

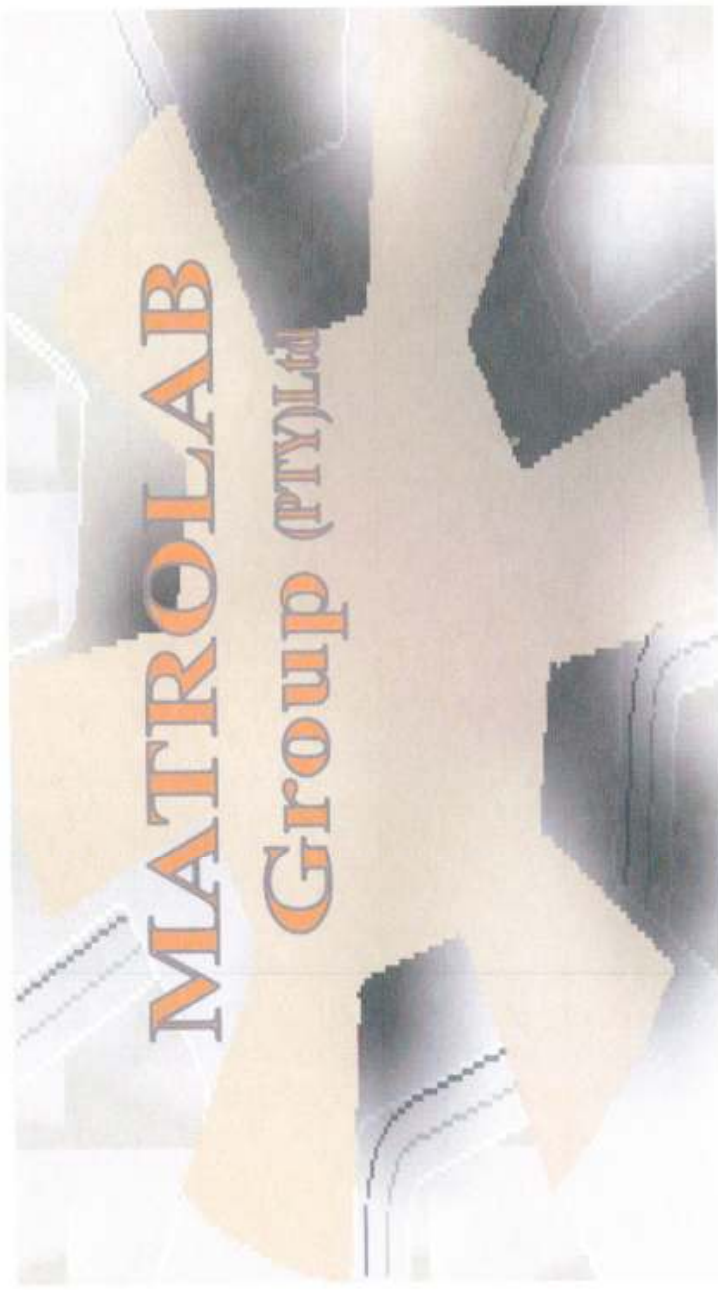


Material Investigation Report



**PROJECT NAME: Soil
Report for Erf 12 & 53 –
Pretorius stad - Nigel**

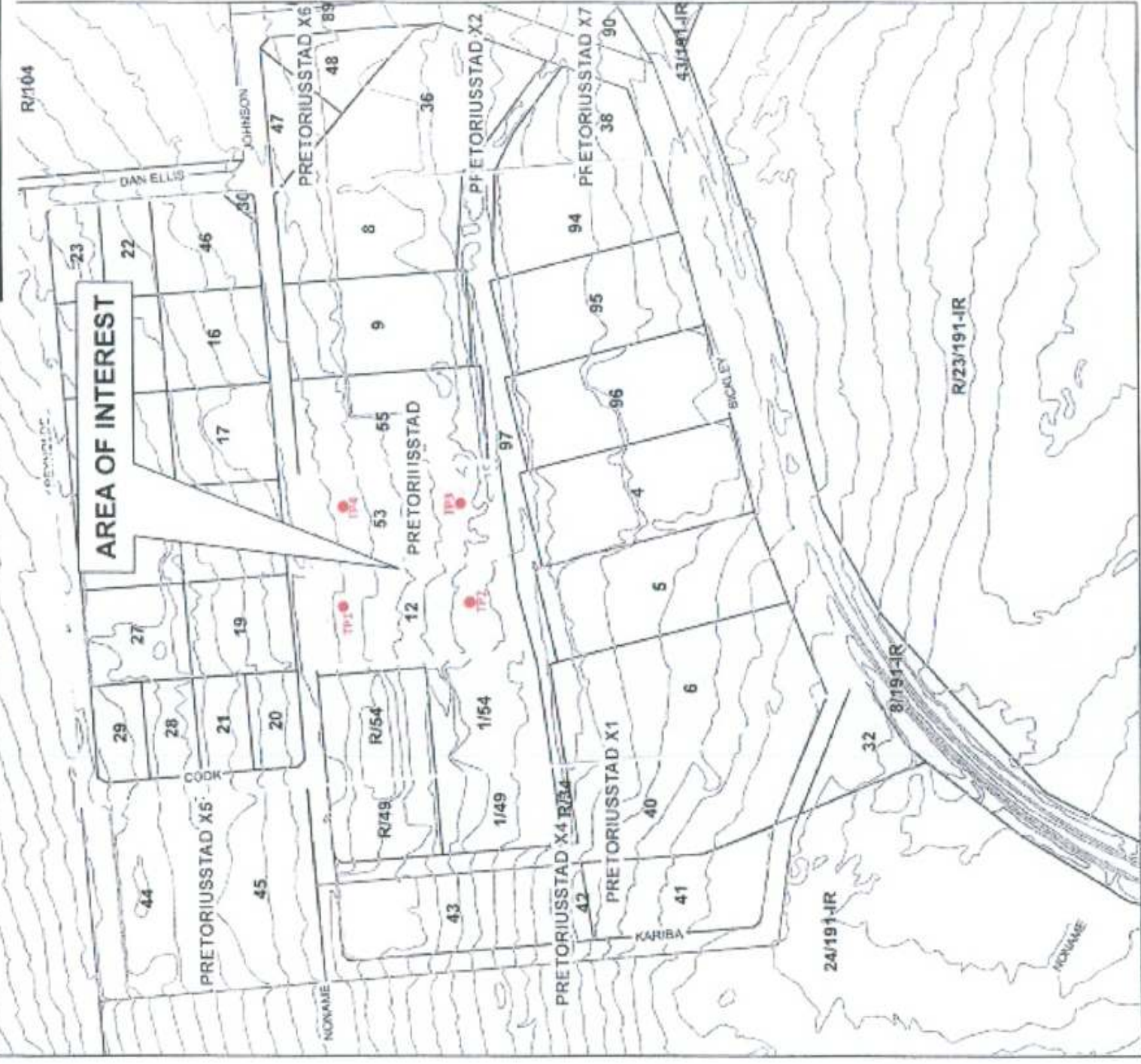
**CLIENT :
Fortune Metallics SA**



Job No: 91806

Legend

- EKUR_CD.SP_Contours_1m
- EKUR_CD.SP_CD_Townships
- SG_Parcel
- EKUR_CD.SP_CD_Street_Centrelines



EKURHULENI METROPOLITAN MUNICIPALITY
 PORTION 261 SPAARWATER 171-1R
 (A SECTION OF DUDUZA TOWNSHIP)
 DUDUZA CCA

NOTES:
 1. The map is not to be used for any purpose other than the purpose for which it was prepared.
 2. The map is not to be used for any purpose other than the purpose for which it was prepared.
 3. The map is not to be used for any purpose other than the purpose for which it was prepared.
 4. The map is not to be used for any purpose other than the purpose for which it was prepared.
 5. The map is not to be used for any purpose other than the purpose for which it was prepared.



MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

Reg. No.: 2003/029180/07 - VAT. Reg. No.: 40-40210587

a SANAS Accredited Testing Laboratory, No. T0025

256 Brander street, Jan Niebrand Park, Pretoria
P.O. BOX 912387, SILVERTON, 0127

Tel. : (012) 800 1299
Fax : (012) 800 3043
Email : benniev@matrolab.co.za

TEST RESULTS

THE 4th DIAMENTION

Project : Pretoriusstad Nigel

Attention: Lerato

Your Ref : 97806
Our Ref : PL/92315
Date Reported : 29.07.2013

AGGREGATE REPORT (TMH1:A20,A21T)

SAMPLE NO.	A3/2720	A3/2721		
DESCRIPTION	TP1 400-1500	TP3 400-1700		Specification Min Max
pH	5.8	5.1		
CONDUCTIVITY @ 25 C (S/m)	0.084	0.091		

Remarks :

FORM: D1

Program ver 3.3(26.01.2010)

Technical Signatory : B. Van Niekerk / A. Verwey / S. Dawnath



Fortune Metallics SA
ATTENTION: Mr. Anthony Afordofe

PROJECT: Soils report for Erf 12 & 53 - Pretorius stad Nigel

JOB NO: 91806 **DATE:** July 2013

PROFILE & PHOTO REPORT

CHAINAGE
T/pit 1

PROFILED BY
Mr.G.Sindane

GPS CO-ORDINATES
S 26° 25.411"
EO 028° 26.320"

TRIAL PITS EXCAVATED
By TLB



Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture, Colour, Consistency, Structure, Soil Type, Origin, General	SAMPLING TYPE AND NUMBER
		0	Moist Dark Brown Medium Dense Intact Transported Fine Silty Sand	Lab no F0633 F.Incl.
		400	Very Moist Yellow Brown Medium Dense Intact Residual Fine Silty Sand	Lab no.F0634 PH & Conductivity Consolidation
		1500	Slightly Moist Yellow Red Brown Medium Dense Intact Residual Silty Sandy Ferricrete CBR - 14% @ 95% Mod Aashito - G8 No Water table No Refusal - Hole stopped @ 2800mm	Lab no.F0635 F.Incl,Mod,Cbr
		2800		



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

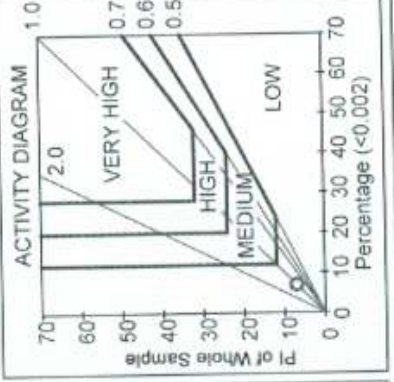
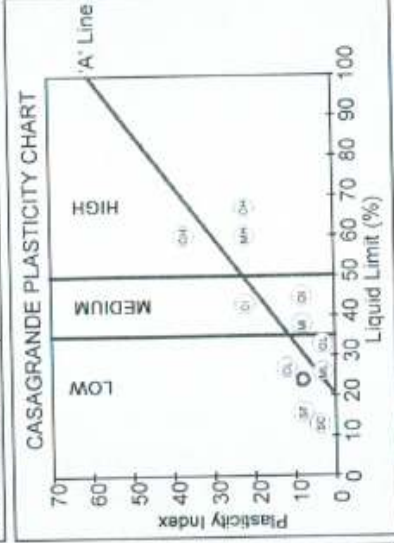
Your Ref :
Our Ref : 91805
Date Reported : 24.07.2013

FOUNDATION INDICATOR (ASTM: D422)

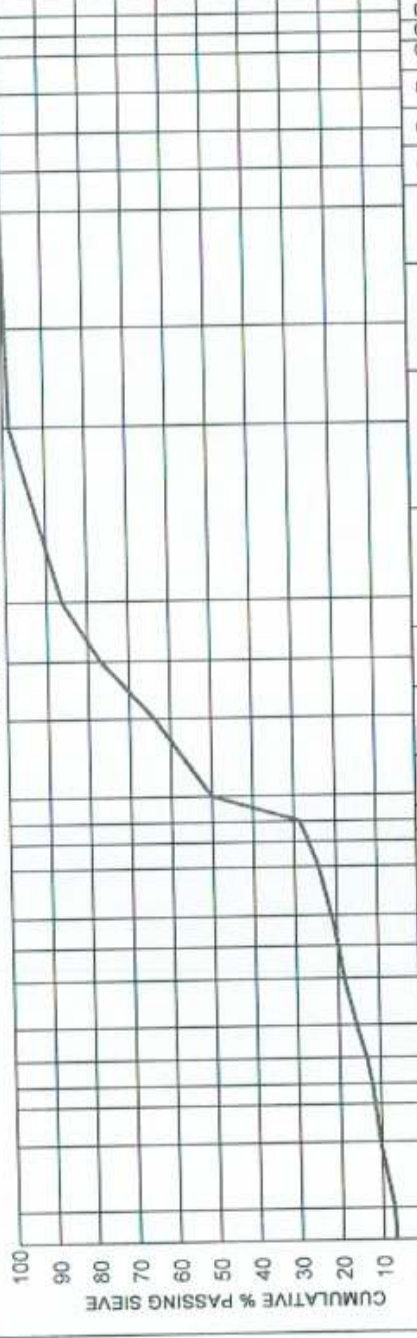
Sample No. : F6633
 Hole No. : TP1
 Depth (mm) : 0-400
 Liquid Limit (%) : 24
 Plasticity Index : 8
 Linear Shrinkage (%) : 4.0
 PI of Whole Sample : 7
 P.R.A. Classification : A-4(3)
 Unified Soil Classification : CL
 Activity : 0.97
 Heave Classification : LOW
 Grading Modulus : 0.65
 Percentage (<0.002) : 7.0
 Moisture Content (%) : 12.9

Material Description : DK BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	11.5	15.0	72.0	1.5	SILTY SAND
Astm	11.5	38.5	49.3	0.7	SILTY SAND
British Standard	7.3	21.5	69.8	1.5	SILTY SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	% Passing	JENN CLAY	SILT	SAND	GRAVEL
75.000	100				
63.000	100				
53.000	100				
37.500	100				
26.500	100				
19.000	100				
13.200	100				
4.7500	99				
2.0000	99				
0.850	88				
0.4250	77				
0.2500	64				
0.1500	50				
0.0750	29				
0.0600	26				
0.0500	24				
0.0400	21				
0.0260	20				
0.0200	19				
0.0150	16				
0.0100	13				
0.0075	12				
0.0060	11				
0.0050	10				
0.0036	7				
0.0020	7				
0.0015	7				

ASTM CLAY	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL
BS CLAY	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	GRAVEL

Remarks : 1st LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

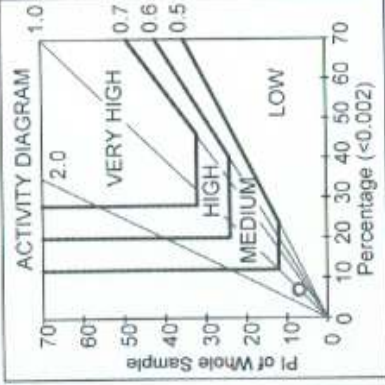
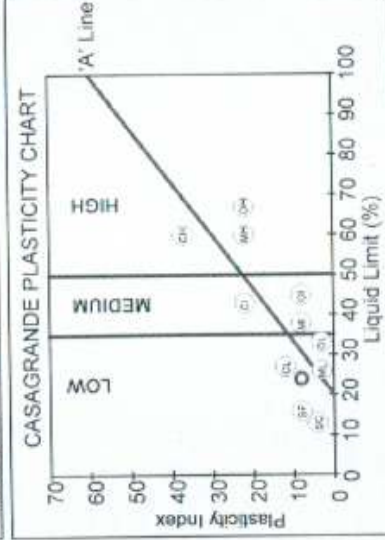
Your Ref :
Our Ref : 91806
Date Reported : 24.07.2013

FOUNDATION INDICATOR (ASTM: D422)

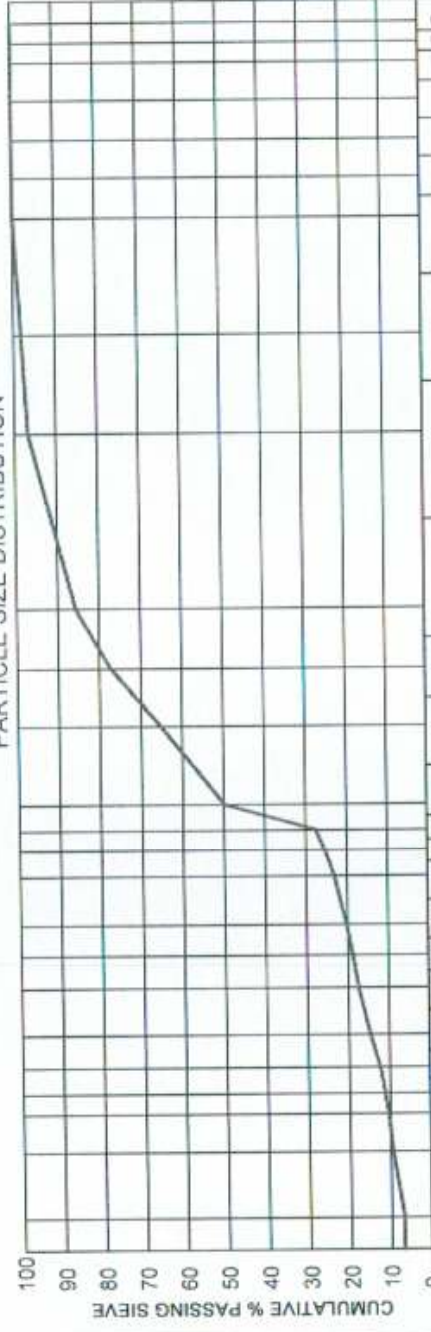
Sample No. : F0634
 Hole No. : TP1
 Depth (mm) : 400-1500
 Liquid Limit (%) : 24
 Plasticity Index : 8
 Linear Shrinkage (%) : 4.0
 PI of Whole Sample : 7
 P.R.A. Classification : A-4(3)
 Unified Soil Classification : SC
 Activity : 1.02
 Heave Classification : LOW
 Grading Modulus : 0.68
 Percentage (<0.002) : 7.0
 Moisture Content (%) : 15.5

Material Description : YL BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	10.5	14.9	71.5	3.2	SILTY SAND
Astm	10.5	39.2	48.6	1.7	SILTY SAND
British Standard	6.8	20.7	69.3	3.2	SILTY SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	SILT			SAND			GRAVEL		
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL
75	7	15	20	65	77	97	98		
75.000	0.0015	0.0100	0.0200	0.0750	0.2500	2.0000	4.7500		
150	11	12	18	50	66	86			
150.000	0.0050	0.0075	0.0150	0.1500	0.4250				
300	23	25	28	33	35	37			
300.000	0.0400	0.0500	0.0600	0.2250	0.2500				
600	33	35	37	37	37	37			
600.000	0.0800	0.0800	0.0800	0.2250	0.2500				
1200	37	37	37	37	37	37			
1200.000	0.1300	0.0800	0.0800	0.2250	0.2500				
2500	37	37	37	37	37	37			
2500.000	0.1300	0.0800	0.0800	0.2250	0.2500				
5000	37	37	37	37	37	37			
5000.000	0.1300	0.0800	0.0800	0.2250	0.2500				
10000	37	37	37	37	37	37			
10000.000	0.1300	0.0800	0.0800	0.2250	0.2500				

Remarks : 2nd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andrie Potgieter



MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

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Fax: 011 740 1949
Email: andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project: SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

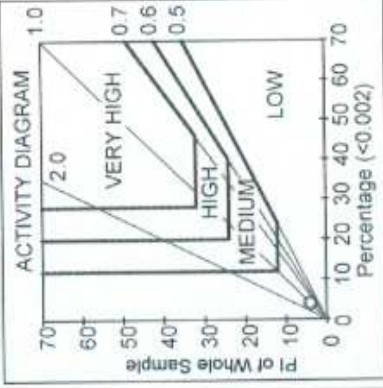
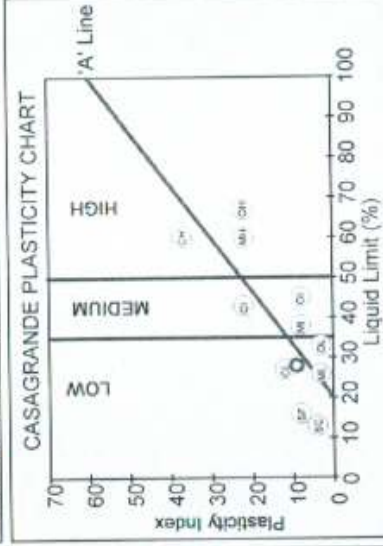
Your Ref :
Our Ref : 91806
Date Reported : 24.07.2013

FOUNDATION INDICATOR (ASTM: D422)

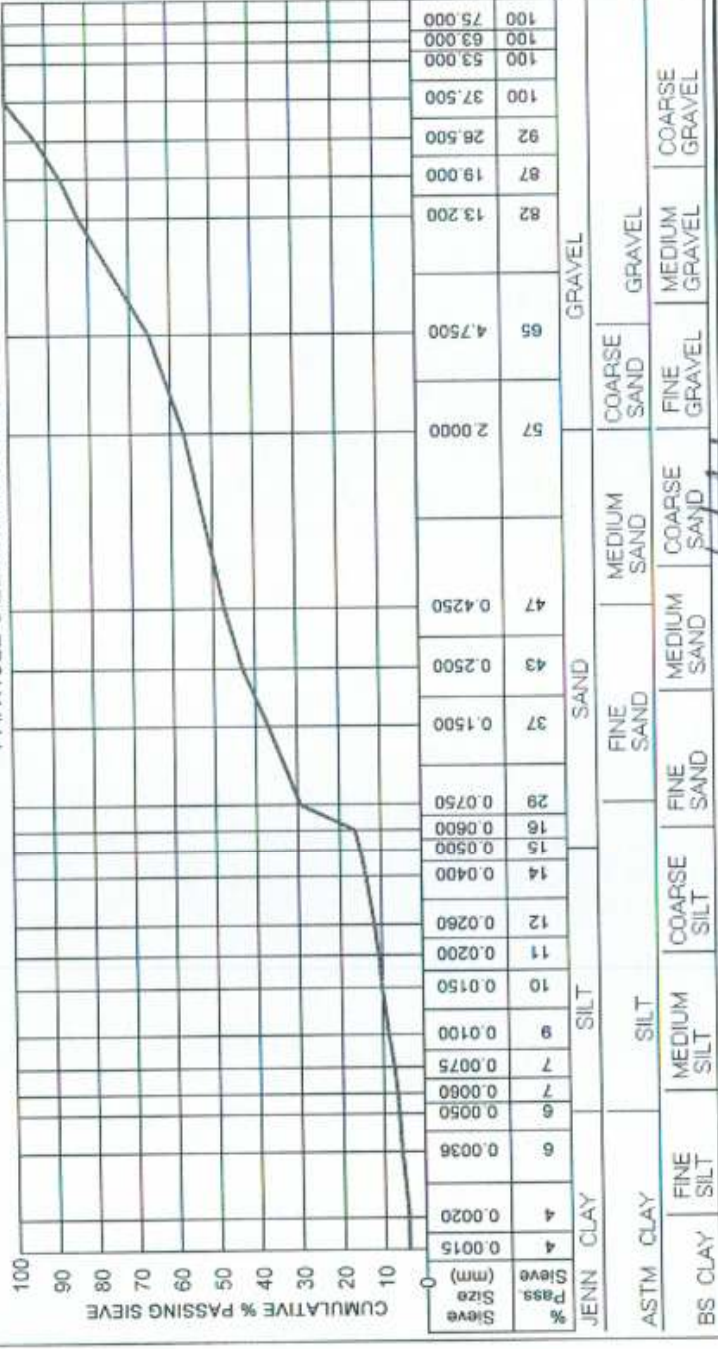
Sample No.: F0635
 Hole No.: TP1
 Depth (mm): 1500-2800
 Liquid Limit (%): 28
 Plasticity Index: 9
 Linear Shrinkage (%): 4.5
 PI of Whole Sample: 4
 P.R.A. Classification: A-2-4(0)
 Unified Soil Classification: SC
 Activity: 0.94
 Heave Classification: LOW
 Grading Modulus: 1.67
 Percentage (<0.002): 4.0
 Moisture Content (%): 6.2

Material Description: YL RD BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	6.3	8.8	41.7	43.3	SILTY SAND
Astm	6.3	23.0	35.9	34.8	SILTY SAND
British Standard	4.3	12.0	40.5	43.3	SILTY SAND



PARTICLE SIZE DISTRIBUTION



Remarks: 3rd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory: Andre Potgieter



TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Attention: GAURAV BANSAL

Project : PRETORIUSSTAD - NIGEL

Your Ref :
Our Ref : 91806(A)
Date Reported : 26.07.2013

SIEVE ANALYSIS, ATTERBERG LIMITS, CBR, UCS(TMH1:A1-A5,A7,A8)

SAMPLE NO.	F0635		
HOLE NO.	TP1		
ROAD NO.	1500-2800		
DEPTH (mm)			
CHAINAGE	3rd		
LAYER TYPE	NONE		
STABILISED WITH			
SUPPLIER	YL RD BR		
CURING METHOD	SILTY SAND		
DESCRIPTION			

SIEVE ANALYSIS (% PASSING)

75 mm	100		
63 mm	92		
53 mm	87		
37.5 mm	82		
26.5 mm	65		
19.0 mm	57		
13.2 mm	47		
4.75 mm	27		
2.0 mm			
0.425 mm			
0.075 mm			

SOIL MORTAR

COARSE SAND < 2.000mm > 0.425mm	18		
FINE SAND < 0.425mm > 0.075mm	35		
MATERIAL < 0.075mm	47		

CONSTANTS

GRADING MODULUS	1.69		
PRA CLASSIFICATION	A-2-4(0)		
UNIFIED SOIL CLAS.	SC		
COLTO CLASSIFICATION	G8		
TRH Class (INSITU [93%(90%)]	G8/G8		
LIQUID LIMIT (%)	28		
PLASTICITY INDEX (0.425mm)	9		
LINEAR SHRINKAGE (%)	4.5		

MOD AASHTO

MAXIMUM DRY DENSITY (kg/m³)	1915		
OPTIMUM MOISTURE CONTENT (%)	13.5		
MOULDING MOISTURE (%)	13.3		

TYPE OF TEST

CBR-UCS @ 100% MOD AASHTO	18		
CBR-UCS @ 98% MOD AASHTO	16		
CBR-UCS @ 97% MOD AASHTO	15		
CBR-UCS @ 95% MOD AASHTO	14		
CBR-UCS @ 93% MOD AASHTO	13		
CBR-UCS @ 90% MOD AASHTO	13		

CBR-UCS @ % MOD AASHTO derived from calculation.

% SWELL AT [MOD][NRB][PROC]	0.13	0.38	0.60
-----------------------------	------	------	------

Remarks :

 Technical Signatory | Andre Potgieter

FORM: A1 Program ver 3.3(26.01.2010)



MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

Reg.No.: 2003/029180/07 - VAT. Reg.No.: 4040210587

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Fax : 011 740 1949
Email : andrep@matrolab.co.za

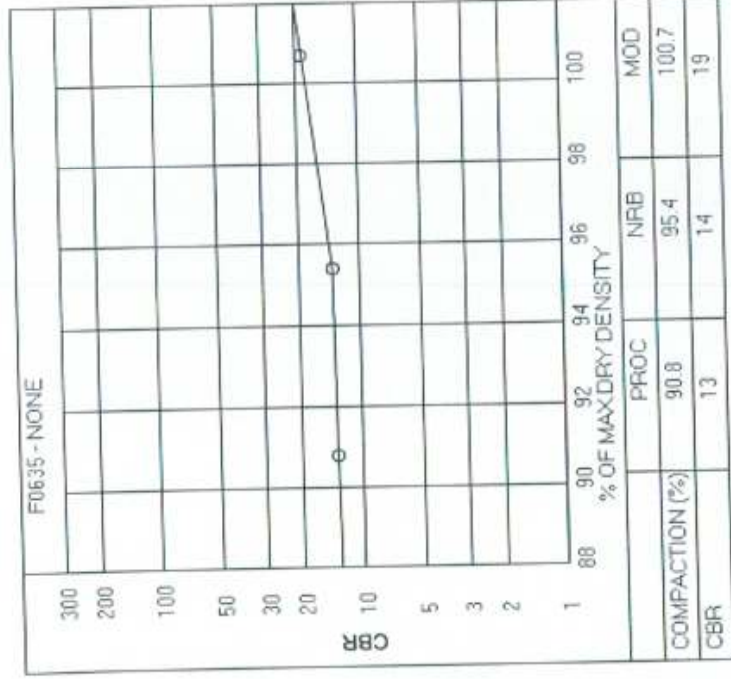
TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
Attention: GAURAV BANSAL

Project : PRETORIUSSTAD - NIGEL

Your Ref :
Our Ref : 91806(A)
Date Reported : 26.07.2013

CBR-UCS GRAPH/S (OPTIONAL INFORMATION)





MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

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P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT, BOKSBURG
1460
Attention: GEORGE

Project : PRETORIUS STAD - NIGEL

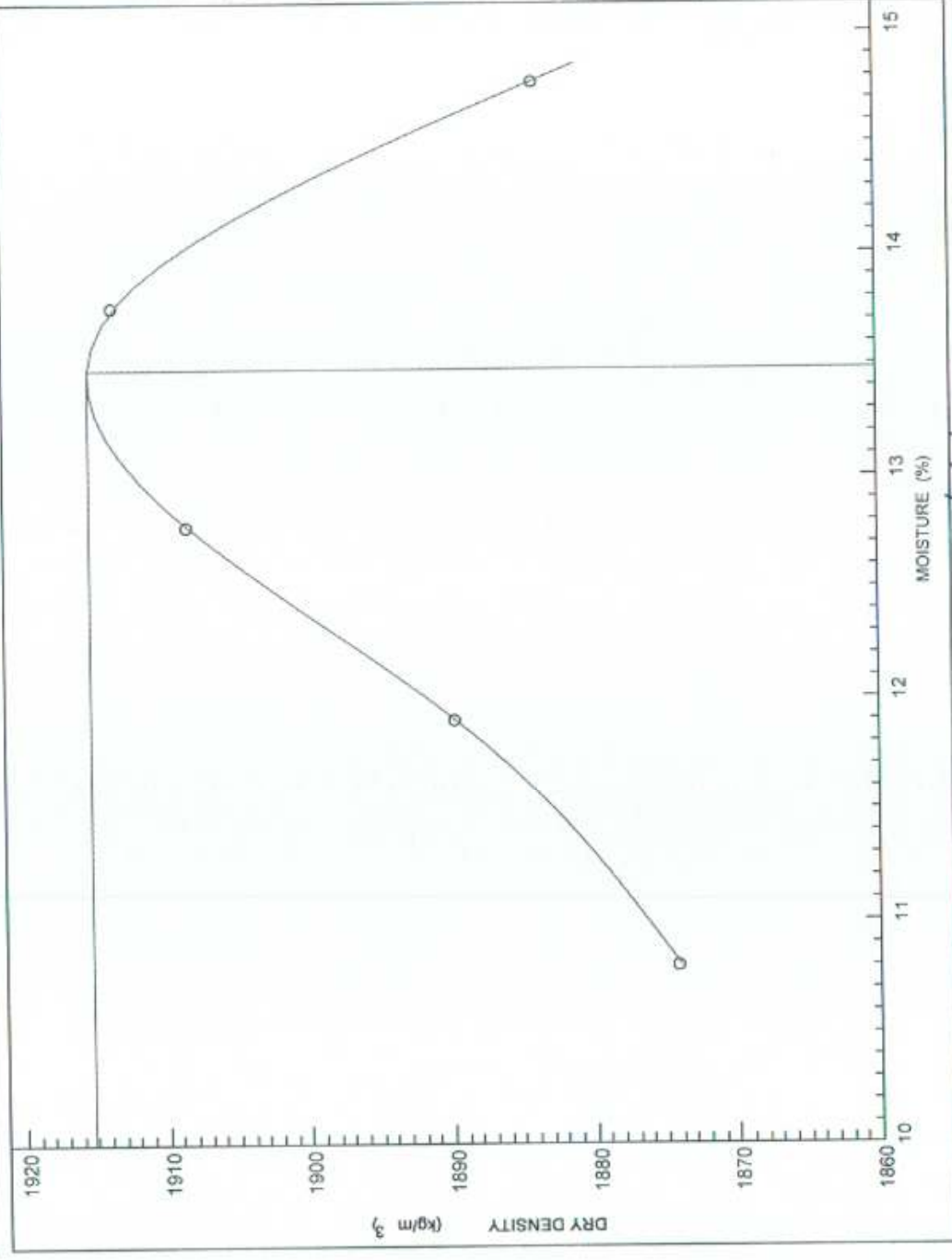
Your Ref : 91806
Our Ref : 91806
Date Reported : 22.07.2013

MOISTURE / DENSITY RELATIONSHIP (TMH1 : A7)

Sample No. : F0635	Hole No. : TP1	Depth (mm) : 500-2800
Origin : 3rd LAYER	Stabilized With : NONE	Compaction Energy : MOD AASHTO
Material Description : YL RD BR SILTY SAND		

Maximum Dry Density (kg/m³) : 1915
Optimum Moisture Content (%) : 13.5

Point No.	1	2	3	4	5
Moisture (%)	10.8	11.9	12.8	13.8	14.8
Density (kg/m ³)	1874	1890	1908	1913	1884



Remarks :

FORM: A7

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



Fortune Metallics SA
ATTENTION: Mr. Anthony Afordofe

PROJECT: Soils report for Erf 12 & 53 - Pretorius stad Nigel
JOB NO: 91806
DATE: July 2013

PROFILE & PHOTO REPORT

CHAINAGE
T/pit 2
PROFILED BY
Mr.G.Sindane
GPS CO-ORDINATES
S 26° 25.444'
EO 028° 26.325'
TRIAL PITS EXCAVATED
By TLB



Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture, Colour, Consistency, Structure, Soil Type, Origin, General	SAMPLING TYPE AND NUMBER
		0	Moist Dark Brown Medium Dense Intact Transported Fine Silty Sand	Lab no.F0636 F.Ind
		400	Very Moist Light Red Orange Brown Medium Dense Intact Residual Fine Silty Sand CBR - 14% @ 95% Mod Aashto - G8/G8	Lab no.F0637 F.Ind,Mod,Cbr
		1600	Moist Red Yellow Brown Dense to Very dense Intact Residual Silty Sandy Ferricrete No Water table Refusal @ 2700mm	Lab no.F0638 F.Ind.
		2700		



288 Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

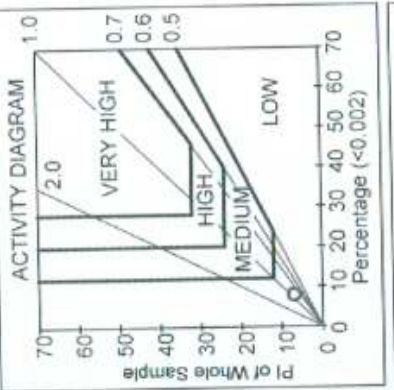
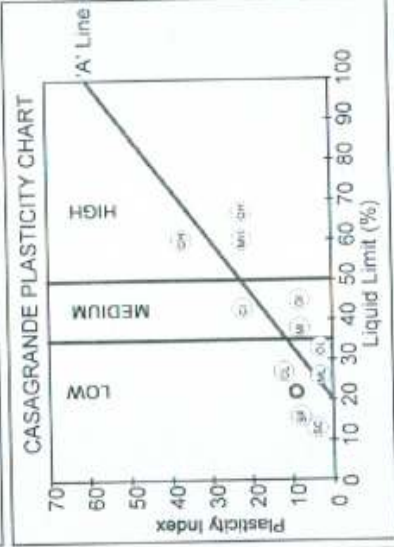
Your Ref :
Our Ref : 91805
Date Reported : 24.07.2013

FOUNDATION INDICATOR (ASTM: D422)

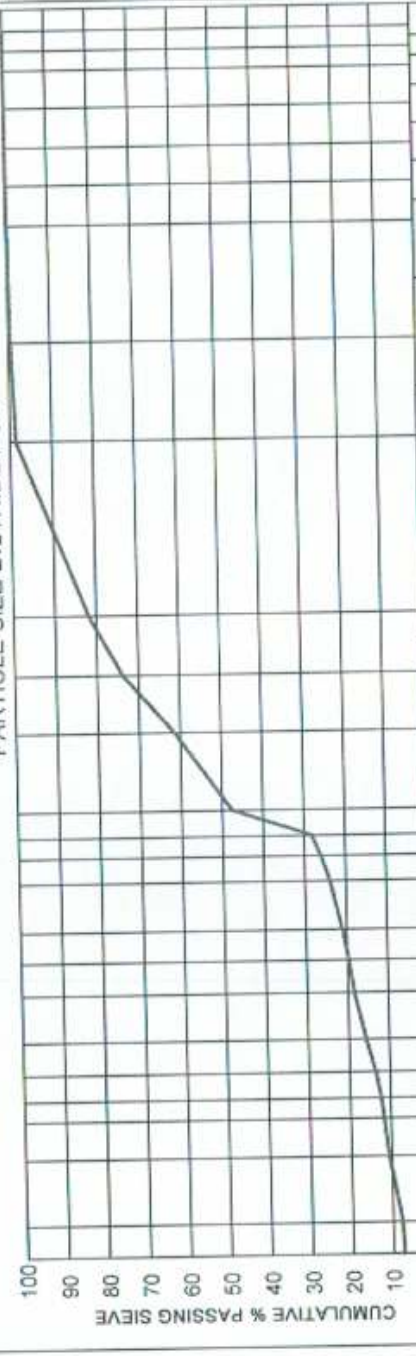
Sample No. : F0636
 Hole No. : TP2
 Depth (mm) : 0-400
 Liquid Limit (%) : 22
 Plasticity Index : 9
 Linear Shrinkage (%) : 4.5
 PI of Whole Sample : 7
 P.R.A. Classification : A-4(2)
 Unified Soil Classification : SC
 Activity : 0.91
 Heave Classification : LOW
 Grading Modulus : 0.72
 Percentage (<0.002) : 8.0
 Moisture Content (%) : 12.1

Material Description : DK BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	11.7	14.3	72.6	1.3	SILTY SAND
Astm	11.7	35.7	52.1	0.4	SILTY SAND
British Standard	7.7	20.5	70.5	1.3	SILTY SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	SILT			SAND			GRAVEL		
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL
75.000									
63.000									
53.000									
47.500									
42.500									
37.500									
30.000									
25.000									
20.000									
15.000									
12.500									
10.000									
7.500									
6.000									
4.7500									
4.2500									
3.7500									
3.0000									
2.5000									
2.0000									
1.5000									
1.1800									
0.8500									
0.7500									
0.6000									
0.5000									
0.4250									
0.3000									
0.2500									
0.1500									
0.0750									
0.0500									
0.0400									
0.0260									
0.0200									
0.0150									
0.0100									
0.0075									
0.0060									
0.0050									
0.0036									
0.0020									
0.0015									
75.000									
63.000									
53.000									
47.500									
42.500									
37.500									
30.000									
25.000									
20.000									
15.000									
12.500									
10.000									
7.500									
6.000									
4.7500									
4.2500									
3.7500									
3.0000									
2.5000									
2.0000									
1.5000									
1.1800									
0.8500									
0.7500									
0.6000									
0.5000									
0.4250									
0.3000									
0.2500									
0.1500									
0.0750									
0.0500									
0.0400									
0.0260									
0.0200									
0.0150									
0.0100									
0.0075									
0.0060									
0.0050									
0.0036									
0.0020									
0.0015									

Remarks : 1st LAYER

Technical Signatory : Andre Potgieter

Program ver 3.3(26.01.2010)

FORM: A6



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALLICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

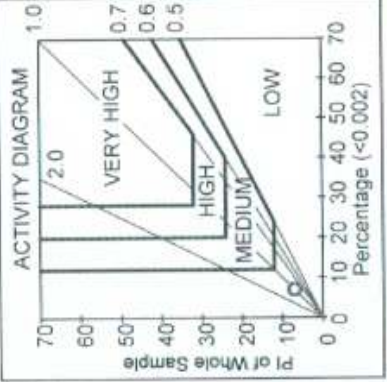
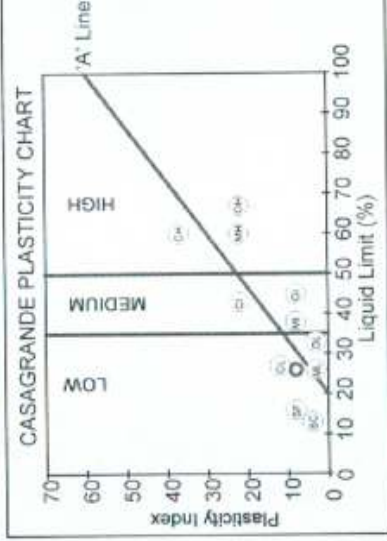
Your Ref :
Our Ref : 91806
Date Reported : 24.07.2013

FOUNDATION INDICATOR (ASTM: D422)

Sample No. : F0637
 Hole No. : TP2
 Depth (mm) : 400-1600
 Liquid Limit (%) : 26
 Plasticity Index : 8
 Linear Shrinkage (%) : 4.0
 Pl of Whole Sample : 7
 P.R.A. Classification : A-4(3)
 Unified Soil Classification : SC
 Activity : 1.02
 Heave Classification : LOW
 Grading Modulus : 0.67
 Percentage (<0.002) : 7.0
 Moisture Content (%) : 17.7

Material Description : LT RD BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	10.5	15.8	70.9	2.7	SILTY SAND
Astm	10.5	39.2	48.6	1.6	SILTY SAND
British Standard	6.9	21.7	68.7	2.7	SILTY SAND



PARTICLE SIZE DISTRIBUTION



Sieve Pass Size (mm)	SILT			SAND			GRAVEL		
	JENN CLAY	ASTM CLAY	BS CLAY	FINE SILT	COARSE SILT	FINE SAND	COARSE SAND	FINE GRAVEL	COARSE GRAVEL
75.000									
100									
63.000									
100									
53.000									
100									
37.500									
100									
26.500									
100									
19.000									
100									
13.200									
100									
4.7500									
98									
2.0000									
97									
0.4250									
86									
0.2500									
76									
0.1500									
63									
0.0750									
50									
0.0600									
26									
0.0500									
24									
0.0400									
21									
0.0260									
18									
0.0200									
18									
0.0150									
15									
0.0100									
12									
0.0075									
11									
0.0060									
11									
0.0050									
10									
0.0036									
7									
0.0020									
7									
0.0015									

Remarks : 2nd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

Your Ref :
Our Ref : 91806(B)
Date Reported : 25.07.2013

SIEVE ANALYSIS, ATTERBERG LIMITS, CBR, UCS(TMHT:A1-A5,A7,A8)

SAMPLE NO. HOLE NO. ROAD NO. DEPTH (mm) CHAINAGE LAYER TYPE STABILISED WITH SUPPLIER CURING METHOD DESCRIPTION	F0637 TP2 400-1000 2nd NONE LT RD OR BR SILTY SAND		
---	--	--	--

SIEVE ANALYSIS (% PASSING)

75 mm			
63 mm			
53 mm			
37.5 mm			
26.5 mm			
19.0 mm			
13.2 mm			
4.75 mm	100		
2.0 mm	98		
0.425 mm	97		
0.075 mm	86		
	48		

SOIL MORTAR

COARSE SAND<2.000mm >0.425mm	11		
FINE SAND <0.425mm >0.075mm	39		
MATERIAL <0.075mm	50		

CONSTANTS

GRADING MODULUS	0.69		
PRA CLASSIFICATION	A-4(3)		
UNIFIED SOIL CLAS.	SC		
COLTO CLASSIFICATION	--		
TRH Class.(INSITU 93% 90%)	G8 G8		
LIQUID LIMIT (%)	26		
PLASTICITY INDEX (0.425mm)	8		
LINEAR SHRINKAGE (%)	4.0		

MOD AASHTO

MAXIMUM DRY DENSITY (kg/m ³)	1837		
OPTIMUM MOISTURE CONTENT (%)	14.4		
MOULDING MOISTURE (%)	14.5		

TYPE OF TEST

CBR-UCS @ 100% MOD AASHTO	CBR		
CBR-UCS @ 98% MOD AASHTO	14		
CBR-UCS @ 97% MOD AASHTO	14		
CBR-UCS @ 95% MOD AASHTO	14		
CBR-UCS @ 93% MOD AASHTO	13		
CBR-UCS @ 90% MOD AASHTO	12		

CBR-UCS @ % MOD AASHTO derived from calculation

% SWELL AT [MOD][NRB][PROC]	0.14	0.38	0.64
-----------------------------	------	------	------

Remarks :

FORM: A1

Program ver 3.3(26.01.2010)

Technical Signatory

Andre Potgieter



MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

Reg No.: 2003/029180/07 - VAT. Reg.No.: 4040210587

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Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

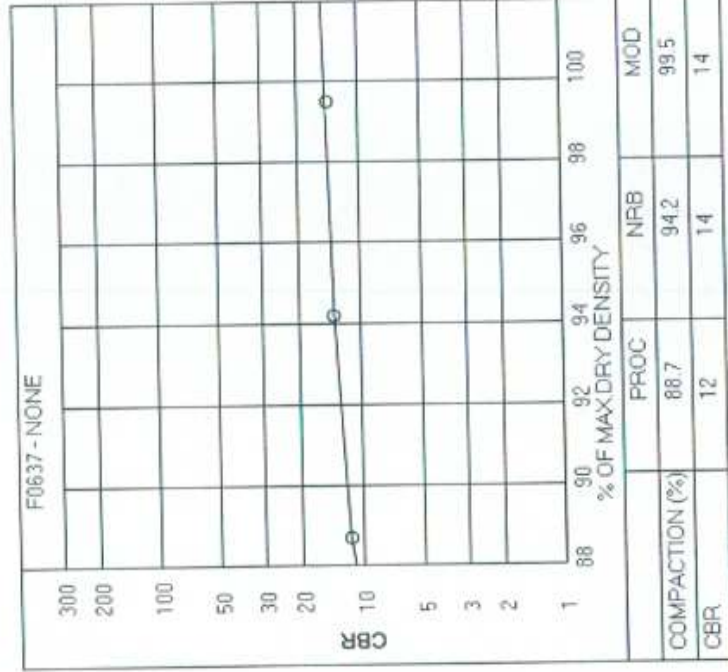
FORTUNE METALICS SA (PTY) LTD

Project : PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

Your Ref :
Our Ref : 91806(B)
Date Reported : 26.07.2013

CBR-UCS GRAPH/S (OPTIONAL INFORMATION)





28B Boundary Road, Brakpan
P.O. Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT, BOKSBURG
1460
Attention: GEORGE

Project : PRETORIUS STAD - NIGEL

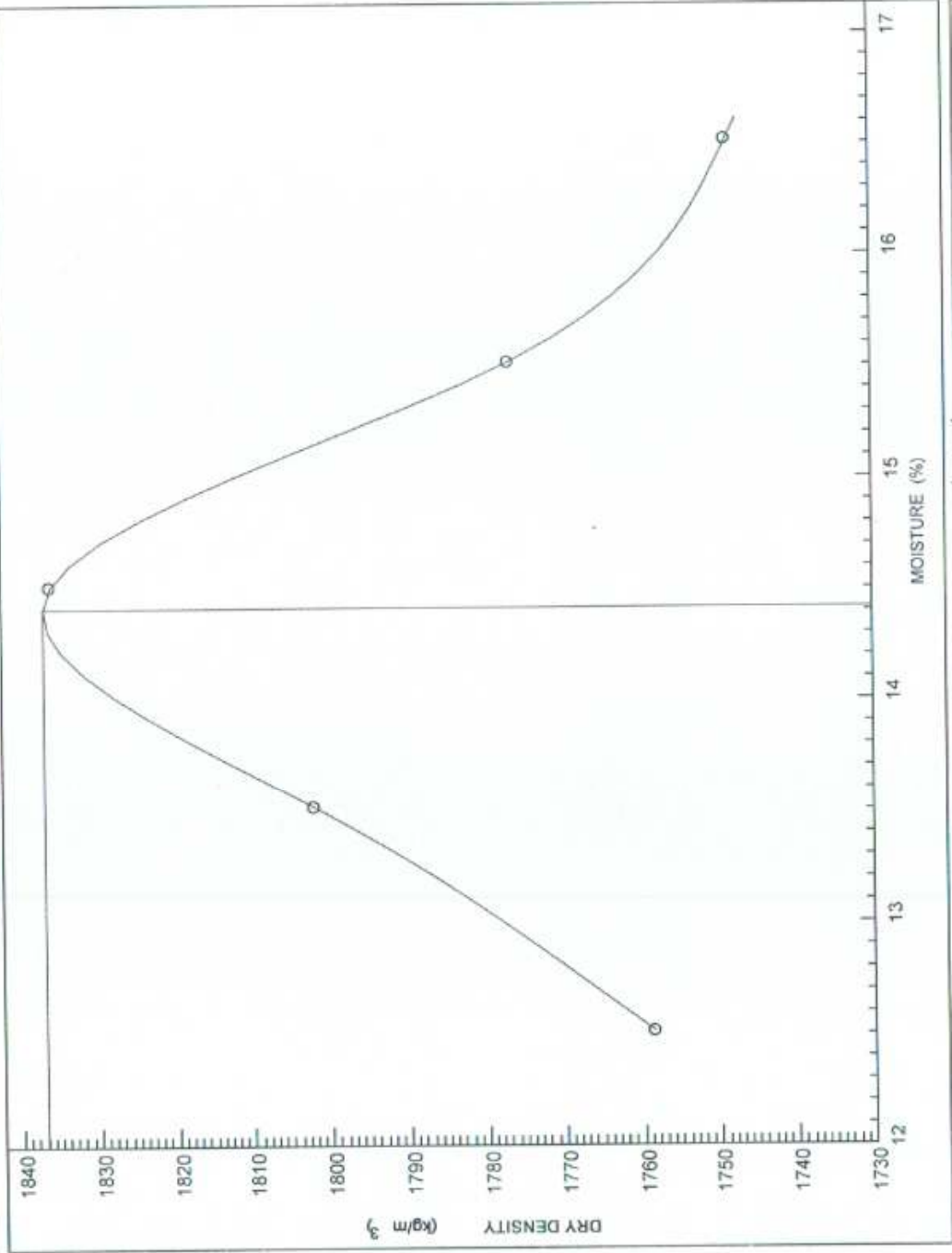
Your Ref : 91806
Our Ref : 91806
Date Reported : 22.07.2013

MOISTURE / DENSITY RELATIONSHIP (TMH1 : A7)

Sample No. : F0637	Hole No. : TP2	Depth (mm) : 400-1000
Origin : 2nd LAYER	Stabilized With : NONE	Compaction Energy : MOD AASHTO
Material Description : LT RD OR BR SILTY SAND		

Maximum Dry Density (kg/m³) : 1837
Optimum Moisture Content (%) : 14.4

Point No.	1	2	3	4	5
Moisture (%)	12.5	13.5	14.5	15.5	16.5
Density (kg/m ³)	1759	1802	1836	1777	1748



Remarks :

FORM: A7

Program ver 3.3(26.01.2010) Technical Signatory : Andre Potgieter



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
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Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

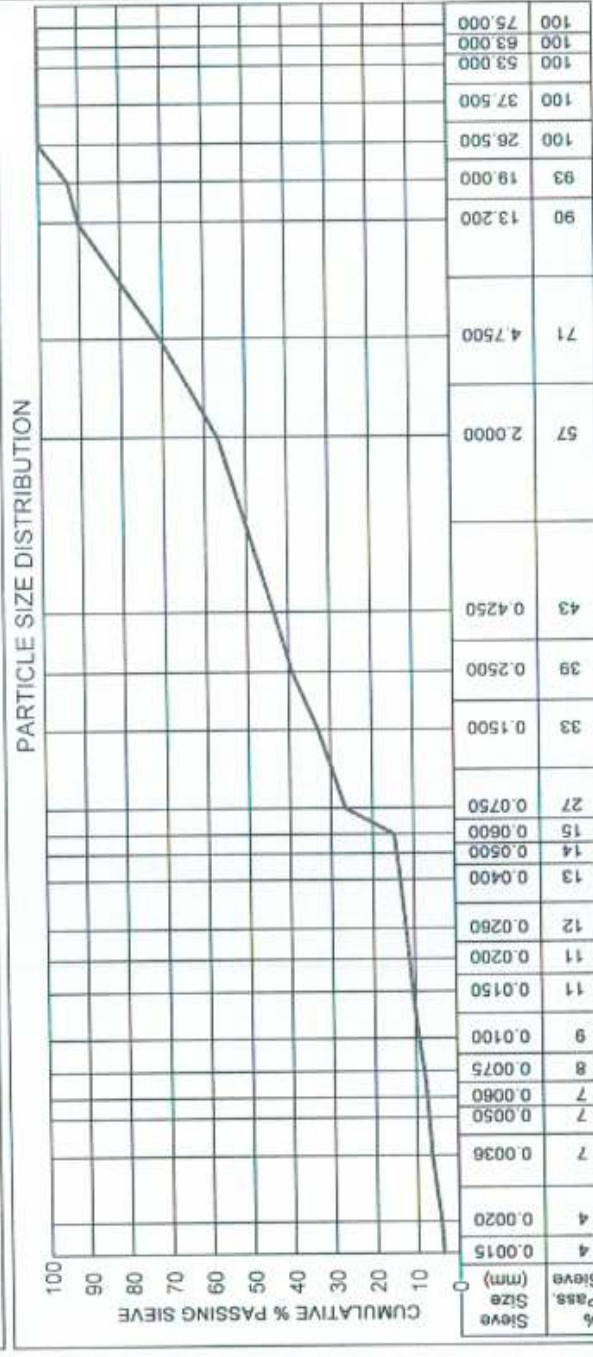
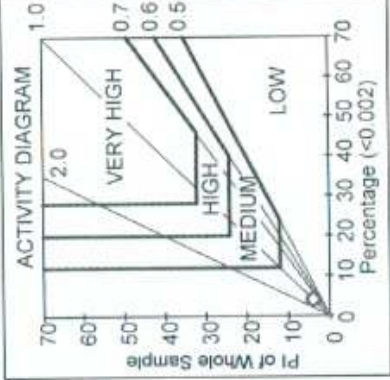
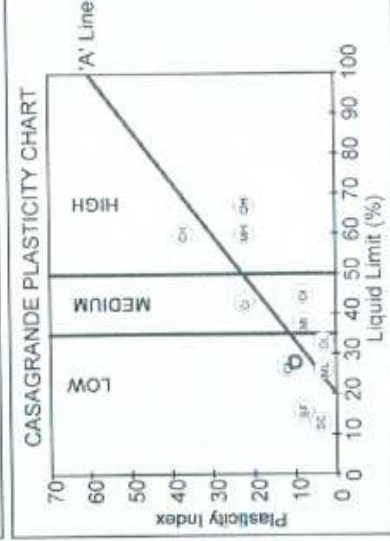
Your Ref :
Our Ref : 91806
Date Reported : 24.07.2013

FOUNDATION INDICATOR (ASTM: D422)

Sample No. : F0638
Hole No. : TP2
Depth (mm) : 1600-2700
Liquid Limit (%) : 28
Plasticity Index : 10
Linear Shrinkage (%) : 5.0
PI of Whole Sample : 4
P.R.A. Classification : A-2-4(0)
Unified Soil Classification : SC
Activity : 0.89
Heave Classification : LOW
Grading Modulus : 1.73
Percentage (<0.002) : 4.0
Moisture Content (%) : 14.3

Material Description : RD YL BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	7.1	7.0	42.6	43.2	SILTY SAND
Astm	7.1	19.4	44.1	29.4	SILTY SAND
British Standard	4.5	10.4	41.9	43.2	SILTY SAND



JENN CLAY		SILT			SAND			GRAVEL		
ASTM CLAY		SILT			SAND			GRAVEL		
BS CLAY	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL	

Remarks : 3rd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



Fortune Metallics SA
ATTENTION: Mr. Anthony Afordofe

PROJECT: Soils report for Erf 12 & 53 - Pretorius stad
Nigel

JOB NO: 91806

DATE: July 2013

PROFILE & PHOTO REPORT

CHAINAGE
T/pit 3
PROFILED BY
Mr.G.Sindane
GPS CO-ORDINATES
S 26° 25.448'
EO 028° 26.354'
TRIAL PITS EXCAVATED
By TLB



Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture, Colour, Consistency, Structure, Soil Type, Origin, General	SAMPLING TYPE AND NUMBER
		0	Moist Dark Brown Medium Dense Intact Transported Fine Silty Sand	Lab no.F0639 F.Ind
		400	Very moist Yellow Brown Medium Dense Intact Residual Fine Silty Sand CBR - 14% @ 95% Mod Aashto - G8/G8	Lab no.F0640 F.Ind,Mod,Cbr PH & Conductivity
		1700	Moist Red Yellow Brown Dense to Very Dense Intact Residual Silty Sandy Ferricrete No Water table Refusal @ 2800mm	Lab no.F0641 F.Ind.
		2800		



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

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TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

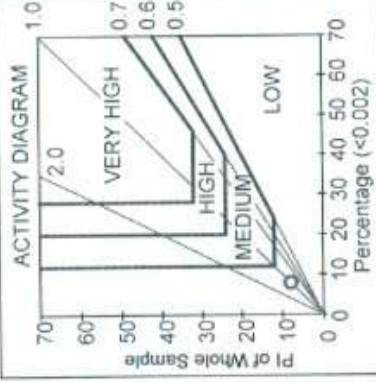
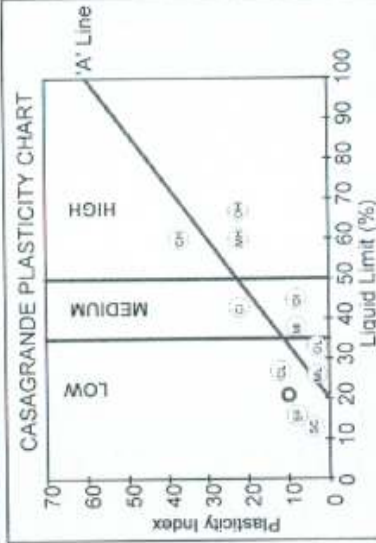
Your Ref :
Our Ref : 91806
Date Reported : 25.07.2013

FOUNDATION INDICATOR (ASTM: D422)

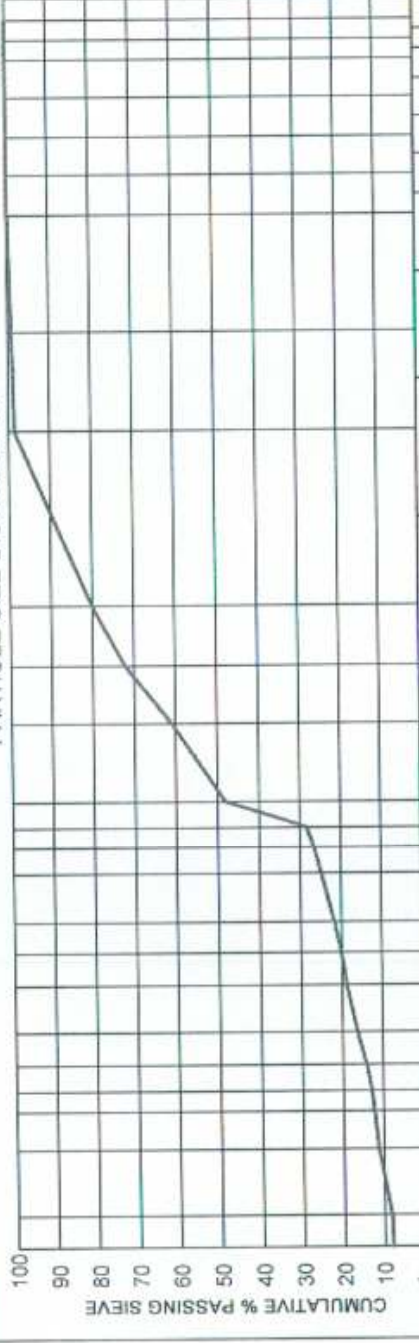
Sample No. : F0639
 Hole No. : TP3
 Depth (mm) : 0-400
 Liquid Limit (%) : 21
 Plasticity Index : 10
 Linear Shrinkage (%) : 5.0
 Pl of Whole Sample : 8
 P.R.A. Classification : A-4(3)
 Unified Soil Classification : SC
 Activity : 0.96
 Heave Classification : LOW
 Grading Modulus : 0.73
 Percentage (<0.002) : 8.0
 Moisture Content (%) : 7.8

Material Description : DK BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	12.3	14.3	72.0	1.4	SILTY SAND
Astm	12.3	35.7	51.2	0.8	SILTY SAND
British Standard	8.3	20.0	70.3	1.4	SILTY SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	SILT			SAND			GRAVEL		
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL
75	100	100	100	100	100	100	100	100	100
60	100	100	100	100	100	100	100	100	100
42.5	100	100	100	100	100	100	100	100	100
30	100	100	100	100	100	100	100	100	100
25	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100	100	100
15	100	100	100	100	100	100	100	100	100
12.5	100	100	100	100	100	100	100	100	100
10	100	100	100	100	100	100	100	100	100
7.5	100	100	100	100	100	100	100	100	100
6	100	100	100	100	100	100	100	100	100
4.75	100	100	100	100	100	100	100	100	100
2.0	100	100	100	100	100	100	100	100	100
0.75	100	100	100	100	100	100	100	100	100
0.425	100	100	100	100	100	100	100	100	100
0.25	100	100	100	100	100	100	100	100	100
0.15	100	100	100	100	100	100	100	100	100
0.075	100	100	100	100	100	100	100	100	100
0.05	100	100	100	100	100	100	100	100	100
0.025	100	100	100	100	100	100	100	100	100
0.015	100	100	100	100	100	100	100	100	100
0.0075	100	100	100	100	100	100	100	100	100
0.0036	100	100	100	100	100	100	100	100	100
0.0020	100	100	100	100	100	100	100	100	100
0.0015	100	100	100	100	100	100	100	100	100
0.00075	100	100	100	100	100	100	100	100	100
0.0005	100	100	100	100	100	100	100	100	100
0.00025	100	100	100	100	100	100	100	100	100
0.000125	100	100	100	100	100	100	100	100	100

Remarks : 1st LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory Andre Potgieter



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAI

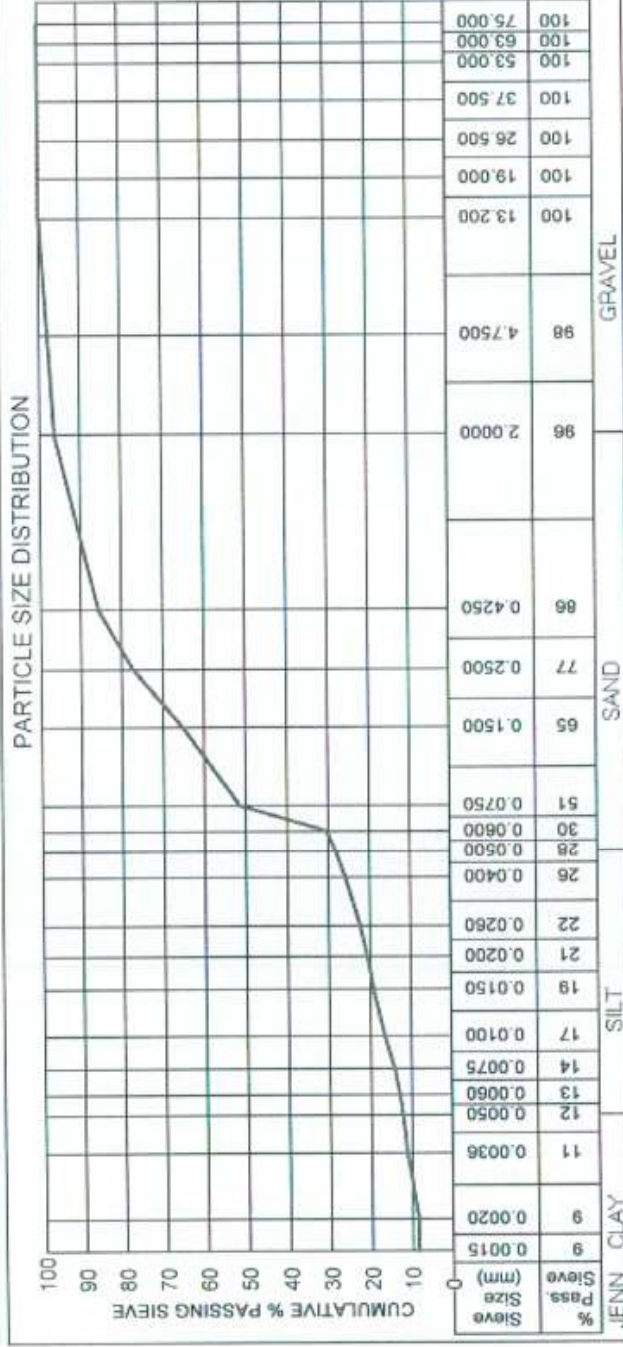
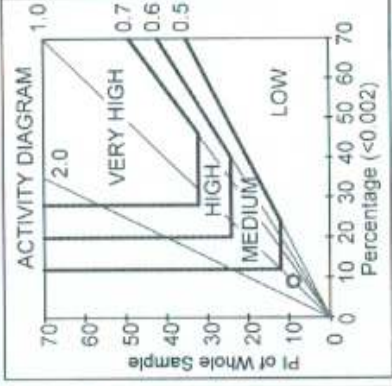
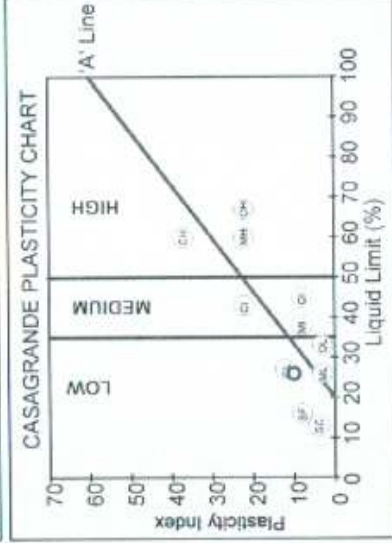
Your Ref :
Our Ref : 91806
Date Reported : 25.07.2013

FOUNDATION INDICATOR (ASTM: D422)

Sample No.: F0640
 Hole No.: TP3
 Depth (mm): 400-1700
 Liquid Limit (%): 26
 Plasticity Index : 10
 Linear Shrinkage (%): 5.0
 PI of Whole Sample : 9
 P.R.A. Classification : A-4(3)
 Unified Soil Classification : CL
 Activity : 1.05
 Heave Classification : LOW
 Grading Modulus : 0.67
 Percentage (<0.002) : 9.0
 Moisture Content (%) : 21.4

Material Description : YL BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	12.3	15.9	68.2	3.6	SILTY SAND
Astrm	12.3	39.1	46.6	2.0	SILTY SAND
British Standard	8.6	21.8	66.0	3.6	SILTY SAND



Sieve Size (mm)	SILT			SAND			GRAVEL		
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL
75.000									
63.000									
53.000									
47.500									
47.500									
2.000									
4.250									
4.250									
0.250									
0.250									
0.150									
0.150									
0.075									
0.075									
0.060									
0.050									
0.050									
0.040									
0.040									
0.026									
0.020									
0.020									
0.015									
0.010									
0.010									
0.0075									
0.0060									
0.0050									
0.0050									
0.0036									
0.0020									
0.0015									
0.0015									

Remarks : 2nd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT, BOKSBURG
1460
Attention: GAURAV BANSAL

Project : PRETORIUSSTAD - NIGEL

Your Ref :
Our Ref : 91806(C)
Date Reported : 30.07.2013

SIEVE ANALYSIS, ATTERBERG LIMITS, CBR, UCS(TMH1:A1-A5,A7,A8)

SAMPLE NO.	F0640		
HOLE NO	TP3		
ROAD NO			
DEPTH (mm)	400-1700		
CHAINAGE			
LAYER TYPE	2nd		
STABILISED WITH	NONE		
SUPPLIER			
CURING METHOD			
DESCRIPTION	YL OR BR SILTY SAND		

SIEVE ANALYSIS (% PASSING)

75 mm			
63 mm			
53 mm			
37.5 mm			
26.5 mm			
19.0 mm			
13.2 mm			
4.75 mm	100		
2.0 mm	98		
0.425 mm	96		
0.075 mm	86		
	52		

SOIL MORTAR

COARSE SAND < 2.000mm > 0.425mm	10		
FINE SAND < 0.425mm > 0.075mm	35		
MATERIAL < 0.075mm	55		

CONSTANTS

GRADING MODULUS	0.66		
PRA CLASSIFICATION	A-4(3)		
UNIFIED SOIL CLAS.	CL		
COLTO CLASSIFICATION	---		
TRH Class (INSITU [93% 90%])	G8 G8		
LIQUID LIMIT (%)	26		
PLASTICITY INDEX (0.425mm)	10		
LINEAR SHRINKAGE (%)	5.0		

MOD AASHTO

MAXIMUM DRY DENSITY (kg/m³)	1801		
OPTIMUM MOISTURE CONTENT (%)	15.7		
MOULDING MOISTURE (%)	15.9		

TYPE OF TEST

CBR			
CBR-UCS @ 100% MOD AASHTO	15		
CBR-UCS @ 98% MOD AASHTO	15		
CBR-UCS @ 97% MOD AASHTO	15		
CBR-UCS @ 95% MOD AASHTO	14		
CBR-UCS @ 93% MOD AASHTO	13		
CBR-UCS @ 90% MOD AASHTO	12		

CBR-UCS @ % MOD AASHTO derived from calculation.

% SWELL AT [MOD][NRB][PROC]	0.14	0.38	0.60						
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Remarks :

FORM: A1

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

Reg.No.: 2003/029180/07 - VAT. Reg.No.: 4040210587

28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

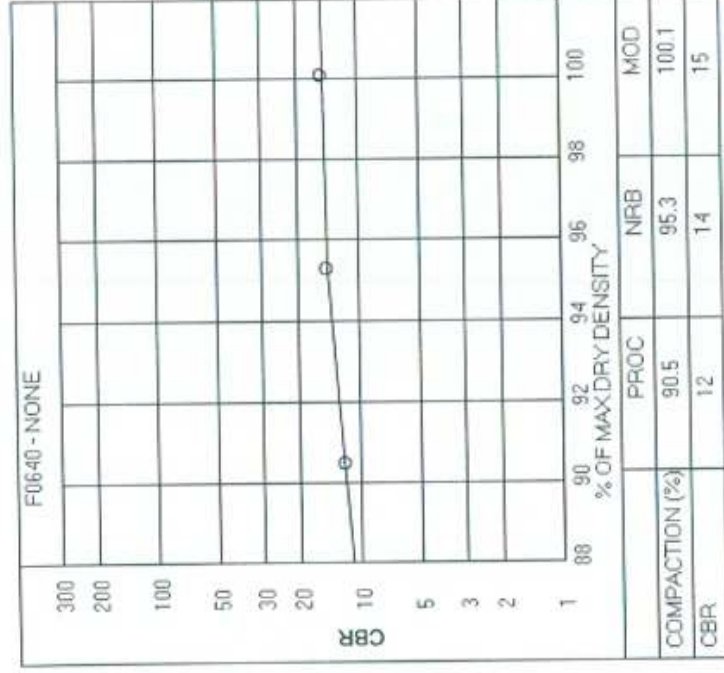
TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT,BOKSBURG
1460
Attention: GAURAV BANSAL

Project : PRETORIUSSTAD - NIGEL

Your Ref :
Our Ref : 91806(C)
Date Reported : 30.07.2013

CBR-UCS GRAPH/S (OPTIONAL INFORMATION)





28B Boundary Road, Brakpan
P O Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT, BOKSBURG
1460
Attention: GEORGE

Project : PRETORIUS STAD - NIGEL

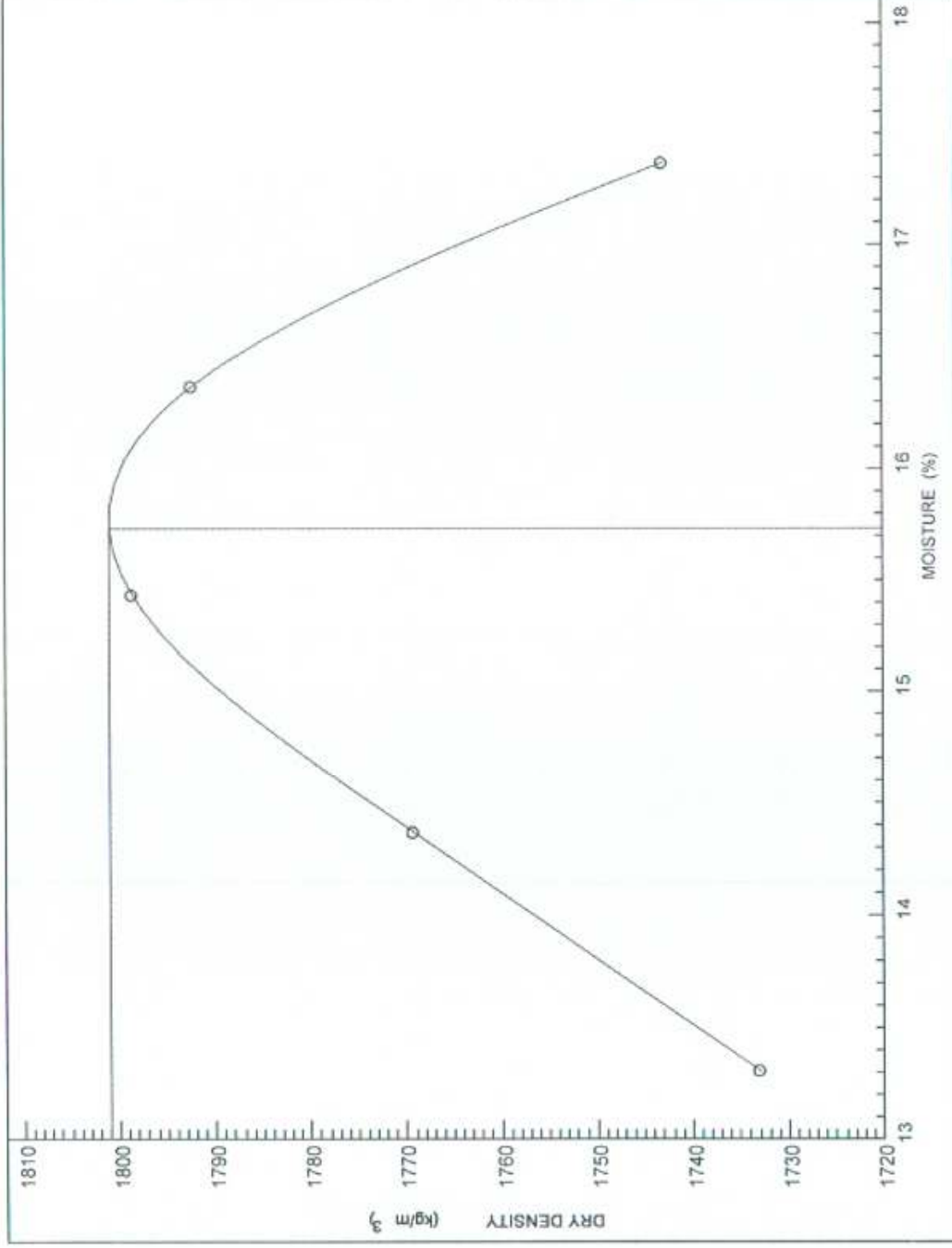
Your Ref :
Our Ref : 91806
Date Reported : 22.07.2013

MOISTURE / DENSITY RELATIONSHIP (TMH1 : A7)

Sample No. : F0640	Hole No. : TP3	Depth (mm) : 400-1700
Origin : 2nd LAYER	Stabilized With : NONE	Compaction Energy : MOD AASHTO
Material Description : YL OR BR SILTY SAND		

Maximum Dry Density (kg/m³) : 1801
Optimum Moisture Content (%) : 15.7

Point No.	1	2	3	4	5
Moisture (%)	13.3	14.4	15.4	16.4	17.4
Density (kg/m ³)	1733	1769	1799	1792	1743



Remarks :

FORM: A7

Program ver 3.3(26.01.2010)

Technical Signatory: Andre Potgieter



28B Boundary Road, Brakpan
P O Box 2393, Brakpan, 1540

Tel : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

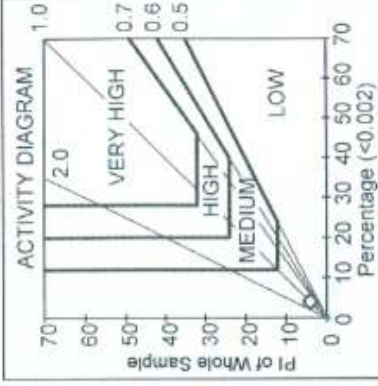
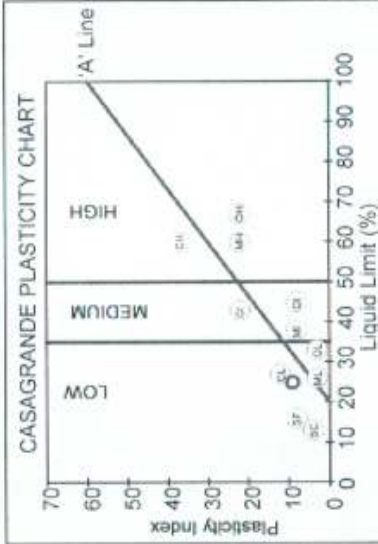
Your Ref :
Our Ref : 91806
Date Reported : 25.07.2013

FOUNDATION INDICATOR (ASTM: D422)

Sample No. : F0641
 Hole No. : TP3
 Depth (mm) : 1700-2800
 Liquid Limit (%) : 25
 Plasticity Index : 9
 Linear Shrinkage (%) : 4.5
 PI of Whole Sample : 4
 P.R.A. Classification : A-2-4(0)
 Unified Soil Classification : SC
 Activity : 1.00
 Heave Classification : LOW
 Grading Modulus : 1.75
 Percentage (<0.002) : 4.0
 Moisture Content (%) : 15.2

Material Description : RD YL BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	5.9	8.2	40.8	45.1	SILTY SAND
Astm	5.9	19.9	37.9	35.3	SILTY SAND
British Standard	4.0	11.3	39.6	45.1	SILTY SAND



ASTM CLAY	SILT			SAND			GRAVEL		
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL
BS CLAY									

Remarks : 3rd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andrie Potgieter



Fortune Metallics SA
ATTENTION: Mr. Anthony Afordofe

PROJECT:

Soils report for Erf 12 & 53 - Pretorius stad Nigel

JOB NO: 91806

DATE: July 2013

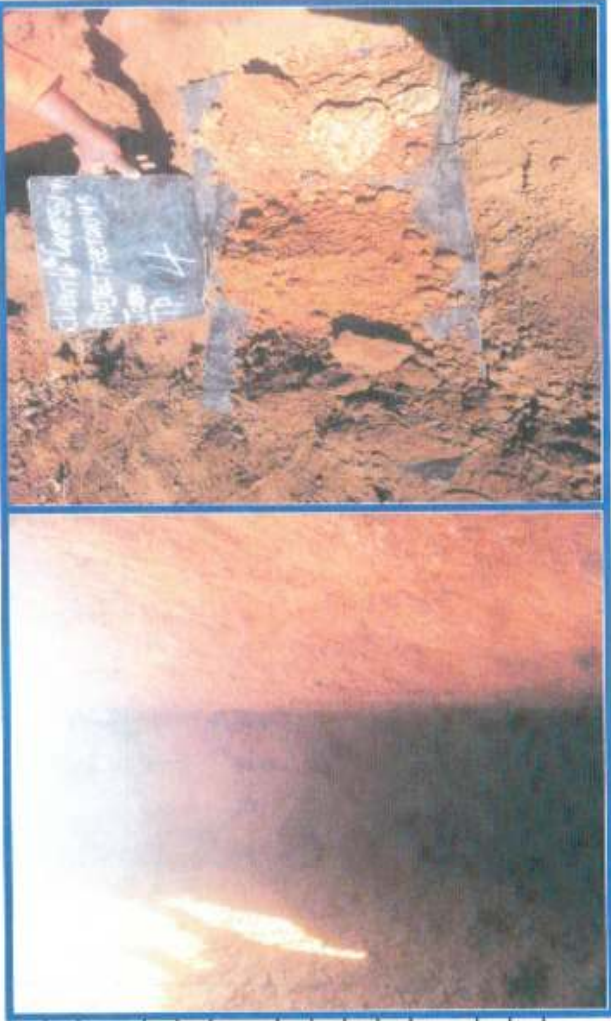
PROFILE & PHOTO REPORT

CHAINAGE
T/pit 4

PROFILED BY
Mr.G.Sindane

GPS CO-ORDINATES
S 26° 25.408'
EO 028° 26.353'

TRIAL PITS EXCAVATED
By TLB



Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture, Colour, Consistency, Structure, Soil Type, Origin, General	SAMPLING TYPE AND NUMBER
		0		Lab no.F0642 F.Ind.
		400	Moist Dark Brown Medium Dense Intact Transported Fine Silty Sand	
		1900	Very Moist Yellow Brown Medium Dense Intact Residual Fine Silty Sand	Lab no.F0643 F.Ind.
		2600	Moist Yellow Orange Brown Dense to Very Dense Intact Residual Clayey Sandy Ferricrete CBR - 14% 95% Mod Aashfo - G8 No Water table Refusal @ 2600mm	Lab no.F0644 F.Ind,Mod,Cbr



28B Boundary Road, Brakpan
P.O. Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
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TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

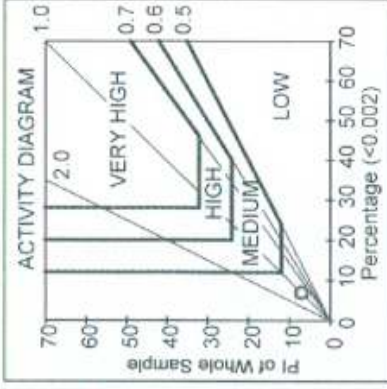
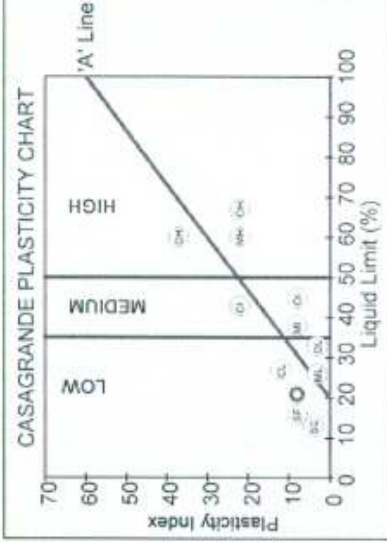
Your Ref :
Our Ref : 91806
Date Reported : 25.07.2013

FOUNDATION INDICATOR (ASTM: D422)

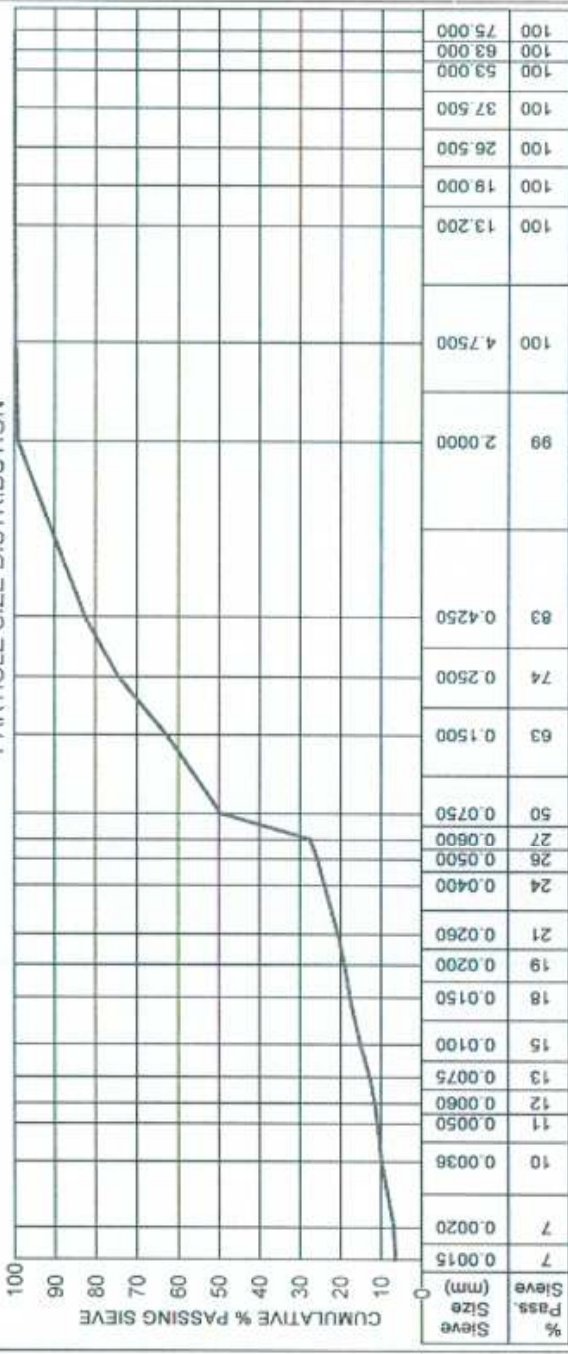
Sample No. : F0642
Hole No. : TP4
Depth (mm) : 0-400
Liquid Limit (%) : 21
Plasticity Index : 8
Linear Shrinkage (%) : 4.0
PI of Whole Sample : 7
P.R.A. Classification : A-4(3)
Unified Soil Classification : SC
Activity : 1.01
Heave Classification : LOW
Grading Modulus : 0.69
Percentage (<0.002) : 7.0
Moisture Content (%) : 11.6

Material Description : DK BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	11.0	14.7	73.5	0.8	SILTY SAND
Astm	11.0	38.6	50.2	0.3	SILTY SAND
British Standard	5.9	20.5	71.7	0.8	SILTY SAND



PARTICLE SIZE DISTRIBUTION



ASTM CLAY	SILT			SAND			GRAVEL																
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL														
BS CLAY																							

Remarks : 1st LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



285 Boundary Road, Brakpan
P.O. Box 2393, Brakpan, 1540

Tel. : 011 740 9410/1
Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

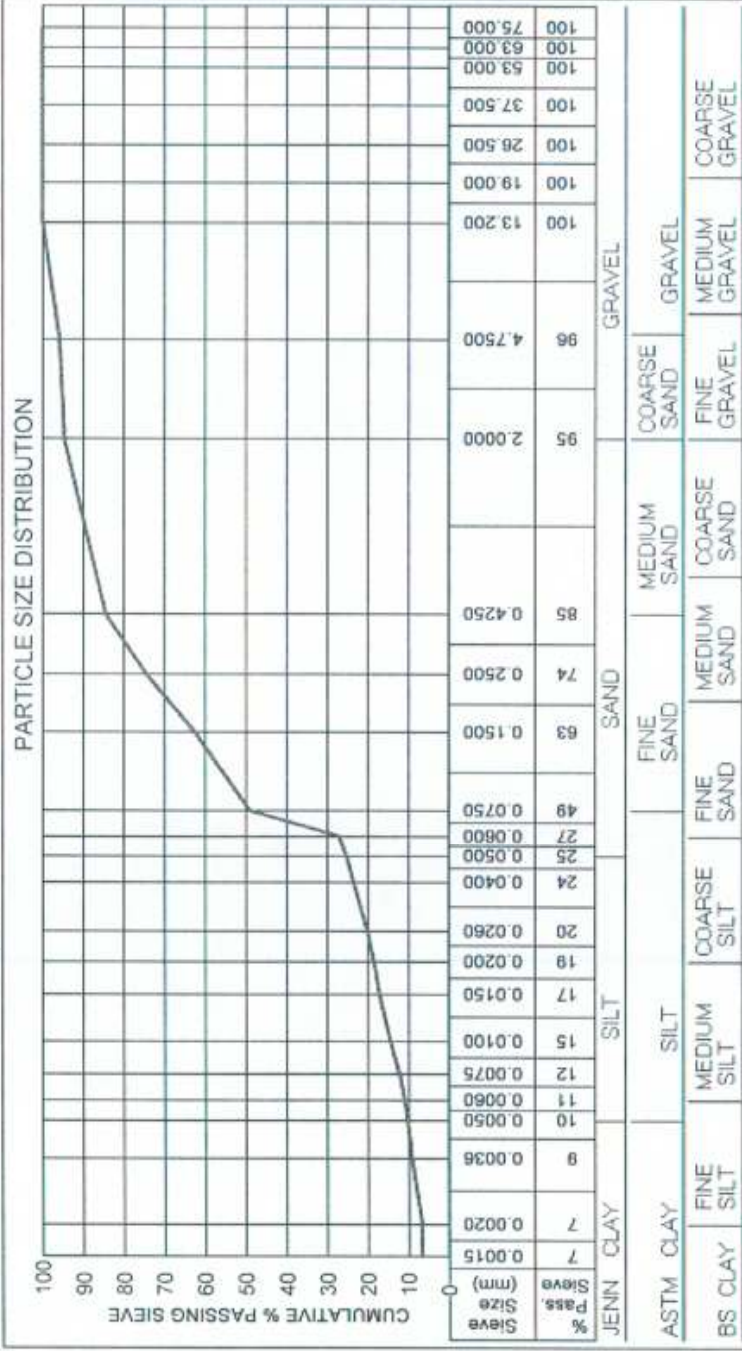
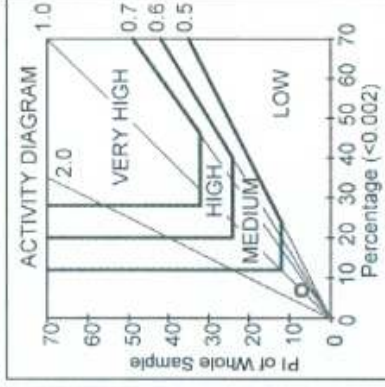
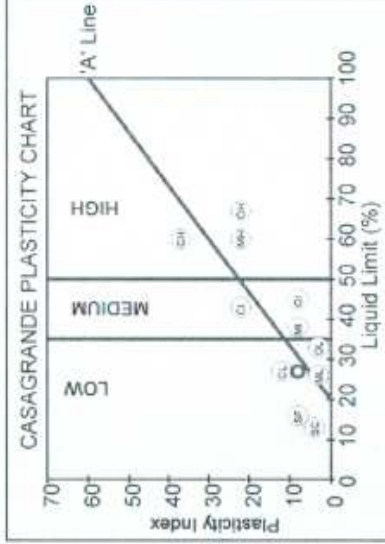
Your Ref :
Our Ref : 91806
Date Reported : 25.07.2013

FOUNDATION INDICATOR (ASTM: D422)

Sample No. : F0643
 Hole No. : TP4
 Depth (mm) : 400-1900
 Liquid Limit (%) : 27
 Plasticity Index : 8
 Linear Shrinkage (%) : 4.0
 PI of Whole Sample : 7
 P.R.A. Classification : A-4(3)
 Unified Soil Classification : SC
 Activity : 1.04
 Heave Classification : LOW
 Grading Modulus : 0.72
 Percentage (<0.002) : 7.0
 Moisture Content (%) : 18.3

Material Description : YL BR SILTY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	10.4	15.0	69.4	5.3	SILTY SAND
Astrm	10.4	38.7	46.9	4.1	SILTY SAND
British Standard	6.8	20.4	67.6	5.3	SILTY SAND



Remarks : 2nd LAYER

FORM: A6

Program ver: 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



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TEST RESULTS

FORTUNE METALICS SA (PTY) LTD

Project : SOIL REPORT FOR ERF 12 & 53, PRETORIUSSTAD - NIGEL

Attention: GAURAV BANSAL

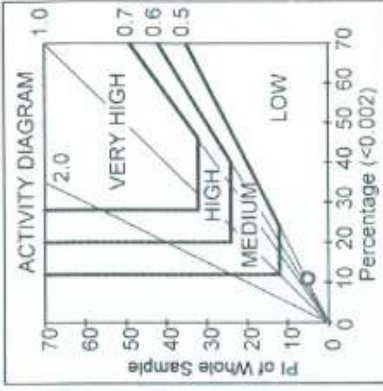
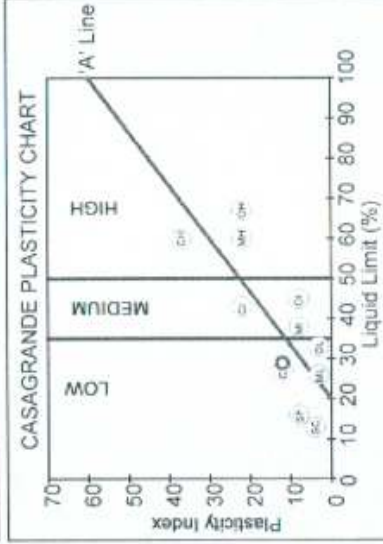
Your Ref :
Our Ref : 91806
Date Reported : 25.07.2013

FOUNDATION INDICATOR (ASTM: D422)

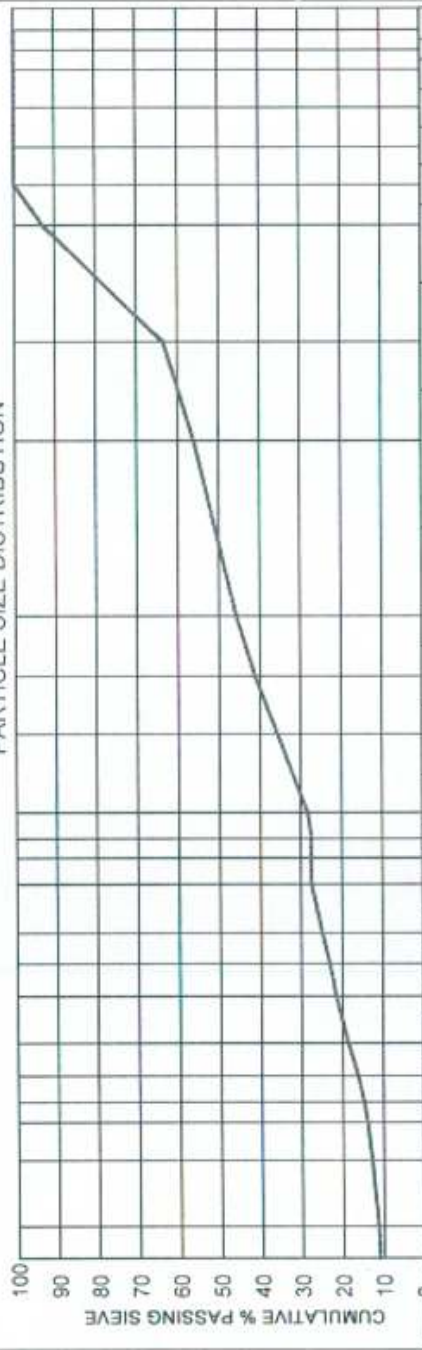
Sample No. : F0644
 Hole No. : TP4
 Depth (mm) : 1900-2600
 Liquid Limit (%) : 29
 Plasticity Index : 12
 Linear Shrinkage (%) : 6.0
 PI of Whole Sample : 5
 P.R.A. Classification : A-2-6(0)
 Unified Soil Classification : SC
 Activity : 0.44
 Heave Classification : LOW
 Grading Modulus : 1.70
 Percentage (<0.002) : 11.0
 Moisture Content (%) : 17.0

Material Description : YL OR BR CLAYEY SAND

	Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Classification
Jennings	14.1	13.4	28.5	43.9	CLAYEY SAND
Astm	14.1	14.3	35.0	36.6	CLAYEY SAND
British Standard	11.4	16.1	28.6	43.9	CLAYEY SAND



PARTICLE SIZE DISTRIBUTION



Sieve Size (mm)	SILT			SAND			GRAVEL		
	FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL
75.000									
100									
63.000									
53.000									
47.500									
42.500									
37.500									
30.000									
25.000									
20.000									
15.000									
12.500									
10.000									
7.500									
6.000									
4.750									
0.750									
0.600									
0.500									
0.400									
0.250									
0.150									
0.075									
0.050									
0.020									
0.0075									
0.0050									
0.0020									
0.0015									
0.0010									
0.0005									
0.0002									
0.0001									

ASTM CLAY	SILT			SAND			GRAVEL		
FINE SILT	MEDIUM SILT	COARSE SILT	FINE SAND	MEDIUM SAND	COARSE SAND	FINE GRAVEL	MEDIUM GRAVEL	COARSE GRAVEL	
100									
63.000									
53.000									
47.500									
42.500									
37.500									
30.000									
25.000									
20.000									
15.000									
12.500									
10.000									
7.500									
6.000									
4.750									
0.750									
0.600									
0.500									
0.400									
0.250									
0.150									
0.075									
0.050									
0.020									
0.0075									
0.0050									
0.0020									
0.0015									
0.0010									
0.0005									
0.0002									
0.0001									

Remarks : 3rd LAYER

FORM: A6

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter



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TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT,BOKSBURG
1460
Attention: GAURAV BANSAL

Project : PRETORIUSSTAD - NIGEL

Your Ref :
Our Ref : 91806(D)
Date Reported : 30.07.2013

SIEVE ANALYSIS, ATTERBERG LIMITS, CBR, UCS(TMH1:A1-A5,A7,A8)

SAMPLE NO.	F0644		
HOLE NO.	TP4		
ROAD NO.	1900-2600		
DEPTH (mm)			
CHAINAGE			
LAYER TYPE	NONE		
STABILISED WITH			
SUPPLIER			
CURING METHOD			
DESCRIPTION	LT YL OR BR SILTY SAND		

SIEVE ANALYSIS (% PASSING)

75 mm			
63 mm			
53 mm			
37.5 mm			
26.5 mm			
19.0 mm			
13.2 mm			
4.75 mm	100		
2.0 mm	93		
0.425 mm	63		
	56		
	46		
	29		

SOIL MORTAR

COARSE SAND<2.000mm >0.425mm	18		
FINE SAND <0.425mm >0.075mm	30		
MATERIAL <0.075mm	52		

CONSTANTS

GRADING MODULUS	1.69		
PRA CLASSIFICATION	A-2-6(0)		
UNIFIED SOIL CLAS.	SC		
COLTO CLASSIFICATION	G8		
TRH Class. (INSITU [93% 90%])	G8 G8		
LIQUID LIMIT (%)	29		
PLASTICITY INDEX (0.425mm)	12		
LINEAR SHRINKAGE (%)	6.0		

MOD AASHTO

MAXIMUM DRY DENSITY (kg/m ³)	1880		
OPTIMUM MOISTURE CONTENT (%)	14.0		
MOULDING MOISTURE (%)	14.2		

TYPE OF TEST

CBR			
CBR-UCS @ 100% MOD AASHTO	15		
CBR-UCS @ 98% MOD AASHTO	15		
CBR-UCS @ 97% MOD AASHTO	15		
CBR-UCS @ 95% MOD AASHTO	14		
CBR-UCS @ 93% MOD AASHTO	14		
CBR-UCS @ 90% MOD AASHTO	12		

CBR-UCS @ % MOD AASHTO derived from calculation.

% SWELL AT [MOD][NRB][PROC]	0.17	0.40	0.60					
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Remarks :

FORM: A1

Program ver 3.3(26.01.2010)

Technical Signatory : Andrie Potgieter



MATROLAB GROUP (PTY.) LTD.

- CIVIL ENGINEERING SERVICES -

Reg.No.: 2003/029180/07 - VAT, Reg.No.: 4040210587

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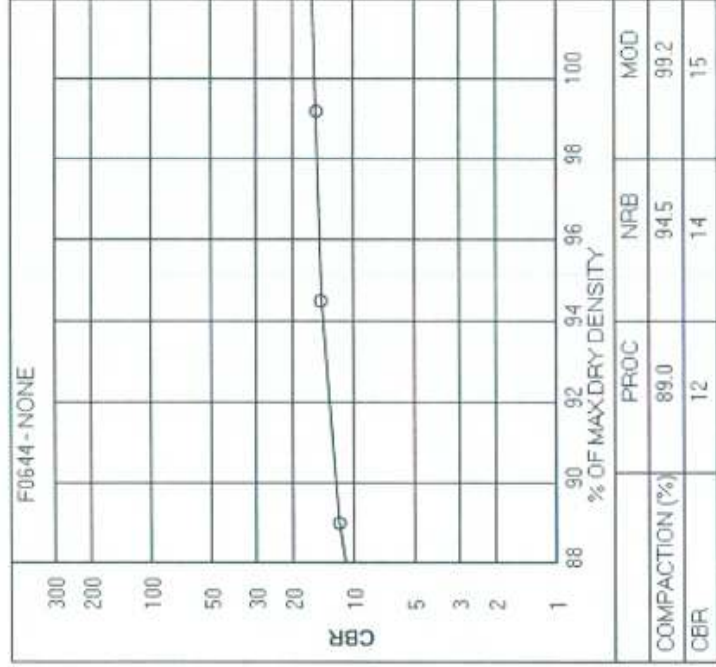
TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT,BOKSBURG
1460
Attention: GAURAV BANSAL

Project : PRETORIUSSTAD - NIGEL

Your Ref :
Our Ref : 91806(D)
Date Reported : 30.07.2013

CBR-JCS GRAPH/S (OPTIONAL INFORMATION)





28B Boundary Road, Brakpan
P.O Box 2393, Brakpan, 1540

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Fax : 011 740 1949
Email : andrep@matrolab.co.za

TEST RESULTS

FORTUNE METALICS SA (PTY) LTD
54 MAIN REEF ROAD
ANDERBOLT,BOKSBURG
1460
Attention: GEORGE

Project : PRETORIUS STAD - NIGEL

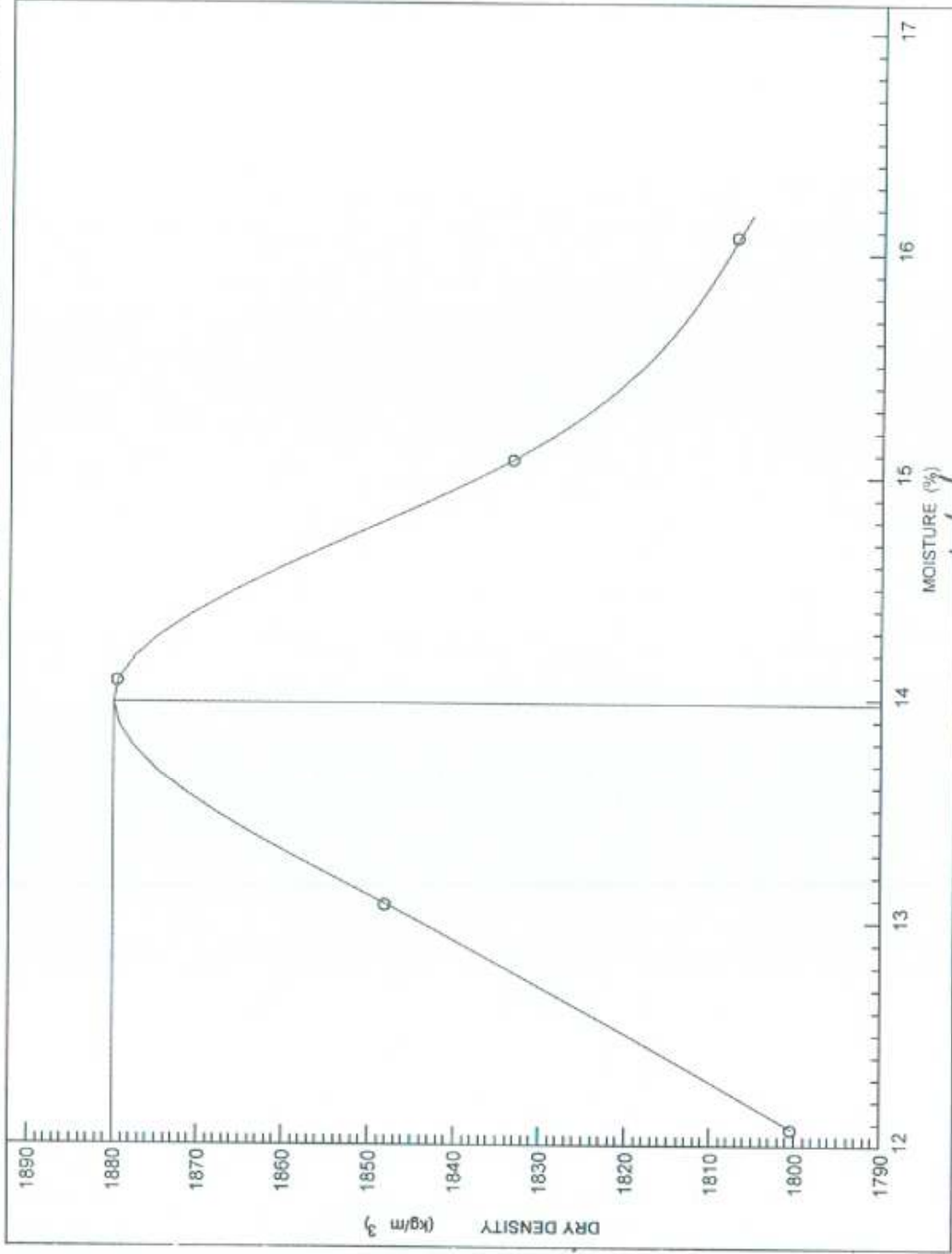
Your Ref :
Our Ref : 91806
Date Reported : 22.07.2013

MOISTURE / DENSITY RELATIONSHIP (TMH1 : A7)

Sample No. : F0644	Hole No. : TP4	Depth (mm) : 1900-2600
Origin : 3rd LAYER	Stabilized With : NONE	Compaction Energy : MOD AASHTO
Material Description : LT YL OR BR SILTY SAND		

Maximum Dry Density (kg/m³) : 1880
Optimum Moisture Content (%) : 14.0

Point No.	1	2	3	4	5
Moisture (%)	12.1	13.1	14.1	15.1	16.1
Density (kg/m ³)	1800	1848	1879	1833	1807



Remarks :

FORM: A7

Program ver 3.3(26.01.2010)

Technical Signatory : Andre Potgieter