

Date

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Revision

A

Elaine Richardson  
Level 1, 2 Epsom Road  
ZETLAND NSW 2017

Our Ref      AWT 82468

Soil Permeability as per AS1547-2012

Lot 52, No 154 Plateau Road, Bilgola Plateau NSW

**Soil category & Structure:** Sandy Loams over Clay Loams

**Indicative Permeability:**  $K_{sat} = 0.12$  to  $0.5$  m/d

**Observed Permeability:**  $K_{sat} = 0.4$  m/d

Please find attached the results of the Soil Permeability test, log sections and site sketch, undertaken at the above address.

Providing the system is designed by a suitably qualified person for the recommended design  $K_{sat}$ , above, and the system is located a minimum setback distance of 1.5m from any adjacent property boundary and infrastructure, we do not see any reason why this proposal should not proceed to construction.

Although no water table was encountered during our testing, a perched water table or water seepage can occur during or after wet periods, generally where a porous layer overlies less porous strata.

If you have any queries, please do not hesitate to contact the writer.

Yours faithfully

AW Geotechnics



Jason Bau  
MIE Aus, NER, RPEQ

## BORELOG

Depth (mm)	Description Soil Type-Colour-Consistency	FILL
100	<b>SILTY SAND (SG) w Gravel</b>	
200	(brn) Moist	
300	<b>SILTY SANDY CLAY (CI) w gravel</b>	
400	(or/mott rd)	
500	Moist	
600		
700		
800		
900		
1000		
1100		
1200		
1300		
1400		
1500	<b>END H/A</b>	
1600		
1700		
1800		
1900		
2000		

### NOMENCLATURE:

UTP=Unable to Penetrate XW ROCK=Extremely Weathered Rock P/A = Power Auger

Refer Tables 7.3.2 & 7.3.3. AS1726-2017 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green

Refer AS1726-2017 Clause A2.4 for classifying soils.

### *Notes:*

1. Hand Auger (H/A) is a portable auger and where utilised is used because of lack of access or trafficability, it is essential that the results of a hand auger are confirmed once access is provided, further testing using a 4WD mounted drill rig is carried out, or stakeholders shall accept the associated risk of results which may not represent the subject site conditions.

SITE SKETCH (Not to Scale)



SITE PHOTOGRAPHS





## PERCOLATION TEST RESULTS

### Soil Permeability Constant Head Test (Refer AS1547-2012)

**Address:** Lot 52, No 1! Plateau Road **Ref :** AWT 82468  
**Suburb:** Bilgola Plateau NSW

Depth(cm) of auger hole(D):	60	cm
Depth(cm) of water in hole(H):	30	cm
Average radius(cm) of hole(r):	5	cm
Pretest Hole Saturation Duration (mins):	30	min

#### Apparatus Specifications:

Diameter of reservoir(cm):	3.65	cm
Diameter of Air Inlet(cm):	1.2	cm
Effective Surface Area(cm <sup>2</sup> )	37.3	cm <sup>2</sup>

#### Field Measurements

Start (min)	Level (cm)	Drop (cm)	Volume cm <sup>3</sup>	Q		Ksat	
				cm <sup>3</sup> /min	Litres/sec	cm/min	m/s

#### Test 1

0.00	30						
5.00	41	11.0	864	173	0.0029	0.0326	5.434E-06

#### Test 2

0.00	30						
5.00	39.5	9.5	746	149	0.0025	0.0282	4.693E-06

#### Test 3

0.00	30						
5.00	39	9.0	707	141	0.0024	0.0267	4.446E-06

#### Test 4

0.00	30						
5.00	38.5	9.0	707	141	0.0024	0.0267	4.446E-06

#### Test 5

0.00	30						
5.00	38.5	8.5	668	134	0.0022	0.0252	4.199E-06

#### Range of results

Ksat of 0.0252 to 0.0326 cm/min

#### Observed Permeability

Av K<sub>sat</sub> = 0.0279 cm/min AS1547-2012 Eq G6  
 Rate = 0.4012 m/d or 4.64E-06 m/s  
 = 0.05 l/s/m<sup>2</sup> based on a hydraulic gradient of 1 for sand

#### Estimated Permeability Range & Soil

Type 4 Clay Loams (Moderately structured) Ksat = 0.12 to 0.5 m/d

AS1547 SOIL DESCRIPTIONS & Ksat RANGE

Soil Category	Soil Texture & Structure	Indicative Ksat (m/d)
1	Gravel & Sands (Structureless / Massive)	>3.0
2	Sandy Loams - Weakly structured	>3.0
2	Sandy Loams(Massive)	1.4 to 3.0
3	Loams (High / Moderate Structured)	1.5 to 3.0
3	Loams (Weakly Structured / Massive)	0.5 to 1.5
4	Clay Loams (High/moderate structured)	0.5 to 1.5
4	Clay Loams (Moderately structured)	0.12 to 0.5
4	Clay Loams (Weakly structured / Massive)	0.06 to 0.12
5	Slight Clays (Strongly structured)	0.12 to 0.5
5	Light Clays (Moderately structured)	0.06 to 0.12
5	Light Clays (Weakly structured / Massive)	<0.06
6	Medium to Heavy Clays (Strongly structured)	0.06 to 0.5
6	Medium to Heavy Clays (Moderately structured)	<0.06
6	Medium to Heavy Clays (Weakly structured / Massive)	<0.06