DANSON AND BLABY PTY. LTD.

71 ORANGE AVENUE, MILDURA VIC. 3500

A.C.N. 159 022 661 A.B.N. 16 159 022 661
(Incorporating The Practices of Thomson & Blaby Pty. Ltd., and Peter R. Danson)
Consulting Surveyors – Civil Design – Town Planning Consultants

DIRECTORS:
BRAD BLABY, B.SP.SC. (SURVEYING).
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U:/2013 Client/ 8169 Gateway Determination Proposal.sjh

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WENTWORTH SHIRE COUNCIL

16th October, 2013.

Director Health & Planning,
Wentworth Shire Council,
PO Box 81,
WENTWORTH. N.S.W. 2648

Attention: Mr Ken Ross

Dear Ken,

Re: **GATEWAY DETERMINATION PROPOSAL**
LOTS 56 & 73 IN DP 756946
WILGA ROAD, GOL GOL, N.S.W.

On Behalf of: I.L. & L.G. ROBERTS,
ROBERT SUPERANNUATION FUND &
ROBERTS FAMILY SUPERANNUATION FUND.

Please find enclosed two (2) copies of the Gateway Determination Proposal for the above Project.

We would appreciate your assessment of the proposal to rezone land to permit a future rural residential subdivision, at your earliest convenience.

If you have any question, please don't hesitate to contact me.

Yours sincerely,

PETER R. DANSON
DIRECTOR.

Enc.

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Gateway Determination Proposal

Submission to Wentworth Shire Council

To rezone land to permit future rural residential subdivision

Lots 56 and 73 in DP 756946, Wilga Road Gol Gol

For:

I.L. & L.G. Roberts, Robert Superannuation Fund and Roberts Family Superannuation Fund

August 2013

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Part 1 - Introduction

1.0 **Overview**

The land to which this planning proposal relates has been prepared on behalf of I.K. & L.G. Roberts, the Roberts Superannuation Fund and the Roberts Family Superannuation Fund by Danson and Blaby Pty. Ltd. Consulting Land Surveyors and Development Planners of Mildura.

The land is located approximately 2 kms north-east of Gol Gol and is situated beside Gol Gol (Moon Tongue) Creek and other parts of land that form part of the Wilga Road development area.

The land abuts the Modikerr Way estate comprising 18 low density residential allotments of approximately 5,000 m^2.

The Gol Gol Creek Estate that is the subject of this Planning Proposal is located to the north and north-east of the existing Estate and it is proposed to subdivide this land to provide 53 low density residential allotments.

The subject land is zoned RU1 Primary Production under the provisions of the Wentworth Local Environmental Plan 2011. (**See Figure 1**).

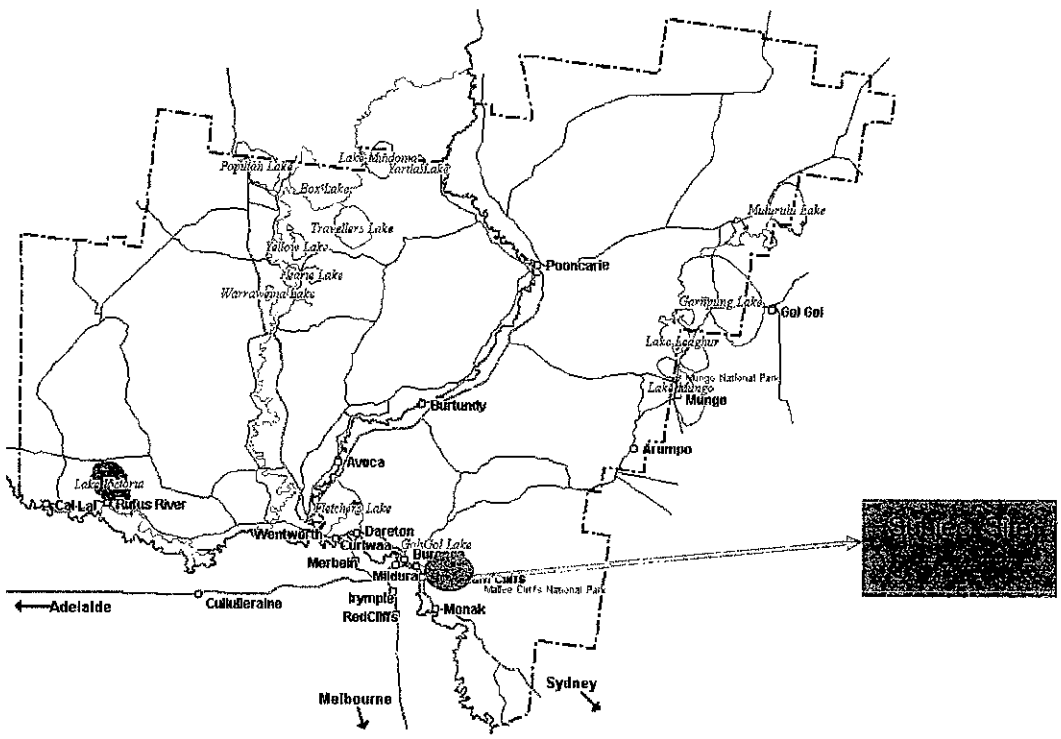

Figure 1

The proposal describes the site, its key features and surrounding land uses. It also considers the key strategic environmental planning instruments, strategies and initiatives applying to the site, and provides an assessment of the impacts of the proposal and suitability of the site for the proposed rezoning.

1.1 **Key Benefit of the Proposal**

The rezoning proposal will have a major benefit in that it will:

- contribute 53 new dwellings to the Shire meeting in part Council's Community Strategic Plan Vision 2012 – 2022 to ".....improve population growth and residential expansion....." and "... Improve (the) built urban environment by ..... encouraging residential housing options that meet the needs of all community sectors.....".

- provide waterfront access to 11 new dwellings that are the last riverfront lots that are available in the Wentworth Shire Council low density residential areas.

1.3 **Site Location and Context**

The site is located about 2 kms north-east of the Gol Gol Township and is on the eastern side of the Gol Gol Creek. The land is irregular in shape with an area of 20.03 ha. in two different titles.

The land is developed for horticultural purposes with a dwelling on each of the titles and out-buildings for the storage of farm equipment and farm products are on each of the titles. The dwelling on Lot 56 is not a habitable dwelling whilst the dwelling on Lot 73 is habitable.

An aerial view on the sites is shown in **Figure 2.**

Figure 2

The folio descriptions are as to Lot 56 in DP 756946 and Lot 73 in DP 756946 as shown in **Figure 3** below.

Figure 3

1.4 Land Use and Zoning

As shown in **Figure 4**, the site is zoned RU1 under the provisions of *Wentworth Local Environment Plan (LEP)*, the zone supporting rural and agricultural practices.

Figure 4

1.5 Site Characteristics

The properties are within an irrigation district growing horticultural and viticultural products and are 9.51 ha. (Lot 56) and 10.52 ha. (Lot 73) respectively. Property sizes within the irrigation districts are too small for dry land operations, and agricultural land of this size are predominantly used for irrigation purposes.

The source of irrigation water that is provided to each of the properties is from the Murray River into the Gol Gol Creek where it is managed by the Gol Gol Creek Grower's Association Inc. who ensure that the water quality and quantity is managed to meet the irrigation and domestic use requirements of its members.

Lot 73 has been in the hands of the Roberts family since 1957 and is planted to wine grapes. The plantings are a mixture of Gourdo and Shiraz grapes that are

approximately 43 years old. The property is watered by under vine drip irrigation – a state of the art watering method that provides the most control over water management where a precise amount of water can be provided to each vine.

Lot 56, in contrast is a considerably older holding with plantings being predominantly sultanas (dried fruit) that are more than 70 years old, near the end of their productive life and have effectively been abandoned with some citrus on the land that is only a few years old.

This property is watered by furrow irrigation – an irrigation system where small channels run through the vineyard providing irrigation and that can only be controlled slightly by the operator as the amount of water that each vine received was sporadic.

The property requires significant capital investment to provide under vine irrigation infrastructure and additional pumping facilities before any investment is even made into other fruit varieties that could be planted on the land.

The two titles have water entitlements that comprise NSW Murray High Security access allocations and these allocations are 110 Ml (Lot 56) and 156 Ml (Lot 73) respectively and the expectation is that they will be delivered at 97% for the 2013 – 14 seasons.

The wine industry has been drying off land and removing plantings to adjust to 20% over-supply and low prices, whilst the dried fruit industry is starting to recover after a decade or more of low or static prices.

Citrus is a relatively stable planting and has not changed in area for many years, except for drying off of certain varieties of fruit.

1.6 Topography and Geology

Gol Gol is situated on flat land without hills or mountains on the northern bank of the Murray River and to the north and east of the town are a lake - Lake Gol Gol and a major swamp area - Gol Gol Swamp.

While the land along the river and irrigation channels is fertile, much of the land to the north of Gol Gol is also dry, saline and semi-arid. The land is within the Murray Darling Depression Bioregion which lies in the southwest corner of NSW and extends into Victoria and South Australia.

The NSW portion of the bioregion is bounded in the north by the Broken Hill Complex Bioregion, with the Cobar Peneplain to the northeast and the Riverina Bioregion to the east.

The Murray Darling Depression Bioregion also borders the Darling Riverine Plains to the northwest and contains outlying remnants of the Darling River and tributaries as they meet the Murray River at the Victorian border.

The bioregion lies entirely in the Western Division of NSW and contains few town centres, with Ivanhoe, just near the tip of the Riverina Bioregion, being the major settlement aside from Manilla, Emmdale and other pastoral stations in the bioregion.

The landscape is characterised by dune fields, sand plains and undulating plains of brown calcareous soils. There is very little structured drainage but numerous lakes, swamps and depressions are present, some of which are driven by saline groundwater.

The Darling River and streams in the Riverina have cut through the sands and constructed numerous overflow lakes and the abandoned channels and basins of the Willandra Lakes complex. Saline ground waters have formed salt basins in many places where the sand plain or dune topography intersects the water table.

All lakes and swamps have well-formed lunettes on their eastern margins that record evidence of climate change and human occupation. A few bedrock ridges rise above the sand plains as isolated ranges.

The soils on the subject land are typical of the general profiles of the region and include red, brown and yellow sands that occur with more clayey materials in the swales. On sand plains the soil tends to be heavier with brown loamy profiles.

1.7 **Flood Prone Land**

The field survey undertaken to support this application shows the proposed sites under the 100 year ARI flood event RL 39.85 metres (AHD) with depths varying from approximately 0.80 metres to 0.20 metres. **(See Attachment A).**

However, the land is not included as a Flood Planning Area within the scheme despite most of the land being under this level.

This is because there is a regulator under the Sturt Highway that is a radial arm gate.

The gate can be close at the time of high water flood times, just as it can be opened for water to access Lake Gol Gol for environment purposes.

The photos below show the regulator and structure from both the Mildura River side and the Gol Gol Creek side. The photographs are part of a series of photos from the Victorian State Rivers and Water Supply Commission and accessed through the State Library of Victoria Archive. The photographs were created between April 1952 and May 1954.

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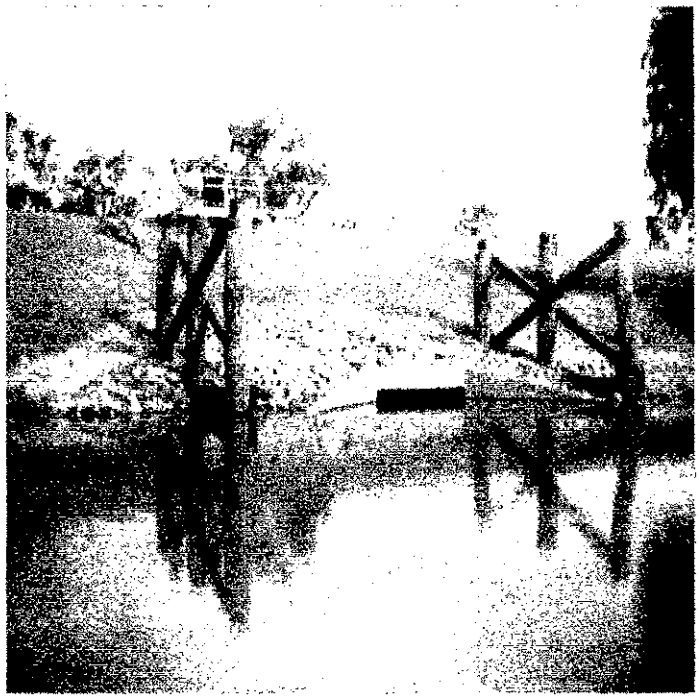
(Accession No. rwp/a48.1058 Image Nos: rw013565 and 13566).

Murray River Side



North of Sturt Highway

1.8 **Vegetation**

There is no natural vegetation on the subject land as both of the subject lots have been planted to viticultural and horticultural fruits.

1.9 **Surrounding Development**

To the south of the subject land there is an existing horticultural holding and other horticultural holdings that have been converted into residential estate areas.

The Modikerr Estate development (DP 1103697) was registered on 21st October 2006, whilst the first stage of other holdings of the Roberts Family (DP 1184258) was registered on 3rd May 2013.

To the north and north–west of the site on the opposite side of Gol Gol Creek are other horticultural holdings and further north are predominantly Western Lands grazing leases. Whilst immediately to the east of the subject land are Western Lands grazing leases.

To the north-east of the subject site is the Gol Gol Swamp that forms part of the Gol Gol wetlands a large fresh water system in conjunction with Lake Gol Gol.

The lake is about 3.6 kms north of the subject land and is 494 ha in extent. Prior to development, the Gol Gol wetlands would have received floodwaters from the Murray River via Gol Gol Creek.

Since the 1950s, a number of flow control structures have been installed along Gol Gol Creek. These structures have been provided because of significant Government funding allowing the connection of the wetlands to the Murray River in times of high water.

At Gol Gol Swamp, a local community group representing state and local stake holders has been working for five years to rehabilitate the wetlands. Their work has shown that the nearby Mildura Weir pool is causing the gradual salinisation of the wetlands and the decline of black box and lignum trees on the fringe of the swamp.

The groundwater – almost as salty as sea water – is within two metres of the bed of the swamp. That is - close enough to be drawn closer to the surface each time the wetland is flooded. The current strategy is to keep floods out of the wetlands to avoid exacerbating the salt problem.

The long-term health of the wetlands is still marginal. The Gol Gol Swamp has a clay floors, and in recent years, evidence of more salinity has been by grey cracking clays and the appearance of blue bush and salt bush on the lake floor.

In 1990, the southern lobe of the wetland was flooded for experimental purposes, however, the last significant flooding of Lake Gol Gol occurred during the 2011 – 2012 high water events where the Lake was filled to 35% capacity.

Gol Gol Swamp is zoned E3 Environmental Management and its objectives include protecting, managing and restoring areas with special ecological values and providing a limited range of development that does not affect these values.

Part 2 - Objectives or Intended Outcomes

2.1 **Objectives**

The application seeks to rezone the subject land identified in **Figure 3** as being suitable for Rural Residential land, from an RU1 – Primary Production Zone to an R5 Large Lot Residential Zone under the *Wentworth LEP 2011.* The proposal also seeks to change the minimum lot size mapping for the proposed R5 land to 3,000 m^2.

The purpose of the rezoning is to enable the subdivision of the land pursuant to Clause 4.1of the *Wentworth LEP* 2011 by amending the Lot Size Map to allow a minimum lot size of 3,000 m^2

The objectives of the planning proposal are to:

- Rezone Lots 56 and 73 in DP 756946 to R5 - Large Lot Residential Zone.
- Map the land proposed to be rezoned R5 on the minimum lot size map under the Wentworth LEP 2011as Y – 3,000 m^2.
- Provide land stocks to meet the demand for dwelling houses in rural localities.
- Ensure that future development of the land for rural residential purposes does not adversely affect the rural environment of the area.
- Develop the land in a manner that recognises the constraints and opportunities of the site.
- Ensure that all requisite and essential infrastructure servicing is available to the land.
- Take advantage of the site's locational attributes and opportunities of the site. (i.e. in close proximity to a reasonably sized rural town).

In **Attachment B** is a plan showing the conceptual lot and road layout for the proposed rezoning area and identifies a total of 53 lots in size from 3,000 m^2.

2.2 **Outcomes**

The outcomes for this planning proposal will be to enable the land to be subdivided and developed for Rural Residential purposes into minimum 3,000 m^2 sized lots, the construction of roads to service the new lots and the construction of future dwelling houses.

Part 3 - Explanation of Provisions

The land that is the subject of the planning proposal is currently zoned RU 1-Primary Production Zone under the provisions of the *Wentworth LEP 2011*. The land is mapped as Y – 3,000 m^2 on the minimum lot size mapping of the LEP.

The planning proposal seeks to rezone Lots 56 and 73 in DP 756946 to R5 - Large Lot Residential Zone in the manner shown on the plan in **Attachment B** as detailed below:

- rezone 20.03 ha. to R5 – Large Lot Residential (Land Zoning Map - Sheet LZN_004G).
- the land proposed to be rezoned R5 to be mapped as Y – 3,000 m^2 on the minimum lot sizes map (Lot Size Map – Sheet LSZ_002D).

Part 4 – Justification

4.1 Need for the planning proposal.

4.1.1 Is the planning proposal a result of any strategic study or report?

The planning proposal is not the subject of any strategic plan or report.

The need for the planning proposal has arisen as a result of the processes associated with the implementation of the *Wentworth Shire Council Local Environment Plan (LEP) (2011)*.

During that process the Council confirmed its zoning of the Gol Gol Land fill facility that is to the south of the subject lots. The area has been declared a Wildlife Reserve by Council, however it still remains within the Zone R5 – Large Lot Residential, when a more appropriate Zone E-1 Nature Reserve would have been a better zoning of the land site.

There is no likelihood of any dwellings being built or development occurring on the land because of the unstable nature of the land fill site.

The moderate rural residential lifestyle outcome sought by this Planning Proposal and the densities that are proposed reflect the proposed development pattern on the adjacent land.

4.1.2 Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The proposed rezoning of the subject land from RU1 Primary Production Zone to R5 Large Lot Residential and proposed change in minimum lot size to 3000 m^2 is considered to be the best means of achieving the relevant objectives and intended outcomes outlined in Part 1.

4.1.3 Is there a net community benefit?

It is considered there will be a definite net benefit to the community as the Planning Proposal is consistent with the aims and actions of the Draft Murray Regional Strategy 2009 – 2036 (October 2009).

The benefits will result from the following:

- The provision of increased stocks of rural residential land zoned land increasing choice and competition in the local market place.
- The support of housing diversity complimenting existing residential and low residential areas helping to cater for an expected growth in low density rural

lifestyle housing demand. This is consistent with the objective of the Draft Murray Regional Strategy where an estimated 400 additional dwellings will be needed in the Lower Murray Sub region.

- The Proposal is reflective of existing development patterns, agricultural trends and is the result of a submission received and requests made by a landholder for a low density residential zone to be applied to the subject land.

- The support of employment generating activities within the wider Buronga - Gol Gol area by providing increased development and building activity (during the subdivision and house construction), and increased demands for goods and services from an increased population base.

- An analysis of existing lot sizes (as set out in Attachment D) and likely development outcomes has confirmed that the overall impact of the Planning Proposal will be minor, with a resultant development potential of only 50 additional lots.

- The proposal is unlikely to significantly affect housing supply as well as housing affordability due to the small number of potential lots that could be created. If at all the proposal will increase diversity of existing supply and cater for demand in a sector not readily available, thereby increasing choice.

- Minimal impacts and/or demands on public infrastructure, as existing infrastructure is adequate given the comparatively small number of potential lots that could be created.

- The proposal will have minimal impacts and/or demand upon the existing road network due to the small number of potential additional lots. The only likely infrastructure requirement may be the need to augment and upgrade the existing road network to provide appropriate and adequate vehicular access arrangements to any created lots. This will be subject to assessment at the time of any development application to subdivide being received.

- The subject land over time has historically been used for horticultural purposes and consequently, is relatively clear of any vegetation. As such, the land has not been identified for protection as a result of its biodiversity or environmental values and does not contain threatened species, critical habitat, ecological communities or their habitat.

- Accordingly, based on investigations undertaken, it is considered that outcomes sought by this Planning Proposal (including cumulative impacts) are moderate and more accurately reflect the current status of the land and that of its surrounds. Overall the proposal will support the amenity of the wider

community as well as the public domain as the proposal seeks to reflect existing landholdings and land use patterns.

- Similarly the proposal is consistent, or where relevant, justifiably inconsistent with agreed State directions including State Environmental Planning Policies and Section 117 Ministerial Directions.

This assessment confirms that the Planning Proposal has an overall net community benefit.

4.2 Relationship to Strategic Planning Framework

4.2.1 Is the Planning Proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the *Sydney Metropolitan Strategy* and exhibited draft strategies)?

The Draft Murray Regional Strategy (October 2009), recognised the settlement of Buronga Gol Gol as the likely focus of future dwelling growth of dwelling growth in the Lower Murray sub-region.

The strategy stated that infrastructure within the Buronga Gol Gol area has sufficient capacity deal with growth. New areas in the area needed to be planned carefully to avoid flood liable areas and sensitive locations close to the River.

Accordingly, the Planning Proposal is consistent with the aims and actions of the *Draft Murray Regional Strategy 2009 – 2036 (October 2009)* as considered in detail in Table 1 of **Attachment C**.

4.2.2 Is the planning proposal consistent with the local council's Community Strategic Plan, or other local strategic plan?

The Wentworth Region Community Strategic Plan (2012 – 2022) (Wentworth Plan) is Council's local Community Strategic Plan.

The Wentworth Plan contains a number of outcomes sought under three principal visions.

Strategic actions listed under each vision of this Plan are designed to contribute towards bringing that vision to life.

The Wentworth Plan includes as a strategic action under the vision "We want to be a vibrant, growing and thriving community" and the theme "Improved population growth and residential expansion", the following:

"Support population growth, resident attraction and retention."

Under the vision "We want to strengthen the natural and built environment", and the theme "Improve our built urban environment", the following:

"Encourage residential housing options that meet the needs of all community sectors ....."

The Planning Proposal is primarily aimed at facilitating a change in land use zoning and a reduction in the minimum lot size that reflects existing land development

patterns, climatic conditions and economic pressures that have resulted in a declining agricultural land base.

The Planning Proposal does however contribute towards achieving the abovementioned strategic action by providing more appropriate housing densities in a rural context in the form of low density residential lifestyle lots.

4.2.3 Is the planning proposal consistent with applicable state environmental planning policies?

Relevant State Environmental Planning Policies and their relationship with the planning proposal are outlined in the table below:

State Environmental Planning Policies	Comment
SEPP No. 1 - Development Standards	Consistent.
SEPP No. 4 - Development without Consent and Miscellaneous Complying Development	Not Applicable
SEPP No. 6 - Number of Storeys in a Building	Not Applicable
SEPP No. 14 – Coastal Wetlands	Not Applicable
SEPP No. 15 - Rural Land - Sharing Communities	Not applicable
SEPP No. 19 - Bush land in Urban Areas	Not applicable
SEPP No. 21 – Caravan Parks	Not Applicable
SEPP No. 22 - Shops and Commercial Premises	Not applicable
SEPP No. 30 - Intensive Agriculture	Not applicable

State Environmental Planning Policies (cont.)	Comment
SEPP No. 33 - Hazardous and Offensive Development	Not applicable
SEPP No. 36 - Manufactured Home Estates	Not applicable
SEPP No. 44 - Koala Habitat Protection	Consistent. The area does not currently support koalas.
SEPP No. 50 - Canal Estate Development	Not applicable
SEPP No. 52 - Farm Dams and Other Works in Land and Water Management Plan Areas	Not applicable
SEPP No. 55 - Remediation of Land	Consistent. No known contamination exists on site.
SEPP No. 60 - Exempt and Complying Development	Not applicable
SEPP No. 62 - Sustainable Aquaculture	Not applicable
SEPP No. 64 - Advertising and Signage	Not applicable
SEPP No. 65 - Design Quality of Residential Flat Development	Not applicable
SEPP (Building Sustainability Index: BASIX) 2004	Consistent. BASIX is able to be complied with at the D.A. Stage

State Environmental Planning Policies (cont.)	Comment
SEPP (Major Development) 2005	Not applicable
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	Not applicable
SEPP (Temporary Structures) 2007	Not applicable
SEPP (Infrastructure) 2007	Not applicable
SEPP (Rural Lands) 2008	Consistent. Refer comments below
SEPP (Exempt and Complying Development Codes) 2008	Not applicable
SEPP (Affordable Rental Housing) 2009	Not applicable
State Environmental Planning Policy (Urban Renewal) 2010	Not applicable
State Environmental Planning Policy (State and Regional Development) 2011	Not applicable

State Environmental Planning Policy (Rural Lands) 2008

The land is subject to SEPP (Rural Lands) 2008 and in particular Clause 7 contains a number of rural subdivision principles and matters to be considered in determining applications for rural subdivision and rural dwellings.

The planning proposal addresses the rural planning principles as follows:

- The area does not contain State significant agricultural land and is not located within an area of regional farming significance.
- The proposal achieves an appropriate balance between social, environmental and economic interests of the community by providing opportunities for additional housing choice within an area that is not adversely affected by any significant restraints.
- The proposal provides for a low density residential lifestyle opportunity which in the short term will benefit the township of Gol Gol.
- The site is located in close proximity to the Gol Gol township and can be easily serviced.

4.2.4 Is the planning proposal consistent with applicable Ministerial Directions (s.117 directions)?

A number of Ministerial Directions made under Section 117 of the Environmental Planning and Assessment Act 1979 apply to the land.

The following identifies each of the key local planning directions which are relevant of the land and planning proposal and makes brief comments in regards to each of the directions.

Direction 1.2 Rural Zones

The land that is the subject of the planning proposal is not identified in any planning studies as being, however, the Planning Proposal does not detract from the aims or objectives of this direction as it does not seek to rezone land from a rural zone to a residential, business, industrial, village or tourist zone.

It is noted that Clause 4(b) does not apply, however, an increase in densities is sought to be created on the subject land. The Proposal will better reflect surrounding landholdings (existing development patterns), response to climate change, declining Terms of Trade, and anecdotal evidence that suggests that the lands that are the subject of this application will require significant capital contributions for irrigation infrastructure and for new plantings on the lands.

Direction 1.5 Rural Lands

The land that is the subject of the planning proposal is not identified in any of the Council's studies as being a candidate for rural residential living purposes.

However, the proposed usage is consistent with the strategic policies adopted by the

Wentworth Shire Council whereby the social and environmental benefits associated with rezoning of rural land to residential land, such as rural lifestyle and additional housing choice and opportunities are recognised

The rezoning of the land for rural-residential purposes is therefore consistent with this strategic planning document and thus with the provisions of Direction 1.5.

The Planning Proposal is inconsistent with the aims of this direction in that it does not protect the agricultural production value of rural land, however it is consistent in that it will facilitate orderly and economic development of rural lands.

In addition, the Planning Proposal seeks to assist the proper management, development and protection of rural lands, reduce land use conflict and promote social, economic and environmental welfare.

Direction 2.1 Environment Protection Zones

The proposed zoning of the land will not compromise the continued protection of any high conservation vegetation in the locality.

The proposed re-zoning does not seek to modify or reduce any environmental protection standards applying to the land.

Direction 2.3 Heritage Conservation

The subject land is not identified in any studies as containing or comprising items, areas or objects of environmental heritage significance

Direction 3.1 Residential Zones

The planning proposal will broaden the choice of building types and locations available within the Gol Gol Township and will assist with the efficient use of infrastructure and services.

Accordingly, the planning proposal will enable the development of land consistent with the objectives contained within Section 5 of the Environmental and Planning and Assessment Act, 1979 and therefore reflects evolving lifestyle and demographic trends.

An analysis of the existing low density zones **(see Attachment D)** in the Wentworth Shire Council district that have existed since 1993, further highlights the need for the subject land to be developed as provided in this proposal.

Much of the land set aside by Council cannot be developed as the land is not able to be adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, can be been made to service it).

Direction 3.3 Home Occupations

As the objective of this direction is to encourage the carrying out of low-impact small businesses in dwelling houses, the proposal will be consistent with this direction as it will permit home occupations to be carried out in dwelling houses without the need for development consent.

Direction 3.4 Integrating Land Use and Transport

The planning proposal is inconsistent with this Direction as, despite the creation of land for low density residential development, the provisions of the proposal are of minor significance.

Direction 4.3 Flood Prone Land

This direction seeks to ensure that development of flood prone land is consistent with the NSW Government's Flood Prone Land Policy and the principles of the Floodplain Development Manual 2005.

It seeks to ensure that the provision of an LEP on flood prone land is commensurate with flood hazard and includes consideration of the potential flood impacts both on and off the subject land.

The Wentworth LEP 2011 provides for the management of flood planning on land that is shown as "Flood Planning Area" on the Flood Planning Area Map River Front Building Line Map Sheet CL1_002D.

The Planning Proposal for the subject land is consistent with the Direction despite the close proximity to Gol Gol Swamp, as the land is not included as a Flood Planning Area within the scheme despite most of the land being under the 1:100 ARI (average recurrent interval) flood event level of 39.85 metres.

This is because there is a regulator under the Sturt Highway that is a radial arm gate. The gate can be close at the time of high water flood times, just as it can be opened for water to access Lake Gol Gol for environment purposes.

Direction 6.1 Approval and Referral Requirements

The Proposal is consistent as the proposed rezoning of the land does not seek any additional agreement, consultation or referral of development applications to the Minister or other public authority or any designated development provisions.

Direction 6.2 Reserving Land for Public Purposes

The planning proposal does not create, alter or reduce existing zonings or

reservations of land for public purposes and is consistent with the provisions of the Ministerial Direction.

Direction 6.3 Site Specific Provisions

The planning proposal does not impose unnecessarily restrictive site specific planning controls and is consistent with the provisions of the Ministerial Direction.

4.3 Environmental, social and economic impact.

4.3.1 Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The subject land is cleared land that has been utilised for horticultural purposes for many years and there are no critical habitats, threatened species or vegetation on the land.

4.3.2 Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

Environmental Issues

The subject land is not known to be significantly affected by any other environmental issues including natural hazards such as flooding, land slip, bushfire and the like, as well as not being located within the vicinity of a heritage item.

Furthermore, the outcomes sought by the Planning Proposal are not likely to exacerbate any other existing environmental issues.

Site Suitability

Having regard to the characteristics of the site and its location, the proposed rezoning is considered appropriate in that:

- The size, dimensions and location of the site (adjacent to an existing proposed low density residential development and in proximity to the Gol Gol Town Centre) are appropriate for the accommodation of the proposal;
- The surrounding road network will accommodate the traffic generated by the proposal;
- The proposed access arrangements are satisfactory; and
- The proposed uses and density is compatible with the pattern of surrounding development;
- There are no environmental or social issues that would constrain the proposed rezoning or development from occurring.

Land Capability Assessment

The subject land has been tested against the minimum requirements for accreditation by the N.S.W. Department of Health for septic tanks and collection wells used in the treatment and/or collection of domestic sewage primarily from single dwellings.

The soil classification determined was Sandy Loam and the long term absorption rate varied from 11.3 litres /m^2/day to 18.4 litres/m^2/day.

The trench lengths varied from 36 to 59 metres and the recommendation was that lot owners should:

> "Adopt three trenches of 25 m length each x 1.00 m width for Base Are of 75 m^2 as required and Disposal area of 29 m x 11m = 319 m^2 for 2 m clear between and all around".

(See Gallasch and Associates Report dated 8th October 2013 - ***Attachment E****)*

4.3.3 How has the planning proposal adequately addressed any social and economic effects?

Whilst the planning proposal is relatively minor in nature, there will be a positive social and economic effect on the township of Gol Gol.

The provision of large Rural Residential Lots adjoining the town will offer an "in demand" rural lifestyle opportunity through wider housing choice and create opportunity to the building industry and enhance local businesses.

The outcomes sought by the Planning Proposal are not likely to exacerbate any social and economic effects currently affecting the subject land.

4.4 State and Commonwealth interests.

4.4.1 Is there adequate public infrastructure for the planning proposal?

The planning proposal involves a rural-residential subdivision of 14 lots and access will be to the existing Pooncarie Road. It provides adequate bitumen road access to the site, and mains electrical power and telecommunications servicing abut the site, and are more than adequate to service and meet the needs of the proposal.

Essential services such as emergency services (police, ambulance, SES etc.), and education and health services are all available in the Wentworth township.

The development is in close proximity to the East Wentworth (Wentworth Township) sewerage works and the service will be available to the development.

4.4.2 What are the views of State and Commonwealth public authorities consulted in accordance with the gateway determination?

The views of the State and Commonwealth Public authorities will be known once consultation has occurred as part of the gateway determination of the planning proposal

4.5 Community Consultation

Community Consultation that will be undertaken on the proposal will be in accordance with "A Guide to Preparing Local Environmental Plans prepared by the Department of Planning" (2009).

The planning proposal is considered to be a low impact planning proposal and the planning proposal exhibition period is intended to be 28 days.

Community consultation will be commenced by giving notice of the public exhibition of the planning proposal:

- in a newspaper that circulates in the area affected by the planning proposal;
- on the web-site of the Wentworth Shire Council, and
- in writing to adjoining landowners.

During the exhibition period, the following material will be made available for inspection:

- The planning proposal, in the form approved for community consultation by the Director General of Planning;
- The gateway determination; and
- Any studies relied upon by the planning proposal.

The community consultation will be complete only when the Wentworth Shire Council as considered any submissions made concerning the planning proposal.

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ATTACHMENT A

Contour Survey of Subject Land

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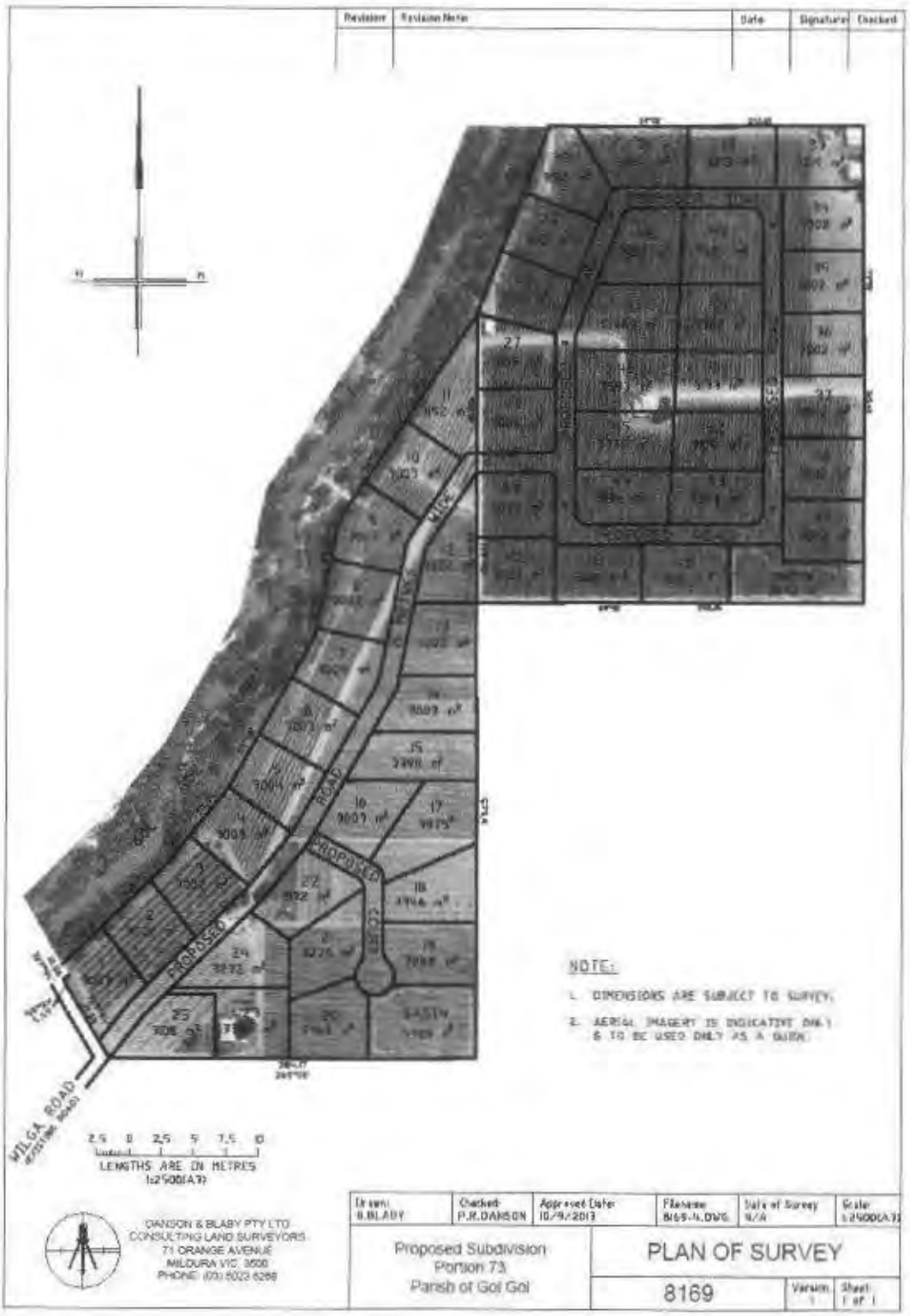
ATTACHMENT B

Proposed Subdivision of the Subject Land



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ATTACHMENT C

Table 1 - Consideration of Draft Murray Regional Strategy 2007

Aims: Draft Murray Regional Strategy 2009	**Consistency Response/ Comment**
Protect and manage the sensitive Riverine environment of the Region's major waterways (such as the Murray River) to safeguard the future health and wellbeing of one of Australia's most important natural catchments, its associated $1 billion agricultural industry, the needs of downstream users and the $400 million tourism industry.	The location of the land subject of this Planning Proposal and the moderate nature of changes to both zoning and minimum lot size proposed, as well as the likely limited development outcomes will have a neutral and/or minimal impact on the Riverine environment (including the Murray River).
Cater for a housing demand of 13,900 new dwellings by 2036 to accommodate the combined pressure of the forecast population increase, the needs of a significantly changing population and growing tourism demands for new dwellings.	The Planning Proposal is consistent with this objective as it seeks to create moderate rural 'lifestyle' opportunities for the subject land through a proposed change in land use zoning and minimum lot size applicable to the subject land. Analysis of existing lot sizes and likely development outcomes has confirmed that the overall impact of this proposal will however be minor, with a maximum additional development potential of only 50 lots. The proposal is consistent with this objective as it provides greater housing choice and diversity in the market, if only on a small-scale.
Prepare for and manage the significantly ageing population and ensure that new housing meets the needs of smaller households and ageing populations by encouraging a shift in dwelling mix and type.	Not relevant, the proposal seeks to reflect existing land use patterns and densities by rezoning the subject land to low density development pattern. Higher density development outcomes that cater for smaller households and ageing population needs are accommodated elsewhere in the Wentworth LGA.

Aims: Draft Murray Regional Strategy 2009	Consistency Response/ Comment
Ensure an adequate supply of employment land, particularly in Buronga – Gol Gol and other major towns to accommodate a projected 3,100 new jobs.	Not relevant as the proposal does not relate to commercial or industrial development. Notwithstanding, employment lands are provided elsewhere across the Wentworth LGA to accommodate projected new jobs.
Protect the rural landscape and natural environment by limiting urban sprawl, focusing new settlement in areas identified on local strategy maps and restricting unplanned new urban or rural residential settlement.	The Planning Proposal is consistent with this aim as it seeks to insert both zoning and minimum lot size provisions that responds to and reflects the fragmented nature of existing and surrounding landholdings (existing development patterns), climate change, declining Terms of Trade, and anecdotal evidence regarding the capital intensive nature of future improvements to farming equipment and infrastructure and fruit varieties. Wentworth Shire Council is satisfied that the proposal is consistent with its long term objectives and will not result in a leap-frogging of development due to the moderate nature of changes in zoning and minimum lot size proposed, and the fact that it seeks to reflect existing and surrounding development and land fragmentation. Hence the proposal is also not considered to be urban sprawl due to the confirmed low potential lot yield and no significant additional infrastructure demand.

Aims: Draft Murray Regional Strategy 2009	Consistency Response/ Comment
Only consider additional development sites outside of agreed local strategies if they can satisfy the Regional Strategy's Sustainability Criteria [as provided in Appendix 1 of Draft Murray Regional Strategy 2009]	It is the intention of this Planning Proposal to seek a change in land use zoning and a reduction in the minimum lot size to better reflect the fragmented nature of existing and surrounding landholdings (existing development patterns), and responds to climate change, declining Terms of Trade, and anecdotal evidence regarding the capital intensive nature of future improvements to farming equipment and infrastructure and fruit varieties. Only moderate rural lifestyle outcomes are sought by this Planning Proposal. Wentworth Shire Council is satisfied that the proposal is consistent with the long term objective/intent of Council and will not result in a leap-frogging of development due to the moderate changes proposed and the fact that it seeks to reflect existing and surrounding development and land fragmentation.
Ensure that the land use planning system can respond to changing circumstances for settlement and agricultural activity arising from water trading, by setting a strategic framework for decisions on land use change and investment in irrigation infrastructure	The Planning Proposal responds to changing circumstances for settlement and agricultural activities arising, namely the long term unviable nature of traditional forms of agriculture (including irrigation development) on the subject land. This has resulted from long term drought, declining terms of trade, climate change impacts and the need to supplement on-farm incomes.

Aims: Draft Murray Regional Strategy 2009	Consistency Response/ Comment
Recognise, value and protect the cultural and archaeological heritage values of the Region for both Aboriginal and European cultures, including the visual character of rural towns and the cultural landscapes of Aboriginal people.	Moderate changes proposed to both zoning and minimum lot size are not likely to have an impact on any existing visual, cultural, landscape, heritage values etc.
Where development or rezoning increases the need for State infrastructure, the Minister for Planning may require a contribution to the provision of such infrastructure, having regard to the NSW Government State Infrastructure Strategy and equity considerations.	Not relevant. The proposal does not facilitate development outcomes that would require a contribution for State Infrastructure to be provided

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ATTACHMENT D

Land Set aside in *Wentworth Shire Council LEP 1993*

Table 1 - Wakefield Lane and Manly Road Curlwaa

Folio Identifier	Area of Parcel	Land Developed	Indicative No. of Lots (@ 5,000 m^2)
5/807827	25.19 ha.	No	45
PART 12/807828	5.558 ha.	No	10
13/807828	9.635 ha.	No	17
14/807828	7.306 ha.	No	13
15/807828	6.458 ha.	No	12
17/807828	6.506 ha.	No	12
1/1107710	12.24 ha.	No	22
2/1107710	7.537 ha.	No	14
2/1117300	7.138 ha.	No	13
1/1167436	1.993 ha.	Yes	1
2/1167436	2.032 ha.	Yes	1
TOTAL	**91.59 ha.**		**160**

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Table 2 – River Road and Golf Course Road Dareton

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
1057/40315	2072 m^2	Yes	1
506/756961	2.082 ha.	No	4
551/756961	2.428 ha.	No	4
719/756961	1.156 ha.	No	2
822/756961	3.005 ha.	No	3
1/1004848	11.55 ha.	No	21
2/1004848	4.510 ha.	No	8
1/1155361	9640 m^2	Yes	1
2/1155361	3.829 ha.	No	7
TOTAL	**29.73 ha.**		**51**

Table 3 – Boeill Creek

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
2/24314	19.68 ha.	No	35
TOTAL	**19.68 ha.**		**35**

Table 4 - River Road Mourquong

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
650/756961	4.072 ha.	No	7
1/120603	1.572 ha.	No	3
1/811964	7428 m^2	Yes	1
2/811964	1.950 ha.	No	3
TOTAL	8.337 ha.		14

Table 5 – Pitman Avenue North Gol Gol

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
1/857217	17.33 ha.	No	31
2/857217	17.34 ha.	No	31
TOTAL	**34.67 ha.**		**62**

Table 6 – Sturt Highway Gol Gol

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (Actual)
1 – 10/1060701	5034 m^2 – 6967 m^2	Yes	10
1 – 17/865438	5002 m^2 – 7074 m^2	Yes	16 (Utility Lot 17)
19 – 30/8983066	5000 m^2 – 6769 m^2	Yes	10 (Balance Lot 30)
1 – 23/1167396	5018 m^2 – 6071 m^2	Yes	23
30 – 54/1025499	5000 m^2 – 7240 m^2	Yes	25

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (Actual)
55 - 66/1071972	5001 m^2 – 6043 m^2	Yes	12 (Balance Lots 55 and 62)
TOTAL			**96**

Table 7 – Sturt Highway and Wilga Road North Gol Gol

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
72/756946	8.40 ha.	No	15
78/756496	16.69 ha.	No	30
188/756946	14.75 ha.	No	Old Gol Gol Tip and current Nature Reserve
1/803555	2980 m^2	Yes	1
1/845486	4047 m^2	Yes	1
2/845486	4047 m^2	Yes	1
3/845486	1.492 ha.	No	3
4/845486	13.83 ha.	No	25
1 - 4/867591	6655 m^2 – 1.473 ha.	Yes	4

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Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
2/875018	8.691 ha.	No	16
5 – 14/1004939	5003 m^2 – 8074 m^2	Yes	10 (Pedestrian Access Lot 9)
1/1008577	5024 m^2	Yes	1
1 - 19/1103697	4686 m^2 – 6575 m^2	Yes	19 (Drainage Reserve Lot 19)
2/1128391	12.77 ha.	No	23
1/1136930	11.54 ha.	No	21
2/1136930	2.576 ha.	No	5
3/1136930	3.465 ha.	No	6
2/1184258	10.00 ha.	No	18
TOTAL	105.5 ha (exc. Multiple lots)		199

Table 8 – Sturt Highway Trentham Cliffs

Folio Identifier	Area of Parcel	Land Developed	No. of Lots (@ 5,000 m^2)
38/756936	1.696 ha.	No	1
42/756936	1.201 ha.	No	1
Part 46/756936	15.74 ha.	No	28
Part 71/814699	6.49 ha.	No	12
TOTAL	**25.13 ha.**		**42**

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CONSULT AUSTRALIA

Member Firm

LAND CAPABILITY ASSESSMENT
Danson & Blaby Pty Ltd—Ian Roberts
Rezoning of Portions 73 and 56, Gol Gol East, New South Wales

Ref No:	13/533
Date:	08 October 2013
Client:	Danson & Blaby Pty Ltd 7 Orange Avenue Mildura Vic 3500
Project:	Land Capability Assessment Ian Roberts – Rezoning of Portions 73 and 56 Gol Gol East, New South Wales

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Ref No: 13/533

Rev No.	Author	Reviewer	Approved for Issue		
			Name	Signature	Date
0	M Gallasch		M Gallasch		05/10/13

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CONSULT AUSTRALIA

Member Firm

Ref No: 13/533

Date: 08 October 2013

Client: Danson & Blaby Pty Ltd, 7 Orange Avenue, Mildura Vic 3500

Project: Land Capability Assessment—Ian Roberts
Rezoning of Portions 73 and 56, Gol Gol East, New South Wales

Brief:

The subject Portions 73 and 56 are currently zoned RU1 Primary Production as advised by Danson & Blaby Pty Ltd.

The Owner of the subject Portions wishes to have the minimum lot size reduced to 3000 m^2 for R5 Large Lot Residential Zone in order to promote opportunity for rural housing that contributes to the social and economic welfare of the rural community of Gol Gol.

A Land Capability Assessment is required to support this submission.

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DOMESTIC EFFLUENT DISPOSAL IN NEW SOUTH WALES
Based on NSW Health Department Septic Tank and Collection Well Accreditation Guideline—December 2001

1. Scope (Section 2):

This Guideline sets out the minimum requirements for accreditation by the NSW Department of Health (NSW Health) of septic tanks and collection wells used in the treatment and/or collection of domestic sewage primarily from single dwellings.

2. Capacity of Septic Tank (Section 8.4.1 & Annexure 2):

Number of persons between 5 to 10. Adopted household population equals number of bedrooms plus one as Section 3.4 of Victorian Code of Practice (No. 891.3).

Garbage grinders and spa baths are excluded.

Sludge allowance of 1550L irrespective of the number of persons for desludging at 4 yearly intervals.

The required septic tank capacity is the sludge allowance (1550L) plus the daily flow per person (150 L/person) multiplied by the number of persons, eg for a 4 bedroom house, **septic tank capacity =** 1550 + (150 x 5) = **2300 L minimum**.

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DOMESTIC EFFLUENT DISPOSAL IN NEW SOUTH WALES
Design of On-Site System based on AS/NZS 1547 : 2012
"On-site domestic wastewater management"
(Appendix L, Land Application Methods—Trenches etc)

1. Scope (Section L1):

Evapotranspiration absorption (ETA) systems provide traditional means of land application treatment of effluent from septic tanks.

2. Selection of DLR Value (Section L2):

Design Loading Rate (DLR) for trenches receiving primary quality effluent shall be selected using Table L1.

Visual/tactile examination of the excavated soils indicate a weakly structured loam soil texture for which Table L1 indicates Soil Category 3 and recommends an indicative permeability of 0.5 – 1.5 m/day and a conservative DLR of 10 mm/day.

Falling head soil percolation tests were carried out at four locations (see Site Plan Appendix B) with the following results:

Lot No.	4	10	18	45
Soil Percolation Rate (mm/hour)	145	387	94	331
Soil Permeability (m/day)	0.58	1.55	0.38	1.33
Soil Classification	Sandy loam	Sandy loam	Sandy loam	Sandy loam
Long Term Absorption Rate (L/m²/day)	14.7	18.4	11.3	17.6

Although falling head permeators are not recommended in this Standard (refer Appendix CG2), the writer has found over 20 years experience that the results do provide an acceptable guide to evapotranspiration absorption trench designs.

It is noted that the Table L1 indicative permeability of 0.5 – 1.5 m/day approximates the percolation test permeabilities varying from 0.38 to 1.55 m/day at the respective test sites.

Table L1, Note 4, advises that ETA systems are not normally used for soil Categories 1 to 3.These soils require a system design by suitably qualified and experienced person in order to achieve even distribution of effluent over the full design surface area.

3. Plants (Section L3):

Surface vegetation for evapotranspiration absorption trenches shall be grasses and shrubs that tolerate wet conditions and have high evapotranspiration capacity and be well exposed to the sun and wind.

4. Design Area Sizing (Section L4):

The base area of the trenches is sized from the design daily flow (Q) divided by the design loading rate (DLR) as follows:

Design Base Area (m^2) = 750 L/day ÷ 10 mm / day = 75 m^2.

Adopt three trenches of 25 m length each x 1.00 m width for Base Area of 75 m^2 as required and Disposal Area of 29 m x 11 m = 319 m^2 for 2 m clear between and all around.

Alternative trench design for 5 persons at daily flow (5 x 200) = 1000 L/day utilising the percolation test results and the Mildura Rural City Council program is as follows: (refer Appendices B2 for each site.):

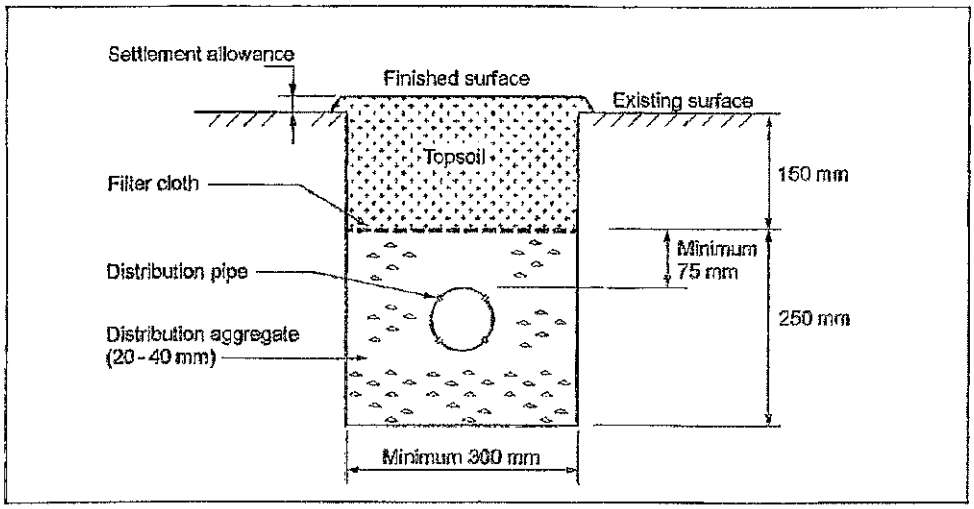
Lot No.	4	10	18	45
Trench Width (m)	1.00	1.00	1.00	1.00
Trench Length (m)	45	36	59	38
Bottom Area (m^2)	45	36	59	38

This alternative design is less conservative than the Section L4 design which is therefore adopted.

5. Construction (Section L5):

Trenches may be gravity loaded using a slotted or drilled distribution pipe of diameter not less than 100 mm.

Figure L1 depicts a conventional piped trench with adopted dimensions from Table L2 as follows:



NOTE: LPED lines can be used to replace distribution pipes when dose loading effluent into trenches.

FIGURE L1 CONVENTIONAL PIPED TRENCH

6. Layout:

Layout of trenches shall typically be as shown on Typical Allotment Plan (Appendix A) with setback distance from boundaries and buildings at least 6.0 m. It is noted that the Disposal Area of 319 m^2 represents only 10.6 to 8.0 % of the allotment areas of 3000 to 4000 m^2 which is considered to be supportable.

Malcolm G Gallasch BE FIEAust CPEng MASBC GAICD
Principal Engineer
Registered Building Practitioner No. EC – 1015

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Land Capability Assessment Table for Domestic Wastewater Disposal and Reuse through a Conventional Trench System in compliance with EPA Publication 891.3, February 2013

Ref No: 13/533

Date: 08 October 2013

Client: Danson & Blaby Pty Ltd, 7 Orange Avenue, Mildura Vic 3500

Project Ian Roberts—Rezoning of Portions 73 and 56, Gol Gol East, New South Wales

Land Feature	Land Capability Class Rating (EPA Publication 891.3)					
	1 V. Good	2 Good	3 Fair	4 Poor	5 V. Poor	Site Rating
General						
Allotment area (ha)	> 0.4	0.2 – 0.4	0.1 – 0.2	–	< 0.1	2
Site runoff	V. Slow	Slow	Moderate	Rapid	V. Rapid	2
Site drainage	No dampness	Moist soil	–	Visible dampness	Ponded water	1
Flood/inundation potential (frequency yrs)	Never	Never	< 1 in 100	< 1 in 30	> 1 in 20	3
Distance from non-potable water	> 300 m	> 180 m	>60 m	<60 m	< 30 m	5
Slope (%)	0 – 2	2 – 8	8 –12	12 – 20	> 20	2
Landslip	Never	Never	Low potential	High potential	Incipient	1
Seasonal groundwater table depth (m)	> 5	2.5 – 5	2.5 – 2.0	2.0 – 1.5	< 1.5	2
Rainfall (mm/yr)	< 450	450 – 650	650 – 750	750 – 1000	> 1000	1
Pan evaporation (mm/yr)	> 1500	1250 – 1500	1000 – 1250	–	< 1000	1
Soil Profile *						
Profile depth (m)	> 2	1.5 – 2	1.5 – 1.0	1.0 – 0.5	< 0.5	2
Reactivity class (AS 2870 – 2011)	S	M	H	E	A	2
Soil Permeability Category (EPA Publication 891.3)	2 and 3	4	–	5	1 and 6	2
Stoniness (%)	–	< 10	10 – 20	20 – 50	> 50	2
Dispersive characteristic (AS 1289.3.8.1 – 2006)	Not	Not	Coherent /Swell	Moderate	Strong	1
Salinity	V. Low	Low	Moderate	High	V. High	2
Overall	**Site rating satisfying all performance criteria**					**5**

* Characteristic relevant to soils associated with disposal trench.

Flood Inundation Potential:

A site rating of [3] relates to the possible inundation of the majority of the site by a River Murray flood level of 40.12 m AHD as experienced by the 1956 Flood of frequency 1 in 100 years at Gol Gol. (Refer Feature and Level Plan—Appendix C).

This inundation may be prevented by the timely operation of the regulator at the Gol Gol Creek mouth provided it is of adequate height which is currently not known by the author of this Report.

Distance from Non-Potable Water:

A site rating of [5] relates to a distance from non-potable water of less than 30 m for the Lots abutting Gol Gol Creek.

This feature is capable of being handled by appropriate design of packaged treatment plant and land application of secondary treated effluent.

Land Capability Assessment:

Discounting Flood Inundation and Distance from Non-Potable Water, an LCA Rating of [2] is considered to be a true and accurate assessment of the land capability of Portions 73 and 56 within the accuracy deemed appropriate for the purpose of this assessment.

The LCA Rating of [2] defined as good is only a general guide for the purpose of subdivision into lots of 3000 to 4000 m^2 because soils and landscapes are variable within Portions 73 and 56.

A Land Capability Assessment should be undertaken for each subdivided lot of 3000 to 4000 m^2 area by a suitably qualified and experienced person for the purpose of detail design of land application system.

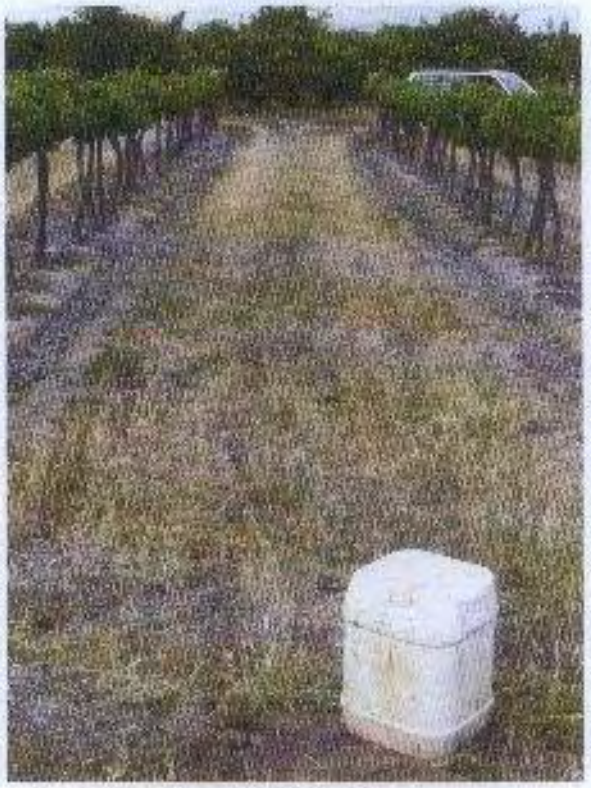
Management and Monitoring Program:

As the Design of an absorption/transpiration disposal trench system is based on both soil absorption and plant transpiration, the landowner shall

- ensure that the system is installed in compliance with the Design,
- ensure that copious plants and grasses are established and maintained over the disposal field,
- clearly define and maintain the specified disposal field and reserve area,
- inspect the septic tank annually for depths of scum and sludge which are to be removed at least 4 yearly.

Malcolm G Gallasch BE FIEAust CPEng MASBC GAICD
Principal Engineer
Registered Building Practitioner No. EC – 1015

Danson & Blaby Pty Ltd—Ian Roberts
Rezoning of Lots 73 and 56, Gol Gol East, New South Wales
Photos Taken 6th October 2013



Percolation Test Lot 4.

Site of Percolation Test on Lot 4.

Danson & Blaby Pty Ltd—Ian Roberts
Rezoning of Lots 73 and 56, Gol Gol East, New South Wales
Photos Taken 6th October 2013

Percolation Test Lot 10.

Site of Percolation Test on Lot 10.

Danson & Blaby Pty Ltd—Ian Roberts
Rezoning of Lots 73 and 56, Gol Gol East, New South Wales
Photos Taken 6th October 2013

Percolation Test Lot 18.

Sit of Percolation Test on Lot 18.

Danson & Blaby Pty Ltd—Ian Roberts
Rezoning of Lots 73 and 56, Gol Gol East, New South Wales
Photos Taken 6th October 2013

Percolation Test Lot 45.

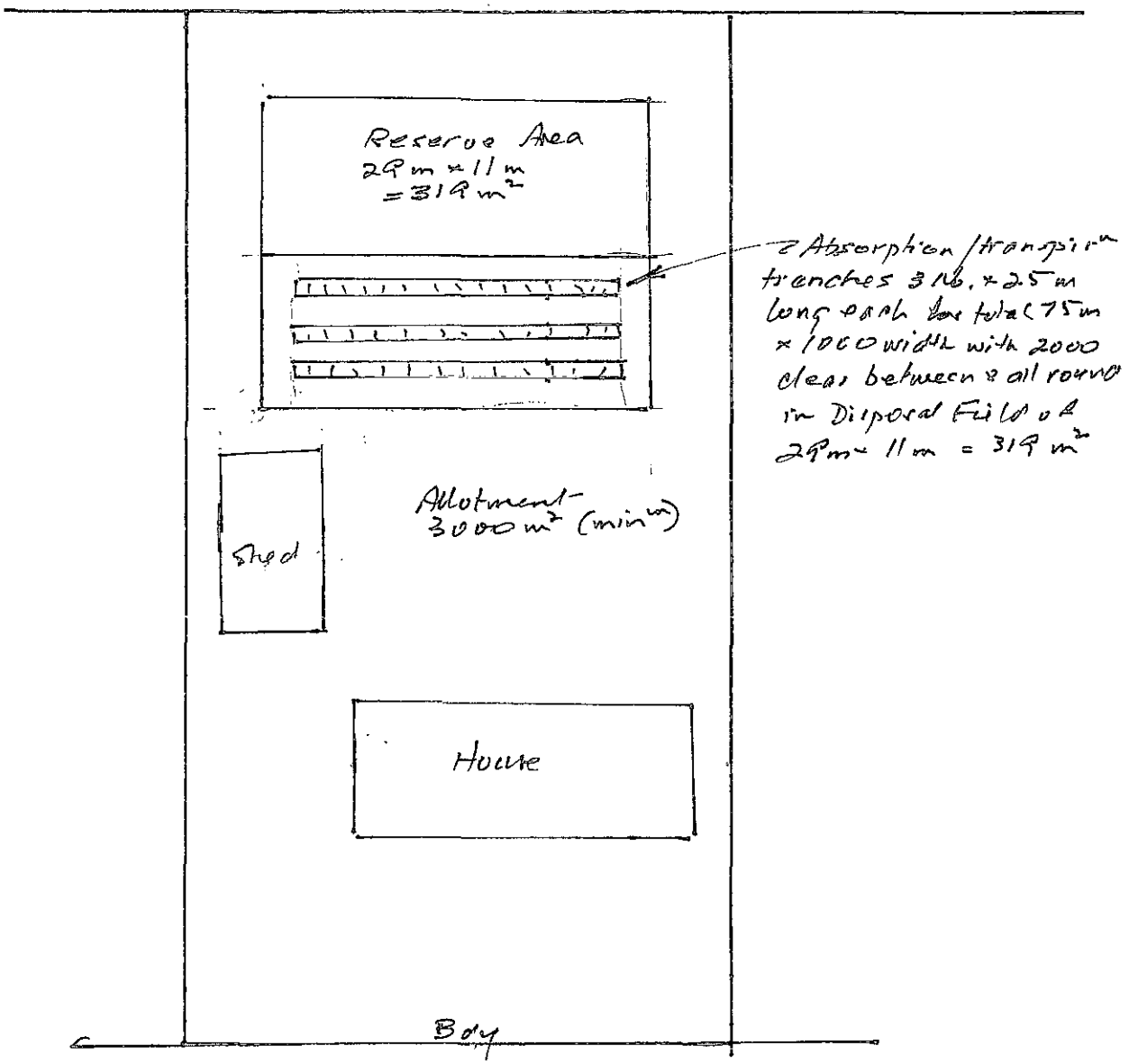
Site of Percolation Test on Lot 45.

COMPUTATION SHEET

Client: Dawson & Blaby Pty Ltd Date: 08/10/13

Project: LCA, Portions 73 & 56, Parish Gol Gol East NSW

Typical Allotment



Typical Allotment (3000m² min)

SITE PLAN

Scale 1:500

GALLASCH & ASSOCIATES PTY LTD
CONSULTING CIVIL AND BUILDING ENGINEERS
Office: First Floor, 79 Deakin Avenue, Mildura Vic 3500
Postal: PO Box 3135, Mildura Vic 3502
Telephone: 03 5022 1055
Facsimile: 03 5021 3733 Mobile: 0407 391 533
Email: gallasch@ncable.com.au

ENGINEERS AUSTRALIA

Malcolm G Gallasch
BE FIEAust M.ACEA MASBC CPEng
Registered Building Practitioner No. EC-1015
Chartered Professional Engineer
NPER-3 Civil/Structural/Forensic
Membership No. 66229
The Institution of Engineers, Australia

Computed: MGG

Ref. No. 13/533

Page: A

Revision	Revision Note	Date	Signature	Checke

NOTE:

1. DIMENSIONS ARE SUBJECT TO SURVEY.
2. AERIAL IMAGERY IS INDICATIVE ONLY & TO BE USED ONLY AS A GUIDE.

2.5 0 2.5 5 7.5 10

LENGTHS ARE IN METRES
1:2500(A3)

Malcolm G. Gallasch
FIEAust CPEng
Chartered Professional Engineer
Membership No. 88220
The Institution of Engineers, Australia

Ref No 13/533
Appendix B

08/10/13

DANSON & BLABY PTY LTD
CONSULTING LAND SURVEYORS
71 ORANGE AVENUE
MILDURA VIC. 3500
PHONE: (03) 5023 6268

Drawn:	Checked:	Approved Date:	Filename:	Date of Survey	Scale:
B.BLABY	P.R.DANSON	10/9/2013	8169-4.DWG	N/A	1:2500(A3)

Proposed Subdivision
Portion 73
Parish of Gol Gol

PLAN OF SURVEY

8169

Version: 1

Sheet: 1 of 1

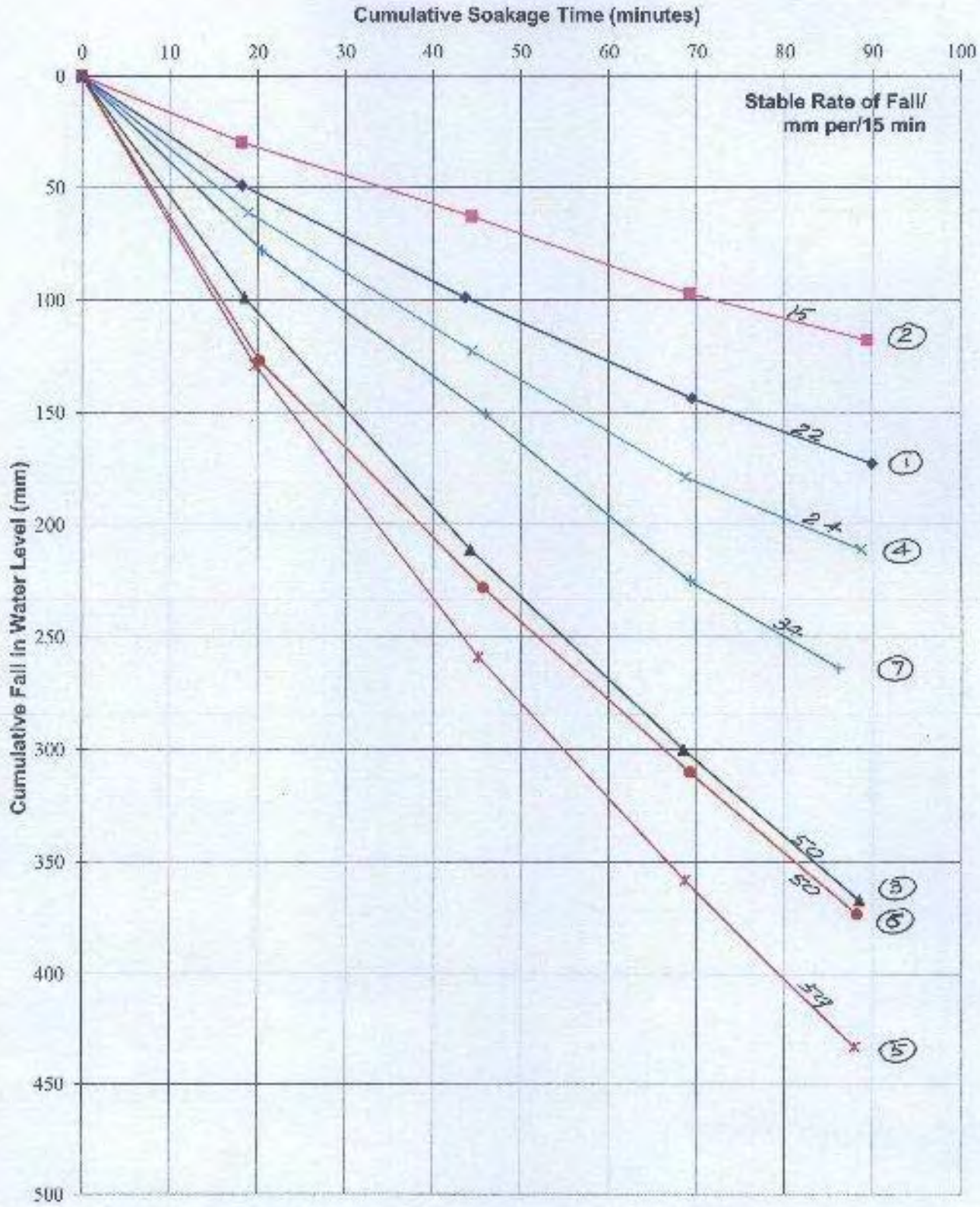
Malcolm G. Gallasch
BSA ast CPEng
Chartered Professional Engineer
Membership No. 66229
The Institution of Engineers, Australia
IE Aust

08/10/13

R.t. No. 13/533
Appendix C

DARGIN & BLABY PTY LTD
CONSULTING LAND SURVEYORS

J ROBERTS
FEATURE AND LEVEL
REZONING OF LAND
PORTIONS 56 & 73, WILGA ROAD


Cumulative Soakage Time (minutes)
0
10
20
30
40
50
60
70
80
90
100
Cumulative Fall in Water Level (mm)
0
50
100
150
200
250
300
350
400
450
500
Stable Rate of Fall/
mm per/15 min
15
22
24
32
52
50
54
2
1
4
7
5
6
5

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date:** 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 4
Gol Gol East, New South Wales

HOLE No: 1

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
80	129	8:07:00 AM	8:25:15 AM	18	49
129	179	8:25:15 AM	8:50:45 AM	44	99
106	151	8:51:15 AM	9:17:00 AM	70	144
151	180	9:17:00 AM	9:37:30 AM	90	173
				90	173

HOLE No: 2

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
107	137	8:07:45 AM	8:26:00 AM	18	30
137	170	8:26:00 AM	8:52:15 AM	45	63
111	145	8:52:45 AM	9:17:30 AM	69	97
145	166	9:17:30 AM	9:37:45 AM	90	118
				90	118

HOLE No: 3

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
99	198	8:08:15 AM	8:26:45 AM	19	99
88	200	8:27:30 AM	8:53:15 AM	44	211
92	181	8:53:45 AM	9:18:00 AM	68	300
90	157	9:18:15 AM	9:38:15 AM	88	367
				88	367

HOLE No: 4

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
110	171	8:08:45 AM	8:27:45 AM	19	61
99	161	8:28:30 AM	8:54:00 AM	45	123
90	146	8:54:30 AM	9:18:45 AM	69	179
146	178	9:18:45 AM	9:38:45 AM	89	211
				89	211

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date:** 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 4
Gol Gol East, New South Wales

HOLE No: 5

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
98	227	8:09:15 AM	8:29:00 AM	20	129
88	218	8:29:30 AM	8:55:00 AM	45	259
99	198	8:55:30 AM	9:19:00 AM	69	358
106	181	9:19:45 AM	9:39:00 AM	88	433
				88	433

HOLE No: 6

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
109	236	8:09:45 AM	8:30:00 AM	20	127
110	211	8:30:30 AM	8:56:00 AM	46	228
99	181	8:56:30 AM	9:20:00 AM	69	310
103	166	9:20:30 AM	9:39:30 AM	88	373
				88	373

HOLE No: 7

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
108	186	8:10:30 AM	8:31:00 AM	21	78
115	188	8:31:30 AM	8:57:00 AM	46	151
70	144	8:57:30 AM	9:20:45 AM	69	225
144	183	9:20:45 AM	9:37:45 AM	86	264
				86	264

GALLASCH & ASSOCIATES PTY LTD

GUIDE TO DESIGN RATES FOR SEPTIC SYSTEMS

Based on "Code of Practice - Septic Tanks 2003".

Program developed by Mildura Rural City Council

Date : 08/10/13

HOUSEHOLD RESIDENCES

Applicant Details

Owner: Danson & Blaby Pty Ltd

Site Address: Rezoning of Portion Lots 73 and 56 – LOT 4
Gol Gol East, New South Wales

Occupation Details

(Insert number into one of the boxes below)

OPTION 1: Total number of bedrooms = [ ]

OPTION 2 : Total number of persons/users [5] (No. of persons = No of bedrooms plus one)

Water Saving Devices

Place an "X" into the appropriate boxes for water rated appliances as set out below (if known)

1. Bathroom		
- flow restricters on showers	[X]	Unrestricted (20 litres/minute)
	[ ]	A rated (16 litres/minute)
	[ ]	AA rated (12 litres/minute)
	[ ]	AAA rated (9 litres/minute)
2. Laundry		
- washing machine	[X]	Unrestricted (7 kg capacity)
	[ ]	A rated (6 kg capacity)
	[ ]	AA rated (front loading, 5 kg capacity)
	[ ]	AAA rated (front loading, 4 kg capacity)
3. Water closet		
- cisterns	[X]	Unrestricted (10 litre capacity)
	[ ]	A - AAA rated (dual 6/3 litre capacity)
4. Other uses		
- sink, basins and trough etc	[X]	Unrestricted
	[ ]	A rated (aerator taps)
	[ ]	AA rated (flow restricters)
	[ ]	AAA rated (suds saver)

Effluent Flow Rate

Estimated daily effluent flow = **1000** Litres/day

Septic Tank Capacity

Insert 'X' for food waste disposal unit [ ]

Frequency of desludging = [3] years (At least every 3 years)

Minimum septic tank capacity = **2200** Litres

NOTE: Above figures represent best values available at this time and are a guide only.

GALLASCH & ASSOCIATES PTY LTD

SOIL PERCOLATION TEST REPORT

(Based on the "falling head method" described in Code of Practice—Septic Tanks,
EPA Publication 451, March 1996, which has given consistent and appropriate results over many years.)
XLS Program developed by Mildura Rural City Council

Date : 8/10/2013

Applicant Details

Owner: Danson & Blaby Pty Ltd
Site Address: Rezoning of Portion Lots 73 and 56 – LOT 4
Gol Gol East, New South Wales

Effluent Loading Rate

Expected daily effluent flow rate = **1000** **L/day** (See worksheets 1 & 2)

Test Data & Analysis

Stable Rate of Fall (Method - Appendix B of Code)		
Hole 1	22	mm/15 min
Hole 2	15	mm/15 min
Hole 3	50	mm/15 min
Hole 4	24	mm/15 min
Hole 5	59	mm/15 min
Hole 6	50	mm/15 min
Hole 7	34	mm/15 min
Hole 8		mm/15 min
Hole 9		mm/15 min
Hole 10		mm/15 min

Statistical Information	
Mean :	36.29
Std. Dev.	16.86
Max.	61.57
Min.	11.00

Test Results within Max & Min values	
Hole 1	22
Hole 2	15
Hole 3	50
Hole 4	24
Hole 5	59
Hole 6	50
Hole 7	34
Hole 8	
Hole 9	
Hole 10	
Total =	254

Soil Percolation Rate = $\frac{254}{7}$ mm/15 min = **145** **mm/hr**

Soil Permeability = 0.58 m/day

Soil Classification = Sandy loam

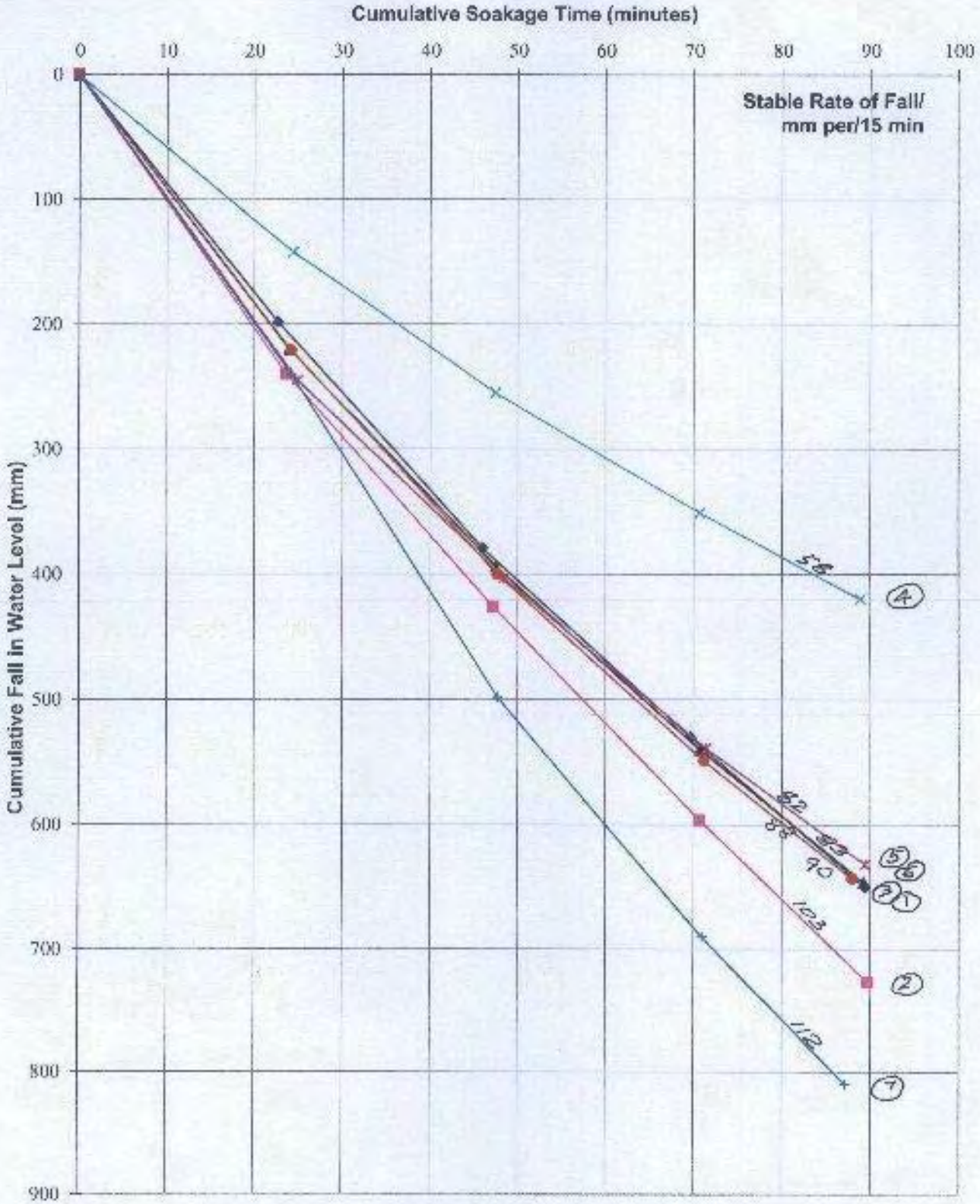
Long Term Absorption Rate = 14.7 L/ sq.m/day

Sub-Soil Absorbtion Trench Options

	Trench width		Trench length (min.)		
Option 1	1000	mm	45	Metres	
Option 2	700	mm	57	Metres	
Option 3	500	mm	68	Metres	
Option 4	300	mm	85	Metres	
Other 1:	1200	mm	40	Metres	
Other 2:	2000	mm	27	Metres	

Signed:

* NOTES: (i) "S". - May be suitable subject to further treatment, investigation and/or design.
(ii) "N.S". - Generally not suitable for septic tank effluent."
(iii) Trench lengths may be reduced by 50% where effluent is treated to 20/30 standard.


Cumulative Soakage Time (minutes)
0
10
20
30
40
50
60
70
80
90
100
Stable Rate of Fall/
mm per/15 min
Cumulative Fall in Water Level (mm)
0
100
200
300
400
500
600
700
800
900
4
5
6
3
1
2
7

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date:** 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 10
Gol Gol East, New South Wales

HOLE No: 1

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
115	313	8:14:30 AM	8:37:15 AM	23	198
101	282	8:38:00 AM	9:01:15 AM	46	379
129	280	9:02:00 AM	9:25:45 AM	70	530
112	232	9:26:15 AM	9:46:00 AM	90	650
				90	650

HOLE No: 2

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
88	328	8:15:00 AM	8:38:45 AM	24	240
99	285	8:39:15 AM	9:02:45 AM	47	426
86	256	9:03:15 AM	9:26:45 AM	71	596
99	229	9:27:30 AM	9:46:30 AM	90	726
				90	726

HOLE No: 3

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
110	330	8:15:45 AM	8:39:45 AM	24	220
85	259	8:40:15 AM	9:03:45 AM	48	394
95	241	9:04:30 AM	9:27:45 AM	71	540
107	213	9:28:15 AM	9:46:45 AM	89	646
				89	646

HOLE No: 4

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
110	252	8:16:15 AM	8:40:45 AM	25	142
88	201	8:41:15 AM	9:04:15 AM	47	255
100	196	9:05:15 AM	9:28:30 AM	71	351
111	180	9:29:00 AM	9:47:15 AM	89	420
				89	420

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date:** 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 10
Gol Gol East, New South Wales

HOLE No: 5

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
105	350	8:16:45 AM	8:41:45 AM	25	245
92	250	8:42:15 AM	9:05:45 AM	48	403
95	231	9:06:15 AM	9:29:15 AM	72	539
118	211	9:29:45 AM	9:47:45 AM	89	632
				89	632

HOLE No: 6

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
98	319	8:18:45 AM	8:43:00 AM	24	221
100	279	8:43:15 AM	9:06:45 AM	48	400
112	261	9:07:15 AM	9:30:45 AM	71	549
138	232	9:31:15 AM	9:48:00 AM	88	643
				88	643

HOLE No: 7

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
109	349	8:19:30 AM	8:43:45 AM	24	240
90	348	8:44:15 AM	9:07:45 AM	48	498
121	313	9:08:30 AM	9:31:45 AM	71	690
143	263	9:32:15 AM	9:48:30 AM	87	810
				87	810

GALLASCH & ASSOCIATES PTY LTD

GUIDE TO DESIGN RATES FOR SEPTIC SYSTEMS

Based on "Code of Practice - Septic Tanks 2003".

Program developed by Mildura Rural City Council

Date : 08/10/13

HOUSEHOLD RESIDENCES

Applicant Details

Owner: Danson & Blaby Pty Ltd

Site Address: Rezoning of Portion Lots 73 and 56 – LOT 10
Gol Gol East, New South Wales

Occupation Details

(Insert number into one of the boxes below)

OPTION 1: Total number of bedrooms = [ ]

OPTION 2 : Total number of persons/users [5] (No. of persons = No of bedrooms plus one)

Water Saving Devices

Place an "X" into the appropriate boxes for water rated appliances as set out below (if known)

1. Bathroom		
- flow restricters on showers	[X]	Unrestricted (20 litres/minute)
	[ ]	A rated (16 litres/minute)
	[ ]	AA rated (12 litres/minute)
	[ ]	AAA rated (9 litres/minute)
2. Laundry		
- washing machine	[X]	Unrestricted (7 kg capacity)
	[ ]	A rated (6 kg capacity)
	[ ]	AA rated (front loading, 5 kg capacity)
	[ ]	AAA rated (front loading, 4 kg capacity)
3. Water closet		
- cisterns	[X]	Unrestricted (10 litre capacity)
	[ ]	A - AAA rated (dual 6/3 litre capacity)
4. Other uses		
- sink, basins and trough etc	[X]	Unrestricted
	[ ]	A rated (aerator taps)
	[ ]	AA rated (flow restricters)
	[ ]	AAA rated (suds saver)

Effluent Flow Rate

Estimated daily effluent flow = **1000** Litres/day

Septic Tank Capacity

Insert 'X' for food waste disposal unit [ ]

Frequency of desludging = [3] years (At least every 3 years)

Minimum septic tank capacity = **2200** Litres

NOTE: Above figures represent best values available at this time and are a guide only.

GALLASCH & ASSOCIATES PTY LTD

SOIL PERCOLATION TEST REPORT

(Based on the "falling head method" described in Code of Practice—Septic Tanks,
EPA Publication 451, March 1996, which has given consistent and appropriate results over many years.)
XLS Program developed by Mildura Rural City Council

Date : 8/10/2013

Applicant Details

Owner: Danson & Blaby Pty Ltd
Site Address: Rezoning of Portion Lots 73 and 56 – LOT 10
Gol Gol East, New South Wales

Effluent Loading Rate

Expected daily effluent flow rate = **1000** **L/day** (See worksheets 1 & 2)

Test Data & Analysis

Stable Rate of Fall (Method - Appendix B of Code)		
Hole 1	112	mm/15 min
Hole 2	103	mm/15 min
Hole 3	88	mm/15 min
Hole 4	58	mm/15 min
Hole 5	82	mm/15 min
Hole 6	83	mm/15 min
Hole 7	112	mm/15 min
Hole 8		mm/15 min
Hole 9		mm/15 min
Hole 10		mm/15 min

Statistical Information	
Mean :	91.14
Std. Dev.	19.45
Max.	120.31
Min.	61.97

Test Results within Max & Min values	
Hole 1	112
Hole 2	103
Hole 3	88
Hole 4	Rejected
Hole 5	82
Hole 6	83
Hole 7	112
Hole 8	
Hole 9	
Hole 10	
Total =	580

Soil Percolation Rate = $\frac{580}{6}$ mm/15 min = **387** **mm/hr**

Soil Permeability = 1.55 m/day

Soil Classification = Sandy loam / Sand

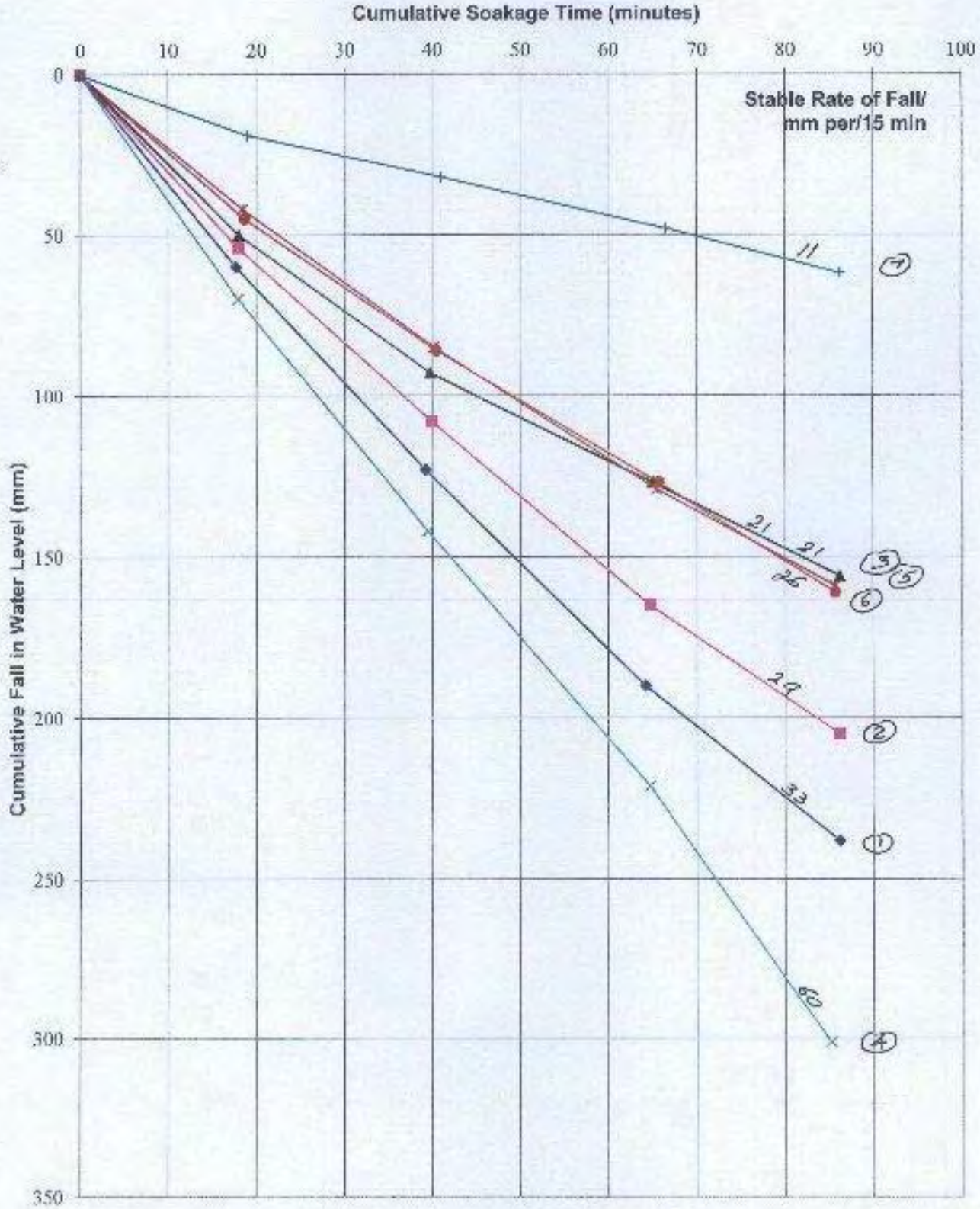
Long Term Absorption Rate = 18.4 L/ sq.m/day

Sub-Soil Absorbtion Trench Options

	Trench width		Trench length (min.)		
Option 1:	1000	mm	36	Metres	S *
Option 2:	700	mm	45	Metres	S *
Option 3:	500	mm	54	Metres	S *
Option 4:	300	mm	68	Metres	S *
Other 1:	1200	mm	32	Metres	S *
Other 2:	2000	mm	22	Metres	

Signed:

* NOTES: (i) "S". - May be suitable subject to further treatment, investigation and/or design.
(ii) "N.S". - Generally not suitable for septic tank effluent."
(iii) Trench lengths may be reduced by 50% where effluent is treated to 20/30 standard.


Cumulative Soakage Time (minutes)
0
10
20
30
40
50
60
70
80
90
100
Cumulative Fall in Water Level (mm)
0
50
100
150
200
250
300
350
Stable Rate of Fall/
mm per/15 min
11
21
21
26
19
33
60
7
3
5
6
2
1
4

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date:** 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 18
Gol Gol East, New South Wales

HOLE No: 1

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
112	172	11:09:45 AM	11:27:30 AM	18	60
97	160	11:27:45 AM	11:49:15 AM	39	123
90	157	11:50:00 AM	12:15:00 PM	64	190
105	153	12:15:30 PM	12:37:30 PM	86	238
				86	238

HOLE No: 2

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
106	160	11:10:15 AM	11:28:15 AM	18	54
101	155	11:28:30 AM	11:50:30 AM	40	108
85	142	11:51:00 AM	12:15:45 PM	65	165
120	160	12:16:15 PM	12:37:45 PM	86	205
				86	205

HOLE No: 3

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
90	140	11:11:00 AM	11:29:00 AM	18	50
82	125	11:29:30 AM	11:51:15 AM	40	93
125	159	11:51:15 AM	12:16:30 PM	65	127
108	137	12:17:00 PM	12:38:15 PM	86	156
				86	156

HOLE No: 4

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
116	186	11:11:45 AM	11:29:45 AM	18	70
106	178	11:30:15 AM	11:51:45 AM	40	142
92	171	11:52:15 AM	12:17:30 PM	65	221
70	150	12:18:00 PM	12:38:30 PM	85	301
				85	301

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date**: 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 18
Gol Gol East, New South Wales

HOLE No: 5

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
112	154	11:12:15 AM	11:30:45 AM	18	42
110	153	11:31:00 AM	11:52:45 AM	40	85
102	146	11:53:00 AM	12:18:15 PM	65	129
110	140	12:18:45 PM	12:39:00 PM	86	159
				86	159

HOLE No: 6

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
104	149	11:12:45 AM	11:31:30 AM	19	45
105	146	11:31:45 AM	11:53:30 AM	41	86
109	150	11:53:45 AM	12:19:00 PM	66	127
105	139	12:19:30 PM	12:39:30 PM	86	161
				86	161

HOLE No: 7

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
108	127	11:13:15 AM	11:32:15 AM	19	19
127	140	11:32:15 AM	11:54:15 AM	41	32
119	135	11:54:30 AM	12:20:00 PM	67	48
135	149	12:20:00 PM	12:39:45 PM	86	62
				86	62

GALLASCH & ASSOCIATES PTY LTD

GUIDE TO DESIGN RATES FOR SEPTIC SYSTEMS

Based on "Code of Practice - Septic Tanks 2003".

Program developed by Mildura Rural City Council

Date : 08/10/13

HOUSEHOLD RESIDENCES

Applicant Details

Owner: Danson & Blaby Pty Ltd

Site Address: Rezoning of Portion Lots 73 and 56 – LOT 18
Gol Gol East, New South Wales

Occupation Details

(Insert number into one of the boxes below)

OPTION 1: Total number of bedrooms = [ ]

OPTION 2 : Total number of persons/users [5] (No. of persons = No of bedrooms plus one)

Water Saving Devices

Place an "X" into the appropriate boxes for water rated appliances as set out below (if known)

1. Bathroom		
- flow restricters on showers	[X]	Unrestricted (20 litres/minute)
	[ ]	A rated (16 litres/minute)
	[ ]	AA rated (12 litres/minute)
	[ ]	AAA rated (9 litres/minute)
2. Laundry		
- washing machine	[X]	Unrestricted (7 kg capacity)
	[ ]	A rated (6 kg capacity)
	[ ]	AA rated (front loading, 5 kg capacity)
	[ ]	AAA rated (front loading, 4 kg capacity)
3. Water closet		
- cisterns	[X]	Unrestricted (10 litre capacity)
	[ ]	A - AAA rated (dual 6/3 litre capacity)
4. Other uses		
- sink, basins and trough etc	[X]	Unrestricted
	[ ]	A rated (aerator taps)
	[ ]	AA rated (flow restricters)
	[ ]	AAA rated (suds saver)

Effluent Flow Rate

Estimated daily effluent flow = **1000** Litres/day

Septic Tank Capacity

Insert 'X' for food waste disposal unit [ ]

Frequency of desludging = [3] years (At least every 3 years)

Minimum septic tank capacity = **2200** Litres

NOTE: Above figures represent best values available at this time and are a guide only.

GALLASCH & ASSOCIATES PTY LTD

SOIL PERCOLATION TEST REPORT

(Based on the "falling head method" described in Code of Practice—Septic Tanks,
EPA Publication 451, March 1996, which has given consistent and appropriate results over many years.)
XLS Program developed by Mildura Rural City Council

Date : 8/10/2013

Applicant Details

Owner: Danson & Blaby Pty Ltd
Site Address: Rezoning of Portion Lots 73 and 56 – LOT 18
Gol Gol East, New South Wales

Effluent Loading Rate

Expected daily effluent flow rate = **1000** **L/day** (See worksheets 1 & 2)

Test Data & Analysis

Stable Rate of Fall (Method - Appendix B of Code)		
Hole 1	33	mm/15 min
Hole 2	29	mm/15 min
Hole 3	21	mm/15 min
Hole 4	60	mm/15 min
Hole 5	21	mm/15 min
Hole 6	26	mm/15 min
Hole 7	11	mm/15 min
Hole 8		mm/15 min
Hole 9		mm/15 min
Hole 10		mm/15 min

Statistical Information	
Mean :	28.71
Std. Dev.	15.48
Max.	51.93
Min.	5.50

Test Results within Max & Min values	
Hole 1	33
Hole 2	29
Hole 3	21
Hole 4	Rejected
Hole 5	21
Hole 6	26
Hole 7	11
Hole 8	
Hole 9	
Hole 10	
Total =	141

Soil Percolation Rate = $\frac{141}{6}$ mm/15 min = **94** **mm/hr**

Soil Permeability = 0.38 m/day

Soil Classification = Loam / Sandy loam

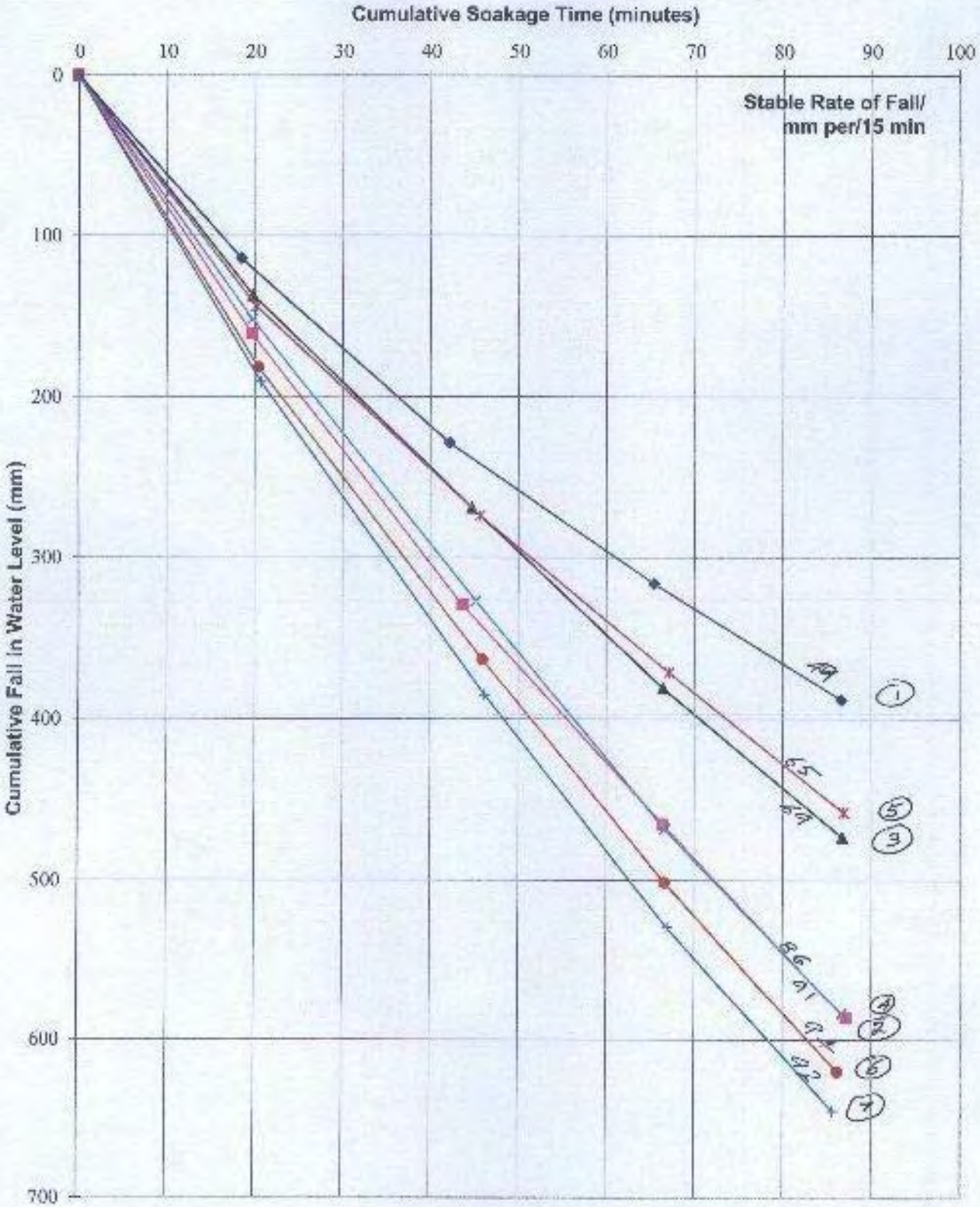
Long Term Absorption Rate = 11.3 L/ sq.m/day

Sub-Soil Absorbtion Trench Options

	Trench width		Trench length (min.)		
Option 1:	1000	mm	59	Metres	
Option 2:	700	mm	74	Metres	
Option 3:	500	mm	89	Metres	
Option 4:	300	mm	111	Metres	
Other 1:	1200	mm	52	Metres	
Other 2:	2000	mm	36	Metres	

Signed:

* NOTES: (i) "S". - May be suitable subject to further treatment, investigation and/or design.
(ii) "N.S". - Generally not suitable for septic tank effluent."
(iii) Trench lengths may be reduced by 50% where effluent is treated to 20/30 standard.


Cumulative Soakage Time (minutes)
0
10
20
30
40
50
60
70
80
90
100
Stable Rate of Fall/
mm per/15 min
Cumulative Fall in Water Level (mm)
0
100
200
300
400
500
600
700

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date:** 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 45
Gol Gol East, New South Wales

HOLE No: 1

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
111	225	11:18:00 AM	11:36:30 AM	18	114
80	195	11:37:00 AM	12:00:45 PM	42	229
103	190	12:02:15 PM	12:25:30 PM	65	316
108	180	12:26:15 PM	12:47:30 PM	87	388
				87	388

HOLE No: 2

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
130	291	11:18:45 AM	11:38:30 AM	20	161
120	288	11:39:00 AM	12:03:00 PM	44	329
130	266	12:04:00 PM	12:26:45 PM	67	465
109	230	12:27:15 PM	12:48:00 PM	87	586
				87	586

HOLE No: 3

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
118	255	11:19:45 AM	11:39:30 AM	20	137
98	230	11:40:00 AM	12:05:00 PM	45	269
107	219	12:05:45 PM	12:27:30 PM	67	381
110	202	12:28:00 PM	12:48:15 PM	87	473
				87	473

HOLE No: 4

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
108	260	11:20:30 AM	11:40:15 AM	20	152
90	265	11:40:45 AM	12:06:15 PM	45	327
95	236	12:06:45 PM	12:28:15 PM	67	468
102	217	12:28:45 PM	12:48:45 PM	87	583
				87	583

GALLASCH & ASSOCIATES PTY LTD

PERCOLATION RECORDING SHEETS

Ref No: 13/533 **Date**: 06/10/13

Client: Danson & Blaby Pty Ltd

Job: Rezoning of Portion Lots 73 and 56 – LOT 45
Gol Gol East, New South Wales

HOLE No: 5

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
122	266	11:21:00 AM	11:41:15 AM	20	144
98	228	11:41:45 AM	12:07:15 PM	46	274
98	195	12:07:45 PM	12:29:15 PM	67	371
90	177	12:29:30 PM	12:49:15 PM	87	458
				87	458

HOLE No: 6

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
85	267	11:21:45 AM	11:42:15 AM	21	182
98	279	11:42:45 AM	12:08:15 PM	46	363
92	230	12:09:15 PM	12:30:00 PM	67	501
100	219	12:30:15 PM	12:49:45 PM	86	620
				86	620

HOLE No: 7

Water Level (mm)		Time (h:m:s)		Cumulative Soakage Time (minutes)	Cumulative Fall in Water Level (mm)
Initial	Final	Initial	Final		
				0	0
100	291	11:22:15 AM	11:43:00 AM	21	191
106	300	11:44:00 AM	12:09:30 PM	46	385
109	253	12:10:00 PM	12:30:45 PM	67	529
106	222	12:31:15 PM	12:50:00 PM	86	645
				86	645

GALLASCH & ASSOCIATES PTY LTD

GUIDE TO DESIGN RATES FOR SEPTIC SYSTEMS

Based on "Code of Practice - Septic Tanks 2003".

Program developed by Mildura Rural City Council

Date : 08/10/13

HOUSEHOLD RESIDENCES

Applicant Details

Owner: Danson & Blaby Pty Ltd

Site Address: Rezoning of Portion Lots 73 and 56 – LOT 45
Gol Gol East, New South Wales

Occupation Details

(Insert number into one of the boxes below)

OPTION 1: Total number of bedrooms = [ ]

OPTION 2 : Total number of persons/users [5] (No. of persons = No of bedrooms plus one)

Water Saving Devices

Place an "X" into the appropriate boxes for water rated appliances as set out below (if known)

1. Bathroom		
- flow restricters on showers	[X]	Unrestricted (20 litres/minute)
	[ ]	A rated (16 litres/minute)
	[ ]	AA rated (12 litres/minute)
	[ ]	AAA rated (9 litres/minute)
2. Laundry		
- washing machine	[X]	Unrestricted (7 kg capacity)
	[ ]	A rated (6 kg capacity)
	[ ]	AA rated (front loading, 5 kg capacity)
	[ ]	AAA rated (front loading, 4 kg capacity)
3. Water closet		
- cisterns	[X]	Unrestricted (10 litre capacity)
	[ ]	A - AAA rated (dual 6/3 litre capacity)
4. Other uses		
- sink, basins and trough etc	[X]	Unrestricted
	[ ]	A rated (aerator taps)
	[ ]	AA rated (flow restricters)
	[ ]	AAA rated (suds saver)

Effluent Flow Rate

Estimated daily effluent flow = **1000** Litres/day

Septic Tank Capacity

Insert 'X' for food waste disposal unit [ ]

Frequency of desludging = [3] years (At least every 3 years)

Minimum septic tank capacity = **2200** Litres

NOTE: Above figures represent best values available at this time and are a guide only.

GALLASCH & ASSOCIATES PTY LTD

SOIL PERCOLATION TEST REPORT

(Based on the "falling head method" described in Code of Practice—Septic Tanks,
EPA Publication 451, March 1996, which has given consistent and appropriate results over many years.)
XLS Program developed by Mildura Rural City Council

Date : 8/10/2013

Applicant Details

Owner: Danson & Blaby Pty Ltd
Site Address: Rezoning of Portion Lots 73 and 56 – LOT 45
Gol Gol East, New South Wales

Effluent Loading Rate

Expected daily effluent flow rate = **1000** **L/day** (See worksheets 1 & 2)

Test Data & Analysis

Stable Rate of Fall (Method - Appendix B of Code)		
Hole 1	49	mm/15 min
Hole 2	91	mm/15 min
Hole 3	69	mm/15 min
Hole 4	86	mm/15 min
Hole 5	65	mm/15 min
Hole 6	94	mm/15 min
Hole 7	92	mm/15 min
Hole 8		mm/15 min
Hole 9		mm/15 min
Hole 10		mm/15 min

Statistical Information	
Mean :	78.00
Std. Dev.	17.20
Max.	103.81
Min.	52.19

Test Results within Max & Min values	
Hole 1	Rejected
Hole 2	91
Hole 3	69
Hole 4	86
Hole 5	65
Hole 6	94
Hole 7	92
Hole 8	
Hole 9	
Hole 10	
Total =	497

Soil Percolation Rate = $\frac{497}{6}$ mm/15 min = **331** **mm/hr**

Soil Permeability = 1.33 m/day

Soil Classification = Sandy loam / Sand

Long Term Absorption Rate = 17.6 L/ sq.m/day

Sub-Soil Absorbtion Trench Options

	Trench width		Trench length (min.)		
Option 1:	1000	mm	38	Metres	S *
Option 2:	700	mm	47	Metres	S *
Option 3:	500	mm	57	Metres	S *
Option 4:	300	mm	71	Metres	S *
Other 1:	1200	mm	33	Metres	S *
Other 2:	2000	mm	23	Metres	

Signed:

* NOTES: (i) "S". - May be suitable subject to further treatment, investigation and/or design.
(ii) "N.S". - Generally not suitable for septic tank effluent."
(iii) Trench lengths may be reduced by 50% where effluent is treated to 20/30 standard.