

APPENDIX F
CBR Test Results

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

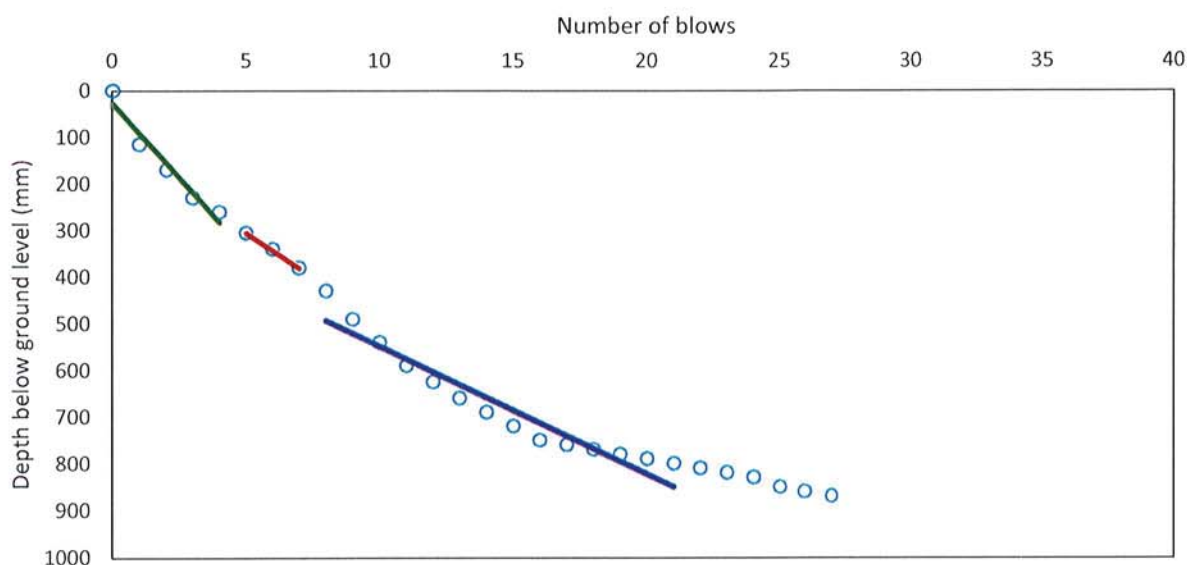
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP1



Layer 0-280mm bgl

50th Percentile penetration rate

32 mm/blow

Estimated CBR

7.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

65.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

101.9 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

19 mm/blow

Estimated CBR

13.4 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

92.7 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

146.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

14 mm/blow

Estimated CBR

18.6 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

114.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

181.9 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

Report date: 05/08/2021

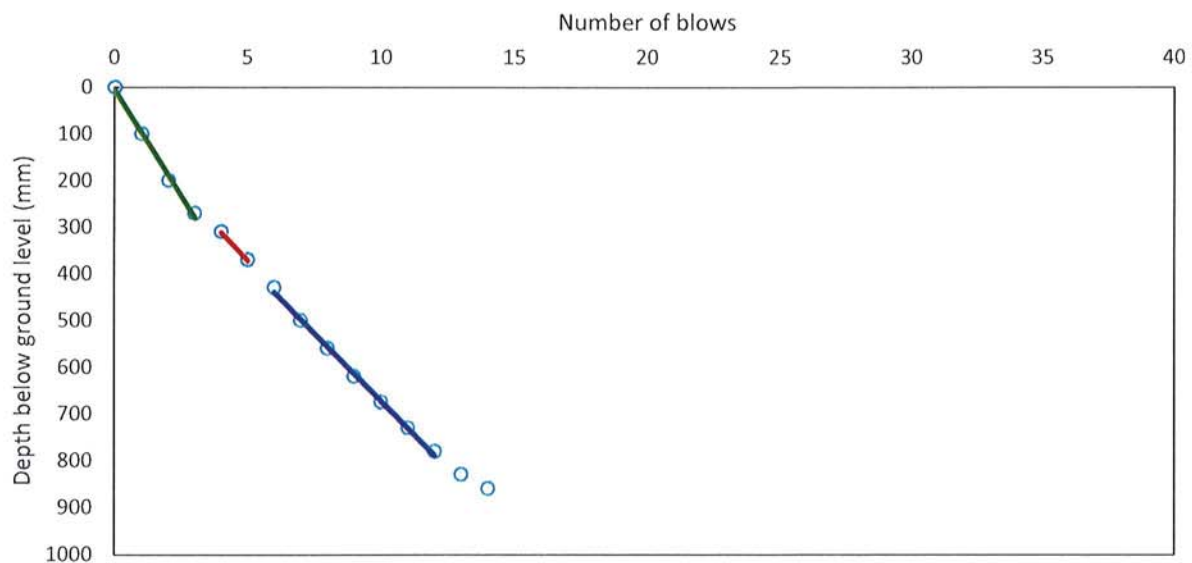
Well House Barns • Bretton • CH4 0DH

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP2



Layer 0-280mm bgl

50th Percentile penetration rate

46 mm/blow

Estimated CBR

5.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

51.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

79.0 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

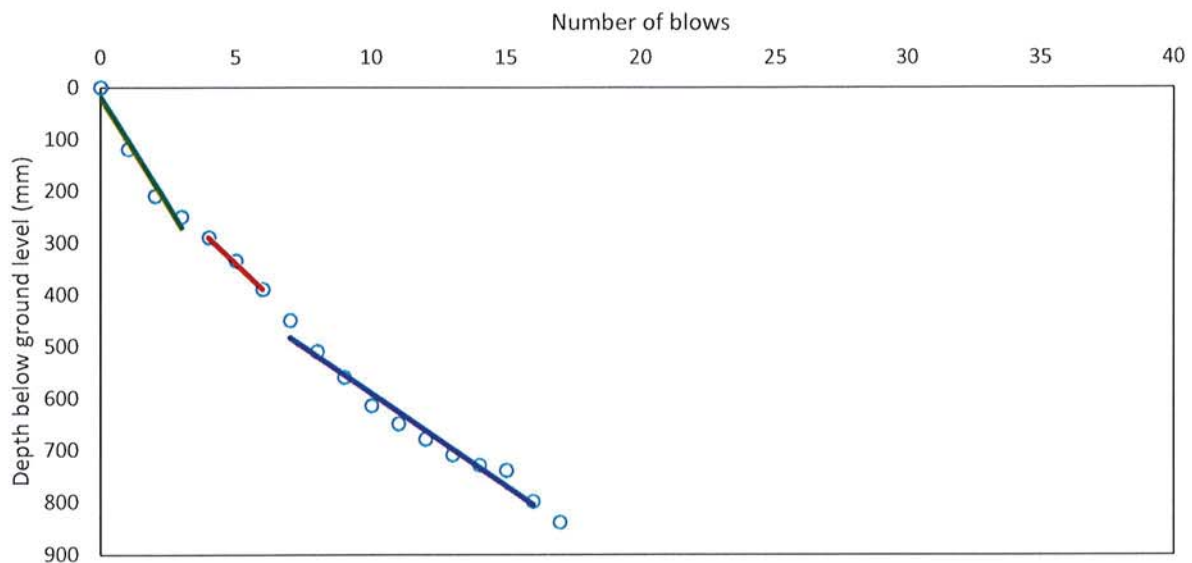
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP3



Layer 0-280mm bgl

50th Percentile penetration rate

42 mm/blow

Estimated CBR

5.8 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

54.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

84.2 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

25 mm/blow

Estimated CBR

10.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

77.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

121.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

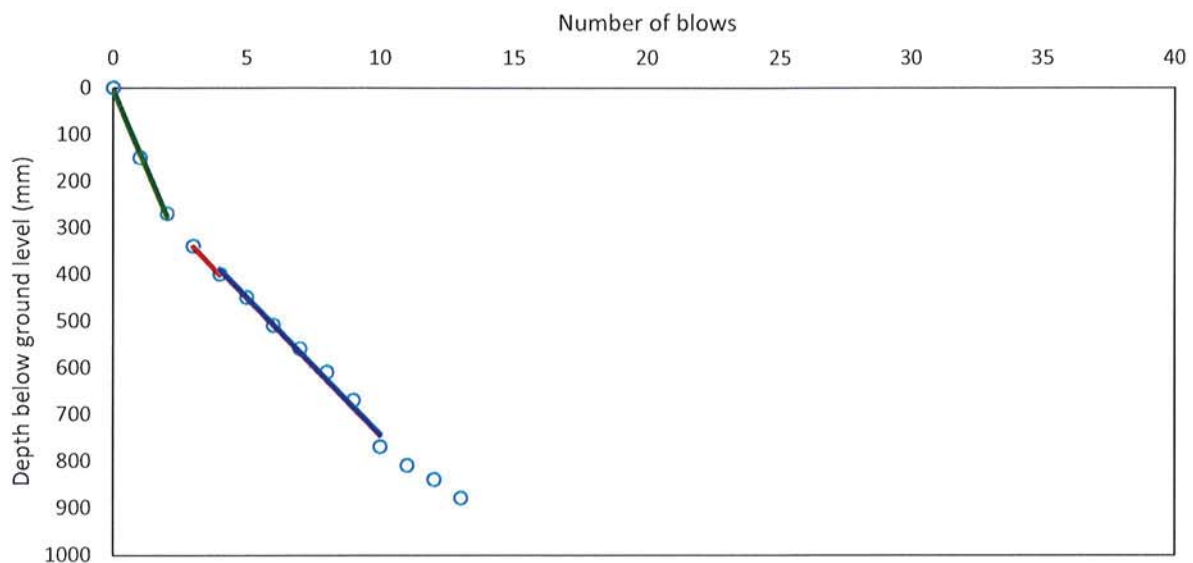
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP4



Layer 0-280mm bgl

50th Percentile penetration rate

68 mm/blow

Estimated CBR

3.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

39.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

60.0 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

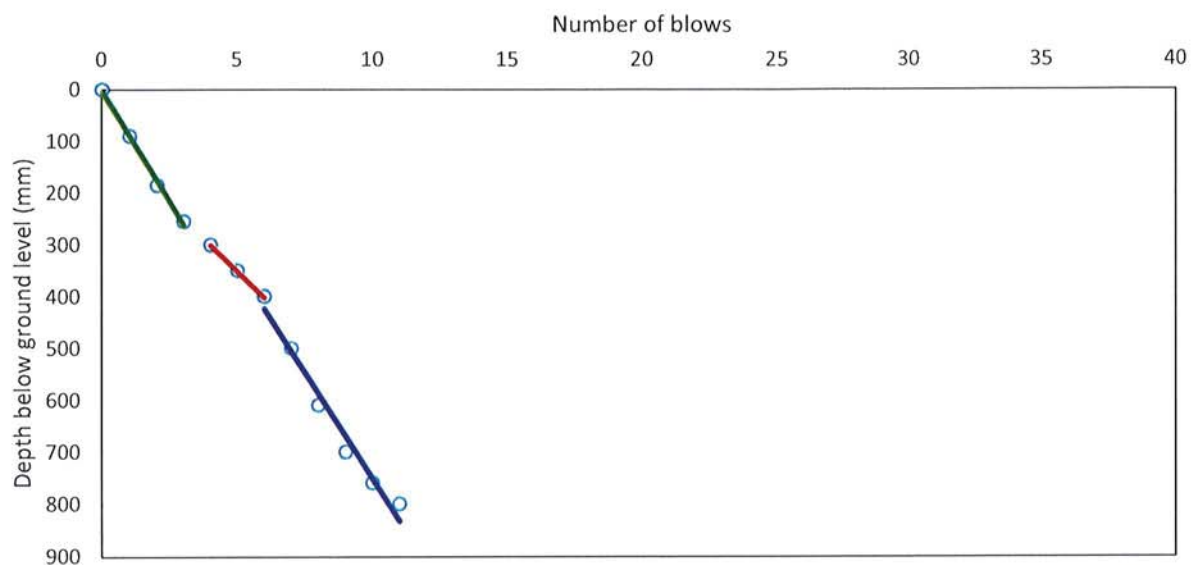
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP5



Layer 0-280mm bgl

50th Percentile penetration rate

43 mm/blow

Estimated CBR

5.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

53.4 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

82.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

25 mm/blow

Estimated CBR

10.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

77.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

121.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

41 mm/blow

Estimated CBR

6.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

55.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

85.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

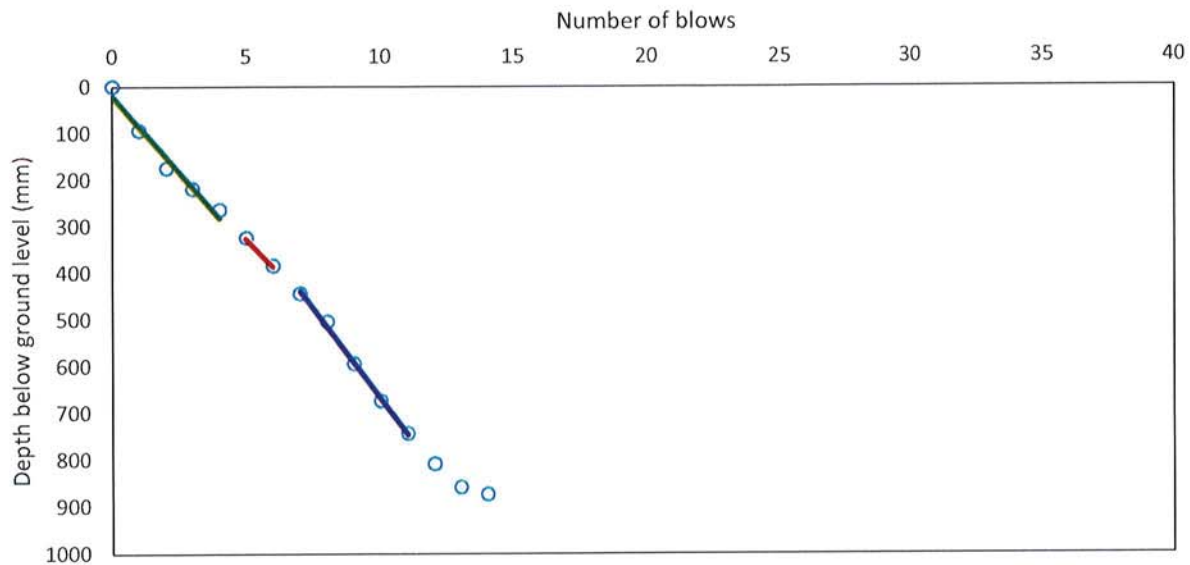
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP6



Layer 0-280mm bgl

50th Percentile penetration rate

33 mm/blow

Estimated CBR

7.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

63.8 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

99.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

39 mm/blow

Estimated CBR

6.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

57.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

88.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

GroundSolve Ltd

Well House Barns • Bretton • CH4 0DH

Project: 2585

Project name: St Peters Close

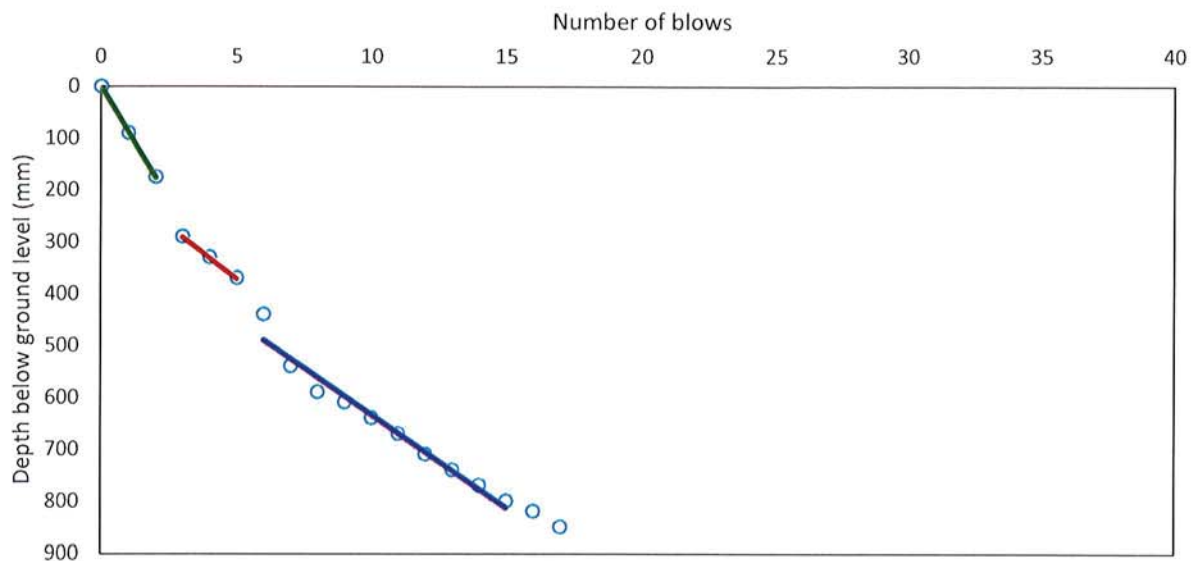
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP7



Layer 0-280mm bgl

50th Percentile penetration rate

44 mm/blow

Estimated CBR

5.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

52.5 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

81.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

20 mm/blow

Estimated CBR

12.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

89.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

141.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

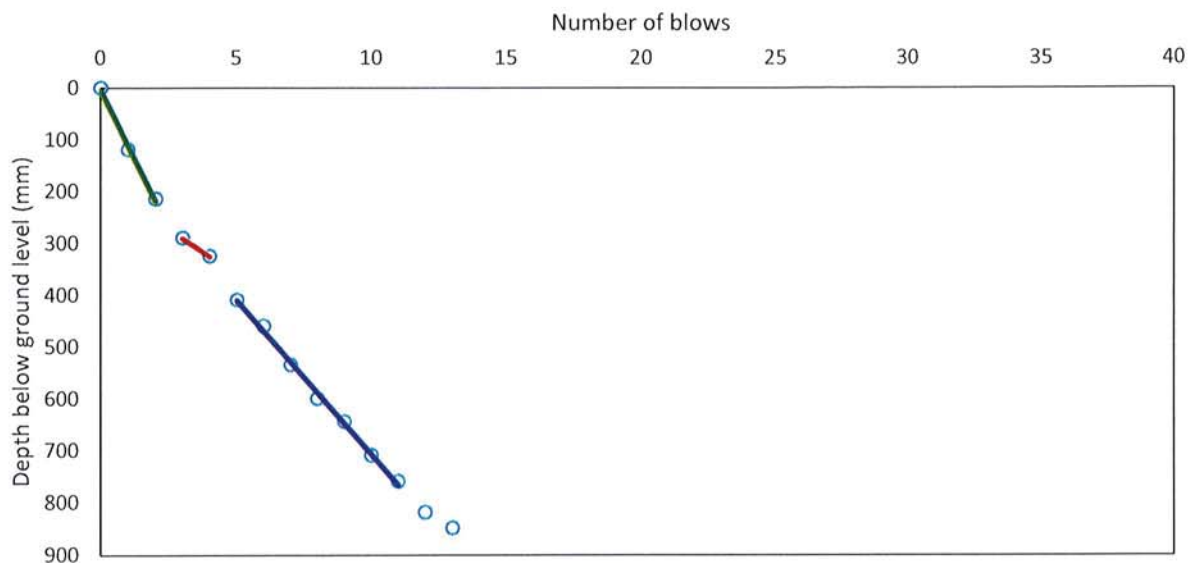
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP8



Layer 0-280mm bgl

50th Percentile penetration rate

54 mm/blow

Estimated CBR

4.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

45.7 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

70.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

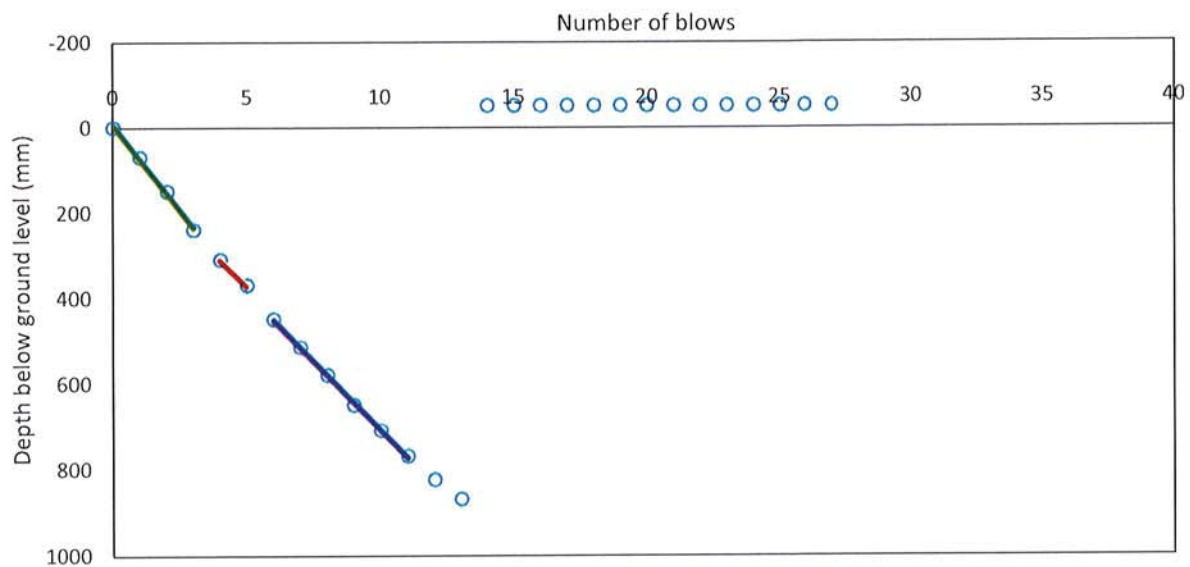
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP9



Layer 0-280mm bgl

50th Percentile penetration rate

40 mm/blow

Estimated CBR

6.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

56.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

87.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

30 mm/blow

Estimated CBR

8.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

68.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

106.6 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

33 mm/blow

Estimated CBR

7.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

63.8 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

99.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

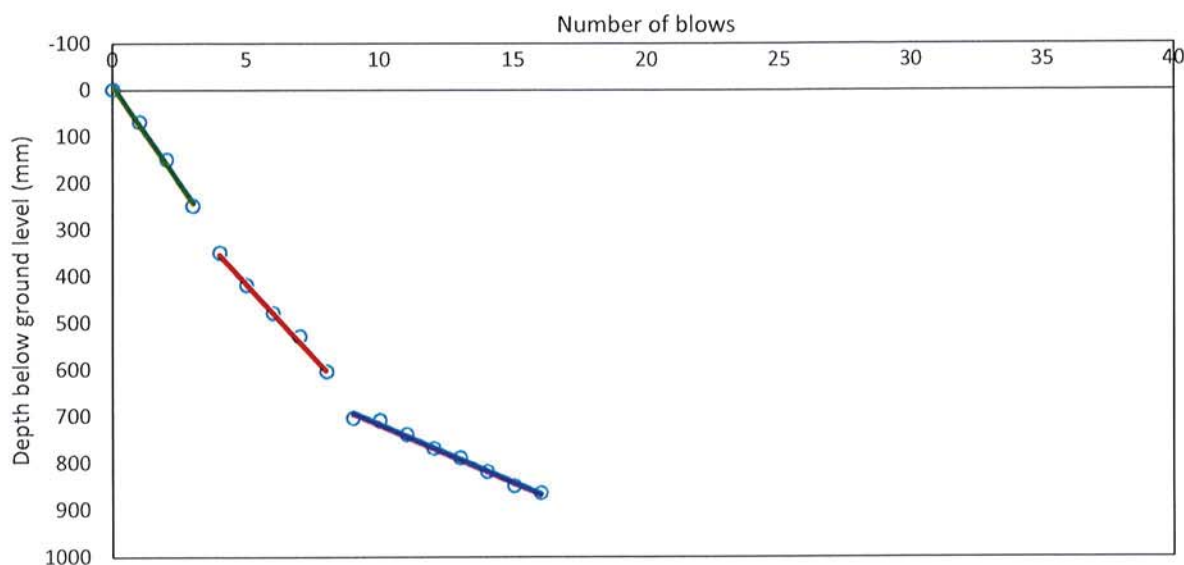
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP10



Layer 0-280mm bgl

50th Percentile penetration rate

42 mm/blow

Estimated CBR

5.8 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

54.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

84.2 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 350-700mm bgl

50th Percentile penetration rate

31 mm/blow

Estimated CBR

8.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

66.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

104.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 700-900mm bgl

50th Percentile penetration rate

13 mm/blow

Estimated CBR

20.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

119.9 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

191.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

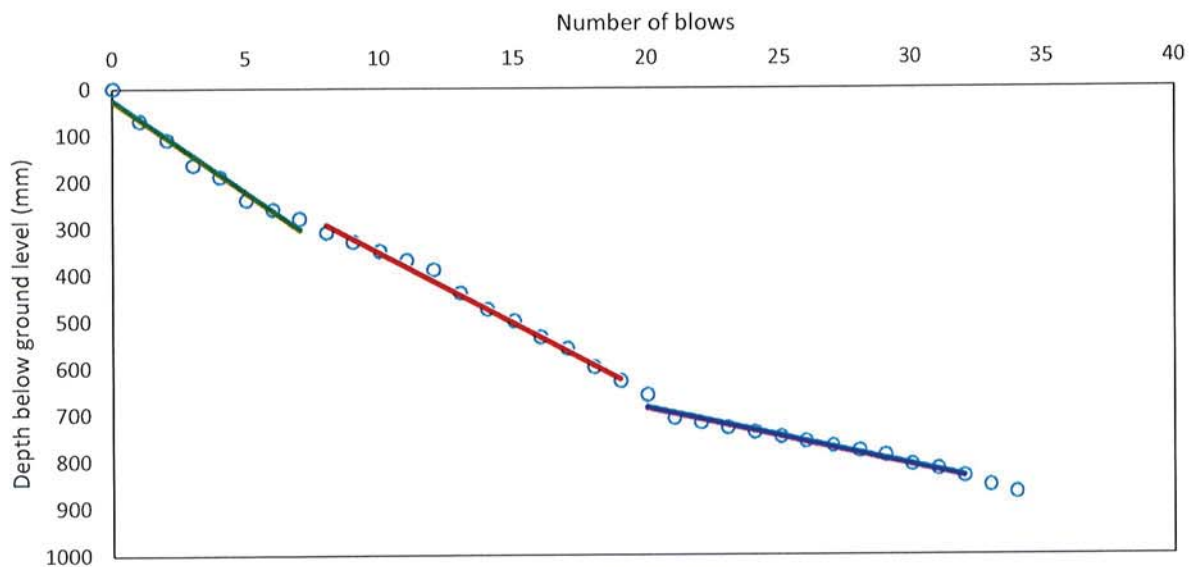
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP11



Layer 0-300mm bgl

50th Percentile penetration rate

20 mm/blow

Estimated CBR

12.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

89.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

141.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 300-650mm bgl

50th Percentile penetration rate

16 mm/blow

Estimated CBR

16.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

104.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

165.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 650-850mm bgl

50th Percentile penetration rate

7 mm/blow

Estimated CBR

38.6 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

182.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

296.0 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

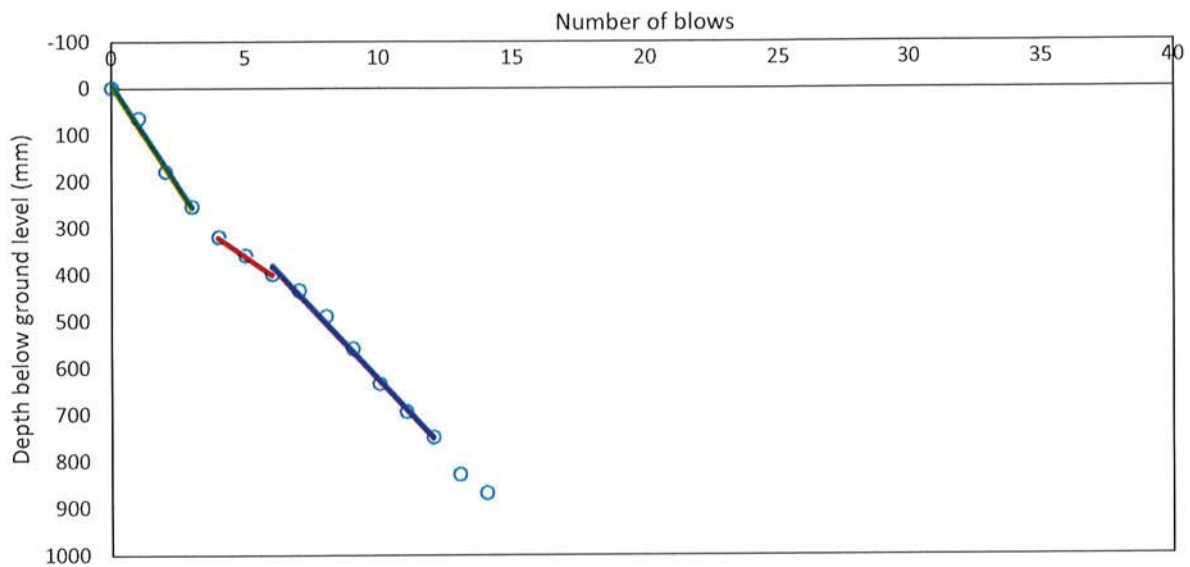
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP12

**Layer 0-280mm bgl**

50th Percentile penetration rate

44 mm/blow

Estimated CBR

5.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

52.5 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

81.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 280-400mm bgl

50th Percentile penetration rate

20 mm/blow

Estimated CBR

12.7 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

89.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

141.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

31 mm/blow

Estimated CBR

8.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

66.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

104.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

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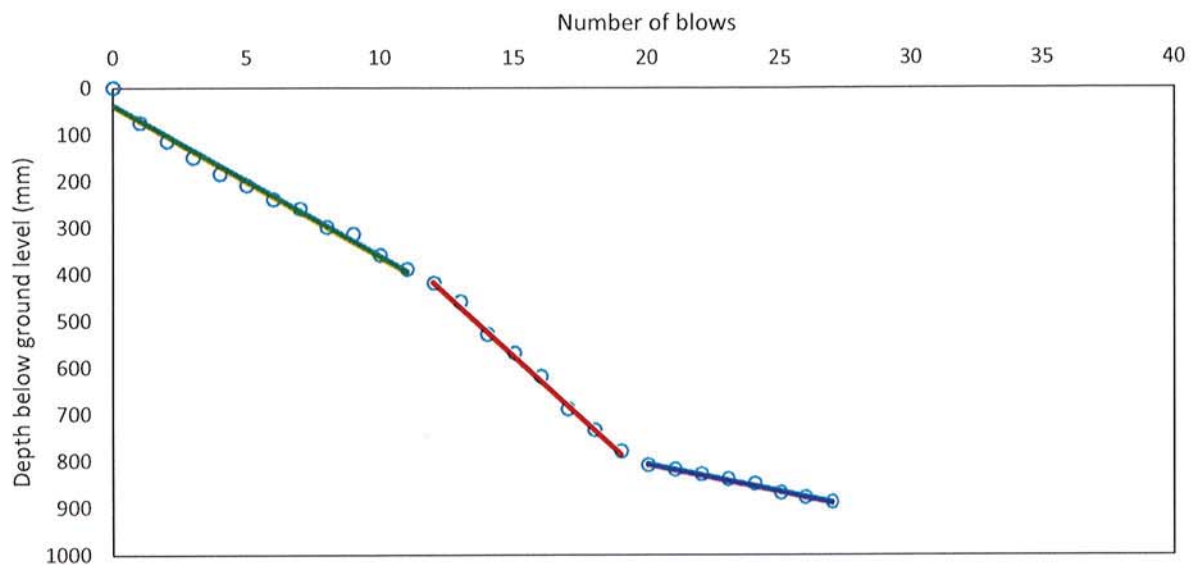
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP13



Layer 0-400mm bgl

50th Percentile penetration rate

17 mm/blow

Estimated CBR

15.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

100.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

158.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-800mm bgl

50th Percentile penetration rate

27 mm/blow

Estimated CBR

9.3 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

73.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

114.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 800-900mm bgl

50th Percentile penetration rate

6 mm/blow

Estimated CBR

45.4 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

202.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

329.8 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

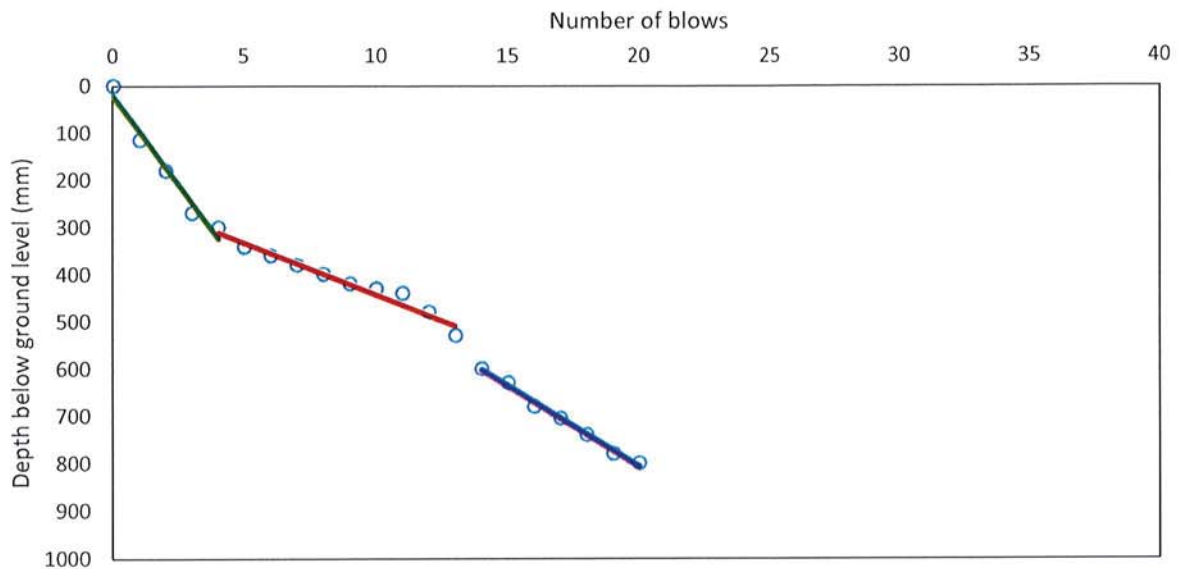
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP14



Layer 0-300mm bgl

50th Percentile penetration rate

38 mm/blow

Estimated CBR

6.5 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

58.0 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

90.3 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 300-550mm bgl

50th Percentile penetration rate

11 mm/blow

Estimated CBR

23.9 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

134.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

215.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 550-800mm bgl

50th Percentile penetration rate

18 mm/blow

Estimated CBR

14.2 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

96.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

152.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

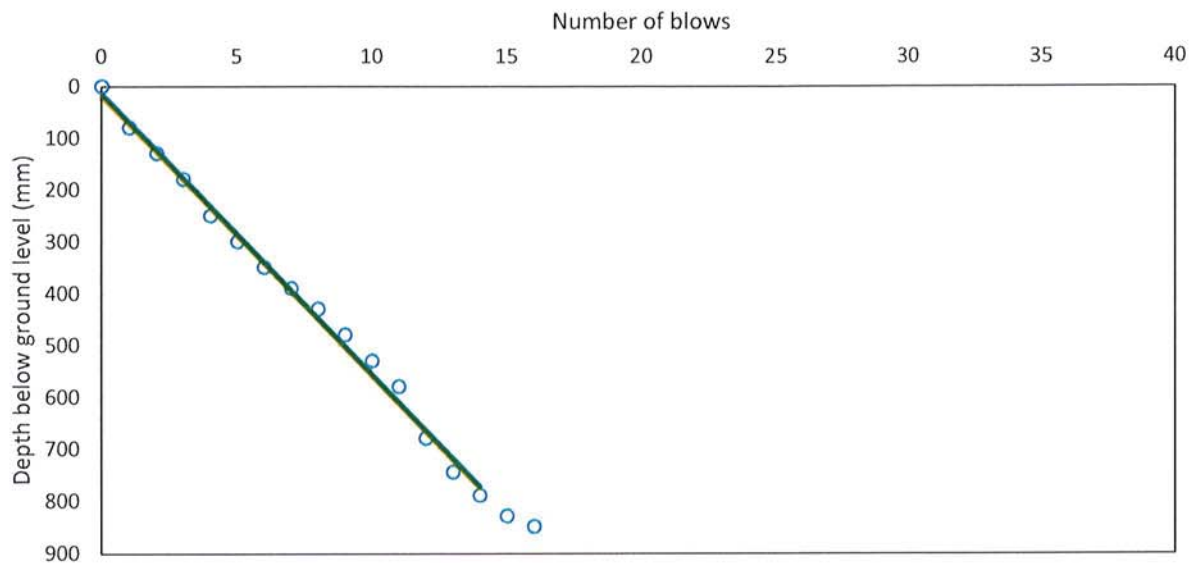
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP15



Layer 0-800mm bgl

50th Percentile penetration rate

28 mm/blow

Estimated CBR

8.9 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

71.3 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

111.9 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

DYNAMIC CONE PENETROMETER TEST REPORT

Project: 2585

Project name: St Peters Close

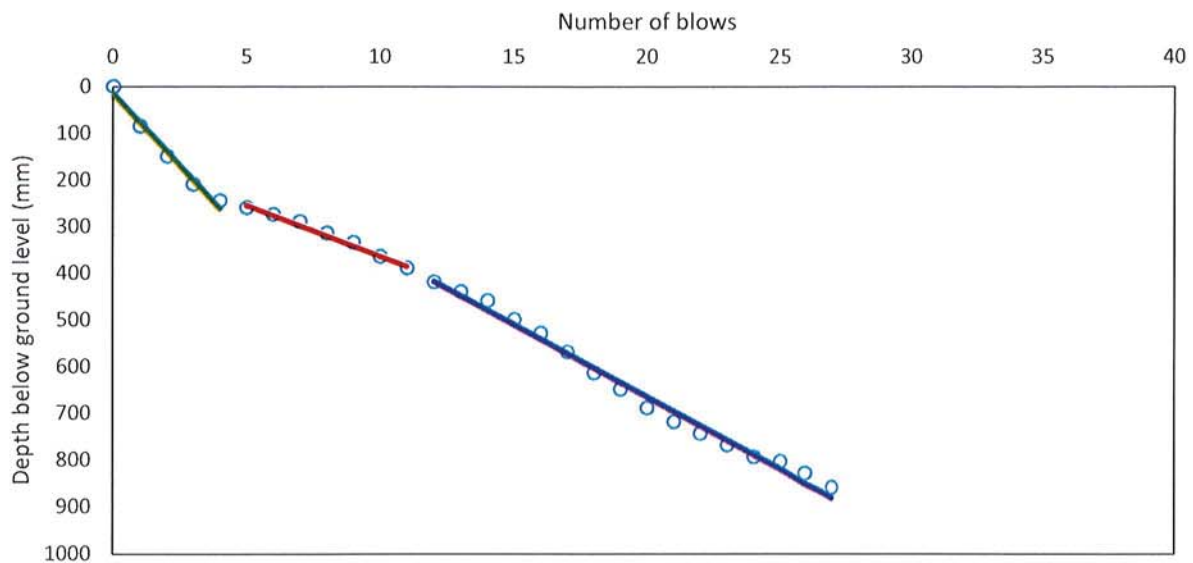
Report date: 05/08/2021

Operator: CK

Notes:

Test date: 05/08/2021

Test location: DCP16



Layer 0-250mm bgl

50th Percentile penetration rate

31 mm/blow

Estimated CBR

8.0 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

66.6 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

104.1 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 250-400mm bgl

50th Percentile penetration rate

11 mm/blow

Estimated CBR

23.9 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

134.2 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

215.5 kPa

[PCA - Design of Concrete Pavement. 1955]

Layer 400-900mm bgl

50th Percentile penetration rate

16 mm/blow

Estimated CBR

16.1 %

[IAN 73/06 Rev1 (2009) - Clause 893]

Subgrade surface modulus

104.1 MPa

[TRRL LR 1132 - Appendix C Equation C1]

Estimated bearing capacity

165.7 kPa

[PCA - Design of Concrete Pavement. 1955]

Produced by	Dated	Checked by	Dated
TG	05/08/21		

APPENDIX G
Physical Test Results



LABORATORY REPORT



4043

Contract Number: PSL21/6865

Report Date: 02 September 2021

Client's Reference:

Client Name: Dets
Park Rd Industrial Estate
South Consett
Co Durham
DH8 5PY

For the attention of: Adam Fenwick

Contract Title: 21-17044

Date Received: 25/8/2021

Date Commenced: 25/8/2021

Date Completed: 2/9/2021

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

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Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

4043

PSL

Professional Soils Laboratory

21-17044

Contract No:

PSI.21/6865

Client Ref:

(BS1377 : PART 2 : 1990)

SYMBOLS : NP : Non Plastic * : Liquid Limit and Plastic Limit Wet Sieved.

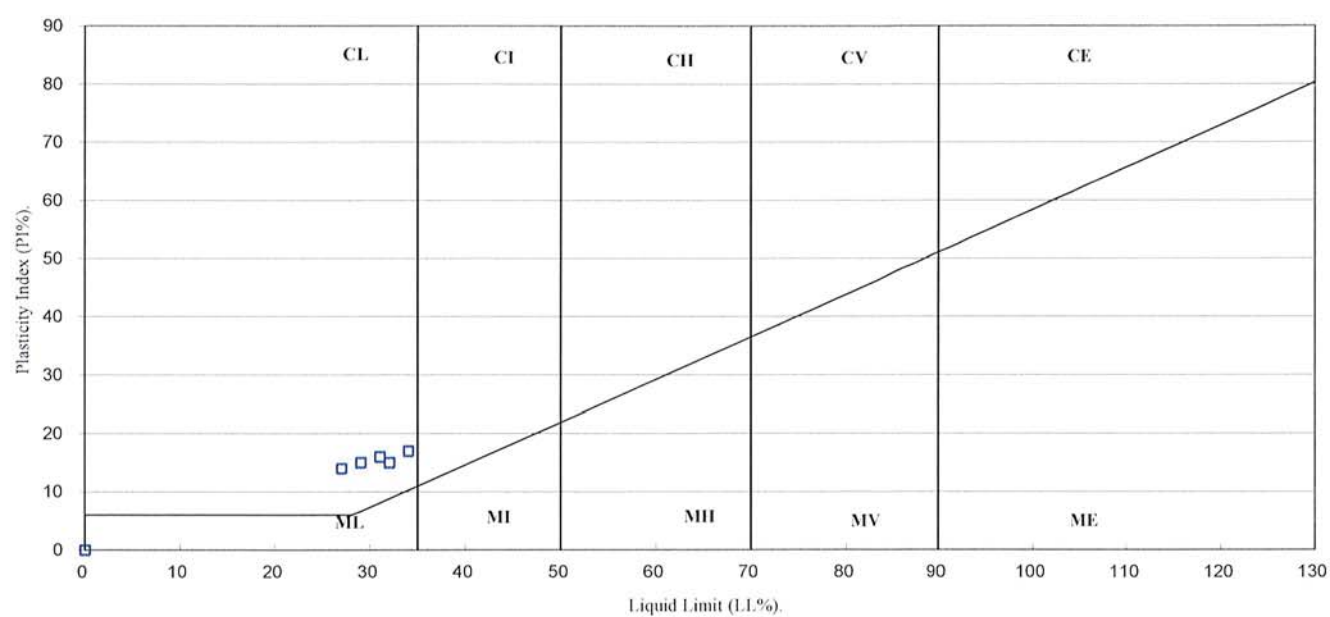
21-17044

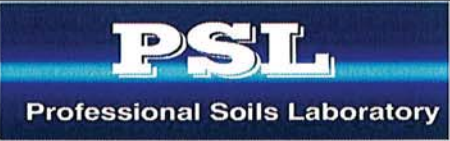
Contract No:

PSL21/6865

Client Ref:

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



 4043	 Professional Soils Laboratory	21-17044	Contract No:
			PSL21/6865
			Client Ref:

APPENDIX H
Chemical Test Results



Certificate of Analysis

Certificate Number 21-17044

Issued: 02-Sep-21

Client GroundSolve Limited
Unit 1
Well House Barns
Bretton
Flintshire
FAO Adam Fenwick
CH4 0DH

Our Reference 21-17044

Client Reference 2585

Order No (not supplied)

Contract Title St Peters Close

Description 10 Soil samples.

Date Received 13-Aug-21

Date Started 13-Aug-21

Date Completed 02-Sep-21

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
Client Ref 2585
Contract Title St Peters Close

Lab No	1889374	1889375	1889376	1889377	1889378	1889379
Sample ID	TP01	TP01	TP04	TP04	TP06	TP07
Depth	0.20	1.00	1.00	0.20	0.20	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%			11	12		11
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13			8.1	9.2	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.2			0.3	0.5	
Cadmium	DETSC 2301#	0.1	mg/kg	0.2			0.3	0.4	
Chromium	DETSC 2301#	0.15	mg/kg	16			15	21	
Chromium III	DETSC 2301*	0.15	mg/kg	16			15	21	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0			< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	26			17	29	
Lead	DETSC 2301#	0.3	mg/kg	81			53	87	
Mercury	DETSC 2325#	0.05	mg/kg	0.09			0.06	0.11	
Nickel	DETSC 2301#	1	mg/kg	14			12	13	
Selenium	DETSC 2301#	0.5	mg/kg	2.4			1.9	1.6	
Zinc	DETSC 2301#	1	mg/kg	220			170	66	
Inorganics									
pH	DETSC 2008#		pH	6.5	7.2	7.7		5.7	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5			0.5	0.7	
Organic matter	DETSC 2002#	0.1	%	4.0			4.2	4.6	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	95	62	33	16	19	
Sulphide	DETSC 2024*	10	mg/kg	24			< 10	20	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.3			< 0.75	2.1	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2			< 1.2	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4			< 3.4	< 3.4	
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4			< 3.4	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01	< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9			< 0.9	< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5			< 0.5	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6			< 0.6	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4			< 1.4	< 1.4	
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4			< 1.4	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10	< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10	< 10	
PAHs									

Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
 Client Ref 2585
 Contract Title St Peters Close

Lab No	1889374	1889375	1889376	1889377	1889378	1889379
Sample ID	TP01	TP01	TP04	TP04	TP06	TP07
Depth	0.20	1.00	1.00	0.20	0.20	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Naphthalene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Acenaphthylene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Acenaphthene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Fluorene	DETS 3303	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Phenanthrene	DETS 3303#	0.03	mg/kg	0.05			< 0.03	< 0.03	
Anthracene	DETS 3303	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Fluoranthene	DETS 3303#	0.03	mg/kg	0.21			0.05	0.07	
Pyrene	DETS 3303#	0.03	mg/kg	0.19			0.04	0.06	
Benzo(a)anthracene	DETS 3303#	0.03	mg/kg	0.10			0.03	< 0.03	
Chrysene	DETS 3303	0.03	mg/kg	0.10			< 0.03	< 0.03	
Benzo(b)fluoranthene	DETS 3303#	0.03	mg/kg	0.19			0.10	0.10	
Benzo(k)fluoranthene	DETS 3303#	0.03	mg/kg	0.04			< 0.03	< 0.03	
Benzo(a)pyrene	DETS 3303#	0.03	mg/kg	0.08			< 0.03	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETS 3303#	0.03	mg/kg	0.03			< 0.03	< 0.03	
Dibenzo(a,h)anthracene	DETS 3303#	0.03	mg/kg	< 0.03			< 0.03	< 0.03	
Benzo(g,h,i)perylene	DETS 3303#	0.03	mg/kg	0.03			< 0.03	< 0.03	
PAH - USEPA 16, Total	DETS 3303	0.1	mg/kg	0.97			0.19	0.23	
Phenols									
Phenol - Monohydric	DETS 2130#	0.3	mg/kg	0.3			< 0.3	0.5	

Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
Client Ref 2585
Contract Title St Peters Close

Lab No	1889380	1889381	1889382	1889383
Sample ID	TP09	TP09	TP11	TP11
Depth	0.20	1.00	0.20	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Moisture Content	DETSC 1004	0.1	%		12		14
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	10		11	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4		0.4	
Cadmium	DETSC 2301#	0.1	mg/kg	0.4		0.2	
Chromium	DETSC 2301#	0.15	mg/kg	18		19	
Chromium III	DETSC 2301*	0.15	mg/kg	18		19	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	25		25	
Lead	DETSC 2301#	0.3	mg/kg	54		56	
Mercury	DETSC 2325#	0.05	mg/kg	0.07		0.07	
Nickel	DETSC 2301#	1	mg/kg	17		18	
Selenium	DETSC 2301#	0.5	mg/kg	1.9		1.1	
Zinc	DETSC 2301#	1	mg/kg	72		57	
Inorganics							
pH	DETSC 2008#		pH	8.6	6.7	5.7	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.6		0.6	
Organic matter	DETSC 2002#	0.1	%	4.4		4.3	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	12	< 10	15	< 10
Sulphide	DETSC 2024*	10	mg/kg	< 10		< 10	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.2		< 0.75	
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	
Aliphatic C35-C40	DETSC 3072*	3.4	mg/kg	< 3.4		< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	
Aromatic C35-C40	DETSC 3072*	1.4	mg/kg	< 1.4		< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	
PAHs							

Summary of Chemical Analysis

Soil Samples

Our Ref 21-17044
 Client Ref 2585
 Contract Title St Peters Close

Lab No	1889380	1889381	1889382	1889383
Sample ID	TP09	TP09	TP11	TP11
Depth	0.20	1.00	0.20	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/08/2021	04/08/2021	04/08/2021	04/08/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Naphthalene	DETS 3303#	0.03	mg/kg	< 0.03		< 0.03	
Acenaphthylene	DETS 3303#	0.03	mg/kg	< 0.03		< 0.03	
Acenaphthene	DETS 3303#	0.03	mg/kg	< 0.03		< 0.03	
Fluorene	DETS 3303	0.03	mg/kg	< 0.03		< 0.03	
Phenanthrene	DETS 3303#	0.03	mg/kg	0.07		< 0.03	
Anthracene	DETS 3303	0.03	mg/kg	< 0.03		< 0.03	
Fluoranthene	DETS 3303#	0.03	mg/kg	0.21		0.06	
Pyrene	DETS 3303#	0.03	mg/kg	0.18		0.05	
Benzo(a)anthracene	DETS 3303#	0.03	mg/kg	0.11		0.03	
Chrysene	DETS 3303	0.03	mg/kg	0.12		0.04	
Benzo(b)fluoranthene	DETS 3303#	0.03	mg/kg	0.22		0.11	
Benzo(k)fluoranthene	DETS 3303#	0.03	mg/kg	0.05		< 0.03	
Benzo(a)pyrene	DETS 3303#	0.03	mg/kg	0.10		< 0.03	
Indeno(1,2,3-c,d)pyrene	DETS 3303#	0.03	mg/kg	0.05		< 0.03	
Dibenzo(a,h)anthracene	DETS 3303#	0.03	mg/kg	< 0.03		< 0.03	
Benzo(g,h,i)perylene	DETS 3303#	0.03	mg/kg	0.05		< 0.03	
PAH - USEPA 16, Total	DETS 3303	0.1	mg/kg	1.2		0.25	
Phenols							
Phenol - Monohydric	DETS 2130#	0.3	mg/kg	0.4		0.4	

Summary of Asbestos Analysis

Soil Samples

Our Ref 21-17044

Client Ref 2585

Contract Title St Peters Close

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1889374	TP01 0.20	SOIL	NAD	none	Colin Patrick
1889377	TP04 0.20	SOIL	NAD	none	Colin Patrick
1889378	TP06 0.20	SOIL	NAD	none	Colin Patrick
1889380	TP09 0.20	SOIL	NAD	none	Colin Patrick
1889382	TP11 0.20	SOIL	NAD	none	Colin Patrick
Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.					

Information in Support of the Analytical Results

Our Ref 21-17044
 Client Ref 2585
 Contract St Peters Close

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	inappropriate container for tests
1889374	TP01 0.20 SOIL	04/08/21	GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889375	TP01 1.00 SOIL	04/08/21	PT 1L	pH + Conductivity (7 days)	
1889376	TP04 1.00 SOIL	04/08/21	PT 1L	pH + Conductivity (7 days)	
1889377	TP04 0.20 SOIL	04/08/21	GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889378	TP06 0.20 SOIL	04/08/21	GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889379	TP07 1.00 SOIL	04/08/21	PT 1L		
1889380	TP09 0.20 SOIL	04/08/21	GJ 250ml, GJ 60ml x2	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889381	TP09 1.00 SOIL	04/08/21	PT 1L	pH + Conductivity (7 days)	
1889382	TP11 0.20 SOIL	04/08/21	GJ 250ml, GJ 60ml	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1889383	TP11 1.00 SOIL	04/08/21	PT 1L	pH + Conductivity (7 days)	

Key: G-Glass J-Jar P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report