Strider Duerinckx
Telephone 0402608396
Email strider@ewcon.com.au
Web: www.ewcon.com.au

Bannerman Consulting Pty Ltd
By email: C/- geoff.smyth@bigpond.com

Our ref: 2122-022-01
Date: 10 December 2021

Two Tales Winery 963 Orara Way, Nana Glen - Revised OSMS Solution

1. Introduction

Earth Water Consulting (EWC) has been engaged by Bannerman Consulting Pty Ltd (the client) to provide independent expert advice on the proposed On-Site Sewage management System (OSMS) for the expanded Two Tales Winery commercial development at 963 Orara Way, Nana Glen (Figure 1).

It is understood that a significant Land & Environment Court proceeding is underway. The purpose of this letter is to summarise our review of the Site, provide an alternative solution and present this to Councils expert witness so as to obtain a mutually agreed solution.

2. Suitability to Undertake Review

Strider Duerinckx of EWC has undertaken this review without prejudice. Strider is a director of EWC and has >20 years experience undertaking wastewater designs in NSW for domestic and commercial developments. Strider has appeared as an expert witness for VCAT and undertaken a joint expert conclave process on two occasions in NSW.

The following details are provided in numbered bullets so that if any details require clarification or amendments are required, the bullet can be identified.

3. Existing OSM

1. Truewater Australia designed an OSMS for the 4 bdr dwelling, 2bdr B&B and 40 bar + meals per day. They recommended a small commercial Kubota moving bed reactor treatment plant be installed to treat the peak 1.9kL/day (smallest model available 2.4-10kL/day), with land application into 890m^2 of irrigation in 2 zones of 445m^2 per zone.
2. Burnett Plumbing were awarded the installation using an Ozzikleen branded RP10+ AWTS, their B&B model. The AWTS consists of a 5kL balance tank with dual alternating lift pumps coupled to an Ozzikleen RP10 AWTS, and represents a “B&B” model from Ozzikleen. The total treatment capacity is expected to be 2-2.5kL/day. Approximately 890m^2 of SSI was installed (Figure 2). The approximate location and extents of the SSI field were obtained via Nearmap aerial and georeferencing to MGA56-GDA94. Aerial photographs have parallax error and the actual extent of the SSI field may be located by surveying if required.

3. In order to gauge the existing to proposed expansion, EWC undertook preliminary modelling of the existing dwelling, B&B and restaurant activities to Appendix H of AS/1547:2012. Based on these published wastewater generation rates we estimated design wastewater generation between 1.9-2.7kL/day. The actual generation would depend on site specific water consumption and wastewater generation habits.

4. Proposed Upgrade

4. It is understood that the proposed expansion of the commercial development is as follows. We also understand that a 25% reduction in wastewater generation would be applicable to AS/NZS1547:2012 with inclusion or retrofitting of water reduction fittings.

Source	WW Gen (L/p/day)[1]	WW Gen Mod (L/p/day)[2]	Persons	Peak WW Gen (kL/day)
4bdr House	120	120	6	0.90
Staff	30	22.5	8	0.18
Bar	20	15	20	0.3
Meals Inside	30	22.5	60 x 2 x 2 = 240	5.4
Meals on Conc or Vineyard	30	22.5	26 x 2 = 52	1.2
2 bdr Accom	220	220	4	0.9
			330	8.9

1. **WW gen based on Table H1 and H4 of AS/NZS154:2012 with unlimited water supply**
2. **Gen mod with 25% reduction based on min 3* WELS fittings excluding house and accom as based on Table H1**

5. Wastewater generation rates are based on AS/NZS1547:2012. This is the adopted standard based on the CHCC OSMS Strategy (2015). In addition, the wastewater generation rates from AS/NZS1547:2012 broadly correspond to wastewater generation rates from other states in Australia such as VicEPA 891.4 (2016) and SAHealth (2013.
6. VicEPA Table 4 provides wastewater generation rates for restaurants of 30L/p/day of >50 seats of 30L/p/day per sitting, bar meals 10L/p/day, motel accommodation of 100-150L/p/day, and households 120-180L/p/day (see note 5).
7. SA Health (2013) Appendix E provides various flow and BOD loading rates for commercial premises. Restaurants with liquor licenses have a design flow rate of 20L/p/day.

5. Proposed WW Generation

8. An annual balance was undertaken for wastewater generation over 424 days to capture any end of year storage in Yr1 that cascades over to storage at the beginning of Yr2.
9. WW generation was modelled based on an assumed seasonal occupancy of low season weekdays, low season weekends, school holidays weekends, holidays weekdays, and function days.
10. Based on experience by the author at similar developments, the modelled occupancy is higher than has been allowed for commercial tourist facilities in the Coffs Harbour and MNC area by the author on previous assessments. Average annual occupancy as low as 22% has

previously been allowed for many developments, and for this development the modelled occupancy for the entire year has been modelled with an average occupancy at 53%.

Source	Function Capacity	Hol Weekday Capacity	Hol Weekend Capacity	Low Season Weekday Capacity	Low Season Weekend Capacity
4bdr House	100%	100%	100%	100%	100%
Staff	150%	75%	100%	25%	40%
Bar	200%	100%	100%	100%	100%
Meals Inside	150%	75%	100%	25%	500%
Meals Outside	100%	75%	100%	25%	50%
2 bdr Accom	100%	100%	100%	25%	50%

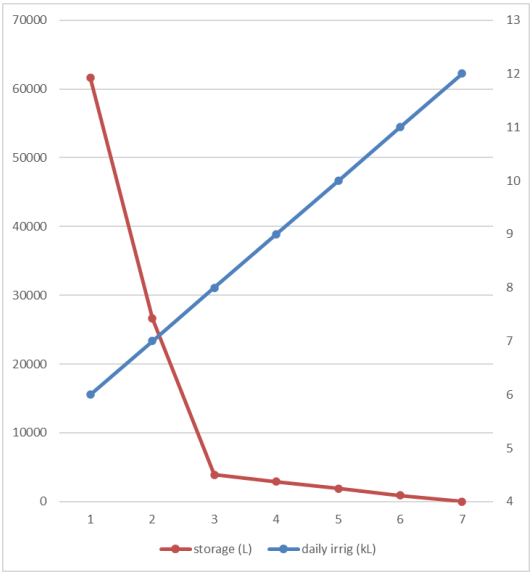
11. Wastewater generation was modelled for these 5 scenarios, then storage calculation undertaken over the 424 days.

Source	Functions (kL/day)	Hol Weekday (kL/day)	Hol Weekend (kL/day)	Low Season Weekday (kL/day)	Low Season Weekend (kL/day)
WW Generation	11.9	8.8	7.1	3.1	5.0

12. Wastewater generation ranges from a peak of 11.9kL/day, with variable daily generation down to 3.1kL/day.
13. The daily average wastewater generation based on the annual storage calculation is 4.7kL/day. An excerpt of the storage calculation is shown below.

Date	Day	Daily WW Gen (L)	Daily Function WW Gen (L)	Monthly Avg (L/month)	Monthly Avg (L/month)	Monthly Total (L/month)	Max Daily Irrigation Output (L)	Stored Wastewater (L)	Stored Wastewater from Previous Day (L)	Cumulative Wastewater Storage (L)	Actual Daily Irrigation Output (L)
1-Jan	1	8,830	0	7,841	0	243,070	8,000	830	0	830	8,000
2-Jan	2	8,830	0				8,000	830	830	1,660	8,000
3-Jan	3	7142.5	0				8,000	-858	1,660	803	8,000
4-Jan	4	7142.5	0				8,000	-858	803	0	7,143
5-Jan	5	7142.5	0				8,000	-858	0	0	7,143
6-Jan	6	7142.5	0				8,000	-858	0	0	7,143
7-Jan	7	7142.5	0				8,000	-858	0	0	7,143
8-Jan	8	8,830	0				8,000	830	0	830	8,000
9-Jan	9	8,830	0				8,000	830	830	1,660	8,000
10-Jan	10	7142.5	0				8,000	-858	1,660	803	8,000
11-Jan	11	7142.5	0				8,000	-858	803	0	7,143
12-Jan	12	7142.5	0				8,000	-858	0	0	7,143
13-Jan	13	7142.5	0				8,000	-858	0	0	7,143
14-Jan	14	7142.5	0				8,000	-858	0	0	7,143
15-Jan	15	8,830	0				8,000	830	0	830	8,000
16-Jan	16	8,830	0				8,000	830	830	1,660	8,000
17-Jan	17	7142.5	0				8,000	-858	1,660	803	8,000
18-Jan	18	7142.5	0				8,000	-858	803	0	7,143
19-Jan	19	7142.5	0				8,000	-858	0	0	7,143
20-Jan	20	7142.5	0				8,000	-858	0	0	7,143
21-Jan	21	7142.5	0				8,000	-858	0	0	7,143
22-Jan	22	8,830	0				8,000	830	0	830	8,000
23-Jan	23	8,830	0				8,000	830	830	1,660	8,000
24-Jan	24	7142.5	0				8,000	-858	1,660	803	8,000
25-Jan	25	7142.5	0				8,000	-858	803	0	7,143
26-Jan	26	11920	0				8,000	3,920	0	3,920	8,000
27-Jan	27	7142.5	0				8,000	-858	3,920	3,063	8,000
28-Jan	28	7142.5	0				8,000	-858	3,063	2,205	8,000
29-Jan	29	8,830	0				8,000	830	2,205	3,035	8,000
30-Jan	30	8,830	0				8,000	830	3,035	3,865	8,000
31-Jan	31	7142.5	0				8,000	-858	3,865	3,008	8,000
1-Feb	32	7142.5	0	4,224	0	118,266	8,000	-858	3,008	2,150	8,000
2-Feb	33	7142.5	0				8,000	-858	2,150	1,293	8,000
3-Feb	34	7142.5	0				8,000	-858	1,293	435	8,000
4-Feb	35	7142.5	0				8,000	-858	435	0	7,143
5-Feb	36	4997	0				8,000	-3,003	0	0	4,997
6-Feb	37	4997	0				8,000	-3,003	0	0	4,997
7-Feb	38	3107.5	0				8,000	-4,893	0	0	3,108
8-Feb	39	3107.5	0				8,000	-4,893	0	0	3,108
9-Feb	40	3107.5	0				8,000	-4,893	0	0	3,108
10-Feb	41	3107.5	0				8,000	-4,893	0	0	3,108
11-Feb	42	3107.5	0				8,000	-4,893	0	0	3,108
12-Feb	43	4997	0				8,000	-3,003	0	0	4,997

14. A sensitivity analysis was undertaken of irrigation versus storage. Based on this a treatment and irrigation rate of 8kL/day represents a reasonable solution of treatment versus balancing tank storage. At 8kL/day treatment, an upfront balance tank of minimum 3.9kL is required.



6. Proposed WW Treatment Plant

15. A WWMP would calculate and detail the BOD loading for the total OSMS such that the treatment system would have sufficient capacity for scum and sludge storage and BOD treatment.
16. A grease arrestor is important pre-treatment to reduce BOD and oil & grease levels for a small commercial treatment plants. Following this pretreatment, the chemical composition of wastewater from a small restaurant and bar, plus dwelling and B&B would be considered within the BOD, COD, pH and oil & grease ranges that off the shelf treatment systems can treat to a commercial secondary standard (BOD 45mg/L, TSS 30mg/L, Residual Chlorine 2-5mg/L, FC <100cfu/100ml).
17. Examples of commercially available treatment systems include the Graf Klaro or the Fujiclean treatment plants rated to 10kL/day (Appendix A). Treatment systems >5kL/day do not require NSW Health accreditation.
18. A WWMP will require an irrigation flow meter installed so as to monitor irrigation rates. This is important for truthing the design and ensuring operational capability.
19. There is the opportunity to split wastewater flows with a portion from the dwelling and B&B into the existing Ozzikleen AWTS, and the remainder to a separate treatment system. Treated wastewater then pumped into a common irrigation line for the common SSI indexing valve dosing system. This would reduce the treatment system sizing for the restaurant bar down to a second treatment system of 7kL/day treatment capacity coupled with a 3.2kL balance tank.

7. Proposed Land Application

20. For land application area requirements, utilising the storage calculation and restricted wastewater treatment of 9kL/day, the daily average wastewater irrigation (on a monthly basis) was modelled between 4.1-5.9kL/day.

Month	Daily Average Irrigation
Jan	7.640
Feb	4.316
Mar	3.789
Apr	5.477
May	3.656
Jun	5.414
Jul	3.717
Aug	3.789
Sep	3.812
Oct	5.461
Nov	3.975
Dec	5.013

21. A monthly water balance was undertaken based on these average daily irrigation rates. For zero wet weather storage requirements, a minimum subsurface irrigation area of 1,764m^2 is required. Including the existing 890m^2 SSI field, an additional 2 zones of 445m^2 would be required for equal distribution, totalling 1,780m^2 (Figure 3 and Appendix B). A 4-port indexing valve would be utilised to split the wastewater into the 4 zones for intermittent distribution, thereby maximising the wetting/drying of the subsoil.
22. SSI is considered by the owner the preferred land application method as the land application method provides minimal impact to the vines during installation. In the vineyard area the laterals can be installed at a deeper depth of 300mm to provide trafficability.
23. Section 4 of DLG (1998) Guidelines provide recommended buffer distances to various features including buildings, driveways, pathways and swimming pools. Subsurface drip irrigation does not require a buffer to pathways, the concrete slab wouldn't be considered a dwelling, and the commentary on buffers suggests when assessing buffer distances consideration should be given to site and soil factors. Appendix R of AS/NZS1547:2012 provides "informative" information on risk assessment procedures for buffer distances. Note 2 of Table R1 suggests that subject to regulatory rules and appropriate design, the separation of a drip line system from an upslope boundary, for slopes >5% may be reduced from 1.5m to 0.5m width. The emphasis is on assessment of risks.
24. Given the commercial nature of the Site with limited daily exposure in duration and older ages (children may occasionally be present), that exposure is dining only on the concrete slab and vineyard corridor, and that the SSI field is located downslope of the slab, the existing SSI field of 890m^2 can be retained as equal dosing of the field with the additional SSI area will be undertaken (spreading out of the effluent application maximising wetting and drying, barriers (planter boxes) and signage will be installed, and paved walkways will be constructed to reduce the amount of foot traffic on the area.
25. To limit potential exposure timed dosing of the existing SSI field will be undertaken during after hours (nominally 12am to 10am).

8. Operation & Maintenance

26. Specific Operating and Maintenance (O&M) requirements depends on the treatment system and will be supplied by the manufacturer. The Ozzikleen treatment system and the proposed additional are off the shelf and small commercial with a standard quarterly servicing schedule, and procedures adopted for domestic AWTS are similar. A preliminary O&M plan is presented below.

Item	Description	Timing	Responsibility
Balance tank	The balance tank will generate a scum layer and collect inorganic solids and settleable sludges including sand. Pumps are susceptible to clogging and wear/tear.	Annual inspection of the tanks for solids levels. Desludging as required. Quarterly inspection and maintenance or as per	Scheduled contractor.

Item	Description	Timing	Responsibility
	High water alarms will need checking.	manufacturer's requirements.	
Treatment Plant	The treatment tanks will collect inorganic solids and settleable sludges that pass through the treatment system. Dosing lines, pumps and air blowers are susceptible to clogging and wear/tear.	Annual inspection of the AWTS for sludge and scum levels. Desludging as required. Quarterly inspection and maintenance or as per manufacturer's requirements.	Scheduled contractor. Scheduled contractor.
Irrigation tank	The irrigation tank will collect fine inorganic solids and settleable sludges that pass through the treatment system. The irrigation pump is susceptible to clogging and wear/tear.	Annul inspection of chamber to assess sludge levels and pump-out biosolids as required. The pump will require inspection and maintenance as per manufacturer's requirements.	Scheduled contractor. Scheduled contractor.
Effluent quality and quantity	To ensure that effluent quality meets the parameters as specified previously, regular monitoring of routine parameters such as DO, NTU and residual chlorine levels by the maintenance contractor will be required. Flow meter installed on the irrigation line.	Quarterly, DO, NTU and residual chlorine as a minimum. Monthly recording of water meter.	Scheduled contractor or consultant. Maintenance staff
SSI Field	The indexing valve requires maintenance to ensure ongoing operation. The application area requires a good vegetative cover that is well maintained.	Quarterly Mowing to maintain suitable vegetative cover and for vegetative removal in winter and summer months	Scheduled contractor. Maintenance staff.

Item	Description	Timing	Responsibility
	Pressure lines may clog with fine sediment and biofilm.	Quarterly inspection and at least annual chlorine shock load and flushing of lines.	Scheduled contractor.

9. Wastewater Management Plan

27. In order to obtain a s68 approval to upgrade or modify, at that time a Wastewater Management Plan (WWMP) will be prepared to support the s68 application, including relevant details required for that approval stage.

Yours sincerely,

Strider Duerinckx

Director

Encl: Figures 1-3

Appendices A & B

Figures

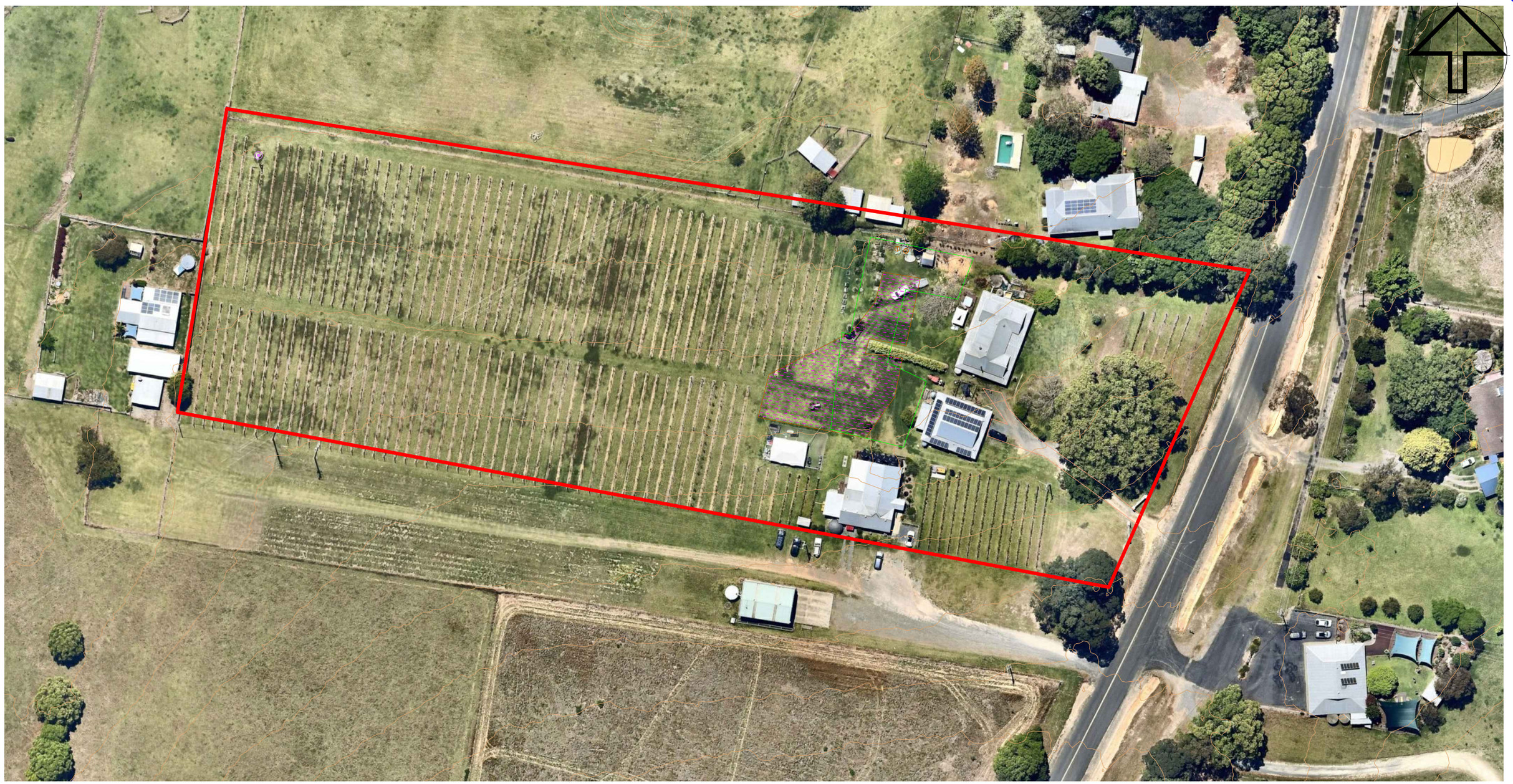
Note property boundaries are indicative only

EARTH WATER CONSULTING

LEGEND

- Approx Property Boundary
- Contour (10m)
- Drainage Alignment

TITLE: Site Location			PROJECT: WWMP for 963 Orara Way, Nana Glen		CLIENT: Two Tales Winery
FIGURE: Figure 1					
SHEET: 1 OF 1	ISSUE: B	AUTHOR: SD	DATE: 9/12/21	SCALE: 1:2000	PROJECT: 2122-022



0 25 50

Horizontal Scale (metres) 1:1000

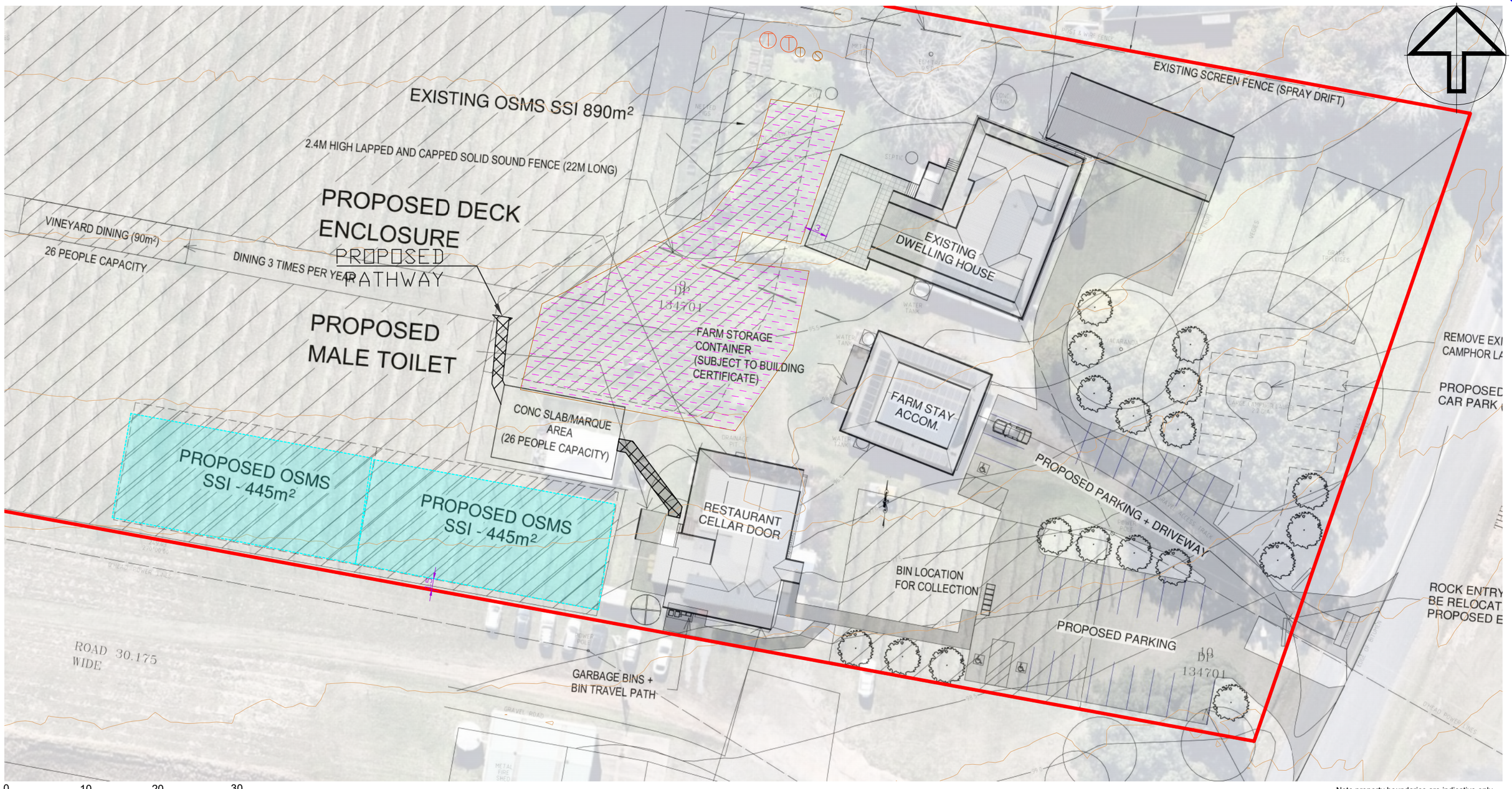
Note property boundaries are indicative only

LEGEND

- Property Boundary
- Drainage Alignment
- Fenceline
- Existing Building
- Contour Line (1m)
- Driveway
- Existing OSMS as Installed
- Approved SSI Field

EARTH WATER CONSULTING

TITLE: Existing Site Layout			FIGURE: Figure 2
			SHEET: 1 OF 1 / ISSUE: A
PROJECT: WWMP for 963 Orara Way, Nana Glen			CLIENT: Two Tales Winery
AUTHOR: SD	DATE: 22/10/21	SCALE: 1:1000	PROJECT: 2122-022



0 10 20 30

Horizontal Scale (metres) 1:500

Note property boundaries are indicative only

LEGEND

- Property Boundary
- Drainage Alignment
- Fenceline
- Existing Building
- Contour Line (1m)
- Recommended Treatment Tank
- Recommended Additional SSI

TITLE: Proposed OSMS - SSI			FIGURE: Figure 3
			SHEET: 1 OF1 ISSUE: C
PROJECT: WWMP for 963 Orara Way, Nana Glen			CLIENT: Two Tales Winery
AUTHOR: SD	DATE: 9/12/21	SCALE: 1:500	PROJECT: 2122-022

Appendix A

FUJI CLEAN
Model PCN

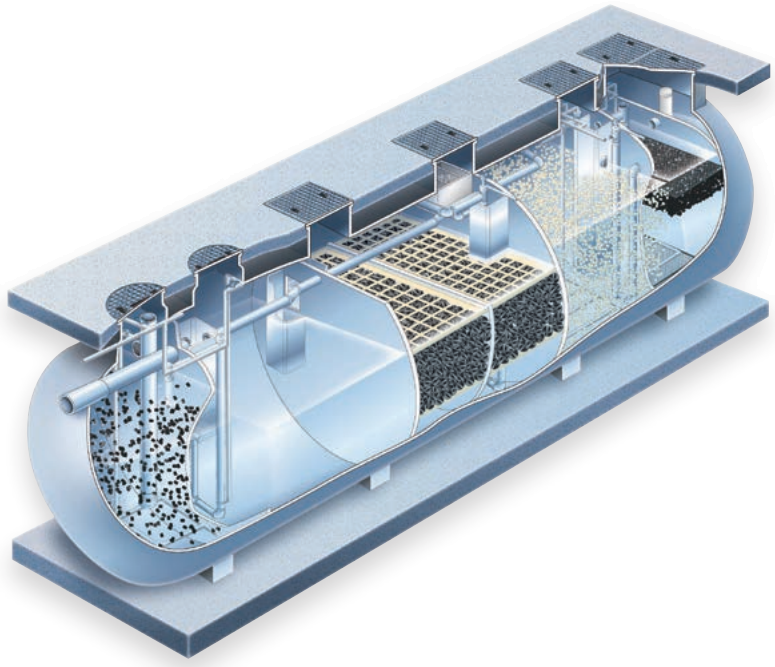
Commercial Plant

Cleaning frequency
Every 6 months
Maintenance frequency
Every month

Effluent quality
BOD:15mg / L or less
SS: 10mg / L or less
T-N: 20mg / L or less
The above effluent quality is accredited by The Building Center of Japan.

Design Hydraulic Loading

10–60 m³/day



Features

Self-Contained φ2000 tank

φ2000 tank can be put into a 40-ft. shipping container

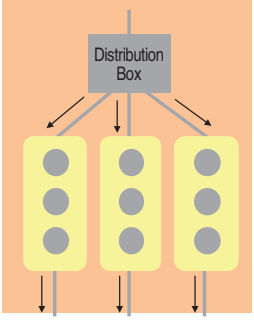
Cluster design

Units can be combined for optimal efficiency

Linear Diaphragm Air Blower

Constructed for long lasting durability with very low energy consumption achieved by “Made-in-Japan” air blower

Cluster design

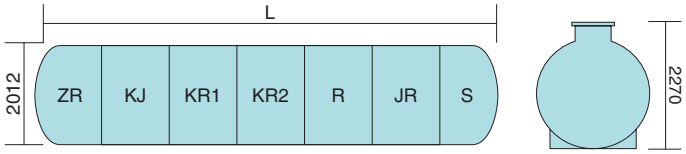


Parallel connection

Example of a temporary housing installation following Japan’s “Great East Earthquake” of 2011

Configuration of Each Chamber

Model PCNⅢ
W pattern



Note

- **ZR** : Forward Fluidized Media chamber
- **KJ** : Sedimentation chamber
- **KR1** : 1st Anaerobic chamber
- **KR2** : 2nd Anaerobic chamber
- **R** : Fluidized Media chamber
- **JR** : Recirculation & Filtration chamber
- **S** : Disinfection chamber

Tank Dimensions

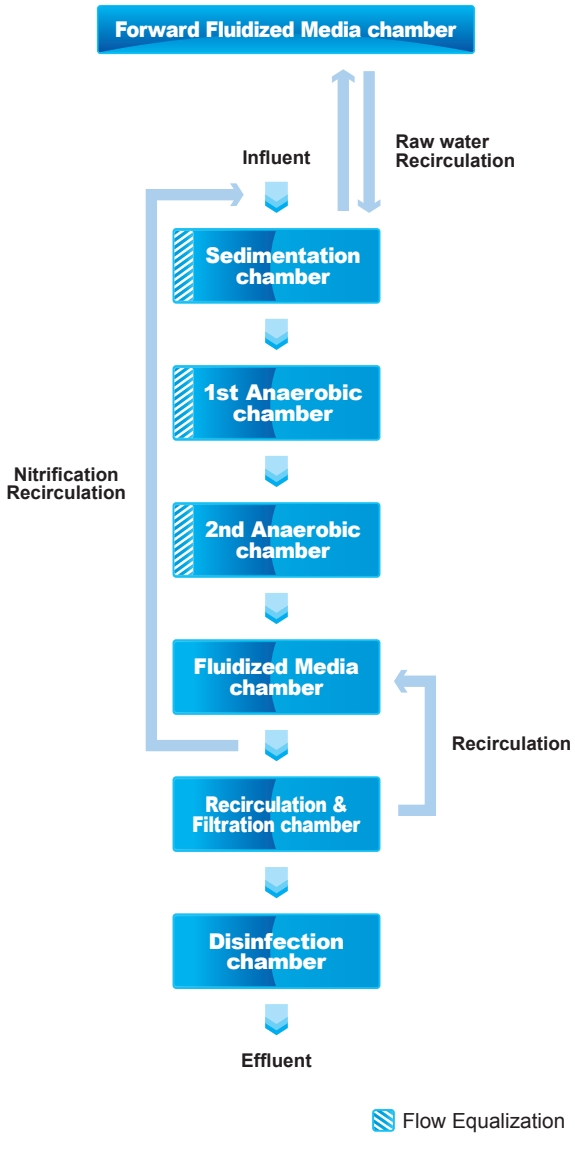
Design Influent Quality based on Japanese household wastewater : BOD 200mg/L T-N 50mg/ L

Design Hydraulic Loading [m³/D]	Model Name	Tank Length and number L(mm)×unit(s)
10m³	PCNⅢ-51W	5,960 × 1 unit
20m³	PCNⅢ-100W	10,250 × 1 unit
30m³	PCNⅢ-51W × 3 Cluster design	5,960 × 3 unit
40m³	PCNⅢ-100W × 2 Cluster design	10,250 × 2 unit
60m³	PCNⅢ-100W × 3 Cluster design	10,250 × 3 unit

Container Dimensions (nominal)

		20ft	40ft	40ftHC*
Outer Dimensions [mm]	Length	6,058	12,192	12,192
	Width	2,438	2,438	2,438
	Height	2,591	2,591	2,896
Inner Dimensions [mm]	Length	5,898	12,032	12,032
	Width	2,352	2,352	2,352
	Height	2,385	2,385	2,690
	Volume [m³]	33.1	67.5	76.3
Door Dimensions [mm]	Width	2,343	2,343	2,343
	Height	2,280	2,280	2,585

Treatment Process



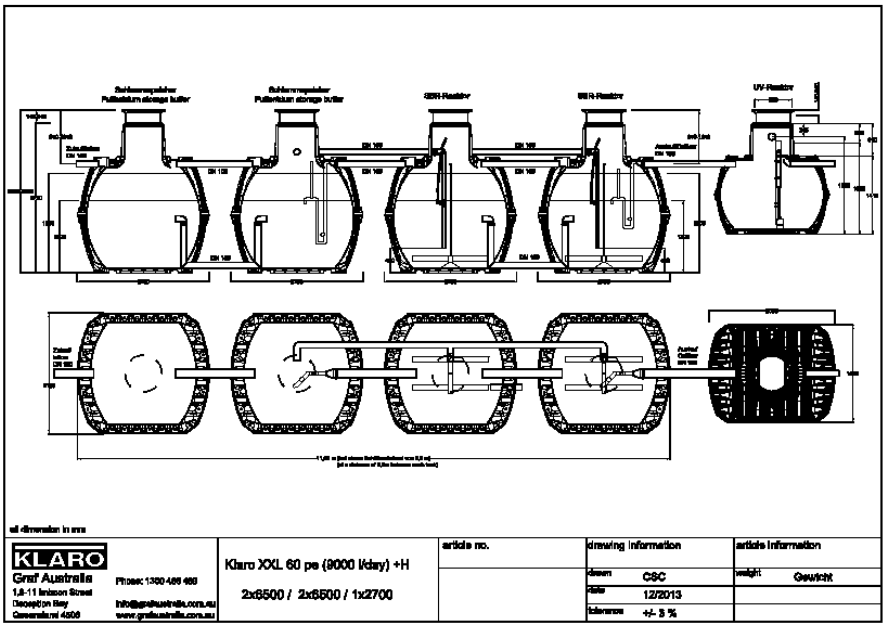
KLARO
Advanced SBR-Technology

KLARO Modular Wastewater Systems

9,000 Litres p/day - Advanced German technology

SYSTEM CODE: KCMS9000 TANKS: 2 x 6500L[PC] 2 x 6500L[SBR] 1 x 6500L[DIS]
Max Flow P/day: 9,000L POWER: Single Phase DT4.25 Compressor 740W

Certified Product
Australian Standard



Graf Carat Tanks are easy to transport and install. Injection moulded in the world's most advanced facility they are covered by Graf's 15 year warranty.

Klaro Advanced SBR Technology..

Energy Efficient – Systems don't run continuously
Tanks can be flat packed to site saving 1,000's
Systems feature Under Load and Vacation Mode
Remote Monitoring : Reliable & Robust operation

Graf Australia P/L Brisbane www.klaro.com.au

3 years warranty

15 years warranty

No mechanics in the wastewater

No pumps in the wastewater

No electrical parts in the wastewater

Appendix B

Annual Flow Calculations for

Date	Day	Daily WW Gen (L)	Daily Function WW Gen (L)	Monthly Avg (L/month)	Monthly Avg (L/month)	Monthly Total (L/month)	Max Daily Irrigation Output (L)	Stored Wastewater (L)	Stored Wastewater from Previous Day (L)	Cumulative Wastewater Storage (L)	Actual Daily Irrigation Output (L)	Monthly Avg (L/day)	Monthly Total (L/month)
1-Jan	1	8,830	0	7,841	0	243,070	8,000	830	0	830	8,000	7,640	236,853
2-Jan	2	8,830	0				8,000	830	830	1,660	8,000		
3-Jan	3	7142.5	0				8,000	-858	1,660	803	8,000		
4-Jan	4	7142.5	0				8,000	-858	803	0	7,143		
5-Jan	5	7142.5	0				8,000	-858	0	0	7,143		
6-Jan	6	7142.5	0				8,000	-858	0	0	7,143		
7-Jan	7	7142.5	0				8,000	-858	0	0	7,143		
8-Jan	8	8,830	0				8,000	830	0	830	8,000		
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23-Jan	23	8,830	0				8,000	830	830	1,660	8,000		
24-Jan	24	7142.5	0				8,000	-858	1,660	803	8,000		
25-Jan	25	7142.5	0				8,000	-858	803	0	7,143		
26-Jan	26	11920	0				8,000	3,920	0	3,920	8,000		
27-Jan	27	7142.5	0				8,000	-858	3,920	3,063	8,000		
28-Jan	28	7142.5	0				8,000	-858	3,063	2,205	8,000		
29-Jan	29	8,830	0				8,000	830	2,205	3,035	8,000		
30-Jan	30	8,830	0				8,000	830	3,035	3,865	8,000		
31-Jan	31	7142.5	0				8,000	-858	3,865	3,008	8,000		
1-Feb	32	7142.5	0	4,224	0	118,266	8,000	-858	3,008	2,150	8,000	4,316	120,839
2-Feb	33	7142.5	0				8,000	-858	2,150	1,293	8,000		
3-Feb	34	7142.5	0				8,000	-858	1,293	435	8,000		
4-Feb	35	7142.5	0				8,000	-858	435	0	7,143		
5-Feb	36	4997	0				8,000	-3,003	0	0	4,997		
6-Feb	37	4997	0				8,000	-3,003	0	0	4,997		
7-Feb	38	3107.5	0				8,000	-4,893	0	0	3,108		
8-Feb	39	3107.5	0				8,000	-4,893	0	0	3,108		
9-Feb	40	3107.5	0				8,000	-4,893	0	0	3,108		
10-Feb	41	3107.5	0				8,000	-4,893	0	0	3,108		
11-Feb	42	3107.5	0				8,000	-4,893	0	0	3,108		
12-Feb	43	4997	0				8,000	-3,003	0	0	4,997		
13-Feb	44	4997	0				8,000	-3,003	0	0	4,997		
14-Feb	45	3107.5	0				8,000	-4,893	0	0	3,108		
15-Feb	46	3107.5	0				8,000	-4,893	0	0	3,108		
16-Feb	47	3107.5	0				8,000	-4,893	0	0	3,108		
17-Feb	48	3107.5	0				8,000	-4,893	0	0	3,108		
18-Feb	49	3107.5	0				8,000	-4,893	0	0	3,108		
19-Feb	50	4997	0				8,000	-3,003	0	0	4,997		
20-Feb	51	4997	0				8,000	-3,003	0	0	4,997		
21-Feb	52	3107.5	0				8,000	-4,893	0	0	3,108		
22-Feb	53	3107.5	0				8,000	-4,893	0	0	3,108		
23-Feb	54	3107.5	0				8,000	-4,893	0	0	3,108		
24-Feb	55	3107.5	0				8,000	-4,893	0	0	3,108		
25-Feb	56	3107.5	0				8,000	-4,893	0	0	3,108		
26-Feb	57	4997	0				8,000	-3,003	0	0	4,997		
27-Feb	58	4997	0				8,000	-3,003	0	0	4,997		
28-Feb	59	3107.5	0				8,000	-4,893	0	0	3,108		
1-Mar	60	3107.5	0	3,796	0	121,479	8,000	-4,893	0	0	3,108	3,789	117,455
2-Mar	61	3107.5	0				8,000	-4,893	0	0	3,108		
3-Mar	62	3107.5	0				8,000	-4,893	0	0	3,108		
4-Mar	63	3107.5	0				8,000	-4,893	0	0	3,108		
5-Mar	64	11920	0				8,000	3,920	0	3,920	8,000		
6-Mar	65	4997	0				8,000	-3,003	3,920	917	8,000		
7-Mar	66	3107.5	0				8,000	-4,893	917	0	3,108		
8-Mar	67	3107.5	0				8,000	-4,893	0	0	3,108		
9-Mar	68	3107.5	0				8,000	-4,893	0	0	3,108		
10-Mar	69	3107.5	0				8,000	-4,893	0	0	3,108		
11-Mar	70	3107.5	0				8,000	-4,893	0	0	3,108		
12-Mar	71	4997	0				8,000	-3,003	0	0	4,997		
13-Mar	72	4997	0				8,000	-3,003	0	0	4,997		
14-Mar	73	3107.5	0				8,000	-4,893	0	0	3,108		
15-Mar	74	3107.5	0				8,000	-4,893	0	0	3,108		
16-Mar	75	3107.5	0				8,000	-4,893	0	0	3,108		
17-Mar	76	3107.5	0				8,000	-4,893	0	0	3,108		
18-Mar	77	3107.5	0				8,000	-4,893	0	0	3,108		
19-Mar	78	4997	0				8,000	-3,003	0	0	4,997		
20-Mar	79	4997	0				8,000	-3,003	0	0	4,997		
21-Mar	80	3107.5	0				8,000	-4,893	0	0	3,108		
22-Mar	81	3107.5	0				8,000	-4,893	0	0	3,108		
23-Mar	82	3107.5	0				8,000	-4,893	0	0	3,108		
24-Mar	83	3107.5	0				8,000	-4,893	0	0	3,108		
25-Mar	84	3107.5	0				8,000	-4,893	0	0	3,108		
26-Mar	85	4997	0				8,000	-3,003	0	0	4,997		
27-Mar	86	4997	0				8,000	-3,003	0	0	4,997		
28-Mar	87	3107.5	0				8,000	-4,893	0	0	3,108		
29-Mar	88	3107.5	0				8,000	-4,893	0	0	3,108		
30-Mar	89	3107.5	0				8,000	-4,893	0	0	3,108		
31-Mar	90	3107.5	0				8,000	-4,893	0	0	3,108		

Annual Flow Calculations for

Date	Day	Daily WW Gen (L)	Daily Function WW Gen (L)	Monthly Avg (L/month)	Monthly Avg (L/month)	Monthly Total (L/month)	Max Daily Irrigation Output (L)	Stored Wastewater (L)	Stored Wastewater from Previous Day (L)	Cumulative Wastewater Storage (L)	Actual Daily Irrigation Output (L)	Monthly Avg (L/day)	Monthly Total (L/month)
1-Apr	91	3107.5	0	5,593	0	167,802	8,000	-4,893	0	0	3,108	5,477	164,308
2-Apr	92	4997	0				8,000	-3,003	0	0	4,997		
3-Apr	93	4997	0				8,000	-3,003	0	0	4,997		
4-Apr	94	3107.5	0				8,000	-4,893	0	0	3,108		
5-Apr	95	3107.5	0				8,000	-4,893	0	0	3,108		
6-Apr	96	3107.5	0				8,000	-4,893	0	0	3,108		
7-Apr	97	3107.5	0				8,000	-4,893	0	0	3,108		
8-Apr	98	3107.5	0				8,000	-4,893	0	0	3,108		
9-Apr	99	4997	0				8,000	-3,003	0	0	4,997		
10-Apr	100	4997	0				8,000	-3,003	0	0	4,997		
11-Apr	101	3107.5	0				8,000	-4,893	0	0	3,108		
12-Apr	102	3107.5	0				8,000	-4,893	0	0	3,108		
13-Apr	103	3107.5	0				8,000	-4,893	0	0	3,108		
14-Apr	104	3107.5	0				8,000	-4,893	0	0	3,108		
15-Apr	105	3107.5	0				8,000	-4,893	0	0	3,108		
16-Apr	106	8,830	0				8,000	830	0	830	8,000		
17-Apr	107	8,830	0				8,000	830	830	1,660	8,000		
18-Apr	108	7142.5	0				8,000	-858	1,660	803	8,000		
19-Apr	109	7142.5	0				8,000	-858	803	0	7,143		
20-Apr	110	7142.5	0				8,000	-858	0	0	7,143		
21-Apr	111	7142.5	0				8,000	-858	0	0	7,143		
22-Apr	112	7142.5	0				8,000	-858	0	0	7,143		
23-Apr	113	8,830	0				8,000	830	0	830	8,000		
24-Apr	114	8,830	0				8,000	830	830	1,660	8,000		
25-Apr	115	7142.5	0				8,000	-858	1,660	803	8,000		
26-Apr	116	7142.5	0				8,000	-858	803	0	7,143		
27-Apr	117	7142.5	0				8,000	-858	0	0	7,143		
28-Apr	118	7142.5	0				8,000	-858	0	0	7,143		
29-Apr	119	7142.5	0				8,000	-858	0	0	7,143		
30-Apr	120	4997	0				8,000	-3,003	0	0	4,997		
1-May	121	4997	0	3,595	0	111,449	8,000	-3,003	0	0	4,997	3,656	113,338
2-May	122	3107.5	0				8,000	-4,893	0	0	3,108		
3-May	123	3107.5	0				8,000	-4,893	0	0	3,108		
4-May	124	3107.5	0				8,000	-4,893	0	0	3,108		
5-May	125	3107.5	0				8,000	-4,893	0	0	3,108		
6-May	126	3107.5	0				8,000	-4,893	0	0	3,108		
7-May	127	4997	0				8,000	-3,003	0	0	4,997		
8-May	128	4997	0				8,000	-3,003	0	0	4,997		
9-May	129	3107.5	0				8,000	-4,893	0	0	3,108		
10-May	130	3107.5	0				8,000	-4,893	0	0	3,108		
11-May	131	3107.5	0				8,000	-4,893	0	0	3,108		
12-May	132	3107.5	0				8,000	-4,893	0	0	3,108		
13-May	133	3107.5	0				8,000	-4,893	0	0	3,108		
14-May	134	4997	0				8,000	-3,003	0	0	4,997		
15-May	135	4997	0				8,000	-3,003	0	0	4,997		
16-May	136	3107.5	0				8,000	-4,893	0	0	3,108		
17-May	137	3107.5	0				8,000	-4,893	0	0	3,108		
18-May	138	3107.5	0				8,000	-4,893	0	0	3,108		
19-May	139	3107.5	0				8,000	-4,893	0	0	3,108		
20-May	140	3107.5	0				8,000	-4,893	0	0	3,108		
21-May	141	4997	0				8,000	-3,003	0	0	4,997		
22-May	142	4997	0				8,000	-3,003	0	0	4,997		
23-May	143	3107.5	0				8,000	-4,893	0	0	3,108		
24-May	144	3107.5	0				8,000	-4,893	0	0	3,108		
25-May	145	3107.5	0				8,000	-4,893	0	0	3,108		
26-May	146	3107.5	0				8,000	-4,893	0	0	3,108		
27-May	147	3107.5	0				8,000	-4,893	0	0	3,108		
28-May	148	4997	0				8,000	-3,003	0	0	4,997		
29-May	149	4997	0				8,000	-3,003	0	0	4,997		
30-May	150	3107.5	0				8,000	-4,893	0	0	3,108		
31-May	151	3107.5	0				8,000	-4,893	0	0	3,108		
1-Jun	152	3107.5	0	5,467	0	164,023	8,000	-4,893	0	0	3,108	5,414	162,418
2-Jun	153	3107.5	0				8,000	-4,893	0	0	3,108		
3-Jun	154	3107.5	0				8,000	-4,893	0	0	3,108		
4-Jun	155	8,830	0				8,000	830	0	830	8,000		
5-Jun	156	8,830	0				8,000	830	830	1,660	8,000		
6-Jun	157	7142.5	0				8,000	-858	1,660	803	8,000		
7-Jun	158	7142.5	0				8,000	-858	803	0	7,143		
8-Jun	159	7142.5	0				8,000	-858	0	0	7,143		
9-Jun	160	7142.5	0				8,000	-858	0	0	7,143		
10-Jun	161	7142.5	0				8,000	-858	0	0	7,143		
11-Jun	162	8,830	0				8,000	830	0	830	8,000		
12-Jun	163	8,830	0				8,000	830	830	1,660	8,000		
13-Jun	164	7142.5	0				8,000	-858	1,660	803	8,000		
14-Jun	165	7142.5	0				8,000	-858	803	0	7,143		
15-Jun	166	7142.5	0				8,000	-858	0	0	7,143		
16-Jun	167	7142.5	0				8,000	-858	0	0	7,143		
17-Jun	168	7142.5	0				8,000	-858	0	0	7,143		
18-Jun	169	4997	0				8,000	-3,003	0	0	4,997		
19-Jun	170	4997	0				8,000	-3,003	0	0	4,997		
20-Jun	171	3107.5	0				8,000	-4,893	0	0	3,108		
21-Jun	172	3107.5	0				8,000	-4,893	0	0	3,108		
22-Jun	173	3107.5	0				8,000	-4,893	0	0	3,108		
23-Jun	174	3107.5	0				8,000	-4,893	0	0	3,108		
24-Jun	175	3107.5	0				8,000	-4,893	0	0	3,108		
25-Jun	176	4997	0				8,000	-3,003	0	0	4,997		
26-Jun	177	4997	0				8,000	-3,003	0	0	4,997		
27-Jun	178	3107.5	0				8,000	-4,893	0	0	3,108		
28-Jun	179	3107.5	0				8,000	-4,893	0	0	3,108		
29-Jun	180	3107.5	0				8,000	-4,893	0	0	3,108		

Annual Flow Calculations for

Date	Day	Daily WW Gen (L)	Daily Function WW Gen (L)	Monthly Avg (L/month)	Monthly Avg (L/month)	Monthly Total (L/month)	Max Daily Irrigation Output (L)	Stored Wastewater (L)	Stored Wastewater from Previous Day (L)	Cumulative Wastewater Storage (L)	Actual Daily Irrigation Output (L)	Monthly Avg (L/day)	Monthly Total (L/month)
30-Jun	181	3107.5	0				8,000	-4,893	0	0	3,108		
1-Jul	182	3107.5	0	3,717	0	115,228	8,000	-4,893	0	0	3,108	3,717	115,228
2-Jul	183	4997	0				8,000	-3,003	0	0	4,997		
3-Jul	184	4997	0				8,000	-3,003	0	0	4,997		
4-Jul	185	3107.5	0				8,000	-4,893	0	0	3,108		
5-Jul	186	3107.5	0				8,000	-4,893	0	0	3,108		
6-Jul	187	3107.5	0				8,000	-4,893	0	0	3,108		
7-Jul	188	3107.5	0				8,000	-4,893	0	0	3,108		
8-Jul	189	3107.5	0				8,000	-4,893	0	0	3,108		
9-Jul	190	4997	0				8,000	-3,003	0	0	4,997		
10-Jul	191	4997	0				8,000	-3,003	0	0	4,997		
11-Jul	192	3107.5	0				8,000	-4,893	0	0	3,108		
12-Jul	193	3107.5	0				8,000	-4,893	0	0	3,108		
13-Jul	194	3107.5	0				8,000	-4,893	0	0	3,108		
14-Jul	195	3107.5	0				8,000	-4,893	0	0	3,108		
15-Jul	196	3107.5	0				8,000	-4,893	0	0	3,108		
16-Jul	197	4997	0				8,000	-3,003	0	0	4,997		
17-Jul	198	4997	0				8,000	-3,003	0	0	4,997		
18-Jul	199	3107.5	0				8,000	-4,893	0	0	3,108		
19-Jul	200	3107.5	0				8,000	-4,893	0	0	3,108		
20-Jul	201	3107.5	0				8,000	-4,893	0	0	3,108		
21-Jul	202	3107.5	0				8,000	-4,893	0	0	3,108		
22-Jul	203	3107.5	0				8,000	-4,893	0	0	3,108		
23-Jul	204	4997	0				8,000	-3,003	0	0	4,997		
24-Jul	205	4997	0				8,000	-3,003	0	0	4,997		
25-Jul	206	3107.5	0				8,000	-4,893	0	0	3,108		
26-Jul	207	3107.5	0				8,000	-4,893	0	0	3,108		
27-Jul	208	3107.5	0				8,000	-4,893	0	0	3,108		
28-Jul	209	3107.5	0				8,000	-4,893	0	0	3,108		
29-Jul	210	3107.5	0				8,000	-4,893	0	0	3,108		
30-Jul	211	4997	0				8,000	-3,003	0	0	4,997		
31-Jul	212	4997	0				8,000	-3,003	0	0	4,997		
1-Aug	213	3107.5	0	3,818	0	118,372	8,000	-4,893	0	0	3,108	3,789	117,455
2-Aug	214	3107.5	0				8,000	-4,893	0	0	3,108		
3-Aug	215	3107.5	0				8,000	-4,893	0	0	3,108		
4-Aug	216	3107.5	0				8,000	-4,893	0	0	3,108		
5-Aug	217	3107.5	0				8,000	-4,893	0	0	3,108		
6-Aug	218	4997	0				8,000	-3,003	0	0	4,997		
7-Aug	219	4997	0				8,000	-3,003	0	0	4,997		
8-Aug	220	3107.5	0				8,000	-4,893	0	0	3,108		
9-Aug	221	3107.5	0				8,000	-4,893	0	0	3,108		
10-Aug	222	3107.5	0				8,000	-4,893	0	0	3,108		
11-Aug	223	3107.5	0				8,000	-4,893	0	0	3,108		
12-Aug	224	3107.5	0				8,000	-4,893	0	0	3,108		
13-Aug	225	11920	0				8,000	3,920	0	3,920	8,000		
14-Aug	226	4997	0				8,000	-3,003	3,920	917	8,000		
15-Aug	227	3107.5	0				8,000	-4,893	917	0	3,108		
16-Aug	228	3107.5	0				8,000	-4,893	0	0	3,108		
17-Aug	229	3107.5	0				8,000	-4,893	0	0	3,108		
18-Aug	230	3107.5	0				8,000	-4,893	0	0	3,108		
19-Aug	231	3107.5	0				8,000	-4,893	0	0	3,108		
20-Aug	232	4997	0				8,000	-3,003	0	0	4,997		
21-Aug	233	4997	0				8,000	-3,003	0	0	4,997		
22-Aug	234	3107.5	0				8,000	-4,893	0	0	3,108		
23-Aug	235	3107.5	0				8,000	-4,893	0	0	3,108		
24-Aug	236	3107.5	0				8,000	-4,893	0	0	3,108		
25-Aug	237	3107.5	0				8,000	-4,893	0	0	3,108		
26-Aug	238	3107.5	0				8,000	-4,893	0	0	3,108		
27-Aug	239	4997	0				8,000	-3,003	0	0	4,997		
28-Aug	240	4997	0				8,000	-3,003	0	0	4,997		
29-Aug	241	3107.5	0				8,000	-4,893	0	0	3,108		
30-Aug	242	3107.5	0				8,000	-4,893	0	0	3,108		
31-Aug	243	3107.5	0				8,000	-4,893	0	0	3,108		
1-Sep	244	3107.5	0	4,033	0	120,987	8,000	-4,893	0	0	3,108	3,812	114,347
2-Sep	245	3107.5	0				8,000	-4,893	0	0	3,108		
3-Sep	246	4997	0				8,000	-3,003	0	0	4,997		
4-Sep	247	4997	0				8,000	-3,003	0	0	4,997		
5-Sep	248	3107.5	0				8,000	-4,893	0	0	3,108		
6-Sep	249	3107.5	0				8,000	-4,893	0	0	3,108		
7-Sep	250	3107.5	0				8,000	-4,893	0	0	3,108		
8-Sep	251	3107.5	0				8,000	-4,893	0	0	3,108		
9-Sep	252	3107.5	0				8,000	-4,893	0	0	3,108		
10-Sep	253	4997	0				8,000	-3,003	0	0	4,997		
11-Sep	254	4997	0				8,000	-3,003	0	0	4,997		
12-Sep	255	3107.5	0				8,000	-4,893	0	0	3,108		
13-Sep	256	3107.5	0				8,000	-4,893	0	0	3,108		
14-Sep	257	3107.5	0				8,000	-4,893	0	0	3,108		
15-Sep	258	3107.5	0				8,000	-4,893	0	0	3,108		
16-Sep	259	3107.5	0				8,000	-4,893	0	0	3,108		
17-Sep	260	11920	0				8,000	3,920	0	3,920	8,000		
18-Sep	261	4997	0				8,000	-3,003	3,920	917	8,000		
19-Sep	262	3107.5	0				8,000	-4,893	917	0	3,108		
20-Sep	263	3107.5	0				8,000	-4,893	0	0	3,108		
21-Sep	264	3107.5	0				8,000	-4,893	0	0	3,108		
22-Sep	265	3107.5	0				8,000	-4,893	0	0	3,108		
23-Sep	266	3107.5	0				8,000	-4,893	0	0	3,108		
24-Sep	267	4997	0				8,000	-3,003	0	0	4,997		
25-Sep	268	4997	0				8,000	-3,003	0	0	4,997		
26-Sep	269	3107.5	0				8,000	-4,893	0	0	3,108		
27-Sep	270	3107.5	0				8,000	-4,893	0	0	3,108		

Annual Flow Calculations for

Date	Day	Daily WW Gen (L)	Daily Function WW Gen (L)	Monthly Avg (L/month)	Monthly Avg (L/month)	Monthly Total (L/month)	Max Daily Irrigation Output (L)	Stored Wastewater (L)	Stored Wastewater from Previous Day (L)	Cumulative Wastewater Storage (L)	Actual Daily Irrigation Output (L)	Monthly Avg (L/day)	Monthly Total (L/month)
28-Sep	271	3107.5	0				8,000	-4,893	0	0	3,108		
29-Sep	272	3107.5	0				8,000	-4,893	0	0	3,108		
30-Sep	273	3107.5	0				8,000	-4,893	0	0	3,108		
1-Oct	274	8,830	0	5,329	0	165,187	8,000	830	0	830	8,000	5,461	169,305
2-Oct	275	8,830	0				8,000	830	830	1,660	8,000		
3-Oct	276	7142.5	0				8,000	-858	1,660	803	8,000		
4-Oct	277	7142.5	0				8,000	-858	803	0	7,143		
5-Oct	278	7142.5	0				8,000	-858	0	0	7,143		
6-Oct	279	7142.5	0				8,000	-858	0	0	7,143		
7-Oct	280	7142.5	0				8,000	-858	0	0	7,143		
8-Oct	281	8,830	0				8,000	830	0	830	8,000		
9-Oct	282	8,830	0				8,000	830	830	1,660	8,000		
10-Oct	283	7142.5	0				8,000	-858	1,660	803	8,000		
11-Oct	284	7142.5	0				8,000	-858	803	0	7,143		
12-Oct	285	7142.5	0				8,000	-858	0	0	7,143		
13-Oct	286	7142.5	0				8,000	-858	0	0	7,143		
14-Oct	287	7142.5	0				8,000	-858	0	0	7,143		
15-Oct	288	4997	0				8,000	-3,003	0	0	4,997		
16-Oct	289	4997	0				8,000	-3,003	0	0	4,997		
17-Oct	290	3107.5	0				8,000	-4,893	0	0	3,108		
18-Oct	291	3107.5	0				8,000	-4,893	0	0	3,108		
19-Oct	292	3107.5	0				8,000	-4,893	0	0	3,108		
20-Oct	293	3107.5	0				8,000	-4,893	0	0	3,108		
21-Oct	294	3107.5	0				8,000	-4,893	0	0	3,108		
22-Oct	295	4997	0				8,000	-3,003	0	0	4,997		
23-Oct	296	4997	0				8,000	-3,003	0	0	4,997		
24-Oct	297	3107.5	0				8,000	-4,893	0	0	3,108		
25-Oct	298	3107.5	0				8,000	-4,893	0	0	3,108		
26-Oct	299	3107.5	0				8,000	-4,893	0	0	3,108		
27-Oct	300	3107.5	0				8,000	-4,893	0	0	3,108		
28-Oct	301	3107.5	0				8,000	-4,893	0	0	3,108		
29-Oct	302	4997	0				8,000	-3,003	0	0	4,997		
30-Oct	303	4997	0				8,000	-3,003	0	0	4,997		
31-Oct	304	3107.5	0				8,000	-4,893	0	0	3,108		
1-Nov	305	3107.5	0	4,136	0	124,077	8,000	-4,893	0	0	3,108	3,975	119,240
2-Nov	306	11920	0				8,000	3,920	0	3,920	8,000		
3-Nov	307	3107.5	0				8,000	-4,893	3,920	0	3,108		
4-Nov	308	3107.5	0				8,000	-4,893	0	0	3,108		
5-Nov	309	4997	0				8,000	-3,003	0	0	4,997		
6-Nov	310	4997	0				8,000	-3,003	0	0	4,997		
7-Nov	311	3107.5	0				8,000	-4,893	0	0	3,108		
8-Nov	312	3107.5	0				8,000	-4,893	0	0	3,108		
9-Nov	313	3107.5	0				8,000	-4,893	0	0	3,108		
10-Nov	314	3107.5	0				8,000	-4,893	0	0	3,108		
11-Nov	315	3107.5	0				8,000	-4,893	0	0	3,108		
12-Nov	316	4997	0				8,000	-3,003	0	0	4,997		
13-Nov	317	4997	0				8,000	-3,003	0	0	4,997		
14-Nov	318	3107.5	0				8,000	-4,893	0	0	3,108		
15-Nov	319	3107.5	0				8,000	-4,893	0	0	3,108		
16-Nov	320	3107.5	0				8,000	-4,893	0	0	3,108		
17-Nov	321	3107.5	0				8,000	-4,893	0	0	3,108		
18-Nov	322	3107.5	0				8,000	-4,893	0	0	3,108		
19-Nov	323	11920	0				8,000	3,920	0	3,920	8,000		
20-Nov	324	4997	0				8,000	-3,003	3,920	917	8,000		
21-Nov	325	3107.5	0				8,000	-4,893	917	0	3,108		
22-Nov	326	3107.5	0				8,000	-4,893	0	0	3,108		
23-Nov	327	3107.5	0				8,000	-4,893	0	0	3,108		
24-Nov	328	3107.5	0				8,000	-4,893	0	0	3,108		
25-Nov	329	3107.5	0				8,000	-4,893	0	0	3,108		
26-Nov	330	4997	0				8,000	-3,003	0	0	4,997		
27-Nov	331	4997	0				8,000	-3,003	0	0	4,997		
28-Nov	332	3107.5	0				8,000	-4,893	0	0	3,108		
29-Nov	333	3107.5	0				8,000	-4,893	0	0	3,108		
30-Nov	334	3107.5	0				8,000	-4,893	0	0	3,108		
1-Dec	335	3107.5	0	5,309	0	164,581	8,000	-4,893	0	0	3,108	5,013	155,392
2-Dec	336	3107.5	0				8,000	-4,893	0	0	3,108		
3-Dec	337	11920	0				8,000	3,920	0	3,920	8,000		
4-Dec	338	4997	0				8,000	-3,003	3,920	917	8,000		
5-Dec	339	3107.5	0				8,000	-4,893	917	0	3,108		
6-Dec	340	3107.5	0				8,000	-4,893	0	0	3,108		
7-Dec	341	3107.5	0				8,000	-4,893	0	0	3,108		
8-Dec	342	3107.5	0				8,000	-4,893	0	0	3,108		
9-Dec	343	3107.5	0				8,000	-4,893	0	0	3,108		
10-Dec	344	4997	0				8,000	-3,003	0	0	4,997		
11-Dec	345	4997	0				8,000	-3,003	0	0	4,997		
12-Dec	346	3107.5	0				8,000	-4,893	0	0	3,108		
13-Dec	347	3107.5	0				8,000	-4,893	0	0	3,108		
14-Dec	348	3107.5	0				8,000	-4,893	0	0	3,108		
15-Dec	349	3107.5	0				8,000	-4,893	0	0	3,108		
16-Dec	350	3107.5	0				8,000	-4,893	0	0	3,108		
17-Dec	351	11920	0				8,000	3,920	0	3,920	8,000		
18-Dec	352	4997	0				8,000	-3,003	3,920	917	8,000		
19-Dec	353	3107.5	0				8,000	-4,893	917	0	3,108		
20-Dec	354	3107.5	0				8,000	-4,893	0	0	3,108		
21-Dec	355	3107.5	0				8,000	-4,893	0	0	3,108		
22-Dec	356	3107.5	0				8,000	-4,893	0	0	3,108		
23-Dec	357	3107.5	0				8,000	-4,893	0	0	3,108		
24-Dec	358	8,830	0				8,000	830	0	830	8,000		
25-Dec	359	8,830	0				8,000	830	830	1,660	8,000		
26-Dec	360	7142.5	0				8,000	-858	1,660	803	8,000		

Annual Flow Calculations for

Date	Day	Daily WW Gen (L)	Daily Function WW Gen (L)	Monthly Avg (L/month)	Monthly Avg (L/month)	Monthly Total (L/month)	Max Daily Irrigation Output (L)	Stored Wastewater (L)	Stored Wastewater from Previous Day (L)	Cumulative Wastewater Storage (L)	Actual Daily Irrigation Output (L)	Monthly Avg (L/day)	Monthly Total (L/month)
27-Dec	361	7142.5	0				8,000	-858	803	0	7,143		
28-Dec	362	7142.5	0				8,000	-858	0	0	7,143		
29-Dec	363	7142.5	0				8,000	-858	0	0	7,143		
30-Dec	364	7142.5	0				8,000	-858	0	0	7,143		
31-Dec	365	8,830	0				8,000	830	0	830	8,000		
1-Jan	366	8,830	0	6,574	0	203,784	8,000	830	830	1,660	8,000	6,527	202,349
2-Jan	367	7142.5	0				8,000	-858	1,660	803	8,000		
3-Jan	368	7142.5	0				8,000	-858	803	0	7,143		
4-Jan	369	7142.5	0				8,000	-858	0	0	7,143		
5-Jan	370	7142.5	0				8,000	-858	0	0	7,143		
6-Jan	371	7142.5	0				8,000	-858	0	0	7,143		
7-Jan	372	8,830	0				8,000	830	0	830	8,000		
8-Jan	373	8,830	0				8,000	830	830	1,660	8,000		
9-Jan	374	7142.5	0				8,000	-858	1,660	803	8,000		
10-Jan	375	7142.5	0				8,000	-858	803	0	7,143		
11-Jan	376	7142.5	0				8,000	-858	0	0	7,143		
12-Jan	377	7142.5	0				8,000	-858	0	0	7,143		
13-Jan	378	7142.5	0				8,000	-858	0	0	7,143		
14-Jan	379	8,830	0				8,000	830	0	830	8,000		
15-Jan	380	8,830	0				8,000	830	830	1,660	8,000		
16-Jan	381	7142.5	0				8,000	-858	1,660	803	8,000		
17-Jan	382	7142.5	0				8,000	-858	803	0	7,143		
18-Jan	383	7142.5	0				8,000	-858	0	0	7,143		
19-Jan	384	7142.5	0				8,000	-858	0	0	7,143		
20-Jan	385	7142.5	0				8,000	-858	0	0	7,143		
21-Jan	386	8,830	0				8,000	830	0	830	8,000		
22-Jan	387	8,830	0				8,000	830	830	1,660	8,000		
23-Jan	388	3107.5	0				8,000	-4,893	1,660	0	3,108		
24-Jan	389	3107.5	0				8,000	-4,893	0	0	3,108		
25-Jan	390	11920	0				8,000	3,920	0	3,920	8,000		
26-Jan	391	3107.5	0				8,000	-4,893	3,920	0	3,108		
27-Jan	392	3107.5	0				8,000	-4,893	0	0	3,108		
28-Jan	393	4997	0				8,000	-3,003	0	0	4,997		
29-Jan	394	4997	0				8,000	-3,003	0	0	4,997		
30-Jan	395	3107.5	0				8,000	-4,893	0	0	3,108		
31-Jan	396	3107.5	0				8,000	-4,893	0	0	3,108		
1-Feb	397	3107.5	0	3,667	0	99,019	8,000	-4,893	0	0	3,108	3,647	102,126
2-Feb	398	3107.5	0				8,000	-4,893	0	0	3,108		
3-Feb	399	3107.5	0				8,000	-4,893	0	0	3,108		
4-Feb	400	4997	0				8,000	-3,003	0	0	4,997		
5-Feb	401	4997	0				8,000	-3,003	0	0	4,997		
6-Feb	402	3107.5	0				8,000	-4,893	0	0	3,108		
7-Feb	403	3107.5	0				8,000	-4,893	0	0	3,108		
8-Feb	404	3107.5	0				8,000	-4,893	0	0	3,108		
9-Feb	405	3107.5	0				8,000	-4,893	0	0	3,108		
10-Feb	406	3107.5	0				8,000	-4,893	0	0	3,108		
11-Feb	407	4997	0				8,000	-3,003	0	0	4,997		
12-Feb	408	4997	0				8,000	-3,003	0	0	4,997		
13-Feb	409	3107.5	0				8,000	-4,893	0	0	3,108		
14-Feb	410	3107.5	0				8,000	-4,893	0	0	3,108		
15-Feb	411	3107.5	0				8,000	-4,893	0	0	3,108		
16-Feb	412	3107.5	0				8,000	-4,893	0	0	3,108		
17-Feb	413	3107.5	0				8,000	-4,893	0	0	3,108		
18-Feb	414	4997	0				8,000	-3,003	0	0	4,997		
19-Feb	415	4997	0				8,000	-3,003	0	0	4,997		
20-Feb	416	3107.5	0				8,000	-4,893	0	0	3,108		
21-Feb	417	3107.5	0				8,000	-4,893	0	0	3,108		
22-Feb	418	3107.5	0				8,000	-4,893	0	0	3,108		
23-Feb	419	3107.5	0				8,000	-4,893	0	0	3,108		
24-Feb	420	3107.5	0				8,000	-4,893	0	0	3,108		
25-Feb	421	4997	0				8,000	-3,003	0	0	4,997		
26-Feb	422	4997	0				8,000	-3,003	0	0	4,997		
27-Feb	423	3107.5	0				8,000	-4,893	0	0	3,108		
28-Feb	424	3107.5	0				8,000	-4,893	0	0	3,108		
Annual Total (L)		1,725,688	0	56,859	0	1,734,518	2,920,000		average	255.7	1,706,174		
Average daily (L)		4727.9	0.0	134.1	0.0	4090.8	8000.0				4674.4		

Nominated Area Water Balance & Storage Calculations

Site Address: **Two Tales Winery** **Proj Ref:** 2122-022

Design DIR	DI R	21	mm/week
Daily DIR	Sl-DIR	3.0	mm/day
Crop Factor	C	0.6-0.8	unitless
Retained Rainfall	Rr	0.7	untiless
Nominated Land Application Area	Nom	1764	
Rainfall Data	Nana Glen (median data drill)		
Evaporation Data	Coffs Harbour MO- Average		

Notes

Design Wastewater Flow	Q			7,640	4,316	3,789	5,477	3,656	5,414	3,717	3,789	3,812	5,461	3,975	5,013	

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	**365**
Rainfall	R	\	mm/month	125.8	128.6	149.8	71.3	53.2	56.2	21.9	15.4	35.6	52.6	120.6	119.3	**1214.8**
Evaporation	E	\	mm/month	192.2	156.8	148.8	117	86.8	69	77.5	105.4	135	161.2	171	192.2	**0**
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.70	0.70	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	154	125	119	82	61	41	47	63	95	113	137	154	**1189.94**
Percolation	B	Sl-DIRxD	mm/month	93.0	84.0	93.0	90.0	93.0	90.0	93.0	93.0	90.0	93.0	90.0	93.0	**1095.0**
Outputs		ET+B	mm/month	246.8	209.44	212.0	171.9	153.8	131.4	139.5	156.2	184.5	205.8	226.8	246.8	**2284.9**
INPUTS																
Retained Rainfall	RR	R*Rr	mm/month	88.06	90.02	104.86	49.91	37.24	39.34	15.33	10.78	24.92	36.82	84.42	83.51	**665.21**
Effluent Irrigation	W	(QxD)/L	mm/month	134.3	68.5	66.6	93.1	64.3	92.1	65.3	66.6	64.8	96.0	67.6	88.1	**967.2**
Inputs		RR+W	mm/month	222.3	158.5	171.4	143.1	101.5	131.4	80.7	77.4	89.7	132.8	152.0	171.6	**1632.4**
STORAGE CALCULATION																
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	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-24.4	-50.9	-40.6	-28.8	-52.3	0.0	-58.8	-78.9	-94.8	-73.0	-74.8	-75.2	**-310.3**
Cumulative Storage	M		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	**0.0**
Maximum Storage for Nominated Area	N		mm	**0.01**												
	V	NxL	L	**24**												
LAND AREA REQUIRED FOR ZERO STORAGE			m^2	1492	1012	1096	1347	973	1764	928	807	717	1002	837	952	

MINIMUM AREA REQUIRED FOR ZERO STORAGE: **1764.3** m^2 multiples of 445 4.0