

Client : CIVILAB (PTY) LTD - CENTURION
Address : P O BOX 7661
 : CENTURION
 : 46

Client Reference :
Order No. : HP/B 390-18

Attention :
Facsimile : 012-653-0997
E-mail :

Date Received : 05/11/2013
Date Tested : 03/12/2013-12/12/2013
Date Reported : 28/01/2014

Project : Qua Qua Newlandfill Site
Project No. : 2013-B-2579

Page : 1 of 4

Herewith please find the test report(s) pertaining to the above project. All tests were conducted in accordance with prescribed test method(s). Information herein consists of the following:

Test(s) conducted / Item(s) measured	Qty.	Test Method(s)	Authorized By	Page(s)
MDD & OMC	1.000	TMH1 A7	W van Zyl	3
Atterberg Limits < 0.425mm	1.000	TMH1 A2, A3, A4	W van Zyl	2
Sieve Analysis 0.075mm (Mass Grading)	1.000	TMH1 A1	W van Zyl	2
Hydrometer Analysis	1.000	ASTM D422	W van Zyl	2
Permeability: Falling Head	1.000	KH Head	W van Zyl	1 file, 1 page

Any test results contained in this report and marked with * in the table above are "not SANAS accredited" and are not included in the schedule of accreditation for this laboratory.

Any information contained in this test report pertain only to the areas and/or samples tested. Documents may only be reproduced or published in their full context.

While every care is taken to ensure that all tests are carried out in accordance with recognised standards, neither Civilab (Proprietary) Limited nor its employess shall be liable in any way whatsoever for any error made in the execution or reporting of tests or any erroneous conclusions drawn therefrom or for any consequences thereof.

All interpretations, Interpolations, Opinions and/or Classifications contained in this report falls outside our scope of accreditation.

The following parameters, where applicable, were excluded from the classification procedure: Chemical modifications, Additional fines, Fractured Faces, Soluble Salts, pH, Conductivity, Coarse Sand Ratio, Durability (COLTO: G4-G9).

The following parameters, where applicable, were assumed: Rock types were assumed to be of an Arenaceous nature with Siliceous cementing material.

Unless otherwise requested or stated, all samples will be discarded after a period of 3 months.

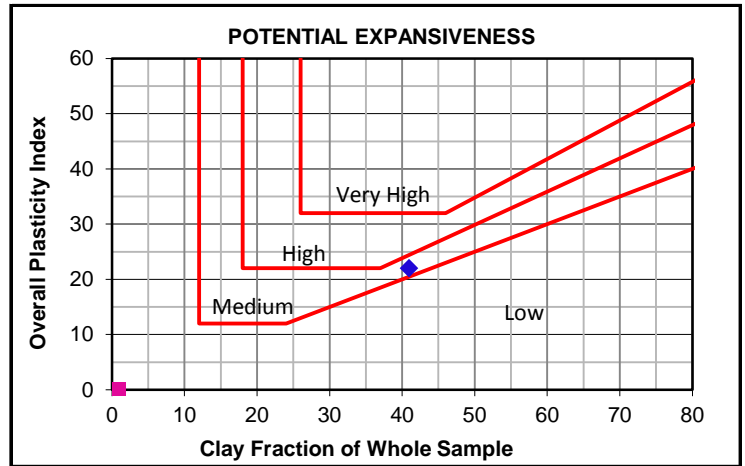
Deviations in Test Methods:

Client : CIVILAB (PTY) LTD - CENTURION
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FOUNDATION INDICATOR

Laboratory Number	1	◆	■
Field Number	TP 8		
Client Reference			
Depth (m)	1.2-2.0		
Position			
Coordinates	X Y		
Description			
Additional Information			
Calcrete / Crushed Stabilizing Agent			

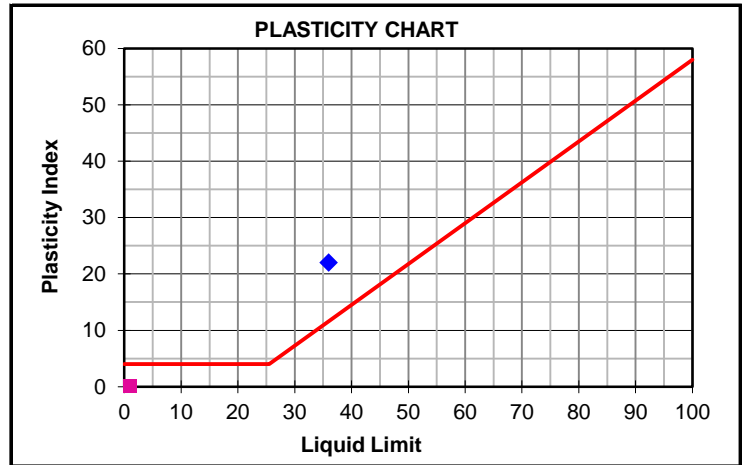


Moisture Content & Relative Density-TMH1 Metod A12T

Moisture Content (%)		
Relative Density (S.G.)		

Sieve Analysis (Wet Preparation) - TMH1 Method A1(a)

Percentage Passing	75.0 mm	100	
	63.0 mm	100	
	53.0 mm	100	
	37.5 mm	100	
	26.5 mm	100	
	19.0 mm	100	
	13.2 mm	100	
	4.75 mm	100	
	2.00 mm	100	
	0.425 mm	99	
0.075 mm	61		
Grading Modulus	0.4		



Hydrometer Analysis - ASTM Method D422

Percentage Passing	0.060 mm	60	
	0.040 mm	57	
	0.020 mm	54	
	0.006 mm	48	
	0.002 mm	41	
Gravel	%	0	
Sand	%	40	
Silt	%	19	
Clay	%	41	

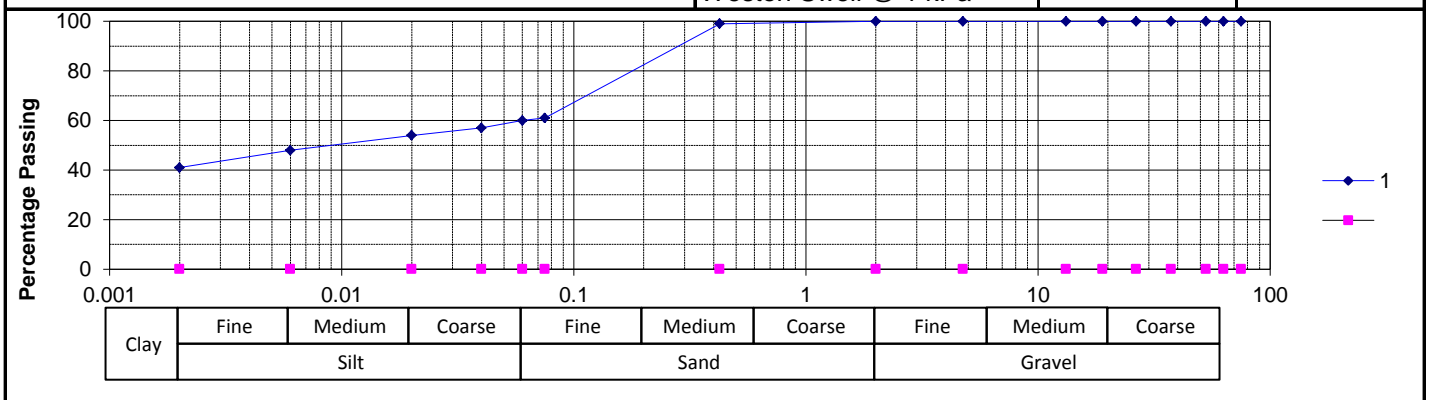
Laboratory Number	1	◆	■
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Atterberg Limits - TMH1 Method A2, A3 & A4

Liquid Limit	%	36	
Plasticity Index	%	22	
Linear Shrinkage	%	8.0	
Overall PI	%	22	

Classifications

HRB	A-6(10)
Unified	CL
Weston Swell @ 1 kPa	



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MOISTURE DENSITY RELATIONSHIP

Laboratory Number	1	
Field Number	TP 8	
Client Reference		
Depth (m)	1.2-2.0	
Position		
Coordinates	X	
	Y	
Description		
Additional Information		
Calcrete / Crushed		
Stabilizing Agent		

Maximum Dry Density & Optimum Moisture Content - TMH1 Method A7

Compactive Effort:	Modified AASHTO
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Dry Density	kg/m ³	1674	1698	1725	1705	1671	
Moisture Content	%	12.8	14.8	16.8	18.8	20.8	

Max. Dry Density	kg/m ³	1725
Optimum Moisture	%	17

