Penrith Gospel Trust

Wastewater Management Plan:

Proposed Alterations and Additions – 26 Kingswood Road, Orchard Hills, NSW

martens consulting engineers

ENVIRONMENTAL

WATER

WASTEWATER

GEOTECHNICAL

CIVIL

PROJECT MANAGEMENT

P1404110JR01V06
October 2016

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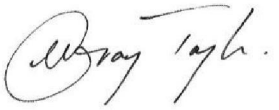
Megan Kovelis, Michael Dumas	Gray Taylor Andrew Norris	Gray Taylor	

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All enquiries regarding this project are to be directed to the Project Manager.

Contents

1 Introduction

1.1 Study Overview

This wastewater management plan (WMP) is prepared to support a development application (DA) for approval of alterations and additions to an existing church at 26 Kingswood Road, Orchard Hills, NSW.

1.2 Project Scope and Aims

This WMP provides:

1. Detailed site description including: soils; vegetation; slope; drainage; and landuse.
2. Details of site investigations.
3. Description of the existing onsite wastewater management system (OSWMS).
4. Calculation of existing wastewater generation rates and loads.
5. Assessment of suitability of existing OSWMS and identification of any required system modification.
6. Specification of existing system modifications and a final wastewater management solution for the site.

1.3 Proposed Development

We understand the proposed development is for alterations and additions to the existing main building. Works specifically include:

- Construction of a new foyer area on the eastern side of the existing meeting hall.
- A new amenities block (current amenities block to be retained).
- Replacement of existing meeting building.

1.4 Reference Documents

This assessment is prepared in general accordance with the following guidelines:

- Penrith City Council (2010), *Development Control Plan: Section 13.3 Onsite Sewage Management.*

- Penrith City Council (2014) On-site Sewage Management and Greywater Reuse Policy.
- Department of Environment and Conservation (2004). *Environmental Guidelines-Use of effluent by Irrigation.*
- Australian / New Zealand Standard 1547 (2012), *Onsite domestic wastewater management.*

2 Site Description

2.1 Location and Site Description

Site information is summarised in Table 1.

Table 1: Site background information.

Site address	26 Kingswood Road, Orchard Hills
Lot and DP (title information)	Lot 43 DP 811320
Area (ha)	2.26 ha
Local Government Area (LGA)	Penrith City Council
Zoning	RU4 Rural Small Holdings
Current land use	Currently utilised by the Penrith United Church. Site comprised of: bitumen surfaced car parking areas and access driveways from Kingswood Road and Castle Road; an existing brick meeting hall building with amenities block; 2 sheds and a pump house; and lawn and landscaped areas (Attachment A).
Proposed land use	Continued use as church.
Surrounding land uses	Rural residential land to the north and east, Kingswood Road to the west and Castle Road to the south.
Geology and soil landscapes	The Penrith 1:100,000 Soil Landscapes Sheet (1989) indicates the site lies on the Luddenham soil landscapes consisting of moderately deep red podzolic soils on upper slopes and moderately deep yellow podzolic soils and prairie soils on lower slopes and drainage lines. The Penrith 1:100,000 Geological Series (1987) indicates the site is formed on Bringelly Shale consisting of carbonaceous claystone, claystone, laminate, fine to medium grained lithic sandstone, rare coal and tuff.
Drainage	According to the topographic map, a drainage depression traverses the north eastern corner of the site in a south easterly direction. A second drainage line is located to the south of the site and Castle Road. Both drainage lines contain several online farm dams.

An existing site plan is provided in Attachment A with survey details provided in Attachment D.

2.2 Site Investigations

Site investigations were undertaken on January 30, 2014 and included the following:

- Walkover inspection of the site to assess existing site conditions and local topography, geology, soil conditions and vegetation.
- Inspection of the existing OSWMS.
- Intrusive investigations (3 boreholes) for soil characterisation in area of existing and proposed effluent irrigation.

Plates of the site are provided in Attachment B.

2.3 Soil Profile

Intrusive soil investigations found the soil profile consisted of silt loam and clay loam to 0.6m below ground level (bgl) overlying light to medium clays to depths of 1.5 – 3.0m bgl.

Borehole logs are provided in Attachment C with borehole locations provided in Attachment A.

3 Existing Wastewater System Assessment

3.1 Overview

An assessment of the site's existing wastewater system has been undertaken to determine if upgrades are required in light of the proposed development. This assessment includes:

1. A description of the existing system's condition and treatment capacity.
2. An assessment of wastewater generation rates for the site.
3. Determination of suitability of the continued use of the system.

3.2 Existing Wastewater System Description

3.2.1 Treatment System

Wastewater generated onsite is from toilet flushing only as no kitchen or canteen facilities are provided. It is pumped to an onsite sewage treatment plant (STP) via a lift well with 2 macerator pumps located to the north east of the main building in the existing carpark (Attachment A).

The STP is located south of the main building (Attachment A). According to the manufacturer (J Pridham, February 13, 2014) the system is a *Gebel Aquasafe* extended aeration unit with a capacity of 15 KL/day plus an additional 60KL wet weather storage tank (Attachment F). The treatment system includes tertiary filtration, UV sterilisation and chlorine dosing.

Site inspection of the STP showed it to be in good working order and well maintained. No leaks or odours were noted. Servicing records (April 2012 – October 2013) supplied by the client indicate the system is maintained quarterly by the manufacturer. No issues or incidents are noted on supplied servicing records.

3.2.2 Disposal System

Treated effluent was applied to a grassed irrigation field in the site's south (Attachment A) from 4 pop-up sprinklers. An alternative disposal system has since been installed as follows:

- A diverter was installed to direct all effluent to a new absorption trench.

- Absorption trench is approximately 6.0 m long and 0.5 m wide, constructed into medium clay beneath an earth bund (2.0 – 2.5 m wide and 1.0 – 1.5 m high) along the southern boundary.

We understand that no Council approval for the absorption system has been obtained and the system has not been sized and designed in accordance with AS/NZS 1547 (2012). General location of the absorption trench is provided in Attachment A.

3.3 Population and Wastewater Generation

Site population varies on a daily basis with Table 3 summarising population data provided by the client for a typical month. Data is also provided for occasions when conferences are held at the site (once every 3-6 months) and Sunday attendance increases to 1250 people.

Table 2: Site population summary.

Week	Mon	Tues	Wed	Thur	Fri	Sat	Sun	Average/day
1	50	300	450	0	0	0	500	186
2	50	300	0	400	0	450	50	179
3	50	300	450	0	0	0	850	186
4	50	300	450	0	300	450	500	293
Every 3-6 months	50	300	450	0	0	0	1250	293

A maximum daily average (based on a week) site population of 293 is adopted for this wastewater assessment. The proposed development does not intend to increase the site population – only the amenities available to them.

Given population fluctuation water usage rates were reviewed. According to the August 2013 – November 2013 quarter bill (Attachment E), average daily usage was 5.07 KL. This includes water which passes to the wastewater system (i.e. toilet flushing) and that used for landscape irrigation.

We understand that landscaped areas are irrigated using an automatic watering system running for 20 minutes, 4 days/week from a single tap. At an assumed irrigation rate of 20 L/min, irrigation uses 1.6 KL/week (0.23 KL/day). When subtracted from the total site water usage of 5.07 KL/day, the wastewater generation rate is calculated as 4.84 KL/day. This equates to a per person generation rate of 16.5 L/person/day using an average population of 293 people (Table 2). This rate is generally consistent with Table H4 of AS/NZS 1547 (2012) which provides a typical wastewater generation rate of 15 L/person/day for community meeting halls on reticulated water supply.

3.4 Wastewater System Suitability

3.4.1 Treatment System

The existing STP is, based on inspection by Martens, in good working order and well maintained. No leaks or odours were noted. Maintenance records from the last 18 months indicate no significant or ongoing issues with the system.

3.4.2 Disposal System

It is recommended that the existing disposal system be decommissioned and replaced with a new pump-out system (Section 4).

4 Wastewater Assessment

4.1 Overview

This assessment determines existing system modifications and requirements to ensure wastewater generated is appropriately treated and disposed. The existing STP is to be retained and treated effluent disposed via pump-out.

Our understanding is that Sydney Water intends to provide reticulated sewer to the area within the next 2 – 3 years. Our Client's preference is to pump-out wastewater effluent until a reticulated sewerage connection becomes available. This is considered to be in accordance with Penrith City Council (2014) and is also the most economical solution.

4.2 Design Hydraulic Load

The current wastewater generation rate is 4.84 KL/day (Section 3.3). This is not proposed to increase as a result of the proposed development.

4.3 Wet Weather Effluent Storage Tank

The existing effluent storage tank has a capacity of 60 kL. The system also contains a float switch and alarm system which automatically alerts site management when the system reaches 70% capacity.

4.4 Pump Out Frequency

Advice obtained from the Client indicates that the existing system pump-out contractor has a tanker capable of holding up to 22 kL of effluent. At projected wastewater generation rates, this means that the pump-out tanker will be required to pump-out the effluent wet weather storage tank every 4.8 days on average (twice a week).

A copy of a recent invoice from the current pump-out Contractor to the Client for previous system pump-out is provided in Attachment G.

4.5 Effluent Pump-out Location

Proposed pump-out system shall be located as shown in Attachment D. Advice from the Client indicates that the local pump-out Contractor currently servicing the site, stands the pump-out tanker adjacent to the existing STP (partially over the wet weather effluent storage tank) when pumping out the STP and wet weather storage tanks (when required).

We recommend that the tanker stand on the existing gravel driveway near to the STP and wet weather storage tank and that the pump-out

tanker be connected to a new 50 mm Camlock fitting adjacent to the gravel driveway.

4.6 Specific System Requirements

4.6.1 Secondary Treatment System

The existing STP is considered suitable for ongoing use as part of the proposed development.

4.6.2 Wet Weather Storage

The existing wet weather effluent storage tank is considered suitable for ongoing use as part of the proposed development. It provides 12 days storage at average flow. The existing float switch and alarm are to be maintained as per existing site operations.

4.6.3 Pump-out System

A new pump-out system is considered appropriate for the site as a temporary wastewater management solution, until such time as a reticulated sewer connection becomes available to the site. The pump-out system will require the following as a minimum:

- 50 mm Camlock fitting is to be installed as shown on the site plan in Attachment D. This is to allow the tanker to stand on the existing gravel driveway during pump-out.
- The Camlock fitting is to have a timber bollard installed adjacent for support and to prevent vehicles from colliding with and damaging the Camlock fitting.
- Supporting bollard is to have a "Cat's Eye" reflective marker on both sides of the bollard to prevent accidental collision during low light conditions.
- A new length of 50 mm diameter transfer main is to be fitted from the effluent wet weather storage tank to the Camlock fitting. Main may be UPVC or PE below the ground. Main is to be stainless steel above ground. Sub-surface pipe to be laid with minimum 450 mm cover in accordance with AS3500.2 (2003). Where this cannot be achieved, 50 mm of 10 -20 mm aggregate and then 75 mm of concrete is to be placed over the top of the main.
- A concrete thrust block shall be provided under the Camlock fitting as shown on the plan in Attachment D.

4.6.4 *On-site Effluent Disposal Systems*

All existing effluent disposal systems on the site are to be decommissioned. The existing irrigation system may be retained as an emergency system.

4.7 System Monitoring, Inspections and Maintenance

The pump-out system will require weekly visual inspection by the site owner / operator to identify any leaks within the transfer system or any issues with the Camlock fitting.

4.8 Summary

The system requirements for the proposed development is summarised as follows:

- Continued operation of existing STP.
- Continued operation of existing wet weather effluent storage tank located downstream of the STP.
- Existing absorption trench to be decommissioned.
- Pump-out system including new 50 mm Camlock fitting to be constructed adjacent to gravel driveway to allow tanker to stand on driveway during pump-out.
- Detailed design of the proposed system shall be completed at construction certificate stage.

4.9 Further Approvals

Prior to the construction of any new or modified site sewage management infrastructure, an approval under Section 68A of the Local Government Act (1993) will be required where final design specifications for the STP, effluent storage system and pump-out systems shall be submitted for approval to Council.

5 References

Australian / New Zealand Standard 1547 (2012), *Onsite domestic wastewater management.*

Australian / New Zealand Standard 3500.2 (2003) *Plumbing and Drainage Part 2: Sanitary plumbing and drainage.*

Department of Environment and Conservation (2004). *Environmental Guidelines-Use of effluent by Irrigation.*

Penrith City Council (2010), *Development Control Plan: Section 13.3 Onsite Sewage Management.*

Penrith City Council (2014) On-site Sewage Management and Greywater Reuse Policy.

N6

Attachment A – Site Plan

Borehole location

Site boundary

Martens & Associates Pty Ltd ABN 85 070 240 890		**Environment | Water | Wastewater | Geotechnical | Civil | Management**	
Drawn:	MLK	**Site Plan and Existing Wastewater System Layout**	Drawing No: ATTACHMENT A
Approved:	GT		
Date:	15/04/2014		
Scale:	NA		Job No: P1404110

7 Attachment B – Figures

Plate 1: Lift station

Plate 2: STP tank and control shed

Plate 3: STP

Plate 4: Proposed irrigation field location. View facing north west.

Plate 5: Existing earth bund along southern boundary and absorption trench location. View facing east.

Plate 6: Existing earth bund along southern boundary. View facing west.

Martens & Associates Pty Ltd ABN 85 070 240 890		**Environment | Water | Wastewater | Geotechnical | Civil | Management**	
Drawn:	MLK	**Plates**	Drawing No: FIGURE 1
Approved:	GT		
Date:	20/02/2014		
Scale:	NA		Job No: P1404110

8 Attachment C – Borehole Logs

CLIENT	**Stimson Consultant Services**	**COMMENCED**	30/01/14	**COMPLETED**	30/01/14	**REF**	**BH101**
PROJECT	**Wastewater Assessment**	**LOGGED**	GT	**CHECKED**	AN	**Sheet**	**1 of 1**
SITE	**26 Kingswood Road, Orchard Hills, NSW**	**GEOLOGY**	Shale	**VEGETATION**	Grasses	**PROJECT NO.**	P1404110
EQUIPMENT	Hydraulic Auger	**EASTING**	NA	**RL SURFACE**	NA		
EXCAVATION DIMENSIONS	Ø100mm X 2.25m depth	**NORTHING**	NA	**ASPECT**	South East	**SLOPE**	5-10%

EXCAVATION DATA						MATERIAL DATA					SAMPLING & TESTING			
METHOD	SUPPORT	WATER	MOISTURE	DEPTH (M)	PENETRATION RESISTANCE (L M H R)	GRAPHIC LOG	CLASSIFICATION	DESCRIPTION OF STRATA Soil type, texture, structure, mottling, colour, plasticity, rocks, oxidation, particle characteristics, organics, secondary and minor components, fill, contamination, odour.	CONSISTENCY	DENSITY INDEX	TYPE	DEPTH (M)	RESULTS AND ADDITIONAL OBSERVATIONS	
V	Nil	N	D	0.25			SiL	SILT LOAM - Brown/red, smooth.			A	0.15	4110/101/ 0.15	
V	Nil	N	D	0.65			CL	CLAY LOAM - Orange/brown.			A	0.4	4110/101/ 0.4	
V	Nil	N	D	1.0 1.5			MC	MEDIUM CLAY - Gold/brown/grey, very hard drilling. - Slow V bit progression because possibly very low strength shale.			A B	0.8 1.3	4110/101/ 0.8 4110/101/ 1.3	1.0
V	Nil	N	D	2.0 2.25			SC	SANDY CLAY - Brown/light brown, medium grained sands.			A	2.0	4110/101/ 2.0	2.0
				3.0 4.0 4.5				V bit Auger refusal at 2.25m on bedrock.						3.0 4.0 4.5

EQUIPMENT / METHOD
N Natural exposure
X Existing excavation
BH Backhoe bucket
E Excavator
HA Hand auger
S Hand spade
A Auger
TC Tungsten Carbide Bit
V V-Bit

SUPPORT
SH Shoring
SC Shotcrete
RB Rock Bolts
Nil No support

WATER
N None observed
X Not measured
Water level
Water outflow
Water inflow

MOISTURE
D Dry
M Moist
W Wet
Wp Plastic limit
Wl Liquid limit

PENETRATION
L Low
M Moderate
H High
R Refusal

CONSISTENCY
VS Very Soft
S Soft
F Firm
St Stiff
VSt Very Stiff
H Hard
F Friable

DENSITY
VL Very Loose
L Loose
MD Medium Dense
D Dense
VD Very Dense

SAMPLING & TESTING
A Auger sample
B Bulk sample
U Undisturbed sample
D Disturbed sample
M Moisture content
Ux Tube sample (x mm)
G Gas

pp Pocket penetrometer
S Standard penetration test
VS Vane shear
DCP Dynamic cone penetrometer
FD Field density
WS Water sample

CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION
N USCS
Y Agricultural

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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Engineering Log - Borehole

Quality Sheet No. 4

CLIENT	**Stimson Consultant Services**	**COMMENCED**	30/01/14	**COMPLETED**	30/01/14	**REF**	**BH102**
PROJECT	**Wastewater Assessment**	**LOGGED**	GT	**CHECKED**	AN	**Sheet**	**1 of 1**
SITE	**26 Kingswood Road, Orchard Hills, NSW**	**GEOLOGY**	Shale	**VEGETATION**	Grasses	**PROJECT NO.**	P1404110
EQUIPMENT	Hydraulic Auger	**EASTING**	NA	**RL SURFACE**	NA		
EXCAVATION DIMENSIONS	Ø100mm X 2.5m depth	**NORTHING**	NA	**ASPECT**	South West	**SLOPE**	5-10%

EXCAVATION DATA						MATERIAL DATA					SAMPLING & TESTING		
METHOD	SUPPORT	WATER	MOISTURE	DEPTH (M)	PENETRATION RESISTANCE (L M H R)	GRAPHIC LOG	CLASSIFICATION	DESCRIPTION OF STRATA Soil type, texture, structure, mottling, colour, plasticity, rocks, oxidation, particle characteristics, organics, secondary and minor components, fill, contamination, odour.	CONSISTENCY	DENSITY INDEX	TYPE	DEPTH (M)	RESULTS AND ADDITIONAL OBSERVATIONS
V	Nil	N	D	0.2			SiL	SILT LOAM - Brown/red, smooth.					
V	Nil	N	D	0.6			CL	CLAY LOAM - Brown/red, minor gravels (1-5mm, ≈5%).			A	0.5	4110/102/ 0.5
V	Nil	N	D	1.0			LMC	LIGHT MEDIUM CLAY - Grey/brown/gold mottled, moderately plastic.				1.0	
				1.5							A	1.5	4110/102/ 1.5
			M	2.0								2.0	
V	Nil	N	D	2.5			MC	MEDIUM CLAY - Brown/gold, with minor gravels (1-5mm, ≈10%), possibly very low strength shale.			A	2.3	4110/102/ 2.3
				3.0				Borehole refusal at 2.5m on bedrock.				3.0	
				4.0								4.0	
				4.5								4.5	

EQUIPMENT / METHOD
N Natural exposure
X Existing excavation
BH Backhoe bucket
E Excavator
HA Hand auger
S Hand spade
A Auger
TC Tungsten Carbide Bit
V V-Bit

SUPPORT
SH Shoring
SC Shotcrete
RB Rock Bolts
Nil No support

WATER
N None observed
X Not measured
Water level
Water outflow
Water inflow

MOISTURE
D Dry
M Moist
W Wet
Wp Plastic limit
Wl Liquid limit

PENETRATION
L Low
M Moderate
H High
R Refusal

CONSISTENCY
VS Very Soft
S Soft
F Firm
St Stiff
VSt Very Stiff
H Hard
F Friable

DENSITY
VL Very Loose
L Loose
MD Medium Dense
D Dense
VD Very Dense

SAMPLING & TESTING
A Auger sample
B Bulk sample
U Undisturbed sample
D Disturbed sample
M Moisture content
Ux Tube sample (x mm)
G Gas
pp Pocket penetrometer
S Standard penetration test
VS Vane shear
DCP Dynamic cone penetrometer
FD Field density
WS Water sample

CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION
N USCS
Y Agricultural

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

Quality Sheet No. 4

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Engineering Log - Borehole

CLIENT	**Stimson Consultant Services**	**COMMENCED**	30/01/14	**COMPLETED**	30/01/14	**REF**	**BH103**
PROJECT	**Wastewater Assessment**	**LOGGED**	GT	**CHECKED**	AN	**Sheet**	**1 of 1**
SITE	**26 Kingswood Road, Orchard Hills, NSW**	**GEOLOGY**	Shale	**VEGETATION**	Grasses	**PROJECT NO.**	P1404110
EQUIPMENT	Hydraulic Auger	**EASTING**	NA	**RL SURFACE**	NA		
EXCAVATION DIMENSIONS	Ø100mm X 3.0m depth	**NORTHING**	NA	**ASPECT**	South West	**SLOPE**	3-5%

EXCAVATION DATA						MATERIAL DATA					SAMPLING & TESTING			
METHOD	SUPPORT	WATER	MOISTURE	DEPTH (M)	PENETRATION RESISTANCE (L M H R)	GRAPHIC LOG	CLASSIFICATION	DESCRIPTION OF STRATA Soil type, texture, structure, mottling, colour, plasticity, rocks, oxidation, particle characteristics, organics, secondary and minor components, fill, contamination, odour.	CONSISTENCY	DENSITY INDEX	TYPE	DEPTH (M)	RESULTS AND ADDITIONAL OBSERVATIONS	
V	Nil	N	D	0.2			SiL	SILT LOAM - Brown/red, smooth.			A	0.1	4110/103/ 0.1	
V	Nil	N	D	0.7			CL	CLAY LOAM - Orange/brown.						
V	Nil	N	M	1.0 1.6			LMC	LIGHT MEDIUM CLAY - Grey with minor brown mottled, moderately plastic.			A	1.0	4110/103/ 1.0	1.0
V	Nil	N	D	2.0 3.0			MC	MEDIUM CLAY - Grey/orange/gold mottled, moderately plastic.			A	2.0	4110/103/ 2.0	2.0 3.0
				4.0 4.5				Borehole terminated at 3.0m on medium clays.						4.0 4.5

EQUIPMENT / METHOD
N Natural exposure
X Existing excavation
BH Backhoe bucket
E Excavator
HA Hand auger
S Hand spade
A Auger
TC Tungsten Carbide Bit
V V-Bit

SUPPORT
SH Shoring
SC Shotcrete
RB Rock Bolts
Nil No support

WATER
N None observed
X Not measured
Water level
Water outflow
Water inflow

MOISTURE
D Dry
M Moist
W Wet
Wp Plastic limit
Wl Liquid limit

PENETRATION
L Low
M Moderate
H High
R Refusal

CONSISTENCY
VS Very Soft
S Soft
F Firm
St Stiff
VSt Very Stiff
H Hard
F Friable

DENSITY
VL Very Loose
L Loose
MD Medium Dense
D Dense
VD Very Dense

SAMPLING & TESTING
A Auger sample
B Bulk sample
U Undisturbed sample
D Disturbed sample
M Moisture content
Ux Tube sample (x mm)
G Gas

pp Pocket penetrometer
S Standard penetration test
VS Vane shear
DCP Dynamic cone penetrometer
FD Field density
WS Water sample

CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION
N USCS
Y Agricultural

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS

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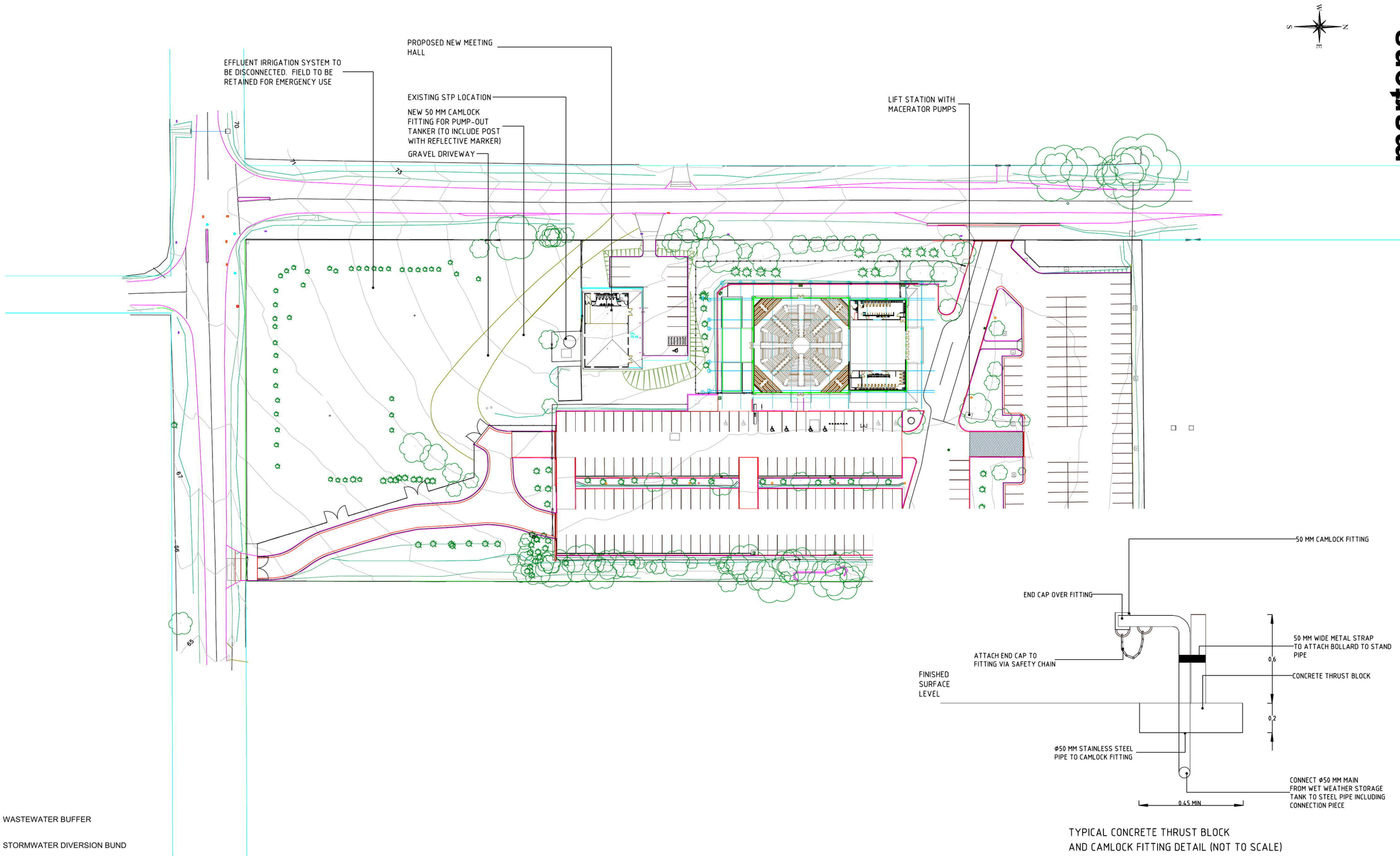
Engineering Log - Borehole

Quality Sheet No. 4

10 Attachment D - Wastewater Management Plan



TYPICAL CONCRETE THRUST BLOCK AND CAMLOCK FITTING DETAIL (NOT TO SCALE)

KEY

- WASTEWATER BUFFER
- STORMWATER DIVERSION BUND
- WET WEATHER STORAGE (60 KL)

NOTE:
SITE CONTOURS SUPPLIED BY STIMSON CONSULTANT SERVICES
CONTOURS DO NOT INCLUDE EXISTING EARTH BUND ALONG WESTERN AND SOUTHERN BOUNDARIES

0 10 20 30 40 50
UNITS - METRES

Martens & Associates Pty Ltd ABN 85 070 240 890		**Environment | Water | Wastewater | Geotechnical | Civil | Management**			
Drawn:	MLK	**WASTEWATER MANAGEMENT PLAN AND CAMLOCK DETAIL**	Drawing No./ID: **SK001**		
Approved:	GT				
Date:	02.11.2016				
Scale @A3:	1:1000	6/37 Leighton Place, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: http://www.martens.com.au	Project: P1404110	File: JD02V04	Revision: A

11 Attachment E – Sydney Water Usage Rates

Sydney WATER

Telephone Payments ☎ (See below)
Account Balance ☎ 1300 362 093
Website: sydneywater.com.au

General Enquiries ☎ 13 20 92
8.30am to 5.30pm (Mon-Fri)
Faults and Leaks ☎ 13 20 90
24 hours

Last bill	Payments	Balance	This bill
$960.45	$960.45	$0.00	$1044.95

Total amount due
$1044.95

Please pay by
09/12/13

Account number
4594 095

DJ ARKCOLL, JA GREENE, JS JOYCE,
MR GJ OVENDEN, MR JI THORNCROFT
C/- PENRITH GOSPEL TRUST
PO BOX 664
PENRITH NSW 2751

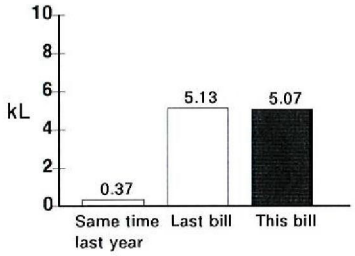
45940950-1071

Account for property — 26 Kingswood Rd Orchard Hills

Fixed charges - GST free		1 Oct 13 - 31 Dec 13		$
Water service				137.79
Usage charges - GST free		12 Aug 13 - 15 Nov 13		
Water	12/08 - 15/11	482 kL at $2.1680 a kL	*See over for details*	1044.97
Other charges and credits				
Exempt fixed charges credit				-137.79
Credit				-0.02

Total amount due **$1044.95**

Your average daily usage



How much water did you use?

Goods Rec'd:
Price/Calcs:
Approved:
Cheque No:
Date Paid: 29/11/13
N112938350388

Continued overleaf

SYDNEY WATER CORPORATION ABN 49 776 225 038

TAX INVOICE

Date of issue 18 November 2013

Sydney WATER

Account for 26 Kingswood Rd Orchard Hills

POST billpay *242 4594 095 0004

POSTbillpay: Use cash, cheque or debit card at any Australia Post Office.

Credit card limit:
$1,000 per bill

Payment number
4594 095 0004

Please pay by
09/12/13

Total amount due
$1044.95

BPAY: Internet or phone banking.
Biller code: 45435 **Ref no.:** 4594 095 0004

Mail payments: Return slip and cheque payable to Sydney Water (no staples).
Send to:
Sydney Water
PO Box 339
Silverwater NSW 2128

Telephone payments: Mastercard or Visa.
Call **1300 12 34 58** (24 hour service)

Direct debit payments: For more information, please call 13 20 92 or visit **sydneywater.com.au**

Internet payments: Mastercard or Visa: **sydneywater.com.au**

TRAN CODE	USER CODE	CUSTOMER REFERENCE NUMBER
831	066859	00004594 095 0004

<0000104495> <066859> <000045940950004> >

Account for property

26 Kingswood Rd Orchard Hills

Water meter details

Meter Reading Period: 12 Aug 13 - 15 Nov 13

Meter No.	This Reading	Last Reading	Consumption (kL)
EDYE0128	3152	2670	482

Total water used in 95 days was 482 kilolitres

Customer information

* Visit sydneywater.com.au to view the Sydney Water Customer Contract in Brief.
* If you are having difficulty paying your bill, we can help. We have flexible payment options to help you plan your payments. We may offer payment extensions or a regular payment arrangement. **Call us on 13 20 92.**
* Direct Debit by credit card - now available. Register at sydneywater.com.au
* Interest may be charged on overdue amounts at the current rate of 6.50% a year.
* Hearing impaired customers can phone via NRS for a TTY service on **13 36 77**, quoting **13 20 90.**
* We may exchange contact information with local councils to ensure your bills get to you.

Faults and Leaks (available 24 hours)

Please ring 13 20 90 in cases of service difficulty and emergency.

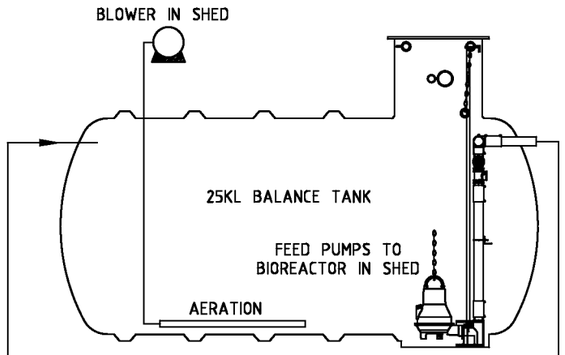
Payment number	Total amount due
4594 095 0004	**$1044.95**

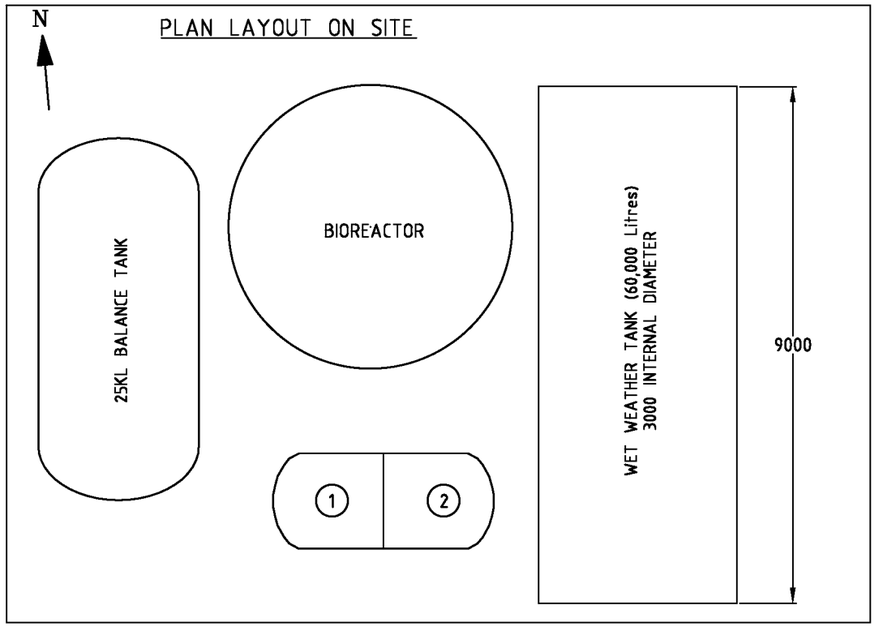
Changing your mailing address?
For changes to your mailing address, please ring general enquiries or visit **sydneywater.com.au/SW/accounts-billing/** to change your address online.

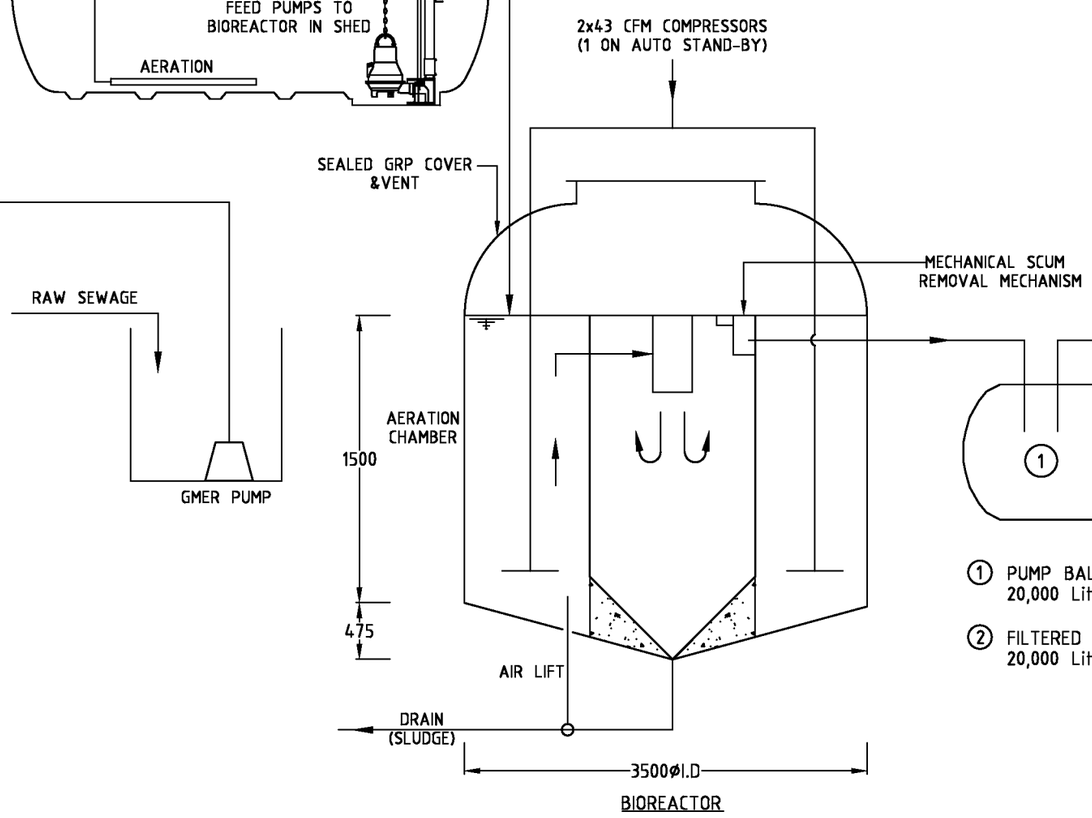
Centrepay payments: call Centrelink to arrange regular Centrepay deductions.
Centrepay Reference No.: 555 052 086C

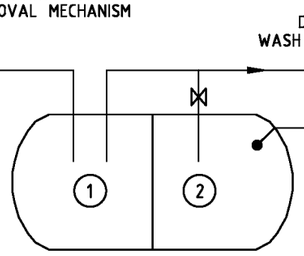
Interpreter Service 13 14 50
Arabic • Chinese • Greek • Italian • Korean • Vietnamese
إذا كنت تحتاج إلى مترجم، يرجى الاتصال بالرقم أعلاه.
如果您需要傳譯員的協助，請致電以上的號碼。
Αν χρειάζεστε διερμηνέα, τηλεφωνήστε στον παραπάνω αριθμό.
Se vi serve un interprete, telefonate al numero indicato sopra.
통역사가 필요하시면 위의 번호로 전화하십시오.
Nếu quý vị cần thông dịch viên, hãy gọi đến số trên đây.

12 Attachment F – Existing Wastewater Treatment System Design (GEBEL, 2014)



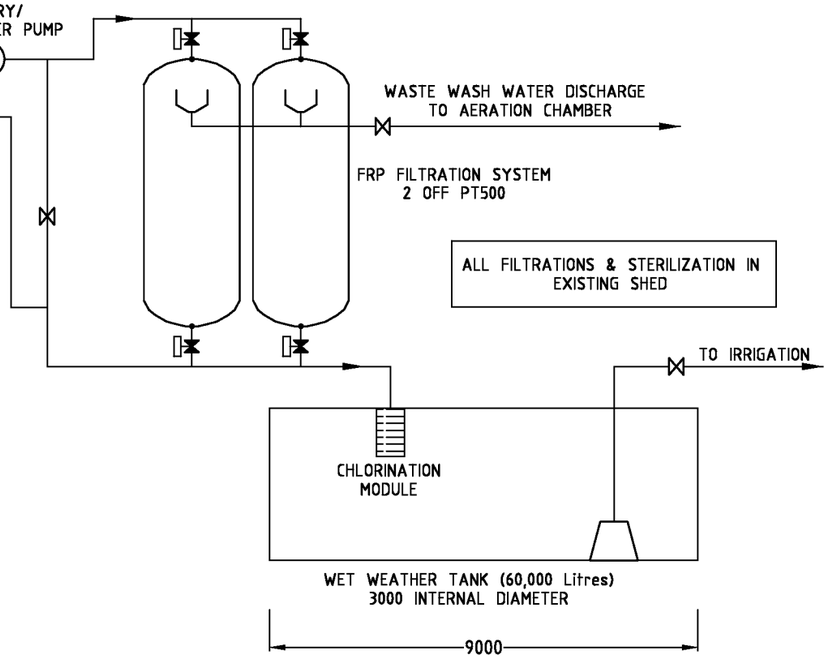






① PUMP BALANCE TANK
20,000 Litres

② FILTERED WASH WATER STORAGE
20,000 Litres



NOTE:

- ALL VESSELS TO BE CONSTRUCTED IN GRP TO AS2634-1983
- ALL VESSELS TO BE LOCATED BELOW GROUND LEVEL

CLIENT: PENRITH GOSPEL TRUST	**ISSUE FOR APPROVAL :**		Drawn: M.T Checked: A.P Verified: Approved: Dig.Add.	Date: 7.10.14 Date: 7.10.14 Date: Date:		**Title:** Proposed Effluent Treatment Plant For Penrith Gospel trust–Lot43 Kingswood Rd Orchard Hills Code: Scale: N.T.S Size:A3 Drawing No: GA1516-PGT-01 Sheet:1 Rev:1

13 Attachment G – Pump-out Contractor Invoice

ACN 070 120 928
ABN 68 070 120 928

BRANDSTER SERVICES

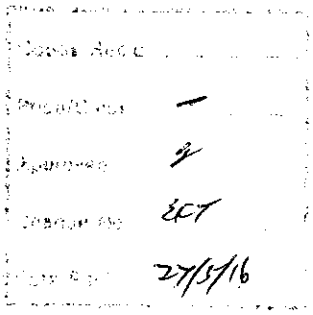
P.O. Box 166, St Marys NSW 1790
P: 02 9623 1177
F: 02 9623 1002
www.brandsterservices.com.au

Penrith Gospel Trust
PO Box 584
PENRITH NSW 2751

TAX INVOICE

Invoice **S78178**
Date: 24/05/2016
Page: 1

Description	**Amount**	**Tax**
Pump out sullage as directed and transfer to Brandster Services Waste Facility at St Marys 26 Kingswood Rd Orchard Hills D/N - S78177 / S78178 / S78421 BS9825 / BS9816 - Pumped out 1 x Tank Removed a total of 60,000 Litres of liquids @ 5 cents per litre	$3,000.00	GST



Your Order #:

Terms: ***C.O.D.***

MEMO 0438 017 166

Direct Deposits or EFT Deposits
Bank ANZ , BSB 012 408 Account 900317038

SALE AMOUNT	***$3,000.00***
Freight:	$0.00
GST:	$300.00
Total Inc GST:	***$3,300.00***
Amount Applied:	$0.00
Balance Due:	**$3,300.00**

ACN 070 120 928
ABN 68 070 120 928

BRANDSTER SERVICES

P.O. Box 166, St Marys NSW 1790
P: 02 9623 1177
F: 02 9623 1002
www.brandsterservices.com.au

Penrith Gospel Trust
PO Box 584
PENRITH NSW 2751

TAX INVOICE

Invoice **S81187**
Date: 12/09/2016
Page: 1

Description	Amount	Tax
Penrit Gospel Trust Site - 26 Kingswood RD Orchard Hills		
D/N - S81187		
BS9814 - Pumped out 1 x Tank Removed 22,000 ltrs @ 5 cents per ltr	$1,100.00	GST
D/N - S81188		
BS9814 - Pumped out 1 x Tank Removed 22,000 ltrs @ 5 cents per ltr	$1,100.00	GST

Your Order #: ***S81187/188*** Terms: ***C.O.D.***

MEMO 0438 017 166

SALE AMOUNT	***$2,200.00***
Freight:	$0.00
GST:	$220.00
Total Inc GST:	***$2,420.00***
Amount Applied:	$0.00
Balance Due:	**$2,420.00**

Direct Deposits or EFT Deposits
Bank ANZ , BSB 012 408 Account 900317038

Vacuum Tankers for Domestic & Industrial Liquid Waste
Treatment Facility for Septic, Sullage, Oily Waters, Storm Waters, Ground Waters

EPA Waste Depot Lic No 5973 - EPA Transport Lic No 6414