panic in accordance with the *Environmental Offsets Act 2014*;



- Ensure that best practice sedimentation and pollution control measures are undertaken at all times to prevent offsite impacts to downstream receiving environments. The Best Practice Erosion and Sediment Control Guidelines (Witheridge, 2014) should be referred to; and
- As native plants provides valuable habitat and food resources for fauna, it is recommended that any landscape plantings that are undertaken as part of the proposed development are completed using 90% native species that are found within the surrounding area, provided that commercial quantities of seedlings/seed are available.

## 5 LEGISLATIVE AND POLICY IMPLICATIONS

### 5.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

#### 5.1.1 Wetlands of international significance

The study area occurs within the catchment of four Ramsar sites that occur many hundreds of kilometres downstream. These sites are unlikely to be impacted as each is situated a considerable distance from the proposed action. Provided management practices and construction techniques are consistent with current industry standards, the project is unlikely to affect the ecological character of any Ramsar wetland.

#### 5.1.2 Threatened species and ecological communities

**Flora:** One threatened flora species, Belson's Panic was detected from within the patch of RE 11.9.5 and within the Yarranlea-Murlaggan Road reserve adjacent to the study area. There is a moderate likelihood of other threatened flora species being present within the study area, although these would be confined to vegetation along Yarranlea-Murlaggan Road. No other threatened flora species were identified during the field survey. The population within the patch of vegetation within the cropping area is proposed to be removed.

Table 5 provides an assessment of the significance of the impact on Belson's Panic and habitat. When assessing the significance of an action on a Vulnerable species, it is necessary to define whether an 'important population' of the species occurs or could potentially occur within the study area. An important population is defined as one that is necessary for a species' long-term survival and recovery. This may include population identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal;
- populations that are necessary for maintaining genetic diversity; and/or
- populations that are at near the limit of the species range.

The population of Belson's Panic within the study area is located within a small (less than one hectare) patch of vegetation that is completely surrounded by cropping land. Although the species sets seed and like other *Panicum* grasses the seed head (panicle) can be blown by the wind, the species spreads mainly by the stolons (Menkins, 1998). As the habitat is completely isolated to other habitat patches and is over 0.5 kilometres away from the small population within Yarranlea-Murlaggan Road, the population to be removed cannot be considered a key source population for breeding or dispersal due to the hostile land use (i.e. cropping) surrounding the population. Similarly, since this population is isolated from other habitat areas, the population cannot be considered to be necessary for maintain genetic diversity, since the chance of seed entering the patch from other populations is highly unlikely. Finally, the species is known to occur in a broad arc from north of Narrabri in central northern NSW to north of Toowoomba and north to Wandoan. The population within the study area is therefore near the eastern limit of its known range. However, this population cannot be considered an important population for the following reasons:

1. The area of habitat is small (less than one hectare), has been subject to previous disturbances (clearing) and is surrounded by active cropping land (a hostile land use);
2. The vegetation is not protected under the Queensland VM Act (identified as Category X vegetation) and could be cleared for expansion of cropping within the property;
3. The patch of vegetation contains weeds that are known to be threatening processes to the species and in the absence of active management would be expected to increase in abundance over time;
4. Is not connected to other populations within the region, including from the small population along Yarranlea – Murlaggan Road and Irongate Conservation Park, 6 kilometres to the north; and
5. An improvement in the habitat quality and condition of the vegetation is unlikely given the surrounding land use.

Therefore, the population within the study area is not considered to be an important population as the population is highly unlikely to be necessary for the species' long-term survival and recovery. The long-term survival of the vegetation patch is low and the habitat condition would be expected to continue to decline to the exclusion of Belson's Panic.

**Table 5 Significant Impact Assessment for Belson's Panic**

| Significant Impact Criteria                                                                                                                                                                                      | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will: lead to a long-term decrease in the size of an important population of a species | The loss of this population is unlikely to lead to a long-term decrease in the size of the population as the population is not necessary for the species' long-term survival and recovery.                                                                                                                                                                                       |
| Reduce the area of occupancy of an important population                                                                                                                                                          | The removal of the patch of vegetation within the study area will result in the reduction in the area of occupancy for the species on a local level, however, the loss of this vegetation will not impact on other populations that are likely to be considered important populations, such as the population with the Irongate Conservation Park.                               |
| Fragment an existing important population into two or more populations                                                                                                                                           | The proposed removal of vegetation will not fragment an existing population into two or more populations.                                                                                                                                                                                                                                                                        |
| Adversely affect habitat critical to the survival of a species                                                                                                                                                   | Although the vegetation patch contains habitat for Belson's Panic, it does not provide habitat critical to the survival of the species. This is because the habitat is not secured from further clearing from agricultural development, contains weed species that are listed as a threatening process to the species and the habitat is not connected to other vegetated areas. |

| Significant Impact Criteria                                                                                                                                                                     | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disrupt the breeding cycle of an important population modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposed clearing of the vegetation will result in the local loss of 12 discrete areas containing Belson's Panic. However, the loss of this vegetation is unlikely to result in the decline of the species as the population is not considered to be an important population.                                                                                                                                                                                                                                                                                                                                     |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat                                                                     | The proposed development will implement weed hygiene measures to ensure that invasive species will not become established within existing habitat for the species along Yarranlea – Murlaggan Road.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Introduce disease that may cause the species to decline, or                                                                                                                                     | The proposed development is unlikely to introduce a disease that could cause the species to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Interfere substantially with the recovery of the species.                                                                                                                                       | <p>Tremont and Whalley (1993) identify management of remnant habitats as a key action to recover the species as well as maintenance of overstorey vegetation, preservation of sub-shrub and shrub populations, regeneration of native vegetation and strategic protection of lands. The NSW (former) Department of Environment, Conservation and Water (2005) further identify key actions including exclusion of stock, weed control and protection of areas from clearing and further fragmentation.</p> <p>The proposed development will not substantially interfere with any of these key management actions.</p> |

**Fauna:** No fauna species listed under the EPBC Act were recorded within the study area during the field assessment. There is suitable habitat within the study area for four fauna species listed under the EPBC Act (Condamine Earless Dragon, Five-clawed Worm-skink, Grey-headed Flying Fox and Painted Honeyeater), however the potential habitat is generally restricted to vegetation within the patch of RE 11.9.5 and road reserves due to the active cropping activities occurring within the study area.

The Condamine Earless Dragon is a high likelihood within road reserves adjacent to the study area and adjacent cropping areas. This species is regularly found within actively cropped areas and does not seem to be impacted by regular harvesting or planting of crop species. Although it would appear to have lost a significant percentage of its native grassland habitat prior to agricultural development, the nature of the black cracking clay soils upon which it is dependent has not changed and continues even after ploughing (Richardson 2006). The proposed solar farm will not significantly change the soil profile or cracking characteristics and therefore it is unlikely that the development will have a significant impact on this species.

Five-clawed Worm-skink is known from several records approximately 13 kilometres to the east of the study area, near Pittsworth and 18km to the north-west, around Bongeen (DEHP 2016). The study area lies within the Pittsworth region and is considered to be an important area for the species (Richardson 2006). There is potential habitat along Yarranlea-Murlaggan Road reserve and the worm-

skink may use this vegetation as a refuge. The road reserve may provide a refuge for this species and will not be impacted by the project.

The patch of vegetation within the southern portion of the study area is analogous to RE 11.9.5 and occurs on land zone 9, described as fine grained sedimentary rocks. In contrast, the worm-skink is most often associated with communities on land zone 3 (recent Quaternary alluvial systems) and land zone 8 (soils derived from basalt). In addition, the patch contains a lower abundance of woody debris (approximately 7%) and a relatively high coverage of bare ground (18%) than would otherwise be expected in a similar community and is likely to be a result of the dominance of *Belah* in the community. Therefore, although the vegetation within the southern portion could provide habitat in its undisturbed state, it is considered to be sub-optimal due to the small size of the patch, prior disturbances and surrounding hostile land use.

The Painted Honeyeater is known from the Irongate Conservation Park, approximately 10 kilometres to the north of the study area and north of Pittsworth (DEHP 2016). The honeyeater occurs in a variety of woodland and open forest communities and shows a preference for mistletoes, although it's diet includes nectar from mistletoes, eucalypts and possibly banksias. The species prefers habitats with a high proportion of large, mature trees due the increased presence of mistletoes (Threatened Species Scientific Committee 2015). This species is considered a moderate potential occurrence within the study area due to the presence of records in the locality and presence of mature Poplar Box within road reserves. However, the patch of vegetation within the southern portion of the study area is considered to be sub-optimal habitat for the Painted Honeyeater due the low abundance of mistletoe.

Grey-headed Flying-fox is a dietary generalist which forages across a wide area. It is likely to continue to utilise the site post development and forage in landscaped areas. There will be no impact on roost sites as a result of the proposed development. This species is highly unlikely to be significantly impacted by the removal of individual trees in the short or long term.

**Communities:** No ecological communities listed under the EPBC Act were recorded within the study area.

### 5.1.3 Migratory species

Several migratory species are likely to occur in or fly over the study area. However, the study area would not be classed as an 'important habitat' as defined under the EPBC Act Policy Statement 1.1 Principal Significant Impact Guidelines (DEWHA 2009) for any of these species and no further assessment is warranted.

### 5.1.4 Implications

Based on the assessment completed in Table 5, the proposed removal of the habitat and associated population of Belson's Panic from the proposed development is unlikely to result in a significant impact to the species.

The proposed action is unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act. However, the proponent may wish to refer the project regardless to provide certainty to project timelines and to ensure that the MNES being considered are 'locked-in' for the duration of

the project. This means that any future listing events, such as listing of a new species as threatened (and which may occur within the study area) or upgrading the status of Belson's Panic to endangered or critically endangered do not impact on the project.

## 5.2 Nature Conservation Act 1992 (Queensland)

### 5.2.1 EVNT Flora

One threatened flora species (Belson's Panic) was recorded within the study area during the survey. The species was found within the patch of RE 11.9.5 within the southern portion and a small population within the road reserve of Yarranlea-Murlaggan Road. The area of habitat, including 12 discrete patches of Belson's Panic, is proposed to be removed. Under the QEOP Significant Residual Impact Guideline (DEHP 2014a), an action is likely to have a significant impact on endangered wildlife if the impact on the habitat is likely to:

- lead to a long-term decrease in the size of a local population; or
- reduce the extent of occurrence of the species; or
- fragment an existing population; or
- result in genetically distinct populations forming as a result of habitat isolation; or
- result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat; or
- introduce disease that may cause the population to decline, or
- interfere with the recovery of the species; or
- cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species.

An assessment against these criteria has been completed in Table 6.

**Table 6 Significant Impact Assessment for Belson's Panic**

| Significant Impact Criteria                                                                                                                                                                        | Impact Assessment                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will:<br>lead to a long-term decrease in the size of a local population | The local population is defined as the population residing in the study area. The proposed development will result in the loss of this population.                                                                                                                                                                                                            |
| reduce the extent of occurrence of the species                                                                                                                                                     | The removal of the patch of vegetation within the study area will result in the reduction in the extent of occurrence for the species on a local level, however, the loss of this vegetation will not impact on other populations surrounding the study area, such as the population with the Irongate Conservation Park and within Yarranlea-Murlaggan Road. |
| fragment an existing population                                                                                                                                                                    | The proposed removal of habitat will not fragment an existing population as the entirety of the habitat patch will be removed.                                                                                                                                                                                                                                |

| Significant Impact Criteria                                                                                                                              | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| result in genetically distinct populations forming as a result of habitat isolation                                                                      | The habitat containing Belson' Panic is currently isolated from other habitat patches and the proposed development will result in the loss of the habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat | The proposed development will implement weed hygiene measures to ensure that invasive species will not become established within existing habitat for the species along Yarranlea – Murlaggan Road.                                                                                                                                                                                                                                                                                                                                                                                                            |
| introduce disease that may cause the population to decline                                                                                               | The proposed development is unlikely to introduce a disease that could cause the species to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| interfere with the recovery of the species.                                                                                                              | Tremont and Whalley (1993) identify management of remnant habitats as a key action to recover the species as well as maintenance of overstorey vegetation, preservation of sub-shrub and shrub populations, regeneration of native vegetation and strategic protection of lands. The NSW (former) Department of Environment, Conservation and Water (2005) further identify key actions including exclusion of stock, weed control and protection of areas from clearing and further fragmentation.<br><br>The proposed development will not substantially interfere with any of these key management actions. |
| cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species                             | The habitat patch within the study area cannot be considered an ecological significant location as the habitat is isolated from other habitat patches or vegetation within the surrounding area.                                                                                                                                                                                                                                                                                                                                                                                                               |

In assessing applications for Clearing Permits, DEHP will have regard to Nature Conservation (Wildlife Management) Regulation 2006 Protected Plants Assessment Guideline (DEHP, 2014b). An Impact Management Plan must be provided, which identifies how unavoidable impacts to Belson' Panic will be managed. The Impact Management Plan is provided in Appendix 4.

The Flora Survey Trigger map was downloaded on 12/2/2016 and a small area of high risk area is mapped within and adjacent to the study area in the north-east portion. This map is valid for 12 months from the date of download and will need to be re-downloaded if construction is likely to commence more than 12 months from this date.

### 5.2.2 EVNT Fauna

Although several EVNT and SLC fauna species have the potential occur within the study area (Condamine Earless Dragon, Five-clawed Worm-skink, Painted Honeyeater, Grey-headed Flying-fox, Echidna), no specific licensing or approvals are required to take (e.g. damage or destroy) potential habitat for those species in this instance. However, under the EO Act, habitat for endangered, vulnerable or least concern fauna is considered a matter of state environmental significance (MSES) and significant residual impacts to habitat would result in an offset being triggered. Offsets are described in section 5.5.



Under section 332 of the Nature Conservation (Wildlife Management) Regulation 2006 a person must not, without a reasonable excuse, tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring. Tampering with an animals breeding place under an approved Species Management Program (SMP) is a reasonable defence against a charge under Section 332.

### 5.2.3 Implications

The removal of an endangered plant must be approved under the NC Act through the granting of a Clearing Permit. An application for a clearing permit will be made to DEHP in due course. A fee of \$2,677.00 is payable at the time of lodgement of the fee. An environmental offset obligation will be a condition of approval attached to the permit.

The Condamine Earless Dragon is considered a likely occurrence within the study area within cropping lands and adjacent grassy areas within Yarranlea-Murlaggan Road. Although breeding places for this species are not well understood, the grassy areas along Yarranlea-Murlaggan Road are considered to be habitat for the dragon. No impacts are proposed within these area, and as such, an SMP for this species is not required. In addition, no other special least concern species are known to breeding within the proposed development area or would be impact by the development and as such an SMP is not required.

## 5.3 Vegetation Management Act 1999

The proposed development does not trigger the VM Act given that the patch of RE 11.9.5 has been confirmed as Category X vegetation through the approval of a PMAV over the Lot 2 on RP7475 (Appendix 5).

However, should regulated vegetation be impacted along Yarranlea Road, the VM Act may apply. Given the activity is for the construction of a powerline, the trimming may be exempt under the VM Act if the activity is under section 101 or 112A of the *Electricity Act 1994* or section 17 of the *Electricity Regulation 2006*.

## 5.4 Biosecurity Act 2014

Some animal pests and weed species are listed as prohibited or restricted matters under the *Biosecurity Act 2014*.

Velvety Tree Pear and European Rabbit are restricted pests and landowners have an obligation to take all reasonable and practicable steps to prevent or minimise biosecurity risks associated with these matters.

## 5.5 Environmental Offset Act 2014

The proposed removal of Belson's Panic from the study area will require approval from DEHP through the granting of a clearing permit. A condition of approval will include provision of an environmental offset in accordance with the EO Act. The EO Act requires that an offset is provided for significant residual impacts to matters of state environmental significance (MSES). Removal of a population of

an endangered plant is a MSES as defined under the EO Act. Under section 2.3.2 of the Queensland Environmental Offsets Policy (QEOP) (Version 1.1, DEHP, 2014c), the offset can be a 100% financial offset, which is a payment to DEHP to offset the impact on behalf of the proponent. Yarranlea Solar Pty Ltd, as proponent for the project, would seek to complete a financial offset for removal of Belson's Panic plants.

Financial offsets are calculate using the methodology described in Appendix 4 of the QEOP; however, DEHP provide an online calculator. The following criteria were used in the online calculator as shown in Table 7. The total offset cost has been assessed as **\$28,772.00**.

**Table 7** Financial Offset Calculation

| Criteria                     | Assessment                                    |
|------------------------------|-----------------------------------------------|
| Local government area        | Toowoomba Regional Council                    |
| Bioregion                    | Brigalow Belt                                 |
| Subregion                    | Eastern Darling Downs                         |
| Impact area                  | 0.9386 hectares                               |
| Notional offset area         | 3.7544 hectares                               |
| Distinct matter area (DMA)   | 1.1                                           |
| Matter group                 | 1.1.1 Threatened plants – Homopholis belsonii |
| Non-protected area cost      | \$15,017.60                                   |
| Landholder incentive payment | \$10,000.00                                   |
| Administrative cost          | \$3,754.40                                    |
| <b>Total offset cost</b>     | <b>\$28,772.00</b>                            |

Habitat for endangered, vulnerable and special least concern fauna is also an MSES and an offset is required for significant residual impacts to habitat areas. The patch of vegetation in the southern portion potentially provides habitat for Painted Honeyeater, Grey-headed Flying-fox and Echidna; however, the loss of this vegetation is not considered to be significant as the vegetation is of very small size (0.9386 hectares), is isolated from other habitat areas and surrounded by a hostile land use, and does not provide any significant resources for feeding, breeding, nesting, migration or resting of any of the species in question.

## 5.6 Water Act 2000

The watercourse map was reviewed for the study area (via the Vegetation Management category globe within the Queensland Globe). The map shows that two waterways have been identified as occurring within the study area. However, both waterways have been disturbed and diverted from their original courses and only a drainage feature remains.

Construction activities can be undertaken within the drainage features without the need for a permit or approval under the Water Act.

## 5.7 Toowoomba Planning Scheme

The study area is captured by the Environmental Significance Overlay Map and therefore the Environmental Significance Overlay Code is triggered. An assessment is provided against Table 8.5.1.1 below (Table 8).

**Table 8 Environmental Significance Overlay Code – for assessable development**

| Performance outcomes                    |                                                                                                                                                                                                                                  | Acceptable outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Proposed Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Areas of Ecological Significance</b> |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PO <sub>1</sub>                         | Vegetation disturbance or other impacts on areas of ecological significance shown on the Environmental Significance Overlay maps, is avoided or where disturbance cannot be avoided the loss or decrease of values is minimised. | <p>AO<sub>1.1</sub> Impacts are avoided by locating development wholly outside mapped areas of ecological significance and areas of ecological significance buffer identified on the Environmental Significance Overlay maps.</p> <p>OR</p> <p>Where impacts on areas of ecological significance shown on the Environmental Significance Overlay Maps cannot be avoided, they are minimised by:</p> <ul style="list-style-type: none"> <li>(a) minimising the total footprint within which activities, buildings, structures, driveways and other works or activities are contained;</li> <li>(b) avoiding further fragmentation of areas of ecological significance and strengthening linkages where possible;</li> <li>a) utilising areas of lesser importance in terms of biodiversity values so that areas of higher value are conserved to the greatest extent practicable; and</li> <li>(d) maintaining areas of ecological significance in patches of greatest possible size and with the smallest possible edge to area ratio.</li> </ul> | <p>The small patch of RE 11.9.5 is identified as an Area of Ecological Significance as this relates to the patch being mapped as regulated vegetation. The patch is proposed to be removed. The boundary of this patch was modified through a PMAV application and DNRM have confirmed that the modified boundary has resulted in the patch being identified as category X vegetation.</p> <p>However, the definition of areas of ecological significance includes:</p> <ul style="list-style-type: none"> <li>- endangered REs;</li> <li>- of concern REs;</li> <li>- least concern REs; and</li> <li>- areas of endangered, vulnerable and rare species.</li> </ul> <p>Therefore, the area is considered an area of ecological significance. None of the acceptable outcomes can be achieved with the current project design. The vegetation is currently small and isolated within the study area and any attempts to minimise the impacts of the development would be superfluous. An offset is proposed under the <i>Environmental Offsets Act 2014</i> to compensate for the loss of this habitat.</p> |
| PO <sub>2</sub>                         | Optimise biodiversity outcomes by prioritising the location of environmental offsets within identified biodiversity corridors.                                                                                                   | AO <sub>2.1</sub> Biodiversity offsets designed to counterbalance development impacts on areas of ecological significance are delivered consistent with the Queensland Government Environmental Offsets Policy 2008 and other applicable biodiversity / environmental offset policies.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | An offset is proposed in accordance with the EO Act as a likely condition of approval on a Clearing Permit made under the NC Act.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Performance outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Acceptable outcomes                 | Proposed Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PO<sub>3</sub> Landscaping complements biodiversity values through incorporating the following elements into the landscaping design:</p> <ul style="list-style-type: none"> <li>(a) native plants of local origin; or</li> <li>(b) known food and habitat trees and shrubs; or</li> <li>(c) replication of adjacent healthy remnant habitats, including understorey vegetation; and</li> <li>(d) no declared noxious plants, weeds or invasive plants likely to displace native flora species or degrade fauna habitat.</li> </ul>             | No acceptable outcome is nominated. | <p>Landscaping will be complimentary to the species found within proximity to the study area and will include:</p> <ul style="list-style-type: none"> <li>(a) native plants of local origin; or</li> <li>(b) known food and habitat trees and shrubs; or</li> <li>(c) replication of adjacent healthy remnant habitats, including understorey vegetation; and</li> <li>(d) no declared noxious plants, weeds or invasive plants likely to displace native flora species or degrade fauna habitat.</li> </ul> |
| <p>PO<sub>4</sub> Movement of fauna is facilitated within and through the site, particularly along identified biodiversity corridors by:</p> <ul style="list-style-type: none"> <li>(a) ensuring that development and associated activities do not create barriers to the movement of fauna along and within biodiversity corridors;</li> <li>(b) directing fauna to locations where wildlife infrastructure has been created, to enable wildlife to safely negotiate a development area; and separating fauna from potential hazards.</li> </ul> | No acceptable outcome is nominated. | <p>The study area comprises an agricultural land use and does not provide vegetated connections to other habitat area. Therefore, movement of fauna will not be facilitated through the proposed development.</p>                                                                                                                                                                                                                                                                                            |
| <p>PO<sub>5</sub> Identified biodiversity corridors on the Environmental Significance Overlay maps and their role to potentially connect areas of ecological significance (through rehabilitation or enhancement) are not compromised by development.</p>                                                                                                                                                                                                                                                                                         | No acceptable outcome is nominated. | <p>No Biodiversity Corridors are identified on the Environmental Significance Overlay Map within or adjacent to the study area.</p>                                                                                                                                                                                                                                                                                                                                                                          |

| Performance outcomes          |                                                                                                                                    | Acceptable outcomes                                                                                                                                                                                                                                                        | Proposed Development                                                                                                                                                                                   |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waterways and Wetlands</b> |                                                                                                                                    |                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                        |
| PO <sub>6</sub>               | Development is not carried out within a mapped waterway or wetland identified on the Environmental Significance Overlay maps.      | AO <sub>6.1</sub> Development is located outside the mapped boundary of a waterway or wetland identified on the Environmental Significance Overlay maps.                                                                                                                   | Two mapped waterways are identified within the northern portion of the study area. Both waterway area have been significantly modified from their natural state and are not identifiable as waterways. |
| PO <sub>7</sub>               | Development provides a buffer which protects the ecological, hydrological and water quality values of the wetland or the waterway. | AO <sub>7.1</sub> Development provides a buffer area which is vegetated with native plants endemic to the area.<br>AO <sub>7.2</sub> Buildings, structures and works are not carried out within the buffer area identified on the Environmental Significance Overlay maps. | Natural waterways do not occur within or immediately adjacent to the study area. The drainage line is not proposed to be vegetated.                                                                    |
| PO <sub>8</sub>               | Development retains the existing hydrological regime or re-establishes the previous naturally occurring regime.                    | AO <sub>8.1</sub> Existing flows of surface and ground water are not altered through construction of channelled flows or the redirection or interruption of flows.                                                                                                         | The proposed development will not modify the existing drainage patterns or profile of the study area.                                                                                                  |

## 6 CONCLUSION AND FURTHER REQUIREMENTS

This ecological assessment has been prepared to identify the flora and fauna values within the study area, define and identify features of significance at the Commonwealth, State and local level, and to provide an assessment of the proposed development in consideration of relevant biodiversity legislation and government policy. The study area contains ecological values that are expected within an agricultural landscape with a common suite of species occurring within the limited habitat available. The small patch of RE 11.9.5 meets the definition of remnant vegetation; however through a PMAV process it has been identified as Category X vegetation due to the small area involved. The patch of vegetation including the population of Belson's Panic is proposed to be removed.

The removal of habitat for Belson's Panic has been assessed at the Queensland and Commonwealth levels. The removal of habitat has been assessed as a significant impact under the relevant Queensland guidelines; however, the removal of habitat is not a significant impact under the EPBC Act. This difference is primarily due to the different conservation status of the species under the NC Act (endangered) and EPBC Act (vulnerable).

Further requirements associated with proposed development are provided below (Table 9).

**Table 9.** Further requirements associated with development of the study area

| Legislation                                                                                 | Description of Values                                                                                                                                                                                                                                                                       | Action Required                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Environment Protection and Biodiversity Conservation Act 1999</i>                        | The proposed action is unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act.                                                                     | No further action required. A referral under the EPBC Act could be completed to provide project certainty.                                                                                                                                     |
| <i>Vegetation Management Act 1999</i>                                                       | Regulated vegetation (i.e. RE 11.9.5) was identified within the study area. This vegetation was the subject of a PMAV process which resulted in the vegetation being identified as Category X vegetation.                                                                                   | No further action required                                                                                                                                                                                                                     |
| <i>Nature Conservation Act 1992</i>                                                         | A small population of Belson's Panic was recorded within the patch of RE 11.9.5. This population will be removed as part of the proposed development. No threatened fauna species were recorded within the study area; however Condamine Earless Dragon was considered a likely occurrence. | An application for a clearing permit must be made to DEHP and approval gained prior to clearing commencing.<br><br>No breeding places for EVNT, special least concern or least concern species is expected. Therefore, an SMP is not required. |
| <i>South East Queensland koala Conservation State Planning Regulatory Provisions (SPRP)</i> | The study area is not located within a koala assessable development area.                                                                                                                                                                                                                   | No further action required.                                                                                                                                                                                                                    |
| <i>Land Protection (Pest and Stock Route Management) Act 2002</i>                           | Class 2 and class 3 declared plant pests have been identified within the study area.                                                                                                                                                                                                        | Class 2 declared plants, velvety tree pear must be removed and destroyed from the study area prior to construction commencing.                                                                                                                 |

| Legislation                                                 | Description of Values                                                                                                                                                                                                                              | Action Required                                                                                                                                  |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Water Act 2000</i>                                       | The creekline and tributaries within the study area are defined as a drainage features under the Water Act.                                                                                                                                        | No further action required.                                                                                                                      |
| <i>Toowoomba Planning Scheme</i>                            | The Environmental Significance Overlay identifies an Area of Ecological Significance and Waterways within the study area. The Area of Ecological Significance will be retained and protected and the waterways do not occur within the study area. | PO1 of the Environmental Significance Overlay Code has not been met. This will required consultation with TRC to resolve the acceptable outcome. |
| <i>Electricity Act 1994 and Electricity Regulation 2006</i> | An exemption may apply for impacts to regulated vegetation for activities under section 101 or 112A of the Electricity Act of 17 of the Electricity Regulation.                                                                                    | The potential exemption should be investigation further once the design has progressed.                                                          |



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## APPENDIX 1 – LEGISLATION (BACKGROUND)

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### A1.1. Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions (i.e. project, development, undertaking, activity, or series of activities) that are likely to have a significant impact on matters of national environmental significance (NES), or on Commonwealth land. An action, unless otherwise exempt, requires approval from the Commonwealth Environment Minister if it is considered likely to have an impact on any of the following matters of NES:

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory and marine species;
- Commonwealth marine area;
- Nuclear actions (including uranium mining);
- Great Barrier Reef Marine Park; or,
- Water resources impacted by coal seam gas or mining development.

### A1.2. Nature Conservation Act 1992 (Queensland)

The *Nature Conservation Act 1992* (NC Act) provides for the conservation of nature through protection of all native plants and animals in Queensland. Protection is provided under the NC Act through conservation of land as protected areas and wildlife protection outside of protected areas. Actions impacting on protected native flora and fauna are regulated under the NC Act. Permits for disturbance to native flora and fauna can be administered under the NC Act. The Queensland Nature Conservation (Wildlife) Regulation 2006 lists flora and fauna species considered to be extinct in the wild, endangered, vulnerable, near threatened or special least concern in Queensland.

#### Protected Plants

In Queensland, all plants that are native to Australia are “protected plants” under the NC Act. The DEHP administer this Act to ensure that protected plants and their parts are not illegally removed from the wild or traded. The take and use of protected plants (including whole plants, plant parts and propagating material) from the wild is regulated by a licensing system. People who wish to take protected plants from the wild, for any reason, may be required by law to obtain a licence, permit or authority from the Department of Environment and Heritage Protection (DEHP). This will be the case unless the activity is specifically exempt under a regulation or conservation plan under the Act (such as for timber harvesting of common species). Whether the activity is bound by, or exempt from,

provisions of the Act, the clearing of native vegetation may also require development approval under other legislation such the *Vegetation Management Act 1999* (VM Act).

The Protected Plants Flora Survey Trigger Map (DEHP 2015) shows high risk areas for protected plants and is used to help determine flora survey and clearing permit requirements for a particular location. Areas shown on the map as high risk are subject to particular requirements under the NC Act.

### Protected Animal Breeding Places

Section 332 of the Nature Conservation (Wildlife Management) Regulation 2006 (Wildlife Management Regulation) governs tampering with animal breeding places. Under the Wildlife Management Regulation, Section 332(1), it is an offence to tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring.

Section 332(2) states that an animal breeding place is being used by a protected animal to incubate or rear the animal's offspring if:

- the animal is preparing, or has prepared, the place for incubating or rearing the animal's offspring; or
- the animal is breeding, or is about to breed, and is physically occupying the place; or
- the animal and the animal's offspring are physically occupying the place, even if the occupation is only periodical; or
- the animal has used the place to incubate or rear the animal's offspring and is of a species generally known to return to the same place to incubate or rear offspring in each breeding season for the animal.

Section 332(5) defines tamper (with an animal breeding place) as "damage, destroy, mark, move or dig up the breeding place".

Section 332(1) does not apply if the removal or tampering is part of an approved Species Management Program (SMP) for animals of the same species (section 332(4)). Section 332(5) defines an approved SMP, for a species of animal, as "a program about managing the population and habitat of the species of animal that is approved by the chief executive".

If a breeding place for a protected animal is likely to be disturbed by construction activities, an SMP is required to be prepared and approved by DEHP.

## A1.3. Vegetation Management Act 1999

The VM Act provides a framework for the regulation of woody, terrestrial native vegetation located outside of protected areas. The stated purpose of the Act is to regulate the clearing of native vegetation in a way that:

- Conserves remnant vegetation that is an endangered, of concern or least concern RE
- Conserves vegetation in declared areas
- Ensures clearing does not cause land degradation
- Prevents biodiversity loss

- Maintains ecological processes
- Manages the environmental effects of the clearing to ensure the above purposes are obtained.

The Act provides for the establishment and mapping of REs that encompass vegetation community descriptions within a geological and bioregional context, and for the creation and use of clearing codes (among other things). In addition, it provides a process for RE mapping changes by the public, and for the investigation and prosecution of clearing offences. Details on what clearing activities require assessment against the various regional clearing codes authorised under the VM Act are provided by the *Sustainable Planning Act 2009* (SP Act).

#### **A1.4. Environmental Offsets Act 2014**

The *Environmental Offsets Act 2014* (EO Act) was recently enacted in Queensland to streamline the offsets process for proponents and developers. The EO Act and subordinate Environmental Offsets Regulation 2014 and Environmental Offsets Policy replaced the Queensland Government Environmental Offsets Policy and four specific-issue policies for vegetation management, koala habitat, fish habitat and biodiversity values.

The EO Act amended other Acts to provide consistency for when offsets are triggered and how they should be delivered. The EO Act does not trigger offsets directly, but is indirectly involved through existing approval pathways under the SP Act, NC Act, VM Act and Fisheries Act 1994. Offsets can be imposed by an authority when a prescribed activity will have a significant residual impact on a prescribed environmental matter.

Offsets can be delivered by a proponent driven offset (land-based offset) or financial settlement offset depending upon the activity and the matter(s) involved.

If the proposed development is shown to have a significant residual impact on a matter of State environmental significance (SES), then an environmental offset is likely to be conditioned onto the project approval.

#### **A1.5. Biosecurity Act 2014**

The *Biosecurity Act 2014* and subordinate *Biosecurity Regulation 2016* commenced on 1 July 2016. The Act is a combination of several pieces of now superseded legislation in relation to managing pests (weeds and animals), diseases and contaminants and provides a risk-based approach to biosecurity. Biosecurity matters include prohibited matters, restricted matters, notifiable incidents and restricted places.

- Prohibited Matters are matters (pests, diseases, contaminants) not found in Queensland, but would have a significant adverse impact on our health, way of life, the economy or the environment if it entered the State. All prohibited matters must be reported to Biosecurity Queensland.
- Restricted Matters are matters that are found in Queensland and have a significant impact on human health, social amenity, the economy or the environment. There are 7 categories of

restricted matters and Category 1 and 2 matters must be reported. Categories 2, 4, 5 and 6 relate to restrictions on keeping, feeding and moving weeds, pest animals and noxious fish and Category 7 requires people to kill noxious fish. Multiple categories can apply to several matters.

The Act also introduces a new concept called a General Biosecurity Obligation (GBO). This applies to everyone in Queensland for managing biosecurity risks that are:

- under their control and
- that they know about, or should reasonably be expected to know about.

Under the GBO, individuals and organisations whose activities pose a biosecurity risk must:

- take all reasonable and practical steps to prevent or minimise each biosecurity risk;
- minimise the likelihood of causing a biosecurity event, and limit the consequences if such an event is caused; and
- prevent or minimise the harmful effects a risk could have, and not do anything that might make any harmful effects worse.

## **A1.6. Water Act 2000**

The *Water Reform and Other Legislation Amendment Act 2014* was passed on 26 November 2014. The Act includes a number of changes to the Water Act 2000 and other resource related legislation. Amongst the changes, a new watercourse identification map has been prepared to show watercourses and drainage features as described in the Water Act.

## **A1.7. Toowoomba Regional Planning Scheme**

The study area lies within the Toowoomba Regional Council area and will be assessed under the Toowoomba Planning Scheme 2012 (amended October 2015). The following overlays are relevant to the study area.

### **Environmental Significance Overlay**

The Environmental Significance Overlay identifies eight significant features throughout the Beaudesert area. These include:

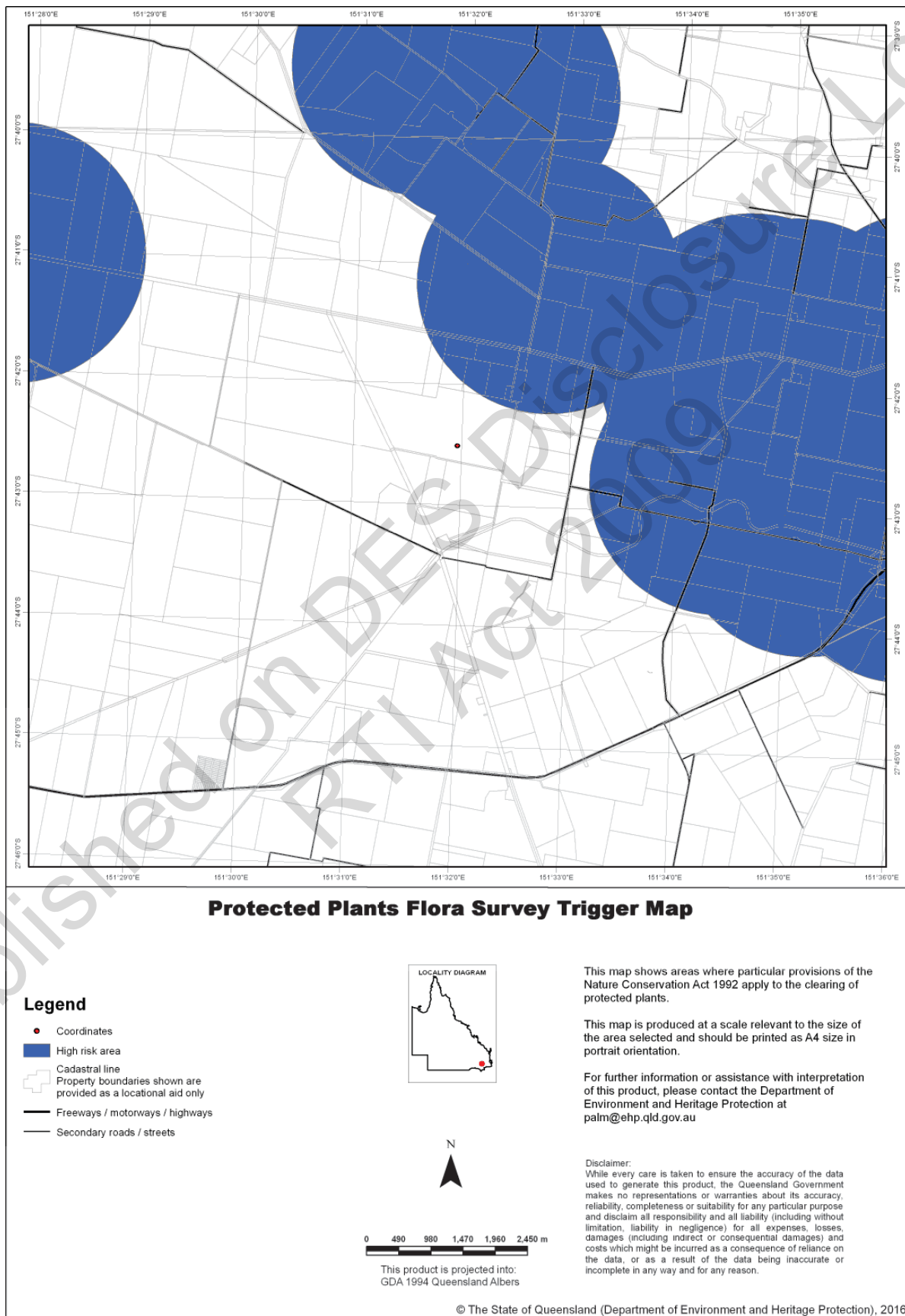
- (a) Areas of Ecological Significance;
- (b) Areas of Ecological Significance Buffer;
- (c) Waterways and Wetlands; and
- (d) Biodiversity Corridors.

The study area is captured by the Areas of Ecological Significance, buffers and Waterways and Wetlands overlay and corresponds with the mapped remnant vegetation within and adjacent to the study area and the mapped waterways within the northern portion.

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## APPENDIX 2 – FLORA SURVEY TRIGGER MAP



## APPENDIX 3 – SIGNIFICANT FAUNA ASSESSMENT

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**Table 10 Significant Fauna Species within 10km of the Study Area**

| Scientific Name                 | Common Name            | Qld | EPBC | Source        | Habitat Requirements and Distribution                                                                                                                                                                                                                                                       | Likelihood of Occurrence Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------|------------------------|-----|------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>FISH</b>                     |                        |     |      |               |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Maccullochella mariensis</i> | Mary River Cod         | LC  | E    | PMST          | The Mary River cod is endemic to the Mary River system in northern South East Queensland. It has been translocated to many impoundments in SEQ, including Wivenhoe, Baroon Pocket and Maroon Dam.                                                                                           | Unlikely. A translocated population occurs within 10km of the study area, however the waterway within the study area does not contain the required habitat for the species.                                                                                                                                                                                                                                                                                                                                                             |
| <b>REPTILES</b>                 |                        |     |      |               |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Anomalopus mackayi</i>       | Five-clawed Worm-skink | V   | E    | PMST, Wildnet | Open grasslands on heavy cracking clay in the Darling Downs. Usually in soil under dead grass. Often on relict roadside verges                                                                                                                                                              | Moderate. Known records from the locality and the study area contains cracking clay soils preferred by this species, however the majority of the soils are used for cropping and are continually disturbed. The skink may inhabit road reserves such as Yarranlea Murlaggan Road and Yarranlea Road. The patch of vegetation within the southern portion of the study area is considered to be sub-optimal due to the small size of the patch, surrounding hostile land use and soils that are not usually associated with the species. |
| <i>Delma torquata</i>           | Collared Delma         | V   | V    | PMST          | The collared delma is known from rocky areas associated with dry open forests and from Brigalow associations. Within these habitats the presence rocky substrates (with small rocks which act as shelter sites) is an essential microhabitat element.                                       | Unlikely. Required habitat does not occur within the study area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Egernia rugosa</i>           | Yakka Skink            | V   | V    | PMST          | Ground-dwelling, reliant on logs, ground debris and/or burrows for shelter. Widespread but rare. Dry open forests or woodland with dense ground vegetation, rocky areas, fallen timber and other debris.                                                                                    | Unlikely. Preferred habitat does not occur within the study area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Furina dunmalli</i>          | Dunmall's Snake        | V   | V    | PMST          | Poorly known, so that preferred habitats are uncertain. Open dry sclerophyll forests and woodlands, especially Brigalow, with fallen timber and ground litter on floodplains of cracking clay soils. In Queensland, the snake occurs almost exclusively within the Brigalow Belt bioregion. | Unlikely. Preferred habitat does not occur within the study area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Tympanocryptis</i>           | Condamine Earless      | E   | E    | Wildnet       | Remnant roadside grassland and adjacent croplands.                                                                                                                                                                                                                                          | High. The dragon is known to inhabit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Scientific Name                  | Common Name                     | Qld | EPBC | Source       | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                       | Likelihood of Occurrence Assessment                                                                                                                                                                                                                                               |
|----------------------------------|---------------------------------|-----|------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>condaminensis</i>             | Dragon                          |     |      |              | Known to utilise intensively farmed, mixed croplands of cotton and sorghum. Formerly known as <i>Tympanocryptis pinguicolla</i> , which is now considered not to occur in Qld.                                                                                                                                                                                              | cropping land as well as roadside remnant, both habitats which occur within the study area. Known records from within 10 km of the study area.                                                                                                                                    |
| <b>BIRDS</b>                     |                                 |     |      |              |                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                   |
| <i>Anthochaera phrygia</i>       | Regent Honeyeater               | E   | CE   | PMST         | The regent honeyeater is usually associated with box-ironbark vegetation types and the wetter more fertile sites within these associations such as creek flats, broad valleys and foothills. The species has undergone a significant range contraction and is now rarely sighted in Queensland.                                                                             | Unlikely. Required habitat does not occur within the study area.                                                                                                                                                                                                                  |
| <i>Calyptrorhynchus lathamii</i> | Glossy Black-cockatoo (eastern) | -   | V    | Wildnet, ALA | Coastal forest and open inland woodland. Feeds only on seeds of casuarinas such as Black She-oak, Forest Oak or Belah.                                                                                                                                                                                                                                                      | Low. Although the species preferred food source, Belah, is present the cockatoo prefers large patches of habitat in which to feed. The species is known from Irongate Conservation Park.                                                                                          |
| <i>Erythrotriorchis radiatus</i> | Red Goshawk                     | V   | V    | PMST         | The red goshawk is generally found in open woodland, the edges of rainforest, and in dense riverine vegetation of coastal and subcoastal forests. This species is known to have a large home range but nests in tall trees usually within 1km of a waterway or wetland.                                                                                                     | Unlikely. Required habitat does not occur within the study area.                                                                                                                                                                                                                  |
| <i>Geophaps scripta scripta</i>  | Squatter Pigeon (southern)      | V   | V    | PMST         | This species is known from tropical dry, open sclerophyll woodlands and sometimes savanna. It appears to favour sandy soil dissected with low gravelly ridges and is less common on heavier soils with dense grass cover. It is nearly always found in close association with permanent water. This species is now rarely recorded in southern Queensland and northern NSW. | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area.                                                                                                                                                  |
| <i>Grantiella picta</i>          | Painted honeyeater              | V   | V    | PMST         | Forests, woodlands and dry scrublands, dependent on mistletoe berries. Widespread throughout Queensland but rare in inland Australia.                                                                                                                                                                                                                                       | Moderate. Records are known from Irongate Conservation Park preferred habitat occurs within the study area due to the presence of mature Poplar Box within road reserves. However, the patch of vegetation within the southern portion of the study area is considered to be sub- |

| Scientific Name               | Common Name                     | Qld | EPBC | Source       | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Likelihood of Occurrence Assessment                                                                                              |
|-------------------------------|---------------------------------|-----|------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                               |                                 |     |      |              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | optimal habitat for the Painted Honeyeater due the low abundance of mistletoe                                                    |
| <i>Lathamus discolor</i>      | Swift Parrot                    | E   | E    | PMST         | This species only breeds in Tasmania and migrates to the mainland to feed each year mainly on the inland slopes of the Great Dividing Range particularly in Victoria and NSW with a small number of birds reaching as far as south east Queensland. This species is considered to have a moderate potential to occur within the study area during its winter, non breeding period. However, this would be expected to be a rare occurrence. While it has been recorded historically from Chinchilla, recent records tend to be from coastal Queensland.                                      | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Poephila cincta cincta</i> | Black-throated Finch (southern) | E   | E    | PMST         | The Black-throated Finch (southern) historically occurred from far south-eastern Queensland, near the Queensland-NSW border, through eastern Queensland north to the divide between the Burdekin and Lynd Rivers. The subspecies is now extinct at most sites south of Burdekin River, and is confined to a very few remaining 'pockets' of suitable habitat. It has been absent from Brisbane and its surrounds since the 1930s or 1940s, and appears to have become extinct around most of Rockhampton during the early to mid 1970s, despite having been numerous there during the 1950s. | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Lophochroa leadbeateri</i> | Major Mitchell's cockatoo       | -   | V    | ALA, Wildnet | Open sparsely timbered grasslands, farmlands with well-treed paddocks, mulga shrublands, mallee, callitris and casuarina woodlands, watercourse trees; never far from water.                                                                                                                                                                                                                                                                                                                                                                                                                 | Unlikely. Preferred habitat does not occur within the study area.                                                                |
| <i>Rostratula australis</i>   | Australian Painted Snipe        | V   | E    | PMST         | This species occurs in shallow, vegetated temporary or infrequently filled wetlands, sometimes with trees or shrubs where it feeds at the water's edge on seeds and invertebrates.                                                                                                                                                                                                                                                                                                                                                                                                           | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Turnix melanogaster</i>    | Black-breasted Button-quail     | V   | V    | PMST         | The black-breasted button-quail is most commonly associated with vine thicket rainforest with greater than 800mm rainfall, deep leaf litter and a closed canopy but also occur in softwood scrubs in the Brigalow Belt, vine scrub regrowth and mature hoop                                                                                                                                                                                                                                                                                                                                  | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |

| Scientific Name                 | Common Name                          | Qld | EPBC | Source        | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Likelihood of Occurrence Assessment                                                                                              |
|---------------------------------|--------------------------------------|-----|------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                                 |                                      |     |      |               | pine ( <i>Araucaria cunninghamii</i> ) particularly with a lantana understorey. They also occur in dry sclerophyll forest adjacent to rainforest and acacia and <i>Austromyrtus</i> scrubs on sandy coastal soils (Inskip Point) (Garnett & Crowley 2000).                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                  |
| <b>MAMMALS</b>                  |                                      |     |      |               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                  |
| <i>Chalinolobus dwyeri</i>      | Large-eared Pied Bat, Large Pied Bat | V   | V    | PMST          | This species is uncommon in dry and wet Eucalypt forests from Blackdown Tableland in Central Queensland to near Wollongong. Primarily a cave rooster, this species inhabits sclerophyll forests and woodlands throughout much of its range. It is however, primarily associated with Dry Sclerophyll Woodlands throughout its range, and these habitats are relatively restricted in the study area. This species is considered unlikely to be present in the study area                                                                                                                                                                                           | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Ornithorhynchus anatinus</i> | Platypus                             | SL  |      | Wildnet       | Freshwater rivers and creeks in eastern Australia, from tropical rainforest in n Qld to mountains of Tasmania and SE Aust. Feed in both slow-moving and rapid (riffle) parts of streams, but appear to prefer coarser bottom substrates (e.g. gravel). Construct short burrows in the banks, often hidden by overhanging vegetation.                                                                                                                                                                                                                                                                                                                               | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Phascolarctos cinereus</i>   | Koala                                | V   | V    | Wildnet, PMST | ALA, koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species. koala habitat can be broadly defined as any environment containing koala food trees species or shelter trees, which may be used by koalas for roosting, sheltering or breeding, and which is sufficiently connected. The distribution of this habitat is largely influenced by land elevation average, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clayey soils. | Low likelihood. Food trees are present within the study area, however no signs of Koala usage was recorded.                      |
| <i>Pteropus poliocephalus</i>   | Grey-headed Flying-fox               | LC  | V    | Wildnet, PMST | The Grey-headed Flying-fox requires foraging resources and roosting sites. It is a canopy-feeding                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Moderate likelihood. The flying fox may forage within the study area when mature                                                 |

| Scientific Name                     | Common Name            | Qld | EPBC | Source  | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Likelihood of Occurrence Assessment                                                                              |
|-------------------------------------|------------------------|-----|------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
|                                     |                        |     |      |         | <p>frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from Eucalyptus and related genera but in some areas it also utilises a wide range of rainforest fruits. None of the vegetation communities used by the Grey-headed Flying-fox produce continuous foraging resources throughout the year. As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources.</p> <p>The Grey-headed Flying-fox roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of Melaleuca, mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and suburban areas. The species can maintain fidelity to roost sites for extended periods, although new sites have been colonised.</p> | eucalypts are flowering, however the resources provided are insufficient to support a population of the species. |
| <i>Tachyglossus aculeatus</i>       | Short-beaked echidna   | SL  |      | Wildnet | Occurs in a wide range of habitats, from alpine and cold-temperate areas to deserts and tropical regions. Appears to have no specific habitat requirements beyond a food supply of ants and termites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | High likelihood. Echidnas are ubiquitous throughout the region and may occur on the study area.                  |
| <i>Nyctophilus corbeni</i>          | Eastern Long-eared Bat | V   | V    | PMST    | Open dry woodland and forest. Individuals and small colonies roost in tree hollows, cracks in branches and under sheets of bark. Capable of flying large distances (>7km) between roosts and foraging habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Unlikely. Preferred habitat does not occur within the study area.                                                |
| <i>Dasyurus hallucatus</i>          | Northern Quoll         | E   | C    | PMST    | Rocky outcrops and cliffs.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Unlikely. Preferred habitat does not occur within the study area.                                                |
| <i>Dasyurus maculatus maculatus</i> | Spotted-tail Quoll     | E   | E    | ALA     | The Spot-tailed Quoll occurs in south-east Queensland: coastally from Bundaberg to the border and inland to Monto and Stanthorpe. Occurrences from five broad geographic areas are known: four                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Unlikely. Required habitat does not occur within the study area.                                                 |



| Scientific Name | Common Name | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Likelihood of Occurrence Assessment |
|-----------------|-------------|-----|------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|                 |             |     |      |        | <p>from coastal ranges and the Great Dividing Range from the NSW border to Gladstone. The fifth is centred on the eastern Darling Downs-Inglewood Sandstone provinces of the Brigalow Belt South Bioregion. Unconfirmed reports suggest the subspecies may occur in the Clarke and Conway Range areas, eastern Queensland.</p> <p>Historical locations include the D'Aguilar Range west of Brisbane and coastal areas from Coolangatta to Bundaberg. The species is now believed to be extinct in these regions.</p> |                                     |

**Notes:** 1) Listed as Critically Endangered (CE), Endangered (E), Vulnerable (V), Special Least Concern (SL) under the EPBC Act and/or NC Act

3) Likelihood of occurrence:

|   |                 |                                                                                                                                                                                                                                                                                                                                                                                                               |   |                     |                                                                                                                                                                                                                                                                                                                        |
|---|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | High Likelihood | <ul style="list-style-type: none"> <li>Known resident in the Study area based on site observations, database records, or expert advice; and/or,</li> <li>Recent records (i.e. within five years) of the species in the local area (VBA 2011); and/or,</li> <li>The Study area contains the species' preferred habitat.</li> </ul>                                                                             | 2 | Moderate Likelihood | <ul style="list-style-type: none"> <li>The species is likely to visit the Study area regularly (i.e. at least seasonally); and/or,</li> <li>Previous records of the species in the local area (DSE 2011b); and/or,</li> <li>The Study area contains some characteristics of the species' preferred habitat.</li> </ul> |
| 3 | Low Likelihood  | <ul style="list-style-type: none"> <li>The species is likely to visit the Study area occasionally or opportunistically whilst en route to more suitable sites; and/or,</li> <li>There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,</li> <li>The Study area contains few or no characteristics of the species' preferred habitat.</li> </ul> | 4 | Unlikely            | <ul style="list-style-type: none"> <li>No previous records of the species in the local area; and/or,</li> <li>The species may fly over the Study area when moving between areas of more suitable habitat; and/or,</li> <li>Out of the species' range; and/or,</li> <li>No suitable habitat present.</li> </ul>         |

**Table 11 Migratory Species within 10km of the Study Area**

| Scientific Name                                  | Common Name                       | Qld | EPBC | Source             |
|--------------------------------------------------|-----------------------------------|-----|------|--------------------|
| <i>Acrocephalus australis</i>                    | Australian Reed-warbler           | SL  | Mi   | Wildnet, ALA       |
| <i>Apus pacificus</i>                            | Fork-tailed Swift                 | SL  | Mi   | PMST               |
| <i>Ardea alba</i> (syn. <i>A. alba modesta</i> ) | Great Egret (Eastern Great Egret) | SL  | Mi   | PMST, Wildnet, ALA |
| <i>Ardea ibis</i>                                | Cattle Egret                      | SL  | Mi   | Wildnet, ALA, PMST |
| <i>Acrocephalus australis</i>                    | Australian reed-warbler           | Mi  | SL   | ALA, Wildnet       |
| <i>Coracina tenuirostris</i>                     | Cicadabird                        | SL  | Mi   | Wildnet, ALA       |
| <i>Cuculus optatus</i>                           | Horsfield's Cuckoo                | SL  | Mi   | PMST               |

| Scientific Name              | Common Name               | Qld | EPBC | Source             |
|------------------------------|---------------------------|-----|------|--------------------|
| <i>Gallinago hardwickii</i>  | Latham's snipe            | SL  | Mi   | Wildnet, ALA, PMST |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | SL  | Mi   | Wildnet, ALA, PMST |
| <i>Merops ornatus</i>        | Rainbow Bee-eater         | SL  | Mi   | Wildnet, ALA, PMST |
| <i>Monarcha melanopsis</i>   | Black-faced Monarch       | SL  | Mi   | PMST               |
| <i>Motacilla flava</i>       | Yellow Wagtail            | SL  | Mi   | PMST               |
| <i>Myiagra cyanoleuca</i>    | Satin Flycatcher          | SL  | Mi   | PMST               |
| <i>Pandion haliaetus</i>     | Osprey                    | SL  | Mi   | PMST               |
| <i>Plegadis falcinellus</i>  | Glossy Ibis               | SL  | Mi   | Wildnet, ALA       |
| <i>Rhipidura rufifrons</i>   | Rufous Fantail            | SL  | Mi   | PMST               |

## APPENDIX 4 – IMPACT MANAGEMENT PLAN

---

### A1.1. Introduction

This impact management plan has been prepared in accordance with the Protected Plants Assessment Guideline (DEHP, 2014b). The proposed development proposes to remove a population of Belson's Panic *Homopholis belsonii*, which is listed as endangered under the *Nature Conservation Act 1992* (NC Act), and an area of habitat of approximately 0.94 hectares.

### A1.2. Attempts to avoid and minimise impact

Avoidance of clearing is not possible for this project as the species habitat occurs as an isolated patch within the centre of the property and is surrounded on all sides by cropping. Solar farms require large, flat areas for installation of solar panels and for efficiency, property configurations which allow installation of rectangular 'blocks' of solar panels are preferred. It is not reasonable to amend the development layout to avoid clearing of the habitat patch as the action would involve a loss of potential revenue over the life of the farm and potentially resulting in the project becoming economically unviable.

Minimising the clearing has been considered and rejected as the habitat patch would remain isolated regardless of the percentage of habitat retained.

### A1.3. Nature of impact

The impact is the clearing of habitat supporting a population of Belson's Panic. This will result in a loss of less than one hectare of habitat and 12 discrete areas where Belson's Panic occurs (Figure A1). An exact count of individuals grasses is not possible since the species reproduces primarily through stolons and therefore multiple tussocks could be attributable to one or more individuals. Each discrete area is between one metre squared and several metres squared and the grass occurs primarily underneath shrubs where it has a competitive advantage over other native and exotic grasses that prefer open spaces. Belson's Panic is the dominant grass in the discrete areas in which it occurs. This pattern of occupation is usual for this species.



**Figure A1** Location of Belson's Panic patches within vegetation to be removed.

#### **A1.4. Management of impact**

All plants of Belson's Panic within the habitat patch are proposed to be removed. Translocation has been considered as a mitigation option; however, this option has been rejected for the following reasons:

- The species has been successfully translocated previously (see SKM 2008); however the species is also easily grown from seed (Menkins, *pers. comm.*);
- There are no suitable habitat patches within the study area that could receive the translocated plants and which then could be managed by the proponent. The closest population is within the road reserve of Yarranlea-Murlaggan Road, which is outside of the control of the proponent; and
- Translocation has the potential to introduce weeds that are present within the habitat patch into the receiving environment. The habitat within the study area contains weed species that are known threatening processes to Belson's Panic (e.g. Green Panic *Megathyrsus maximus*) and contaminated soil may be introduced into the receiving environment.

Under the EO Act, a financial offset is proposed to counterbalance the loss of this species from the study area. Prior to clearing, seed will also be collected from the plants for spreading within nearest populations (Yarranlea-Murlaggan Road and Irongate Conservation Park) to introduce new genetic material into these populations.

### **A1.5. Justification of impact management**

The proposed clearing area is within a Low Risk area on the Flora Survey Trigger Map (Appendix 5) and therefore, the loss of any populations of threatened plants within such areas has been accounted for under the Protected Plant framework.

The habitat proposed to be cleared is situated within the centre of an active agricultural property and is surrounded on all sides by cropland. The nearest habitat area for Belson's Panic is over 500 metres to the north-east within Yarranlea-Murlaggan Road. The habitat patch is isolated and there is unlikely to be any connection between this habitat and surrounding habitat areas. The habitat is currently subjected to threatening processes including presence of weed threats (e.g. Green Panic) and the likelihood that the landholder could clear the vegetation at any time without a permit. The habitat has been identified as Category X vegetation and therefore, no assessment or approval is required to clear under the VM Act.

### **A1.6. Survival of plant in the wild**

The clearing will not impact on any populations outside of the study area and is unlikely to adversely affect the survival in the wild of the species. Collection of seed prior to clearing and distribution into the existing populations along Yarranlea-Murlaggan Road and at Irongate Conservation Park will ensure that the genetic material will not be lost as a result of the proposed clearing.





SITE LAYOUT PLAN  
Scale 1:10000(A1)

**LEGEND:**

- Site Property Boundary
- Adjoining Property Boundary
- Existing Sealed Road
- Existing Unformed Road
- Sump 1 Drain and Retention Zone
- Sump 2/3 Drain and Retention Zone
- Ring Tank
- Drainage Pipe
- Finished Lidar Minor Contours
- Finished Lidar Major Contours

- NOTES:**
- Intervals between contours — 0.5m
  - Contours are finished Lidar surface levels.
  - Plans to be plotted in colour to distinguish design elements.

**EXISTING SERVICES NOTES:**

- The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
- The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
- The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these service locations.
- The Contractor is responsible for arranging the locating of all services by the relevant Authorities.
- A representative for each service provider to be present on site when working within 3.0m of each existing service.
- The Contractor is to confirm the location & level of all drainage connection points prior to commencing any construction works or ordering any materials.
- Should invert levels or location of any drainage connection points differ to that indicated on RMA's drawings then the Certifying Engineer shall be notified immediately.
- Any works required to or near an Authorities services shall be carried out to the approval of, under the supervision of and to the standard required by the Authority.

0 100 200 300 400m  
1:10000(A1) 1:20000(A3)

|        |                                             |          |     |     |     |
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| 18-274 |                                             |          |     |     |     |
| 2      | REVISE CONTAMINATED RUNOFF CAPTURE STRATEGY | 09/08/17 | NGT | JJW | JJW |
| 1      | CHANGE TO CULVERT TYPE                      | 14/06/17 | NGT | JJB | AEL |
| 0      | FOR APPROVAL                                | 26/05/17 | NGT | JJB | AEL |
| ISSUE  | DESCRIPTION                                 | DATE     | DWN | DES | CHK |

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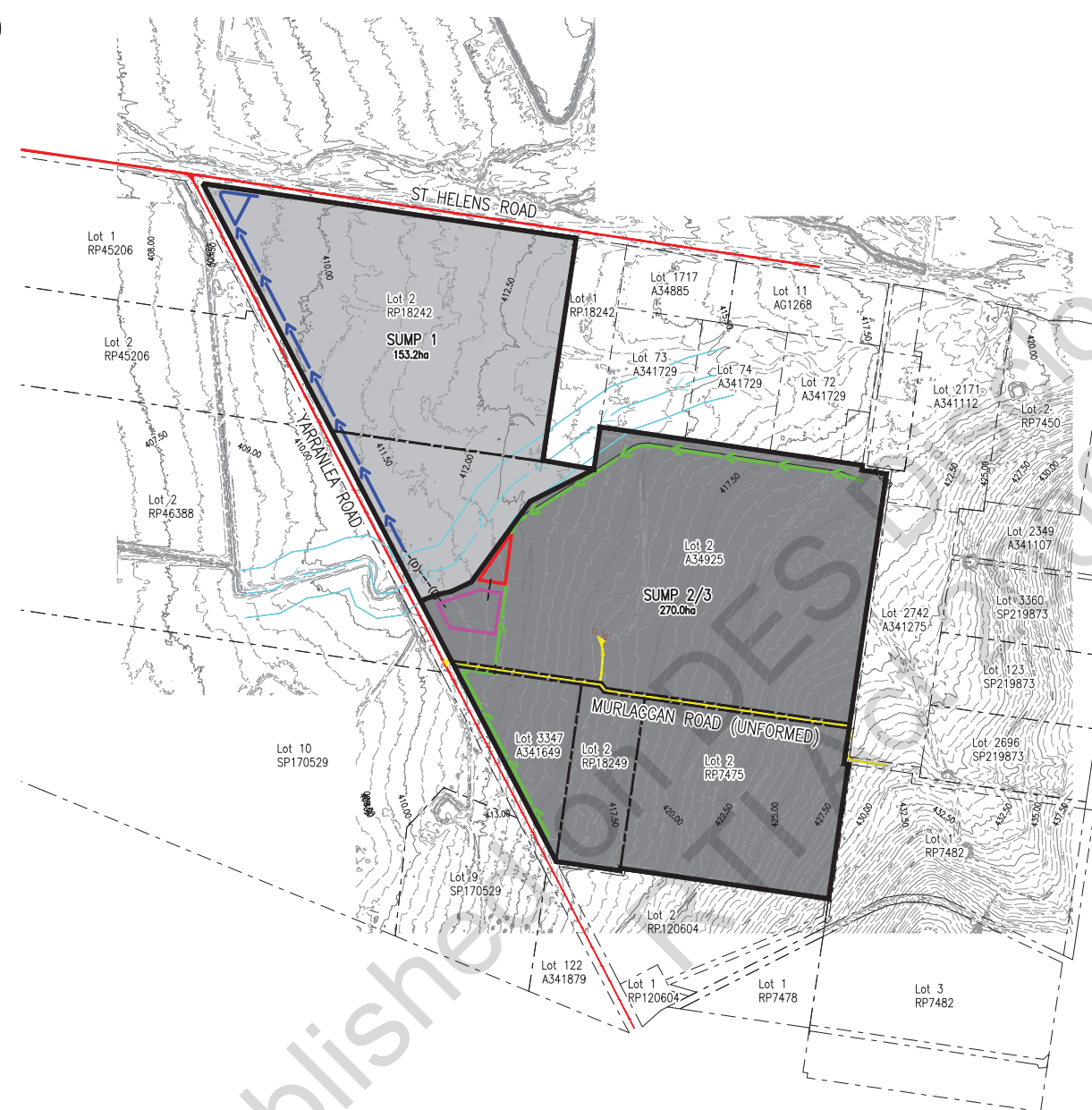
PROJECT NO.  
**11448(NRM)**

COUNCIL, RALINCU NO.

SOURCE, OWN

DRAWING NO.  
**D-D0101**

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**2**



# SITE CATCHMENT PLAN

Scale 1:10000(A1)

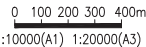
- LEGEND:**
-  Site Property Boundary
  -  Adjoining Property Boundary
  -  Existing Sealed Road
  -  Existing Unformed Road
  -  Catchment and Area
  -  Catchment Boundary
  -  Sump 1 Drain and Retention Zone
  -  Sump 2/3 Drain and Retention Zone
  -  Ring Tank
  -  Finished Lidar Minor Contours
  -  Finished Lidar Major Contours

NOTES:

1. Intervals between contours – 1.0m  
Contours are finished Lidar surface levels.
2. Plans to be plotted in colour to distinguish design elements.

EXISTING SERVICES NOTES:

1. The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
2. The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
3. The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these services locations.
4. The Contractor is responsible for arranging the locating of all services by the relevant Authorities.
5. A Representative for each service provider to be present on site when working within 3.0m of each existing service.
6. The Contractor is to confirm the location & level of all drainage connection points prior to commencing any construction works or ordering any materials.
7. The Contractor to investigate the location of any drainage connection points differ to that indicated on RMA's drawings then the Certifying Engineer shall be notified immediately.
8. Any works required to or near on Authorities services shall be carried out to the approval of, under the supervision of and to the standard required by the Authority.

[illegible]

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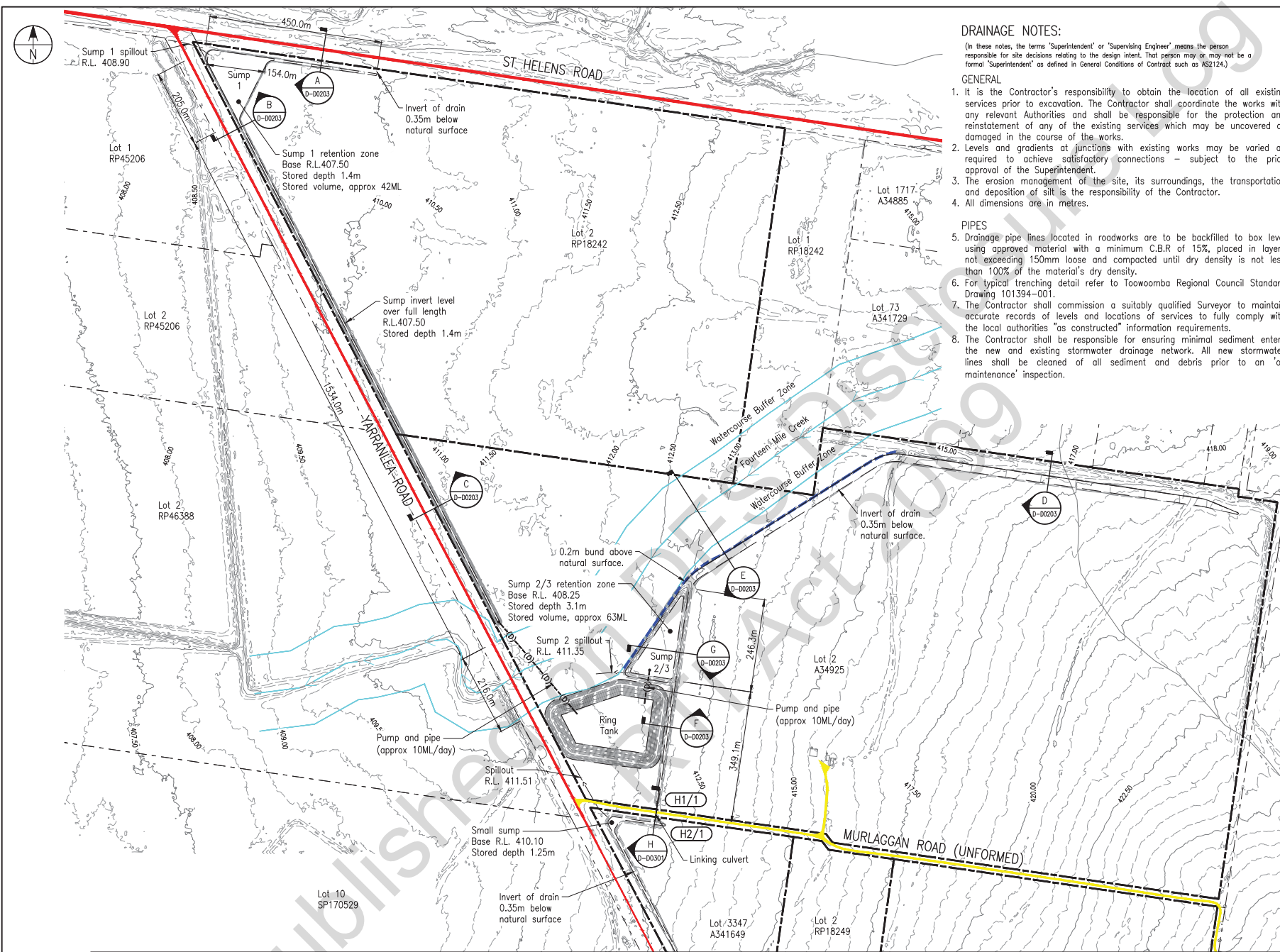
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| PROJECT | WORKS TO CAPTURE<br>CONTAMINATED AGRICULTURAL RUNOFF |
| TITLE   | SITE CATCHMENT PLAN                                  |

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|          |                                                                                                                                                                       | <p>COUNCIL, RALIMCU NO.</p>              |                           |
|          |                                                                                                                                                                       | <p>COUNCIL, OW NO.</p>                   |                           |
|          |                                                                                                                                                                       | <p>DRAWING NO.<br/><b>D-P0102</b></p>    | <p>ISSUE<br/><b>2</b></p> |





CONTAMINATED WATER MANAGEMENT LAYOUT PLAN – 1  
Scale 1:5000(A1)

#### DRAINAGE NOTES:

(In these notes, the terms 'Superintendent' or 'Supervising Engineer' means the person responsible for site decisions relating to the design intent. That person may or may not be a formal 'Superintendent' as defined in General Conditions of Contract such as AS2124.)

#### GENERAL

- It is the Contractor's responsibility to obtain the location of all existing services prior to excavation. The Contractor shall coordinate the works with any relevant Authorities and shall be responsible for the protection and reinstatement of any of the existing services which may be uncovered or damaged in the course of the works.
  - Levels and gradients at junctions with existing works may be varied as required to achieve satisfactory connections – subject to the prior approval of the Superintendent.
  - The erosion management of the site, its surroundings, the transportation and deposition of silt is the responsibility of the Contractor.
  - All dimensions are in metres.
- #### PIPES
- Drainage pipe lines located in roadworks are to be backfilled to box level using approved material with a minimum C.B.R. of 15%, placed in layers not exceeding 150mm loose and compacted until dry density is not less than 100% of the material's dry density.
  - For typical trenching detail refer to Toowoomba Regional Council Standard Drawing 101394–001.
  - The Contractor shall commission a suitably qualified Surveyor to maintain accurate records of levels and locations of services to fully comply with the local authorities "as constructed" information requirements.
  - The Contractor shall be responsible for ensuring minimal sediment enters the new and existing stormwater drainage network. All new stormwater lines shall be cleaned of all sediment and debris prior to an 'on maintenance' inspection.

#### LEGEND:

- Site Property Boundary
- Adjoining Property Boundary
- Existing Sealed Road
- Existing Unformed Road
- H1/1 Headwall Label
- 200mm High Bund
- Finished Lidar Minor Contours
- Finished Lidar Major Contours

#### NOTES:

- Intervals between contours – 0.5m  
Contours are finished Lidar surface levels.
- Plans to be plotted in colour to distinguish design elements.

#### NOTE:

Scour protection to be provided at spill out points, where drains drop into sumps and elsewhere if scour zones develop.

#### EXISTING SERVICES NOTES:

- The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
- The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
- The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these service locations.
- The Contractor is responsible for arranging the locating of all services by the relevant Authorities.
- A representative for each service provider to be present on site when working within 3.0m of each existing service.
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- Should invert levels or location of any drainage connection points differ to that indicated on RMA's drawings then the Certifying Engineer shall be notified immediately.
- Any works required to or near an Authorities services shall be carried out to the approval of, under the supervision of and to the standard required by the Authority.

|        |          |     |     |     |     |
|--------|----------|-----|-----|-----|-----|
| 18-274 | 09/08/17 | NGT | JJW | JJW | AEL |
| 1      | 34/06/17 | NGT | JRB | AEL | AEL |
| 2      | 20/05/17 | NGT | JRB | AEL | AEL |
| 3      |          | DES |     |     |     |
| 4      |          | CHK |     |     |     |
| 5      |          | APP |     |     |     |

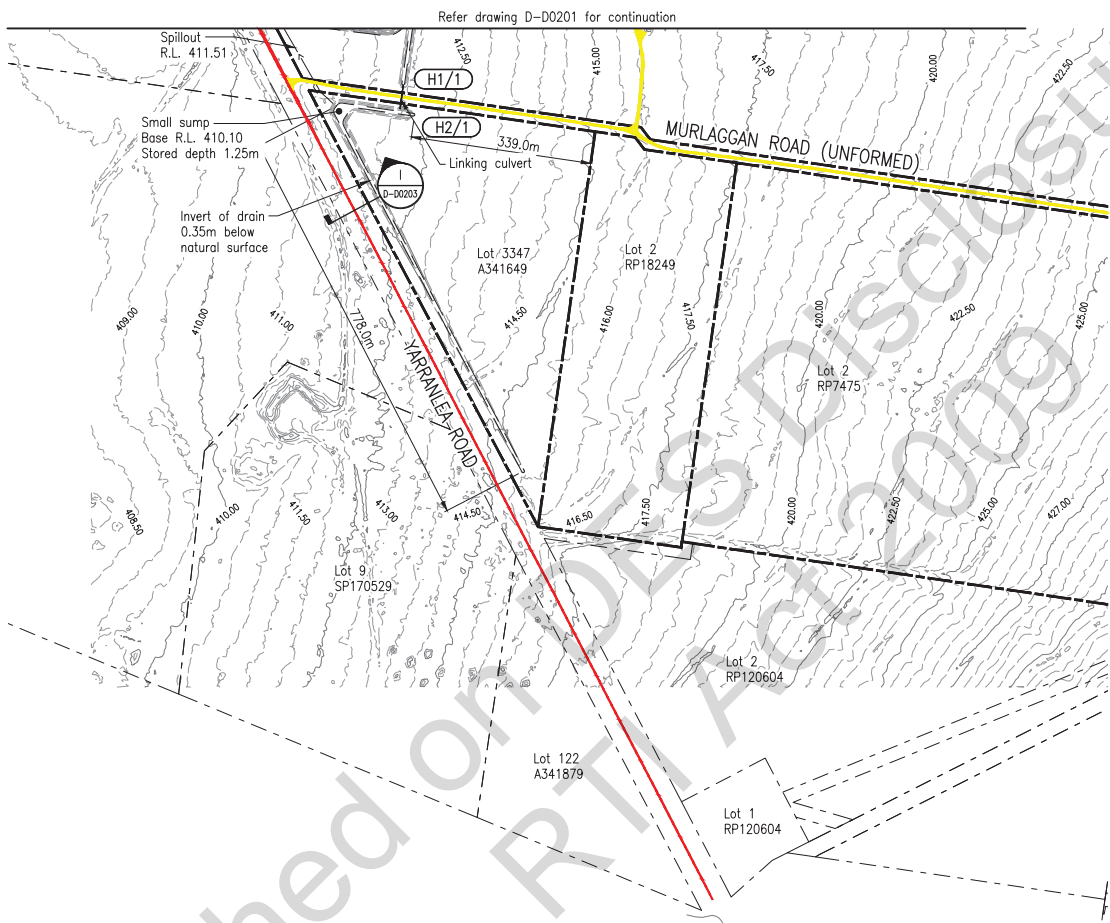
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TITLE  
**CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 1**

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COUNCIL, OW NO.  
DRAWING NO.  
**D-D0201**  
ISSUE  
**2**



CONTAMINATED WATER MANAGEMENT LAYOUT PLAN – 2

Scale 1:5000(A1)

LEGEND:

- Site Property Boundary
- Adjoining Property Boundary
- Existing Sealed Road
- Existing Unformed Road
- Headwall Label
- Finished Lidar Minor Contours
- Finished Lidar Major Contours

NOTES:

- Intervals between contours – 0.5m
- Contours are finished Lidar surface levels.
- Plans to be plotted in colour to distinguish design elements.
- Refer drawing D–D0201 for drainage notes.

NOTE:

Scour protection to be provided at spill out points, where drains drop into sumps and elsewhere if scour zones develop.

EXISTING SERVICES NOTES:

- The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
- The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
- The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these service locations.
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- Any works required to or near an Authorities services shall be carried out to the approval of, under the supervision of and to the standard required by the Authority.

0 50 100 150 200m  
1:5000(A1) 1:10000(A3)

|        |                                             |          |     |     |     |
|--------|---------------------------------------------|----------|-----|-----|-----|
| 18-274 | 09/08/17                                    | NGT      | JJW | JJW | AEL |
| 2      | REVISE CONTAMINATED RUNOFF CAPTURE STRATEGY | 14/06/17 | NGT | JJB | AEL |
| 1      | CHANGE TO CULVERT TYPE                      | 26/05/17 | NGT | JJB | AEL |
| 0      | FOR APPROVAL                                |          |     |     |     |
| ISSUE  | DESCRIPTION                                 | DATE     | DWN | DES | CHK |

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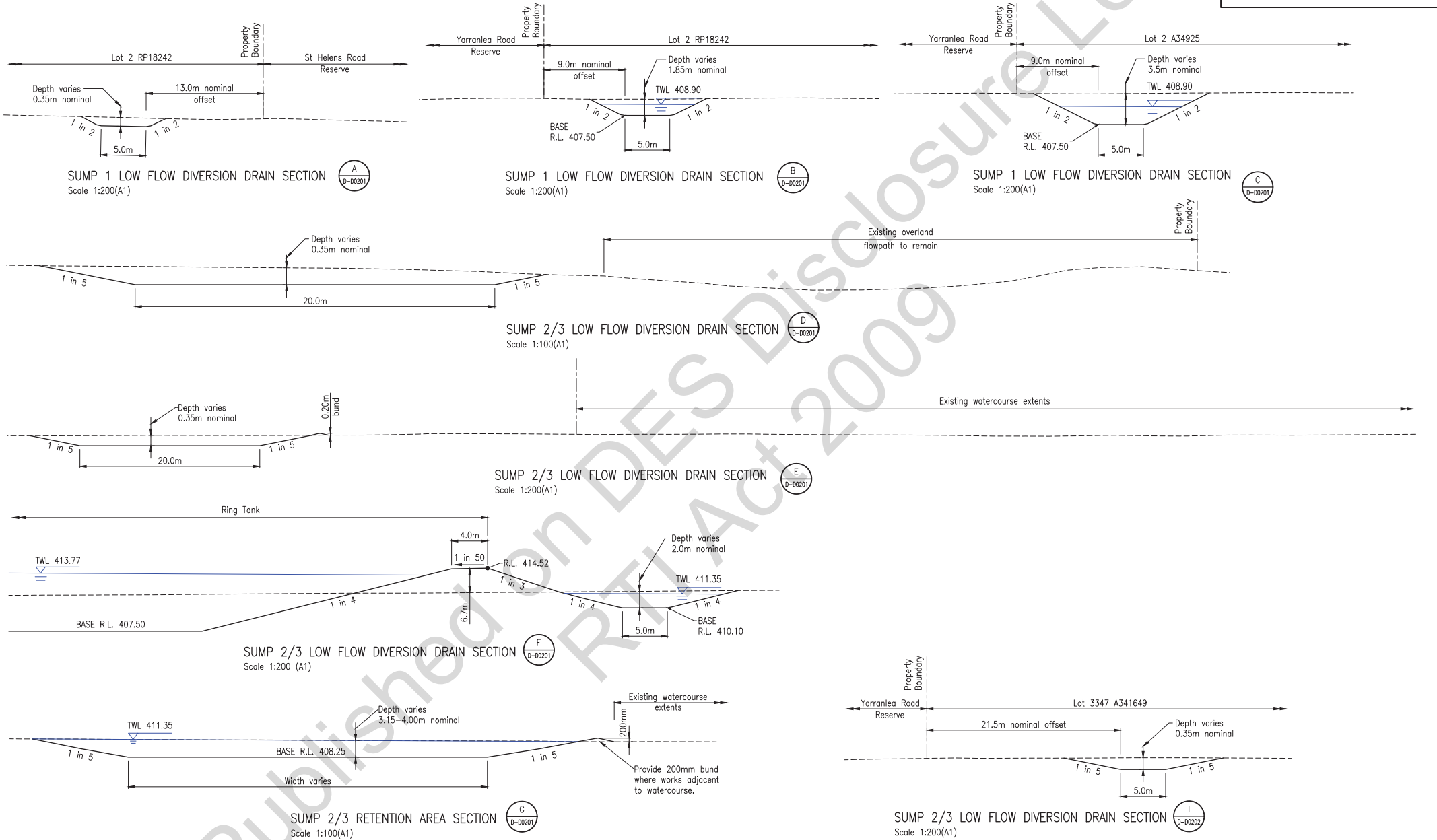
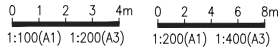
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|--------------------------------------------------------------|----------------------------------------------|
| PROJECT<br>WORKS TO CAPTURE CONTAMINATED AGRICULTURAL RUNOFF | PROJECT NO.<br>11448(NRM)                    |
| TITLE<br>CONTAMINATED WATER MANAGEMENT LAYOUT PLAN - 2       | COUNCIL, RALINCU NO.<br>COUNCIL, RALINCU NO. |

|                                                                                                                                             |                                              |
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|                                                                                                                                             | COUNCIL, RALINCU NO.<br>COUNCIL, RALINCU NO. |
|                                                                                                                                             | DRAWING NO.<br>D-D0202                       |
|                                                                                                                                             | ISSUE<br>2                                   |

LEGEND:

Natural Surface

Design Surface



|        |  |                                             |          |     |     |     |
|--------|--|---------------------------------------------|----------|-----|-----|-----|
| 18-274 |  | 09/08/17                                    | NGT      | JJW | JJW | AEL |
| 2      |  | REVISE CONTAMINATED RUNOFF CAPTURE STRATEGY | 14/06/17 | NGT | JRB | AEL |
| 1      |  | CHANGE TO CULVERT TYPE                      | 26/05/17 | NGT | JRB | AEL |
| 0      |  | FOR APPROVAL                                |          |     |     |     |
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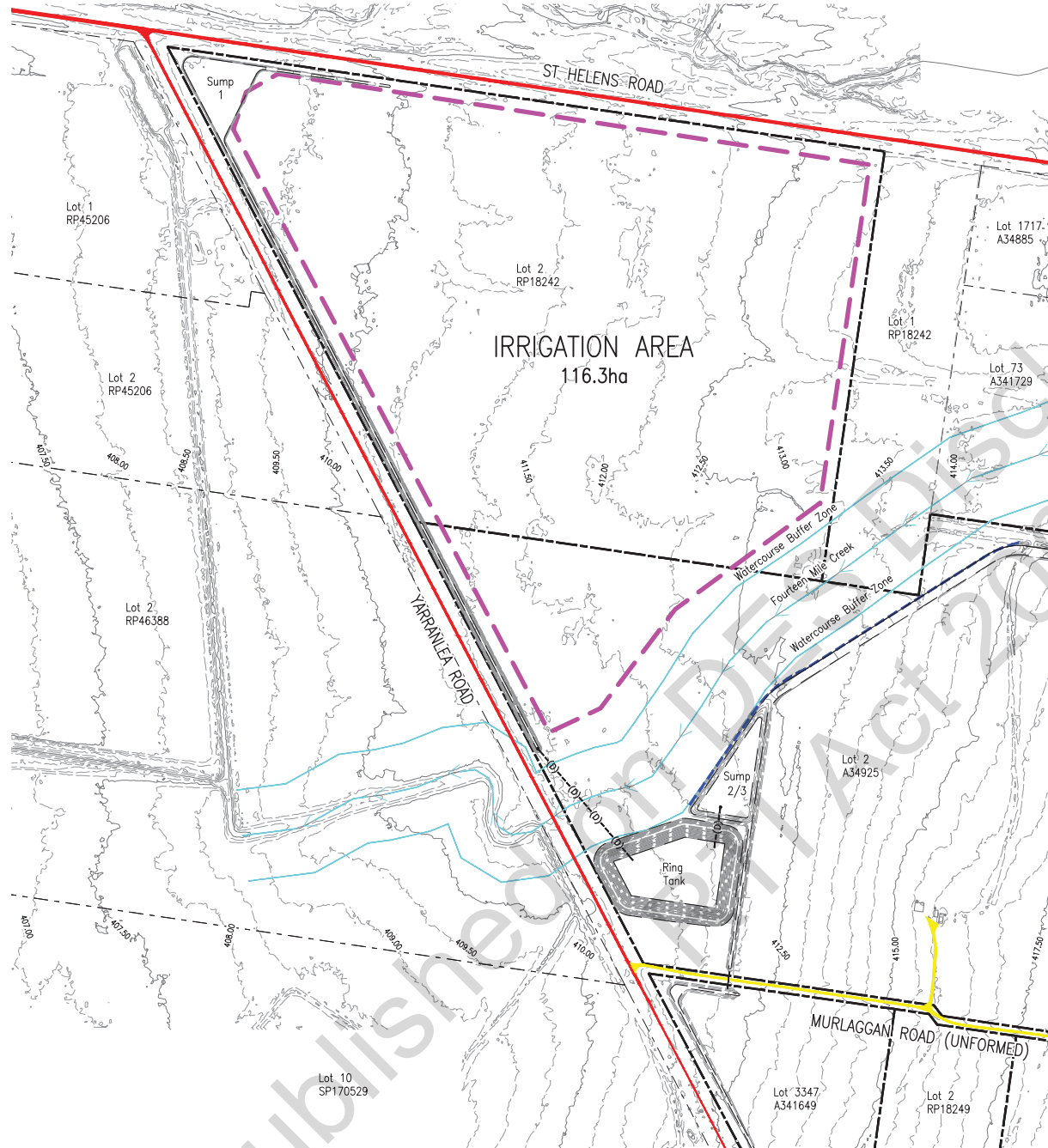


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|                                                                 |  |
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| PROJECT<br>WORKS TO CAPTURE<br>CONTAMINATED AGRICULTURAL RUNOFF |  |
| TITLE<br>SECTIONS                                               |  |

|                                                                                                                                                                  |                           |
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|                                                                                                                                                                  | COUNCIL COW NO.           |
|                                                                                                                                                                  | DRAWING NO.<br>D-D0203    |
|                                                                                                                                                                  | ISSUE<br>2                |





## LEGEND:

- Site Property Boundary
- Adjoining Property Boundary
- Existing Sealed Road
- Existing Unformed Road
- Approximate Irrigation Area
- 200mm High Bund

IRRIGATION AREA  
0.0ha

- Drainage Pipe
- Finished Lidar Minor Contours
- Finished Lidar Major Contours

## NOTES:

- Intervals between contours — 0.5m
- Contours are finished Lidar surface levels.
- Plans to be plotted in colour to distinguish design elements.
- Refer drawing D-D0201 for drainage notes.
- Refer drawing D-D0201-0202 for contaminated water management details.

## NOTE:

Approximate area to be irrigated. Details to be confirmed.

## EXISTING SERVICES NOTES:

- The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
- The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
- The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these service locations.
- The Contractor is responsible for arranging the locating of all services by the relevant Authorities.
- A representative for each service provider to be present on site when working within 3.0m of each existing service.
- The Contractor is to confirm the location & level of all drainage connection points prior to commencing any construction works or ordering any materials.
- Should invert levels or location of any drainage connection points differ to that indicated on RMA's drawings then the Certifying Engineer shall be notified immediately.
- Any works required to or near an Authorities services shall be carried out to the approval of, under the supervision of and to the standard required by the Authority.

## POSSIBLE IRRIGATED AREA LAYOUT

Scale 1:5000(A1)

0 50 100 150 200m  
1:5000(A1) 1:10000(A3)

| ISSUE | DESCRIPTION                                 | DATE     | DWN | DES | CHK | APP |
|-------|---------------------------------------------|----------|-----|-----|-----|-----|
| 2     | REVISE CONTAMINATED RUNOFF CAPTURE STRATEGY | 09/08/17 | NGT | JJW | JJW | AEL |
| 1     | CHANGE TO CULVERT TYPE                      | 14/06/17 | NGT | JRB | AEL | AEL |
| 0     | FOR APPROVAL                                | 01/06/17 | NGT | JRB | AEL | AEL |

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PROJECT

WORKS TO CAPTURE  
CONTAMINATED AGRICULTURAL RUNOFF

TITLE

POSSIBLE IRRIGATED AREA LAYOUT

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**11448(NRM)**  
COUNCIL, RALINCU NO.

COUNCIL, OW NO.

DRAWING NO.  
**D-D0204**ISSUE  
**2**



(In these notes, the terms 'Superintendent' or 'Supervising Engineer' means the person responsible for site decisions relating to the design intent. That person may or may not be a formal 'Superintendent' as defined in General Conditions of Contract such as AS2124.)

1. It is the Contactor's responsibility to obtain the location of all existing services prior to excavation. The Contractor shall coordinate the works with any relevant Authorities and shall be responsible for the protection and reinstatement of any of the existing services which may be uncovered or damaged in the course of the works.
2. Levels and gradients at junctions with existing works may be varied as required to achieve satisfactory connections - subject to the prior approval of the Engineer.
3. The erosion management of the site, its surroundings, the transportation and deposition of silt is the responsibility of the Contractor.
4. All dimensions are in metres.

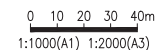
5. This drawing is to be read in conjunction with the stormwater drainage longitudinal sections. Pipe sizes are listed on the longitudinal sections.
6. All stormwater drainage pipes to be class 2 spigot and socket R.R.J R.C.P. unless noted otherwise. Alternative products can be used subject to the prior approval of the Superintendent and Council.
7. Stormwater drainage pipe lines located in roadworks are to be backfilled to box level using approved material with a minimum C.B.R. of 15%, placed in layers not exceeding 150mm loose and compacted until dry density is not less than 100% of the material's dry density.
8. For typical trenching detail refer to Toowoomba Regional Council Standard Drawing 101394-001.
9. The Contractor shall commission a suitably qualified Surveyor to maintain accurate records of levels and locations of services to fully comply with the local authorities "as constructed" information requirements.
10. The Contractor shall be responsible for ensuring minimal sediment enters the new and existing stormwater drainage network. All new stormwater lines shall be cleaned of all sediment and debris prior to an 'on maintenance' inspection.

|                                                                                     |                               |
|-------------------------------------------------------------------------------------|-------------------------------|
|  | Site Boundary                 |
|  | Adjoining Property Boundary   |
|  | Existing Sealed Road          |
|  | Existing Unformed Road        |
|  | Headwall Label                |
|  | Drainage Pipe                 |
|  | Drainage Pipe and Pump        |
|  | Finished Lidar Major Contours |
|  | Finished Lidar Minor Contours |

1. Intervals between contours – 0.2m  
Contours are finished Lidar surface levels.
2. Plan to be plotted in colour to distinguish design elements.

Scour protection to be provided at spill out points, where drains drop into sumps and elsewhere if scour zones develop.

1. The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
2. The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
3. The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these service locations.
4. The Contractor is responsible for arranging the supplying of all services by the relevant Authorities.
5. A representative for each service provider to be present on site when working within 3.0m of each existing service.
6. The Contractor is to confirm the location & level of all drainage connection points prior to commencing any construction works or ordering any materials.
7. Should invert levels or location of any drainage connection points differ to that indicated on RMA's drawings then the Certifying Engineer shall be notified immediately.
8. Any works required to or near an Authorities services shall be carried out to the approval of, under the supervision of and to the standard required by the Authority.

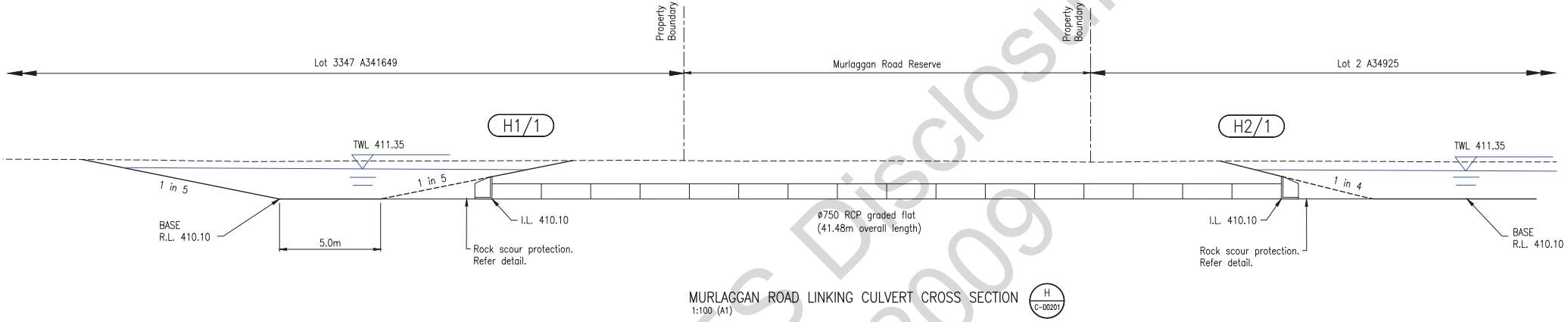


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|---------|--------------------------------------------------------------|
| PROJECT | <b>WORKS TO CAPTURE<br/>CONTAMINATED AGRICULTURAL RUNOFF</b> |
| TITLE   | <b>DETAIL AT MURLAGGAN ROAD</b>                              |

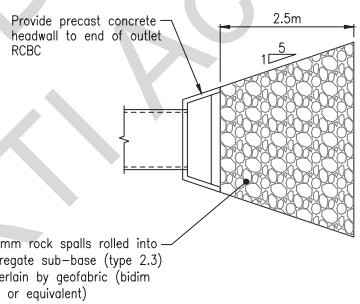
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|          |                                                                                                                                                                  | DRAWING NO.         | D-D0301    |
|          |                                                                                                                                                                  |                     | ISSUE 2    |



LEGEND:

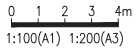
- H1/1 Headwall Label
- Design Surface
- Natural Surface

MURLAGGAN ROAD LINKING CULVERT CROSS SECTION  
1:100 (A1)



TYPICAL OUTLET SCOUR PROTECTION  
Do not scale

- EXISTING SERVICES NOTES:
1. The Contractor is to confirm the location of all services prior to commencing any construction works or ordering any materials.
  2. The Contractor is to contact Dial Before You Dig on 1100 prior to commencing any construction works.
  3. The project site, Yarranlea and St Helens Road reserves are known to contain existing services not shown on the plans. It is the Contractor's responsibility to confirm these service locations.
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|        |                                             |          |     |     |     |
|--------|---------------------------------------------|----------|-----|-----|-----|
| 18-274 | 09/08/17                                    | NGT      | JJW | JJW | AEL |
| 2      | REVISE CONTAMINATED RUNOFF CAPTURE STRATEGY | 14/06/17 | NGT | JRS | AEL |
| 1      | CHANGE TO CULVERT TYPE                      | 26/05/17 | NGT | JRS | AEL |
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PROJECT  
**WORKS TO CAPTURE CONTAMINATED AGRICULTURAL RUNOFF**

TITLE  
**CULVERT DETAILS**

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PROJECT NO.  
**11448(NRM)**  
COUNCIL, RALINCU NO.  
DRAWING NO.  
**D-D0302**

ISSUE  
**2**



# Development Approval Environmental Submission

## Yarranlea Solar Pty Ltd – Yarranlea Road

Within  
Toowoomba Regional Council

**For**  
**Yarranlea Solar Pty Ltd**

**Document Reference**  
**15-282 – Environmental Risk Assessment – 20170529**



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c o n s u l t i n g

|               |                        |          |               |
|---------------|------------------------|----------|---------------|
| Prepared By   | 3 irrelevant informati |          |               |
| Released By   |                        |          |               |
| Job Number    | 15-282                 |          |               |
| Date          | 21 September 2017      |          |               |
| Document Name | 15-282 – Development   | Approval | Environmental |
|               | Submission – 20170529  |          |               |
| Version       | V1.2                   |          |               |



Prepared and Approved for release by:

3 irrelevant informat

Ph.D, M.T.M, B.Sc.(Hons), MRACI C.Chem

21 September 2017

#### STATEMENT OF LIMITATION

Data and conclusions of this report are the findings and opinions of icubed consulting and are not an expressed or implied representation, warranty or guarantee. This report has been prepared for Yarranlea Solar Pty Ltd. icubed Consulting does not accept liability for any third party's use or reliance on this report.

## Executive Summary

This report supports a site-specific application for ERA 16(2)(a) - extractive and screening activities - extracting, other than by dredging, 5,000 to 100,000 tonnes of material in a year (the proposed ERA) on Lot 2 A34925 at 538 and 752 Yarranlea Road, Yarranlea. The proposed ERA will only operate on a small portion of the south west corner of this Lot.

The activity is associated with the development of a private rural ring tank, which once completed will operate as a method of capturing contaminated stormwater runoff from the landholder's property. All applicable approvals have been gained from the Department of Natural Resources and Mines and Toowoomba Regional Council by the owners of the property. Our application for ERA 16(2)(a) is to extract the materials from the site prior to development of the ring tank, to be used for subgrade improvement of access tracks, a new substation yard, and a temporary construction compound for the Yarranlea Solar Farm that is approved on the property and surrounding Lots.

Table 1 below provides a summary of the proposed ERA and the relevant sections in this report that address potential environmental risks and impacts associated with the activity.

**Table 1 – Summary of ERA activity**

|                                                                                                                                 | Comment                                                                                                  | Relevant Section in Report                |
|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------|
| ERA Category                                                                                                                    | 16                                                                                                       |                                           |
| ERA Number and Name                                                                                                             | 2a- Extractive and Screening Activities                                                                  |                                           |
| ERA Threshold                                                                                                                   | extracting, other than by dredging, in a year, the following quantity of material—<br>5,000t to 100,000t |                                           |
| Applicable Fees                                                                                                                 | AES-22                                                                                                   |                                           |
| Proposed Scale/Capacity                                                                                                         | 63,000 tonnes                                                                                            |                                           |
| Type of approval sought                                                                                                         | Environmental Authority                                                                                  |                                           |
| Is the proposed ERA a mobile or temporary ERA                                                                                   | NO                                                                                                       |                                           |
| Are there any existing ERAs on or associated with the premises                                                                  | NO                                                                                                       |                                           |
| Will there be any screening activities                                                                                          | NO                                                                                                       |                                           |
| <b>Activities</b>                                                                                                               |                                                                                                          |                                           |
| Release of water or waste to land                                                                                               | NO                                                                                                       |                                           |
| Release of water, other than stormwater, to surface water                                                                       | NO                                                                                                       |                                           |
| Stormwater runoff to the receiving environment                                                                                  | YES                                                                                                      | Section 3.10, 4.2<br>Stormwater Emissions |
| Release of water or waste to a wetland for treatment                                                                            | NO                                                                                                       |                                           |
| Berthing, docking or mooring a boat                                                                                             | NO                                                                                                       |                                           |
| Storing or moving bulk material                                                                                                 | NO                                                                                                       |                                           |
| Disturbance of acid sulphate soil                                                                                               | NO                                                                                                       |                                           |
| Disturbance of acid-producing rock                                                                                              | NO                                                                                                       |                                           |
| Release of waste directly to groundwater                                                                                        | NO                                                                                                       |                                           |
| Release of contaminants indirectly to groundwater                                                                               | NO                                                                                                       |                                           |
| <b>General Information</b>                                                                                                      |                                                                                                          |                                           |
| Subject Land                                                                                                                    | YES                                                                                                      | Section 2                                 |
| Description of the site, including site maps showing vegetation, topography and any areas of cultural or heritage significance) | YES                                                                                                      | Section 2                                 |

|                                                                                                                                                                                                                                                        |                                                                                     |                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------|
| Description of the receiving environment, including maps showing surrounding land uses                                                                                                                                                                 | YES                                                                                 | Section 2                                 |
| Details of the distance to any watercourse, dam, bore or other water on, adjoining or near the premises                                                                                                                                                | YES                                                                                 | Section 2                                 |
| Details of any known acid sulphate soils within or adjoining the premises                                                                                                                                                                              | Not applicable                                                                      |                                           |
| <b>Proposed ERA</b>                                                                                                                                                                                                                                    |                                                                                     |                                           |
| A description of the activity, including proposed operation, discharge points, operating hours and process details                                                                                                                                     | YES                                                                                 | Section 3                                 |
| Details about how the activity achieves best practice environmental management, including technology used, management approach, environmental management plans, and monitoring                                                                         | YES                                                                                 | Sections 3 & 4                            |
| Details of the proposed release of any contaminant or emission to air, land or water and the impacts on the receiving environment, including how the activity conforms with the management hierarchy in the Environmental Protection (Air) Policy 2008 | YES                                                                                 | Sections 3.6 – 3.11                       |
| Details of stormwater runoff management and disposal, including stormwater management plans and how the activity conforms with the management hierarchy in the Environmental Protection (Water) Policy 2009                                            | YES                                                                                 | Section 3.10, 4.2<br>Stormwater Emissions |
| Details of waste produced, including solid and liquid waste (including trade waste) and how the activity conforms with the management hierarchy in the Environmental Protection (Waste Management) Policy 2000                                         | YES – Waste will be minimal general waste from personnel onsite                     | Section 4.3                               |
| Details of management of noise impacts on the surrounding environment, including how the activity conforms with the management hierarchy in the Environmental Protection (Noise) Policy 2008                                                           | YES                                                                                 | Section 3.11                              |
| Details on the quantity and type of greenhouse gases released and measures proposed to minimise emissions                                                                                                                                              | YES – The site will not generate significant quantities of greenhouse gas emissions | Section 3.14                              |
| Details of any flammable and combustible materials, chemicals or other hazardous substances proposed to be stored on the premises                                                                                                                      | NO – Flammable, combustible, or hazardous materials will not be stored on site      |                                           |
| Summary of Environmental Values Likely to Affected                                                                                                                                                                                                     | YES                                                                                 | Section 6                                 |
| Detail of Emissions                                                                                                                                                                                                                                    | YES                                                                                 |                                           |
| Summary of Environmental Risk                                                                                                                                                                                                                          | YES                                                                                 | Section 6                                 |
| Summary of Environmental Management Practices                                                                                                                                                                                                          | YES                                                                                 |                                           |
| Summary of Site Rehabilitation                                                                                                                                                                                                                         | YES                                                                                 |                                           |

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## 1 Introduction

This environmental impact report has been prepared to support a site-specific application for an Environmental Authority for a prescribed ERA 16(2)(a) (the proposed ERA) on Lot 2 of A34925 located at Yarranlea and Murlaggan Road, Yarranlea. The report provides an assessment of the risks and potential impacts to environmental values of the site and surrounding land, and addresses the environmental objectives and performance outcomes relevant to ERA 16(2)(a).

Drawings for the activity are provided in Appendix A.

## 2 Site Description

The site is located in the south west corner of Lot 2 A34925 at 538 and 752 Yarranlea Road, Yarranlea, 50 km south west of Toowoomba, and falls within the Toowoomba Regional Council LGA. The footprint of the proposed ERA is a small portion of the land parcel, and will only take up 5.6ha within this Lot – the boundary of the proposed ERA is shown in Figure 1.

The site is situated within a highly modified agricultural landscape that has been historically cleared and altered for cropping. The topography of the site is generally flat, with a gentle slope towards the west. The environmental values associated with the site and the local landscape are discussed in detail in this report.



Figure 1 Site boundary for proposed ERA 16(2)(a)



The local area surrounding the project site is zoned as rural, and is predominantly used for agricultural activities, principally for cropping. The landscape is dominated by large fields, with scattered residential dwellings and isolated patches of vegetation. The nearest urban centre is Pittsworth, located 10 km east of the site.

A brief description of the surrounding land uses has been provided in Table 2 below.

**Table 2 - Surrounding Land Uses Summary**

|              |                                                                                                                                                                                                                                  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>East</b>  | Rural Lots – Zoned Rural, and utilised for cropping purposes with scattered residential and agricultural buildings with some dense vegetation in parts                                                                           |
| <b>West</b>  | Rural Lots – Zoned Rural, and utilised for cropping purposes with scattered residential and agricultural buildings with some scattered vegetation                                                                                |
| <b>North</b> | Rural Lots – Zoned Rural, and utilised for cropping purposes with scattered residential and agricultural buildings with some scattered vegetation                                                                                |
| <b>South</b> | Rural Lots – Zoned Rural, and utilised for cropping purposes with scattered residential and agricultural buildings with some scattered vegetation.<br>An electricity substation is approximately 1.6km south of the project site |

## 2.1 Existing Environmental Values

Due to historical modification of the landscape for agricultural purposes there are no environmental values within the boundary of the site of the proposed ERA. There are minimal mapped values in the vicinity of the site, which will not be impacted on during the extraction activity. Figure 2 below shows the location of significant environmental values in the vicinity of the site (red), which will be discussed in detail in this section of the report. These include: a watercourse mapped on the Watercourse Vegetation Management Map to the north of the site, Category B (Remnant Vegetation) to the south of the site, and a registered bore to the east.



**Figure 2 Site location (red) with nearby environmental receptors in the surrounding landscape: watercourse mapped to the north, Category B vegetation to the south, registered bore to the east**

#### 2.1.1 Sensitive Receptors

There are two residential dwellings located within 1,000m of the site boundary for the proposed ERA. The closest is approximately 370m to the east of the boundary, which has been approved for demolition by the Toowoomba Regional Council (5.05.17), and will be unoccupied by the time activities commence. The second is approximately 840m to the south west of the boundary of the site, and is situated behind a stand of vegetation. The resident at this location has been extensively consulted in relation to the proposed Yarranlea Solar Farm that is to be developed in this area, and will be communicated with throughout the extractive activities to ensure that management of noise from the activity is adequate to maintain acoustic quality.

There are no schools, community facilities, or major hazard facilities within 1km of the site.

#### 2.1.2 Matters of State Environmental Significance

A report on the Matters of State Environment Significance (MSES) for Lot 2 A34925 was requested from the Department of Environment and Heritage Protection website (11.05.17), and can be found in Appendix B. The only MSES that occur in the vicinity of the proposed ERA is a Watercourse on the Vegetation Management Watercourse Map. This is located approximately 120m north west of the site boundary, and has and has been significantly modified due to historical agricultural practices on the site. Additionally, as there is no mapped RE within 25m of the watercourse, it is not considered to be a trigger for MSES.

#### 2.1.3 Land

The local area is mostly covered by grey or dark grey cracking clays with trace amounts of small gravel and a thin veneer of sand and silt at the surface. Waco soils cover the site area, which are a dark brown cracking clays subject to shrink-swell behaviour.

The area is not prone to Acid Sulfate Soils, and there are no known contaminated soils on the site.

#### 2.1.4 Flora and Fauna

The site is located within a highly modified agricultural landscape, where native vegetation exists as small isolated patches within paddocks or linear strips within road reserves.

There is no regulated vegetation on, or immediately adjacent to the location of the proposed ERA. There is a small patch of Category B vegetation approximately 426m to the south of the site, and minimal Category X vegetation within the road reserve adjacent to the site, but there are no risks associated with impacts to this vegetation from the proposed ERA.

Due to the highly disturbed nature of the site and the lack of connected vegetation, the existing habitat is in poor condition for supporting native fauna. A number of common birds that are adapted to highly modified landscapes may be present in the area, as well as common skinks or snakes which frequent cropping lands.

A review of MSES has determined that there is no essential habitat or koala bushland habitat.

There is some potential for the significant species in Table 3 to use road reserve vegetation south of the site, but there will be no impacts to this vegetation.

Table 3 – Likelihood of significant fauna near site

| Species                                                             | QLD                   | EPBC           | Likelihood of Occurrence                                                                          |
|---------------------------------------------------------------------|-----------------------|----------------|---------------------------------------------------------------------------------------------------|
| Condamine Earless Dragon<br>( <i>Tympanocryptis condaminensis</i> ) | Endangered            | Not yet listed | High likelihood – known to inhabit cropping lands, and native grasslands in road reserves         |
| Five-clawed Worm-skink<br>( <i>Anomalopus mackayi</i> )             | Endangered            | Vulnerable     | Moderate likelihood – unlikely to occur on site due to disturbance, but may inhabit road reserves |
| Grey-headed flying fox<br>( <i>Pteropus poliocephalus</i> )         | Least Concern         | Vulnerable     | Low likelihood – highly mobile species and may forage around site when eucalypts are in flower    |
| Short-beaked Echidna<br>( <i>Tachyglossus aculeatus</i> )           | Special Least Concern | -              | High likelihood – echidnas are common in the region                                               |

#### 2.1.5 Water

There is one mapped watercourse approximately 120m to the north west of the site as shown in Figure 2. A Stormwater Management Report (Appendix C) has been conducted by icubed consulting for this area, and it has been determined that due to historical agricultural practices this waterway has been significantly altered and acts only as a drainage channel. There will be no disturbance to this watercourse from the proposed ERA.

Topography of the site is generally flat, with stormwater draining with the contours of the land from east to west. Natural drainage lines surrounding the site have been altered as a result of the agricultural practices, and as such the extent of flooding is low.

A Geotechnical Assessment conducted by Morrison Geotechnic (Appendix C) observed no groundwater or groundwater seepages into any of the 5 boreholes they drilled on Lot 2 A34925, which ranged from a 2.7 m to 4.5 m termination depth. There is one existing bore (RN 30899) approximately 150m to the east of the site boundary (Figure 2), which was drilled in 1968. The report from this bore identifies the aquifer being 30m below ground level. There will be no impacts on groundwater.

## 2.2 Site Operations

The extraction works are associated with the construction of a private rural ring tank, which approval has been granted for through Department Natural Resources and Mines and Toowoomba Regional Council. Approximately 80,000 tonnes of select fill is expected to be removed from the site as a part of the earthworks for the ring tank, which is the subject of the proposed ERA. Material will be used for subgrade improvement of access tracks, a new substation yard, and a temporary construction compound associated with Stage 1 of the Yarranlea Solar Farm, which is approved for development on the following land parcels: Lot 2 RP7475, Lot 2 RP18249, Lot 3347 A341649, and Lot 2 A34925.

The proposed ERA will only be undertaken to the extent of levelling required for the design of the proposed ring tank, as identified in this application. After these levels have been reached the extractive operations will cease, and will not resume. Drawing number D-D0301 in Appendix A shows the area of the site where excavation works will be undertaken under this ERA.

No screening of materials as defined under the *Environmental Protection Regulation 2008* will be undertaken, and as such there will be no trigger for an ERA 16(3)(a).

The site will be operational from 6.30am to 6.30pm Monday to Saturday. No operations are expected to occur on Sundays or Public Holidays.

## 2.3 Site History

The site of the proposed ERA is located in a rural area that has historically been used for agricultural purposes, primarily cropping, and as such has been extensively cleared and modified. There are no environmentally significant values within the site footprint, and management measures as detailed below will ensure no negative impacts to any surrounding values.

### 2.3.1 Environmental Complaints and Incidents

There is no history of environmental complaints or significant environmental events on the site.

## 3 Description of Operations & Environmental Impacts

The proposed ERA will involve extraction of an estimated 80,000 tonnes of select fill material from the site using scrapers and excavators. No blasting will be required, and there will be no screening undertaken on site as per the definition in the *Environmental Protection Regulation 2008*. The extracted material is to be used on Lot 2 A34925, and surrounding land parcels Lot 2 RP7475, Lot 2 RP18249, and Lot 3347 A341649. Material will be stockpiled temporarily before being used for subgrade improvements. Where material is stockpiled, it will be managed using erosion and sediment control measures to mitigate sedimentation to stormwater and dust emissions to the air.

### 3.1 Existing Approvals

- Approval for development of tail drain, low mounds, and a sump and pumped ring tank storage for capture of contaminated agricultural runoff
- Approval for development of a solar farm and associated infrastructure

### 3.2 Proposed Plant

The following plant will be used as a part of the operations:

- Mobile excavation equipment;
- Scrapers;
- Trucks including B-Doubles.

### 3.3 Proposed Operations

The following operations are undertaken on site:

- Excavation of select fill;
- Temporary stockpiling in preparation for loading to vehicles;
- Vehicle Loading;
- Movement of material for use on surrounding land parcels.

### 3.4 Waste

There will be minimal waste generated from the proposed ERA. General waste associated with the works will be managed in accordance with the waste and resource management hierarchy under the *Waste Reduction and Recycling Act 2011*, and any waste requiring disposal will be done so off-site at a lawful point.

No hazardous waste will be produced from the activity.



### 3.5 Emissions to Air

There will be no DEHP licensed emission points to air, and the proposed ERA will not result in any emission points or discharge points to air. Emissions to air will occur from operational excavation equipment and movement of vehicles, and will consist primarily of diesel exhaust fumes and dust. No blasting or screening will occur as a part of site operations.

Fumes from vehicles and equipment will be minimal given the size of the site. All machinery will be well-maintained to reduce emissions, which will rapidly dissipate and not have any significant impact on air quality.

Dust suppression measures will be used to manage stockpiled material and any unsealed areas that vehicles use. Ground cover vegetation will be left as long as possible before works commence.

The level and intensity of the operations will not materially impact on the existing air quality in the vicinity of the site.

### 3.6 Odour

There is a potential for insignificant odour from diesel exhaust emissions. There will be no impacts from these emissions on the environment or human health and well-being as all operations are well separated from sensitive receptors.

Localised odour from 'sour dirt' may be experienced, but is unlikely based on the soils of the area. Any such odour impacts are expected to be localised and would persist for only short periods.

### 3.7 Emissions to Ground

There will be no emissions to ground.

### 3.8 Emissions to Stormwater

There is a minor potential risk for the contamination of stormwater runoff with suspended particulate matter from soil disturbance and unsealed areas. This is expected to be minimal, a managed as per a stormwater management plan.

### 3.9 Noise

The site will be operational from 6.30am to 6.30pm Monday to Saturday. No operations are expected to occur on Sundays or Public Holidays. Noise from the site will be limited to vehicle movements and operation of excavation equipment, and no blasting is planned.

The closest sensitive receptor is the residential dwelling located approximately 840m to the south west of the site boundary, and situated behind vegetation. Noise from the activity will not be above the Acoustic Quality Objectives as per the *Environmental Protection (Noise) Policy 2008* at this receptor. Communication will be maintained with the owner of this property as a measure of monitoring potential noise concerns.

### 3.10 Fugitive Emissions

No fugitive emissions are expected from the site.

### 3.11 Flora & Fauna Impacts

Due to the highly disturbed nature of the landscape, there is presently no native vegetation on the site. There are small patches of vegetation within the road reserve along Yarranlea Road in the vicinity of the site that will not be impacted by the ERA. Concurrently, an Ecological Assessment conducted by Ecology and Heritage Partners has determined that fauna is unlikely to use the site.

### 3.12 Acid Sulfate Soils

There are no Acid Sulfate Soils on the site.

### 3.13 Greenhouse Gas Emissions

The primary source of greenhouse gas emissions on the site is from excavation equipment and vehicles.

### 3.14 Flammable and Combustible Liquids

No flammable or combustible liquids will be stored on site.

## 4 Operational Management

Details of operational management are listed below.

### 4.1 Responsibilities

Environmental responsibility for managing the site will rest with the site manager.

### 4.2 Stormwater Management

While extractive activities are taking place, erosion and sediment controls will be put into place where required to ensure no sediment or material from disturbed land can enter stormwater run-off. Additionally, as the proposed ERA is part of development works to capture contaminated agricultural run-off from the property, any stormwater that is contaminated with suspended solids from the ERA will be captured, treated, and re-used for irrigation.

Material will only be stockpiled for short periods, and will have erosion and sediment controls in place to prevent sediment movement.

### 4.3 Waste Management

Wastes from the site are expected to be negligible. Where waste is generated it will be stored in a dedicated area on site and periodically disposed of at the nearest waste transfer station.

## 5 Environmental Monitoring and Review

The storage and distribution operations have only minor environmental impacts with few if any significant discharges or emissions to the environment. The primary environmental controls are physical engineering controls that will be maintained to reduce impacts on the receiving environment.

The following environmental monitoring is recommended for the proposed operations:

- General day-to-day monitoring by all personnel onsite
- Periodic inspection (weekly) of sediment and erosion control devices



## 6 Summary of Environmental Risk

A review of environmental risks has been undertaken and a summary of risks is presented in the site aspects and impacts register reproduced in Figure 3 below.

| Yarranlea ERA16(2)(a) Extractive Works Lot 2 on A34925, Yarranlea Road |                                    |                                                                     | Aspects and Impacts Review |            |        |                                                                                               |               |            |      |
|------------------------------------------------------------------------|------------------------------------|---------------------------------------------------------------------|----------------------------|------------|--------|-----------------------------------------------------------------------------------------------|---------------|------------|------|
| Aspect                                                                 | Activity                           | Impacts                                                             | Inherent Risk              |            |        | Control Measures                                                                              | Residual Risk |            |      |
|                                                                        |                                    |                                                                     | Consequence                | Likelihood | Risk   |                                                                                               | Consequence   | Likelihood | Risk |
| Air                                                                    | Vehicle Movements                  | Dust                                                                | A                          | 1          | LOW    | Gravel tracks treated with a dust suppressant where required, and speed limited               | A             | 1          | LOW  |
|                                                                        | Vehicle Movements                  | Fumes/emissions                                                     | A                          | 1          | LOW    | Regularly maintain vehicles and machinery to minimise potential of fumes                      | A             | 1          | LOW  |
|                                                                        | Earthworks                         | Odour from sour-dirt                                                | A                          | 2          | LOW    |                                                                                               | A             | 2          | LOW  |
|                                                                        | Earthworks                         | Dust from exposed soils                                             | B                          | 1          | MEDIUM | Water trucks to be used to manage dust as required, exposed areas vegetated where practicable | B             | 2          | LOW  |
| Water                                                                  | Stormwater Runoff                  | Erosion/Sedimentation                                               | B                          | 1          | MEDIUM | Erosion and sediment control measures                                                         | B             | 2          | LOW  |
|                                                                        | Chemical Spill/Loss of Containment | Diesel/fuel spill to local soil - minor localised clean up required | B                          | 2          | LOW    | Clean/dispose of soil as required                                                             | B             | 2          | LOW  |
| Noise                                                                  | Vehicle Movements and Equipment    | Local nuisance                                                      | A                          | 1          | LOW    | Construction hours restricted to minimise residential nuisance                                | A             | 1          | LOW  |
|                                                                        | Vehicle Alarms/Movement Alarms     | Local nuisance                                                      | A                          | 1          | LOW    | Construction hours restricted to minimise residential nuisance                                | A             | 1          | LOW  |
| Waste                                                                  | General Waste                      | Pollution                                                           | A                          | 1          | LOW    | Training and awareness                                                                        | A             | 1          | LOW  |
| Flora and Fauna                                                        | Vehicle Movements                  | Animal collision                                                    | B                          | 2          | LOW    | Training and awareness                                                                        | B             | 2          | LOW  |
| Land/Ground                                                            | Chemical Spill/Loss of containment | Diesel/fuel spill to local soil - minor localised clean up required | B                          | 2          | LOW    | Clean/dispose of soil as required                                                             | B             | 2          | LOW  |
|                                                                        | Vehicle Movements                  | Soils/sediments tracked off site                                    | B                          | 1          | MEDIUM | Shakedown pads/soil traps as required                                                         | A             | 1          | LOW  |

Figure 3: Aspects and Impacts Review

## 7 Environmental Management Practices

The site operations are primarily one of bulk earthworks. The main environmental practices to be used on the site rely on prevention for the movement off-site of sediments and to minimise erosion. To that end, the effective operation of these controls can be ensured through regular inspection and maintenance as required.

## 8 Policy Review

The following table addresses the proposed development against the relevant Queensland Environmental Policies and the performance outcomes at detailed in Schedule 5, Table 3 of the Environmental Protection Regulation.

| AIR                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental Objective                                                                                                                                                                      | Response                                                                                                                                                                                                                                                                                                                     |
| The activity will be operated in a way that protects the environmental values of air.                                                                                                        | There will only be minor emissions to air from construction vehicles and trucks.                                                                                                                                                                                                                                             |
| Performance Outcomes                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                              |
| 1. There is no discharge to air of contaminants that may cause an adverse effect on the environment from the operation of the activity.                                                      | Discharges to air will only have minor effects on the environment and will rapidly dissipate.                                                                                                                                                                                                                                |
| 2. All of the following—<br>(a) fugitive emissions of contaminants from storage, handling and processing of materials and transporting materials within the site are prevented or minimised; | There will be no storage/handling or processing of materials and no fugitive emissions. Diesel and exhaust fumes will be released to the environment and will rapidly disperse. No other contaminants will be released to air.                                                                                               |
| (b) contingency measures will prevent or minimise adverse effects on the environment from unplanned emissions and shut down and start up emissions of contaminants to air; and               | The only emissions to air from site activities include diesel/exhaust fumes, and dust which will be controlled using dust suppression measures.                                                                                                                                                                              |
| (c) releases of contaminants to the atmosphere for dispersion will be managed to prevent or minimise adverse environmental values.                                                           | Diesel and exhaust fumes will be released to the environment and will rapidly disperse. No other contaminants will be released to air.                                                                                                                                                                                       |
| WATER                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                              |
| Environmental Objective                                                                                                                                                                      | Response                                                                                                                                                                                                                                                                                                                     |
| The activity will be operated in a way that protects environmental values of waters.                                                                                                         |                                                                                                                                                                                                                                                                                                                              |
| Performance Outcomes                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                              |
| 1. There is no actual or potential discharge to waters of contaminants that may cause an adverse effect on an environmental value from the operation of the activity.                        | There are no watercourses in the vicinity of the site. The only contaminants that could enter stormwater run-off are suspended solids. Erosion and sediment controls will be used as per water sensitive urban design principles, and the works the ERA is associated with will be designed to capture contaminated run-off. |
| 2. All of the following—<br>(a) the storage and handling of contaminants will                                                                                                                | No contaminants will be stored on the site.                                                                                                                                                                                                                                                                                  |

|                                                                                                                                                                                                                                                                                      |                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| include effective means of secondary containment to prevent or minimise releases to the environment from spillage or leaks;                                                                                                                                                          |                                                                                                                                                               |
| (b) contingency measures will prevent or minimise adverse effects on the environment due to unplanned releases or discharges of contaminants to water;                                                                                                                               | There are no releases associated with the operations.                                                                                                         |
| (c) the activity will be managed so that stormwater contaminated by the activity that may cause an adverse effect on an environmental value will not leave the site without prior treatment;                                                                                         | Any stormwater contaminated with suspended material will be captured, or will pass through control devices. There will be no impacts to environmental values. |
| (d) the disturbance of any acid sulfate soil, or potential acid sulfate soil, will be managed to prevent or minimise adverse effects on environmental values;                                                                                                                        | There are no Acid Sulfate Soils on the site.                                                                                                                  |
| (e) acid producing rock will be managed to ensure that the production and release of acidic waste is prevented or minimised, including impacts during operation and after the environmental authority has been surrendered;                                                          | There are no Acid Sulfate Soils on the site.                                                                                                                  |
| (f) any discharge to water or a watercourse or wetland will be managed so that there will be no adverse effects due to the altering of existing flow regimes for water or a watercourse or wetland;                                                                                  | There are no wetlands in the vicinity of the site. There will be no discharge to the mapped watercourse north of the site.                                    |
| (g) for a petroleum activity, the activity will be managed in a way that is consistent with the coal seam gas water management policy, including the prioritisation hierarchy for managing and using coal seam gas water and the prioritisation hierarchy for managing saline waste; | Not Applicable                                                                                                                                                |
| (h) the activity will be managed so that adverse effects on environmental values are prevented or minimised.                                                                                                                                                                         | The works are designed to minimise adverse impacts.                                                                                                           |
| <b>WETLANDS</b>                                                                                                                                                                                                                                                                      |                                                                                                                                                               |
| <b>Environmental Objective</b>                                                                                                                                                                                                                                                       | <b>Response</b>                                                                                                                                               |
| The activity will be operated in a way that protects the environmental values of wetlands                                                                                                                                                                                            | There are no wetlands in the vicinity of the site.                                                                                                            |
| <b>GROUNDWATER</b>                                                                                                                                                                                                                                                                   |                                                                                                                                                               |
| <b>Environmental Objective</b>                                                                                                                                                                                                                                                       | <b>Response</b>                                                                                                                                               |
| The activity will be operated in a way that protects the environmental values of groundwater and any associated surface ecological systems.                                                                                                                                          | No impacts on groundwater are expected.                                                                                                                       |
| <b>Performance Outcomes</b>                                                                                                                                                                                                                                                          |                                                                                                                                                               |
| 1. Both of the following apply—                                                                                                                                                                                                                                                      | There will be no releases of contaminants to                                                                                                                  |

|                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) there will be no direct or indirect release of contaminants to groundwater from the operation of the activity.                                                                                               | ground or groundwater.                                                                                                                                                                                                                                                                                                    |
| (b) there will be no actual or potential adverse effect on groundwater from the operation of the activity.                                                                                                       | No impacts on groundwater are expected.                                                                                                                                                                                                                                                                                   |
| 2. The activity will be managed to prevent or minimise adverse effects on groundwater or any associated surface ecological systems.                                                                              | There will be no releases of contaminants to ground or groundwater                                                                                                                                                                                                                                                        |
| <b>NOISE</b>                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                           |
| <b>Environmental Objective</b>                                                                                                                                                                                   | <b>Response</b>                                                                                                                                                                                                                                                                                                           |
| The activity will be operated in a way that protects the environmental values of the acoustic environment.                                                                                                       | The activity will not impact on acoustic quality of the area.                                                                                                                                                                                                                                                             |
| <b>Performance Outcomes</b>                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                           |
| 1. Sound from the activity is not audible at a sensitive receptor.                                                                                                                                               | The facility will only operate between the hours of 6.30am and 6.30pm Monday to Saturday. The nearest sensitive receptor is 840m from the site and situated behind vegetation. Noise from the activity will not be above the Acoustic Quality Objectives as per the <i>Environmental Protection (Noise) Policy 2008</i> . |
| 2. The release of sound to the environment from the activity is managed so that adverse effects on environmental values including health and wellbeing and sensitive ecosystems are prevented or minimised.      | The facility will only operate between the hours of 6.30am and 6.30pm Monday to Saturday to minimise any potential impacts including health and wellbeing. No noise-sensitive ecosystems have been identified in the vicinity of the site.                                                                                |
| <b>WASTE</b>                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                           |
| <b>Environmental Objective</b>                                                                                                                                                                                   | <b>Response</b>                                                                                                                                                                                                                                                                                                           |
| Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.                                                                   | The site will generate minimal waste – there are no defined waste streams.                                                                                                                                                                                                                                                |
| <b>Performance Outcomes</b>                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                           |
| 1. Both of the following apply—<br>(a) waste generated, transported or received is managed in accordance with the waste and resource management hierarchy in the <i>Waste Reduction and Recycling Act 2011</i> ; | Minimal waste is expected from the operations. General waste will be managed in accordance with the waste management hierarchy in the <i>Waste Reduction and Recycling Act 2011</i> .                                                                                                                                     |
| (b) if waste is disposed of, it is disposed of in a way that prevents or minimises adverse effects on environmental values.                                                                                      | Any waste to be disposed of will be done so off-site at a lawful point.                                                                                                                                                                                                                                                   |
| <b>LAND</b>                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                           |
| <b>Environmental Objective</b>                                                                                                                                                                                   | <b>Response</b>                                                                                                                                                                                                                                                                                                           |
| The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and                                                                   | Operations are for the purpose of constructing an approved rural ring tank. There will be no impacts to the land beyond what is required to achieve                                                                                                                                                                       |

|                                                                                                                                                                                                                                                               |                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fauna.                                                                                                                                                                                                                                                        | this. No flora or fauna will be negatively impacted.                                                                                                                                                     |
| <b>Performance Outcomes</b>                                                                                                                                                                                                                                   |                                                                                                                                                                                                          |
| 1. There is no actual or potential disturbance or adverse effect to the environmental values of land as part of carrying out the activity.                                                                                                                    | There will be no disturbance to the land other than the extraction of materials within the scope of the proposed ERA.                                                                                    |
| 2. All of the following—<br>(a) activities that disturb land, soils, subsoils, landforms and associated flora and fauna will be managed in a way that prevents or minimises adverse effects on the environmental values of land;                              | Operations are for the purpose of constructing an approved rural ring tank. There will be no impacts to the land beyond what is required to achieve this. No flora or fauna will be negatively impacted. |
| (b) areas disturbed will be rehabilitated or restored to achieve sites that are—<br>(i) safe to humans and wildlife; and<br>(ii) non-polluting; and<br>(iii) stable; and<br>(iv) able to sustain an appropriate land use after rehabilitation or restoration; | No rehabilitation is planned as the future site use is as a rural ring tank.                                                                                                                             |
| (c) the activity will be managed to prevent or minimise adverse effects on the environmental values of land due to unplanned releases or discharges, including spills and leaks of contaminants;                                                              | No contaminant will be stored or handled on the site. A spill could only be from fuel or diesel, and would be localised and cleaned up immediately.                                                      |
| (d) the application of water or waste to the land is sustainable and is managed to prevent or minimise adverse effects on the composition or structure of soils and subsoils.                                                                                 | The only application of water to land will be to manage dust emissions.                                                                                                                                  |

## 9 Site Rehabilitation

At the completion of the ERA extraction operations the site will be utilised as a private rural ring tank, and no further rehabilitation will be required.

## 10 Summary

The proposed ERA 16(2)(a) will be operated as a part of the construction of a rural ring tank on Lot 2 A34925 at 538 and 752 Yarranlea Road, Yarranlea. The proposed ERA will only operate on a small portion of the south west corner of this Lot, and will have minimal impact on the surrounding environment.

The key points from this report are outlined below:

- site and surrounding landscape has historically been highly modified to support agricultural uses, primarily cropping;
- impacts to the environment will be negligible;
- control measures will be used in accordance with best practice to mitigate dust to the air, and sediment in stormwater run-off;
- waste will be minimal, and will be managed according to the waste and resource management hierarchy;
- no hazardous materials will be stored on site.

The only significant environmental values in the vicinity of the site are a watercourse mapped on the Watercourse Vegetation Management Map 120m to the north of the site, Category B (Remnant Vegetation) 426m to the south of the site, and a registered bore 150m to the east. There are no significant environmental values within the site boundary of the extraction activity.

There are only low risks to environmental values in the vicinity of the site, which will be managed carefully using best practice and appropriate controls. These management activities include: dust suppression techniques to mitigate impacts to air quality, erosion and sediment controls to mitigate impacts to surrounding land from sediments entering stormwater run-off, and maintenance of all equipment and vehicles to reduce emissions.





## Appendix A – Site Drawings

Published on DES Disclosure Log  
RTI Act 2009

## Appendix B – Maps



21 September 2017

**DEPARTMENT OF ENVIRONMENT AND HERITAGE PROTECTION  
GPO BOX 2454  
BRISBANE, QLD 4001**

**icubed consulting**  
innovation ingenuity inspiration  
ABN 89 106 675 156

Dear Sir/Madam,

**RE ERA APPLICATION FOR ERA16 (2) (A) EXTRACTIVE ACTIVITIES OVER LAND AT 752  
MURLAGGAN ROAD, YARRANLEA, COMMONLY DESCRIBED AS LOT 2 A34925.**

On behalf of Yarranlea Solar Pty Ltd, please find enclosed our application for an ERA permit to utilise the above described land for Extractive Activities under ERA16(2)(A) of the *Environmental Protection Regulation 2008*.

The applicant proposes to extract less than 100,000 tonnes of material from the abovementioned site (approximately 63,000t). The material will be extracted as a result of constructing a rural ring tank (dam) on land located on Lot 2 A34925, which once completed will operate as a method of capturing stormwater runoff from the landholder's property. The dam (operational works – taking of overland flow – contaminated agricultural runoff) was approved by the Department of Infrastructure, Local Government and Planning on the 8<sup>th</sup> of September 2017 under Section 63 of the *Planning Act 2016* (Reference: 1708-906 SDA).

It can be noted that the subject site is utilised for cropping activities which is deemed 'accepted development' against the Toowoomba Regional Council Planning Scheme 2017 (Version 17). This being the case, a material change of use approval is not required for this activity, along with the creation of the dam which will support this activity.

A Suitable Operator License for Yarranlea Solar Pty Ltd was approved by the Department of Environment and Heritage Protection (Reference: RSO001250) on the 16<sup>th</sup> of May, 2017, against Section 318 of the *Environmental Protection Act 1994*.

Given the above, we seek an ERA 16 (2) (A) permit for Extractive Activities, which includes the following documentation for your assessment;

- EA Application Form;
- Environmental Risk Assessment prepared by i<sup>3</sup> consulting;
- Suitable Operator Approval (Reference: RSO001250);
- Proposed Plans of Development prepared by RMA Engineers;
- DILGP Approval (Reference: 1708-906 SDA);
- Contaminated Land Register and Environmental Management Register Results; and
- Assessment against State Code 22 – Environmentally Relevant Activities.

We also submit that the extraction of material will only occur once to allow for the creation of the dam for agricultural activities, with the material proposed to be transferred and utilised on Lot 3347 A341649, Lot 2 RP18249, or Lot 2 RP7475 which are all owned by the equivalent landowner as the subject site (Lot 2 A34925). This is considered to be customary work for farming activities, and thus, it is considered that there will be no impact upon neighboring landholders. We therefore request that the assessment of this application be fast-tracked.

Should you require any further information, please do not hesitate to contact us.

Yours faithfully,

s.73 irrelevant information

s.73 irrelevant information

**Cadet Town Planner**  
**i<sup>3</sup> consulting pty ltd**

leas

Queensland Government  
Dept of Environment & Heritage Protection

ABN: 46 640 294 485

## RECEIPT

Received from: Yarranlea Solar Pty Ltd  
ABN/Address: 2, 39 SDherwood Rd Toowong Qld 4066

No.: 4244232

| Description                                                          | Qty | Unit | Val | Extended | Discount | Ext Value | GST | Total Price |
|----------------------------------------------------------------------|-----|------|-----|----------|----------|-----------|-----|-------------|
| EA Application New ERA - AR104965 - 431063 1000384 - ERA FEE REVENUE |     |      |     |          |          | 5764.00   |     | 5764.00     |

|                |             |          |         |            |         |
|----------------|-------------|----------|---------|------------|---------|
| Date: 21/09/17 | Time: 15:07 | CHEQUE   | 5764.00 | Tot Value: | 5764.00 |
| Brch: epa400g  | SPer: gxw   |          |         | GST:       | 0.00    |
| CYC: 183734    | Reg: 90     | Tendered | 5764.00 | Tot Price: | 5764.00 |
|                |             |          |         | Tendered:  | 5764.00 |
|                |             |          |         | Change:    | 0.00    |

Cheques or other negotiable instruments accepted subject to clearance.

## Natasha Gouriev

**From:** PALM <palm@ehp.qld.gov.au>  
**Sent:** Thursday, 21 September 2017 12:40 PM  
**To:** 73 irrelevant information  
**Subject:** RE: AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

Good afternoon

The application number for this application is - AR104965.

Regards

Veronica Lightfoot



**Veronica Lightfoot**  
 Customer Service Officer  
**Customer Service Team I Regulatory Capability and Customer Service Branch**  
 Department of Environment and Heritage Protection

-----  
**Telephone:** 1300 130 372 (Select option 4) **Facsimile:** 07 3330 5875  
 400 George Street, Brisbane Q 4000  
 GPO Box 2454, Brisbane Q 4001

s.73 irrelevant information

**From:** 73 irrelevant information [mailto:3 irrelevant information@icubed.com.au]  
**Sent:** Thursday, 21 September 2017 11:47 AM  
**To:** PALM  
**Cc:** s.73 irrelevant information  
**Subject:** AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

Good Morning,

Please find attached our application for an ERA Permit to utilise land located at 752 Murlaggan Road, Yarranlea, commonly described as Lot 2 A34925, for Extractive Activities under ERA16(2)(A) of the Environmental Protection Regulation 2008, which includes the following documentation for your assessment;

- Cover Letter;
- Environmental Risk Assessment prepared by i3 consulting;
- Suitable Operator Approval (Reference: RSO001250);
- Proposed Plans of Development prepared by RMA Engineers;
- DILGP Approval (Reference: 1708-906 SDA);
- Contaminated Land Register and Environmental Management Register Results; and
- Assessment against State Code 22 – Environmentally Relevant Activities.

Please be advised that the relevant application fees will be paid via cheque. A copy of this cheque has been attached to this application for your records. If you could please provide a reference number for this application that would be greatly appreciated.

Should you have any queries or require any further information please do not hesitate to contact us.



Kind Regards,

s.73 irrelevant information

Cadet Town Planner

**i3 consulting pty ltd**  
**engineering consultants**  
 innovation ingenuity inspiration

Suite 2/ 39 Sherwood Road PO Box 878  
 TOOWONG QLD 4066 TOOWONG QLD 4066

p: 07 3870 8888

e: [irrelevant.inform@icubed.com.au](mailto:irrelevant.inform@icubed.com.au)

[www.icubed.com.au](http://www.icubed.com.au)

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# State code 22: Environmentally relevant activities

**Table 22.2.2: Material change of use**

| Performance outcomes                                                                                                                                                                                        | Acceptable outcomes                                                                                                                                    | Response                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All ERAs                                                                                                                                                                                                    |                                                                                                                                                        |                                                                                                                                                                                           |
| <b>PO1</b> Development is suitably located and designed to avoid or mitigate environmental harm to the acoustic environment.                                                                                | <b>AO1.1</b> Development meets the acoustic quality objectives for sensitive receptors identified in the Environmental Protection (Noise) Policy 2008. | <b>AO1.1 Complies</b><br><i>The proposed development can meet the acoustic quality objectives for sensitive receptors identified in the Environmental Protection (Noise) Policy 2008.</i> |
| <b>PO2</b> Development is suitably located and designed to avoid or mitigate environmental harm to the air environment.                                                                                     | <b>AO2.1</b> Development meets the air quality objectives of the Environmental Protection (Air) Policy 2008.                                           | <b>AO2.1 Complies</b><br><i>The proposed development can meet the air quality objectives for the Environmental Protection (Air) Policy 2008.</i>                                          |
| <b>PO3</b> Development, other than intensive animal industry for poultry farming, is suitably located and designed to avoid or mitigate environmental harm on adjacent sensitive land uses caused by odour. | No acceptable outcome is prescribed.                                                                                                                   | <b>PO3 Not Applicable</b><br><i>The proposed development is not located adjacent to a sensitive land use and is not deemed to create environmental harm caused by odour.</i>              |
| <b>PO4</b> Development is suitably located and designed to avoid or mitigate environmental harm to the receiving waters environment.                                                                        | <b>AO4.1</b> Development meets the management intent, water quality guidelines and objectives of the Environmental Protection (Water) Policy 2009.     | <b>AO4.1 Complies</b><br><i>The proposed development can meet the management intent, water quality guidelines and objectives of the Environmental Protection (Water) Policy 2009.</i>     |
| <b>PO5</b> Development is designed to include elements which:<br>1. prevent or minimise the production of                                                                                                   | No acceptable outcome is prescribed.                                                                                                                   | <b>PO5 Complies</b><br><i>The development is designed to include elements which prevent the production of</i>                                                                             |

State Development Assessment Provisions – version 2.1

State code 22: Environmentally relevant activities

Page 1 of 4

| Performance outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Acceptable outcomes                  | Response                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| hazardous contaminants and waste as by-products; or<br>2. contain and treat hazardous contaminants on-site rather than releasing them into the environment; and<br>3. provide secondary containment to prevent the accidental release of hazardous contaminants to the environment from spillage or leaks.                                                                                                                                                                                                                                                             |                                      | <i>hazardous contaminants and waste as by-products.</i>                                                                                                                                                                                                                                                                         |
| <b>PO6</b> Environmentally hazardous materials located on site are stored to avoid or minimise their release into the environment due to inundation during flood events.                                                                                                                                                                                                                                                                                                                                                                                               | No acceptable outcome is prescribed. | <b>PO6 Not Applicable</b><br><i>No environmentally hazardous materials form part of this application.</i>                                                                                                                                                                                                                       |
| All development – matters of environmental significance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                      |                                                                                                                                                                                                                                                                                                                                 |
| <b>PO7</b> Development:<br>1. avoids impacts on matters of state environmental significance; or<br>2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and<br>3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance.<br><br>Statutory note: For Brisbane core port land, an offset | No acceptable outcome is prescribed. | <b>PO7 Complies</b><br><i>The development avoids impacts on matters of state significance.</i><br><br><i>It should be noted that an exemption for clearing vegetation (protected plants) has been granted against Section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006 (EHP Reference: AR090069).</i> |

## State Development Assessment Provisions – version 2.1

### State code 22: Environmentally relevant activities

Page 2 of 4

| Performance outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Acceptable outcomes                                                                                                                           | Response                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <p>may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan. For the Brisbane Port LUP, see <a href="http://www.portbris.com.au">www.portbris.com.au</a>.</p> <p>Note: Guidance for determining if the development will have a significant residual impact on a matter of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state environmental significance and an offset is considered appropriate, the offset should be delivered in accordance with the <i>Environmental Offsets Act 2014</i>.</p> |                                                                                                                                               |                                                                                                                                               |
| Category C areas and category R areas of vegetation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                               |                                                                                                                                               |
| <p><b>PO8</b> Development:</p> <ol style="list-style-type: none"> <li>1. avoids impacts on category C areas of vegetation and category R areas of vegetation; or</li> <li>2. minimises and mitigates impacts on category C areas and category R areas of vegetation after demonstrating avoidance is not reasonably possible.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No acceptable outcome is prescribed.                                                                                                          | <p><b>PO8 Complies</b></p> <p><i>The development avoids impacts on Category C areas of vegetation and Category R areas of Vegetation.</i></p> |
| Intensive animal industry – poultry farming (ERA 4(2))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                               |                                                                                                                                               |
| <b>PO9</b> Poultry farming development (where farming more than 200,000 birds) is suitably located and designed to avoid or mitigate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>AO9.1</b> For poultry farming involving 300,000 birds or less, development meets the separation distances as determined using the S-factor | <p><b>AO9.1 Not Applicable</b></p> <p><i>No Poultry Farming ERA 4(2) is proposed as part of this application. This application seeks</i></p>  |

## State Development Assessment Provisions – version 2.1

### State code 22: Environmentally relevant activities

Page 3 of 4

| Performance outcomes                                                | Acceptable outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Response                                                                                                                                                                                                                          |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| environmental harm on adjacent sensitive land uses caused by odour. | methodology to:<br>1. a sensitive land use in a rural zone; and<br>2. boundary of a non-rural zone.<br>OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <i>approval for extractive activities under ERA 16(2)(A) of the Environmental Protection Act 2008.</i>                                                                                                                            |
|                                                                     | <b>AO9.2</b> Development meets the separation distances as determined by odour modelling using the following criteria:<br>1. 2.5 odour units, 99.5 percent, 1 hour average for a sensitive land use in a rural zone; or<br>2. 1.0 odour units, 99.5 percent, 1 hour average for the boundary of a non-rural zone.<br><br>Statutory note: Guidance for determining if the development will cause environmental harm caused by odour is provided in the Development of Meat Chicken Farms in Queensland, Department of Agriculture and Fisheries, 2016 and the Guideline – Odour Impact Assessment from Developments, Department of Environment and Heritage Protection, 2013. | <b>AO9.2 Not Applicable</b><br><i>No Poultry Farming ERA 4(2) is proposed as part of this application. This application seeks approval for extractive activities under ERA 16(2)(A) of the Environmental Protection Act 2008.</i> |

## ANICI Damian

---

**From:** SPELCHAN Daniel  
**Sent:** Wednesday, 23 January 2019 11:45 AM  
**To:** ELLIOTT Emmie  
**Subject:** FW: TOOWOOMBA FW: AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)  
**Attachments:** 15-282 - 20170921 - Copy of Cheque.pdf; 15-282 Environmental Assessment 20170511 v1.0.pdf; 15-282 20170920 State Code 22 - ERA.pdf; 15-282 Contaminated Land Register Results.pdf; 15-282 ERA Form v1.0.pdf; 15-282 RMA - Combined Plans.pdf; DILGP\_Decision - approval with conditions\_SAAL\_1708-906 SDA.pdf; Suitable Operator Approval.pdf; 15-282 20170918 Ltr to DEHP.pdf

Yes there is some information in the Toowoomba file. This was the original email sent by PALM which I think covers off on the query.

---

**From:** DAVIDSON Wes  
**Sent:** Tuesday, 26 September 2017 12:58 PM  
**To:** DAVIES Clare <Clare.Davies@ehp.qld.gov.au>  
**Subject:** FW: TOOWOOMBA FW: AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

Hi Clare,

As discussed another Site specific application for a quarry for a solar farm here in Toowoomba. Longer timeframes so can fit in around after your peak of IR returns... Sorry I meant to send this yesterday.

I think this one has me against it still in the Tracker, if you can change.

Thanks  
Wes

---

**From:** KHAN Tariq  
**Sent:** Thursday, 21 September 2017 4:16 PM  
**To:** DAVIDSON Wes <[Wes.Davidson@ehp.qld.gov.au](mailto:Wes.Davidson@ehp.qld.gov.au)>  
**Subject:** FW: TOOWOOMBA FW: AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

Wes  
Can your team please take this ERA 16 application.  
Thank you  
Tariq

---

**From:** Industry and Development Assessment  
**Sent:** Thursday, 21 September 2017 3:42 PM  
**To:** KHAN Tariq <[Tariq.Khan@ehp.qld.gov.au](mailto:Tariq.Khan@ehp.qld.gov.au)>  
**Subject:** FW: TOOWOOMBA FW: AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

Hi Tariq



Site specific application for ERA16. The cheque was received and receipted today. Please vote yes if the application is to be entered on Connect.

Thanks  
Fiona

---

**From:** PALM

**Sent:** Thursday, 21 September 2017 12:44 PM

**To:** Industry and Development Assessment <[IndustryandDevelopment.Assessment@ehp.qld.gov.au](mailto:IndustryandDevelopment.Assessment@ehp.qld.gov.au)>

**Cc:** KHAN Tariq <[Tariq.Khan@ehp.qld.gov.au](mailto:Tariq.Khan@ehp.qld.gov.au)>

**Subject:** TOOWOOMBA FW: AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

**NOTE: This application has NOT BEEN VALIDATED.**

**No hard copy**

An application has been received by the Customer Service Team (PaLM) and requires your assessment and processing.

**Date received: 21/9/2017**

**Application Type:** New Site-Specific

**Application Date:**

**Client:** Yarranlea Solar Pty Ltd

**Permit:**

**Receipt:**

A copy of the application is attached. Applicant has advised they are sending in a cheque for the payment of the application fee.

If you have any questions regarding this application please contact Veronica Lightfoot or send an email to [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

Regards

Veronica Lightfoot



**Veronica Lightfoot**

Customer Service Officer

Customer Service Team | Regulatory Capability and Customer Service Branch

Department of Environment and Heritage Protection

-----  
**Telephone:** 1300 130 372 (Select option 4) **Facsimile:** 07 3330 5875

400 George Street, Brisbane Q 4000

GPO Box 2454, Brisbane Q 4001

---

**From:** [REDACTED] s.73 irrelevant information @icubed.com.au]

**Sent:** Thursday, 21 September 2017 11:47 AM

**To:** PALM

**Cc:** [REDACTED] s.73 irrelevant information

**Subject:** AR104965 ERA16(2A) Application - 752 Murlaggan Road, Yarranlea - Lot 2 A34925 (i3:15-282)

Good Morning,

Please find attached our application for an ERA Permit to utilise land located at 752 Murlaggan Road, Yarranlea, commonly described as Lot 2 A34925, for Extractive Activities under ERA16(2)(A) of the Environmental Protection Regulation 2008, which includes the following documentation for your assessment;

- Cover Letter;
- Environmental Risk Assessment prepared by i3 consulting;

- Suitable Operator Approval (Reference: RSO001250);
- Proposed Plans of Development prepared by RMA Engineers;
- DILGP Approval (Reference: 1708-906 SDA);
- Contaminated Land Register and Environmental Management Register Results; and
- Assessment against State Code 22 – Environmentally Relevant Activities.

Please be advised that the relevant application fees will be paid via cheque. A copy of this cheque has been attached to this application for your records. If you could please provide a reference number for this application that would be greatly appreciated.

Should you have any queries or require any further information please do not hesitate to contact us.

Kind Regards,

s.73 irrelevant information

Cadet Town Planner

i3 consulting pty ltd  
engineering consultants  
innovation ingenuity inspiration

Suite 2/ 39 Sherwood Road PO Box 878  
TOOWONG QLD 4066 TOOWONG QLD 4066

p: 07 3870 8888

e: irrelevant information@icubed.com.au

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# Notice

## Environmental Protection Act 1994

### Decision on suitable operator application

This notice is issued by the chief executive pursuant to section 318I of the Environmental Protection Act 1994 to advise you of a decision on an application for registration as a suitable operator<sup>1</sup>.

YARRANLEA SOLAR PTY LTD  
PO Box 878  
TOOWONG DC QLD 4066

Email: mail@yarranleasolar.com.au

Our reference: RSO001250

#### Decision on suitable operator application

##### 1. Suitable operator application details

Your application to become a registered suitable operator was received by the chief executive on 16/05/2017.

##### 2. Decision

The chief executive has approved your application.

Your Suitable Operator Reference number is: RSO001250.

Now that you are a registered suitable operator, you will not need to re-apply for this registration when making an application for an environmental authority. However, you may be asked to quote your suitable operator reference number in correspondence or applications in relation to an environmental authority.

Your registered name, address and business number (if applicable) will be added to a register of suitable operators. This register will be made publicly available. You will remain listed on the register for five years after you cease to hold an environmental authority unless your registration is cancelled or suspended.

Should you have any questions about the notice, please contact Department of Environment and Heritage Protection on the details below.

Department of Environment and Heritage Protection  
www.ehp.qld.gov.au ABN 46 640 294 485  
Page 1 of 2 •



# Notice

s.73 irrelevant information

16th May, 2017

Date

Margaret Jones  
Delegate of chief executive  
Department of Environment and Heritage Protection  
*Environmental Protection Act 1994*

## Enquiries:

Permit and Licence Management  
Department of Environment and Heritage  
Protection  
GPO Box 2454 Brisbane QLD 4001  
Phone: 1300 130 372  
Fax: (07) 3330 5875  
Email: palm@ehp.qld.gov.au

<sup>1</sup> The Director General of the Department of Environment and Heritage Protection is the chief executive under the *Environmental Protection Act 1994*.

## ANICI Damian

**From:** [REDACTED]@ehpartners.com.au>  
**Sent:** Monday, 11 July 2016 12:09 PM  
**To:** HOWIE Roslyn  
**Cc:** [REDACTED] s.73 irrelevant information  
**Subject:** RE: Protected plant exemption Yarranlea solar  
**Attachments:** 8328\_EHP\_Yarranlea\_Solar\_EAR\_FINALv2\_17062016.pdf; Exempt Clearing Notification Form- Signed.pdf



Hi Roslyn,

Thanks for the information. I have amended the Exempt Clearing notice to show the correct Lot/Plan and have attached the tracklog of the flora survey that I completed within the high risk area and 100 m buffer. I have also included the same figure in the Ecological Assessment for completeness.

Please let me know if you have any further queries.

Kind regards

[REDACTED] Principal Ecologist | [REDACTED]

---

**From:** HOWIE Roslyn [mailto:Roslyn.Howie@ehp.qld.gov.au]  
**Sent:** Friday, 8 July 2016 11:58 AM  
**To:** [REDACTED]  
**Subject:** Protected plant exemption Yarranlea solar

Hi [REDACTED]

I'm writing to follow up on our conversation of yesterday afternoon concerning your exempt clearing notification for the Yarranlea solar project.

The following matters need to be addressed for us to be able to accept your notification:

- The exempt clearing notification form needs to be amended to correctly reflect those land parcels that are within a high risk area
- Please provide a map that shows the survey area as it relates to the portion of the lot categorised as 'high risk'. The map should clearly show the clearing impact area, the 100m buffer and the meander survey track log.

If you have any further questions, please contact me on 1300 130 372 (menu option 4).

Regards,

**Roslyn Howie**

Senior Administration Officer

Customer Service Team | Regulatory Capability and Customer Service

Department of Environment and Heritage Protection

Phone 1300 130 372 (menu option 4) Fax 07 3330 5875 email [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

Level 9 – 400 George Street BRISBANE QLD 4000

GPO Box 2454, BRISBANE QLD 4001

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-----



Final Report

# Ecological Assessment of the Proposed Yarranlea Solar Project, Yarranlea, Queensland

Prepared for

Yarranlea Solar Pty Ltd

June 2016



Ecology and Heritage Partners Pty Ltd

## ACKNOWLEDGEMENTS

---

We thank the following people for their contribution to the project:

- irrelevant inform<sup>13</sup> Consulting);
- Landowners for site access; and
- Department of Environment and Heritage Protection for biological database relevant for the project.

## DOCUMENT CONTROL

|                  |                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------|
| Assessment       | Ecological Assessment Report                                                                       |
| Address          | Lot 3347 on A341649, Lot 2 on RP18249, Lot 2 on RP7475, Lot 2 on A34925, Yarranlea Road, Yarranlea |
| Project number   | 7789                                                                                               |
| Project manager  | irrelevant inform (Principal Ecologist)                                                            |
| Report author(s) | irrelevant inform (Principal Ecologist)                                                            |
| Report reviewer  | irrelevant inform (Director / Principal Ecologist)                                                 |
| Mapping          | irrelevant inform (GIS)                                                                            |
| File name        | 7789_EHP_Yarranlea_Solar_EAR_FINAL                                                                 |
| Client           | Yarranlea Solar Pty Ltd                                                                            |
| Bioregion        | Brigalow Belt South                                                                                |
| Council          | Toowoomba Regional Council                                                                         |

| Report versions | Comments                                                           | Comments updated by | Date submitted |
|-----------------|--------------------------------------------------------------------|---------------------|----------------|
| Draft 1         | Internal draft                                                     | irrelevant inform   | 18/3/2016      |
| Draft 2         | Draft for review                                                   |                     | 30/3/2016      |
| Final           | Issued for use                                                     |                     | 12/4/2016      |
| Final 2         | Issued for use – included clearing of RE 11.9.5 and Belson's Panic |                     | 22/06/2016     |

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## GLOSSARY

| Acronym  | Description                                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------------|
| DNRM     | Queensland Department of Natural Resources and Mines                                                                |
| DEHP     | Queensland Department of Environment and Heritage Protection                                                        |
| EAR      | Ecological Assessment Report                                                                                        |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i>                                                |
| EO Act   | <i>Environmental Offsets Act 2014</i>                                                                               |
| EVNT     | Endangered, Vulnerable and Near Threatened. Relates to the classification of species under the NC Act and EPBC Act. |
| LP Act   | <i>Land Protection (Pest and Stock Route Management) Act 2002</i>                                                   |
| NC Act   | <i>Nature Conservation Act 1992</i>                                                                                 |
| NES      | National Environmental Significance                                                                                 |
| TRC      | Toowoomba Regional Council                                                                                          |
| RE       | Regional Ecosystem                                                                                                  |
| SES      | State Environmental Significance. Listed under the EO Act.                                                          |
| SMP      | Species Management Program under the NC Act.                                                                        |
| SPRP     | State Planning Regulatory Provisions                                                                                |
| TEC      | Threatened Ecological Community. Listed under the EPBC Act.                                                         |
| TPS      | Toowoomba Planning Scheme                                                                                           |
| VM Act   | <i>Vegetation Management Act 1999</i>                                                                               |

## SUMMARY

---

### Introduction

Ecology and Heritage Partners Pty Ltd was engaged by Yarranlea Solar Pty Ltd to conduct an Ecological Assessment Report (EAR) of a proposed solar utility farm (the proposed development) within several properties on Yarranlea Road, Yarranlea, Queensland. The purpose of the EAR is to provide a description of the existing environment within the properties and to identify any ecologically significant areas that may be impacted by the construction and operation of the proposed development.

The proposed development is located on rural land approximately 44 kilometres south-west of Toowoomba and 10 kilometres west of Pittsworth township. The study area is bound by Yarranlea Road to the west and rural properties to the north, east and south. The study area is located within intensive cropping areas on the fertile plains of the Condamine River Floodplain. This region has been farmed over a long period of time, which has resulted in the loss of much of the historical vegetation coverage. Remnant and regrowth vegetation exists in small patches on hills and rises in the east and along road reserves. The natural waterways within the study area have been cleared of riparian vegetation and exist as channelized drainage lines.

Yarranlea Solar is proposing to construct a Utility Scale Photovoltaic (PV) Solar farm. The PV Facility is estimated to generate up to 100 megawatts (MW) of energy and have an operational life of 30 years. The project will have a connection to the Queensland Electricity Market through an Ergon substation and will have on-site battery storage. The PV Facility is proposed to eventually cover up to 250 hectares of land and will be developed over four stages. The proposed development will be assessed under the Toowoomba Regional Planning Scheme.

### Methods

A desktop assessment and site inspection was completed by [irrelevant informa] (Principal Ecologist) to identify the vegetation communities and flora and fauna values (e.g. potential occurrence of threatened species) within the study area, and to confirm the vegetation mapping at the local and State government levels. The extent of the study area was inspected and the overall condition of vegetation and potential fauna habitat noted. A modified quaternary vegetation assessment was completed to assess the mapped remnant vegetation within the study area in terms of structure and dominant species and whether they were consistent with Regional Ecosystem (RE) types in the Regional Ecosystem Description Database. Given that a portion of the study area is mapped as a High Risk Area for protected plants on the flora survey trigger map, a survey in accordance with the Flora Survey Guidelines was completed. Several random meanders (Cropper 1993) were completed within the mapped area to search for significant flora species. Random meanders were also completed within other potential habitats.

The field assessment included a visual fauna assessment of the study area, with all observed fauna species recorded and the overall habitat condition noted. Birds and frogs vocalisations were noted, and searches were undertaken for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Habitat features, including ground cover and vegetation composition and structure, and the presence of hollows and fallen ground debris were also noted.

## Results

Desktop analysis of remnant native vegetation within the study area and surrounds showed a highly modified landscape with large areas cleared for agricultural purposes (predominately cropping), and residual, small, fragmented remnants of vegetation scattered throughout the landscape. One patch of remnant RE vegetation was identified within the study area and is mapped as regulated vegetation under the VM Act. This RE is sometimes included as in the Brigalow (*Acacia harpophylla* dominant and co-dominant) Threatened Ecological Community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, in this case the community is not consistent due to the absence of Brigalow.

One threatened flora species was detected within the study area (Belson's Panic *Homopholis belsonii*) which is listed as endangered under the Queensland *Nature Conservation Act 1992* and vulnerable under the EPBC Act. Twelve discrete patches were identified within the patch of RE 11.9.5 within the southern portion of study area, and one patch was identified adjacent to the eastern boundary of the study area within the Yarranlea-Murlaggan Road reserve. Each discrete patch covered an approximate area of several meters squared, and these areas were most often at the base of canopy trees and were in shaded areas created by shrubs.

Several significant flora and fauna species potentially occur within the study area, including Austral Cornflower, *Rhaponticum australe*, King Bluegrass *Dichanthium queenslandicum*, Condamine Earless Dragon *Tympanocryptis condaminensis*, Painted Honeyeater *Grantiella picta*, Five-clawed Worm-Skink *Anomalopus mackayi*, and Grey-headed Flying Fox *Pteropus poliocephalus*.

## Potential impacts and mitigation measures

The development is proposed over four stages and will involve complete coverage of the study area in solar PV panel arrays. The proposed development will result in the disturbance of cropped areas and the small patch of vegetation located within Stage 1. The removal of this vegetation will also result in the removal of the population of Belson's Panic. Vegetation along Yarranlea-Murlaggan Road will not be impacted, although a small number of remnant trees and other vegetation may be trimmed or cleared for duplication of the powerline along Yarranlea Road.

The removal of habitat for Belson's Panic has been assessed at the Queensland and Commonwealth levels. The removal of plants has been assessed as a significant impact under the relevant Queensland guidelines; however, the removal of plants is not a significant impact under the EPBC Act. This difference is primarily due to the different conservation status of the species under the NC Act (endangered) and EPBC Act (vulnerable).



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# 1 INTRODUCTION

---

## 1.1 Background

Ecology and Heritage Partners Pty Ltd was engaged by Yarranlea Solar Pty Ltd to undertake an Ecological Assessment of a proposed solar utility farm (the proposed development) within several properties on Yarranlea Road, Yarranlea, Queensland.

The purpose of the assessment is to provide a description of the existing environment within the properties and to identify any ecologically significant areas that may be impacted by the construction and operation of the proposed development. The proposed development is located within the Toowoomba Regional Council (TRC) area and will be assessed under the Toowoomba Regional Planning Scheme 2015. Planning Scheme Policy No. 1 – Development Application Requirements: Appendix 1 Preparation of Ecological Assessment report (ERA) identifies the requirements for EAR. Further information regarding the EAR structure is provided below (Section 2).

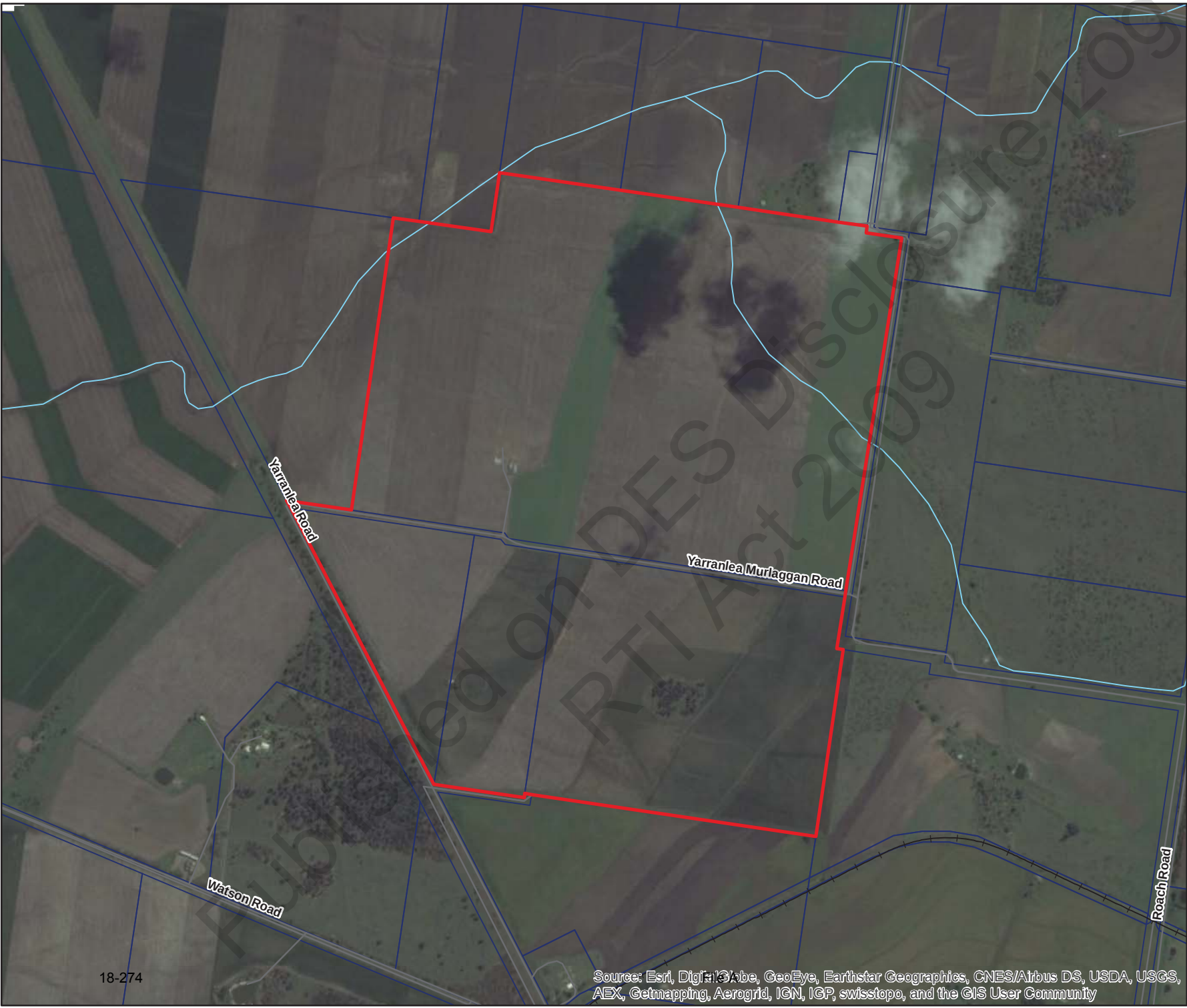
This report presents the results of the desktop and site assessment, and discusses the potential ecological and legislative implications associated with the proposed development. Several recommendations to avoid, minimise or mitigate impacts associated with the proposed development are provided (Section 5).

## 1.2 Study Area

The proposed development is located on rural land approximately 44 kilometres south-west of Toowoomba and 10 kilometres west of Pittsworth township (Figure 1). The study area is described as Lot 2 on RP7475, Lot 2 on RP18249, Lot 3347 on A341649 and part of Lot 2 on A34925 and is bound by Yarranlea Road to the west and rural properties to the north, east and south. A connection to an Ergon Substation on the corner of Yarranlea Road and the Millmerran Branch Rail Line is also required and will traverse Lot 2 on RP120604 to the south of the study area.

The study area is located within intensive cropping areas on the fertile plains of the Condamine River Floodplain, and is currently used to grow crops (e.g. sorghum), which is the primary land use across the broader region (i.e. historically been farmed). This has resulted in the loss of remnant native vegetation across the study area. However, remnant and regrowth vegetation exists in small patches on hills and rises in the east and along road reserves. Most natural waterways have been cleared of riparian vegetation and exist as channelized drainage lines. .

The study area is flat to gently sloping towards the west, and contains several buildings and infrastructure, including a homestead and sheds. A small patch of remnant native vegetation is located within the central southern portion of the study area.



**Legend**

- Study Area
- Roads and tracks
- Railway
- Minor watercourse
- Property boundaries



**Figure 1**  
**Location of Study Area**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*

N

0200400

Metres



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that they shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

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### 1.3 Proposed Development

Yarranlea Solar is proposing to construct a Utility Scale Photovoltaic (PV) Solar farm at Yarranlea. The PV Facility is estimated to generate up to 100 megawatts (MW) of energy and have an operational life of 30 years. The project will have a connection to the Queensland Electricity Market through an Ergon substation and may have on-site battery storage. The PV Facility is proposed to eventually cover up to 250 hectares of land and will be developed over four stages:

- Stage 1 – Installation of Solar PV panels to generate approximately 40MW over 100 ha. A Battery Storage Building, and Operations and Maintenance Building will also be constructed to support the operation. Connection to Ergon Substation will be completed at this stage via a new 1.5 kilometre powerline. Located in the southern half of the study area;
- Stage 2 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the north-east portion of the study area;
- Stage 3 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the northern portion of the study area; and
- Stage 4 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the north-western portion of the study area.

The proposed layout of the PV facility is shown below (Figure 2).

The PV Facility comprises several interlinked and integral components for the operation of the equipment and generation of electricity from solar radiation. These components include: solar modules, steel mounts for the modules, electrical transformers and inverters, electrical wiring, telecommunication equipment and electrical control enclosures. It is also likely that the PV Facility will include a battery/electrical storage enclosure, which would include batteries.

The panels utilised in the facility are similar to those used for domestic power generation purposes and will be supported on steel frames. The frames may operate under a solar tracking system to increase power generation through tracking the movement of the sun. An underground reticulation system will be used to collect the power to an internal substation which will transform the power voltage to 110 kV, compatible with the nearby Ergon Energy transmission infrastructure. Power will be connected to the grid, approximately 600m from the southern boundary of the development area using either an underground or overhead transmission line within the Yarranlea Road reserve and terminating at the existing Ergon Substation.

The solar panel arrays will be surrounded by informal grassed internal access ways which are designed to provide access to the inverter/transformer equipment pads located at the centre of the array blocks. A gravel access track shall be provided to the perimeter of the Stage 1 block and the block comprising Stages 2 to 4. This will act as a fire break and will be accessed from the western end of Yarranlea-Murlaggen Road. This track is proposed to be located inside of a 2.4 metre high chain wire security fence. Project site, substation, and other areas requiring controlled access will be appropriately restricted to private access during construction and operations.

The facility will be managed from a control building, located adjacent to the substation which will include formalised staff and visitor parking, and this will be accessed off Yarranlea-Murlaggen Road. The compound will also house an electrical switchroom and battery storage building. The access



driveway and parking will comprise a bitumen sealed surface. Permanent motion sensitive, directional security lights will also to be installed to provide adequate illumination around the substation area and points of ingress/egress. All lighting will be directed downward to minimise the potential for glare or spill-over onto adjacent properties. Lighting is proposed to be used from dusk to dawn once the facility is operational.

Stage 4 will require the removal of three existing farm buildings and these are to be replaced by a farm storage shed, located opposite the Operations and Maintenance facility on the northern side of Yarranlea-Murlaggen Road.

Appropriate landscaping is to be provided along the western boundary of the site, using native shrub species with a mature height of 4 – 5 metres, to assist in reducing any potential visual impacts of the PV Facility. The proposed landscaping treatment will be intensified in the vicinity of the Operations and Maintenance facility due to the taller structures which will be required in this part of the development.

The PV Facility has been designed in such a manner as to minimise the extent of civil works required to occur on the site. All existing overland drainage flow paths are intended to be maintained where practical so as to minimise the impact on the surrounding land uses. No formalised internal roads are envisaged to be provided between panels and the level of sealing required has been kept to a minimum. The existing soil will be retained and re-seeded with an appropriate blend of pasture grass and legume species, to provide vegetation coverage over the site. Grasses will be maintained through periodic slashing and potential grazing opportunities. Accordingly, it is intended that the facility will have minimal impact when decommissioned as the development components do not require substantial disturbance to the landscape.

#### *Construction Phase Schedule*

For each stage of the project, construction is to proceed in the manner outlined below. However, it should be noted that the Substation and 110 kV connection installation components will only occur as part of Stage 1, and will not be required in subsequent stages.

- Site Preparation, Substation and Grid Connection Installation (52 to 60 weeks in duration).
- Photovoltaic Panel System Installation (26 to 30 weeks in duration, beginning mid-way through the site preparation phase).
- Inverters, Transformers, and Electrical Collector System Installation (12 to 20 weeks, beginning mid-way through the PV System Installation Phase).

#### *Site Preparation, Substation and Grid Connection Installation*

A construction laydown area is to be established near the main site entrance and a second area to the east of the site, and equipment mobilised to the site. The site is then cleared, grubbed, graded, and compacted, with the on-site informal roadway system staked and established. Roads would be treated to create a durable, dust minimising surface to ensure minimisation of dust emissions, and security fencing would be installed around the site perimeter.

The substation facility would incorporate a number of concrete foundations for the electrical plant including the main transformer, Neutral Earth Transformer, Reactive Plant, Switchroom, Operations and Maintenance Building and Battery Storage Building. Following construction of these foundations,

the plant and structures would be installed in readiness for commissioning when the first of the PV modules have been installed in readiness for first power. During the construction of the substation facility the 110kV connection to the existing ergon substation will be installed as will the connection works by Ergon at the Yarranlea Substation. This 110kV line will be either direct buried underground, or alternately a traditional overhead line connecting the development to the existing Ergon Infrastructure.

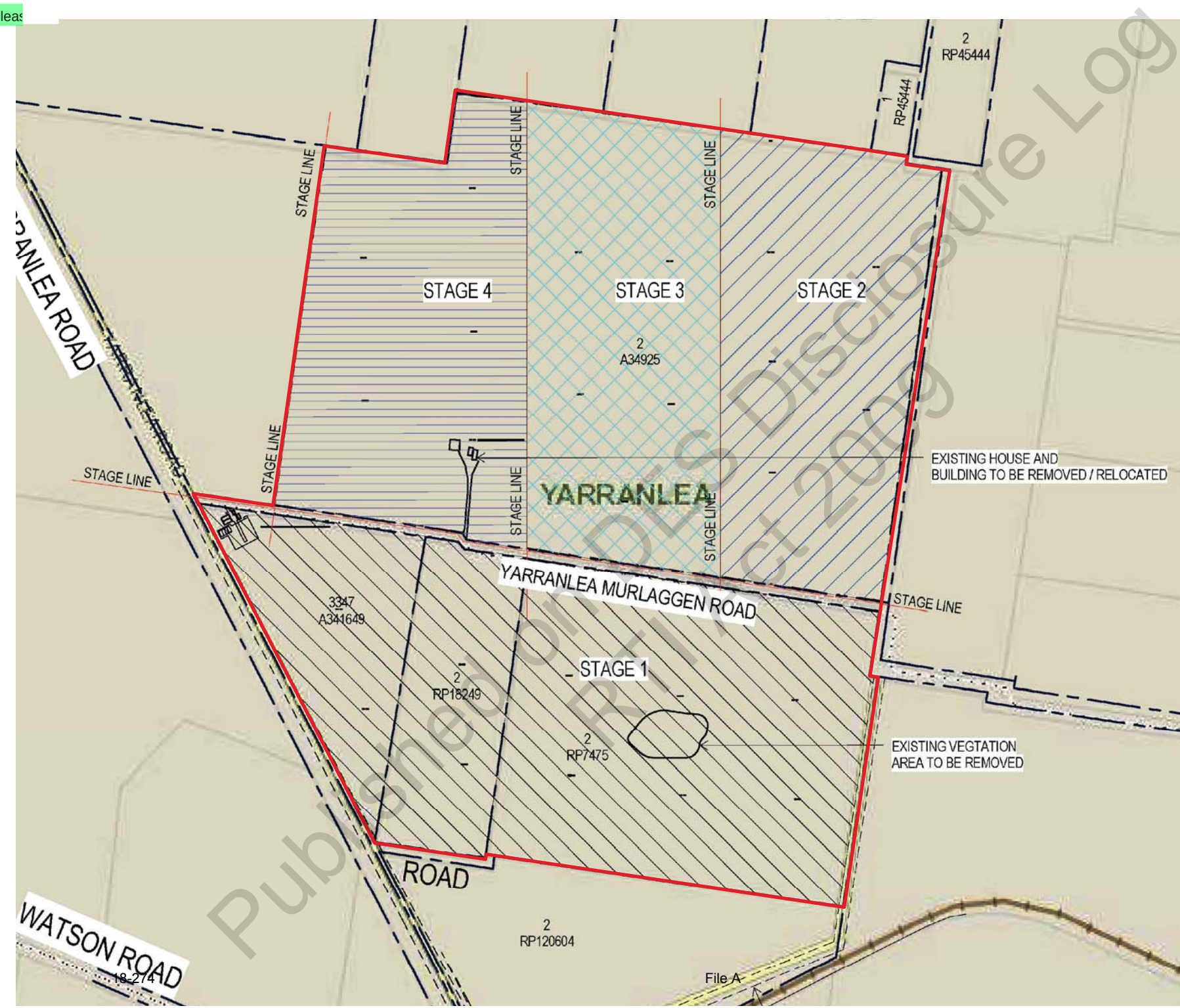
It is expected that the Site Preparation, Substation and Grid Connection Phase will require the use of heavy equipment including: bulldozers, water trucks, graders, flatbed trucks, skid steers, front end loaders, roller compactors, trenchers, backhoes, gravel trucks, water buffaloes, cranes, and aerial lifts. However, it should be noted that the design of the facility is such that, where possible and practicable, on-site levelling and grading will be minimised.

#### *Photovoltaic Panel System Installation*

Approximately 401,500 solar panels are to be installed in the development arranged in solar arrays consisting of linear strings of mounted modules organised into blocks of approximately two megawatts capacity. The solar panels are to be positioned 1.2 metres above ground level and mounted on monopole structures. These monopole structures are approximately 1.5 metres long and 1.5 metres high, and are connected in strings of 100 metres, with a seven metre gap between centres. The monopole structures will be supported on either steel screw piles, steel driven piles or FRP Composite Drive Piles, to a depth of between 2 – 3 metres below the existing ground surface level. These foundations will be readily removable at the end of life of the facility to enable the land to be restored to cultivated agricultural activities.

#### *Inverters, Transformers, and Electrical Collector System Installation*

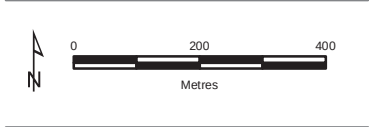
Each power block is to include a central skid mounted inverter/transformer station that will convert the direct current (DC) energy into grid-compatible alternating current (AC) energy. Foundations for the inverter stations shall be similar screw pile or driven pile technology to the solar panel supports and removable at the end of the life of the project. The Medium Voltage, (33kV), collector system will be installed by direct burying to a depth of 1.0 metre below ground level. At the end of the project the cable metals will be recovered for recycling.



**Legend**  
 Study Area



**Figure 2**  
**Proposed development layout**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*





## 1.4 Objectives

The objectives of the assessment follows the requirements for an EAR in Planning Scheme Policy 1 – Appendix 1, which includes:

- Describe the location and extent of the proposed study area;
- Describe the physical characteristics of the study area;
- Outline the existing use of the study area and any previous uses;
- Outline the existing environment of the study area, including areas of ecological significance;
- Provide an overview of the proposed project;
- Identify the potential impacts of the proposed project on the existing environment;
- Outline other planning scheme codes, overlays and policies which apply to the site;
- List references used in the desktop assessment; and
- Include appendices for any additional supporting information.

## 1.5 Legislation

This section identifies biodiversity policy and legislation relevant to the proposed development, principally:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth), administered by the Department of the Environment (DoE);
- *Nature Conservation Act 1992* (NC Act) (Queensland), administered by the Department of Environment and Heritage Protection (DEHP);
- *Vegetation Management Act 1999* (VM Act) (Queensland), administered by the Department of Natural Resources and Mines (DNRM);
- *Land Protection (Pest and Stock Route Management) Act 2002* (Queensland), administered by the Department of Agriculture and Fisheries (DAF);
- *Environmental Offsets Act 2014* (EO Act) (Queensland), administered by DEHP;
- *Water Act 2000* (Queensland), administered by DNRM; and
- Toowoomba Regional Planning Scheme 2015, administered by Toowoomba Regional Council (TRC).

Background information on the above is provided in Appendix 1.

## 2 METHODS

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This section identifies the methods used to identify the ecological values occurring or likely to occur within the study area.

### 2.1 Nomenclature

Common and scientific names of vascular plants follow the Queensland Herbarium Census of the Queensland Flora (Bostock and Holland 2010). The following sources were used for names of fauna species:

- Reptiles and Frogs – Cogger (2014) Reptiles and Amphibians of Australia. Seventh Edition;
- Birds – Christidis and Boles (2008) Systematics and Taxonomy of Australian Birds; and
- Mammals – Van Dyck and Strahan (2008) The Mammals of Australia. Third Edition.

### 2.2 Desktop Assessment

The following resources were reviewed prior to undertaking the field assessment:

- Queensland Herbarium Regional Ecosystem Description Database (REDD) version 9.0 – April 2015 (DEHP 2016a);
- Current Regional Ecosystem (RE) mapping (Queensland Herbarium 2016);
- Regulated Vegetation Management Map and essential habitat map (DNRM 2016) under the *Vegetation Management Act 1999* (VM Act);
- Protected Plants Flora Survey Trigger Map (DEHP 2016b);
- Relevant flora and fauna databases (Qld Herbarium HERBRECS, Queensland Museum, Wildlife Online [WildNet], Atlas of Living Australia and Birds Australia Atlas [1998-2008]);
- Commonwealth EPBC Act Protected Matters Search Tool (DoE 2016);
- Current aerial photography of the study area (Queensland Globe 2016);
- Toowoomba Regional Planning Scheme; and
- Relevant federal and state legislation and policies.

### 2.3 Field Assessment

A field assessment was conducted by **3 irrelevant informat** (Principal Ecologist, Ecology and Heritage Partners) on 16 February 2016 to identify the vegetation communities, and flora and fauna values (e.g. potential occurrence of significant species) within the study area, and to confirm the vegetation mapping at the local and State government levels. The entire the study area was assessed and the overall condition of vegetation and potential fauna habitat noted.

A modified quaternary vegetation assessment (Neldner *et al.* 2012) was completed to assess the mapped remnant vegetation within the study area in terms of structure and dominant species and whether they were consistent with RE types (Sattler and Williams 1999) in the Regional Ecosystem (RE) Description Database (REDD). A vegetation transect was completed within the mapped patch of RE 11.9.5, and this transect involved:

- Laying out a 50 metre tape measure (a 100 metre transect could not be completed due to the small size of the patch);
- Measure the distance that the tree or shrub cover intercepted the tape if the cover was projected onto the ground;
- Estimate the height of each tree or shrub that intercepted the transect;
- Estimate the relative dominance of trees, shrubs and ground covers within 10 metres either side of the transect centreline;
- Estimate the relative abundance of native and exotic groundcovers, litter, bare ground and coarse woody debris within 1 metre by 1 metre quadrats spaced alternatively every 10 metres along the transect centreline.

The boundary of the patch was also mapped using a hand held GPS unit. A Property Map of Assessable Vegetation (PMAV) was submitted to the Department of Natural Resources and Mines (DNRM) on 15 April, 2016 to modify the boundary of this vegetation to more accurately reflect the on-ground boundary.

As a portion of the study area is mapped as a High Risk Area for protected plants on the flora survey trigger map, a survey in accordance with the Flora Survey Guidelines was completed. Several random meanders (Cropper 1993) were completed within the mapped area to search for significant flora species. Random meanders were also completed within other potential habitats.

The site assessment included a visual fauna assessment of the study area, with all observed fauna species recorded and the overall habitat condition noted. Birds and frogs vocalisations were noted and searches were made for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Habitat features, including ground cover and vegetation composition and structure, and the presence of hollows and fallen ground debris were also noted.

In addition, as fauna species are mobile, a visual assessment of the surrounding landscape was made to determine whether there was suitable habitat (principally for threatened species) in the immediate area, and to determine the likelihood that any of these species would either reside within the study areas for extended periods of time, or whether the sites contributed to a larger home range of a significant species.



## 3 RESULTS

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### 3.1 Matters of National Environmental Significance

The Protected Matters Search Tool identified several matters of National Environmental Significance (MNES) that are known to or are likely to occur within the study area and surrounds. These include:

- Four Wetlands of International Importance (Ramsar sites);
- Five listed Threatened Ecological Communities;
- 24 listed threatened species;
- 12 migratory species; and
- 15 marine species.

#### 3.1.1 Wetlands of International Importance

The study area is located within the catchment of four Ramsar sites with the sites themselves located between 400 kilometres and 1,500 kilometres downstream of the study area.

#### 3.1.2 Threatened Ecological Communities

The desktop assessment identified five EPBC Act-listed Threatened Ecological Communities (TEC) with the potential to occur within the study area. These communities are:

- Brigalow (*Acacia harpophylla* dominant and co-dominant);
- Coolibah – Black Box Woodland of the Darling River Plains and the Brigalow Belt South Bioregions;
- Natural Grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland;
- Weeping Myall Woodlands; and
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland, listed as critically endangered.

One TEC was mapped as potentially occurring within the study area, namely Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC. The field survey found that the vegetation was consistent with RE 11.9.5, however was dominated by Belah *Casuarina cristata* and Poplar Box *Eucalyptus populnea* and Brigalow was absent. To be considered part of the Brigalow TEC, Brigalow must be dominant or co-dominant within the vegetation community, therefore the Brigalow TEC does not occur within the study area. Similarly, areas of mapped RE 11.9.5 along Yarranlea Road adjacent to the study area are dominated by Belah and Poplar Box and therefore are not considered part of the TEC.

No other TECs were identified within or adjacent to the study area.

## 3.2 Vegetation Communities

### 3.2.1 Regional Ecosystems

Desktop analysis of remnant vegetation within the study area and surrounds showed a highly modified landscape with large areas cleared for agricultural purposes (predominately cropping) and residual, small, fragmented remnants of vegetation scattered throughout the landscape (Figure 3). One patch of remnant RE vegetation was identified within the study area and is mapped as regulated vegetation under the VM Act:

- RE 11.9.5 (VM Status - Endangered) - *Acacia harpophylla* and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks.

This RE is included in the description of the Brigalow TEC listed under the EPBC Act (DoE, 2016), however field investigations showed that it is dominated by *Belah* and hence excluded from the Brigalow TEC listed community.

The patch of RE 11.9.5 mapped within the southern portion of the study area was assessed to confirm its remnant status and whether it met the listing criteria for the Brigalow TEC. As the patch of vegetation was below the area threshold to be mappable as a RE (the threshold is one hectare for non-linear features), the PMAV approved by DNRM on 15 June, 2016 resulted in the removal of this patch from the regulated vegetation map and consequently the vegetation is mapped as Category X vegetation.

A summary of the results of the vegetation transect and assessment are included below (Table 1). Transect photographs are included in Plates 1, 2, 3 and 4. The Queensland Herbarium maintains technical descriptions of the normal range of vegetation structure and floristic compositions of REs and are used to compare disturbed REs with their 'undisturbed' state. The technical description for RE 11.9.5 has not yet been made available by the Herbarium. However, an alternative resource, the BioCondition Benchmarks provide some compatible metrics for comparison with the RE 11.9.5 patch within the study area. The relevant BioCondition benchmarks are provided (Table 1).

**Table 1 Vegetation structure and composition of RE 11.9.5 patch**

| Variable                         | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BioCondition Benchmarks                                                                                                                                                                                                                                      |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Area (hectares)                  | 0.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                                                                                                                                                                                                                          |
| Dominant species                 | Canopy (T1 layer) - Belah, Poplar Box<br>Sub-canopy (T2 layer) – Weeping Pittosporum<br><i>Pittosporum angustifolium</i> , Belah<br>Tall Shrub (S1 layer) – Velvety Tree Pear <i>Opuntia tomentosa</i> , Wilga <i>Geijera parviflora</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Canopy (T1 layer) – Brigalow, Belah<br>Sub-canopy (T2 layer) – Brigalow, Belah<br>Tall Shrub (S1 layer) – Wilga, Smooth-barked Ironwood <i>Gossia bidwillii</i> , False Sandalwood <i>Eremophila mitchellii</i> , Ellangowan Poison Bush <i>E. deserti</i> . |
| Median height of the canopy (T1) | 18 metres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25 metres                                                                                                                                                                                                                                                    |
| Median height of sub-canopy (T2) | 5 metres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8 metres                                                                                                                                                                                                                                                     |
| Average canopy (T1) cover        | 57.4% cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 59%                                                                                                                                                                                                                                                          |
| Average sub-canopy (T2) cover    | 3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 48%                                                                                                                                                                                                                                                          |
| Other species present            | Trees - Sally Wattle <i>Acacia salicina</i><br>Native groundcovers - Small Saltbush <i>Atriplex eardleyae</i> , Mueller's Saltbush <i>Atriplex muelleri</i> , Currant Bush <i>Carissa ovata</i> , Ruby Saltbush <i>Enchylaena tomentosa</i> ,<br>Exotic groundcovers - Flax-leaf Fleabane <i>Conyza bonariense</i> , Mayne's Pest <i>Verbena aristigera</i> , Cobblers Pegs <i>Bidens pilosa</i> ,<br>Native grasses – Slender Chloris <i>C. divaricata</i> , Fairy Grass <i>Sporobolus caroli</i> , Curly Windmill Grass <i>Enteropogon acicularis</i> , Brigalow Grass <i>Paspalidium caespitosum</i> , Slender Bottlewashers <i>Enneapogon gracilis</i> ,<br>Exotic grasses - Rhodes Grass <i>Chloris gayana</i> , | Ground covers - Brigalow Grass <i>Paspalidium caespitosum</i><br>Exotic species – Velvety Tree Pear, Prickly Pear <i>Opuntia stricta</i>                                                                                                                     |
| Percentage weed cover            | 13% (averaged over 50 metre transect)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0%                                                                                                                                                                                                                                                           |
| Average ground cover             | Native grasses – 23.2%<br>Exotic grasses – 0%<br>Native herbs and forbs – 1%<br>Exotic herbs and forbs – 6%<br>Native shrubs – 1%<br>Exotic shrubs – 6.8%<br>Litter – 36%<br>Coarse woody debris – 7%<br>Bare ground – 18%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Native grasses – 4%<br>Litter – 66%                                                                                                                                                                                                                          |

To be considered remnant vegetation, the height of the canopy layer of the vegetation must be 70% or greater than the canopy height of an undisturbed community and must have 50% of the canopy cover of the undisturbed community. The vegetation must also include species that are generally found within the canopy of the undisturbed community. Using the BioCondition benchmarks, the undisturbed median canopy height is 25 metres and therefore 70% is 17.7 metres and the undisturbed canopy cover is 59% and therefore 50% is 29.5%. The vegetation also contains some species that are found in the undisturbed community benchmark. The small patch of vegetation just meets the canopy height requirement and easily meets the cover requirement and is therefore considered remnant vegetation. However, as discussed previously, as the area is below the mapping threshold used by the DNRM, this vegetation is not considered to be regulated vegetation.





Plate 1 – Transect looking north



Plate 2 – Transect looking east



Plate 3 – Transect looking south



Plate 4 – Transect looking west

Several small patches of remnant vegetation are mapped adjacent to the study area on the western side of Yarranlea Road, including:

- RE 11.9.5; and
- RE 11.3.2 (VM Status of Concern) - *Eucalyptus populnea* woodland on alluvial plains.

A larger patch of RE 11.3.2 is mapped adjacent to the north-eastern corner of the study area. This community is sometimes included in the Weeping Myall Woodlands TEC if patches of Weeping Myall

*Acacia pendula* form monotypic stands. No Weeping Myall was identified within this community during the survey.

There are no vegetated connections to the mapped remnant vegetation from the study area.

#### RE 11.9.5 and 11.3.2 along Yarranlea Road

Several patches of RE 11.9.5 and 11.3.2 are mapped on both sides of the Yarranlea Road reserve with extensive areas occurring on the western side of the road. The patches on the eastern side, and adjacent to the study area, were inspected although formal transects were not completed. This vegetation exists predominantly as a single line of trees with an exotic grassy understorey. The canopy is dominated entirely by Poplar Box with Belah forming a sub-canopy with Wilga and False Sandalwood. The ground cover is dominated by exotic grasses and herbs that are common along roadsides in the Darling Downs. Species include Rhodes Grass, Purple Pigeon Grass *Setaria incrassata*, Flax-leaf Fleabane, Balloon Cotton Bush *Gomphocarpus physocarpus*, Cobblers Pegs, Maynes Pest, Velvety Tree Pear, Spear Thistle *Cirsium vulgare* and Moth Vine *Araujia hortorum*. Native ground covers include Queensland Bluegrass *Dichanthium sericeum*, Curly Windmill Grass, Barb Wire Grass *Cymbopogon refractus*, Native Millet *Panicum decompositum* and Ellagowan Poison Bush.



**Plate 5** Mapped RE 11.9.5 and 11.3.2 along Yarranlea Road reserve

### **3.2.2 Non-remnant Communities**

The study area is located within a highly disturbed agricultural landscape where native vegetation exists as small patches within paddocks or linear strips within road reserves. A small patch of mapped RE 11.9.5 occurs within the southern portion of the study area and other patches of mapped RE 11.9.5 and 11.3.2 occur along Yarranlea Road (Figure 3). Isolated clumps of trees and shrubs occur along Yarranlea – Murlagan Road which traverses the centre of the study area. While isolated stands of Brigalow occur in the far north-east portion of the study area within a road easement, these do not form large enough patches to be considered part of the Brigalow TEC.

#### Non-remnant Roadside Vegetation

Several isolated patches of vegetation existing within the road reserve of Yarranlea Murlaggan Road which transects the study area. This vegetation exists as a single canopy tree or up to three trees with surrounding shrubs and grasses. Poplar Box is the dominant canopy species with Sally Wattle and Weeping Pittosporum also present. Ground covers generally include exotic grasses and herbs including Rhodes Grass, Cobblers Pegs, Mayne's Pest and Flax-leaf Fleabane.

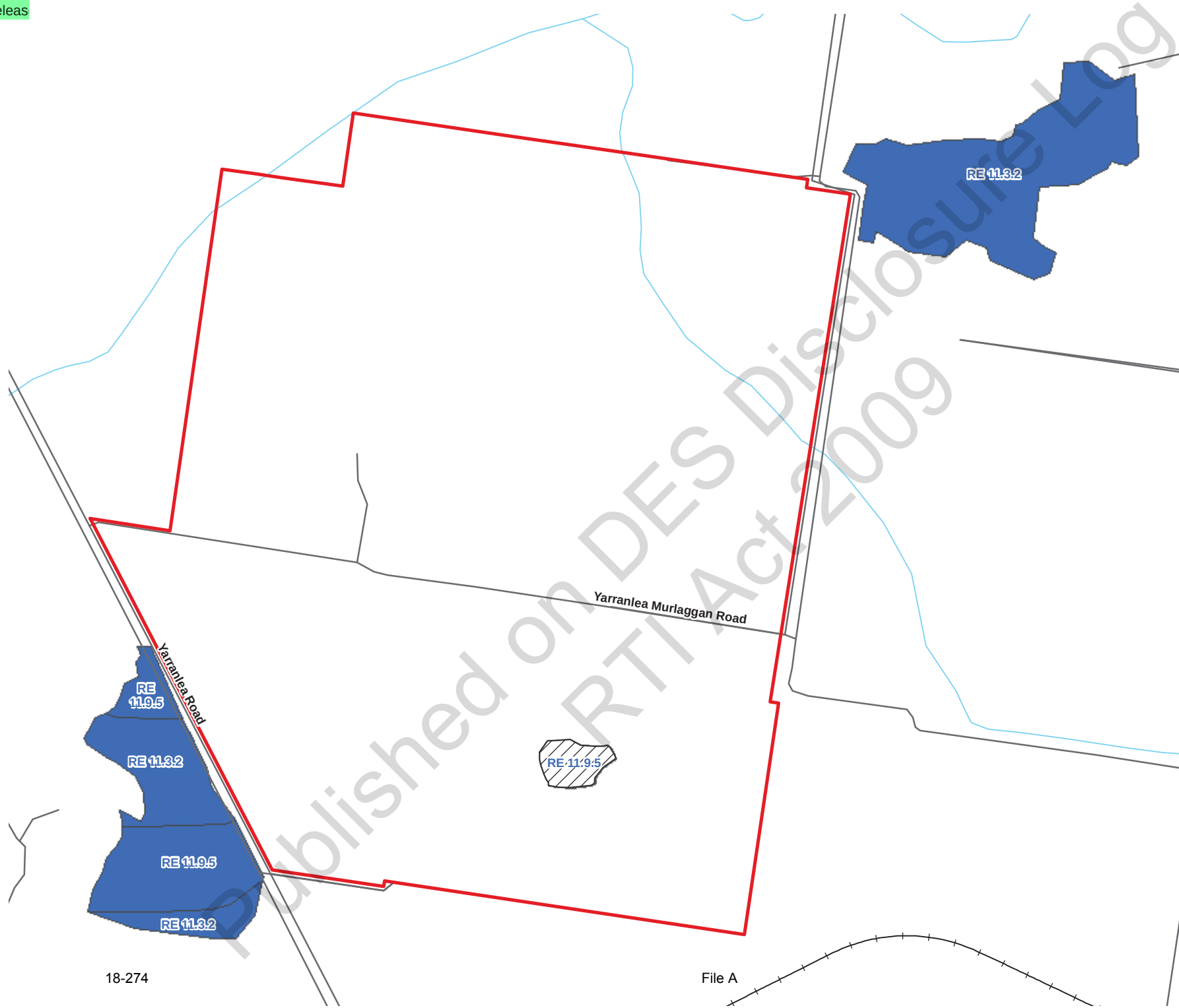
#### Cropping Land

The majority of the study area is used for cropping of a variety of crops including sorghum, cotton and chickpeas. The southern portion of the study area had been recently harvested at the time of the survey although some crops were growing within the northern portion.

### 3.3 Significant Flora Species

The database searches identified nine threatened flora species that have been previously recorded or likely to occur within 10 kilometres of the study area (Table 2) and these are shown below (Figure 4). The potential occurrence of each species within the study area was assessed based on the criteria described below (Appendix 2). Two species have been assessed to have a moderate likelihood of occurrence within the study area; Austral Cornflower *Rhaponticum australe* and King Bluegrass *Dichanthium queenslandicum*, and one species was detected within the study area; Belson's Panic *Homopholis belsonii*.

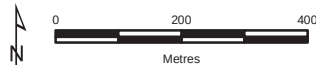




- Legend**
- Study Area
  - Category B area (remnant vegetation)
  - Category X vegetation



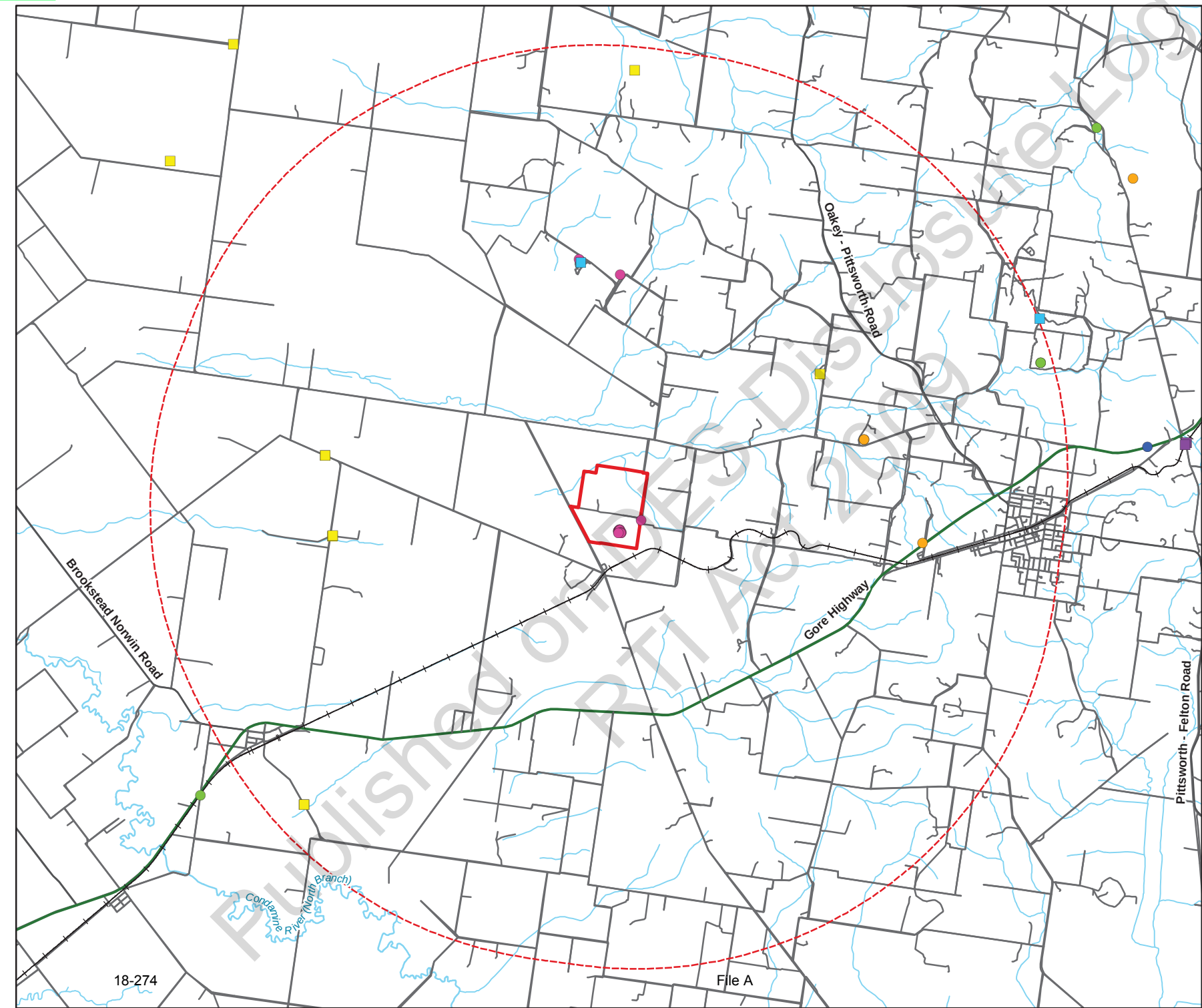
**Figure 3**  
**Vegetation Management Map**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that they shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

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- Legend**
- Study Area
  - Search buffer (10km)
- Threatened fauna**
- Long-legged Worm-skink *Anomalopus mackayi*
  - Painted Honeyeater *Grantiella picta*
  - Condamine Earless Dragon *Tympanocryptis condaminensis*
- Threatened flora**
- King Blue-grass *Dichanthium queenslandicum*
  - Belson's Panic *Homopholis belsonii*
  - Hawkweed *Picris evae*
  - Austral Cornflower *Rhaponticum australe*



**Figure 4**  
**Threatened flora and fauna identified from database searches**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*

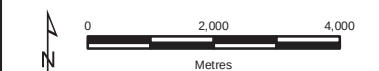


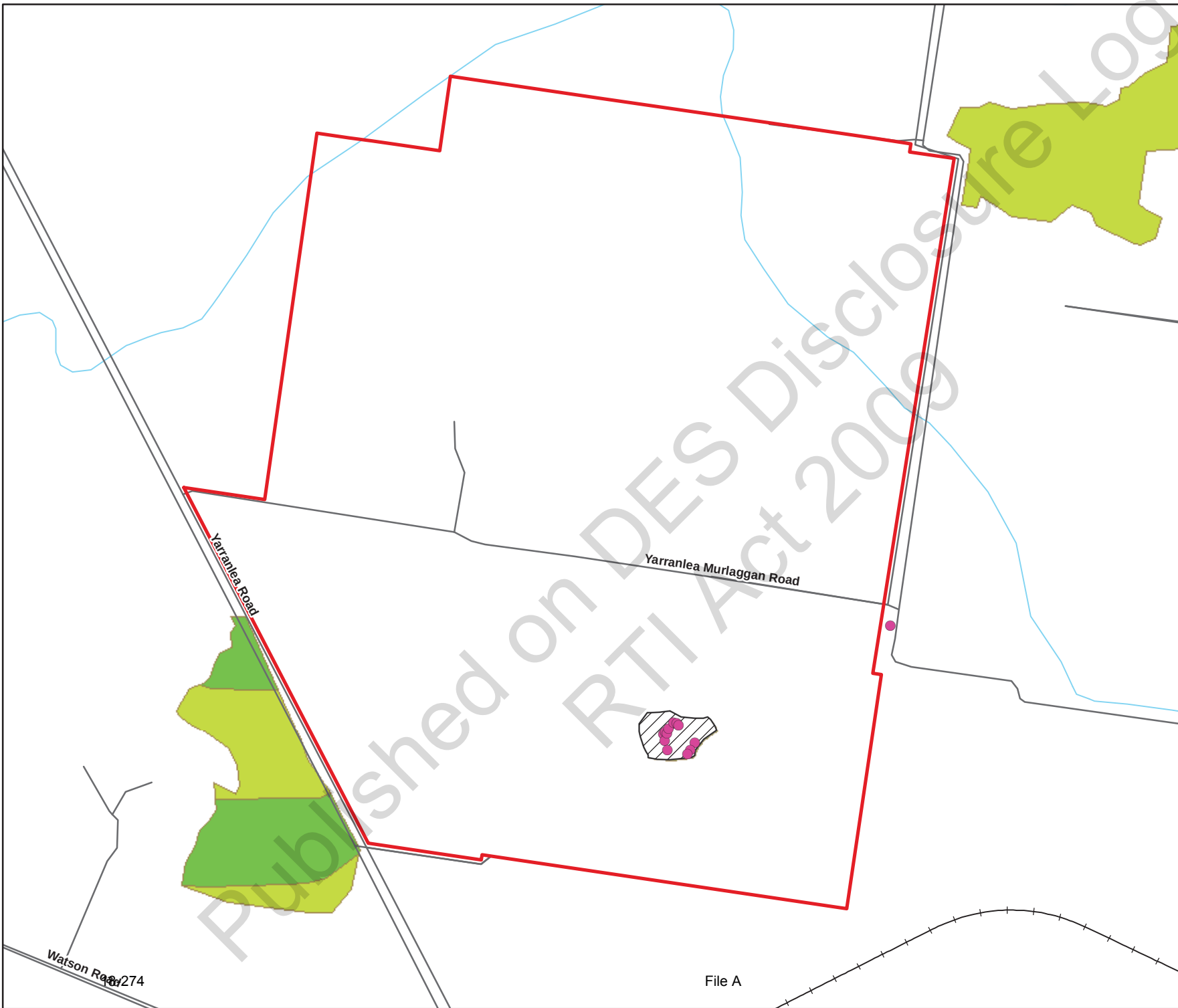
**Table 2** Threatened flora species identified from database searches

| Species Name                      | Common Name           | EPBC Status | NC Act Status | Preferred Habitat                                                                                                                                                         | Likelihood of Occurrence                                                                                                                                                                                        |
|-----------------------------------|-----------------------|-------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Rhaponticum australe</i>       | Austral Cornflower    | V           | V             | Heavy black or red-brown clays or clay-loams derived from basalt (land zone 8). Known from roadsides and cultivation headlands. Restricted to southern Qld.               | Moderate. Most records are located to the east of the study area with the closest being 6km away. Habitat occurs within the study area, however the dominance of Rhodes Grass may preclude use of this habitat. |
| <i>Picris evae</i>                | Hawkweed              | V           | V             | Occurs in open grassy eucalypt woodlands on clay-loams and medium clay soils. Found in the Darling Downs region of Qld as well as NSW.                                    | Low. Most records are from the east and preferred habitat occurs to the north-east of the study area within RE 11.3.2.                                                                                          |
| <i>Picris barbarorum</i>          |                       | O           | V             | Occurs on riverbanks and floodplains (land zone 3) in southern Qld and central western NSW.                                                                               | Unlikely. The study area does not occur on a floodplain and suitable habitat is not present.                                                                                                                    |
| <i>Clematis fawcettii</i>         | Stream Clematis       | V           | V             | Occurs in semi-evergreen vine thicket and vine forests of high altitude areas such as Bunya Mtn and Lamington National Park.                                              | Unlikely. No records from within 10km and suitable habitat does not occur within the study area.                                                                                                                |
| <i>Digitaria porrecta</i>         | Finger Grass          | Panic       | NT            | Occurs in native grasslands and open woodlands on soils derived from basalt (land zone 8). Known from southern and central Qld.                                           | Unlikely. No records from within 10km of the study area and preferred habitat does not occur.                                                                                                                   |
| <i>Homopholis belsonii</i>        | Belson's Panic        | V           | E             | Occurs in a variety of habitats including woodlands on poor quality soils, rocky hills, in Wilga woodland and in Poplar Box communities.                                  | <b>Known.</b> Occurs within the small patch of RE 11.9.5 within the southern portion of the study area and a small population within the road reserve of Yarranlea-Murlaggan Road.                              |
| <i>Dichanthium queenslandicum</i> | King Bluegrass        | E           | E             | Known from native grasslands and grassy eucalypt woodlands in central and southern Qld.                                                                                   | Moderate. Most records are from Bowenville approx.. 40km to the north of the study area, although a recent record is from just east of Pittsworth.                                                              |
| <i>Lepidium peregrinus</i>        | Wandering Peppergrass | E           | LC            | Occurs in riparian open forests in disjunct populations in southern and south-east Qld. Also NSW.                                                                         | Unlikely. No records from within 10km of the study area and suitable habitat does not occur.                                                                                                                    |
| <i>Thesium australe</i>           | Austral Toadflax      | V           | V             | Is semi-parasitic on the roots of native grasses including Kangaroo Grass <i>Themeda australis</i> . Occurs in a range of habitats and shows a preference for damp sites. | Low. No records from within 10km of the study area and habitat is marginal.                                                                                                                                     |

One threatened flora species was detected within the study area, Belson's Panic *Homopholis belsonii*, which is listed as endangered under the Queensland NC Act and vulnerable under the EPBC Act. Twelve discrete patches were identified within the patch of RE 11.9.5 within the southern portion of study area and one patch was identified adjacent to the eastern boundary of the study area within the Yarranlea Murlaggan Road reserve (Table 3, Figure 5). Each discrete patch covered an approximate area of several meters squared, and these areas were most often at the base of canopy trees and were in shaded areas created by shrubs..

**Table 3** Locations of Belson's Panic populations

| Population No.                   | Projected Coordinates (GDA, Zone 56J) |          | Geographic Coordinates (GDA) |           |
|----------------------------------|---------------------------------------|----------|------------------------------|-----------|
|                                  | Easting                               | Northing | Latitude                     | Longitude |
| 1                                | 355510                                | 6933562  | -27.71451                    | 151.53439 |
| 2                                | 355514                                | 6933567  | -27.71447                    | 151.53443 |
| 3                                | 355513                                | 6933547  | -27.71465                    | 151.53442 |
| 4                                | 355518                                | 6933564  | -27.7145                     | 151.53447 |
| 5                                | 355522                                | 6933575  | -27.7144                     | 151.53451 |
| 6                                | 355534                                | 6933589  | -27.71428                    | 151.53463 |
| 7                                | 355542                                | 6933588  | -27.71429                    | 151.53472 |
| 8                                | 355546                                | 6933583  | -27.71433                    | 151.53475 |
| 9                                | 355584                                | 6933542  | -27.71471                    | 151.53513 |
| 10                               | 355574                                | 6933525  | -27.71486                    | 151.53502 |
| 11                               | 355567                                | 6933516  | -27.71494                    | 151.53495 |
| 12                               | 355519                                | 6933524  | -27.71486                    | 151.53447 |
| Yarranlea-Murlaggan Road reserve | 356225                                | 6934864  | -27.70284                    | 151.54179 |



**Legend**

- Belson's Panic *Homopholis belsonii* locations
- ▭ Study Area

**Regional Ecosystems**

- 11.3.2
- 11.9.5
- ▨ Category X vegetation



**Figure 5**  
**Locations of Belson's Panic *Homopholis belsonii***  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*

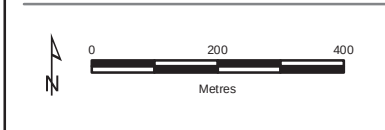






**Plate 1** Small patch of Belson's Panic growing underneath Belah

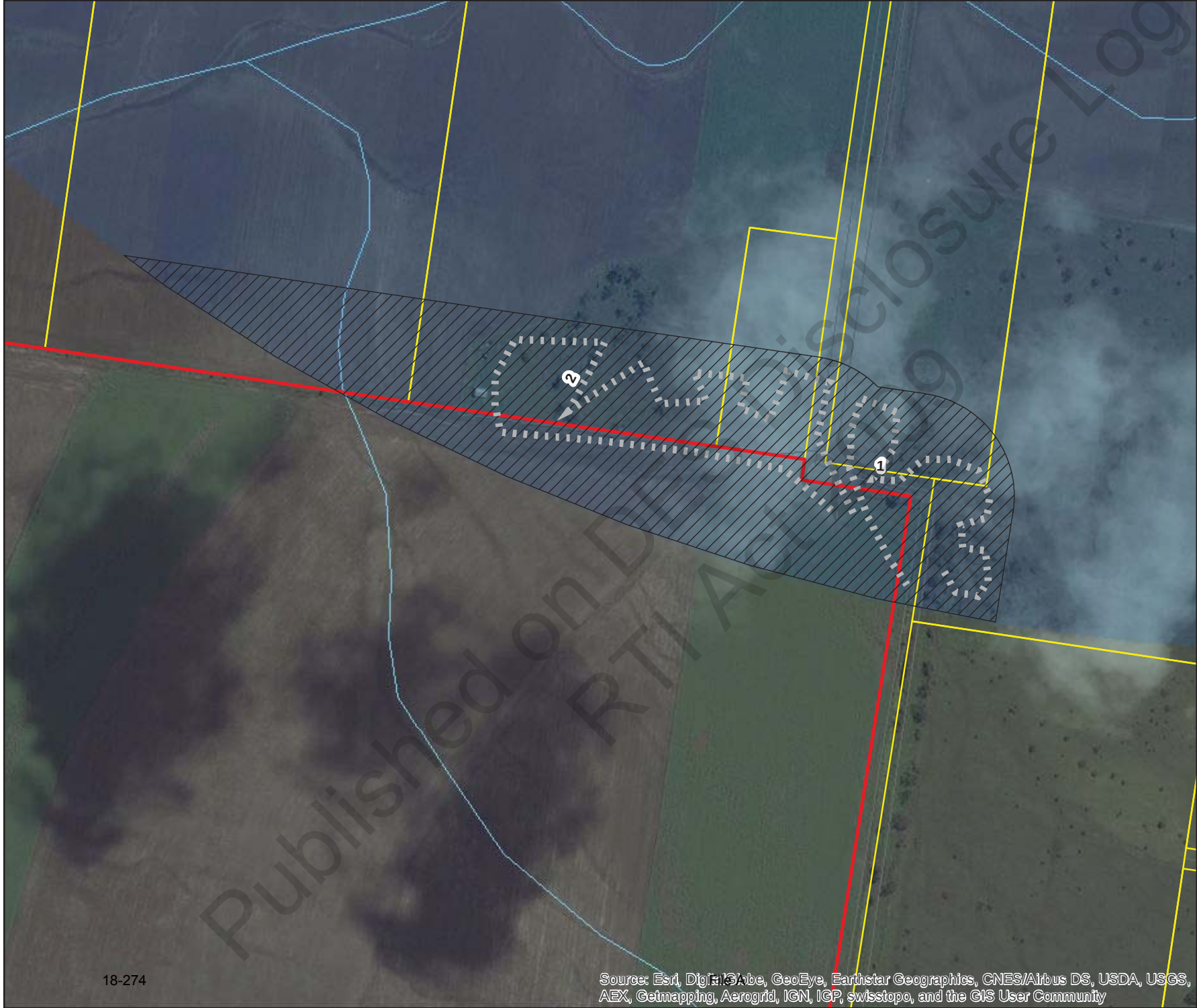
### 3.4 Flora Survey within High Risk Area

The Flora Survey Trigger Map (DEHP 2016c) was reviewed for the study area and surrounds. A High Risk Area for threatened flora species is mapped within the extreme north-eastern corner of the study area (Appendix 2). A random meander transect was completed within this area, as well as within 100 metres of the study area boundary in neighbouring properties (Figure 6). No significant flora species were found within the high risk area during the random meander despite a total flora survey effort of 40 minutes (Table 4). One individual of Lobed Bluegrass *Bothriochloa biloba* was identified along a fenceline along the northern boundary of the study area. Lobed Bluegrass was previously listed as threatened under the EPBC Act, however was removed from the list in 2013. The species is listed as Least Concern under the NC Act.

**Table 4** Flora survey effort within mapped High Risk Area

| Transect         | Easting | Northing | Time       |
|------------------|---------|----------|------------|
| Transect 1 Start | 356266  | 6934854  | 20 minutes |
| Transect 1 Stop  | 356214  | 6934830  |            |
| Transect 2 Start | 356178  | 6934920  | 20 minutes |
| Transect 2 Stop  | 356178  | 6934920  |            |

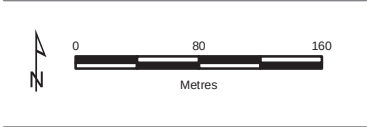




- Legend**
- ..... Flora survey tracklog
  - Study Area
  - Property Boundaries
  - High Risk Area within 100m of study area



**Figure 6**  
**Flora Survey Effort**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that they shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

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7789\_Fig0X - Flora survey map 8/07/2016

### 3.5 Significant Fauna Species

The desktop review indicated that 21 significant fauna species and nine special least concern species have been previously recorded or are predicted to occur within 10 kilometres of the study area (Appendix 2) and are shown on Figure 4. This comprises one fish, five reptiles, nine birds and six mammals threatened species. Additionally, 12 bird species are listed as migratory under the EPBC Act and consequently as special least concern under the NC Act. These are shown separately in Appendix 2.

A likelihood of occurrence assessment was completed to determine the suite of threatened and conservation significant species that may potentially occur within the study area. The assessment is included in Appendix 3 and the species with a high or moderate potential to occur within the study area are presented below.

#### Condamine Earless Dragon

Condamine Earless Dragon *Tympanocryptis condaminensis* is listed as endangered under the NC Act. The Condamine Earless Dragon was recently separated taxonomically from the related Grassland Earless Dragon *T. pinguicolla*, which is listed under the EPBC Act and occurs in NSW and the ACT. As the population of Earless Dragons in the Darling Downs was previously listed under the EPBC Act, it is likely that the Condamine Earless Dragon will eventually be listed under that Act. There are several records of this species along Saal Road and Watson Road to the west of the study area and further to the north and east (DEHP 2016). The dragon is known to inhabit cropping lands and native grasslands along roadsides and is therefore a high potential occurrence within the study area. Very little is known about the breeding and egg laying habits of the species, but anecdotal evidence suggests that the dragon escapes into adjacent grasslands during harvesting operations (Ashdown 2014).

#### Painted Honeyeater

Painted Honeyeater *Grantiella picta*, listed as vulnerable under the NC Act and EPBC Act. The Painted Honeyeater is known from the Irongate Conservation Park, approximately 10 kilometres to the north of the study area and north of Pittsworth (DEHP 2016). The honeyeater occurs in a variety of woodland and open forest communities and shows a preference for mistletoe. This species is considered a moderate potential occurrence within the study area.

#### Five-clawed Worm-Skink

Five-clawed Worm-Skink *Anomalopus mackayi*, listed as endangered under the NC Act and vulnerable under the EPBC Act. The Five-clawed Worm-Skink is known from several records approximately 13 kilometres to the east of the study area, near Pittsworth (DEHP 2016). The worm-skink prefers sites on heavy cracking clay soils and with coarse woody debris. Although the study area contains cracking clay soils preferred by this species, the majority of the soils are used for cropping and are continually disturbed. The skink may inhabit road reserves such as Yarranlea-Murlaggan Road and Yarranlea Road as well as the patch of RE 11.9.5.

#### Grey-headed Flying Fox

The Grey-headed Flying Fox is listed as vulnerable under the EPBC Act. The species is a highly mobile forager across a variety of vegetation communities and may travel up to 30 kilometres from camps. The study area contains some plant species that provide foraging resources within in flower and

which may be utilised by the flying fox, although due to the small extent of such species the study area is unlikely to provide sufficient resources to maintain a population of Grey-headed Flying Fox.

### Echidna

The Echidna is listed as special Least Concern fauna under the NC Act as it is considered culturally significant. The Echidna occurs in a variety of habitats throughout Queensland and may occasionally traverse the study area.

## 3.6 Other Fauna and Habitats

Due to the disturbed nature of the study area and low diversity of plant species present, the existing habitat for fauna is in poor condition. The study area provides habitat and resources for open country species that can tolerate high levels of habitat modification such as common birds. Common species sighted included Australian magpie *Gymnorhina tibicen*, Pied Butcherbird *Cracticus nigrogularis*, Grey Butcherbird *Cracticus torquatus*, Pale-headed Rosella *Platycercus adscitus*, Torresian crow *Corvus orru*, Crested Pigeon *Ocyphaps lophotes* and Magpie-lark *Grallina cyanoleuca*. An European Rabbit *Oryctolagus cuniculus* was observed within the patch of RE 11.9.5.

Several large eucalypts occur within the study area, primarily within the road reserves and several were observed to contain hollows of various sizes, which are suitable for hollow-nesting birds and mammals such as possums.

The study area is unlikely to provide suitable habitat for a diversity of reptile species due to the agricultural land use and lack of fallen woody debris. Reptile diversity is likely to be limited to common skinks and snakes, particularly Eastern Brown Snakes *Pseudonaja textilis*, which frequent cropping lands. Similarly, the study area is unlikely to provide habitat for frogs due to the absence of ponds or dams and the diversion drain at the northern boundary of the study area does not hold water.

The study area is also unlikely to provide habitat for a diversity of native mammal species due to the absence of vegetation cover.

## 3.7 Weeds and Pest Animals

The declared weed velvety tree pear *Opuntia tomentosa* was recorded prolifically within the RE 11.9.5 patch and throughout the road reserves. The study area also contains the suite of herbaceous and grassy weed species that are expected within an agricultural property in southern Queensland.

European Rabbit was observed within the patch of RE 11.9.5 within the southern portion of the study area. Rabbits would be expected to be relatively common within the surrounding landscape and their presence within the study area is not unexpected.

Tree pear and European Rabbit are listed as class 2 declared pests under the *Land Protection (Pest and Stock Route Management) Act 2002*.

### 3.8 Essential Habitat

No essential habitat as mapped by DRNM (2016) is located within or adjacent to the study area.

### 3.9 Wetlands and Watercourses

No referable wetlands, or wetland protected areas were identified within the study area during the desktop assessment, nor during the current field assessment.

Two watercourses are identified as occurring within the study area on the Vegetation Management Map (DNRM 2016c) in the northern portion of the study area. One watercourse traverses the north-western corner of the study area and is identified as a stream of order 4 and one watercourse traverses the north-eastern corner and is identified as a stream of order 1. Both watercourses have been significantly disturbed and diverted from its mapped path and currently do not resemble natural features due to the absence of a defined banks or channel and absence of riparian or aquatic vegetation.

## 4 POTENTIAL IMPACTS AND MITIGATION MEASURES

### 4.1 Proposed Impacts

The proposed development is proposed to be staged over four stages and will involve complete coverage of the study area in solar PV panel arrays. The development will involve the loss of all currently cropped areas and the small patch of RE 11.9.5 (Category X vegetation) located within Stage 1. This will also involve the loss of the population of Belson's Panic within this vegetation. Vegetation along Yarranlea-Murlaggan Road will not be impacted, however some trees and other vegetation may be trimmed or cleared for duplication of the powerline along Yarranlea Road.

Potential impacts to ecological values associated with the PV Facility will be limited to those during construction. Construction activities will involve:

- A construction laydown area will be established at the western end of Yarranlea-Murlaggan Road and a second area at the eastern end. The areas will be cleared, grubbed, graded and compacted;
- Construction of an informal internal road system, treated to minimise dust creation;
- Construction of a gravel access track from the western end of Yarranlea-Murlaggan Road and around the perimeter of the Stage 1 block and stages 2-4 blocks;
- Erecting a 2.4 metre high chain wire link security fence around the perimeter of the study area;
- Construction of a control building and substation on the corner of Yarranlea Road and Yarranlea-Murlaggan Road;
- Construction of an Operations and Maintenance Facility and farm storage shed on the northern side of Yarranlea-Murlaggan Road;
- Installing a 110 kV powerline to the existing Ergon substation by directly trenching and burying the line or by overhead powerline; and
- Installation of solar PV panels on monopoles supported by screw piles or similar that are driven into the ground.

Operational activities will be minimal and be largely restricted to use of the control building and operations and maintenance facility by staff. As the PV array frames have a minimal footprint on the ground surface, the soil will be seeded with an appropriate grass mix. Slashing of the grass would occur as appropriate and grazing would be considered.

Decommissioning activities would involve the removal of the panel arrays including monopole structures. The disturbance to the soil profile will be minimal and will be able to be returned to an agricultural land use.

There may be some trimming of regulated vegetation along Yarranlea Road adjacent to the existing powerline.



## 4.2 Mitigation Measures

Mitigation measures follow the impact mitigation hierarchy of avoid, minimise and mitigate (including offsets). This section identifies how the proposed development will mitigate impacts to ecological values.

### 4.2.1 Avoidance

No impacts to grassland or woody vegetation will occur within the Yarranlea-Murlaggan Road reserve.

The existing stand of RE11.9.5 (Category X vegetation) will be removed as will the population of Belson's Panic. As this patch is isolated within the centre of the Stage 1 area, avoidance of this impact is not possible.

Although the proposed development will not result in extensive ground disturbance, which would otherwise impact on the Condamine Earless Dragon, some ground disturbance may occur. To avoid impacts to the dragon, any crops remaining within the study area prior to construction commencing should be harvested and any other standing biomass (eg. grasses, weeds) should be slashed. This is to provide a disturbance stimulus to any dragons residing within the study area to retreat to existing habitats within adjacent road reserves.

### 4.2.2 Minimisation

Some clearing or trimming of regulated vegetation may be required along Yarranlea Road for the construction of an electricity connection to the Yarranlea Substation. Clearing will be limited to the minimise width necessary to safely construct and operate the electricity connection. Where possible, trees will be trimmed rather than felled.

Recommended measures to minimise impacts to terrestrial values present within the study area include:

- The extent of ground disturbance will be the minimum necessary to construct the access tracks, buildings and install the solar PV arrays;
- Construction stockpiles, machinery and other infrastructure should be wholly contained outside of the drainage channels to minimise the risk of sediments and pollutants being mobilised downstream; and
- Declared Class 2 weed species (i.e. velvety tree pear) must be treated prior to the activity commencing. This is to ensure that weed propagative material is not spread to other areas. A weed control contractor who is licenced to use herbicides should be engaged to treat weed infestations.

### 4.2.3 Mitigation measures

Recommended measures to mitigate impacts on terrestrial values present within the study area include:

- Provision on an environmental offset to compensate for the loss of the population of Belson's Panic in accordance with the *Environmental Offsets Act 2014*;



- Ensure that best practice sedimentation and pollution control measures are undertaken at all times to prevent offsite impacts to downstream receiving environments. The Best Practice Erosion and Sediment Control Guidelines (Witheridge, 2014) should be referred to; and
- As native plants provides valuable habitat and food resources for fauna, it is recommended that any landscape plantings that are undertaken as part of the proposed development are completed using 90% native species that are found within the surrounding area, provided that commercial quantities of seedlings/seed are available.

## 5 LEGISLATIVE AND POLICY IMPLICATIONS

### 5.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

#### 5.1.1 Wetlands of international significance

The study area occurs within the catchment of four Ramsar sites that occur many hundreds of kilometres downstream. These sites are unlikely to be impacted as each is situated a considerable distance from the proposed action. Provided management practices and construction techniques are consistent with current industry standards, the project is unlikely to affect the ecological character of any Ramsar wetland.

#### 5.1.2 Threatened species and ecological communities

**Flora:** One threatened flora species, Belson's Panic was detected from within the patch of RE 11.9.5 and within the Yarranlea-Murlaggan Road reserve adjacent to the study area. There is a moderate likelihood of other threatened flora species being present within the study area, although these would be confined to vegetation along Yarranlea-Murlaggan Road. No other threatened flora species were identified during the field survey. The population within the patch of vegetation within the cropping area is proposed to be removed.

Table 5 provides an assessment of the significance of the impact on Belson's Panic and habitat. When assessing the significance of an action on a Vulnerable species, it is necessary to define whether an 'important population' of the species occurs or could potentially occur within the study area. An important population is defined as one that is necessary for a species' long-term survival and recovery. This may include population identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal;
- populations that are necessary for maintaining genetic diversity; and/or
- populations that are at near the limit of the species range.

The population of Belson's Panic within the study area is located within a small (less than one hectare) patch of vegetation that is completely surrounded by cropping land. Although the species sets seed and like other *Panicum* grasses the seed head (panicle) can be blown by the wind, the species spreads mainly by the stolons (Menkins, 1998). As the habitat is completely isolated to other habitat patches and is over 0.5 kilometres away from the small population within Yarranlea-Murlaggan Road, the population to be removed cannot be considered a key source population for breeding or dispersal due to the hostile land use (i.e. cropping) surrounding the population. Similarly, since this population is isolated from other habitat areas, the population cannot be considered to be necessary for maintain genetic diversity, since the chance of seed entering the patch from other populations is highly unlikely. Finally, the species is known to occur in a broad arc from north of Narrabri in central northern NSW to north of Toowoomba and north to Wandoan. The population within the study area is therefore near the eastern limit of its known range. However, this population cannot be considered an important population for the following reasons:

1. The area of habitat is small (less than one hectare), has been subject to previous disturbances (clearing) and is surrounded by active cropping land (a hostile land use);
2. The vegetation is not protected under the Queensland VM Act (identified as Category X vegetation) and could be cleared for expansion of cropping within the property;
3. The patch of vegetation contains weeds that are known to be threatening processes to the species and in the absence of active management would be expected to increase in abundance over time;
4. Is not connected to other populations within the region, including from the small population along Yarranlea – Murlaggan Road and Irongate Conservation Park, 6 kilometres to the north; and
5. An improvement in the habitat quality and condition of the vegetation is unlikely given the surrounding land use.

Therefore, the population within the study area is not considered to be an important population as the population is highly unlikely to be necessary for the species' long-term survival and recovery. The long-term survival of the vegetation patch is low and the habitat condition would be expected to continue to decline to the exclusion of Belson's Panic.

**Table 5 Significant Impact Assessment for King Blue-grass**

| Significant Impact Criteria                                                                                                                                                                                      | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will: lead to a long-term decrease in the size of an important population of a species | The loss of this population is unlikely to lead to a long-term decrease in the size of the population as the population is not necessary for the species' long-term survival and recovery.                                                                                                                                                                                       |
| Reduce the area of occupancy of an important population                                                                                                                                                          | The removal of the patch of vegetation within the study area will result in the reduction in the area of occupancy for the species on a local level, however, the loss of this vegetation will not impact on other populations that are likely to be considered important populations, such as the population with the Irongate Conservation Park.                               |
| Fragment an existing important population into two or more populations                                                                                                                                           | The proposed removal of vegetation will not fragment an existing population into two or more populations.                                                                                                                                                                                                                                                                        |
| Adversely affect habitat critical to the survival of a species                                                                                                                                                   | Although the vegetation patch contains habitat for Belson's Panic, it does not provide habitat critical to the survival of the species. This is because the habitat is not secured from further clearing from agricultural development, contains weed species that are listed as a threatening process to the species and the habitat is not connected to other vegetated areas. |

| Significant Impact Criteria                                                                                                                                                                     | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disrupt the breeding cycle of an important population modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposed clearing of the vegetation will result in the local loss of 12 discrete areas containing Belson's Panic. However, the loss of this vegetation is unlikely to result in the decline of the species as the population is not considered to be an important population.                                                                                                                                                                                                                                                                                                                                     |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat                                                                     | The proposed development will implement weed hygiene measures to ensure that invasive species will not become established within existing habitat for the species along Yarranlea – Murlaggan Road.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Introduce disease that may cause the species to decline, or                                                                                                                                     | The proposed development is unlikely to introduce a disease that could cause the species to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Interfere substantially with the recovery of the species.                                                                                                                                       | <p>Tremont and Whalley (1993) identify management of remnant habitats as a key action to recover the species as well as maintenance of overstorey vegetation, preservation of sub-shrub and shrub populations, regeneration of native vegetation and strategic protection of lands. The NSW (former) Department of Environment, Conservation and Water (2005) further identify key actions including exclusion of stock, weed control and protection of areas from clearing and further fragmentation.</p> <p>The proposed development will not substantially interfere with any of these key management actions.</p> |

**Fauna:** No fauna species listed under the EPBC Act were recorded within the study area during the field assessment. There is suitable habitat within the study area for five fauna species listed under the EPBC Act (Condamine Earless Dragon, Five-clawed Worm-skink, Grey-headed Flying Fox and Painted Honeyeater), however the habitat is generally restricted to vegetation within the patch of RE 11.9.5 and road reserves due to the active cropping activities occurring within the study area.

The Condamine Earless Dragon is a high likelihood within road reserves adjacent to the study area and adjacent cropping areas. This species is regularly found within actively cropped areas and does not seem to be impacted by regular harvesting or planting of crop species. Although it would appear to have lost a significant percentage of its native grassland habitat prior to agricultural development, the nature of the black cracking clay soils upon which it is dependent has not changed and continues even after ploughing (Richardson 2006). The proposed solar farm will not significantly change the soil profile or cracking characteristics and therefore it is unlikely that the development will have a significant impact on this species.

Grey-headed Flying-fox is a dietary generalist which forages across a wide area. It is likely to continue to utilise the site post development and forage in landscaped areas. There will be no impact on roost sites as a result of the proposed development. This species is highly unlikely to be significantly impacted by the removal of individual trees in the short or long term.

**Communities:** No ecological communities listed under the EPBC Act were recorded within the study area.

### 5.1.3 Migratory species

Several migratory species are likely to occur in or fly over the study area. However, the study area would not be classed as an 'important habitat' as defined under the EPBC Act Policy Statement 1.1 Principal Significant Impact Guidelines (DEWHA 2009) for any of these species and no further assessment is warranted.

### 5.1.4 Implications

Based on the assessment completed in Table 5, the proposed removal of the habitat and associated population of Belson's Panic from the proposed development is unlikely to result in a significant impact to the species.

The proposed action is unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act. However, the proponent may wish to refer the project regardless to provide certainty to project timelines and to ensure that the MNES being considered are 'locked-in' for the duration of the project. This means that any future listing events, such as listing of a new species as threatened (and which may occur within the study area) or upgrading the status of Belson's Panic to endangered or critically endangered do not impact on the project.

## 5.2 Nature Conservation Act 1992 (Queensland)

### 5.2.1 EVNT Flora

One threatened flora species (Belson's Panic) was recorded within the study area during the survey. The species was found within the patch of RE 11.9.5 within the southern portion and a small population within the road reserve of Yarranlea-Murlaggan Road. The area of habitat, including 12 discrete patches of Belson's Panic, is proposed to be removed. Under the QEOP Significant Residual Impact Guideline (DEHP 2014a), an action is likely to have a significant impact on endangered wildlife if the impact on the habitat is likely to:

- lead to a long-term decrease in the size of a local population; or
- reduce the extent of occurrence of the species; or
- fragment an existing population; or
- result in genetically distinct populations forming as a result of habitat isolation; or
- result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat; or
- introduce disease that may cause the population to decline, or
- interfere with the recovery of the species; or
- cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species.

An assessment against these criteria has been completed in Table 6.

**Table 6 Significant Impact Assessment for Belson's Panic**

| Significant Impact Criteria                                                                                                                                                                     | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will: lead to a long-term decrease in the size of a local population | The local population is defined as the population residing in the study area. The proposed development will result in the loss of this population.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| reduce the extent of occurrence of the species                                                                                                                                                  | The removal of the patch of vegetation within the study area will result in the reduction in the extent of occurrence for the species on a local level, however, the loss of this vegetation will not impact on other populations surrounding the study area, such as the population with the Irongate Conservation Park and within Yarranlea-Murlaggan Road.                                                                                                                                                                                                                                                         |
| fragment an existing population                                                                                                                                                                 | The proposed removal of habitat will not fragment an existing population as the entirety of the habitat patch will be removed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| result in genetically distinct populations forming as a result of habitat isolation                                                                                                             | The habitat containing Belson's Panic is currently isolated from other habitat patches and the proposed development will result in the loss of the habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat                                        | The proposed development will implement weed hygiene measures to ensure that invasive species will not become established within existing habitat for the species along Yarranlea – Murlaggan Road.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| introduce disease that may cause the population to decline                                                                                                                                      | The proposed development is unlikely to introduce a disease that could cause the species to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| interfere with the recovery of the species.                                                                                                                                                     | <p>Tremont and Whalley (1993) identify management of remnant habitats as a key action to recover the species as well as maintenance of overstorey vegetation, preservation of sub-shrub and shrub populations, regeneration of native vegetation and strategic protection of lands. The NSW (former) Department of Environment, Conservation and Water (2005) further identify key actions including exclusion of stock, weed control and protection of areas from clearing and further fragmentation.</p> <p>The proposed development will not substantially interfere with any of these key management actions.</p> |
| cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species                                                                    | The habitat patch within the study area cannot be considered an ecological significant location as the habitat is isolated from other habitat patches or vegetation within the surrounding area.                                                                                                                                                                                                                                                                                                                                                                                                                      |

In assessing applications for Clearing Permits, DEHP will have regard to Nature Conservation (Wildlife Management) Regulation 2006 Protected Plants Assessment Guideline (DEHP, 2014b). An Impact



Management Plan must be provided, which identifies how unavoidable impacts to Belson' Panic will be managed. The Impact Management Plan is provided in Appendix 4.

The Flora Survey Trigger map was downloaded on 12/2/2016 and a small area of high risk area is mapped within and adjacent to the study area in the north-east portion. This map is valid for 12 months from the date of download and will need to be re-downloaded if construction is likely to commence more than 12 months from this date.

### 5.2.2 EVNT Fauna

Although several EVNT and SLC fauna species are likely to occur within the study area (Condamine Earless Dragon, Grey-headed Flying-fox, Echidna), no specific licensing or approvals are required to take (e.g. damage or destroy) potential habitat for those species in this instance. However, under section 332 of the Nature Conservation (Wildlife Management) Regulation 2006 a person must not, without a reasonable excuse, tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring. Tampering with an animals breeding place under an approved Species Management Program (SMP) is a reasonable defence against a charge under Section 332.

### 5.2.3 Implications

The removal of an endangered plant must be approved under the NC Act through the granting of a Clearing Permit. An application for a clearing permit will be made to DEHP in due course. A fee of \$2,677.00 is payable at the time of lodgement of the fee. An environmental offset obligation will be a condition of approval attached to the permit.

The Condamine Earless Dragon is considered a likely occurrence within the study area within cropping lands and adjacent grassy areas within Yarranlea-Murlaggan Road. Although breeding places for this species are not well understood, the grassy areas along Yarranlea-Murlaggan Road are considered to be habitat for the dragon. No impacts are proposed within these area, and as such, an SMP for this species is not required. In addition, no other least concern or special least concern species are known to breeding within the proposed development area or would be impact by the development and as such an SMP is not required.

## 5.3 Vegetation Management Act 1999

The proposed development does not trigger the VM Act given that the patch of RE 11.9.5 has been confirmed as Category X vegetation through the approval of a PMAV over the Lot 2 on RP7475 (Appendix 5).

However, should regulated vegetation be impacted along Yarranlea Road, the VM Act may apply. Given the activity is for the construction of a powerline, the trimming may be exempt under the VM Act if the activity is under section 101 or 112A of the *Electricity Act 1994* or section 17 of the *Electricity Regulation 2006*.

## 5.4 Land Protection (Pest and Stock Route Management) Act 2002

Declared pests, being certain animal and plant species, are declared under the *Land Protection (Pest and Stock Route Management) Act 2002*. Declared pests can be assigned into one of three Classes that regulate how the species is managed and can apply to restricting sale, introduction, possession or transport of the species.

Landowners must take reasonable steps to keep their land free of Class 1 and 2 declared pests. Landholders are not required to control Class 3 plants unless their land is adjacent to an environmentally significant area and they are issued with a pest control notice.

Velvety tree pear and European Rabbit are declared class 2 pests and landowners are legally responsible to take reasonable steps to remove and destroy these pests.

## 5.5 Environmental Offset Act 2014

The proposed removal of Belson's Panic from the study area will require approval from DEHP through the granting of a clearing permit. A condition of approval will include provision of an environmental offset in accordance with the EO Act. The EO Act requires that an offset is provided for significant residual impacts to matters of state environmental significance (MSES). Removal of a population of an endangered plant is a MSES as defined under the EO Act. Under section 2.3.2 of the Queensland Environmental Offsets Policy (QEOP) (Version 1.1, DEHP, 2014c), the offset can be a 100% financial offset, which is a payment to DEHP to offset the impact on behalf of the proponent. Yarranlea Solar Pty Ltd, as proponent for the project, would seek to complete a financial offset for removal of Belson's Panic plants.

Financial offsets are calculate using the methodology described in Appendix 4 of the QEOP; however, DEHP provide an online calculator. The following criteria were used in the online calculator as shown in Table 6. The total offset cost has been assessed as **\$28,772.00**.

**Table 7** Financial Offset Calculation

| Criteria                     | Assessment                                           |
|------------------------------|------------------------------------------------------|
| Local government area        | Toowoomba Regional Council                           |
| Bioregion                    | Brigalow Belt                                        |
| Subregion                    | Eastern Darling Downs                                |
| Impact area                  | 0.9386 hectares                                      |
| Notional offset area         | 3.7544 hectares                                      |
| Distinct matter area (DMA)   | 1.1                                                  |
| Matter group                 | 1.1.1 Threatened plants – <i>Homopholis belsonii</i> |
| Non-protected area cost      | \$15,017.60                                          |
| Landholder incentive payment | \$10,000.00                                          |
| Administrative cost          | \$3,754.40                                           |
| <b>Total offset cost</b>     | <b>\$28,772.00</b>                                   |

## 5.6 Water Act 2000

The watercourse map was reviewed for the study area (via the Vegetation Management category globe within the Queensland Globe). The map shows that two waterways have been identified as occurring within the study area. However, both waterways have been disturbed and diverted from their original courses and only a drainage feature remains.

Construction activities can be undertaken within the drainage features without the need for a permit or approval under the Water Act.

## 5.7 Toowoomba Planning Scheme

The study area is captured by the Environmental Significance Overlay Map and therefore the Environmental Significance Overlay Code is triggered. An assessment is provided against Table 8.5.1.1 below (Table 8).

**Table 8 Environmental Significance Overlay Code – for assessable development**

| Performance outcomes                    |                                                                                                                                                                                                                                  | Acceptable outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Proposed Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Areas of Ecological Significance</b> |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PO <sub>1</sub>                         | Vegetation disturbance or other impacts on areas of ecological significance shown on the Environmental Significance Overlay maps, is avoided or where disturbance cannot be avoided the loss or decrease of values is minimised. | <p>AO<sub>1.1</sub> Impacts are avoided by locating development wholly outside mapped areas of ecological significance and areas of ecological significance buffer identified on the Environmental Significance Overlay maps.</p> <p>OR</p> <p>Where impacts on areas of ecological significance shown on the Environmental Significance Overlay Maps cannot be avoided, they are minimised by:</p> <ul style="list-style-type: none"> <li>(a) minimising the total footprint within which activities, buildings, structures, driveways and other works or activities are contained;</li> <li>(b) avoiding further fragmentation of areas of ecological significance and strengthening linkages where possible;</li> <li>a) utilising areas of lesser importance in terms of biodiversity values so that areas of higher value are conserved to the greatest extent practicable; and</li> <li>(d) maintaining areas of ecological significance in patches of greatest possible size and with the smallest possible edge to area ratio.</li> </ul> | <p>The small patch of RE 11.9.5 is identified as an Area of Ecological Significance as this relates to the patch being mapped as regulated vegetation. The patch is proposed to be removed. The boundary of this patch was modified through a PMAV application and DNRM have confirmed that the modified boundary has resulted in the patch being identified as category X vegetation.</p> <p>However, the definition of areas of ecological significance includes:</p> <ul style="list-style-type: none"> <li>- endangered REs;</li> <li>- of concern REs;</li> <li>- least concern REs; and</li> <li>- areas of endangered, vulnerable and rare species.</li> </ul> <p>Therefore, the area is considered an area of ecological significance. None of the acceptable outcomes can be achieved with the current project design. The vegetation is currently small and isolated within the study area and any attempts to minimise the impacts of the development would be superfluous. An offset is proposed under the <i>Environmental Offsets Act 2014</i> to compensate for the loss of this habitat.</p> |

| Performance outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Acceptable outcomes                                                                                                                                                                                                                                                                          | Proposed Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PO<sub>2</sub> Optimise biodiversity outcomes by prioritising the location of environmental offsets within identified biodiversity corridors.</p>                                                                                                                                                                                                                                                                                                                                                                                              | <p>AO<sub>2.1</sub> Biodiversity offsets designed to counterbalance development impacts on areas of ecological significance are delivered consistent with the Queensland Government Environmental Offsets Policy 2008 and other applicable biodiversity / environmental offset policies.</p> | <p>An offset is proposed in accordance with the EO Act as a likely condition of approval on a Clearing Permit made under the NC Act.</p>                                                                                                                                                                                                                                                                                                                                                                     |
| <p>PO<sub>3</sub> Landscaping complements biodiversity values through incorporating the following elements into the landscaping design:</p> <ul style="list-style-type: none"> <li>(a) native plants of local origin; or</li> <li>(b) known food and habitat trees and shrubs; or</li> <li>(c) replication of adjacent healthy remnant habitats, including understorey vegetation; and</li> <li>(d) no declared noxious plants, weeds or invasive plants likely to displace native flora species or degrade fauna habitat.</li> </ul>             | <p>No acceptable outcome is nominated.</p>                                                                                                                                                                                                                                                   | <p>Landscaping will be complimentary to the species found within proximity to the study area and will include:</p> <ul style="list-style-type: none"> <li>(a) native plants of local origin; or</li> <li>(b) known food and habitat trees and shrubs; or</li> <li>(c) replication of adjacent healthy remnant habitats, including understorey vegetation; and</li> <li>(d) no declared noxious plants, weeds or invasive plants likely to displace native flora species or degrade fauna habitat.</li> </ul> |
| <p>PO<sub>4</sub> Movement of fauna is facilitated within and through the site, particularly along identified biodiversity corridors by:</p> <ul style="list-style-type: none"> <li>(a) ensuring that development and associated activities do not create barriers to the movement of fauna along and within biodiversity corridors;</li> <li>(b) directing fauna to locations where wildlife infrastructure has been created, to enable wildlife to safely negotiate a development area; and separating fauna from potential hazards.</li> </ul> | <p>No acceptable outcome is nominated.</p>                                                                                                                                                                                                                                                   | <p>The study area comprises an agricultural land use and does not provide vegetated connections to other habitat area. Therefore, movement of fauna will not be facilitated through the proposed development.</p>                                                                                                                                                                                                                                                                                            |

| Performance outcomes                                                                                                                                                                                                                                | Acceptable outcomes                                                                                                                                                                                                                                                        | Proposed Development                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PO <sub>5</sub> Identified biodiversity corridors on the Environmental Significance Overlay maps and their role to potentially connect areas of ecological significance (through rehabilitation or enhancement) are not compromised by development. | No acceptable outcome is nominated.                                                                                                                                                                                                                                        | No Biodiversity Corridors are identified on the Environmental Significance Overlay Map within or adjacent to the study area.                                                                           |
| <b>Waterways and Wetlands</b>                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                        |
| PO <sub>6</sub> Development is not carried out within a mapped waterway or wetland identified on the Environmental Significance Overlay maps.                                                                                                       | AO <sub>6.1</sub> Development is located outside the mapped boundary of a waterway or wetland identified on the Environmental Significance Overlay maps.                                                                                                                   | Two mapped waterways are identified within the northern portion of the study area. Both waterway area have been significantly modified from their natural state and are not identifiable as waterways. |
| PO <sub>7</sub> Development provides a buffer which protects the ecological, hydrological and water quality values of the wetland or the waterway.                                                                                                  | AO <sub>7.1</sub> Development provides a buffer area which is vegetated with native plants endemic to the area.<br>AO <sub>7.2</sub> Buildings, structures and works are not carried out within the buffer area identified on the Environmental Significance Overlay maps. | Natural waterways do not occur within or immediately adjacent to the study area. The drainage line is not proposed to be vegetated.                                                                    |
| PO <sub>8</sub> Development retains the existing hydrological regime or re-establishes the previous naturally occurring regime.                                                                                                                     | AO <sub>8.1</sub> Existing flows of surface and ground water are not altered through construction of channelled flows or the redirection or interruption of flows.                                                                                                         | The proposed development will not modify the existing drainage patterns or profile of the study area.                                                                                                  |

## 6 CONCLUSION AND FURTHER REQUIREMENTS

This ecological assessment has been prepared to identify the flora and fauna values within the study area, define and identify features of significance at the Commonwealth, State and local level, and to provide an assessment of the proposed development in consideration of relevant biodiversity legislation and government policy. The study area contains ecological values that are expected within an agricultural landscape with a common suite of species occurring within the limited habitat available. The small patch of RE 11.9.5 meets the definition of remnant vegetation; however through a PMAV process it has been identified as Category X vegetation. The patch of vegetation including the population of Belson's Panic is proposed to be removed.

The removal of habitat for Belson's Panic has been assessed at the Queensland and Commonwealth levels. The removal of habitat has been assessed as a significant impact under the relevant Queensland guidelines; however, the removal of habitat is not a significant impact under the EPBC Act. This difference is primarily due to the different conservation status of the species under the NC Act (endangered) and EPBC Act (vulnerable).

Further requirements associated with proposed development are provided below (Table 9).

**Table 9.** Further requirements associated with development of the study area

| Legislation                                                                                 | Description of Values                                                                                                                                                                                                                                                                       | Action Required                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Environment Protection and Biodiversity Conservation Act 1999</i>                        | The proposed action is unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act.                                                                     | No further action required. A referral under the EPBC Act could be completed to provide project certainty.                                                                                                                                     |
| <i>Vegetation Management Act 1999</i>                                                       | Regulated vegetation (i.e. RE 11.9.5) was identified within the study area. This vegetation was the subject of a PMAV process which resulted in the vegetation being identified as Category X vegetation.                                                                                   | No further action required                                                                                                                                                                                                                     |
| <i>Nature Conservation Act 1992</i>                                                         | A small population of Belson's Panic was recorded within the patch of RE 11.9.5. This population will be removed as part of the proposed development. No threatened fauna species were recorded within the study area; however Condamine Earless Dragon was considered a likely occurrence. | An application for a clearing permit must be made to DEHP and approval gained prior to clearing commencing.<br><br>No breeding places for EVNT, special least concern or least concern species is expected. Therefore, an SMP is not required. |
| <i>South East Queensland koala Conservation State Planning Regulatory Provisions (SPRP)</i> | The study area is not located within a koala assessable development area.                                                                                                                                                                                                                   | No further action required.                                                                                                                                                                                                                    |
| <i>Land Protection (Pest and Stock Route Management) Act 2002</i>                           | Class 2 and class 3 declared plant pests have been identified within the study area.                                                                                                                                                                                                        | Class 2 declared plants, velvety tree pear must be removed and destroyed from the study area prior to construction commencing.                                                                                                                 |



| Legislation                                                 | Description of Values                                                                                                                                                                                                                              | Action Required                                                                                                                                  |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Water Act 2000</i>                                       | The creekline and tributaries within the study area are defined as a drainage features under the Water Act.                                                                                                                                        | No further action required.                                                                                                                      |
| <i>Toowoomba Planning Scheme</i>                            | The Environmental Significance Overlay identifies an Area of Ecological Significance and Waterways within the study area. The Area of Ecological Significance will be retained and protected and the waterways do not occur within the study area. | PO1 of the Environmental Significance Overlay Code has not been met. This will required consultation with TRC to resolve the acceptable outcome. |
| <i>Electricity Act 1994 and Electricity Regulation 2006</i> | An exemption may apply for impacts to regulated vegetation for activities under section 101 or 112A of the Electricity Act of 17 of the Electricity Regulation.                                                                                    | The potential exemption should be investigation further once the design has progressed.                                                          |

## 7 REFERENCES

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## APPENDIX 1 – LEGISLATION (BACKGROUND)

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### A1.1. Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions (i.e. project, development, undertaking, activity, or series of activities) that are likely to have a significant impact on matters of national environmental significance (NES), or on Commonwealth land. An action, unless otherwise exempt, requires approval from the Commonwealth Environment Minister if it is considered likely to have an impact on any of the following matters of NES:

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory and marine species;
- Commonwealth marine area;
- Nuclear actions (including uranium mining);
- Great Barrier Reef Marine Park; or,
- Water resources impacted by coal seam gas or mining development.

### A1.2. Nature Conservation Act 1992 (Queensland)

The *Nature Conservation Act 1992* (NC Act) provides for the conservation of nature through protection of all native plants and animals in Queensland. Protection is provided under the NC Act through conservation of land as protected areas and wildlife protection outside of protected areas. Actions impacting on protected native flora and fauna are regulated under the NC Act. Permits for disturbance to native flora and fauna can be administered under the NC Act. The Queensland Nature Conservation (Wildlife) Regulation 2006 lists flora and fauna species considered to be extinct in the wild, endangered, vulnerable, near threatened or special least concern in Queensland.

#### Protected Plants

In Queensland, all plants that are native to Australia are “protected plants” under the NC Act. The DEHP administer this Act to ensure that protected plants and their parts are not illegally removed from the wild or traded. The take and use of protected plants (including whole plants, plant parts and propagating material) from the wild is regulated by a licensing system. People who wish to take protected plants from the wild, for any reason, may be required by law to obtain a licence, permit or authority from the Department of Environment and Heritage Protection (DEHP). This will be the case unless the activity is specifically exempt under a regulation or conservation plan under the Act (such as for timber harvesting of common species). Whether the activity is bound by, or exempt from,

provisions of the Act, the clearing of native vegetation may also require development approval under other legislation such the *Vegetation Management Act 1999* (VM Act).

The Protected Plants Flora Survey Trigger Map (DEHP 2015) shows high risk areas for protected plants and is used to help determine flora survey and clearing permit requirements for a particular location. Areas shown on the map as high risk are subject to particular requirements under the NC Act.

### Protected Animal Breeding Places

Section 332 of the Nature Conservation (Wildlife Management) Regulation 2006 (Wildlife Management Regulation) governs tampering with animal breeding places. Under the Wildlife Management Regulation, Section 332(1), it is an offence to tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring.

Section 332(2) states that an animal breeding place is being used by a protected animal to incubate or rear the animal's offspring if:

- the animal is preparing, or has prepared, the place for incubating or rearing the animal's offspring; or
- the animal is breeding, or is about to breed, and is physically occupying the place; or
- the animal and the animal's offspring are physically occupying the place, even if the occupation is only periodical; or
- the animal has used the place to incubate or rear the animal's offspring and is of a species generally known to return to the same place to incubate or rear offspring in each breeding season for the animal.

Section 332(5) defines tamper (with an animal breeding place) as "damage, destroy, mark, move or dig up the breeding place".

Section 332(1) does not apply if the removal or tampering is part of an approved Species Management Program (SMP) for animals of the same species (section 332(4)). Section 332(5) defines an approved SMP, for a species of animal, as "a program about managing the population and habitat of the species of animal that is approved by the chief executive".

If a breeding place for a protected animal is likely to be disturbed by construction activities, an SMP is required to be prepared and approved by DEHP.

## A1.3. Vegetation Management Act 1999

The VM Act provides a framework for the regulation of woody, terrestrial native vegetation located outside of protected areas. The stated purpose of the Act is to regulate the clearing of native vegetation in a way that:

- Conserves remnant vegetation that is an endangered, of concern or least concern RE
- Conserves vegetation in declared areas
- Ensures clearing does not cause land degradation
- Prevents biodiversity loss

- Maintains ecological processes
- Manages the environmental effects of the clearing to ensure the above purposes are obtained.

The Act provides for the establishment and mapping of REs that encompass vegetation community descriptions within a geological and bioregional context, and for the creation and use of clearing codes (among other things). In addition, it provides a process for RE mapping changes by the public, and for the investigation and prosecution of clearing offences. Details on what clearing activities require assessment against the various regional clearing codes authorised under the VM Act are provided by the *Sustainable Planning Act 2009* (SP Act).

#### **A1.4. Environmental Offsets Act 2014**

The *Environmental Offsets Act 2014* (EO Act) was recently enacted in Queensland to streamline the offsets process for proponents and developers. The EO Act and subordinate Environmental Offsets Regulation 2014 and Environmental Offsets Policy replaced the Queensland Government Environmental Offsets Policy and four specific-issue policies for vegetation management, koala habitat, fish habitat and biodiversity values.

The EO Act amended other Acts to provide consistency for when offsets are triggered and how they should be delivered. The EO Act does not trigger offsets directly, but is indirectly involved through existing approval pathways under the SP Act, NC Act, VM Act and Fisheries Act 1994. Offsets can be imposed by an authority when a prescribed activity will have a significant residual impact on a prescribed environmental matter.

Offsets can be delivered by a proponent driven offset (land-based offset) or financial settlement offset depending upon the activity and the matter(s) involved.

If the proposed development is shown to have a significant residual impact on a matter of State environmental significance (SES), then an environmental offset is likely to be conditioned onto the project approval.

#### **A1.5. Water Act 2000**

The *Water Reform and Other Legislation Amendment Act 2014* was passed on 26 November 2014. The Act includes a number of changes to the Water Act 2000 and other resource related legislation. Amongst the changes, a new watercourse identification map has been prepared to show watercourses and drainage features as described in the Water Act.

#### **A1.6. Toowoomba Regional Planning Scheme**

The study area lies within the Toowoomba Regional Council area and will be assessed under the Toowoomba Planning Scheme 2012 (amended October 2015). The following overlays are relevant to the study area.

##### **Environmental Significance Overlay**



The Environmental Significance Overlay identifies eight significant features throughout the Beaudesert area. These include:

- (a) Areas of Ecological Significance;
- (b) Areas of Ecological Significance Buffer;
- (c) Waterways and Wetlands; and
- (d) Biodiversity Corridors.

The study area is captured by the Areas of Ecological Significance, buffers and Waterways and Wetlands overlay and corresponds with the mapped remnant vegetation within and adjacent to the study area and the mapped waterways within the northern portion.

## APPENDIX 2 – FLORA SURVEY TRIGGER MAP

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Published on DES Disclosure Log  
RTI Act 2009

## APPENDIX 3 – SIGNIFICANT FAUNA ASSESSMENT

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Published on DES Disclosure Log  
RTI Act 2009

**Table 10 Significant Fauna Species within 10km of the Study Area**

| Scientific Name                       | Common Name                  | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                           | Likelihood of Occurrence Assessment                                                                                                                                         |
|---------------------------------------|------------------------------|-----|------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>INSECTS</b>                        |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Phyllodes imperialis smithersi</i> | Pink Underwing Moth          | LC  | E    | PMST   | The moth occurs in undisturbed lowland rainforest where its food plant the vine <i>Carronia multisepalea</i> occurs. The moth occurs from Nambour into northern NSW.                                                                                                                                                                                                                                                                                                            | Unlikely. Required habitat does not occur within the study area.                                                                                                            |
| <b>FISH</b>                           |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Maccullochella mariensis</i>       | Mary River Cod               | LC  | E    | PMST   | The Mary River cod is endemic to the Mary River system in northern South East Queensland. It has been translocated to many impoundments in SEQ, including Wivenhoe, Baroon Pocket and Maroon Dam.                                                                                                                                                                                                                                                                               | Unlikely. A translocated population occurs within 10km of the study area, however the waterway within the study area does not contain the required habitat for the species. |
| <b>FROGS</b>                          |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Mixophyes iteratus</i>             | Giant Barred Frog            | LC  | E    | PMST   | The Southern Barred Frog occurs in uplands and lowlands in rainforest and wet sclerophyll forest, including farmland. Populations have been found in disturbed areas with vegetated riparian strips on cattle farms and in regenerated logged areas. Many sites where the Southern Barred Frog is known to occur are the lower reaches of streams which have been affected by major disturbances such as clearing, timber harvesting and urban development in their headwaters. | Unlikely. Required habitat does not occur within the study area.                                                                                                            |
| <b>REPTILES</b>                       |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Coeranoscincus reticulatus</i>     | Three-toed Snake-tooth Skink | LC  | V    | PMST   | The Three-toed snake-tooth skink is known from subtropical rainforests in McPherson, Main and Conondale Ranges north to Fraser Island. It is absent from apparently suitable habitat in the D'Aguilar Range. It mainly occurs in elevated areas although Fraser Island and adjacent Cooloola region                                                                                                                                                                             | Unlikely. Required habitat does not occur within the study area.                                                                                                            |

| Scientific Name                       | Common Name          | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                       | Likelihood of Occurrence Assessment                              |
|---------------------------------------|----------------------|-----|------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
|                                       |                      |     |      |        | are lowland sites.                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <i>Delma torquata</i>                 | Collared Delma       | V   | V    | PMST   | The collared delma is known from rocky areas associated with dry open forests and from briglow associations. Within these habitats the presence rocky substrates (with small rocks which act as shelter sites) is an essential microhabitat element.                                                                                                        | Unlikely. Required habitat does not occur within the study area. |
| <i>Furina dunmalli</i>                | Dunmall's snake      | V   | V    | PMST   | Poorly known, so that preferred habitats are uncertain. Open dry sclerophyll forests and woodlands, especially brigalow, with fallen timber and ground litter on floodplains of cracking clay soils. In Queensland, the snake occurs almost exclusively within the Brigalow Belt bioregion.                                                                 | Unlikely. The snake does not occur east of Toowoomba.            |
| <b>BIRDS</b>                          |                      |     |      |        |                                                                                                                                                                                                                                                                                                                                                             |                                                                  |
| <i>Anthochaera phrygia</i>            | Regent Honeyeater    | E   | CE   | PMST   | The regent honeyeater is usually associated with box-ironbark vegetation types and the wetter more fertile sites within these associations such as creek flats, broad valleys and foothills. The species has undergone a significant range contraction and is now rarely sighted in Queensland.                                                             | Unlikely. Required habitat does not occur within the study area. |
| <i>Botaurus poiciloptilus</i>         | Australasian Bittern | LC  | E    | PMST   | The Australasian Bittern requires shallow water, less than 30 cm deep with medium to low density reeds, grasses or shrubs for foraging (Pickering 2013). It needs deeper water with medium to high density reeds, rushes or sedges for nesting (Pickering 2013). It is largely recorded in freshwater wetlands and, rarely, in estuaries or tidal wetlands. | Unlikely. Required habitat does not occur within the study area. |
| <i>Cyclopsitta diophthalma coxeni</i> | Coxen's Fig-Parrot   | E   | E    | PMST   | Coxen's fig parrot occurs in lowland subtropical rainforest, dry rainforest, littoral and developing rainforest, riparian areas in woodland and cleared areas with fig trees. It feeds on figs but also eats the                                                                                                                                            | Unlikely. Required habitat does not occur within the study area. |

| Scientific Name                  | Common Name                | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                            | Likelihood of Occurrence Assessment                                                                                              |
|----------------------------------|----------------------------|-----|------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                                  |                            |     |      |        | fruit of other native and exotic trees and insect larvae. In Queensland it now appears to be largely restricted to the greater Bundaberg area, Main Range National Park, Blackall Range and the western side of Lamington National Park.                                                                                                                                                         |                                                                                                                                  |
| <i>Dasyornis brachypterus</i>    | Eastern Bristlebirds       | E   | E    | PMST   | The northern population, occurs in south-eastern Queensland and north-eastern NSW, and consists of extant local populations at Conondale Range National Park, Main Range National Park, Mount Barney National Park, Lamington National Park, Border Ranges National Park, Grady's Creek and Gibraltar Range National Park. It is not known outside of these reserves and adjacent private lands. | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Erythrotriorchis radiatus</i> | Red Goshawk                | V   | V    | PMST   | The red goshawk is generally found in open woodland, the edges of rainforest, and in dense riverine vegetation of coastal and subcoastal forests. This species is known to have a large home range but nests in tall trees usually within 1km of a waterway or wetland.                                                                                                                          | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Geophaps scripta scripta</i>  | Squatter Pigeon (southern) | V   | V    | PMST   | This species is known from tropical dry, open sclerophyll woodlands and sometimes savanna. It appears to favour sandy soil dissected with low gravely ridges and is less common on heavier soils with dense grass cover. It is nearly always found in close association with permanent water. This species is now rarely recorded in southern Queensland and northern NSW.                       | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Grantiella picta</i>          | Painted honeyeater         | V   | V    | PMST   | Forests, woodlands and dry scrublands, dependent on mistletoe berries. Widespread throughout Queensland but rare in inland Australia.                                                                                                                                                                                                                                                            | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km                           |



| Scientific Name               | Common Name                     | Qld | EPBC | Source  | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Likelihood of Occurrence Assessment                                                                                              |
|-------------------------------|---------------------------------|-----|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                               |                                 |     |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | radius of the study area.                                                                                                        |
| <i>Lathamus discolor</i>      | Swift Parrot                    | E   | E    | PMST    | This species only breeds in Tasmania and migrates to the mainland to feed each year mainly on the inland slopes of the Great Dividing Range particularly in Victoria and NSW with a small number of birds reaching as far as south east Queensland. This species is considered to have a moderate potential to occur within the study area during its winter, non breeding period. However, this would be expected to be a rare occurrence. While it has been recorded historically from Chinchilla, recent records tend to be from coastal Queensland. | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Ninox strenua</i>          | Powerful Owl                    | V   |      | Wildnet | The powerful owl occurs mostly on the coastal side of the Great Dividing Range and adjacent inland slopes. Powerful Owls are sedentary within home ranges of about 1,000 ha within open eucalypt, Casuarina or Callitris pine forest and woodlands, often utilising exotic pine plantations. They nest in tree hollows often in large eucalypts and often roost in denser vegetation including rainforest. Prey items are medium sized mammals such as possums and gliders but also take birds, flying-foxes, rats and insects.                         | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Poephila cincta cincta</i> | Black-throated Finch (southern) | E   | E    | PMST    | The Black-throated Finch (southern) historically occurred from far south-eastern Queensland, near the Queensland-NSW border, through eastern Queensland north to the divide between the Burdekin and Lynd Rivers. The subspecies is now extinct at most sites south of Burdekin River, and is confined to a very few remaining 'pockets' of                                                                                                                                                                                                             | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |

| Scientific Name             | Common Name                          | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Likelihood of Occurrence Assessment                                                                                              |
|-----------------------------|--------------------------------------|-----|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                             |                                      |     |      |        | <p>suitable habitat.</p> <p>It has been absent from Brisbane and its surrounds since the 1930s or 1940s, and appears to have become extinct around most of Rockhampton during the early to mid 1970s, despite having been numerous there during the 1950s.</p>                                                                                                                                                                                                                                                         |                                                                                                                                  |
| <i>Rostratula australis</i> | Australian Painted Snipe             | V   | E    | PMST   | This species occurs in shallow, vegetated temporary or infrequently filled wetlands, sometimes with trees or shrubs where it feeds at the water's edge on seeds and invertebrates.                                                                                                                                                                                                                                                                                                                                     | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Turnix melanogaster</i>  | Black-breasted Button-quail          | V   | V    | PMST   | The black-breasted button-quail is most commonly associated with vine thicket rainforest with greater than 800mm rainfall, deep leaf litter and a closed canopy but also occur in softwood scrubs in the Brigalow Belt, vine scrub regrowth and mature hoop pine ( <i>Araucaria cunninghamii</i> ) particularly with a lantana understorey. They also occur in dry sclerophyll forest adjacent to rainforest and acacia and <i>Austromyrtus</i> scrubs on sandy coastal soils (Inskip Point) (Garnett & Crowley 2000). | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <b>MAMMALS</b>              |                                      |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                  |
| <i>Chalinolobus dwyeri</i>  | Large-eared Pied Bat, Large Pied Bat | V   | V    | PMST   | This species is uncommon in dry and wet Eucalypt forests from Blackdown Tableland in Central Queensland to near Wollongong. Primarily a cave rooster, this species inhabits sclerophyll forests and woodlands throughout much of its range. It is however, primarily associated with Dry Sclerophyll Woodlands throughout its range, and these habitats are relatively restricted in the study area. This species is considered unlikely to be present in the study area                                               | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |

| Scientific Name                         | Common Name                      | Qld | EPBC | Source             | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Likelihood of Occurrence Assessment                                                                                                 |
|-----------------------------------------|----------------------------------|-----|------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <i>Ornithorhynchus anatinus</i>         | platypus                         | SL  |      | Wildnet            | Freshwater rivers and creeks in eastern Australia, from tropical rainforest in n Qld to mountains of Tasmania and SE Aust. Feed in both slow-moving and rapid (riffle) parts of streams, but appear to prefer coarser bottom substrates (e.g. gravel). Construct short burrows in the banks, often hidden by overhanging vegetation.                                                                                                                                                                                                                                                                                                                          | Unlikely. Required habitat does not occur within the study area.                                                                    |
| <i>Petrogale penicillata</i>            | brush-tailed rock-wallaby        | V   | V    | Wildnet, PMST      | In Queensland, occurs on rocky slopes and gorges of the Great Dividing Range.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Unlikely. Required habitat does not occur within the study area.                                                                    |
| <i>Phascolarctos cinereus</i>           | koala                            | V   | V    | Wildnet, ALA, PMST | koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species. koala habitat can be broadly defined as any environment containing koala food trees species or shelter trees, which may be used by koalas for roosting, sheltering or breeding, and which is sufficiently connected. The distribution of this habitat is largely influenced by land elevation average, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clayey soils. | Low likelihood. Food trees are present within the study area, however no signs of koala usage was recorded.                         |
| <i>Potorous tridactylus tridactylus</i> | Long-nosed Potoroo (SE mainland) | C   | V    | PMST               | In Queensland, the potoroo utilises a variety of habitats such as rainforest and coastal heaths and scrubs and seems to favour habitat with dense understorey. It occurs in scattered populations within Queensland.                                                                                                                                                                                                                                                                                                                                                                                                                                          | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area.    |
| <i>Pteropus poliocephalus</i>           | grey-headed flying-fox           | LC  | V    | Wildnet, PMST      | The Grey-headed Flying-fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests,                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Low likelihood. The flying fox may forage within the study area when mature eucalypts are flowering, however the resources provided |

| Scientific Name                     | Common Name          | Qld | EPBC | Source  | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Likelihood of Occurrence Assessment                                                             |
|-------------------------------------|----------------------|-----|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                     |                      |     |      |         | closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from Eucalyptus and related genera but in some areas it also utilises a wide range of rainforest fruits. None of the vegetation communities used by the Grey-headed Flying-fox produce continuous foraging resources throughout the year. As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources. The Grey-headed Flying-fox roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of Melaleuca, mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and suburban areas. The species can maintain fidelity to roost sites for extended periods, although new sites have been colonised. | are insufficient to support a population of the species.                                        |
| <i>Tachyglossus aculeatus</i>       | short-beaked echidna | SL  |      | Wildnet | Occurs in a wide range of habitats, from alpine and cold-temperate areas to deserts and tropical regions. Appears to have no specific habitat requirements beyond a food supply of ants and termites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | High likelihood. Echidnas are ubiquitous throughout the region and may occur on the study area. |
| <i>Dasyurus maculatus maculatus</i> | Spotted-tail Quoll   | E   | E    | PMST    | The Spot-tailed Quoll occurs in south-east Queensland: coastally from Bundaberg to the border and inland to Monto and Stanthorpe. Occurrences from five broad geographic areas are known: four from coastal ranges and the Great                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Unlikely. Required habitat does not occur within the study area.                                |

| Scientific Name | Common Name | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                              | Likelihood of Occurrence Assessment |
|-----------------|-------------|-----|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|                 |             |     |      |        | <p>Dividing Range from the NSW border to Gladstone. The fifth is centred on the eastern Darling Downs-Inglewood Sandstone provinces of the Brigalow Belt South Bioregion. Unconfirmed reports suggest the subspecies may occur in the Clarke and Conway Range areas, eastern Queensland.</p> <p>Historical locations include the D'Aguilar Range west of Brisbane and coastal areas from Coolangatta to Bundaberg. The species is now believed to be extinct in these regions.</p> |                                     |

**Table 11 Migratory Species within 10km of the Study Area**

| Scientific Name               | Common Name               | Qld | EPBC | Source             |
|-------------------------------|---------------------------|-----|------|--------------------|
| <i>Acrocephalus australis</i> | Australian Reed-warbler   | SL  | Mi   | Wildnet, ALA       |
| <i>Apus pacificus</i>         | Fork-tailed Swift         | SL  | Mi   | EPBC               |
| <i>Ardea alba</i>             | Great Egret               | SL  | Mi   | EPBC               |
| <i>Ardea alba modesta</i>     | Eastern Great Egret       | SL  | Mi   | Wildnet, ALA       |
| <i>Ardea ibis</i>             | Cattle Egret              | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Coracina tenuirostris</i>  | Cicadabird                | SL  | Mi   | Wildnet, ALA       |
| <i>Gallinago hardwickii</i>   | Latham's snipe            | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Hirundapus caudacutus</i>  | White-throated Needletail | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Merops ornatus</i>         | Rainbow Bee-eater         | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Monarcha melanopsis</i>    | Black-faced Monarch       | SL  | Mi   | EPBC               |
| <i>Monarcha trivirgatus</i>   | Spectacled Monarch        | SL  | Mi   | EPBC               |
| <i>Myiagra cyanoleuca</i>     | Satin Flycatcher          | SL  | Mi   | EPBC               |
| <i>Pandion haliaetus</i>      | Osprey                    | SL  | Mi   | EPBC               |

| Scientific Name             | Common Name    | Qld | EPBC | Source       |
|-----------------------------|----------------|-----|------|--------------|
| <i>Plegadis falcinellus</i> | Glossy Ibis    | SL  | Mi   | Wildnet, ALA |
| <i>Rhipidura rufifrons</i>  | Rufous Fantail | SL  | Mi   | EPBC         |

**Notes:** 1) Listed as Critically Endangered (CE), Endangered (E), Vulnerable (V), Special Least Concern (SL) or Migratory (Mi) under the EPBC Act

3) Likelihood of occurrence:

|   |                 |                                                                                                                                                                                                                                                                                                                                                                                                               |   |                     |                                                                                                                                                                                                                                                                                                                        |
|---|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | High Likelihood | <ul style="list-style-type: none"> <li>Known resident in the Study area based on site observations, database records, or expert advice; and/or,</li> <li>Recent records (i.e. within five years) of the species in the local area (VBA 2011); and/or,</li> <li>The Study area contains the species' preferred habitat.</li> </ul>                                                                             | 2 | Moderate Likelihood | <ul style="list-style-type: none"> <li>The species is likely to visit the Study area regularly (i.e. at least seasonally); and/or,</li> <li>Previous records of the species in the local area (DSE 2011b); and/or,</li> <li>The Study area contains some characteristics of the species' preferred habitat.</li> </ul> |
| 3 | Low Likelihood  | <ul style="list-style-type: none"> <li>The species is likely to visit the Study area occasionally or opportunistically whilst en route to more suitable sites; and/or,</li> <li>There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,</li> <li>The Study area contains few or no characteristics of the species' preferred habitat.</li> </ul> | 4 | Unlikely            | <ul style="list-style-type: none"> <li>No previous records of the species in the local area; and/or,</li> <li>The species may fly over the Study area when moving between areas of more suitable habitat; and/or,</li> <li>Out of the species' range; and/or,</li> <li>No suitable habitat present.</li> </ul>         |



## APPENDIX 4 – IMPACT MANAGEMENT PLAN

---

### A1.1. Introduction

This impact management plan has been prepared in accordance with the Protected Plants Assessment Guideline (DEHP, 2014b). The proposed development proposes to remove a population of Belson's Panic *Homopholis belsonii*, which is listed as endangered under the *Nature Conservation Act 1992* (NC Act), and an area of habitat of approximately 0.94 hectares.

### A1.2. Attempts to avoid and minimise impact

Avoidance of clearing is not possible for this project as the species habitat occurs as an isolated patch within the centre of the property and is surrounded on all sides by cropping. Solar farms require large, flat areas for installation of solar panels and for efficiency, property configurations which allow installation of rectangular 'blocks' of solar panels are preferred. It is not reasonable to amend the development layout to avoid clearing of the habitat patch as the action would involve a loss of potential revenue over the life of the farm and potentially resulting in the project becoming economically unviable.

Minimising the clearing has been considered and rejected as the habitat patch would remain isolated regardless of the percentage of habitat retained.

### A1.3. Nature of impact

The impact is the clearing of habitat supporting a population of Belson's Panic. This will result in a loss of less than one hectare of habitat and 12 discrete areas where Belson's Panic occurs (Figure A1). An exact count of individuals grasses is not possible since the species reproduces primarily through stolons and therefore multiple tussocks could be attributable to one or more individuals. Each discrete area is between one metre squared and several metres squared and the grass occurs primarily underneath shrubs where it has a competitive advantage over other native and exotic grasses that prefer open spaces. Belson's Panic is the dominant grass in the discrete areas in which it occurs. This pattern of occupation is usual for this species.



**Figure A1** Location of Belson's Panic patches within vegetation to be removed.

#### A1.4. Management of impact

All plants of Belson's Panic within the habitat patch are proposed to be removed. Translocation has been considered as a mitigation option; however, this option has been rejected for the following reasons:

- The species has been successfully translocated previously (see SKM 2008); however the species is also easily grown from seed (Menkins, *pers. comm.*);
- There are no suitable habitat patches within the study area that could receive the translocated plants and which then could be managed by the proponent. The closest population is within the road reserve of Yarranlea-Murlaggan Road, which is outside of the control of the proponent; and
- Translocation has the potential to introduce weeds that are present within the habitat patch into the receiving environment. The habitat within the study area contains weed species that are known threatening processes to Belson's Panic (e.g. Green Panic *Megathyrsus maximus*) and contaminated soil may be introduced into the receiving environment.

Under the EO Act, a financial offset is proposed to counterbalance the loss of this species from the study area. Prior to clearing, seed will also be collected from the plants for spreading within nearest populations (Yarranlea-Murlaggan Road and Irongate Conservation Park) to introduce new genetic material into these populations.

### **A1.5. Justification of impact management**

The proposed clearing area is within a Low Risk area on the Flora Survey Trigger Map (Appendix 5) and therefore, the loss of any populations of threatened plants within such areas has been accounted for under the Protected Plant framework.

The habitat proposed to be cleared is situated within the centre of an active agricultural property and is surrounded on all sides by cropland. The nearest habitat area for Belson's Panic is over 500 metres to the north-east within Yarranlea-Murlaggan Road. The habitat patch is isolated and there is unlikely to be any connection between this habitat and surrounding habitat areas. The habitat is currently subjected to threatening processes including presence of weed threats (e.g. Green Panic) and the likelihood that the landholder could clear the vegetation at any time without a permit. The habitat has been identified as Category X vegetation and therefore, no assessment or approval is required to clear under the VM Act.

### **A1.6. Survival of plant in the wild**

The clearing will not impact on any populations outside of the study area and is unlikely to adversely affect the survival in the wild of the species. Collection of seed prior to clearing and distribution into the existing populations along Yarranlea-Murlaggan Road and at Irongate Conservation Park will ensure that the genetic material will not be lost as a result of the proposed clearing.

## APPENDIX 5 – PROPERTY MAP OF ASSESSABLE VEGETATION

---

Published on DES Disclosure Log  
RTI Act 2009

To remove this landscaped page without effecting the formatting of the rest of the document:

- Select an area just above the section break (i.e. portrait page), then click File->Print->Page Setup. Click on each of the three tabs (don't change any settings) then click OK.
- Now, click after the section break (i.e. in the landscape page) and press F4. This will copy the formatting from the area above the section break (portrait), to the area below the section break (landscape).
- To correct any headers and footers that are not correct, open the 'headers and footers tools' tab (by double clicking on the header or footer) and apply the appropriate EHP header and footer styles from the drop down menus on the left side (the EHP specific options will be at the bottom of the list).



# Form

## Wildlife management

### Exempt clearing notification (protected plants)

*This form is to be used to notify the department of clearing of protected plants that are exempt under section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006.*

#### Important information

A protected plant clearing permit is required for clearing protected plants in an area identified as high risk on the flora survey trigger map, unless an exemption applies. This form is to be used to notify the department of clearing that is exempt from the requirement of a permit under section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006.

Under section 261ZA, a person may take a protected plant if a flora survey report is submitted to the chief executive, providing evidence that endangered, vulnerable or near threatened plants are not present in a clearing impact area, or these plants are present but the proposed clearing could avoid the plants by 100m. Section 261ZA requires that the flora survey report is provided at least 1 week before the person starts clearing, but no later than 12 months after the flora survey was undertaken.

Following submission of this form, the applicant will receive a receipt of the submission providing approval for the clearing to commence. Clearing under this exemption may be conducted within two years after the flora survey report is submitted.

#### 1. Applicant information

A permit may only be granted to an individual or corporation. Please tick the appropriate box:

- ☐ **AN INDIVIDUAL** → Complete Section 2 applicant details — then complete sections 4 to 7
- ☒ **A CORPORATION** → Complete Section 3 applicant details — then complete sections 4 to 7

#### 2. Applicant details for an individual

|                                                                  |        |               |
|------------------------------------------------------------------|--------|---------------|
| APPLICANT'S FAMILY NAME                                          |        | TITLE         |
| APPLICANT'S GIVEN NAME/S                                         |        | DATE OF BIRTH |
| RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)                      |        | POST CODE     |
| TELEPHONE (BUSINESS HOURS)                                       | MOBILE | FACSIMILE     |
| TELEPHONE (AFTER HOURS)                                          | EMAIL  |               |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS) |        | POST CODE     |





Form  
Exempt clearing notification (protected plants)

### 3. Application details for corporations

|                                                                                                                               |                       |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| REGISTERED LEGAL ENTITY NAME (NOT A BUSINESS TRADING NAME)<br>Yarranlea Solar Pty Ltd                                         |                       |
| TRADING NAME/S (IF APPLICABLE)<br>Yarranlea Solar                                                                             |                       |
| REGISTERED BUSINESS ADDRESS (NOT A POST OFFICE BOX)<br>c/- Power Tynan, Suite 6, 618 Ruthven Street, Toowoomba                | POST CODE<br>4350     |
| TELEPHONE (BUSINESS HOURS)<br>07 3870 8888                                                                                    | FACSIMILE             |
| EMAIL<br>relevant info@icubed.com.au                                                                                          | WEBSITE               |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS BUSINESS ADDRESS)<br>PO BOX 878, TOOWONG, QLD                                     | POST CODE<br>4066     |
| ABN / ACN / AN, OR TITLE AND SECTION OF LEGISLATION UNDER WHICH CORPORATION HAS LEGAL STATUS<br>30 609 850 553                |                       |
| NAME OF PRINCIPAL OF CORPORATION<br>3 irrelevant informat                                                                     |                       |
| SIGNATURE OF PRINCIPAL OF CORPORATION (or someone authorised to sign on their behalf)<br>s.73 irrelevant information DIRECTOR | DATE<br>06. MAY 2016. |

### Details of nominated person in charge where the authorised activity is to be undertaken

|                                                                                              |                                    |
|----------------------------------------------------------------------------------------------|------------------------------------|
| NOMINATED CONTACT PERSON'S FAMILY NAME<br>levant info                                        | TITLE<br>levant info               |
| NOMINATED CONTACT PERSON'S GIVEN NAME/S<br>vant ir                                           | DATE OF BIRTH<br>irrelevant inform |
| RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)<br>s.73 irrelevant information                   | POSTCODE<br>levant info            |
| TELEPHONE (BUSINESS HOURS)<br>07 38708888                                                    | MOBILE<br>3 irrelevant informa     |
| TELEPHONE (AFTER HOURS)<br>73 irrelevant informat                                            | FACSIMILE                          |
| EMAIL<br>levant info@icubed.com.au                                                           |                                    |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS)<br>PO BOX 878, TOOWONG, QLD | POSTCODE<br>4066                   |

### 4. Where is the clearing to be conducted?

Please identify area type:

Provide the street address, real property description(s) of the land(s) in which the project is located and local government area. (If you require more space, attach a separate sheet.)

|                                                 |
|-------------------------------------------------|
| Street Address<br>752 Murlaggan Road, Yarranlea |
|-------------------------------------------------|

Form

## Exempt clearing notification (protected plants)

|                                                     |                |
|-----------------------------------------------------|----------------|
| LOT<br>2                                            | Plan<br>A34925 |
| LOCAL GOVERNMENT AREA<br>TOOWOOMBA REGIONAL COUNCIL |                |

If possible, provide a specific location within the property, a property name or attach a map with the project area clearly delineated. Also include the map name/details.

|                                                           |
|-----------------------------------------------------------|
| SPECIFIC LOCATION/PROPERTY NAME                           |
| Geographical Coordinates<br>-27.7025 South, 151.5415 East |

### 5. What are the approximate start and completion dates for the project?

|                   |                 |
|-------------------|-----------------|
| START DATE<br>N/A | END DATE<br>N/A |
|-------------------|-----------------|

### 6. Flora survey requirements

#### 6.1 Flora survey

Has a flora survey been undertaken in accordance with the flora survey guideline?

☒ YES ☐ NO

If no, was the flora survey undertaken in accordance with an alternative flora survey methodology that has been agreed to by the chief executive?

☐ YES ☐ NO

*If an alternative flora survey methodology was used, evidence of approval is required to be attached to this application.*

*Note: If the survey relating to the application was undertaken during the period of 31 March 2013 to 31 March 2014, the transitional provision under section 4.5 of the flora survey guideline applies.*

#### 6.2 Results of flora survey

1. Are endangered, vulnerable or near threatened plants present within the clearing impact area?

☐ YES ☒ NO

*Note: If the response to this question is no, please go to section 6.3 of the flora survey guideline.*

2. Are endangered, vulnerable or near threatened plants present within the clearing impact area but able to be avoided by 100m?

☐ YES ☐ NO

*Note: If the response to question 6.2 is no, this exemption does not apply for this clearing activity and a clearing permit will be required to take protected plants. Please refer to the EHP website for protected plant clearing permit requirements.*

#### 6.3 Flora survey report

|                                                                           |                                                   |
|---------------------------------------------------------------------------|---------------------------------------------------|
| WHEN WAS THE FLORA SURVEY UNDERTAKEN? PLEASE PROVIDE DATE/S:<br>16/2/2016 | FLORA SURVEY REPORT COMPLETION DATE:<br>14/3/2016 |
|---------------------------------------------------------------------------|---------------------------------------------------|



## Form Exempt clearing notification (protected plants)

*Note: Under the Nature Conservation (Wildlife Management) Regulation 2006, the results of a flora survey are to be presented in a flora survey report, prepared in accordance with the flora survey guideline within 12 months of a flora survey being undertaken for the report being completed.*

### 7. Privacy statement

Information you provide on this form is being collected by the Department of Environment and Heritage Protection to process and administer your application for a Exempt clearing notification (protected plants), as authorised under section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006. Some information may be provided to the Departments of National Parks, Recreation, Sport and Racing; Agriculture, Fisheries and Forestry; or Health in order to investigate allegations of unlawful activity, biosecurity or health issues, if required. Information regarding your status as a holder of this type of permit may be provided to any party upon request. Your personal information will not be disclosed to any other parties unless authorised or required by law. More information on our commitment to privacy is available on our website: <http://www.ehp.qld.gov.au/legal/privacy.html>.

### 8. Declaration

**Note:** If you have provided any false or misleading information in this form you may be liable for prosecution under the relevant Acts or Regulations.

- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true.
- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Right to Information Act 2009* and the *Evidence Act 1977*.

|                                                                                              |                             |
|----------------------------------------------------------------------------------------------|-----------------------------|
| APPLICANT'S NAME<br><b>JARRANUEA SOLAR PTY LTD.</b>                                          |                             |
| APPLICANT'S SIGNATURE<br><b>s.73 irrelevant information</b>                                  | DATE<br><b>06. MAY 2016</b> |
| IF APPLICANT IS A CORPORATION, WHAT IS YOUR POSITION IN THE CORPORATION?<br><b>DIRECTOR.</b> |                             |

### 9. Applicant checklist

- ☒ Notification form completed and signed
- ☒ Flora survey report or
- ☐ Justification of alternative flora survey methodology (*if applicable*)
- ☒ Privacy statement acknowledged

Please return your completed notification to:

#### Permit and Licence Management

#### Department of Environment and Heritage Protection

GPO Box 2454

Brisbane Qld 4001

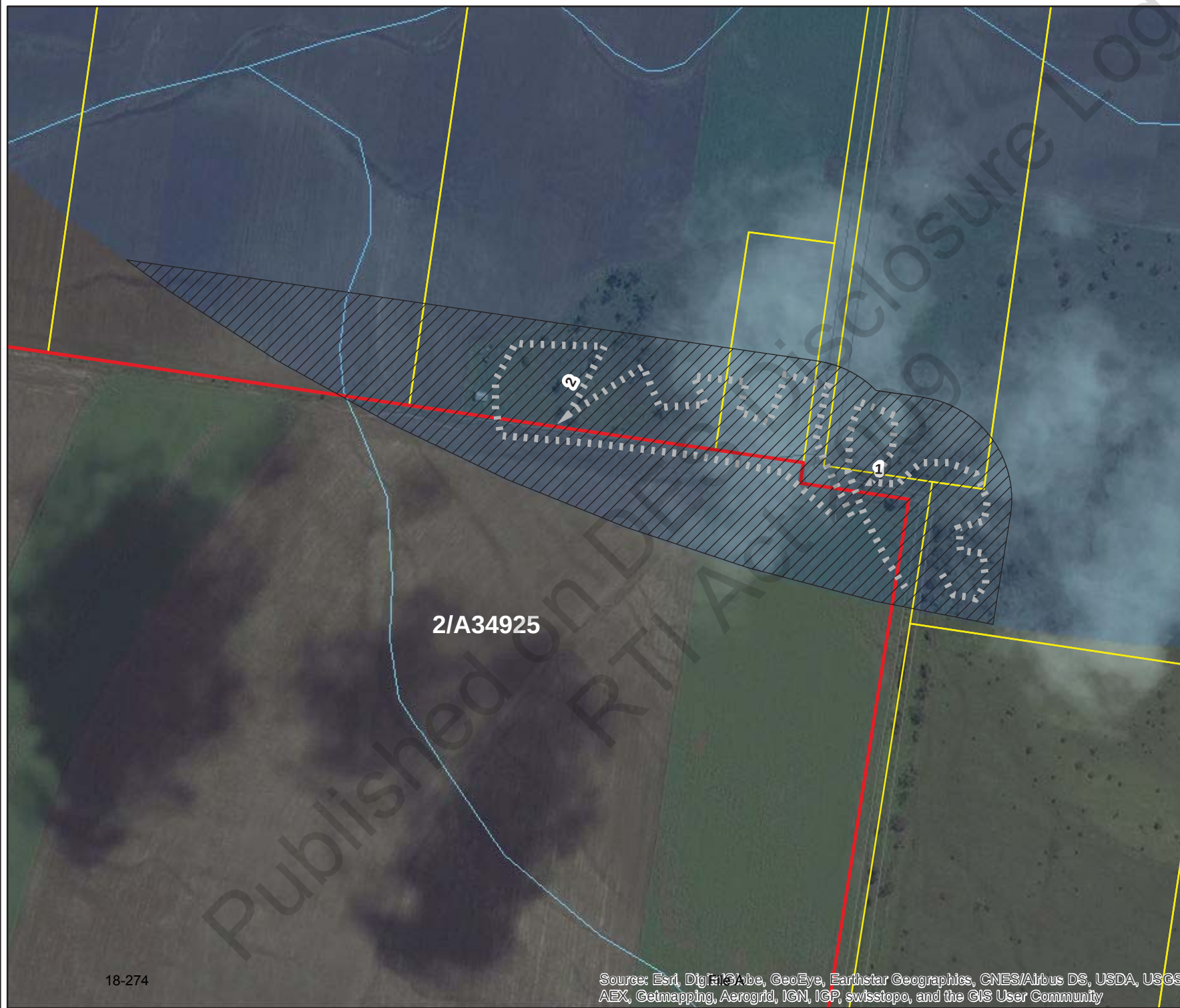
Enquiries: **1300 130 372**

Facsimile: (07) 3330 5875

E-mail: [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

The Nature Conservation (Wildlife Management) Regulation 2006 may be obtained from the Office of Queensland Parliamentary Counsel website <http://www.legislation.qld.gov.au>

Code of Practice or guidelines and Information sheet – Wildlife authorities and privacy may be obtained from the EHP website <http://www.ehp.qld.gov.au/licences-permits/plants-animals> or by contacting the EHP Referral Centre on 1300 130 372.



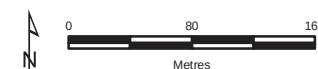
## Legend

- ..... Flora survey tracklog
- Study Area
- Property Boundaries
- High Risk Area within 100m of study area



**Figure 1**

**Flora Survey Effort**  
Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that they shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

## ANICI Damian

---

**From:** PALM  
**Sent:** Tuesday, 28 June 2016 12:49 PM  
**To:** s.73 irrelevant information @icubed.com.au  
**Subject:** RE: Notification of Exempt Clearing of Protected Plants - Purpose Solar Farm - Yarranlea (i3: 15-282)  
**Attachments:** Exempt Clearing Notification Form- Signed.pdf; 8328 \_EHP\_Yarranlea\_Solar\_EAR\_FINALv2\_17062016\_figures.pdf; flora-survey-guidelines.pdf



s.73 irrelevant information

The purpose of the exempt clearing notification is to advise of an exemption under s. 261ZA of the Nature Conservation (Wildlife Management) Regulation and only applies to land that is identified as being within a high risk area on the flora survey trigger map.

Land that is identified as being within a high risk area must be surveyed in accordance with the flora survey guideline (copy attached). If endangered, vulnerable or near threatened plants are not identified within the clearing impact area, or they are present but able to be avoided by 100m, then an exempt clearing notification can be submitted to the department.

This notification must be accompanied by a copy of the flora survey report.

In the application you submitted to the department, the only land identified as being within a high risk area is the top corner of lot 2 on A34925 therefore this is the only part of the proposed clearing area that could potentially qualify for an exemption under s.261ZA.

You will need to resubmit your exempt clearing notification form together with a flora survey report that meets the requirements of the guidelines and which clearly shows the area surveyed. Please note that the flora survey report already submitted does not adequately address the flora survey guideline.

If you have any enquiries or need further assistance with this matter, I can be contacted by return email, or on 1300 130 372 (menu option 4). Please quote reference number AR089560.

Regards,

**Roslyn Howie**

Senior Administration Officer

**Customer Service Team | Regulatory Capability and Customer Service**

Department of Environment and Heritage Protection

Phone 1300 130 372 (menu option 4) Fax 07 3330 5875 email [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

Level 9 – 400 George Street BRISBANE QLD 4000

GPO Box 2454, BRISBANE QLD 4001

---

**From:** s.73 irrelevant information @icubed.com.au]  
**Sent:** Wednesday, 22 June 2016 12:00 PM  
**To:** PALM  
**Cc:** s.73 irrelevant information  
**Subject:** AR089417 Notification of Exempt Clearing of Protected Plants - Purpose Solar Farm - Yarranlea (i3: 15-282)

To whom it may concern,



Please find attached our notification of exemption to clear vegetation for the purpose of constructing a solar farm in Yarranlea.

Documents provided are;

- Form for exempt clearing notification (Protected Plants)
- Ecological Assessment of Proposed Yarranlea Solar Project

Should you require any further information please contact me.

With Kind Regards,

.73 irrelevant information

Lead Town Planner

i³ consulting pty ltd  
engineering consultants  
innovation ingenuity inspiration

Suite 2/ 39 Sherwood Road PO Box 878  
TOOWONG QLD 4066 TOOWONG QLD 4066

p: 07 3870 8888

e: irrelevant information icubed.com.au

[www.icubed.com.au](http://www.icubed.com.au)

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Final Report

# Ecological Assessment of the Proposed Yarranlea Solar Project, Yarranlea, Queensland

Prepared for

Yarranlea Solar Pty Ltd

June 2016



Ecology and Heritage Partners Pty Ltd

## ACKNOWLEDGEMENTS

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We thank the following people for their contribution to the project:

- irrelevant inform (I<sup>3</sup> Consulting);
- Landowners for site access; and
- Department of Environment and Heritage Protection for biological database relevant for the project.

## DOCUMENT CONTROL

|                  |                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------|
| Assessment       | Ecological Assessment Report                                                                       |
| Address          | Lot 3347 on A341649, Lot 2 on RP18249, Lot 2 on RP7475, Lot 2 on A34925, Yarranlea Road, Yarranlea |
| Project number   | 7789                                                                                               |
| Project manager  | irrelevant information (Principal Ecologist)                                                       |
| Report author(s) | irrelevant information (Principal Ecologist)                                                       |
| Report reviewer  | irrelevant information (Director / Principal Ecologist)                                            |
| Mapping          | irrelevant information (GIS)                                                                       |
| File name        | 7789_EHP_Yarranlea_Solar_EAR_FINAL                                                                 |
| Client           | Yarranlea Solar Pty Ltd                                                                            |
| Bioregion        | Brigalow Belt South                                                                                |
| Council          | Toowoomba Regional Council                                                                         |

| Report versions | Comments                                                           | Comments updated by    | Date submitted |
|-----------------|--------------------------------------------------------------------|------------------------|----------------|
| Draft 1         | Internal draft                                                     | irrelevant information | 18/3/2016      |
| Draft 2         | Draft for review                                                   |                        | 30/3/2016      |
| Final           | Issued for use                                                     |                        | 12/4/2016      |
| Final 2         | Issued for use – included clearing of RE 11.9.5 and Belson's Panic |                        | 22/06/2016     |

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## GLOSSARY

| Acronym  | Description                                                                                                         |
|----------|---------------------------------------------------------------------------------------------------------------------|
| DNRM     | Queensland Department of Natural Resources and Mines                                                                |
| DEHP     | Queensland Department of Environment and Heritage Protection                                                        |
| EAR      | Ecological Assessment Report                                                                                        |
| EPBC Act | <i>Environment Protection and Biodiversity Conservation Act 1999</i>                                                |
| EO Act   | <i>Environmental Offsets Act 2014</i>                                                                               |
| EVNT     | Endangered, Vulnerable and Near Threatened. Relates to the classification of species under the NC Act and EPBC Act. |
| LP Act   | <i>Land Protection (Pest and Stock Route Management) Act 2002</i>                                                   |
| NC Act   | <i>Nature Conservation Act 1992</i>                                                                                 |
| NES      | National Environmental Significance                                                                                 |
| TRC      | Toowoomba Regional Council                                                                                          |
| RE       | Regional Ecosystem                                                                                                  |
| SES      | State Environmental Significance. Listed under the EO Act.                                                          |
| SMP      | Species Management Program under the NC Act.                                                                        |
| SPRP     | State Planning Regulatory Provisions                                                                                |
| TEC      | Threatened Ecological Community. Listed under the EPBC Act.                                                         |
| TPS      | Toowoomba Planning Scheme                                                                                           |
| VM Act   | <i>Vegetation Management Act 1999</i>                                                                               |

## SUMMARY

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### Introduction

Ecology and Heritage Partners Pty Ltd was engaged by Yarranlea Solar Pty Ltd to conduct an Ecological Assessment Report (EAR) of a proposed solar utility farm (the proposed development) within several properties on Yarranlea Road, Yarranlea, Queensland. The purpose of the EAR is to provide a description of the existing environment within the properties and to identify any ecologically significant areas that may be impacted by the construction and operation of the proposed development.

The proposed development is located on rural land approximately 44 kilometres south-west of Toowoomba and 10 kilometres west of Pittsworth township. The study area is bound by Yarranlea Road to the west and rural properties to the north, east and south. The study area is located within intensive cropping areas on the fertile plains of the Condamine River Floodplain. This region has been farmed over a long period of time, which has resulted in the loss of much of the historical vegetation coverage. Remnant and regrowth vegetation exists in small patches on hills and rises in the east and along road reserves. The natural waterways within the study area have been cleared of riparian vegetation and exist as channelized drainage lines.

Yarranlea Solar is proposing to construct a Utility Scale Photovoltaic (PV) Solar farm. The PV Facility is estimated to generate up to 100 megawatts (MW) of energy and have an operational life of 30 years. The project will have a connection to the Queensland Electricity Market through an Ergon substation and will have on-site battery storage. The PV Facility is proposed to eventually cover up to 250 hectares of land and will be developed over four stages. The proposed development will be assessed under the Toowoomba Regional Planning Scheme.

### Methods

A desktop assessment and site inspection was completed by [irrelevant informa] (Principal Ecologist) to identify the vegetation communities and flora and fauna values (e.g. potential occurrence of threatened species) within the study area, and to confirm the vegetation mapping at the local and State government levels. The extent of the study area was inspected and the overall condition of vegetation and potential fauna habitat noted. A modified quaternary vegetation assessment was completed to assess the mapped remnant vegetation within the study area in terms of structure and dominant species and whether they were consistent with Regional Ecosystem (RE) types in the Regional Ecosystem Description Database. Given that a portion of the study area is mapped as a High Risk Area for protected plants on the flora survey trigger map, a survey in accordance with the Flora Survey Guidelines was completed. Several random meanders (Cropper 1993) were completed within the mapped area to search for significant flora species. Random meanders were also completed within other potential habitats.

The field assessment included a visual fauna assessment of the study area, with all observed fauna species recorded and the overall habitat condition noted. Birds and frogs vocalisations were noted, and searches were undertaken for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Habitat features, including ground cover and vegetation composition and structure, and the presence of hollows and fallen ground debris were also noted.

## Results

Desktop analysis of remnant native vegetation within the study area and surrounds showed a highly modified landscape with large areas cleared for agricultural purposes (predominately cropping), and residual, small, fragmented remnants of vegetation scattered throughout the landscape. One patch of remnant RE vegetation was identified within the study area and is mapped as regulated vegetation under the VM Act. This RE is sometimes included as in the Brigalow (*Acacia harpophylla* dominant and co-dominant) Threatened Ecological Community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, in this case the community is not consistent due to the absence of Brigalow.

One threatened flora species was detected within the study area (Belson's Panic *Homopholis belsonii*) which is listed as endangered under the Queensland *Nature Conservation Act 1992* and vulnerable under the EPBC Act. Twelve discrete patches were identified within the patch of RE 11.9.5 within the southern portion of study area, and one patch was identified adjacent to the eastern boundary of the study area within the Yarranlea-Murlaggan Road reserve. Each discrete patch covered an approximate area of several meters squared, and these areas were most often at the base of canopy trees and were in shaded areas created by shrubs.

Several significant flora and fauna species potentially occur within the study area, including Austral Cornflower, *Rhaponticum australe*, King Bluegrass *Dichanthium queenslandicum*, Condamine Earless Dragon *Tympanocryptis condaminensis*, Painted Honeyeater *Grantiella picta*, Five-clawed Worm-Skink *Anomalopus mackayi*, and Grey-headed Flying Fox *Pteropus poliocephalus*.

## Potential impacts and mitigation measures

The development is proposed over four stages and will involve complete coverage of the study area in solar PV panel arrays. The proposed development will result in the disturbance of cropped areas and the small patch of vegetation located within Stage 1. The removal of this vegetation will also result in the removal of the population of Belson's Panic. Vegetation along Yarranlea-Murlaggan Road will not be impacted, although a small number of remnant trees and other vegetation may be trimmed or cleared for duplication of the powerline along Yarranlea Road.

The removal of habitat for Belson's Panic has been assessed at the Queensland and Commonwealth levels. The removal of plants has been assessed as a significant impact under the relevant Queensland guidelines; however, the removal of plants is not a significant impact under the EPBC Act. This difference is primarily due to the different conservation status of the species under the NC Act (endangered) and EPBC Act (vulnerable).



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# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners Pty Ltd was engaged by Yarranlea Solar Pty Ltd to undertake an Ecological Assessment of a proposed solar utility farm (the proposed development) within several properties on Yarranlea Road, Yarranlea, Queensland.

The purpose of the assessment is to provide a description of the existing environment within the properties and to identify any ecologically significant areas that may be impacted by the construction and operation of the proposed development. The proposed development is located within the Toowoomba Regional Council (TRC) area and will be assessed under the Toowoomba Regional Planning Scheme 2015. Planning Scheme Policy No. 1 – Development Application Requirements: Appendix 1 Preparation of Ecological Assessment report (ERA) identifies the requirements for EAR. Further information regarding the EAR structure is provided below (Section 2).

This report presents the results of the desktop and site assessment, and discusses the potential ecological and legislative implications associated with the proposed development. Several recommendations to avoid, minimise or mitigate impacts associated with the proposed development are provided (Section 5).

## 1.2 Study Area

The proposed development is located on rural land approximately 44 kilometres south-west of Toowoomba and 10 kilometres west of Pittsworth township (Figure 1). The study area is described as Lot 2 on RP7475, Lot 2 on RP18249, Lot 3347 on A341649 and part of Lot 2 on A34925 and is bound by Yarranlea Road to the west and rural properties to the north, east and south. A connection to an Ergon Substation on the corner of Yarranlea Road and the Millmerran Branch Rail Line is also required and will traverse Lot 2 on RP120604 to the south of the study area.

The study area is located within intensive cropping areas on the fertile plains of the Condamine River Floodplain, and is currently used to grow crops (e.g. sorghum), which is the primary land use across the broader region (i.e. historically been farmed). This has resulted in the loss of remnant native vegetation across the study area. However, remnant and regrowth vegetation exists in small patches on hills and rises in the east and along road reserves. Most natural waterways have been cleared of riparian vegetation and exist as channelized drainage lines. .

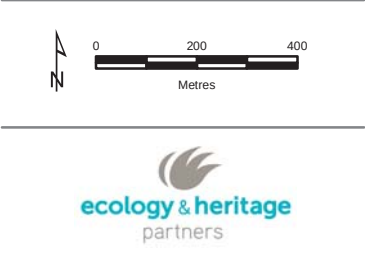
The study area is flat to gently sloping towards the west, and contains several buildings and infrastructure, including a homestead and sheds. A small patch of remnant native vegetation is located within the central southern portion of the study area.



- Legend**
- Study Area
  - Roads and tracks
  - Railway
  - Minor watercourse
  - Property boundaries



**Figure 1**  
**Location of Study Area**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



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### 1.3 Proposed Development

Yarranlea Solar is proposing to construct a Utility Scale Photovoltaic (PV) Solar farm at Yarranlea. The PV Facility is estimated to generate up to 100 megawatts (MW) of energy and have an operational life of 30 years. The project will have a connection to the Queensland Electricity Market through an Ergon substation and may have on-site battery storage. The PV Facility is proposed to eventually cover up to 250 hectares of land and will be developed over four stages:

- Stage 1 – Installation of Solar PV panels to generate approximately 40MW over 100 ha. A Battery Storage Building, and Operations and Maintenance Building will also be constructed to support the operation. Connection to Ergon Substation will be completed at this stage via a new 1.5 kilometre powerline. Located in the southern half of the study area;
- Stage 2 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the north-east portion of the study area;
- Stage 3 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the northern portion of the study area; and
- Stage 4 – Generate approximately 20MW. Site coverage of 50 hectares. Located in the north-western portion of the study area.

The proposed layout of the PV facility is shown below (Figure 2).

The PV Facility comprises several interlinked and integral components for the operation of the equipment and generation of electricity from solar radiation. These components include: solar modules, steel mounts for the modules, electrical transformers and inverters, electrical wiring, telecommunication equipment and electrical control enclosures. It is also likely that the PV Facility will include a battery/electrical storage enclosure, which would include batteries.

The panels utilised in the facility are similar to those used for domestic power generation purposes and will be supported on steel frames. The frames may operate under a solar tracking system to increase power generation through tracking the movement of the sun. An underground reticulation system will be used to collect the power to an internal substation which will transform the power voltage to 110 kV, compatible with the nearby Ergon Energy transmission infrastructure. Power will be connected to the grid, approximately 600m from the southern boundary of the development area using either an underground or overhead transmission line within the Yarranlea Road reserve and terminating at the existing Ergon Substation.

The solar panel arrays will be surrounded by informal grassed internal access ways which are designed to provide access to the inverter/transformer equipment pads located at the centre of the array blocks. A gravel access track shall be provided to the perimeter of the Stage 1 block and the block comprising Stages 2 to 4. This will act as a fire break and will be accessed from the western end of Yarranlea-Murlaggen Road. This track is proposed to be located inside of a 2.4 metre high chain wire security fence. Project site, substation, and other areas requiring controlled access will be appropriately restricted to private access during construction and operations.

The facility will be managed from a control building, located adjacent to the substation which will include formalised staff and visitor parking, and this will be accessed off Yarranlea-Murlaggen Road. The compound will also house an electrical switchroom and battery storage building. The access



driveway and parking will comprise a bitumen sealed surface. Permanent motion sensitive, directional security lights will also to be installed to provide adequate illumination around the substation area and points of ingress/egress. All lighting will be directed downward to minimise the potential for glare or spill-over onto adjacent properties. Lighting is proposed to be used from dusk to dawn once the facility is operational.

Stage 4 will require the removal of three existing farm buildings and these are to be replaced by a farm storage shed, located opposite the Operations and Maintenance facility on the northern side of Yarranlea-Murlaggen Road.

Appropriate landscaping is to be provided along the western boundary of the site, using native shrub species with a mature height of 4 – 5 metres, to assist in reducing any potential visual impacts of the PV Facility. The proposed landscaping treatment will be intensified in the vicinity of the Operations and Maintenance facility due to the taller structures which will be required in this part of the development.

The PV Facility has been designed in such a manner as to minimise the extent of civil works required to occur on the site. All existing overland drainage flow paths are intended to be maintained where practical so as to minimise the impact on the surrounding land uses. No formalised internal roads are envisaged to be provided between panels and the level of sealing required has been kept to a minimum. The existing soil will be retained and re-seeded with an appropriate blend of pasture grass and legume species, to provide vegetation coverage over the site. Grasses will be maintained through periodic slashing and potential grazing opportunities. Accordingly, it is intended that the facility will have minimal impact when decommissioned as the development components do not require substantial disturbance to the landscape.

#### *Construction Phase Schedule*

For each stage of the project, construction is to proceed in the manner outlined below. However, it should be noted that the Substation and 110 kV connection installation components will only occur as part of Stage 1, and will not be required in subsequent stages.

- Site Preparation, Substation and Grid Connection Installation (52 to 60 weeks in duration).
- Photovoltaic Panel System Installation (26 to 30 weeks in duration, beginning mid-way through the site preparation phase).
- Inverters, Transformers, and Electrical Collector System Installation (12 to 20 weeks, beginning mid-way through the PV System Installation Phase).

#### *Site Preparation, Substation and Grid Connection Installation*

A construction laydown area is to be established near the main site entrance and a second area to the east of the site, and equipment mobilised to the site. The site is then cleared, grubbed, graded, and compacted, with the on-site informal roadway system staked and established. Roads would be treated to create a durable, dust minimising surface to ensure minimisation of dust emissions, and security fencing would be installed around the site perimeter.

The substation facility would incorporate a number of concrete foundations for the electrical plant including the main transformer, Neutral Earth Transformer, Reactive Plant, Switchroom, Operations and Maintenance Building and Battery Storage Building. Following construction of these foundations,

the plant and structures would be installed in readiness for commissioning when the first of the PV modules have been installed in readiness for first power. During the construction of the substation facility the 110kV connection to the existing ergon substation will be installed as will the connection works by Ergon at the Yarranlea Substation. This 110kV line will be either direct buried underground, or alternately a traditional overhead line connecting the development to the existing Ergon Infrastructure.

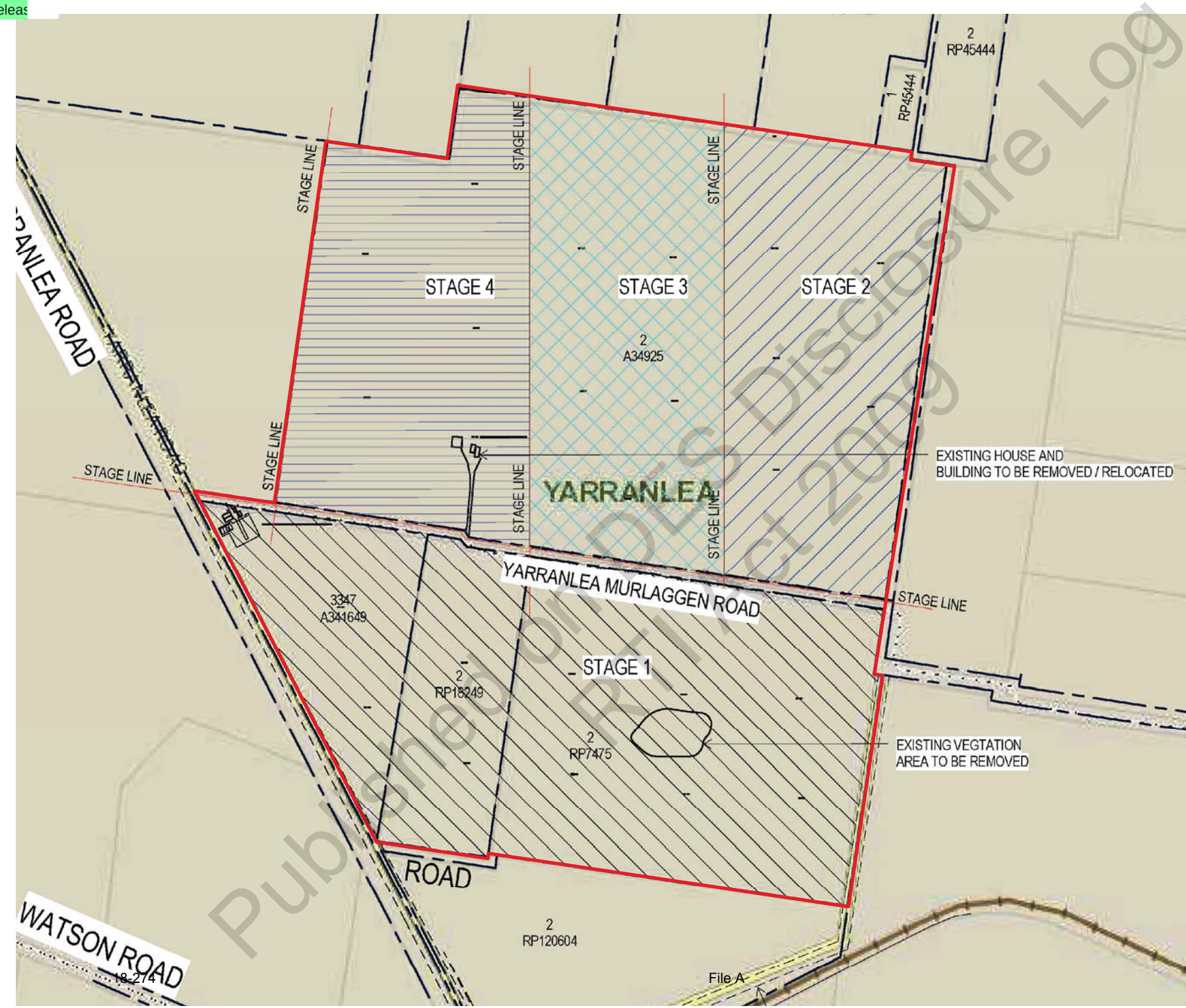
It is expected that the Site Preparation, Substation and Grid Connection Phase will require the use of heavy equipment including: bulldozers, water trucks, graders, flatbed trucks, skid steers, front end loaders, roller compactors, trenchers, backhoes, gravel trucks, water buffaloes, cranes, and aerial lifts. However, it should be noted that the design of the facility is such that, where possible and practicable, on-site levelling and grading will be minimised.

#### *Photovoltaic Panel System Installation*

Approximately 401,500 solar panels are to be installed in the development arranged in solar arrays consisting of linear strings of mounted modules organised into blocks of approximately two megawatts capacity. The solar panels are to be positioned 1.2 metres above ground level and mounted on monopole structures. These monopole structures are approximately 1.5 metres long and 1.5 metres high, and are connected in strings of 100 metres, with a seven metre gap between centres. The monopole structures will be supported on either steel screw piles, steel driven piles or FRP Composite Drive Piles, to a depth of between 2 – 3 metres below the existing ground surface level. These foundations will be readily removable at the end of life of the facility to enable the land to be restored to cultivated agricultural activities.

#### *Inverters, Transformers, and Electrical Collector System Installation*

Each power block is to include a central skid mounted inverter/transformer station that will convert the direct current (DC) energy into grid-compatible alternating current (AC) energy. Foundations for the inverter stations shall be similar screw pile or driven pile technology to the solar panel supports and removable at the end of the life of the project. The Medium Voltage, (33kV), collector system will be installed by direct burying to a depth of 1.0 metre below ground level. At the end of the project the cable metals will be recovered for recycling.

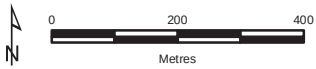


**Legend**

Study Area



**Figure 2**  
**Proposed development layout**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



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## 1.4 Objectives

The objectives of the assessment follows the requirements for an EAR in Planning Scheme Policy 1 – Appendix 1, which includes:

- Describe the location and extent of the proposed study area;
- Describe the physical characteristics of the study area;
- Outline the existing use of the study area and any previous uses;
- Outline the existing environment of the study area, including areas of ecological significance;
- Provide an overview of the proposed project;
- Identify the potential impacts of the proposed project on the existing environment;
- Outline other planning scheme codes, overlays and policies which apply to the site;
- List references used in the desktop assessment; and
- Include appendices for any additional supporting information.

## 1.5 Legislation

This section identifies biodiversity policy and legislation relevant to the proposed development, principally:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth), administered by the Department of the Environment (DoE);
- *Nature Conservation Act 1992* (NC Act) (Queensland), administered by the Department of Environment and Heritage Protection (DEHP);
- *Vegetation Management Act 1999* (VM Act) (Queensland), administered by the Department of Natural Resources and Mines (DNRM);
- *Land Protection (Pest and Stock Route Management) Act 2002* (Queensland), administered by the Department of Agriculture and Fisheries (DAF);
- *Environmental Offsets Act 2014* (EO Act) (Queensland), administered by DEHP;
- *Water Act 2000* (Queensland), administered by DNRM; and
- Toowoomba Regional Planning Scheme 2015, administered by Toowoomba Regional Council (TRC).

Background information on the above is provided in Appendix 1.

## 2 METHODS

---

This section identifies the methods used to identify the ecological values occurring or likely to occur within the study area.

### 2.1 Nomenclature

Common and scientific names of vascular plants follow the Queensland Herbarium Census of the Queensland Flora (Bostock and Holland 2010). The following sources were used for names of fauna species:

- Reptiles and Frogs – Cogger (2014) Reptiles and Amphibians of Australia. Seventh Edition;
- Birds – Christidis and Boles (2008) Systematics and Taxonomy of Australian Birds; and
- Mammals – Van Dyck and Strahan (2008) The Mammals of Australia. Third Edition.

### 2.2 Desktop Assessment

The following resources were reviewed prior to undertaking the field assessment:

- Queensland Herbarium Regional Ecosystem Description Database (REDD) version 9.0 – April 2015 (DEHP 2016a);
- Current Regional Ecosystem (RE) mapping (Queensland Herbarium 2016);
- Regulated Vegetation Management Map and essential habitat map (DNRM 2016) under the *Vegetation Management Act 1999* (VM Act);
- Protected Plants Flora Survey Trigger Map (DEHP 2016b);
- Relevant flora and fauna databases (Qld Herbarium HERBRECS, Queensland Museum, Wildlife Online [WildNet], Atlas of Living Australia and Birds Australia Atlas [1998-2008]);
- Commonwealth EPBC Act Protected Matters Search Tool (DoE 2016);
- Current aerial photography of the study area (Queensland Globe 2016);
- Toowoomba Regional Planning Scheme; and
- Relevant federal and state legislation and policies.

### 2.3 Field Assessment

A field assessment was conducted by **3 irrelevant informa** (Principal Ecologist, Ecology and Heritage Partners) on 16 February 2016 to identify the vegetation communities, and flora and fauna values (e.g. potential occurrence of significant species) within the study area, and to confirm the vegetation mapping at the local and State government levels. The entire the study area was assessed and the overall condition of vegetation and potential fauna habitat noted.

A modified quaternary vegetation assessment (Neldner *et al.* 2012) was completed to assess the mapped remnant vegetation within the study area in terms of structure and dominant species and whether they were consistent with RE types (Sattler and Williams 1999) in the Regional Ecosystem (RE) Description Database (REDD). A vegetation transect was completed within the mapped patch of RE 11.9.5, and this transect involved:

- Laying out a 50 metre tape measure (a 100 metre transect could not be completed due to the small size of the patch);
- Measure the distance that the tree or shrub cover intercepted the tape if the cover was projected onto the ground;
- Estimate the height of each tree or shrub that intercepted the transect;
- Estimate the relative dominance of trees, shrubs and ground covers within 10 metres either side of the transect centreline;
- Estimate the relative abundance of native and exotic groundcovers, litter, bare ground and coarse woody debris within 1 metre by 1 metre quadrats spaced alternatively every 10 metres along the transect centreline.

The boundary of the patch was also mapped using a hand held GPS unit. A Property Map of Assessable Vegetation (PMAV) was submitted to the Department of Natural Resources and Mines (DNRM) on 15 April, 2016 to modify the boundary of this vegetation to more accurately reflect the on-ground boundary.

As a portion of the study area is mapped as a High Risk Area for protected plants on the flora survey trigger map, a survey in accordance with the Flora Survey Guidelines was completed. Several random meanders (Cropper 1993) were completed within the mapped area to search for significant flora species. Random meanders were also completed within other potential habitats.

The site assessment included a visual fauna assessment of the study area, with all observed fauna species recorded and the overall habitat condition noted. Birds and frogs vocalisations were noted and searches were made for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Habitat features, including ground cover and vegetation composition and structure, and the presence of hollows and fallen ground debris were also noted.

In addition, as fauna species are mobile, a visual assessment of the surrounding landscape was made to determine whether there was suitable habitat (principally for threatened species) in the immediate area, and to determine the likelihood that any of these species would either reside within the study areas for extended periods of time, or whether the sites contributed to a larger home range of a significant species.



## 3 RESULTS

---

### 3.1 Matters of National Environmental Significance

The Protected Matters Search Tool identified several matters of National Environmental Significance (MNES) that are known to or are likely to occur within the study area and surrounds. These include:

- Four Wetlands of International Importance (Ramsar sites);
- Five listed Threatened Ecological Communities;
- 24 listed threatened species;
- 12 migratory species; and
- 15 marine species.

#### 3.1.1 Wetlands of International Importance

The study area is located within the catchment of four Ramsar sites with the sites themselves located between 400 kilometres and 1,500 kilometres downstream of the study area.

#### 3.1.2 Threatened Ecological Communities

The desktop assessment identified five EPBC Act-listed Threatened Ecological Communities (TEC) with the potential to occur within the study area. These communities are:

- Brigalow (*Acacia harpophylla* dominant and co-dominant);
- Coolibah – Black Box Woodland of the Darling River Plains and the Brigalow Belt South Bioregions;
- Natural Grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland;
- Weeping Myall Woodlands; and
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland, listed as critically endangered.

One TEC was mapped as potentially occurring within the study area, namely Brigalow (*Acacia harpophylla* dominant and co-dominant) TEC. The field survey found that the vegetation was consistent with RE 11.9.5, however was dominated by Belah *Casuarina cristata* and Poplar Box *Eucalyptus populnea* and Brigalow was absent. To be considered part of the Brigalow TEC, Brigalow must be dominant or co-dominant within the vegetation community, therefore the Brigalow TEC does not occur within the study area. Similarly, areas of mapped RE 11.9.5 along Yarranlea Road adjacent to the study area are dominated by Belah and Poplar Box and therefore are not considered part of the TEC.

No other TECs were identified within or adjacent to the study area.

## 3.2 Vegetation Communities

### 3.2.1 Regional Ecosystems

Desktop analysis of remnant vegetation within the study area and surrounds showed a highly modified landscape with large areas cleared for agricultural purposes (predominately cropping) and residual, small, fragmented remnants of vegetation scattered throughout the landscape (Figure 3). One patch of remnant RE vegetation was identified within the study area and is mapped as regulated vegetation under the VM Act:

- RE 11.9.5 (VM Status - Endangered) - *Acacia harpophylla* and/or *Casuarina cristata* open forest on fine-grained sedimentary rocks.

This RE is included in the description of the Brigalow TEC listed under the EPBC Act (DoE, 2016), however field investigations showed that it is dominated by *Belah* and hence excluded from the Brigalow TEC listed community.

The patch of RE 11.9.5 mapped within the southern portion of the study area was assessed to confirm its remnant status and whether it met the listing criteria for the Brigalow TEC. As the patch of vegetation was below the area threshold to be mappable as a RE (the threshold is one hectare for non-linear features), the PMAV approved by DNRM on 15 June, 2016 resulted in the removal of this patch from the regulated vegetation map and consequently the vegetation is mapped as Category X vegetation.

A summary of the results of the vegetation transect and assessment are included below (Table 1). Transect photographs are included in Plates 1, 2, 3 and 4. The Queensland Herbarium maintains technical descriptions of the normal range of vegetation structure and floristic compositions of REs and are used to compare disturbed REs with their 'undisturbed' state. The technical description for RE 11.9.5 has not yet been made available by the Herbarium. However, an alternative resource, the BioCondition Benchmarks provide some compatible metrics for comparison with the RE 11.9.5 patch within the study area. The relevant BioCondition benchmarks are provided (Table 1).

**Table 1 Vegetation structure and composition of RE 11.9.5 patch**

| Variable                         | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BioCondition Benchmarks                                                                                                                                                                                                                                      |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Area (hectares)                  | 0.93                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | N/A                                                                                                                                                                                                                                                          |
| Dominant species                 | Canopy (T1 layer) - Belah, Poplar Box<br>Sub-canopy (T2 layer) – Weeping Pittosporum<br><i>Pittosporum angustifolium</i> , Belah<br>Tall Shrub (S1 layer) – Velvety Tree Pear <i>Opuntia tomentosa</i> , Wilga <i>Geijera parviflora</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Canopy (T1 layer) – Brigalow, Belah<br>Sub-canopy (T2 layer) – Brigalow, Belah<br>Tall Shrub (S1 layer) – Wilga, Smooth-barked Ironwood <i>Gossia bidwillii</i> , False Sandalwood <i>Eremophila mitchellii</i> , Ellangowan Poison Bush <i>E. deserti</i> . |
| Median height of the canopy (T1) | 18 metres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25 metres                                                                                                                                                                                                                                                    |
| Median height of sub-canopy (T2) | 5 metres                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8 metres                                                                                                                                                                                                                                                     |
| Average canopy (T1) cover        | 57.4% cover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 59%                                                                                                                                                                                                                                                          |
| Average sub-canopy (T2) cover    | 3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 48%                                                                                                                                                                                                                                                          |
| Other species present            | Trees - Sally Wattle <i>Acacia salicina</i><br>Native groundcovers - Small Saltbush <i>Atriplex eardleyae</i> , Mueller's Saltbush <i>Atriplex muelleri</i> , Currant Bush <i>Carissa ovata</i> , Ruby Saltbush <i>Enchylaena tomentosa</i> ,<br>Exotic groundcovers - Flax-leaf Fleabane <i>Conyza bonariense</i> , Mayne's Pest <i>Verbena aristigera</i> , Cobblers Pegs <i>Bidens pilosa</i> ,<br>Native grasses – Slender Chloris <i>C. divaricata</i> , Fairy Grass <i>Sporobolus caroli</i> , Curly Windmill Grass <i>Enteropogon acicularis</i> , Brigalow Grass <i>Paspalidium caespitosum</i> , Slender Bottlewashers <i>Enneapogon gracilis</i> ,<br>Exotic grasses - Rhodes Grass <i>Chloris gayana</i> , | Ground covers - Brigalow Grass <i>Paspalidium caespitosum</i><br>Exotic species – Velvety Tree Pear, Prickly Pear <i>Opuntia stricta</i>                                                                                                                     |
| Percentage weed cover            | 13% (averaged over 50 metre transect)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0%                                                                                                                                                                                                                                                           |
| Average ground cover             | Native grasses – 23.2%<br>Exotic grasses – 0%<br>Native herbs and forbs – 1%<br>Exotic herbs and forbs – 6%<br>Native shrubs – 1%<br>Exotic shrubs – 6.8%<br>Litter – 36%<br>Coarse woody debris – 7%<br>Bare ground – 18%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Native grasses – 4%<br>Litter – 66%                                                                                                                                                                                                                          |

To be considered remnant vegetation, the height of the canopy layer of the vegetation must be 70% or greater than the canopy height of an undisturbed community and must have 50% of the canopy cover of the undisturbed community. The vegetation must also include species that are generally found within the canopy of the undisturbed community. Using the BioCondition benchmarks, the undisturbed median canopy height is 25 metres and therefore 70% is 17.7 metres and the undisturbed canopy cover is 59% and therefore 50% is 29.5%. The vegetation also contains some species that are found in the undisturbed community benchmark. The small patch of vegetation just meets the canopy height requirement and easily meets the cover requirement and is therefore considered remnant vegetation. However, as discussed previously, as the area is below the mapping threshold used by the DNRM, this vegetation is not considered to be regulated vegetation.





Plate 1 – Transect looking north



Plate 2 – Transect looking east



Plate 3 – Transect looking south



Plate 4 – Transect looking west

Several small patches of remnant vegetation are mapped adjacent to the study area on the western side of Yarranlea Road, including:

- RE 11.9.5; and
- RE 11.3.2 (VM Status of Concern) - *Eucalyptus populnea* woodland on alluvial plains.

A larger patch of RE 11.3.2 is mapped adjacent to the north-eastern corner of the study area. This community is sometimes included in the Weeping Myall Woodlands TEC if patches of Weeping Myall

*Acacia pendula* form monotypic stands. No Weeping Myall was identified within this community during the survey.

There are no vegetated connections to the mapped remnant vegetation from the study area.

#### RE 11.9.5 and 11.3.2 along Yarranlea Road

Several patches of RE 11.9.5 and 11.3.2 are mapped on both sides of the Yarranlea Road reserve with extensive areas occurring on the western side of the road. The patches on the eastern side, and adjacent to the study area, were inspected although formal transects were not completed. This vegetation exists predominantly as a single line of trees with an exotic grassy understorey. The canopy is dominated entirely by Poplar Box with Belah forming a sub-canopy with Wilga and False Sandalwood. The ground cover is dominated by exotic grasses and herbs that are common along roadsides in the Darling Downs. Species include Rhodes Grass, Purple Pigeon Grass *Setaria incrassata*, Flax-leaf Fleabane, Balloon Cotton Bush *Gomphocarpus physocarpus*, Cobblers Pegs, Maynes Pest, Velvety Tree Pear, Spear Thistle *Cirsium vulgare* and Moth Vine *Araujia hortorum*. Native ground covers include Queensland Bluegrass *Dichanthium sericeum*, Curly Windmill Grass, Barb Wire Grass *Cymbopogon refractus*, Native Millet *Panicum decompositum* and Ellagowan Poison Bush.



**Plate 5** Mapped RE 11.9.5 and 11.3.2 along Yarranlea Road reserve

### **3.2.2 Non-remnant Communities**

The study area is located within a highly disturbed agricultural landscape where native vegetation exists as small patches within paddocks or linear strips within road reserves. A small patch of mapped RE 11.9.5 occurs within the southern portion of the study area and other patches of mapped RE 11.9.5 and 11.3.2 occur along Yarranlea Road (Figure 3). Isolated clumps of trees and shrubs occur along Yarranlea – Murlagan Road which traverses the centre of the study area. While isolated stands of Brigalow occur in the far north-east portion of the study area within a road easement, these do not form large enough patches to be considered part of the Brigalow TEC.

#### Non-remnant Roadside Vegetation

Several isolated patches of vegetation existing within the road reserve of Yarranlea Murlaggan Road which transects the study area. This vegetation exists as a single canopy tree or up to three trees with surrounding shrubs and grasses. Poplar Box is the dominant canopy species with Sally Wattle and Weeping Pittosporum also present. Ground covers generally include exotic grasses and herbs including Rhodes Grass, Cobblers Pegs, Mayne's Pest and Flax-leaf Fleabane.

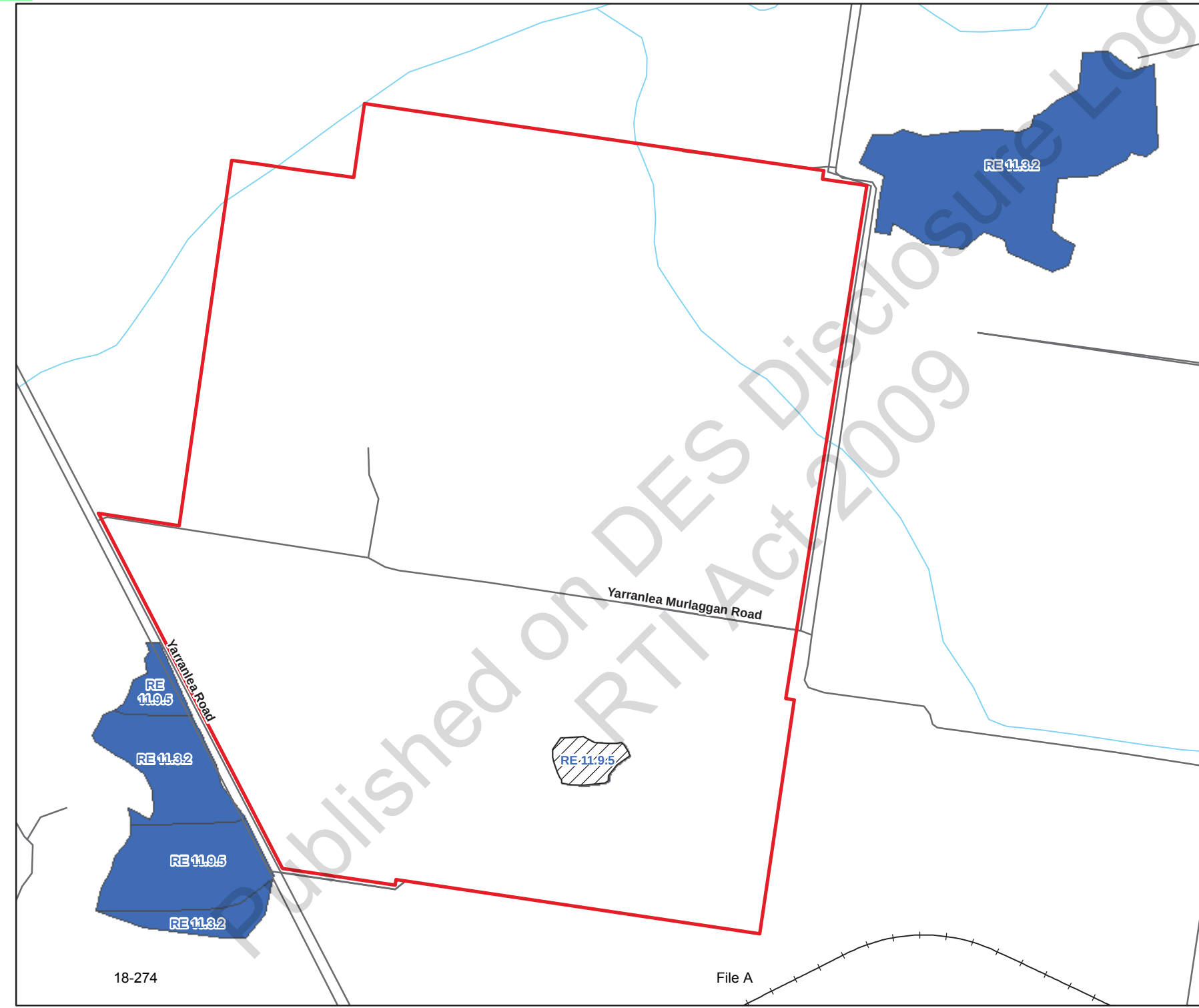
#### Cropping Land

The majority of the study area is used for cropping of a variety of crops including sorghum, cotton and chickpeas. The southern portion of the study area had been recently harvested at the time of the survey although some crops were growing within the northern portion.

### 3.3 Significant Flora Species

The database searches identified nine threatened flora species that have been previously recorded or likely to occur within 10 kilometres of the study area (Table 2) and these are shown below (Figure 4). The potential occurrence of each species within the study area was assessed based on the criteria described below (Appendix 2). Two species have been assessed to have a moderate likelihood of occurrence within the study area; Austral Cornflower *Rhaponticum australe* and King Bluegrass *Dichanthium queenslandicum*, and one species was detected within the study area; Belson's Panic *Homopholis belsonii*.



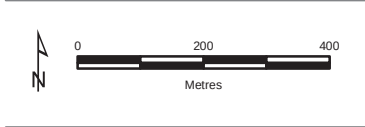


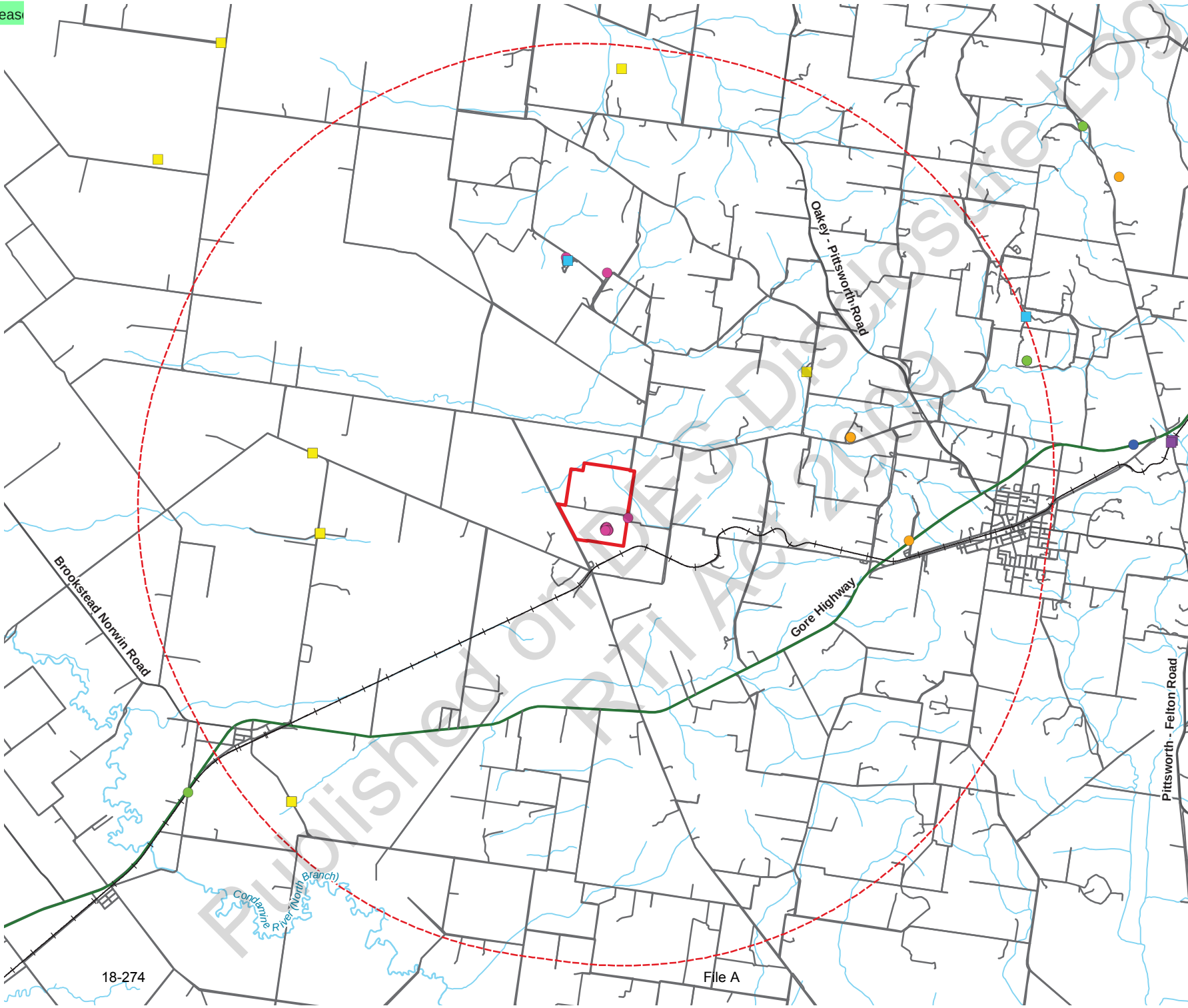
**Legend**

- Study Area
- Category B area (remnant vegetation)
- Category X vegetation



**Figure 3**  
**Vegetation Management Map**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*





**Legend**

- Study Area
- Search buffer (10km)

**Threatened fauna**

- Long-legged Worm-skink *Anomalopus mackayi*
- Painted Honeyeater *Grantiella picta*
- Condamine Earless Dragon *Tympanocryptis condaminensis*

**Threatened flora**

- King Blue-grass *Dichanthium queenslandicum*
- Belson's Panic *Homopholis belsonii*
- Hawkweed *Picris evae*
- Austral Cornflower *Rhaponticum australe*



**Figure 4**  
**Threatened flora and fauna identified from database searches**  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*

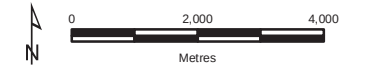


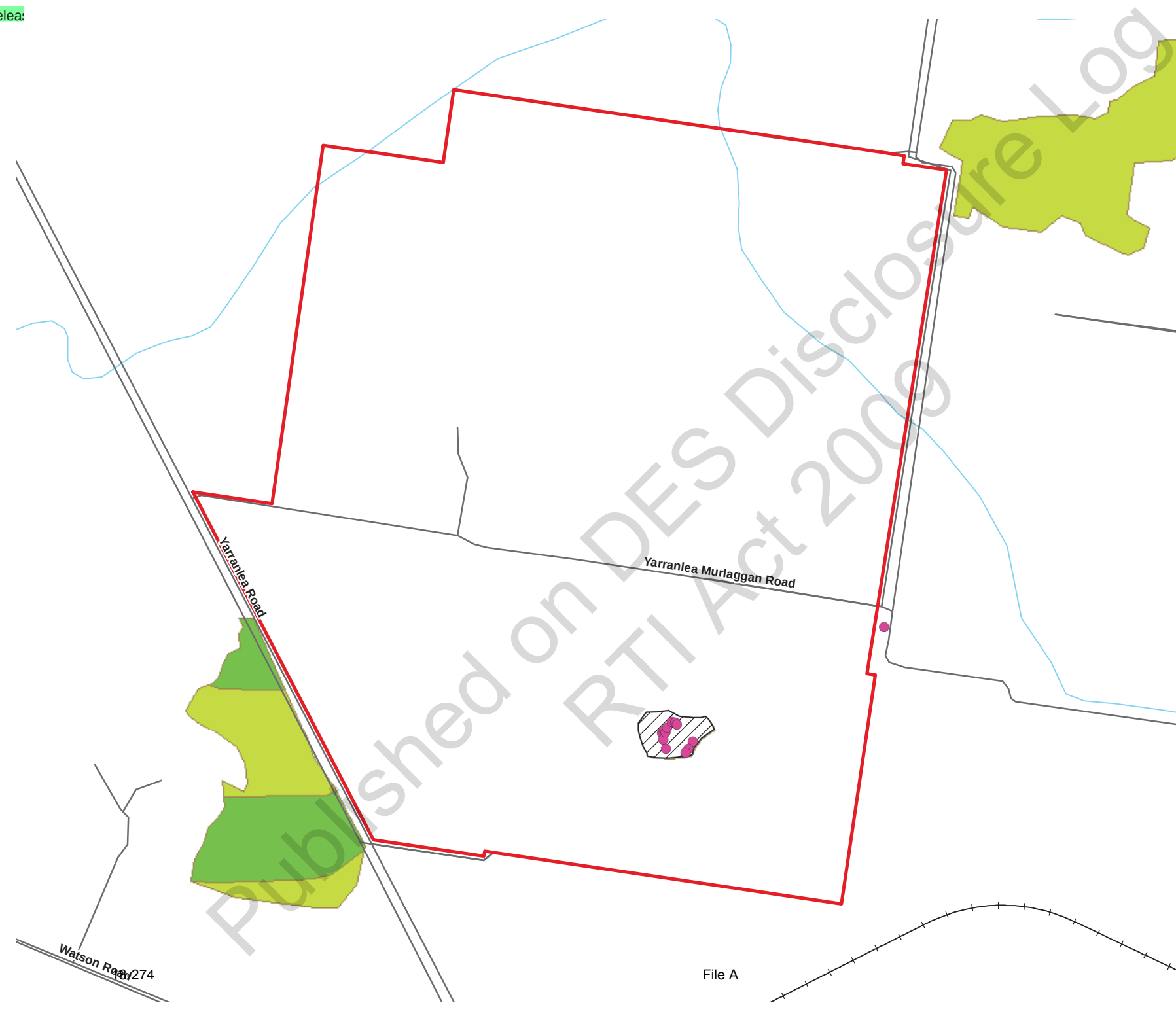
**Table 2** Threatened flora species identified from database searches

| Species Name                      | Common Name           | EPBC Status | NC Act Status | Preferred Habitat                                                                                                                                                         | Likelihood of Occurrence                                                                                                                                                                                        |
|-----------------------------------|-----------------------|-------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Rhaponticum australe</i>       | Austral Cornflower    | V           | V             | Heavy black or red-brown clays or clay-loams derived from basalt (land zone 8). Known from roadsides and cultivation headlands. Restricted to southern Qld.               | Moderate. Most records are located to the east of the study area with the closest being 6km away. Habitat occurs within the study area, however the dominance of Rhodes Grass may preclude use of this habitat. |
| <i>Picris evae</i>                | Hawkweed              | V           | V             | Occurs in open grassy eucalypt woodlands on clay-loams and medium clay soils. Found in the Darling Downs region of Qld as well as NSW.                                    | Low. Most records are from the east and preferred habitat occurs to the north-east of the study area within RE 11.3.2.                                                                                          |
| <i>Picris barbarorum</i>          |                       | O           | V             | Occurs on riverbanks and floodplains (land zone 3) in southern Qld and central western NSW.                                                                               | Unlikely. The study area does not occur on a floodplain and suitable habitat is not present.                                                                                                                    |
| <i>Clematis fawcettii</i>         | Stream Clematis       | V           | V             | Occurs in semi-evergreen vine thicket and vine forests of high altitude areas such as Bunya Mtn and Lamington National Park.                                              | Unlikely. No records from within 10km and suitable habitat does not occur within the study area.                                                                                                                |
| <i>Digitaria porrecta</i>         | Finger Grass          | Panic       | NT            | Occurs in native grasslands and open woodlands on soils derived from basalt (land zone 8). Known from southern and central Qld.                                           | Unlikely. No records from within 10km of the study area and preferred habitat does not occur.                                                                                                                   |
| <i>Homopholis belsonii</i>        | Belson's Panic        | V           | E             | Occurs in a variety of habitats including woodlands on poor quality soils, rocky hills, in Wilga woodland and in Poplar Box communities.                                  | <b>Known.</b> Occurs within the small patch of RE 11.9.5 within the southern portion of the study area and a small population within the road reserve of Yarranlea-Murlaggan Road.                              |
| <i>Dichanthium queenslandicum</i> | King Bluegrass        | E           | E             | Known from native grasslands and grassy eucalypt woodlands in central and southern Qld.                                                                                   | Moderate. Most records are from Bowenville approx.. 40km to the north of the study area, although a recent record is from just east of Pittsworth.                                                              |
| <i>Lepidium peregrinus</i>        | Wandering Peppergrass | E           | LC            | Occurs in riparian open forests in disjunct populations in southern and south-east Qld. Also NSW.                                                                         | Unlikely. No records from within 10km of the study area and suitable habitat does not occur.                                                                                                                    |
| <i>Thesium australe</i>           | Austral Toadflax      | V           | V             | Is semi-parasitic on the roots of native grasses including Kangaroo Grass <i>Themeda australis</i> . Occurs in a range of habitats and shows a preference for damp sites. | Low. No records from within 10km of the study area and habitat is marginal.                                                                                                                                     |

One threatened flora species was detected within the study area, Belson's Panic *Homopholis belsonii*, which is listed as endangered under the Queensland NC Act and vulnerable under the EPBC Act. Twelve discrete patches were identified within the patch of RE 11.9.5 within the southern portion of study area and one patch was identified adjacent to the eastern boundary of the study area within the Yarranlea Murlaggan Road reserve (Table 3, Figure 5). Each discrete patch covered an approximate area of several meters squared, and these areas were most often at the base of canopy trees and were in shaded areas created by shrubs..

**Table 3** Locations of Belson's Panic populations

| Population No.                   | Projected Coordinates (GDA, Zone 56J) |          | Geographic Coordinates (GDA) |           |
|----------------------------------|---------------------------------------|----------|------------------------------|-----------|
|                                  | Easting                               | Northing | Latitude                     | Longitude |
| 1                                | 355510                                | 6933562  | -27.71451                    | 151.53439 |
| 2                                | 355514                                | 6933567  | -27.71447                    | 151.53443 |
| 3                                | 355513                                | 6933547  | -27.71465                    | 151.53442 |
| 4                                | 355518                                | 6933564  | -27.7145                     | 151.53447 |
| 5                                | 355522                                | 6933575  | -27.7144                     | 151.53451 |
| 6                                | 355534                                | 6933589  | -27.71428                    | 151.53463 |
| 7                                | 355542                                | 6933588  | -27.71429                    | 151.53472 |
| 8                                | 355546                                | 6933583  | -27.71433                    | 151.53475 |
| 9                                | 355584                                | 6933542  | -27.71471                    | 151.53513 |
| 10                               | 355574                                | 6933525  | -27.71486                    | 151.53502 |
| 11                               | 355567                                | 6933516  | -27.71494                    | 151.53495 |
| 12                               | 355519                                | 6933524  | -27.71486                    | 151.53447 |
| Yarranlea-Murlaggan Road reserve | 356225                                | 6934864  | -27.70284                    | 151.54179 |

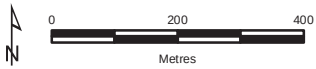


**Legend**

- Belson's Panic *Homopholis belsonii* locations
- Study Area
- Regional Ecosystems**
- 11.3.2
- 11.9.5
- Category X vegetation



**Figure 5**  
**Locations of Belson's Panic *Homopholis belsonii***  
*Ecological Assessment for the proposed Yarranlea Solar Farm, Yarranlea*



Base data sourced from Queensland Government: The State of Queensland does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that they shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

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7789\_Fig05\_BelsonsPanic 21/06/2016





**Plate 1** Small patch of Belson's Panic growing underneath Belah

The Flora Survey Trigger Map (DEHP 2016c) was reviewed for the study area and surrounds. A High Risk Area for threatened flora species is mapped within the extreme north-eastern corner of the study area. A random meander transect was completed within this area, as well as within 100 metres of the study area boundary in neighbouring properties. No significant flora species were found within the high risk area during the random meander despite a total flora survey effort of 40 minutes (Table 4). One individual of Lobed Bluegrass *Bothriochloa biloba* was identified along a fenceline along the northern boundary of the study area. Lobed Bluegrass was previously listed as threatened under the EPBC Act, however was removed from the list in 2013. The species is listed as Least Concern under the NC Act.

**Table 4** Flora survey effort within mapped High Risk Area

| Transect | Easting | Northing | Time       |
|----------|---------|----------|------------|
| Start    | 356228  | 6934854  | 20 minutes |
| Stop     | 356181  | 6934554  |            |
| Start    | 356181  | 6934554  | 20 minutes |
| Stop     | 356181  | 6934554  |            |

### 3.4 Significant Fauna Species

The desktop review indicated that 21 significant fauna species and nine special least concern species have been previously recorded or are predicted to occur within 10 kilometres of the study area (Appendix 2) and are shown on Figure 4. This comprises one fish, five reptiles, nine birds and six mammals threatened species. Additionally, 12 bird species are listed as migratory under the EPBC Act



and consequently as special least concern under the NC Act. These are shown separately in Appendix 2.

A likelihood of occurrence assessment was completed to determine the suite of threatened and conservation significant species that may potentially occur within the study area. The assessment is included in Appendix 3 and the species with a high or moderate potential to occur within the study area are presented below.

#### Condamine Earless Dragon

Condamine Earless Dragon *Tympanocryptis condaminensis* is listed as endangered under the NC Act. The Condamine Earless Dragon was recently separated taxonomically from the related Grassland Earless Dragon *T. pinguicollis*, which is listed under the EPBC Act and occurs in NSW and the ACT. As the population of Earless Dragons in the Darling Downs was previously listed under the EPBC Act, it is likely that the Condamine Earless Dragon will eventually be listed under that Act. There are several records of this species along Saal Road and Watson Road to the west of the study area and further to the north and east (DEHP 2016). The dragon is known to inhabit cropping lands and native grasslands along roadsides and is therefore a high potential occurrence within the study area. Very little is known about the breeding and egg laying habits of the species, but anecdotal evidence suggests that the dragon escapes into adjacent grasslands during harvesting operations (Ashdown 2014).

#### Painted Honeyeater

Painted Honeyeater *Grantiella picta*, listed as vulnerable under the NC Act and EPBC Act. The Painted Honeyeater is known from the Irongate Conservation Park, approximately 10 kilometres to the north of the study area and north of Pittsworth (DEHP 2016). The honeyeater occurs in a variety of woodland and open forest communities and shows a preference for mistletoe. This species is considered a moderate potential occurrence within the study area.

#### Five-clawed Worm-Skink

Five-clawed Worm-Skink *Anomalopus mackayi*, listed as endangered under the NC Act and vulnerable under the EPBC Act. The Five-clawed Worm-Skink is known from several records approximately 13 kilometres to the east of the study area, near Pittsworth (DEHP 2016). The worm-skink prefers sites on heavy cracking clay soils and with coarse woody debris. Although the study area contains cracking clay soils preferred by this species, the majority of the soils are used for cropping and are continually disturbed. The skink may inhabit road reserves such as Yarranlea-Murlaggan Road and Yarranlea Road as well as the patch of RE 11.9.5.

#### Grey-headed Flying Fox

The Grey-headed Flying Fox is listed as vulnerable under the EPBC Act. The species is a highly mobile forager across a variety of vegetation communities and may travel up to 30 kilometres from camps. The study area contains some plant species that provide foraging resources within in flower and which may be utilised by the flying fox, although due to the small extent of such species the study area is unlikely to provide sufficient resources to maintain a population of Grey-headed Flying Fox.

### Echidna

The Echidna is listed as special Least Concern fauna under the NC Act as it is considered culturally significant. The Echidna occurs in a variety of habitats throughout Queensland and may occasionally traverse the study area.

## 3.5 Other Fauna and Habitats

Due to the disturbed nature of the study area and low diversity of plant species present, the existing habitat for fauna is in poor condition. The study area provides habitat and resources for open country species that can tolerate high levels of habitat modification such as common birds. Common species sighted included Australian magpie *Gymnorhina tibicen*, Pied Butcherbird *Cracticus nigrogularis*, Grey Butcherbird *Cracticus torquatus*, Pale-headed Rosella *Platycercus adscitus*, Torresian crow *Corvus orru*, Crested Pigeon *Ocyphaps lophotes* and Magpie-lark *Grallina cyanoleuca*. An European Rabbit *Oryctolagus cuniculus* was observed within the patch of RE 11.9.5.

Several large eucalypts occur within the study area, primarily within the road reserves and several were observed to contain hollows of various sizes, which are suitable for hollow-nesting birds and mammals such as possums.

The study area is unlikely to provide suitable habitat for a diversity of reptile species due to the agricultural land use and lack of fallen woody debris. Reptile diversity is likely to be limited to common skinks and snakes, particularly Eastern Brown Snakes *Pseudonaja textilis*, which frequent cropping lands. Similarly, the study area is unlikely to provide habitat for frogs due to the absence of ponds or dams and the diversion drain at the northern boundary of the study area does not hold water.

The study area is also unlikely to provide habitat for a diversity of native mammal species due to the absence of vegetation cover.

## 3.6 Weeds and Pest Animals

The declared weed velvety tree pear *Opuntia tomentosa* was recorded prolifically within the RE 11.9.5 patch and throughout the road reserves. The study area also contains the suite of herbaceous and grassy weed species that are expected within an agricultural property in southern Queensland.

European Rabbit was observed within the patch of RE 11.9.5 within the southern portion of the study area. Rabbits would be expected to be relatively common within the surrounding landscape and their presence within the study area is not unexpected.

Tree pear and European Rabbit are listed as class 2 declared pests under the *Land Protection (Pest and Stock Route Management) Act 2002*.

## 3.7 Essential Habitat

No essential habitat as mapped by DRNM (2016) is located within or adjacent to the study area.

### 3.8 Wetlands and Watercourses

No referrable wetlands, or wetland protected areas were identified within the study area during the desktop assessment, nor during the current field assessment.

Two watercourses are identified as occurring within the study area on the Vegetation Management Map (DNRM 2016c) in the northern portion of the study area. One watercourse traverses the north-western corner of the study area and is identified as a stream of order 4 and one watercourse traverses the north-eastern corner and is identified as a stream of order 1. Both watercourses have been significantly disturbed and diverted from its mapped path and currently do not resemble natural features due to the absence of a defined banks or channel and absence of riparian or aquatic vegetation.

## 4 POTENTIAL IMPACTS AND MITIGATION MEASURES

### 4.1 Proposed Impacts

The proposed development is proposed to be staged over four stages and will involve complete coverage of the study area in solar PV panel arrays. The development will involve the loss of all currently cropped areas and the small patch of RE 11.9.5 (Category X vegetation) located within Stage 1. This will also involve the loss of the population of Belson's Panic within this vegetation. Vegetation along Yarranlea-Murlaggan Road will not be impacted, however some trees and other vegetation may be trimmed or cleared for duplication of the powerline along Yarranlea Road.

Potential impacts to ecological values associated with the PV Facility will be limited to those during construction. Construction activities will involve:

- A construction laydown area will be established at the western end of Yarranlea-Murlaggan Road and a second area at the eastern end. The areas will be cleared, grubbed, graded and compacted;
- Construction of an informal internal road system, treated to minimise dust creation;
- Construction of a gravel access track from the western end of Yarranlea-Murlaggan Road and around the perimeter of the Stage 1 block and stages 2-4 blocks;
- Erecting a 2.4 metre high chain wire link security fence around the perimeter of the study area;
- Construction of a control building and substation on the corner of Yarranlea Road and Yarranlea-Murlaggan Road;
- Construction of an Operations and Maintenance Facility and farm storage shed on the northern side of Yarranlea-Murlaggan Road;
- Installing a 110 kV powerline to the existing Ergon substation by directly trenching and burying the line or by overhead powerline; and
- Installation of solar PV panels on monopoles supported by screw piles or similar that are driven into the ground.

Operational activities will be minimal and be largely restricted to use of the control building and operations and maintenance facility by staff. As the PV array frames have a minimal footprint on the ground surface, the soil will be seeded with an appropriate grass mix. Slashing of the grass would occur as appropriate and grazing would be considered.

Decommissioning activities would involve the removal of the panel arrays including monopole structures. The disturbance to the soil profile will be minimal and will be able to be returned to an agricultural land use.

There may be some trimming of regulated vegetation along Yarranlea Road adjacent to the existing powerline.

## 4.2 Mitigation Measures

Mitigation measures follow the impact mitigation hierarchy of avoid, minimise and mitigate (including offsets). This section identifies how the proposed development will mitigate impacts to ecological values.

### 4.2.1 Avoidance

No impacts to grassland or woody vegetation will occur within the Yarranlea-Murlaggan Road reserve.

The existing stand of RE11.9.5 (Category X vegetation) will be removed as will the population of Belson's Panic. As this patch is isolated within the centre of the Stage 1 area, avoidance of this impact is not possible.

Although the proposed development will not result in extensive ground disturbance, which would otherwise impact on the Condamine Earless Dragon, some ground disturbance may occur. To avoid impacts to the dragon, any crops remaining within the study area prior to construction commencing should be harvested and any other standing biomass (eg. grasses, weeds) should be slashed. This is to provide a disturbance stimulus to any dragons residing within the study area to retreat to existing habitats within adjacent road reserves.

### 4.2.2 Minimisation

Some clearing or trimming of regulated vegetation may be required along Yarranlea Road for the construction of an electricity connection to the Yarranlea Substation. Clearing will be limited to the minimise width necessary to safely construct and operate the electricity connection. Where possible, trees will be trimmed rather than felled.

Recommended measures to minimise impacts to terrestrial values present within the study area include:

- The extent of ground disturbance will be the minimum necessary to construct the access tracks, buildings and install the solar PV arrays;
- Construction stockpiles, machinery and other infrastructure should be wholly contained outside of the drainage channels to minimise the risk of sediments and pollutants being mobilised downstream; and
- Declared Class 2 weed species (i.e. velvety tree pear) must be treated prior to the activity commencing. This is to ensure that weed propagative material is not spread to other areas. A weed control contractor who is licenced to use herbicides should be engaged to treat weed infestations.

### 4.2.3 Mitigation measures

Recommended measures to mitigate impacts on terrestrial values present within the study area include:

- Provision on an environmental offset to compensate for the loss of the population of Belson's Panic in accordance with the *Environmental Offsets Act 2014*;

- Ensure that best practice sedimentation and pollution control measures are undertaken at all times to prevent offsite impacts to downstream receiving environments. The Best Practice Erosion and Sediment Control Guidelines (Witheridge, 2014) should be referred to; and
- As native plants provides valuable habitat and food resources for fauna, it is recommended that any landscape plantings that are undertaken as part of the proposed development are completed using 90% native species that are found within the surrounding area, provided that commercial quantities of seedlings/seed are available.



## 5 LEGISLATIVE AND POLICY IMPLICATIONS

### 5.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

#### 5.1.1 Wetlands of international significance

The study area occurs within the catchment of four Ramsar sites that occur many hundreds of kilometres downstream. These sites are unlikely to be impacted as each is situated a considerable distance from the proposed action. Provided management practices and construction techniques are consistent with current industry standards, the project is unlikely to affect the ecological character of any Ramsar wetland.

#### 5.1.2 Threatened species and ecological communities

**Flora:** One threatened flora species, Belson's Panic was detected from within the patch of RE 11.9.5 and within the Yarranlea-Murlaggan Road reserve adjacent to the study area. There is a moderate likelihood of other threatened flora species being present within the study area, although these would be confined to vegetation along Yarranlea-Murlaggan Road. No other threatened flora species were identified during the field survey. The population within the patch of vegetation within the cropping area is proposed to be removed.

Table 5 provides an assessment of the significance of the impact on Belson's Panic and habitat. When assessing the significance of an action on a Vulnerable species, it is necessary to define whether an 'important population' of the species occurs or could potentially occur within the study area. An important population is defined as one that is necessary for a species' long-term survival and recovery. This may include population identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal;
- populations that are necessary for maintaining genetic diversity; and/or
- populations that are at near the limit of the species range.

The population of Belson's Panic within the study area is located within a small (less than one hectare) patch of vegetation that is completely surrounded by cropping land. Although the species sets seed and like other *Panicum* grasses the seed head (panicle) can be blown by the wind, the species spreads mainly by the stolons (Menkins, 1998). As the habitat is completely isolated to other habitat patches and is over 0.5 kilometres away from the small population within Yarranlea-Murlaggan Road, the population to be removed cannot be considered a key source population for breeding or dispersal due to the hostile land use (i.e. cropping) surrounding the population. Similarly, since this population is isolated from other habitat areas, the population cannot be considered to be necessary for maintain genetic diversity, since the chance of seed entering the patch from other populations is highly unlikely. Finally, the species is known to occur in a broad arc from north of Narrabri in central northern NSW to north of Toowoomba and north to Wandoan. The population within the study area is therefore near the eastern limit of its known range. However, this population cannot be considered an important population for the following reasons:

1. The area of habitat is small (less than one hectare), has been subject to previous disturbances (clearing) and is surrounded by active cropping land (a hostile land use);
2. The vegetation is not protected under the Queensland VM Act (identified as Category X vegetation) and could be cleared for expansion of cropping within the property;
3. The patch of vegetation contains weeds that are known to be threatening processes to the species and in the absence of active management would be expected to increase in abundance over time;
4. Is not connected to other populations within the region, including from the small population along Yarranlea – Murlaggan Road and Irongate Conservation Park, 6 kilometres to the north; and
5. An improvement in the habitat quality and condition of the vegetation is unlikely given the surrounding land use.

Therefore, the population within the study area is not considered to be an important population as the population is highly unlikely to be necessary for the species' long-term survival and recovery. The long-term survival of the vegetation patch is low and the habitat condition would be expected to continue to decline to the exclusion of Belson's Panic.

**Table 5 Significant Impact Assessment for King Blue-grass**

| Significant Impact Criteria                                                                                                                                                                                      | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will: lead to a long-term decrease in the size of an important population of a species | The loss of this population is unlikely to lead to a long-term decrease in the size of the population as the population is not necessary for the species' long-term survival and recovery.                                                                                                                                                                                       |
| Reduce the area of occupancy of an important population                                                                                                                                                          | The removal of the patch of vegetation within the study area will result in the reduction in the area of occupancy for the species on a local level, however, the loss of this vegetation will not impact on other populations that are likely to be considered important populations, such as the population with the Irongate Conservation Park.                               |
| Fragment an existing important population into two or more populations                                                                                                                                           | The proposed removal of vegetation will not fragment an existing population into two or more populations.                                                                                                                                                                                                                                                                        |
| Adversely affect habitat critical to the survival of a species                                                                                                                                                   | Although the vegetation patch contains habitat for Belson's Panic, it does not provide habitat critical to the survival of the species. This is because the habitat is not secured from further clearing from agricultural development, contains weed species that are listed as a threatening process to the species and the habitat is not connected to other vegetated areas. |

| Significant Impact Criteria                                                                                                                                                                     | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disrupt the breeding cycle of an important population modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline | The proposed clearing of the vegetation will result in the local loss of 12 discrete areas containing Belson's Panic. However, the loss of this vegetation is unlikely to result in the decline of the species as the population is not considered to be an important population.                                                                                                                                                                                                                                                                                                                                     |
| Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat                                                                     | The proposed development will implement weed hygiene measures to ensure that invasive species will not become established within existing habitat for the species along Yarranlea – Murlaggan Road.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Introduce disease that may cause the species to decline, or                                                                                                                                     | The proposed development is unlikely to introduce a disease that could cause the species to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Interfere substantially with the recovery of the species.                                                                                                                                       | <p>Tremont and Whalley (1993) identify management of remnant habitats as a key action to recover the species as well as maintenance of overstorey vegetation, preservation of sub-shrub and shrub populations, regeneration of native vegetation and strategic protection of lands. The NSW (former) Department of Environment, Conservation and Water (2005) further identify key actions including exclusion of stock, weed control and protection of areas from clearing and further fragmentation.</p> <p>The proposed development will not substantially interfere with any of these key management actions.</p> |

**Fauna:** No fauna species listed under the EPBC Act were recorded within the study area during the field assessment. There is suitable habitat within the study area for five fauna species listed under the EPBC Act (Condamine Earless Dragon, Five-clawed Worm-skink, Grey-headed Flying Fox and Painted Honeyeater), however the habitat is generally restricted to vegetation within the patch of RE 11.9.5 and road reserves due to the active cropping activities occurring within the study area.

The Condamine Earless Dragon is a high likelihood within road reserves adjacent to the study area and adjacent cropping areas. This species is regularly found within actively cropped areas and does not seem to be impacted by regular harvesting or planting of crop species. Although it would appear to have lost a significant percentage of its native grassland habitat prior to agricultural development, the nature of the black cracking clay soils upon which it is dependent has not changed and continues even after ploughing (Richardson 2006). The proposed solar farm will not significantly change the soil profile or cracking characteristics and therefore it is unlikely that the development will have a significant impact on this species.

Grey-headed Flying-fox is a dietary generalist which forages across a wide area. It is likely to continue to utilise the site post development and forage in landscaped areas. There will be no impact on roost sites as a result of the proposed development. This species is highly unlikely to be significantly impacted by the removal of individual trees in the short or long term.

**Communities:** No ecological communities listed under the EPBC Act were recorded within the study area.

### 5.1.3 Migratory species

Several migratory species are likely to occur in or fly over the study area. However, the study area would not be classed as an 'important habitat' as defined under the EPBC Act Policy Statement 1.1 Principal Significant Impact Guidelines (DEWHA 2009) for any of these species and no further assessment is warranted.

### 5.1.4 Implications

Based on the assessment completed in Table 5, the proposed removal of the habitat and associated population of Belson's Panic from the proposed development is unlikely to result in a significant impact to the species.

The proposed action is unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act. However, the proponent may wish to refer the project regardless to provide certainty to project timelines and to ensure that the MNES being considered are 'locked-in' for the duration of the project. This means that any future listing events, such as listing of a new species as threatened (and which may occur within the study area) or upgrading the status of Belson's Panic to endangered or critically endangered do not impact on the project.

## 5.2 Nature Conservation Act 1992 (Queensland)

### 5.2.1 EVNT Flora

One threatened flora species (Belson's Panic) was recorded within the study area during the survey. The species was found within the patch of RE 11.9.5 within the southern portion and a small population within the road reserve of Yarranlea-Murlaggan Road. The area of habitat, including 12 discrete patches of Belson's Panic, is proposed to be removed. Under the QEOP Significant Residual Impact Guideline (DEHP 2014a), an action is likely to have a significant impact on endangered wildlife if the impact on the habitat is likely to:

- lead to a long-term decrease in the size of a local population; or
- reduce the extent of occurrence of the species; or
- fragment an existing population; or
- result in genetically distinct populations forming as a result of habitat isolation; or
- result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat; or
- introduce disease that may cause the population to decline, or
- interfere with the recovery of the species; or
- cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species.

An assessment against these criteria has been completed in Table 6.

**Table 6 Significant Impact Assessment for Belson's Panic**

| Significant Impact Criteria                                                                                                                                                                     | Impact Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An action is likely to have a significant impact on an endangered species if there is a real chance or possibility that it will: lead to a long-term decrease in the size of a local population | The local population is defined as the population residing in the study area. The proposed development will result in the loss of this population.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| reduce the extent of occurrence of the species                                                                                                                                                  | The removal of the patch of vegetation within the study area will result in the reduction in the extent of occurrence for the species on a local level, however, the loss of this vegetation will not impact on other populations surrounding the study area, such as the population with the Irongate Conservation Park and within Yarranlea-Murlaggan Road.                                                                                                                                                                                                                                                         |
| fragment an existing population                                                                                                                                                                 | The proposed removal of habitat will not fragment an existing population as the entirety of the habitat patch will be removed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| result in genetically distinct populations forming as a result of habitat isolation                                                                                                             | The habitat containing Belson's Panic is currently isolated from other habitat patches and the proposed development will result in the loss of the habitat.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered or vulnerable species' habitat                                        | The proposed development will implement weed hygiene measures to ensure that invasive species will not become established within existing habitat for the species along Yarranlea – Murlaggan Road.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| introduce disease that may cause the population to decline                                                                                                                                      | The proposed development is unlikely to introduce a disease that could cause the species to decline.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| interfere with the recovery of the species.                                                                                                                                                     | <p>Tremont and Whalley (1993) identify management of remnant habitats as a key action to recover the species as well as maintenance of overstorey vegetation, preservation of sub-shrub and shrub populations, regeneration of native vegetation and strategic protection of lands. The NSW (former) Department of Environment, Conservation and Water (2005) further identify key actions including exclusion of stock, weed control and protection of areas from clearing and further fragmentation.</p> <p>The proposed development will not substantially interfere with any of these key management actions.</p> |
| cause disruption to ecologically significant locations (breeding, feeding, nesting, migration or resting sites) of a species                                                                    | The habitat patch within the study area cannot be considered an ecological significant location as the habitat is isolated from other habitat patches or vegetation within the surrounding area.                                                                                                                                                                                                                                                                                                                                                                                                                      |

In assessing applications for Clearing Permits, DEHP will have regard to Nature Conservation (Wildlife Management) Regulation 2006 Protected Plants Assessment Guideline (DEHP, 2014b). An Impact

Management Plan must be provided, which identifies how unavoidable impacts to Belson' Panic will be managed. The Impact Management Plan is provided in Appendix 4.

The Flora Survey Trigger map was downloaded on 12/2/2016 and a small area of high risk area is mapped within and adjacent to the study area in the north-east portion. This map is valid for 12 months from the date of download and will need to be re-downloaded if construction is likely to commence more than 12 months from this date.

### 5.2.2 EVNT Fauna

Although several EVNT and SLC fauna species are likely to occur within the study area (Condamine Earless Dragon, Grey-headed Flying-fox, Echidna), no specific licensing or approvals are required to take (e.g. damage or destroy) potential habitat for those species in this instance. However, under section 332 of the Nature Conservation (Wildlife Management) Regulation 2006 a person must not, without a reasonable excuse, tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring. Tampering with an animals breeding place under an approved Species Management Program (SMP) is a reasonable defence against a charge under Section 332.

### 5.2.3 Implications

The removal of an endangered plant must be approved under the NC Act through the granting of a Clearing Permit. An application for a clearing permit will be made to DEHP in due course. A fee of \$2,677.00 is payable at the time of lodgement of the fee. An environmental offset obligation will be a condition of approval attached to the permit.

The Condamine Earless Dragon is considered a likely occurrence within the study area within cropping lands and adjacent grassy areas within Yarranlea-Murlaggan Road. Although breeding places for this species are not well understood, the grassy areas along Yarranlea-Murlaggan Road are considered to be habitat for the dragon. No impacts are proposed within these area, and as such, an SMP for this species is not required. In addition, no other least concern or special least concern species are known to breeding within the proposed development area or would be impact by the development and as such an SMP is not required.

## 5.3 Vegetation Management Act 1999

The proposed development does not trigger the VM Act given that the patch of RE 11.9.5 has been confirmed as Category X vegetation through the approval of a PMAV over the Lot 2 on RP7475 (Appendix 5).

However, should regulated vegetation be impacted along Yarranlea Road, the VM Act may apply. Given the activity is for the construction of a powerline, the trimming may be exempt under the VM Act if the activity is under section 101 or 112A of the *Electricity Act 1994* or section 17 of the *Electricity Regulation 2006*.



## 5.4 Land Protection (Pest and Stock Route Management) Act 2002

Declared pests, being certain animal and plant species, are declared under the *Land Protection (Pest and Stock Route Management) Act 2002*. Declared pests can be assigned into one of three Classes that regulate how the species is managed and can apply to restricting sale, introduction, possession or transport of the species.

Landowners must take reasonable steps to keep their land free of Class 1 and 2 declared pests. Landholders are not required to control Class 3 plants unless their land is adjacent to an environmentally significant area and they are issued with a pest control notice.

Velvety tree pear and European Rabbit are declared class 2 pests and landowners are legally responsible to take reasonable steps to remove and destroy these pests.

## 5.5 Environmental Offset Act 2014

The proposed removal of Belson's Panic from the study area will require approval from DEHP through the granting of a clearing permit. A condition of approval will include provision of an environmental offset in accordance with the EO Act. The EO Act requires that an offset is provided for significant residual impacts to matters of state environmental significance (MSES). Removal of a population of an endangered plant is a MSES as defined under the EO Act. Under section 2.3.2 of the Queensland Environmental Offsets Policy (QEOP) (Version 1.1, DEHP, 2014c), the offset can be a 100% financial offset, which is a payment to DEHP to offset the impact on behalf of the proponent. Yarranlea Solar Pty Ltd, as proponent for the project, would seek to complete a financial offset for removal of Belson's Panic plants.

Financial offsets are calculate using the methodology described in Appendix 4 of the QEOP; however, DEHP provide an online calculator. The following criteria were used in the online calculator as shown in Table 6. The total offset cost has been assessed as **\$28,772.00**.

**Table 7** Financial Offset Calculation

| Criteria                     | Assessment                                           |
|------------------------------|------------------------------------------------------|
| Local government area        | Toowoomba Regional Council                           |
| Bioregion                    | Brigalow Belt                                        |
| Subregion                    | Eastern Darling Downs                                |
| Impact area                  | 0.9386 hectares                                      |
| Notional offset area         | 3.7544 hectares                                      |
| Distinct matter area (DMA)   | 1.1                                                  |
| Matter group                 | 1.1.1 Threatened plants – <i>Homopholis belsonii</i> |
| Non-protected area cost      | \$15,017.60                                          |
| Landholder incentive payment | \$10,000.00                                          |
| Administrative cost          | \$3,754.40                                           |
| <b>Total offset cost</b>     | <b>\$28,772.00</b>                                   |

## 5.6 Water Act 2000

The watercourse map was reviewed for the study area (via the Vegetation Management category globe within the Queensland Globe). The map shows that two waterways have been identified as occurring within the study area. However, both waterways have been disturbed and diverted from their original courses and only a drainage feature remains.

Construction activities can be undertaken within the drainage features without the need for a permit or approval under the Water Act.

## 5.7 Toowoomba Planning Scheme

The study area is captured by the Environmental Significance Overlay Map and therefore the Environmental Significance Overlay Code is triggered. An assessment is provided against Table 8.5.1.1 below (Table 8).

**Table 8 Environmental Significance Overlay Code – for assessable development**

| Performance outcomes                    |                                                                                                                                                                                                                                  | Acceptable outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Proposed Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Areas of Ecological Significance</b> |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| PO <sub>1</sub>                         | Vegetation disturbance or other impacts on areas of ecological significance shown on the Environmental Significance Overlay maps, is avoided or where disturbance cannot be avoided the loss or decrease of values is minimised. | <p>AO<sub>1.1</sub> Impacts are avoided by locating development wholly outside mapped areas of ecological significance and areas of ecological significance buffer identified on the Environmental Significance Overlay maps.</p> <p>OR</p> <p>Where impacts on areas of ecological significance shown on the Environmental Significance Overlay Maps cannot be avoided, they are minimised by:</p> <ul style="list-style-type: none"> <li>(a) minimising the total footprint within which activities, buildings, structures, driveways and other works or activities are contained;</li> <li>(b) avoiding further fragmentation of areas of ecological significance and strengthening linkages where possible;</li> <li>(c) utilising areas of lesser importance in terms of biodiversity values so that areas of higher value are conserved to the greatest extent practicable; and</li> <li>(d) maintaining areas of ecological significance in patches of greatest possible size and with the smallest possible edge to area ratio.</li> </ul> | <p>The small patch of RE 11.9.5 is identified as an Area of Ecological Significance as this relates to the patch being mapped as regulated vegetation. The patch is proposed to be removed. The boundary of this patch was modified through a PMAV application and DNRM have confirmed that the modified boundary has resulted in the patch being identified as category X vegetation.</p> <p>However, the definition of areas of ecological significance includes:</p> <ul style="list-style-type: none"> <li>- endangered REs;</li> <li>- of concern REs;</li> <li>- least concern REs; and</li> <li>- areas of endangered, vulnerable and rare species.</li> </ul> <p>Therefore, the area is considered an area of ecological significance. None of the acceptable outcomes can be achieved with the current project design. The vegetation is currently small and isolated within the study area and any attempts to minimise the impacts of the development would be superfluous. An offset is proposed under the <i>Environmental Offsets Act 2014</i> to compensate for the loss of this habitat.</p> |

| Performance outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Acceptable outcomes                                                                                                                                                                                                                                                                          | Proposed Development                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>PO<sub>2</sub> Optimise biodiversity outcomes by prioritising the location of environmental offsets within identified biodiversity corridors.</p>                                                                                                                                                                                                                                                                                                                                                                                              | <p>AO<sub>2.1</sub> Biodiversity offsets designed to counterbalance development impacts on areas of ecological significance are delivered consistent with the Queensland Government Environmental Offsets Policy 2008 and other applicable biodiversity / environmental offset policies.</p> | <p>An offset is proposed in accordance with the EO Act as a likely condition of approval on a Clearing Permit made under the NC Act.</p>                                                                                                                                                                                                                                                                                                                                                                     |
| <p>PO<sub>3</sub> Landscaping complements biodiversity values through incorporating the following elements into the landscaping design:</p> <ul style="list-style-type: none"> <li>(a) native plants of local origin; or</li> <li>(b) known food and habitat trees and shrubs; or</li> <li>(c) replication of adjacent healthy remnant habitats, including understorey vegetation; and</li> <li>(d) no declared noxious plants, weeds or invasive plants likely to displace native flora species or degrade fauna habitat.</li> </ul>             | <p>No acceptable outcome is nominated.</p>                                                                                                                                                                                                                                                   | <p>Landscaping will be complimentary to the species found within proximity to the study area and will include:</p> <ul style="list-style-type: none"> <li>(a) native plants of local origin; or</li> <li>(b) known food and habitat trees and shrubs; or</li> <li>(c) replication of adjacent healthy remnant habitats, including understorey vegetation; and</li> <li>(d) no declared noxious plants, weeds or invasive plants likely to displace native flora species or degrade fauna habitat.</li> </ul> |
| <p>PO<sub>4</sub> Movement of fauna is facilitated within and through the site, particularly along identified biodiversity corridors by:</p> <ul style="list-style-type: none"> <li>(a) ensuring that development and associated activities do not create barriers to the movement of fauna along and within biodiversity corridors;</li> <li>(b) directing fauna to locations where wildlife infrastructure has been created, to enable wildlife to safely negotiate a development area; and separating fauna from potential hazards.</li> </ul> | <p>No acceptable outcome is nominated.</p>                                                                                                                                                                                                                                                   | <p>The study area comprises an agricultural land use and does not provide vegetated connections to other habitat area. Therefore, movement of fauna will not be facilitated through the proposed development.</p>                                                                                                                                                                                                                                                                                            |

| Performance outcomes                                                                                                                                                                                                                                | Acceptable outcomes                                                                                                                                                                                                                                                        | Proposed Development                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PO <sub>5</sub> Identified biodiversity corridors on the Environmental Significance Overlay maps and their role to potentially connect areas of ecological significance (through rehabilitation or enhancement) are not compromised by development. | No acceptable outcome is nominated.                                                                                                                                                                                                                                        | No Biodiversity Corridors are identified on the Environmental Significance Overlay Map within or adjacent to the study area.                                                                           |
| <b>Waterways and Wetlands</b>                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                        |
| PO <sub>6</sub> Development is not carried out within a mapped waterway or wetland identified on the Environmental Significance Overlay maps.                                                                                                       | AO <sub>6.1</sub> Development is located outside the mapped boundary of a waterway or wetland identified on the Environmental Significance Overlay maps.                                                                                                                   | Two mapped waterways are identified within the northern portion of the study area. Both waterway area have been significantly modified from their natural state and are not identifiable as waterways. |
| PO <sub>7</sub> Development provides a buffer which protects the ecological, hydrological and water quality values of the wetland or the waterway.                                                                                                  | AO <sub>7.1</sub> Development provides a buffer area which is vegetated with native plants endemic to the area.<br>AO <sub>7.2</sub> Buildings, structures and works are not carried out within the buffer area identified on the Environmental Significance Overlay maps. | Natural waterways do not occur within or immediately adjacent to the study area. The drainage line is not proposed to be vegetated.                                                                    |
| PO <sub>8</sub> Development retains the existing hydrological regime or re-establishes the previous naturally occurring regime.                                                                                                                     | AO <sub>8.1</sub> Existing flows of surface and ground water are not altered through construction of channelled flows or the redirection or interruption of flows.                                                                                                         | The proposed development will not modify the existing drainage patterns or profile of the study area.                                                                                                  |

## 6 CONCLUSION AND FURTHER REQUIREMENTS

This ecological assessment has been prepared to identify the flora and fauna values within the study area, define and identify features of significance at the Commonwealth, State and local level, and to provide an assessment of the proposed development in consideration of relevant biodiversity legislation and government policy. The study area contains ecological values that are expected within an agricultural landscape with a common suite of species occurring within the limited habitat available. The small patch of RE 11.9.5 meets the definition of remnant vegetation; however through a PMAV process it has been identified as Category X vegetation. The patch of vegetation including the population of Belson's Panic is proposed to be removed.

The removal of habitat for Belson's Panic has been assessed at the Queensland and Commonwealth levels. The removal of habitat has been assessed as a significant impact under the relevant Queensland guidelines; however, the removal of habitat is not a significant impact under the EPBC Act. This difference is primarily due to the different conservation status of the species under the NC Act (endangered) and EPBC Act (vulnerable).

Further requirements associated with proposed development are provided below (Table 9).

**Table 9.** Further requirements associated with development of the study area

| Legislation                                                                                 | Description of Values                                                                                                                                                                                                                                                                       | Action Required                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Environment Protection and Biodiversity Conservation Act 1999</i>                        | The proposed action is unlikely to have a significant impact on any matter of NES. As such, a referral to the Commonwealth Environment Minister is unlikely to be required regarding matters listed under the EPBC Act.                                                                     | No further action required. A referral under the EPBC Act could be completed to provide project certainty.                                                                                                                                     |
| <i>Vegetation Management Act 1999</i>                                                       | Regulated vegetation (i.e. RE 11.9.5) was identified within the study area. This vegetation was the subject of a PMAV process which resulted in the vegetation being identified as Category X vegetation.                                                                                   | No further action required                                                                                                                                                                                                                     |
| <i>Nature Conservation Act 1992</i>                                                         | A small population of Belson's Panic was recorded within the patch of RE 11.9.5. This population will be removed as part of the proposed development. No threatened fauna species were recorded within the study area; however Condamine Earless Dragon was considered a likely occurrence. | An application for a clearing permit must be made to DEHP and approval gained prior to clearing commencing.<br><br>No breeding places for EVNT, special least concern or least concern species is expected. Therefore, an SMP is not required. |
| <i>South East Queensland koala Conservation State Planning Regulatory Provisions (SPRP)</i> | The study area is not located within a koala assessable development area.                                                                                                                                                                                                                   | No further action required.                                                                                                                                                                                                                    |
| <i>Land Protection (Pest and Stock Route Management) Act 2002</i>                           | Class 2 and class 3 declared plant pests have been identified within the study area.                                                                                                                                                                                                        | Class 2 declared plants, velvety tree pear must be removed and destroyed from the study area prior to construction commencing.                                                                                                                 |

| Legislation                                                 | Description of Values                                                                                                                                                                                                                              | Action Required                                                                                                                                  |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Water Act 2000</i>                                       | The creekline and tributaries within the study area are defined as a drainage features under the Water Act.                                                                                                                                        | No further action required.                                                                                                                      |
| <i>Toowoomba Planning Scheme</i>                            | The Environmental Significance Overlay identifies an Area of Ecological Significance and Waterways within the study area. The Area of Ecological Significance will be retained and protected and the waterways do not occur within the study area. | PO1 of the Environmental Significance Overlay Code has not been met. This will required consultation with TRC to resolve the acceptable outcome. |
| <i>Electricity Act 1994 and Electricity Regulation 2006</i> | An exemption may apply for impacts to regulated vegetation for activities under section 101 or 112A of the Electricity Act of 17 of the Electricity Regulation.                                                                                    | The potential exemption should be investigation further once the design has progressed.                                                          |



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## APPENDIX 1 – LEGISLATION (BACKGROUND)

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### A1.1. Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions (i.e. project, development, undertaking, activity, or series of activities) that are likely to have a significant impact on matters of national environmental significance (NES), or on Commonwealth land. An action, unless otherwise exempt, requires approval from the Commonwealth Environment Minister if it is considered likely to have an impact on any of the following matters of NES:

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory and marine species;
- Commonwealth marine area;
- Nuclear actions (including uranium mining);
- Great Barrier Reef Marine Park; or,
- Water resources impacted by coal seam gas or mining development.

### A1.2. Nature Conservation Act 1992 (Queensland)

The *Nature Conservation Act 1992* (NC Act) provides for the conservation of nature through protection of all native plants and animals in Queensland. Protection is provided under the NC Act through conservation of land as protected areas and wildlife protection outside of protected areas. Actions impacting on protected native flora and fauna are regulated under the NC Act. Permits for disturbance to native flora and fauna can be administered under the NC Act. The Queensland Nature Conservation (Wildlife) Regulation 2006 lists flora and fauna species considered to be extinct in the wild, endangered, vulnerable, near threatened or special least concern in Queensland.

#### Protected Plants

In Queensland, all plants that are native to Australia are “protected plants” under the NC Act. The DEHP administer this Act to ensure that protected plants and their parts are not illegally removed from the wild or traded. The take and use of protected plants (including whole plants, plant parts and propagating material) from the wild is regulated by a licensing system. People who wish to take protected plants from the wild, for any reason, may be required by law to obtain a licence, permit or authority from the Department of Environment and Heritage Protection (DEHP). This will be the case unless the activity is specifically exempt under a regulation or conservation plan under the Act (such as for timber harvesting of common species). Whether the activity is bound by, or exempt from,

provisions of the Act, the clearing of native vegetation may also require development approval under other legislation such the *Vegetation Management Act 1999* (VM Act).

The Protected Plants Flora Survey Trigger Map (DEHP 2015) shows high risk areas for protected plants and is used to help determine flora survey and clearing permit requirements for a particular location. Areas shown on the map as high risk are subject to particular requirements under the NC Act.

### Protected Animal Breeding Places

Section 332 of the Nature Conservation (Wildlife Management) Regulation 2006 (Wildlife Management Regulation) governs tampering with animal breeding places. Under the Wildlife Management Regulation, Section 332(1), it is an offence to tamper with an animal breeding place that is being used by a protected animal to incubate or rear the animal's offspring.

Section 332(2) states that an animal breeding place is being used by a protected animal to incubate or rear the animal's offspring if:

- the animal is preparing, or has prepared, the place for incubating or rearing the animal's offspring; or
- the animal is breeding, or is about to breed, and is physically occupying the place; or
- the animal and the animal's offspring are physically occupying the place, even if the occupation is only periodical; or
- the animal has used the place to incubate or rear the animal's offspring and is of a species generally known to return to the same place to incubate or rear offspring in each breeding season for the animal.

Section 332(5) defines tamper (with an animal breeding place) as "damage, destroy, mark, move or dig up the breeding place".

Section 332(1) does not apply if the removal or tampering is part of an approved Species Management Program (SMP) for animals of the same species (section 332(4)). Section 332(5) defines an approved SMP, for a species of animal, as "a program about managing the population and habitat of the species of animal that is approved by the chief executive".

If a breeding place for a protected animal is likely to be disturbed by construction activities, an SMP is required to be prepared and approved by DEHP.

## A1.3. Vegetation Management Act 1999

The VM Act provides a framework for the regulation of woody, terrestrial native vegetation located outside of protected areas. The stated purpose of the Act is to regulate the clearing of native vegetation in a way that:

- Conserves remnant vegetation that is an endangered, of concern or least concern RE
- Conserves vegetation in declared areas
- Ensures clearing does not cause land degradation
- Prevents biodiversity loss

- Maintains ecological processes
- Manages the environmental effects of the clearing to ensure the above purposes are obtained.

The Act provides for the establishment and mapping of REs that encompass vegetation community descriptions within a geological and bioregional context, and for the creation and use of clearing codes (among other things). In addition, it provides a process for RE mapping changes by the public, and for the investigation and prosecution of clearing offences. Details on what clearing activities require assessment against the various regional clearing codes authorised under the VM Act are provided by the *Sustainable Planning Act 2009* (SP Act).

#### **A1.4. Environmental Offsets Act 2014**

The *Environmental Offsets Act 2014* (EO Act) was recently enacted in Queensland to streamline the offsets process for proponents and developers. The EO Act and subordinate Environmental Offsets Regulation 2014 and Environmental Offsets Policy replaced the Queensland Government Environmental Offsets Policy and four specific-issue policies for vegetation management, koala habitat, fish habitat and biodiversity values.

The EO Act amended other Acts to provide consistency for when offsets are triggered and how they should be delivered. The EO Act does not trigger offsets directly, but is indirectly involved through existing approval pathways under the SP Act, NC Act, VM Act and Fisheries Act 1994. Offsets can be imposed by an authority when a prescribed activity will have a significant residual impact on a prescribed environmental matter.

Offsets can be delivered by a proponent driven offset (land-based offset) or financial settlement offset depending upon the activity and the matter(s) involved.

If the proposed development is shown to have a significant residual impact on a matter of State environmental significance (SES), then an environmental offset is likely to be conditioned onto the project approval.

#### **A1.5. Water Act 2000**

The *Water Reform and Other Legislation Amendment Act 2014* was passed on 26 November 2014. The Act includes a number of changes to the Water Act 2000 and other resource related legislation. Amongst the changes, a new watercourse identification map has been prepared to show watercourses and drainage features as described in the Water Act.

#### **A1.6. Toowoomba Regional Planning Scheme**

The study area lies within the Toowoomba Regional Council area and will be assessed under the Toowoomba Planning Scheme 2012 (amended October 2015). The following overlays are relevant to the study area.

##### **Environmental Significance Overlay**

The Environmental Significance Overlay identifies eight significant features throughout the Beaudesert area. These include:

- (a) Areas of Ecological Significance;
- (b) Areas of Ecological Significance Buffer;
- (c) Waterways and Wetlands; and
- (d) Biodiversity Corridors.

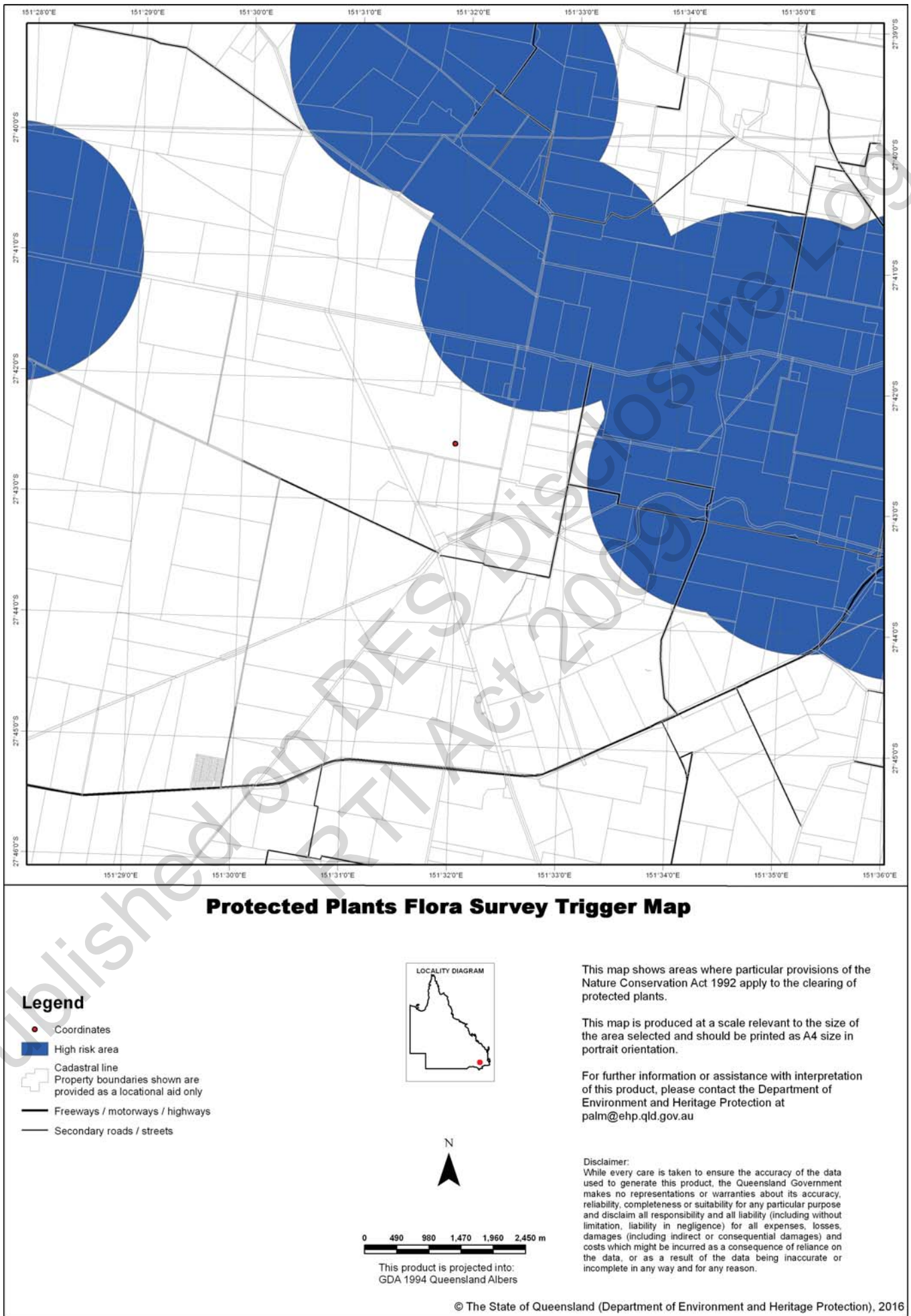
The study area is captured by the Areas of Ecological Significance, buffers and Waterways and Wetlands overlay and corresponds with the mapped remnant vegetation within and adjacent to the study area and the mapped waterways within the northern portion.



## APPENDIX 2 – FLORA SURVEY TRIGGER MAP

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Published on DES Disclosure Log  
RTI Act 2009



## APPENDIX 3 – SIGNIFICANT FAUNA ASSESSMENT

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Published on DES Disclosure Log  
RTI Act 2009

**Table 10 Significant Fauna Species within 10km of the Study Area**

| Scientific Name                       | Common Name                  | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                           | Likelihood of Occurrence Assessment                                                                                                                                         |
|---------------------------------------|------------------------------|-----|------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>INSECTS</b>                        |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Phyllodes imperialis smithersi</i> | Pink Underwing Moth          | LC  | E    | PMST   | The moth occurs in undisturbed lowland rainforest where its food plant the vine <i>Carronia multisepalea</i> occurs. The moth occurs from Nambour into northern NSW.                                                                                                                                                                                                                                                                                                            | Unlikely. Required habitat does not occur within the study area.                                                                                                            |
| <b>FISH</b>                           |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Maccullochella mariensis</i>       | Mary River Cod               | LC  | E    | PMST   | The Mary River cod is endemic to the Mary River system in northern South East Queensland. It has been translocated to many impoundments in SEQ, including Wivenhoe, Baroon Pocket and Maroon Dam.                                                                                                                                                                                                                                                                               | Unlikely. A translocated population occurs within 10km of the study area, however the waterway within the study area does not contain the required habitat for the species. |
| <b>FROGS</b>                          |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Mixophyes iteratus</i>             | Giant Barred Frog            | LC  | E    | PMST   | The Southern Barred Frog occurs in uplands and lowlands in rainforest and wet sclerophyll forest, including farmland. Populations have been found in disturbed areas with vegetated riparian strips on cattle farms and in regenerated logged areas. Many sites where the Southern Barred Frog is known to occur are the lower reaches of streams which have been affected by major disturbances such as clearing, timber harvesting and urban development in their headwaters. | Unlikely. Required habitat does not occur within the study area.                                                                                                            |
| <b>REPTILES</b>                       |                              |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <i>Coeranoscincus reticulatus</i>     | Three-toed Snake-tooth Skink | LC  | V    | PMST   | The Three-toed snake-tooth skink is known from subtropical rainforests in McPherson, Main and Conondale Ranges north to Fraser Island. It is absent from apparently suitable habitat in the D'Aguilar Range. It mainly occurs in elevated areas although Fraser Island and adjacent Cooloola region                                                                                                                                                                             | Unlikely. Required habitat does not occur within the study area.                                                                                                            |

| Scientific Name                       | Common Name          | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                       | Likelihood of Occurrence Assessment                              |
|---------------------------------------|----------------------|-----|------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
|                                       |                      |     |      |        | are lowland sites.                                                                                                                                                                                                                                                                                                                                          |                                                                  |
| <i>Delma torquata</i>                 | Collared Delma       | V   | V    | PMST   | The collared delma is known from rocky areas associated with dry open forests and from briglow associations. Within these habitats the presence rocky substrates (with small rocks which act as shelter sites) is an essential microhabitat element.                                                                                                        | Unlikely. Required habitat does not occur within the study area. |
| <i>Furina dunmalli</i>                | Dunmall's snake      | V   | V    | PMST   | Poorly known, so that preferred habitats are uncertain. Open dry sclerophyll forests and woodlands, especially brigalow, with fallen timber and ground litter on floodplains of cracking clay soils. In Queensland, the snake occurs almost exclusively within the Brigalow Belt bioregion.                                                                 | Unlikely. The snake does not occur east of Toowoomba.            |
| <b>BIRDS</b>                          |                      |     |      |        |                                                                                                                                                                                                                                                                                                                                                             |                                                                  |
| <i>Anthochaera phrygia</i>            | Regent Honeyeater    | E   | CE   | PMST   | The regent honeyeater is usually associated with box-ironbark vegetation types and the wetter more fertile sites within these associations such as creek flats, broad valleys and foothills. The species has undergone a significant range contraction and is now rarely sighted in Queensland.                                                             | Unlikely. Required habitat does not occur within the study area. |
| <i>Botaurus poiciloptilus</i>         | Australasian Bittern | LC  | E    | PMST   | The Australasian Bittern requires shallow water, less than 30 cm deep with medium to low density reeds, grasses or shrubs for foraging (Pickering 2013). It needs deeper water with medium to high density reeds, rushes or sedges for nesting (Pickering 2013). It is largely recorded in freshwater wetlands and, rarely, in estuaries or tidal wetlands. | Unlikely. Required habitat does not occur within the study area. |
| <i>Cyclopsitta diophthalma coxeni</i> | Coxen's Fig-Parrot   | E   | E    | PMST   | Coxen's fig parrot occurs in lowland subtropical rainforest, dry rainforest, littoral and developing rainforest, riparian areas in woodland and cleared areas with fig trees. It feeds on figs but also eats the                                                                                                                                            | Unlikely. Required habitat does not occur within the study area. |

| Scientific Name                  | Common Name                | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                            | Likelihood of Occurrence Assessment                                                                                              |
|----------------------------------|----------------------------|-----|------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                                  |                            |     |      |        | fruit of other native and exotic trees and insect larvae. In Queensland it now appears to be largely restricted to the greater Bundaberg area, Main Range National Park, Blackall Range and the western side of Lamington National Park.                                                                                                                                                         |                                                                                                                                  |
| <i>Dasyornis brachypterus</i>    | Eastern Bristlebirds       | E   | E    | PMST   | The northern population, occurs in south-eastern Queensland and north-eastern NSW, and consists of extant local populations at Conondale Range National Park, Main Range National Park, Mount Barney National Park, Lamington National Park, Border Ranges National Park, Grady's Creek and Gibraltar Range National Park. It is not known outside of these reserves and adjacent private lands. | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Erythrotriorchis radiatus</i> | Red Goshawk                | V   | V    | PMST   | The red goshawk is generally found in open woodland, the edges of rainforest, and in dense riverine vegetation of coastal and subcoastal forests. This species is known to have a large home range but nests in tall trees usually within 1km of a waterway or wetland.                                                                                                                          | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Geophaps scripta scripta</i>  | Squatter Pigeon (southern) | V   | V    | PMST   | This species is known from tropical dry, open sclerophyll woodlands and sometimes savanna. It appears to favour sandy soil dissected with low gravely ridges and is less common on heavier soils with dense grass cover. It is nearly always found in close association with permanent water. This species is now rarely recorded in southern Queensland and northern NSW.                       | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Grantiella picta</i>          | Painted honeyeater         | V   | V    | PMST   | Forests, woodlands and dry scrublands, dependent on mistletoe berries. Widespread throughout Queensland but rare in inland Australia.                                                                                                                                                                                                                                                            | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km                           |



| Scientific Name               | Common Name                     | Qld | EPBC | Source  | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Likelihood of Occurrence Assessment                                                                                              |
|-------------------------------|---------------------------------|-----|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                               |                                 |     |      |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | radius of the study area.                                                                                                        |
| <i>Lathamus discolor</i>      | Swift Parrot                    | E   | E    | PMST    | This species only breeds in Tasmania and migrates to the mainland to feed each year mainly on the inland slopes of the Great Dividing Range particularly in Victoria and NSW with a small number of birds reaching as far as south east Queensland. This species is considered to have a moderate potential to occur within the study area during its winter, non breeding period. However, this would be expected to be a rare occurrence. While it has been recorded historically from Chinchilla, recent records tend to be from coastal Queensland. | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Ninox strenua</i>          | Powerful Owl                    | V   |      | Wildnet | The powerful owl occurs mostly on the coastal side of the Great Dividing Range and adjacent inland slopes. Powerful Owls are sedentary within home ranges of about 1,000 ha within open eucalypt, Casuarina or Callitris pine forest and woodlands, often utilising exotic pine plantations. They nest in tree hollows often in large eucalypts and often roost in denser vegetation including rainforest. Prey items are medium sized mammals such as possums and gliders but also take birds, flying-foxes, rats and insects.                         | Unlikely. Required habitat does not occur within the study area.                                                                 |
| <i>Poephila cincta cincta</i> | Black-throated Finch (southern) | E   | E    | PMST    | The Black-throated Finch (southern) historically occurred from far south-eastern Queensland, near the Queensland-NSW border, through eastern Queensland north to the divide between the Burdekin and Lynd Rivers. The subspecies is now extinct at most sites south of Burdekin River, and is confined to a very few remaining 'pockets' of                                                                                                                                                                                                             | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |

| Scientific Name             | Common Name                          | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Likelihood of Occurrence Assessment                                                                                              |
|-----------------------------|--------------------------------------|-----|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|                             |                                      |     |      |        | <p>suitable habitat.</p> <p>It has been absent from Brisbane and its surrounds since the 1930s or 1940s, and appears to have become extinct around most of Rockhampton during the early to mid 1970s, despite having been numerous there during the 1950s.</p>                                                                                                                                                                                                                                                         |                                                                                                                                  |
| <i>Rostratula australis</i> | Australian Painted Snipe             | V   | E    | PMST   | This species occurs in shallow, vegetated temporary or infrequently filled wetlands, sometimes with trees or shrubs where it feeds at the water's edge on seeds and invertebrates.                                                                                                                                                                                                                                                                                                                                     | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <i>Turnix melanogaster</i>  | Black-breasted Button-quail          | V   | V    | PMST   | The black-breasted button-quail is most commonly associated with vine thicket rainforest with greater than 800mm rainfall, deep leaf litter and a closed canopy but also occur in softwood scrubs in the Brigalow Belt, vine scrub regrowth and mature hoop pine ( <i>Araucaria cunninghamii</i> ) particularly with a lantana understorey. They also occur in dry sclerophyll forest adjacent to rainforest and acacia and <i>Austromyrtus</i> scrubs on sandy coastal soils (Inskip Point) (Garnett & Crowley 2000). | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |
| <b>MAMMALS</b>              |                                      |     |      |        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                  |
| <i>Chalinolobus dwyeri</i>  | Large-eared Pied Bat, Large Pied Bat | V   | V    | PMST   | This species is uncommon in dry and wet Eucalypt forests from Blackdown Tableland in Central Queensland to near Wollongong. Primarily a cave rooster, this species inhabits sclerophyll forests and woodlands throughout much of its range. It is however, primarily associated with Dry Sclerophyll Woodlands throughout its range, and these habitats are relatively restricted in the study area. This species is considered unlikely to be present in the study area                                               | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area. |

| Scientific Name                         | Common Name                      | Qld | EPBC | Source             | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Likelihood of Occurrence Assessment                                                                                                 |
|-----------------------------------------|----------------------------------|-----|------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <i>Ornithorhynchus anatinus</i>         | platypus                         | SL  |      | Wildnet            | Freshwater rivers and creeks in eastern Australia, from tropical rainforest in n Qld to mountains of Tasmania and SE Aust. Feed in both slow-moving and rapid (riffle) parts of streams, but appear to prefer coarser bottom substrates (e.g. gravel). Construct short burrows in the banks, often hidden by overhanging vegetation.                                                                                                                                                                                                                                                                                                                          | Unlikely. Required habitat does not occur within the study area.                                                                    |
| <i>Petrogale penicillata</i>            | brush-tailed rock-wallaby        | V   | V    | Wildnet, PMST      | In Queensland, occurs on rocky slopes and gorges of the Great Dividing Range.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Unlikely. Required habitat does not occur within the study area.                                                                    |
| <i>Phascolarctos cinereus</i>           | koala                            | V   | V    | Wildnet, ALA, PMST | koalas naturally inhabit a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by Eucalyptus species. koala habitat can be broadly defined as any environment containing koala food trees species or shelter trees, which may be used by koalas for roosting, sheltering or breeding, and which is sufficiently connected. The distribution of this habitat is largely influenced by land elevation average, annual temperature and rainfall patterns, soil types and the resultant soil moisture availability and fertility. Preferred food and shelter trees are naturally abundant on fertile clayey soils. | Low likelihood. Food trees are present within the study area, however no signs of koala usage was recorded.                         |
| <i>Potorous tridactylus tridactylus</i> | Long-nosed Potoroo (SE mainland) | C   | V    | PMST               | In Queensland, the potoroo utilises a variety of habitats such as rainforest and coastal heaths and scrubs and seems to favour habitat with dense understorey. It occurs in scattered populations within Queensland.                                                                                                                                                                                                                                                                                                                                                                                                                                          | Unlikely. Required habitat does not occur within the study area and no recent records from within 10km radius of the study area.    |
| <i>Pteropus poliocephalus</i>           | grey-headed flying-fox           | LC  | V    | Wildnet, PMST      | The Grey-headed Flying-fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests,                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Low likelihood. The flying fox may forage within the study area when mature eucalypts are flowering, however the resources provided |

| Scientific Name                     | Common Name          | Qld | EPBC | Source  | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Likelihood of Occurrence Assessment                                                             |
|-------------------------------------|----------------------|-----|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                     |                      |     |      |         | closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from Eucalyptus and related genera but in some areas it also utilises a wide range of rainforest fruits. None of the vegetation communities used by the Grey-headed Flying-fox produce continuous foraging resources throughout the year. As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources. The Grey-headed Flying-fox roosts in aggregations of various sizes on exposed branches. Roost sites are typically located near water, such as lakes, rivers or the coast. Roost vegetation includes rainforest patches, stands of Melaleuca, mangroves and riparian vegetation, but colonies also use highly modified vegetation in urban and suburban areas. The species can maintain fidelity to roost sites for extended periods, although new sites have been colonised. | are insufficient to support a population of the species.                                        |
| <i>Tachyglossus aculeatus</i>       | short-beaked echidna | SL  |      | Wildnet | Occurs in a wide range of habitats, from alpine and cold-temperate areas to deserts and tropical regions. Appears to have no specific habitat requirements beyond a food supply of ants and termites.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | High likelihood. Echidnas are ubiquitous throughout the region and may occur on the study area. |
| <i>Dasyurus maculatus maculatus</i> | Spotted-tail Quoll   | E   | E    | PMST    | The Spot-tailed Quoll occurs in south-east Queensland: coastally from Bundaberg to the border and inland to Monto and Stanthorpe. Occurrences from five broad geographic areas are known: four from coastal ranges and the Great                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Unlikely. Required habitat does not occur within the study area.                                |

| Scientific Name | Common Name | Qld | EPBC | Source | Habitat Requirements and Distribution                                                                                                                                                                                                                                                                                                                                                                                                                                              | Likelihood of Occurrence Assessment |
|-----------------|-------------|-----|------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|                 |             |     |      |        | <p>Dividing Range from the NSW border to Gladstone. The fifth is centred on the eastern Darling Downs-Inglewood Sandstone provinces of the Brigalow Belt South Bioregion. Unconfirmed reports suggest the subspecies may occur in the Clarke and Conway Range areas, eastern Queensland.</p> <p>Historical locations include the D'Aguilar Range west of Brisbane and coastal areas from Coolangatta to Bundaberg. The species is now believed to be extinct in these regions.</p> |                                     |

**Table 11 Migratory Species within 10km of the Study Area**

| Scientific Name               | Common Name               | Qld | EPBC | Source             |
|-------------------------------|---------------------------|-----|------|--------------------|
| <i>Acrocephalus australis</i> | Australian Reed-warbler   | SL  | Mi   | Wildnet, ALA       |
| <i>Apus pacificus</i>         | Fork-tailed Swift         | SL  | Mi   | EPBC               |
| <i>Ardea alba</i>             | Great Egret               | SL  | Mi   | EPBC               |
| <i>Ardea alba modesta</i>     | Eastern Great Egret       | SL  | Mi   | Wildnet, ALA       |
| <i>Ardea ibis</i>             | Cattle Egret              | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Coracina tenuirostris</i>  | Cicadabird                | SL  | Mi   | Wildnet, ALA       |
| <i>Gallinago hardwickii</i>   | Latham's snipe            | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Hirundapus caudacutus</i>  | White-throated Needletail | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Merops ornatus</i>         | Rainbow Bee-eater         | SL  | Mi   | Wildnet, ALA, EPBC |
| <i>Monarcha melanopsis</i>    | Black-faced Monarch       | SL  | Mi   | EPBC               |
| <i>Monarcha trivirgatus</i>   | Spectacled Monarch        | SL  | Mi   | EPBC               |
| <i>Myiagra cyanoleuca</i>     | Satin Flycatcher          | SL  | Mi   | EPBC               |
| <i>Pandion haliaetus</i>      | Osprey                    | SL  | Mi   | EPBC               |

| Scientific Name             | Common Name    | Qld | EPBC | Source       |
|-----------------------------|----------------|-----|------|--------------|
| <i>Plegadis falcinellus</i> | Glossy Ibis    | SL  | Mi   | Wildnet, ALA |
| <i>Rhipidura rufifrons</i>  | Rufous Fantail | SL  | Mi   | EPBC         |

**Notes:** 1) Listed as Critically Endangered (CE), Endangered (E), Vulnerable (V), Special Least Concern (SL) or Migratory (Mi) under the EPBC Act

3) Likelihood of occurrence:

|   |                 |                                                                                                                                                                                                                                                                                                                                                                                                               |   |                     |                                                                                                                                                                                                                                                                                                                        |
|---|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | High Likelihood | <ul style="list-style-type: none"> <li>Known resident in the Study area based on site observations, database records, or expert advice; and/or,</li> <li>Recent records (i.e. within five years) of the species in the local area (VBA 2011); and/or,</li> <li>The Study area contains the species' preferred habitat.</li> </ul>                                                                             | 2 | Moderate Likelihood | <ul style="list-style-type: none"> <li>The species is likely to visit the Study area regularly (i.e. at least seasonally); and/or,</li> <li>Previous records of the species in the local area (DSE 2011b); and/or,</li> <li>The Study area contains some characteristics of the species' preferred habitat.</li> </ul> |
| 3 | Low Likelihood  | <ul style="list-style-type: none"> <li>The species is likely to visit the Study area occasionally or opportunistically whilst en route to more suitable sites; and/or,</li> <li>There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,</li> <li>The Study area contains few or no characteristics of the species' preferred habitat.</li> </ul> | 4 | Unlikely            | <ul style="list-style-type: none"> <li>No previous records of the species in the local area; and/or,</li> <li>The species may fly over the Study area when moving between areas of more suitable habitat; and/or,</li> <li>Out of the species' range; and/or,</li> <li>No suitable habitat present.</li> </ul>         |



## APPENDIX 4 – IMPACT MANAGEMENT PLAN

---

### A1.1. Introduction

This impact management plan has been prepared in accordance with the Protected Plants Assessment Guideline (DEHP, 2014b). The proposed development proposes to remove a population of Belson's Panic *Homopholis belsonii*, which is listed as endangered under the *Nature Conservation Act 1992* (NC Act), and an area of habitat of approximately 0.94 hectares.

### A1.2. Attempts to avoid and minimise impact

Avoidance of clearing is not possible for this project as the species habitat occurs as an isolated patch within the centre of the property and is surrounded on all sides by cropping. Solar farms require large, flat areas for installation of solar panels and for efficiency, property configurations which allow installation of rectangular 'blocks' of solar panels are preferred. It is not reasonable to amend the development layout to avoid clearing of the habitat patch as the action would involve a loss of potential revenue over the life of the farm and potentially resulting in the project becoming economically unviable.

Minimising the clearing has been considered and rejected as the habitat patch would remain isolated regardless of the percentage of habitat retained.

### A1.3. Nature of impact

The impact is the clearing of habitat supporting a population of Belson's Panic. This will result in a loss of less than one hectare of habitat and 12 discrete areas where Belson's Panic occurs (Figure A1). An exact count of individuals grasses is not possible since the species reproduces primarily through stolons and therefore multiple tussocks could be attributable to one or more individuals. Each discrete area is between one metre squared and several metres squared and the grass occurs primarily underneath shrubs where it has a competitive advantage over other native and exotic grasses that prefer open spaces. Belson's Panic is the dominant grass in the discrete areas in which it occurs. This pattern of occupation is usual for this species.



**Figure A1** Location of Belson's Panic patches within vegetation to be removed.

#### **A1.4. Management of impact**

All plants of Belson's Panic within the habitat patch are proposed to be removed. Translocation has been considered as a mitigation option; however, this option has been rejected for the following reasons:

- The species has been successfully translocated previously (see SKM 2008); however the species is also easily grown from seed (Menkins, *pers. comm.*);
- There are no suitable habitat patches within the study area that could receive the translocated plants and which then could be managed by the proponent. The closest population is within the road reserve of Yarranlea-Murlaggan Road, which is outside of the control of the proponent; and
- Translocation has the potential to introduce weeds that are present within the habitat patch into the receiving environment. The habitat within the study area contains weed species that are known threatening processes to Belson's Panic (e.g. Green Panic *Megathyrsus maximus*) and contaminated soil may be introduced into the receiving environment.

Under the EO Act, a financial offset is proposed to counterbalance the loss of this species from the study area. Prior to clearing, seed will also be collected from the plants for spreading within nearest populations (Yarranlea-Murlaggan Road and Irongate Conservation Park) to introduce new genetic material into these populations.

### **A1.5. Justification of impact management**

The proposed clearing area is within a Low Risk area on the Flora Survey Trigger Map (Appendix 5) and therefore, the loss of any populations of threatened plants within such areas has been accounted for under the Protected Plant framework.

The habitat proposed to be cleared is situated within the centre of an active agricultural property and is surrounded on all sides by cropland. The nearest habitat area for Belson's Panic is over 500 metres to the north-east within Yarranlea-Murlaggan Road. The habitat patch is isolated and there is unlikely to be any connection between this habitat and surrounding habitat areas. The habitat is currently subjected to threatening processes including presence of weed threats (e.g. Green Panic) and the likelihood that the landholder could clear the vegetation at any time without a permit. The habitat has been identified as Category X vegetation and therefore, no assessment or approval is required to clear under the VM Act.

### **A1.6. Survival of plant in the wild**

The clearing will not impact on any populations outside of the study area and is unlikely to adversely affect the survival in the wild of the species. Collection of seed prior to clearing and distribution into the existing populations along Yarranlea-Murlaggan Road and at Irongate Conservation Park will ensure that the genetic material will not be lost as a result of the proposed clearing.

## APPENDIX 5 – PROPERTY MAP OF ASSESSABLE VEGETATION

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Published on DES Disclosure Log  
RTI Act 2009



# Flora Survey Guidelines - Protected Plants

## Nature Conservation Act 1992





Prepared by: Business Reform, Nature Conservation Services, Department of Environment and Heritage Protection

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# 1. Purpose

This document constitutes the approved flora survey guidelines made by the chief executive under section 253 of the *Nature Conservation (Wildlife Management) Regulation 2006* ('the regulation'). The purpose of this document is to outline how a flora survey must be conducted in order to meet the requirements of the protected plants legislative framework for clearing protected plants. This guideline aims to provide clarity to environmental consultants and proponents on the expected principles and protocols of flora surveys required to assist decision-making processes associated with clearing protected plants in Queensland. The guideline will achieve this by applying a consistent approach to collecting appropriate botanical data, including standard requirements necessary for assessing the impact of proposals on plant diversity, particularly endangered, vulnerable and near threatened (EVNT) species. The guideline will also ensure that flora surveys conducted are presented to the department in the appropriate format, in order to contribute to improved data on protected plants in Queensland.

The guideline is necessary to specify the minimum requirements that must be met to ensure that the flora surveys undertaken are of a sufficient standard. It is not the intention of this guideline to limit further measures for consultants and proponents to collect appropriate data on protected plants.

It should be noted that, when interpreting this guideline, any words present in italics have specific meaning and are defined in the 'key definitions' section (5.2).

# 2. Background

The Queensland Government is adopting a risk-based approach to the regulation of protected plants under the *Nature Conservation Act 1992*. The regulatory framework will capture activities that pose a high risk to plant biodiversity. Clearing activities that are outside of an area identified as a high risk area on the flora survey trigger map will not be subject to flora survey requirements.

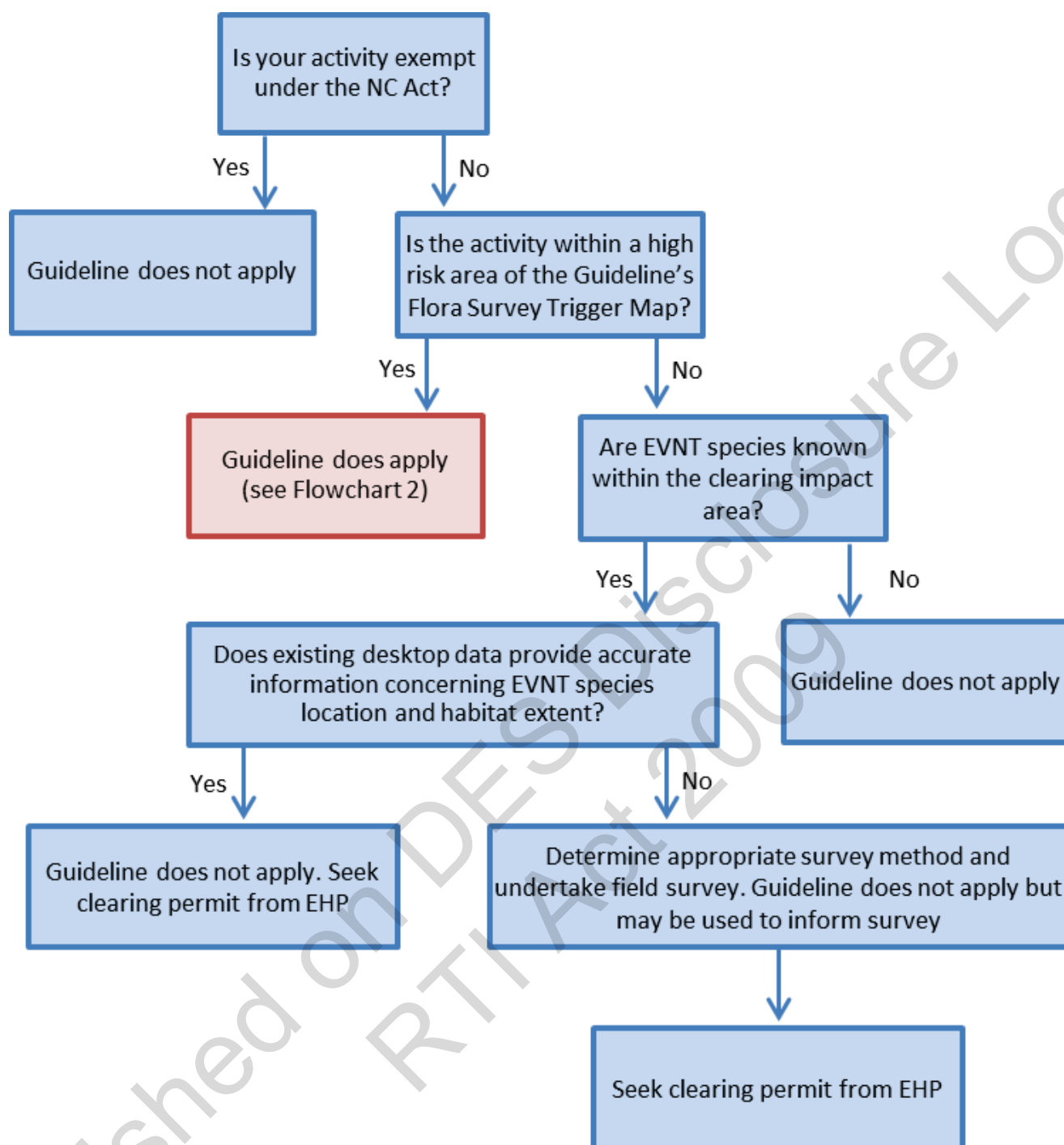
Regulatory, educational and compliance effort will consequently be focused on high risk activities.

Under the framework, when a non-exempt clearing activity is proposed within a high risk area, the proponent of that activity is required to complete a flora survey prior to commencement of clearing.

The main objective of the flora survey will be to locate any EVNT plants that may be present in the clearing impact area. This will be particularly important for determining the degree of assessment required for a particular clearing activity. For example, if the survey establishes that EVNT plant species are not present within the clearing impact area, the proposed clearing will be exempt and, following notification to the department, a clearing permit will not be required. Alternatively, if EVNT plant species are identified, and clearing is considered to impact on the EVNT plant (i.e. clearing comes within 100m of the EVNT plant) then an application for a protected plant clearing permit is required.

This document has been developed following consultation with industry groups, agricultural sector, linear infrastructure providers, conservation groups and ecological consultants.

A flowchart outlining the process and requirements for clearing protected plants in Queensland has been provided as Flowchart 1 below. This also depicts the process for determining whether this guideline applies to a particular project or not.



Flowchart 1 Process for determining when the flora survey guideline applies

## 3. Legislative requirements

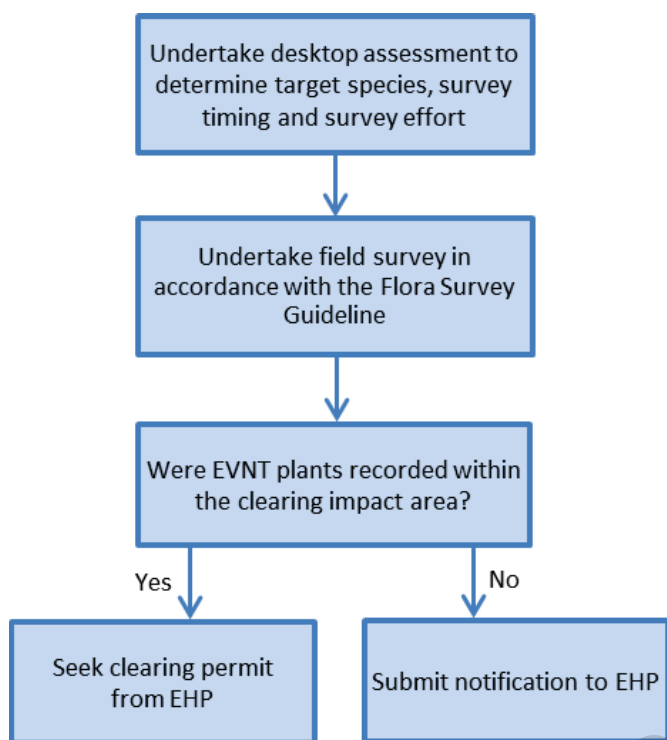
### 3.1 Clearing within a high risk area

For clearing within an area identified as high risk on the flora survey trigger map, a flora survey is required to identify EVNT plants that are or are likely to be present. The flora survey must cover the area to be cleared as well as a buffer area of 100m around the clearing. This total area is referred to as the clearing impact area.

As shown in Flowchart 2, the results of the survey will either lead to the requirement for a protected plant clearing permit, or for the proponent to submit the results of the flora survey to gain an exemption.

If EVNT plant species are identified in the clearing impact area, then the flora survey report will be required to support an application for a protected plant clearing permit.

If the survey establishes that EVNT plants species are not present within the clearing impact area, the proposed clearing will be exempt and, following notification to the department, a clearing permit will not be required.



**Flowchart 2: Process for clearing within a high risk area**

## 3.2 Survey requirements

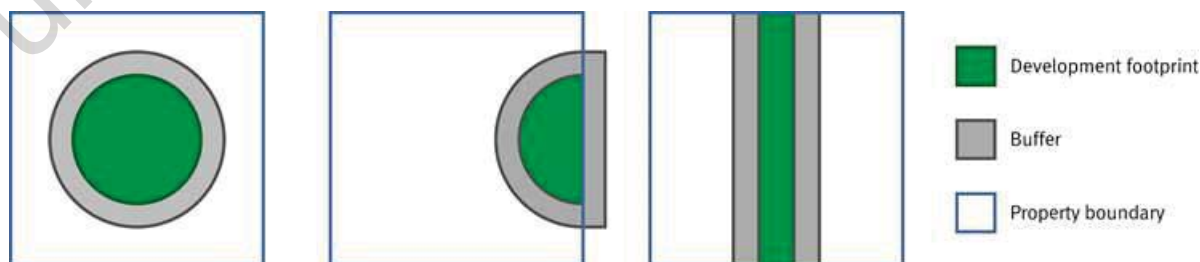
Section 257 of the regulation requires a flora survey and a flora survey report to comply with this guideline.

Section 257 of the regulation also allows for the chief executive to agree to an alternative survey methodology for carrying out a flora survey or flora survey report if the methodology is determined to be suitable for identifying the presence of EVNT plants within a clearing impact area.

### 3.2.1 Clearing impact area

For clearing within an area identified as high risk, the flora survey is to be undertaken within the clearing impact area, defined under section 249 of the regulation as the area to be cleared to the extent it is within a high risk area, together with a buffer zone - an additional area 100m in width around the development footprint. Diagrams illustrating examples of the area to be surveyed are provided below.

Where this may not be appropriate for particular proponents, an alternative buffer width can be proposed and may be agreed by the chief executive. This may be appropriate in circumstances such as, for example, where the applicant can demonstrate there is inaccessible terrain, or if the applicant can demonstrate that all reasonable attempts have been made to gain landholder permission but the landholder does not give consent to access the land to be surveyed.



**Schematic Representation of a clearing impact area in an area identified as high risk**

### 3.2.2 Suitably qualified person

Flora surveys are to be co-ordinated and led by a person who has considerable experience in conducting botanical surveys, including the identification of EVNT species ('a suitably qualified person'). In this instance, the suitably qualified person must have:

- Professional qualification or formal training in plant identification and the taxonomy of Queensland flora; and
- A minimum of five years' experience in undertaking surveys for EVNT species.

Proponents may wish to deploy a person who they believe to be suitably qualified but does not meet the above thresholds, for example, they have less than 5 years experience but have conducted a significant number of surveys. In such a case, the proponents may seek approval in writing (either by letter or email) from the Department of Environment and Heritage Protection (EHP) to rely on that person as a suitably qualified person.

Contact details for such an application may be found on the EHP website at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au)

The survey report is to include a statement to justify the suitability of the person. The suitably qualified person is not required to be independent of the project proponent, provided that their skills and experience are appropriate.

Surveys may be conducted by teams that include members with less than 5 years' experience, provided that they are working under the close supervision of a suitably qualified person. The suitably qualified person will hold ultimate accountability for the results of the flora field survey. Curricula vitae for the survey team are to be provided as an appendix to the flora survey report and are to highlight significant studies undertaken by personnel as evidence of their suitability for the role.

Where curricula vitae have been previously provided to EHP through this process, there is no need to provide them again in future reports. The report should indicate the person or people in the survey for whom curricula vitae have previously been provided.

### 3.2.3 Timing of survey

The optimal time of year to undertake EVNT surveys varies across taxa and ecosystems. During the desktop component of the assessment, the most appropriate time of the year to undertake the flora field survey is to be determined. Specifically, the survey is to be undertaken when there is the highest possible chance of detecting the EVNT species. The report is to include a statement to justify the timing of the survey.

Where project timeframes are constrained such that the flora survey cannot be undertaken within an appropriate timeframe to maximise the chance of detecting the target species, this fact and the reasons for it must be articulated in the report.

The report is required to detail any limitations associated with the timing of the survey, together with any recommendations for subsequent surveys. By way of example, this may include the timing, weather, season, weather cycle, disturbances (fire, flood, accidental human intervention etc.), and access problems.

### 3.2.4 Unidentified plant species

If a plant taxon cannot be identified during field investigations and is suspected of being an EVNT species, a specimen must be collected and preserved for later identification with the assistance of resources such as field guides and keys. In accordance with section 261S of the regulation, where a specimen cannot be identified to the species level, it should be lodged with the Queensland Herbarium for formal identification unless it can confidently be concluded that it is not an EVNT species. Specimen collection and vouchering should be done in accordance with the Queensland Herbarium (2013) procedures.

## 3.3 Reporting requirements

### 3.3.1 Flora survey report

Under section 250 of the regulation, a flora survey report is defined as a report about the results of a flora survey for a clearing impact area.



### 3.3.2 Required content for flora survey report

A flora survey report submitted to the department must include results that demonstrate that the survey undertaken was appropriately comprehensive to provide a high level of confidence that the EVNT species that might occur in the area have been identified and accounted for. Specifically, these are:

- the species of EVNT found, their location on the site, and an estimate of the populations of those species in the clearing impact area.
- A description of the *supporting habitat* around any EVNT's identified in the buffer area;
- A measure of power or, if not practical, error for the estimates must be included.
- A statement to justify the suitability and qualifications of the person undertaking the flora survey.
- Curricula vitae for the survey team undertaking the flora survey.
- Justification of the timing of the flora survey and detail of any limitations associated with the timing of the survey.
- A GIS shapefile of the area to be cleared.
- A GIS shapefile (map) of the different habitat types identified for the clearing impact area and the GPS data showing the on-ground surveys undertaken.
- A map or plan of the clearing impact area including the locations of all EVNT species or populations of species found.
- A map or plan of the proposed land use requiring the area to be cleared.
- A description of the location.
- The date or dates the clearing is expected to occur.
- A discussion of the potential impacts and mitigative measures

### 3.3.3 Flora survey report submission

A flora survey report must be submitted to the Department of Environment and Heritage Protection in the following circumstances:

- An activity exempt under section 261ZA — if no EVNT plant species were found on site, or EVNT plant species are present but impacts are to be *avoided*.
- An application for a protected plant clearing permit — if EVNT plant species are present and impacts are unavoidable.

### 3.3.4 Timing of survey submission

A flora survey report must be submitted to the Department of Environment and Heritage Protection at the appropriate time:

- For an activity exempt under section 261ZA: the flora survey report must be submitted to the department at least 1 week before the person starts clearing, and no later than 12 months after the completion of the flora survey that was undertaken for the report.
- For an application for a clearing permit: a flora survey report for the *clearing impact area* must be submitted as part of the clearing permit application. This should be submitted no later than 12 months after the completion of the flora survey.

### 3.3.5 Notification of clearing

Notification to the Department of Environment and Heritage Protection is required as follows:

- For an activity exempt under section 261ZA: the submission of the survey is taken to be notification to the department. The clearing must occur within 2 years of the submission of the survey. This notification is required to demonstrate eligibility for the exemption to re-clear a particular area under section 261ZB of the regulation.
- For an application for a clearing permit: if a permit is granted for the *clearing impact area*, the applicant must notify the department when the clearing is started. This notification is required to demonstrate eligibility for the exemption to re-clear a particular area under section 261ZB of the regulation.

## 4. Survey method

### 4.1 Timed meander survey

The timed meander survey method is the preferred approach to identify and locate EVNT plants potentially impacted by a project. Timed meander surveys are to be led by a person suitably qualified to achieve the required outcomes. It is expected that the majority of vascular plant species encountered will be identified during these

searches.

The meander method described herein is based on techniques described by Cropper (1993) and Goff et al. (1982), and will be suitable for a diversity of target species, habitats and project areas.

The default approach to undertake a meander survey is outlined in this section. The suitably qualified person may choose to rely on the published methodology for meander surveys rather than the adapted version as outlined. If that is the case, this must be declared in the flora survey report and the reasons for the choice.

The methodology outlined below is not a comprehensive description of the methodology. It assumes the suitably qualified person knows how to conduct a timed meander survey and so provides guidance at a higher level.

This comprehensiveness is required so that impacts on EVNT species can be appropriately assessed by EHP. It also allows site design to potentially avoid known EVNT plants in the area to be surveyed. This is only possible if their precise location is known.

It should also be noted that the timed meander approach is not a sampling method. It is a risk based survey technique that allows survey to cease when it is unlikely that any more EVNT plants are to be found. As such, the area of the site to be surveyed may vary from a relatively small proportion to all of it, depending on how many EVNT plants are found during the survey.

Where there is uncertainty about what is required, the method described by Cropper (1993) and Goff et al. (1982) is to be referred to.

To achieve the highest rate of success, the meander technique relies on a comprehensive preliminary desktop assessment having been undertaken in order to target appropriate habitats for EVNT species likely to occur in the area.

It should be noted that areas other than those known to be habitat must also be sample surveyed as the preferred habitat of all EVNT species is not known. These should be categorised via desktop analysis and represent a cross section of all the vegetation communities present.

Where an EVNT plant is found in an area not thought to be habitat, that habitat type is to then be treated as a known habitat type and searched comprehensively as outlined below.

#### 4.1.1 Preferred timed meander method

1. Choose a starting point within the particular habitat of interest and record the time. The choice of starting point is determined by the suitably qualified person based on their experience.
2. Record the identities of the *EVNT plant* species observed, and collect specimens for any unknown species.
3. Traverse the particular habitat in a random manner so as to maximise the coverage of habitat and the encounter rate of different species.
4. Record the time every 2 to 5 minutes. If the survey needs to be interrupted, do not include this time in the results.
5. Continue searching until no new species have been recorded for 30 minutes or when the entire area of habitat type is surveyed, whichever happens sooner.

Where multiple habitat types or vegetation communities are present within a *clearing impact area*, a timed meander assessment is to be undertaken within each of these.

Where certain *preferred habitat* types or vegetation communities may be extensively represented within a site, multiple meanders per habitat type should be undertaken across the *clearing impact area* to increase the probability of detecting an EVNT species. For example, if several pockets of preferred habitat are represented on the site, timed meanders must be undertaken in each of these.

Meanders must be undertaken (at a minimum) at the following rate per area of habitat:

- <10ha, two meanders
- Between 10ha and 100ha, between 2 and 5 meanders
- >100 ha 5 meanders

Where suspected EVNT species are encountered, the extent and density of the population should be determined (refer '4.3 EVNT population survey') and a more comprehensive assessment of the vegetation community and habitat should be undertaken (refer 'quadrat survey'). A specimen of the EVNT species should be collected and submitted to the Queensland Herbarium together with the name of the collector, date and locality.

## 4.2 Systematic transect search method

The systematic transect search method may be used. It is one of the most common survey methods and is generally well understood by botanists.

This method should be considered when surveying an entire site.

It follows transects to provide the greatest coverage possible of the area. Greatest coverage occurs with parallel transects spaced equidistant over the area.

If this method is selected, it must be consistent with a peer-reviewed method. References for the method must be supplied with the final survey report.

## 4.3 EVNT population survey

When an EVNT plant species has been recorded during a timed meander search or transect search, the population extent and density should be determined in order to quantify the potential impact. With regards to the population extent, mapping of the population within the *clearing impact area* is to be undertaken by traversing the periphery of the population whilst capturing spatial data. With regards to population density, the total number of individuals comprising the EVNT population is to be recorded. Where an EVNT population may be too dense for this to be practical, the density of the overall population should be estimated by counting the number of individuals within the quadrat (refer 'quadrat survey').

## 4.4 Plot survey

When an EVNT plant species has been recorded during a timed meander search or transect search, there is a requirement for a more comprehensive assessment to be undertaken. This is required in order to determine the species abundance, distribution and habitat associations, as well as to inform impact management measures. The preferred approach to collect additional data is plot-based assessment, described as follows.

Following the Queensland Herbarium's methodology (Neldner et al., 2012), establish a plot measuring 50 m by 10 m. This is the preferred standard quadrat size for determining vegetation structure and composition for the majority of plant communities found in Queensland. An alternative plot size can be used, provided that this can be justified as appropriate to a particular species or habitat in the survey report. Within the plot, the following information should be recorded and described:

- The GPS location of each plot or plots
- The number of individuals of the EVNT species, as well as any other observations such as the age structure (if possible), reproductive state and health.
- A description of the vegetation structure, including noting the Regional Ecosystem (where relevant).
- The identities of all flora taxa found in each of the strata comprising the vegetation community.
- The landscape attributes including the landform type, soil type, geology, slope, aspect and altitude.
- Any specific habitat or micro-habitat features associated with the EVNT species. Notes must also be included on the nature and degree of any disturbance to the habitat.

## 4.4 Other methods

It is recognised that the appropriate survey methodology can vary depending on the environmental aspects, type of vegetation communities present and potential EVNT species that are being targeted.

It is recognised that there will be circumstances where the prescribed methods may not achieve the required outcomes.

If a variation from the methodology outlined in the Flora Survey Guideline is proposed, and it is beyond the scope of variation provided for in s.4.1, approval of the variation must be applied for in writing to EHP, either by letter or email, prior to the survey commencing. Contact details can be found on the EHP website at [www.ehp.qld.gov.au](http://www.ehp.qld.gov.au).

## 4.5 Transitional provision

A flora survey undertaken for the purposes of the Nature Conservation Act 1992, during the period of 31 March 2013 to 31 March 2014, will be deemed to be valid and compliant with the purposes of the protected plants legislative framework commencing 31 March 2014, and will remain so for the period to 31 March 2015.

## 5. Key definitions

For the purposes of this document:

**"avoid"** is defined as, for an EVNT plant in an area being cleared, the plant is not cleared and there is no clearing within 100m of the plant.

**"clearing impact area"** is defined as the area to be cleared (development footprint), including an additional area 100m in width around the development footprint.

**"EVNT plant"** is defined as a plant species listed as Endangered, Vulnerable or Near Threatened in the Nature Conservation (Wildlife) Regulation 2006.

**"supporting habitat"** is defined as the components, including other plants, of the habitat necessary for the survival of an EVNT plant; this includes all least concern plants within 100m of the EVNT plant or population.

**"preferred habitat"** is defined as an area containing the prevailing ecological conditions critical to the survival of an EVNT plant species.

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## ANICI Damian

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**From:** PALM  
**Sent:** Friday, 24 June 2016 12:35 PM  
**To:** RETSCHLAG Christian  
**Subject:** FW: Notification of Exempt Clearing of Protected Plants - Purpose Solar Farm - Yarranlea (i3: 15-282)  
**Attachments:** Exempt Clearing Notification Form- Signed.pdf; 8328 \_EHP\_Yarranlea\_Solar\_EAR\_FINALv2\_17062016\_figures.pdf; ap-wl-pp-clearing\_YarranleaSolar.pdf; report.pdf



Hi Christian,

Could I get some help with this application please?

The client has submitted both an exempt clearing notification and a protected plant clearing permit for the same parcel of land (lot 2 on RP7475).

The actual clearing impact area encompasses four land parcels: Lots 2 on RP7475; 2 on RP18249; 3347 on A341649 and 2 on A34925.

Belson's Panic has been identified on lot 2 on RP7475, which is covered by the clearing permit application.

However the only land parcel that is actually in a high risk area is the top corner of lot 2 on A34925, and it's not clear from the ecologist's report whether this area was adequately surveyed (ie including the 100m buffer). I've attached a copy of the flora survey trigger map for this lot.

I guess my question to you is, given that an EVNT species has already been identified within the clearing impact area, is it necessary for us to pursue an exempt clearing notification for lot 2 on A34925, or can it be incorporated into the assessment for the protected plant clearing permit, and do we need confirmation from the ecologist that the high risk area was adequately surveyed (ie with 100m buffers etc).

Hope that makes sense – give me a call if not.

Thanks,

**Roslyn Howie**

Senior Administration Officer

**Customer Service Team | Regulatory Capability and Customer Service**

Department of Environment and Heritage Protection

Phone 1300 130 372 (menu option 4) Fax 07 3330 5875 email [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

Level 9 – 400 George Street BRISBANE QLD 4000

GPO Box 2454, BRISBANE QLD 4001

---

**From:** [s.73 irrelevant information]@icubed.com.au]

**Sent:** Wednesday, 22 June 2016 12:00 PM

**To:** PALM

**Cc:** [s.73 irrelevant information]

**Subject:** Notification of Exempt Clearing of Protected Plants - Purpose Solar Farm - Yarranlea (i3: 15-282)

To whom it may concern,



Please find attached our notification of exemption to clear vegetation for the purpose of constructing a solar farm in Yarranlea.

Documents provided are;

- Form for exempt clearing notification (Protected Plants)
- Ecological Assessment of Proposed Yarranlea Solar Project

Should you require any further information please contact me.

With Kind Regards,

3 irrelevant informati

Lead Town Planner

i³ consulting pty ltd  
engineering consultants  
innovation ingenuity inspiration

Suite 2/ 39 Sherwood Road PO Box 878  
TOOWONG QLD 4066 TOOWONG QLD 4066

p: 07 3870 8888

e: irrelevant inform@icubed.com.au

[www.icubed.com.au](http://www.icubed.com.au)

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# Application form

## Section 15 – Nature Conservation (Administration) Regulation 2006

### OFFICIAL USE ONLY

DATE RECEIVED

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FILE REF

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PROJECT REF

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COMPLETE FORM

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ADMINISTERING DISTRICT

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ENTERED BY [SIGNATURE]

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DATE

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## Clearing permit (protected plants)

### Important information for applicants

This form is to be used to apply for a clearing permit. You need a clearing permit if your proposed activity involves the legitimate taking or destruction of protected plants in the wild, except where an exemption applies. Information requested will enable your application to be processed as prescribed by the *Nature Conservation Act 1992*. Your application must be assessed and a permit granted by the chief executive before you can proceed with the proposed activity. Your application may take up to 40 days to process.

Before completing your application please read the information materials included with your application kit. Before lodging this application you should be familiar with the requirements of the Nature Conservation Act available on the Office of the Queensland Parliamentary Counsel website <http://www.legislation.qld.gov.au>. If you have queries about how to complete this form correctly or need guidance contact Permit and Licence Management on **1300 130 372**.

### Fees and concessions

In accordance with section 144 of the Nature Conservation (Administration) Regulation 2006, reduced fees are available for particular applications. Does the application relate to one of the following purposes?

- ☐ An educational purpose; or
- ☐ A scientific research purpose; or
- ☐ An activity directed at conservation; or
- ☐ Clearing to establish necessary property infrastructure; or
- ☐ A traditional owner activity.

See section 144 of the Nature Conservation (Administration) Regulation 2006 for definitions of the eligible purposes.

In accordance with section 155 of the Nature Conservation (Administration) Regulation 2006, a fee exemption is available for particular applications. Is the applicant is one of the following;

- ☐ A recreational plant society
- ☐ A voluntary conservation organisation
- ☐ A volunteer community organisation

See section 155 of the Nature Conservation (Administration) Regulation 2006 for definitions of eligible applicants.

## PART A – PERMIT APPLICATION

### Applicant information

A permit may only be granted to an individual or corporation. Please tick the appropriate box:

- ☐ **AN INDIVIDUAL** → **Complete** Section 1 **applicant details** — then complete sections 3 to 14
- ☒ **A CORPORATION** → **Complete** Section 2 **applicant details** — then complete sections 3 to 14

#### 1. Applicant details for an individual

|                                                                  |        |               |
|------------------------------------------------------------------|--------|---------------|
| APPLICANT'S FAMILY NAME                                          |        | TITLE         |
| APPLICANT'S GIVEN NAME/S                                         |        | DATE OF BIRTH |
| RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)                      |        | POST CODE     |
| TELEPHONE (BUSINESS HOURS)                                       | MOBILE | FACSIMILE     |
| TELEPHONE (AFTER HOURS)                                          | EMAIL  |               |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS) |        | POST CODE     |

#### 2. Application details for corporations

|                                                                                                                |                                        |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------|
| REGISTERED LEGAL ENTITY NAME (NOT A BUSINESS TRADING NAME)<br>Yarranlea Solar Pty Ltd                          |                                        |
| TRADING NAME/S (IF APPLICABLE)                                                                                 |                                        |
| REGISTERED BUSINESS ADDRESS (NOT A POST OFFICE BOX)<br>C/- Power Tynan, Suite 6, 618 Ruthven Street, Toowoomba | POST CODE<br>4350                      |
| TELEPHONE (BUSINESS HOURS)<br>07 3870 8888                                                                     | FACSIMILE                              |
| EMAIL<br>relevant.inform@icubed.com.au                                                                         | WEBSITE<br>www.icubed.com.au           |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS BUSINESS ADDRESS)<br>PO Box 878, Toowong                           | POST CODE<br>4066                      |
| ABN / ACN / AN, OR TITLE AND SECTION OF LEGISLATION UNDER WHICH CORPORATION HAS LEGAL STATUS<br>30 609 850 553 |                                        |
| NAME OF PRINCIPAL OF CORPORATION<br>C/- relevant.inform icubed consulting                                      |                                        |
| SIGNATURE OF PRINCIPAL OF CORPORATION (or person authorised to sign on their behalf)                           | DATE<br>3 irrelevant.inform 22/06/2016 |

**Details of nominated person in charge where the authorised activity is to be undertaken**

|                                                                                              |                                      |                                      |
|----------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|
| NOMINATED CONTACT PERSON'S FAMILY NAME<br>levant info                                        |                                      | TITLE<br>evant inf                   |
| NOMINATED CONTACT PERSON'S GIVEN NAME/S<br>levant info                                       |                                      | DATE OF BIRTH<br>irrelevant informat |
| RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)<br>s.73 irrelevant information                   |                                      | POSTCODE<br>evant inf                |
| TELEPHONE (BUSINESS HOURS)<br>07 3870 8888                                                   | MOBILE<br>3 irrelevant informat      | FACSIMILE                            |
| TELEPHONE (AFTER HOURS)<br>3 irrelevant informa                                              | EMAIL<br>s.73 irrelevant information |                                      |
| POSTAL ADDRESS (WRITE "AS ABOVE" IF SAME AS RESIDENTIAL ADDRESS)<br>PO Box 878, Toowong, QLD |                                      | POSTCODE<br>4066                     |

**3. Have you previously held this type of permit?**

This may include permits in other States.

Yes ☐ No ☒ If yes, state the permit number (if known)

**4. Protected plant details**

What species of protected plant that are endangered, vulnerable or near threatened (EVNT) does the application refer to?

*For clearing within an area identified as high risk on the flora survey trigger map – the application must list all EVNT plants present in the clearing impact area (\*area to be cleared and additional buffer zone around that area), as identified in the attached flora survey report (refer to section 11 for detail of required attachments).*

*For clearing within an area other than high risk- the application must list all EVNT plants known to exist within the area to be cleared, as identified in an attached document (refer to section 11 for detail of required attachments).*

If you require more space, please attach a separate sheet

| SCIENTIFIC NAME     | COMMON NAME    | CONSERVATION STATUS | AREA*   |
|---------------------|----------------|---------------------|---------|
| Homopholis belsonii | Belson's Panic | E                   | 9386 m2 |
|                     |                |                     |         |
|                     |                |                     |         |
|                     |                |                     |         |
|                     |                |                     |         |
|                     |                |                     |         |
|                     |                |                     |         |

*\*Note: Area for high risk (flora trigger map) includes the area to be cleared and additional buffer zone. Area outside high risk (flora trigger map) includes the area to be cleared only.*

## Application form

### Clearing permit (protected plants)

Provide the total clearing impact area (as appropriate)

|                                                                 |                                                                           |
|-----------------------------------------------------------------|---------------------------------------------------------------------------|
| TOTAL CLEARING IMPACT AREA – HIGH RISK – FLORA TRIGGER MAP<br>0 | TOTAL CLEARING IMPACT AREA – NON HIGH RISK – FLORA TRIGGER MAP<br>9386 M2 |
|-----------------------------------------------------------------|---------------------------------------------------------------------------|

#### 5. Potential salvage of protected plants

Is contingent salvage of whole protected plants intended? ☐ YES ☒ NO

If contingent salvage of EVNT plants or special least concern plants is intended, identify the plants to be taken;

a) EVNT salvage

EVNT PLANTS TO BE TAKEN UNDER CONTINGENT SALVAGE

b) Special least concern salvage

SPECIAL LEAST CONCERN PLANTS TO BE TAKEN UNDER CONTINGENT SALVAGE

Will the salvage be undertaken by the applicant? ☐ YES ☐ NO

DETAILS OF EXTERNAL PARTY UNDERTAKING CONTINGENT SALVAGE

#### 6. What property or properties do you intend to take protected plants from?

|                                                      |             |
|------------------------------------------------------|-------------|
| PROPERTY NAME OR LOT ON PLAN DESCRIPTION<br>2/RP7475 |             |
| LOCAL GOVERNMENT NAME<br>TOOWOOMBA REGIONAL          | PARISH NAME |

#### 7. Where is the clearing to be conducted?

**Please identify area type:** ☐ high risk area ☒ not identified as high risk area

Provide the street address, real property description(s) of the land(s) in which the project is located and local government area. (If you require more space, attach a separate sheet.)

STREET ADDRESS  
538 YARRANLEA ROAD, VIA PITTSWORTH

If possible, provide a specific location within the property, a property name or attach a map with the project area clearly delineated. Also include the map name/details.

SPECIFIC LOCATION/PROPERTY NAME

GEOGRAPHICAL COORDINATES  
-27.7146 DEGREES SOUTH, 151.5344 DEGREES EAST

## 8. Details of clearing

For EVNT plants listed in section 4, provide details of the impacts on the plants, including:

a) The reason for clearing

REASON FOR THE CLEARING ACTIVITY

CONSTRUCTION OF SOLAR FARM

b) Details of proposed Impact Management Plan, prepared in accordance with the protected plants assessment guideline. *Note: if the application relates to extensive impact management, references to relevant sections of an attached impact management plan are acceptable (refer to section 11 for detail of required attachments).*

HOW ARE YOU AVOIDING OR MINIMISING CLEARING

AVOIDANCE OF CLEARING IS NOT POSSIBLE AS THE SPECIES HABITAT OCCURS AS AN ISOLATED PATCH WITHIN THE CENTRE OF THE PROPERTY AND IS SURROUNDED BY CROPPING. IN ADDITION, MINIMISING THE CLEARING IS NOT POSSIBLE AS THE ENTIRE PATCH IS PROPOSED TO BE REMOVED. SOLAR FARMS REQUIRE LARGE, FLAT AREAS FOR INSTALLATION OF SOLAR PANELS AND FOR EFFICIENCY PROPERTY CONFIGURATIONS WHICH ALLOW INSTALLATION OF RECTANGULAR 'BLOCKS' OF SOLAR PANELS ARE PREFERRED. AMENDMENTS TO THE LAYOUT TO AVOID CLEARING OF THE HABITAT PATCH WOULD INVOLVE A LOSS OF POTENTIAL REVENUE OVER THE LIFE OF THE FARM.

NATURE OF IMPACT - WHAT WILL BE THE IMPACT OF THE CLEARING ACTIVITY?

THE IMPACT IS THE CLEARING OF HABITAT SUPPORTING A POPULATION OF BELSON'S PANIC. THIS WILL RESULT IN A LOSS OF LESS THAN ONE HECTARE OF HABITAT AND 12 DISCRETE AREAS WHERE BELSON'S PANIC OCCURS. AN EXACT COUNT OF INDIVIDUALS GRASSES IS NOT POSSIBLE SINCE THE SPECIES REPRODUCES THROUGH STOLONS. EACH DISCRETE AREA IS BETWEEN ONE METRE SQUARED AND SEVERAL METRES SQUARED.

DESCRIPTION OF MANAGEMENT OF IMPACT - HOW ARE YOU REDUCING THE ADVERSE IMPACTS OF CLEARING ON EVNT PLANTS?

THERE IS NO OPPORTUNITY WITHIN THE STUDY AREA TO MITIGATE THE IMPACTS OF CLEARING ON THIS SPECIES. APART FROM THE SMALL PATCH OF HABITAT, THE STUDY AREA IS DEVOID OF WOODY VEGETATION. A POPULATION OF BELSON'S PANIC OCCURS APPROXIMATELY 500 METERS TO THE NORTH-EAST WITHIN THE YARRANLEA-MURLAGGAN ROAD RESERVE AND THE NEAREST KNOWN POPULATION IS WITHIN THE IRONGATE CONSERVATION PARK APPROXIMATELY 6.5 KILOMETRES TO THE NORTH.

SURVIVAL OF PLANT IN THE WILD - HOW WILL THE PROPOSED CLEARING AFFECT THE SURVIVAL OF THE PLANT SPECIES IN THE WILD?

THE LOSS OF THE POPULATION OF BELSON'S PANIC IS LIKELY TO HAVE A SIGNIFICANT RESIDUAL IMPACT ON THE ENDANGERED SPECIES AS THE CLEARING WILL REDUCE THE EXTENT OF OCCURRENCE OF THE SPECIES. HOWEVER, THE LOSS OF THIS LOCAL POPULATION IS UNLIKELY TO AFFECT THE SURVIVAL IN THE WILD OF THE SPECIES AS THE POPULATION WITHIN THE STUDY AREA IS CURRENTLY ISOLATED FROM OTHER POPULATIONS OF BELSON'S PANIC AS WELL AS OTHER HABITAT AREAS. THERE IS CURRENTLY LITTLE OPPORTUNITY FOR THE POPULATION WITHIN THE STUDY AREA TO CONTRIBUTE TO THE GENETIC DIVERSITY OF THE SPECIES AS SEED MUST BE CARRIED FROM THE VEGETATION ACROSS A HOSTILE AND ACTIVELY DISTURBED AREA AND REACH THE EXISTING POPULATION WITHIN THE YARRANLEA-MURLAGGAN ROAD RESERVE DUE TO THE ABSENCE OF CONNECTING HABITAT.

## 9. Flora survey

For clearing within an area identified as high risk, has a flora survey been undertaken in accordance with the flora survey guideline? ☐ YES ☐ NO

If no, was the flora survey undertaken in accordance with an alternative flora survey methodology that has been



## Application form Clearing permit (protected plants)

agreed to by the chief executive?

☐ YES ☐ NO

*If an alternative flora survey methodology was used, evidence of approval is required to be attached to this application.*

*Note: If the survey relating to the application was undertaken during the period of 31 March 2013 to 31 March 2014, the transitional provision under section 4.5 of the flora survey guideline applies.*

### 10. What are the approximate start and completion dates for the project?

|                   |                 |
|-------------------|-----------------|
| START DATE<br>N/A | END DATE<br>N/A |
|-------------------|-----------------|

### 11 Attachments

- 1) A clearing permit is required for clearing within an area identified as high risk on the flora survey trigger map. For clearing within a high risk area, attachments must include;
  - a. Copy of flora survey trigger map relating to the application
  - b. Flora survey report for the clearing impact area
  - c. Justification of an alternative flora survey methodology, if an alternative flora survey methodology was used
  - d. Impact management plan
- 2) In accordance with section 283 of the Nature Conservation (Wildlife Management) Regulation 2006, a clearing permit is also required where a person is aware that EVNT plants exist within an area that is not identified as high risk on the flora survey trigger map. For a clearing activity in an area other than high risk, attachments must include;
  - a. Copy of flora survey trigger map relating to the application
  - b. Report of known EVNT presence in the area to be cleared
  - c. Impact management plan

List all attached documents, including maps containing information supporting this application in the space below.

ATTACHMENTS (LABEL ALL ATTACHMENTS ALPHABETICALLY E.G. "ATTACHMENT A")

Attachment A - Flora Survey Trigger Map

Attachment B - Ecological Assessment Report (Ecology and Heritage Partners 2016), including Impact Management Plan

### 12. Applicant suitability

The permit may be granted if the applicant is an appropriate person to hold the permit, that is, if the applicant has the ability to carry out the activity under the authority in a competent and ethical way.

| QUESTIONS                                                                                                                                                                                                                                                           | DETAILS                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1. During the past 10 years have you ever (in Queensland or elsewhere) been found guilty of any criminal offence or entered a plea of guilty in a Court? (Note: does not include simple traffic offences such as parking, speeding.) If yes, provide details of the | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |

## Application form Clearing permit (protected plants)

|                                                                                                                                                                                                                                            |                                                                     |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--|
| offence/s.                                                                                                                                                                                                                                 |                                                                     |  |
| 2. Have you ever had an equivalent permit from another State or country that was suspended and/or cancelled? If yes, provide details about the permit, the date it was suspended and/or cancelled and reasons for suspension/cancellation. | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |  |

### 13. Privacy statement

Information you provide on this form is being collected by the Department of Environment and Heritage Protection to process and administer your application for a Clearing permit (protected plants), as authorised under section 15 of the Nature Conservation (Administration) Regulation 2006. Some information may be provided to the Departments of National Parks, Recreation, Sport and Racing; Agriculture, Fisheries and Forestry; or Health in order to investigate allegations of unlawful activity, biosecurity or health issues, if required. Information regarding your status as a holder of this type of permit may be provided to any party upon request. Your personal information will not be disclosed to any other parties unless authorised or required by law. More information on our commitment to privacy is available on our website: <http://www.ehp.qld.gov.au/legal/privacy.html>.

### 14. Declaration

Note: If you have not told the truth in this application you may be liable for prosecution under the relevant Acts or Regulations.

- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true.
- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Right to Information Act 2009* and the *Evidence Act 1977*.
- All persons involved in the activities authorised by this authority will have the necessary licences, permits, approvals (for example a rehabilitation permit for spotter catcher activities or a Species Management Program for interfering with a breeding place), prior to undertaking any clearing.

|                                                                                      |                    |  |
|--------------------------------------------------------------------------------------|--------------------|--|
| APPLICANT'S NAME<br>73 irrelevant informati                                          |                    |  |
| APPLICANT'S SIGNATURE<br>irrelevant inform                                           | DATE<br>22/06/2016 |  |
| IF APPLICANT IS A CORPORATION, WHAT IS YOUR POSITION IN THE CORPORATION?<br>DIRECTOR |                    |  |

### PART B – LANDHOLDER STATEMENT

This section provides assurance that the applicant is the landholder of the land, has approval from the landholder to lawfully clear the land or has the benefit of an easement over the land. This form also provides for assurance from the landholder that clearing is for use of the land.

Is the applicant the landholder of the land? ☐ YES   ☒ NO

*The applicant or the landholder of the land must complete this section.*

## Application form Clearing permit (protected plants)

Does the applicant have benefit of an easement over the land this application relates to? ☐ YES ☐ NO

Where the applicant has benefit of an easement for the activity that this application relates to, landholder approval is taken to already have been given, under the approval of the easement.

### Landholder name(s)

|                                                    |
|----------------------------------------------------|
| LANDHOLDER NAME(S):<br>s.73 irrelevant information |
|----------------------------------------------------|

### Contact person for the landholder

|                                        |
|----------------------------------------|
| CONTACT NAME:<br>3 irrelevant informat |
|----------------------------------------|

### Contact person's details

|                                                       |                                           |            |
|-------------------------------------------------------|-------------------------------------------|------------|
| POSITION:<br>PRINCIPAL CONSULTANT                     |                                           |            |
| FULL POSTAL ADDRESS:<br>PO Box 878, TOOWONG, QLD 4066 |                                           |            |
| TELEPHONE:<br>( 07 ) 3870 8888                        | EMAIL:<br>irrelevant inform@ICUBED.COM.AU | FACSIMILE: |

### Purpose of the clearing

|                                                                                             |
|---------------------------------------------------------------------------------------------|
| THE PURPOSE OF THE CLEARING<br>FOR DEVELOPMENT OF A RENEWABLE ENERGY FACILITY (SOLAR FARM). |
|---------------------------------------------------------------------------------------------|

### Landholder certificate

|                                                            |
|------------------------------------------------------------|
| I, Cameron Andrew Saal<br>PRINTED NAME OF TENEMENT HOLDERS |
|------------------------------------------------------------|

- ☒ Authorise the applicant to clear the plants from the land, and
- ☒ State that the purpose of the clearing is for use of the land, and
- ☒ State that information supplied above is, to the best of my knowledge, true and accurate.

|                                                                           |       |
|---------------------------------------------------------------------------|-------|
| SIGNATURE                                                                 |       |
| POSITION OF SIGNATORY (E.G. DIRECTOR, MANAGER, OWNER, PARTNER, CEO ETC.): | DATE: |

### PART C – APPLICANT CHECKLIST

**Application form**  
**Clearing permit (protected plants)**

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- ☒ Application form completed and signed
- ☒ Fees paid or enclosed
- Supporting information including:
  - ☒ Flora survey trigger map
  - ☐ Flora survey report (if applicable)
  - ☒ Report of known EVNT presence (if applicable)
  - ☐ Justification of alternative flora survey methodology (if applicable)
  - ☒ Impact management plan
  - ☒ Privacy statement acknowledged

Please return to:

**Permit and Licence Management**  
**Regulatory Capability and Customer Service**  
**Branch**  
**Department of Environment and Heritage**  
**Protection**

GPO Box 2454

Brisbane Qld 4001

Enquiries: **1300 130 372**

Facsimile: (07) 3330 5875

E-mail: [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

The Nature Conservation (Wildlife Management) Regulation 2006 may be obtained from the Office of Queensland Parliamentary Counsel website <http://www.legislation.qld.gov.au>

Code of Practice or guidelines and Information sheet – Wildlife authorities and privacy may be obtained from the EHP website <http://www.ehp.qld.gov.au/licences-permits/plants-animals> or by contacting the EHP Referral Centre on 1300 130 372.

## Form

## Wildlife management

## Exempt clearing notification (protected plants)

*This form is to be used to notify the department of clearing of protected plants that are exempt under section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006.*

## Important information

A protected plant clearing permit is required for clearing protected plants in an area identified as high risk on the flora survey trigger map, unless an exemption applies. This form is to be used to notify the department of clearing that is exempt from the requirement of a permit under section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006.

Under section 261ZA, a person may take a protected plant if a flora survey report is submitted to the chief executive, providing evidence that endangered, vulnerable or near threatened plants are not present in a clearing impact area, or these plants are present but the proposed clearing could avoid the plants by 100m. Section 261ZA requires that the flora survey report is provided at least 1 week before the person starts clearing, but no later than 12 months after the flora survey was undertaken.

Following submission of this form, the applicant will receive a receipt of the submission providing approval for the clearing to commence. Clearing under this exemption may be conducted within two years after the flora survey report is submitted.

## 1. Applicant information

A permit may only be granted to an individual or corporation. Please tick the appropriate box:

- ☐ **AN INDIVIDUAL** → Complete Section 2 applicant details — then complete sections 4 to 7
- ☒ **A CORPORATION** → Complete Section 3 applicant details — then complete sections 4 to 7

## 2. Applicant details for an individual

|                                                                  |        |               |
|------------------------------------------------------------------|--------|---------------|
| APPLICANT'S FAMILY NAME                                          |        | TITLE         |
| APPLICANT'S GIVEN NAME/S                                         |        | DATE OF BIRTH |
| RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)                      |        | POST CODE     |
| TELEPHONE (BUSINESS HOURS)                                       | MOBILE | FACSIMILE     |
| TELEPHONE (AFTER HOURS)                                          | EMAIL  |               |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS) |        | POST CODE     |





Form

Exempt clearing notification (protected plants)

### 3. Application details for corporations

|                                                                                                                      |                       |
|----------------------------------------------------------------------------------------------------------------------|-----------------------|
| REGISTERED LEGAL ENTITY NAME (NOT A BUSINESS TRADING NAME)<br>Yarranlea Solar Pty Ltd                                |                       |
| TRADING NAME/S (IF APPLICABLE)<br>Yarranlea Solar                                                                    |                       |
| REGISTERED BUSINESS ADDRESS (NOT A POST OFFICE BOX)<br>c/- Power Tynan, Suite 6, 618 Ruthven Street, Toowoomba       | POST CODE<br>4350     |
| TELEPHONE (BUSINESS HOURS)<br>07 3870 8888                                                                           | FACSIMILE             |
| EMAIL<br>relevant.infor@icubed.com.au                                                                                | WEBSITE               |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS BUSINESS ADDRESS)<br>PO BOX 878, TOOWONG, QLD                            | POST CODE<br>4066     |
| ABN / ACN / AN, OR TITLE AND SECTION OF LEGISLATION UNDER WHICH CORPORATION HAS LEGAL STATUS<br>30 609 850 553       |                       |
| NAME OF PRINCIPAL OF CORPORATION<br>3 irrelevant informat                                                            |                       |
| SIGNATURE OF PRINCIPAL OF CORPORATION (or someone authorised to sign on their behalf)<br>s.73 irrelevant information | DATE<br>06. MAY 2016. |

### Details of nominated person in charge where the authorised activity is to be undertaken

|                                                                                              |                                       |
|----------------------------------------------------------------------------------------------|---------------------------------------|
| NOMINATED CONTACT PERSON'S FAMILY NAME<br>levant info                                        | TITLE<br>levant inf                   |
| NOMINATED CONTACT PERSON'S GIVEN NAME/S<br>levant info                                       | DATE OF BIRTH<br>3 irrelevant informa |
| RESIDENTIAL ADDRESS (NOT A POST OFFICE BOX)<br>[REDACTED]                                    | POSTCODE<br>levant info               |
| TELEPHONE (BUSINESS HOURS)<br>07 38708888                                                    | MOBILE<br>3 irrelevant informat       |
| TELEPHONE (AFTER HOURS)<br>73 irrelevant informat                                            | FACSIMILE                             |
| EMAIL<br>relevant.infor@icubed.com.au                                                        |                                       |
| POSTAL ADDRESS (WRITE 'AS ABOVE' IF SAME AS RESIDENTIAL ADDRESS)<br>PO BOX 878, TOOWONG, QLD | POSTCODE<br>4066                      |

### 4. Where is the clearing to be conducted?

Please identify area type:

Provide the street address, real property description(s) of the land(s) in which the project is located and local government area. (If you require more space, attach a separate sheet.)

STREET ADDRESS  
538 YARRANLEA ROAD, VIA PITTSWORTH



Form  
Exempt clearing notification (protected plants)

|                                                                                                                                                                            |                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| LOT<br>2                                                                                                                                                                   | PLAN<br>RP7475 |
| LOCAL GOVERNMENT AREA<br>TOOWOOMBA REGIONAL COUNCIL                                                                                                                        |                |
| If possible, provide a specific location within the property, a property name or attach a map with the project area clearly delineated. Also include the map name/details. |                |
| SPECIFIC LOCATION/PROPERTY NAME                                                                                                                                            |                |
| GEOGRAPHICAL COORDINATES<br>355530 E 6933589 N                                                                                                                             |                |

**5. What are the approximate start and completion dates for the project?**

|                   |                 |
|-------------------|-----------------|
| START DATE<br>N/A | END DATE<br>N/A |
|-------------------|-----------------|

**6. Flora survey requirements**

**6.1 Flora survey**

Has a flora survey been undertaken in accordance with the flora survey guideline? ☒ YES ☐ NO

If no, was the flora survey undertaken in accordance with an alternative flora survey methodology that has been agreed to by the chief executive? ☐ YES ☐ NO

*If an alternative flora survey methodology was used, evidence of approval is required to be attached to this application.*

*Note: If the survey relating to the application was undertaken during the period of 31 March 2013 to 31 March 2014, the transitional provision under section 4.5 of the flora survey guideline applies.*

**6.2 Results of flora survey**

1. Are endangered, vulnerable or near threatened plants present within the clearing impact area?

☐ YES ☒ NO

*Note: If the response to this question is no, please go to section 6.3 of the flora survey guideline.*

2. Are endangered, vulnerable or near threatened plants present within the clearing impact area but able to be avoided by 100m? ☐ YES ☐ NO

*Note: If the response to question 6.2 is no, this exemption does not apply for this clearing activity and a clearing permit will be required to take protected plants. Please refer to the EHP website for protected plant clearing permit requirements.*

**6.3 Flora survey report**

|                                                                           |                                                   |
|---------------------------------------------------------------------------|---------------------------------------------------|
| WHEN WAS THE FLORA SURVEY UNDERTAKEN? PLEASE PROVIDE DATE/S:<br>16/2/2016 | FLORA SURVEY REPORT COMPLETION DATE:<br>14/3/2016 |
|---------------------------------------------------------------------------|---------------------------------------------------|

## Exempt clearing notification (protected plants)

*Note: Under the Nature Conservation (Wildlife Management) Regulation 2006, the results of a flora survey are to be presented in a flora survey report, prepared in accordance with the flora survey guideline within 12 months of a flora survey being undertaken for the report being completed.*

## 7. Privacy statement

Information you provide on this form is being collected by the Department of Environment and Heritage Protection to process and administer your application for a Exempt clearing notification (protected plants), as authorised under section 261ZA of the Nature Conservation (Wildlife Management) Regulation 2006. Some information may be provided to the Departments of National Parks, Recreation, Sport and Racing; Agriculture, Fisheries and Forestry; or Health in order to investigate allegations of unlawful activity, biosecurity or health issues, if required. Information regarding your status as a holder of this type of permit may be provided to any party upon request. Your personal information will not be disclosed to any other parties unless authorised or required by law. More information on our commitment to privacy is available on our website: <http://www.ehp.qld.gov.au/legal/privacy.html>.

## 8. Declaration

**Note:** If you have provided any false or misleading information in this form you may be liable for prosecution under the relevant Acts or Regulations.

- I do solemnly and sincerely declare that the information provided is true and correct to the best of my knowledge and I make this solemn declaration conscientiously believing the same to be true.
- I understand that all information supplied on or with this application form may be disclosed publicly in accordance with the *Right to Information Act 2009* and the *Evidence Act 1977*.

|                                                                                              |  |                             |
|----------------------------------------------------------------------------------------------|--|-----------------------------|
| APPLICANT'S NAME<br><b>JARRANUEA SOLAR PTY LTD.</b>                                          |  |                             |
| APPLICANT'S SIGNATURE<br><b>s.73 irrelevant information</b>                                  |  | DATE<br><b>06. MAY 2016</b> |
| IF APPLICANT IS A CORPORATION, WHAT IS YOUR POSITION IN THE CORPORATION?<br><b>DIRECTOR.</b> |  |                             |

## 9. Applicant checklist

- ☒ Notification form completed and signed
- ☒ Flora survey report or
- ☐ Justification of alternative flora survey methodology (if applicable)
- ☒ Privacy statement acknowledged

Please return your completed notification to:

### Permit and Licence Management

### Department of Environment and Heritage Protection

GPO Box 2454

Brisbane Qld 4001

Enquiries: **1300 130 372**

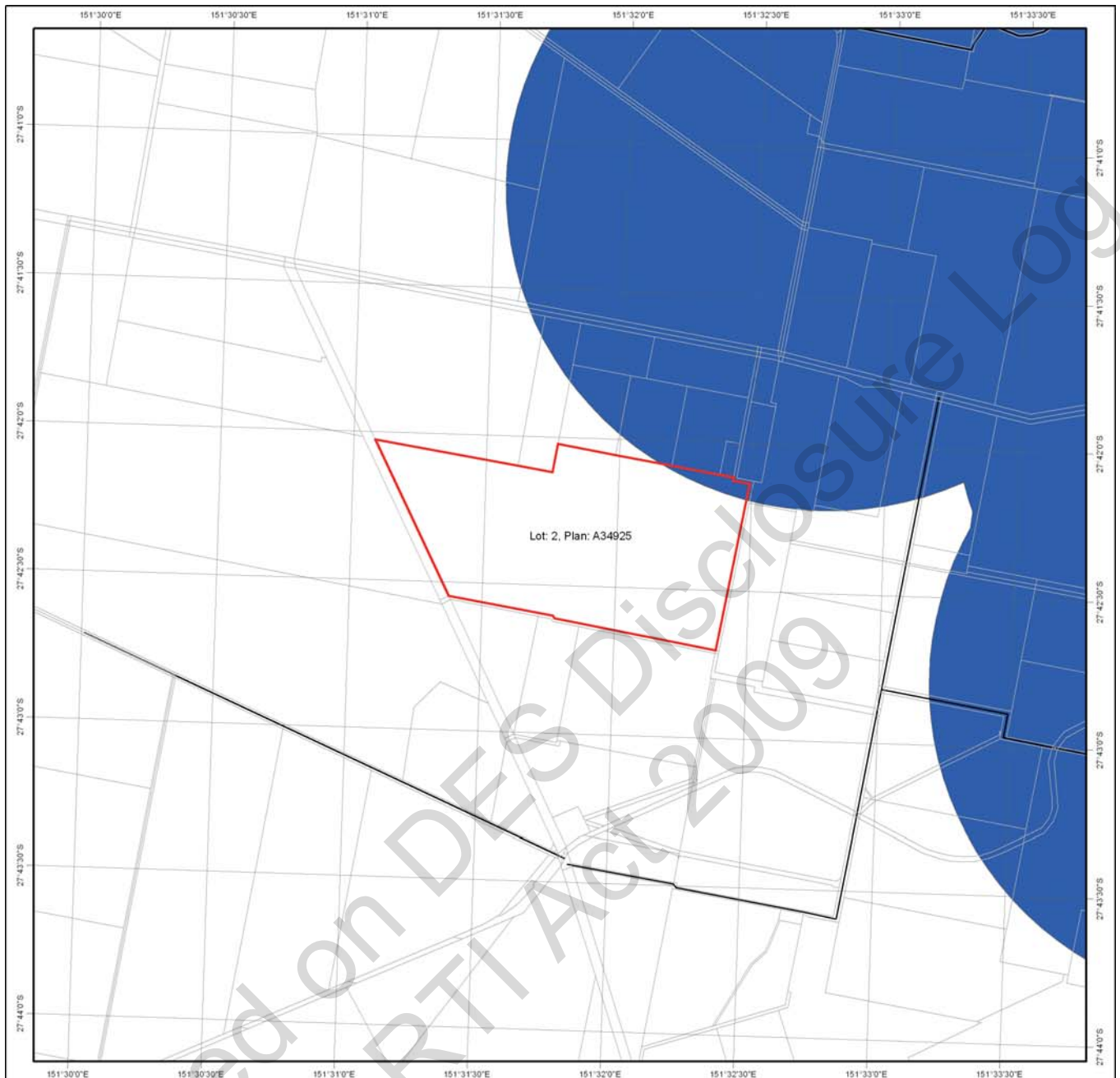
Facsimile: (07) 3330 5875

E-mail: [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

The Nature Conservation (Wildlife Management) Regulation 2006 may be obtained from the Office of Queensland Parliamentary Counsel website <http://www.legislation.qld.gov.au>

Code of Practice or guidelines and Information sheet – Wildlife authorities and privacy may be obtained from the EHP website <http://www.ehp.qld.gov.au/licences-permits/plants-animals> or by contacting the EHP Referral Centre on 1300 130 372.

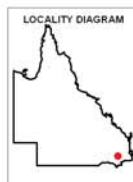




### Protected Plants Flora Survey Trigger Map

#### Legend

-  Lot and Plan
-  High risk area
-  Cadastral line
-  Property boundaries shown are provided as a locational aid only
-  Freeways / motorways / highways
-  Secondary roads / streets



This product is projected into:  
GDA 1994 Queensland Albers

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Heritage Protection at [palm@ehp.qld.gov.au](mailto:palm@ehp.qld.gov.au)

**Disclaimer:**  
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

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## ANICI Damian

---

**From:** [REDACTED]@icubed.com.au>  
**Sent:** Wednesday, 22 June 2016 12:01 PM  
**To:** PALM  
**Cc:** [REDACTED]  
**Subject:** Application for Clearing Protected Plants - Purpose Solar Farm - Yarranlea (i3: 15-282)  
**Attachments:** ap-wl-pp-clearing\_YarranleaSolar.pdf; 8328\_EHP\_Yarranlea\_Solar\_EAR\_FINALv2\_17062016\_figures.pdf

To whom it may concern,

Please find attached our application to clear vegetation for the purpose of constructing a solar farm in Yarranlea.

Documents provided are;

- Application Form Clearing permit (Protected Plants)
- Ecological Assessment of Proposed Yarranlea Solar Project

We understand that there is a fee of \$2,677 payable for this application, which will be paid on receipt of invoice.

Should you require any further information please contact me.

With Kind Regards,

[REDACTED] 73 irrelevant informatio

Lead Town Planner

i3 consulting pty ltd  
engineering consultants  
innovation ingenuity inspiration

Suite 2/ 39 Sherwood Road PO Box 878  
TOOWONG QLD 4066 TOOWONG QLD 4066

p: 07 3870 8888

e: [REDACTED]@icubed.com.au

[www.icubed.com.au](http://www.icubed.com.au)

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## ANICI Damian

---

**From:** s.73 irrelevant information @icubed.com.au>  
**Sent:** Wednesday, 22 June 2016 12:00 PM  
**To:** PALM  
**Cc:** s.73 irrelevant information  
**Subject:** Notification of Exempt Clearing of Protected Plants - Purpose Solar Farm - Yarranlea (i3: 15-282)  
**Attachments:** Exempt Clearing Notification Form- Signed.pdf; 8328 \_EHP\_Yarranlea\_Solar\_EAR\_FINALv2\_17062016\_figures.pdf

To whom it may concern,

Please find attached our notification of exemption to clear vegetation for the purpose of constructing a solar farm in Yarranlea.

Documents provided are;

- Form for exempt clearing notification (Protected Plants)
- Ecological Assessment of Proposed Yarranlea Solar Project

Should you require any further information please contact me.

With Kind Regards,

s.73 irrelevant information

Lead Town Planner

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