

11 June 2026

Reference No. GL26303Ab

Paul & Teresa West
PO Box 674
WYNYARD TAS 7325

Dear Sir

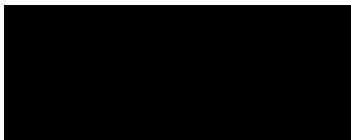
**RE: Preliminary On-site Wastewater Disposal Site Evaluation
66 River Road, Wynyard**

We have pleasure in submitting herein our report detailing the results of a preliminary on-site wastewater disposal site evaluation conducted at the above site.

Should you require clarification of any aspect of this report, please contact Edwin Zhang on 03 6326 5001.

For and on behalf of

Geoton Pty Ltd



Tony Barrier

Director – Principal Geotechnical Engineer

Rev No.	Date	Written By	Reviewed By	Description
Ab	11/06/2026	E Zhang	S Shahandeh	Original

1 INTRODUCTION

At the request of Mr Paul West, Geoton Pty Ltd has carried out a limited scope investigation at the site of a proposed 2 lot residential subdivision at 66 River Road, Wynyard.

The investigation is to determine if the proposed new Lot 2 can support an on-site wastewater disposal system (in accordance with AS/NZS 1547:2012 “On-site domestic-wastewater management”) for the purposes of subdivision approval.

It should be noted that this is a preliminary assessment for subdivision approval and that site-specific assessments for the proposed new Lot 2 will be required by the developers/owners once the actual location and size of the residential development is known.

Site plans were provided, prepared by PLA Designs, Job No. 26028, Sheet Nos. 26028-01 to 26028-05, dated 28 April 2026.

We understand that the existing residence and shed will be allocated to proposed Lot 1, while Lot 2 will remain vacant. The proposed Lot 1 is 1.080 hectares in size and is located within the southern portion of the site and the proposed Lot 2 is 1.091 hectares in size and is located within the northern portion of the site.

2 FIELD INVESTIGATION

The field investigation was conducted on 28 May 2026 and involved the drilling of 2 boreholes by 4WD mounted auger rig to the investigated depths of 2.0m.

The permeability of the soil on site was measured using a constant head permeameter

The logs of the boreholes are included in Appendix A and their locations are shown on Drawing 1, attached.

3 SITE CONDITIONS

Proposed Lot 1 is currently developed with a dwelling, shed and wastewater disposal system and Lot 2 is currently undeveloped with the ground surface being near level. Vegetation across the property comprises a low cover of grass with trees on the western and southern portions of the site.

The MRT Digital Geological Atlas 1:25,000 Series, indicates that the site is mapped as Quaternary period sediments comprising older stabilised aeolian sand of predominately coastal plain, with underlying marine sands in places. This was generally confirmed by our field investigation.

Examination of the LIST Landslide Planning Map – Landslide Hazard Bands Overlay indicates that the site is not within a mapped landslide hazard band.

The investigation indicated that the soil profile is relatively uniform across the site. The boreholes generally encountered clayey sand topsoil to depths of 0.1m, overlaying

clayey sand to depths of 0.6m and 0.7m, underlain by sandy to silty clay to the investigated depths of 2.0m.

The boreholes did not reveal any signs of groundwater seepage over the depths investigated.

Full details of the soil conditions encountered are presented on the borehole logs.

4 EFFLUENT DISPOSAL

4.1 Permeability of Soil and Soil Classification

Based on the findings of the borehole investigation, the soil has been classified, at worst, as follows:

- Texture – Clay loams (Table E4 from AS1547-2012);
- Structure – Weakly structured (Table E4 from AS/NZS1547-2012); and
- Category – 4 (Table E1 from AS/NZS1547:2012).

For weakly structured Category 4 soils the indicative permeability from AS1547 Table L1 is 0.12 to 0.5m/day.

- Adopted Permeability – 0.46m/day.

4.2 Disposal and Treatment Method

The soil within the proposed effluent disposal area is assessed as having sufficient depth and clay content to provide an adequate attenuation period for the breakdown of pathogens within the treated effluent.

Therefore, provided the setback distances are adhered to, this site assessment indicates that the proposed new lots are suitable for the disposal of primary or secondary treated effluent.

As such, the proposed new lots are suitable for the disposal of domestic effluent by way of the following methods:

- Septic Tank and Absorption trenches (primary treated effluent*).
- Secondary Treated System (STS) and sub-surface irrigation (secondary treated effluent).

4.3 Design Loading Rate (Primary Treated Effluent)

The adopted design loading rate for the absorption trenches has been set at 10mm/day as outlined in AS/NZS 1547:2012 Table L1.

4.4 Design Irrigation Rate (Secondary Treated Effluent)

According to AS/NZS 1547 Table M1, the recommended design irrigation rate (DIR) for sub-surface irrigation (drip irrigation) on Category 4 soils is 3.5mm/day.

4.5 Setbacks

The minimum separation distance between the disposal area and downslope features is based on Appendix R from AS/NZS 1547:2012 “Recommended Setback Distances for Land Application Systems” and Section 3.1 from the *Building Act 2016*: Director’s Guidelines for On-site Wastewater Management Systems.

The following setbacks are required for a primary treated effluent:

- 22.0m from downslope sensitive features such as watercourses;
- 3.0m from downslope property boundaries;
- 1.5m from cross slope or upslope property boundaries;
- 5.0m from downslope buildings;
- 3.0m from upslope or cross-slope buildings;

The following setbacks are required for a secondary treated effluent:

- 17.0m from downslope sensitive features such as watercourses;
- 2.5m from downslope property boundaries;
- 1.5m from cross slope or upslope property boundaries;
- 3.5m from downslope buildings;
- 3.0m from upslope or cross-slope buildings;

4.6 Example of Minimum System Requirements

4.6.1 Septic Tank and Absorption Trenches

About 468m² (234m² for the effluent disposal area and 234m² as a backup area) would be required for a septic tank and trenches to support a standard 4-bedroom dwelling within the assessed area of the site.

4.6.2 STS and mounded sub-surface irrigation

About 514m² (257m² for the effluent disposal area and 257m² as a backup area) would be required for an STS and sub-surface irrigation system to support a standard 4-bedroom dwelling within the assessed area of the site.

5 CONCLUSIONS

The results of the investigation indicate that the proposed new Lot 2 has sufficient available area suitable for the disposal of domestic effluent by way of primary wastewater treatment via a septic tank and absorption trenches or secondary treatment systems with irrigation lines, including sufficient reserve area.

6 REFERENCES

Department of Justice. (2017). *Building Act 2016 Director's Guidelines for On-site Wastewater Management Systems v2.0*. Consumer, Building and Occupational Services.

Standards Australia Limited. (2012). *AS/NZS 1547 On-site Domestic Wastewater Management*. Sydney: SAI Global Limited.

Standards Australia Limited. (2017). *AS 1726: Geotechnical Site Investigation*. Sydney: SAI Global Limited.

Attachments:

Limitations of report

Drawing 1 – Site Plan

Appendix A – Borehole Logs & Explanation Sheets

Geotechnical Consultants - Limitations of report

These notes have been prepared to assist in the interpretation and understanding of the limitations of this report.

Project specific criteria

The report has been developed on the basis of unique project specific requirements as understood by Geoton and applies only to the site investigated. Project criteria are typically identified in the Client brief and the associated proposal prepared by Geoton and may include risk factors arising from limitations on scope imposed by the Client. The report should not be used without further consultation if significant changes to the project occur. No responsibility for problems that might occur due to changed factors will be accepted without consultation.

Subsurface variations with time

Because a report is based on conditions which existed at the time of subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. For example, water levels can vary with time, fill may be placed on a site and pollutants may migrate with time. In the event of significant delays in the commencement of a project, further advice should be sought.

Interpretation of factual data

Site assessment identifies actual subsurface conditions only at those points where samples are taken and at the time they are taken. All available data is interpreted by professionals to provide an opinion about overall site conditions, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist, as it is virtually impossible to provide a definitive subsurface profile which includes all the possible variabilities inherent in soil and rock masses.

Report Recommendations

The report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until earthworks and/or foundation construction is almost complete and therefore the report recommendations can only be regarded as preliminary. Where variations in conditions are encountered, further advice should be sought.

Specific purposes

This report should not be applied to any project other than that originally specified at the time the report was issued.

Interpretation by others

Geoton will not be responsible for interpretations of site data or the report findings by others involved in the design and construction process. Where any confusion exists, clarification should be sought from Geoton.

Report integrity

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way.

Geoenvironmental issues

This report does not cover issues of site contamination unless specifically required to do so by the client. In the absence of such a request, Geoton take no responsibility for such issues.



Legend

BH 1
⊕ Approximate Borehole Location

— Cadastral Parcels

				Client: PAUL & TERESA WEST	
				Project: 66 RIVER ROAD WYNYARD	
Date	02/06/2026	Drawn	EZ	Title: SITE PLAN	
Scale	As Shown	Approved	SS		
Original size	A3	Rev		Project no: GL26303A	Drawing no. 1

Appendix A

Borehole Logs

Geotechnical Consultants

PO Box 522 Prospect TAS 7250

Unit 24, 16-18 Goodman Court, Invermay TAS

Tel (03) 6326 5001

Borehole no. BH1

Sheet no. 1 of 1

Job no. GL26303A

Client :		Paul & Teresa West				Date :		28/05/26	
Project :		Preliminary On-site Wastewater Site Evaluation				Logged By :		EZ	
Location :		66 River Road, Wynyard							
Drill model :		Honey Badger		Easting:		Slope: 90°		RL Surface :	
Hole diameter :		95mm		Northing:		Bearing: -		Datum :	

Method	Support	Penetration	Water	Notes Samples Tests	Depth (m)	Graphic log Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADT	N						TOPSOIL - Clayey SAND, fine to medium grained, dark brown.	M	L/ MD	
					0.25	SC	Clayey SAND, fine to medium grained, dark brown.	M	MD	
					0.50					
					0.75	CL/ CI	Sandy CLAY, low to medium plasticity, brown / dark brown.	M	St	
					1.00		becoming yellow brown.			
					1.25					
					1.50	CI/ CH	Silty CLAY, medium to high plasticity, yellow brown, trace fine to medium grained sand.	M	St/ VSt	
					1.75					
					2.00					
								Borehole BH1 terminated at 2.0m.		
			2.25							

Geotechnical Consultants

PO Box 522 Prospect TAS 7250

Unit 24, 16-18 Goodman Court, Invermay TAS

Tel (03) 6326 5001

Borehole no. BH2

Sheet no. 1 of 1

Job no. GL26303A

Client :		Paul & Teresa West				Date :		28/05/26	
Project :		Preliminary On-site Wastewater Site Evaluation				Logged By :		EZ	
Location :		66 River Road, Wynyard							
Drill model :		Honey Badger		Easting:		Slope: 90°		RL Surface :	
Hole diameter :		95mm		Northing:		Bearing: -		Datum :	

Method	Support	Penetration	Water	Notes Samples Tests	Depth (m)	Graphic log Classification Symbol	Material Description	Moisture condition	Consistency density, index	Structure, additional observations
ADT	N						TOPSOIL - Clayey SAND, fine to medium grained, dark brown.	M	L/ MD	
					0.25	SC	Clayey SAND, fine to medium grained, dark brown.	M	MD	
					0.50					
					0.75	CL/ CI	Sandy CLAY, low to medium plasticity, brown / dark brown.	M	St	
					1.00					
					1.25					
					1.50	CI/ CH	Silty CLAY, medium to high plasticity, yellow brown, trace fine to medium grained sand.	M	St/ VSt	
					1.75					
					2.00					
								Borehole BH2 terminated at 2.0m.		
			2.25							

Investigation Log Explanation Sheet

METHOD – BOREHOLE

TERM	Description
AS	Auger Screwing*
AD	Auger Drilling*
RR	Roller / Tricone
W	Washbore
CT	Cable Tool
HA	Hand Auger
DT	Diatube
B	Blank Bit
V	V Bit
T	TC Bit

* Bit shown by suffix e.g. ADT

METHOD – EXCAVATION

TERM	Description
N	Natural exposure
X	Existing excavation
H	Backhoe bucket
B	Bulldozer blade
R	Ripper
E	Excavator
HT	Hand Tools

SUPPORT

TERM	Description
M	Mud
N	Nil
C	Casing
S	Shoring

PENETRATION

1	2	3	4	
				No resistance ranging to Refusal

WATER

Symbol	Description
	Water inflow
	Water outflow
	17/3/08 water on date shown

NOTES, SAMPLES, TESTS

TERM	Description
U ₅₀	Undisturbed sample 50 mm diameter
U ₆₃	Undisturbed sample 63 mm diameter
U ₈₁	Undisturbed sample 81 mm diameter
D	Disturbed sample
N	Standard Penetration Test (SPT)
N*	SPT – sample recovered
N _c	SPT with solid cone
V	Vane Shear
PP	Pocket Penetrometer
P	Pressumeter
B _s	Bulk sample
E	Environmental Sample
R	Refusal – Material cannot be penetrated
DCP	Dynamic Cone Penetrometer (blows/100mm)
PL	Plastic Limit
LL	Liquid Limit
LS	Linear Shrinkage

CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION

Based on AS 1726:2017

MOISTURE

TERM	Description
D	Dry
M	Moist
W	Wet

CONSISTENCY/DENSITY INDEX

TERM	Description
VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fr	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	Very dense

Soil Description Explanation Sheet (1of 2)

DEFINITION

In engineering terms, soil includes every type of uncemented or partially cemented inorganic or organic material found in the ground. In practice, if the material can be remoulded or disintegrated by hand in its field condition or in water it is described as a soil. Other materials are described using rock description terms.

CLASSIFICATION SYMBOL AND SOIL NAME

Soils are described in accordance with the AS 1726: 2017 as shown in the table on Sheet 2.

PARTICLE SIZE DEFINITIONS

NAME	SUBDIVISION	SIZE (mm)
BOULDERS		>200
COBBLES		63 to 200
GRAVEL	Coarse	19 to 63
	Medium	6.7 to 19
	Fine	2.36 to 6.7
SAND	Coarse	0.6 to 2.36
	Medium	0.21 to 0.6
	Fine	0.075 to 0.21
SILT		0.002 to 0.075
CLAY		<0.002

MOISTURE CONDITION

Coarse Grained Soils

Dry Non-cohesive and free running.

Moist Soil feels cool, darkened in colour.
Soil tends to stick together.

Wet As for moist but with free water forming when handling.

Fine Grained Soils

Moist, dry of Plastic Limited – $w < PL$

Hard and friable or powdery.

Moist, near Plastic Limit – $w \approx PL$

Soils can be moulded at a moisture content approximately equal to the plastic limit.

Moist, wet of Plastic Limit – $w > PL$

Soils usually weakened and free water forms on hands when handling.

Wet, near Liquid Limit - $w \approx LL$

Wet, wet of Liquid Limit - $w > LL$

CONSISTENCY TERMS FOR COHESIVE SOILS

TERM	UNDRAINED STRENGTH s_u (kPa)	FIELD GUIDE
Very Soft	≤ 12	Exudes between the fingers when squeezed in hand
Soft	12 to 25	Can be moulded by light finger pressure
Firm	25 to 50	Can be moulded by strong finger pressure
Stiff	50 to 100	Cannot be moulded by fingers
Very Stiff	100 to 200	Can be indented by thumb nail
Hard	>200	Can be indented with difficulty by thumb nail
Friable	–	Can be easily crumbled or broken into small pieces by hand

RELATIVE DENSITY OF NON-COHESIVE SOILS

TERM	DENSITY INDEX (%)
Very Loose	≤ 15
Loose	15 to 35
Medium Dense	35 to 65
Dense	65 to 85
Very Dense	> 85

DESCRIPTIVE TERMS FOR ACCESSORY SOIL COMPONENTS

DESIGNATION OF COMPONENT	IN COARSE GRAINED SOILS		IN FINE GRAINED SOILS	TERM
	% Fines	% Accessory coarse fraction	% Sand/ gravel	
Minor	≤ 5	≤ 15	≤ 15	Trace
	>5, ≤ 12	>15, ≤ 30	>15, ≤ 30	With
Secondary	>12	>30	>30	Prefix

SOIL STRUCTURE

ZONING		CEMENTING	
Layer	Continuous across the exposure or sample.	Weakly cemented	Easily disaggregated by hand in air or water.
Lens	Discontinuous layer of different material, with lenticular shape.	Moderately cemented	Effort is required to disaggregate the soil by hand in air or water.
Pocket	An irregular inclusion of different material.		

GEOLOGICAL ORIGIN

WEATHERED IN PLACE SOILS

Extremely Weathered material	Material is weathered to such an extent that it has soil properties. Structure and/or fabric of parent rock material retained and visible.
Residual soil	Structure and/or fabric of parent rock material not retained and visible.

TRANSPORTED SOILS

Aeolian soil	Carried and deposited by wind.
Alluvial soil	Deposited by streams and rivers.
Colluvial soil	Soil and rock debris transported downslope by gravity.
Estuarine soil	Deposited in coastal estuaries, and including sediments carried by inflowing rivers and streams, and tidal currents.
Fill	Man-made deposit. Fill may be significantly more variable between tested locations than naturally occurring soils.
Lacustrine soil	Deposited in freshwater lakes.
Marine soil	Deposited in a marine environment.

Soil Description Explanation Sheet (2 of 2)

SOIL CLASSIFICATION INCLUDING IDENTIFICATION AND DESCRIPTION

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 63 mm and basing fractions on estimated mass)					GROUP SYMBOL	PRIMARY NAME	
COARSE GRAINED SOIL More than 65% of soil excluding oversize fraction is larger than 0.075 mm	(A 0.075 mm particle is about the smallest particle visible to naked eyes)	GRAVEL More than half of coarse fraction is larger than 2.36 mm	CLEAN GRAVEL (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes	GW	GRAVEL	
				Predominantly one size or a range of sizes with some intermediate sizes missing	GP	GRAVEL	
			GRAVEL WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML and MH below)	GM	Silty GRAVEL	
				Plastic fines (for identification procedures see CL, CI and CH below)	GC	Clayey GRAVEL	
		SAND More than half of coarse fraction is smaller than 2.36 mm	CLEAN SAND (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate sizes	SW	SAND	
				Predominantly one size or a range of sizes with some intermediate sizes missing	SP	SAND	
			SAND WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML and MH below)	SM	Silty SAND	
				Plastic fines (for identification procedures see CL, CI and CH below)	SC	Clayey SAND	
FINE GRAINED SOIL More than 35% of soil excluding oversize fraction is smaller than 0.075 mm	(A 0.075 mm particle is about the smallest particle visible to naked eyes)	IDENTIFICATION PROCEDURES ON FRACTIONS <0.075 mm					
			DRY STRENGTH	DILATANCY	TOUGHNESS		
		SILT & CLAY (low to medium plasticity, LL ≤ 50)	None to Low	Slow to Rapid	Low	ML	SILT
			Medium to High	None to Slow	Medium	CL, CI	CLAY
			Low to Medium	Slow	Low	OL	ORGANIC SILT
		SILT & CLAY (high plasticity, LL > 50)	Low to Medium	None to Slow	Low to Medium	MH	SILT
			High to Very High	None	High	CH	CLAY
			Medium to High	None to Very Slow	Low to Medium	OH	ORGANIC CLAY
		Highly Organic Soil	Readily identified by colour, odour, spongy feel and frequently by fibrous texture.			Pt	PEAT
		• LL – Liquid Limit.					

• LL – Liquid Limit.

COMMON DEFECTS IN SOILS

TERM	DEFINITION	DIAGRAM	TERM	DEFINITION	DIAGRAM
PARTING	A surface or crack across which the soil has little or no tensile strength. Parallel or sub parallel to layering (e.g. bedding). May be open or closed.		SOFTENED ZONE	A zone in clayey soil, usually adjacent to a defect in which the soil has a higher moisture content than elsewhere.	
FISSURE	A surface or crack across which the soil has little or no tensile strength, but which is not parallel or sub parallel to layering. May be open or closed. May include desiccation cracks.		TUBE	Tubular cavity. May occur singly or as one of a large number of separate or inter-connected tubes. Walls often coated with clay or strengthened by denser packing of grains. May contain organic matter.	
SHEARED SEAM	Zone in clayey soil with roughly parallel near planar, curved or undulating boundaries containing closely spaced, smooth or slickensided, curved intersecting fissures which divide the mass into lenticular or wedge-shaped blocks.		TUBE CAST	An infilled tube. The infill may be uncemented or weakly cemented soil or have rock properties.	
SHEARED SURFACE	A near planar curved or undulating, smooth, polished or slickensided surface in clayey soil. The polished or slickensided surface indicates that movement (in many cases very little) has occurred along the defect.		INFILLED SEAM	Sheet or wall like body of soil substance or mass with roughly planar to irregular near parallel boundaries which cuts through a soil mass. Formed by infilling of open defects.	