

**REPORT No.** : 1191040-5 Issue 3

**CLIENT** : Pared Victoria T/A Lysterfield Lake College  
C/- HWL Ebsworth Lawyers  
Level 8, 447 Collins Street  
MELBOURNE VIC 3000

**PROJECT** : Lysterfield Lake College  
19-23 Horswood Road  
NARRE WARREN NORTH

**PROPOSAL** : It is proposed to develop this site with a multipurpose sports field.

**1. COMMISSION:**

Carry out relevant insitu soil tests, log test bores and recommend suitable materials, site preparation and testing for the construction and earthworks of the oval.

All testing and observations carried out are to follow the relevant provisions of AS 1726:2017 (Geotechnical Site Investigations).

**2. SITE GEOLOGY:**

Geological maps show that this site is in an area of Devonian Granodiorite & Granite - CLAYS. The site investigation confirmed this.

**3. SITE TOPOGRAPHY:**

The site has a gentle slope to the east. The ground cover comprises of natural grasses and native trees.

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**ADVERTISED  
PLAN**

#### **4. INVESTIGATION:**

##### **4.1 Field Work:**

Eight boreholes were drilled by mechanical auger at the approximate locations shown on the attached plan.

##### **4.2 Laboratory Work:**

Classification tests (Plasticity Index and Sieve Analysis) were carried out on the predominant subgrade material types to assess the reactivity and the drainage characteristics for the site.

All the laboratory data is attached (Appendix B).

#### **5. FINDINGS:**

The boreholes revealed that the natural soil profile consisted generally of silty SAND with clay overlying silty CLAY with and without sand.

#### **6. SITE CLASSIFICATION:**

Based on the site investigation and the geology of the area, this site would be classified as CLASS M with respect to Australian Standard 2870-2011 (Residential Slabs and Footings). However, this classification is technically not correct for the proposed type of structure, therefore is given as a guide only. It is anticipated that the seasonal surface movement at this site will not exceed 40mm.

It must be emphasised that the heave mentioned and recommendations referred to in this report are based solely on the observed soil profile at the time of the investigation for this report without taking into account the effects of any abnormal moisture conditions that may develop after construction as defined in Clause 1.3.3 (A) (B) (C) (D) (E).

The recommendations given in this report have been based largely on the soil conditions encountered at the time of the field investigation. Under inclement weather or prolonged wet weather conditions, the soil conditions noted and reported in this report could vary. It is advisable to undertake construction during and following good weather conditions - i.e., dry weather conditions - not during or following inclement weather or prolonged wet weather conditions.

**7. EARTHWORKS:**

**7.1 Unsuitable Materials:**

The following materials are considered unsuitable:

- (a) Organic soils, such as topsoils, severely root effected subsoils and peat
- (b) Contaminated soils
- (c) Silts or materials that have deleterious engineering properties of silt
- (d) Fill that contains wood, metal, plastic, boulders concrete, or deleterious material.

And/or any other materials as described in AS3798 Section 4.2. They should be removed to spoil and not be incorporated into the fill.

**7.2 Suitable Materials:**

Existing site derived clean CLAY material equivalent imported CLAY material is recommended for general filling of the site as required.

The properties of site derived materials may vary over the site. A visual inspection and/or laboratory testing of the prepared stockpile material is recommended before placing the fill. The following parameters can be used as a guide to determine if the material is suitable or not:

Fill material should comply with the following:

**Fill Material Over CLAYS**

Maximum Plasticity Index	45%
Minimum Plasticity Index	20%
Maximum Passing 4.75mm Sieve:	100%
Minimum passing 0.425mm sieve:	75%
Minimum passing 75µm sieve:	60%

Moderately reactive silty CLAYS or sandy CLAYS and some of the site derived silty CLAY soils are considered suitable, subject to confirmation ongoing monitoring and laboratory testing.

Low plasticity or non plastic soils are not suitable as fill material over CLAYS unless the depth of filling is less than 400mm.

**Fill Material Over Clayey SILTS, Silty SANDS or SANDS  
(or where filling over CLAY does not exceed a depth of 400mm)**

Maximum Plasticity Index:	16
Minimum Plasticity Index:	Non-plastic
Maximum Particle Size:	20mm
Range passing 4.75mm sieve:	85% - 100%
Range passing 2.36mm sieve:	55% - 95%
Range passing 75µm sieve::	0 – 25%

### **7.3 Site Preparation:**

#### **7.3.1 Drainage:**

Due to the nature and levels of the proposed works it is imperative that, until the fill is at a level where it will self-drain, adequate drainage should be maintained to prevent water being retained in the filling area in the event of significant rainfall.

#### **7.3.2 Site Clearing:**

All trees (including root systems), stumps, debris and other materials determined by Civiltest as unsuitable for incorporation into the filling should be removed and disposed of.

#### **7.3.3 Stripping:**

##### **7.3.3.1. Areas to be Filled:**

Areas to be filled should be cleared as above and then stripped of all vegetation, organic matter and such topsoils as are deemed by Civiltest Pty Ltd as unsuitable for incorporation into the fill.

Stripping and excavation in the areas of existing FILL must extend down to the natural CLAY soils. The surface of the natural soil must be inspected by Civiltest Pty Ltd prior to the placement of new FILL material.

In the areas where FILL was not encountered, stripping and excavation should extend to the natural CLAY, which based on the investigation, is up to 500mm depth from the existing surface level. There could be some variations over the areas that were not covered by the boreholes.

##### **7.3.3.2. Borrow Area(s):**

Any borrow areas should be cleared as above and then stripped of all vegetation, organic matter and such topsoils as are deemed by Civiltest Pty Ltd as unsuitable for incorporation into the fill. Borrow areas should incorporate good surface drainage so as not to inundate the proposed fill material during prolonged wet weather

Soils taken from separate borrow areas for use as fill material on this site should be tested for suitability.

#### **7.3.4 Slope Preparation:**

Where fill abuts sloping ground, it is desirable that the fill be benched into the slope. The cut benches should be shaped to provide free drainage.

#### **7.3.5 Foundation Preparation:**

The base of the proposed fill area should be completely stripped of all vegetation and debris and all soft/wet material removed to expose a firm base to be rolled and approved by Civiltest Pty Ltd prior to placement of any fill. If dry conditions are encountered, the existing surface should be ripped to 100mm below existing surface level and moisture conditioned to between 80% and 100% of the optimum moisture content. Once this is achieved, fill can be placed directly over the compacted surface.

#### **7.4 Backfilling And Compaction:**

##### **7.4.1 Placement of Fill:**

All fill should be placed in horizontal layers of maximum 150mm loose thickness and at a uniform moisture condition between  $\pm 3\%$  of optimum moisture content as determined by either AS1289 5.1.1 or 5.7.1, prior to compaction.

##### **7.4.2 Compaction of Fill:**

Fill shall be compacted to achieve a density ratio of not less than 98% Standard Compaction in all areas, as determined by either AS1289 5.1.1 or 5.7.1

In areas proposed for pavement construction, imported crushed rock material for pavement construction should be placed and compacted to a minimum of 98% of AS 1289 5.2.1 (Modified Compaction).

#### **7.5 Inspections & Testing Of Fill:**

##### **7.5.1** Inspections and testing shall be in accordance with AS3798-2007 Appendix B.

Prior to filling, stripping and moisture conditioning as per Section 3 above, the area to be filled should be inspected by Civiltest Pty Ltd for compliance to this specification

All fill material, either imported or obtained from site, must be inspected, tested where required, and approved by Civiltest Pty Ltd prior to use.

Prior to placing of subsequent layers of fill, the preceding fill layer must be tested for compliance and approved by Civiltest Pty Ltd

##### **7.5.2** Frequency of field density testing shall be in accordance with AS3798-2007 Table 8.1 Type 3 concentrated operations less than 500m<sup>2</sup> large scale operations using test method AS1289 5.8.1 (determination of field density using a nuclear gauge).

#### **8. CONDITIONS OF THE RECOMMENDATIONS:**

**8.1** The recommendations made in this report may need to be reviewed should any site works disturb any soil 300mm below the founding depth of the structure.

**8.2** The descriptions of the soils found in the boreholes closely follow those outlined in AS 1726:2017 (Geotechnical Site Investigations). Colour descriptions can vary with soil moisture content. It should be noted therefore, colour and shade descriptions mentioned in this report are made when the soil is in a moist condition.

In accordance with Appendix D of AS2870–2011, the soil profile and site conditions should be inspected at footing excavation stage by CIVILTEST PTY LTD to confirm the soil profile and site classification.

- 8.3** This report has been compiled and recommendations made based on information supplied in the brief to Civiltest Pty Ltd and from the field investigation and observations made including the extent of, if any, site filling. Every care has been taken within the terms of the brief to ensure that the field investigation is representative of the site. Therefore, if it is found that for any reason information received by Civiltest Pty Ltd is incorrect or conditions on site vary from those described in this report then the comments and recommendations made in this report may need to be amended.
- 8.4** The recommendations given in this report have been based largely on the soil conditions encountered at the time of the field investigation. Under inclement weather or prolonged wet weather conditions, the soil conditions noted and reported in this report could vary. It is advisable to undertake construction during and following good weather conditions - i.e., dry weather conditions - not during or following inclement weather or prolonged wet weather conditions.
- 8.5** The information and any recommendations given in this report are limited to the client named herein.
- 8.6** Whilst CIVILTEST PTY LTD has accepted the commission for the work reported herein, the ownership of the report and any liabilities associated with it, remain with CIVILTEST PTY LTD until all relevant accounts have been paid.
- 8.7** Finally, no responsibility will be taken for this report if it is altered in any way or not reproduced in full.

This report consists of eight pages including one site plan. Appendices A (Engineering Logs) and B (Laboratory Test Results) are attached.



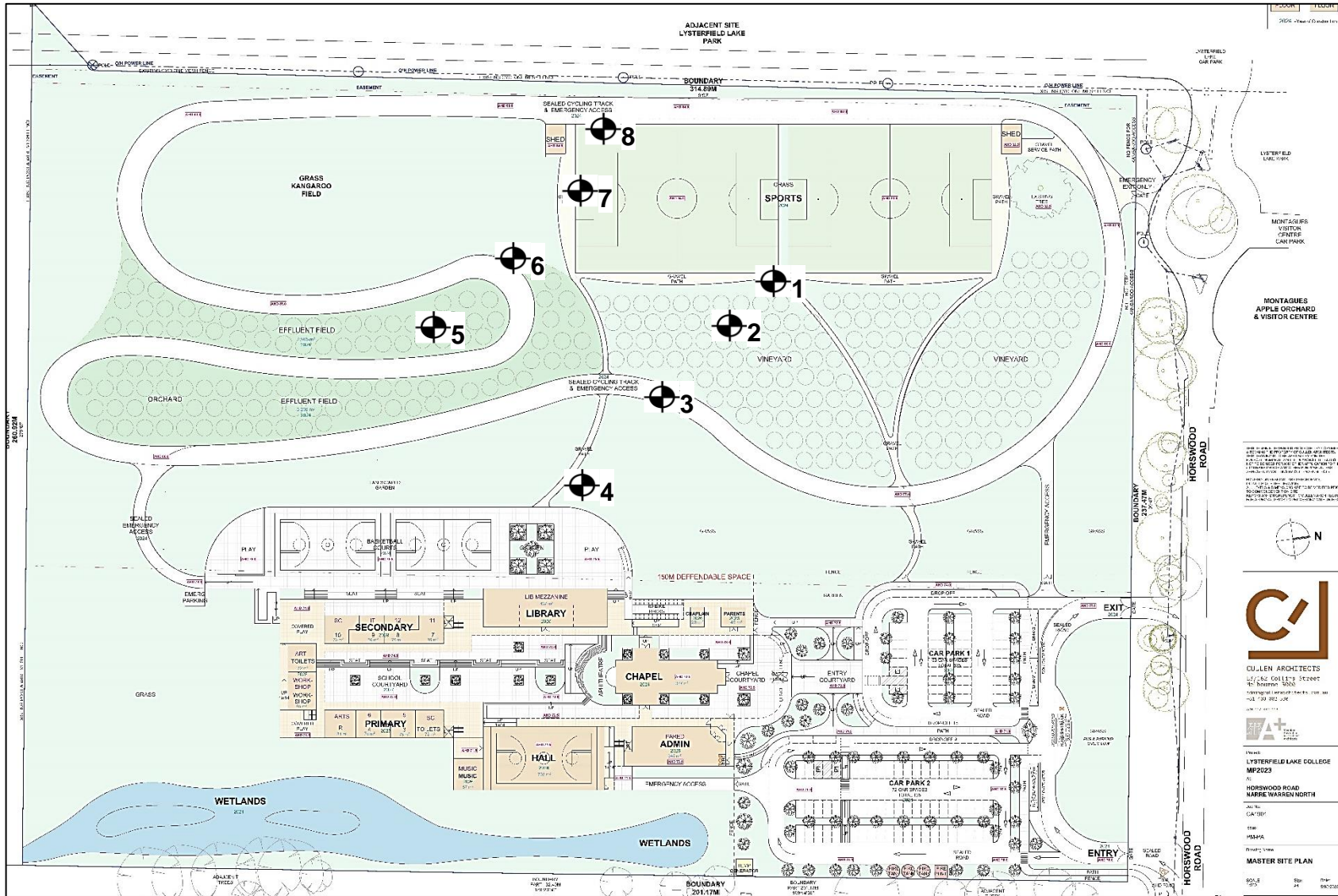
**LIAM COX**  
**SENIOR GEOTECHNICAL ENGINEER**  
**CIVILTEST PTY LTD**

REF: MC/MR/DO/MS/LC/th/mg/sb

30 May 2023

**AMENDMENT:** *This report was first issued on 31 October 2019. Sections of this report were amended on 04 May 2023 and 30 May 2023, and consequently this revised report now takes precedence over any previously dated report.*

**LOCATION OF TEST SITES: Lysterfield Lake College, 19-23 Horswood Rd, Narre Warren NTH**



 Denotes Boreholes

THIS PLAN IS NOT INTENDED TO BE AN ACCURATE DEPICTION OF THE NUMBER, SIZE OR LOCATION OF TREES AND/OR SHRUBS

**NOT TO SCALE**

# APPENDIX A

## ENGINEERING LOGS



# ENGINEERING LOG

REPORT NO. 1191040  
FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 1  
DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm²)
0	SAND, silty, with clay Brown								
0.20	Moist, Medium dense								
0.35	CLAY, silty Brown								
	Moist, Firm								
	CLAY, silty, trace gravel								
	Brown mottled orange grey red								
	Moist, Stiff								
1									
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									



# ENGINEERING LOG

REPORT NO. 1191040  
 FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 3  
 DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm <sup>2</sup> )
0	SAND, silty, with clay								
0.15	Grey Moist, Medium dense								
0.50	CLAY, sandy, trace gravel Pale brown mottled orange Moist to wet, Firm Becoming wet at 0.4m								
1	CLAY, silty, trace gravel Pale brown mottled orange grey Moist, Stiff								
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									

# ENGINEERING LOG

REPORT NO. 1191040  
FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 4  
DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm <sup>2</sup> )
0	SAND, silty, with clay Grey								
0.20	Moist, Medium dense CLAY, sandy, trace gravel Pale brown mottled orange								
0.50	Moist, Firm CLAY, silty, trace gravel Pale brown mottled orange grey Moist, Stiff								
1									
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									

# ENGINEERING LOG

REPORT NO. 1191040  
FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 5  
DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm <sup>2</sup> )
0	SAND, silty, with clay Grey Moist, Medium dense								
0.50	CLAY, silty, with sand Pale brown mottled orange Moist to wet, Firm								
1									
1.10	CLAY, silty, trace gravel Pale brown mottled orange grey Moist, Stiff								
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									

# ENGINEERING LOG

REPORT NO. 1191040  
FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 6  
DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm <sup>2</sup> )
0	SAND, silty, with clay Grey								
0.20	Moist, Medium dense CLAY, sandy, trace gravel								
0.40	Pale brown mottled orange Moist, Firm CLAY, silty, trace gravel Pale brown mottled orange grey Moist, Stiff								
1									
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									

# ENGINEERING LOG

REPORT NO. 1191040  
 FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 7  
 DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm <sup>2</sup> )
0	SAND, silty, with clay Grey								
0.20	Moist, Medium dense CLAY, sandy, trace gravel Pale brown mottled orange								
0.50	Moist, Firm More moist with depth CLAY, silty, trace gravel Pale brown mottled orange grey Moist, Stiff								
1									
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									

# ENGINEERING LOG

REPORT NO. 1191040  
FIELD TECHNICIAN: MC,MR,DO

BOREHOLE NO. 8  
DATE: 11-OCT-2019



DEPTH (m)	STRATA DESCRIPTION	NOTES	GRAPHIC LOG	IN SITU TESTING					
				DEPTH (m)	RESULTS				
					DCP Blows/100mm	FIELD CBR (%)	SPT	MC (%)	PP (kg/cm <sup>2</sup> )
0	SAND, silty, with clay Grey								
0.20	Moist, Medium dense CLAY, sandy, trace gravel Pale brown mottled orange								
0.50	Moist, Firm More moist with depth Becoming wet at 0.4m CLAY, silty, trace gravel Pale brown mottled orange grey								
1	Moist, Stiff								
1.50	END OF BORE (11-Oct-2019)								
2									
3									
4									



# APPENDIX B

## LABORATORY TEST RESULTS

# Material Test Report

**Report Number:** 1191040-2  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
**Client:** Pared VIC T/A Harkaway Hills College  
 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474A  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 21/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH1 (400mm)  
**Material:** CLAY silty

Civiltest Pty Ltd  
 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civiltest.com.au

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*Scott Walsh*

Approved Signatory: Scott Walsh  
 Lab Manager

NATA Accredited Laboratory Number: 1407

### Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	100		0	
4.75 mm	100		0	
2.36 mm	99		1	
1.18 mm	94		5	
0.6 mm	86		8	
0.425 mm	83		3	
0.3 mm	81		2	
0.15 mm	79		2	
0.075 mm	76		2	

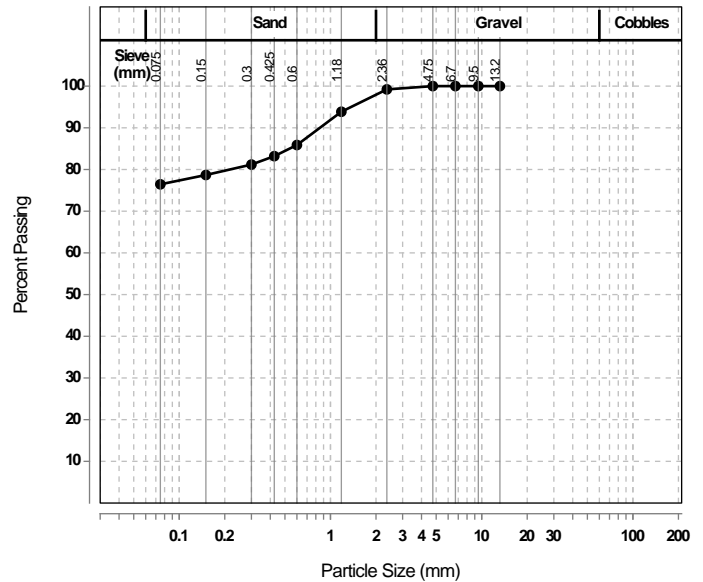
### Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	66	
Plastic Limit (%)	27	
Plasticity Index (%)	39	

### Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	14.5	
Cracking Crumbling Curling	Curling	

Particle Size Distribution



# Material Test Report

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**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474B  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 22/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH2 (400mm)  
**Material:** SAND silty

Civiltest Pty Ltd  
 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
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Approved Signatory: Scott Walsh  
 Lab Manager

NATA Accredited Laboratory Number: 1407

**Particle Distribution (AS1289 3.6.1)**

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	100		0	
4.75 mm	100		0	
2.36 mm	99		1	
1.18 mm	90		9	
0.6 mm	70		20	
0.425 mm	61		9	
0.3 mm	53		7	
0.15 mm	44		9	
0.075 mm	38		6	

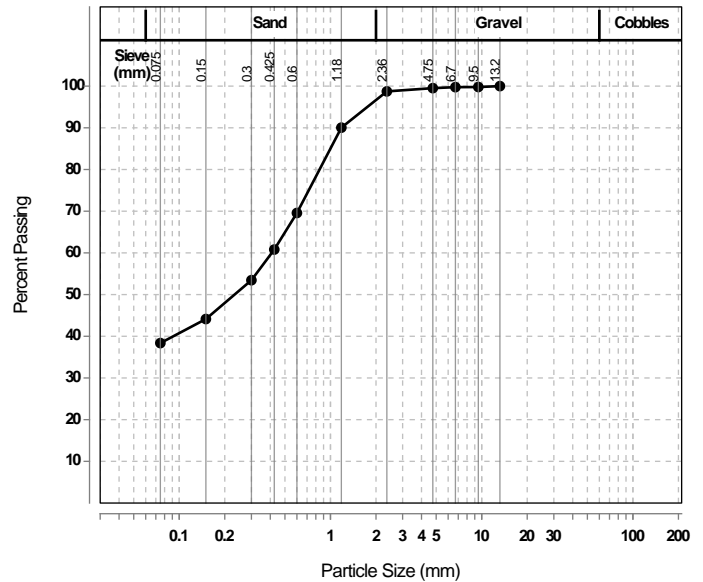
**Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)**

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	21	
Plastic Limit (%)	17	
<b>Plasticity Index (%)</b>	<b>4</b>	

**Linear Shrinkage (AS1289 3.4.1)**

	Min	Max
Linear Shrinkage (%)	4.0	
Cracking Crumbling Curling	None	

**Particle Size Distribution**



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**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474C  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 21/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH3 (400mm)  
**Material:** CLAY silty sandy

Civiltest Pty Ltd  
 Mornington Laboratory  
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## Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	100		0	
4.75 mm	100		0	
2.36 mm	98		2	
1.18 mm	88		10	
0.6 mm	64		24	
0.425 mm	56		8	
0.3 mm	50		6	
0.15 mm	44		6	
0.075 mm	41		3	

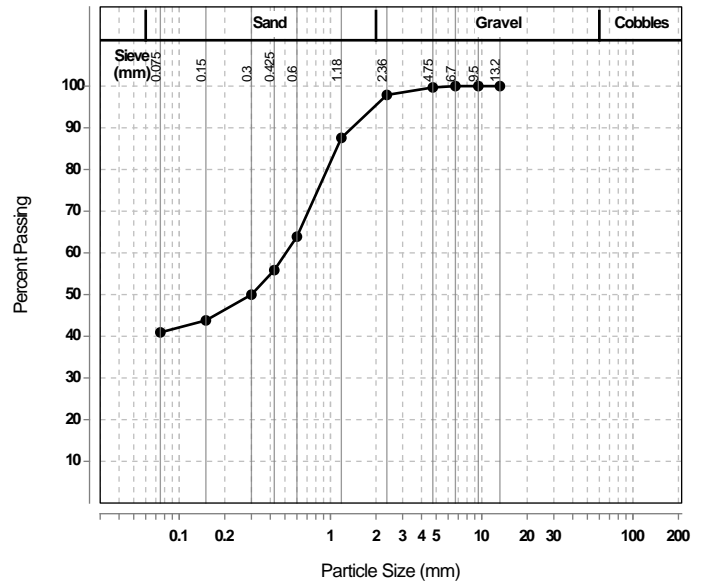
## Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	37	
Plastic Limit (%)	15	
Plasticity Index (%)	22	

## Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	9.0	
Cracking Crumbling Curling	Curling	

Particle Size Distribution



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**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474D  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 18/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH4 (400mm)  
**Material:** CLAY silty sandy

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 Mornington Laboratory  
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 Lab Manager

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### Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	100		0	
4.75 mm	99		1	
2.36 mm	97		2	
1.18 mm	86		11	
0.6 mm	68		18	
0.425 mm	62		6	
0.3 mm	57		5	
0.15 mm	53		4	
0.075 mm	50		2	

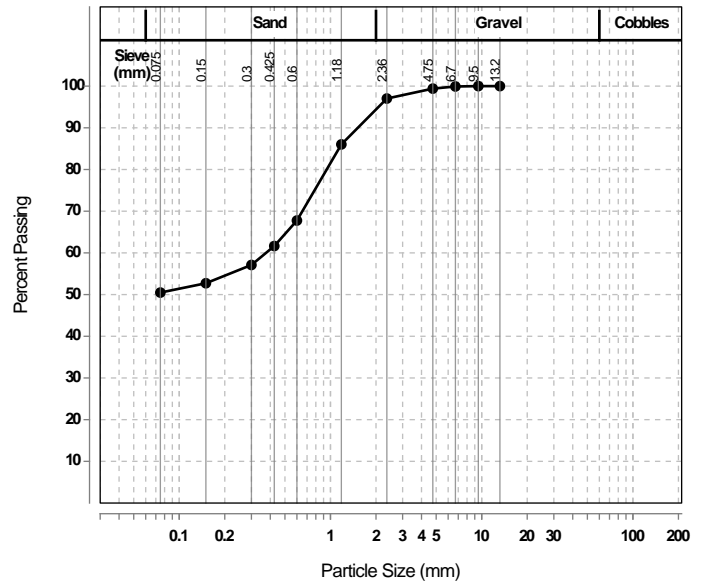
### Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	44	
Plastic Limit (%)	18	
Plasticity Index (%)	26	

### Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	10.0	
Cracking Crumbling Curling	Curling	

Particle Size Distribution



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**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474E  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 24/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH5 (400mm)  
**Material:** CLAY silty sandy

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 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civiltest.com.au

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*Scott Walsh*

Approved Signatory: Scott Walsh  
 Lab Manager

NATA Accredited Laboratory Number: 1407

### Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	100		0	
4.75 mm	100		0	
2.36 mm	98		2	
1.18 mm	89		9	
0.6 mm	66		22	
0.425 mm	57		10	
0.3 mm	49		8	
0.15 mm	42		7	
0.075 mm	38		4	

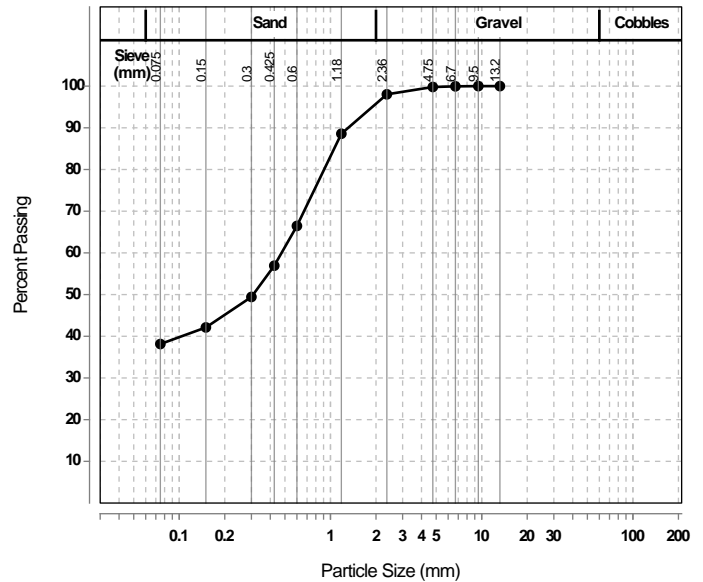
### Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	18	
Plastic Limit (%)	16	
Plasticity Index (%)	2	

### Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	2.5	
Cracking Crumbling Curling	None	

Particle Size Distribution



# Material Test Report

**Report Number:** 1191040-2  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
**Client:** Pared VIC T/A Harkaway Hills College  
 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474F  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 22/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH6 (600mm)  
**Material:** CLAY silty

Civiltest Pty Ltd  
 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civiltest.com.au

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*Scott Walsh*

Approved Signatory: Scott Walsh  
 Lab Manager  
 NATA Accredited Laboratory Number: 1407

### Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	100		0	
9.5 mm	100		0	
6.7 mm	100		0	
4.75 mm	100		0	
2.36 mm	100		0	
1.18 mm	97		2	
0.6 mm	92		5	
0.425 mm	90		2	
0.3 mm	89		2	
0.15 mm	87		2	
0.075 mm	86		1	

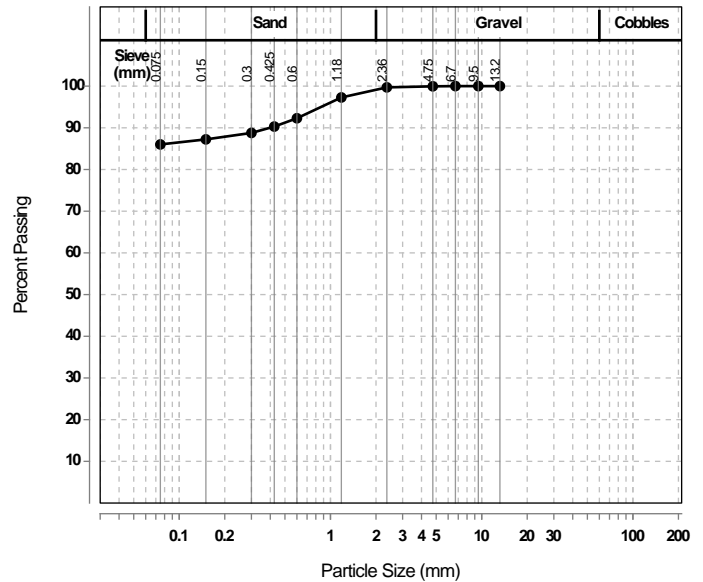
### Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	72	
Plastic Limit (%)	27	
Plasticity Index (%)	45	

### Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	17.0	
Cracking Crumbling Curling	Curling	

Particle Size Distribution



# Material Test Report

**Report Number:** 1191040-2  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
**Client:** Pared VIC T/A Harkaway Hills College  
 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474G  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 23/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH7 (400mm)  
**Material:** CLAY silty

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 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civiltest.com.au

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 Lab Manager

NATA Accredited Laboratory Number: 1407

### Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
4.75 mm	100		0	
2.36 mm	99		1	
1.18 mm	93		6	
0.6 mm	85		8	
0.425 mm	82		3	
0.3 mm	79		3	
0.15 mm	75		3	
0.075 mm	73		2	

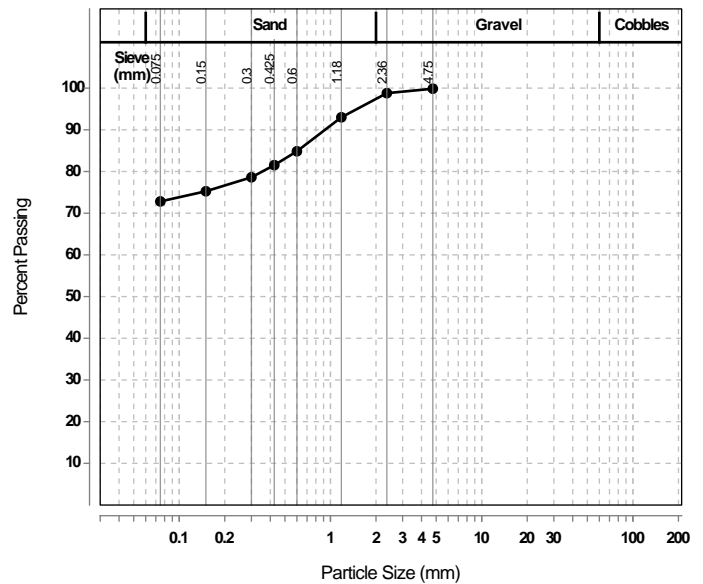
### Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Oven Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	53	
Plastic Limit (%)	23	
Plasticity Index (%)	30	

### Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	13.0	
Cracking Crumbling Curling	Curling	

Particle Size Distribution





# Material Test Report

**Report Number:** 1191040-2  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
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 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474H  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 22/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH8 (400mm)  
**Material:** CLAY silty

Civiltest Pty Ltd  
 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civiltest.com.au

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*Scott Walsh*

Approved Signatory: Scott Walsh  
 Lab Manager  
 NATA Accredited Laboratory Number: 1407

### Particle Distribution (AS1289 3.6.1)

Sieve	Passed %	Passing Limits	Retained %	Retained Limits
13.2 mm	98		2	
9.5 mm	97		1	
6.7 mm	97		0	
4.75 mm	97		1	
2.36 mm	94		2	
1.18 mm	83		12	
0.6 mm	70		13	
0.425 mm	65		5	
0.3 mm	62		4	
0.15 mm	57		4	
0.075 mm	54		3	

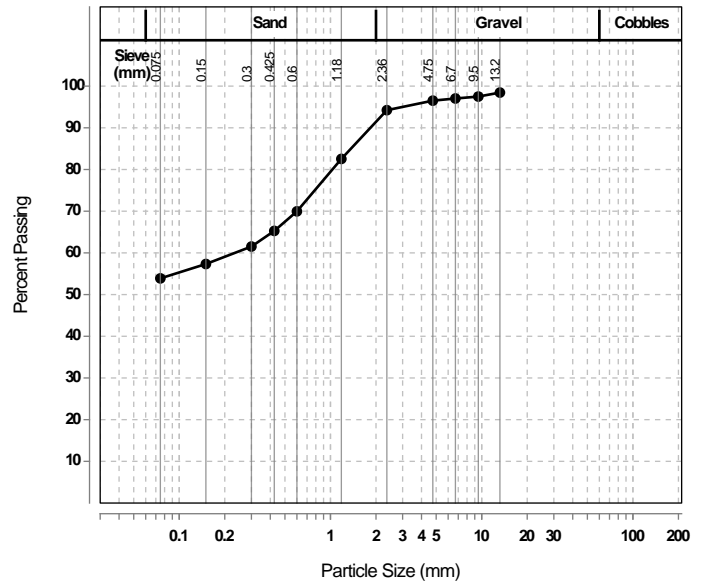
### Atterberg Limit (AS1289 3.1.2 & 3.2.1 & 3.3.1)

	Min	Max
Sample History	Air Dried	
Preparation Method	Dry Sieve	
Liquid Limit (%)	59	
Plastic Limit (%)	21	
<b>Plasticity Index (%)</b>	<b>38</b>	

### Linear Shrinkage (AS1289 3.4.1)

	Min	Max
Linear Shrinkage (%)	14.0	
Cracking Crumbling Curling	Curling	

Particle Size Distribution



# Material Test Report

**Report Number:** 1191040-2  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
**Client:** Pared VIC T/A Harkaway Hills College  
 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474I  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 18/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH1 (400mm-600mm)  
**Material:** CLAY silty

Civiltest Pty Ltd  
 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civiltest.com.au

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 Lab Manager  
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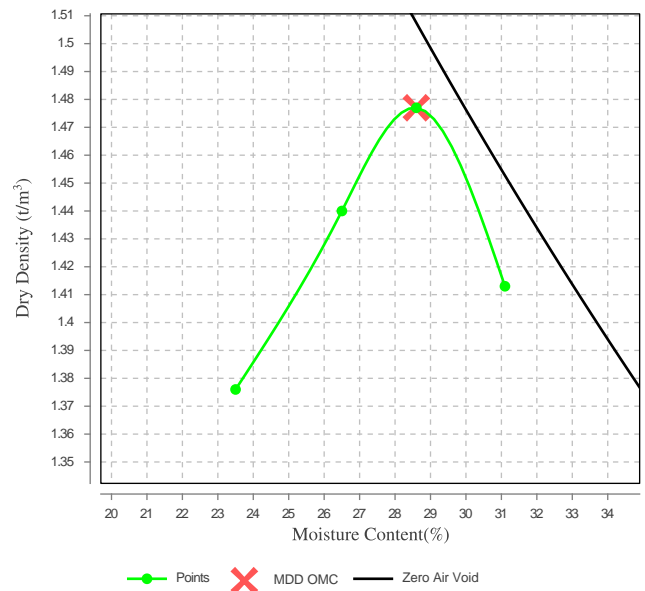
## Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)

Mould Type	1 LITRE MOULD A
Compaction	Standard
No. Layers	3
No. Blows / Layer	25
Maximum Dry Density (t/m <sup>3</sup> )	1.48
Optimum Moisture Content (%)	28.5
Retained on 19mm (%)	
Oversize Sieve (mm)	19
Oversize Material Wet (%)	
Oversize Material Dry (%)	
Dry Oversize density (t/m <sup>3</sup> )	
Method used to Determine Plasticity	Visual
Curing Hours	168

## Moisture Content (AS 1289 2.1.1)

Moisture Content (%)	32.3
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Moisture Density Relationship



# Material Test Report

**Report Number:** 1191040-2  
**Issue Number:** 2 - This version supersedes all previous issues  
**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
**Client:** Pared VIC T/A Harkaway Hills College  
 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474J  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 18/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH3 (400mm-600mm)  
**Material:** CLAY silty sandy

Civiltest Pty Ltd  
 Mornington Laboratory  
 10 Latham Street Mornington Vic 3931  
 Phone: (03) 5975 6644  
 Fax: (03) 5975 9589  
 Email: scott.walsh@civilttest.com.au

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 Lab Manager  
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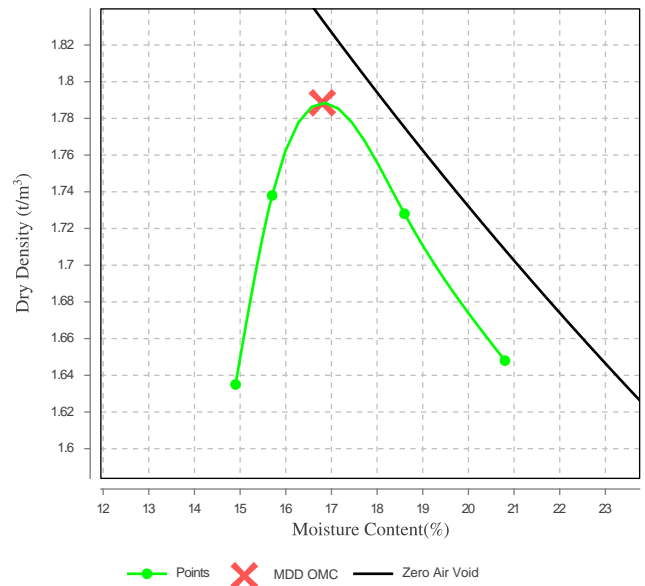
### Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)

Mould Type	1 LITRE MOULD A
Compaction	Standard
No. Layers	3
No. Blows / Layer	25
Maximum Dry Density ( $t/m^3$ )	1.79
Optimum Moisture Content (%)	17.0
Retained on 19mm (%)	
Oversize Sieve (mm)	19
Oversize Material Wet (%)	
Oversize Material Dry (%)	
Dry Oversize density ( $t/m^3$ )	
Method used to Determine Plasticity	Visual
Curing Hours	168

### Moisture Content (AS 1289 2.1.1)

Moisture Content (%)	20.2
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Moisture Density Relationship



# Material Test Report

**Report Number:** 1191040-2  
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**Reissue Reason:** mdr's reported  
**Date Issued:** 31/10/2019  
**Client:** Pared VIC T/A Harkaway Hills College  
 PO Box 420, NARRE WARREN NORTH VIC 3806  
**Project Number:** 1191040  
**Project Name:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Project Location:** Lysterfield Lake College, 19-23 Horswood Road NARRE WARREN NORTH  
**Work Request:** 4474  
**Sample Number:** 191-4474K  
**Date Sampled:** 11/10/2019  
**Dates Tested:** 11/10/2019 - 16/10/2019  
**Sampling Method:** AS1289 1.2.1 6.5.3 - Power auger drilling  
**Sample Location:** BH8 (400mm-600mm)  
**Material:** CLAY silty

Civiltest Pty Ltd  
 Mornington Laboratory  
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 Phone: (03) 5975 6644  
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## Dry Density - Moisture Relationship (AS 1289 5.1.1 & 2.1.1)

Mould Type	1 LITRE MOULD A
Compaction	Standard
No. Layers	3
No. Blows / Layer	25
Maximum Dry Density (t/m <sup>3</sup> )	1.59
Optimum Moisture Content (%)	22.0
Retained on 19mm (%)	
Oversize Sieve (mm)	19
Oversize Material Wet (%)	
Oversize Material Dry (%)	
Dry Oversize density (t/m <sup>3</sup> )	
Method used to Determine Plasticity	Visual
Curing Hours	116

## Moisture Content (AS 1289 2.1.1)

Moisture Content (%)	24.2
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Moisture Density Relationship

