

CLIENT : Umgudulu Project Management & Construction  
 PHYSICAL ADDRESS : No. 517, Aldrovande Place, 6 Jubilee Ridge,  
 Umhlanga Ridge, Umhlanga,  
 4319  
 ATTENTION : Mr Njabulo  
 PROJECT : Chatsworth Pipeline

**TEST REPORT REFERENCE NUMBER: 55963**

**Dear Sir/Madam,**

Enclosed herewith, please find the original reports pertaining to the above-mentioned project.

Date Received	15.12.2021		
Date Tested	10.01.2022 to 17.01.2022		
Sample Location	Refer to Report		
Sampling Method	Unknown		
Sample Condition	Good		
Sampling Environmental Condition	Unknown		
Sampler(s) Name	Client		
Total Number of Pages	8		
<b>Test Carried Out</b>			
SANS3001 GR1	<input checked="" type="checkbox"/>	SANS3001 AS2	
SANS3001 GR10, GR12	<input checked="" type="checkbox"/>	SANS3001 AS20	
SANS3001 GR30	<input checked="" type="checkbox"/>	SANS3001 AS10	
SANS3001 GR40	<input checked="" type="checkbox"/>	Hydrometer Analysis - ASTM D422	<input checked="" type="checkbox"/>
TMH1 Method A10(b)		SANS3001 AS11	
SANS3001 GR50, GR53		ASTM D6931	
SANS3001 GR50, GR54		SANS 5860, 5861-1, 5861-2, 5861-3	
SANS3001 GR58		TMH1 Method B9	
<input checked="" type="checkbox"/> - Tick denotes tests that were carried out.			

**We would like to take this opportunity of thanking you for your continued support.**

**Should you have any queries please do not hesitate to contact me.**

**Yours faithfully**



**Technical Signatory,  
 Bradley Hariram for Geosure (Pty) Ltd.**

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Client : Umgudulu Project Management & Constructio      Our Ref. : 55963  
 Project : Chatsworth Pipeline      Your Ref. : -  
 Date Tested : 11.01.2022 to 14.01.2022  
 Attention : Mr Njabulo      Date Reported : 19.01.2022

Sample No.	T37671	T37672	T37673
Field No.	TP1	TP1	TP2
Position in Field	-	-	-
Depth (m)	0.25-1.0	1.0-1.70	0.0-1.0
Material Description	Dark brown gravelly SAND	Light brown SAND	Dark greyish brown silty SAND

**Sieve Analysis ( Wet Preparation ) - SANS3001 GR 1 - Percent Passing Sieve Size**

<b>% Passing</b>	100.0 mm	100	100	100
	75.0 mm	100	100	100
	63.0 mm	100	100	100
	50.0 mm	100	100	100
	37.5 mm	100	100	100
	28.0 mm	100	100	100
	20.0 mm	100	100	100
	14.0 mm	100	100	100
	5.00 mm	99	100	100
	2.00 mm	99	99	99
	0.425 mm	76	77	78
	0.250 mm	51	50	53
	0.150 mm	35	33	32
0.075 mm	26	23	21	

**Hydrometer Analysis - ASTM - D422 - Percent Passing Particle Diameter (<0.425mm)**

<b>% Passing</b>	0.060 mm	24	21	20
	0.050 mm	22	19	19
	0.040 mm	21	18	18
	0.026 mm	18	16	16
	0.015 mm	15	14	13
	0.010 mm	14	13	12
	0.0074 mm	12	12	11
	0.0036 mm	10	10	7
	0.0020 mm	8	8	6
	0.0015 mm	8	8	5

**Mechanical analysis - SANS3001 GR1 - Percent of Soil Mortar (<2 mm) for Grain Size range**

Coarse Sand	%	23	23	21
Coarse Fine Sand	%	25	27	25
Medium Fine Sand	%	15	17	21
Fine Fine Sand	%	10	10	11
Silt & Clay	%	26	23	21
Grading Modulus		1.00	1.02	1.03

**Atterberg Limits - SANS3001 GR10, GR12 (<0.425mm)**

Liquid Limit	%	SP	SP	SP
Plasticity Index	%	SP	SP	SP
Linear Shrinkage	%	1.5	0.5	1.0
AASHTO Classification (Group Index)*		A-2-4 (0)	A-2-4 (0)	A-2-4 (0)
Unified Classification*		SM	SM	SM
Moisture Content	%			

<b>Remarks:</b>	Date Received: 15.12.2021
	Sampled by Client.
	*Opinions expressed herein fall outside the scope of SANAS accreditation.

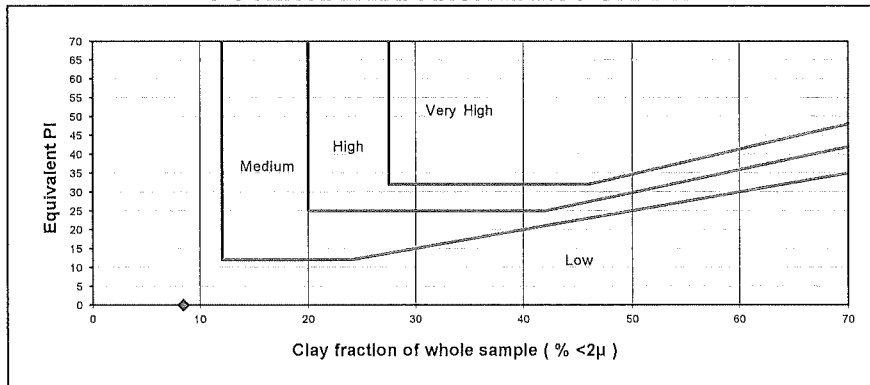
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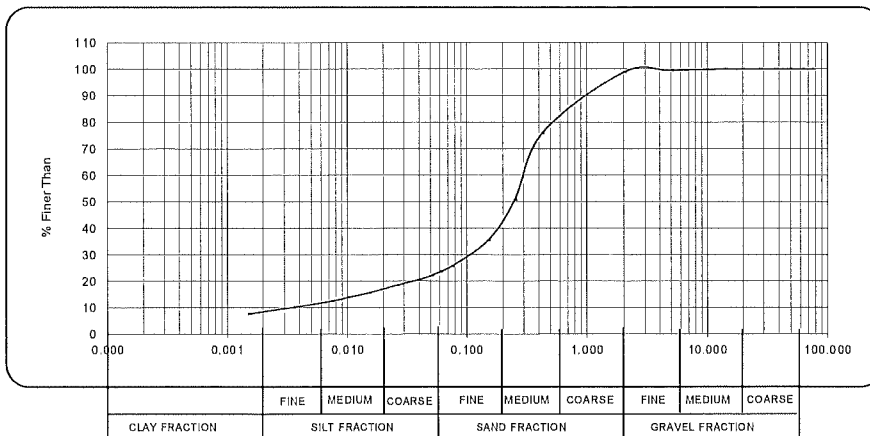
Client : Umgudulu Project Management & Construction Job No. : 55963  
 Project : Chatsworth Pipeline Your Ref.No. : -  
Date Tested : 11.01.2022 to 14.01.2022  
 Attention : Mr Njabulo Date Reported : 19.01.2022

Sample Number : T37671  
 Field No. : TP1  
 Sample Description : Dark brown gravelly SAND  
 Equivalent PI :   Clay fraction of whole sample (% <2μ) : 8

### POTENTIAL EXPANSIVENESS GRAPH



### PARTICLE SIZE DISTRIBUTION CHART



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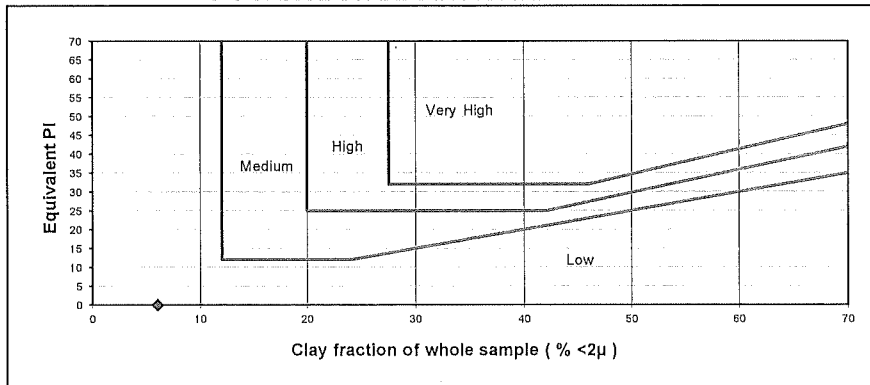


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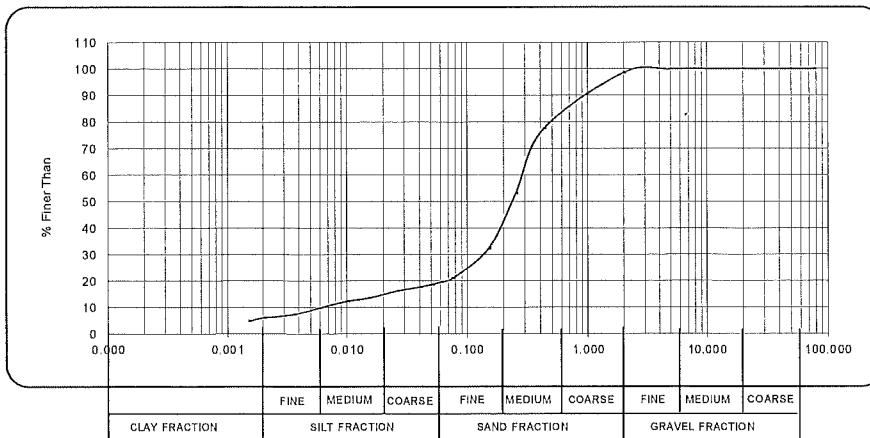
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Project : Chatsworth Pipeline	Your Ref.No. : -
	Date Tested : 11.01.2022 to 14.01.2022
Attention : Mr Njabulo	Date Reported : 19.01.2022

Sample Number : T37673  
 Field No. : TP2  
 Sample Description : Dark greyish brown silty SAND  
 Equivalent PI :   Clay fraction of whole sample (% <2 $\mu$ ) : 6

**POTENTIAL EXPANSIVENESS GRAPH**



**PARTICLE SIZE DISTRIBUTION CHART**



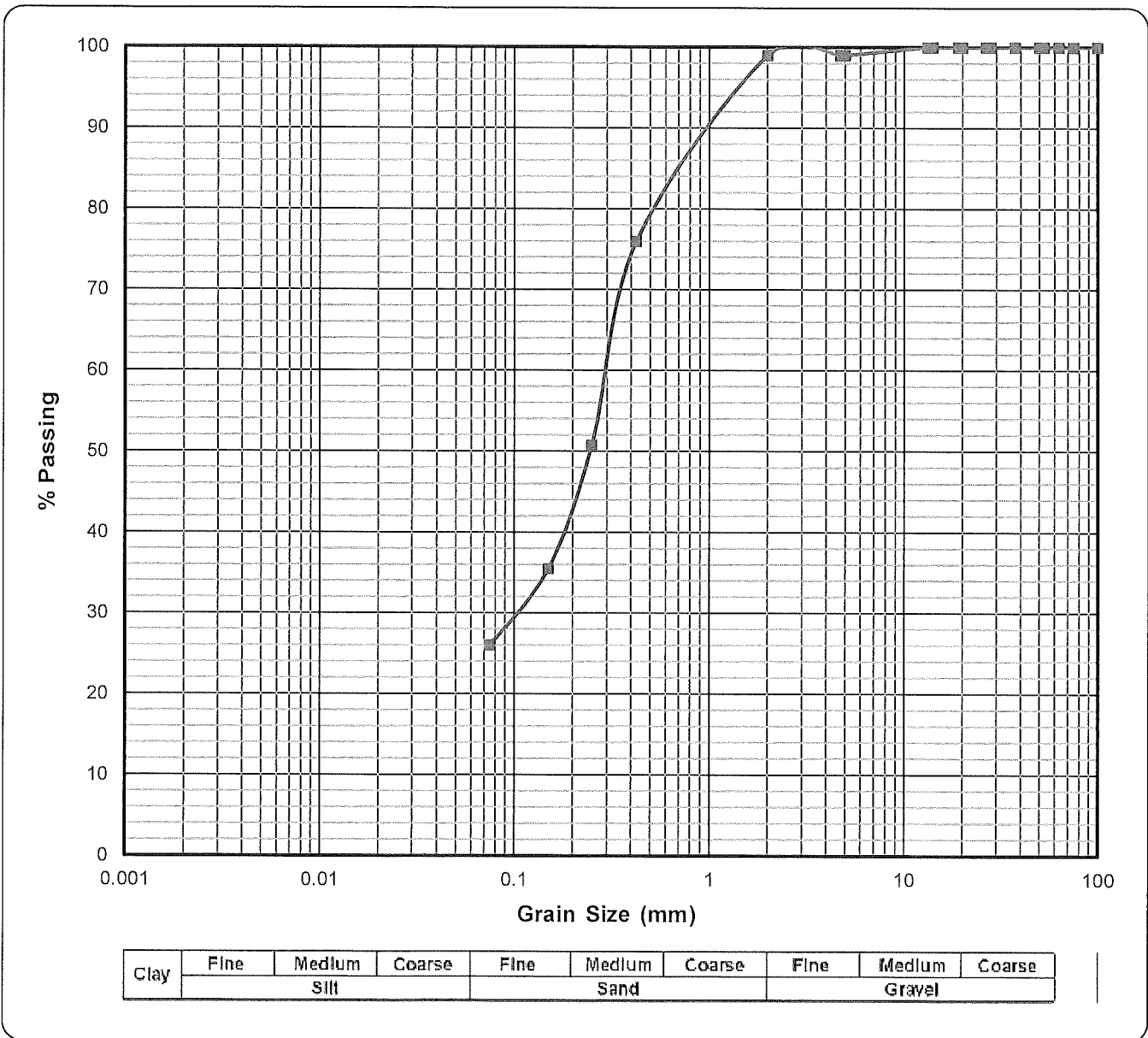
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## Grading Curve for Sample T37671 – SANS 3001



**Thick Red Line is the Grading Curve (COLTO Classification = G8 (#)) (TRH 14 Classification = G10)**

Sieve Aperture Size	0.075	0.150	0.250	0.425	2.00	4.75	5.00	13.20	14.00	19.00	20.00	26.50	28.0	37.5	50.0	53.0	63	75	100
Percentage Passing	26%	35%	51%	76%	99%	99%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

