Planning Proposal – ABR Farming Lake Wyangan Large Lot Rural Residential

0

ATTACHMENT 2 – LAND CAPABILITY ASSESSMENT



LAND CAPABILITY ASSESSMENT 2368 WEST ROAD & LOTS 102 & 104 BOORGA ROAD NERICON NSW 2680

January 2015

Project brief

At the request of Andrew Ryan of ARB Farming P/L a land capability assessment was carried out to assess the site for a proposed residential development in January 2015. The document provides information about the site conditions from desktop assessment, field observations and laboratory analysis.

Site identification

Address: 2368 West Road and Lots 102 & 104 Boorga Road, Nericon NSW 2680 Real property description: Lots 309 & 610 DP751743 & Lots 102 & 104 DL1018460 Centre co-ordinate: 410885 6214050 MGA GDA z55 Property size: 181ha approximately Owner: c/o ARB Farming P/L Local Council Area: Griffith

Present use: Farming block

Development Application Reference: not known

Certification

Name	Signed	Date	Revision Number
David McMahon BAppSc GradDip WRM	THE	11/03/15	(1 iesge) Closdú2
	8 (542 201 22	a of nortplan (i viti null soldad duti	lenius elis Ieniu doeli

DM McMahon Pty Ltd 4A Norton Street (PO BOX 6118) Wagga Wagga NSW 2650 t (02) 6931 0510 m 0427 214 453 f (02) 6931 0511

e david@dmmcmahon.com.au w www.dmmcmahon.com.au

Table of Contents	
PROJECT BRIEF	
SITE IDENTIFICATION	
PHYSICAL CHARACTERISTICS OF THE SITE	
Topography Vegetation Hydrology Weather Soil & Landform Lithology and Geology Hydrogeology	
INTRODUCTION	5
Scope of Work Report PROPOSED WASTEWATER TREATMENT AND IRRIGATION SYS	5
Greywater quality and quantity Treated wastewater quality target values Typical wastewater design flows Typical household flow rates	
IRRIGATION OF TREATED WASTEWATER	
Soil Categories and Design Irrigation Rate Minimum irrigation area from AS1547:2012 Minimum irrigation area from water balance Minimum irrigation area from Nutrient Balance	
SITE ASSESSMENT	
Soil Analysis Topsoil Analysis	
Subsoil Analysis	
Site Suitability in relation to AS1547:2012 Recommended setback distance range Site suitability in relation to Australian Standards Site suitability in relation to the DEC guidelines Typical site and soil characterises for effluent irrigation syste Site suitability in relation to DEC guidelines	
HYDROGEOLOGICAL CHARACTERISTICS	
Hydrogeological discussion	
SUMMARY OF LAND CAPABILITY ASSESSMENT	
DISCLAIMER	
REFERENCE	
BORE LOGS	
WATER AND NUTRENT BALANCE	
SOIL ANALYSIS	

DM McMahon Pty Ltd – January 2015

Page 2 of 37

Physical characteristics of the site

A desktop review and investigation of the topography, hydrology, soil, lithology, geology and hydrogeology of the site has been undertaken and are as follows:

Topography

The Nericon 1:25,000 Topographic Map (Sheet 8129-4-S) indicates that the site is located at an approximate elevation range of 110 to 122 AHD. The site landform is very low gently undulating rises and the slope class is gently to very gently inclined.

Vegetation

The site is mostly completely cleared farmland.

Hydrology

The site is adjacent to Lake Wyangan which is a recreational man-made water body that was inundated in the 1950s. Prior to being a lake the area was gypsum mine and swap area (Australian Explorer 2015). The lake is a closed drainage basin receiving run-off from surrounding agricultural land and water is pumped out of south Lake Wyangan into a Murrumbidgee Irrigation drainage channel to maintain a constant height. Lake Wyangan is classified as a 'highly disturbed system' by reference to ANZECC 2000 and is prone to algal blooms in the warmer months. The nearest natural named waterway is the Mirrool Creek 15km to the south west of the site. There are also numerous irrigation supply canals, drainages and tile drains in the locale. Due to the relative incline and soils of the site, rainfall is likely to infiltrate into the relatively permeable topsoil with minimal run off. The site currently has two irrigation water entitlements one being 76 Megalitres (ML) of high security and the other 200ML of general security.

Weather

The average rainfall is approximately 401.6 mm per annum, with the wettest months being March, August and October. Mean daily evaporation ranges from 1.4mm in June to 8.7mm in January. Griffith is characterised by cool wet winters and hot dry summers with mean maximum temperatures ranging from 14.5 °C in July to 33.0 °C in January and mean minimum temperatures ranging from 3.5 °C in July to 17.4 °C in February. Rainfall and temperature data from Griffith Airport AWS 075041, 3.6km away and evaporation data from Griffith CSIRO 075028, 11km away (www.bom.gov.au).

Soil & Landform

The site lies within the soil mapping unit coded as Mx4 from the Digital Atlas of Australian Soil (BRS, 1991). The map unit key Mx4 is described as:

"Undulating plains with low and very low dune forms, kunkar, and areas of large melonhole depressions; buried soil layers occur: chief soils are alkaline and neutral red earths (Gn2.13 and Gn2.12) with brown calcareous earths (Gc1.12 and Gc1.2). Associated are brown sands (Uc5.1) on dunes; and (Dr2.33) soils in small flats. Other soils are likely. As mapped, minor areas of unit My6 are included. Data are limited. Occurs on sheet(s): 3"

Soil maps of the Mirrool Irrigation Area have been sourced and the mapped area does not cover the investigated site. However the soils investigated can be broadly classified as Lake View Loam by reference to Taylor and Hooper, 1979. The Lake View Loam soil description is as follows.

Lake View Loam

Fringing the Wyangan loam at Lakeview, particularly on the west side of the section, is a narrow strip of non-stony red loam soil with a light profile. The deep subsoil is

DM McMahon Pty Ltd – January 2015

Page 3 of 37

sandy, and it contains carbonates to only a minor degree. The type is not extensive, but has the advantage over adjacent soils in that it is almost invariably suited to citrus growing. The profile, without significant depths, is as follows:

Red to red-brown loam, with coarse sand grains Light red-brown clay loam or loam to clay loam Light brown or light red-brown clay loam to sandy clay loam Light brown loam to clay loam weakly cemented and with light soft carbonates Subplastic SP(III)

Light brown sandy clay loam, light soft and hard carbonates. The profile is allied to the less calcareous phase of Tharbogang loam. The surface soil may be deep and when wet has a gritty and sticky feel.

Lithology and Geology

The site geology is distributed over one unit: Sedimentary Rocks. Lithology is distributed over one unit being Cainozoic residual and aeolian sands.

Hydrogeology

From the Geoscience Australia hydrogeology dataset the groundwater beneath the site is described as fractured or fissured extensive aquifers of low to moderate productivity. A more detailed assessment is provided later in this document.

As follows is a map showing the location of the property in relation to the surrounding area.



DM McMahon Pty Ltd – January 2015

Page 4 of 37

Introduction

This document provides an overview of the land capability and proposed wastewater management for a proposed 181 hectare subdivision to the North and East of Lake Wyangan in Griffith. The site is zoned R5 – Large Lot Residential and has a minimum lot size of 5ha by reference to the Griffith Local Environment Plan (LEP) 2014. This report assesses the suitability of utilising individual Aerated Wastewater Treatment Systems (AWTS) as part of the development as opposed to connecting to a pressured municipal sewerage system. The assessment will determine the suitability of the site and soil for individual AWTS' based on a lot size of 5 hectares or less and discussion on suitable buffer distances from Lake Wyangan. This report presents the results of the investigations and provides recommendations for sustainable management at the site.

Scope of Work

The assessment was carried out to:

- Undertake soil survey to:
 - confirm the suitability of the site for the planned development using AWTS;
 assess the physical characteristics of the soil and landform; and
 - identify any 'moderate' soil limitations that will require special management practices by reference to DEC 2004.
- Conduct in-house soil analysis for pH, Electrical Conductivity (EC) and Emerson Aggregate Class Number;
- Utilise comprehensive nutrient analysis undertaken in 2014 from YARA Laboratories; and
- Conduct in-situ permeability testing using a well permeameter by reference to AS1547:2012 and McKenzie et al., (2002).

Report

- Interpret results of all site, soil and chemical investigations to determine suitability for the implementation of the planned wastewater treatment and irrigation system;
- Use previous studies carried out by EA Systems Pty Limited as reference for site suitability report, in regard to the site's hydrological/hydrogeological characteristics;
- Use information supplied by Griffith City Council and Murrumbidgee Irrigation regarding the locale's soil and hydrogeological characteristics as reference for the site suitability report;
- Predict the likely quality and quantity and wastewater generated at the site;
- Undertake hydraulic and nutrient balance modelling to assess the minimum effluent land application area requirements; and
- Prepare written report discussing results and recommendations for the wastewater treatment and irrigation system.

Proposed Wastewater Treatment and Irrigation System

The proposed development is planning to use individual AWTS for each single residential lot to manage domestic wastewater. Guidance as to the sizing of the AWTS irrigation areas is provided by reference to Standards Australia AS/NZS 1547-2012 On-site Domestic Wastewater Management. Greywater management guidelines are provided in Greywater Reuse in Sewered Single Domestic Premises, NSW Health 2000. The NSW Health guidelines usually apply for larger sites but in the case of single residential sites they are still relevant regarding public safety.

The AWTS and irrigation management must be done in such a way as to provide long term sustainable management of hydraulic and nutrient loads. The AWTS has been

DM McMahon Pty Ltd – January 2015

preferred over other options as it provides the highest level of onsite treatment with practical and sustainable reuse of the treated wastewater by irrigation. AWTS' are regularly serviced and inspected as part of ongoing maintenance so the reliability of this system is superior to other onsite options. Owing to the comparatively large lot sizes of the development the irrigation area is not constrained in that respect.

An overview of the proposed onsite wastewater management system is as follows:

- Installation of AWTS in all single residential lot;
- The AWTS will have the hydraulic loading capacity of around 1500L/day or 10 Equivalent Persons (EP);
- The AWTS will have a secondary quality effluent of:
 - BOD equal to or less than 10mg/L.
 - Suspended Solids equal to or less than 10mg/L.
 - Thermotolerant Coliforms less than 10cfu/100ml.
- The AWTS be Accredited by NSW Health in accordance with the Sewage Management Facility Accreditation Guidelines May 2005;
- Irrigation of treated effluent at each lot by low pressure surface spray/drip or subsurface drip;
- Adequate buffer zones from irrigated areas to the Lake Wyangan high water mark be stipulated; and
- At least annual maintenance of AWTS.

Greywater is to be irrigated on a scheduled basis as determined by the type of plants, seasonal conditions and wastewater availability. If greywater is stored for any significant length of time microbial water quality declines which can give rise to offensive odours and cause micro-organisms to reproduce rapidly. Therefore the AWTS wastewater must be irrigated on a regular basis and the use of surge tanks is only recommended for short periods of time. The minimum irrigation areas have been calculated to have a zero storage factor.

Greywater quality and quantity

Although the AWTS wastewater quality is very good it is important that all residents are aware of activities and substances that can impede the treatment process. A treatment system that is under lower load will use less electricity to run the AWTS, have an improved performance, will have a lower pollutant and hydraulic load and will have increased irrigation water quality. It is recommended that new residents are informed of the suggested greywater enhancement as follows:

- Minimise the amount of water entering the AWTS. Simple water saving measures and fittings in households can easily achieve this;
- Reduce the amount of sodium entering the wastewater. Recommend use low sodium detergents or use liquid detergents;
- Reduce nutrients in greywater by using low phosphorous detergents and by reducing the quantities of chemicals and foods entering the waste systems;
- Minimise the amount of organic waste, oils and fats entering the system. Sink mounted garbage disposal units should be discouraged;
- Cleaning compounds such as bleach and disinfectants should not be disposed of down the sink in any other than in normal diluted cleaning water;
- Medicines, drugs, cosmetics, pharmaceuticals should not be disposed of down the sink or toilet; and
- Avoid placing chemicals such as fuel, pesticides, acids, herbicides or other agents in the wastewater treatment system.

DM McMahon Pty Ltd – January 2015

Page 6 of 37

The proposed effluent quality from the AWTS is superior to than the target effluent quality outlined in the following table which is derived by reference to relevant guidelines (e.g. AS/NZS 1547:2012; DLG (1998); NSW EPA (2004); ARMCANZ & ANZECC (2000)).

Treated	wastewater	quality	target	values
Ilealeu	wastewater	quality	larger	values

Parameter	Target Value
pH	6.5 - 8.5
Biochemical Oxygen Demand (BOD5)	< 20 mg/L
Suspended solids	< 30 mg/L
Total Nitrogen	< 20 mg/L
Phosphorus	< 10 mg/L
Total dissolved solids (salinity)	< 1,000 mg/L
Thermotolerant coliforms	< 10,000 cfu/100 mL
Pathogen contamination	negligible
Odour	negligible

The volume of wastewater generated is calculated by reference to AS1457:2012 and is shown in the following table.

Typical	waste	water	desian	flows

Desidential Dreneties	Typical Wastewater design flows (L/person/day)		
Residential Properties	On-site roof water tank supply	Reticulated water supply	
No water savings devices	120	150	
Complying BASIX Certificate	115	140	
Full water reduction fittings and fixtures as per AS1527	80	110 Start 110	

Griffith City Council adhere to the BASIX (Building Sustainability Index) to ensure equitable and effective water and greenhouse gas reductions. Therefore all houses in the Griffith area must be BASIX compliant at a minimum and further water reduction features can be undertaken if householders wish.

Therefore the wastewater generated at each residential lot will be based on the sites have a reticulated water supply with BASIX water reduction features with a typical design flow of 140 Litres per person per day.

As the design flow per person has been determined the amount of people per dwelling will be calculated to give an overall flow volume. As follows is a typical households total flow rate based on a flow design of 140L/day per person per day. By reference to AS1527:2012 the total flow rate is based on the Equivalent Persons (EP) in the household based on the number of bedrooms and living areas. Each household will have different configurations of bedrooms, living areas, studies and rumpus rooms but the table below acts as a general guide for typical family homes.

Typical household flow rates

Household Bedrooms	Household Living areas	EP	Total Household flow rate L/day
3	2	5	700
4	2	6	840
5	2	7	980

Irrigation of treated wastewater

The development is appropriate for irrigation of treated wastewater owing to the suitable soils, Griffith's relatively low rainfall and the sustainability of the AWTS for this development. Across the site there were no soils or landforms that were unsuitable for irrigation or had high limitations in regard to waste water reuse.

By reference to table MI of AS1547:2012 the site is broken into two main soil categories for Design Irrigation Rates (DIR) based on indicative permeability being Loams and Clay Loams and can be seen in tabular format as follows.

Soil Categories and Design Irrigation Rate

Soil texture	Indicative	Design Irrigation Rate (DIR) mm/day	
own dae oanse dae oans	permeability mm/day	Drip Irrigation	Spray Irrigation
Loams	0.5 - 3.0	4	4
Clay Loams	0.06 - 1.5	3.5	3.5

It is noted that if drip irrigation is to be installed for Sandy Loams it should be to a depth of 100-150mm below ground level in good quality topsoil, whilst for Loams and Clay Loams a depth of 150-250mm is recommended in good quality in situ or imported topsoil to slow soakage and assist with nutrient reduction.

AS1547:2012 offers a calculation for minimum irrigation area based on flow rate and the DIR which is as follows:

A = Qw/DIRw

Where:

A = Irrigation area in m²

Qw = Design weekly flow in litres

DIRw = Design Irrigation Rate (DIR) in mm/week

Minimum irrigation area from AS1547:2012

Flow rate	Irrigation ra	ate mm/day
L/day	3.5	an defendent de 4 mars contractor
	Required minimur	n irrigation area m ²
700	200	175
840	240	210
980	280	245

The AS1547:2012 calculations do not take into account the climatic conditions and a zero storage factor therefore a water balance calculation should be used in addition to the AS1547:2012 method for comparison.

A water balance has been undertaken to determine the total irrigation area requirements per residential lot based on the hydraulic load, average rainfall, evaporation, run-off and zero storage factor. The calculations are based on the houses having a reticulated town water supply, 100% occupancy and BASIX water reduction

DM McMahon Pty Ltd – January 2015

Page 8 of 37

features. The following table shows the required minimum irrigation area for the two soil categories with the three flow rates for a three, four and five bedroom house. In the water balance, to gauge irrigation requirements, Evapotranspiration (ET_o) has been calculated by multiplying evaporation by a crop of 0.6 to 0.8 which is seasonally adjusted and a conservative value. Year round active turf and perennial grasses have a crop factor of 0.95 and 1.05 respectively which are year round figures so the 0.6 to 0.8 crop factor used is very conservative, Allen at al 1998.

Flow rate	Irrigation ra	ate mm/day
L/day	3.5	4
	Required minimur	n irrigation area m ²
700	217	188
840	261	226
980	304	263

Minimum irrigation area from water balance

The water balance calculations can be seen in the appendix.

A nutrient balance was also calculated to determine the minimum irrigation area for nitrogen disposal which has been given a design wastewater of strength 10mg/L and the nitrogen uptake factor of 220kg/ha/annum. The nitrogen uptake factor is for pasture and is viewed as being at the lower end of the scale. Irrigated grasses can uptake up to 400kg/ha/annum, Reuter & Robinson 1997

Minimum irrigation area from Nutrient Balance

Flow rate L/day	Required minimum irrigation area m ²
700	93
840	111
980	130

From the above calculations it can be seen that the minimum irrigation areas for the nutrient loads are negligible when compared to the water balance and AS1547:2012. The AS1547:2012 calculation for minimum irrigation area based on hydraulic load is lower than the water balance method owing to the AS1547:2012 method not incorporating climatic conditions and a zero storage factor into the equation. It is therefore recommend that the water balance minimum irrigation area calculations be used as opposed to the AS1547:2012 method as it gives a more reliable output.

Site Assessment

A detailed soil investigation was carried out to:

- confirm the suitability of the proposed irrigation site;
- identify any 'moderate' soil limitations that will require special management practices by reference to AS1547:2012 and DEC 2004; and
- identify the minimum irrigation area for each residential lot.

A hybrid survey technique was used incorporating the EM-31 data, desktop and landform assessment. The hybrid survey used quantitative methods from the EM-31 and elevation survey data as well as using the soil surveyor's expert judgement and experience from previous studies undertaken in the locale. The results of the land evaluation are analysed, synthesised and summarised as follows bearing in mind that:

- In a special or project-oriented survey the effort must be concentrated on the particular land qualities and interpretations considered relevant for the intended use;
- Due to narrowly defined objectives, the survey was selective in data collection and presentation and this report is therefore closely tailored to the land's intended single use and cannot serve equally well for other purposes; and
- Because of a sampling methodology and regime, only conclusions can be drawn for the intended end use of the land at that time.

By reference to the 'Guidelines for Surveying Soil & Land Resources' McKenzie et al 2008, a detailed soil and land resource survey was carried out. Detailed surveys have an inspection density of 1 point per 5 to 25ha and the objectives are for 'moderately intensive uses at field level and detailed project planning'. The survey had 27 investigation points for the 181 hectares which gives a physical sampling density of 1 point per 6.7 hectares which is at the intensive end of the density range.

The field assessment included investigation with a backhoe to 1.8 metres depth where the soil profile and basic chemical characteristics were assessed as well as undertaking in-situ permeability which will be the definitive guide to sizing the AWTS disposal areas. The permeability tests were undertaken using a well permeameter by reference to AS1547:2012 and McKenzie et al., (2002). In the absence of a Griffith City Council AWTS policy, AS1547:2012 and DEC 2004 will be referenced for soil assessment factors and constraints.

A map of the EM-31 and EM-38 survey with elevation contours and pit locations can be seen as follows.

DM McMahon Pty Ltd – January 2015

Page 10 of 37



DM McMahon Pty Ltd – January 2015

0

Page 11 of 37

EM-38

DM McMahon Pty Ltd – January 2015

Page 12 of 37



The EM survey results indicate that the site overall has low apparent conductivity (ECa). ECa is influenced by: the type of material being tested; its degree of saturation; and the salinity of the soil water, Dunn, Beecher and Hume, 1998. Owing to the sandy textured soil profile, the moderate saturation and relatively low overall salinity the low ECa is evident. The EM-31 measures conductivity to a depth of around six metres with the majority of readings taken in the top ~three metres of the profile while the EM-38 measures conductivity to a depth of 1.5 metres with the majority of readings taken in the top ~one metre. This explains why the EM-38 data has lower overall EM readings compared to the EM-31 as the soil profile generally did get comparatively heavier textured with depth.

The EM data was mapped using ArcGIS software using data interpolation at 10m cell size. The data distribution was investigated using histograms so the weighting of data to sample points could be assessed. The sample points were chosen based on the EM data, the landform and elevation. This survey technique was chosen as it satisfies the sampling density as recommended by McKenzie et al 2008 and it allows the local knowledge of the soil survey to be utilised as well as using the EM data.

From the investigation, the soils of the site belong to the Red Chromosol soil classification and are defined as: strong texture contrast between the A and B horizons and with a soil pH >5.5 in the B horizon. They are derived from the dust mantle and dune-fields of the Riverine plains which are rich in iron oxides, clay, organic matter with varying amounts of calcareous material.

The Red Chromosol profiles mainly consist of three horizons:

 A darker fine sandy loam to sandy clay loam organic surface layer (A horizon);
 A slightly lighter subsurface sandy clay loam horizon with moderate sub angular blocky structure (B horizon);

3. A clayey and silty subsoil that is characterised by the accumulation of amorphous organic compounds and some influence of carbonate, (B/C horizon).

A photograph of typical soil profile can be seen as follows.



DM McMahon Pty Ltd – January 2015

Page 14 of 37

The class of carbonate mainly found was fine soil carbonate or a compact mixture of loamy sand to sandy clay containing less than 20% calcrete fragments. The carbonate found indicates a decreasing age of the geological material in which the carbonate has accumulated therefore the fine earth carbonate is older than the fragments.

Soil Analysis

56 soil samples were taken for analysis and tested for properties outlined by reference to DEC 2004. Soils were tested for:

Topsoil 56 individual and one composite sample: pH, Electrical Conductivity (EC), Total Nitrogen, Total Phosphorus, Exchangeable Sodium Percentage (ESP), Cation Exchange Capacity (CEC), Available Phosphorus, and Emerson Aggregate Test (EAT). Subsoil samples were analysed for: pH, EC & EAT. Laboratory results are attached.

Topsoil Analysis

pH & EC

Topsoil pH is classed as neutral to mildly alkaline by reference to Rayment and Bruce 1982.

EC is a salinity indicator and samples are classified as non-saline to slightly saline, Charman and Murphy, 1991.

CEC and ESP

CEC is 10.89 which is typical of the nature of soils in the locale. The soil is classed as non-sodic, Hazelton and Murphy 2007.

Total Nitrogen, Total & Available Phosphorus and Phosphorus Sorption Capacity Nutrients appear in check and are typical of agricultural soils in the locale.

Emerson Aggregate Test

Emerson Aggregate Tests returned class numbers 3 and 5, which has nil or slight limitation by reference to DEC guidelines.

Subsoil Analysis

Subsoil samples were collected at discrete depths and were analysed for: pH, EC & EAT.

pH & EC

pH is classed as neutral to mildly alkaline, Rayment and Bruce 1982.

EC is a salinity indicator and samples range from having nil to moderate subsoil salinity, Charman and Murphy 1991. The subsoils at sites 11, 14, 16, 19 and 24 are moderately saline with the rest of the sites being non-saline to slightly saline. The five sites with moderate subsoil salinity are distributed randomly across the site with no real correlation to EM data or landform.

Emerson Aggregate Test

Emerson Aggregate Tests returned predominantly class numbers 3 and 5. This indicates a soil that 'is unlikely to be sodic', Hazelton and Murphy 2007.

DM McMahon Pty Ltd – January 2015

Page 15 of 37

Site Suitability in relation to AS1547:2012

The Australian Standard provides less specific soil recommendations when compared to the DEC guidelines as they largely focus on the site constraint scale for development of setback distances. The Standard gives setback distance ranges from site constraint items of specific concern being bedrock, hardpans, surface waters, bores, groundwater, boundaries, recreation areas and utilities.

Recommended setback distance range

Site Feature	Setback distance range (m)
	Horizontal setback distance (m)
Property boundary	1.5 – 50
Buildings/houses	2.0 - 6
Surface water	15 – 100
Bore, well	15 – 50
Recreation areas (Children's play areas, swimming pools and so on)	3 – 15 Sizvious toegoT
In-ground water tank	4 – 15
Retaining walls and Embankments, escarpments, cuttings	3.0m or 45° angle from toe of wall (whichever is greatest)
	Vertical setback distance (m)
Groundwater	0.6 - >1.5
Hardpan or bedrock	0.5 - >1.5

Site suitability in relation to Australian Standards

Site Feature	Comments
Property boundary	Subject to local rules and council recommendations.
Buildings/houses	Recommend irrigation adhere to CSIRO Foundation Management and Footing Performance: A Homeowner's guide, BTF-2011.
Surface water	Recommended to be 100m from the high water mark owing to Griffith being a lower rainfall area and the soils on site being in category 1 to 3 of the Standard. Lake Wyangan is a man- made water body which is classified as a 'highly disturbed system' by reference to ANZECC 2000, owing to it being affected by human activity, namely storm water, horticultural run-off, grazing and recreational activities.
Bore, well	50m recommended from irrigation bores and any domestic supply bores liaison with NSW Office of Water is required.
Recreation areas (Children's play areas, swimming pools and so on)	Where effluent is applied to the surface by covered drip or spray irrigation, the maximum value is recommended.
In-ground water tank	It is recommended that land application of treated effluent be down gradient of in-ground water tanks.
Retaining walls and Embankments, escarpments, cuttings	3.0m is adequate owing to the moderately permeable soil and gentle slope which would eliminate the requirement for retaining walls of any great size.
	Vertical setback distance (m)
Groundwater	No free groundwater was encountered within 1.8m of the surface and depth to piezometric surface is 3.4m in one of the on-site bores.
Hardpan or bedrock	No hardpan or bedrock was encountered during the investigation.

DM McMahon Pty Ltd - January 2015

Page 16 of 37

Site suitability in relation to the DEC guidelines

The site is highly suitable for irrigation of treated wastewater when compared to the DEC guidelines owing to most parameters returning a nil to slight limitation for irrigation systems. Some isolated soils had moderate limitations such as a slightly low topsoil Cation Exchange Capacity and five samples return moderate salinity in the subsoil which is inherent to the locale. The following DEC guidelines were used as a guide for identifying soil and site limitations and selecting appropriate amelioration measures if required.

	Limitation			AND REPORT OF A DESCRIPTION	
Property	Nil or Slight	Moderate	Severe	Restrictive Feature	
Exchangeable sodium percentage (0–40 cm)	0—5	5–10	> 10	structural degradation and waterlogging	
Exchangeable sodium percentage (40–100 cm)	< 10	>10	90 100 - 08101	structural degradation and waterlogging	
Salinity measured as electrical conductivity (ECe) (dS/m at 0–70 cm)	< 2	2–4	> 4	excess salt may restrict plant growth	
Salinity measured as electrical conductivity (ECe) (dS/m at 70–100 cm)	< 4	4–8	> 8	excess salt may restrict plant growth, potential seasonal groundwater rise	
Depth to top of seasonal high water table (metres)	> 3	0.5–3	< 0.5	poor aeration, restricts plant growth, risk to groundwater	
Depth to bedrock or hardpan (metres)	> 1	0.5–1	< 0.5	restricts plant growth, excess runoff, waterlogging	
Saturated hydraulic conductivity (Ks, mm/h, 0-100 cm)	20–80	5–20 or >80	<5	excess runoff, waterlogging, poor infiltration	
Available water capacity (AWC, mm/m)	> 100	< 100	inina - Ma Nina -	little plant-available water in reserve, risk to groundwater	
Soil pHCaCl2 (surface layer)	> 6–7.5	3.5–6.0 > 7.5	< 3.5	reduces optimum plant growth	
Effective cation exchange capacity (ECEC, cmol (+)/kg, average 0–40 cm)	> 15	3–15	< 3	unable to hold plant nutrients	
Emerson aggregate test (0–100cm)	4, 5, 6, 7, 8	2, 3	1	Poor structure	
Phosphorus (P) sorption (kg/ha at total 0–100 cm)	high	moderate	Low	unable to immobilise any excess phosphorus	

Typical site and soil characterises for effluent irrigation systems

DM McMahon Pty Ltd – January 2015

Page 17 of 37

Site suita	bility in relatio	n to DEC	guidelines
------------	-------------------	----------	------------

Property	Comments
Exchangeable sodium percentage (0–40 cm)	ESP in the topsoil is 2 which is considered low. Emerson Aggregate test were also undertaken and results indicate a soil that is unlikely to be sodic.
Exchangeable sodium percentage (40–100 cm)	Not tested but Emerson Aggregate test was used as an indicator.
Salinity measured as electrical conductivity (EC) (dS/m at 0–70 cm)	EC were all less <1 dS/m. Once calculated to ECe it indicates generally nil to slight limitations.
Salinity measured as electrical conductivity (EC) (dS/m at 70–100 cm)	EC in the sub soil were <1 dS/m with the exception of 5 of the 56 samples in holes 11, 14, 16, 19 and 24 which once calculated to ECe indicates a moderate limitation to the subsoil.
Depth to top of seasonal high water table (metres)	No free groundwater was encountered during excavation to 1.8m depth. Of the 13 monitoring bores on site the depth to piezometric surface level ranges from 3.4m to 5.6m below ground level. Of the 13 bores nine are dry. This indicates nil to slight risk.
Depth to bedrock or hardpan (metres)	No bedrock or hardpans were experienced during excavation and plant roots were found in all profiles to the excavated depth of 1.8 metres.
Saturated hydraulic conductivity (Ks, mm/h, 0-100 cm)	The mean kSat is classed as "moderately permeable" with no problems associated with impaired infiltration, water logging or excessive runoff. Some investigation points returned >80mm/h infiltration rates in the sandier soils which is viewed as a moderate limitation.
Available water capacity (AWC, mm/m)	AWC is calculated to be generally ~120mm/m which is highly suitable for irrigation.
Soil pHCaCl2 (surface layer)	Surface layer soil pH H ₂ O is neutral to mildly alkaline which is nil to slight limitations. Soil pH when tested in CaCl2 is usually slightly lower than the H ₂ O method so the nil to slight limitation would still apply.
Effective cation exchange capacity (ECEC, cmol (+)/kg, average 0–40 cm)	CEC was suitable a reading of 10.89.which is classed as a moderate limitation but this is deemed typical of most soils in Southern NSW.
Emerson aggregate test (0–100cm)	Samples returned results that have Nil or Slight limitations with the exception of pits 24 and 27 with a class number 2.
Phosphorus(P)sorption (kg/ha at total 0–100 cm)	Not tested but available Phosphorus (Colwell) are slightly low indicating that the addition of Phosphorous by fertiliser or in treated wastewater would be beneficial.

DM McMahon Pty Ltd – January 2015

Page 18 of 37

Hydrogeological characteristics

There are 13 monitoring bores on site that were installed in 2007 as part of a development application for a medium density housing development. The bores range from around five to 14 metres deep and are installed around the site which can be seen as follows.



The depth to piezometric surface of the monitoring bores on site was recorded in 2007 and 2015 and is shown below. The remaining seven bores on site have been dry. It is noted that the sampling points are infrequent and should be used as an indication only of the hydrogeological conditions on site.

Monitoring bore	Depth May 2007	Depth Jan. 2015
PO2	-3.30	-3.40
PO5	-2.80	Dry
PO7B	Dry	-5.45
PO10	Dry	-5.60
PO11B	-5.30	-4.30

DM McMahon Pty Ltd – January 2015

Page 19 of 37

Murrumbidgee Irrigation Ltd (MI) has a series of monitoring bores within a 5 kilometre radius of the locale installed to depths of between 12 and 35 metres deep. The data has been supplied by MI and is recorded six monthly from 2007 to 2014. The data demonstrates that the piezometric water depth is highly variable and not knowing the construction details of the bores is difficult to comment whether the water table is that high or if it is the influence of a deeper aquifer under pressure. Department of Natural Resources in 2006 also noted that not knowing the construction of the bores may produce misleading results. Salinity information has been provided by MI for the surrounding bores and the results between monitoring events and bores are wildly variable. From discussion with MI some of the discrepancies may have occurred during collection with the EC dipper not being placed in the correct screen level and/or typographic errors, pers comms L Williams 19 February 2014. As a result the water quality results have not been included until results verification is completed by MI. However it can be noted that the groundwater in the locale is saline.



As follows is a representation of the depth to piezometric surface for the closest eight bores to the site which shows a generally steady groundwater depth with a slightly rising long term trend in bores G2006 and G651.

DM McMahon Pty Ltd – January 2015

Page 20 of 37



In 2007 EA Systems Pty Limited Conducted a Hydrological and Hydrological Assessment (Report 21762.16326) of the site and in summary they had the following findings:

The elevation of the two shallow piezometer water levels was approximately 104-114 m and the elevation of the two deeper piezometers installed in the water bearing zones was approximately 104 m in both holes. These results indicate that the static water level (SWL) within the shallow piezometers is variable, likely as a result of perching of surface waters and is therefore likely to be variable based on rainfall and surface water conditions. The water levels within the piezometers installed in deeper water bearing zones is relatively uniform at 104 m and is unlikely to be significantly influenced by climatic conditions.

The general conclusions from the report are as follows:

Current water bearing stratigraphic layers were encountered at depths ranging from 6 m to 20 m across the site and stabilised water levels of piezometers constructed in these formations are preliminary indicted at approximately 5 to 5.5 m below current ground surface. The stratigraphy indicates a potential for the perching of shallow groundwater overlying thick heavy clays under wet conditions at depths of 1.5 to 4.5 m below current ground surface levels. There is minimal published investigation data to indicate the behaviour of perched shallow groundwater. The elevation shallow ground surface) and the elevation of the two deeper piezometers installed in water bearing zones was approximately 104 m in both holes.

The fluctuation of shallow groundwater within sand aquifers encountered at < 20 m across the site is likely to be predictable based on irrigation patterns. The behaviour of shallow perched waters is more difficult to predict, but results of the filed investigation indicate a potential for the formation of perched water tables in areas of shallow topsoil at less than two metres below ground surface levels. Soil chemistry data suggests that there is a potential for urban salinity, particularly on the eastern bank of north Lake Wyangan. The occurrence of a slat scald in the Nericon Swamp area less than one km to the east of the site and the results of the EC soil contouring indicate that there is potential for urban salinity impacts in this area.

DM McMahon Pty Ltd – January 2015

Page 21 of 37

Hydrogeological discussion

The groundwater on site and in the locale appears to be in two aquifers one being a deep sandy aquifer at around 20 m and a shallower perched aquifer on a clay aquitard, both being saline. The 13 monitoring bores installed on site are generally dry with the exception of four bores with a piezometric surface of between 3.6 and 5.4 m from ground level. These four bores are installed on the lake side edge of the property on the lowest elevations and are most probably influenced by Lake Wyangan. The depth to groundwater on site is well below the DEC 2004 and AS1547:2012 site threshold levels and should not be a concern in the foreseeable future.

Summary of Land Capability Assessment

The site slope, landform, soils and other environmental factors lend itself to be suitable for irrigation of treated effluent by AWTS. The site constraints when compared to AS1547:2000 are generally negligible and compared to the DEC guidelines they are mostly nil to slight limitations with some moderate limitations which are manageable.

The gentle slope and low landform make the site suitable from an irrigation perspective as run-off will be limited by the long waning slopes and permeable soils. The soil generally is deep, friable, porous and non-cracking that is currently well-drained and with a good potential available water holding capacity. Tests show that the soils are generally neutral to mildly alkaline pH, non to low saline and do not swell and disperse. In general, a combination of soil depth, slope, low salinity, open porosity, subsoil structure, physically unrestricted roots to the investigated depth and water penetration, large water holding capacity, good drainage, aeration, water and heat transmission, workability and trafficability, are some of the many advantages of these soils. These favourable properties make them suitable for the intended use.

It is important to note that the site has a total irrigation water allocation of 276 ML per annum. If however the site is to be developed as 36 individual five hectare blocks the total irrigation amount at maximum daily flow of 980L/day based on seven EP and 100% occupancy would be 13 ML per annum which by contrast has less potential impact on the groundwater and surface waters at the site. A lesser development lot size of for example 1 ha would see the maximum amount of water irrigated at 64ML across the site which is still a lesser impact than agricultural or horticultural activities. The proposed development at present would have a negligible net recharge on the Lake Wyangan catchment given the comparably low total irrigation amount by AWTS and high quality of the treated effluent.

Lake Wyangan is frequently closed owing to algal blooms occurring in the summer months associated with warm and stable water conditions. Blue-green algae is a natural bacteria which are typical of freshwater environments in Australia, especially the Murray-Darling Basin. Stable water conditions, sunlight and nutrients are the three key contributors to algal blooms and Lake Wyangan being a closed drainage basin and Griffith having a warm and stable weather pattern in summer has made the Lake historically prone to blooms. Nutrients also play a part in the algal blooms with sufficient levels of Nitrogen and Phosphorous required to feed the algae. The Lake being a fixed drainage basin in the middle of agricultural and irrigated horticultural land would receive nutrient laden run-off from the catchment. The proposed residential development would see a far lower net irrigation rate than if the site was used as an irrigation farm therefore the risk off run-off into the lake is reduced considerably if the site is used for residential purposes. Modern AWTS's have a very low nutrient output and the low irrigation rate and highly suitable soil type combine to have a negligible run-off rate. Therefore it is considered that the prosed residential development will have a negligible contribution to nutrient levels in the lake which contribute to algal blooms.

DM McMahon Pty Ltd – January 2015

Page 22 of 37

In regard to block sizes the site is currently zoned for a minimum lot size of 5 hectares. Considering the largest minimum irrigation area for a DIR of 3.5 and daily flow rate of 908L is 304m² there is scope for a reduction in lot size for parts of the development to not less than 1 hectare with negligible impact. Allotments smaller than 1 hectare are seen to have higher risks for wastewater management, EPA 2003. The area available for irrigation on each lot would depend on a range of factors including end lot size and layout and the size and orientation of the building footprint and driveways etc. As the lot size in the development may vary it is necessary to determine the relationship between lot size and the area available for effluent irrigation. The area available for effluent irrigation was estimated for five different lot sizes from one to five hectares for the conceptual model. The conceptual setbacks were estimated at 10 metres from the front and side boundary, five metres from the building envelope for drip irrigation and 15 metres for spray irrigation with a building envelope estimated at 20 metres x 20 metres. Therefore two conceptual models were calculated being: area available for above ground irrigation; and area available for sub-surface drip irrigation and the relevant areas available for each type of irrigation based on lot size is as follows:

Lot area (m ²)	Available area for drip irrigation (m ²)	Available area for surface/spray irrigation (m ²)
10000	8425	8775
20000	18425	18775
30000	28425	28775
40000	38425	38775
50000	48425	48775

The data shown in a graph demonstrating the linear regression between the two data sets is as follows.



The regression equation can be used to calculate the lot size that would be required for a given effluent disposal area where:

LS = Lot size EDA = effluent disposal area

DM McMahon Pty Ltd – January 2015

Page 23 of 37

For example, the lot size required to provide $280m^2$ for spray effluent disposal would be: LS = 0.9141 x 304 + 1575 = 1.853 m²

And for $280m^2$ for drip irrigation would be: LS = $0.9332 \times 304 + 1225$ = $1,508 m^2$

Based on the above calculations the conceptual minimum lot size is far lower than the estimated minimum one hectare sizing that is being suggested. However given that lot sizes of less than one hectare present higher risks for wastewater management (EPA 2003) the proposed minimum lot size of one hectare appears reasonable. It is recommended though that the above regression analysis be re-run once a more advanced plan of lot sizes and layout is developed to validate the model.

In summary the environmental impacts in relation to the development and a decreased lot size are considered negligible given that the:

- manageable minimum irrigation areas in relation to the irrigation and nutrient load;
- likelihood of run-off from the AWTS into Lake Wyangan is negligible owing to the existing buffer of approximately 150 to 300 metres in the form of the reserve surrounding the lake and the permeable soils;
- soils at the site are highly suitable for irrigation of treated effluent;
- wastewater quality from the AWTS is very good; and
- low likelihood of impact to groundwater on site.

DM McMahon Pty Ltd – January 2015

Page 24 of 37

Disclaimer

The information contained in this report has been extracted from field and laboratory sources believed to be reliable and accurate. DM McMahon Pty Ltd will not assume any responsibility for the misinterpretation of information supplied in this report. The accuracy and reliability of recommendations identified in this report need to be evaluated with due care according to individual circumstances. It should be noted that the recommendations and findings in this report are based solely upon the said site location and the ground level conditions at the time of testing. The results of the said investigations undertaken are an overall representations of the conditions encountered. The properties of the soil within the location may change due to variations in ground conditions outside of the tested area. The author has no control or liability over site variability that may warrant further investigation that may lead to significant design changes.

Reference

Allen, R.G., Pereria, D. Raes, and M. Smith, 1998. Crop Evapotranspiration; guidelines for computing Crop Water Requirements, FAO Irrigation and Drainage Paper, 56, Food and Agriculture Organization of the United Nations Rome.

ANZECC 2000, Australian Water Quality Guidelines for Fresh and Marine Waters, Australian and New Zealand Environment and Conservation Council, Kingston.

ANZECC (Australian and New Zealand Environment and Conservation Council) and ARMCANZ (Agriculture and Resource Management Council of Australia and New Zealand) 2000, Australian Guidelines for Water Quality Monitoring and Reporting. National Water Quality Management Strategy Paper No. 7, ANZECC and ARMCANZ, Canberra.

Australian Explorer. 2015, http://www.australianexplorer.com/lake_wyangan.htm, Data accessed 2 February 2015

Bureau of Rural Sciences after Commonwealth Scientific and Industrial Research Organisation (1991), *Digital Atlas of Australian Soils.*

CSIRO Foundation Management and Footing Performance: A Homeowner's guide, BTF-2011.

Department of Local Government (1998). *Environment & Health Protection Guidelines: On-site Sewage Management for Single Households.*

DEC 2004, *Environmental guidelines, Use of Effluent by Irrigation*, Department of Environment and Conservation (NSW), Sydney.

Department of Natural Resources, 15 August 2006. Submission under thr GS2030 Review-Waterfront Pty Ltd-Lake Wyangan. Reference R079.

Dunn, B., Beecher, G., and Hume, I., Electromagnetic Surveying of Fields for Rice Soil Suitability, NSW Agriculture Yanco NSW.

EA Systems Pty Limited 2007. Hydrogeological and Hydrological Assessment, Proposed Residential development, Sunset Waters, Lake Wyangan, North lake, Griffith NSW. Report Number: 21762.16326.

EPA Victoria 2003 Guidelines for Environmental Management Septic Tanks Code of Practice, Publication 891, Southbank Victoria.

DM McMahon Pty Ltd – January 2015

Geary and Gardner. (1996) On-Site Disposal of Effluent. In Proceedings from the one-day conference on 'Innovative Approaches to the Management of Waste Water' Lismore, 1996.

Geeves GW, Craze B and Hamilton GJ 2007a. Soil physical properties. In 'Soils – their properties and management'. 3rd edn. (Eds Charman PEV and Murphy BW) pp. 168-191 Oxford University Press Melbourne.

Geology information: Copyright Commonwealth of Australia (MDBC) 1999.

Griffith City Council LEP

https://www.griffith.nsw.gov.au/cp_themes/default/page.asp?p=DOC-SJM-35-20-01 http://www.legislation.nsw.gov.au/mapindex?type=epi&year=2014&no=137 Land Zoning Map-LZN-003B Minimum Lot Size Map-Sheet LSZ-003b

Hazelton, P.A. & Murphy, B.W. eds. (1992). *What Do All the Numbers Mean? A Guide for the Interpretation of Soil Test Results*. Department of Infrastructure, Planning and Natural Resources (formerly Department of Conservation and Land Management, Sydney).

Meyer, W. 1999 in Katupitiya, A. 2000 Irrigation Practices for Coleambally, Coleambally Irrigation Cooperative Limited

McKenzie, N., Grundy, M., Webster, R., and Ringrose-Voase, A. (2008). Guidelines for Surveying Soil and Land Resources. (Australian Soil and Land Survey Handbook Series), Melbourne: CSIRO Publishing.

McKenzie, N., Coughlan, K., and Cresswell, H. (2002). Soil physical measurement and interpretation for land evaluation. (Australian Soil and Land Survey Handbook Series), Melbourne: CSIRO Publishing.

Murrumbidgee Irrigation Limited, Williams, L,. Personal Communication 19 February 2014.

Reuter, D.J. & Robinson, J.B. (eds), 1997. Plant Analysis - An Interpretation Manual. CSIRO Publishing, Collingwood, Victoria.

Standards Australia AS/NZS 1547-2012 On-site Domestic Wastewater Management.

Taylor J.K and Hooper P.D, A soil survey of the horticultural soils in the Murrumbidgee Irrigation Areas, New South Wales revised by B.E. Butler, Melbourne : CSIRO, 1979.

DM McMahon Pty Ltd – January 2015

Page 26 of 37

BORE LOGS

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Yellowish Red Loamy Sand	Moderate structure Roots present
B1 Horizon	0.2-0.55	Reddish Yellow Fine Sandy Loam Some carbonate coarse fragments 10% <10mm	Strong structure Roots present
B2 Horizon	0.55-1.3	Yellowish Red Fine Sandy Clay Loam Some carbonate coarse fragments 10% <10mm	Strong structure Roots present
C Horizon	1.3-1.8	Reddish Sandy Clay	Moderate structure Roots present

Site 2: 410131 6214939 - Very Gently Inclined Drainage Depression

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.45	Yellowish Red Loamy Sand	Moderate structure Roots present
B Horizon	0.45-0.7	Reddish Yellow Fine Sandy Loam	Strong structure Roots present
C Horizon	0.7-1.6	Brownish Yellow Sandy Clay Some carbonate coarse fragments 10% <10mm	Moderate structure Roots present

Site 3: 410071 6214737 - Very Gently Inclined Lower Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Moderate structure Roots present
A2 Horizon	0.2-0.45	Yellowish Red Sandy Loam	Moderate structure Roots present
B Horizon	0.45-1.0	Brownish Yellow Sandy Clay Some carbonate coarse fragments 50% <20mm	Strong structure Roots present
C Horizon	1.0-1.8	Greyish Silty Clay Some carbonate coarse fragments 20% <20mm	Massive structure Roots present

DM McMahon Pty Ltd - January 2015

Page 27 of 37

Site 4: 410394 6215081 – Very Gently Inclined Mid Slope

Depth (m)	Soil Type	Properties
0-0.2	Yellowish Red Loamy Sand	Moderate structure Roots present
0.2-0.8	Reddish Yellow Fine Sandy Loam	Strong structure Roots present
0.8-1.35	Yellowish Red Fine Sandy Clay Loam Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
1.5-1.8	Light Reddish Sandy Clay	Moderate structure Roots present
	0-0.2 0.2-0.8 0.8-1.35	0-0.2Yellowish Red Loamy Sand0.2-0.8Reddish Yellow Fine Sandy Loam0.8-1.35Yellowish Red Fine Sandy Clay Loam Some carbonate coarse fragments 20% <10mm

Site 5: 410451 6214865 - Very Gently Inclined Crest

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.35	Reddish Brown Loamy Sand	Moderate structure Roots present
B Horizon	0.35-1.0	Brownish Yellow Sandy Clay Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	1.0-1.8	Reddish Yellow Silty/Sandy Clay Some carbonate coarse fragments 10% <10mm	Massive structure Roots present

Site 6: 410444 6214725 - Very Gently Inclined Footslope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.4	Reddish Brown Sandy Loam	Moderate structure Roots present
B Horizon	0.4-1.0	Brownish Yellow Sandy Clay Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	1.0-1.8	Reddish Yellow Silty Clay Some carbonate coarse fragments 10% <10mm	Massive structure Roots present

Page 28 of 37

Site 7: 411056 6214585 – Very Gently Inclined Crest

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.25	Reddish Brown Fine Sandy Loam	Moderate structure Roots present
B Horizon	0.25-0.9	Reddish Fine Sandy Clay Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	0.9-1.8	Reddish Light Clay Some carbonate coarse fragments 10% <10mm	Strong structure Roots present

Site 8: 410839 6214550 - Very Gently Inclined Mid Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Moderate structure Roots present
B1 Horizon	0.2-0.5	Reddish Brown Sandy Clay Loam	Strong structure Roots present
B2 Horizon	0.5-0.8	Reddish Yellow Fine Sandy Clay Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	0.8-1.8	Greyish Sandy Clay Some carbonate coarse fragments 10% <10mm	Massive structure Roots present

Site 9: 410623 6214400 - Very Gently Inclined Lower Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.3	Reddish Brown Fine Sandy Loam	Moderate structure Roots present
B/C Horizon	0.3-1.8	Reddish Yellow Fine Sandy Loam	Strong structure Roots present

0

Site	10: 41	1052	6214329 -	Verv	Gently	Inclined	Crest

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Moderate structure Roots present
B1 Horizon	0.2-0.55	Yellowish Red Sandy Clay Loam	Strong structure Roots present
B2 Horizon	0.55-1.1	Reddish Yellow Sandy Clay Loam Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	1.1-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 10% <10mm	Massive structure Roots present

Site 11: 410790 6214231 - Very Gently Inclined Mid Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Moderate structure Roots present
B1 Horizon	0.2-0.55	Yellowish Red Sandy Clay Loam	Strong structure Roots present
B2 Horizon	0.5-1.1	Reddish Yellow Sandy Clay Loam Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	1.1-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 10% <10mm	Massive structure Roots present

Site 12: 410712 6214160 - Very Gently Inclined Lower Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.3	Reddish Brown Fine Sandy Loam	Moderate structure Roots present
B/C Horizon	0.3-1.8	Reddish Yellow Fine Sandy Loam	Strong structure Roots present

Page 30 of 37

Site 13: 410949 6214127 – Very Gently Inclined Mid Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Moderate structure Roots present
B1 Horizon	0.2-0.55	Yellowish Red Sandy Clay Loam	Strong structure Roots present
B2 Horizon	0.5-1.1	Reddish Yellow Sandy Clay Loam Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	1.1-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 10% <10mm	Massive structure Roots present

Site 14: 410743 6213986 – Very Gently Inclined Lower Slope

Depth (m)	Soil Type	Properties
18(0)	Radial Brown	106806 6.00
0-0.25	Greyish Brown	Moderate structure
ionte i	Fine Sandy Clay Loam	Roots present
0.25-0.8	Greyish Brown	Strong structure
10113	Fine Sandy Clay Loam	Roots present
0.8-1.8	Greyish	Granular structure
	Silty Loam	Roots present
	0.25-0.8	Fine Sandy Clay Loam0.25-0.8Greyish Brown Fine Sandy Clay Loam0.8-1.8Greyish

Site 15: 411376 6213894 – Very Gently Inclined Mid/Upper Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.3	Reddish Brown Sandy Clay Loam	Granular structure Roots present
B Horizon	0.3-0.55	Reddish Brown Fine Sandy Clay Loam	Strong structure Roots present
C Horizon	0.55-1.8	Reddish Yellow Sandy Clay Some carbonate coarse fragments 20% <20mm	Moderate structure Roots present

Page 31 of 37

Site 16: 411149 6213869 - Very Gently Inclined Crest

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.25	Reddish Brown Sandy Clay Loam	Moderate structure Roots present
B1 Horizon	0.25-0.7	Yellowish Red Sandy Clay Loam	Strong structure Roots present
B2 Horizon	0.7-1.3	Reddish Yellow Fine Sandy Clay Loam Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
C Horizon	1.3-1.8	Yellowish Grey Silty/Sandy Clay	Massive structure Roots present

Site 17: 410889 6213860 - Very Gently Inclined Crest

Depth (m)	Soil Type	Properties
0-0.30	Reddish Brown Sandy Clay	Granular structure Roots present
0.30-0.5	Reddish Brown Fine Sandy Clay Loam	Strong structure Roots present
0.5-0.85	Reddish Yellow Fine Sandy Clay Loam Some carbonate coarse fragments 20% <10mm	Strong structure Roots present
0.85-1.8	Yellowish Grey Sandy Clay Loam	Massive structure Roots present
	0-0.30 0.30-0.5 0.5-0.85	0-0.30Reddish Brown Sandy Clay0.30-0.5Reddish Brown Fine Sandy Clay Loam0.5-0.85Reddish Yellow Fine Sandy Clay Loam Some carbonate coarse fragments 20% <10mm

Site 18: 410707 6213839 - Very Gently Inclined Mid Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.25	Reddish Brown Sandy Clay Loam	Moderate structure Roots present
B Horizon	0.25-0.8	Yellowish Grey Fine Sandy Loam	Strong structure Roots present
C Horizon	0.8-1.8	Reddish Yellow Silty Clay Loam Some carbonate coarse fragments 10% <10mm	Granular structure Roots present

Page 32 of 37

Site 19: 411162 6213189 - Very Gently Inclined Crest

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.4	Reddish Brown Sandy Clay Loam	Granular structure Roots present
B Horizon	0.4-1.0	Reddish Yellow Sandy Clay Some carbonate coarse fragments 20% <20mm	Strong structure Roots present
C Horizon	1.0-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 10% <10mm	Moderate structure Roots present

Site 20: 410991 6213328 - Very Gently Inclined Upper Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.3	Reddish Brown Sandy Loam	Granular structure Roots present
B Horizon	0.3-0.7	Reddish Brown Sandy Clay Loam	Strong structure Roots present
C Horizon	0.7-1.8	Reddish Yellow Silty/Sandy Clay Some carbonate coarse fragments 30% <20mm	Moderate structure Roots present

Site 21: 410787 6213561 - Very Gently Inclined Lower Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.15	Reddish Brown Sandy Clay Loam	Granular structure Roots present
B Horizon	0.15-0.6	Reddish Brown Sandy Clay Loam	Strong structure Roots present
C Horizon	0.6-1.8	Reddish Yellow Sandy Clay Some carbonate coarse fragments 20% <20mm	Moderate structure Roots present

(

Site 22: 411043 6213042 – Very Gently Inclined Crest

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.35	Reddish Brown Sandy Clay Loam	Granular structure Roots present
B Horizon	0.35-1.1	Reddish Yellow Sandy Clay Some carbonate coarse fragments 20% <20mm	Strong structure Roots present
C Horizon	1.1-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 10% <10mm	Moderate structure Roots present

Site 23: 410880 6213026 - Very Gently Inclined Mid Slope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.25	Reddish Brown Fine Sandy Loam	Granular structure Roots present
B Horizon	0.25-0.7	Yellowish Red Sandy Clay Loam	Strong structure Roots present
C Horizon	0.7-1.8	Yellowish Brown Silty/Sandy Clay Some carbonate coarse fragments 20% <20mm	Moderate structure Roots present

Site 24: 410714 6213078 - Very Gently Inclined Footslope

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.3	Reddish Brown Fine Sandy Loam	Granular structure Roots present
B Horizon	0.3-0.7	Yellowish Red Sandy Clay Loam	Strong structure Roots present
C Horizon	0.7-1.8	Yellowish Brown Silty/Sandy Clay Some carbonate coarse fragments 20% <20mm	Granular structure Roots present

Page 34 of 37

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Granular structure Roots present
B Horizon	0.2-0.55	Reddish Brown Sandy Clay Loam	Strong structure Roots present
C Horizon	0.55-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 20% <20mm	Moderate structure Roots present

Site 25: 411062 6212735 - Very Gently Inclined Upper Slope

Site 26: 410980 6212656 - Very Gently Inclined Mid Slope

 \bigcirc

Profile Description	Depth (m)	Soil Type	Properties
TOPSOIL	0-0.2	Reddish Brown Sandy Loam	Granular structure Roots present
B Horizon	0.2-0.65	Reddish Brown Sandy Clay Loam	Strong structure Roots present
C Horizon	0.65-1.8	Yellowish Grey Silty/Sandy Clay Some carbonate coarse fragments 10% <20mm	Moderate structure Roots present

Site 27: 410869 6212583 - Very Gently Inclined Lower Slope

Profile	Depth (m)	Soil Type	Properties
Description			
TOPSOIL	0-0.2	Reddish Brown Fine Sandy Loam	Granular structure Roots present
B Horizon	0.2-0.7	Reddish Brown Fine Sandy Clay Loam	Strong structure Roots present
C Horizon	0.7-1.8	Yellowish Brown Silty/Sandy Clay Some carbonate coarse fragments 20% <20mm	Moderate structure Roots present
Land Capability: 2368 West Road and Lots 102 & 104 Boorga Road, Nericon

WATER AND NUTRENT BALANCE

.Gemilar antolun- Poop prosent		
	Yellewish Groy SilbuSanay Clay Bahie qadhorata zoeras fagmisala 1955 -20mm	

Yellowish Srova Shy/Benty City Soine carbonala coarse Indmants:30% <20mm	

Page 36 of 37

DM McMahon Pty Ltd – January 2015

Ó

0

547:2012 547:2012 4 crop type ² 30 31 32:1 33:5 32:1 33:5 32:1 33:5 32:1 13:5 32:1 13:5 11:2 32:1 32:1 32:1 32:1 13:5 11:2 32:1 32:1 12:9 0 0 0 0 0 0 0 0 0 0 12:9 12:9 12:9 12:9 12:9 0 0 0 0 0 0 12:0 15:15 15:					West Rd & Boorga Road. Nericon NSW 2680	West Rd & Boorga Road. Nericon NSW 2680	oorda	Road.	Nerico	NSN U	V 2680					
Learner Learner <thlearner< th=""></thlearner<>					Acess		Davic	MOME	node							
Image:	A state of the sta				000001		TADA I					2014				
Material Composition Constrained			1							and the						
Ingetion Rate in Application Area in the Application Rate in Application Rate in Application Area in the Applicatin Application Area in the Application Area in the Applicatio	MO			Based on I	maximum pote	ential occu	pancy and	derived fr	rom Table	5.2 AS154	47:2012					
Ited Land Application Area L optimal Image Proprint and Application Area L optimal Proprint and Application Area Proprint Area Proprova	Party	1000		Based on c	conservative :	soil texture	class/perr	neability a	ind derived	I from Tab	Ne M AS15	547:2012				
Control C 0.6-0.8 unities in the initiality infinite Extractor Propriori Propriori <td>nated Land Application Area L</td> <td>257</td> <td>1</td> <td>192</td> <td></td>	nated Land Application Area L	257	1	192												
Runoff Factor RF 1 Unitiese Proportion of rainfall that remains onsite and infittates, allowing for any runoff Runoff Factor RF 1 Unitiese Proportion of rainfall that remains onsite and numer Runoff Pactor Rinter Safeto and numer Boild Sateto and numer Runoff Same Mar M	U			Estimates (evapotranspir	ation as a	fraction of	pan evapo	oration: va	ries with s	eason and	d crop type	N			
Intrinty Pairfail Data Griffith AVIS (075041) Boill Station and number Intrinty PairFail Data Griffith AVIS (075038) Boill Station and number Intrinty PairFail Data Griffith CSIRO (075038) Boill Station and number Parameter Symbol Formula Mar Apr Mar		1 1		Proportion	of rainfall tha	t remains c	insite and	infiltrates.	allowing fe	or any run	off					
Manual carry current care Manual carry current Manu		20	No.	BoM Statio	in and numbe				8							
Parameter Symbol Formula Units Jan Har Apr May Jun		Ne In In She		DOINI STAUC	and numbe											
Dark month D days 31 32 31 31 33 31 33 31 33 31 33 31 33 31 33	Svmbol	ormula	Units	Jan	Feb	Mar	Apr	Mav	Jun	Jul	Aud	Sen	Oct	Nov	Dec	Total
Fainaling Cooperation R Fainaling Cooperation R Fainaling Fainaling Cooperation R Fainaling F	Q		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Evaporation E mimmonity 284/7 224 186 105 62 426 713 102 151 Corp Factor C Difficitie Difficitie 0.80 <td></td> <td>E</td> <td>nm/month</td> <td>33.1</td> <td>30</td> <td>36.6</td> <td>27.8</td> <td>35</td> <td>33.4</td> <td>33.2</td> <td>35.2</td> <td>32.1</td> <td>38.5</td> <td>34.2</td> <td>32.4</td> <td>401.5</td>		E	nm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
UNIT Unit of the constraint of the constrain		E	nm/month	269.7	224	186	105	62	42	49.6	71.3	102	151.9	213	251.1	1727.6
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	CIUP Factor			0.00	0.00	0.0	0.0	0.00	0.00	00.0	0.00	00	0.00	0.80	0.80	
Percelation B DIRCD mmmonth 8.0 8.0 9.0 8.0 9.0 8.0 9.0			nm/month	216	179	130	74	37	25	30	43	71	122	170	201	1297.8
Outputs ET+B mm/month 308 283.2 283.5 130.2 115.2 135.8 161.4 214.5 Statient Ratine Ratin Ratine Ratin Ratine Ratine Ratine Ratine Ratine Ratine Ratine	В		1m/month	93.0	28	93.0	90.06	93.0	90.06	93.0	93.0	90.06	93.0	0.06	93.0	1095.0
State State <th< td=""><td>Outputs</td><td>1</td><td>nm/month</td><td>308.8</td><td>263.2</td><td>223.2</td><td>163.5</td><td>130.2</td><td>115.2</td><td>122.8</td><td>135.8</td><td>161.4</td><td>214.5</td><td>260.4</td><td>293.9</td><td>2392.8</td></th<>	Outputs	1	nm/month	308.8	263.2	223.2	163.5	130.2	115.2	122.8	135.8	161.4	214.5	260.4	293.9	2392.8
Retained Raintall RR RxRF mm/month 33.1 30 36.6 27.8 33.4 33.2 35.2 32.1 38.5 Applie diment W (CaxD)L mm/month 117.5 18.4 117.5 14.4 81.7 84.4 81.6 712.6 91.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0																
Applied Efficient W (QXD)L mm/month 84.4 76.3 84.4 81.7<	RR		nm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Inputs AGE CALATION RK+W mm/month 11/5 106.3 12/10 11/5	8	1	nm/month	84.4	76.3	84.4	81.7	84.4	81.7	84.4	84.4	81.7	84.4	81.7	84.4	994.2
The second for the month of the month o			nm/month	117.5	106.3	121.0	109.5	119.4	115.1	117.6	119.6	113.8	122.9	115.9	116.8	1395.7
Programment S (RF+W)-(ET+B) minimum -10.2 -0.0 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td></t<>														0		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	S		m/month	-191.2	-156.9	-102.2	-54.0	-10.8	-0.0	-5.1	-16.1	47.6	-91.6	-144.5	-177.0	
num Storage for Nominated Area N multicated Area V V Multicated Area V V Multicated Area V V V V V V V V V V V V V V V V V V V	W		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AREA REQUIRED FOR ZERO STORAGE m² 79 84 116 155 257 242 216 162 123 IUM AREA REQUIRED FOR ZERO STORAGE: 257.0 m² m² 79 84 116 155 228 257 242 216 123 IUM AREA REQUIRED FOR ZERO STORAGE: 257.0 m² m² m² m² 128 123 IUM AREA REQUIRED FOR ZERO STORAGE: 257.0 m² m² 166 162 123 XX Please enter data in blue cells xx Red cells are automatically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet		Nivi	E -	0.00	The second se											
IUM AREA REQUIRED FOR ZERO STORAGE: 257.0 m ² Please enter data in blue cells XX Pata in yellow cells is calculated by the spreadsheet	D AREA REQUIRED FOR ZERO STOR	AGE	т ²	79	84	116	155	228	757	CVC	216	16.7	123	8	83	
IUM AREA REQUIRED FOR ZERO				2	5	2	3	3	3	747	710	70	23	8	3	
XX	MUM AREA REQUIRED FOR ZERO ST	ORAGE:		257.0	m²											
		12 20 20	Chester 1	1.4280	1000 ×			22.030		10033		28.45	0110			
		tse enter dat cells are au t in yellow ce	ta in blue tomaticall ells is calc	cells ly populate ulated by t	ed by the spre the spreadshe	adsheet set, DO NC	T ALTER	THESE C	ELLS							
NOTEG																

Image: constraint of the second of the se	2,0 low Ω cation Area L cation Area L			-Harden and	West Rd & Boorga Road, Nericon NSW 2680	d & Bo	orga F	Road, I	Verico	n NSM	1 2680					
Image: constraint of the constr	low Q Internation Area L C C	5			Assesso		David	McMa	hon							
Q 700 Uday Based on maximum potential occupancy and derived from Table AS1547.2012 B C 0.6.0.8 unities Estimates evaporation; value derived from Table AS1547.2012 B Extinates Estimates Estimates Estimates Estimates evaporation; valies with season and crop type ² Dist T T T T T T T Dist Estimates Estimates Estimates Standand number Standand number Standand T	low Q cation Area L C RF								and the second						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
DIR 3.5 mm/day mm/s Based on conservative soil texture class/permeability and derived from Table MA51547.2012 a L 2.77 mm/s Exit mater Self on conservative soil texture class/permeability and derived from Table MA51547.2012 R C 0.03 unifies Self mater Self mater MA51547.2012 R Failure and mater Self mater Self mater MM Station and number MM station and number Amound For mater MM Station and number MM station and number MM station and number MM station and number Propertion For mater MM station and number MM station and number MM station and number MM station and number Propertion For mater MM station and number MM station and number MM station and number MM station and number Propertion For mater MM station and number MM station and number MM station and number Propertion For mater MM station and number MM station and number MM station and number Propertion For mater MM statin statin andintrates, allowing tor any number <th< th=""><th>ication Area L C</th><th>200</th><th></th><th>Based on n</th><th>naximum pote</th><th>ntial occup</th><th>ancy and</th><th>derived fro</th><th>m Table 5</th><th>5.2 AS154</th><th>7:2012</th><th></th><th></th><th></th><th></th><th></th></th<>	ication Area L C	200		Based on n	naximum pote	ntial occup	ancy and	derived fro	m Table 5	5.2 AS154	7:2012					
a L 217 m ² 1 a L 217 m ² 1 F 0.6-0.3 Unitess Exponention fraintal that transmis onsite and infit tasks, allowing for any runoff Dist Crinth ANS (075041) Boil Station and number Dist Crinth ANS (075041) Boil Station and number Dist Crinth ANS (075041) Boil Station and number Amount of the station and number Station and number Amount of number Amount of number Amount of number Station and number Station and number Station and number Station and number Amount of number Amoun	ication Area L C	THE AL	mm/day	Based on c	conservative su	oil texture	class/perm	neability an	nd derived	from Tab	le M AS15	47:2012				
C 0.6-0.8 unitiese infiniti-MNS (075-041) Estimates evaportation as a fraction of paralities value with season and crop type ² Data Criffiniti-MNS (075-041) Box (Stition and number provide and number Annotation of antimating that remains onsite and infinities, allowing for any runoff Data Criffiniti-MNS (075-041) Box (Stition and number Annotation and number Data Criffiniti-MNS (075-041) Box (Stition and number Annotation and number Data Criffiniti-MNS (075-041) Box (Stition and number Annotation and number Annotation and number Display Immontine and size Stite Annotation and number Annotation and annotani and annotation and annotation	C	217														
RF 1 unidees unidees Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff Part I unidees Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff Part Formula Dim Unit And Set and runder Part Formula Dim Unit And Set and runder	RF			Estimates e	evapotranspire	tion as a f	raction of p	pan evapo	ration; var	ies with se	eason and	I crop type	2			
		1		Proportion	of rainfall that	remains o	nsite and i	nfiltrates, a	allowing fo	r any rund	off					
Matrix Stant of the control Matrix		Sriffith AWS (0	NUT THE	BoM Statio	in and number											
Symbol Formula Units Jan Feb Mar Apr May Jun Mug Sep Oct R R minimonity 31 28 31 28 31 30 31				BOIN STATIO	n and number											
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
R minimum 33.1 20 36.6 27.8 32.4 33.2 33.3 33.4 33.1 20.0 0.00 0.70 0.20 0.70 0.20 0.70 0.20 0.20 0.70 0.20 0			days	31	28	31	30	31	30	31	31	30	31	30	31	365
E minimize Cash <			mm/month	33.1	8	36.6	27.8	នេខ	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Eff Exc mmmonth 216 173 130 74 37 25 30 43 71 122 R ET+8D mmmonth 248 736 1457 1050 1685 1513 1513 1513 1513 1513 1513 1513 1513 1505 2005 R R RxRF mmmonth 331 30 36.6 27.8 35 33.2 35.2 32.7 35.5 32.7 35.5 33.5 35.5 30.5 30.5 30.5 33.5 33.2 35.5 33.7 30.5 33.5 33.2 35.5 33.7 33.5 30.5 33.5 </td <td></td> <td></td> <td>mm/month</td> <td>0.80</td> <td>0.80</td> <td>0 20</td> <td>02.0</td> <td>0.60</td> <td>44</td> <td>0.60</td> <td>0.60</td> <td>0.70</td> <td>0.80</td> <td>0.80</td> <td>0.80</td> <td>0.1711</td>			mm/month	0.80	0.80	0 20	02.0	0.60	44	0.60	0.60	0.70	0.80	0.80	0.80	0.1711
FI EC minimonth 216 173 130 74 37 25 30 43 71 122 R FT+ minimonth 2085 1085				2010	2010								110		0.0	
B DIRc0 mmmonth 108.5 38 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 108.5 105.0 38.5 157.3 176.4 230.0 M M Mmmonth 130.1 120.3 136.6 174.6 130.2 138.5 163.0 169.0 96.8 100.0 97.8	vapotranspiration	EXC	mm/month	216	179	130	74	37	25	30	43	11	122	170	201	1297.8
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		DIRXD	mm/month	108.5	88	108.5	105.0	108.5	105.0	108.5	108.5	105.0	108.5	105.0	108.5	1277.5
RR RxRF minimonth 33.1 30 35.6 27.8 35.4 33.2 35.2 32.1 38.5 W QxONL minimonth 100.0 90.3 100.0 96.8 100.0 56.8 100.0 56.8 100.0 56.8 100.0 56.8 100.0 56.8 100.0 56.1 135.2 23.1 38.5 Inh RR+WO-(ET+B) minimonth 100.0 0.0 0.0 0.0 0.0 0.0 57.1 135.2 136.5 91.5 ea N Nixi L 0 0.0		ET+B	mm/month	324.3	277.2	238.7	178.5	145.7	130.2	138.3	151.3	176.4	230.0	275.4	309.4	2575.3
RR RxHF mm/month 33.1 30 36.6 27.8 35.2 35.2 35.2 35.2 35.2 35.1 38.6 1000 58.8 1000 59.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 50.8 1000 100	INPUTS															
W (02d)/L mm/month 100.0 90.3 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.8 100.0 96.9 100.0 96.9 100.0 96.8 100.0 96.9 100.0 96.8 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 96.9 100.0 100.0 100.0		RXRF	mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Image: Network in the second state T33.1 T30.3 T35.1 T30.3 T35.2 T35.2 T35.2 T35.3 T35.3 <tht35.3< th=""> T35.3 T35.3</tht35.3<>		T/(GXD)	mm/month	100.0	90.3	100.0	96.8	100.0	96.8	100.0	100.0	96.8	100.0	96.8	100.0	1177.4
mth mt/month 0.0 0.	Inputs	RR+W	mm/month	133.1	120.3	136.6	124.6	135.0	130.2	133.2	135.2	128.9	C.851	131.0	132.4	6.87CI
a remaining from previous month 0.0 0	STORAGE CALCULATION								South Press	Service and	starts lines	NON TON				
Storage for homized Area Image for the month S RR+Wy-LET+B) mm 0.0 -131.2 -155.9 -102.1 -35.3 -10.1				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cumulative screage um Storage for Nominated Area M <		(RR+W)-(E1+B)		2.191-2	-156.9	1.201-	50.0	1.01-			1.01-	0.14	0.10-	4.44.4	0.00	
AREA REQUIRED FOR ZERO STORAGE m ² 75 79 107 139 196 217 207 187 146 113 IUM AREA REQUIRED FOR ZERO STORAGE: 217.0 m ² ILM AREA REQUIRED FOR ZERO STORAGE: 217.0 m ² Red cells are automatically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet				0.00	0.0	0.0	0.0	2	0.0	0.0	0.0	0.0	0	5	0	
AREA REQUIRED FOR ZERO STORAGE m² 75 79 107 139 207 187 146 113 IUM AREA REQUIRED FOR ZERO STORAGE: 217.0 m² INM AREA REQUIRED FOR ZERO STORAGE: <td></td> <td>NXL</td> <td>HE STATE</td> <td>0</td> <td></td> <td>and the second</td> <td>the state of the s</td>		NXL	HE STATE	0											and the second	the state of the s
IUM AREA REQUIRED FOR ZERO	LAND AREA REQUIRED FOR ZERO S	STORAGE	m²	75	62	107	139	196	217	207	187	146	113	87	78	North Contraction
XX	MINIMUM AREA REQUIRED FOR ZER	RO STORAGE		217.0	m²											
××	CELLS	Please enter (data in blue	cells		in the second		No.				itel.	10			
11.0 MIC	××	Red cells are Data in yellow	automatical v cells is cal	Ily populate culated by 1	ed by the sprea the spreadshe	adsheet et, DO NC	T ALTER	THESE CI	STIE							
	NOTES	1981				;										

(

 \bigcirc

0

Date: 2.015 Assessor: David McMathon Neur DrAt	2,015 Assessor: David McMahon a Dr 10	2,015 Assessor: David McMahon a 1 0 700 104 98ed on maximum protential occupancy and derived from Table 5.2 AS1547.2012 a 1 0 700 104 98ed on maximum protential occupancy and derived from Table 5.2 AS1547.2012 a 1 0 0.01 0.01 0.01 0.01 0.01 0.01 a 1 0 0.01 0.01 0.01 0.01 0.01 0.01 2016 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 2016 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 2016 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 2017 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 2016 0.01	DATA					West	West Rd & Boorga Road. Nericon NSW 2680	oorda	Road. I	Nerico	n NSW	/ 2680					
O Too Uar Saeed on maximum potential occupancy and derived from Table 5.2 AS1547-2012 D C O Too Umage Based on conservative soil texture dasspermeability and derived from Table 5.2 AS1547-2012 D C O.0.3 uniferes Estimates evaportancy institue and inflated, allowing for any tunoff D C O.0-3 uniferes Estimates evaportancy institue and inflated, allowing for any tunoff Dime Second and tunner Second and tunner Second and tunner Second and tunner Dime C O.0-3 uniferes Second and tunner Second and tunner Dime Filt Minimum Site on and tunner Site on and tunner Site on and tunner Site on and tunner Dime Filt Minimum Site on and tunner Site on and tunner Site on and tunner Site on and tunner Dime Filt Minimum Site on and tunner Site on and tunner Site on and tunner Site on and tunner Site on and tunner Site on and tunner Site on and tunner Site on and tunner Site on and tunner Si	Image: constraint operative soil returners Image: constraint operative soil returner derived from Table 52 AS147/2012 Image: constraint operative soil returner and mundless Besed on conservative soil returner derived from Table 52 AS147/2012 Image: constraint operative soil returner and mundless End of the transmission of carried montenant primer and mundless End of the transmission of carried montenant constraints and mundles Image: constraint operative soil returner and mundless End of the transmission of carried montenant constraints and mundles End of the transmission of carried montenant constraints and mundles Image: constraint operative constraints End of the transmission of carried montenant constraints Annotation constraint constraints Annotation constraint constraints Annotation constraint constraint constraint constraints Image: constraint constra	Image: Constraint of the section on conservative soil texture desispermeability and derived from Table 52 AS1547/2012 Image: Constraint of the section on conservative soil texture desispermeability and derived from Table 52 AS1547/2012 Image: Constraint of the section on conservative soil texture desispermeability and derived from Table 52 AS1547/2012 Image: Constraint of the section of the vegotration; relating the section of the vegotration; rating with season and crop type ¹ Image: Constraint of the section of the vegotration; relating the relation and number Open intervention Open intervention Open intervention Open intervention Open intervention Prime Open intervention Open	DATA	015				Assess	or:	Davic	McMa	nohe							
Image: Display of the product of the produc	Image: Display of the product of product of the product of	Image: Display of the partial company and derived from Table 5.2 AST647:2012 Image: Display of the partial company and derived from Table 5.2 AST647:2012 Image: Display of the partial partial company and derived from Table 5.2 AST647:2012 Image: Display of the partial partial partial company and derived from Table 5.2 AST647:2012 Image: Display of the partial partin partial partial partial partial partial partial partial parti	INPUT DATA													0			
Q Tool Uday Based on maximum potential occupancy and derived from Table 5.2 AS1547.2012 a L rs8 m² m² <thm²< th=""> <thm²< th=""> m² <t< td=""><td>□ □ TOD Udd <thudd< th=""> <thudd< th=""> <thudd< th=""></thudd<></thudd<></thudd<></td><td>Image: Difference of the second conservative soil lexiture desired from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. Extendes expendence of the exportation; varies with season and crop type² Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. Extendes expendence of the exponence of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51247-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51247-2012 Image: Difference of the second conservative desiremenability and derived from Table 5. 2A51247-2012 Image: Difference of the second conservative soil lexiture desiremenation conservative soil lexiture desiremenation conservative soil lexiture desiremenation conservative soil lexiture desiremenation conservative social conservative social conservative social conservative social conservative social conservatintexecond conservative social conservatintervative co</td><td></td><td></td><td></td><td></td><td></td><td></td><td>and the second se</td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<></thm²<></thm²<>	□ □ TOD Udd Udd <thudd< th=""> <thudd< th=""> <thudd< th=""></thudd<></thudd<></thudd<>	Image: Difference of the second conservative soil lexiture desired from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. Extendes expendence of the exportation; varies with season and crop type ² Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. Extendes expendence of the exponence of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51547-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51247-2012 Image: Difference of the second conservative soil lexiture desiremenability and derived from Table 5. 2A51247-2012 Image: Difference of the second conservative desiremenability and derived from Table 5. 2A51247-2012 Image: Difference of the second conservative soil lexiture desiremenation conservative soil lexiture desiremenation conservative soil lexiture desiremenation conservative soil lexiture desiremenation conservative social conservative social conservative social conservative social conservative social conservatintexecond conservative social conservatintervative co							and the second se			-							
DIR 4.0 mmday logs Based on conservative soil texture dass/permeability and derived from Table M AS1547:2012 a L 0.00 mmday logs Estimates evaportany prior any runoif R N Miles Estimates evaportany prior any runoif MAS Estimates evaportany prior any runoif Dir R Miles Estimates evaportany prior and runois Said	DIR 4.0 Imidas Bis 1 a C 05.03 Imidas Estimates exportanspiration as a fraction of pan exponding, varies with season and crop type ² i C 05.03 Imidas Estimates exportanspiration as a fraction of pan exponding, varies with season and crop type ² imiter AVN 50756411 ENM Station and number ENM Station and number Env Imiter AVN 50756411	In 4.0 minder 18 Based on conservative soil texture dass/permeability and derived from Table MAS1547.2012 In L 0.08 minder 18 Expension and munder Stimine Stimine Stimates experiencipination as a fraction of pan eveporation; varies with season and cop type ² End interval difficult SIND(075028) DoM Station and number Stimates experiencipination as a fraction of pan eveporation; varies with season and corp type ² Stimation End interval difficult SIND(075028) DoM Station and number Stimates eveptorarispination and number Stimation Units Low Units Stimates is a fraction of pan eveptoration; varies with season and corp type ² Stimation Formula Units Stimation and number Stimation and number Stimation and number Stimation and number Stimation Formula Units Stimation and number Stimation and number Stimation and number Stimation and number Stimation Formula Units Stimation and number Stimation and number Stimation and number Stimation Stimation Stimation and number Stimation and number Stimation and number Stimation Stimation anumere	Design Wastewater Flow	a	700	L/day	Based on r	naximum pot	ential occul	pancy and	derived fro	om Table	5.2 AS154	7:2012					
I I ross of 0.0.0 m ² imites 1 imites Figure second fractional that remains on the arction of random for any runoff. P I unitess Estimates Estimates Estimates Estimates Estimates Estimates Estimates Estimates Estimates Imites Im	I I	a L misson min 1 a L misson min 1 FF O.0.0.0 miles Performants Perfor Performants Perform	Design Irrigation Rate	DIR	4.0	mm/day	Based on c	onservative	soil texture	class/pern	neability ar	nd derived	I from Tab	le M AS15	47:2012				
C 0.6-0.8 unitless Estimates eveportanspiration as a fraction of pan eveporation; varies with season and cop bype ² RF 1 unitless Estimates eveportanspiration as a fraction of pan eveporation; varies with season and cop bype ² Data Frequencial of initiations, correctly of and number Apr	C C O6.05.03 bit miles Unities Exacision of pan evaporation: varies with season and cop bype ² R I <thi< th=""> I</thi<>	C 0.0.0.0 0.011605 Circlines Circline conjortion Circline	Nominated Land Application Area	L	188	m ²							1						
FF I uniferes Proprior of rainfall that remains onsite and inflictates, allowing for any runof Jate Cirrint ANX (075041) Bolk Station and number Jate Cirrint ANX (075041) Bolk Station and number Amount Formula June Amount	RF I I unifies Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff Data Griffm AVKS (77504.1) Box Station and number Amounts Amounts <td>RF I United Control Currents Proprior Currents Proprior Currents Proprior Currents Proprior Currents Proprior Currents Proprior Current AVIS Clot Distance Proprior Current AVIS Curren</td> <td>Crop Factor</td> <td>υ</td> <td>0.6-0.8</td> <td>unitless</td> <td>Estimates e</td> <td>evapotranspi</td> <td>ration as a</td> <td>fraction of</td> <td>pan evapo</td> <td>pration; va</td> <td>ries with s</td> <td>eason and</td> <td>I crop type</td> <td>2</td> <td></td> <td></td> <td></td>	RF I United Control Currents Proprior Currents Proprior Currents Proprior Currents Proprior Currents Proprior Currents Proprior Current AVIS Clot Distance Proprior Current AVIS Curren	Crop Factor	υ	0.6-0.8	unitless	Estimates e	evapotranspi	ration as a	fraction of	pan evapo	pration; va	ries with s	eason and	I crop type	2			
Image: Control in the contr	Image: Carrier AVIS (07:50:41) Boild Station and number Data Carrier AVIS (07:50:41) Boild Station and number Part Minter Avis (07:50:41) Boild Station and number Part Apr Part	Image: Control of Contreconted Contreconted Control of Control of Control of Control o	Rainfall Runoff Factor	RF	1	unitless	Proportion	of rainfall the	it remains o	nsite and i	infiltrates,	allowing fo	or any run	off					
Data Griffith CSIRO (075029) BoM Station and number Data Criffith CSIRO (075029) BoM Station and number Symbol Famula Units Jan Feb May Jun Jun Jun Jun Sep Oct Nov Dec Symbol Famula Units Jan Feb Mar Jun Jun Jun Jun Jun Jun Sep S	Data Griffith CSIRO (075020) Box Nation and number Symbol Formula Units Jan For May Jun Mup For Nov Dec R R mmonth 31 28 31 28 31 32 3	Data Griffith CSIRO (075029) Box Nation and number Data Final Formula Units An Final Mark	Mean Monthly Rainfall Data	Griff	ith AWS (075	041)	BoM Statio	n and numbe	L.				1						
Symbol Femulta Units Jan Feb Mar Apr May Jun Unit Aug Sep Oct Nvv Dec R R mm/monti 331 <t< th=""><th>Symbol Famulta Units Jan Fab Mar Apr May Jun Jul Aug Sep Oct Nov Dec R minimonth 281 28 31 28 31 30 31 31 30 31 31 30 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31</th><th>Symbol Famulta Units Jan Fab May Jun Jul May Sep Oct Nov Dec Nov <t< th=""><th>Mean Monthly Pan Evaporation Data</th><th>Griffi</th><th>th CSIRO (07</th><th>5028)</th><th>BoM Statio</th><th>n and numbe</th><th>J.</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<></th></t<>	Symbol Famulta Units Jan Fab Mar Apr May Jun Jul Aug Sep Oct Nov Dec R minimonth 281 28 31 28 31 30 31 31 30 31 31 30 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31	Symbol Famulta Units Jan Fab May Jun Jul May Sep Oct Nov Dec Nov <t< th=""><th>Mean Monthly Pan Evaporation Data</th><th>Griffi</th><th>th CSIRO (07</th><th>5028)</th><th>BoM Statio</th><th>n and numbe</th><th>J.</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	Mean Monthly Pan Evaporation Data	Griffi	th CSIRO (07	5028)	BoM Statio	n and numbe	J.										
D days minimum 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 31 30 31	D days 31 33 31	D memory F Sol Tope Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol Sol		Symbol	Formula	Units	Jan	Feb	Mar	Apr	Mav	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
R minimun 331 30 365 27 32 <	R mmmonial 33,1 30 66.6 27.8 55 32,4 33,2 35,3 43,3 32	R minimont 33.1 30.1 <t< td=""><td></td><td>D</td><td></td><td>days</td><td>31</td><td>28</td><td>31</td><td>30</td><td>31</td><td>30</td><td>31</td><td>31</td><td>30</td><td>31</td><td>30</td><td>31</td><td>365</td></t<>		D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
E memorini 2837 224 195 0 20 050 <td>E millionith 2637 224 165 0.00 <t< td=""><td>E mmmonth 2837 224 185 105 62 436 713 113 213 231<!--</td--><td>Rainfall</td><td>R</td><td></td><td>mm/month</td><td>33.1</td><td>30</td><td>36.6</td><td>27.8</td><td>35</td><td>33.4</td><td>33.2</td><td>35.2</td><td>32.1</td><td>38.5</td><td>34.2</td><td>32.4</td><td>401.5</td></td></t<></td>	E millionith 2637 224 165 0.00 <t< td=""><td>E mmmonth 2837 224 185 105 62 436 713 113 213 231<!--</td--><td>Rainfall</td><td>R</td><td></td><td>mm/month</td><td>33.1</td><td>30</td><td>36.6</td><td>27.8</td><td>35</td><td>33.4</td><td>33.2</td><td>35.2</td><td>32.1</td><td>38.5</td><td>34.2</td><td>32.4</td><td>401.5</td></td></t<>	E mmmonth 2837 224 185 105 62 436 713 113 213 231 </td <td>Rainfall</td> <td>R</td> <td></td> <td>mm/month</td> <td>33.1</td> <td>30</td> <td>36.6</td> <td>27.8</td> <td>35</td> <td>33.4</td> <td>33.2</td> <td>35.2</td> <td>32.1</td> <td>38.5</td> <td>34.2</td> <td>32.4</td> <td>401.5</td>	Rainfall	R		mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
C unless 0.80 0.70 0.70 0.60 0.70 0.84 71 122 170 231 234	C uniters 0.80 0.71 0.71 0.71 0.71 0.71 0.71 0.71 0.71 0.71 0.71 <t< td=""><td>C unless Cold <th< td=""><td>Evaporation</td><td>ш</td><td></td><td>mm/month</td><td>269.7</td><td>224</td><td>186</td><td>105</td><td>62</td><td>42</td><td>49.6</td><td>71.3</td><td>102</td><td>151.9</td><td>213</td><td>251.1</td><td>1727.6</td></th<></td></t<>	C unless Cold Cold <th< td=""><td>Evaporation</td><td>ш</td><td></td><td>mm/month</td><td>269.7</td><td>224</td><td>186</td><td>105</td><td>62</td><td>42</td><td>49.6</td><td>71.3</td><td>102</td><td>151.9</td><td>213</td><td>251.1</td><td>1727.6</td></th<>	Evaporation	ш		mm/month	269.7	224	186	105	62	42	49.6	71.3	102	151.9	213	251.1	1727.6
FI Exc mmmonth 216 173 120 171 122 170 240<	FT Exc mmmonth 216 173 130 141 37 25 30 43 71 122 70 2010 240	ET EX mmmonity mmmonity 216 173 130 74 37 25 300 430 132 170 130 1340		υ		unitless	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
ET EX. mmmonth 216 173 130 74 37 25 30 43 77 720 201 RR RKF mm/month 216 173 145 142 124 120 240 240 245 264 249 240 245 240 240 245 264 249 245 240 240 245 264 249 245 264 249 245 264 249 246 246 249 246 240 240 246 246 249 246 246 240 246 246 246 246 246 246 246 246 246 246 246 246 246 246 247 147 115,4 111,7 115,4 111,7 115,4 111,7 115,4 111,7 115,4 111,7 115,4 111,7 115,4 111,7 115,4 111,7 115,4 111,7 115,4	Ef Ex.C mmmonin 216 173 130 740 27	EI Exc. mmmonth 216 173 730 73 230 445 710 720 730<	ouiruis	1		(Scatter)			124	i							-		
B Uncol mmmonin 124.0 1	B Unkon Table infimition Table infinition Table infinin Table infinin Table infiniti	B Unext Tree Immontant 73.40 Free 71.2 radius 7.4.0 radius 7.4.1.7 radius 7.4.1.7 radius <th7.4.1.7< td=""><td>Evapotranspiration</td><td><u>ل</u></td><td>CX L</td><td>mm/month</td><td>216</td><td>179</td><td>130</td><td>74</td><td>37</td><td>25</td><td>30</td><td>43</td><td>17</td><td>122</td><td>170</td><td>201</td><td>1297.8</td></th7.4.1.7<>	Evapotranspiration	<u>ل</u>	CX L	mm/month	216	179	130	74	37	25	30	43	17	122	170	201	1297.8
RR RxF mm/month 33.1 30 36.6 27.8 35 33.2 35.2 32.1 38.5 34.2 22.4 N (0x0)/L mm/month 115.4 104.3 115.4 111.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.2 16.0 0.0 0.0 0.0 0.0 0.0 0.0 <td>RR RxF RxF mm/mmm 33.1 30 36.6 27.8 35. 33.2 35.2 32.1 35.6 34.2 32.4 W (2x00)/L mm/month 115.4 111.7 115.4 111.7 115.4 111.7 115.4 111.7 115.4 111.7 115.4 mh S (Rx+W)-(ET+B) mm/month 115.5 139.5 150.4 111.7 155.4 111.7 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 117.5 115.4 117.5 115.6 114.5 117.1 115.4 117.1 115.4 117.5 117.5 116.5 116.5 117.5 117.5 116.5 116.5 116.5 117.5 117.5 117.5 116.5 114.5 114.5 <</td> <td>File Risk Rest mmmonth 33.1 30 36.6 27.8 35 33.4 33.2 35.2 32.1 31.5 41.1 41.5 41.5 41.1 41.5 <th< td=""><td>Cuthurts</td><td>a</td><td>UIKXU FT+R</td><td>mm/month</td><td>339.8</td><td>2112</td><td>724.0</td><td>193.5</td><td>161.0</td><td>145.2</td><td>153.8</td><td>166.8</td><td>191.4</td><td>745.5</td><td>290.4</td><td>324.9</td><td>2757.8</td></th<></td>	RR RxF RxF mm/mmm 33.1 30 36.6 27.8 35. 33.2 35.2 32.1 35.6 34.2 32.4 W (2x00)/L mm/month 115.4 111.7 115.4 111.7 115.4 111.7 115.4 111.7 115.4 111.7 115.4 mh S (Rx+W)-(ET+B) mm/month 115.5 139.5 150.4 111.7 155.4 111.7 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 115.4 117.5 117.5 115.4 117.5 115.6 114.5 117.1 115.4 117.1 115.4 117.5 117.5 116.5 116.5 117.5 117.5 116.5 116.5 116.5 117.5 117.5 117.5 116.5 114.5 114.5 <	File Risk Rest mmmonth 33.1 30 36.6 27.8 35 33.4 33.2 35.2 32.1 31.5 41.1 41.5 41.5 41.1 41.5 <th< td=""><td>Cuthurts</td><td>a</td><td>UIKXU FT+R</td><td>mm/month</td><td>339.8</td><td>2112</td><td>724.0</td><td>193.5</td><td>161.0</td><td>145.2</td><td>153.8</td><td>166.8</td><td>191.4</td><td>745.5</td><td>290.4</td><td>324.9</td><td>2757.8</td></th<>	Cuthurts	a	UIKXU FT+R	mm/month	339.8	2112	724.0	193.5	161.0	145.2	153.8	166.8	191.4	745.5	290.4	324.9	2757.8
RR RxRF mm/month 33.1 30 36.6 27.8 35. 33.2 35.2 32.1 38.5 34.2 32.4 W (0x0)L mm/month 115.4 111.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 115.4 117.7 116.7	RR RxRF mmmonth 33.1 30 36.6 27.8 35 33.4 31.2 35.2 32.1 38.5 34.2 32.4 W (Q00)L mm/month 115.4 104.3 115.4 111.7 <	RR Roter minimonth 33.1 30 36.6 27.8 33.2 35.2 35.1 36.5 34.2 35.4 35.3 35.2 35.1 35.5 34.2 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 35.4 35.3 37.1 37.3 air N N N 7 7 7 7 7 7 7 7 7 7 7 7 7<	10				0.000	71 67	71-1-7	0.001	7101	7.011	0.001	0.001	110	0.01-7	1.007	0.1.20	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		aa	RXRF	mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	W Weaking Without 14.5 13.3 15.0 14.5	w Weak Minimum 1455 134.3 150.4 145.1 148.6 150.6 143.8 153.9 143.9 177.1 ea N NML m 0.0	Andiod Efflicant	INI		mm/month	115.4	104 3	115.4	1117	115.4	111 7	115.4	115.4	1117	115.4	1117	115.4	1359 0
Inth S (RR+W)-(ET+B) mn/month 191.2 -156.3 -102 54.0 0.	Inth RR+W0-(ET+B) mm/month 1912 -102 54.0 0.	Inth RR+W0-(ET+E) mm/month 112 -165.9 -102.2 54.0 -10.8 0.1 -5.1 -16.2 -77.6 -81.6 -144.5 -177.1 ea N NML 1 20.0 <	Applied Enderit	*	RR+W	mm/month	148.5	134.3	152.0	139.5	150.4	145.1	148.6	150.6	143.8	153.9	145.9	147.8	1760.5
Permaining from previous month 0.0	e remaining from previous month 0.0	0.0 -91.6 -144.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	STORAGE CALCULATION	12		State 1	小学問任に	a the contexts	04.5 10 1 S 10	(Solicitor)	St. E. St. C. AN	Sec. Sec. Sec.	というの	Area to	AL OF DE	12			
Storage for the month S (RR+W)-(ET+B) mm/month 191.2 -185.9 -102.2 -54.0 -10.1 -5.1 -16.2 -77.6 -91.6 -144.5 Cumulative Storage N m 0.0	Storage for the month S (RR+W)-(ET+B) m/month -191.2 -181.2 -182.9 -47.6 -91.6 -144.5 cumulative storage N M mm 0.0 0.	-41.5 0.0 1.05 82 82	Storage remaining from previous month			10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cumulative Storage M Mm 0.0	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	00 105 82	Storage for the month	S	(RR+W)-(ET+B)		-191.2	-156.9	-102.2	-54.0	-10.8	-0.1	-5.1	-16.2	-47.6	-91.6	-144.5	-177.1	
AREA REQUIRED FOR ZERO STORAGE m ² 71 75 100 127 172 188 180 165 132 105 82 UM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² IUM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² Red cells are automatically populated by the spreadsheet XXX Data in yellow cells is calculated by the spreadsheet DO NOT ALTER THESE CELLS	AREA REQUIRED FOR ZERO STORAGE m² r1 r5 100 127 172 188 180 165 132 105 82 UM AREA REQUIRED FOR ZERO STORAGE: 188.0 m² r1 r5 r00 127 r12 r88 r80 r65 r32 r05 82 UM AREA REQUIRED FOR ZERO STORAGE: 188.0 m² r1 r5 r00 127 r12 r88 r80 r65 r82 r82 UM AREA REQUIRED FOR ZERO STORAGE: 188.0 m² r83 r80 r80 r65 r82 r82 <thr8< td=""><td>105 82</td><td>Cumulative Storage Maximum Storage for Nominated Area</td><td>ΣZ</td><td></td><td></td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td>0.0</td><td></td></thr8<>	105 82	Cumulative Storage Maximum Storage for Nominated Area	ΣZ			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AREA REQUIRED FOR ZERO STORAGE m ² 71 75 100 127 172 188 180 165 82 IUM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² 188.0 m ² 100 127 172 189 165 125 105 82 IUM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² 188.0 m ² 188.0 m ² 188.0 165 82 82 IVM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² 188.0 m ² 188.0 165 165 82 IVM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² 188.0 188.0 165 165 82 IVM AREA REQUIRED FOR ZERO STORAGE! 188.0 m ² 188.0 188.0 188.0 188.0 188.0 188.0 188.0 189.0 188.0 185	AREA REQUIRED FOR ZERO STORAGE m² 71 75 100 127 172 180 165 132 105 82 UM AREA REQUIRED FOR ZERO STORAGE: 188.0 m² 188.0 m² 1 100 127 172 185 105 82 UM AREA REQUIRED FOR ZERO STORAGE: 188.0 m² m² 1	105 82		: >	NxL	L	0						and the second		a sub-transferration	and the second		and the second second	- colores
UM AREA REQUIRED FOR ZERO	UM AREA REQUIRED FOR ZERO	MINIMUM AREA REQUIRED FOR ZERO STORAGE: 188.0 m ² CELLS CELLS The control of the Area of the Arithmetically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet NOTES The control to the Arithmetic for an antication area required hased on the most limition nutrient halance or minimum area required for zero storade	LAND AREA REQUIRED FOR ZE	ERO ST	ORAGE	m²	71	75	100	127	172	188	180	165	132	105	82	74	and the
XX	XX	CELLS CELLS Please enter data in blue cells X Red cells are automatically populated by the spreadsheet X Data in yellow cells is calculated by the spreadsheet, NOT ALTER THESE CELLS Intervented to the following red antication area required hased on the most limiting number balance or minimum area required for zero storage	MINIMUM AREA REQUIRED FOR	R ZERO	STORAGE		188.0	m²											
		NOTES 1 This volue should be the following land application area required based on the most limiting nutrient balance or minimum area required for zero storage	CELLS	XX	Please enter Red cells are Data in vellov	data in blue automatica v cells is cal	t cells thy populate toulated by t	d by the spre the spreadsh	adsheet eet DO NC	DT ALTER	THESE C	ELLS							

Date: 2,015 Assessor: David McMahon INPUT DATA Assessor: David McMahon INPUT DATA Assessor: David McMahon Report Design Imgetomet Flow Q 700 Maximum potential occupancy and derived from Table AAS1547:2012 Design Imgetomet Land Application. Area L Area Monimised Land Application Area L Area Nonimised Land Application. Area L Area Monimised Land Application Area L Area Nonimised Land Application. Area L Area Monitorial Area Monitorial Area Monitorial Area Nonimised Land Application Area L Area Monitorial Area Monitorial Area Monitorial Area Nonimised Land Application Area L Area Monitorial Area Monitorial Area Monitorial Area Nonimised Land Application Area Exploration Area Box Station and number Monitorial Area Monitorial Area Mean Monthy Rainelli Data Emmeting area Area Maxima Area Marea Area Marea Mean Monthy Rainelli Data Emmeting area Area Marea Marea Marea Marea Mean Monthy Rainelli Data Emmeting area Area Marea Marea Marea Marea	Site Address:				West	West Rd & Boorga Road, Nericon NSW 2680	oorga	Road,	Nerico	. Nericon NSW 2680	V 2680					
Q 700 L/day a L 149 m² a L 149 m² E 0.6-0.8 unitiess RF 1 unitiess Criffth AWS (07503) 045041) Data Criffth AWS (075028) Symbol Formula Units Symbol Formula Units Symbol Formula Units Criffth AWS (075028) days B DRxD mm/month R RxRF mm/month N (2x00)/L mm/month Mh RR+W-(ET+B) mm/month Ma NxL mm/month Ma NxL mm Ma NxL mm M NxL mm OR ZERO STORAGE m M Red cells are automatica					Assess	or:	David	d McMa	ahon							0
Q 700 L/day a L 149 m² a C 0.6-0.8 unitless RF 1 unitless m² Asta C 0.6-0.8 unitless Asta C 0.6-0.8 unitless RF 1 unitless unitless Asta Criffith AWS (075041) unitless Asta Criffith AWS (075041) unitless Symbol Formula Units R R m/month E Exc mm/month R R&RKF mm/month Max RR RKF mm/month Max RR RKF mm/month Max RR+W-(ET+B) mm/month mm Max NAL M m m Max NAL M M m M NAL M M M M NAL M M<																
DIR 5.0 mm/day a L 149 m² RF T 1 unitless RF T 1 unitless Asta C 0.6-0.8 unitless RF T unitless unitless Criffth AWS (075028) Criffth AWS (075028) agys RR RR RR mm/month R R mm/month agys R RKF mm/month mm/month RR R&RF mm/month agys RR RKF mm/month mm/month Max RR+W-(ET+B) mm/month mm/month Max NAL L M Max Max m m Max MAL M m A NAL M M Max M M M Max M M M M NAL M <th>12</th> <th>200</th> <th></th> <th>Based on r</th> <th>naximum pot</th> <th>ential occu</th> <th>pancy and</th> <th>derived fr</th> <th>om Table</th> <th>5.2 AS154</th> <th>17:2012</th> <th></th> <th></th> <th></th> <th></th> <th></th>	12	200		Based on r	naximum pot	ential occu	pancy and	derived fr	om Table	5.2 AS154	17:2012					
a L 149 m ² RF 1 unitless unitless RF 1 unitless unitless Criffith AWS (075041) days unitless Symbol Formula Unitless Symbol Formula Units P Criffith AWS (075028) units Symbol Formula Units R R mm/month R RK RKF mm/month R RKF mm/month days R RKF mm/month mm/month Mt RR+W-(ET+B) mm/month mm/month Ma NAL L M Ma NAL M m m OR ZERO STORAGE M M M M M NAL L M M M M NAL L M M M M M NAL M M <td></td> <td>5.0</td> <td></td> <td>Based on c</td> <td>conservative</td> <td>soil texture</td> <td>class/perr</td> <td>neability a</td> <td>nd derived</td> <td>I from Tab</td> <td>le M AS1</td> <td>547:2012</td> <td></td> <td></td> <td></td> <td></td>		5.0		Based on c	conservative	soil texture	class/perr	neability a	nd derived	I from Tab	le M AS1	547:2012				
C 0.6-0.8 unitless RF 1 unitless Cirifith AWS (07503) addited and and and and and and and and and an	ated Land Application Area L	149	m²	-												
RF 1 unitless Jata Griffith AWS (075041) Jata Griffith AWS (075028) Symbol Formula Units Symbol Formula Units Symbol Formula Units Symbol Formula Units Carrift CSIRO (075028) days D E mm/month E E Mm/month R RxRF mm/month RR RxRF mm/month Inh S RR+Wy-(ET+B) mm/month Ma NAL mm mm Ma NAL mm mm M NAL mm mm OR ZERO STORAGE m ² m ² MA Please enter data in blue		0.6-0.8		Estimates (evapotranspi	ration as a	fraction of	pan evapo	oration; va	rries with s	eason and	I crop type	2			
Image: Constraint AWS (075028) Boill Station and number constraint AWS (075028) Boill Station and number constraint and number constraint and number constraint and number constraint and constraint and number constraint constrant		1		Proportion	of rainfall the	t remains c	insite and	infiltrates,	allowing f	or any run	off					
Data Griffith CSIRO (075028) BoM Station and number Carrier No. Demole Formula Units Jan Feb Mar Apr May Jun Jul	No. and No.	Fith AWS (0750	AD.C.	BoM Static	n and numbe	ir		10.744	1. 1.4	1.24						
Symbol Femula Units Jan Feb Mar Apr May Jun Jul Jul <th< td=""><td>100</td><td>ith CSIRO (075</td><td></td><td>BoM Static</td><td>in and numbe</td><td>ar a</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	100	ith CSIRO (075		BoM Static	in and numbe	ar a										
D days 31 28 31 30 31		Formula	Units	Jan	Feb	Mar	Apr	Mav	Jun	Jul	Aud	Sep	Oct	Nov	Dec	Total
R mm/month 33.1 30 56.6 27.8 35. 33.4 33.2 E untless 0.80 0.80 0.70 0.70 0.60 0.66		Contraction of	days	31	28	31	30	31	30	31	31	30	31	30	31	365
E mm/month 283.7 224 185 105 62 42 436 E E E E E Mm/month 216 179 130 74 37 25 39.0 B DIRXD mm/month 216 179 130 74 37 25 39.0 RR RxKF mm/month 37.6 319.2 285.2 223.5 192.2 168.7 155.0 146.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 <td></td> <td></td> <td>mm/month</td> <td>33.1</td> <td>30</td> <td>36.6</td> <td>27.8</td> <td>35</td> <td>33.4</td> <td>33.2</td> <td>35.2</td> <td>32.1</td> <td>38.5</td> <td>34.2</td> <td>32.4</td> <td>401.5</td>			mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
C untess use use <td></td> <td></td> <td>mm/month</td> <td>269.7</td> <td>224</td> <td>186</td> <td>105</td> <td>62</td> <td>42</td> <td>49.6</td> <td>71.3</td> <td>102</td> <td>151.9</td> <td>213</td> <td>251.1</td> <td>1727.6</td>			mm/month	269.7	224	186	105	62	42	49.6	71.3	102	151.9	213	251.1	1727.6
ET Exc. mm/month 216 173 130 74 37 25 30 B DIRxD mm/month 155.0 140 155.0 150.0 155.0 156.0 155.0 156.0 15	Crop Factor		nuidess	0.80	0.80	00	0.10	0.00	0.00	0.00	0.00	0.70	0.80	0.00	0.00	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			theorem and	216	170	130	42	27	36	UR	42	74	122	170	FUC	1207 8
Description State			mm/month	155.0	140	155.0	150.0	155.0	150.0	155.0	155.0	150.0	155.0	150.0	155.0	1825.0
RR RxRF mm/month 33.1 30 36.6 27.8 35 33.4 33.2 W (0.20/)L mm/month 145.6 131.5 145.6 140.3 145.6 145.6 140.6 140.0 100 100 100 100 100 100 100 100<		ET+B	mm/month	370.8	319.2	285.2	223.5	192.2	175.2	184.8	197.8	221.4	276.5	320.4	355.9	3122.8
RR RxrF mm/month 33.1 30 36.6 27.8 35 33.4 33.2 W (0.20)/L mm/month 145.6 131.5 145.6 140.3 145.6 140.3 145.6 140.3 145.6 140.3 145.6 140.3 145.6 140.3 145.6 140.3 145.6 140.3 145.6 140.3 145.6 145.6 140.3 145.6 145.7 145.6																a second
W (020)/L mm/month 145.6 131.5 145.6 130.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 140.9 145.6 174.3 178.8 143.8 <t< td=""><td></td><td>RXRF</td><td>mm/month</td><td>33.1</td><td>30</td><td>36.6</td><td>27.8</td><td>35</td><td>33.4</td><td>33.2</td><td>35.2</td><td>32.1</td><td>38.5</td><td>34.2</td><td>32.4</td><td>401.5</td></t<>		RXRF	mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
RR+W mm/month 178.7 161.5 182.2 168.7 180.6 174.3 178.8 nth S (RR+W)-(ET+B) mm/month 0.0 <		(axd)/L	mm/month	145.6	131.5	145.6	140.9	145.6	140.9	145.6	145.6	140.9	145.6	140.9	145.6	1714.8
th mn/month 0.0 0.	Inputs	RR+W	mm/month	178.7	161.5	182.2	168.7	180.6	174.3	178.8	180.8	173.0	184.1	175.1	178.0	2116.3
pe remaining from previous month 0.0	AGE CALCULATION										- bass make	an by the		1		
Current Storage M Nultative Storage for Nominated Area N Nultative L L 0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	U		mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Intermediated Area N N Intermediated Area N N AREA REQUIRED FOR ZERO STORAGE m ² 64 68 87 107 138 148 143 IUM AREA REQUIRED FOR ZERO STORAGE: 149:0 m ² 149:0 m ² 149:0 143	0 2	וווויייייייייייייייייייייייייייייייייי	mm	00	00	0.0	00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
V NkL L 0 AREA REQUIRED FOR ZERO STORAGE m ² 64 68 87 107 138 148 UM AREA REQUIRED FOR ZERO STORAGE: 149.0 m ² 149.0 m ² Please enter data in blue cells readsheet			E	0.00						ind to be						
AREA REQUIRED FOR ZERO STORAGE m² 64 68 87 107 138 148 IUM AREA REQUIRED FOR ZERO STORAGE: 149.0 m² Please enter data in blue cells readsheet	Λ	NXL	-	0							and the second s	- way is well				5
IUM AREA REQUIRED FOR ZERO) AREA REQUIRED FOR ZERO ST(ORAGE	a²	64	68	87	107	138	148	143	133	111	91	73	67	
	AUM AREA REQUIRED FOR ZERO) STORAGE		149.0	m²											
1		Please enter d	lata in blue	cells							104.8		197			
		Data in yellow	cells is calo	iy populate	the spreadsh	eet, DO NC	DT ALTER	THESE C	ELLS							
NOTES	(0)															

0

Site Address.					Wast	West Rd & Boorda Road Nericon NSW 2680	onroa	Panal 1	Narico	MSN u	1 2680					
olle Audiess.		and the second			ANCOL			Nuau, I			2000					
Date:	2,015				Assessor:	:or:	Davic	David McMahon	ahon							
INPUT DATA	a section of	- The second		the second second	and the	34										•
Design Wastewater Flow	a	840	L/day	Based on I	Based on maximum potential occupancy and derived from Table 5.2 AS1547:2012	tential occu	pancy and	derived fro	om Table (5.2 AS154	7:2012					
Design Irrigation Rate	DIR	3.0	mm/day		Based on conservative soil texture class/permeability and derived from Table M AS1547:2012	soil texture	class/pern	neability ar	nd derived	from Tabl	le M AS15	47:2012				
Nominated Land Application Area	T	309	m ²	-												
Crop Factor	U	0.6-0.8	unitless		Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type ²	iration as a	fraction of	pan evapo	pration; vai	ries with su	eason and	I crop type	7			
Rainfall Runoff Factor	RF	1	unitless		Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff	at remains c	onsite and i	infiltrates, a	allowing fc	r any rund	off					
Mean Monthly Rainfall Data Mean Monthly Pan Evaporation Data		Griffith AWS (075 Griffith CSIRO (07	75041) 75028)	BoM Static BoM Static	BoM Station and number BoM Station and number	er er										
				1											1 1 1	
Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	0	5.00	days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	œ ۱		mm/month		8	36.6	27.8	8	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Evaporation	ш с		mm/month		0.80	186	60L	0.60	0.60	49.6	0.60	02.0	0.80	0.80	0.80	0.1211
OUTPUTS	>			000	000	0.0	200	000	2010	2010	-					
Evapotranspiration	١	ExC	mm/month	216	179	130	74	37	25	30	43	71	122	170	201	1297.8
Percolation	jœ	DIRXD	mm/month		8	93.0	90.0	93.0	90.06	93.0	93.0	90.0	93.0	0.06	93.0	1095.0
Outputs	19-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	ET+B	mm/month	308.8	263.2	223.2	163.5	130.2	115.2	122.8	135.8	161.4	214.5	260.4	293.9	2392.8
INPUTS																
Retained Rainfall	RR	RxRF	mm/month		30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Applied Effluent	M	(QXD)/L	mm/month	84.3	76.1	84.3	81.6	84.3	81.6	84.3	84.3	81.6	84.3 122 8	81.6	84.3	992.2
STORAGE CALCULATION			INICIDATION		1001	0.07	1.001	2001				0000				
Storage remaining from previous month			mm/month		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)		1	-157.1	-102.3	-54.1	-10.9	-0.2	-5.3	-16.3	-47.7	-91.7	-144.6	-177.2	
Cumulative Storage	Σ		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum Storage for Nominated Area	z >	NXL		0.0												Sec. 100
LAND AREA REQUIRED FOR ZERO STORAGE	ZERO S	TORAGE	m²	94	101	140	186	274	308	291	259	195	148	111	100	a series
MINIMUM AREA REQUIRED FOR ZERO STORAG	OR ZER	O STORAGI	ij	309.0	m ²											
CELLS	×××	Please enter data in blue cells Red cells are automatically populated by the spreadsheet Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS	data in blu automatica v cells is ca	e cells ally populate ilculated by	ed by the spr the spreadsh	eadsheet neet, DO NC	OT ALTER	THESE CI	ELLS							
NOTES ¹ This value should be the largest of the following: land application area required based on the most limiting nutrient balance or minimum area required for zero storage	the followin	ia: land applica	ation area re	squired base	ed on the mo	st limiting n	utrient bala	ance or mi	nimum are	a required	d for zero :	storage				
2. Veluce selected are secondarily and are suitable for marting and	nd are suits	ahle for pasture	0 01200			>										

2,015	120	day /day less less less vys nonth	timates evi oportion of M Station á 31 33 33 33 31 31 32 32 31 32 31 31 31 31 31 31 31 31 31 31 31 31 31	Assessor: David McMahon Based on maximum potential occupancy and derived from Table 5.2 AS1547:2012 Based on conservative soil texture dass/permeability and derived from Table MAS1547:2012 1 Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type ² Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff Box Station and number Box Station and number		Dovio	inan'			1 1000					
ow Ω ow Ω cation Area L Data C Data C Data C aporation Data C symt Symt	120	ray /day /day /day ray less less ress ress ress ress ress ress	sed on ma sed on cor timates ev M Station of M Station 31 33 33 33 33 33	SSESSO Simum poter iservative sr apotranspira rainfall that and number	ü	0000		West Nu & DUOIGA NUAU, NEIICUII INSW 2000							
ow Q Cation Area L Cation Area L C C RF RF RF RF RF RF RF RF RF RF RF RF RF	120	/day /day /day its less less vys nonth	sed on ma sed on cor timates ev M Station i M Station : Jan 31 33 33 33 33 33	ximum poter iservative sc apotranspira rainfall that and number and number	1	DIANIC	David McMahon	nou							
ow Q Cation Area L Cation Area L Cation Area C Data C Data C Data C Sport C Sport C Symt Symt	150	/day /day less less less vys	sed on ma sed on cor timates ev portion of M Station M Station 33.1 33.1 33.1 259.7	ximum poter iservative sc apotranspira rainfall that and number and number											
DIF cation Area L C C C C C C C C C C C C C C C C C C C	220	/day less less less vorth	sed on cor timates evi pportion of M Station of M Station of 33.1 33.1 259.7	iservative sc apotranspira rainfall that and number and number	ntial occup	ancy and	derived fro	m Table	5.2 AS154	7:2012					
cation Area L C C C Data RF Data C sporation Data 0	120	1 ² less less less vorth nonth	timates ev portion of M Station of M Station of Jan 31. 33.1	apotranspira rainfall that and number and number	vil texture c	ass/perm	leability an	nd derived	from Tab.	le M AS15	347:2012				
Data C Data A aporation Data 0	120	less less less vys nonth	timates ev portion of M Station i M Station i Jan 31 33.1 269.7	apotranspira rainfall that I and number and number											
Data Data RF aporation Data 0	120	less its vys nonth	pportion of M Station of M Station of Jan 31 33.1	rainfall that and number	tion as a fi	action of t	oan evapo	ration: var	ies with se	eason and	I crop type	N			
Symb	220	nonth nonth	M Station a M Station a Jan 33.1 269.7	and number and number	emains or	isite and in	nfiltrates, a	allowing fo	r any rund	off					
Sym	č	nonth nonth	M Station 3 Jan 33.1 269.7	and number											
Symbol	$\sim D$	Units days m/month	Jan 31 33.1 269.7												
	19	days n/month m/month	31 33.1 269.7	Feb	Mar	Apr	Mav	-hun	lul.	Auc	Sen	100	Nov	Dar	Total
Days in month D		n/month n/month	33.1 269.7	28	31	30	31	30	31	31	30	31	30	31	365
	m	n/month	269.7	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Evaporation E	Ē			224	186	105	62	42	49.6	71.3	102	151.9	213	251.1	1727.6
		nuiness	0.00	0.80	0.70	0.70	0.60	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
vapotranspiration	ExC.	mm/month	216	179	130	42	27	36	00	4	74		02.4	FUC	0 2004
; œ		mm/month	108.5	6 6	108.5	105.0	108 5	105.0	200	108 5	1050	100 5	1/0	102	8.1621
and the second		mm/month	324.3	277.2	238.7	178.5	145.7	130.2	138.3	151.3	176.4	230.0	275.4	309.4	2575.3
INPUTS			-					1		1					
RR	RxRF mm	mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
		mm/month	99.8	90.1	99.8	96.6	8.66	96.6	99.8	99.8	96.6	99.8	96.6	866	1174.7
	RR+W mr	mm/month	132.9	120.1	136.4	124.4	134.8	130.0	133.0	135.0	128.7	138.3	130.8	132.2	1576.2
STORAGE CALCULATION									No 14-	S DESIGNE	- 00 Diser.				
is month	i		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	(KK+VV)-(EI+B) MI	Ę	-191.4	1.761-	-102.3	-54.1	-10.9	-0.2	-5.3	-16.3	-47.7	-91.7	-144.6	-177.2	
Maximum Storage for Nominated Area N			0.00	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	NxL		0												
LAND AREA REQUIRED FOR ZERO STORAGE	AGE	m²	68	95	129	167	235	260	248	224	175	136	104	94	
MINIMUM AREA REQUIRED FOR ZERO STORAG	ORAGE:		261.0 m ²	8											
CELLS	Please enter data in blue cells	in blue ce	s					0	120						
XX Red XX Data	Red cells are automatically populated by the spreadsheet Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS	omatically	populated I ated by the	by the spread	t, DO NOT	L ALTER 1	THESE CE	STI							
NOTES															
¹ This value should be the largest of the following: land application area required based on the most limiting nutrient balance or minimum area required for zero storage	id application	area requi	red based	on the most	imiting nut	trient bala	nce or min	iimum area	a required	for zero s	storage				

 \bigcirc

O

O

Irrigation area siz	sizing u	using N	Nominated		Area water balance & storage valculations	grei	רמומו	ういい		ングシ						
Site Address:					West R	Rd & Bo	West Rd & Boorga Road, Nericon NSW 2680	Road, N	Nerico	n NSW	1 2680					
Date:	2,015				Assessor:	or:	David	David McMahon	non							
INPUT DATA	A Martin							1							100	
Design Wastewater Flow	a	840	L/day	Based on m	Based on maximum potential occupancy and derived from Table 5.2 AS1547:2012	ential occup	pancy and	derived fro	om Table {	5.2 AS154	7:2012					
Design Irrigation Rate	DIR	4.0	mm/day	Based on co	Based on conservative soil texture class/permeability and derived from Table M AS1547:2012	oil texture	class/perm	neability an	nd derived	from Tabl	le M AS15	47:2012				
Nominated Land Application Area	L	226	m²	-												
Crop Factor	0	0.6-0.8	unitless	Estimates e	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type ²	ation as a f	raction of p	pan evapo	iration; vai	ries with se	eason and	crop type	8			
Rainfall Runoff Factor	RF	L	unitless	Proportion 6	Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff	tremains o	nsite and il	nfiltrates, a	allowing fo	or any rund	off					
Mean Monthly Rainfall Data Mean Monthly Pan Evaporation Data		Griffith AWS (075041) Griffith CSIRO (075028)	75028) 75028)	BoM Station BoM Station	BoM Station and number BoM Station and number											
											the second second					
Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	0	CARDIN .	days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	хu		mm/month	33.1	30	36.6	21.8	38	42.42	33.2	2.02	102	38.5	24.2	32.4	6.104
Crop Factor	J 0		unitless	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
OUTPUTS														108.0		100
Evapotranspiration	Ē	EXC	mm/month	216	179	130	74	37	25	30	43	71	122	170	201	1297.8
Percolation	8	DIRXD	mm/month	124.0	112	124.0	120.0	124.0	120.0	124.0	124.0	120.0	124.0	120.0	124.0	1460.0
Outputs	1. (. State	ET+B	mm/month	339.8	291.2	254.2	193.5	161.2	145.2	153.8	166.8	191.4	245.5	290.4	324.9	2757.8
INPUTS																
Retained Rainfall	RR	RXRF	mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Applied Effluent	N	(QxD)/L	mm/month	115.2	104.1 134.1	115.2 151.8	111.5	150.2	111.5	115.2	115.2	111.5	115.2	111.5	147.6	1356.6
STORAGE CALCULATION	12 miles			2.04		2101	2001									
Storage remaining from previous month			mm/month		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	() mm/month		-157.1	-102.4	-54.2	-11.0	-0.3	-5.3	-16.4	-47.8	-91.8	-144.7	-177.3	
Cumulative Storage	ΣZ			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	: >	NXL		0									in the second	and the second	A State of the second	and the second second
LAND AREA REQUIRED FOR ZERO STORAGE	ZERO S	TORAGE	m²	85	6	120	152	206	225	216	198	158	126	86	68	
MINIMUM AREA REQUIRED FOR ZERO STORAGE:	OR ZER	O STORAGE		226.0	m²											
CELLS	××	Please enter data in blue cells Red cells are automatically poi Data in yellow cells is calculate	data in blue automatica v cells is cal	cells lly populated culated by th	Please enter data in blue cells Red cells are automatically populated by the spreadsheet Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS	adsheet set, DO NC	T ALTER -	THESE CE	ELLS							
NOTES ¹ This value should be the larrest of the following: land analication area required based on the most limiting nutrient balance or minimum area required for zero storage	he followin	io: land applica	ntion area re	duired base	d on the mos	t limiting n	utrient bala	nce or mir	nimum are	a required	l for zero s	storade				
² Values selected are conservative and are suitable for pastu	nd are suit	able for pasture	re grass			0			5			0				
Values services are conservative		anto ini pine	2000												I	

Image: constraint from the second of the			Population and	and a second second second	West h	100	- 58101	Road, I	Nerico	West Rd & Boorga Road, Nericon NSW 2680	V 2680					
DATA Data Data State S					Assesso	ir:	David	McMa	nou							
Watermeter Flow O 840 Uder Seed on maximum potential compared activitied from Table XI S47:2012. Machine Lambda L Fige mm/ds1 seed on monservative soil texture class/permeability and derived from Table XI S47:2012. Machine Lambda L Fige mm/ds1 seed on conservative soil texture class/permeability and derived from Table XI S47:2012. Machine Lambda C 0.6 0.6 0.8 Station and number Machine Lambda C 0.6									1	1			4		R	
Irrigation Rate Indication Rate Indica				3ased on m	aximum pote	ntial occup	ancy and	derived fro	om Table	5.2 AS154	17:2012					
Let Total m </td <td></td> <td>101</td> <td></td> <td>Based on co</td> <td>inservative s</td> <td>oil texture</td> <td>class/perm</td> <td>eability ar</td> <td>nd derived</td> <td>from Tab</td> <td>le M AS15</td> <td>547:2012</td> <td></td> <td></td> <td></td> <td></td>		101		Based on co	inservative s	oil texture	class/perm	eability ar	nd derived	from Tab	le M AS15	547:2012				
Rundfine C O.6.0.8 Unitiese unitiese formits Estimates evolocitarispiration as a fraction of pan evaloration; varies with season and crop type ² contribly Pan Evaluation Rundfine E O.6.0.8 unitiese unitiese Proportion of rainfall that mains onsite and infituates, allowing for any rundfination Rundfine E Orientation of rainfall that mains E Propertion of rainfall that mains Procine Pr			m ²													
Rundity Racinal Data Fr 1 Unities Proportion of rainfall plate	Ω	Ī	_	Estimates e	vapotranspira	tion as a f	raction of p	oan evapo	stion; val	ries with s	eason and	d crop type	CN CO			
Orthly Faintall Data Criffith MNS (075041) BMN Station and number Contribly Faintall Data Criffith MNS (075021) BMN Station and number Parameter Criffith CSIRO (075023) BMN Station and number Parameter Criffith CSIRO (075021) BMN Station and number Parameter Spinol Family Family Family Parameter P	und	1		Proportion o	of rainfall that	remains o	nsite and in	nfiltrates, a	allowing fc	or any rund	off	1.100				
Image Simple Form May May <thm< th=""><th>a na na</th><th>WS (07504 SIRO (07502</th><th>March 1</th><th>SoM Station</th><th>and number</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></thm<>	a na	WS (07504 SIRO (07502	March 1	SoM Station	and number											
	Symbol															
Definition D moment D <thd< th=""> D <thd< th=""> <!--</th--><th>□ 0</th><th>ormula</th><th>Units</th><th>Jan</th><th>Feb</th><th>Mar</th><th>Apr</th><th>May</th><th>Jun</th><th>Inc</th><th>Aug</th><th>Sep</th><th>Oct</th><th>Nov</th><th>Dec</th><th>Total</th></thd<></thd<>	□ 0	ormula	Units	Jan	Feb	Mar	Apr	May	Jun	Inc	Aug	Sep	Oct	Nov	Dec	Total
Finantial R mmmonth 331 20 366 77.8 35 334 317 321 321 321 321 321 321 321 321 321 321 321 321 321 321 321 321 321 322 323 <th< td=""><td></td><td>1</td><td>days</td><td>31</td><td>28</td><td>31</td><td>30</td><td>31</td><td>30</td><td>31</td><td>31</td><td>30</td><td>31</td><td>30</td><td>31</td><td>365</td></th<>		1	days	31	28	31	30	31	30	31	31	30	31	30	31	365
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		E	nm/month	33.1	30	36.6	27.8	នេះ	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		=	unitless	0.80	0.80	0.70	02.0	0.60	0.60	0.60	0.60	0.70	6.1 CI	0.80	0.80	9.1211
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				2010	2010			000	2010	000	000	2.00	000	000	200	
	山		nm/month	216	179	130	74	37	25	30	43	71	122	170	201	1297.8
Outputs E1+B mmmonth 37.08 319.2 285.2 223.5 192.2 175.2 184.8 197.8 271.4 276.5 S Retained Rainfall R.R Roter mmmonth 33.1 30.6 27.8 33.2 175.2 175.2 184.8 147.8 271.4 276.5 Applied Effluent W QuoD/L mmmonth 173.4 165.1 146.3 141.6 34.6 37.8 33.2 35.2 35.2 35.2 35.2 37.7 146.3 <	B		nm/month	155.0	140	155.0	150.0	155.0	150.0	155.0	155.0	150.0	155.0	150.0	155.0	1825.0
Stational Relation Relation Relation Relation Relation Relation Relatititities Relation Relation Relation Relatitititities	Outputs		nm/month	370.8	319.2	285.2	223.5	192.2	175.2	184.8	197.8	221.4	276.5	320.4	355.9	3122.8
Retined Rainfall RR RxFr Monitorin 33.1 30 36.6 27.8 33.4 33.2 55.2 32.1 38.5 Appled Ritient W (Qx0)/L mm/month 146.3 141.6 141.6 141.6 141.6 141.6 141.6 141.6 141.6 141.6 141.6 141.6 141.7 141.7																
Applied Efficient W (QXD/L mm/month 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 145.3 141.6 146.3 141.6 145.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.6 146.3 141.7 143.3 141.6 146.3 141.7 143.3 141.6 146.3 141.7 143.3 141.7 143.3 143.3 141.6 145.3 141.6 145.3 141.6 147.3 141.6 147.3 143.3 141.6 147.3 143.3 141.6 147.3 147.3 147.3 <td>RR</td> <td></td> <td>nm/month</td> <td>33.1</td> <td>30</td> <td>36.6</td> <td>27.8</td> <td>35</td> <td>33.4</td> <td>33.2</td> <td>35.2</td> <td>32.1</td> <td>38.5</td> <td>34.2</td> <td>32.4</td> <td>401.5</td>	RR		nm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
AGE CULATION Arrest memorin 1/34 162.1 162.9 173.0 173.0 173.1 163.6 173.1 163.1 163.1 173.1 163.1 163.1 173.1 163.1	M		nm/month	146.3	132.1	146.3	141.6	146.3	141.6	146.3	146.3	141.6	146.3	141.6	146.3	1722.5
Image: inclusion of the month single for month inclusion of the month single for month solution of the month inclusion of the month solution of the month inclusion of the mont	and the second se		munom/mn	1/3.4	102.1	182.9	109.4	181.3	0.6/1	C'R/L	C.181	1/3./	184.8	8.C/L	1/8/1	0.4212
Storage for the motion in	Storade remaining from previous month	2	Hannan h	00	00	00		00		00	00	00	00	00	00	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	U.	-	mm/month	4 191-	-157.1	-102 3	-54.1	0.0		2.0	-16.3	47.7	- 10-	-1446	C 171-	
the strange for Nominated Area N ML L 0 0 ML L 0 0 AREA REQUIRED FOR ZERO STORAGE m^2 77 81 105 129 165 179 172 160 133 109 UM AREA REQUIRED FOR ZERO STORAGE: 178.0 m^2 Image: Standard Required Point Required Boundard Standard Red Collar Red Collar	×	100	mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
AREA REQUIRED FOR ZERO STORAGE μ R	z		mm	0.00												
MKEA REQUIRED FOR ZERO STORAGE m 77 81 105 129 166 172 160 133 UM AREA REQUIRED FOR ZERO STORAGE: 178.0 m² m² 178.0 m² Please enter data in blue cells Red cells are automatically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS		NXL	^	0							No and and a second			1000 L 1000 L 10	-14 - X-10	Sector and state
UM AREA REQUIRED FOR ZERO	LAND AREA REQUIRED FOR ZERO STORA	AGE	έ	11	81	105	129	166	178	172	160	133	109	88	80	
	MINIMUM AREA REQUIRED FOR ZERO STO	ORAGE:			11 ²											
XX		se enter dat	a in blue	cells			ing sta	20								0
NOTES	XX Red c XX Data i	cells are au in yellow ce	tomaticall ells is calo	y populated ulated by th	l by the sprea	idsheet et, DO NO	T ALTER 1	THESE CE	STIS							
	NOTES															
¹ This value should be the largest of the following: land application area required based on the most limiting nutrient balance or minimum area required for zero storage	¹ This value should be the largest of the following: land	d applicatior	n area req	uired based	I on the most	: limiting nu	trient bala.	nce or mir	nimum are	a required	d for zero	storage				

(

 \bigcirc

0

Date: Joint McMahon Image: Instant Figure Market Market Figure Market Market Figure Market Market Figure Market Market Market Figure Market	2,015 300 Uday a L 360 Uday a L 360 mm/day a C 0.6-0.8 unitiess RF 1 unitiess mm/day Criffith AWS (075041) Criffith AWS (075028) mm/day Data Criffith AWS (075028) days Symbol Formula Unitess Symbol Formula Unitess a B B days B Difx/D mm/month min R RAFH mm/month min R RAFH mm/month who N NAL mm/month who N NAL mm/month who N NAL mm/month who NAL M DASERO STORAGE mm/month	West Rd & Boorga Road, Nericon NSW 2680
Image: constraint of the stand of	Q 980 L/day a L 3.0 mm/day a L 3.0 mm/day BIR 3.0 mm/day mm/day RF 1 unitiess mm/day Criffith AWS (075028) Criffith AWS (075028) mm/month Symbol Formula Units Symbol Formula Units Symbol Formula Units Criffith AWS (075028) days B Rath mm/month C Cox00/L mm/month R RARF mm/month R RARF mm/month with RRAW RARF mm/month with RRAW NAL M DI FOR ZERO STORAGE m	David McMahon
Q 980 bit Uday bit Based on maximum potential cocupancy and derived from Table MS1547/2012 A Dir 300 bit Immide and bit Immide bit Based on conservative soil extinct class permeability and derived from Table MS1547/2012 A C 0.6.0.8 Unities Estimates eraportanipitation as if raction of pan evaportanion: varies with season and crop type ² A C 0.6.0.8 Unities Boint Station and number Dir Sinth MVS (075441) E Unities Sinth AVS (075441) E Avaitable seraportanipitation as if raction of pan evaportanion: varies with season and compt diffic STRAH (075023) Boint Station and number Dir Filt Filt Avaitable seraportanion: varies with season and compt diffic STRAH (075041) Avaitable seraportanion Sinth AVS (075441) Avaitable seraportanion Sinth AVS (075441) Avaitable seraportanic Sinth AVAItable seraportanic Amminentia Sinth AVS (075441) Month 201 Sinth AVS (075441) Month AVAItable seraportanic Sinth AVAItable seraportanic	Q 980 Uday a L 3.0 mm/day a L 3.0 mm/day A C 0.6-0.8 unitless RF 1 unitless unitless Antitle ANS (075041) unitless unitless Symbol Formula Units Symbol Formula Units R R RKF mm/month N NAL L OR ZERO STORAGE m m B NAL L	
DIR 3.0 mm/day mm/day Fr Based on conservative soil texture dass/permeability and derived from Table M AS1547.2012 a L Bool and stimules France Propriori Propriation as a fraction of pan evolorability and derived from Table M AS1547.2012 Dist L Bool Imm/day stimules Remote the sequentianity termination as a fraction of pan evolorability and derived from trable Application Propriation of trainfall that remains onsite and infiltrates, allowing for any runoif Dist Dist Unitians Same Propriation of rainfall that remains onsite and infiltrates, allowing for any runoif Application	DIR 3.0 mm/day a L 360 m² RF 1 unitless unitless RF 1 unitless unitless C 0.6-0.8 unitless unitless RF 1 unitless unitless Criffth AWS (075028) Criffth AWS (075028) unitless Symbol Formula Units units Symbol Formula Units units R R&RKF mm/month units R R&R RKF mm/month N RR+WJ-(ET+B) mm/month units N N N mm/month with RR+WJ-(ET+B) mm/month mm with N N m mm with N N L M OR ZERO STORAGE m m m m	upancy and derived from Table 5.2 AS1547:2012
a L cs00 m ² /m ² 1 a L cs00 m ² /m ² 1 a C 0.6.0.8 unitess Evaluates Evaluates <th< td=""><td>a L 360 m² RF 1 unitless unitless RF 1 unitless unitless Data Griffith AWS (075028) unitless unitless Symbol Formula Unitless unitless Symbol Formula Unitless unitless R R mm/month days R RKF mm/month unitless N RR RKF mm/month R RKF mm/month unitless N RR+WJ-(ET+B) mm/month mm/month ea N NAL L M OR ZERO STORAGE m m m m</td><td>e class/permeability and derived from Table M AS1547:2012</td></th<>	a L 360 m² RF 1 unitless unitless RF 1 unitless unitless Data Griffith AWS (075028) unitless unitless Symbol Formula Unitless unitless Symbol Formula Unitless unitless R R mm/month days R RKF mm/month unitless N RR RKF mm/month R RKF mm/month unitless N RR+WJ-(ET+B) mm/month mm/month ea N NAL L M OR ZERO STORAGE m m m m	e class/permeability and derived from Table M AS1547:2012
C 0.6-0.8 unitess intervals Estimates evaporation or a fraction of pan evaporation; varies with season and crop bype ² En Time Time Propertion of criminal that remains onsite and influttes, allowing for any runoff Data En Unitess Reprint AVIS-017 Other and number Amon Final Properiod Other and number Amon Mark and number Amon Final Mark and number Sector and number Mark and number Mark and number Mark and number Amon Final Units Mark and number Sec Mark and number Mar Mar Mar	C 0.6-0.8 unitless RF 1 unitless Carifful AWS (075028) Grifful AWS (075028) Data Grifful AWS (075028) Symbol Formula Units P E Markov P Data Units Symbol Formula Units P E Exc mm/month R Rx4F mm/month days R Rx4F mm/month days R Rx4F mm/month and with RR+W)-(ET+B) mm/month mm/month with NAL L M or NAL L M OR ZERO STORAGE m m m	
RF 1 Interest (minicipation) Mater	RF 1 unitless Data Griffth AWS (075024) Unitless Symbol Formula Units Symbol Formula Units Symbol Formula Units Symbol Formula Units R R Marken B B BRxD days RR RKF mm/month RR RXRF mm/month RR RKF mm/month N RR+WJ-(ET+B) mm/month ea N NL mm OR ZERO STORAGE m m m Correct Cara in hine Dasse order rotation hine m	a fraction of pan evaporation; varies with season and crop type ²
Image: Service of the interval of the i	Image: Contribution of the control of the contrel of the control of the contrel of the contrel of the c	onsite and infiltrates, allowing for any runoff
Symbol Formula Units Jan Feb Mar Apr Way Unit Jan Apr Way Jan Jan Jan Sep Oct Nov Dec R mmmonth 263 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31	Symbol Formula Units Jan Feb Mar Apr May P 0 49ys 31 28 31 30 31 E mm/month 331 283.1 28 31 30 31 E mm/month 283.1 283.1 28 31 30 31 E E wm/month 283.1 283.1 286 27.8 35 E E EXC mm/month 216 179 130 74 37 RR RxKF mm/month 33.1 30 34 33.0 36.6 27.8 35 W (QxD)/L mm/month 33.1 30 36.2 36.0 36.6 37.0 Mu S RR May 44 75.2 84.4 44 Mu S RA-W 84.4 81.7 84.4 44 Mu N Mu 177.5 <th></th>	
Unimotion Columnation Columnation <thcolumnation< th=""> <thcolumnation< th=""> <</thcolumnation<></thcolumnation<>	Dimension Limit of the second state 31 28 31 30 31 E mm/month 33.1 269.7 284 31 30 31 E mm/month 33.1 30 37 286.7 278 35 E E untless 0.80 0.80 0.70 0.70 660 B ET-8 mm/month 216 179 130 74 37 F F ET-8 mm/month 38.0 38.3 283.2 39.3 38.3 W (Cx0)/L mm/month 33.1 30 36.6 27.8 35 30.3 W (Cx0)/L mm/month 84.4 76.2 84.4 81.7 84.4 M N N 0.0 0.0 0.0 0.0 0.0 min S (Rt+W)-(ET+B) mm/month 177.5 166.2 710.4 84.4 M N M <	Mav Jun Jul Aug Sep Oct Nov Dec
R mm/mining 331 30 366 278 35 324 332 332 332 332 332 332 332 332 332 3333 333 333 333<	R mm/month 33.1 30 36.6 27.8 35 C unitless 0.80 0.80 0.85 0.84 0.44	31 30 31 31 30 31 30 31
E mmmonth 283/1 224 186 105 0.66 0.66 0.66 0.70 0.89 0.213 251	E mm/month 255.7 224 186 105 62 ET EXC mm/month 216 179 130 74 37 B DIR3D mm/month 33.0 68.0 63.0 63.0 63.0 63.0 R R Rx RxRF mm/month 33.1 30 74 37 W (3x0)/L mm/month 33.1 30 36.6 27.8 35. W (3x0)/L mm/month 33.1 30 36.6 27.8 35. M M (3x0)/L mm/month 117.5 106.2 121.0 109.5 119.4 M S (84.4 76.2 84.4 81.7 84.4 M M 0.0 0.0 0.0 0.0 0.0 0.0 M M M 117.5 106.2 13.4 84.4 M M M 0.0 0.0 0.0 <td>35 33.4 33.2 35.2 32.1 38.5 34.2 32.4</td>	35 33.4 33.2 35.2 32.1 38.5 34.2 32.4
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	C unless u.go	62 42 49.6 71.3 102 151.9 213 251.1 nen nen nen nen n7n nan nan n8n n8n
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ET Exc. mm/month 216 179 130 74 37 B DIRxD mm/month 38.0<	
P Protect minimentine 55.0 85.0	B Difxuo mm/month 33.0 84 95.0 93.0 <t< td=""><td>37 25 30 43 71 122 170 201</td></t<>	37 25 30 43 71 122 170 201
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ET+B mm/month 308.8 263.2 213.5 130.2 RR RxRF mm/month 33.1 30.8 36.6 27.8 35 W (0x0)/L mm/month 33.1 30.8 36.6 27.8 35 M (0x0)/L mm/month 84.4 76.2 84.4 81.7 84.4 M RR+W)-(ET+B) mm/month 117.5 106.2 121.0 109.5 119.4 M N Mm 0.0 <t< td=""><td>93.0 90.0 93.0 93.0 90.0 93.0 90.0 93.0</td></t<>	93.0 90.0 93.0 93.0 90.0 93.0 90.0 93.0
RR RxF mm/month 33.1 30 35.6 27.8 35 33.4 33.2 35.2 32.1 38.5 34.2 32.4 32.4 32.5 32.1 38.5 34.2 32.4 32.4 32.4 32.4 32.5 32.1 38.5 34.2 32.4 32.4 32.5 32.1 38.5 34.4 34.4 34.4 34.4 34.7 34.4 34.7 34.4 34.7 34.4 34.4 34.4 34.7 34.4 34.4 34.4 34.7 34.4 34.4 34.7 34.4 34.7 34.4 34.4 34.7 34.4 34.4 34.7 34.4 34.4 34.7 34.4 34.7 34.4 34.7 34.4 34.7 34.4 34.4 34.7 34.4 34.4 34.7 34.4 34.4 34.7 34.4 34.7 34.4 34.6 34.4 34.6 34.4 34.6 34.6 34.6 34.7 34.6 34.7 34	RR RxRF mm/month 33.1 30 35.6 27.8 35 W (0.40/)L mm/month 14.4 76.2 84.4 81.7 84.4 I (0.40/)L mm/month 117.5 106.2 131.0 193.5 194.4 I (0.40/)L mm/month 117.5 106.2 721.0 109.5 194.4 I (0.10) 0.0 0.0 0.0 0.0 0.0 0.0 ea N M 0.0 0.0 0.0 0.0 0.0 0.0 ea N M 110 118 163 217 319 CN ZERO STORAGE m ² 110 118 163 217 319	130.2 115.2 122.8 135.8 161.4 214.5 260.4 293.9
RR RxRF mm/month 33.1 30 35.6 27.8 35 33.4 33.2 32.1 38.5 34.2 32.4 33.2 32.4 33.1 38.5 34.4 31.7 38.5 34.4 31.5 38.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 31.5 34.4 34.8 34.4 34.8 34.4 34.8 34.4 34.8 34.9 34.9 34.9 3	RR RxRF mm/month 33.1 30 36.6 27.8 35 W (0.40)/L mm/month 117.5 106.2 84.4 81.7 84.4 Inditional 84.4 76.2 84.4 81.7 84.4 Inditional 84.4 76.2 84.4 81.7 84.4 Inditional 84.4 77.0 106.2 121.0 103.5 119.4 Inditional 8.4 77.0 0.0	
W (0.40)U mmmonth 84.4 76.2 84.4 81.7 84.4	W (0x0)/L mm/month 84.4 76.2 84.4 81.7 84.4 Inth RR+W mm/month 117.5 106.2 121.0 109.5 119.4 Inth S (RR+W)-(ET+B) mm/month 0.0 0.0 0.0 0.0 0.0 m M mm -197.3 -157.0 -102.2 -54.0 -10.8 ea V NxL L 0.0 0.0 0.0 0.0 cons M 0.0 0.0 118 163.2 217 319 ea V NxL L 0 0.0 0.0 0.0 COX ZERO STORAGE m ² 110 118 163 217 319 DFOR ZERO STORAGE: 360.0 m ² 0.0 118 163 217 319	35 33.4 33.2 35.2 32.1 38.5 34.2 32.4
Intermediation 0.0	Introduction Introduction<	84.4 81.7 84.4 84.4 81.7 84.4 81.7 84.4 119.4 115.1 117.6 119.6 113.8 122.9 115.9 116.8
Image remaining from previous month Image is a manual from previous month Image is a manual from the month	e remaining from previous month s (RR+W)-(ET+B) mm/month 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	
Storage for the month S (RX+W)-(ET+B) mm/month 157.0 -102.2 -54.0 -10.8 -0.1 -5.2 -16.2 -47.6 -31.6 -144.5 Cumulative Storage N N mm 0.0	Storage for the month S (RX+VV)-(ET+B) mm/month -191.3 -157.0 -102.2 -54.0 -10.8 Cumulative Storage M M M M M M M M M M M M M M M M M M M	0.0 0.0 0.0 0.0 0.0 0.0
Cumulative Storage M mm 0.0 Mital ALTING <th< td=""><td>Cumulative Storage M m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0</td><td>-10.8 -0.1 -5.2 -16.2 -47.6 -91.6 -144.5</td></th<>	Cumulative Storage M m 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-10.8 -0.1 -5.2 -16.2 -47.6 -91.6 -144.5
Num sociage for nominated Area Not Lim 00 AREA REQUIRED FOR ZERO STORAGE m² 110 118 163 217 319 359 302 227 173 130 UM AREA REQUIRED FOR ZERO STORAGE m² 110 118 163 217 319 359 302 227 173 130 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m² m² 10 118 163 217 319 359 302 227 173 130 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m² m² m² m² 130 130 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m² m² 110 118 163 217 319 359 302 227 173 130 Common and transmitted by the spreadsheet m² m² m² m² m² 130 130 Total in yellow cells is calculated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet DNOT ALTER THESE CELLS Total in yellow cells is calculated by the spreadsheet m² m² m²	Nun sonage for nommated Area N Nkl. L 10 118 163 217 319 AREA REQUIRED FOR ZERO STORAGE m ² 110 118 163 217 319 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m ² DIAges enter data in hills cells	0.0 0.0 0.0 0.0 0.0 0.0
AREA REQUIRED FOR ZERO STORAGE m² 110 118 163 217 319 359 302 227 173 130 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m² m² 10 118 163 217 319 359 302 227 173 130 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m² m² 16 16 16 16 16 17 130 130 X Red cells are automatically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet DONOT ALTER THESE CELLS	AREA REQUIRED FOR ZERO STORAGE m ² 110 118 163 217 319 UM AREA REQUIRED FOR ZERO STORAGE: 360.0 m ²	
UM AREA REQUIRED FOR ZERO	UM AREA REQUIRED FOR ZERO STORAGE: 360.0	319 359 339 302 227 173 130
XX		
	XX Red cells are untrantically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS	40T ALTER THESE CELLS

547:2012 547:2012 d crop type ² Sep Oct 30 0.70 0.80 0.70 0.80 171 122 166.0 0.88 138.5 166.4 138.5 32.1 38.5 32.1 38.5 166.4 138.4 0.0 0.0 0.0 0.0 0.0 0.0	A	West Rd & Boorga Road. Nericon NSW 2680	la Road.	Nerico	WSN un	2680				
Description Early and derived from Table 52 AS15472012 Mattenener Flow assol on maximum petential occupancy and derived from Table 52 AS15472012 Mattenener Flow assol on maximum petential occupancy and derived from Table 52 AS15472012 Mattenener Flow assol on maximum petential occupancy and derived from Table 52 AS15472012 Best fraction assol on maximum petential occupancy and derived from Table 52 AS15472012 Best fraction C 0-6-0.8 Unitiess Estimates evaluation relation of an evaluation random mathematication as a fraction of an evaluation varies with season and corp type ² Best fraction C model C 0-6-0.8 Unitiess Estimation and number Display frammin Second C 0-6-0.8 Unitiess Second and number Display frammin Second C 0-6-0.8 Unitess Second and number Display frammin Second C 0-6-0.8 Unitess Second and number Display frammin Second Second and number Second and number Display frammin Second and number Second and number Second and number Display frammin Second and number Second and number Second and number Display frammin Second and number Second and number Second and number C model Display frammin Second and number <			Mond Mond	nodel						
Important Flow Important flow <th co<="" th=""><th></th><th></th><th></th><th>Idiloli</th><th></th><th></th><th></th><th></th><th></th></th>	<th></th> <th></th> <th></th> <th>Idiloli</th> <th></th> <th></th> <th></th> <th></th> <th></th>				Idiloli					
Mistervisiter Flow Q S80 Olday Based on maximum potential occupancy and derived from Table X5.45:1547:2012 Imgentiater Imgentiation Imgentiation Immediation Based on conservative soil texture dasspermeablity and derived from Table M5.1547:2012 Immediation FE O.0-0.0 Immediation Feature Immediation Ammediation										
Inglation Rate DIR 3.5 mmday transmission ased on conservative soil exture class/permeability and derived from Table M AS1547:2012 Index Land Application Area L O.6-0.8 Inflass Emmaty is a fraction of pan evaporation; varies with season and corp type ² Retrink AVIS 075401 Emmaty is a fraction of pan evaporation; varies with season and corp type ² Emmaty is a fraction of pan evaporation; varies with season and corp type ² Onthity Pan Evaporation Data Onthit AVIS 075401 State and influtates, allowing for any runoff Avia and influtates, allowing for any runoff Onthity Pan Evaporation Data Onthit AVIS 075401 State and influtates, allowing for any runoff Avia and influtates, allowing for any runoff Parameter Aminetic and influtates, allowing for any runoff Avia and influtates, allowing for any runoff Avia and influtates, allowing for any runoff Description End Minetion State S	980 L/day	al occupancy	and derived	from Table	5.2 AS1547	.:2012				
tied Land Application Area L <u>0 00-08</u> mm ² 1 <u>Runof Factor RF</u> <u>0 00-08</u> untriese Estimates expontanspiration as fraction of part evaporation, varies with season and corp bype ² <u>Runof Factor RF</u> <u>0 00-08</u> untriese Estimates evaporation or similar transmiss on the second of an evaporation, varies with season and corp bype ² <u>Runof Factor RF</u> <u>0 00-08</u> untriese Estimates evaporation or similar transmiss on the second number <u>Onlini Paintella Cartin ANS (075041)</u> BoM Station and number <u>Contributes Proposition Data and number</u> <u>Entitient NNS (075041)</u> BoM Station and number <u>Contributes Proposition Data and number</u> <u>Contributes Proposition Data and number</u> <u>Runof Restructures and corp bype² Restructures <u>on the NNS (075041)</u> BoM Station and number <u>Data in the NNS (075041)</u> BoM Station and number <u>Runof Restructures and second and second as and runof tracks</u> <u>1000 0.000 0</u></u>	3.5 mm/day	texture class/	permeability	and derived	d from Table	M AS154	7:2012			
eticitie in the constrained of the constrained of the neraporation, varies with season and crop type ² <u>Contribly Participants</u> <u>Contribly Participants</u> <u>Contributive Participants</u> <u>Contribly Participants</u> <u>Contribly Participants</u> <u>Contribly Participants</u> <u>Contribly Participants</u> <u>Contributive Participants</u> <u>Contri</u>	m ²									
Runoif Factor Ref 1 Unities Proprior Proproprior Proproprior <	0.6-0.8 unitless	on as a fractio	n of pan evat	poration: va	ries with sea	ason and a	Sron type ²			
Incluirly Paintell Data Griffith AVIS (075041) BoM Station and number Incluirly Paintell Data Griffith AVIS (075028) BoM Station and number Incluirly Paintell Data Griffith CSIRO (075028) BoM Station and number Paramati R Paramati Paramati <td>1 unitiess</td> <td>mains onsite</td> <td>and infiltrates</td> <td>allowing fc</td> <td>or any runof</td> <td></td> <td></td> <td></td> <td></td>	1 unitiess	mains onsite	and infiltrates	allowing fc	or any runof					
Outhly Pan Evaporation Data Griftin CSIRO (075028) BoM Station and number Parameter Symbol Formula Units Jan Apr May Jun Apr Sep Oct Parameter Symbol Formula Units Jan Apr May Jun Apr Sep Oct	5041)			D		1 1 1 1 1				
Parameter Symbol Formula Units Jan Har Apr May Jun Jul Aug Sep<	75028)									
Dark Intention Dark In	Formula Units Jan Feb			In	lul.	And		Now Dec	Tatal	
	days 31 28	i.		30	31	31				
Crop Factor E mimmonth 283.7 224 186 105 62 42 436 71.3 102 131.9 Crop Factor C Diffect 0.80 0.60 0.70 0.66 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.70 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.66 0.70 0.70 0.66 0.70 0.70 0.70 0.80 0.70 0.70 0.70 0.80 0.70 0.70 0.80 0.70 0.70 0.80 0.70 0.70 0.80 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.70	mm/month 33.1 30			33.4	33.2	35.2		.,		
University University <thuniversity< th=""> University Universi</thuniversity<>	mm/month 269.7 224			42	49.6	71.3		213 251.		
Function ET Exc mm/month 216 173 130 74 37 25 30 43 71 122 Percolation B Dirxd mm/month 245 165 176 200 166 176 200 176 201 176 201 176 201 <	unitiess 0.80 0.80	2		0.60	0.60	0.60		 .80 0.80	0	
Trendition En Direct Internation En Direct Internation Cutous En T/S	Evr markmath 246 420			L						
Total Total Test Title Test	DIPUD mm/month 108.5 08			22		43		170 201		
Statistical Relation Raintall R. Rx/F mm/month 33.1 30 36.6 27.8 35.2 35.2 35.1 38.5 Appletitiment w (Q2D)L mm/month 33.1 30 36.6 27.8 35.2 35.1 38.5 Appletitiment w (Q2D)L mm/month 133.0 120.3 136.5 124.5 39.3 36.5 35.1 38.5 ACE CALCULATION x (Q2D)L mm/month 133.0 133.0 133.1 135.1 138.1 38.5 ACE CALCULATION x (Q2D)L 0.0 0	ET+B mm/month 324.3 277.2			130.5		108.5			12/1.5	
Retained Rainfall RR RKF mm/month 33.1 30 36.6 27.8 35.2 35.2 32.1 38.5 Applied Effluent W (02/0)1. mm/month 59.9 90.3 96.7 99.9				4.001	1	0.101				
Applied Effluent W (3X0)L mm/month 39.9 96.7 99.9 96.7 </td <td>RxRF mm/month 33.1 30</td> <td></td> <td></td> <td>33.4</td> <td>33.2</td> <td>35.2</td> <td></td> <td>34.2 32.4</td> <td>4015</td>	RxRF mm/month 33.1 30			33.4	33.2	35.2		34.2 32.4	4015	
Inputs RR4W mmmonth 133.0 120.3 133.1 <	(QxD)/L mm/month 99.9 90.3			96.7	0 00	0 00				
AGE CALCULATION AGE CALCULATION GE CALCULATION State and the services much in the structure from previous month in the structure for the miniment in the structure for structure for storage for hominated Area in the miniment in the structure for storage for hominated Area in the miniment in the structure for storage for hominated Area in the miniment in the structure for storage for hominated Area in the miniment in the structure for storage for hominated Area in the structure for storage for hominated Area in the structure for the miniment is structure for the miniment in the structure for the miniment is structure for the s	RR+W mm/month 133.0 120.3	the second		130.1	133.1	135.1			3 1578.1	
Permaining from previous month Image of the month <			14.0							
Storage for the month 5 (RR+W)-(ET+B) mm/month 191.2 -15.9 -10.2 -5.4 -16.1 -47.6 -91.6 Cumulative Storage N M 0.0	mm/month 0.0 0.0			0.0	0.0	0.0				
Cumulative Storage M mm 0.0	(RR+W)-(ET+B) mm/month -191.2 -156.9 .			-0.1	-5.1	-16.1		44.5 -177.0	0.	
Number of the speedsheet of the spreadsheet of the spreads	0.0 0.0			0.0	0.0	0.0				
AREA REQUIRED FOR ZERO STORAGE m² 104 111 150 195 274 304 262 204 159 UM AREA REQUIRED FOR ZERO STORAGE: 304.0 m² m² 104 111 150 155 274 304 262 204 159 UM AREA REQUIRED FOR ZERO STORAGE: 304.0 m² m² 104 150	NXL									
UM AREA REQUIRED FOR ZERO	m ² 104	and the second	1	304	289	262		122 110		
XX	304.0									
Please enter data in blue cells XX Red cells are automatically populated by the spreadsheet XX Data in yellow cells is calculated by the spreadsheet										
	Please enter data in blue cells XX Red cells are automatically populated by the spreads XX Data in vellow cells is calculated by the spreadsheet	heet DO NOT AI T	FR THESE (S I II						

• (

0

Iddress: Nest Rd & Boorga Road, Nericon NSW. Iddress: 2,015 Assessor: David McMahon David Metric flow David McMahon David Mcman Assessor: David McMahon David Mcman Assessor: David McMahon David Mcman Assessor: David McMahon David David McMahon Based on conservative soil texture class formariant potential cocupancy and derived from Table 5 2A51547. David McMahon Dir 4.00 mmday Based on conservative soil texture class formation varies with sea to a manoritante cocupancy and derived from Table 5 2A51547. David McMahon Dir 0.00 Mcman Based on conservative soil texture class formation varies with sea to a manoritante cocupancy and derived from Table 5 2A51547. David McMahon Dir 0.00 Mcman Directure from Table 5 2A51547. David McMahon Directure from Table 5 2A51547. Directure from Table 5 2A51547. David McMahon Directure from Annorements fr	Irrigation area sizing		N RIISN	NOILIIIIALEU		HIGA WALEI	מוכו	המומוולס			>				and the second se		
2,015 2,015 980 L(day) n L 263 m²2 n L 263 m²2 n C 0.6-0.8 unitiess cfrifth AWS (075041) ata Unitiess symbol Formula Units N RK RKF mm/month M (320)L mm/month mm/month M R RKF mm/month M N (320)L mm/month M N NAL mm/month M NAL mm/month mm/month M NAL mm/month mm/month M NAL mm/month mm/month A NAL mm/month mm/month M NAL mm/month mm/month M N MAL 1 Droctores N MAL 1	Site Address:					West F	Rd & B	oorga l	Road, I	Nerico	n NSW	12680					
Q 980 Uday I L 263 m² I C 0.6-0.8 unitless R T 1 unitless And Andress Criffith AWS (075041) unitless And Andress Criffith AWS (075041) unitless Andress Criffith AWS (075041) unitless Andress Criffith AWS (075041) unitless Symbol Formula Units Criffith CSIRO (075028) Criffith CSIRO (075028) Andress E Exc unitless Symbol Formula Units units R RKF mm/month mm/month R RKF mm/month mm/month M RR+W)-(ET+B) mm/month M N NAL L Andress RR+W)-(ET+B) mm/month M N NAL L DR ZERO STORAGE m² M M NAL L M NAL L DR ZERO STORAGE m² M NAL L M NAL L M NAL R M NAL L <th></th> <th>2,015</th> <th></th> <th></th> <th></th> <th>Assess</th> <th>or:</th> <th>Davic</th> <th>McMa</th> <th>ahon</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>		2,015				Assess	or:	Davic	McMa	ahon							
Q 980 Uday DIR 4.0 mm/day L 263 m² R 1 unitiess RF 1 unitiess B Ert Exc mm/month Ert+B mm/month R RxF mm/month R RxF mm/month R RxF mm/month N (QxD)/L mm/month M SONL mm/month M S RR+W-(ET+B) mm/month M NAL L D FOR ZERO STORAGE m M NAL L M NAL R M NAL R M NAL R M NAL L M NAL R M NAL R M NAL R M NAL R M NAL L M N	INPUT DATA	5-5-55			A. C. Start		and the second		200-10		1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5 - S - C	Ser.			4
DIR 4.0 mm/day L 263 m² RF 1 unitless RF 1 unitless cfrifth CSIRO (075041) unitless symbol Griffth AWS (075041) AGA unitless Symbol Formula D Griffth CSIRO (075038) AGA Formula Units Symbol Formula Units R RK RXF mm/month R RXRF mm/month mm/month R RXRF mm/month mm/month M (QAD)/L mm/month mm/month M RR+W)-(ET+B) mm/month mm/month M NAL L mm/month M NAL M M N NAL L M Dr Dr ZERO STORAGE m ³ mm M NAL L M M NAL L M	Design Wastewater Flow	a	980	L/day	Based on I	maximum pot	ential occu	pancy and	derived fro	om Table	5.2 AS154	7:2012	1			1	
L 263 m² RF 1 unitless RF 1 unitless Griffith ANS (075041) unitless Symbol Griffith ANS (075028) ata Criffith CSIRO (075028) Symbol Formula unitless Symbol Formula Unitless Symbol Formula Unitless Symbol Formula Unitless R RK RxRF mm/month R RXRF mm/month R RRFW/ mm/month N RR+W/-(ET+B) mm/month M NAL L N NAL L SR ZERO STORAGE m SY PFARO STORAGE m	Design Irrigation Rate	DIR	4.0	mm/day	Based on (conservative :	soil texture	class/pern	neability ar	nd derived	from Tabl	e M AS15	47:2012				
C 0.6-0.8 unitless IJ Fainfall Data C 0.6-0.8 unitless IJ Painfall Data Criffth AWS (075041) unitless IJ Parameter Symbol Formula Unitless Parameter Symbol Formula Unitless Parameter Symbol Formula Unitless Restribution E Mittin AWS (075041) Initless Restribution B Formula Units Crop Factor C C Units Crop Factor C Mittin AWS (075041) Initials Crop Factor N RRAKF	Nominated Land Application Area	_	263	m²	Ŧ												
RF 1 unitless Griffith AWS (075041) Unitless Symbol Formula Unitless Symbol Formula Units R RxR Markmonth R RxRF mm/month R RxRF mm/month N (QxD)/L mm/month R RXF mm/month R RXF mm/month N NAL L N NAL mm N NAL R OR ZERO STORAGE m ² OR ZERO STORAGE m ² XX Data in yellow cells is ca	Crop Factor	v	0.6-0.8	unitless		evapotranspi	ration as a	fraction of	pan evapo	pration; va	ries with se	eason and	crop type	2			
Griffith AWS (075041) Boll Station and number Criffith CSIRO (075028) Boll Station and number Apr May Jun Jul Jul <thjul< th=""> Jul Jul</thjul<>	Rainfall Runoff Factor	RF	1	unitless	Proportion	of rainfall tha	t remains c	onsite and i	infiltrates,	allowing fo	r any rund	off					
Parameter Symbol Formula Units Jan Feb Mar Apr May Jun Jul Days in month Expondin E mm/month 331 23 33	Mean Monthly Rainfall Data Mean Monthly Pan Evaporation Data	Griffit	ith AWS (075 h CSIRO (07	5041) 5028)	BoM Static BoM Static	on and numbe on and numbe											
Days in month D days 31 28 31 29 31 30 31 Fandal E mmmonth 33,1 29 0,0 0,		Symbol	Formula	Units	Jan	Feb	Mar	Apr	Mav	Jun	Inc	Aug	Sep	Oct	Nov	Dec	Total
Faintail Raintail Raintailit Raintail Raintail		D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Evaporation E mmmonth 283.7 224 185 0.6 62 42 036 <	Rainfall	ĸ		mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5
Cool rated Cool rate	Evaporation	шо		mm/month	269.7	224	186	105	62	42	49.6	71.3	102	151.9 0.80	213 0.80	251.1 0.80	1727.6
Name Eff Exc minimonth 216 173 130 74 57 25 30 142 143 143 143 143 143 143 143 143 143 143 143 143 143 143 145 143 145 143 145<	1	U		- unitiess	0.80	0.00	0.0	0.0	00.0	000	0.0	000	010	000	200	000	
	Evanotransniration	Ŀ	ExC	mm/month	216	179	130	74	37	25	30	43	71	122	170	201	1297.8
Outputs ET+B mm/month 338 2912 2542 1935 1612 1452 1338 Retained Rainfall RR RK mm/month 33.1 30 36.6 27.8 35.4 33.2 Applied Effluent W (320)L mm/month 145.6 104.3 115.5 111.8 115.5 141.8 155.5 145.2 145.2 145.5 145.5 Applied Effluent W (320)L 143.6 134.3 155.1 139.6 27.8 35.2 145.2 145.2 145.5 148.7 Acted CALCULATION M Mm/month 191.1 0.0	Percolation	j @	DIRXD	mm/month	124.0	112	124.0	120.0	124.0	120.0	124.0	124.0	120.0	124.0	120.0	124.0	1460.0
Statistical RR RxRF mn/month 33.1 30 35.6 27.8 35 31.4 32.5 Applied Applied (2x0)VL mn/month 115.5 111.8 115.5 111.8 115.5 113.4 145.5 141.8 155.5 141.8 155.5 141.8 155.5 141.8 155.5 141.8 145.5 141.5 145.5 141.5 145.5		Sec. No.	ET+B	mm/month	339.8	291.2	254.2	193.5	161.2	145.2	153.8	166.8	191.4	245.5	290.4	324.9	2757.8
Retained Rainfall RR RARF mm/month 33.1 30 35.6 27.8 35 33.4 33.2 Applet Ipuds Retained Rithert W (CxD)/L mm/month 145.5 110.8 15.5 111.8 15.5 111.8 15.5 112.8 133.5 132.1 145.5 145.2 145.2 145.2 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.5 145.7 145.7 145.7 145.7 145.7 145.5 145.7													1				
Applied Effluent W (CAD)/L mm/month 115.5	Retained Rainfall	RR	RxRF	mm/month	33.1	30	36.6	27.8	35	33.4	33.2	35.2	32.1	C.95	24.2	32.4	C'104
AGE CALCULATION Main from the formation of the month 0.0 D.0 And<	Applied Effluent	N	(QXD)/L	mm/month	115.5	104.3 134.3	115.5	111.8 139.6	115.5 150.5	111.8	115.5	1150.7	111.8	154.0	111.8	147.9	1761.6
a remaining from previous month 0 (0 0	STORAGE CALCULATION	100						2020-22	a, Yadi aris	Solered.	「「「	The second	di caso di	18			
Storage for the month S (RX+W)-(ET+B) mm/month -191.1 -156.9 -102.1 -53.9 -10.7 0.0 -5.0 cum Storage for Nominated Area N NL L 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 NL EAE AREA REQUIRED FOR ZERO STORAGE m ² 99 105 140 177 241 263 252 UM AREA REQUIRED FOR ZERO STORAGE: 263.0 m ² 26	Storage remaining from previous month			10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	•
Cumulative Storage M mm 0.0 Dis is 252 252	Storage for the month	s	(RR+W)-(ET+B		-191.1	-156.9	-102.1	-53.9	-10.7	0.0	-5.0	-16.1	47.5	-91.5	-144.4	0.771-	
v Nkl L 0 177 241 263 AREA REQUIRED FOR ZERO STORAGE m² s9 105 140 177 241 263 UM AREA REQUIRED FOR ZERO STORAGE: 263.0 m² s9 105 140 177 241 263 UM AREA REQUIRED FOR ZERO STORAGE: 263.0 m² s9 105 m² 263 m² 263.0 m² 263 <	Cumulative Storage Maximum Storage for Nominated Area	ΣZ			0.00	0.0	0.0	0.0	2	0.0	0.0	20	0	2	5	0	
AREA REQUIRED FOR ZERO STORAGE m² 99 105 177 241 263 UM AREA REQUIRED FOR ZERO STORAGE: 263.0 m² ZEND AREA REQUIRED FOR ZERO STORAGE: 263.0 m² Please enter data in blue colls 263.0 m² XX Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS		: >	NxL	-	0							and the second second	A December of the			and the second	
UM AREA REQUIRED FOR ZERO	LAND AREA REQUIRED FOR ZE	ERO ST	ORAGE	a2	66	105	140	177	241	263	252	231	185	147	115	104	
X	MINIMUM AREA REQUIRED FOI	R ZERO	STORAGE	ü	263.0	m²											
	CELLS	××	Please enter Red cells are Data in yellov	data in blue e automatica w cells is ca	e cells ally populate Iculated by	ed by the spre the spreadsh	adsheet eet, DO NO	DT ALTER	THESE C	ELLS				500			
NOIES	NOTES		10.01		:							for some					
¹ This value should be the largest of the following: land application area required based on the most limiting nutrient balance or minimum area required tor zero storage	This value should be the largest of the	e following	: land applica	ation area re	equired bas	ed on the mo	st limiting n	Iutrient Dai	ance or m	nimum ar	sa require	101 7610	slorage				

Indication Assessor: David MCMahon Uday Based on maximum potential occupancy and derived from Table K.2 AS1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table M.S1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table K.2 AS1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table K.2 AS1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table K.2 AS1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table K.2 AS1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table K.2 AS1547:2012 Immiday Based on conservative soil texture class/permeability and derived from Table K.2 AS1547:2012 Attribut termains onsite and inflicteres, allowing for any runoff As1 Attribut and number As1	:: 2,015 Assessor: David McMahon International Assessor: David McMahon Assessor: David McMahon International International Assessor: David McMahon Assessor: David McMahon International International International Assessor: David McMahon Assessor: David McMahon International International International International International International McMahon M	Assessor: David McMahon Image: Transform the product of the prod	Z,015 TA TA Ta Constant Q Etewater Flow Q Bind Application Area L Cond Application Area L Off Factor RF Tainfall Data Griffith AWS (075028) Parameter Symbol Formula Days in month D Evaporation Evamoration Cool Factor C Days in month D Evaporation C	Assessor: Assessor: an maximum potential n conservative soil te es evapotranspiration on of rainfall that remin ation and number ten m Feb M 0.80 0.80 0.179 179 179 179 179 179 179 179	Davi occupancy an exture class/per as a fraction o ains onsite and an Apr an Apr an Apr an 05 0 0,70 0,70	id MCMS d derived fr meability ar f pan evapc i infiltrates, a 31 35 62 0.60	ahon om Table (nd derived oration; var allowing fo	from Table from Table ries with se	7:2012 e M AS15						
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Instant Province Image State	IDATA With the SL ASI 5472012 With the SL ASI 5472012 With the SL ASI 5472012 With the SL AND ASI 5472012 With the SL ASI 5472012 Exercise Image of the SL and Application Area Image of the SL and Application Area Mission Table S. 2, 5515472012 Exercise Image of the SL and Application Area Image of the SL and Application Area Image of the SL and Application Area Mission Area Missio	TA Q 980 L/day tewater Flow Q 980 L/day tion Rate DIR 5.0 mm/day and Application Area L 208 m²a and Application Area L 208 m²a off Factor RF 1 unitess ly Rainfall Data Griffith AWS (075041) onitess ly Pan Evaporation Data Griffith AWS (075028) Days in month Days in month D Symbol Formula Units Cool Factor E Amm/month	n maximum potential on conservative soil te es evapotranspiration on of rainfall that rem ation and number 28 3 224 16 0.80 0.11	occupancy an exture class/per as a fraction o ains onsite anc ar Apr 56 27.8 56 27.5 57 57 57 57 57 57 57 57 57 57 57 57 57 5	d derived fr meability au f pan evapc i infilitrates, a 31 35 62 0.60	om Table { nd derived oration; var allowing fo Jun 30	5.2 AS154: from Table ries with se	7:2012 e M AS15-	1					
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Waterwater Flow C 960 Utday Based on maximum potential occupancy and derived from Table 52.A51547.2012 Integration Retain L Co DIR S.0 Immidaily Based on conservatives soil texture class/permeability and derived from Table 65.A51547.2012 Retain Legistion Area L Co DIR S.0 Immidaily Based on conservatives soil texture class/permeability and derived from Table 52.A51547.2012 Return Ret L Co DIR Expension Return Mase soil and unter- forming for any runoff Return Return Non- onthy Paritizion Return Unter- and Return Unter- and Return Unter- and Return Unter- and Return Non- and Soil	Witteringer Op 900 Utage Based on maximum potential occupancy and derived from Table 5.2AS1547:2012 Integrition Area Dir Sign Based on conservative soil texture class/permeability and derived from Table MAS1547:2012 Entroff Feature C 0.6.0.8 Immedia Estimates Read on conservative soil texture class/permeability and derived from Table MAS1547:2012 Entroff Feature C 0.6.0.8 Immedia Estimates Read on conservative soil texture class/permeability and derived from Table MAS1547:2012 Entroff Feature C 0.6.0.8 Ministro Site of the minister Proprint of texture class permeability and derived from Table MAS1647.0012 Entroff Feature C 0.6.0.8 Minister	Rewater Flow Q 980 L/day ition Rate DIR 5.0 mm/day and Application Area L 208 m² and Application Area L 208 m² off Factor RF 1 unitess ly Rainfall Data Griffith AWS (075041) unitess ly Pan Evaporation Data Griffith CSIRO (075028) days Parameter Symbol Formula Units Days in month D Rainfall edys Rainfall R mm/month corporation	nn maximum potential nn conservative soil te es evapotranspiration on of rainfall that rem ation and number Eeb M Feb M 28 3 28 3 28 3 28 3 28 3 28 3 21 17 179 11	occupancy an exture class/pere as a fraction o ains onsite anc ains on ains ains an ains ains ains ains ains ains ains ains ains	d derived fr meability at f pan evapc i infiltrates, : 31 35 62 0.60	om Table t nd derived oration; var allowing fo Jun 30	5.2 AS154 from Table ries with se	7:2012 e M AS15						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Implicit	Image: Net in the sector intervent of the secto	Market Discrete Discrete Discrete Discrete and Application Area L 208 m ² and Application Area L 208 m ² and Application Area L 208 m ² off Factor RF 1 unitess IV Rainfall Data Griffith AWS (075041) unitess IV Pan Evaporation Data Griffith AWS (075028) days Parameter Symbol Formula unitess Days in month D mm/month days Rainfall E mm/month days	rimaximum potential es evapotranspiration on of rainfall that remi- ation and number <u>Feb M</u> 28 3 224 16 224 16 179 11	xture class/per xture class/per as a fraction o ains onsite and an Apr an Apr 56 27.8 56 27.8 56 0.70 70 0.70	d denved in meablifty au f pan evapc i infiltrates, i 31 35 62 0.60	our rape of nd derived allowing fo Jun 30	from Table from Table ries with se	e M AS15						
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Interfactor L 208 m ⁻¹ Attract L 208 m ⁻¹ Attract L 208 m ⁻¹ Attract L C 0.6.0.8 Unities Proportion of anital that remains onitie and infinates, alowing for any runoff Attract Description C 0.6.0.8 Unities Proportion of anital that remains onitie and infinates, alowing for any runoff Attract Description C 0.6.0.8 Unities Proportion of anital that remains onitie and infinates, alowing for any runoff Attract Description Descrin Description Description	Interfaction L 208 m ⁻¹ Returned I 200 unterses Exploration of rained with easient and corp byte and muters Returned Returned Interses Performance Interses Performance Interses Performance Oribhi Retire Returned	and Application Area L 208 m² off Factor C 0.6-0.8 unitless IV Rainfall Data Griffith AWS (075041) unitless IV Pan Evaporation Data Griffith AWS (075028) m² Parameter Symbol Formula Units Days in month D Month adys Rainfall R mm/month days Cool Factor C C units	es evapotranspiration on of rainfall that remmation and number ation and number <u>Feb M</u> 28 3 224 16 0.80 0.11	as a fraction o ains onsite and ar Apr 86 27.8 56 105 70 0.70	f pan evapo i infiltrates, a May 31 35 62 62	oration; var allowing fo Jun 30	ries with se		47-2012					
Unifies Estimates evaportanspiration as a fraction of pare evaporation; varies with season and crop type ² unifies Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff 41) BolM Station and number 22) May a proper section of pare evaporation; varies with season and crop type ² 0 Station and number Out of varies and infiltrates, allowing for any runoff 241) Dol M Station and number 281 31 30 31 31 31 283 31 32 31 31 31 131 130 132 32 32 31 131 31 31 32 32 31 131 31 32 32 32 32 131 131 31 31 31 31 31 31 31	ector C 0.6-0.0 Infless Estimates evaportation as fraction of pane evaporation; varies with season and crop type ² Influentification RF 1 Infless Point million R No	etct C 0.6-0.8 Inflexe Estimates evaporation; varies with season and cop type ² Inflext Fraction C 0.6-0.8 Inflexes Estimates evaporation; varies with season and cop type ² Inflext Fraction C 0.6-0.8 Inflexes Estimates evaporation; varies with season and cop type ² Inflext Fraction C 0.6-0.8 Inflexes Estimates evaporation; varies with season and cop type ² Inflext Fraction C 0.6-0.8 Inflexes Estimates and inflexes, allowing for any runof Inflext Endemt Endemt Endemt End Ref	C 0.6-0.8 unitless Of Factor RF 1 unitless Iy Rainfall Data Griffith AWS (075041) unitless Iy Pan Evaporation Data Griffith CSIRO (075028) unitless Parameter Symbol Formula Units Days in month D mmmonth days Rainfall R mmmonth ctore Coop Factor C D days	es evapotranspiration on of rainfall that rem- ation and number Eeb M 28 3 28 3 28 3 29 0 179 11	as a fraction o ains onsite and ar Apr 36 27.8 36 105 70 0.70	f pan evapo May 31 35 62 0.60	oration; var allowing fo Jun 30	ries with se or any runo		7107.11					
unites Proportion of rainfall that remains onsite and infittates, allowing for any runoff 41) Box Station and number 23) Box Station and number 41) Box Station and number 23) Box Station and number 24) Box Station and number 24) Box Station and number 23) Box Station and number 241 Box Station and number 251 Box Station and number 261 27 28 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 30 31 31 30 31 31 30 31 31 31 31 31 31 31 31 31 32 31 32 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 31 <t< td=""><td>Runoff Factor RF 1 Unifies Proportion of rainfall that remains onsite and inflictates, allowing for any runoff Runoff Factor RF 1 Unifies Proportion of rainfall that remains onsite and inflictates, allowing for any runoff Runoff Entitie Simple Simple Image Simple Simple</td></t<> <td>Iterator Fit 1 unities Proportion of rainfall that remains onsite and infittates, allowing for any runoff Rundhy Barifall Dela Criffith Assoc 075641) Bok Station and number Contriby Parifall Dela Criffith Assoc 075641) Bok Station and number Contriby Parifall Dela Criffith Assoc 075641) Bok Station and number Contriby Parifall Dela Criffith Assoc 075641) Bok Station and number Parameter Symbol Form Nax Unites Non Nax Anno Anno</td> <td>Off Factor RF 1 unitless Iy Rainfall Data Griffith AWS (075041) Iy Pan Evaporation Data Griffith CSIRO (075028)</td> <td>on of rainfall that rem ation and number ation and number <u>Feb M</u> 28 3 28 3 28 0 0.80 0 179 1</td> <td>ains onsite and ar Apr 11 30 5.6 27.8 5.6 27.8 5.6 0.70 70 0.70</td> <td>l infiltrates, i May 31 62 62 0.60</td> <td>allowing fo Jun 30</td> <td>or any runo</td> <td>sason and</td> <td>crop type</td> <td>2</td> <td></td> <td></td> <td></td>	Runoff Factor RF 1 Unifies Proportion of rainfall that remains onsite and inflictates, allowing for any runoff Runoff Factor RF 1 Unifies Proportion of rainfall that remains onsite and inflictates, allowing for any runoff Runoff Entitie Simple Simple Image Simple	Iterator Fit 1 unities Proportion of rainfall that remains onsite and infittates, allowing for any runoff Rundhy Barifall Dela Criffith Assoc 075641) Bok Station and number Contriby Parifall Dela Criffith Assoc 075641) Bok Station and number Contriby Parifall Dela Criffith Assoc 075641) Bok Station and number Contriby Parifall Dela Criffith Assoc 075641) Bok Station and number Parameter Symbol Form Nax Unites Non Nax Anno	Off Factor RF 1 unitless Iy Rainfall Data Griffith AWS (075041) Iy Pan Evaporation Data Griffith CSIRO (075028)	on of rainfall that rem ation and number ation and number <u>Feb M</u> 28 3 28 3 28 0 0.80 0 179 1	ains onsite and ar Apr 11 30 5.6 27.8 5.6 27.8 5.6 0.70 70 0.70	l infiltrates, i May 31 62 62 0.60	allowing fo Jun 30	or any runo	sason and	crop type	2				
41) Dem Station and number 23) Dem Station and number Units Jan Feb Mar Apr Jun Jun <th co<="" td=""><td>Incluitly Faintial Data Griffith ANIS (075041) Boilly Station and number Incluitly Faintial Data Griffith ANIS (075021) Boilly Station and number Incluitly Faintial Data Griffith ANIS (075021) Boilly Station and number Paramatine Exponsition Data Unit of the station Jan Feb Mar Jan Station Statin Station Station</td><td>Monthly Partical Data Oritific Mitch ANK (075031) Bolk Station and number Monthly Partical Data Oritific Mitch ANK (075031) Bolk Station and number Parenter Oritific Mitch Ank (075031) Bolk Station and number Parenter Display Information Display Information</td><td>IV Rainfall Data Griffith AWS (075041) IV Pan Evaporation Data Griffith CSIRO (075028) Parameter Symbol Formula Days in month D days Rainfall R mm/month Evaporation E mm/month Coop Factor C unites</td><td></td><td></td><td>May 31 85 82 0.60</td><td>Jun 30</td><td></td><td>ff</td><td></td><td></td><td></td><td></td><td></td></th>	<td>Incluitly Faintial Data Griffith ANIS (075041) Boilly Station and number Incluitly Faintial Data Griffith ANIS (075021) Boilly Station and number Incluitly Faintial Data Griffith ANIS (075021) Boilly Station and number Paramatine Exponsition Data Unit of the station Jan Feb Mar Jan Station Statin Station Station</td> <td>Monthly Partical Data Oritific Mitch ANK (075031) Bolk Station and number Monthly Partical Data Oritific Mitch ANK (075031) Bolk Station and number Parenter Oritific Mitch Ank (075031) Bolk Station and number Parenter Display Information Display Information</td> <td>IV Rainfall Data Griffith AWS (075041) IV Pan Evaporation Data Griffith CSIRO (075028) Parameter Symbol Formula Days in month D days Rainfall R mm/month Evaporation E mm/month Coop Factor C unites</td> <td></td> <td></td> <td>May 31 85 82 0.60</td> <td>Jun 30</td> <td></td> <td>ff</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Incluitly Faintial Data Griffith ANIS (075041) Boilly Station and number Incluitly Faintial Data Griffith ANIS (075021) Boilly Station and number Incluitly Faintial Data Griffith ANIS (075021) Boilly Station and number Paramatine Exponsition Data Unit of the station Jan Feb Mar Jan Station Statin Station Station	Monthly Partical Data Oritific Mitch ANK (075031) Bolk Station and number Monthly Partical Data Oritific Mitch ANK (075031) Bolk Station and number Parenter Oritific Mitch Ank (075031) Bolk Station and number Parenter Display Information Display Information	IV Rainfall Data Griffith AWS (075041) IV Pan Evaporation Data Griffith CSIRO (075028) Parameter Symbol Formula Days in month D days Rainfall R mm/month Evaporation E mm/month Coop Factor C unites			May 31 85 82 0.60	Jun 30		ff					
		Farameter Symbol Fermula Units Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Rainfill R Martine P Martine P Martine P	Parameter Symbol Formula Units Days in month D days days Rainfall N days days Rainfall R mm/month days Evaporation E mm/month days Coop Factor C unities days	Feb 28 30 224 0.80		May 31 35 62 0.60	Jun 30								
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Days in moth Days in moth Copression D Marking Exponention B Mmoth motion B Mmoth SB1 SB1 <	Days in month D days Rainfall R mm/month R Evaporation E mm/month d Crop Factor C unitiess	28 30 224 0.80		33 88 9.60 9.60	30	Jul	Aud	Sen	100	Nov	Der	Total	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		Raminal R mmmonth 331 30 66 77.6 55 32 32.2 32.3<	Rainfall R mm/month R mm/month E mm/month Coperation E unitiess	30 224 0.80 179		35 62 0.60		31	31	30	31	30	31	365	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	cropraduri e minimonu Crop Factor c unitiess	0.80 179		0.60	33.4	33.2	35.2	32.1	38.5	34.2	32.4	401.5	
mm/month 216 179 130 74 37 25 30 43 71 122 170 201 0.00 <td>UTS Normation Title Exc mmmonth 216 173 130 74 37 25 30 43 71 122 70 201 Evapotranspiration ET Exc mmmonth 155.0 130 74 37 25 30 43 71 72 70 201 355 323 352 352 353 354 353 354 354 355 354 354 355 354 354</td> <td>UTS mmonth 216 173 216 173 216 173 216 170 201 000</td> <td></td> <td>179</td> <td>1</td> <td>000</td> <td>42</td> <td>49.6</td> <td>71.3</td> <td>102</td> <td>151.9</td> <td>213</td> <td>251.1</td> <td>1727.6</td>	UTS Normation Title Exc mmmonth 216 173 130 74 37 25 30 43 71 122 70 201 Evapotranspiration ET Exc mmmonth 155.0 130 74 37 25 30 43 71 72 70 201 355 323 352 352 353 354 353 354 354 355 354 354 355 354 354	UTS mmonth 216 173 216 173 216 173 216 170 201 000		179	1	000	42	49.6	71.3	102	151.9	213	251.1	1727.6	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		179			000	000	000	010	0.00	0.00	0.00		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Percolation B DIRx0 mmmonth 155.0 156.0 155.0 156.0 155.0 156.0	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	ET ExC mm/month			37	25	30	43	71	122	170	201	1297.8	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Output Error Infinition 33.1 30.2 17.2 19.8 27.1 27.6 35.9 35.9 State Relatined Rainfall R.R RxFr mm/month 3.1 30 35.6 27.8 35.2 15.2 17.8 32.7 35.9 32.4 36.1 31.7 34.8 148.1 148.1 148.1 148.1 148.1 148.1 148.1 148.1 148.1 148.1 148.1	Number Couples Couples <thcouples< th=""> <thcouples< th=""> <thc< td=""><td>B DIRXD mm/month</td><td>140</td><td></td><td>155.0</td><td>150.0</td><td>155.0</td><td>155.0</td><td>150.0</td><td>155.0</td><td>150.0</td><td>155.0</td><td>1825.0</td></thc<></thcouples<></thcouples<>	B DIRXD mm/month	140		155.0	150.0	155.0	155.0	150.0	155.0	150.0	155.0	1825.0	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Retained Raintall R.R. Notwork RxKF mm/month mm/month 33.1 30.0 36.6 27.8 35.2 35.2 32.1 35.5 34.2 32.4 Applied Effluent W (2x0/)L mm/month 146.1 141.3 146.1 146.1 141.3 146.1 141.3 146.1 141.3 146.1 141.3 146.1 141.3 146.1 141.3 146.1 141.3 146.1 141.3 146.1	Retained Rainfall RR RARF mm/month 33.1 30 36.6 27.8 35.3 33.4 33.2 35.2 32.1 38.5 34.2 32.4 Applied Effluent W (020)L mm/month 146.1 141.3 146.1		013.2		192.2	1/5.2	184.8	197.8	221.4	276.5	320.4	355.9	3122.8	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Applied Effluent W (CACD)L mm/month 146.1 131.9 146.1 141.3 <td>RR RXRF mm/month</td> <td></td> <td></td> <td>35</td> <td>33.4</td> <td>33.2</td> <td>35.2</td> <td>32.1</td> <td>38.5</td> <td>6 72</td> <td>30 4</td> <td>401 5</td>	RR RXRF mm/month			35	33.4	33.2	35.2	32.1	38.5	6 72	30 4	401 5	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	W (QxD)/L mm/month	131.9		146.1	141.3	146.1	146.1	141.3	146.1	141.3	146.1	1719.7	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	AGE CALCULATION AGE CALCULATION are maining from previous month S (RR+W)-(ET-B) mm/month 0.0	AGE CALCULATION are reading for the month S (RR+W)-(ET+B) mm/month 0.0	RR+W mm/month	161.9	1000	181.1	174.7	179.3	181.3	173.4	184.6	175.5	178.5	2121.2	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Termaining from previous month S (RR+W)-(ET+B) mm/month 131.6 1.57.3 1.02 0.0	Remaining from previous month S (RF+W)-(ET-B) mm/month mm/month 0.0 <td>Card Analysis and a second</td> <td></td> <td></td> <td></td> <td></td> <td>s antes actual</td> <td>its berts, para</td> <td>an pilba.</td> <td></td> <td></td> <td></td> <td></td>	Card Analysis and a second					s antes actual	its berts, para	an pilba.					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Current with the Storage M M M 0.0<	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	mm/month c (PD+VM (ET+P) mm/month	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Num Storage for Nominated Area N <th< td=""><td>num Storage for Nominated Area N Mut L 000 00 55 122 150 193 207 200 187 155 128 103 UM AREA REQUIRED FOR ZERO STORAGE m² 90 95 122 150 193 207 200 187 155 128 103 UM AREA REQUIRED FOR ZERO STORAGE: 208.0 m²</td><td></td><td>00</td><td></td><td></td><td>0.0-</td><td>0.0</td><td>C.01-</td><td>0.04</td><td>0.28-</td><td>-144.9</td><td>4.//1-</td><td></td></th<>	num Storage for Nominated Area N Mut L 000 00 55 122 150 193 207 200 187 155 128 103 UM AREA REQUIRED FOR ZERO STORAGE m ² 90 95 122 150 193 207 200 187 155 128 103 UM AREA REQUIRED FOR ZERO STORAGE: 208.0 m ²		00			0.0-	0.0	C.01-	0.04	0.28-	-144.9	4.//1-		
L 0 1 150 193 207 200 187 155 128 103	AREA REQUIRED FOR ZERO STORAGE L 0 95 122 150 193 207 200 187 155 103 IUM AREA REQUIRED FOR ZERO STORAGE: 208.0 m ² 208.0 m ² m ² 103 103 105 103	AREA REQUIRED FOR ZERO STORAGE m² 90 95 122 150 193 207 200 187 155 128 103 UM AREA REQUIRED FOR ZERO STORAGE: 208.0 m² 90 95 122 150 193 207 200 187 155 128 103 UM AREA REQUIRED FOR ZERO STORAGE: 208.0 m² m² m² m² Please enter data in blue cells 208.0 m² m² m² 103 103 XX Red cells are automatically populated by the spreadsheet XX Red cells are automatically populated by the spreadsheet					}	2	3	5	2	0	0		
	MAREA REQUIRED FOR ZERO STORAGE: 208.0 m ² 30 122 130 133 207 200 187 155 128 103	IUM AREA REQUIRED FOR ZERO STORAGE: 208.0 m ² 208.0 m ² Please enter data in blue cells XX Red cells are automatically populated by the spreadsheet	m2 L	4					1						
208.0			208.0	m2 2		2 <u>5</u>	202	007	18/	<u>5</u>	128	103	8		

0

C

Site Address:	West	Rd & B	loorga F	Road, Nerico	n NSW 26	80			
SUMMARY - LAND APP	LICATION A	REA REG	UIRED B	ASED NITROGEN	BALANCE			93	m ²
INPUT DATA ¹	- Andrew Replaced	and the second	- Alexander all	freedoment of the second	and had and man	and the second second	Street Street		
	stewater Loading		a second and the		N	lutrient Crop	Uptake		States States
Hydraulic Load		700	L/day	Crop N Uptake	220	kg/ha/yr	which equals	60.27	mg/m²/da
Effluent N Concentration		10	mg/L			1	1	Server Street S	
% N Lost to Soil Processes (Geary	& Gardner 1996)	0.2	Decimal	A A A A A A A A A A A A A A A A A A A					
Total N Loss to Soil	1. A. S.	1400	mg/day						
Remaining N Load after soil loss		5600	mg/day						
ang ing the second s	a patrice and the second	and the same signal		I Export from LAA uffer Required for excess	nutrient	-3.61 0	kg/year m ²		· · · · · · · · ·
CELLS									
	1		ter data in b						
	XX	Red cells	are automat	ically populated by the	he spreadsheet	E Constant (
	XX	Data in ye	llow cells is	calculated by the sp	readsheet, DO	NOT ALTE	R THESE CEL	LS	
	a start and a start and								
NOTES						200 BAN 2000	1.1.1.1.1.1.1.1.1.1	unad Off	
Section of the second states of the second	arameters will aff	ect the acc	uracy of the	result obtained Wh	here nossible si	te specific (data should he		
Model sensitivity to input pa			uracy of the	result obtained. Wh	nere possible si	te specific o	data should be	usea. Ou	ierwise dat
State of the second sec	liable source suc		uracy of the	result obtained. Wh	nere possible si	te specific (data should be	used. Oti	ierwise dat

Site Address:	West	Rd & B	oorga R	Road, Nerico	n NSW 26	80			
SUMMARY - LAND APPL	ICATION A	REA REC	UIRED BA	SED NITROGE	N BALANCE		1.2.1	111	m ²
INPUT DATA ¹	and the second					1	an and a second second second		
Waste	water Loading	10.00	and the second	and a subscription of the	1	utrient Crop	Uptake		and the second second second
Hydraulic Load	Part and the second second	840	L/day	Crop N Uptake	220	kg/ha/yr	which equals	60.27	mg/m ² /day
Effluent N Concentration	MARINE MARINE	10	mg/L						
% N Lost to Soil Processes (Geary &	Gardner 1996)	0.2	Decimal	here have					
Total N Loss to Soil		1680	mg/day	and the second se					
Remaining N Load after soil loss NITROGEN BALANCE BA		6720	mg/day	I. And S. C.		have been a second	and the second s	S. Cash &	
	I.L. Martin			Export from LAA ffer Required for exces	s nutrient	-4.35 0	kg/year m ²		
CELLS	XX XX	Red cells a		ue cells cally populated by calculated by the s			R THESE CEL	LS	
CELLS		Red cells a	are automati	cally populated by			R THESE CEL	LS	
NOTES	XX	Red cells a Data in ye	are automati llow cells is c	cally populated by calculated by the s	preadsheet, DO	NOT ALTE			erwise data
в Лео зази	XX	Red cells a Data in ye ect the acc	are automati llow cells is c	cally populated by calculated by the s	preadsheet, DO	NOT ALTE			erwise data
NOTES ¹ Model sensitivity to input para	XX ameters will aff	Red cells a Data in ye ect the acc	are automati llow cells is c	cally populated by calculated by the s	preadsheet, DO	NOT ALTE			erwise data

Site Address:	West	Rd & B	oorga F	Road, Nerico	n NSW 26	80			
SUMMARY - LAND APPL	ICATION AI	REA REQ	UIRED BA	SED NITROGE	BALANCE			130	m ²
INPUT DATA ¹									
Wast	ewater Loading	Contraction of the second			1	Nutrient Crop	Uptake		
Hydraulic Load		980	L/day	Crop N Uptake	220	kg/ha/yr	which equals	60.27	mg/m²/day
Effluent N Concentration		10	mg/L						
% N Lost to Soil Processes (Geary &	Gardner 1996)	0.2	Decimal						
Total N Loss to Soil	8	1960	mg/day						
Remaining N Load after soil loss	and the state	7840	mg/day		1.0				
Minimum Area required with	2ero buffer 130	m²	Nominated I Predicted N	ion of Buffer Zone Size AA Size Export from LAA iffer Required for excess		260 360 -5.06 0	m ² kg/year m ²		
CELLS	XX XX	Red cells a		lue cells ically populated by t calculated by the sp			R THESE CEL	LS	
NOTES									
¹ Model sensitivity to input par should be obtained from a reli - EPA Guidelines for Effluent I	able source su		uracy of the	result obtained. W	nere possible s	ite specific	data should be	used. Oth	terwise data

- USEPA Onsite Systems Manual

0

0

Land Capability: 2368 West Road and Lots 102 & 104 Boorga Road, Nericon

SOIL ANALYSIS



-Emmunen es sud Papelin Protocom Prodebrus, Oneto Sevelop Management (a Singla Paraenolos) 1. SEAL Oscio, Esteren Manual

Page 37 of 37

DM McMahon Pty Ltd - January 2015



Crop

WHEAT

Analysis Results (SOIL)

Customer	ANDY RYAN C/- AG GROW AGRONOMY	Distributor	AG GROW AGRONOMY 7 FRANCINE COURT YOOGALI NSW 2680	
Sample Ref	LAKE SOUTH 0-10	Date Received	26/02/2014	
Sample No	B071189A / SBB3250			

Analysis	Result	Guideline	Interpretation	Comments
pH [1:5 H2O]*	7.1	5.5 - 8.1	Normal	Ideal range = 5.5 - 8.1. pH is in the normal range.
pH [1:5 CaCl2]	6.4	4.9 - 7.5	Normal	Ideal range = 4.9 - 7.5. pH is in the normal range.
)rganic Matter (%)	2.0	3.0 - 8	Slightly Low	Ideal range = 3 - 8%. Low organic matter has effects on CEC, moisture retention and soil structure as well as reducing potential nitrogen release. Incorporate organic matter where appropriate.
CEC (meq/100g)	10.89	12.00 - 40	Slightly Low	Ideal range = 12 - 40 meq/100g. Indicates a soil with slightly low nutrient holding capacity. Regular (annual) fertilizer applications will help reduce leaching. Addition of organic matter will help.
EC [1:5 H2O] (dS/m)	0.14	0.90 - 3	Low	Ideal range = 0.9 - 3.0. No problems of salinity expected with this soil.
NO3-N (ppm)	29.9	15.0 - 70	Normal	Normal level of nitrate-nitrogen is recorded indicating adequate supply of readily available nitrogen.
NH4-N (ppm)	2.0	a hi gilliat i a		Criefo Ratio
Phosphorus [Colwell] (ppm)	37	43 - 150	Slightly Low	Slightly low level of phosphorus is recorded.
Potassium[Am. Acet.] (meq/100g)	1.81	0.50 - 1.2	High	Level recorded is high and may interfere with uptake of magnesium and boron.
Calcium[Am. Acet.] (meq/100g)	6.05	5.00 - 15	Normal	Level recorded in the soil is in the normal range but this does not guarantee that developing crops will be adequately supplied with this essential nutrient.
Magnesium[Am. Acet.]* meq/100g)	2.64	0.80 - 4.5	Normal	Level recorded is in the normal range.
Sulphur [MCP]* (ppm)	5	8 - 20	Slightly Low	Slightly low level of sulphur recorded. Sulphur is essential for normal crop development. Deficiency affects photosynthesis and reduces yield and quality of production.
Boron[CaCl2] (ppm)	1.0	1.0 - 5	Normal	Boron level recorded is in the normal range.
Copper [DTPA] (ppm)	1.0	2.5 - 20	Low	Low level of copper recorded. Copper is essential for normal crop development. Deficiency affects photosynthesis and reduces yield and quality of production.
Iron [DTPA] (ppm)	17	5 - 120	Normal	Level of iron recorded is in the normal range.
Manganese [DTPA] (ppm)	29.8	5.0 - 60	Normal	Level of manganese recorded is in the normal range.
Zinc [DTPA] (ppm)	0.7	5.0 - 15	Very Low	Very low level of zinc recorded. Zinc is essential for norma crop development and often results in stunted crops with small leaves.



Phosyn Analytical, 1/60 Junction Road, Andrews, Queensland 4220, Australia Tel: +61 7 5568 8700 Fax: +61 7 5522 0720 Email: phosynanalytical@phosyn.com.au







Analysis Results (SOIL)

Customer	ANDY RYAN C/- AG GROW AGRONOMY	Distributor	AG GROW AGRONOMY 7 FRANCINE COURT YOOGALI NSW 2680	
Sample Ref Sample No Crop	LAKE SOUTH 0-10 B071189A / SBB3250 WHEAT	Date Received	26/02/2014	

Analysis	Result	Guideline	Interpretation	Comments
Sodium[Am. Acet.] (meq/100g)	0.2	0.3 - 3	Slightly Low	No problem.Low levels are desirable.
Aluminium[KCI] (meq/100g)	0.17	1.00 - 2.5	Low	No problem.Low levels are desirable.
Chloride* (ppm)	22	200 - 1100	Very Low	No problem.Low levels are desirable.
Ca base saturation (%)	55.6	Winney -	Normal	Calcium base saturation is in desirable range (50-75%).
K base saturation (%)	16.6	yner bened f. St styright	High	Potassium base saturation is high (desired range is 2-5%). Check base saturations for Ca, Mg & Na.
Mg base saturation (%)	24.2	A Departure of the second s	High	Magnesium base saturation is high (desired range is 5- 15%). Check base saturations for K, Ca & Na.
Na base saturation (%)	2.0		High	Sodium base saturation is high (desired range is 1-2%). Check base saturations for K, Mg & Ca.
Al base saturation (%)	1.60			6 - 0.31 - 2.62 (mog 6-044)
Ca:Mg Ratio	2.3	2.5 - 3	Slightly Low	Ca/Mg ratio provided for reference only. Slightly low level indicates possible need for around 2 t/ha gypsum addition.
Texture	SANDYLOAM	L. ACHOMINY. IC	a Martin Pra	CT CA ME AND A MARCH CARDEN AND A
Colour	BROWN	in the line of the second		
Aluminium (ppm)	15.0	PERCEPTION STATE		
Sodium (ppm)	51.0			Cambra Arch
Calcium (ppm)	1210.0			(#00Npem)
Magnesium (ppm)	317.0	and the state		i dan ana ana ana ana ana ana ana ana ana
Potassium (ppm)	706.0	Service and and Service		
Lime Requirement (t/ha)	< 0.50	el vinaciles (



Phosyn Analytical, 1/60 Junction Road, Andrews, Queensland 4220, Australia Tel: +61 7 5568 8700 Fax: +61 7 5522 0720 Email: phosynanalytical@phosyn.com.au





Date Printed · 28/02/2014



Analysis Results (SOIL)

Customer	ANDY RYAN C/- AG GROW AGRONOMY	Distributor	AG GROW AGRONOMY 7 FRANCINE COURT YOOGALI NSW 2680	
Sample Ref	LAKE SOUTH 0-10	Date Received	26/02/2014	
Sample No	B071189A / SBB3250		Upsicipated / Second rup	
Crop	WHEAT		12337.84	

Additional Comments

Aluminium (Al): 1 meq/100g equals 90 ppm Potassium (K): 1 meq/100g equals 390 ppm Sodium (Na): 1 meq/100g equals 230 ppm Magnesium (Mg): 1 meq/100g equals 120ppm Calcium (Ca): 1 meq/100g equals 200ppm You should consult your local agronomist and/or Yara representative before deciding upon any course of action based on this report.

Please Note

hilst every care is taken to ensure that the Results from Analysis are as accurate as possible, it is important to note that the analysis relates to the sample received by the laboratory, and is representative only of that sample. No warranty is given by the laboratory that the Results from Analysis relates to any part of a field or growing area not covered by the sample received. It is important to ensure that any soil, leaf, silage or fruitlet sample sent for analysis is representative of the area requiring analysis and that samples are obtained in accordance with established sampling techniques. A leaflet containing instructions on how to take soil, leaf, herbage, silage and fruit samples for analysis is available from the laboratory on request.

This report has been generated by Yara's Megalab $^{\mbox{TM}}$ software.

This laboratory has been awarded a Certificate of Proficiency for specific soil and plant tissue analyses by the Australasian Soil and Plant Analysis Council (ASPAC). Tests for which proficiency has been demonstrated are highlighted in this report with an asterisk.



Phosyn Analytical, 1/60 Junction Road, Andrews, Queensland 4220, Australia Tel: +61 7 5568 8700 Fax: +61 7 5522 0720 Email: phosynanalytical@phosyn.com.au







nitrogen. If soil sampled at around 15cm, consider deeper

sampling to ascertain subsoil nitrogen level.

Analysis Results (SOIL)

Customer	ANDY R C/- AG (YAN GROW AGROI	NOMY	Distribut	tor	AG GROW AGRONOMY 7 FRANCINE COURT YOOGALI NSW 2680	
Sample Ref Sample No Crop		OUTH 10-60 9B / SBB3251		Date Red	ceived	26/02/2014	
Analys	is	Result	Guideline	Interpretation		Comments	Addinated Co.
789	(theém ha)	in Rodine (19	1 ,066 200,073	Subscript The State	Slightly	y low level indicates possible lead	ching of nitrate-

Slightly Low

Additional Comments

You should consult your local agronomist and/or Yara representative before deciding upon any course of action based on this report.

Please Note

NO3-N (ppm)

NH4-N (ppm)

Whilst every care is taken to ensure that the Results from Analysis are as accurate as possible, it is important to note that the analysis relates to the sample received by the laboratory, and is representative only of that sample. No warranty is given by the laboratory that the Results from Analysis relates to any part of a field or growing area not covered by the sample received. It is important to ensure that any soil, leaf, silage or fruitlet sample sent for analysis is representative of the area requiring analysis and that samples are obtained in accordance with established sampling techniques. A leaflet containing instructions on how to take soil, leaf, herbage, silage and fruit samples for analysis is available from the laboratory on request.

This report has been generated by Yara's MegalabTM software.

12.4

< 1.0

15.0 - 70

This laboratory has been awarded a Certificate of Proficiency for specific soil and plant tissue analyses by the Australasian Soil and Plant Analysis Council (ASPAC). Tests for which proficiency has been demonstrated are highlighted in this report with an asterisk.



Phosyn Analytical, 1/60 Junction Road, Andrews, Queensland 4220, Australia Tel: +61 7 5568 8700 Fax: +61 7 5522 0720 Email: phosynanalytical@phosyn.com.au





					1		
Site	pH H₂O	EC mS/cm	EAT	Site	pH H₂O	EC mS/cm	EAT
1/1	7.56	0.15	5	15/2	7.74	0.20	3
1/2	7.52	0.61	3	16/1	7.25	0.32	3
2/1	7.61	0.04	3	16/2	7.32	1.19	3
2/2	7.21	0.10	5	17/1	7.03	0.10	3
3/1	7.60	0.11	5	17/2	7.50	0.21	5
3/2	7.89	0.31	3	18/1	6.79	0.13	3
.4/1	7.79	0.08	3	18/2	7.43	0.17	5
4/2	7.75	0.12	3	19/1	7.25	0.23	5
5/1	7.70	0.10	4	19/2	7.58	0.36	3
5/2	7.76	0.18	3	19/3	6.91	1.50	6
5/3	7.74	0.26	3	20/1	6.84	0.10	3
6/1	7.55	0.12	3	20/2	7.44	0.15	5
6/2	7.83	0.17	3	21/1	6.88	0.14	3
6/3	7.80	0.30	3	21/2	7.36	0.21	6
7/1	7.81	0.05	3	22/1	6.92	0.22	3
8/1	7.79	0.32	5	22/2	7.16	0.47	3
8/2	7.96	0.16	5	23/1	6.51	0.14	3
9/1	7.79	0.11	5	23/2	6.98	0.11	6
10/1	7.26	0.09	3	23/3	7.36	0.15	3
10/2	7.70	0.09	5	24/1	7.05	0.31	3
11/1	6.99	0.10	3	24/2	6.69	1.72	2
11/2	7.90	1.03	6	25/1	6.92	0.20	3
12/1	8.06	0.22	5	25/2	7.40	0.38	3
13/1	7.28	0.12	3	26/1	6.94	0.29	5
13/2	7.90	0.20	5	26/2	6.65	0.30	3
14/1	7.14	0.29	3	27/1	6.18	0.14	2
14/2	7.35	1.07	5	27/2	7.09	0.11	3
15/1	7.06	0.16	3	27/3	7.24	0.46	3

0

SUMMARY OF SOIL ANALYSIS