GEOTECHNICAL INVESTIGATION: 100 INFILL LOW COST HOUSING, O'KIEP TOWNSHIP, NAMA KHOI LOCAL MUNICIPALITY

Prepared For

COGHSTA

9 Cecil Sussman St,

Kimberley,

8301

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	Name	Signature	Date
Author	Maumela Rudzani		2020/02/18
Document Reviewer	Golden Manganyi		2020/06/08
Document Authorisation	Tumelo Mokgatlee		2020/06/08

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1. INTRODUCTION

By late 2019, COGHSTA appointed Iceberg Trading 751 cc to undertake the Geotechnical investigation for the proposed 100 low cost housing located in O'kiep Town, Northern Cape Province. The physical and geotechnical nature of the site needs to be investigated to facilitate the civil engineering design and foundation solution. Iceberg Trading was advised that the development comprises of a 100-infill housing to be developed in O'kiep area.

The report presents the finding of the site with regards to the Revised Edition of the Guide to Soil Profiling for Civil Engineering Purposes in Southern Africa which was published in September 2002.

This report discusses the method of investigation, geotechnical conditions encountered with on-site material characteristics, recommendations and general considerations.

The level of information provided in this report is deemed suitable for planning purposes.

2. PURPOSE OF INVESTIGATION AND SCOPE OF WORK

The scope of work comprises trial pits excavation and sampling within the proposed areas/townv, this includes:

- Determine the geological origin of the material on site.
- Identify and discuss the main on-site geotechnical constraints;
- Materials classification according to TRH14 of different in-situ materials (indicator tests – mod and CBR related – in situ densities and in situ CBR) for suitability in re-use in new layer works and fill below walkways.
- Identify problem areas at a sufficiently early stage.
- Determining the ground water depth level, along the soggy areas
- Identify risk and consequence of failure.
- Identify and discuss the main on-site geotechnical constraints;
- Recommendation on aspects of the site that can adversely affect the design and cost of the project (Facilitate an adequate and economical design).
- Comment on the founding conditions
- Provide the geotechnical basis for planning and preliminary design purposes.

The scope of work was accomplished by:

- Excavation of 140 trial holes to maximum depth of 1.7m below ground level by Bell TLB;
- Performing laboratory tests to determine physical or engineering characteristics of the soil onsite;
- Performing engineering analysis to develop design guidelines and recommendations.

Subsequent sections of this report contain descriptions of the fieldwork, general subsurface conditions, design recommendations, and construction considerations.

3. CHALLENGES

The proposed scope was to excavate a minimum of two trial holes per stand as per the guideline, however the investigation was within the build-up area, some investigated stands are occupied by houses and underground services. The challenges encountered was that some of the stand didn't have enough space to excavate two trial pits because of the existing house, hence one trial pit was excavated. A portion which was bigger than 2 hectares was also investigated as per 'SANS 634:2012 Geotechnical investigation for township development' and 'Generic Specification GFSH-2:2002 Geotechnical site investigations for housing development.

4. AVAILABLE INFORMATION

- A 1:250 000 scale Geological Map from Council for Geoscience
- Topographical maps and google earth images provided by the client
- A field walkover survey done by the consultant and the municipality.

5. METHOD OF INVESTIGATION

The geotechnical investigation commenced with a desktop study, which entailed obtaining as much information as possible of the site that may provide indication of the most likely sub-soil and associated geotechnical conditions prevailing within the area. By determining the underlying geological setting together with prevailing topographical and climatic condition, the weathering characteristic of the host rock can be estimated and the indication of the most likely geotechnical condition underlying the site can be established.

The desktop study was followed by a site reconnaissance which was carried on 22nd January 2020. This was done through walking over the entire area whilst noting and recording information for visible surface information, from this phase of investigation together with desktop study, provided the preliminary assessment of the geotechnical condition underlying the site and identify areas necessary for further investigation.

Field investigation was carried out on 29th January to 03rd February 2020 and entailed setting out and excavating 140 trial holes using Tlb (Tractor loader backhoe). Holes referred as TP 01 to TP 139 were excavated at position shown on the attached plan.

Representative soil samples were sampled from the soil horizons and submitted to soil laboratory for testing. The following tests were conducted.

- Foundation Indicator tests
- MOD AASHTO compaction and CBR
- Material Classification
- pH and Conductivity

6. BIOPHYSICAL DESCRIPTION

6.1 SITE LOCATION AND DESCRIPTION

The study area is O'kiep Town, Springbok, Northern Cape Province. O'kiep is located 7,9km north of Springbok town. The investigated town lies on the eastern side on the National Road 7 (N7). The investigated area is an existing residential town with houses and shacks, and it is subdivided into sub-villages. Municipality is supplying water and electricity in bulk to the existing town. Electricity supply is by means of an overhead network.

The vegetation comprises of trees, shrubs and few outcrops of granite and quartzite were encountered during the walkover survey and fieldwork.

Figure 1: A Photograph showing outcrops found onsite

Table 1: Coordinates of the proposed investigated area

Latitude	29° 35'31.04"S
Longitude	17° 52'33.44"E

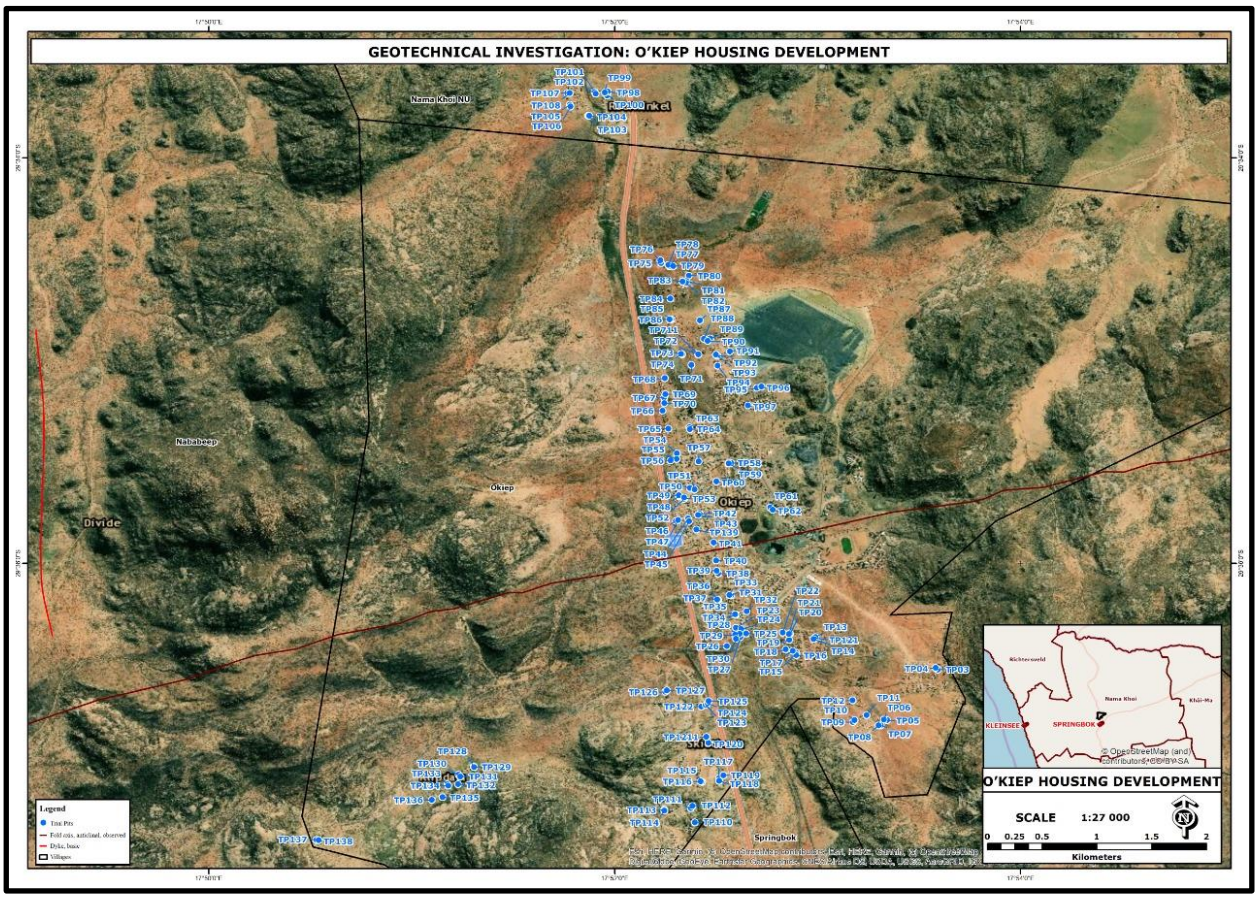


Figure 2: Locality map, showing the investigated town.

6.2 SURFACE WATER

Few streams and water ponds were noted during the walkover survey over the proposed area for investigation.

6.3 LAND USE

The investigated area is an existing residential town with houses and shacks, with services such as water and electricity from the municipality to the existing town.

7. GEOLOGY

According to the 1:250 000 geological map the investigated area is expected to be underlain by different types of Quartzite, Granite and Gneiss of the Namaqualand Suite.

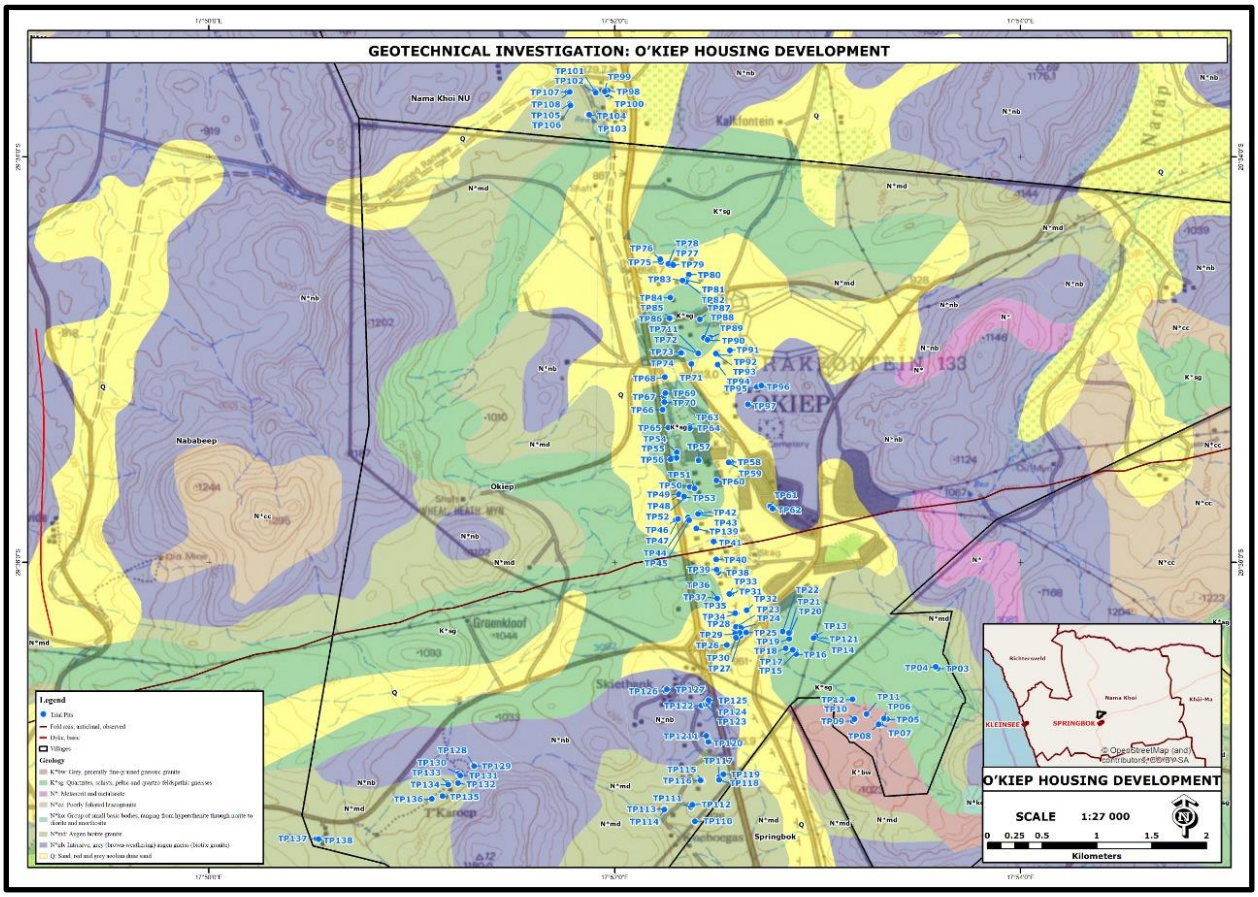


Figure 3: Geology map of the investigated area.

8. CLIMATE AND HYDROLOGY

Okiep normally receives about 106mm of rain per year, with most rainfall occurring during summer. It receives the lowest rainfall (0mm) in January and the highest (23mm) in June. The average midday temperatures for Okiep range from 16.5°C in July to 28.3°C in February. The region is the coldest during July when the mercury drops to 3.8°C on average during the night.

Weinert (1964), through his work on basic rocks in Southern Africa, demonstrated that mechanical disintegration is the predominant mode of rock weathering in areas where his climatic "N-value" is greater than 5, while chemical decomposition predominates where the N-value is less than 5. The climatic N-value of the area is <5, which implies that chemical decomposition is the dominant mode or rock weathering.

9. NATURE OF INVESTIGATION

9.1 TRIAL PITS

The site investigation was carried out on the 29th January to the 3rd February 2020. Hundred and forty pits were excavated with a backhoe loader. The maximum depth reached is 1.7m below ground level. The trial pits were internally profiled by a registered Engineering Geologist in accordance with the latest standard of South Africa (after Jennings et. al. 1973).

Disturbed samples were selectively retrieved in order to determine the soil grading, compaction characteristics and general material properties. The samples were submitted to an SANAS accredited laboratory. The trial pit was loosely backfilled after profiling.

The positions of the trial pits were determined with the aid of a hand-held GPS, the test pit profile is presented in Appendix A of this report and its approximate location is indicated on a test pits locality plan attached in Appendix D.

Figure 4: A photograph showing a TLB machine excavating on site

Table 2: Summary of trial pits

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 01	Hard dig	600mm	No water seepage encountered
TP 02	Hard dig	600mm	No water seepage encountered
TP 03	Hard dig	700mm	No water seepage encountered
TP 04	Hard dig	700mm	No water seepage encountered
TP 05	Refusal on bedrock	500mm	No water seepage encountered
TP 06	Hard dig	500mm	No water seepage encountered
TP 07	Very hard dig	400mm	No water seepage encountered
TP 08A	Hard dig	800mm	No water seepage encountered
TP 08B	Hard dig	800mm	No water seepage encountered
TP 09	Refusal on bedrock	400mm	No water seepage encountered
TP 10	Refusal on bedrock	300mm	No water seepage encountered
TP 11	Refusal	500mm	No water seepage encountered
TP 12	Refusal	400mm	No water seepage encountered
TP 13	Refusal	400mm	No water seepage encountered
TP 14	Refusal	400mm	No water seepage encountered
TP 15	Refusal	400mm	No water seepage encountered
TP 16	Refusal	700mm	No water seepage encountered
TP 17	Refusal on bedrock	400mm	No water seepage encountered
TP 18	Refusal	700mm	No water seepage encountered
TP 19	Refusal	400mm	No water seepage encountered
TP 20	Refusal	400mm	No water seepage encountered
TP 21	Refusal	400mm	No water seepage encountered
TP 22	Refusal	500mm	No water seepage encountered

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 23	Refusal	400mm	No water seepage encountered
TP 24	Refusal	400mm	No water seepage encountered
TP 25	Refusal	400mm	No water seepage encountered
TP 26	Refusal	500mm	No water seepage encountered
TP 27	Refusal on bedrock	300mm	No water seepage encountered
TP 28	Refusal on bedrock	400mm	No water seepage encountered
TP 29	Refusal	400mm	No water seepage encountered
TP 30	Refusal	700mm	No water seepage encountered
TP 31	Refusal	700mm	No water seepage encountered
TP 32	Refusal	500mm	No water seepage encountered
TP 33	Refusal	500mm	No water seepage encountered
TP 34	Refusal	500mm	No water seepage encountered
TP 35	Refusal	500mm	No water seepage encountered
TP 36	Refusal on bedrock	400mm	No water seepage encountered
TP 37	Refusal on bedrock	400mm	No water seepage encountered
TP 38	Refusal on bedrock	400mm	No water seepage encountered
TP 39	Refusal on bedrock	400mm	No water seepage encountered
TP 40	Refusal	500mm	No water seepage encountered
TP 41	Refusal	800mm	No water seepage encountered
TP 42	Refusal	400mm	No water seepage encountered
TP 43	Refusal	300mm	No water seepage encountered
TP 44	Refusal on bedrock	500mm	No water seepage encountered

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 45	Refusal on bedrock	400mm	No water seepage encountered
TP 46	Refusal on bedrock	400mm	No water seepage encountered
TP 47	Refusal on bedrock	200mm	No water seepage encountered
TP 48	Refusal on bedrock	200mm	No water seepage encountered
TP 49	Refusal on bedrock	300mm	No water seepage encountered
TP 50	Refusal on bedrock	400mm	No water seepage encountered
TP 51	Refusal on bedrock	400mm	No water seepage encountered
TP 52	Refusal on bedrock	300mm	No water seepage encountered
TP 53	Refusal on bedrock	300mm	No water seepage encountered
TP 54	Refusal on bedrock	900mm	No water seepage encountered
TP 55	Refusal on bedrock	300mm	No water seepage encountered
TP 56	Refusal on bedrock	500mm	No water seepage encountered
TP 57	Refusal on bedrock	300mm	No water seepage encountered
TP 58	Refusal on bedrock	300mm	No water seepage encountered
TP 59	Refusal on bedrock	300mm	No water seepage encountered
TP 60	Refusal on bedrock	400mm	No water seepage encountered
TP 61	Refusal on bedrock	700mm	No water seepage encountered
TP 62	Refusal on bedrock	600mm	No water seepage encountered
TP 63	Refusal on weathered rock	400mm	No water seepage encountered
TP 64	Refusal on weathered rock	500mm	No water seepage encountered
TP 65	Refusal	600mm	No water seepage encountered
TP 66	Refusal	500mm	No water seepage encountered
TP 67	Refusal	400mm	No water seepage encountered

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 68	Refusal	400mm	No water seepage encountered
TP 69	Refusal	100mm	No water seepage encountered
TP 70	Refusal	300mm	No water seepage encountered
TP 71	Refusal	300mm	No water seepage encountered
TP 72	Refusal	300mm	No water seepage encountered
TP 73	Refusal	500mm	No water seepage encountered
TP 74	Refusal	500mm	No water seepage encountered
TP 75	Refusal	700mm	No water seepage encountered
TP 76	Refusal	600mm	No water seepage encountered
TP 77	Refusal	700mm	No water seepage encountered
TP 78	Refusal	700mm	No water seepage encountered
TP 79	Refusal	700mm	No water seepage encountered
TP 80	Refusal	400mm	No water seepage encountered
TP 81	Refusal	500mm	No water seepage encountered
TP 82	Refusal	500mm	No water seepage encountered
TP 83	Refusal on bedrock	400mm	No water seepage encountered
TP 84	Refusal	700mm	No water seepage encountered
TP 85	Refusal	1300mm	No water seepage encountered
TP 86	Refusal on bedrock	300mm	No water seepage encountered
TP 87	Refusal	400mm	No water seepage encountered
TP 88	Refusal	300mm	No water seepage encountered
TP 89	Refusal	300mm	No water seepage encountered
TP 90	Refusal	500mm	No water seepage encountered

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 91	Refusal	400mm	No water seepage encountered
TP 92	Refusal	200mm	No water seepage encountered
TP 93	Refusal	300mm	No water seepage encountered
TP 94	Refusal	700mm	No water seepage encountered
TP 95	Refusal on bedrock	300mm	No water seepage encountered
TP 96	Refusal	400mm	No water seepage encountered
TP 97	Refusal	500mm	No water seepage encountered
TP 98	Refusal	700mm	No water seepage encountered
TP 99	Refusal	400mm	No water seepage encountered
TP 100	Refusal	600mm	No water seepage encountered
TP 101	Refusal	800mm	No water seepage encountered
TP 102	Refusal	800mm	No water seepage encountered
TP 103	Refusal	400mm	No water seepage encountered
TP 104	Refusal	800mm	No water seepage encountered
TP 105	Refusal	700mm	No water seepage encountered
TP 106	Refusal	500mm	No water seepage encountered
TP 107	Refusal	400mm	No water seepage encountered
TP 108	Refusal	600mm	No water seepage encountered
TP 109	Refusal	500mm	No water seepage encountered
TP 110	Refusal	1300mm	No water seepage encountered
TP 111	Refusal	600mm	No water seepage encountered
TP 112	Refusal	300mm	No water seepage encountered

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 113	Refusal	700mm	No water seepage encountered
TP 114	Refusal	700mm	No water seepage encountered
TP 115	Refusal	200mm	No water seepage encountered
TP 116	Refusal	1100mm	No water seepage encountered
TP 117	Refusal	600mm	No water seepage encountered
TP 118	Refusal	800mm	No water seepage encountered
TP 119	Refusal	700mm	No water seepage encountered
TP 120	Refusal	500mm	No water seepage encountered
TP 121	Refusal	400mm	No water seepage encountered
TP 122	Refusal	500mm	No water seepage encountered
TP 123	Refusal	500mm	No water seepage encountered
TP 124	Refusal	600mm	No water seepage encountered
TP 125	Refusal	600mm	No water seepage encountered
TP 126	Refusal	500mm	No water seepage encountered
TP 127	Refusal	400mm	No water seepage encountered
TP 128	Refusal	100mm	No water seepage encountered
TP 129	Refusal	400mm	No water seepage encountered
TP 130	Refusal	400mm	No water seepage encountered
TP 131	Refusal	400mm	No water seepage encountered
TP 132	Refusal	600mm	No water seepage encountered
TP 133	Refusal	900mm	No water seepage encountered
TP 134	Refusal on bedrock	200mm	No water seepage encountered

Test Pit Number	End of hole (EOH)	Depth (mm)	Water seepage
TP 135	Refusal	600mm	No water seepage encountered
TP 136	Refusal	600mm	No water seepage encountered
TP 137	Refusal	500mm	No water seepage encountered
TP 138	Refusal	1700mm	No water seepage encountered
TP 139	Refusal	400mm	No water seepage encountered

9.2 SAMPLING METHODS AND MATERIAL TESTING

The investigation was further supplemented by limited materials sampling and testing. Representative samples were taken to the lab and the following tests performed:

- **Indicator Test:** samples were collected from various layers exposed in the trial pits and submitted to the lab for sieve analysis, atterberg limits (LS, PI, LL).
- **California Bearing Ratio (CBR):** samples were collected from the soil material and submitted to a lab for analysis. The test results are used as an important input to soil classification using USCS and AASHTO classification systems for soil description and correlation. This test is done to determine the quality and suitability of in-situ materials for use in earthworks.
- **Chemical soil aggressiveness testing:** To determine the proneness of the in-situ material to corrosivity with specific reference to underground services (stormwater, water reticulation and sewer pipes and electrical cables).

10. SUBSURFACE SOIL CONDITIONS

The geotechnical investigation revealed that the profile across the site is uniform, comprising of the following horizons:

- Colluvium;
- Ferruginised colluvium
- Bedrock

These horizons are described in more detail below:

10.1.1 COLLUVIUM

The colluvium soil horizon forms the upper most layers of the site. It is characterised by slightly moist, light to reddish brown, orange red to grey, loose to medium dense, intact, sandy silty gravel and

gravely sandy silty and few abundant sub-rounded and sub-angular cobbles of granite were noted clast supported in a matrix of reddish brown in some area.

This horizon varies in thickness across the site. The material found here are loose, unconsolidated sediments that have been deposited either by gravity or downslope creep, or a variable combination of these processes. This horizon was underlain by the bedrock which is expected to be granite and quartzite.

10.1.2 FERRUGINISED COLLUVIUM

The ferruginised colluvium was only encountered in very few trial pits and comprises slightly moist, reddish brown, medium dense, sandy gravel with ferruginised nodules. An intact soil structure was observed in the test pits. This horizon was found immediately below the colluvium horizon.

10.1.3 BEDROCK

The granite bedrock on site occurs as slightly weathered to moderately weathered residual granite, greyish brown stained orange brown, light brown, spotted black, massive, medium grained and the hardness of the rock was generally profiled as medium hard to hard rock.

11. LABORATOTY TESTING

Table 3: Summary of foundation indicator test results

Sample No.	Depth (m)	Grading (%)				Atterberg Limits (%)			AASHTO Class.	Pot. Exp.	USCS Class.
		Gravel	Sand	Silt	Clay	LL	LS	PI			
TP01	0.0 - 0.6	4.0	84.5	5.4	6.1	25	4.9	9	A-2-4(0)	Low	SC
TP03	0.4 - 0.7	38.0	52.3	1.6	1.1	15	1.0	2	A-1-b(0)	Low	SW-SC
TP05	0.0 -0.4	67.0	30.2	2.4	0.4	22	3.5	6	A-1-a(0)	Low	GW-GM-GC
TP07	0.0 - 0.4	16.0	72.5	5.3	6.2	22	3.8	8	A-2-4(0)	Low	SC
TP08	0.4 - 0.8	24.0	70.2	2.8	3.0	15	1.0	1.0	A-1-b(0)	Low	SC
TP09	0.0 - 0.4	26.0	64.9	5.0	4.1	19	4.0	9	A-2-4(0)	Low	SC
TP11	0.0 - 0.4	36.0	57.4	3.2	3.4	23	4.0	8	A-2-4(0)	Low	SC
TP12	0.0 - 0.4	34.0	60.1	3.7	2.2	17	1.5	3	A-1-b(0)	Low	SC
TP13	0.0 - 0.4	14.0	70.0	8.3	7.7	15	1.0	6	A-2-4(0)	Low	SC
TP15	0.0 - 0.4	20.0	69.3	6.7	4.0	22	3.5	6	A-2-4(0)	Low	SM-SC
TP17	0.0 - 0.4	52.0	38.3	6.6	1.1	19	4.5	6	A-1-b(0)	Low	SM-SC
TP18	0.0 - 0.7	63.0	33.4	2.7	0.9	15	1.0	5	A-1-a(0)	Low	GW-GM-GC
TP19	0.0 - 0.4	20.0	74.5	4.0	1.5	16	0.0	0.0	A-1-b(0)	Low	SC
TP20	0.0 - 0.4	27.0	63.3	4.8	2.9	16	3.0	6	A-1-b(0)	Low	SM-SC
TP22	0.0 - 0.5	46.0	47.2	2.1	4.7	19	3.5	7	A-2-4(0)	Low	SM-SC
TP23	0.0 - 0.4	31.0	59.8	5.2	4.0	16	2.0	5	A-1-b(0)	Low	SM-SC
TP25	0.0 - 0.5	34.0	58.0	3.0	5.0	23	3.0	6	A-1-b(0)	Low	SM-SC

Sample No.	Depth (m)	Grading (%)				Atterberg Limits (%)			AASHTO Class.	Pot. Exp.	USCS Class.
		Gravel	Sand	Silt	Clay	LL	LS	PI			
TP26	0.0 – 0.5	55.0	43.2	1.1	0.7	23	2.5	7	A-2-4(0)	Low	SW-SM-SC
TP28	0.0 – 0.4	39.0	57.0	2.4	1.6	16	1.0	2.0	A-1-b(0)	Low	SC
TP29	0.0 – 0.5	56.0	37.3	4.1	2.6	22	5.5	11	A-2-6(0)	Low	SC
TP30	0.0 – 0.7	49.0	43.4	2.4	5.2	21	6.0	11	A-2-6(0)	Low	SC
TP32	0.0 – 0.5	46.0	46.8	2.4	4.8	22	5.5	11	A-2-6(0)	Low	SC
TP33	0.0 – 0.5	45.0	48.4	3.1	3.5	20	4.0	7	A-2-4(0)	Low	SM-SC
TP34	0.0 – 0.5	51.0	43.0	3.1	2.9	16	1.5	4	A-1-b(0)	Low	SM-SC
TP36	0.0 – 0.4	48.0	44.8	3.4	3.8	23	5.5	10	A-2-4(0)	Low	SC
TP38	0.0 – 0.4	49.0	47.0	1.7	2.3	20	1.5	2	A-1-b(0)	Low	SW-SC
TP40	0.0 – 0.5	46.0	46.4	3.7	3.9	19	3.5	6	A-1-b(0)	Low	SM-SC
TP41	0.0 – 0.8	37.0	45.1	3.5	3.4	15	2.5	5	A-1-b(0)	Low	SM-SC
TP42	0.0 – 0.4	34.0	59.0	5.2	1.8	16	1.5	3.0	A-1-b(0)	Low	SC
TP44	0.0 – 0.5	42.0	51.5	3.6	2.9	22	3.0	5	A-1-b(0)	Low	SM-SC
TP45	0.0 – 0.4	46.0	42.0	2.8	3.2	18	2.0	5	A-1-b(0)	Low	SM-SC
TP46	0.0 – 0.4	55.0	40.0	2.7	2.3	22	3.5	8	A-2-4(0)	Low	SW-SC
TP48	0.0 – 0.2	26.0	65.9	3.7	1.4	16	0.5	2.0	A-1-b(0)	Low	SC
TP50	0.0 - 0.4	30.0	61.6	3.6	4.8	17	3.0	7	A-2-4(0)	Low	SM-SC
TP51	0.0 – 0.4	33.0	59.7	4.9	2.4	19	2.0	4.0	A-1-b(0)	Low	SM-SC
TP52	0.0 – 0.3	24.0	61.5	5.7	8.8	17	3.5	7	A-2-4(0)	Low	SM-SC
TP54	0.4 - 0.9	41.0	55.2	3.1	0.7	36	3.5	8	A-2-4(0)	Low	SM

Sample No.	Depth (m)	Grading (%)				Atterberg Limits (%)			AASHTO Class.	Pot. Exp.	USCS Class.
		Gravel	Sand	Silt	Clay	LL	LS	PI			
TP55	0.0 – 0.3	33.0	58.3	4.8	1.9	14	0.5	1.0	A-1-b(0)	Low	SC
TP56	0.0 – 0.4	33.0	56.4	4.6	3.0	15	1.0	5.0	A-1-b(0)	Low	SM-SC
TP57	0.0 – 0.3	21.0	71.3	3.9	3.8	19	2.0	4	A-1-b(0)	Low	SM-SC
TP58	0.0 – 0.3	49.0	46.2	3.1	1.7	14	1.0	2.0	A-1-b(0)	Low	SC
TP60	0.0 – 0.4	37.0	53.9	3.2	5.9	14	1.0	2.0	A-1-b(0)	Low	SC
TP61	0.0 – 0.1	10.0	81.2	5.4	3.4	19	2.5	5	A-2-4(0)	Low	SM-SC
TP63	0.0 – 0.4	27.0	60.3	7.4	2.3	20	2.0	4.0	A-2-4(0)	Low	SC
TP65	0.0 – 0.6	58.0	34.8	1.1	2.1	13	1.0	2.0	A-1-a(0)	Low	GW-GC
TP66	0.0 – 0.5	48.0	46.3	2.5	3.2	16	1.0	4.0	A-1-b(0)	Low	SW-SC
TP68	0.0 – 0.3	5.0	83.7	5.7	5.6	16	1.5	3.0	A-2-4(0)	Low	SC
TP69	0.5 – 1.0	57.0	36.9	2.7	3.4	20	3.5	7	A-2-4(0)	Low	SM-SC
TP70	0.0 – 0.5	13.0	77.1	5.3	4.6	20	2.0	5	A-2-4(0)	Low	SM-SC
TP71	0.0 – 0.3	52.0	44.2	2.2	1.6	15	1.0	2.0	A-1-a(0)	Low	SW-SC
TP72	0.0 – 0.3	44.0	51.0	2.6	2.4	17	1.0	3.0	A-1-b(0)	Low	SW-SC
TP73	0.0 – 0.3	42.0	53.1	2.7	2.2	18	1.5	3.0	A-1-b(0)	Low	SC
TP75	0.4 – 0.7	11.0	79.4	6.1	3.5	22	1.5	5	A-2-4(0)	Low	SM-SC
TP77	0.4 – 0.7	47.0	48.6	2.5	1,9	16	1.5	2.0	A-1-b(0)	Low	SW-SC
TP79	0.4 – 0.7	32.0	62.2	3.5	2.3	16	1.0	1.0	A-1-b(0)	Low	SC
TP80	0.0 – 0.4	35.0	58.9	3.7	2.4	20	1.5	4.0	A-1-b(0)	Low	SC
TP81	0.0 – 0.5	44.0	51.8	2.4	1.8	22	2.5	8	A-2-4(0)	Low	SW-SC

Sample No.	Depth (m)	Grading (%)				Atterberg Limits (%)			AASHTO Class.	Pot. Exp.	USCS Class.
		Gravel	Sand	Silt	Clay	LL	LS	PI			
TP83	0.0 – 0.4	51.0	28.8	2.0	1.2	22	3.0	7	A-2-4(0)	Low	GW-GM-GC
TP84	0.4 – 0.7	50.0	45.9	1.8	2.3	22	2.5	4.0	A-1-a(0)	Low	SW-SC
TP85	0.4 – 1.3	47.0	46.3	4.1	2.6	42	6.5	11	A-2-7(0)	Low	SM
TP87	0.0 – 0.4	9.0	68.7	6.9	15.4	22	4.5	8	A-4(1)	Low	SC
TP88	0.0 – 0.4	61.0	30.8	2.0	2.2	17	2.0	5	A-1-a(0)	Low	GW-GM-GC
TP90	0.0 – 0.5	47.0	47.1	3.8	2.1	26	4.5	9	A-2-4(0)	Low	SC
TP91	0.0 – 0.4	49.0	46.5	2.2	2.3	15	1.5	3.0	A-1-b(0)	Low	SW-SC
TP92	0.0 – 0.2	37.0	54.5	4.2	4.3	14	1.5	4.0	A-1-b(0)	Low	SC
TP94	0.3 – 0.7	51.0	43.8	1.7	1.5	16	1.0	1.0	A-1-a(0)	Low	SW-SC
TP95	0.0 – 0.3	10.0	80.3	6.9	2.8	14	1.5	1.0	A-2-4(0)	Low	SC
TP96	0.0 – 0.4	16.0	78.5	3.1	2.4	12	0.5	1.0	A-1-b(0)	Low	SC
TP97	0.0 – 0.5	37.0	58.5	3.1	1.4	15	1.5	3.0	A-1-b(0)	Low	SC
TP98	0.4 – 0.7	57.0	40.0	1.8	1.2	17	2.5	4	A-1-a(0)	Low	SW-SM-SC
TP99	0.0 – 0.4	66.0	31.0	1.9	1.1	18	2.0	4	A-1-a(0)	Low	GW-GM-GS
TP100	0.0 – 0.6	44.0	52.2	2.8	1.0	16	1.0	2.0	A-1-b(0)	Low	SW-SC
TP101	0.2 – 0.3	39.0	52.2	5.0	1.8	19	2.0	6	A-1-b(0)	Low	SM-SC
TP103	0.0 – 0.4	27.0	69.8	2.0	1.2	15	0.5	2.0	A-1-b(0)	Low	SW-SC
TP105	0.3 – 0.7	20.0	77.3	2.1	0.6	15	0.5	1.0	A-1-b(0)	Low	SW-SC
TP107	0.0 – 0.4	36.0	57.0	2.3	0.7	15	0.5	2.0	A-1-b(0)	Low	SW-SC
TP110	0.2 – 1.3	11.0	85.0	3.0	1.0	17	0.0	0.0	A-1-b(0)	Low	SC

Geotechnical Investigation for 100 low cost housing- O'kiep, Northern Cape Province

Sample No.	Depth (m)	Grading (%)				Atterberg Limits (%)			AASHTO Class.	Pot. Exp.	USCS Class.
		Gravel	Sand	Silt	Clay	LL	LS	PI			
TP111	0.3 – 0.6	9.0	86.4	2.7	1.9	17	0.5	2.0	A-1-b(0)	Low	SC
TP113	0.0 – 0.5	63.0	36.8	0.1	0.1	18	1.0	1.0	A-1-a(0)	Low	SW
TP116	0.4 – 1.1	22.0	72.7	2.5	2.8	14	1.0	2.0	A-1-b(0)	Low	SC
TP117	0.0 – 0.6	32.0	65.5	1.7	0.8	16	0.5	3.0	A-1-b(0)	Low	SW-SC
TP119	0.2 – 0.7	39.0	58.5	1.5	1.0	19	0.5	0.0	A-1-b(0)	Low	SW-SC
TP120	0.0 – 0.5	38.0	54.5	2.5	1.0	22	1.5	2.0	A-1-b(0)	Low	SW-SC
TP121	0.0 – 0.4	39.0	37.4	0.4	0.2	14	0.5	1.0	A-1-a(0)	Low	GW
TP122	0.0 – 0.4	11.0	82.0	5.8	1.2	15	0.5	1.0	A-2-4(0)	Low	SC
TP127	0.0 – 0.4	66.0	33.6	0.3	0.1	18	1.0	3.0	A-1-a(0)	Low	GW
TP129	0.0 – 0.4	8.0	82.1	5.3	4.6	17	2.5	4.0	A-2-4(0)	Low	SC
TP132	0.0 – 0.3	39.0	58.1	1.2	1.7	14	0.5	1.0	A-1-b(0)	Low	SW-SC
TP133	0.0 – 0.3	43.0	53.8	1.8	1.4	14	0.5	1.0	A-1-b(0)	Low	SW-SC
TP135	0.0 – 0.6	22.0	72.1	3.1	2.8	15	1.0	2.0	A-1-b(0)	Low	SC
TP137	0.0 – 0.4	10.0	85.4	1.8	2.8	13	0.5	0.0	A-1-b(0)	Low	SC
TP139	0.0 – 0.4	21.0	75.1	0.0	3.9	15	0.0	2.0	A-2-4(0)	Low	SW

LS = Linear Shrinkage LL = Liquid Limit PI = Plasticity Index Pot. Exp. = Potential Expansiveness (vd Merwe Classification) USCS = Unified Soil Classification System AASHTO – American Association for State Highways and Transport Officials.

One of the major design factors for building structures is the shrinking and swelling potential of fine-grained soils. The shrink/swell movements can be estimated using the Plasticity Index (PI). Generally, the higher the PI of a material, the greater the potential for soil movements during moisture changes; the results of the Atterberg Limits tests indicate that the soil at the site has low expansion potential (Effective weighted PI = 11).
Shrink-swell movement occurs in response to soil moisture content changes beneath the slab. Moisture changes occur beneath the slab due to seasonal changes in the relative amount of rainfall and evaporation potential. Also, soil moisture changes result from the construction of a slab-on-grade floor due to the presence of the slab/vapor barrier/grade beam system. The installation of the slab, vapor barrier, and grade beams reduces the natural moisture transfer from the subsurface beneath the building and generally causes the soil moisture content to increase in the soil beneath the building after construction. Another significant cause of soil moisture change is changes in vegetation, particularly trees, associated with landscaping.

Material on-site are classified as GW, SC, SW, GM, GC, SM and GS class in accordance to Unified Soil Classification System (USCS), where GW is well-graded gravels, gravel-sand mixtures (little or no fines); SC is clayey sands, sand- clay mixtures with Atterberg limits above A- line with PI > 7; SW is eell-graded sands, gravelly sands (little or no fines); GM is silty gravels, gravel- sand-silt mixtures with Atterberg limits below A- line or PI < 4; GC is clayey gravels, gravel-sand-clay mixtures with Atterberg limits above A -line with PI > 7; SM is silty sands, sand-silt mixtures, Atterberg limits below A- line or PI < 4.

The laboratory test results indicate that the site is typically underlain by gravelly sand and clayey gravel. The Liquid Limit of the samples ranges between 12% and 42% with the Linear Shrinkage ranging between 0% and 6.5%. The samples indicate low plasticity with the Plasticity Index of the samples ranging between 0% and 11 %. Furthermore, the laboratory tests indicate that the samples have high gravel and sand content. The low Plasticity Index indicate that the samples will exhibit a low potential expansiveness (Van der Merwe, 1964).

Table 4: Summary of CBR test results

Sample No.	Depth (m)	CBR @					PI	GM	OMC (%)	Max. Dry Density (kg/m^3)	COLTO Class
		90%	93%	95%	98%	100%					
TP01	0.0 - 0.6	3	3	4	4	5	9	1.1	8.5	1997	-
TP03	0.4 - 0.7	11	17	22	34	44	2	2.1	7.8	2174	G7
TP13	0.0 - 0.4	3	4	5	8	10	6	1.2	5.7	2212	-
TP15	0.0 - 0.4	6	12	20	39	63	6	1.4	6.8	2196	G8
TP17	0.0 - 0.4	6	8	10	13	16	6	2.0	7.1	2191	G9
TP20	0.0 - 0.4	6	11	16	29	43	6	1.7	6.8	2203	G8
TP26	0.0 - 0.5	7	11	15	24	32	7	2.2	6.9	2165	G8
TP30	0.0 - 0.7	5	7	8	11	13	11	2.0	8.6	2188	G9
TP34	0.0 - 0.5	7	10	13	17	22	4	2.0	6.8	2176	G8
TP41	0.0 - 0.8	5	8	11	19	26	5	1.9	6.3	2225	G9
TP45	0.0 - 0.4	8	11	13	18	22	5	2.0	6.7	2157	G8
TP50	0.0 - 0.4	7	9	11	14	17	7	2.0	6.4	2202	G9
TP54	0.4 - 0.9	7	9	11	14	17	8	1.9	13.1	1850	G9
TP58	0.0 - 0.3	6	14	22	47	78	2.0	4.0	5.6	2210	G10
TP61	0.0 - 0.1	3	4	5	6	7	5	1.3	8.1	2088	-
TP69	0.5 - 1.0	13	18	22	31	39	7	2.2	5.6	2250	G9
TP73	0.0 - 0.3	10	14	18	27	35	3.0	2.0	9.5	2191	G8

TP77	0.4 – 0.7	10	14	18	27	35	2.0	2.1	6.6	2216	G8
TP81	0.0 – 0.5	7	13	19	34	50	8	2.0	8.9	2084	G8
TP85	0.4 – 1.3	4	6	8	12	16	11	2.0	6.7	2172	G9
TP94	0.3 – 0.7	7	12	16	27	38	1.4	2.2	5.5	2221	G8
TP97	0.0 – 0.5	13	22	31	52	74	3.0	1.9	7.4	1993	G6
TP98	0.4 – 0.7	17	29	42	72	104	4	2.2	5.8	2176	G6
TP113	0.0 – 0.5	9	19	31	63	101	1.3	2.0	7.0	2076	G6
TP117	0.0 – 0.6	14	20	26	38	48	2.9	1.6	7.4	2039	G6
TP121	0.0 – 0.4	13	24	36	66	100	0.9	1.7	5.1	2143	G6
TP127	0.0 – 0.4	14	25	35	61	88	2.7	1.6	4.5	2187	G6
TP132	0.0 – 0.3	15	27	41	77	117	1.0	1.5	6.6	2098	G6
TP135	0.0 – 0.6	8	13	18	29	40	1.8	1.5	7.8	2105	G8
TP137	0.0 – 0.4	15	24	34	55	77	0.5	1.5	6.2	2063	G6

CBR tests carried out on material or soil from the site are classified as G6 to G10 gravel soil in accordance with the COLTO: 1998.

Material was sampled and classify as good graded silty sand to gravel sand with a grading modulus of between 1.1 and 4. Soils with a good grading are generally characterized with higher grading modulus. Coarse grained soil has some good compatibility characteristics compared to finer material and can normally carry much heavier loads without deformation than finer materials. The CBR samples indicate low plasticity with the Plasticity Index ranging between 0.5% and 11 % which may be associated with a low expansive potential according to Van Der Merwe's Classification System.

Table 5: Summary of soil pH and conductivity

Sample No.	Depth (m)	pH	Conductivity ($s.m^{-1}$)
TP01	0.0 - 0.6	8.4	0.03
TP18	0.0 - 0.7	7.0	0.02
TP32	0.0 - 0.5	6.4	0.09
TP46	0.0 - 0.4	8.2	0.45
TP63	0.0 - 0.4	8.4	0.03
TP90	0.0 - 0.5	8.0	0.4
TP110	0.2 - 1.3	6.2	0.68
TP132	0.0 - 0.3	7.9	0.06
TP137	0.0 - 0.4	7.0	0.08

Chemical test of soils has a pH value ranging between 6.2 to 8.4. The pH values may be used as an initial indicator of potential corrosion problems, since bio-corrosion occurs optimally in the pH ranges of 2-6, while chemical attack generally occurs in either highly alkaline or highly acidic condition. Therefore, the results indicate that the soil slightly acid to slightly alkaline with a conductivity ranging between 0.02 to 0.68. Conductivity is used as an initial indication of electrochemical corrosion potential.

12. GROUND WATER CONDITIONS

Groundwater seepage was not encountered in any of the trial pits excavated on the site, however a sign of ferruginisation which indicates a changing water regime was noted in few trial pits. Problems due to ground water seepage are therefore expected in places, especially during and after a very wet rainy season.

Maximum depth reached was at 1.7m depth below ground level with no sign of near surface water table as such the water table in the area is permanently deeper than 1.7 m below surface level.

13. GEOTECHNICAL ASSESSMENT

It is also the purpose of this investigation to consider various geotechnical factors at the site which may have an influence on the proposed developments and associated infrastructure. The geotechnical factors observed during the field investigation are discussed below.

13.1 PROBLEM SOILS

Problem soils such as dolomite and marshy areas were not encountered on site.

13.2 SLOPE STABILITY

Layers for material encountered in all trial pits were stable during excavation and profiling, hence, slope instability is not anticipated over the area.

13.3 HEAVE AND HIGH COMPRESSIBILITY

This will affect concrete structures around the site. It is recommended that during construction, should clay be encountered alongside or below any structures, it should be removed and replaced with suitable material with no heave or high compressibility potential.

13.4 EXISTENCE OF COLLAPSIBLE/COMPRESSIBLE PROFILE

The soils encountered on the site typically comprise silty sand and sandy gravel with no visual open-textured structure such as pinholes which indicate collapse potential. However, silty sand have been documented to exhibit moderate collapse potential. From the site observations it is anticipated that the site will moderate collapse potential. Compressible soils typically comprise fine grained soils such as clay, clayey sand and clayey silt with low plasticity, gravelly and sandy soil. The soils underlying the area are sandy gravel and gravely sand underlain by weathered residual and bedrock, therefore problems associated with compressible soils such as differential settlement is not anticipated on the site.

13.5 EXPANSIVE SOILS

The site is mainly underlain by sandy gravel and gravel silt underlain by bedrock, therefore, problems associated with expansive soils such as differential volume change of the soil (heaving and shrinking) are not anticipated on the site.

13.6 ERODIBILITY OF THE SOIL

During the site investigation, visible signs of surface soil erosion were not identified, in the form of erosion gullies and rills to indicate that the material could be erodible. The risk of erosion on the proposed site is not expected.

13.7 EXCAVATION CLASSIFICATION WITH RESPECT TO SERVICES

Trial pits were excavated to depths ranging between 0.1 and 1.7 mbgl with all of the test pits terminated due to refusal. Excavations for the proposed development are expected to utilise soft excavation techniques to remove the thin layer of colluvium material and hardrock excavation techniques to remove the bedrock. It is recommended that all required earthworks be carried out in accordance with guidelines provided by SANS 1200 (latest edition).

Table 6 Classification of material for machine excavation (SANS 1200D

CLASSIFICATION	DESCRIPTION
Restricted excavation	
Soft	Material which can be efficient removed by a back-acting excavator having a fly wheel power > 0.10 kW for each mm of tined bucket width.
Intermediate	Material which can be efficient removed by a back-acting excavator having a fly wheel power > 0.10 kW for each mm of tined-bucket width or with the use of pneumatic tools before removal by a machine capable of removing soft material.
Hard rock	Material that cannot be removed without blasting or wedging and splitting.
Non-restricted excavation	
Soft	Material which can be efficiently removed or loaded, without prior ripping, by any of the following plant: A bulldozer or a track type front end loader having an approximate mass of 22 tonne and a fly wheel power of 145 kW. A tractor-scrapper unit having an approximate mass of 28 tonne and fly wheel power of 245 kW, pushed during loading by a bulldozer equivalent to that described above.
Intermediate	Material which can be efficiently ripped by a bulldozer having an approximate mass of 35 tonne and a fly wheel power of 220 kW.
Hard rock	Material which cannot be efficiently ripped by a bulldozer having an approximate mass of 35 tonne and a fly wheel power of 220 kW.
Boulder class A	Material containing more than 40% by volume of boulders of size between 0.03 m3 and 20 m3, in a matrix of soft material or smaller boulders.
Boulder class B	Material containing 40% or less by volume of boulders of size between 0.03 m3 and 20 m3, in a matrix of soft material or smaller boulders.

All trial pits were excavated with Backhoe Loader. Based on engineering properties of material underlying the proposed area; material on-site is classified soft to hard rock excavation (SANS 1200 D).

13.8 GROUNDWATER CONDITIONS

No groundwater was encountered during test pits excavation or profiling. Maximum depth reached was at 1.7m depth below ground level with no sign of near surface water table as such the water table in the area is permanently deeper than 1.7 m below surface level.

14. UNDERGROUND SERVICES

The investigations were conducted within a built-up area with services such as water supply, sewage system running along the street.

15. DEVELOPMENT RECOMMENDATIONS

15.1 PROPOSED DEVELOPMENT

It is understood that the investigation is for the development of 100 infill low-cost housing to be developed in the area.

15.2 RIPPABILITY AND TRENCHABILITY

Soft excavation in terms of SABS 1200 is anticipated to at least a depth of 0.4 m below existing ground level using light earthmoving equipment due to the soft nature of the underlying soils. Some hardrock excavation may locally occur below 0.4 m where the bedrock occurs.

15.3 EARTHWORK CONSTRUCTION

It is recommended that all earthworks be carried out along the guidelines given in SANS 1200 and should be carried out in a manner to promote stable development of the site.

15.4 SITE CLASSIFICATION

RESIDENTIAL SITE CLASS DESIGNATIONS	TYPICAL FOUNDING MATERIAL	CHARACTER OF FOUNDING MATERIAL	SINGLE STOREY MASONRY HOUSE CONSTRUCTION TYPE
R	Rocks	Stable	Normal
H	Clays, silty clays, clayey silts and sandy clays.	Expansive soils	Normal
H1			Modified normal / soil raft
H2			Stiffened or cellular raft / piled or split construction / soil raft
H3			Stiffened or cellular raft / piled construction / soil raft.
C	Silty sands, sands, sandy and gravely soils	Compressible and potentially collapsible soils	Normal
C1			Modified normal / compaction of in-situ soils below individual footings / deep strip foundations / soil raft.
C2			Stiffened strip footings, stiffened or cellular raft / deep strip foundations / compaction of in-situ soils below individual footings / piled or pier foundations / soil raft.
P	Contaminated soils, controlled fill, dolomitic areas, landslip, landfill, marshy areas, mine waste fill, mining subsidence, reclaimed areas, uncontrolled fill, very soft silts / silty clays.	Variable	Variable
S	Clayey silts, clayey sands of low plasticity, sands, sandy and gravely soils	Compressible soils	Normal
S1			Modified normal / compaction of in-situ soil below individual footings / deep strip foundations / soil raft.
S2			Stiffened strip footings, stiffened or cellular raft / deep strip foundations / compaction of in-situ soils below individual footings / piled or pier foundations / soil raft.

For urban planning purpose the site is zoned according to the NHBRC classification systems, the entire site is classified as a Zone S1/C1/R site.

16. CONCLUSION

- The investigated area is suitable for the proposed 100 low cost housing located in O'kiep Town.
- The area is underlain by different types of Quartzite, Granite and Gneiss of the Namaqualand Suite.
- The geotechnical investigation revealed that the profile across the site is uniform, comprising of the colluvium, ferruginised colluvium and bedrock.
- Colluvium varies in thickness across the site and its loose, unconsolidated sediments that have been deposited either by gravity or downslope creep, or a variable combination of these processes. This horizon was underlain by the bedrock which is expected to be granite and quartzite.
- The granite bedrock on site occurs as slightly weathered to moderately weathered residual granite, greyish brown stained orange brown, Light brown, spotted black, massive, medium grained and the hardness of the rock was generally profiled as medium hard to hard rock.

- The low Plasticity Index indicate that the samples will exhibit a low potential expansiveness (Van der Merwe, 1964).
- Material on-site are classified as GW, SC, SW, GM, GC, SM and GS class in accordance to Unified Soil Classification System (USCS).
- CBR tests carried out on material or soil from the site are classified as G6 to G10 gravel soil in accordance with the COLTO: 1998.
- Zone R: This zone is characterised by the occurrence of bedrock at shallow depths.

17. RECOMMENDATION

Based on the profiles of trial pits excavated within the area proposed for the development, together with results of a laboratory tests, the following foundation can be suggested:

- Normal foundation
- Soil raft foundation

The foundation recommendation per stand is attached in Appendix C.

18. ADDITIONAL INVESTIGATIONS

No additional investigation is required.

19. CONSTRUCTION MONITORING

19.1 EXCAVATION INSPECTION

The excavation needs to be inspected by a competent person prior to placing any concrete.

19.2 CONTROL TESTING

Regular checks on the quality and compaction of the backfill to the terraces should be made.

APPENDIX A

SOIL PROFILE

CoGHSTA
O'kiep Housing Development

HOLE No: TP1
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP1

0.00 "Slightly moist, light grey brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."

0.60 End of hole

NOTES

1) No seepage.
2) "Disturbed samples taken TP1 at 0,0--0,6 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP1

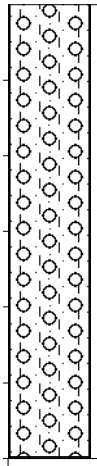
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP2
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, light grey brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP2

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP3
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP3

0.00	"Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL, COLLUVIUM."
0.40	"Slightly moist, reddish brown, medium dense, intact, sandy GRAVEL with ferruginized nodules. FERRUGINIZED COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP3 at 0,4--0,7 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60871899
Y-COORD : 17.89321901

HOLE No: TP3

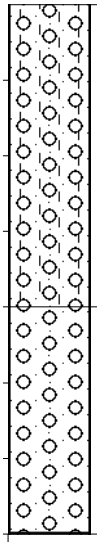
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP4
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."
0.40	"Slightly moist, reddish brown, medium dense, intact, sandy GRAVEL with ferruginized nodules. FERRUGINIZED COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60858999
Y-COORD : 17.89303201

HOLE No: TP4

dotPLOT 7022

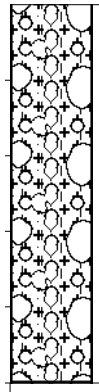
CoGHSTA
O'kiep Housing Development

HOLE No: TP5
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP5



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with granite cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP5 at 0,0--0,5 m."

3) "Refusal on bedrock (light brown, stained orange-brown, hard, slightly weathered residual granite)."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.61288697
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.88904198
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP5
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

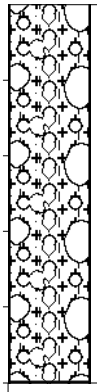
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP6
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with granite cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.612834
Y-COORD : 17.88878297

HOLE No: TP6

dotPLOT 7022

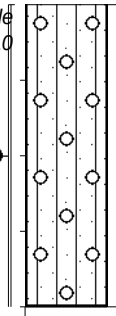
CoGHSTA
O'kiep Housing Development

HOLE No: TP7
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP7



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly sandy SILT. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP7 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61330799
Y-COORD : 17.88853303

HOLE No: TP7

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP8a
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP1

0.00 "Slightly moist, light grey brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."

0.60 End of hole

NOTES

1) No seepage.
2) "Disturbed samples taken TP1 at 0,0--0,6 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 11/06/2020 17:33
TEXT : ..pitlogs2(TP1TP117)12.txt

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP8a

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP8b
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

0.00	"Slightly moist, light grey brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 11/06/2020 17:33
TEXT : ..pitlogs2(TP1TP117)12.txt

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP8b

IN DEMO MODE!

dotPLOT 7022

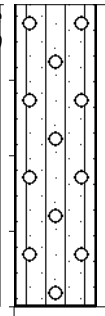
CoGHSTA
O'kiep Housing Development

HOLE No: TP9
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP9



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly sandy SILT with sub-rounded granite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP9 at 0,0--0,4 m."

3) "Refusal on bedrock (Light brown, massive, hard, slightly weathered residual granite)."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.613035
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.88622499
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP9
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

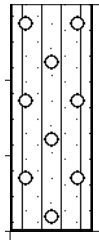
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP10
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly sandy SILT with sub-rounded granite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on bedrock (Orange-brown, spotted black, massive, hard, slightly weathered residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61288404
Y-COORD : 17.886371

HOLE No: TP10

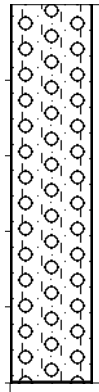
CoGHSTA
O'kiep Housing Development

HOLE No: TP11
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP11



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL. COLLUVIUM."

0.50 End of hole

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP11 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61246503
Y-COORD : 17.88735696

HOLE No: TP11

IN DEMO MODE!

dotPLOT 7022

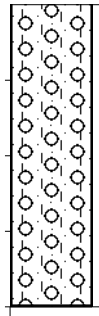
CoGHSTA
O'kiep Housing Development

HOLE No: TP12
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP12



0.00	"Slightly moist, light brown, medium dense, intact, silty sandy GRAVEL with cobbles and boulders. COLLUVIUM."
0.40	End of hole

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP12 at 0,0--0,5 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61126197
Y-COORD : 17.88620202

HOLE No: TP12

IN DEMO MODE!

dotPLOT 7022

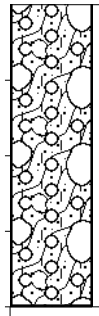
CoGHSTA
O'kiep Housing Development

HOLE No: TP13
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP13



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP13 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60605899
Y-COORD : 17.88316601

HOLE No: TP13

IN DEMO MODE!

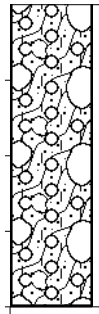
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP14
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole,"

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60622403
Y-COORD : 17.88300298

HOLE No: TP14

IN DEMO MODE!

dotPLOT 7022

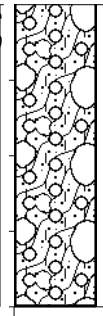
CoGHSTA
O'kiep Housing Development

HOLE No: TP15
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP15



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with abandant quartzite cobbles. COLLUVIUM."

0.40 "End of hole,"

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP15 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.607355
Y-COORD : 17.88158703

HOLE No: TP15

IN DEMO MODE!

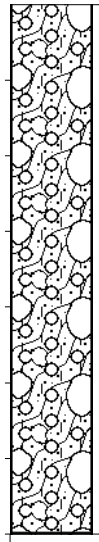
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP16
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with quartzite cobbles. COLLUVIUM."

0.70 "End of hole,"

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60753303
Y-COORD : 17.881583

HOLE No: TP16

IN DEMO MODE!

dotPLOT 7022

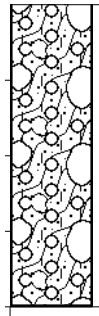
CoGHSTA
O'kiep Housing Development

HOLE No: TP17
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP17



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP17 at 0,0--0,4 m."

3) Stable side walls.

4) "Refusal on bedrock (Greyish brown, spotted black, massive, hard, slightly weathered residual granite). "

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60717596
Y-COORD : 17.88128704

HOLE No: TP17

IN DEMO MODE!

dotPLOT 7022

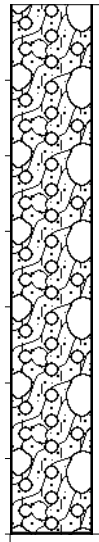
CoGHSTA
O'kiep Housing Development

HOLE No: TP18
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP18



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with sub-rounded and sub-angular quartzite cobbles. COLLUVIUM."

0.70 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP18 at 0,0--0,7 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.607067
Y-COORD : 17.88072403

HOLE No: TP18

IN DEMO MODE!

dotPLOT 7022

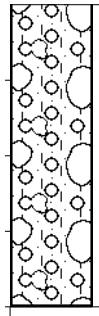
CoGHSTA
O'kiep Housing Development

HOLE No: TP19
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP19



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sandy GRAVEL with sub-rounded and sub-angular quatzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP19 at 0,0--0,4 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60627499
Y-COORD : 17.88100298

HOLE No: TP19

IN DEMO MODE!

dotPLOT 7022

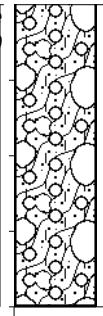
CoGHSTA
O'kiep Housing Development

HOLE No: TP20
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP20



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with minor quartzite cobbles. COLLUVIUM."

0.40 "End of hole,"

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP20 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60578498
Y-COORD : 17.88108302

HOLE No: TP20

IN DEMO MODE!

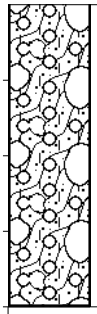
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP21
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with minor quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60580502
Y-COORD : 17.88098303

HOLE No: TP21

IN DEMO MODE!

dotPLOT 7022

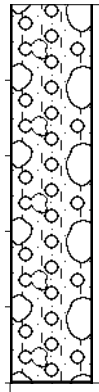
CoGHSTA
O'kiep Housing Development

HOLE No: TP22
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP22



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with minor quatzite cobbles. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP22 at 0.0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60567602
Y-COORD : 17.88046

HOLE No: TP22

IN DEMO MODE!

dotPLOT 7022

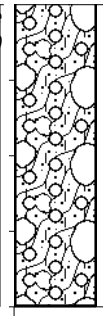
CoGHSTA
O'kiep Housing Development

HOLE No: TP23
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP23



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP23 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60529003
Y-COORD : 17.87661304

HOLE No: TP23

IN DEMO MODE!

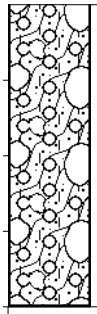
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP24
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60540101
Y-COORD : 17.87706197

HOLE No: TP24

IN DEMO MODE!

dotPLOT 7022

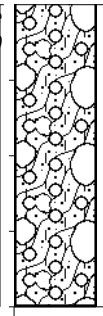
CoGHSTA
O'kiep Housing Development

HOLE No: TP25
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP25



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP25 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60576302
Y-COORD : 17.87746003

HOLE No: TP25

IN DEMO MODE!

dotPLOT 7022

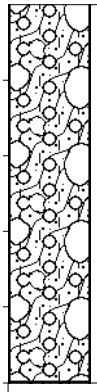
CoGHSTA
O'kiep Housing Development

HOLE No: TP26
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP26



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.

2) Refusal.

3) "Disturbed samples taken TP26 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60679802
Y-COORD : 17.87588901

HOLE No: TP26

IN DEMO MODE!

dotPLOT 7022

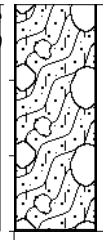
CoGHSTA
O'kiep Housing Development

HOLE No: TP27
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP27



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVELwith quartzite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP27 at 0,0--0,3 m."

3) "Refusal on bedrock (Light brown, spotted black, massive, hard, slightly weathered residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.606047
Y-COORD : 17.876994

HOLE No: TP27

IN DEMO MODE!

dotPLOT 7022

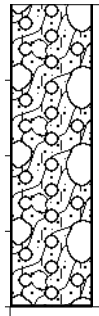
CoGHSTA
O'kiep Housing Development

HOLE No: TP28
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP28



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) "Refusal on bedrock (Light brown, massive, hard, slightly weathered residual granite)."

3) "Disturbed samples taken TP28 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.605787
Y-COORD : 17.87693499

HOLE No: TP28

IN DEMO MODE!

dotPLOT 7022

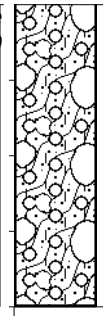
CoGHSTA
O'kiep Housing Development

HOLE No: TP29
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP29



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP29 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60586403
Y-COORD : 17.87656199

HOLE No: TP29

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP30
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP30

0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.70 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP30 at 0,0--0,7 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60620601
Y-COORD : 17.87662804

HOLE No: TP30

IN DEMO MODE!

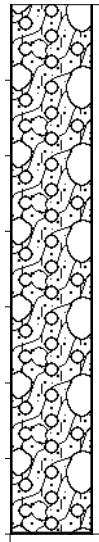
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP31
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, orange red, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.70 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60261604
Y-COORD : 17.87622898

HOLE No: TP31

IN DEMO MODE!

dotPLOT 7022

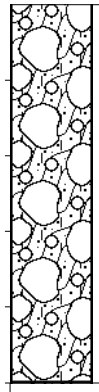
CoGHSTA
O'kiep Housing Development

HOLE No: TP32
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP32



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles and minor boulders. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP32 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60392898
Y-COORD : 17.877498

HOLE No: TP32

IN DEMO MODE!

dotPLOT 7022

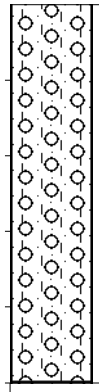
CoGHSTA
O'kiep Housing Development

HOLE No: TP33
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP33



0.00	"Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with weathered rock fragments. COLLUVIUM."
0.50	"End of hole, "

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP33 at 0,0--0,5 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60260397
Y-COORD : 17.87609202

HOLE No: TP33

IN DEMO MODE!

dotPLOT 7022

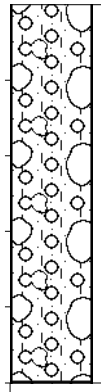
CoGHSTA
O'kiep Housing Development

HOLE No: TP34
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP34



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP34 at 0,0--0,5 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60419997
Y-COORD : 17.87666199

HOLE No: TP34

IN DEMO MODE!

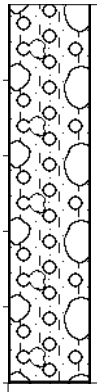
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP35
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60417599
Y-COORD : 17.87655604

HOLE No: TP35

IN DEMO MODE!

dotPLOT 7022

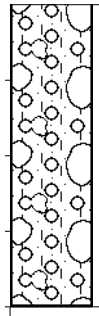
CoGHSTA
O'kiep Housing Development

HOLE No: TP36
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP36



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP36 at 0,0--0,4 m."

3) "Refusal on hard rock (Greyish brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60300001
Y-COORD : 17.87515299

HOLE No: TP36

IN DEMO MODE!

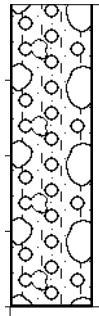
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP37
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on hard rock(Orange-brown, spotted black, massive, hard, slightly weathered, residual granite) ."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60297202
Y-COORD : 17.87508099

HOLE No: TP37

IN DEMO MODE!

dotPLOT 7022

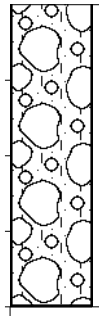
CoGHSTA
O'kiep Housing Development

HOLE No: TP38
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP38



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles and boulders. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP38 at 0,0--0,4 m."

3) "Refusal on bedrock(Orange-brown, massive, hard, slightly weathered,residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60082499
Y-COORD : 17.87515501

HOLE No: TP38

IN DEMO MODE!

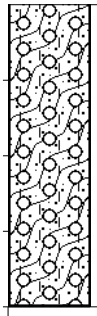
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP39
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with sub-rounded and angular quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on bedrock (Greyish brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.60060497
Y-COORD : 17.87503699

HOLE No: TP39

IN DEMO MODE!

dotPLOT 7022

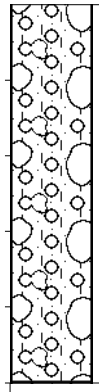
CoGHSTA
O'kiep Housing Development

HOLE No: TP40
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP40



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP40 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59977097
Y-COORD : 17.87500002

HOLE No: TP40

IN DEMO MODE!

dotPLOT 7022

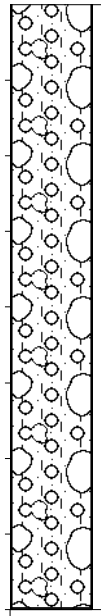
CoGHSTA
O'kiep Housing Development

HOLE No: TP41
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP41



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.80 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP41 at 0,0--0,8 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59827698
Y-COORD : 17.87478997

HOLE No: TP41

IN DEMO MODE!

dotPLOT 7022

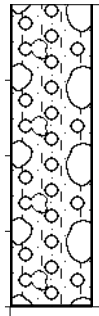
CoGHSTA
O'kiep Housing Development

HOLE No: TP42
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP42



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP42 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59591596
Y-COORD : 17.87363897

HOLE No: TP42

IN DEMO MODE!

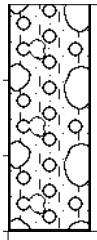
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP43
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."
0.30	
	"End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59601403
Y-COORD : 17.87352104

HOLE No: TP43

IN DEMO MODE!

dotPLOT 7022

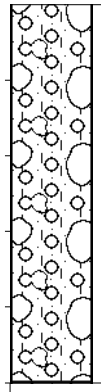
CoGHSTA
O'kiep Housing Development

HOLE No: TP44
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP44



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP44 at 0,0--0,5 m."

3) "Refusal on bedrock (Orange-brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59629801
Y-COORD : 17.87270204

HOLE No: TP44

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP45
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP45

0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP45 at 0,0--0,4 m."

3) "Refusal on bedrock (Orange-brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59654
Y-COORD : 17.87277203

HOLE No: TP45

IN DEMO MODE!

dotPLOT 7022

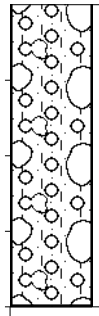
CoGHSTA
O'kiep Housing Development

HOLE No: TP46
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP46



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with sub-rounded and angular quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP46 at 0,0--0,4 m."

3) "Refusal on bedrock (Orange-brown, massive, hard, slightly weathered, residual granite."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59649297
Y-COORD : 17.87169697

HOLE No: TP46

IN DEMO MODE!

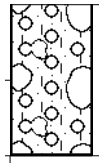
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP47
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with sub-rounded and angular quartzite cobbles. COLLUVIUM."

0.20 End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on bedrock (Greyish brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59643003
Y-COORD : 17.87186704

HOLE No: TP47

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP48
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10
TP48

0.00	"Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with sub-rounded and angular quartzite cobbles. COLLUVIUM."
0.20	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP48 at 0,0--0,2 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59448299
Y-COORD : 17.87194298

HOLE No: TP48

IN DEMO MODE!

dotPLOT 7022

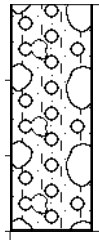
CoGHSTA
O'kiep Housing Development

HOLE No: TP49
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP49



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with sub-rounded and angular quartzite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP49 at 0,0--0,3 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59438602
Y-COORD : 17.87193996

HOLE No: TP49

IN DEMO MODE!

dotPLOT 7022

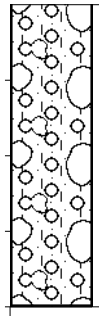
CoGHSTA
O'kiep Housing Development

HOLE No: TP50
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP50



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP50 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59379702
Y-COORD : 17.87284696

HOLE No: TP50

IN DEMO MODE!

dotPLOT 7022

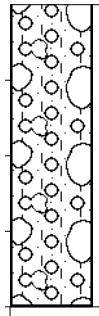
CoGHSTA
O'kiep Housing Development

HOLE No: TP51
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP51



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP51 at 0,0--0,4 m."
3) Refusal on Hard dig.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59393096
Y-COORD : 17.87322499

HOLE No: TP51

IN DEMO MODE!

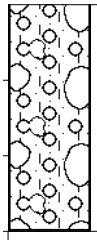
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP52
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal on Hard dig.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59470503
Y-COORD : 17.87237196

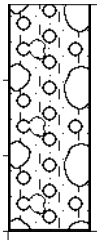
HOLE No: TP52

CoGHSTA
O'kiep Housing Development

HOLE No: TP53
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."
0.30	"End of hole, "

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59457897
Y-COORD : 17.87237003

HOLE No: TP53

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP54
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP54

0.00	"Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL . COLLUVIUM."
0.40	"Slightly moist, olive reddish brown, dense, intact, silty GRAVEL . COLLUVIUM."
0.90	End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP54 at 0,4--0,9 m."

3) "Refusal on bedrock (Greyish brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59095698
Y-COORD : 17.87178003

HOLE No: TP54

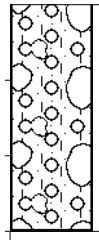
CoGHSTA
O'kiep Housing Development

HOLE No: TP55
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP55



0.00	"Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."
0.30	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP55 at 0,0--0,3 m."
3) Refusal on Hard dig.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59140399
Y-COORD : 17.87175103

HOLE No: TP55

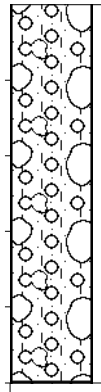
CoGHSTA
O'kiep Housing Development

HOLE No: TP56
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP56



0.00 "Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP56 at 0,0--0,5 m."
3) Refusal on Hard dig.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59153198
Y-COORD : 17.87126102

HOLE No: TP56

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP57
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP56

0.00	"Slightly moist, reddish brown, dense, intact, sandy silty GRAVEL with rock fragments. COLLUVIUM."
0.30	End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP56 at 0,0--0,5 m."

3) "Refusal on bedrock (Orange-brown, spotted black, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59162803
Y-COORD : 17.873558

HOLE No: TP57

IN DEMO MODE!

dotPLOT 7022

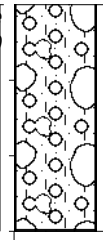
CoGHSTA
O'kiep Housing Development

HOLE No: TP58
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP58



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP58 at 0,0--0,3 m."

3) "Refusal on bedrock (Greyish brown, stained orange-brown, slightly weathered, residual granite)."

4) Stable side walls.

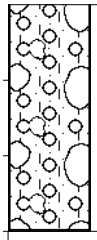
CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.59174898
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87622303
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP58
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

CoGHSTA
O'kiep Housing Development

HOLE No: TP59
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with quartzite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on bedrock (Greyish brown, stained orange-brown, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59178201
Y-COORD : 17.87602597

HOLE No: TP59

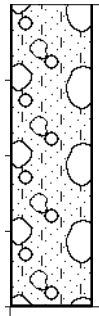
CoGHSTA
O'kiep Housing Development

HOLE No: TP60
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP60



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with quartzite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP60 at 0,0--0,4 m."

3) "Refusal on Refusal (Orange-brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.59325999
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87501897
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP60
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

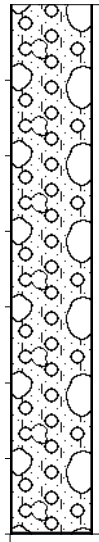
CoGHSTA
O'kiep Housing Development

HOLE No: TP61
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP61



0.00 "Slightly moist, reddish brown, medium dense, intact, silty SAND with gravels quartzite cobbles. COLLUVIUM."

0.70 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP61 at 0,0--0,7 m."

3) "Refusal on Refusal (Orange-brown, spotted black, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.59541104
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87943103
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP61
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP62
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

0.00	"Slightly moist, reddish brown, medium dense, intact, silty SAND. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on bedrock (Greyish brown, stained orange brown, massive, hard, slightly weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.59557801
Y-COORD : 17.87964603

HOLE No: TP62

dotPLOT 7022

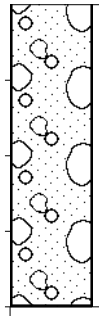
CoGHSTA
O'kiep Housing Development

HOLE No: TP63
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP63



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly SAND with cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP63 at 0,0--0,4 m."

3) "Refusal on weathered rock (Orange-brown, massive, hard, moderately weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.58880702
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87280296
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP63
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

dotPLOT 7022

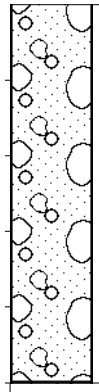
CoGHSTA
O'kiep Housing Development

HOLE No: TP64
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP63



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly SAND with cobbles. COLLUVIUM."

0.50 "End of hole,"

NOTES

1) No seepage.

2) "Disturbed samples taken TP63 at 0,0--0,4 m."

3) "Refusal on weathered rock (Orange-brown, massive, hard, moderately weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.58896401
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87283598
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP64
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

dotPLOT 7022

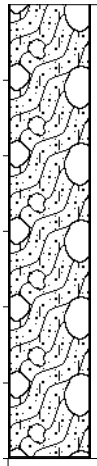
CoGHSTA
O'kiep Housing Development

HOLE No: TP65
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP65



0.00 "Closely packed quartzite cobbles in a matrix of reddish brown, coarse silty SAND. COLLUVIUM."

0.60 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP65 at 0,0--0,6 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58891699
Y-COORD : 17.87107402

HOLE No: TP65

dotPLOT 7022

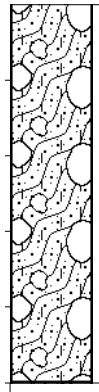
CoGHSTA
O'kiep Housing Development

HOLE No: TP66
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP66



0.00 "Closely packed quartzite cobbles in a matrix of reddish brown, coarse silty SAND. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP66 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58744999
Y-COORD : 17.87059902

HOLE No: TP66

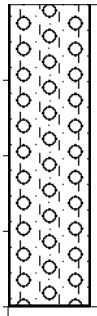
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP67
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58634702
Y-COORD : 17.870724

HOLE No: TP67

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP68
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP68

0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP68 at 0,0--0,3 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.58477197
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87078502
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	HOLE No: TP68
TYPE SET BY :	DATE : 09/06/2020 17:19	
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

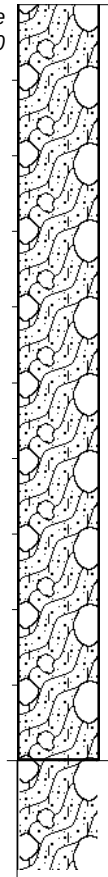
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP69
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Closely packed quartzite cobbles in a matrix of reddish brown, coarse silty SAND. COLLUVIUM."

1.00 "End of hole, continues as above."

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58608097
Y-COORD : 17.87082198

HOLE No: TP69

dotPLOT 7022

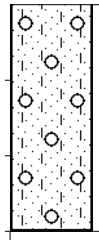
CoGHSTA
O'kiep Housing Development

HOLE No: TP70
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP70



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP70 at 0,0--0,3 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.58682696
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87074001
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP70
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

dotPLOT 7022

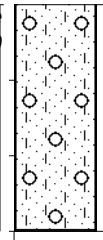
CoGHSTA
O'kiep Housing Development

HOLE No: TP71
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP71



0.00	"Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
0.30	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP71 at 0,0--0,3 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58368199
Y-COORD : 17.87295702

HOLE No: TP71

dotPLOT 7022

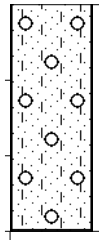
CoGHSTA
O'kiep Housing Development

HOLE No: TP72
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP72



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP72 at 0,0--0,3 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58282603
Y-COORD : 17.87353897

HOLE No: TP72

dotPLOT 7022

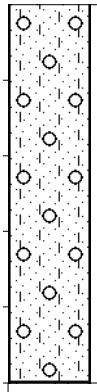
CoGHSTA
O'kiep Housing Development

HOLE No: TP73
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP73



0.00	"Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
0.50	End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP73 at 0,0--0,5 m."

3) Refusal.

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58281798
Y-COORD : 17.87222

HOLE No: TP73

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP74
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP74

0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.50 "End of hole, continues as above."

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP74 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58277901
Y-COORD : 17.87212403

HOLE No: TP74

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP75
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP75

0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.70 "End of hole,"

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP75 at 0,0--0,7 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57532397
Y-COORD : 17.87047497

HOLE No: TP75

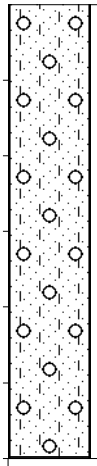
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP76
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with abandant cobbles. COLLUVIUM."

0.60 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57508903
Y-COORD : 17.87041001

HOLE No: TP76

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP77
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP77

0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with cobbles. COLLUVIUM."

0.70 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP77 at 0,0--0,7 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.575588
Y-COORD : 17.871171

HOLE No: TP77

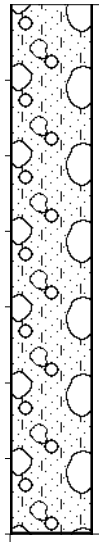
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP78
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with cobbles. COLLUVIUM."

0.70 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57546001
Y-COORD : 17.87108098

HOLE No: TP78

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP79
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP79

0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with cobbles. COLLUVIUM."

0.70 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP79 at 0,0--0,7 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57556797
Y-COORD : 17.87148801

HOLE No: TP79

dotPLOT 7022

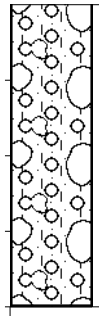
CoGHSTA
O'kiep Housing Development

HOLE No: TP80
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP80



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP80 at 0,0--0,4 m."

3) Refusal

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57635202
Y-COORD : 17.87275803

HOLE No: TP80

dotPLOT 7022

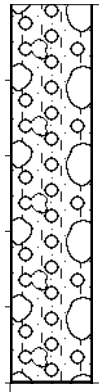
CoGHSTA
O'kiep Housing Development

HOLE No: TP81
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP81



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP81 at 0,0--0,5 m."

3) Refusal

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57678997
Y-COORD : 17.872579

HOLE No: TP81

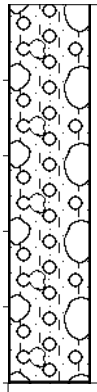
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP82
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57693799
Y-COORD : 17.87250699

HOLE No: TP82

dotPLOT 7022

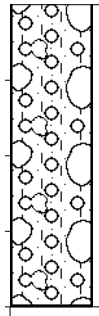
CoGHSTA
O'kiep Housing Development

HOLE No: TP83
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP83



0.00 "Slightly moist, reddish brown, medium dense, intact, sandy silty GRAVEL with cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP83 at 0,0--0,4 m."

3) "Refusal on bedrock(Orange-brown, massive, hard, moderately weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57684403
Y-COORD : 17.87223701

HOLE No: TP83

dotPLOT 7022

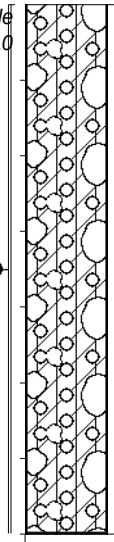
CoGHSTA
O'kiep Housing Development

HOLE No: TP84
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP84



0.00 "Slightly moist, reddish brown, medium dense, intact, clay SILT with abandant gravels and cobbles. COLLUVIUM."

0.70 "End of hole,"

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP84 at 0,0--0,7 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57824297
Y-COORD : 17.87123999

HOLE No: TP84

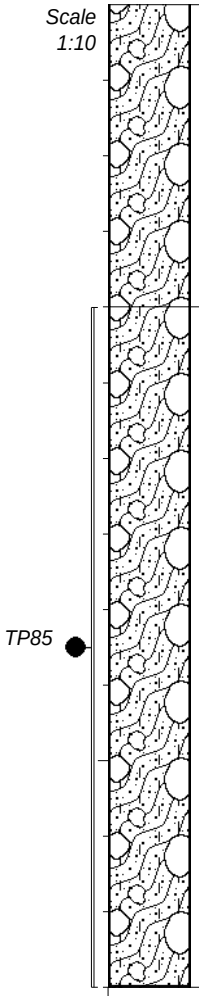
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP85
Sheet 1 of 2

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, silty sand with quartzite cobbles. COLLUVIUM."

0.40 "Slightly moist, dark reddish brown, medium dense, intact, silty sand with quartzite cobbles. COLLUVIUM."

1.30 End of hole.

NOTES

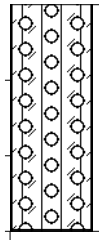
1) No seepage.
2) "Disturbed samples taken TP85 at 0,4--1,3 m."
3) Refusal.
4) Stable side walls.

CoGHSTA
O'kiep Housing Development

HOLE No: TP86
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, light grey brown, medium dense, intact, clayey SILT with quatzite gravels. ALLUVIUM."
0.30	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) "Refusal on bedrock (Orange-brown, massive, hard, moderately weathered, residual granite)."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.57993997
Y-COORD : 17.87117503

HOLE No: TP86

dotPLOT 7022

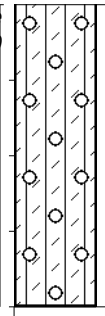
CoGHSTA
O'kiep Housing Development

HOLE No: TP87
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP87



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly clayey SILT. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP87 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58002698
Y-COORD : 17.87366403

HOLE No: TP87

dotPLOT 7022

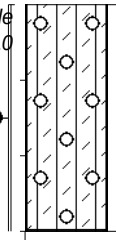
CoGHSTA
O'kiep Housing Development

HOLE No: TP88
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP88



0.00	"Slightly moist, reddish brown, medium dense, intact, gravelly clayey SILT. COLLUVIUM."
0.30	"End of hole, "

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP88 at 0,0--0,3 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58154896
Y-COORD : 17.87399302

HOLE No: TP88

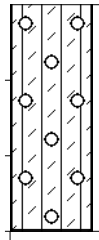
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP89
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, reddish brown, medium dense, intact, gravelly clayey SILT. COLLUVIUM."
0.30	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58150697
Y-COORD : 17.87451496

HOLE No: TP89

dotPLOT 7022

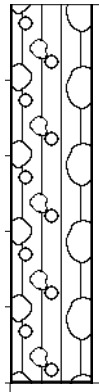
CoGHSTA
O'kiep Housing Development

HOLE No: TP90
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP90



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly SILT with cobbles. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP90 at 0,0--0,5 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58170998
Y-COORD : 17.874306

HOLE No: TP90

dotPLOT 7022

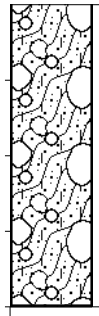
CoGHSTA
O'kiep Housing Development

HOLE No: TP91
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP91



0.00 "Slightly moist, light reddish brown, medium dense, intact, gravelly silty SAND with quartzite pebbles and cobbles. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP91 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.58256703
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87612999
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP91
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

dotPLOT 7022

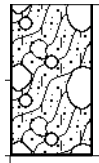
CoGHSTA
O'kiep Housing Development

HOLE No: TP92
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP91



0.00	"Slightly moist, light reddish brown, dense, intact, gravelly silty SAND with quartzite cobbles. COLLUVIUM."
0.20	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP91 at 0,0--0,2 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58293198
Y-COORD : 17.87507898

HOLE No: TP92

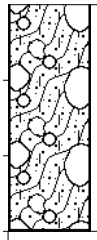
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP93
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, light reddish brown, dense, intact, gravelly silty SAND with quartzite cobbles. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58284397
Y-COORD : 17.87497999

HOLE No: TP93

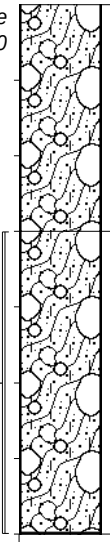
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP94
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, light reddish brown, medium dense, intact, gravelly silty SAND with quartzite cobbles. COLLUVIUM."
0.30	"Slightly moist, dark reddish brown, medium dense, intact, gravelly silty SAND with quartzite cobbles. COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP94 at 0,3--0,7 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.583742
Y-COORD : 17.87511896

HOLE No: TP94

dotPLOT 7022

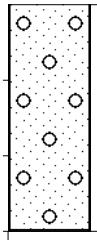
CoGHSTA
O'kiep Housing Development

HOLE No: TP95
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP95



0.00 "Slightly moist, orange brown, medium dense, intact, gravelly SAND. COLLUVIUM."

0.30 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP95 at 0,0--0,3 m."
3) Refusal on bedrock.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58558401
Y-COORD : 17.87835798

HOLE No: TP95

dotPLOT 7022

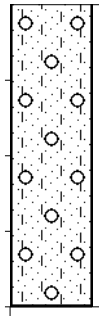
CoGHSTA
O'kiep Housing Development

HOLE No: TP96
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP96



0.00	"Slightly moist, orange brown, dense, intact, gravelly silty SAND. COLLUVIUM."
0.40	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP96 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.58547203
Y-COORD : 17.87872301

HOLE No: TP96

dotPLOT 7022

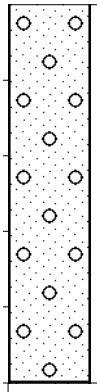
CoGHSTA
O'kiep Housing Development

HOLE No: TP97
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP97



0.00 "Slightly moist, reddish brown to grey, medium dense, intact, gravelly SAND with plant roots. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.

2) "Disturbed samples taken TP97 at 0,0--0,5 m."

3) Refusal.

4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.58702302
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.87761803
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP97
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

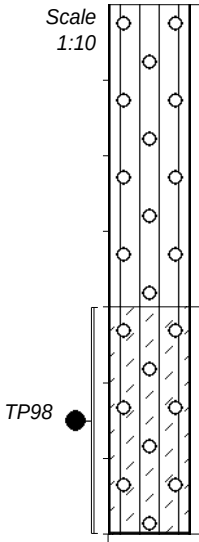
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP98
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, reddish brown to grey, medium dense, intact, gravelly SILT. COLLUVIUM."
0.40	"Slightly moist to moist, dark reddish brown to grey, dense, intact, gravelly clayey SILT. COLLUVIUM."
0.70	"End of hole, "

NOTES

1) No seepage.
2) Refusal
3) "Disturbed samples taken TP98 at 0,4--0,7 m."
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56121799
Y-COORD : 17.86610004

HOLE No: TP98

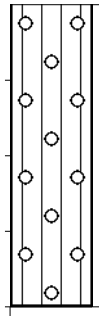
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP99
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown to grey, medium dense, intact, gravelly SILT. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56129602
Y-COORD : 17.86585897

HOLE No: TP99

dotPLOT 7022

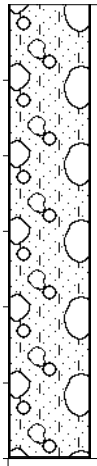
CoGHSTA
O'kiep Housing Development

HOLE No: TP100
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP100



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with minor cobbles. COLLUVIUM."

0.60 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP100 at 0,0--0,6 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE : CAT 428	DIAM : "0,7m trench"	X-COORD : -29.56154597
DRILLED BY :	DATE : 29/01/2020 - 03-02-2020	Y-COORD : 17.86603097
PROFILED BY : Maumela Rudzani	DATE : 29/01/2020 - 03-02-2020	
TYPE SET BY :	DATE : 09/06/2020 17:19	HOLE No: TP100
SETUP FILE : STANDARD.SET	TEXT : ..stpitlogs2(TP1TP117).txt	

IN DEMO MODE!

CoGHSTA
O'kiep Housing Development

HOLE No: TP101
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP101

0.00	"Slightly moist, dark greyish brown, loose, intact, silty SAND. COLLUVIUM."
0.20	"Slightly moist, greyish brown, dense, intact, gravelly silty SAND. COLLUVIUM."
0.80	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP101 at 0,2--0,8 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.561263
Y-COORD : 17.86503503

HOLE No: TP101

IN DEMO MODE!

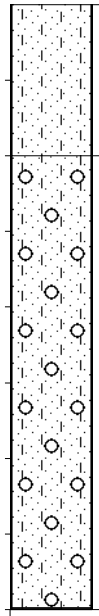
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP102
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, dark greyish brown, loose, intact, silty SAND. COLLUVIUM."
0.20	"Slightly moist, greyish brown, dense, intact, gravelly silty SAND. COLLUVIUM."
0.80	"End of hole,"

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56139702
Y-COORD : 17.86510603

HOLE No: TP102

IN DEMO MODE!

dotPLOT 7022

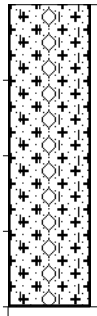
CoGHSTA
O'kiep Housing Development

HOLE No: TP103
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP103



0.00 "Slightly moist, greyish brown, loose to medium dense, intact, silty SAND with granite cobbles. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP103 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56318103
Y-COORD : 17.86448602

HOLE No: TP103

IN DEMO MODE!

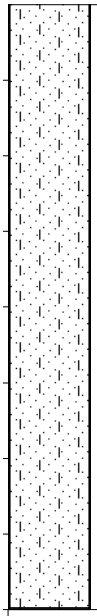
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP104
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, light greyish brown, loose to medium dense, intact, silty SAND with cobbles. COLLUVIUM."

0.80 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56321497
Y-COORD : 17.86458501

HOLE No: TP104

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP105
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP105

0.00	"Slightly moist, orange brown, loose, intact, silty SAND. COLLUVIUM."
0.30	"Slightly moist, orange brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP105 at 0,3--0,7 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56231199
Y-COORD : 17.86296696

HOLE No: TP105

IN DEMO MODE!

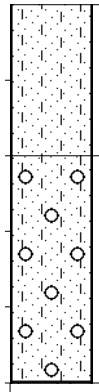
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP106
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, orange brown, loose, intact, silty SAND. COLLUVIUM."
0.20	"Slightly moist, orange brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
0.50	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56245398
Y-COORD : 17.86302597

HOLE No: TP106

IN DEMO MODE!

dotPLOT 7022

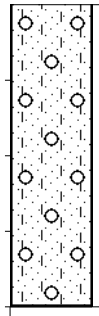
CoGHSTA
O'kiep Housing Development

HOLE No: TP107
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP107



0.00 "Slightly moist, orange brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP107 at 0,0--0,4 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56133299
Y-COORD : 17.86277301

HOLE No: TP107

IN DEMO MODE!

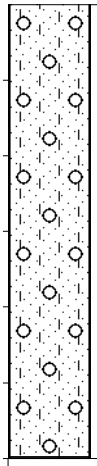
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP108
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, orange brown, loose to medium dense with depth, intact, gravelly silty SAND. COLLUVIUM."

0.60 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.56134296
Y-COORD : 17.86297803

HOLE No: TP108

IN DEMO MODE!

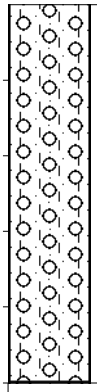
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP109
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, orange brown, loose to medium dense, intact, sandy silty GRAVEL. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61424903
Y-COORD : 17.87418899

HOLE No: TP109

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP110
Sheet 1 of 2

JOB NUMBER: 000

Scale 1:10

TP110

0.00	"Slightly moist, light reddish brown, loose, intact, silty SAND. COLLUVIUM."
0.20	"Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND with plant roots. COLLUVIUM."
1.30	"End of hole,"

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP110 at 0,2--1,3 m."

4) Stable side walls.

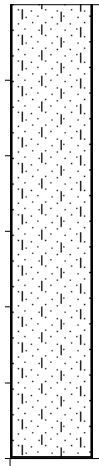
CoGHSTA
O'kiep Housing Development

HOLE No: TP111
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP111



0.00 "Slightly moist, light reddish brown, loose to medium dense, intact, silty SAND. COLLUVIUM."

0.60 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP111 at 0,0--0,6 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.62010798
Y-COORD : 17.87293003

HOLE No: TP111

IN DEMO MODE!

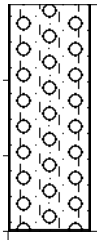
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP112
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, light reddish brown, loose, intact, sandy silty GRAVEL. COLLUVIUM."
0.30	"End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61992199
Y-COORD : 17.87305098

HOLE No: TP112

IN DEMO MODE!

dotPLOT 7022

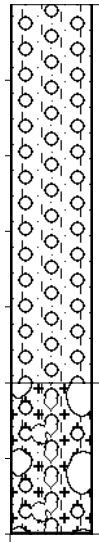
CoGHSTA
O'kiep Housing Development

HOLE No: TP113
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP113



0.00	"Slightly moist, light reddish brown, loose to medium dense, intact, sandy silty GRAVEL. COLLUVIUM."
0.50	"Slightly moist, light reddish brown, medium dense, intact, sandy silty GRAVEL with granite cobbles. COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP113 at 0,0--0,5 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.62024704
Y-COORD : 17.87072601

HOLE No: TP113

IN DEMO MODE!

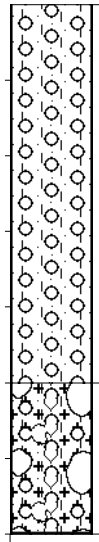
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP114
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, light reddish brown, loose to medium dense, intact, sandy silty GRAVEL. COLLUVIUM."
0.50	"Slightly moist, light reddish brown, medium dense, intact, sandy silty GRAVEL with granite cobbles. COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) Refusal.
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.62032398
Y-COORD : 17.87075099

HOLE No: TP114

IN DEMO MODE!

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP115
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

0.00	"Slightly moist, yellowish brown, medium dense, intact, silty SAND. COLLUVIUM."
0.20	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61794796
Y-COORD : 17.87383896

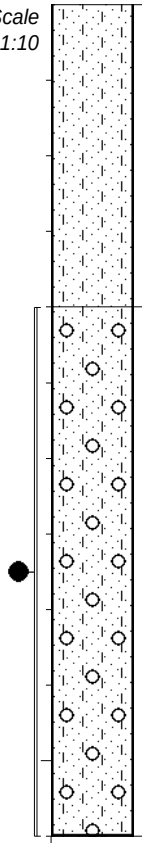
HOLE No: TP115

CoGHSTA
O'kiep Housing Development

HOLE No: TP116
Sheet 1 of 2

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, yellowish brown, medium dense, intact, silty SAND. COLLUVIUM."
0.40	"Slightly moist, dark yellowish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
1.10	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP116 at 0,4--1,1 m."
3) Refusal.
4) Stable side walls.

CoGHSTA
O'kiep Housing Development

HOLE No: TP117
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP117

0.00	"Slightly moist, light yellowish brown, loose, intact, silty SAND. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP117 at 0,0--0,6 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 09/06/2020 17:19
TEXT : ..stpitlogs2(TP1TP117).txt

ELEVATION :
X-COORD : -29.61765502
Y-COORD : 17.87524402

HOLE No: TP117

IN DEMO MODE!

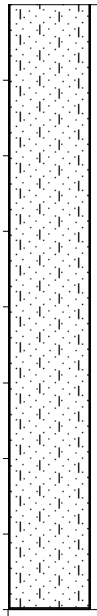
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP118
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, light yellowish brown, loose, intact, silty SAND. COLLUVIUM."

0.80 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61787102
Y-COORD : 17.87524704

HOLE No: TP118

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP119
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP119

0.00	"Slightly moist, light yellowish brown, loose, intact, silty SAND. COLLUVIUM."
0.20	"Slightly moist, dark reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
0.70	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP119 at 0,2--0,7 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61741102
Y-COORD : 17.87559598

HOLE No: TP119

dotPLOT 7022

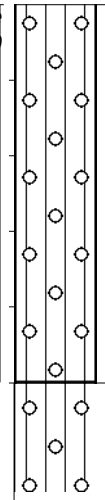
CoGHSTA
O'kiep Housing Development

HOLE No: TP120
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP120



0.00 "Slightly moist, light greyish brown, medium dense, intact, gravelly SILT. COLLUVIUM."

0.50 "End of hole, continues as above."

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP120 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61474599
Y-COORD : 17.87435797

HOLE No: TP120

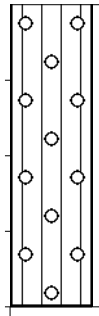
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP121
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, light greyish brown, medium dense, intact, gravelly SILT. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.60613602
Y-COORD : 17.88313097

HOLE No: TP121

dotPLOT 7022

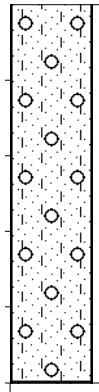
CoGHSTA
O'kiep Housing Development

HOLE No: TP122
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP122



0.00 "Slightly moist, light reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.50 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP122 at 0,0--0,5 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani

TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020

DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61177302
Y-COORD : 17.87379303

HOLE No: TP122

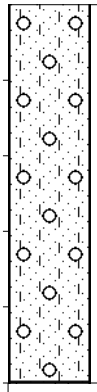
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP123
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, light reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.50 End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) Refusal.

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61163304
Y-COORD : 17.87413501

HOLE No: TP123

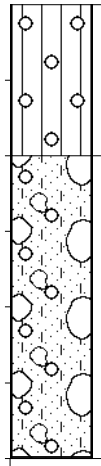
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP124
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, dark brown, loose, intact, gravelly SILT. COLLUVIUM."
0.20	"Slightly moist, light reddish brown, medium dense, intact, gravelly silty SAND with cobbles. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61150999
Y-COORD : 17.87430801

HOLE No: TP124

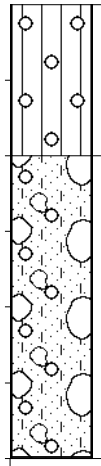
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP125
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, dark brown, loose, intact, gravelly SILT. COLLUVIUM."
0.20	"Slightly moist, light reddish brown, medium dense, intact, gravelly silty SAND with cobbles. COLLUVIUM."
0.60	"End of hole, "

NOTES

1) No seepage.
2) Refusal
3) No disturbed samples taken.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61132299
Y-COORD : 17.874391

HOLE No: TP125

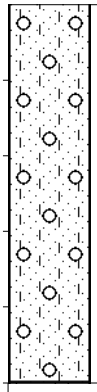
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP126
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, greyish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."
0.50	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61055303
Y-COORD : 17.87083204

HOLE No: TP126

dotPLOT 7022

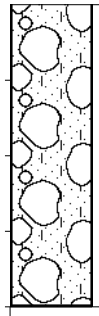
CoGHSTA
O'kiep Housing Development

HOLE No: TP127
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP127



0.00 "Slightly moist, greyish brown, medium dense, intact, gravelly silty SAND with cobbles and boulders. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP127 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61042797
Y-COORD : 17.87094704

HOLE No: TP127

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP128
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

0.00		"Slightly moist, greyish brown, loose, intact, silty SAND. TOP SOIL."
0.10		End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) Refusal

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61667098
Y-COORD : 17.85508202

HOLE No: TP128

dotPLOT 7022

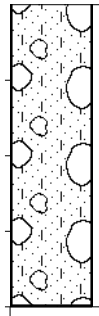
CoGHSTA
O'kiep Housing Development

HOLE No: TP129
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP129



0.00	"Slightly moist, greyish brown, medium dense, intact, silty SAND with minor cobbles. COLLUVIUM."
0.40	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP129 at 0,0--0,4 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61674499
Y-COORD : 17.85511496

HOLE No: TP129

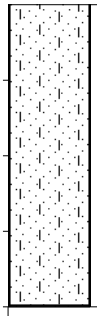
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP130
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, reddish brown, medium dense, intact, gravelly silty SAND. COLLUVIUM."

0.40 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61735997
Y-COORD : 17.85384201

HOLE No: TP130

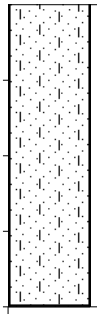
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP131
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	"Slightly moist, reddish brown, medium dense, intact, silty SAND. COLLUVIUM."
0.40	End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61751596
Y-COORD : 17.85398299

HOLE No: TP131

dotPLOT 7022

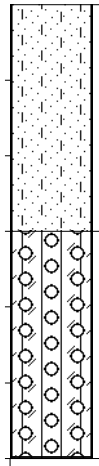
CoGHSTA
O'kiep Housing Development

HOLE No: TP132
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP132



0.00	"Slightly moist, light greyish brown, loose, intact, silty SAND. COLLUVIUM."
0.30	"Slightly moist, reddish brown mottled black, medium dense, intact, clayey SILT with minor gravels. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP132 at 0,0--0,3 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.618141
Y-COORD : 17.85379498

HOLE No: TP132

dotPLOT 7022

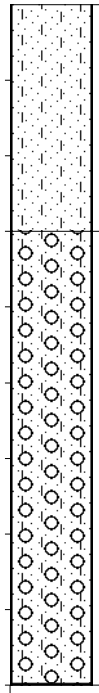
CoGHSTA
O'kiep Housing Development

HOLE No: TP133
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP133



0.00	"Slightly moist, light greyish brown, loose, intact, silty SAND. COLLUVIUM."
0.30	"Slightly moist, greyish brown, medium dense, intact, silty SAND with minor gravels. COLLUVIUM."
0.90	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP133 at 0,0--0,3 m."
3) Refusal
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61814201
Y-COORD : 17.85294296

HOLE No: TP133

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP134
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

0.00	"Slightly moist, light greyish brown, loose, intact, silty SAND. COLLUVIUM."
0.20	End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) "Refusal on bedrock(Orange-brown, massive, hard, moderately weathered, residual granite)."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.618257
Y-COORD : 17.85299401

HOLE No: TP134

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP135
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP135

0.00	"Slightly moist, light greyish brown, loose, intact, silty SAND. COLLUVIUM."
0.40	"Slightly moist, orangish brown, medium dense, intact, silty GRAVEL with roots. COLLUVIUM."
0.60	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP135 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61921296
Y-COORD : 17.85252303

HOLE No: TP135

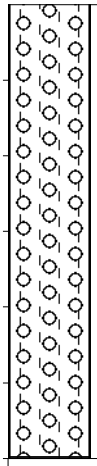
dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP136
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 "Slightly moist, light greyish brown,loose to medium dense, intact, silty GRAVEL with tree roots. COLLUVIUM."

0.60 End of hole.

NOTES

1) No seepage.
2) No disturbed samples taken.
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.61943701
Y-COORD : 17.851641

HOLE No: TP136

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP137
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP137

0.00	"Slightly moist, light brown, medium dense, intact, silty SAND. COLLUVIUM."
0.50	End of hole.

NOTES

1) No seepage.
2) "Disturbed samples taken TP137 at 0,0--0,4 m."
3) Refusal.
4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.62271601
Y-COORD : 17.84215797

HOLE No: TP137

dotPLOT 7022

CoGHSTA
O'kiep Housing Development

HOLE No: TP138
Sheet 1 of 2

JOB NUMBER: 000

Scale 1:10

0.00

"Slightly moist, light brown, medium dense, intact, silty SAND. COLLUVIUM."

1.70

End of hole.

NOTES

1) No seepage.

2) No disturbed samples taken.

3) Refusal.

4) Stable side walls.

CoGHSTA
O'kiep Housing Development

HOLE No: TP139
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10

TP139

0.00 "Slightly moist, light brown, loose to medium dense, intact, silty SAND. COLLUVIUM."

0.40 "End of hole, "

NOTES

1) No seepage.

2) Refusal

3) "Disturbed samples taken TP139 at 0,0--0,4 m."

4) Stable side walls.

CONTRACTOR :
MACHINE : CAT 428
DRILLED BY :
PROFILED BY : Maumela Rudzani
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM : "0,7m trench"
DATE : 29/01/2020 - 03-02-2020
DATE : 29/01/2020 - 03-02-2020
DATE : 10/06/2020 08:23
TEXT : ..itlogs2(TP118TP139)7.txt

ELEVATION :
X-COORD : -29.597216
Y-COORD : 17.87337

HOLE No: TP139

dotPLOT 7022

APPENDIX B

LABORATORY RESULTS

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9006			
HOLE NO./ Km / CHAINAGE	TP01			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 1			
LAYER TESTED/SAMPLED	0.0 - 0.06m			
SAMPLE DEPTH	0.0 - 0.06m			
DATE SAMPLED	2020-01-29			
COLOUR OF SAMPLE	Greyish Brown			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm				
	37.5 mm				
	28.0 mm				
	20.0 mm				
	14.0 mm	100			
	5.0 mm	99			
	2.0 mm	96			
	0.425 mm	65			
	0.075 mm	32			
GM %		1.1			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	32			
COARSE FINE SAND	0.425 - 0.250	13			
MEDIUM FINE SAND	0.250 - 0.150	11			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	34			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	25			
	PLASTICITY INDEX	9			
	LINEAR SHRINKAGE	4.5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	-			
	TRH 14	G10			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	8.5			
	MDD (kg/m³)	1997			
	COMP MC %	8.5			
SWELL % @	MOD | NRB | PRO	0.02 | 0.03 | 0.07			
C.B.R. SANS GR40	100 %	5			
	98 %	4			
	97 %	4			
	95 %	4			
	93 %	3			
	90 %	3			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
Further use of the above information is not the responsibility or liability of Roadlab.
Documents may only be reproduced or published in their full context.
Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-14

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

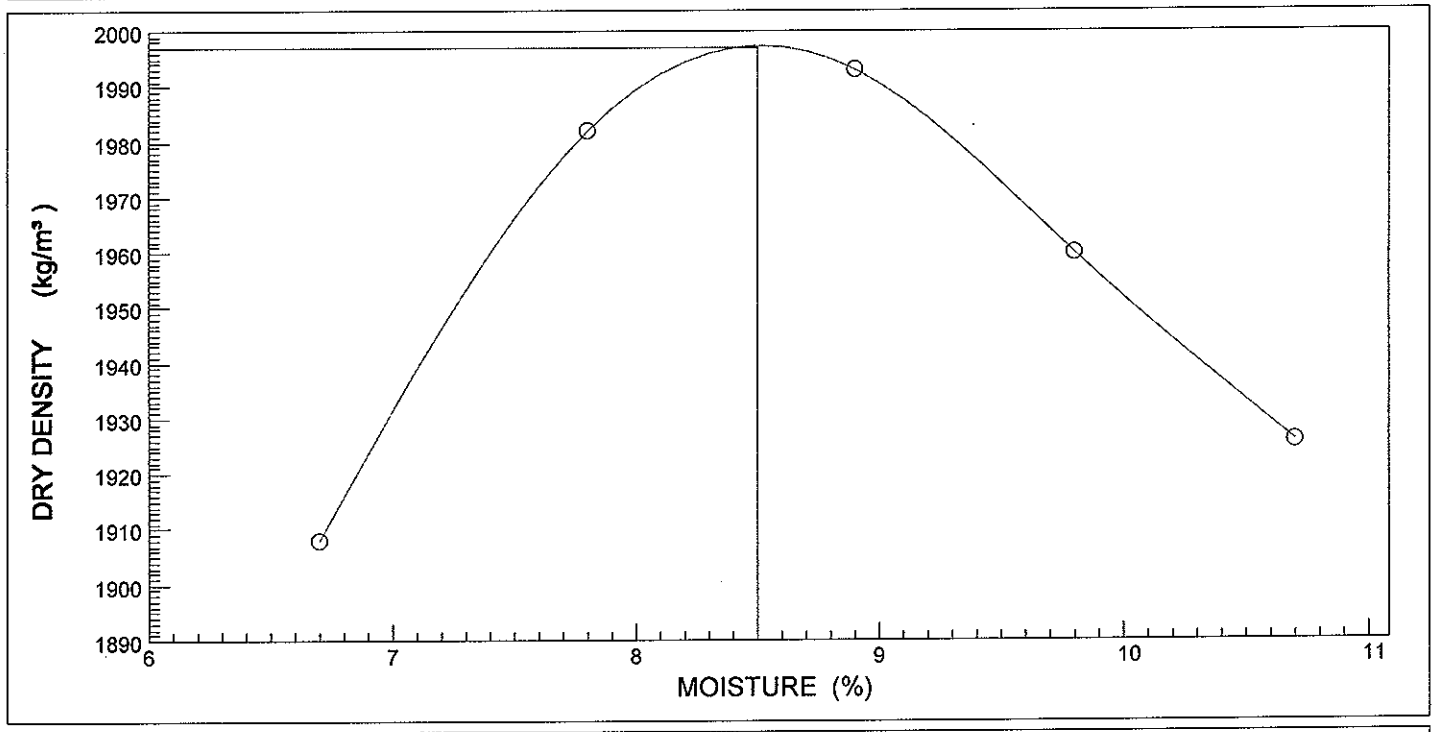
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 1
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	109kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.6m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP01
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9006
COLOUR AND TYPE	Greyish Brown Gravelly Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	1908	1982	1993	1960	1926			
MOISTURE (%)	6.7	7.8	8.9	9.8	10.7			

MAXIMUM DRY DENSITY (kg/m³) : 1997	OPTIMUM MOISTURE CONTENT (%) : 8.5



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
Further use of the above information is not the responsibility or liability of Roadlab.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

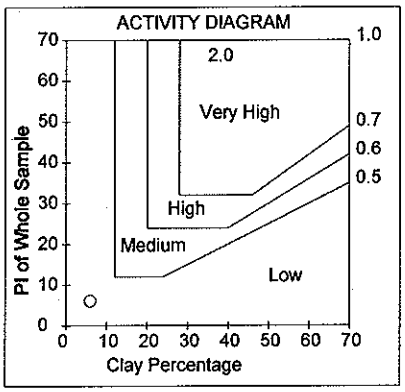
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

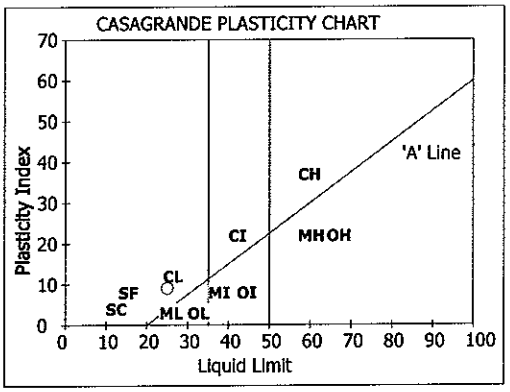
Sample No.	: U9006
Position	: TP 01; 0.0-0.6m
Layer Type	: Sample 1
Sample Colour	: Greyish Brown
Sample Type	: Mix Quartz

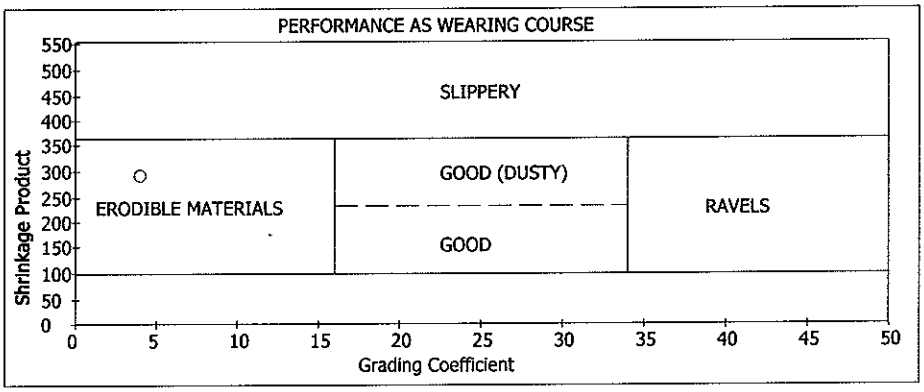
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	99
2.000	96
0.425	65
0.250	53
0.150	42
0.075	32
0.060	12
0.050	11
0.020	11
0.005	6,1
0.002	6,1

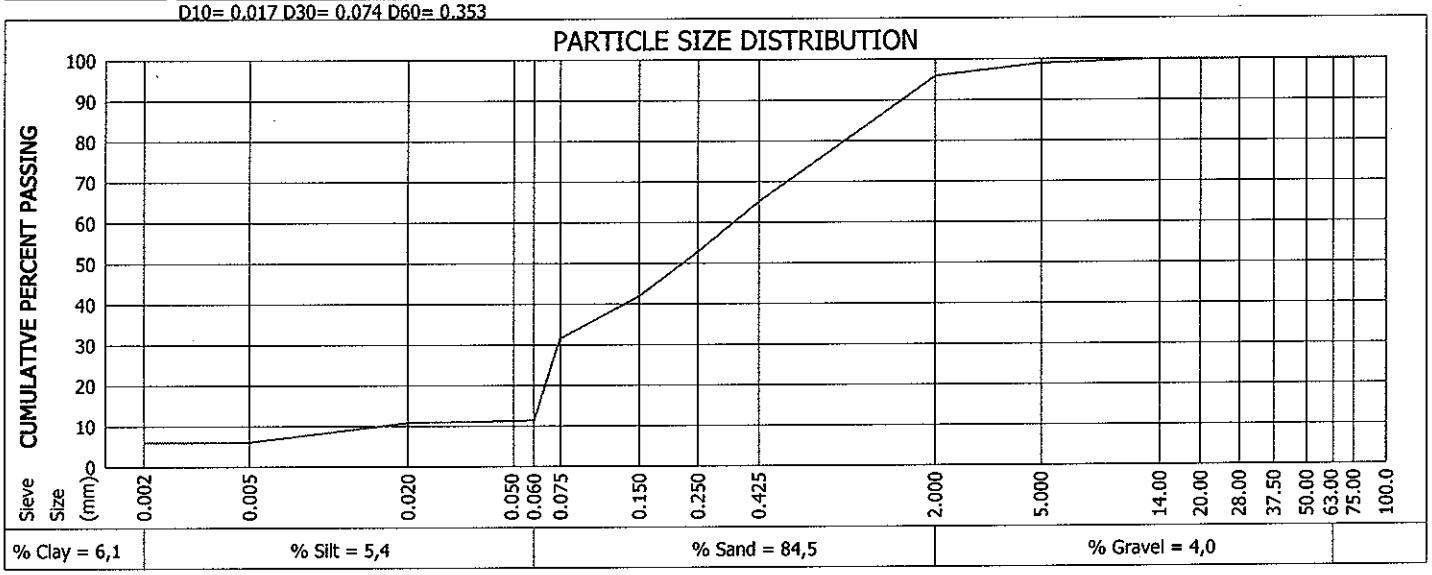
Soil Mortar	2.000 - 0.425	32
	0.425 - 0.250	13
	0.250 - 0.150	11
	0.150 - 0.075	11
	< 0.075	34
Effective Size		0,017
Uniformity Coefficient		20,8
Curvature Coefficient		0,9
Oversize Index		0,0
Shrinkage Product		292,5
Grading Coefficient		4,0
Grading Modulus		1,10
Atterberg Limits	Liquid Limit	25
	Plasticity Index	9
	Linear Shrinkage	4,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.017 D30= 0.074 D60= 0.353









Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 8.4 & Conductivity = 0.03 S/m [SANS 5854]

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB™

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9007			
HOLE NO./ Km / CHAINAGE		TP03			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 2			
LAYER TESTED/SAMPLED		0.4 - 0.07m			
SAMPLE DEPTH		0.4 - 0.07m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Dark Orange Brown			
TYPE OF SAMPLE		Mix Weathered Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm	100			
	75.0 mm	93			
	63.0 mm	93			
	50.0 mm	93			
	37.5 mm	91			
	28.0 mm	90			
	20.0 mm	86			
	14.0 mm	84			
	5.0 mm	69			
	2.0 mm	55			
	0.425 mm	28			
	0.075 mm	7			
GM %		2,1			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	49			
COARSE FINE SAND	0.425 - 0.250	17			
MEDIUM FINE SAND	0.250 - 0.150	12			
FINE FINE SAND	0.150 - 0.075	9			
SILT CLAY	0.075	13			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	15			
	PLASTICITY INDEX	1,6			
	LINEAR SHRINKAGE	1,0			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G7			
	TRH 14	G7			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	7,8			
	MDD (kg/m³)	2174			
	COMP MC %	7,8			
SWELL % @	MOD | NRB | PRO	0,00 | 0,01 | 0,03			
C.B.R. SANS GR40	100 %	44			
	98 %	34			
	97 %	29			
	95 %	22			
	93 %	17			
	90 %	11			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
Further use of the above information is not the responsibility or liability of Roadlab.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-14

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

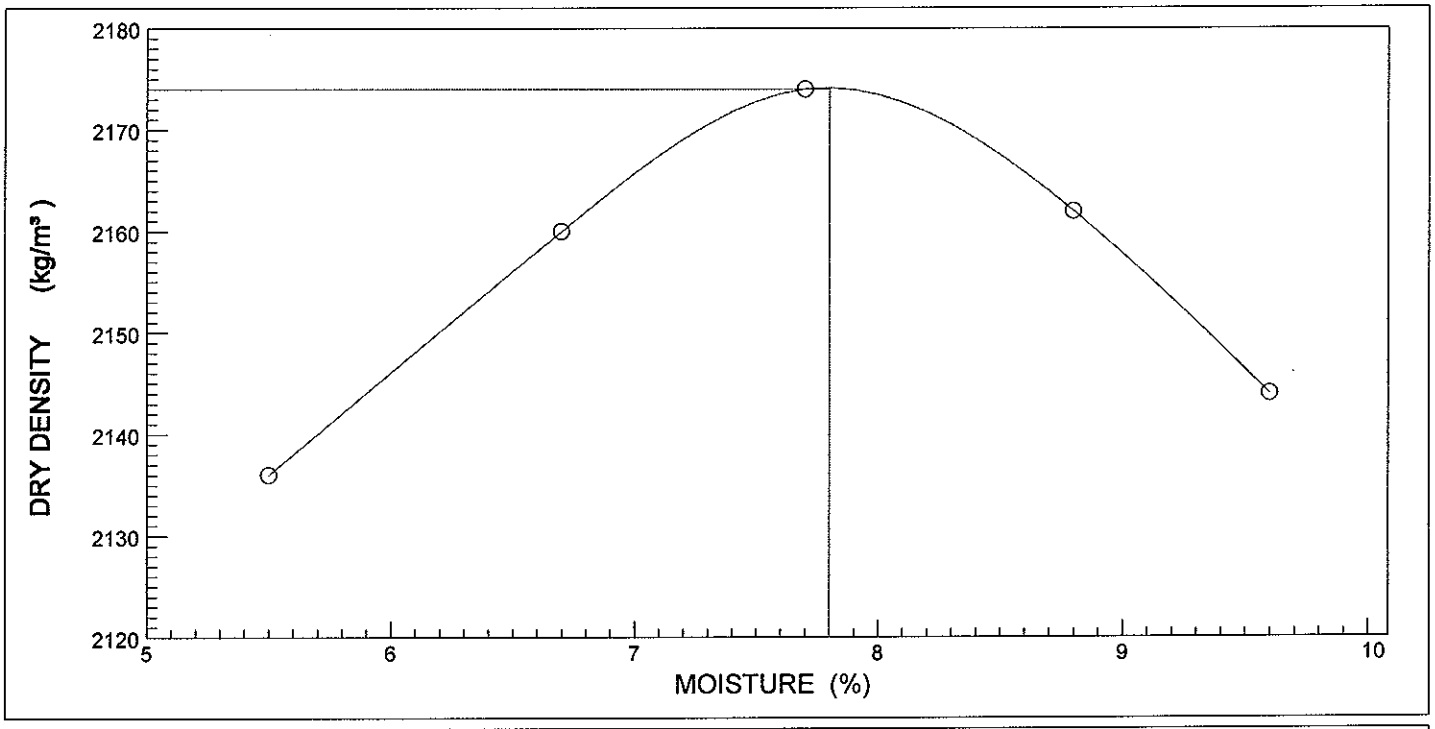
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9007
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	100kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.4 - 0.7m
MATERIAL DESCRIPTION	Mix Weathered Quartzstone
HOLE NO./ km / CHAINAGE	TP03
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9007
COLOUR AND TYPE	Dark Orange Brown Gravel

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2136	2160	2174	2162	2144			
MOISTURE (%)	5.5	6.7	7.7	8.8	9.6			

MAXIMUM DRY DENSITY (kg/m³) : 2174	OPTIMUM MOISTURE CONTENT (%) : 7.8



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

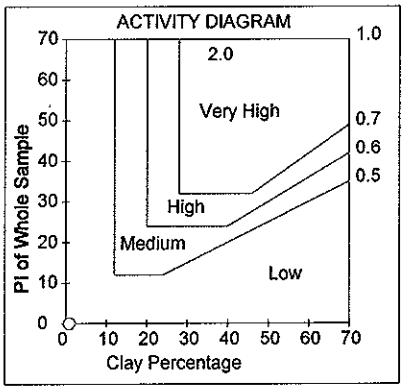
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

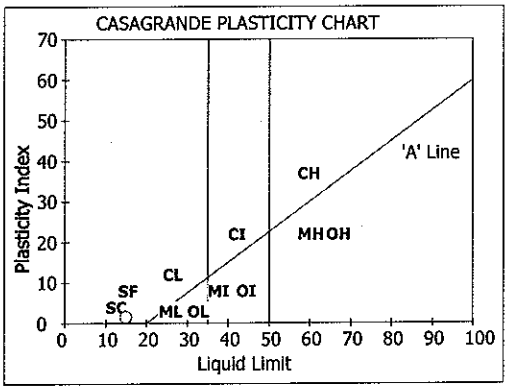
Sample No.	: U9007
Position	: TP 03; 0.4-0.7m
Layer Type	: Sample 2
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Weathered Quartz

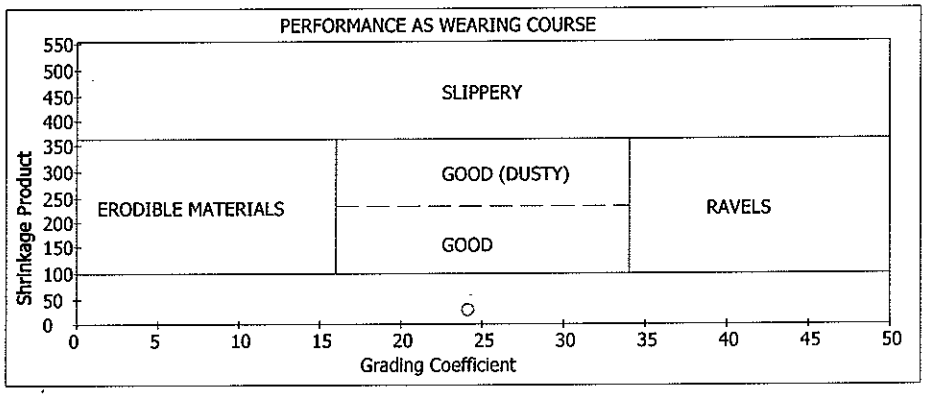
Sieve Size(mm)	% Passing
100.0	100
75.00	93
63.00	93
50.00	93
37.50	91
28.00	90
20.00	86
14.00	84
5.000	69
2.000	55
0.425	28
0.250	19
0.150	12
0.075	7.3
0.060	2.7
0.050	2.6
0.020	2.2
0.005	1.1
0.002	1.1

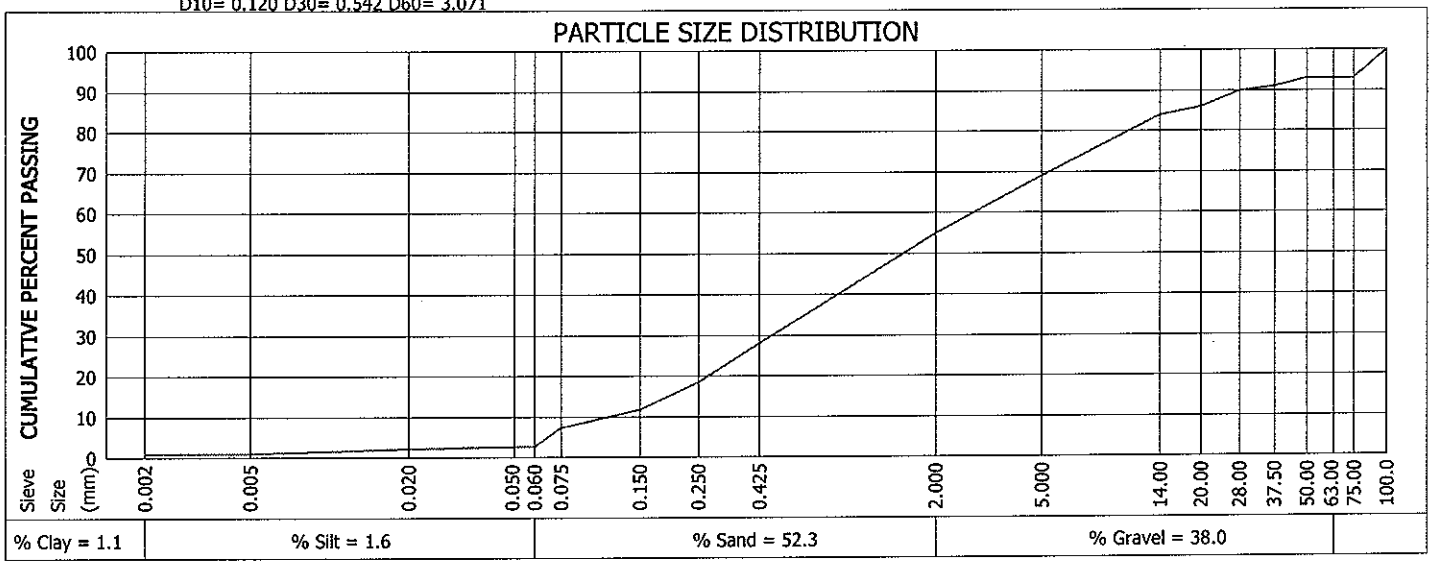
Soil Mortar	2.000 - 0.425	49
	0.425 - 0.250	17
	0.250 - 0.150	12
	0.150 - 0.075	9
	< 0.075	13
Effective Size		0.120
Uniformity Coefficient		25.6
Curvature Coefficient		0.8
Oversize Index		2.0
Shrinkage Product		28.0
Grading Coefficient		24.2
Grading Modulus		2.10
Atterberg Limits	Liquid Limit	15
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.120 D30= 0.542 D60= 3.071









% Clay = 1.1	% Silt = 1.6	% Sand = 52.3	% Gravel = 38.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-21

Project : Okiep 100 Infill

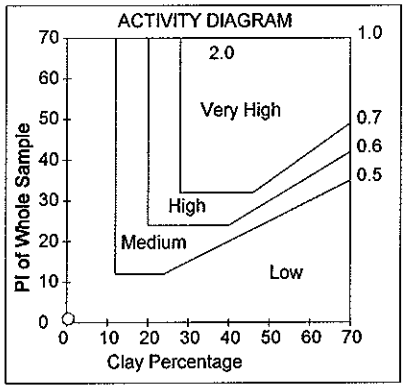
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

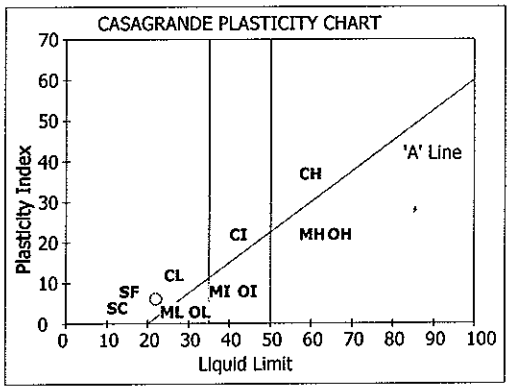
Sample No.	: U9008
Position	: TP 05
Layer Type	: Sample 3
Sample Colour	: Brown Gravel
Sample Type	: Mix Quartziticstone

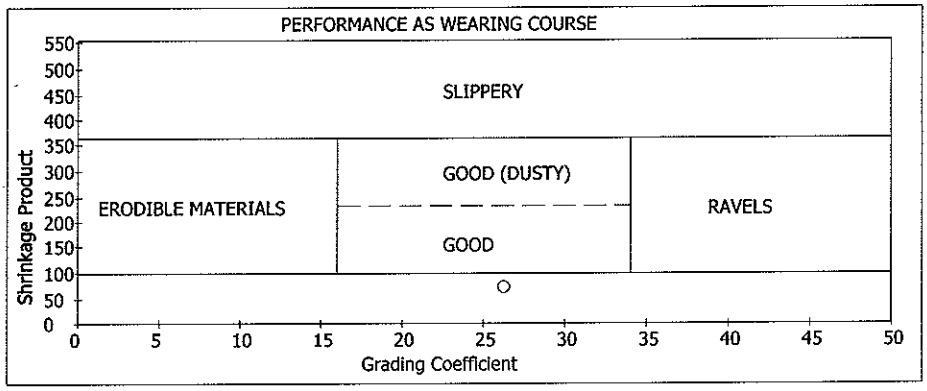
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	95
28.00	90
20.00	80
14.00	73
5.000	46
2.000	33
0.425	21
0.250	17
0.150	13
0.075	8.6
0.060	2.8
0.050	2.6
0.020	2.1
0.005	0.4
0.002	0.4

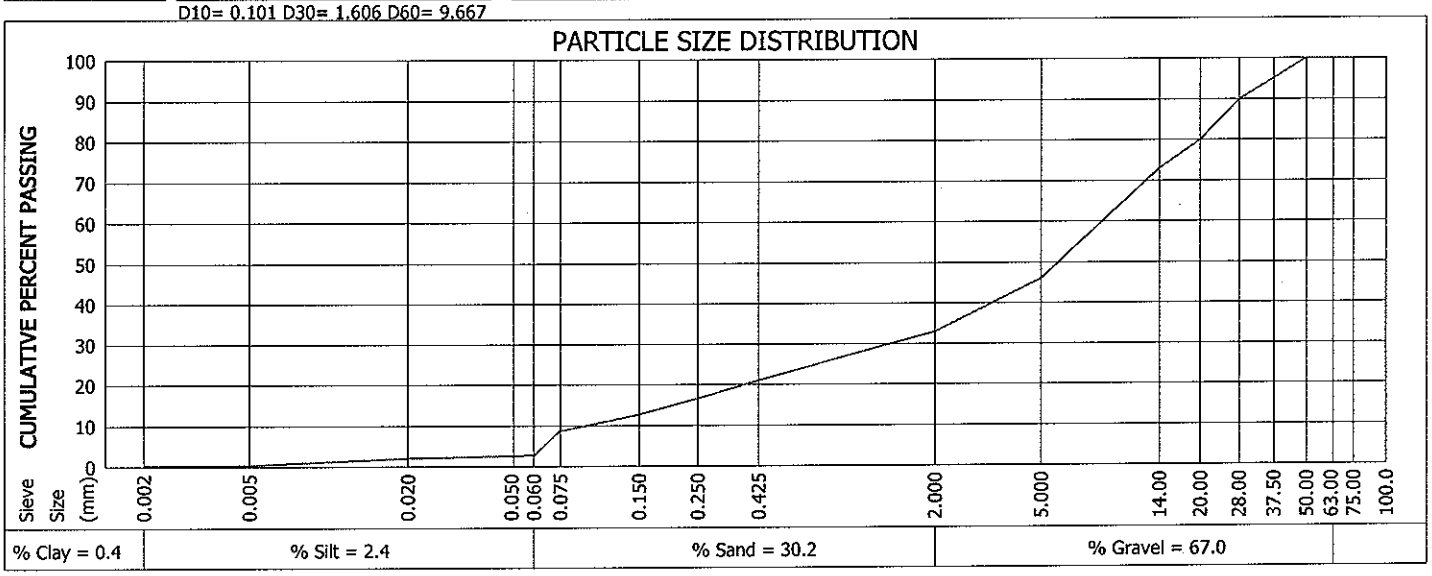
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	13
	0.250 - 0.150	12
	0.150 - 0.075	11
	< 0.075	27
Effective Size		0.101
Uniformity Coefficient		95.7
Curvature Coefficient		2.6
Oversize Index		5.0
Shrinkage Product		73.5
Grading Coefficient		26.2
Grading Modulus		2.40
Atterberg Limits	Liquid Limit	22
	Plasticity Index	6
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		GW-GM-GC
US Highway Classification		A-1-a(0)

D10= 0.101 D30= 1.606 D60= 9.667









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-19

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

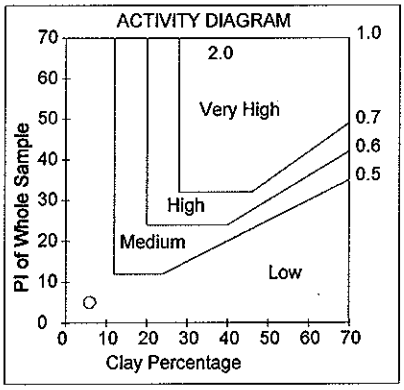
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

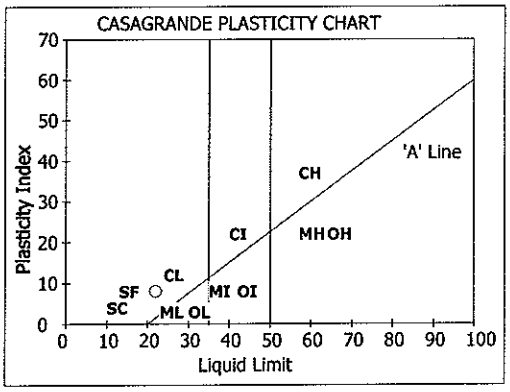
Sample No.	: U9009
Position	: TP 07; 0-0.4m
Layer Type	: Sample 4
Sample Colour	: Brown Silty Sand
Sample Type	: Mix Quartsitic

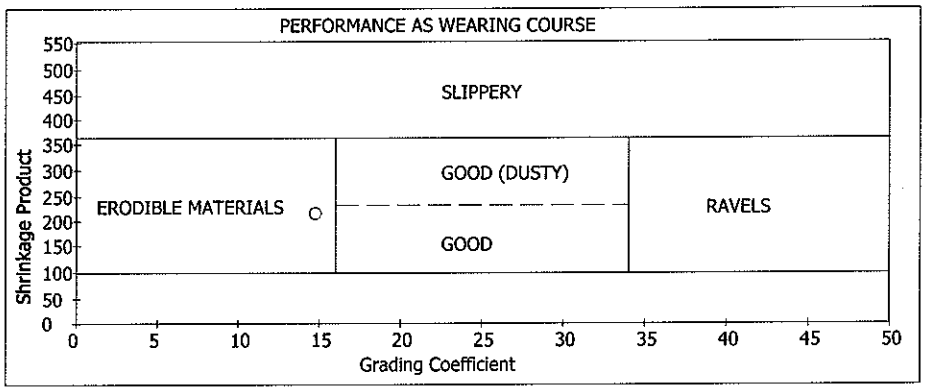
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	99
14.00	97
5.000	92
2.000	84
0.425	62
0.250	52
0.150	43
0.075	33
0.060	12
0.050	11
0.020	8.3
0.005	6.2
0.002	6.2

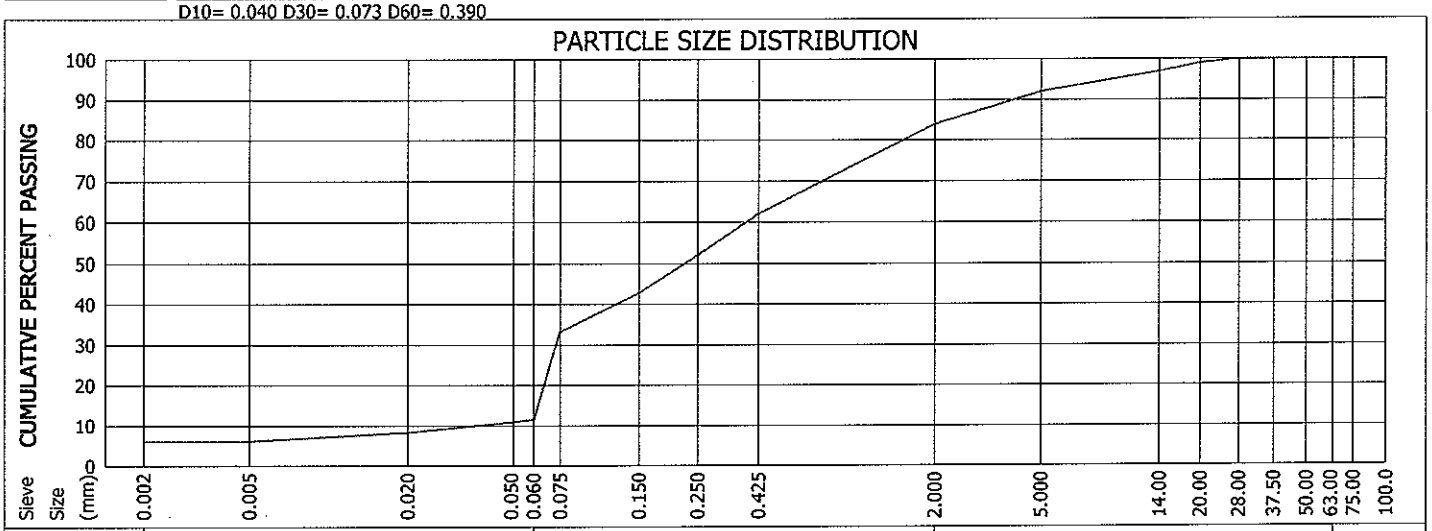
Soil Mortar	2.000 - 0.425	26
	0.425 - 0.250	12
	0.250 - 0.150	11
	0.150 - 0.075	12
	< 0.075	39
Effective Size		0.040
Uniformity Coefficient		9.8
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		217.0
Grading Coefficient		14.7
Grading Modulus		1.20
Atterberg Limits	Liquid Limit	22
	Plasticity Index	8
	Linear Shrinkage	3,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.040 D30= 0.073 D60= 0.390









% Clay = 6.2	% Silt = 5.3	% Sand = 72.5	% Gravel = 16.0

Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Mareze Lategan

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-20

Project : Okiep 100 Infill

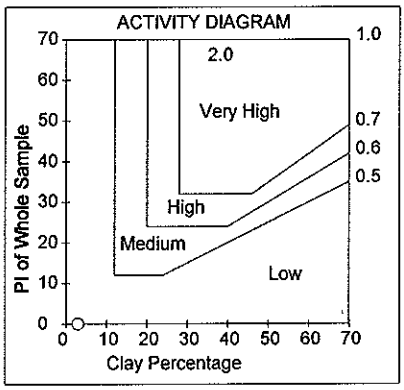
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

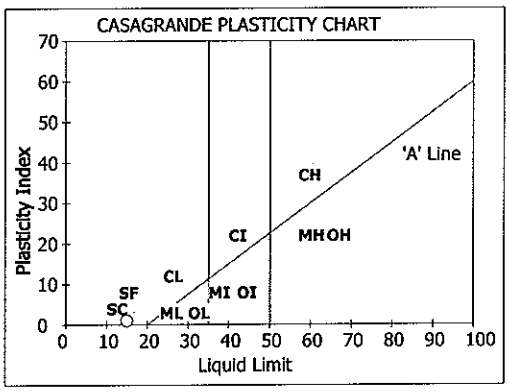
Sample No.	: U9098
Position	: TP 08 - 0.4-0.8m
Layer Type	: Sample
Sample Colour	: Brown
Sample Type	: Mix Quartzstone

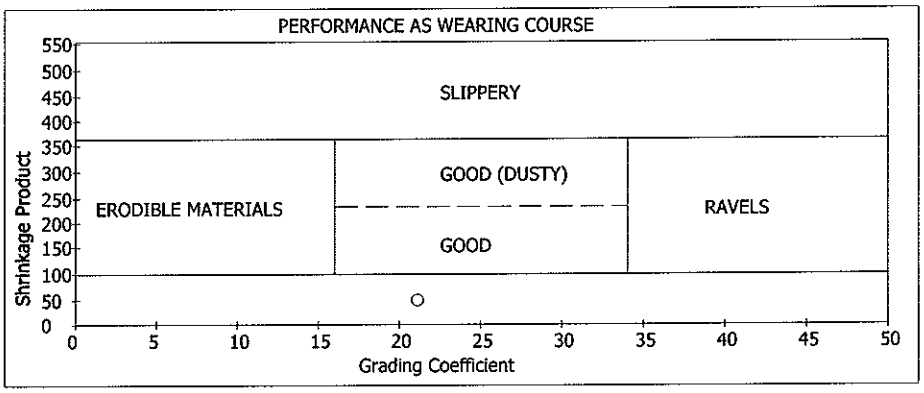
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	99
5.000	88
2.000	76
0.425	48
0.250	39
0.150	27
0.075	16
0.060	5.8
0.050	5.6
0.020	5.2
0.005	3.9
0.002	3.0

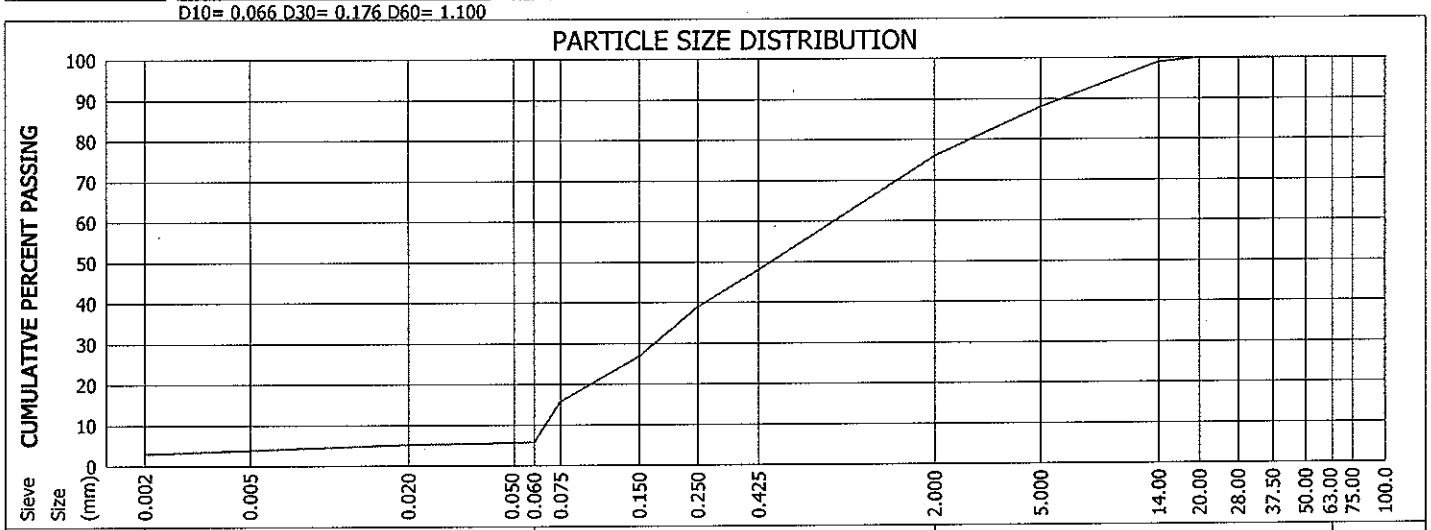
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	11
	0.250 - 0.150	16
	0.150 - 0.075	14
	< 0.075	21
Effective Size		0.066
Uniformity Coefficient		16.7
Curvature Coefficient		0.4
Oversize Index		0.0
Shrinkage Product		48.0
Grading Coefficient		21.1
Grading Modulus		1.60
Atterberg Limits	Liquid Limit	15
	Plasticity Index	1.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.066 D30= 0.176 D60= 1.100









% Clay = 3.0	% Silt = 2.8	% Sand = 70.2	% Gravel = 24.0

Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

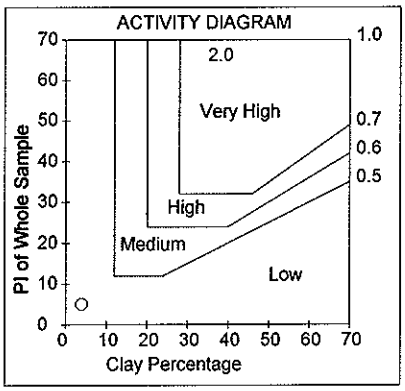
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

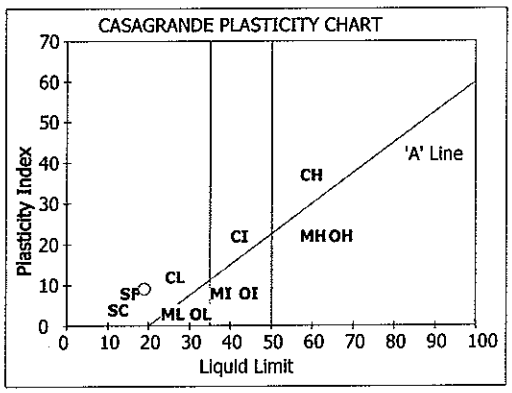
Sample No.	: U9010
Position	: TP 09; 0.0-0.4m
Layer Type	: Sample 5
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

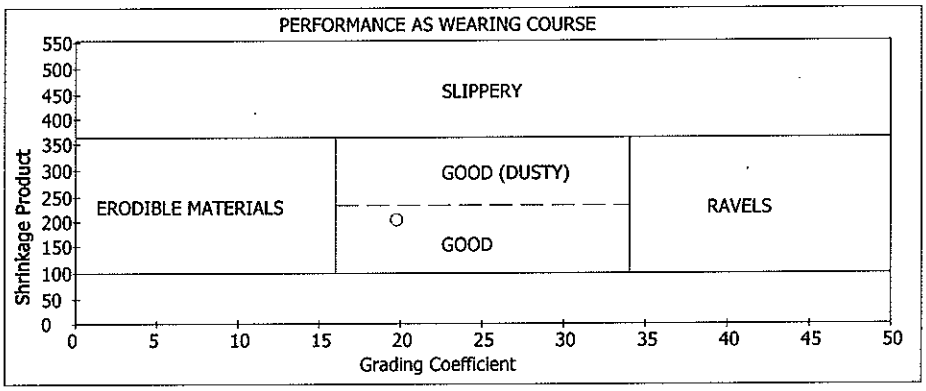
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	97
20.00	95
14.00	94
5.000	86
2.000	74
0.425	51
0.250	41
0.150	31
0.075	22
0.060	9.1
0.050	8.6
0.020	7.5
0.005	4.1
0.002	4.1

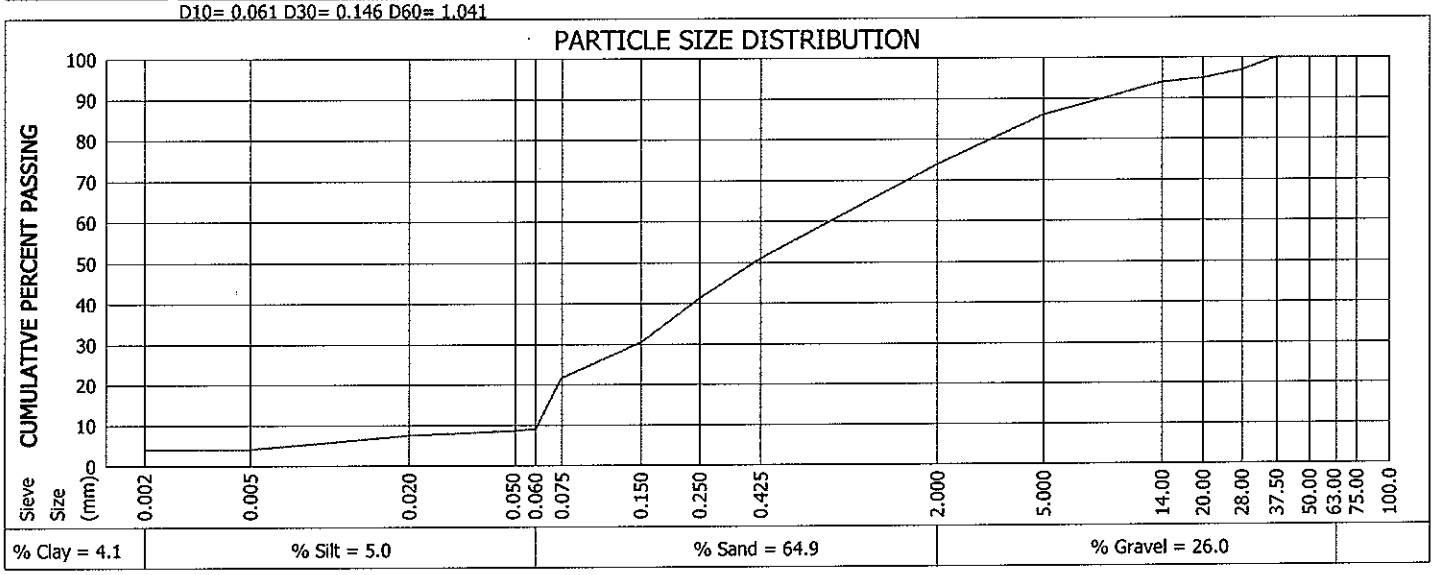
Soil Mortar	2.000 - 0.425	31
	0.425 - 0.250	13
	0.250 - 0.150	15
	0.150 - 0.075	12
	< 0.075	30
Effective Size		0.061
Uniformity Coefficient		17.1
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		204.0
Grading Coefficient		19.8
Grading Modulus		1.50
Atterberg Limits	Liquid Limit	19
	Plasticity Index	9
	Linear Shrinkage	4.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.061 D30= 0.146 D60= 1.041









% Clay = 4.1	% Silt = 5.0	% Sand = 64.9	% Gravel = 26.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

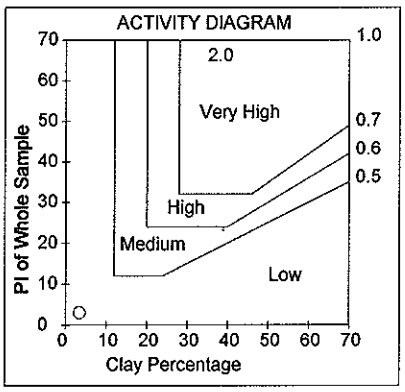
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

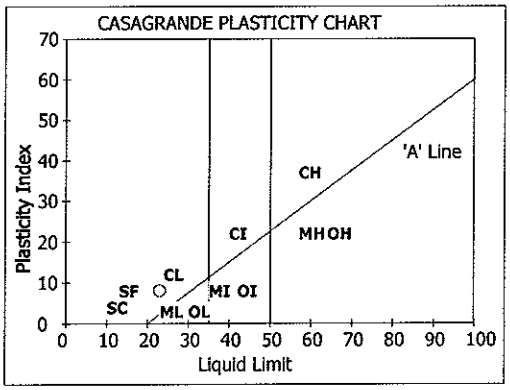
Sample No.	: U9011
Position	: TP 11; 0-0.4m
Layer Type	: Sample 6
Sample Colour	: Brown Silty Sand
Sample Type	: Mix Quartsitic Stone

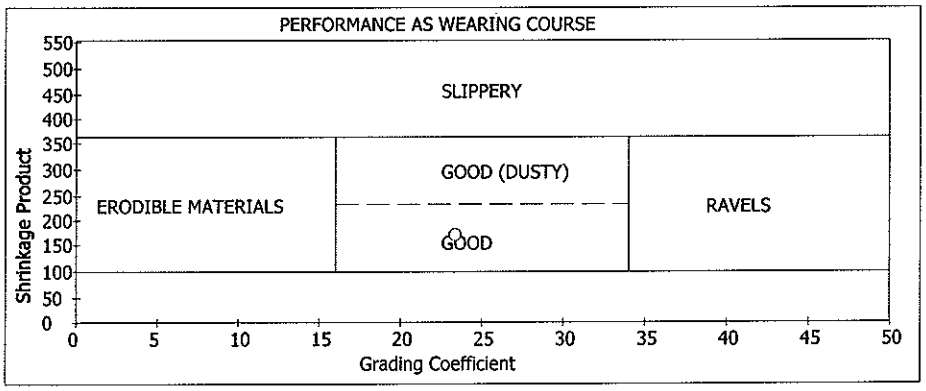
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	96
20.00	92
14.00	87
5.000	73
2.000	64
0.425	43
0.250	33
0.150	24
0.075	17
0.060	6.6
0.050	6.4
0.020	5.3
0.005	3.4
0.002	3.4

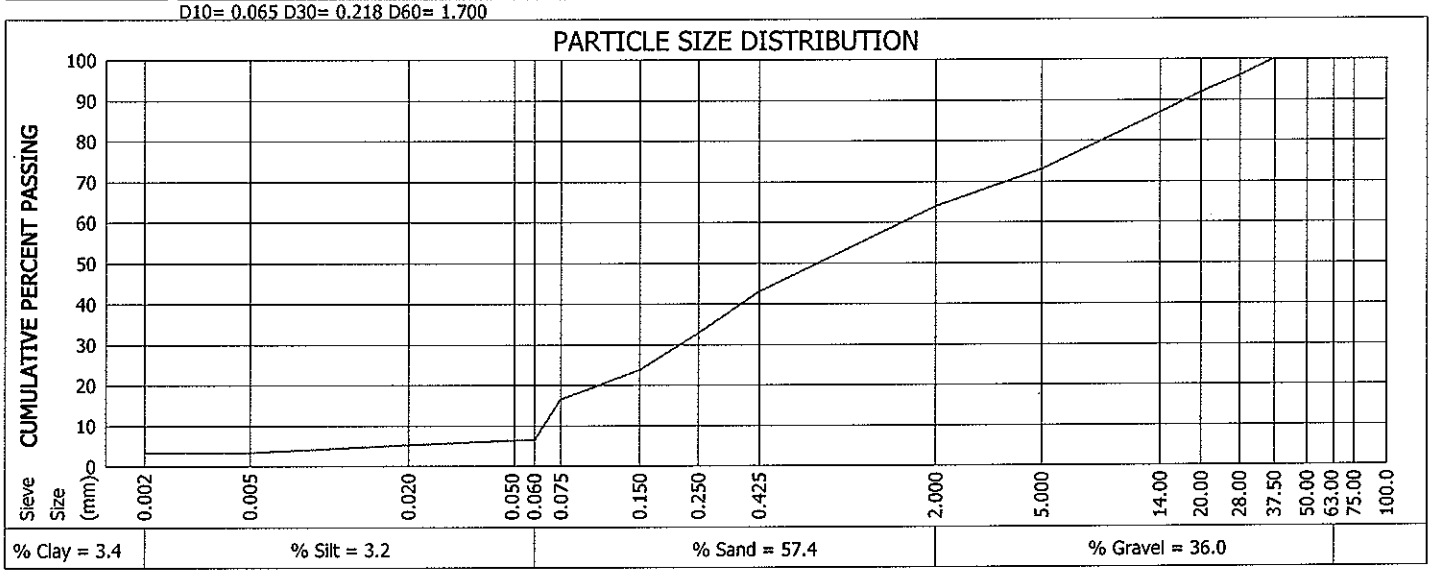
Soil Mortar	2.000 - 0.425	33
	0.425 - 0.250	16
	0.250 - 0.150	14
	0.150 - 0.075	12
	< 0.075	25
Effective Size		0.065
Uniformity Coefficient		26.2
Curvature Coefficient		0.4
Oversize Index		0.0
Shrinkage Product		172.0
Grading Coefficient		23.4
Grading Modulus		1.80
Atterberg Limits	Liquid Limit	23
	Plasticity Index	8
	Linear Shrinkage	4,0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.065 D30= 0.218 D60= 1.700









% Clay = 3.4	% Silt = 3.2	% Sand = 57.4	% Gravel = 36.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

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Louis Trichardt
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Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

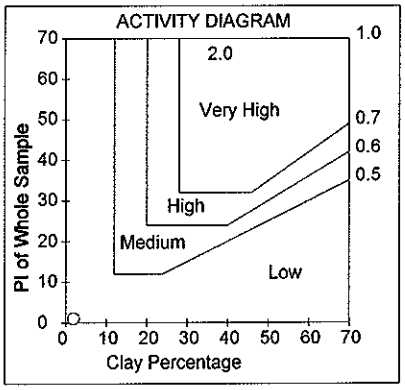
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

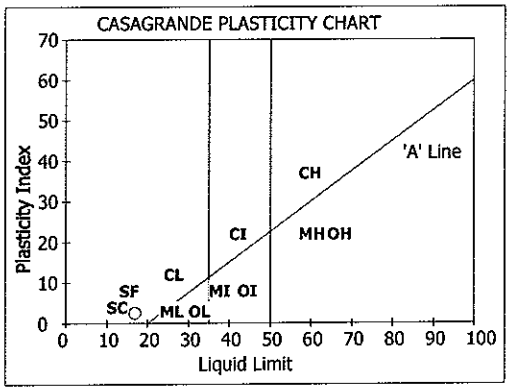
Sample No.	: U9012
Position	: TP 12; 0-0.4m
Layer Type	: Sample 7
Sample Colour	: Greyish Gravelly San
Sample Type	: Mix Quartsitic

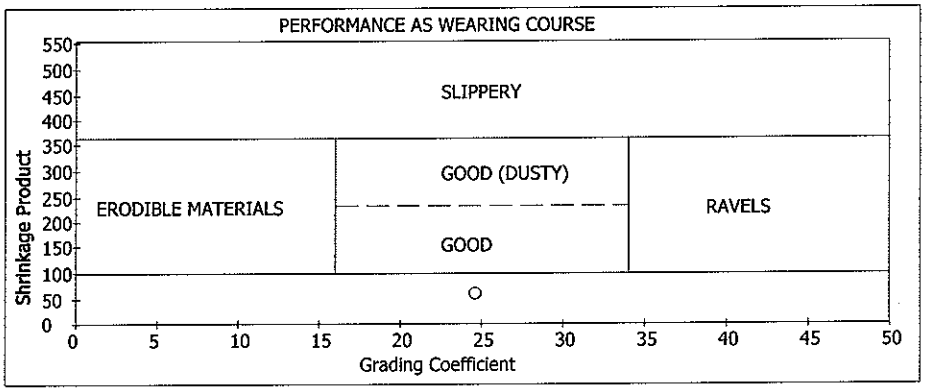
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	96
20.00	94
14.00	92
5.000	82
2.000	66
0.425	40
0.250	31
0.150	22
0.075	15
0.060	5.9
0.050	5.7
0.020	4.8
0.005	2.2
0.002	2.2

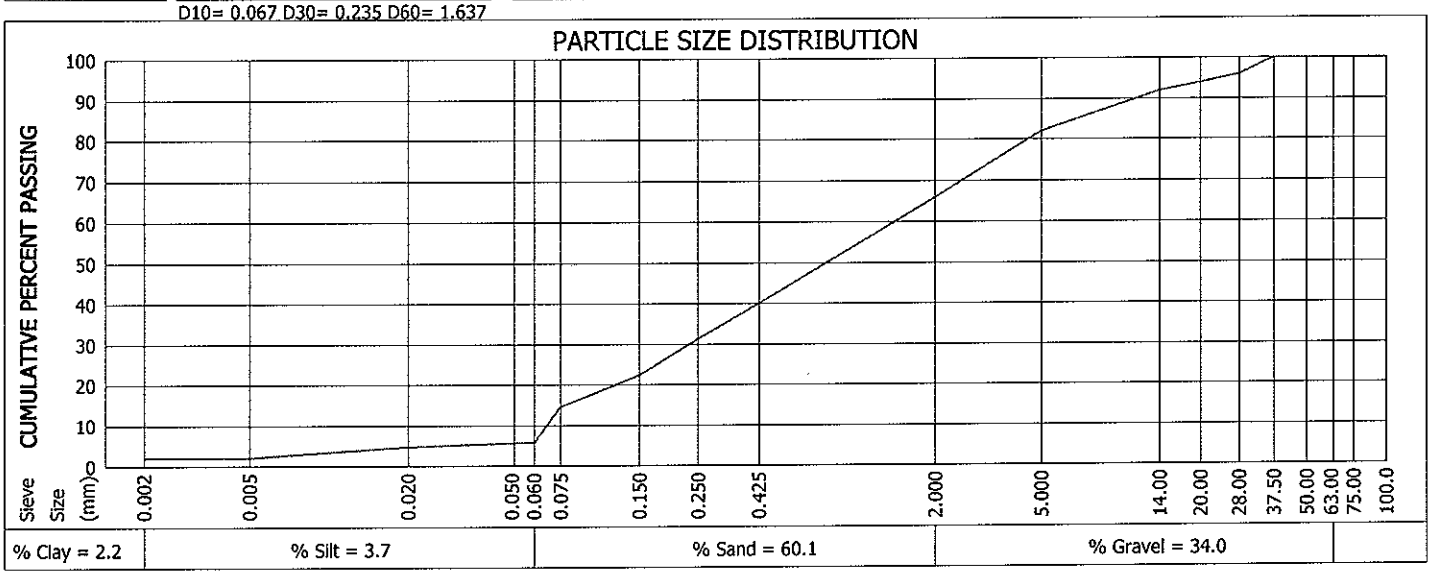
Soil Mortar	2.000 - 0.425	40
	0.425 - 0.250	13
	0.250 - 0.150	14
	0.150 - 0.075	13
	< 0.075	21
Effective Size		0.067
Uniformity Coefficient		24.4
Curvature Coefficient		0.5
Oversize Index		0.0
Shrinkage Product		60.0
Grading Coefficient		24.6
Grading Modulus		1.80
Atterberg Limits	Liquid Limit	17
	Plasticity Index	3,0
	Linear Shrinkage	1,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.067 D30= 0.235 D60= 1.637









% Clay = 2.2	% Silt = 3.7	% Sand = 60.1	% Gravel = 34.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Mareze Lategan

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-18

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9013			
HOLE NO./ Km / CHAINAGE		TP13			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 8			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Dark Orange Brown			
TYPE OF SAMPLE		Mix Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm				
	37.5 mm				
	28.0 mm				
	20.0 mm				
	14.0 mm	100			
	5.0 mm	94			
	2.0 mm	86			
	0.425 mm	65			
	0.075 mm	32			
GM %		1,2			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	24			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	15			
SILT CLAY	0.075	37			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	16			
	PLASTICITY INDEX	6			
	LINEAR SHRINKAGE	3,0			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	-			
	TRH 14	G10			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	5,7			
	MDD (kg/m³)	2212			
	COMP MC %	6,0			
SWELL % @	MOD | NRB | PRO	0,02 | 0,04 | 0,06			
C.B.R. SANS GR40	100 %	10			
	98 %	8			
	97 %	7			
	95 %	5			
	93 %	4			
	90 %	3			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-17

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

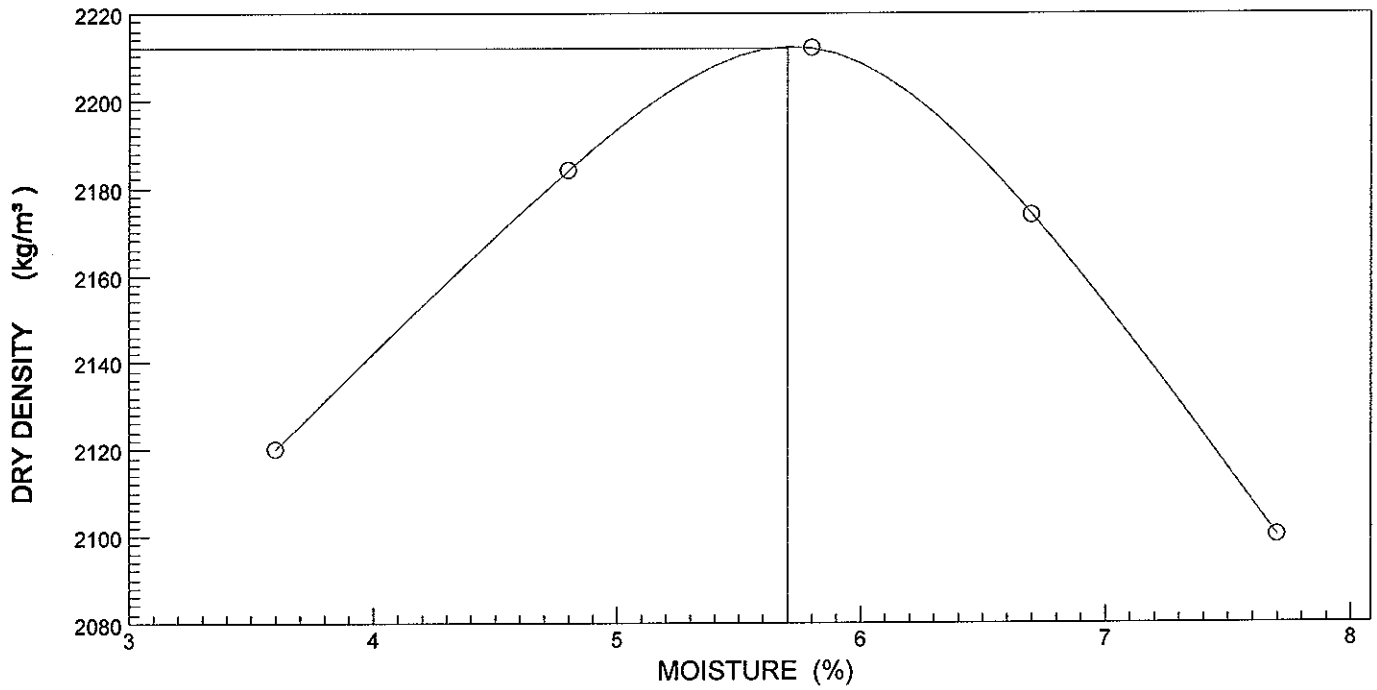
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9013
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	98kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.4m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP13
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9013
COLOUR AND TYPE	Dark Orange Brown Gravel

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2120	2184	2212	2174	2100			
MOISTURE (%)	3.6	4.8	5.8	6.7	7.7			

MAXIMUM DRY DENSITY (kg/m³) : 2212	OPTIMUM MOISTURE CONTENT (%) : 5.7



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-19

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

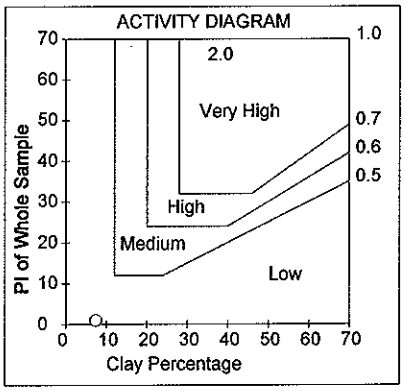
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

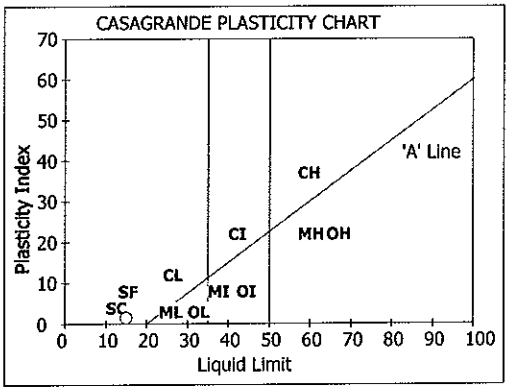
Sample No.	: U9013
Position	: TP 13; 0.0-0.4m
Layer Type	: Sample 8
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

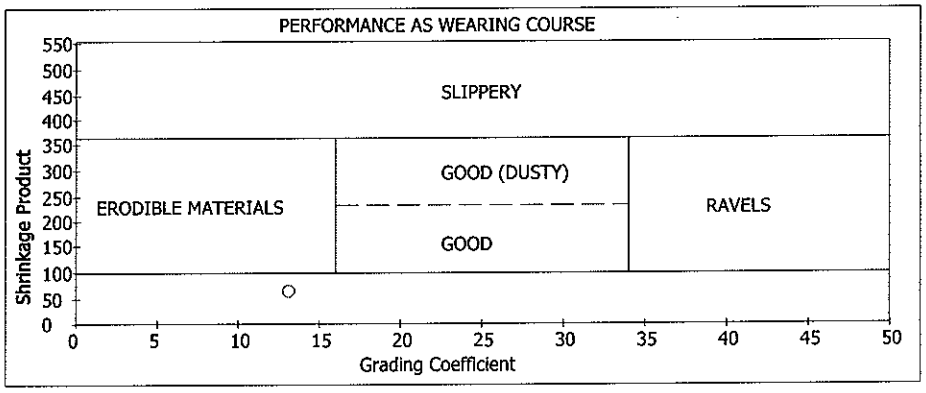
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	94
2.000	86
0.425	65
0.250	56
0.150	45
0.075	32
0.060	16
0.050	15
0.020	14
0.005	7.7
0.002	7.7

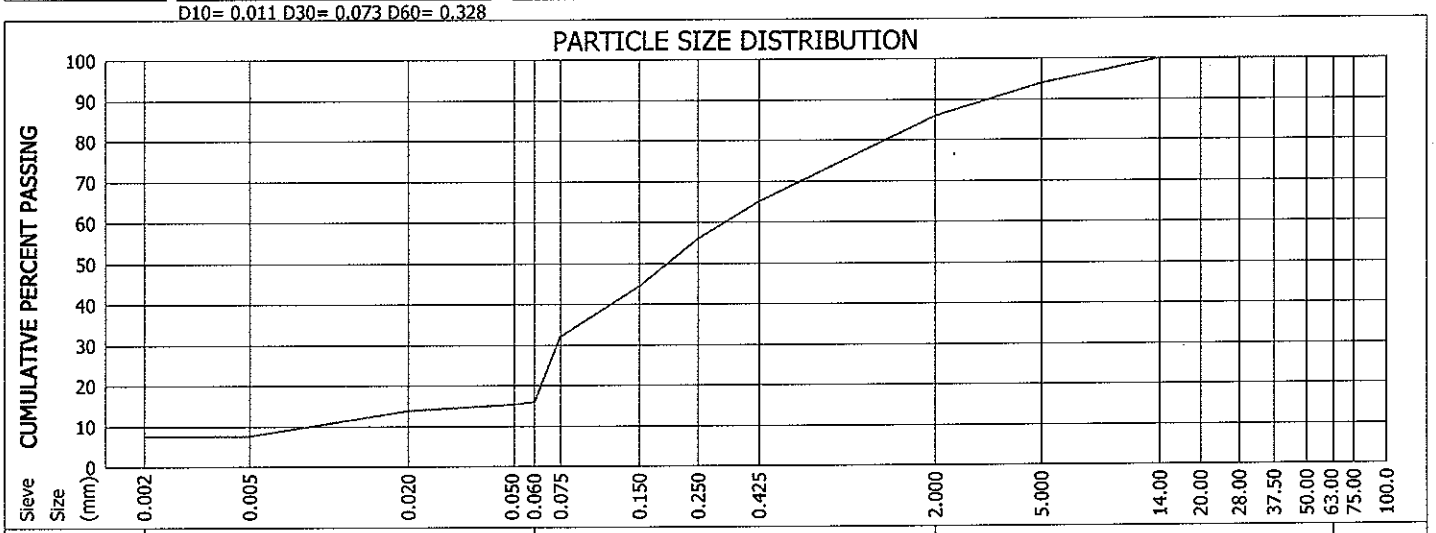
Soil Mortar	2.000 - 0.425	24
	0.425 - 0.250	11
	0.250 - 0.150	13
	0.150 - 0.075	15
	< 0.075	37
Effective Size		0.011
Uniformity Coefficient		29.8
Curvature Coefficient		1.5
Oversize Index		0.0
Shrinkage Product		65.0
Grading Coefficient		13.2
Grading Modulus		1.20
Atterberg Limits	Liquid Limit	15
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.011 D30= 0.073 D60= 0.328









% Clay = 7.7	% Silt = 8.3	% Sand = 70.0	% Gravel = 14.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9014			
HOLE NO./ Km / CHAINAGE		TP15			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 9			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Light Orange Brown			
TYPE OF SAMPLE		Mix Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm	100			
	37.5 mm	99			
	28.0 mm	99			
	20.0 mm	99			
	14.0 mm	98			
	5.0 mm	91			
	2.0 mm	80			
	0.425 mm	59			
	0.075 mm	24			
GM %		1,4			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	26			
COARSE FINE SAND	0.425 - 0.250	13			
MEDIUM FINE SAND	0.250 - 0.150	16			
FINE FINE SAND	0.150 - 0.075	15			
SILT CLAY	0.075	30			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	22			
	PLASTICITY INDEX	6			
	LINEAR SHRINKAGE	3,5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	G8			
	TRH 14	G10			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6,5			
	MDD (kg/m³)	2196			
	COMP MC %	6,7			
SWELL % @	MOD | NRB | PRO	0,01 | 0,03 | 0,06			
C.B.R. SANS GR40	100 %	63			
	98 %	39			
	97 %	31			
	95 %	20			
	93 %	12			
	90 %	6			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Kategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill

Attention : Aurey Nonyana

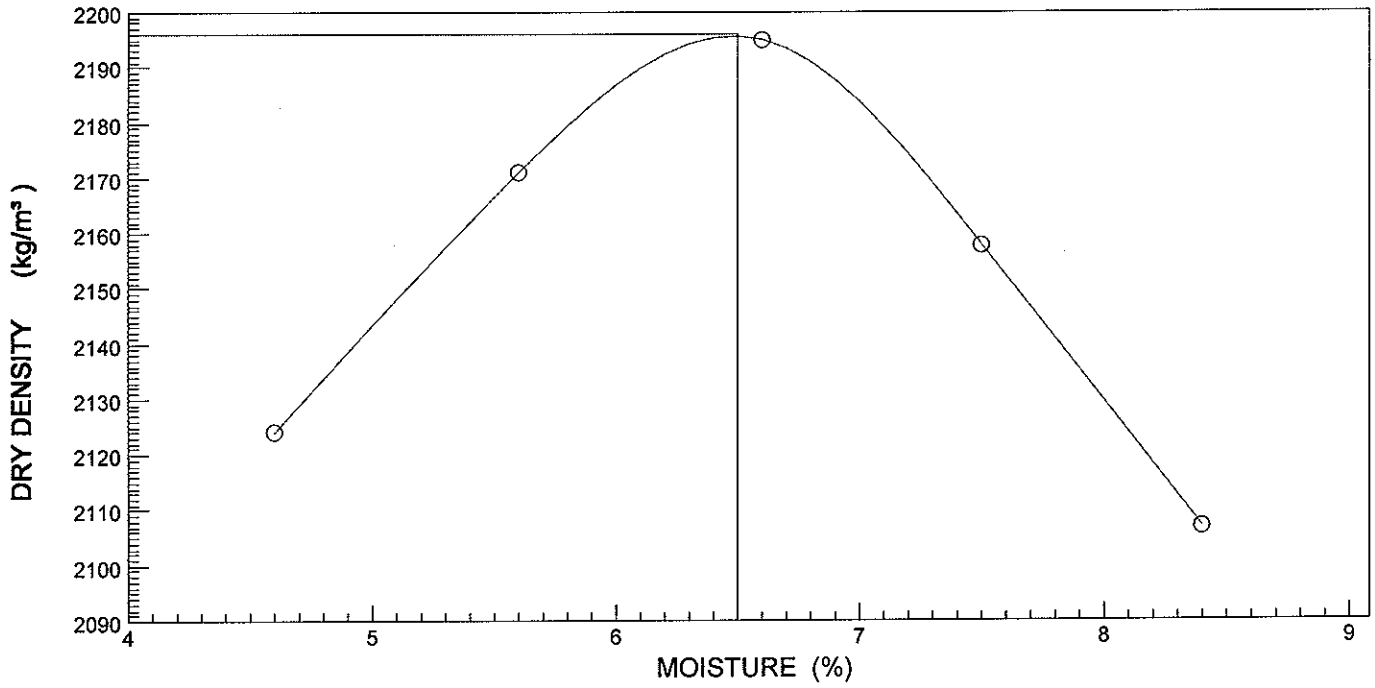
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9014
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.4m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP15
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9014
COLOUR AND TYPE	Light Orange Brown Gravel

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2124	2171	2195	2158	2107			
MOISTURE (%)	4.6	5.6	6.6	7.5	8.4			

MAXIMUM DRY DENSITY (kg/m³) : 2196	OPTIMUM MOISTURE CONTENT (%) : 6.5



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
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Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

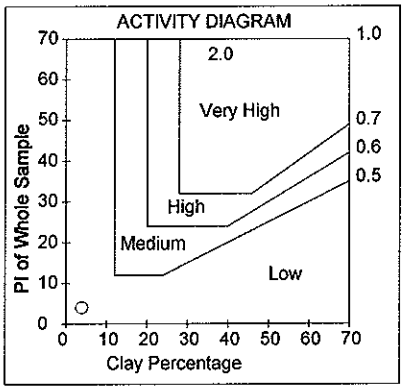
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

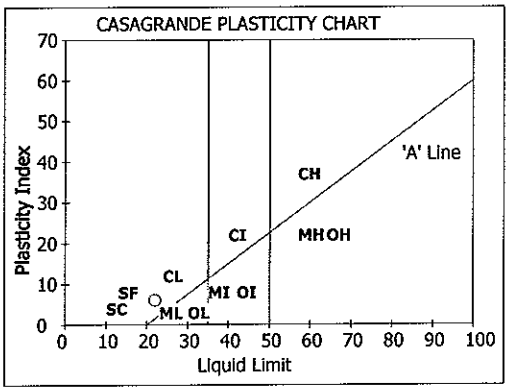
Sample No.	: U9014
Position	: TP 15; 0.0-0.4m
Layer Type	: Sample 9
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

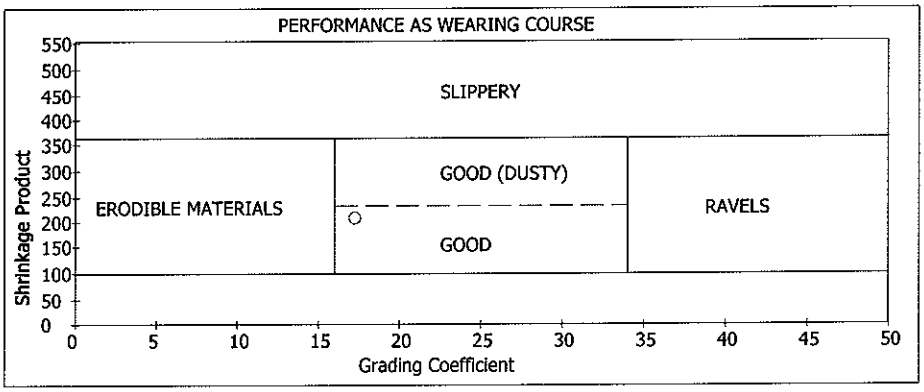
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	99
20.00	99
14.00	98
5.000	91
2.000	80
0.425	59
0.250	49
0.150	36
0.075	24
0.060	11
0.050	11
0.020	8.2
0.005	4.0
0.002	4.0

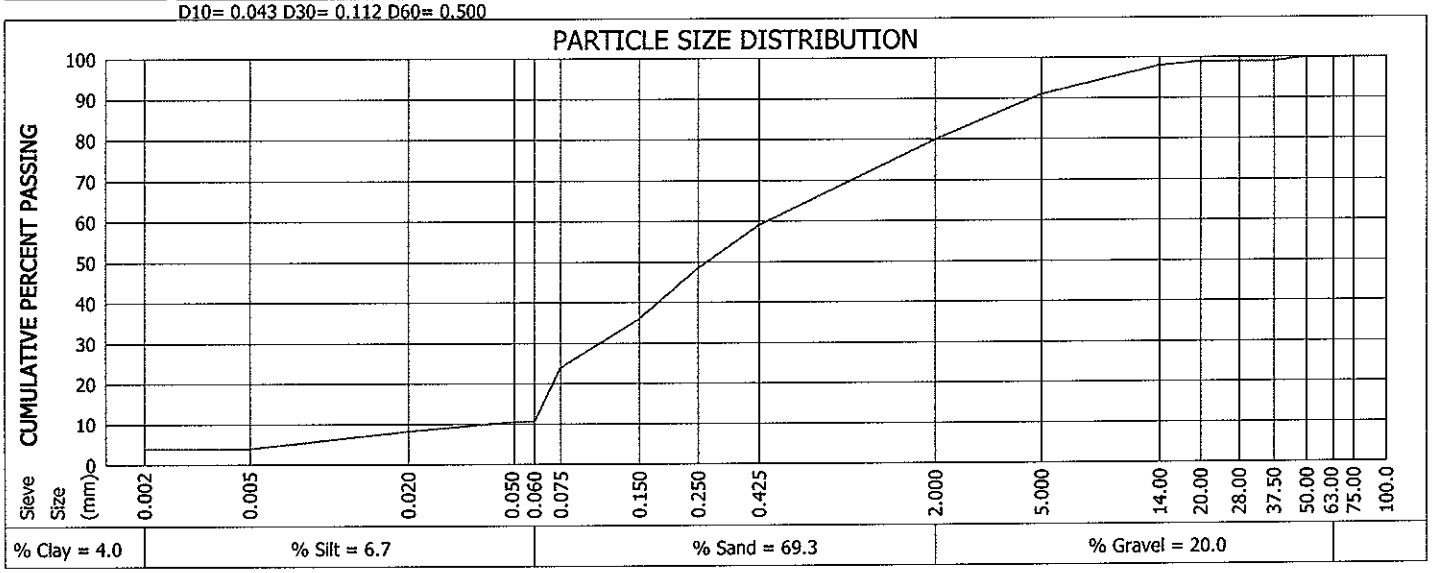
Soil Mortar	2.000 - 0.425	26
	0.425 - 0.250	13
	0.250 - 0.150	16
	0.150 - 0.075	15
	< 0.075	30
Effective Size		0.043
Uniformity Coefficient		11.6
Curvature Coefficient		0.6
Oversize Index		1.0
Shrinkage Product		206.5
Grading Coefficient		17.3
Grading Modulus		1.40
Atterberg Limits	Liquid Limit	22
	Plasticity Index	6
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.043 D30= 0.112 D60= 0.500









% Clay = 4.0	% Silt = 6.7	% Sand = 69.3	% Gravel = 20.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
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PO Box 2893, Upington, 8800
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Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9015			
HOLE NO./ Km / CHAINAGE		TP17			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 10			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Dark Brown S.Sand			
TYPE OF SAMPLE		Mix Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm	100			
	63.0 mm	98			
	50.0 mm	95			
	37.5 mm	88			
	28.0 mm	81			
	20.0 mm	76			
	14.0 mm	72			
	5.0 mm	58			
	2.0 mm	46			
	0.425 mm	34			
	0.075 mm	17			
GM %		2,0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	27			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	37			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	19			
	PLASTICITY INDEX	6			
	LINEAR SHRINKAGE	4,5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G9			
	TRH 14	G10			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	7,1			
	MDD (kg/m³)	2191			
	COMP MC %	6,9			
SWELL % @	MOD | NRB | PRO	0,02 | 0,03 | 0,07			
C.B.R. SANS GR40	100 %	16			
	98 %	13			
	97 %	12			
	95 %	10			
	93 %	8			
	90 %	6			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

ROADLAB

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PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-14

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

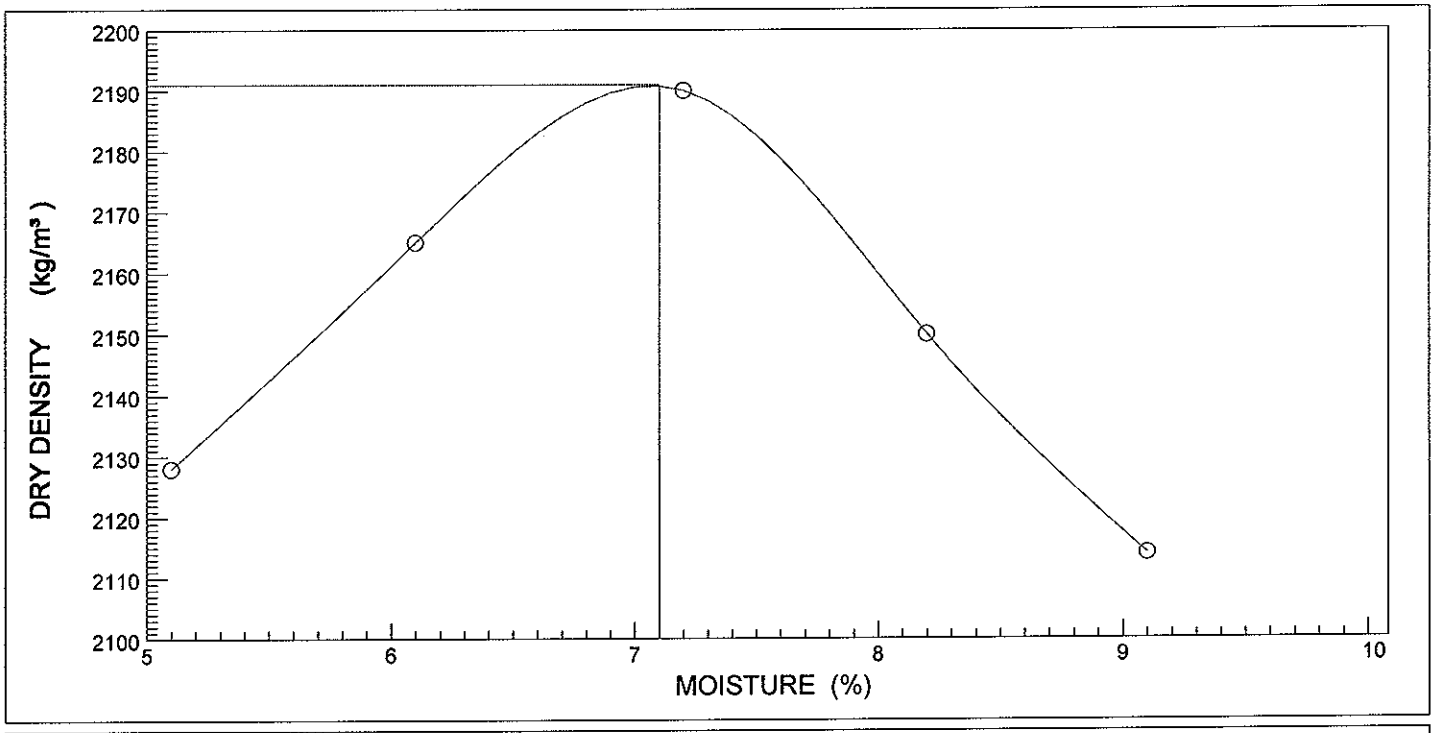
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9015
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	94kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.4m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP17
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9015
COLOUR AND TYPE	Dark Brown S.Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2128	2165	2190	2150	2114			
MOISTURE (%)	5.1	6.1	7.2	8.2	9.1			

MAXIMUM DRY DENSITY (kg/m³) : 2191	OPTIMUM MOISTURE CONTENT (%) : 7.1



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

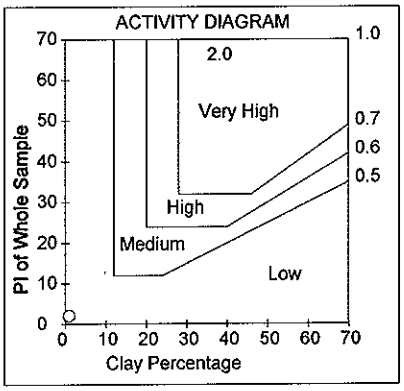
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

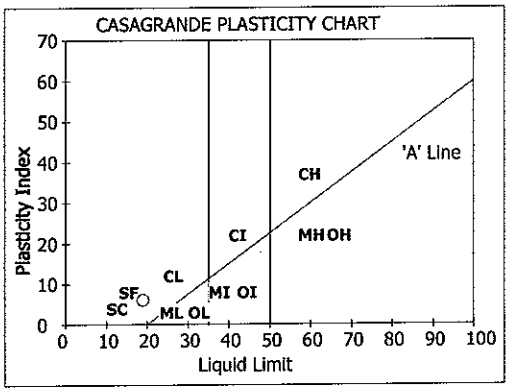
Sample No.	: U9015
Position	: TP 17; 0.0-0.4m
Layer Type	: Sample 10
Sample Colour	: Dark Brown
Sample Type	: Mix Quartz

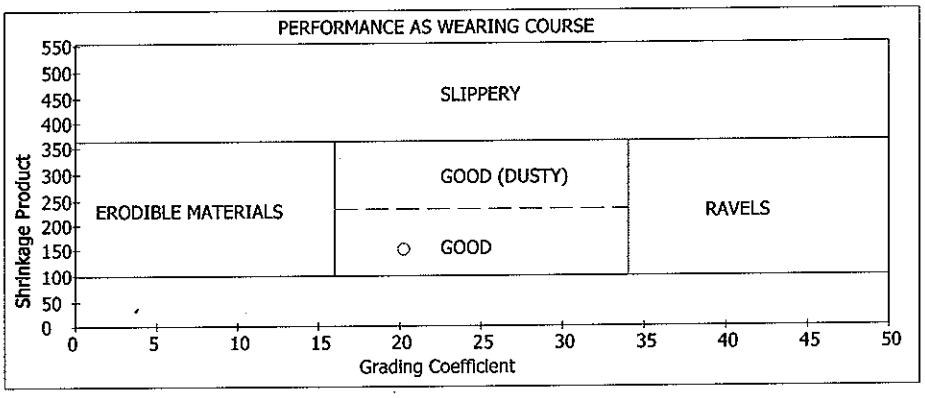
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	98
50.00	95
37.50	88
28.00	81
20.00	76
14.00	72
5.000	58
2.000	46
0.425	34
0.250	29
0.150	23
0.075	17
0.060	7.7
0.050	7.2
0.020	5.5
0.005	1.1
0.002	1.1

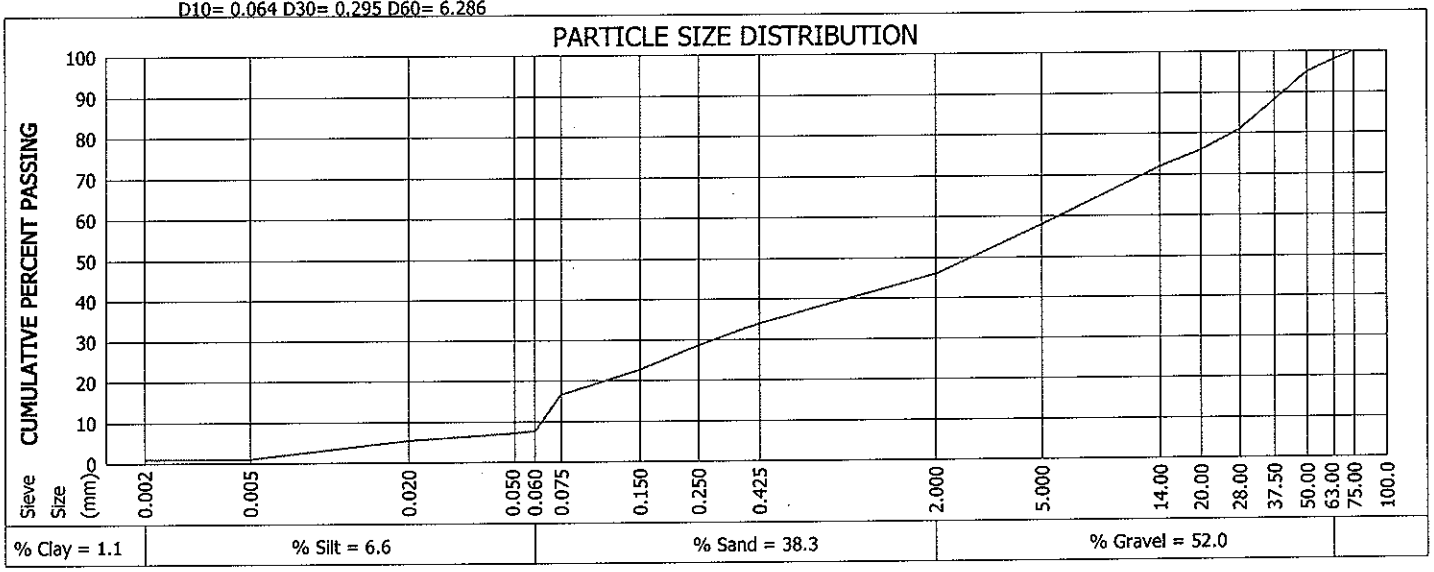
Soil Mortar	2.000 - 0.425	27
	0.425 - 0.250	11
	0.250 - 0.150	13
	0.150 - 0.075	12
	< 0.075	37
Effective Size		0.064
Uniformity Coefficient		98.2
Curvature Coefficient		0.2
Oversize Index		7.0
Shrinkage Product		153.0
Grading Coefficient		20.3
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	19
	Plasticity Index	6
	Linear Shrinkage	4.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.064 D30= 0.295 D60= 6.286









% Clay = 1.1	% Silt = 6.6	% Sand = 38.3	% Gravel = 52.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

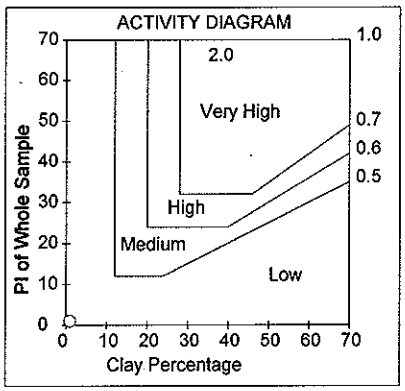
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

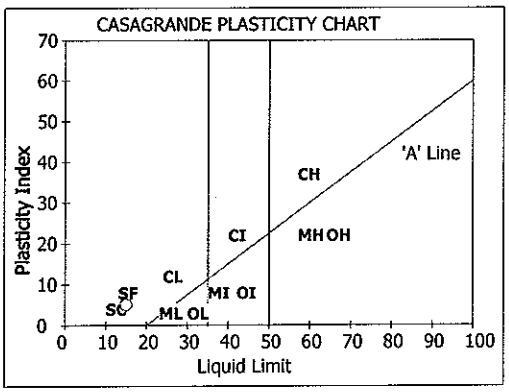
Sample No.	: U9016
Position	: TP 18; 0-0.7m
Layer Type	: Sample 11
Sample Colour	: Brown Silty Sand
Sample Type	: Mix Quartsitic Stone

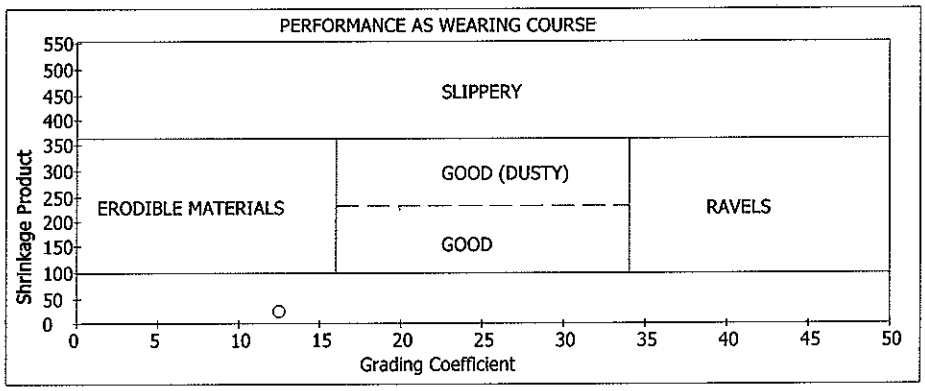
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	80
37.50	72
28.00	63
20.00	62
14.00	60
5.000	48
2.000	37
0.425	25
0.250	19
0.150	14
0.075	9,7
0.060	3,6
0.050	3,5
0.020	2,8
0.005	0,9
0.002	0,9

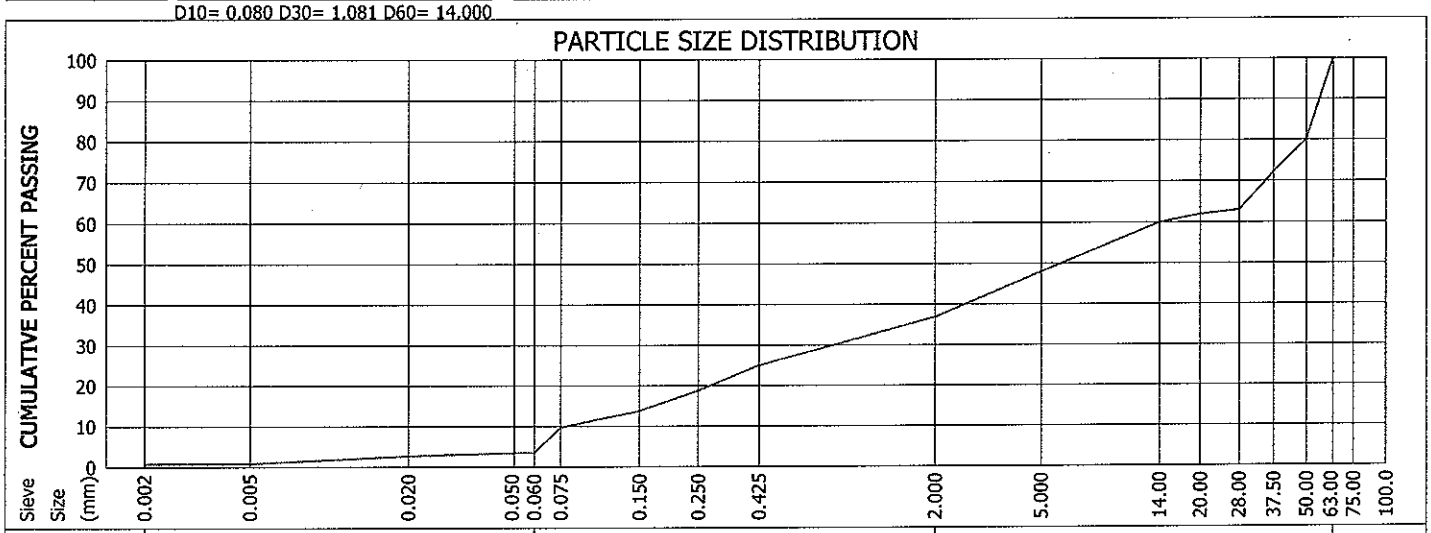
Soil Mortar	2.000 - 0.425	34
	0.425 - 0.250	16
	0.250 - 0.150	13
	0.150 - 0.075	10
	< 0.075	27
Effective Size		0,080
Uniformity Coefficient		175,0
Curvature Coefficient		1,0
Oversize Index		8,0
Shrinkage Product		25,0
Grading Coefficient		12,5
Grading Modulus		2,30
Atterberg Limits	Liquid Limit	15
	Plasticity Index	5
	Linear Shrinkage	1,0
	PI < 0.075	
Unified Soil Classification		GW-GM-GC
US Highway Classification		A-1-a(0)

D10= 0.080 D30= 1.081 D60= 14.000









% Clay = 0,9	% Silt = 2,7	% Sand = 33,4	% Gravel = 63,0

Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 7.0 & Conductivity = 0.02 S/m [SANS 5854]

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Report compiled by : Mareze Lategan

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

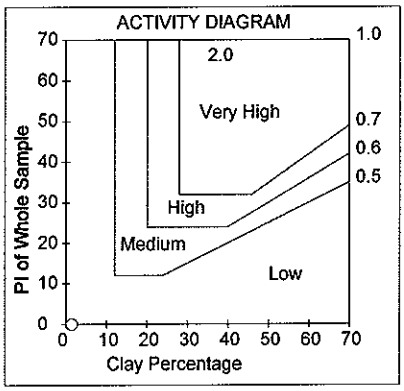
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

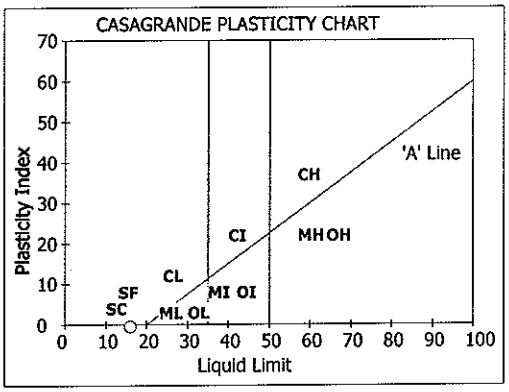
Sample No.	: U9017
Position	: TP 19; 0.0-0.4m
Layer Type	: Sample 12
Sample Colour	: Dark Orange Brown
Sample Type	: Silty Sand Mix Quart

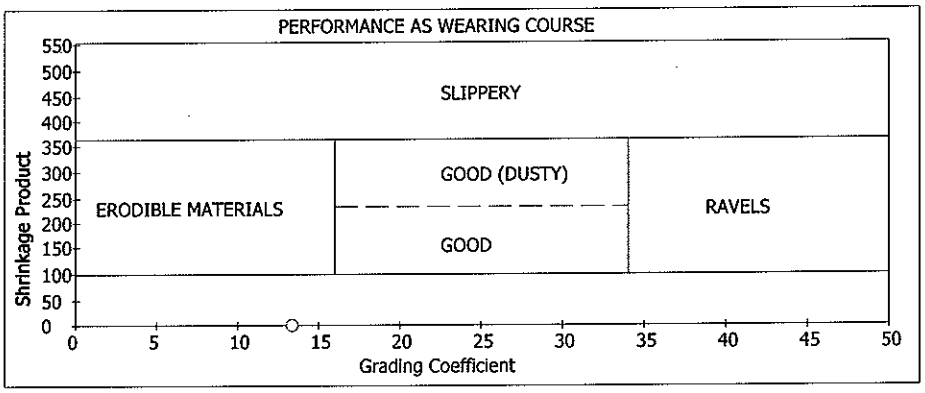
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	95
20.00	95
14.00	95
5.000	89
2.000	80
0.425	48
0.250	37
0.150	24
0.075	14
0.060	5.5
0.050	5.4
0.020	4.4
0.005	1.5
0.002	1.5

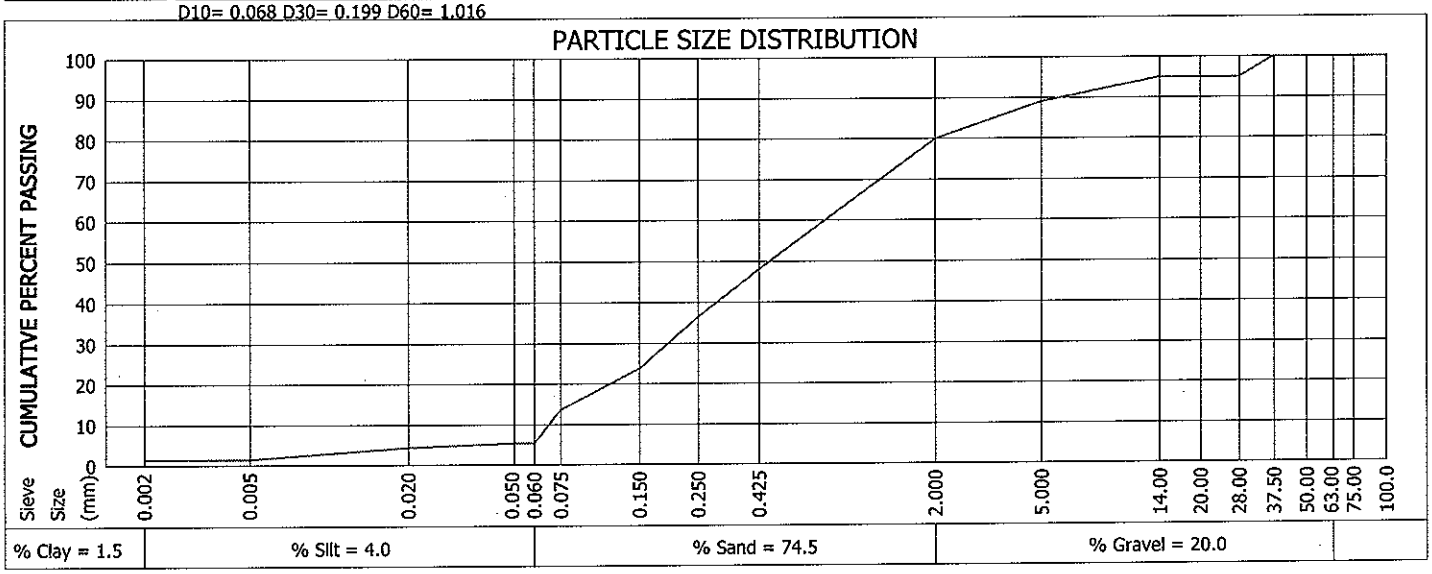
Soil Mortar	2.000 - 0.425	40
	0.425 - 0.250	15
	0.250 - 0.150	16
	0.150 - 0.075	12
	< 0.075	18
Effective Size		0.068
Uniformity Coefficient		14.9
Curvature Coefficient		0.6
Oversize Index		0.0
Shrinkage Product		0.0
Grading Coefficient		13.4
Grading Modulus		1.60
Atterberg Limits	Liquid Limit	16
	Plasticity Index	0,0
	Linear Shrinkage	0,0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.068 D30= 0.199 D60= 1.016









Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9018			
HOLE NO./ Km / CHAINAGE		TP20			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 13			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Dark Orange Brown			
TYPE OF SAMPLE		Mix Quartz			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm	100			
	63.0 mm	98			
	50.0 mm	98			
	37.5 mm	98			
	28.0 mm	97			
	20.0 mm	96			
	14.0 mm	94			
	5.0 mm	85			
	2.0 mm	71			
	0.425 mm	42			
	0.075 mm	17			
GM %		1,7			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425	41			
COARSE FINE SAND	0.425 - 0.250	12			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	10			
SILT CLAY	0.075	24			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	20			
	PLASTICITY INDEX	7			
	LINEAR SHRINKAGE	3,5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	G8			
	TRH 14	G10			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	6,8			
	MDD (kg/m³)	2203			
	COMP MC %	6,5			
SWELL % @	MOD | NRB | PRO	0,02 | 0,03 | 0,08			
C.B.R. SANS GR40	100 %	43			
	98 %	29			
	97 %	24			
	95 %	16			
	93 %	11			
	90 %	6			
STABILISER IN LAB		N/A			
TEST TYPE		CBR			
SAMPLING METHOD		Client			
WEATHER WHEN SAMPLED		Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-14

Project : Okiep 100 Infill

Attention : Aurey Nonyana

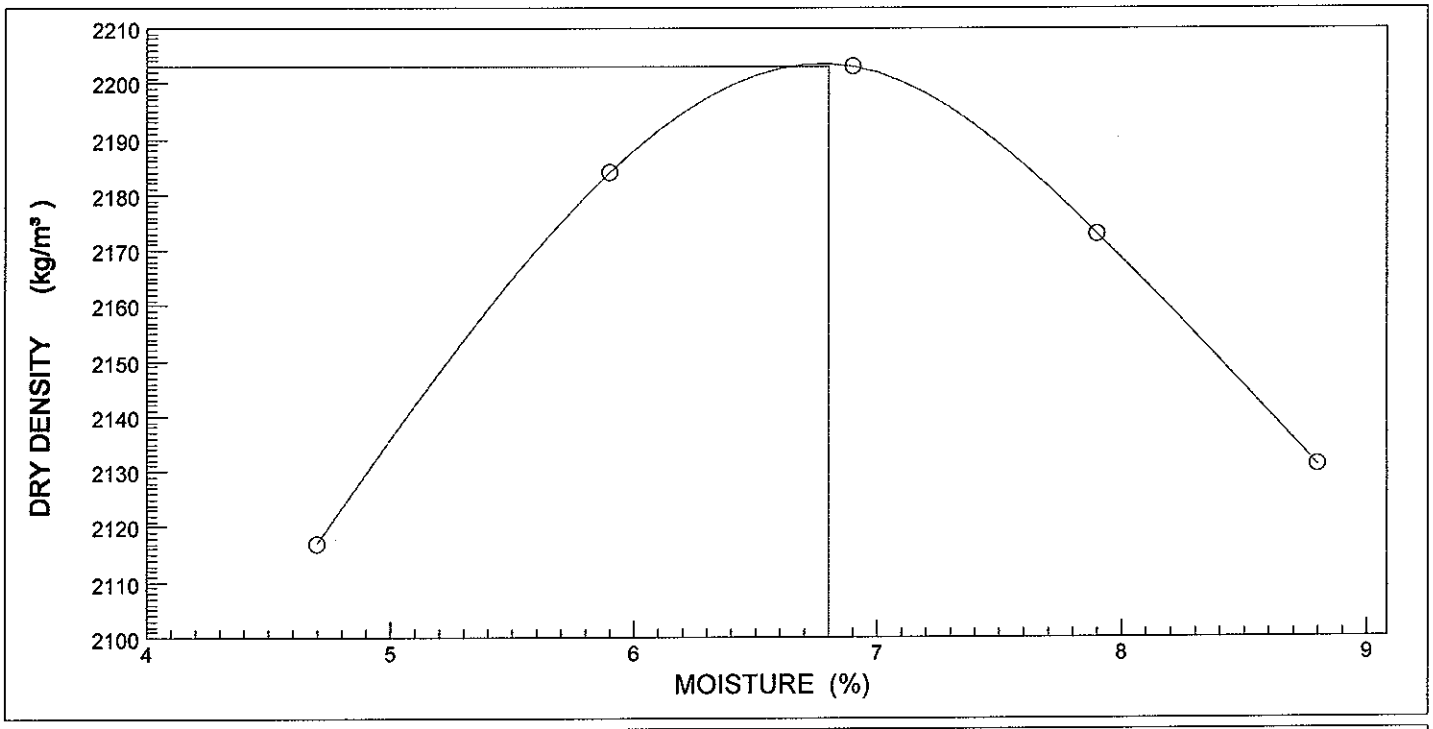
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9018
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0-0.4m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP20
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9018
COLOUR AND TYPE	Dark Orange Brown

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2117	2184	2203	2173	2131			
MOISTURE (%)	4.7	5.9	6.9	7.9	8.8			

MAXIMUM DRY DENSITY (kg/m³) : 2203	OPTIMUM MOISTURE CONTENT (%) : 6.8



Deviation from Test Method :
Remarks and Notes :

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Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

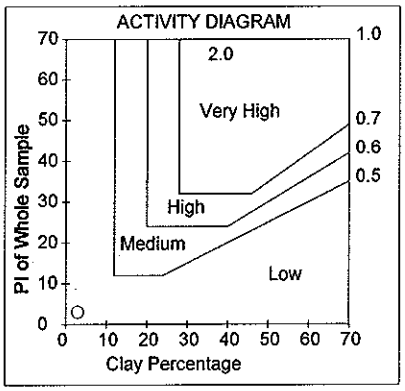
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

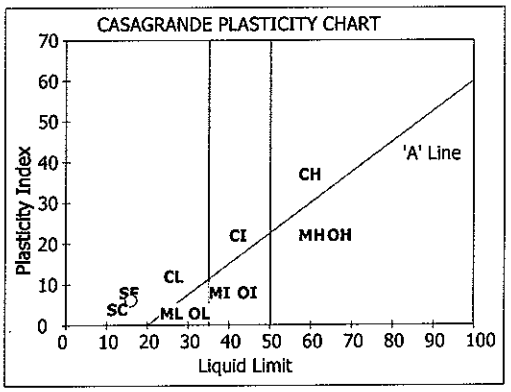
Sample No.	: U9018
Position	: TP 20; 0.0-0.4m
Layer Type	: Sample 13
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

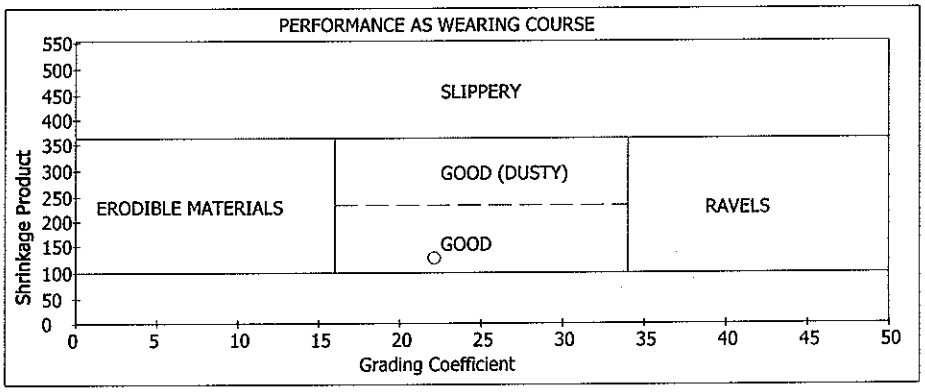
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	98
50.00	98
37.50	98
28.00	97
20.00	96
14.00	94
5.000	85
2.000	71
0.425	42
0.250	33
0.150	24
0.075	17
0.060	7.7
0.050	7.3
0.020	5.9
0.005	2.9
0.002	2.9

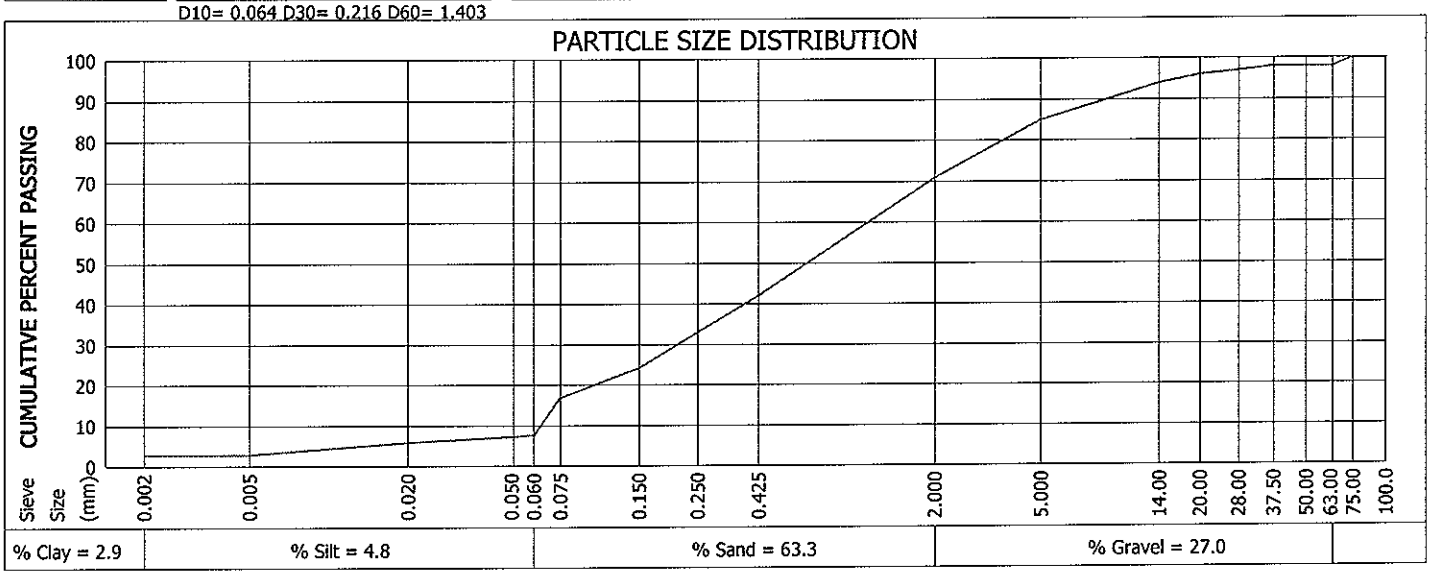
Soil Mortar	2.000 - 0.425	41
	0.425 - 0.250	12
	0.250 - 0.150	13
	0.150 - 0.075	10
	< 0.075	24
Effective Size		0.064
Uniformity Coefficient		21.9
Curvature Coefficient		0.5
Oversize Index		0.0
Shrinkage Product		126.0
Grading Coefficient		22.1
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	16
	Plasticity Index	6
	Linear Shrinkage	3.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.064 D30= 0.216 D60= 1.403









% Clay = 2.9	% Silt = 4.8	% Sand = 63.3	% Gravel = 27.0

Deviation from Test Method :
Remarks and Notes :

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The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-21

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

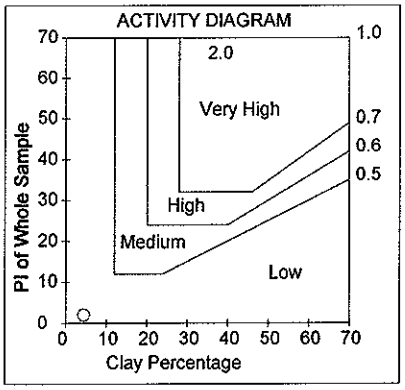
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

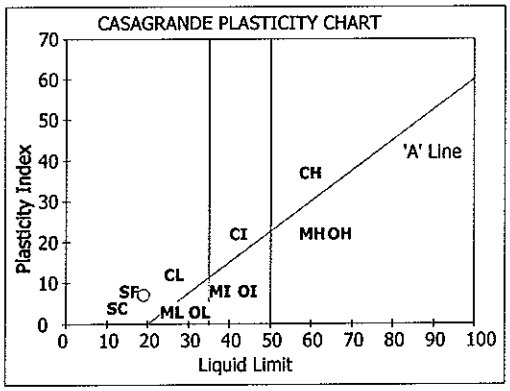
Sample No.	: U9019
Position	: TP 22; 0.0-0.5m
Layer Type	: Sample 14
Sample Colour	: Dark Orange Brown
Sample Type	: Gravel Mix Quartz

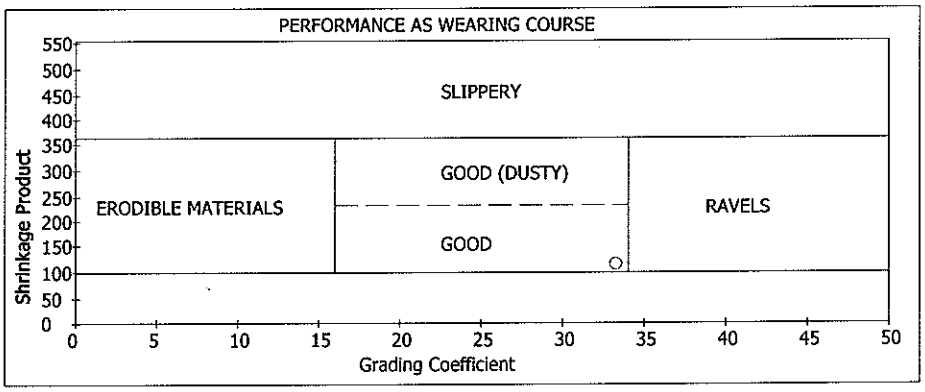
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	99
20.00	95
14.00	92
5.000	74
2.000	54
0.425	33
0.250	26
0.150	20
0.075	15
0.060	6.8
0.050	6.6
0.020	5.7
0.005	4.7
0.002	4.7

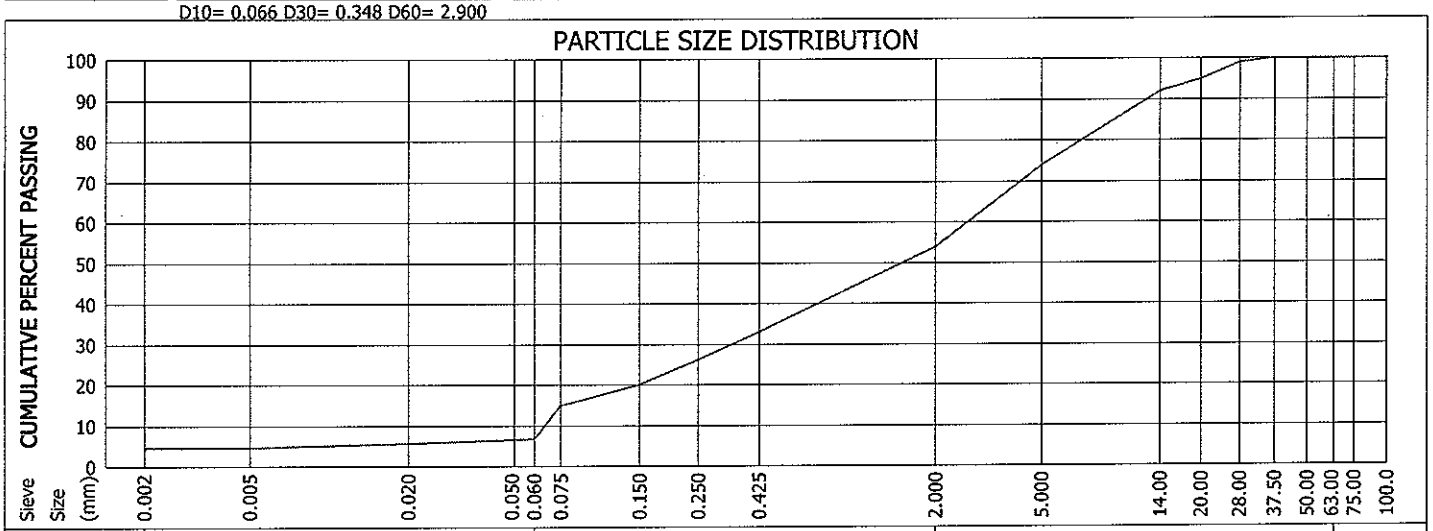
Soil Mortar	2.000 - 0.425	38
	0.425 - 0.250	13
	0.250 - 0.150	11
	0.150 - 0.075	10
	< 0.075	28
Effective Size		0.066
Uniformity Coefficient		43.9
Curvature Coefficient		0.6
Oversize Index		0.0
Shrinkage Product		115.5
Grading Coefficient		33.3
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	19
	Plasticity Index	7
	Linear Shrinkage	3,5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.066 D30= 0.348 D60= 2.900









% Clay = 4.7	% Silt = 2.1	% Sand = 47.2	% Gravel = 46.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

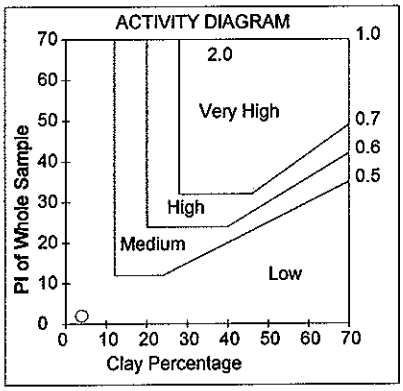
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

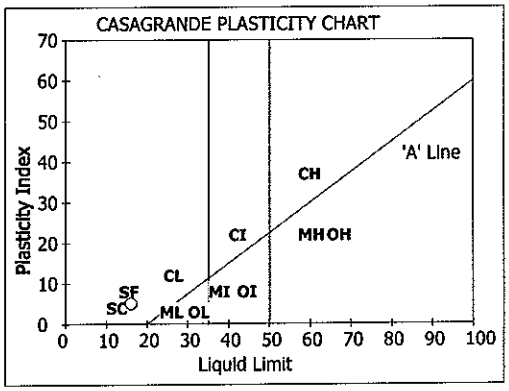
Sample No.	: U9020
Position	: TP 23; 0.0-0.4m
Layer Type	: Sample 15
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

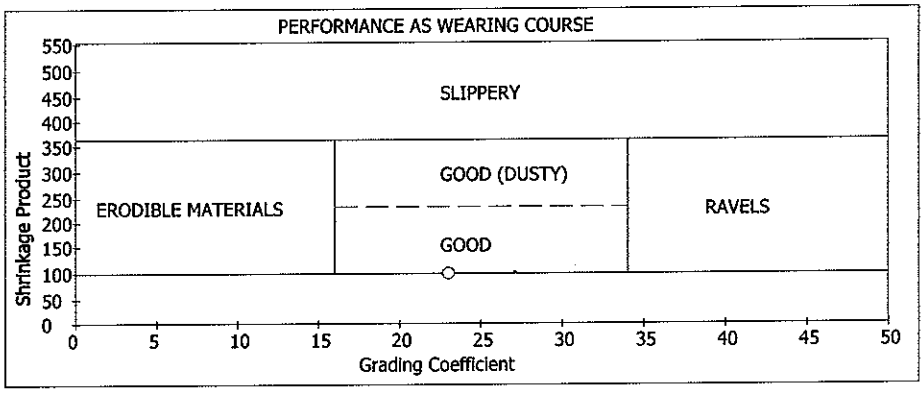
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	97
20.00	95
14.00	93
5.000	82
2.000	69
0.425	50
0.250	42
0.150	33
0.075	24
0.060	9,2
0.050	8,8
0.020	7,4
0.005	4,0
0.002	4,0

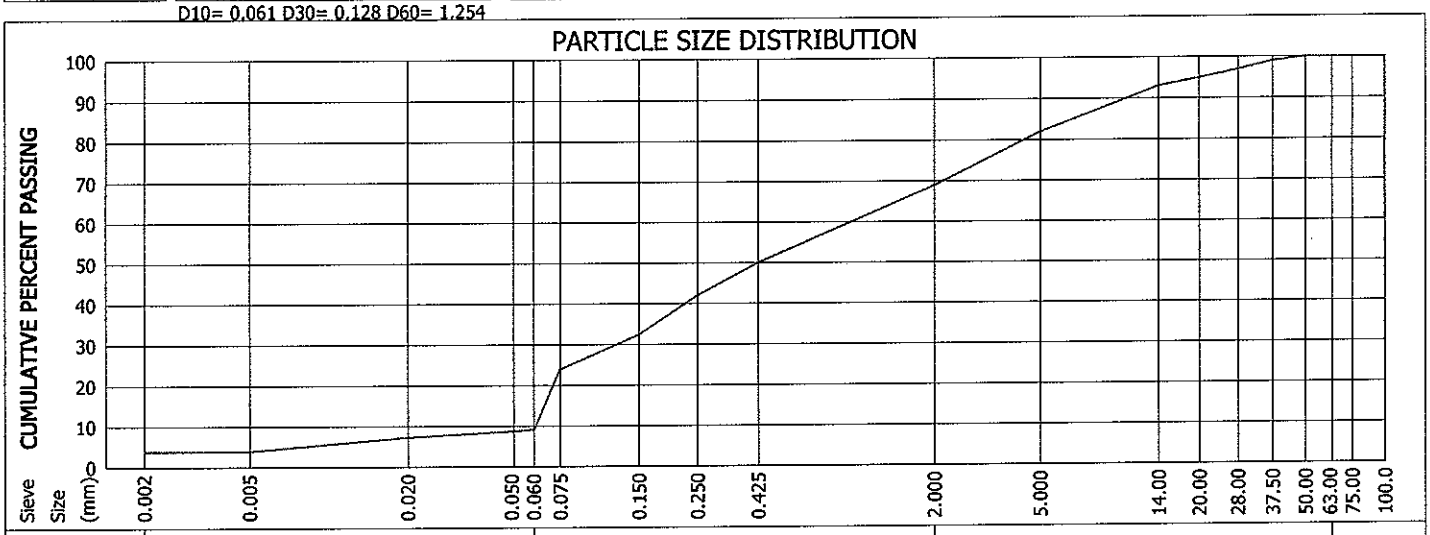
Soil Mortar	2.000 - 0.425	27
	0.425 - 0.250	12
	0.250 - 0.150	14
	0.150 - 0.075	12
	< 0.075	35
Effective Size		0,061
Uniformity Coefficient		20,6
Curvature Coefficient		0,2
Oversize Index		1,0
Shrinkage Product		100,0
Grading Coefficient		23,0
Grading Modulus		1,60
Atterberg Limits	Liquid Limit	16
	Plasticity Index	5
	Linear Shrinkage	2,0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.061 D30= 0.128 D60= 1.254









% Clay = 4,0	% Silt = 5,2	% Sand = 59,8	% Gravel = 31,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-19

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

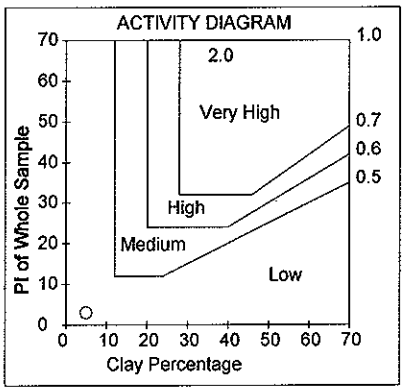
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

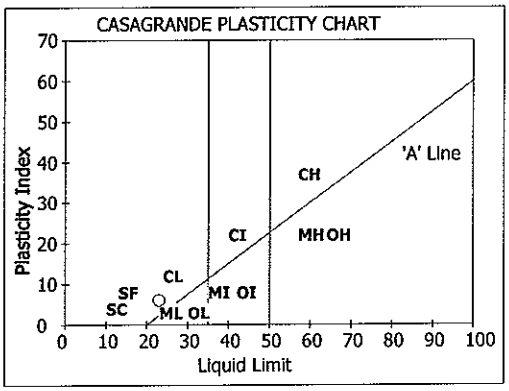
Sample No.	: U9021
Position	: TP 25; 0.0-0.5m
Layer Type	: Sample 16
Sample Colour	: Brown
Sample Type	: Silty Sand Mix Quart

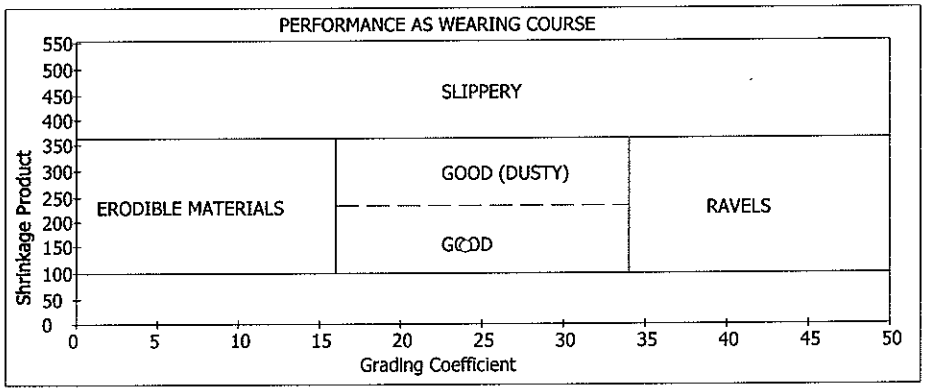
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	98
20.00	95
14.00	94
5.000	75
2.000	66
0.425	50
0.250	39
0.150	29
0.075	21
0.060	8.0
0.050	7.8
0.020	6.1
0.005	5.0
0.002	5.0

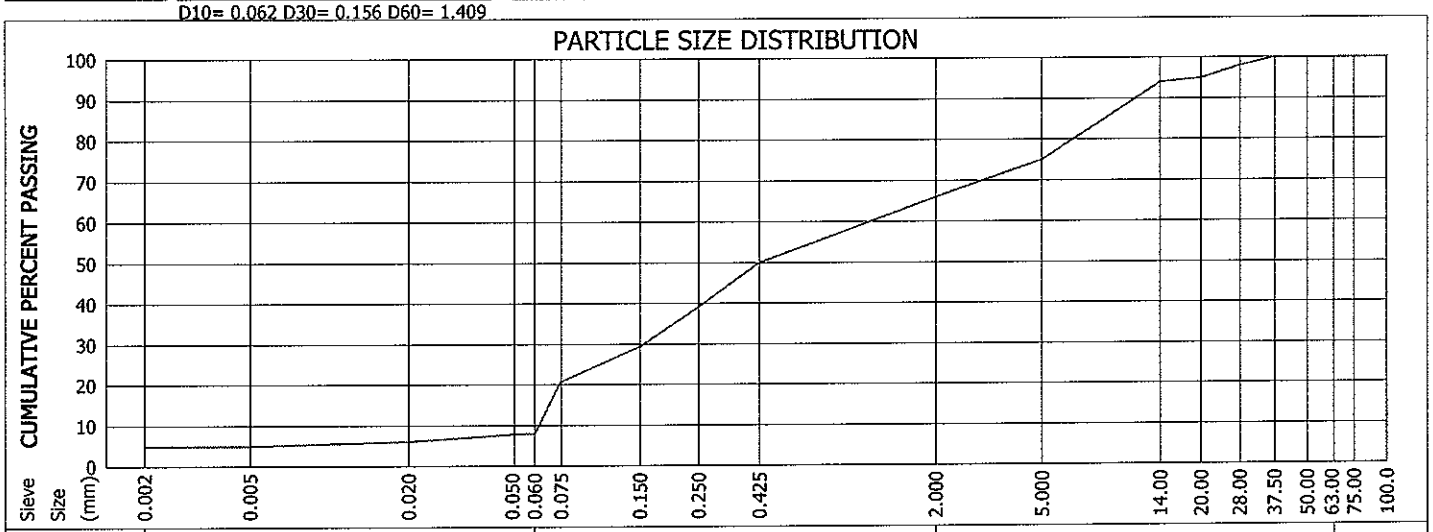
Soil Mortar	2.000 - 0.425	25
	0.425 - 0.250	16
	0.250 - 0.150	15
	0.150 - 0.075	13
	< 0.075	32
Effective Size		0.062
Uniformity Coefficient		22.7
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		150.0
Grading Coefficient		24.0
Grading Modulus		1.60
Atterberg Limits	Liquid Limit	23
	Plasticity Index	6
	Linear Shrinkage	3,0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.062 D30= 0.156 D60= 1.409









% Clay = 5.0	% Silt = 3.0	% Sand = 58.0	% Gravel = 34.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Jategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9022			
HOLE NO./ Km / CHAINAGE		TP26			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 17			
LAYER TESTED/SAMPLED		0.0 - 0.5m			
SAMPLE DEPTH		0.0 - 0.5m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Dark Brown			
TYPE OF SAMPLE		Mix Weathered Quartz			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm				
	37.5 mm				
	28.0 mm				
	20.0 mm	100			
	14.0 mm	92			
	5.0 mm	65			
	2.0 mm	47			
	0.425 mm	24			
	0.075 mm	10			
GM %		2.2			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425	50			
COARSE FINE SAND	0.425 - 0.250	10			
MEDIUM FINE SAND	0.250 - 0.150	10			
FINE FINE SAND	0.150 - 0.075	9			
SILT CLAY	0.075	21			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	23			
	PLASTICITY INDEX	7			
	LINEAR SHRINKAGE	2.5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	G8			
	TRH 14	G9			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	6.9			
	MDD (kg/m³)	2165			
	COMP MC %	7.1			
SWELL % @	MOD | NRB | PRO	0.01 | 0.02 | 0.05			
C.B.R. SANS GR40	100 %	32			
	98 %	24			
	97 %	20			
	95 %	15			
	93 %	11			
	90 %	7			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-14

Project : Okiep 100 Infill

Attention : Aurey Nonyana

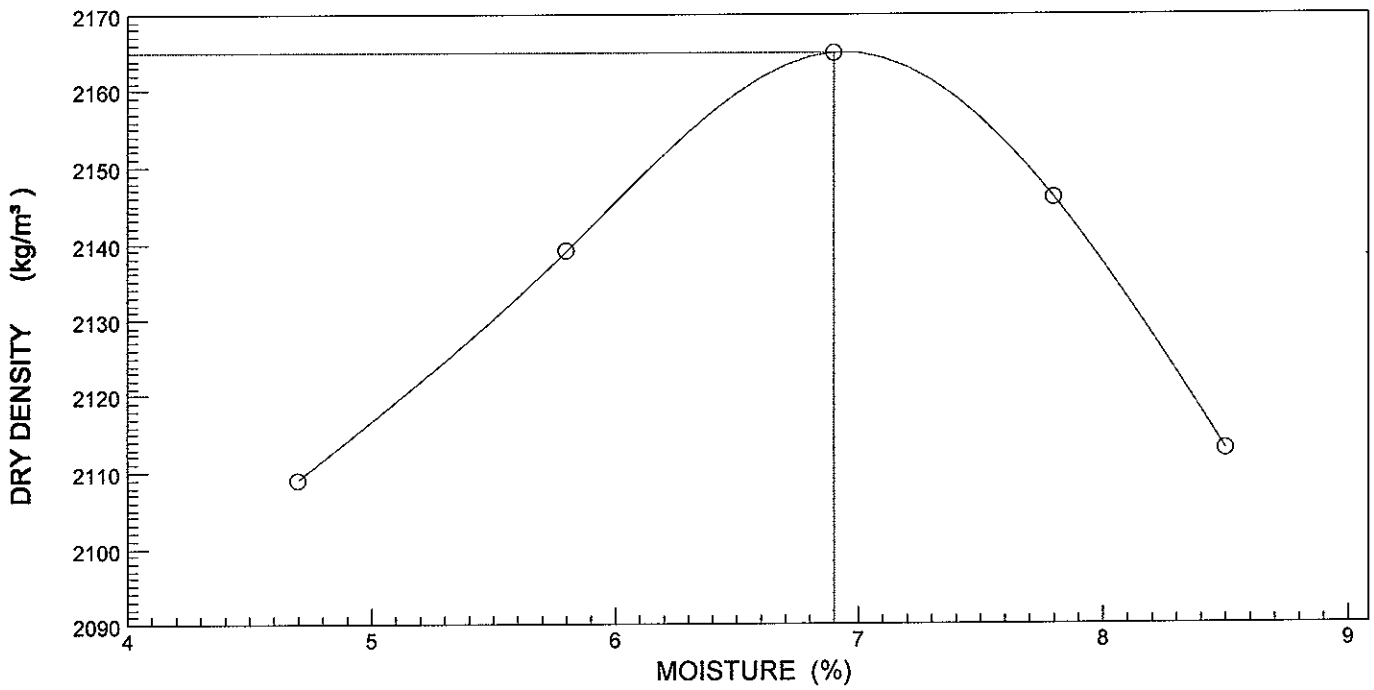
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9022
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	94kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0-0.5m
MATERIAL DESCRIPTION	Mix Wethered Quartzitic Stone
HOLE NO./ km / CHAINAGE	TP26
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9022
COLOUR AND TYPE	Dark Orange Brown

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2109	2139	2165	2146	2113			
MOISTURE (%)	4.7	5.8	6.9	7.8	8.5			

MAXIMUM DRY DENSITY (kg/m³) : 2165	OPTIMUM MOISTURE CONTENT (%) : 6.9



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

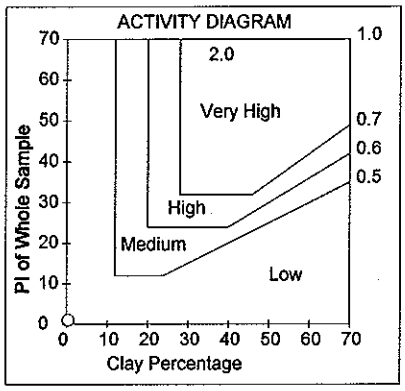
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

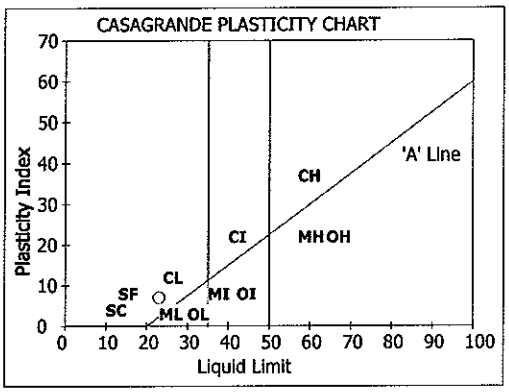
Sample No.	: U9022
Position	: TP 26; 0.0-0.5m
Layer Type	: Sample 17
Sample Colour	: Dark Brown
Sample Type	: Mix Weathered Quartz

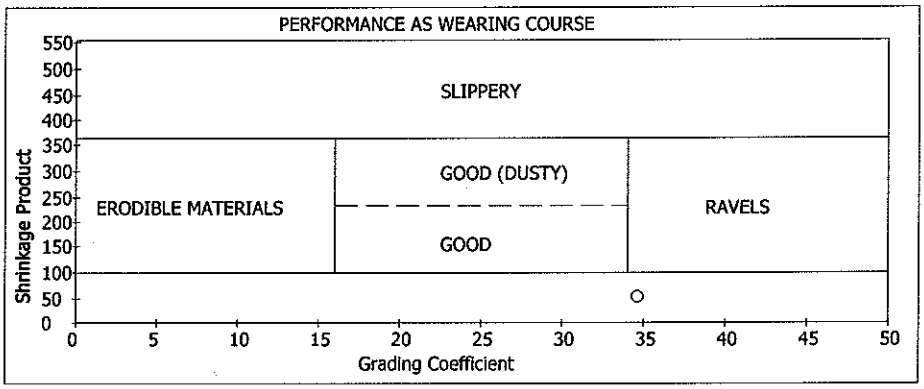
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	98
14.00	90
5.000	63
2.000	45
0.425	21
0.250	17
0.150	13
0.075	9,0
0.060	1,8
0.050	1,7
0.020	1,5
0.005	0,7
0.002	0,7

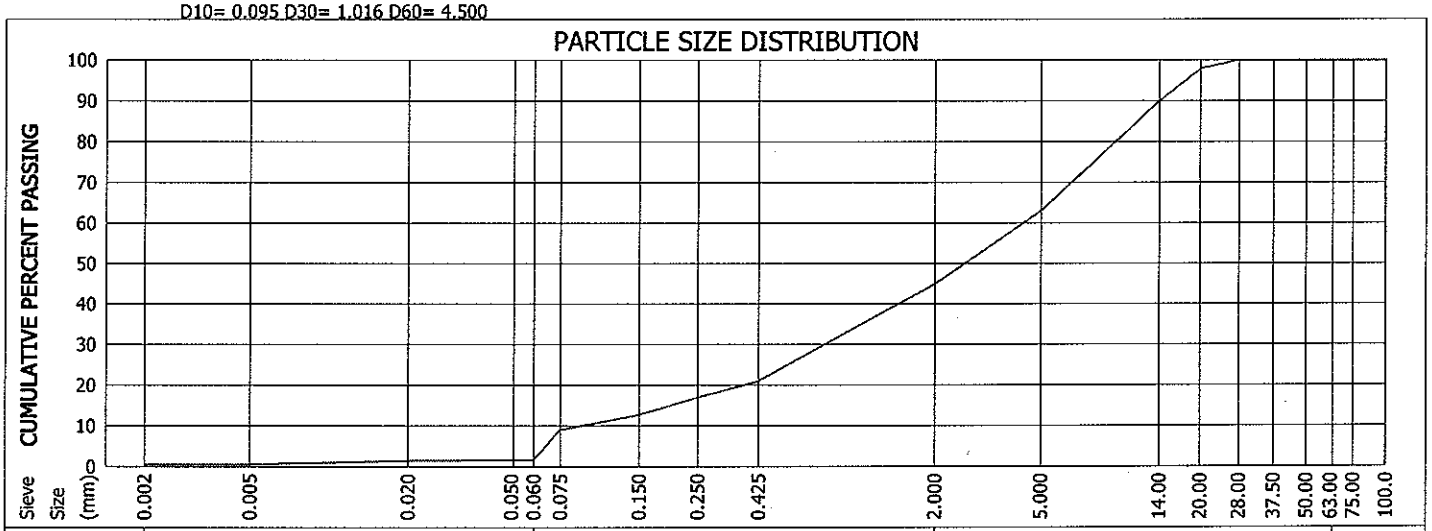
Soil Mortar	2.000 - 0.425	52
	0.425 - 0.250	10
	0.250 - 0.150	10
	0.150 - 0.075	8
	< 0.075	20
Effective Size		0,095
Uniformity Coefficient		47,4
Curvature Coefficient		2,4
Oversize Index		0,0
Shrinkage Product		52,5
Grading Coefficient		34,6
Grading Modulus		2,20
Atterberg Limits	Liquid Limit	23
	Plasticity Index	7
	Linear Shrinkage	2,5
	PI < 0.075	
Unified Soil Classification		SW-SM-SC
US Highway Classification		A-2-4(0)

D10= 0.095 D30= 1.016 D60= 4.500









% Clay = 0,7	% Silt = 1,1	% Sand = 43,2	% Gravel = 55,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Kategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-25

Project : Okiep 100 Infill

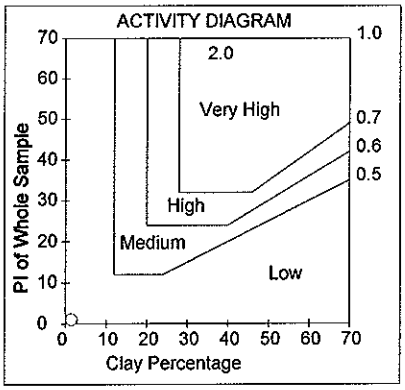
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

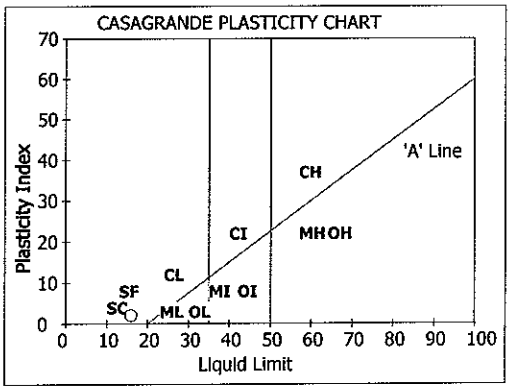
Sample No.	: U9024
Position	: TP 28; 0.0-0.4m
Layer Type	: Sample 19
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

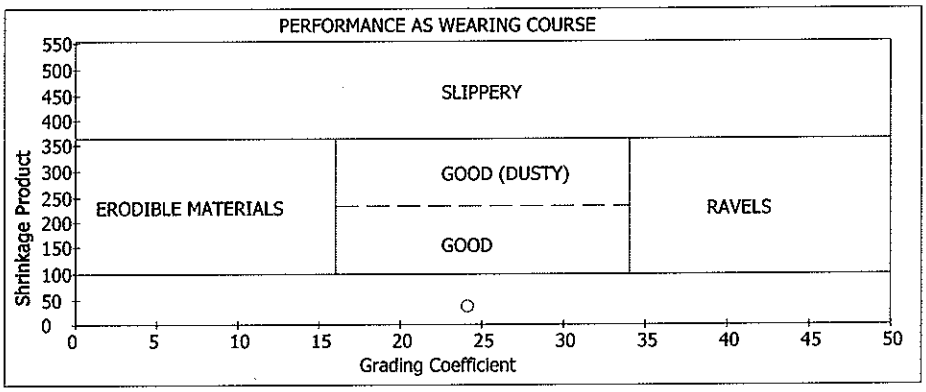
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	99
37.50	98
28.00	94
20.00	91
14.00	88
5.000	73
2.000	61
0.425	36
0.250	29
0.150	21
0.075	14
0.060	4.0
0.050	3.8
0.020	3.0
0.005	1.6
0.002	1.6

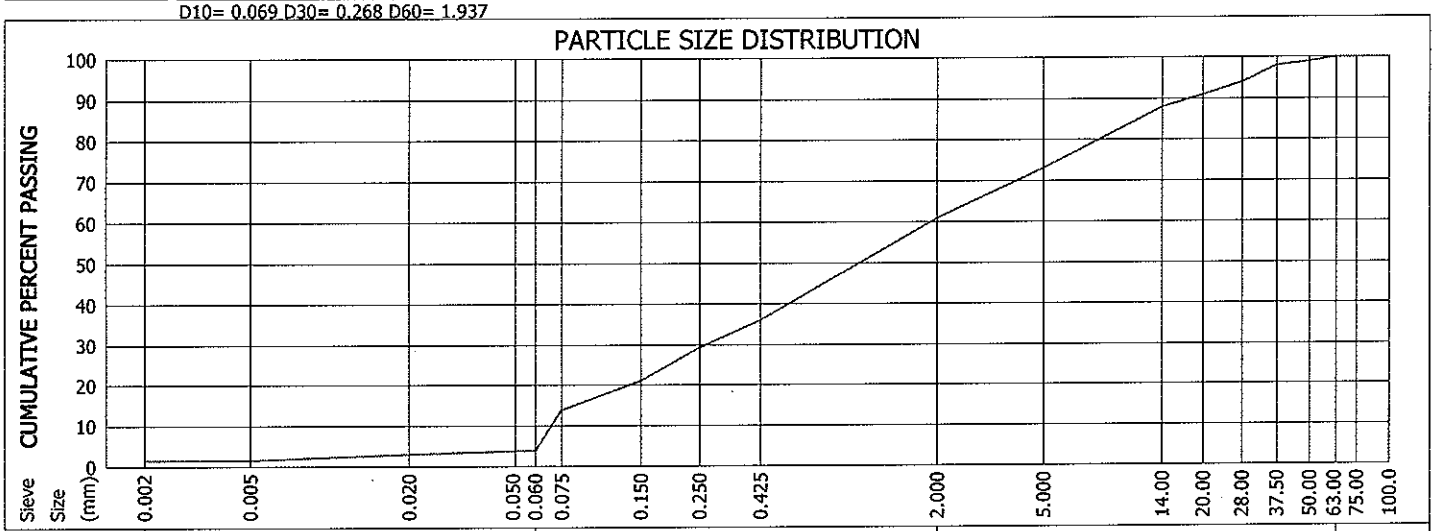
Soil Mortar	2.000 - 0.425	40
	0.425 - 0.250	12
	0.250 - 0.150	13
	0.150 - 0.075	12
	< 0.075	23
Effective Size		0.069
Uniformity Coefficient		28.1
Curvature Coefficient		0.5
Oversize Index		1.0
Shrinkage Product		36.0
Grading Coefficient		24.1
Grading Modulus		1.90
Atterberg Limits	Liquid Limit	16
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.069 D30= 0.268 D60= 1.937









% Clay = 1.6	% Silt = 2.4	% Sand = 57.0	% Gravel = 39.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-21

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

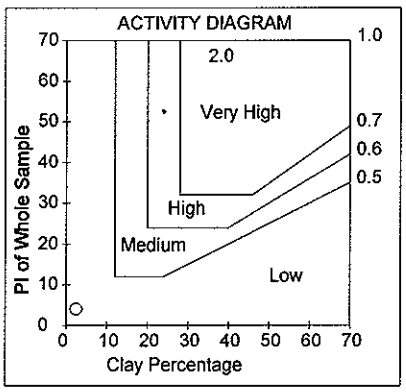
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

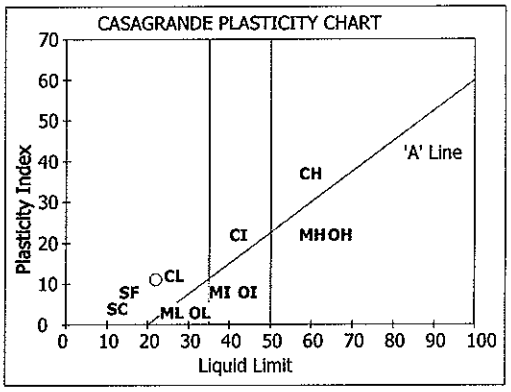
Sample No.	: U9025
Position	: TP 29; 0.0-0.5m
Layer Type	: Sample 20
Sample Colour	: Brown
Sample Type	: Mix Quartz + Calcret

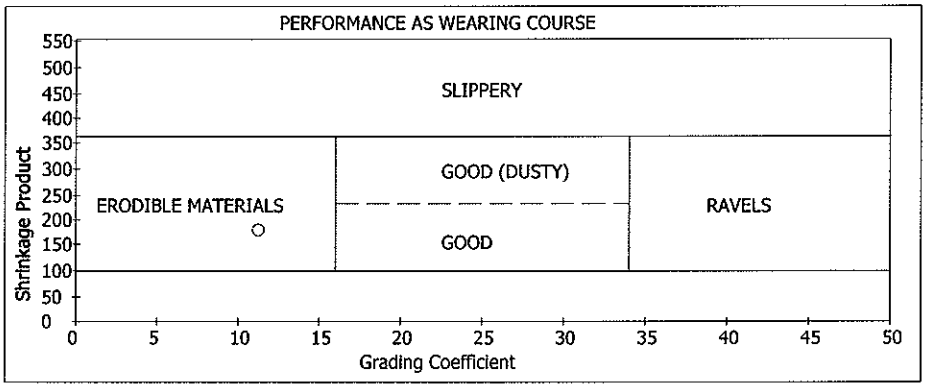
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	84
37.50	77
28.00	66
20.00	62
14.00	59
5.000	51
2.000	44
0.425	33
0.250	29
0.150	23
0.075	17
0.060	6.7
0.050	6.4
0.020	4.6
0.005	2.6
0.002	2.6

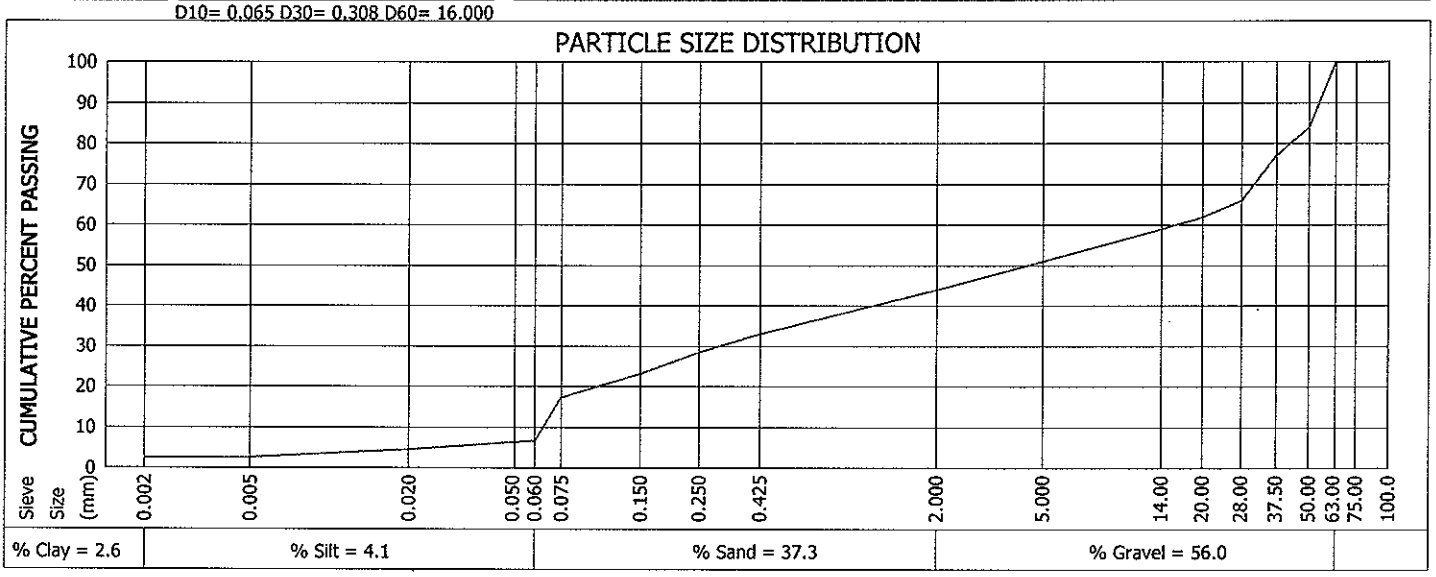
Soil Mortar	2.000 - 0.425	25
	0.425 - 0.250	11
	0.250 - 0.150	12
	0.150 - 0.075	14
	< 0.075	38
Effective Size		0.065
Uniformity Coefficient		246.2
Curvature Coefficient		0.1
Oversize Index		7.0
Shrinkage Product		181.5
Grading Coefficient		11.2
Grading Modulus		2.10
Atterberg Limits	Liquid Limit	22
	Plasticity Index	11
	Linear Shrinkage	5.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-6(0)

D10= 0.065 D30= 0.308 D60= 16.000









% Clay = 2.6	% Silt = 4.1	% Sand = 37.3	% Gravel = 56.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9026			
HOLE NO./ Km / CHAINAGE	TP30			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 21			
LAYER TESTED/SAMPLED	0.0 - 0.7m			
SAMPLE DEPTH	0.0 - 0.7m			
DATE SAMPLED	2020-01-29			
COLOUR OF SAMPLE	Dark Brown			
TYPE OF SAMPLE	Mix Weathered Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	90			
	37.5 mm	82			
	28.0 mm	80			
	20.0 mm	77			
	14.0 mm	73			
	5.0 mm	62			
	2.0 mm	51			
	0.425 mm	32			
	0.075 mm	20			
GM %		2,0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	37			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	7			
FINE FINE SAND	0.150 - 0.075	6			
SILT CLAY	0.075	39			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	21			
	PLASTICITY INDEX	11			
	LINEAR SHRINKAGE	6,0			
CLASSIFICATION	H.R.B.	A-2-6(0)			
	COLTO	G9			
	TRH 14	G10			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	8,6			
	MDD (kg/m³)	2188			
	COMP MC %	8,6			
SWELL % @	MOD | NRB | PRO	0,03 | 0,06 | 0,14			
C.B.R. SANS GR40	100 %	13			
	98 %	11			
	97 %	10			
	95 %	8			
	93 %	7			
	90 %	5			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-14

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

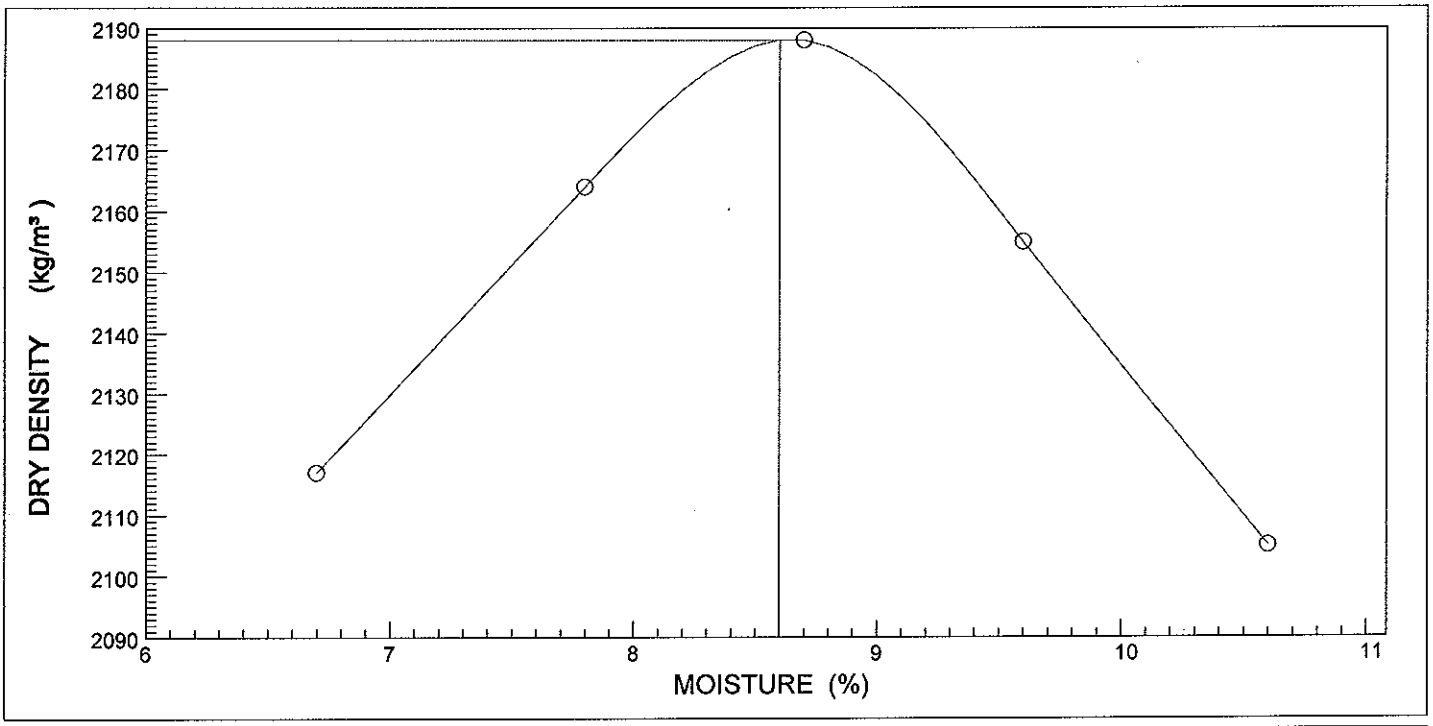
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9026
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	98kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0-0.7m
MATERIAL DESCRIPTION	Mix Wethered Quartzitic Stone
HOLE NO./ km / CHAINAGE	TP30
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9026
COLOUR AND TYPE	Dark Brown

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2117	2164	2188	2155	2105			
MOISTURE (%)	6.7	7.8	8.7	9.6	10.6			

MAXIMUM DRY DENSITY (kg/m³) : 2188	OPTIMUM MOISTURE CONTENT (%) : 8.6



Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-19

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

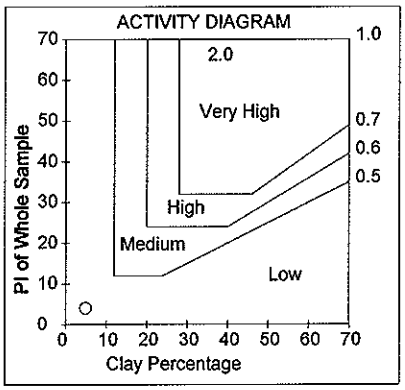
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

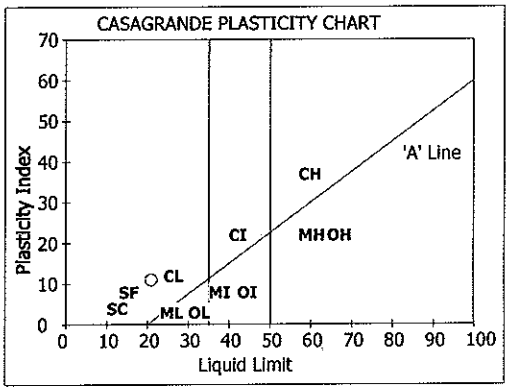
Sample No.	: U9026
Position	: TP 30; 0.0-0.7m
Layer Type	: Sample 21
Sample Colour	: Dark Brown
Sample Type	: Mix Weathered Quartz

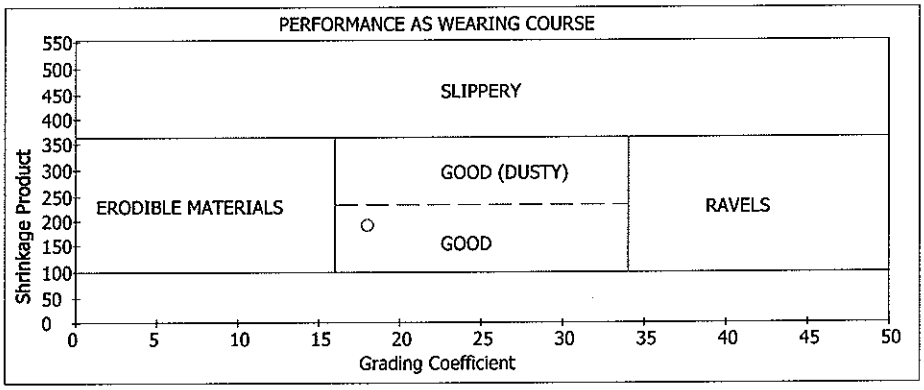
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	90
37.50	82
28.00	80
20.00	77
14.00	73
5.000	62
2.000	51
0.425	32
0.250	27
0.150	23
0.075	20
0.060	7.6
0.050	7.4
0.020	6.3
0.005	5.2
0.002	5.2

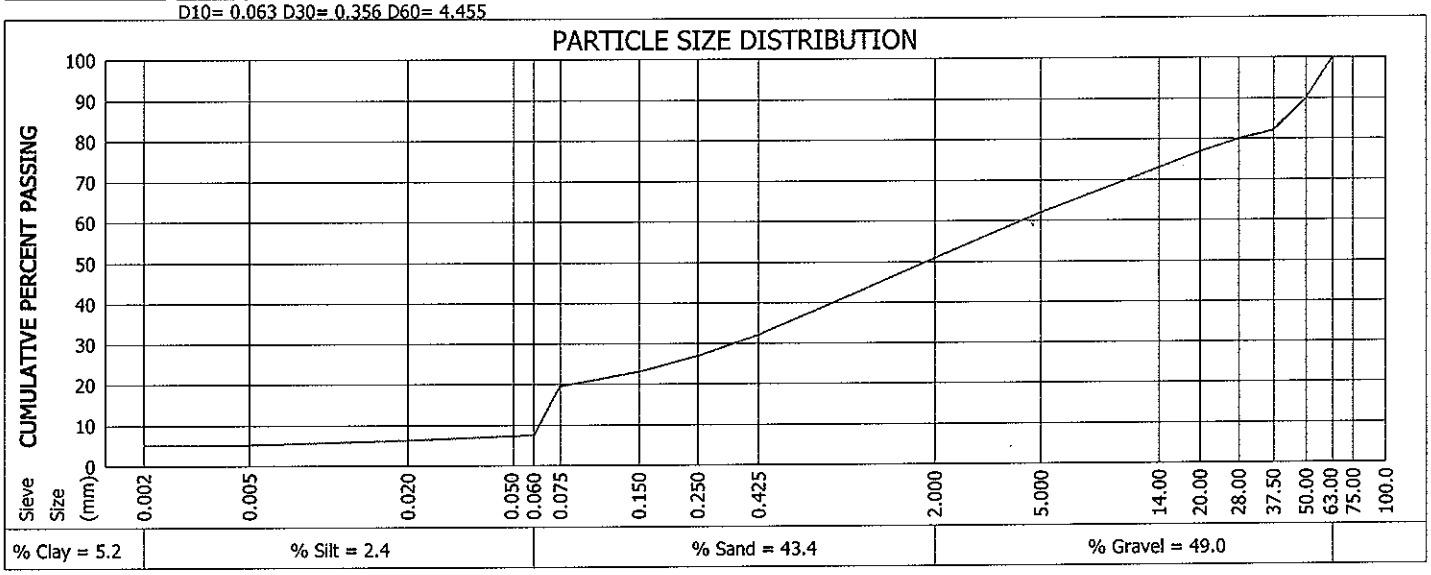
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	11
	0.250 - 0.150	7
	0.150 - 0.075	6
	< 0.075	39
Effective Size		0.063
Uniformity Coefficient		70.7
Curvature Coefficient		0.5
Oversize Index		8.0
Shrinkage Product		192.0
Grading Coefficient		18.0
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	21
	Plasticity Index	11
	Linear Shrinkage	6.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-6(0)

D10= 0.063 D30= 0.356 D60= 4.455









Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-21

Project : Okiep 100 Infill

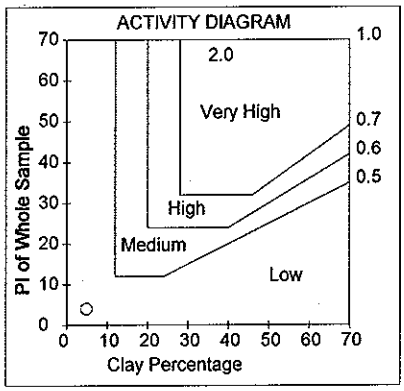
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

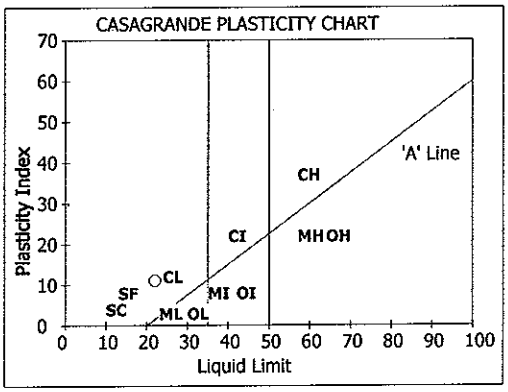
Sample No.	: U9027
Position	: TP 32; 0.0-0.5m
Layer Type	: Sample 22
Sample Colour	: Dark Brown
Sample Type	: Mix Quartziticstone

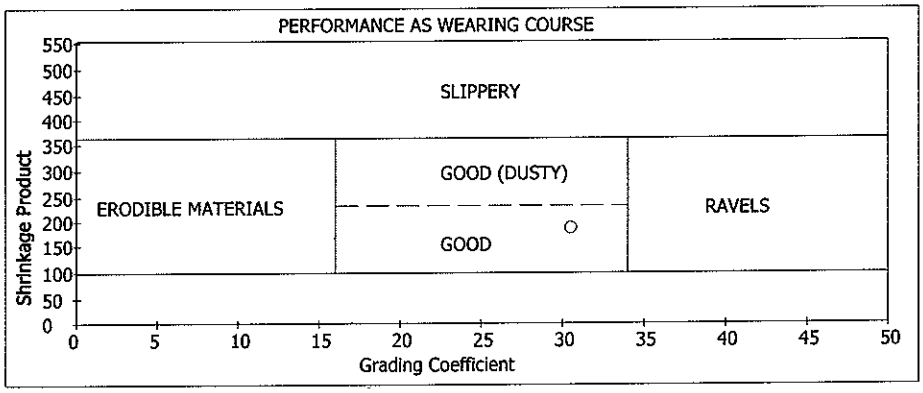
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	97
20.00	93
14.00	90
5.000	71
2.000	54
0.425	34
0.250	29
0.150	24
0.075	20
0.060	7,2
0.050	7,0
0.020	6,0
0.005	4,8
0.002	4,8

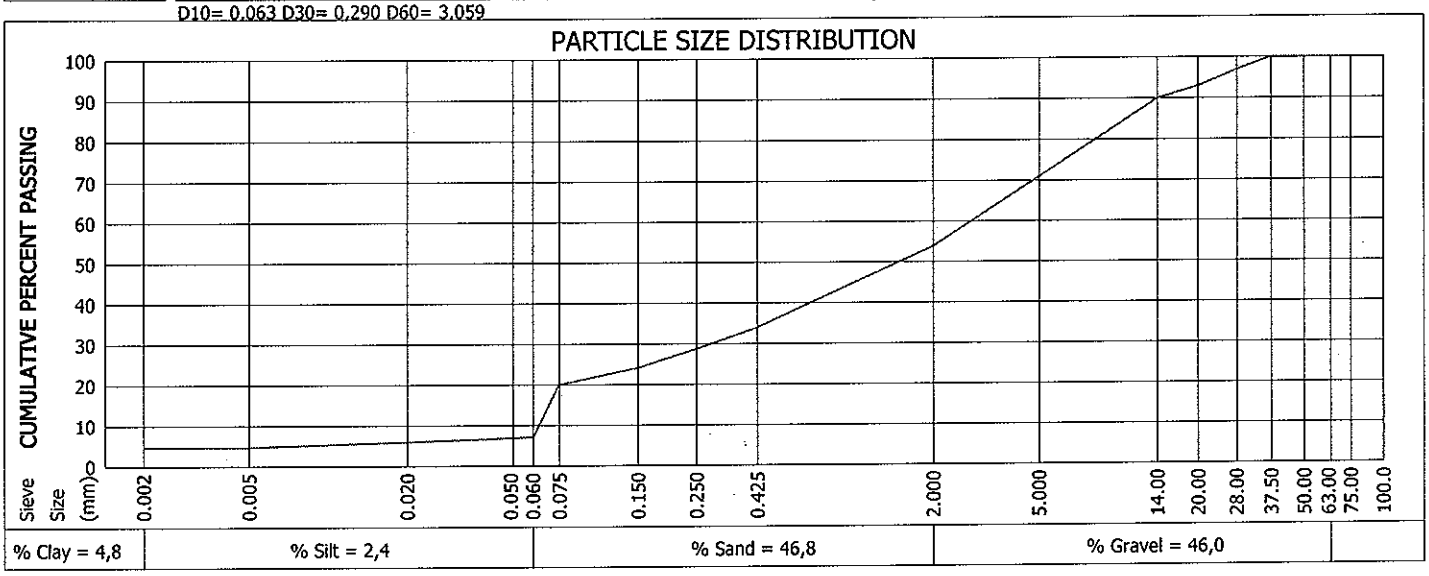
Soil Mortar	2.000 - 0.425	36
	0.425 - 0.250	10
	0.250 - 0.150	9
	0.150 - 0.075	8
	< 0.075	37
Effective Size		0,063
Uniformity Coefficient		48,6
Curvature Coefficient		0,4
Oversize Index		0,0
Shrinkage Product		187,0
Grading Coefficient		30,5
Grading Modulus		1,90
Atterberg Limits	Liquid Limit	22
	Plasticity Index	11
	Linear Shrinkage	5.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-6(0)

D10= 0.063 D30= 0.290 D60= 3.059









Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 6.4 & Conductivity = 0.09 S/m [SANS 5854]

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-25

Project : Okiep 100 Infill

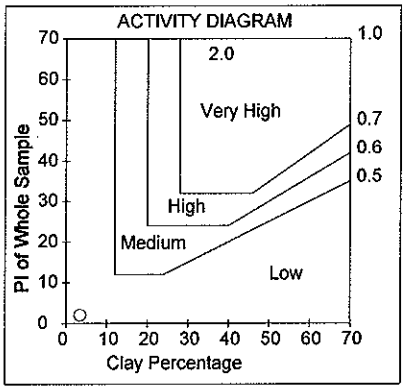
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

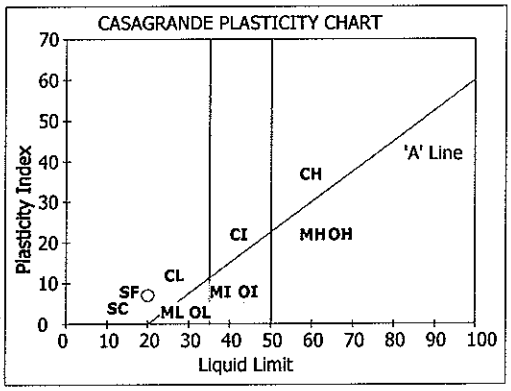
Sample No.	: U9028
Position	: TP 33; 0.0-0.5m
Layer Type	: Sample 23
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

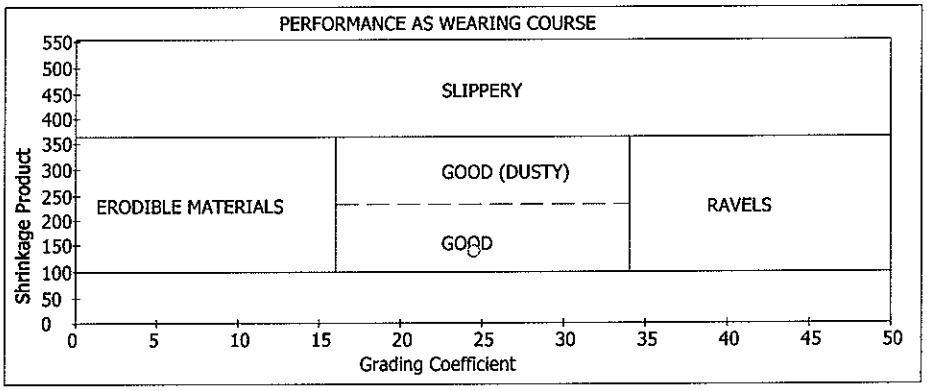
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	90
28.00	90
20.00	88
14.00	85
5.000	70
2.000	55
0.425	35
0.250	29
0.150	22
0.075	15
0.060	6.6
0.050	6.3
0.020	5.4
0.005	3.5
0.002	3.5

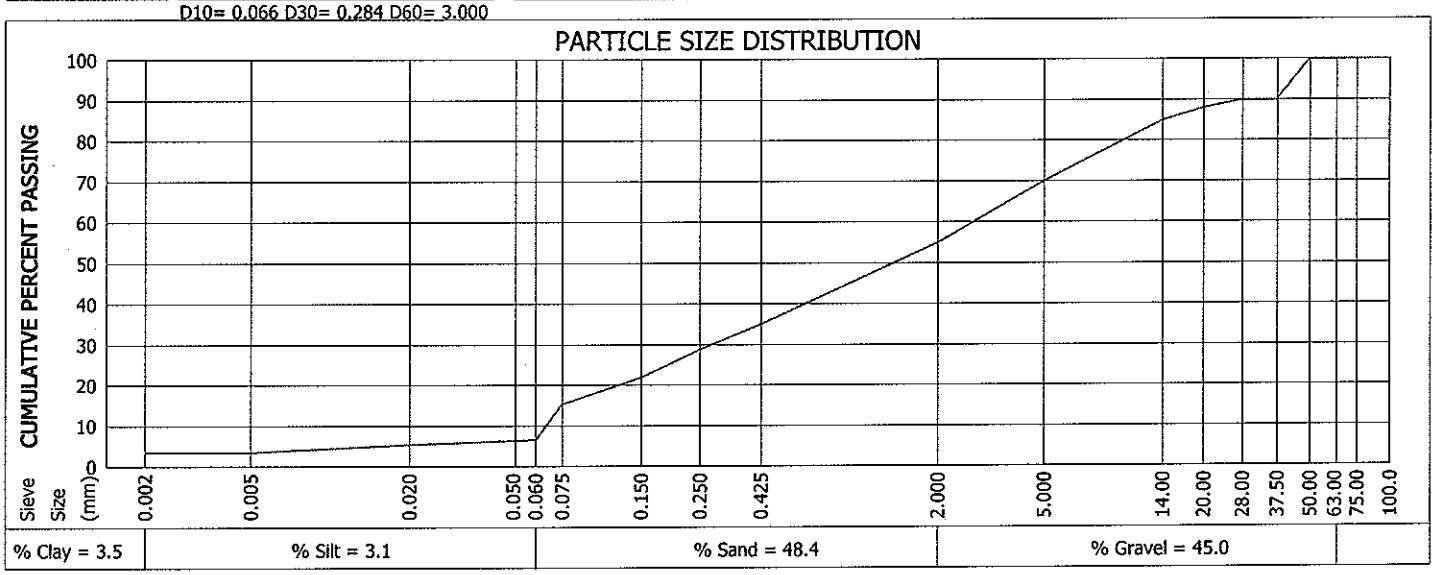
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	11
	0.250 - 0.150	13
	0.150 - 0.075	13
	< 0.075	27
Effective Size		0.066
Uniformity Coefficient		45.5
Curvature Coefficient		0.4
Oversize Index		10.0
Shrinkage Product		140.0
Grading Coefficient		24.5
Grading Modulus		1.90
Atterberg Limits	Liquid Limit	20
	Plasticity Index	7
	Linear Shrinkage	4.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.066 D30= 0.284 D60= 3.000









Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9029			
HOLE NO./ Km / CHAINAGE	TP34			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 24			
LAYER TESTED/SAMPLED	0.0 - 0.5m			
SAMPLE DEPTH	0.0 - 0.5m			
DATE SAMPLED	2020-01-29			
COLOUR OF SAMPLE	Dark Orange Brown			
TYPE OF SAMPLE	Mix Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	94			
	37.5 mm	83			
	28.0 mm	78			
	20.0 mm	73			
	14.0 mm	69			
	5.0 mm	57			
	2.0 mm	49			
	0.425 mm	34			
	0.075 mm	15			
GM %		2.0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	30			
COARSE FINE SAND	0.425 - 0.250	12			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	14			
SILT CLAY	0.075	31			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	16			
	PLASTICITY INDEX	4			
	LINEAR SHRINKAGE	1.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G8			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6.8			
	MDD (kg/m³)	2176			
	COMP MC %	7.1			
SWELL % @	MOD | NRB | PRO	0.02 | 0.04 | 0.07			
C.B.R. SANS GR40	100 %	22			
	98 %	17			
	97 %	16			
	95 %	13			
	93 %	10			
	90 %	7			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-14

Project : Okiep 100 Infill

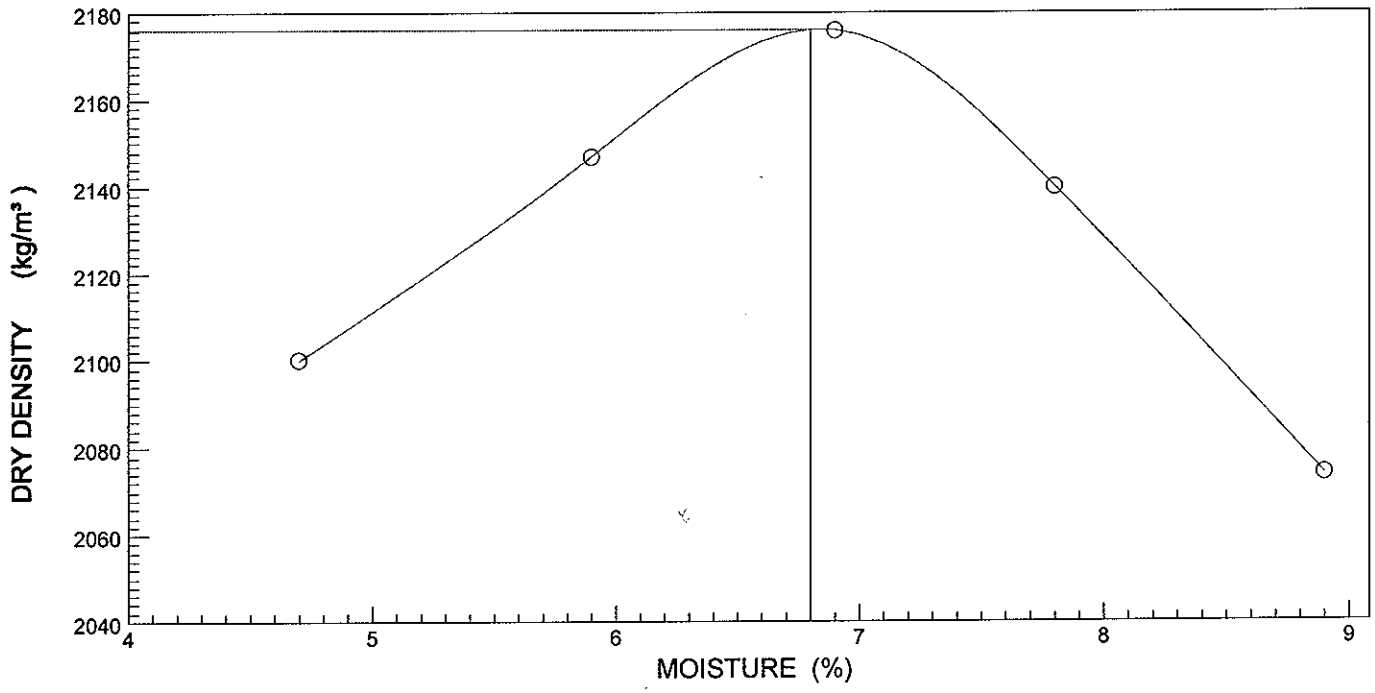
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9029
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	94kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0-0.5m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP34
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9029
COLOUR AND TYPE	Dark Orange Brown Gravel

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2100	2147	2176	2140	2074			
MOISTURE (%)	4.7	5.9	6.9	7.8	8.9			

MAXIMUM DRY DENSITY (kg/m³) : 2176	OPTIMUM MOISTURE CONTENT (%) : 6.8



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

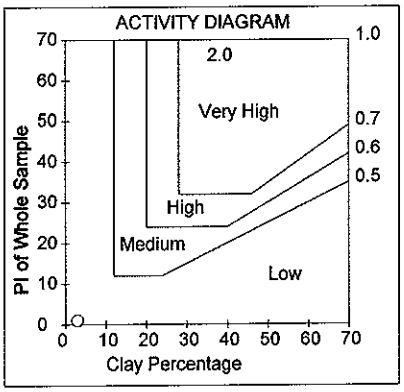
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

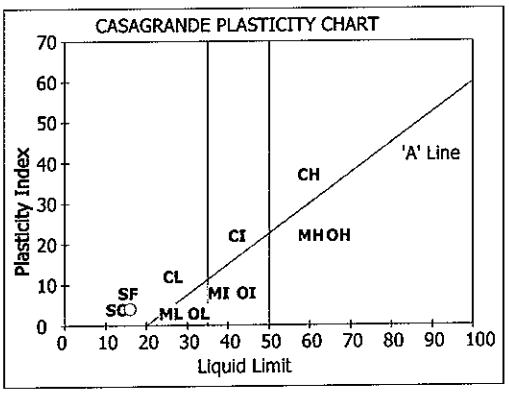
Sample No.	: U9029
Position	: TP 34; 0.0-0.5m
Layer Type	: Sample 24
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

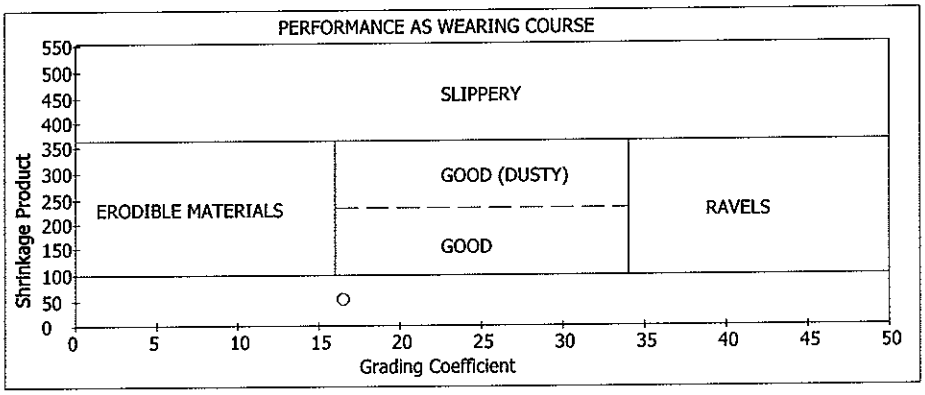
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	94
37.50	83
28.00	78
20.00	73
14.00	69
5.000	57
2.000	49
0.425	34
0.250	29
0.150	22
0.075	15
0.060	6.0
0.050	5.6
0.020	4.2
0.005	2.9
0.002	2.9

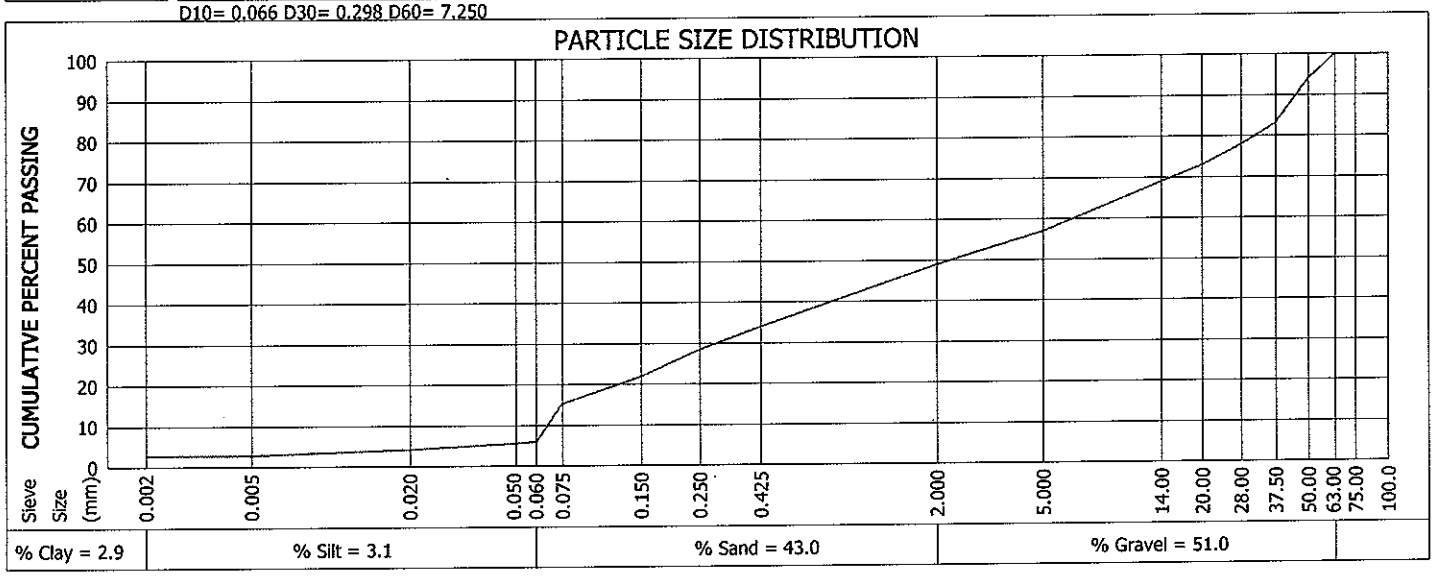
Soil Mortar	2.000 - 0.425	30
	0.425 - 0.250	12
	0.250 - 0.150	14
	0.150 - 0.075	14
	< 0.075	31
Effective Size		0.066
Uniformity Coefficient		109.8
Curvature Coefficient		0.2
Oversize Index		11.0
Shrinkage Product		51.0
Grading Coefficient		16.5
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	16
	Plasticity Index	4
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.066 D30= 0.298 D60= 7.250









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-21

Project : Okiep 100 Infill

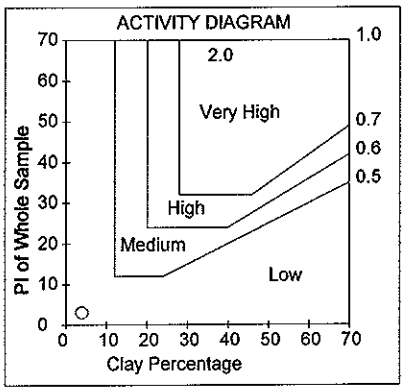
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

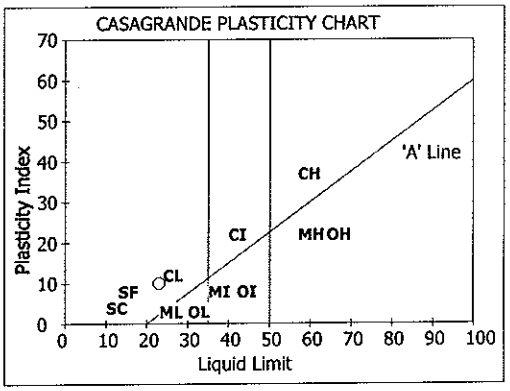
Sample No.	: U9030
Position	: TP 36; 0.0-0.4m
Layer Type	: Sample 25
Sample Colour	: Brown
Sample Type	: Mix Quartzstone

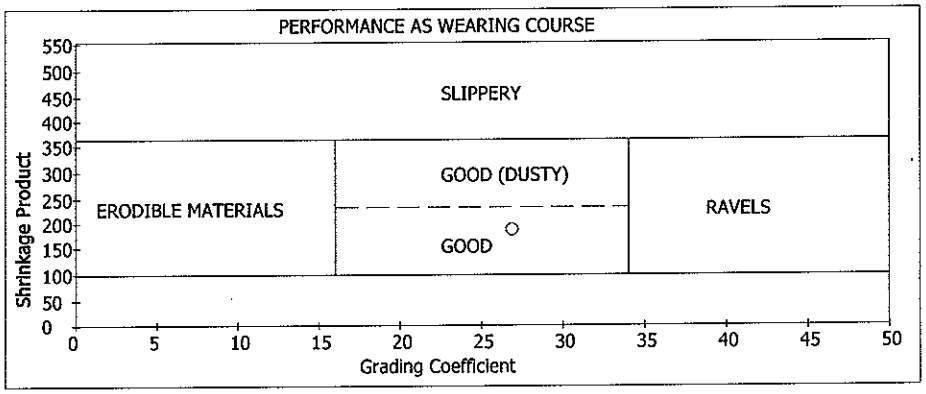
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	91
20.00	88
14.00	84
5.000	69
2.000	52
0.425	34
0.250	30
0.150	25
0.075	19
0.060	7.2
0.050	7.0
0.020	5.9
0.005	3.8
0.002	3.8

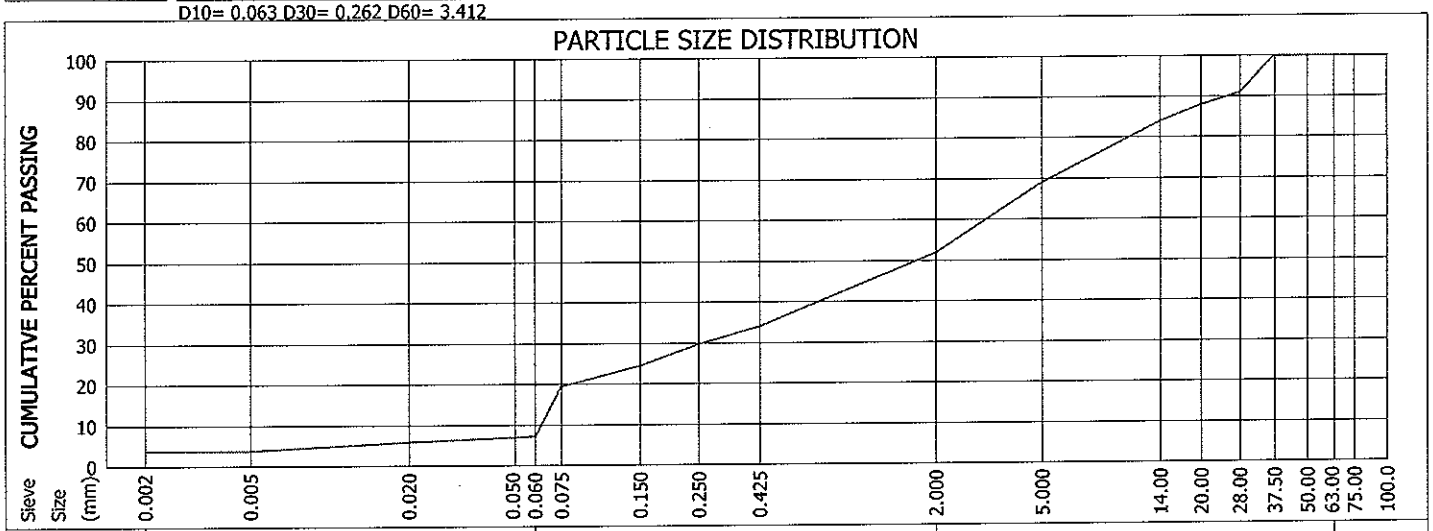
Soil Mortar	2.000 - 0.425	34
	0.425 - 0.250	9
	0.250 - 0.150	10
	0.150 - 0.075	11
	< 0.075	37
Effective Size		0.063
Uniformity Coefficient		54.2
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		187.0
Grading Coefficient		26.9
Grading Modulus		1.90
Atterberg Limits	Liquid Limit	23
	Plasticity Index	10
	Linear Shrinkage	5.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.063 D30= 0.262 D60= 3.412









% Clay = 3.8	% Silt = 3.4	% Sand = 44.8	% Gravel = 48.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-21

Project : Okiep 100 Infill

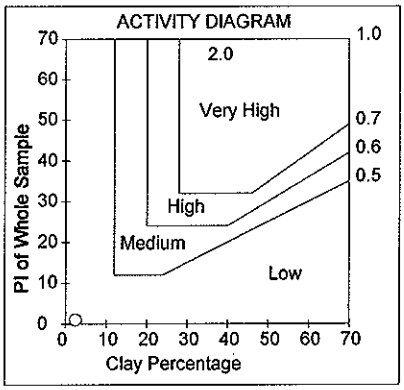
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

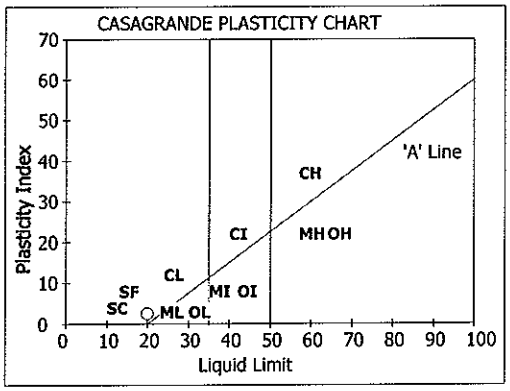
Sample No.	: U9031
Position	: TP 38; 0.0-0.4m
Layer Type	: Sample 26
Sample Colour	: Dark Brown
Sample Type	: Mix Quart

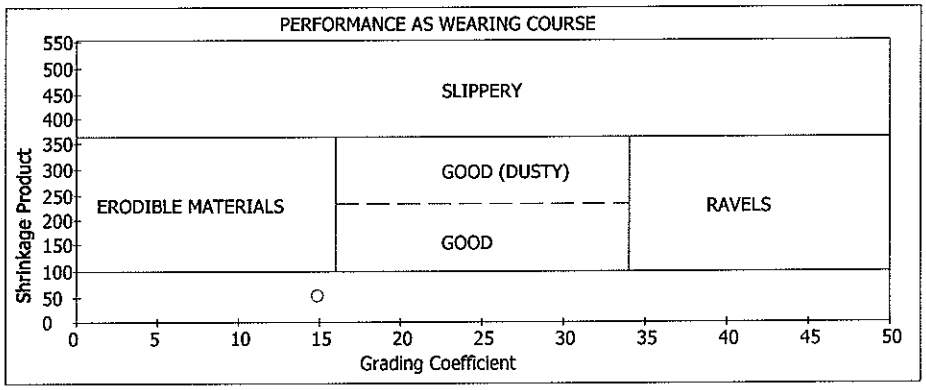
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	88
37.50	75
28.00	75
20.00	75
14.00	73
5.000	62
2.000	51
0.425	34
0.250	24
0.150	17
0.075	11
0.060	4.0
0.050	3.8
0.020	3.1
0.005	2.3
0.002	2.3

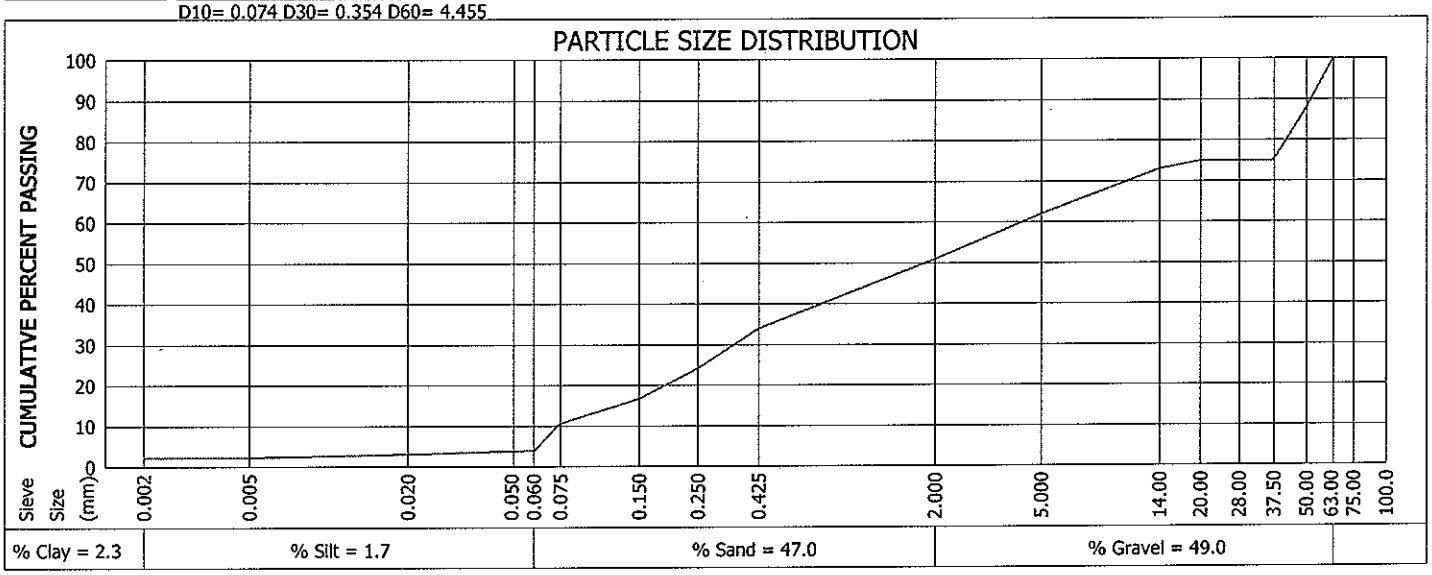
Soil Mortar	2.000 - 0.425	33
	0.425 - 0.250	20
	0.250 - 0.150	14
	0.150 - 0.075	11
	< 0.075	21
Effective Size		0.074
Uniformity Coefficient		60.2
Curvature Coefficient		0.4
Oversize Index		13.0
Shrinkage Product		51.0
Grading Coefficient		14.9
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	20
	Plasticity Index	2.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.074 D30= 0.354 D60= 4.455









% Clay = 2.3	% Silt = 1.7	% Sand = 47.0	% Gravel = 49.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
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Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-20

Project : Oklep 100 Infill

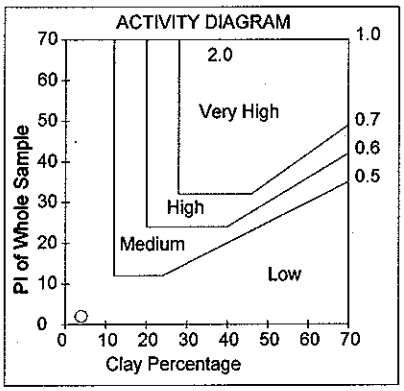
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

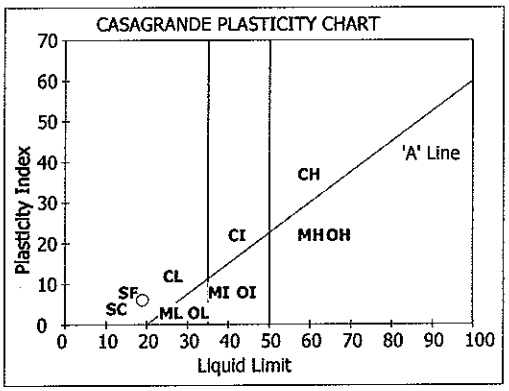
Sample No.	: U9032
Position	: TP 40 - 0.0-0.5m
Layer Type	: Sample 27
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

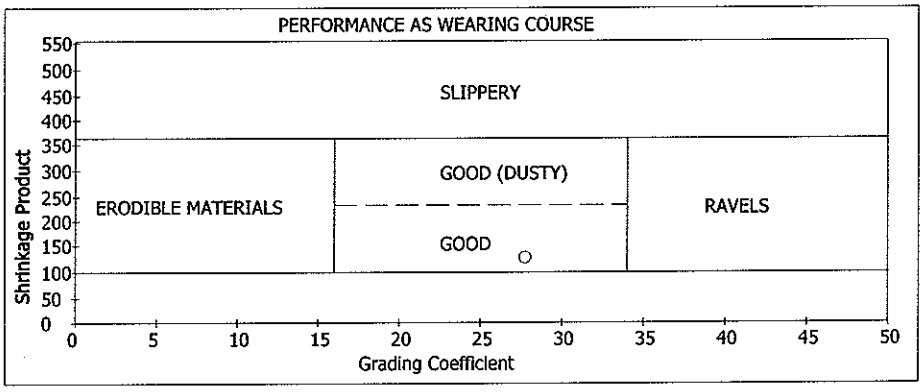
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	93
20.00	90
14.00	87
5.000	71
2.000	54
0.425	37
0.250	31
0.150	23
0.075	15
0.060	7.6
0.050	7.5
0.020	6.7
0.005	5.5
0.002	3.9

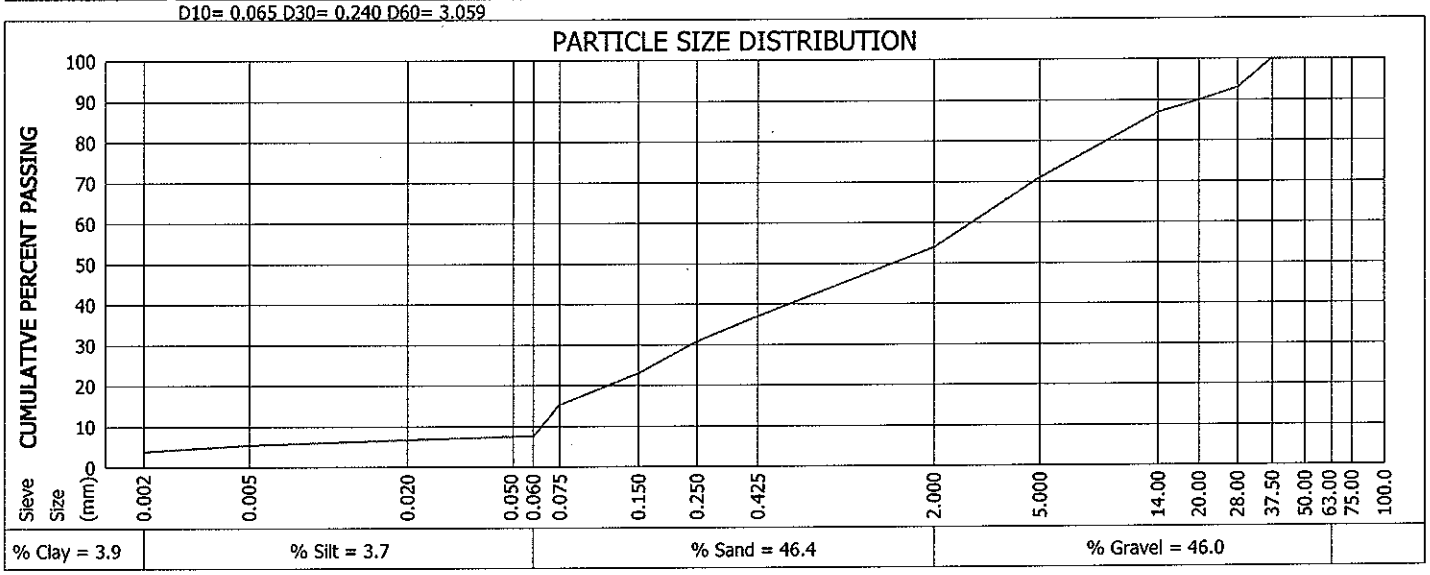
Soil Mortar	2.000 - 0.425	31
	0.425 - 0.250	11
	0.250 - 0.150	15
	0.150 - 0.075	15
	< 0.075	28
Effective Size		0.065
Uniformity Coefficient		47.1
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		129.5
Grading Coefficient		27.7
Grading Modulus		1.90
Atterberg Limits	Liquid Limit	19
	Plasticity Index	6
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.065 D30= 0.240 D60= 3.059









% Clay = 3.9	% Silt = 3.7	% Sand = 46.4	% Gravel = 46.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Vategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9033			
HOLE NO./ Km / CHAINAGE		TP41			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 28			
LAYER TESTED/SAMPLED		0.0 - 0.8m			
SAMPLE DEPTH		0.0 - 0.8m			
DATE SAMPLED		2020-01-29			
COLOUR OF SAMPLE		Dark Orange Brown			
TYPE OF SAMPLE		Mix Quartz			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm	100			
	75.0 mm	92			
	63.0 mm	90			
	50.0 mm	90			
	37.5 mm	84			
	28.0 mm	82			
	20.0 mm	80			
	14.0 mm	77			
	5.0 mm	66			
	2.0 mm	53			
	0.425 mm	36			
	0.075 mm	16			
GM %		1.9			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425	33			
COARSE FINE SAND	0.425 - 0.250	13			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	30			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	15			
	PLASTICITY INDEX	5			
	LINEAR SHRINKAGE	2.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G9			
	TRH 14	G10			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	6.3			
	MDD (kg/m³)	2225			
	COMP MC %	6.3			
SWELL % @	MOD | NRB | PRO	0.02 | 0.03 | 0.06			
C.B.R. SANS GR40	100 %	26			
	98 %	19			
	97 %	16			
	95 %	11			
	93 %	8			
	90 %	5			
STABILISER IN LAB		N/A			
TEST TYPE		CBR			
SAMPLING METHOD		Client			
WEATHER WHEN SAMPLED		Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-25

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

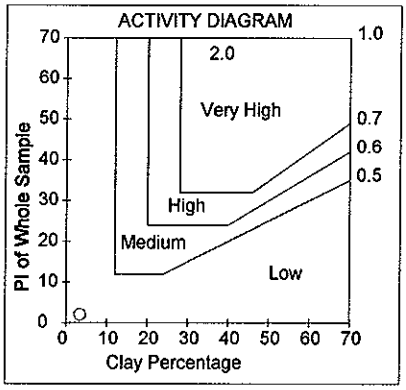
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

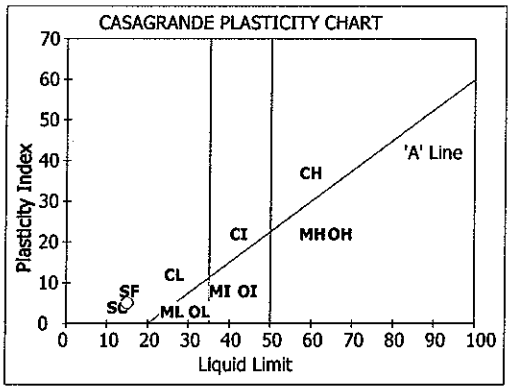
Sample No.	: U9033
Position	: TP 41; 0.0-0.8m
Layer Type	: Sample 28
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

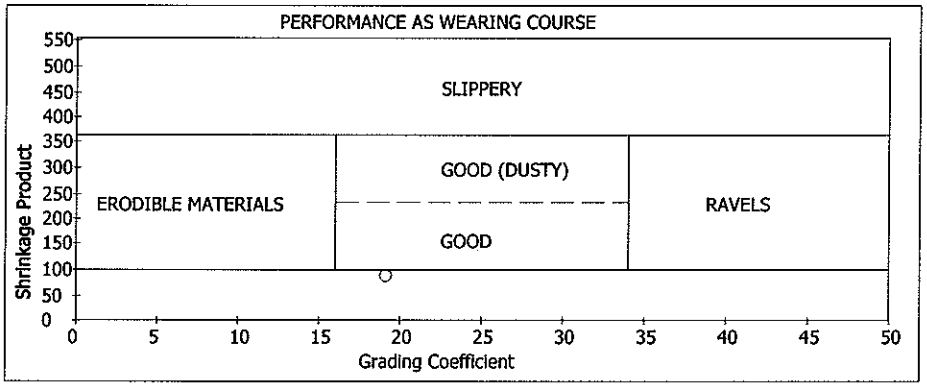
Sieve Size(mm)	% Passing
100.0	100
75.00	92
63.00	90
50.00	90
37.50	84
28.00	82
20.00	80
14.00	77
5.000	66
2.000	53
0.425	36
0.250	29
0.150	22
0.075	17
0.060	6,9
0.050	6,5
0.020	5,5
0.005	3,4
0.002	3,4

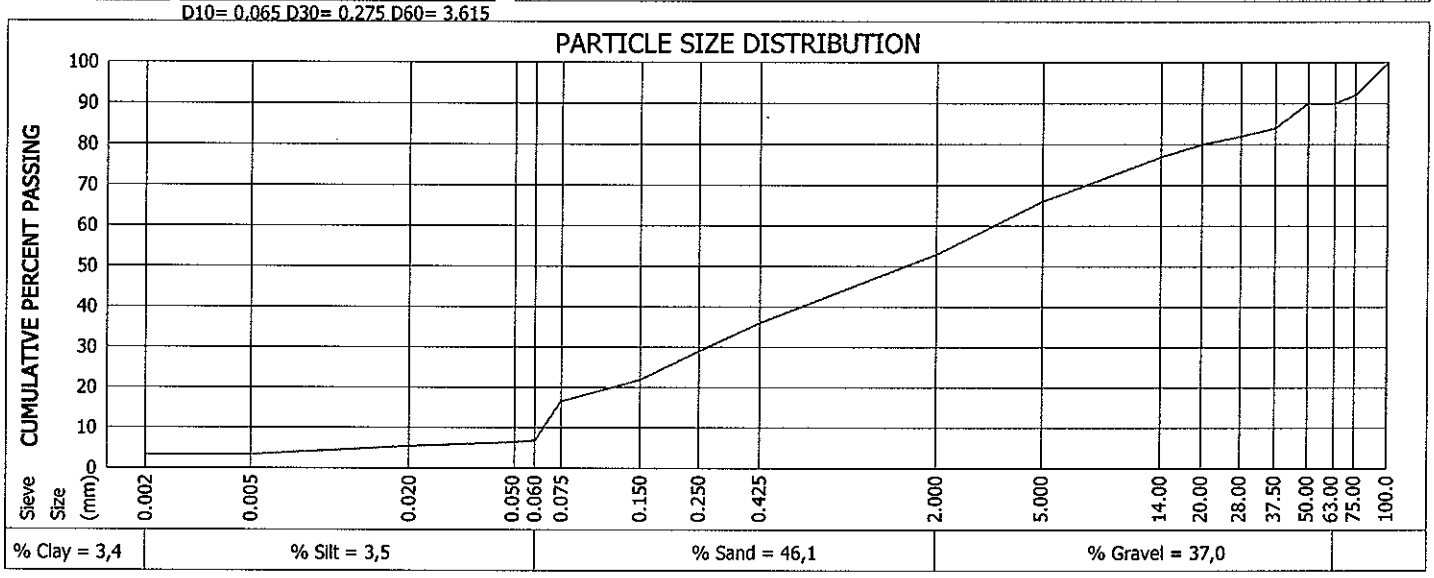
Soil Mortar	2.000 - 0.425	33
	0.425 - 0.250	13
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	30
Effective Size		0,065
Uniformity Coefficient		55,6
Curvature Coefficient		0,3
Oversize Index		6,0
Shrinkage Product		90,0
Grading Coefficient		19,1
Grading Modulus		1,90
Atterberg Limits	Liquid Limit	15
	Plasticity Index	5
	Linear Shrinkage	2,5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0,065 D30= 0,275 D60= 3,615









% Clay = 3,4	% Silt = 3,5	% Sand = 46,1	% Gravel = 37,0

Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-14

Project : Okiep 100 Infill

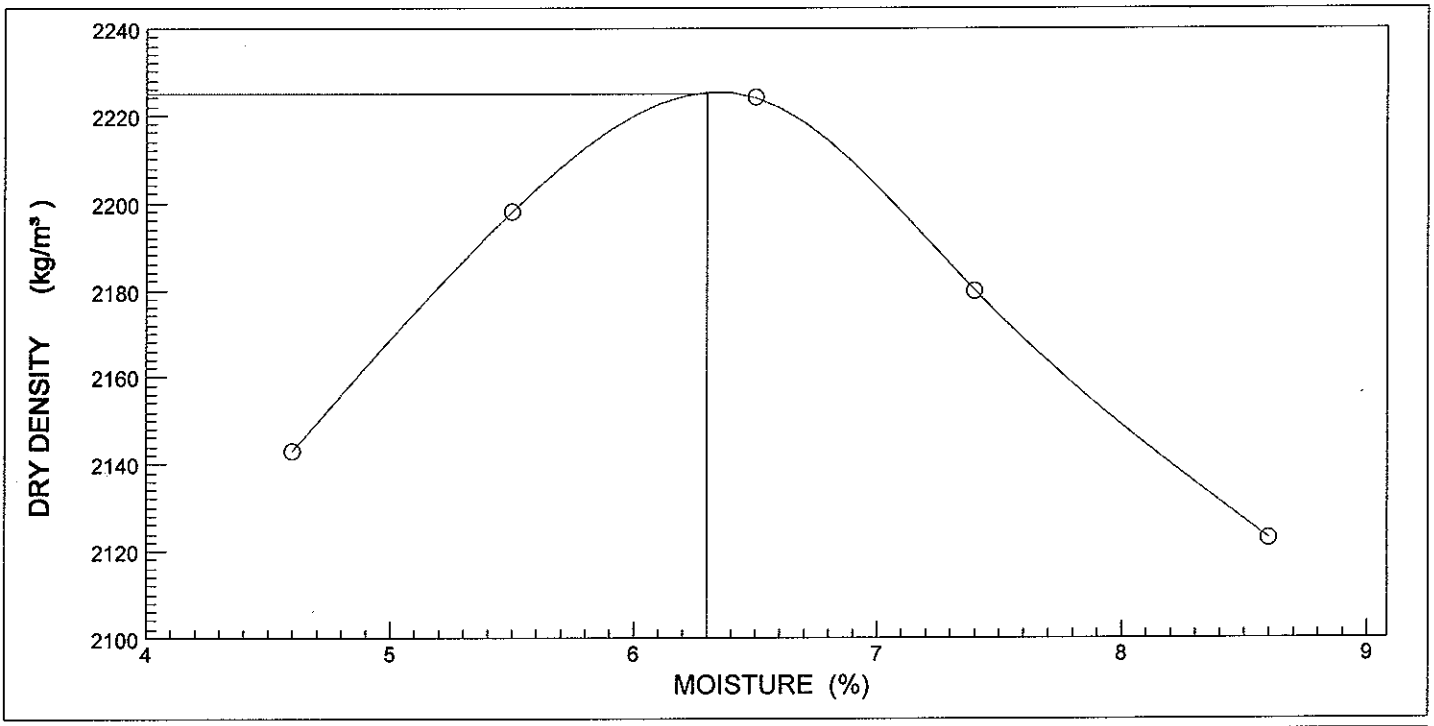
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9033
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.8m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP41
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9033
COLOUR AND TYPE	Dark Orange Brown Gravel

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2143	2198	2224	2180	2123			
MOISTURE (%)	4.6	5.5	6.5	7.4	8.6			

MAXIMUM DRY DENSITY (kg/m³) : 2225	OPTIMUM MOISTURE CONTENT (%) : 6.3



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Manager

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ROADLAB

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PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-02

Project : Okiep 100 Infill

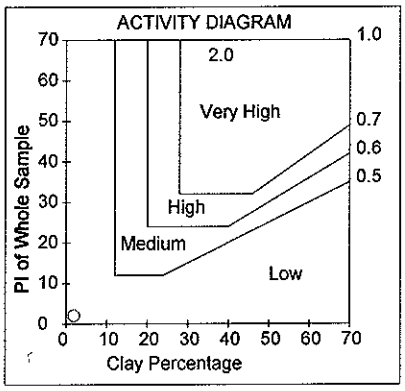
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

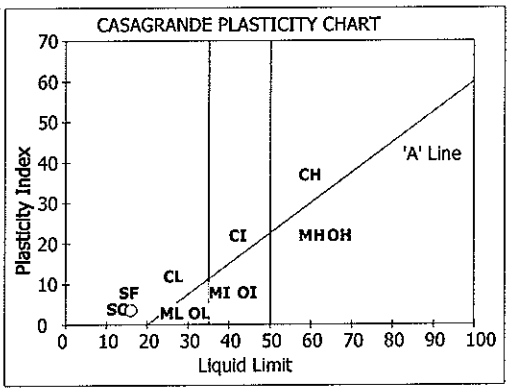
Sample No.	: U9034
Position	: TP 42- 0.0-0.4m
Layer Type	: Sample 29
Sample Colour	: Light Orange Brown
Sample Type	: Mix Quartz

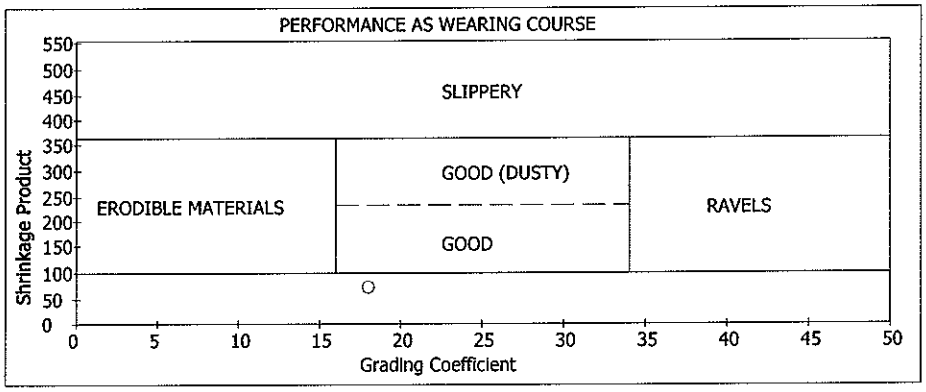
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	99
37.50	96
28.00	90
20.00	87
14.00	86
5.000	75
2.000	66
0.425	48
0.250	40
0.150	30
0.075	20
0.060	7.0
0.050	6.5
0.020	4.7
0.005	3.4
0.002	1.8

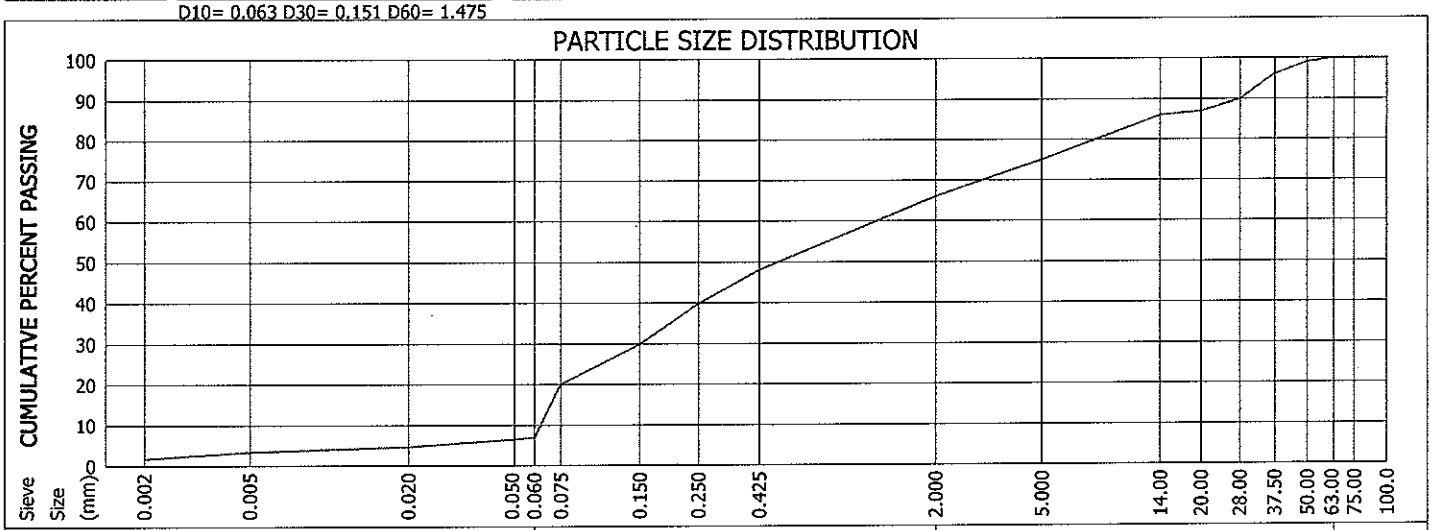
Soil Mortar	2.000 - 0.425	28
	0.425 - 0.250	12
	0.250 - 0.150	15
	0.150 - 0.075	15
	< 0.075	30
Effective Size		0.063
Uniformity Coefficient		23.4
Curvature Coefficient		0.2
Oversize Index		3.0
Shrinkage Product		72.0
Grading Coefficient		18.0
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	16
	Plasticity Index	3.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.063 D30= 0.151 D60= 1.475









% Clay = 1.8	% Silt = 5.2	% Sand = 59.0	% Gravel = 34.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-02

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

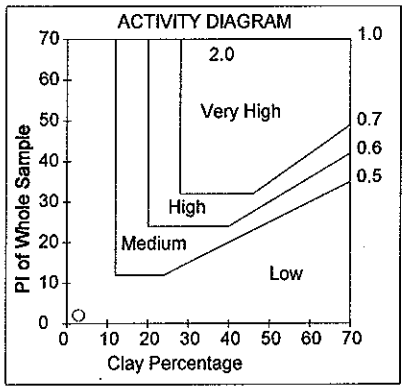
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

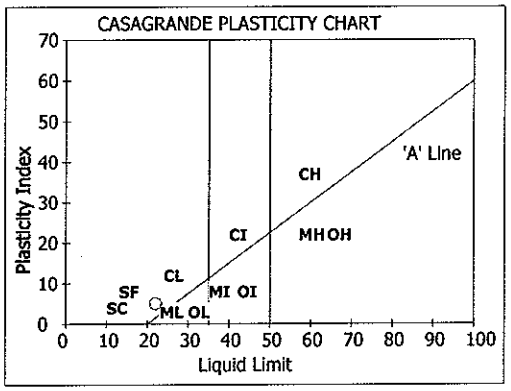
Sample No.	: U9035
Position	: TP 44- 0.0-0.5m
Layer Type	: Sample 30
Sample Colour	: Brown
Sample Type	: Mix Quartzstone

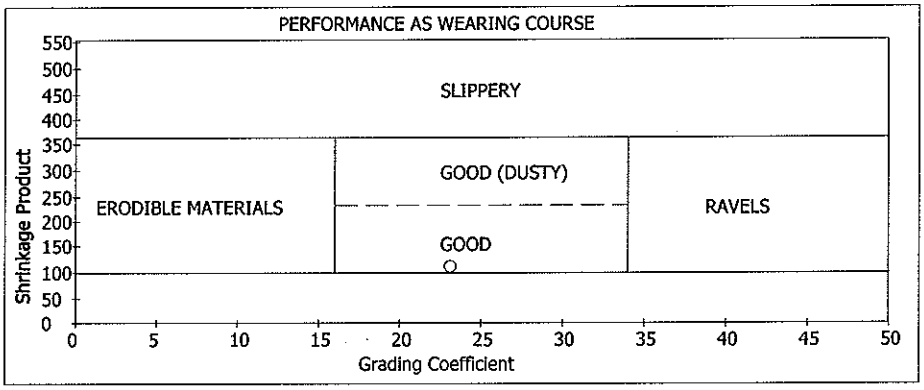
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	98
28.00	92
20.00	88
14.00	82
5.000	68
2.000	58
0.425	37
0.250	31
0.150	23
0.075	16
0.060	6,5
0.050	6,4
0.020	4,9
0.005	3,7
0.002	2,9

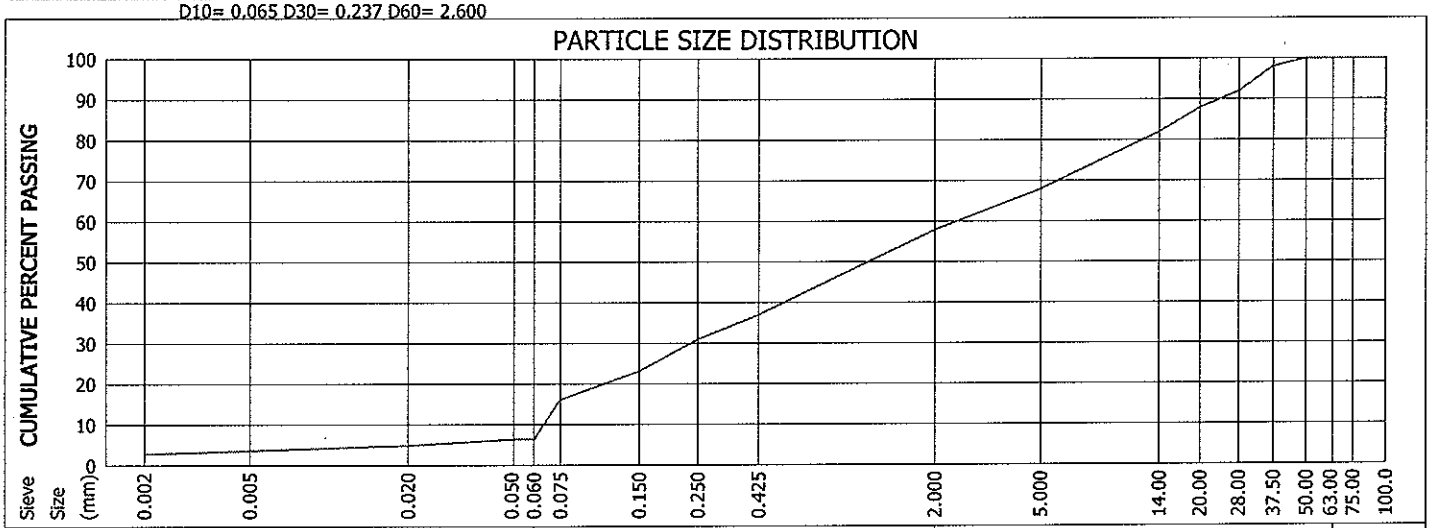
Soil Mortar	2.000 - 0.425	35
	0.425 - 0.250	11
	0.250 - 0.150	14
	0.150 - 0.075	13
	< 0.075	28
Effective Size		0,065
Uniformity Coefficient		40,0
Curvature Coefficient		0,3
Oversize Index		2,0
Shrinkage Product		111,0
Grading Coefficient		23,1
Grading Modulus		1,90
Atterberg Limits	Liquid Limit	22
	Plasticity Index	5
	Linear Shrinkage	3,0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.065 D30= 0.237 D60= 2.600









% Clay = 2,9	% Silt = 3,6	% Sand = 51,5	% Gravel = 42,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9036			
HOLE NO./ Km / CHAINAGE		TP45			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 31			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-01-30			
COLOUR OF SAMPLE		Dark Brown S.Sand			
TYPE OF SAMPLE		Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm	100			
	63.0 mm	94			
	50.0 mm	94			
	37.5 mm	85			
	28.0 mm	75			
	20.0 mm	69			
	14.0 mm	67			
	5.0 mm	56			
	2.0 mm	48			
	0.425 mm	34			
	0.075 mm	14			
GM %		2.0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	29			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	16			
FINE FINE SAND	0.150 - 0.075	15			
SILT CLAY	0.075	29			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	18			
	PLASTICITY INDEX	5			
	LINEAR SHRINKAGE	2.0			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G8			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6.7			
	MDD (kg/m³)	2157			
	COMP MC %	6.7			
SWELL % @	MOD | NRB | PRO	0.01 | 0.02 | 0.06			
C.B.R. SANS GR40	100 %	22			
	98 %	18			
	97 %	16			
	95 %	13			
	93 %	11			
	90 %	8			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-14

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

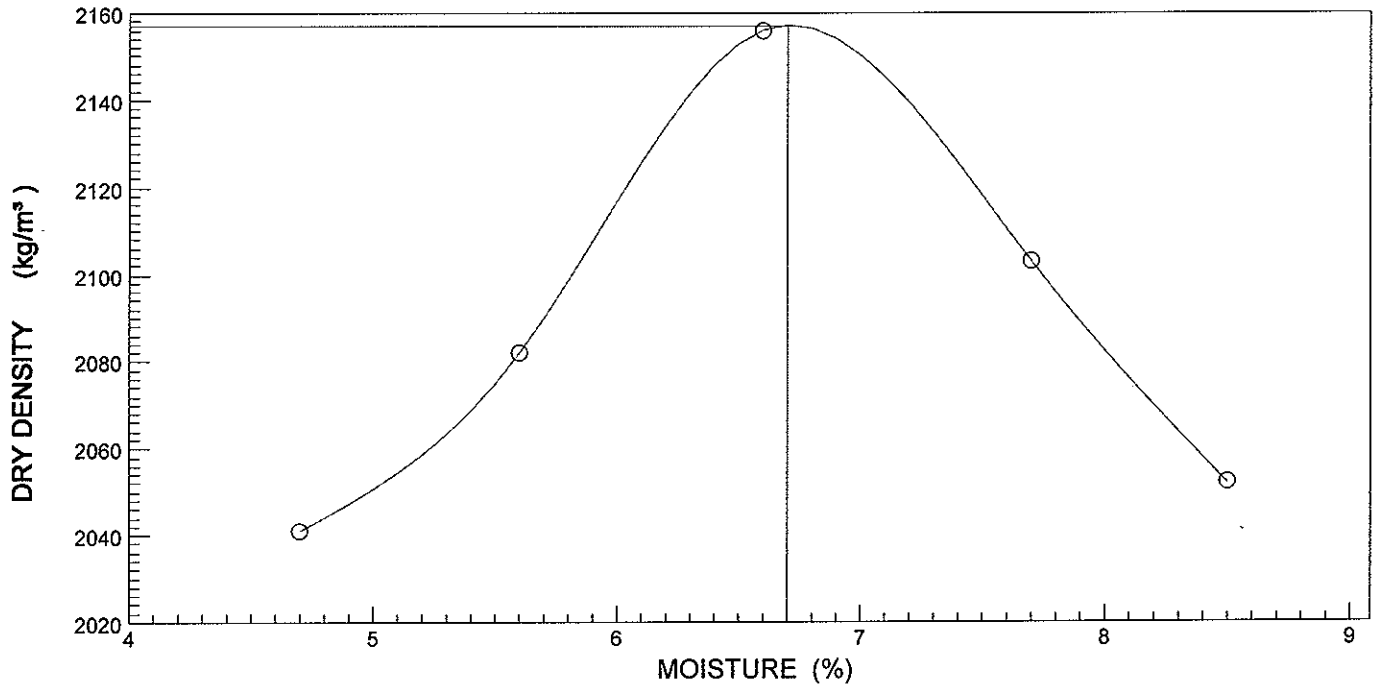
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9036
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	100kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0-0.4m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP45
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9036
COLOUR AND TYPE	Dark Brown S.Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2041	2082	2156	2103	2052			
MOISTURE (%)	4.7	5.6	6.6	7.7	8.5			

MAXIMUM DRY DENSITY (kg/m³) : 2157	OPTIMUM MOISTURE CONTENT (%) : 6.7



Deviation from Test Method :
Remarks and Notes :

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Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-25

Project : Okiep 100 Infill

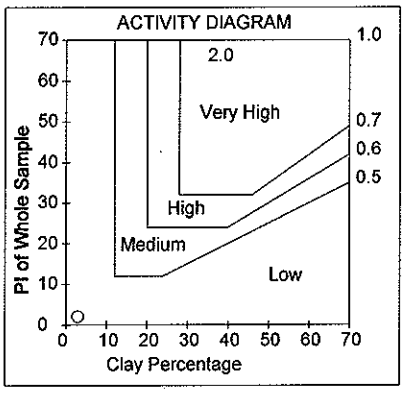
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

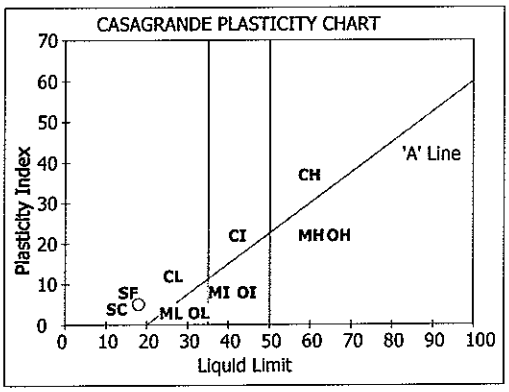
Sample No.	: U9036
Position	: TP 45; 0.0-0.4m
Layer Type	: Sample 31
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

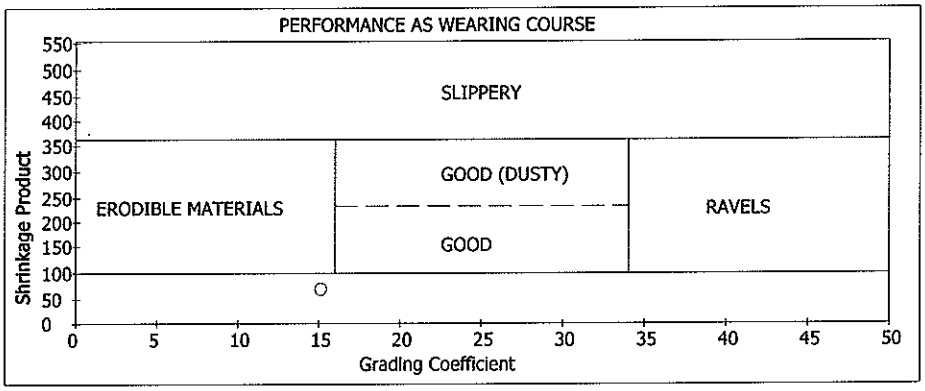
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	94
50.00	94
37.50	85
28.00	75
20.00	69
14.00	67
5.000	56
2.000	48
0.425	34
0.250	29
0.150	21
0.075	14
0.060	6.0
0.050	5.7
0.020	5.2
0.005	3.2
0.002	3.2

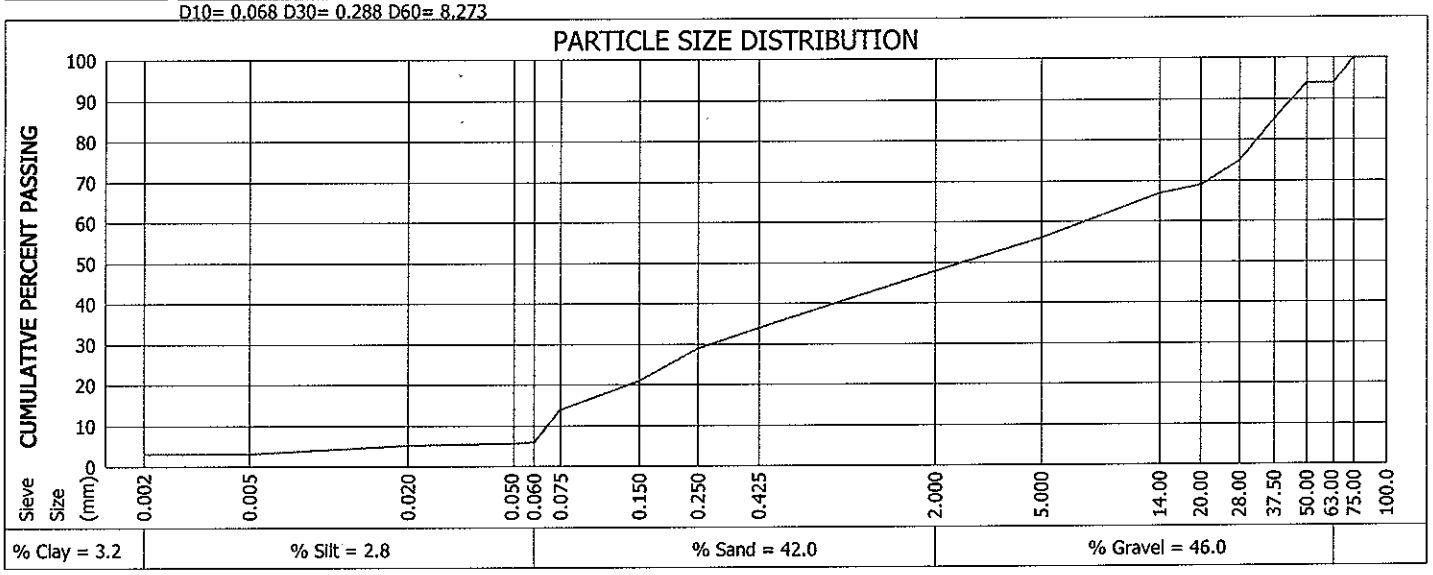
Soil Mortar	2.000 - 0.425	29
	0.425 - 0.250	11
	0.250 - 0.150	16
	0.150 - 0.075	15
	< 0.075	29
Effective Size		0.068
Uniformity Coefficient		121.7
Curvature Coefficient		0.1
Oversize Index		9.0
Shrinkage Product		68.0
Grading Coefficient		15.1
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	18
	Plasticity Index	5
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.068 D30= 0.288 D60= 8.273









Deviation from Test Method :
Remarks and Notes :

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Manager

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Web: www.roadlab.co.za

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Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-02

Project : Okiep 100 Infill

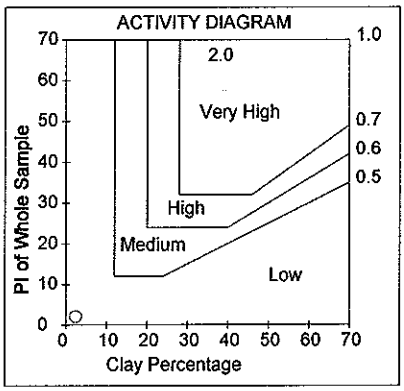
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

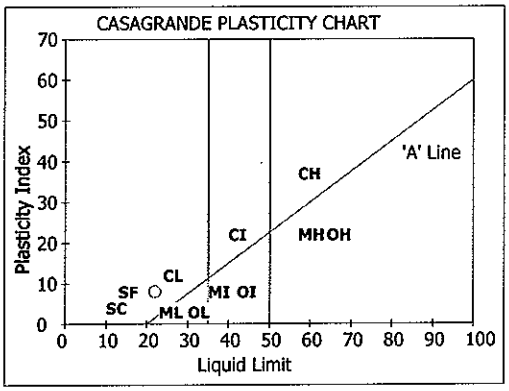
Sample No.	: U9037
Position	: TP 46- 0.0-0.4m
Layer Type	: Sample 32
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

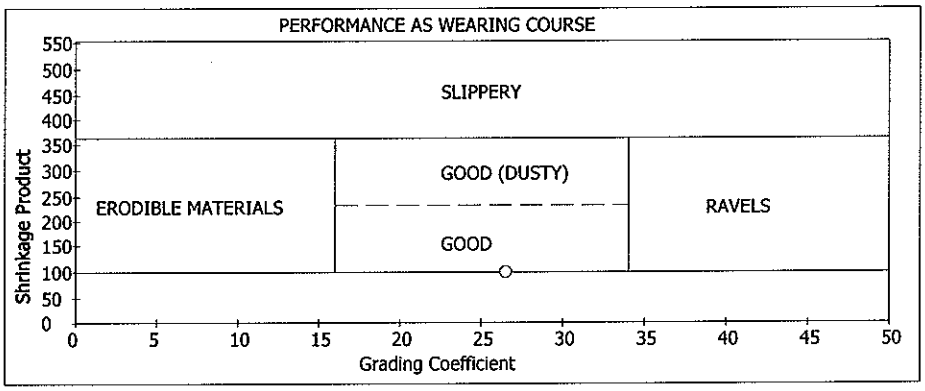
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	98
37.50	95
28.00	90
20.00	85
14.00	80
5.000	59
2.000	45
0.425	29
0.250	24
0.150	17
0.075	11
0.060	5.0
0.050	4.9
0.020	4.3
0.005	2.9
0.002	2.3

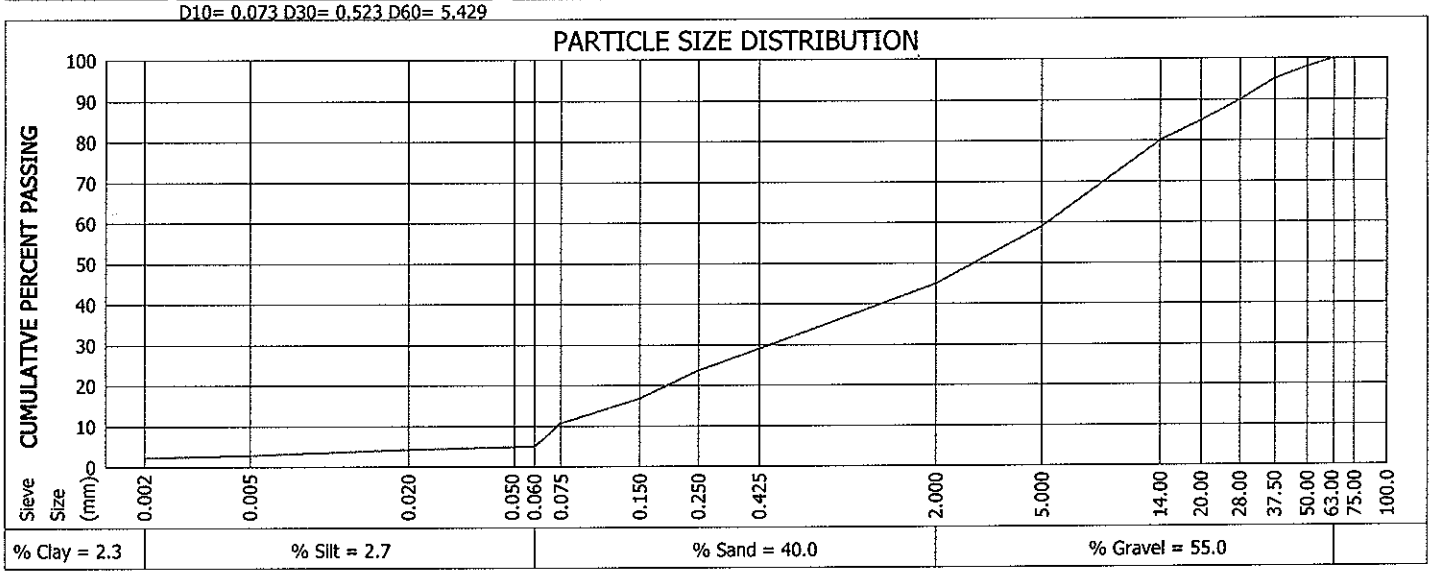
Soil Mortar	2.000 - 0.425	35
	0.425 - 0.250	12
	0.250 - 0.150	15
	0.150 - 0.075	13
	< 0.075	25
Effective Size		0.073
Uniformity Coefficient		74.4
Curvature Coefficient		0.7
Oversize Index		3.0
Shrinkage Product		101.5
Grading Coefficient		26.6
Grading Modulus		2.20
Atterberg Limits	Liquid Limit	22
	Plasticity Index	8
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-2-4(0)

D10= 0.073 D30= 0.523 D60= 5.429









% Clay = 2.3	% Silt = 2.7	% Sand = 40.0	% Gravel = 55.0

Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 8.2 & Conductivity = 0.45 S/m [SANS 5854]

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Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-02

Project : Okiep 100 Infill

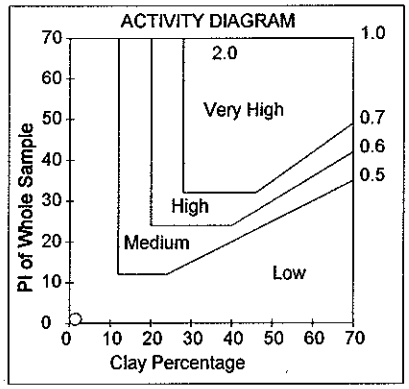
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

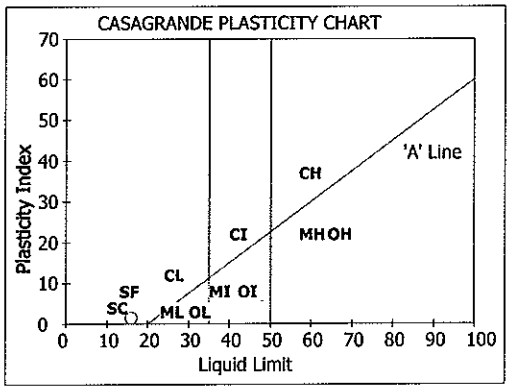
Sample No.	: U9038
Position	: TP 48- 0.0-0.2m
Layer Type	: Sample 33
Sample Colour	: Brown
Sample Type	: Mix Quartzstone

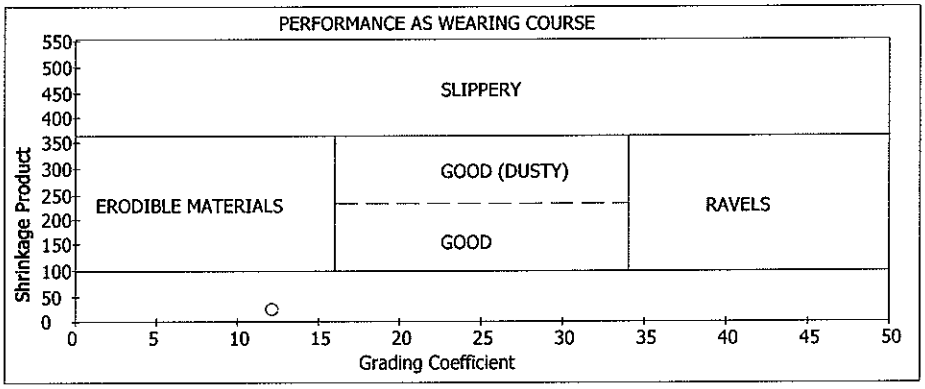
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	97
50.00	97
37.50	91
28.00	87
20.00	85
14.00	83
5.000	76
2.000	71
0.425	45
0.250	36
0.150	26
0.075	16
0.060	5.1
0.050	4.7
0.020	3.2
0.005	2.3
0.002	1.4

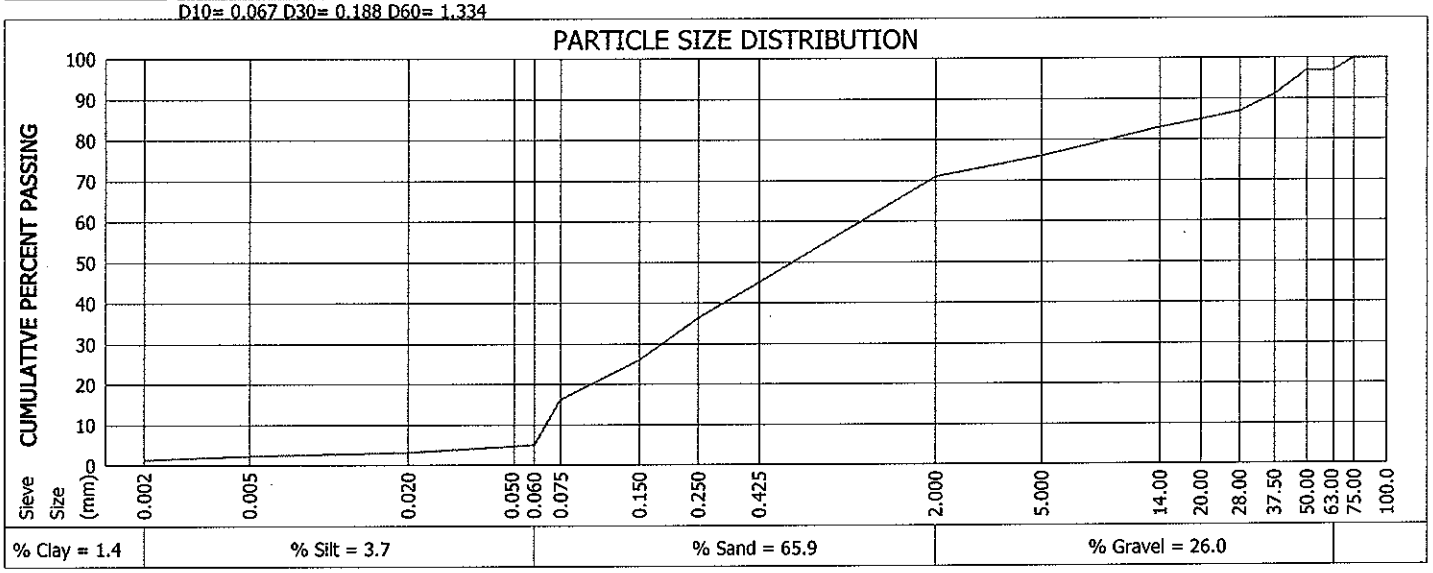
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	13
	0.250 - 0.150	14
	0.150 - 0.075	14
	< 0.075	22
Effective Size		0.067
Uniformity Coefficient		19.9
Curvature Coefficient		0.4
Oversize Index		6.0
Shrinkage Product		22.5
Grading Coefficient		12.2
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	16
	Plasticity Index	2.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.067 D30= 0.188 D60= 1.334









% Clay = 1.4	% Silt = 3.7	% Sand = 65.9	% Gravel = 26.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-19

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9039			
HOLE NO./ Km / CHAINAGE		TP50			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 34			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-01-30			
COLOUR OF SAMPLE		Reddish Brown			
TYPE OF SAMPLE		Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm				
	37.5 mm	100			
	28.0 mm	93			
	20.0 mm	83			
	14.0 mm	81			
	5.0 mm	68			
	2.0 mm	55			
	0.425 mm	34			
	0.075 mm	15			
GM %		2.0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	39			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	27			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	17			
	PLASTICITY INDEX	7			
	LINEAR SHRINKAGE	3.0			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	G9			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6.4			
	MDD (kg/m³)	2202			
	COMP MC %	6.1			
SWELL % @	MOD | NRB | PRO	0.02 | 0.03 | 0.06			
C.B.R. SANS GR40	100 %	17			
	98 %	14			
	97 %	13			
	95 %	11			
	93 %	9			
	90 %	7			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-18

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

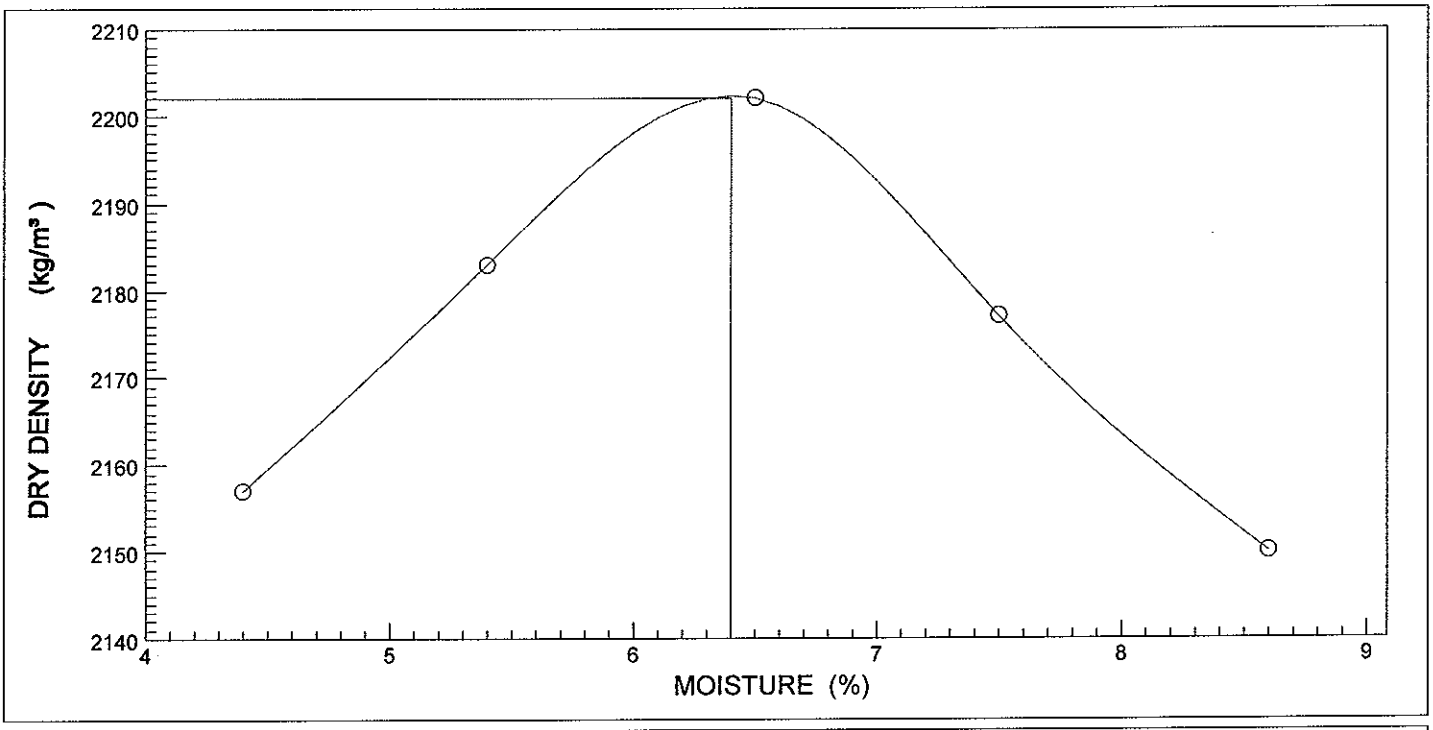
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9039
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	99kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.04m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP50
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-29
CLIENT MARKING	U9039
COLOUR AND TYPE	Dark Reddish Brown S.Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2157	2183	2202	2177	2150			
MOISTURE (%)	4.4	5.4	6.5	7.5	8.6			

MAXIMUM DRY DENSITY (kg/m³) : 2202	OPTIMUM MOISTURE CONTENT (%) : 6.4



Deviation from Test Method :
Remarks and Notes :

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Roelof Vategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

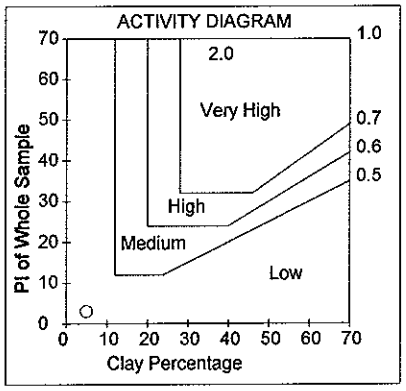
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

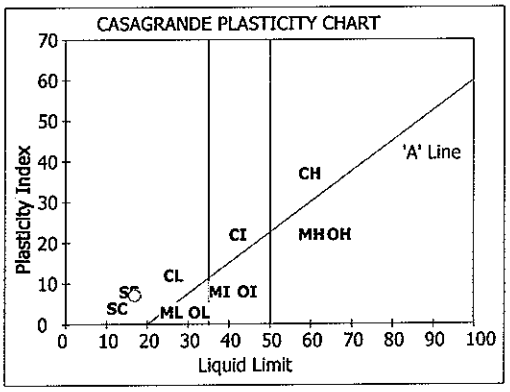
Sample No.	: U9039
Position	: TP 50; 0.0-0.4m
Layer Type	: Sample 34
Sample Colour	: Dark Reddish Brown
Sample Type	: Mix Quartz

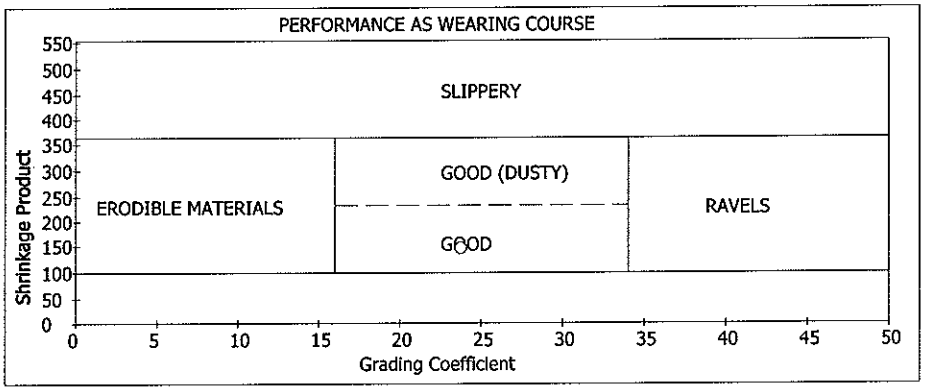
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	99
20.00	97
14.00	95
5.000	82
2.000	70
0.425	49
0.250	40
0.150	30
0.075	22
0.060	8.4
0.050	8.2
0.020	7.0
0.005	5.5
0.002	4.8

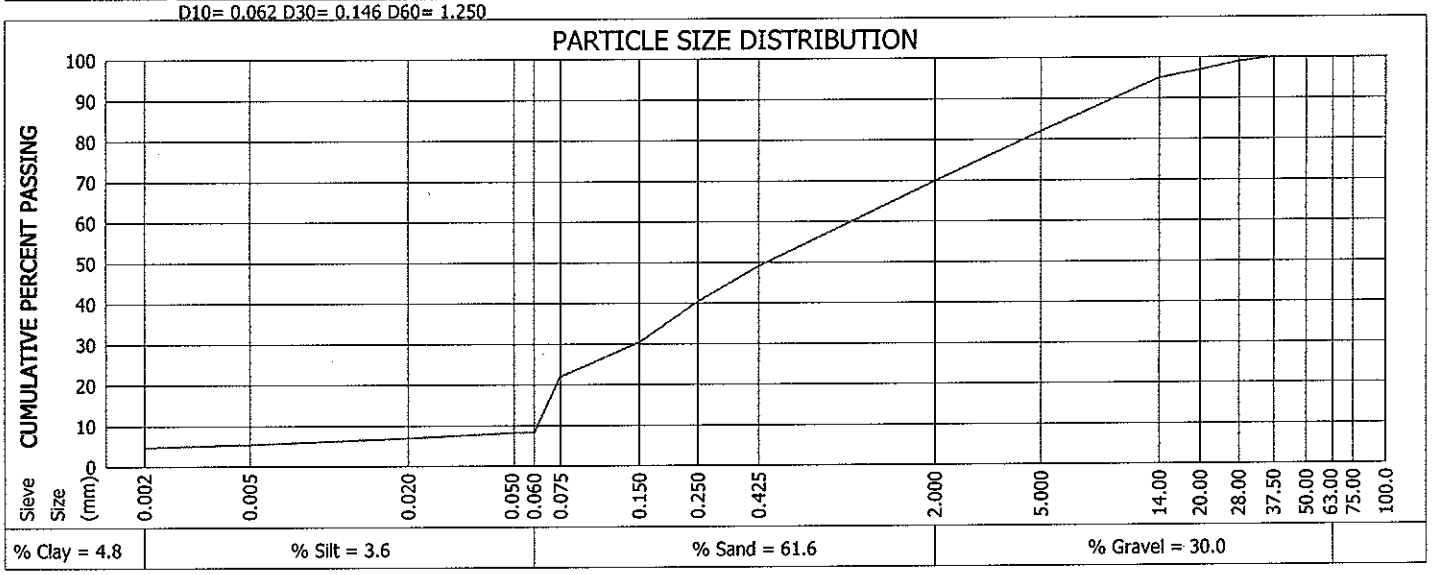
Soil Mortar	2.000 - 0.425	30
	0.425 - 0.250	13
	0.250 - 0.150	14
	0.150 - 0.075	12
	< 0.075	31
Effective Size		0.062
Uniformity Coefficient		20.2
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		147.0
Grading Coefficient		23.8
Grading Modulus		1.60
Atterberg Limits	Liquid Limit	17
	Plasticity Index	7
	Linear Shrinkage	3.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.062 D30= 0.146 D60= 1.250









% Clay = 4.8	% Silt = 3.6	% Sand = 61.6	% Gravel = 30.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-02

Project : Okiep 100 Infill

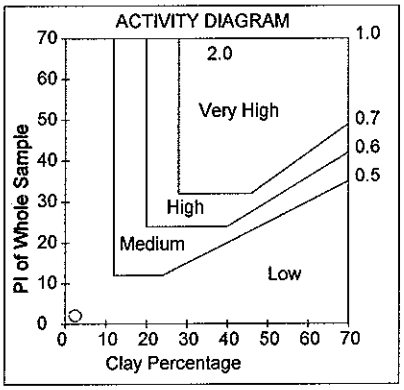
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

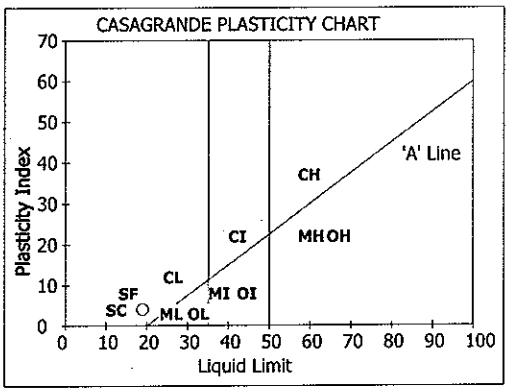
Sample No.	: U9040
Position	: TP 51- 0.0-0.4m
Layer Type	: Sample 35
Sample Colour	: Brown
Sample Type	: Mix Quartzstone

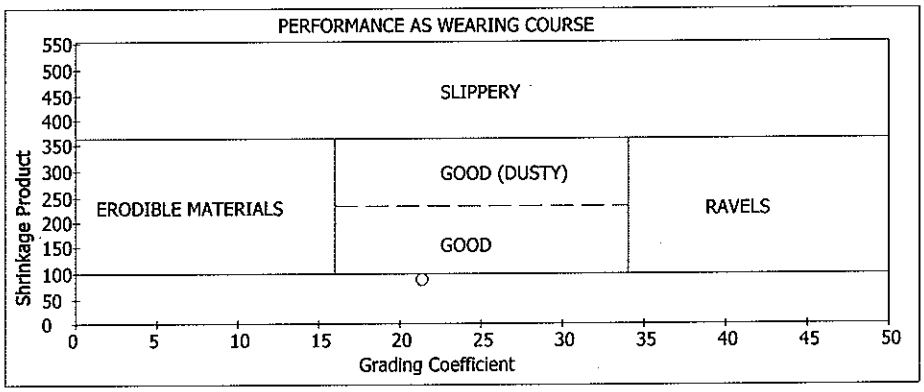
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	94
20.00	91
14.00	89
5.000	79
2.000	67
0.425	44
0.250	35
0.150	25
0.075	16
0.060	7,3
0.050	7,1
0.020	4,9
0.005	3,3
0.002	2,4

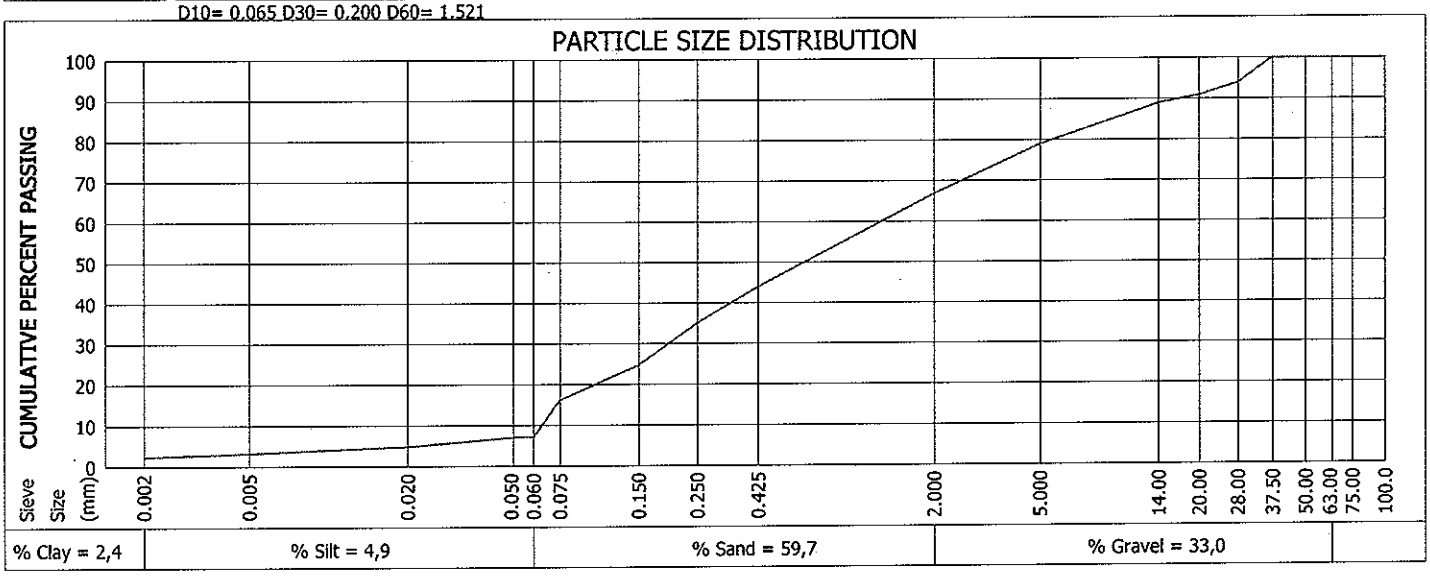
Soil Mortar	2.000 - 0.425	35
	0.425 - 0.250	13
	0.250 - 0.150	15
	0.150 - 0.075	13
	< 0.075	24
Effective Size		0,065
Uniformity Coefficient		23,4
Curvature Coefficient		0,4
Oversize Index		0,0
Shrinkage Product		88,0
Grading Coefficient		21,3
Grading Modulus		1,70
Atterberg Limits	Liquid Limit	19
	Plasticity Index	4
	Linear Shrinkage	2,0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.065 D30= 0.200 D60= 1.521









% Clay = 2,4	% Silt = 4,9	% Sand = 59,7	% Gravel = 33,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-02

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

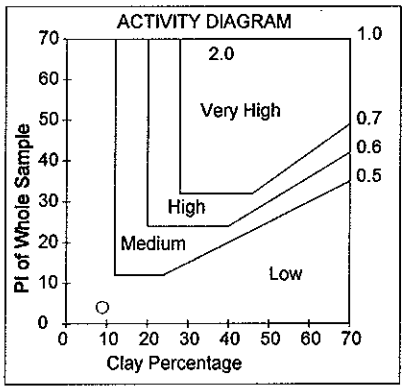
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

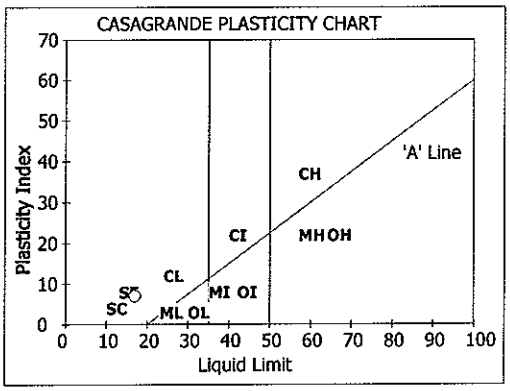
Sample No.	: U9099
Position	: TP 52- 0.0-0.3m
Layer Type	: Sample 91
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

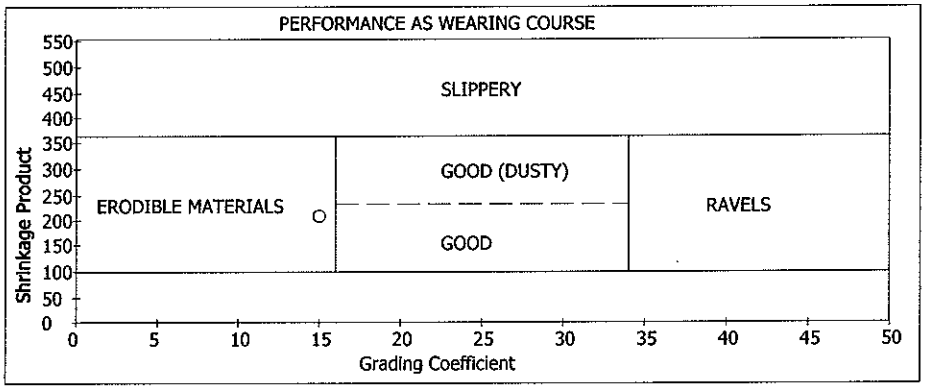
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	98
28.00	94
20.00	94
14.00	92
5.000	83
2.000	76
0.425	60
0.250	52
0.150	40
0.075	30
0.060	15
0.050	14
0.020	13
0.005	11
0.002	8,8

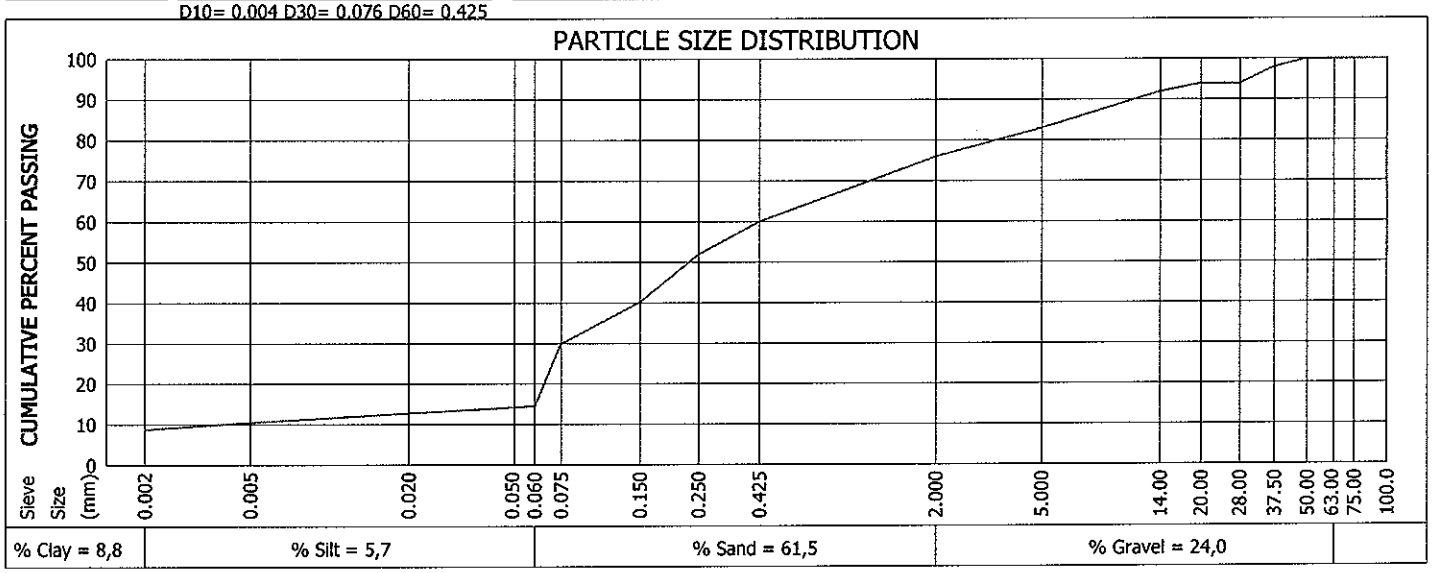
Soil Mortar	2.000 - 0.425	21
	0.425 - 0.250	11
	0.250 - 0.150	15
	0.150 - 0.075	14
	< 0.075	40
Effective Size		0,004
Uniformity Coefficient		106,3
Curvature Coefficient		3,4
Oversize Index		2,0
Shrinkage Product		210,0
Grading Coefficient		14,9
Grading Modulus		1,30
Atterberg Limits	Liquid Limit	17
	Plasticity Index	7
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.004 D30= 0.076 D60= 0.425









% Clay = 8,8	% Silt = 5,7	% Sand = 61,5	% Gravel = 24,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Manager

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Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9041			
HOLE NO./ Km / CHAINAGE	TP54			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 36			
LAYER TESTED/SAMPLED	0.4 - 0.9m			
SAMPLE DEPTH	0.4 - 0.9m			
DATE SAMPLED	2020-02-30			
COLOUR OF SAMPLE	Light Brown			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm				
	37.5 mm				
	28.0 mm				
	20.0 mm	100			
	14.0 mm	95			
	5.0 mm	73			
	2.0 mm	59			
	0.425 mm	37			
	0.075 mm	18			
GM %		1.9			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	37			
COARSE FINE SAND	0.425 - 0.250	10			
MEDIUM FINE SAND	0.250 - 0.150	12			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	30			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	36			
	PLASTICITY INDEX	8			
	LINEAR SHRINKAGE	3.5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	G9			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	13.1			
	MDD (kg/m³)	1850			
	COMP MC %	12.5			
SWELL % @	MOD | NRB | PRO	0.03 | 0.06 | 0.09			
C.B.R. SANS GR40	100 %	17			
	98 %	14			
	97 %	13			
	95 %	11			
	93 %	9			
	90 %	7			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-18

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

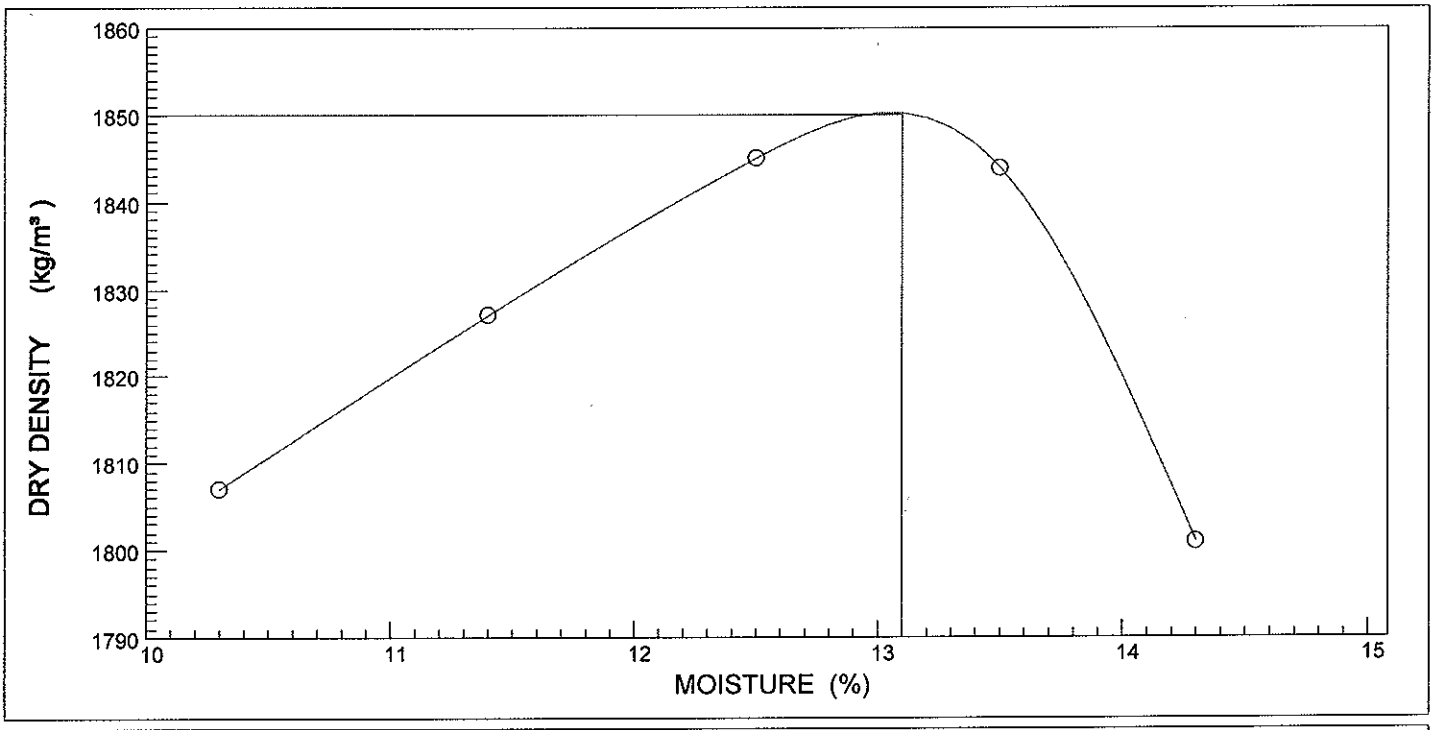
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9041
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	101kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.4 - 0.9m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP54
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-30
CLIENT MARKING	U9041
COLOUR AND TYPE	Light Brown

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	1807	1827	1845	1844	1801			
MOISTURE (%)	10.3	11.4	12.5	13.5	14.3			

MAXIMUM DRY DENSITY (kg/m³) : 1850	OPTIMUM MOISTURE CONTENT (%) : 13.1



Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-19

Project : Okiep 100 Infill

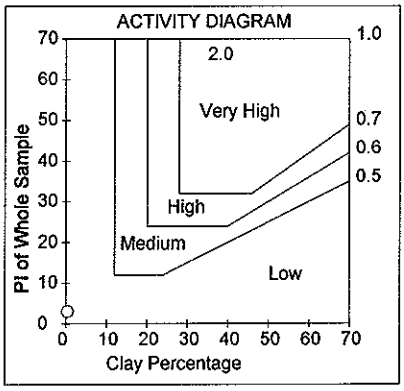
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

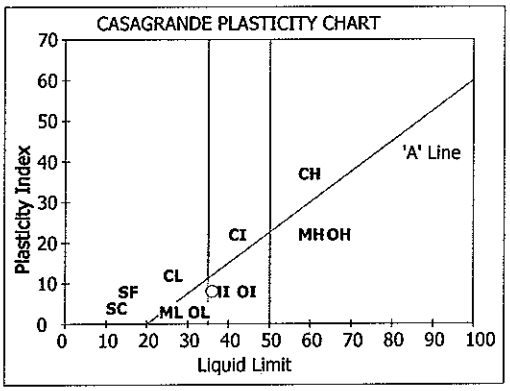
Sample No.	: U9041
Position	: TP 54; 0.4-0.9m
Layer Type	: Sample
Sample Colour	: Light Brown
Sample Type	: Mix Quartzstone

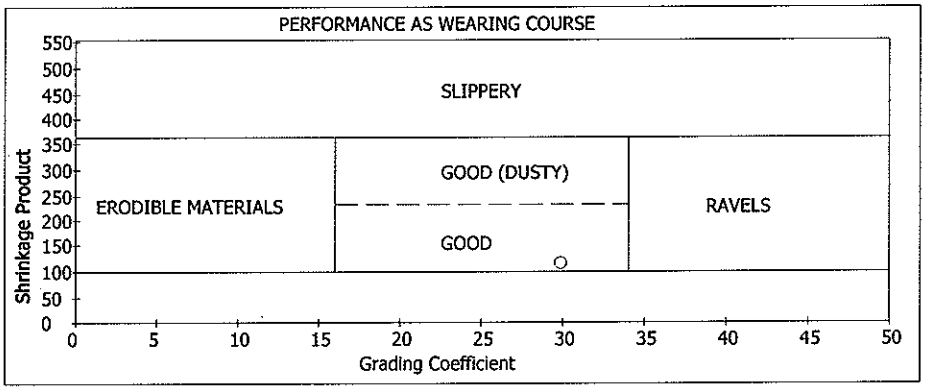
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	95
5.000	73
2.000	59
0.425	33
0.250	28
0.150	22
0.075	16
0.060	3.8
0.050	3.7
0.020	2.8
0.005	1.5
0.002	0.7

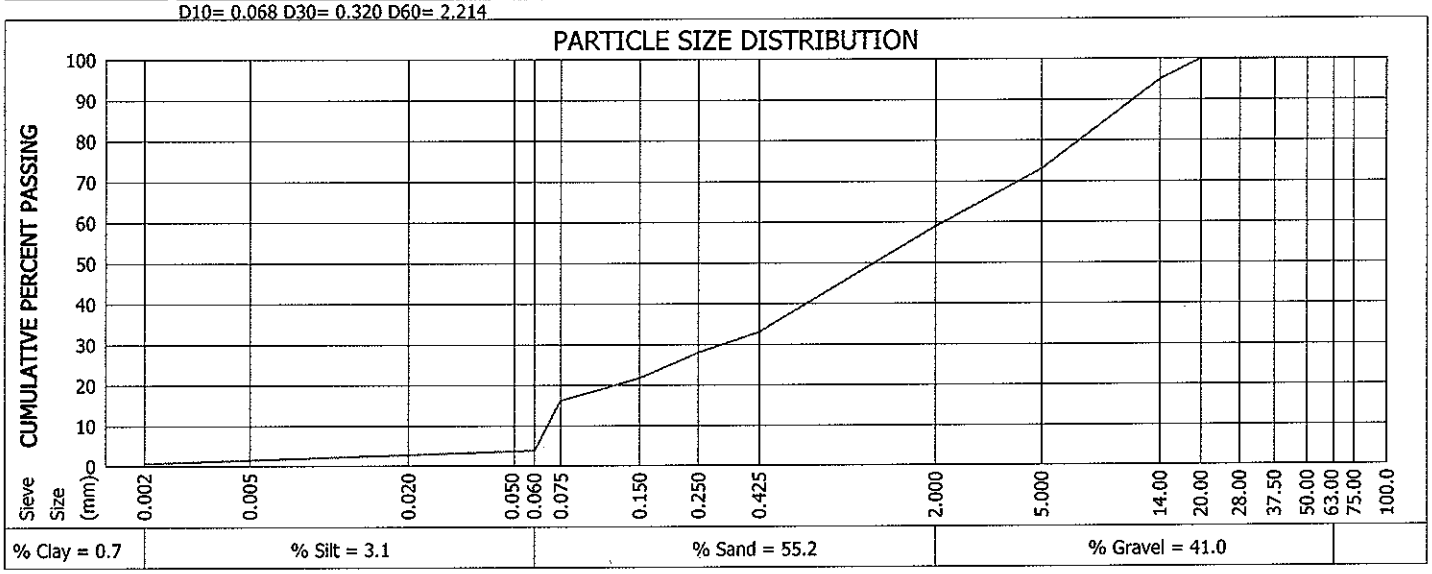
Soil Mortar	2.000 - 0.425	44
	0.425 - 0.250	9
	0.250 - 0.150	10
	0.150 - 0.075	10
	< 0.075	27
Effective Size		0.068
Uniformity Coefficient		32.6
Curvature Coefficient		0.7
Oversize Index		0.0
Shrinkage Product		115.5
Grading Coefficient		29.9
Grading Modulus		1.90
Atterberg Limits	Liquid Limit	36
	Plasticity Index	8
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		SM
US Highway Classification		A-2-4(0)

D10= 0.068 D30= 0.320 D60= 2.214









% Clay = 0.7	% Silt = 3.1	% Sand = 55.2	% Gravel = 41.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-02

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

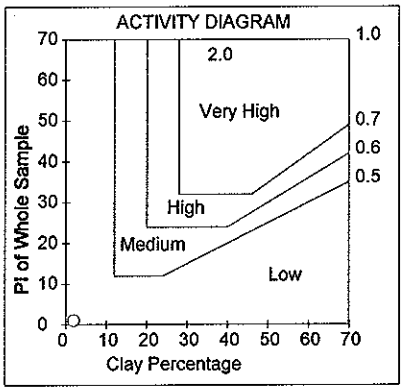
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

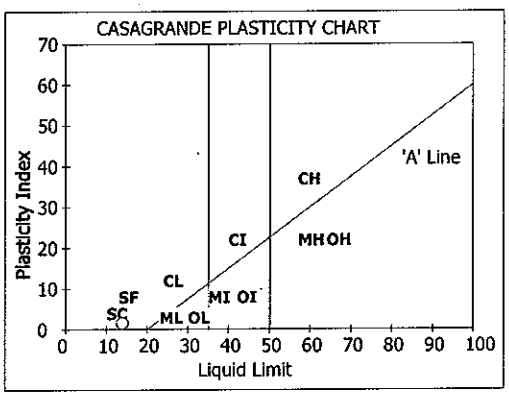
Sample No.	: U9042
Position	: TP 55- 0.0-0.3m
Layer Type	: Sample 37
Sample Colour	: Orange Brown
Sample Type	: Mix Quartz

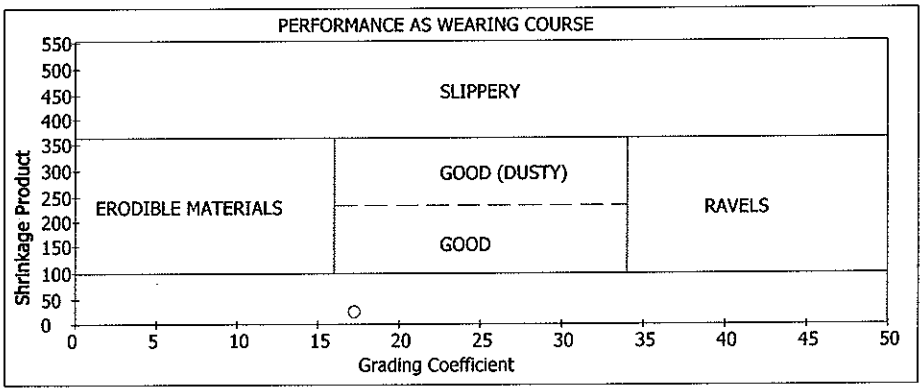
Sieve Size(mm)	% Passing
100.0	100
75.00	98
63.00	98
50.00	98
37.50	93
28.00	89
20.00	87
14.00	85
5.000	72
2.000	65
0.425	47
0.250	38
0.150	27
0.075	17
0.060	6.7
0.050	6.4
0.020	4.5
0.005	2.5
0.002	1.9

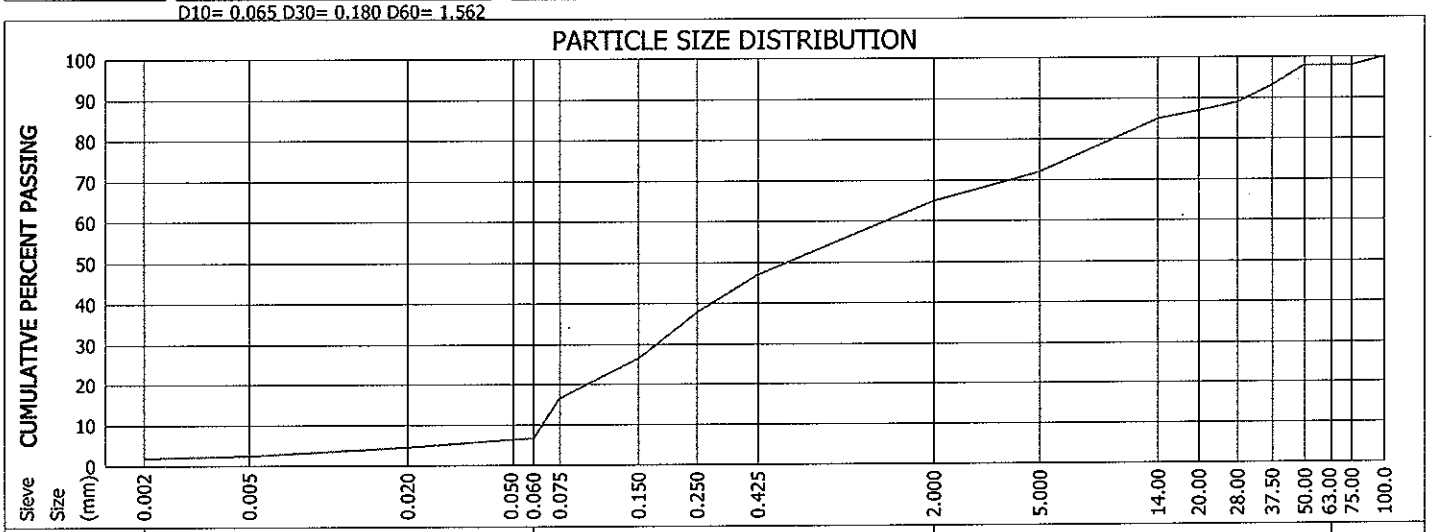
Soil Mortar	2.000 - 0.425	28
	0.425 - 0.250	14
	0.250 - 0.150	17
	0.150 - 0.075	16
	< 0.075	25
Effective Size		0.065
Uniformity Coefficient		24.0
Curvature Coefficient		0.3
Oversize Index		5.0
Shrinkage Product		23.5
Grading Coefficient		17.3
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	14
	Plasticity Index	1.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.065 D30= 0.180 D60= 1.562









% Clay = 1.9	% Silt = 4.8	% Sand = 58.3	% Gravel = 33.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-02

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

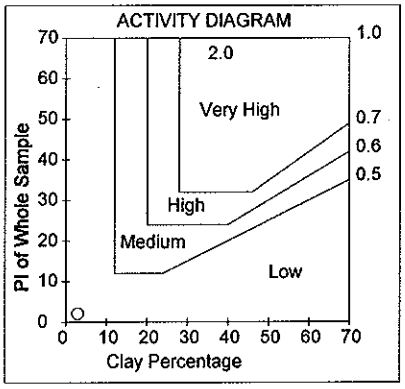
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

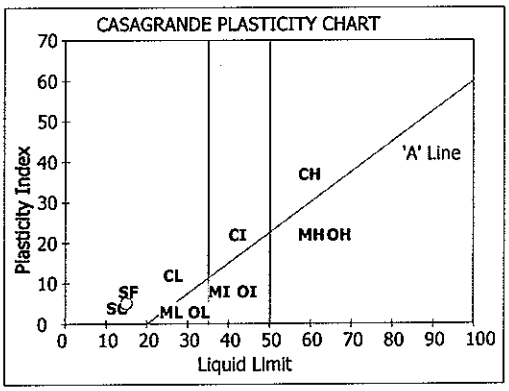
Sample No.	: U9043
Position	: TP 56- 0.0-0.4m
Layer Type	: Sample 38
Sample Colour	: Orange Brown
Sample Type	: Mix Quartz

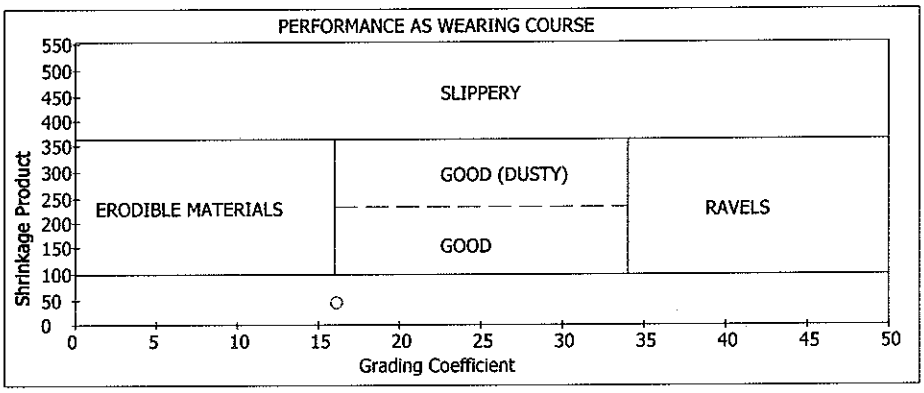
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	97
50.00	95
37.50	92
28.00	87
20.00	83
14.00	80
5.000	70
2.000	64
0.425	44
0.250	35
0.150	23
0.075	14
0.060	7.6
0.050	7.4
0.020	6.0
0.005	4.7
0.002	3.0

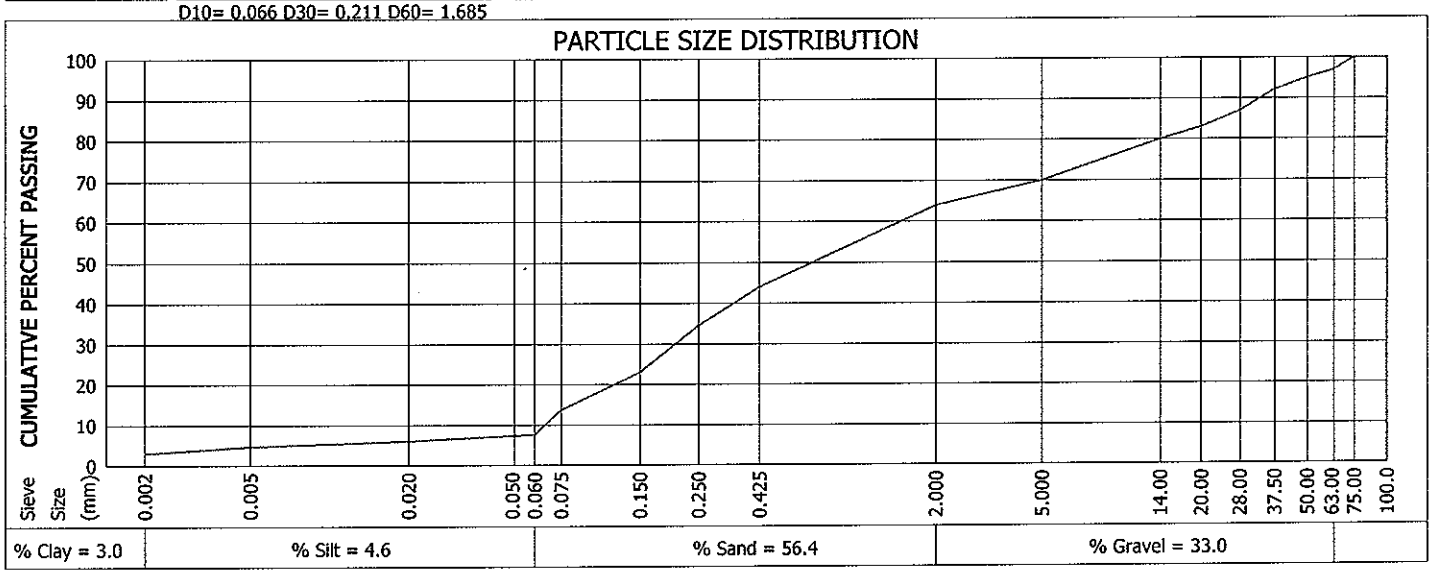
Soil Mortar	2.000 - 0.425	31
	0.425 - 0.250	14
	0.250 - 0.150	18
	0.150 - 0.075	14
	< 0.075	22
Effective Size		0.066
Uniformity Coefficient		25.5
Curvature Coefficient		0.4
Oversize Index		3.0
Shrinkage Product		44.0
Grading Coefficient		16.1
Grading Modulus		1.80
Atterberg Limits	Liquid Limit	15
	Plasticity Index	5
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.066 D30= 0.211 D60= 1.685









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
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Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-02

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

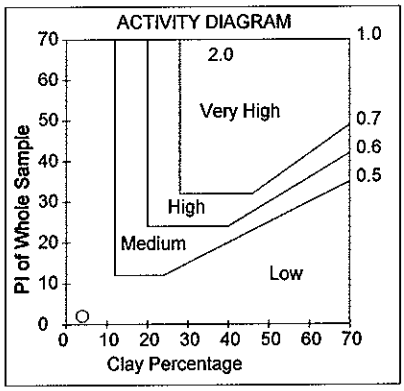
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

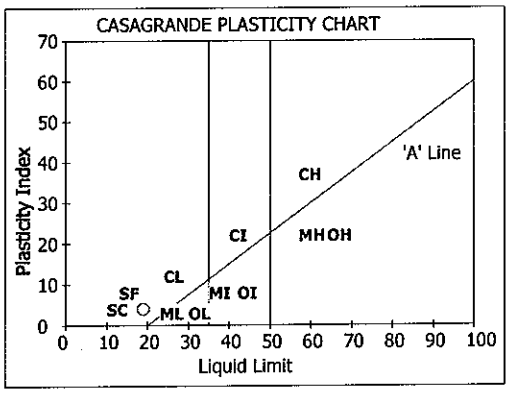
Sample No.	: U9044
Position	: TP 57- 0.0-0.3m
Layer Type	: Sample 39
Sample Colour	: Orange Brown
Sample Type	: Mix Quartz

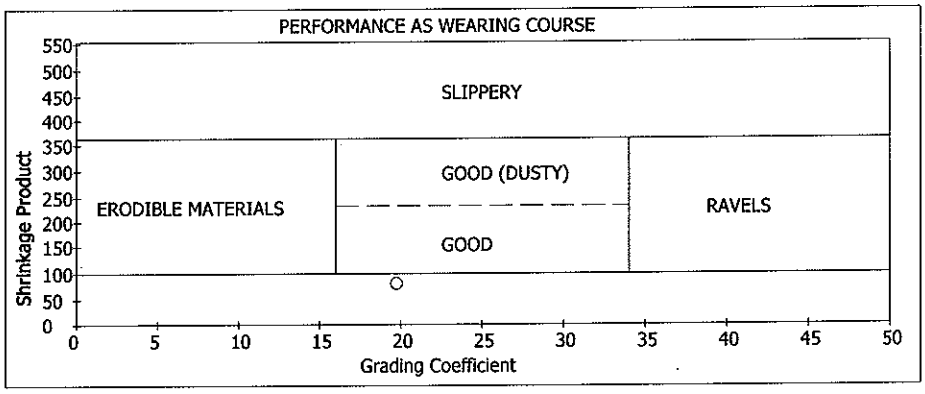
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	94
2.000	79
0.425	40
0.250	32
0.150	24
0.075	18
0.060	7.7
0.050	7.4
0.020	5.4
0.005	5.0
0.002	3.8

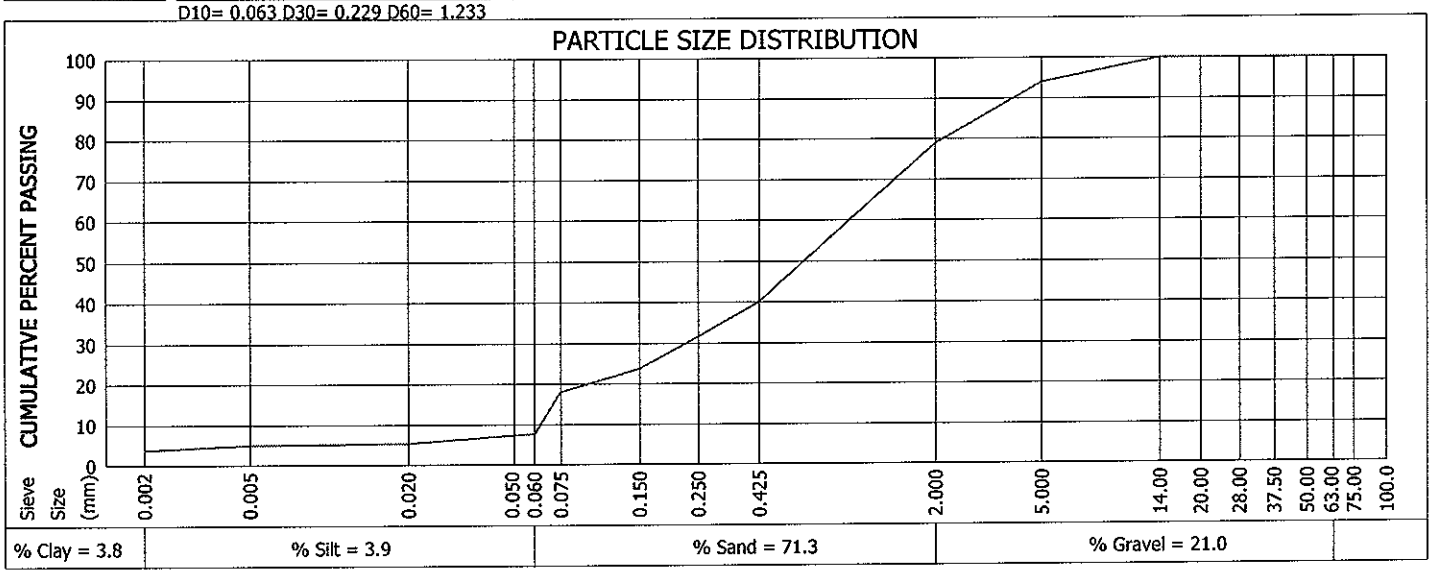
Soil Mortar	2.000 - 0.425	49
	0.425 - 0.250	11
	0.250 - 0.150	10
	0.150 - 0.075	7
	< 0.075	23
Effective Size		0.063
Uniformity Coefficient		19.6
Curvature Coefficient		0.7
Oversize Index		0.0
Shrinkage Product		80.0
Grading Coefficient		19.7
Grading Modulus		1.60
Atterberg Limits	Liquid Limit	19
	Plasticity Index	4
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.063 D30= 0.229 D60= 1.233









% Clay = 3.8	% Silt = 3.9	% Sand = 71.3	% Gravel = 21.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-09

Project : Okiep 100 Infill

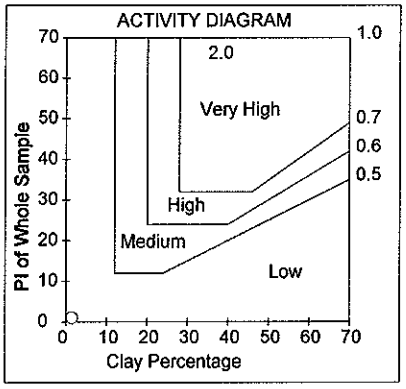
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

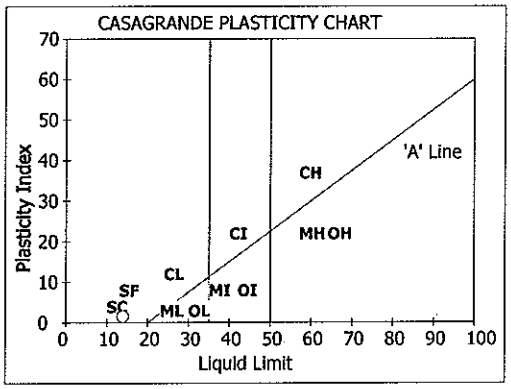
Sample No.	: U9045
Position	: TP 58; 0.0-0.3m
Layer Type	: Sample 40
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

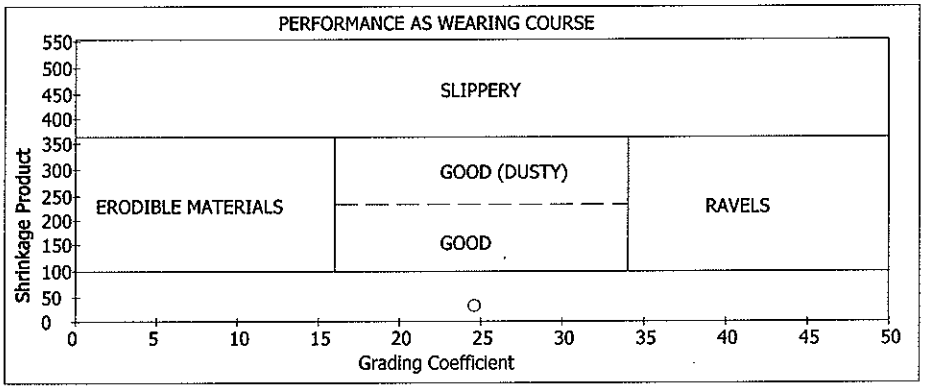
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	98
37.50	97
28.00	92
20.00	85
14.00	80
5.000	60
2.000	51
0.425	30
0.250	23
0.150	17
0.075	12
0.060	4,8
0.050	4,6
0.020	3,4
0.005	3,2
0.002	1,7

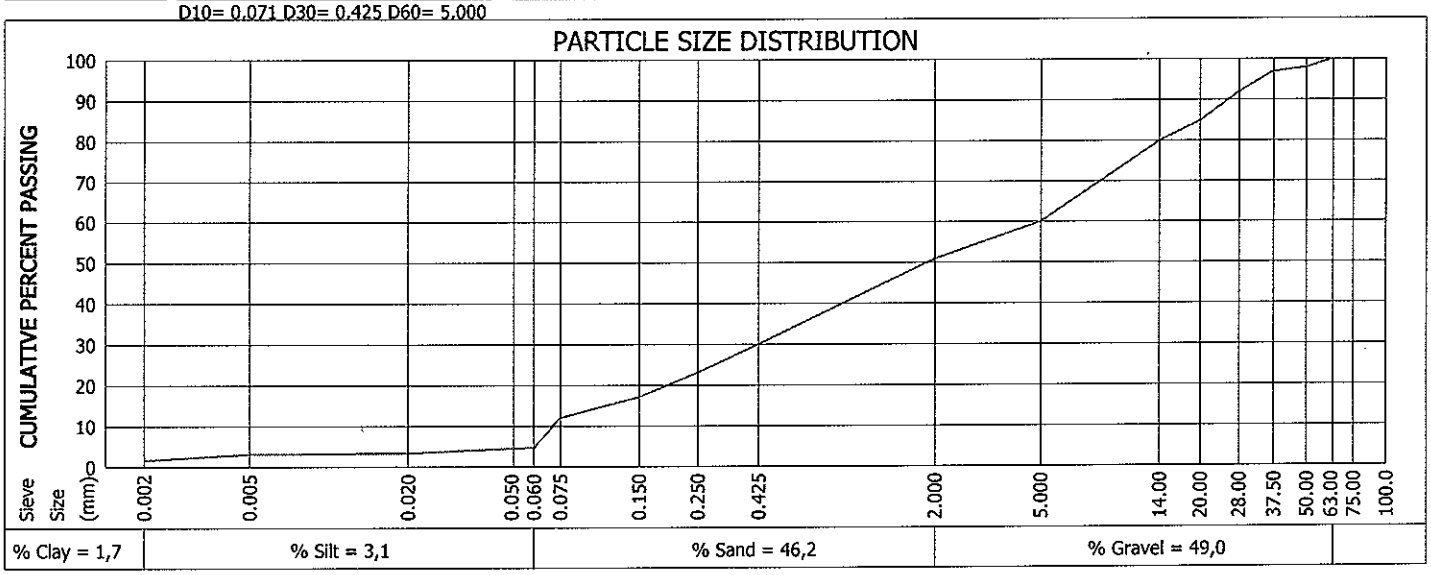
Soil Mortar	2.000 - 0.425	42
	0.425 - 0.250	13
	0.250 - 0.150	12
	0.150 - 0.075	10
	< 0.075	24
Effective Size		0,071
Uniformity Coefficient		70,4
Curvature Coefficient		0,5
Oversize Index		1,0
Shrinkage Product		30,0
Grading Coefficient		24,6
Grading Modulus		2,10
Atterberg Limits	Liquid Limit	14
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.071 D30= 0.425 D60= 5.000









% Clay = 1,7	% Silt = 3,1	% Sand = 46,2	% Gravel = 49,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-09

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9045			
HOLE NO./ Km / CHAINAGE		TP58			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 40			
LAYER TESTED/SAMPLED		0.0 - 0.3m			
SAMPLE DEPTH		0.0 - 0.3m			
DATE SAMPLED		N/S			
COLOUR OF SAMPLE		Dark Orange			
TYPE OF SAMPLE		Mix Quartzstone			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	89			
	37.5 mm	83			
	28.0 mm	56			
	20.0 mm	15			
	14.0 mm	9			
	5.0 mm				
	2.0 mm				
	0.425 mm				
	0.075 mm				
GM %		4,0			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425				
COARSE FINE SAND	0.425 - 0.250	44			
MEDIUM FINE SAND	0.250 - 0.150	39			
FINE FINE SAND	0.150 - 0.075	36			
SILT CLAY	0.075	79			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	14			
	PLASTICITY INDEX	1.7			
	LINEAR SHRINKAGE	1.0			
CLASSIFICATION	H.R.B.	A-1-a(0)			
	COLTO	-			
	TRH 14	G10			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	5,6			
	MDD (kg/m³)	2210			
	COMP MC %	5,7			
SWELL % @	MOD | NRB | PRO	0,02 | 0,05 | 0,08			
C.B.R. SANS GR40	100 %	78			
	98 %	47			
	97 %	37			
	95 %	22			
	93 %	14			
	90 %	6			
STABILISER IN LAB		N/A			
TEST TYPE		CBR			
SAMPLING METHOD		Client			
WEATHER WHEN SAMPLED		Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-18

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

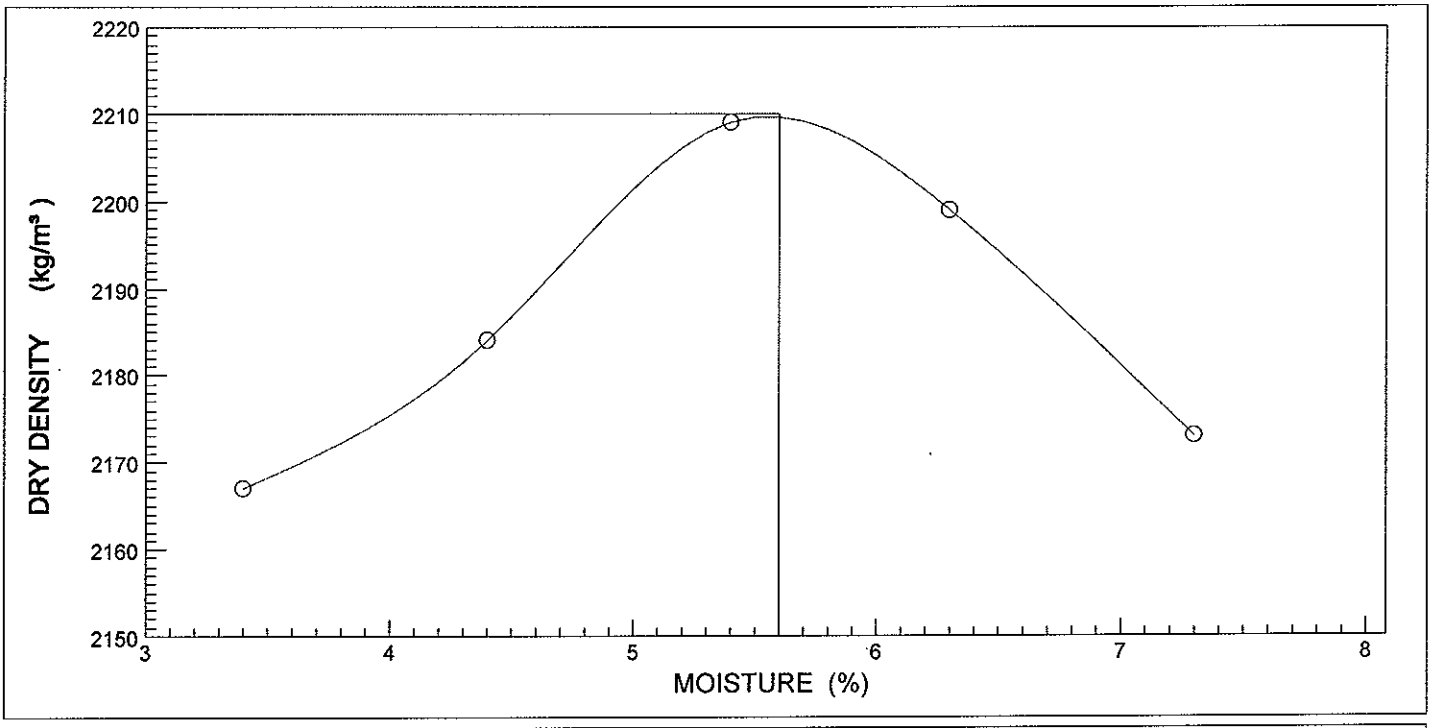
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9045
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	99kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.3m
MATERIAL DESCRIPTION	Mix Weathered Quartz
HOLE NO./ km / CHAINAGE	TP58
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	Not Specified
CLIENT MARKING	U9045
COLOUR AND TYPE	Dark Orange Brown S.Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2167	2184	2209	2199	2173			
MOISTURE (%)	3.4	4.4	5.4	6.3	7.3			

MAXIMUM DRY DENSITY (kg/m³) : 2210	OPTIMUM MOISTURE CONTENT (%) : 5.6



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-04

Project : Okiep 100 Infill

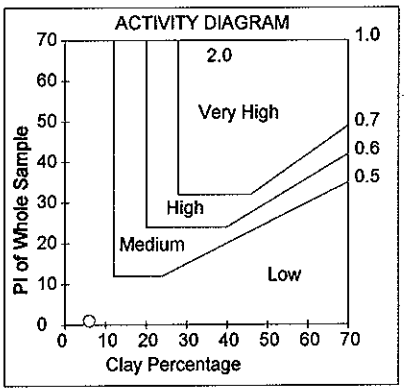
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

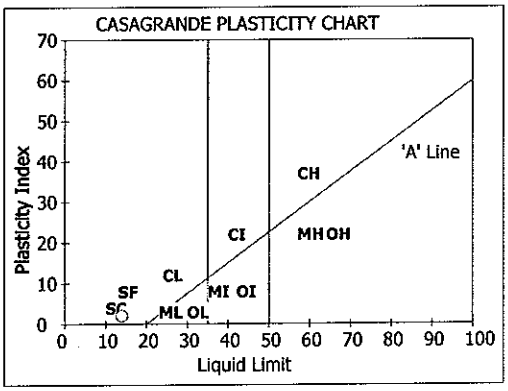
Sample No.	: U9046
Position	: TP60 - 0.0-0.4m
Layer Type	: Sample 41
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

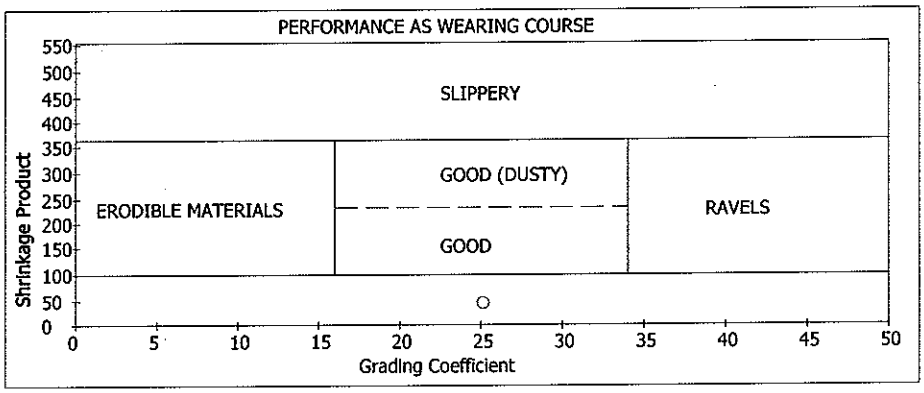
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	97
28.00	94
20.00	92
14.00	89
5.000	81
2.000	63
0.425	44
0.250	36
0.150	26
0.075	18
0.060	9,1
0.050	8,8
0.020	7,9
0.005	6,7
0.002	5,9

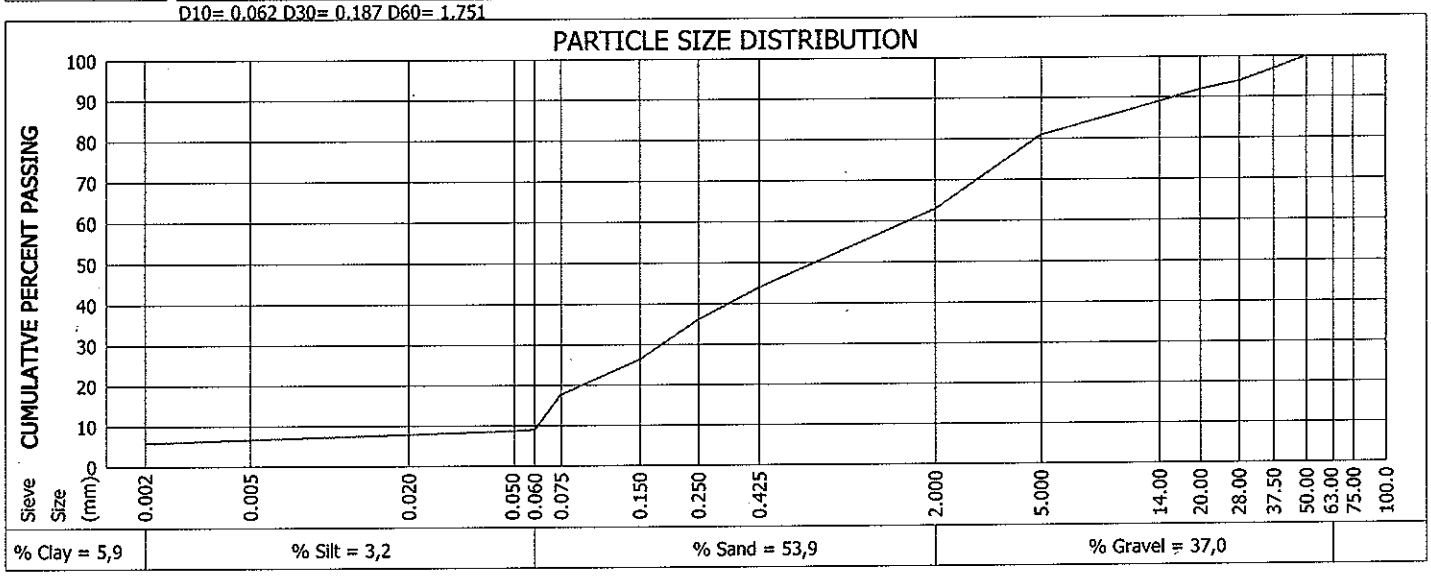
Soil Mortar	2.000 - 0.425	30
	0.425 - 0.250	13
	0.250 - 0.150	16
	0.150 - 0.075	13
	< 0.075	28
Effective Size		0,062
Uniformity Coefficient		28,2
Curvature Coefficient		0,3
Oversize Index		3,0
Shrinkage Product		44,0
Grading Coefficient		25,1
Grading Modulus		1,70
Atterberg Limits	Liquid Limit	14
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.062 D30= 0.187 D60= 1.751









% Clay = 5,9	% Silt = 3,2	% Sand = 53,9	% Gravel = 37,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-20

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9047			
HOLE NO./ Km / CHAINAGE		TP61			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 42			
LAYER TESTED/SAMPLED		0.0 - 0.1m			
SAMPLE DEPTH		0.0 - 0.1m			
DATE SAMPLED		2020-01-30			
COLOUR OF SAMPLE		Brown			
TYPE OF SAMPLE		Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm				
	37.5 mm				
	28.0 mm				
	20.0 mm				
	14.0 mm	100			
	5.0 mm	98			
	2.0 mm	91			
	0.425 mm	58			
	0.075 mm	25			
GM %		1,3			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	36			
COARSE FINE SAND	0.425 - 0.250	10			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	13			
SILT CLAY	0.075	27			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	19			
	PLASTICITY INDEX	5			
	LINEAR SHRINKAGE	2.5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	-			
	TRH 14	G10			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	8,1			
	MDD (kg/m³)	2088			
	COMP MC %	8,1			
SWELL % @	MOD | NRB | PRO	0,02 | 0,05 | 0,08			
C.B.R. SANS GR40	100 %	7			
	98 %	6			
	97 %	5			
	95 %	5			
	93 %	4			
	90 %	3			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-18

Project : Okiep 100 Infill

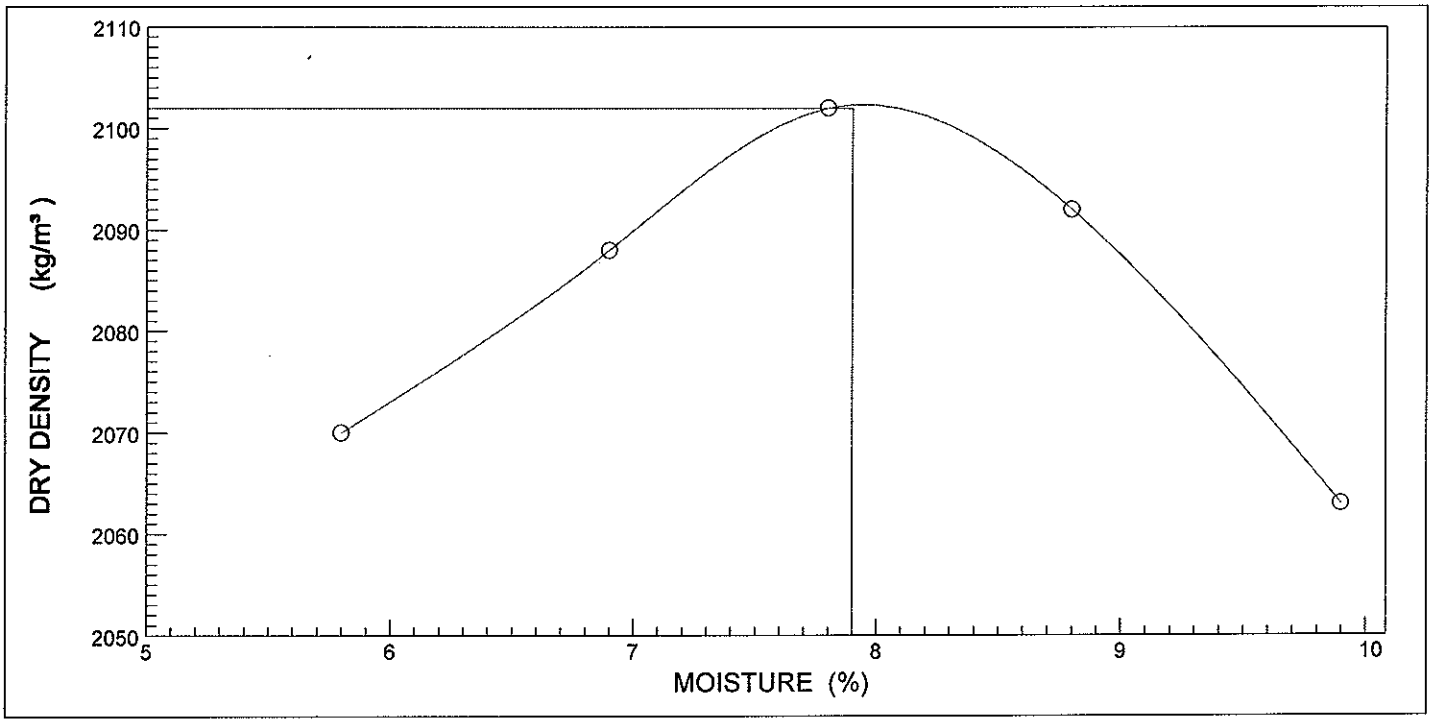
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9047
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	98kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.1m
MATERIAL DESCRIPTION	Mix Gravel
HOLE NO./ km / CHAINAGE	TP61
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-30
CLIENT MARKING	U9047
COLOUR AND TYPE	Brown Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2070	2088	2102	2092	2063			
MOISTURE (%)	5.8	6.9	7.8	8.8	9.9			

MAXIMUM DRY DENSITY (kg/m³) : 2102	OPTIMUM MOISTURE CONTENT (%) : 7.9



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-20

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

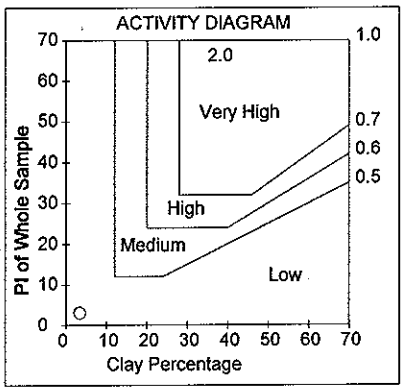
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

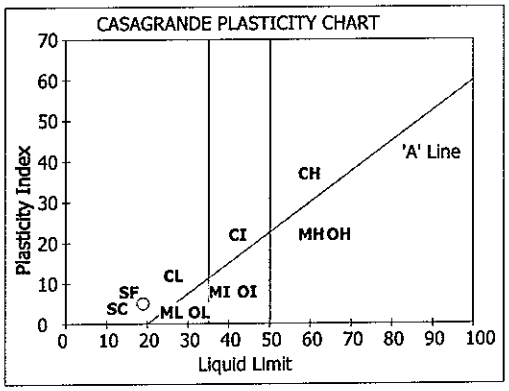
Sample No.	: U9047
Position	: TP 61 - 0.0-0.1m
Layer Type	: Sample 42
Sample Colour	: Brown
Sample Type	: Mix Quartz

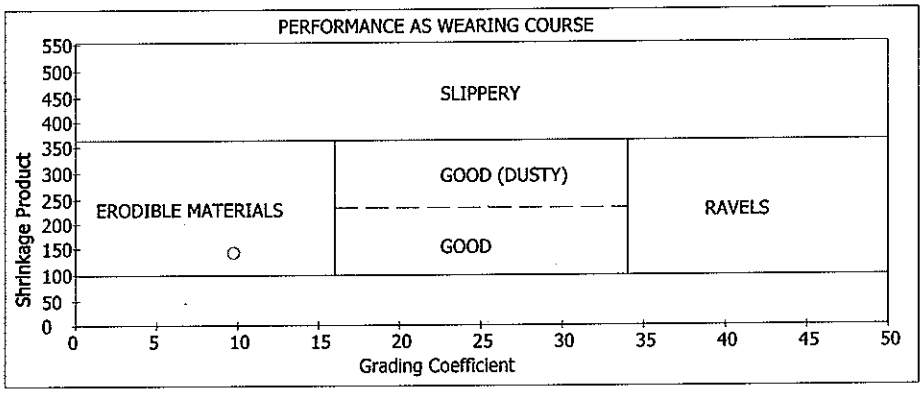
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	99
14.00	99
5.000	98
2.000	90
0.425	57
0.250	48
0.150	37
0.075	25
0.060	8.8
0.050	8.3
0.020	7.2
0.005	5.4
0.002	3.4

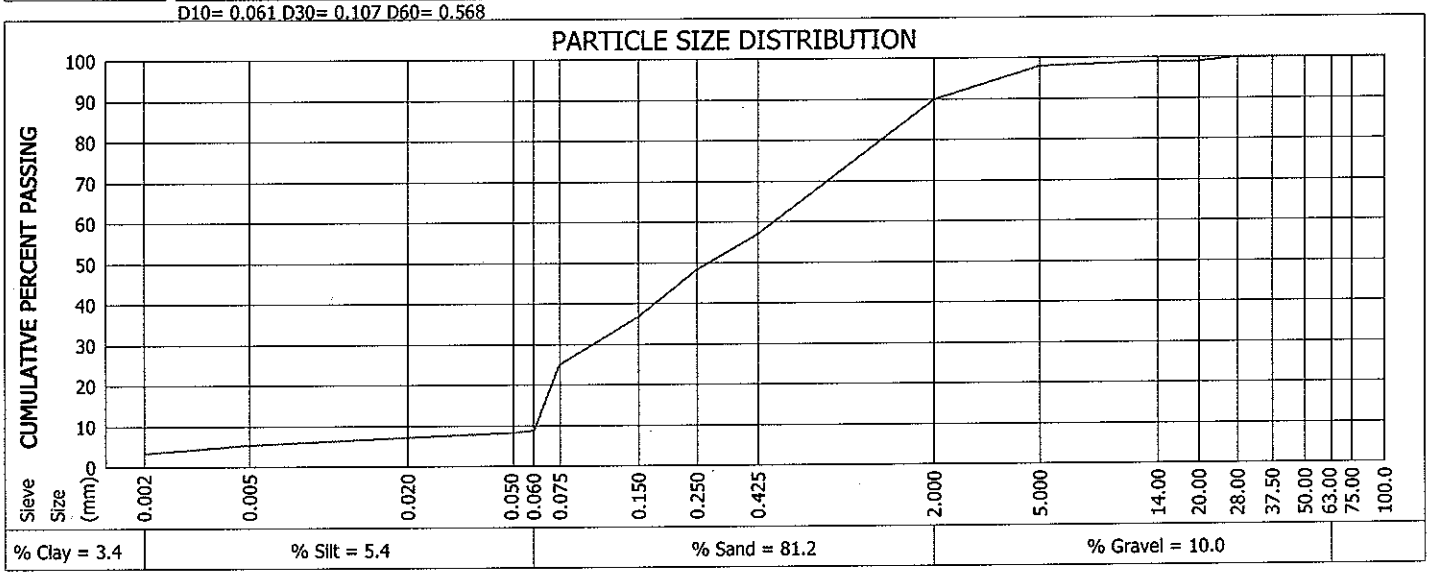
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	10
	0.250 - 0.150	13
	0.150 - 0.075	13
	< 0.075	28
Effective Size		0.061
Uniformity Coefficient		9.3
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		142.5
Grading Coefficient		9.8
Grading Modulus		1.30
Atterberg Limits	Liquid Limit	19
	Plasticity Index	5
	Linear Shrinkage	2.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.061 D30= 0.107 D60= 0.568









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-02

Project : Okiep 100 Infill

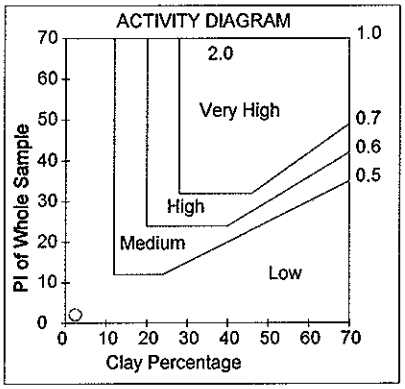
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

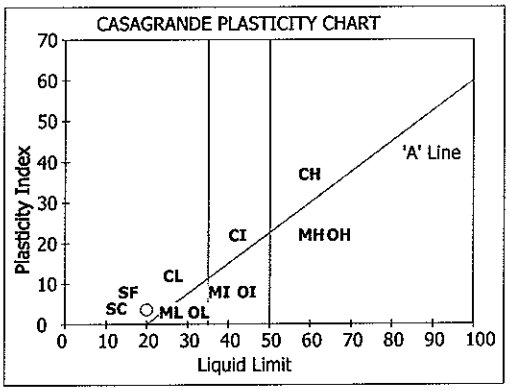
Sample No.	: U9048
Position	: TP 63- 0.0-0.4m
Layer Type	: Sample 43
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

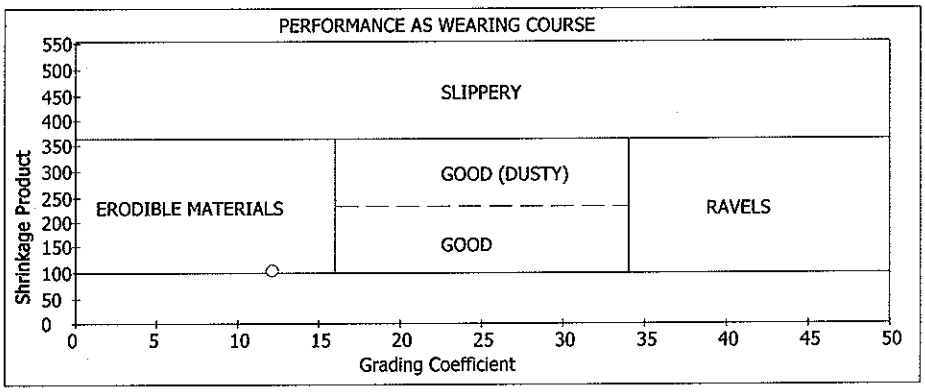
Sieve Size(mm)	% Passing
100.0	100
75.00	97
63.00	97
50.00	95
37.50	92
28.00	86
20.00	83
14.00	81
5.000	76
2.000	70
0.425	53
0.250	45
0.150	33
0.075	20
0.060	9.7
0.050	8.9
0.020	6.7
0.005	3.7
0.002	2.3

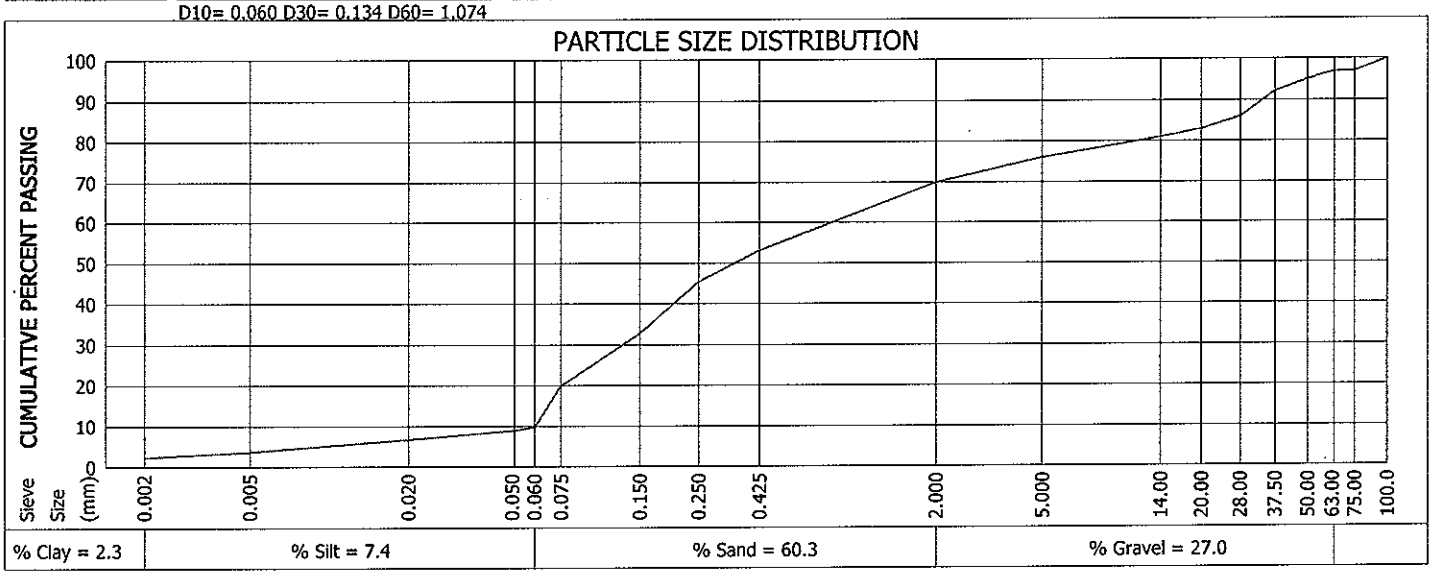
Soil Mortar	2.000 - 0.425	25
	0.425 - 0.250	11
	0.250 - 0.150	18
	0.150 - 0.075	18
	< 0.075	29
Effective Size		0.060
Uniformity Coefficient		17.9
Curvature Coefficient		0.3
Oversize Index		3.0
Shrinkage Product		106.0
Grading Coefficient		12.2
Grading Modulus		1.60
Atterberg Limits	Liquid Limit	20
	Plasticity Index	4.0
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.060 D30= 0.134 D60= 1.074









% Clay = 2.3	% Silt = 7.4	% Sand = 60.3	% Gravel = 27.0

Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 8.4 & Conductivity = 0.03 S/m [SANS 5854]

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Roelof Lategan
Manager

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ROADLAB

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11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-04

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

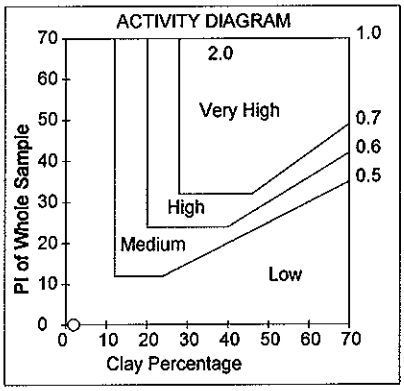
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

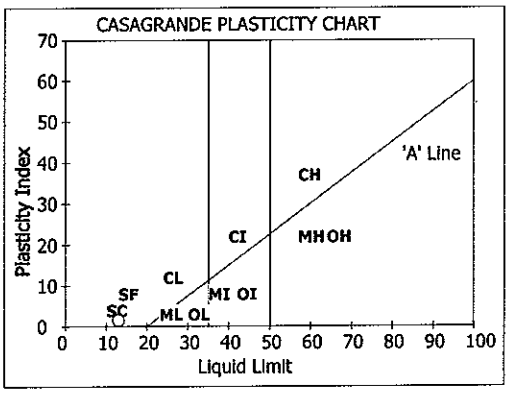
Sample No.	: U9049
Position	: TP65 - 0.0-0.6m
Layer Type	: Sample 44
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

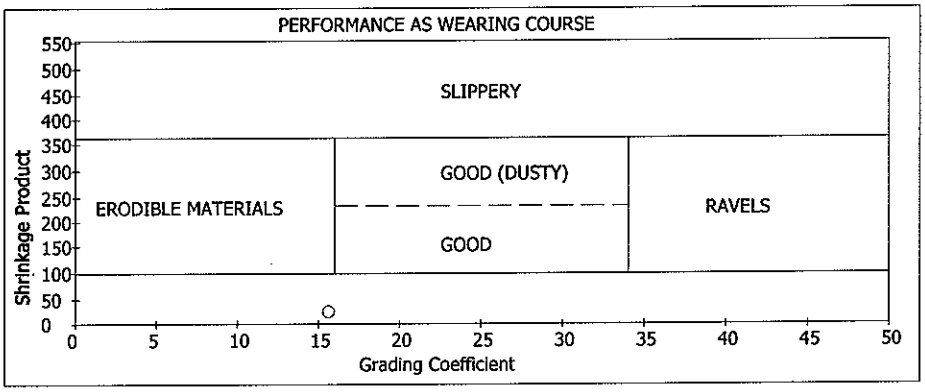
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	96
50.00	94
37.50	84
28.00	72
20.00	66
14.00	60
5.000	46
2.000	38
0.425	26
0.250	20
0.150	13
0.075	7.5
0.060	3.2
0.050	3.1
0.020	2.9
0.005	2.5
0.002	2.1

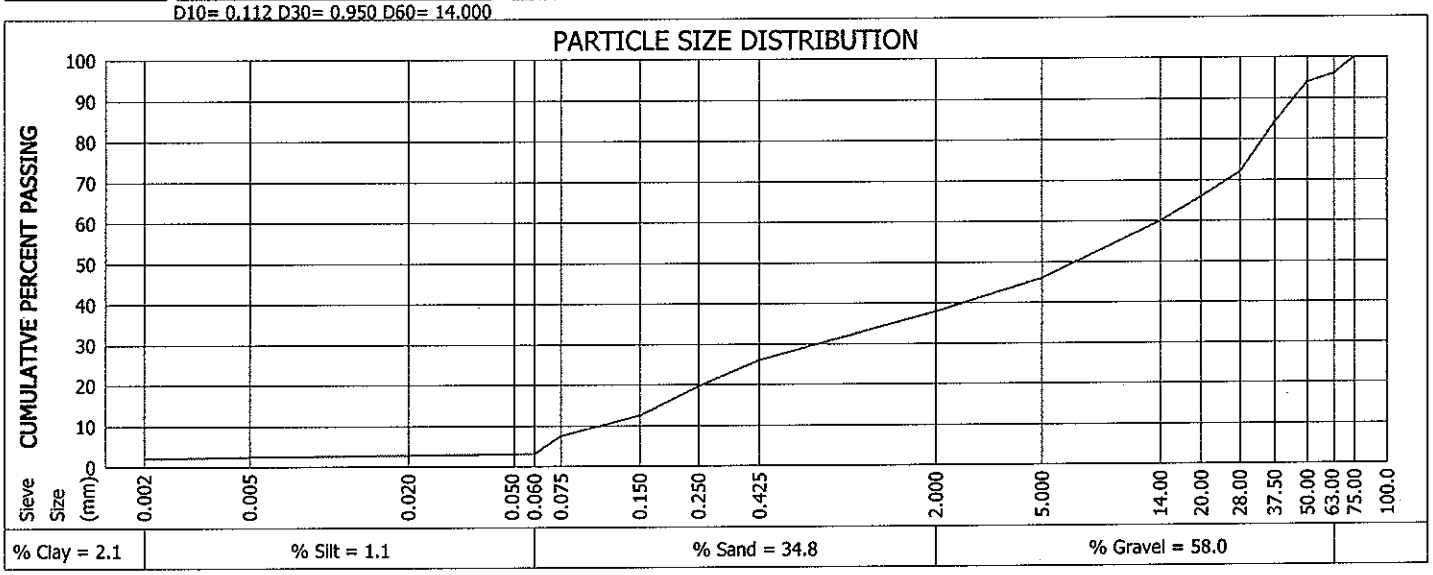
Soil Mortar	2.000 - 0.425	34
	0.425 - 0.250	15
	0.250 - 0.150	19
	0.150 - 0.075	12
	< 0.075	21
Effective Size		0.112
Uniformity Coefficient		125.0
Curvature Coefficient		0.6
Oversize Index		10.0
Shrinkage Product		26.0
Grading Coefficient		15.6
Grading Modulus		2.30
Atterberg Limits	Liquid Limit	13
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		GW-GC
US Highway Classification		A-1-a(0)

D10= 0.112 D30= 0.950 D60= 14.000









% Clay = 2.1	% Silt = 1.1	% Sand = 34.8	% Gravel = 58.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-04

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

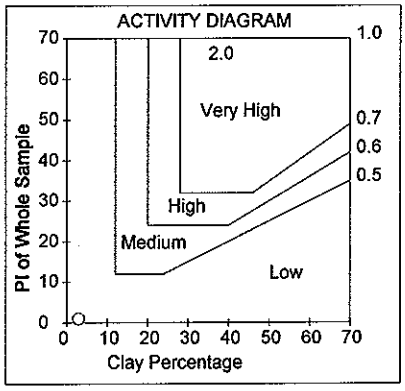
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

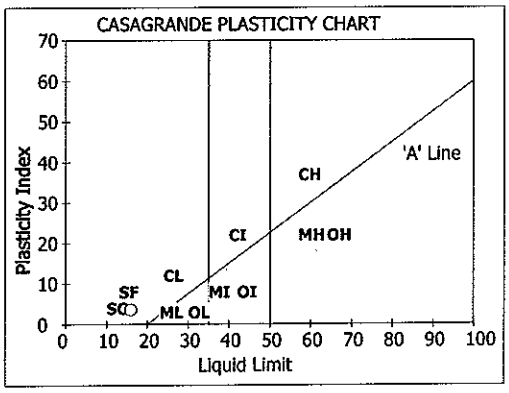
Sample No.	: U9050
Position	: TP66 - 0.0-0.5m
Layer Type	: Sample 45
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

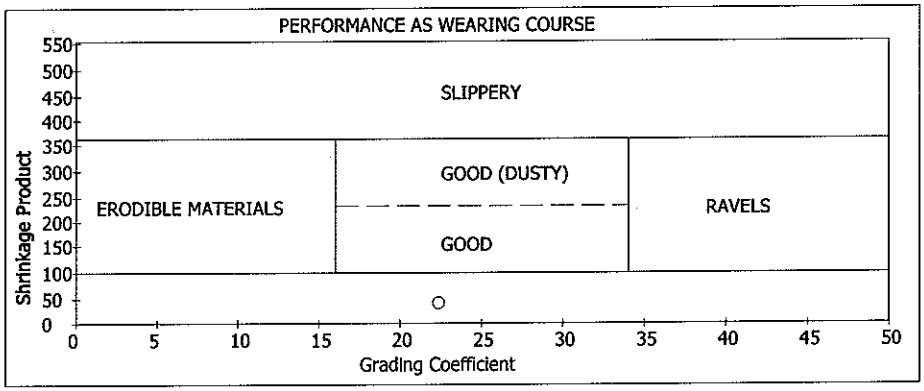
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	98
37.50	95
28.00	88
20.00	83
14.00	78
5.000	62
2.000	52
0.425	39
0.250	31
0.150	20
0.075	11
0.060	5.7
0.050	5.6
0.020	4.3
0.005	3.7
0.002	3.2

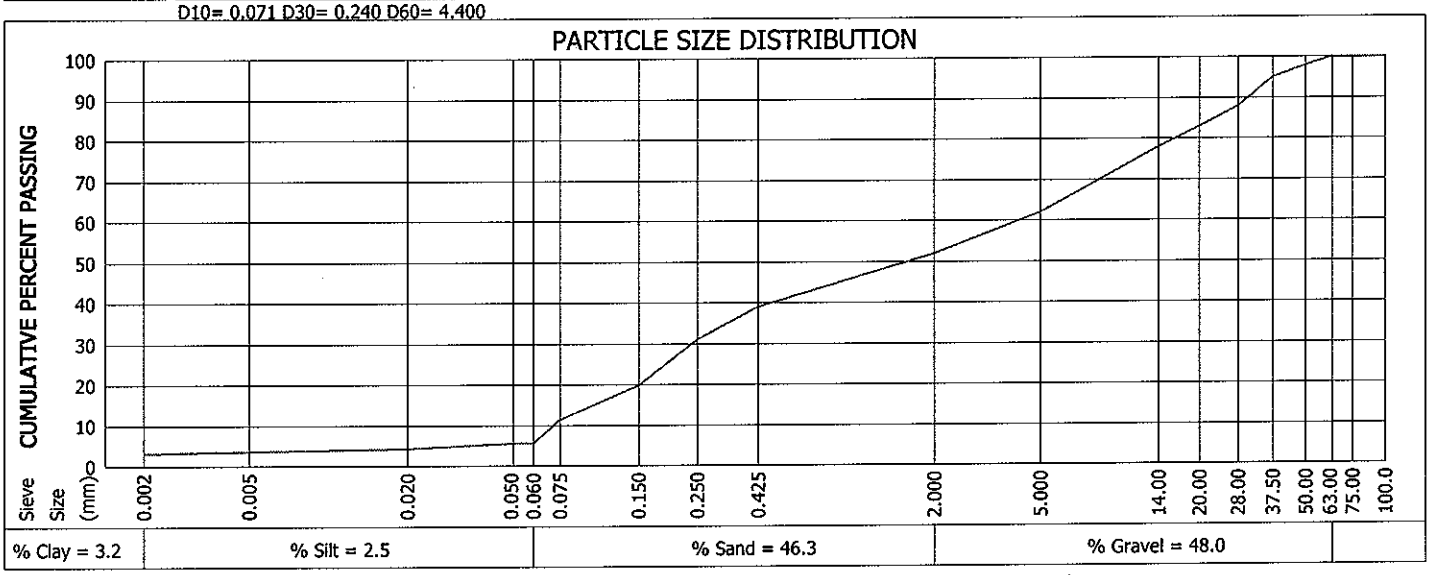
Soil Mortar	2.000 - 0.425	27
	0.425 - 0.250	14
	0.250 - 0.150	21
	0.150 - 0.075	17
	< 0.075	21
Effective Size		0.071
Uniformity Coefficient		62.0
Curvature Coefficient		0.2
Oversize Index		3.0
Shrinkage Product		39.0
Grading Coefficient		22.3
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	16
	Plasticity Index	4.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.071 D30= 0.240 D60= 4.400









Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-04

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

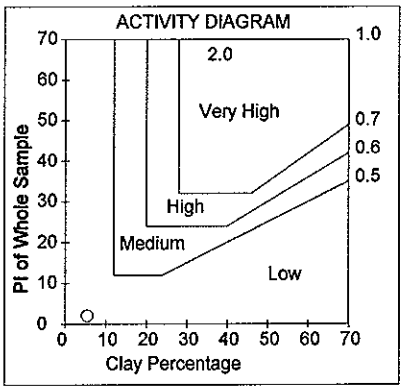
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

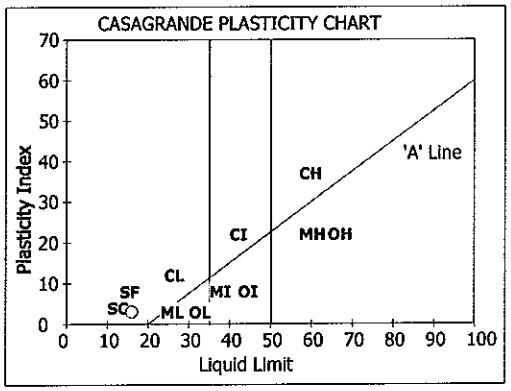
Sample No.	: U9051
Position	: TP68 - 0.0-0.3m
Layer Type	: Sample 46
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

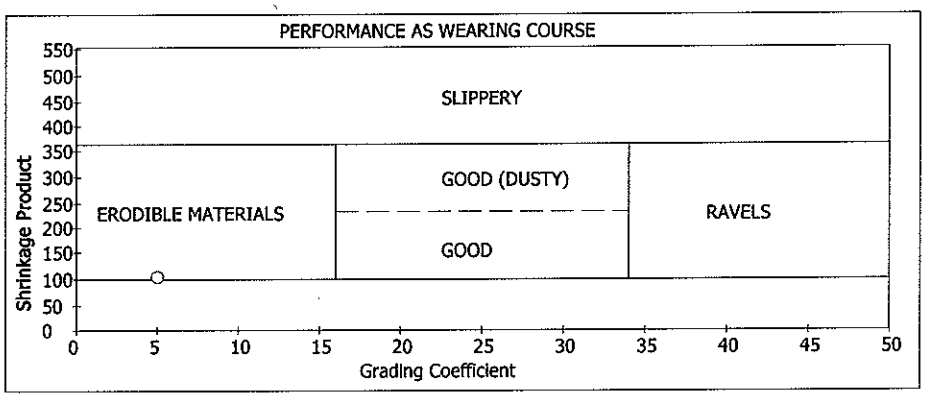
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	99
2.000	95
0.425	68
0.250	56
0.150	41
0.075	26
0.060	11
0.050	11
0.020	8.4
0.005	7.2
0.002	5.6

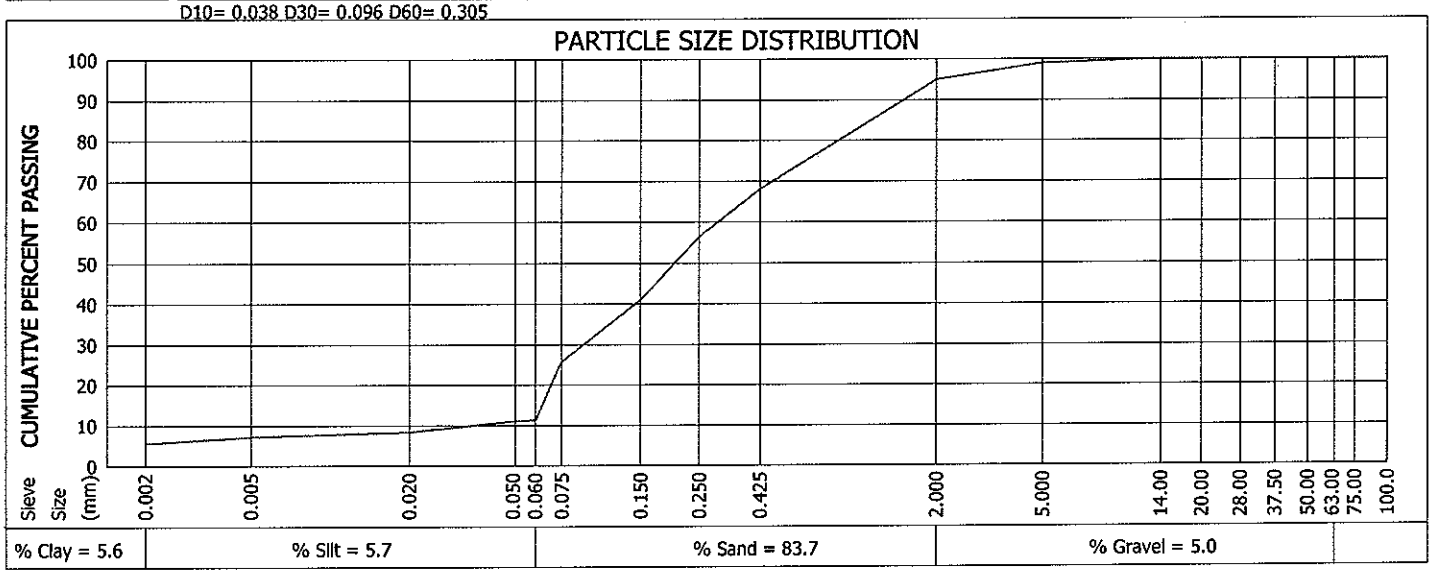
Soil Mortar	2.000 - 0.425	29
	0.425 - 0.250	12
	0.250 - 0.150	16
	0.150 - 0.075	16
	< 0.075	27
Effective Size		0.038
Uniformity Coefficient		8.0
Curvature Coefficient		0.8
Oversize Index		0.0
Shrinkage Product		102.0
Grading Coefficient		5.0
Grading Modulus		1.10
Atterberg Limits	Liquid Limit	16
	Plasticity Index	3.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.038 D30= 0.096 D60= 0.305









% Clay = 5.6	% Silt = 5.7	% Sand = 83.7	% Gravel = 5.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-09

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9096			
HOLE NO./ Km / CHAINAGE		TP69			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample			
LAYER TESTED/SAMPLED		0.5 - 1 m			
SAMPLE DEPTH		0.5 - 1m			
DATE SAMPLED		2020-01-31			
COLOUR OF SAMPLE		Dark Brown G.Sand			
TYPE OF SAMPLE		Mix Quartzstone			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	94			
	37.5 mm	90			
	28.0 mm	86			
	20.0 mm	81			
	14.0 mm	76			
	5.0 mm	58			
	2.0 mm	43			
	0.425 mm	27			
	0.075 mm	13			
GM %		2,2			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425	38			
COARSE FINE SAND	0.425 - 0.250	10			
MEDIUM FINE SAND	0.250 - 0.150	12			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	30			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	20			
	PLASTICITY INDEX	7			
	LINEAR SHRINKAGE	3.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G9			
	TRH 14	G10			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	5,6			
	MDD (kg/m³)	2250			
	COMP MC %	5,4			
SWELL % @	MOD | NRB | PRO	0,02 | 0,05 | 0,09			
C.B.R. SANS GR40	100 %	39			
	98 %	31			
	97 %	28			
	95 %	22			
	93 %	18			
	90 %	13			
STABILISER IN LAB		N/A			
TEST TYPE		CBR			
SAMPLING METHOD		Client			
WEATHER WHEN SAMPLED		Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-25

Project : Okiep 100 Infill

Attention : Aurey Nonyana

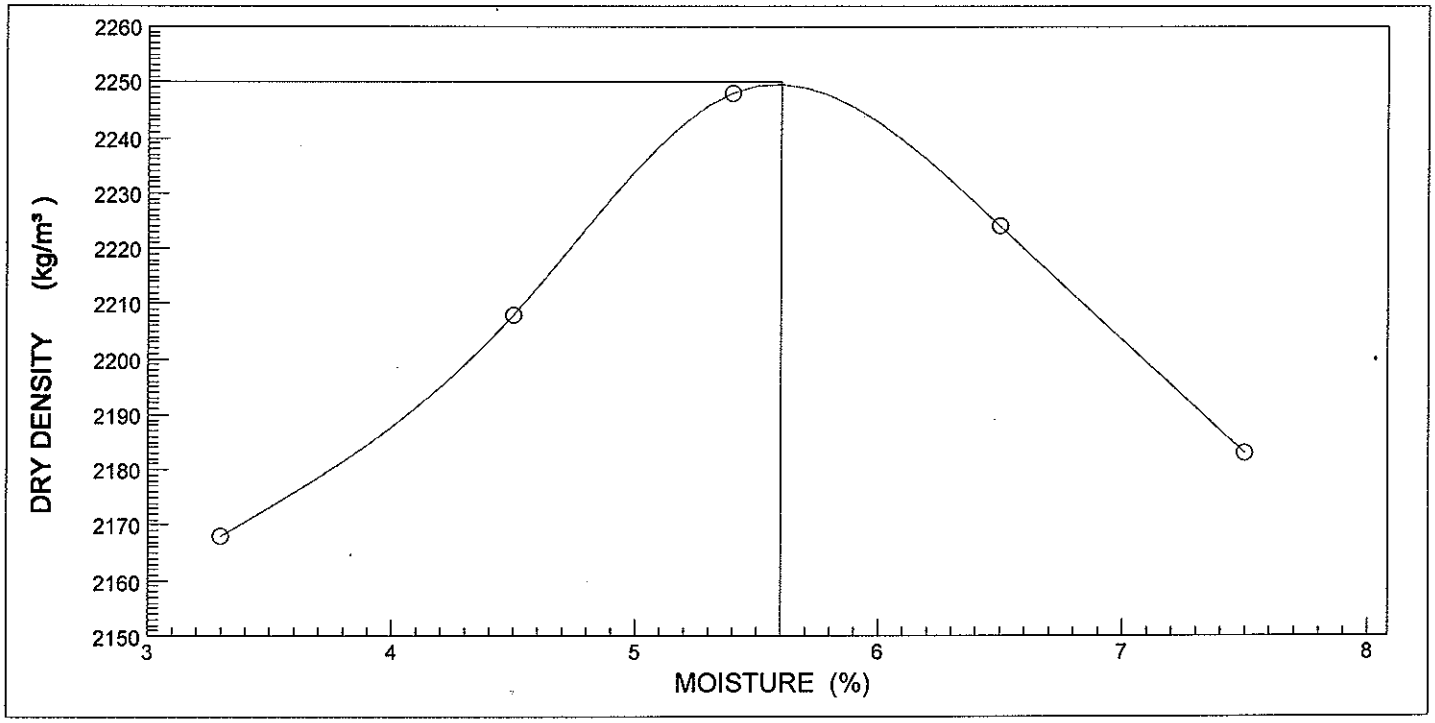
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9096
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	98kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.5 - 1m
MATERIAL DESCRIPTION	Mix Weathered Quartz
HOLE NO./ km / CHAINAGE	TP69
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9096
COLOUR AND TYPE	Orange Brown Gravelly Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2168	2208	2248	2224	2183			
MOISTURE (%)	3,3	4,5	5,4	6,5	7,5			

MAXIMUM DRY DENSITY (kg/m³) : 2250	OPTIMUM MOISTURE CONTENT (%) : 5,6



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-09

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

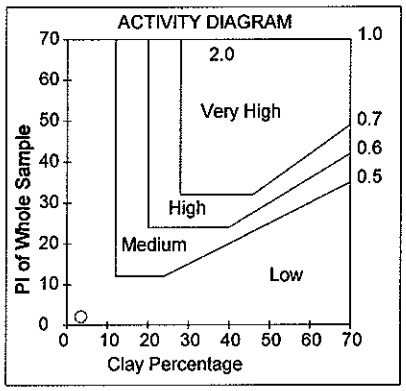
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

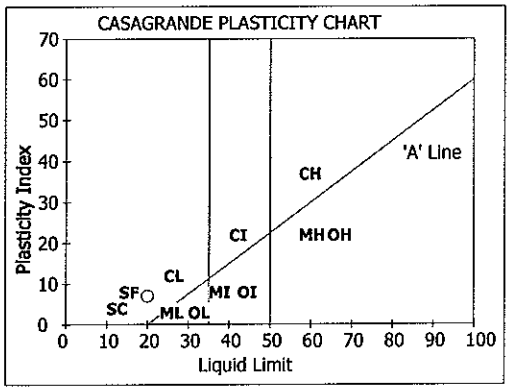
Sample No.	: U9096
Position	: TP 69 - 0.5 - 1m
Layer Type	: N/S
Sample Colour	: Orange Brown
Sample Type	: Mix Quartz

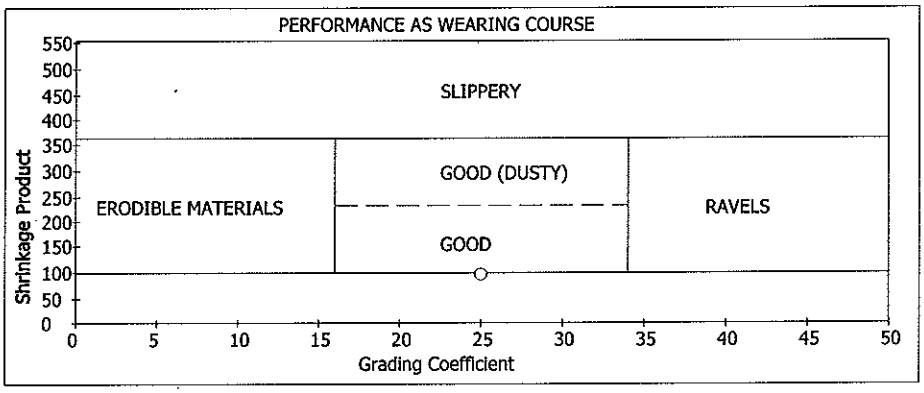
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	94
37.50	90
28.00	86
20.00	81
14.00	76
5.000	58
2.000	43
0.425	27
0.250	23
0.150	18
0.075	13
0.060	6,1
0.050	5,9
0.020	4,9
0.005	4,3
0.002	3,4

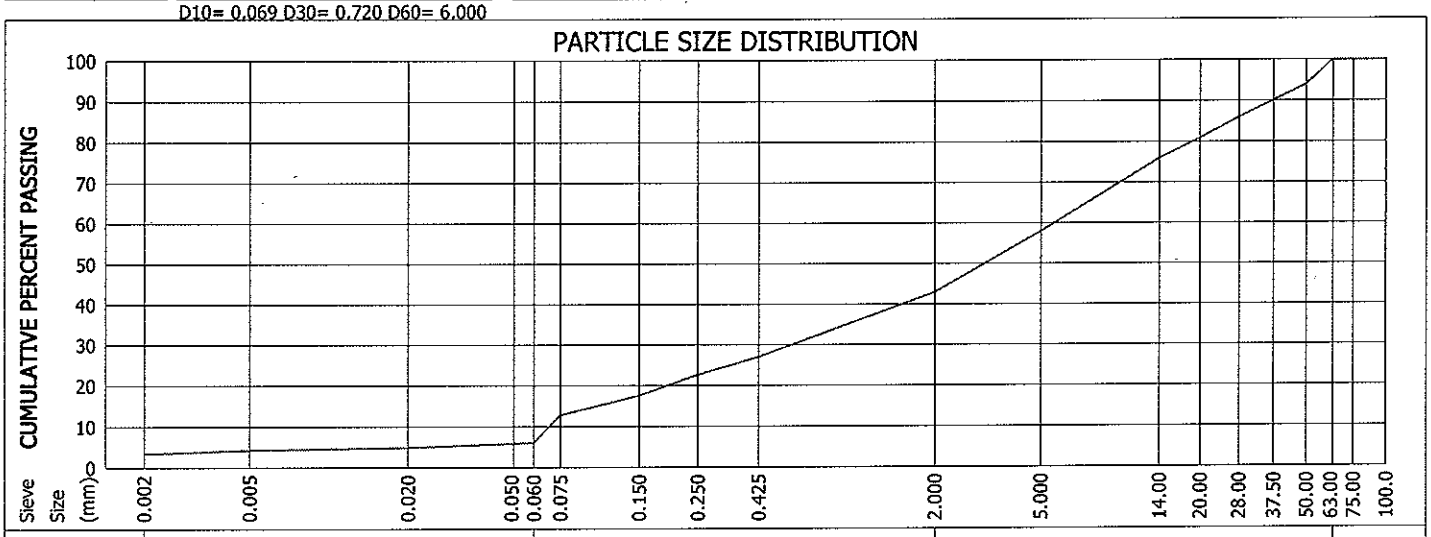
Soil Mortar	2.000 - 0.425	38
	0.425 - 0.250	10
	0.250 - 0.150	12
	0.150 - 0.075	11
	< 0.075	30
Effective Size		0,069
Uniformity Coefficient		87,0
Curvature Coefficient		1,3
Oversize Index		4,0
Shrinkage Product		94,5
Grading Coefficient		24,9
Grading Modulus		2,20
Atterberg Limits	Liquid Limit	20
	Plasticity Index	7
	Linear Shrinkage	3.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.069 D30= 0.720 D60= 6.000









% Clay = 3,4	% Silt = 2,7	% Sand = 36,9	% Gravel = 57,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-09

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

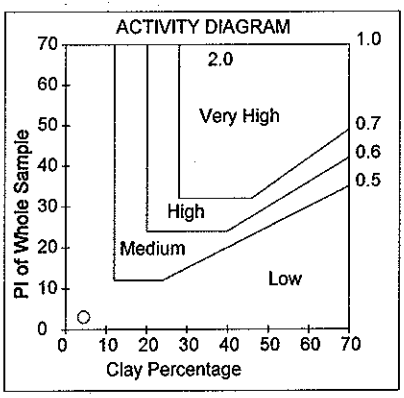
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

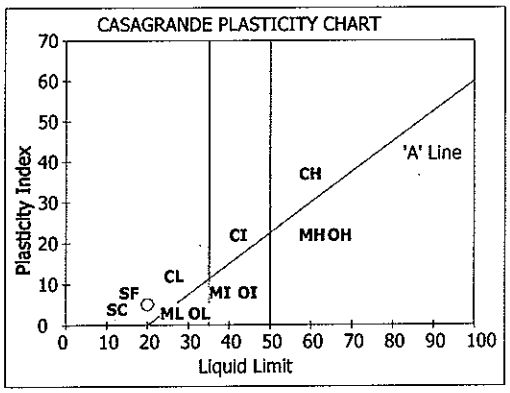
Sample No.	: U9052
Position	: TP 70; 0.0-0.5m
Layer Type	: Sample 47
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

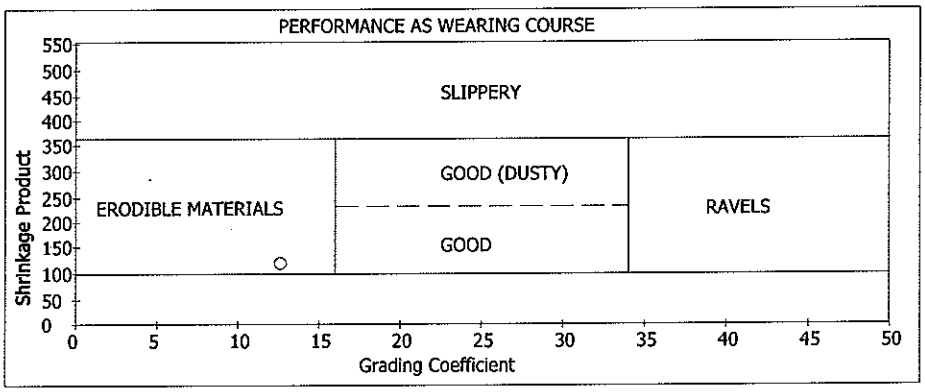
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	97
2.000	87
0.425	59
0.250	46
0.150	31
0.075	19
0.060	9,9
0.050	9,2
0.020	7,9
0.005	6,7
0.002	4,6

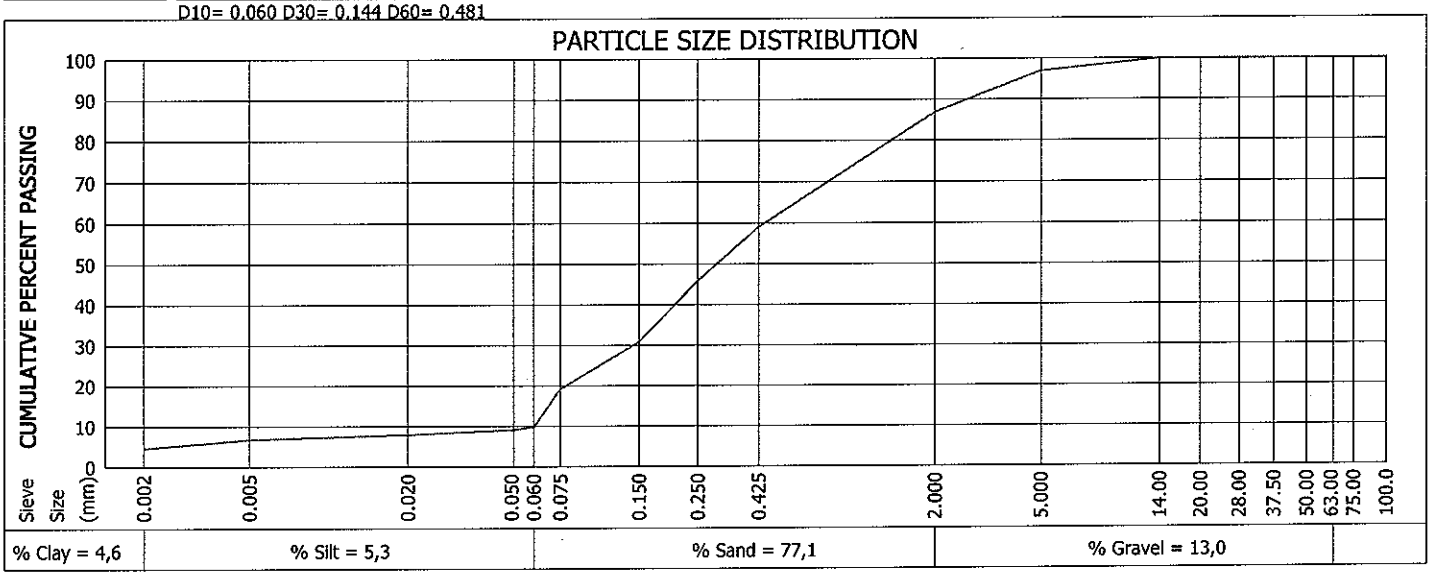
Soil Mortar	2.000 - 0.425	33
	0.425 - 0.250	15
	0.250 - 0.150	17
	0.150 - 0.075	14
	< 0.075	22
Effective Size		0,060
Uniformity Coefficient		8,0
Curvature Coefficient		0,7
Oversize Index		0,0
Shrinkage Product		118,0
Grading Coefficient		12,6
Grading Modulus		1,30
Atterberg Limits	Liquid Limit	20
	Plasticity Index	5
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.060 D30= 0.144 D60= 0.481









% Clay = 4,6	% Silt = 5,3	% Sand = 77,1	% Gravel = 13,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-27

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

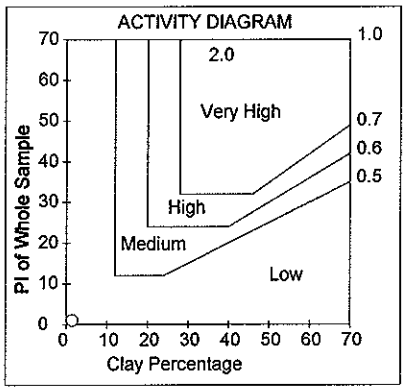
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

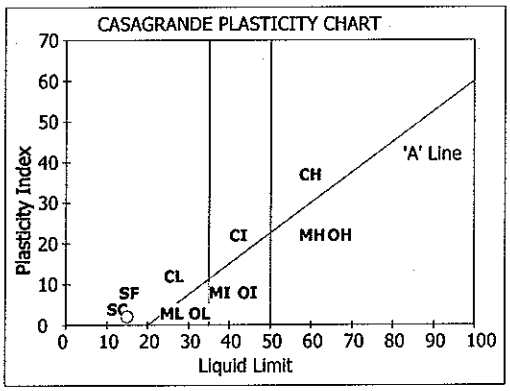
Sample No.	: U9053
Position	: TP 71; 0.0-0.3m
Layer Type	: Sample 48
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

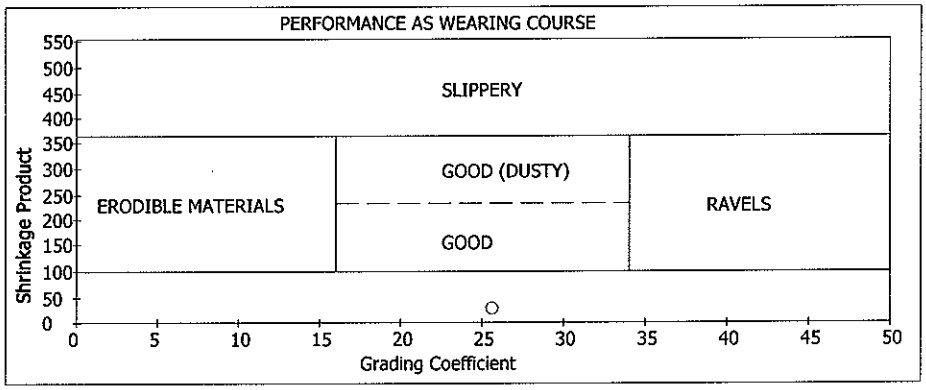
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	94
28.00	90
20.00	84
14.00	80
5.000	61
2.000	48
0.425	29
0.250	23
0.150	15
0.075	8.9
0.060	3.8
0.050	3.8
0.020	3.4
0.005	2.2
0.002	1.6

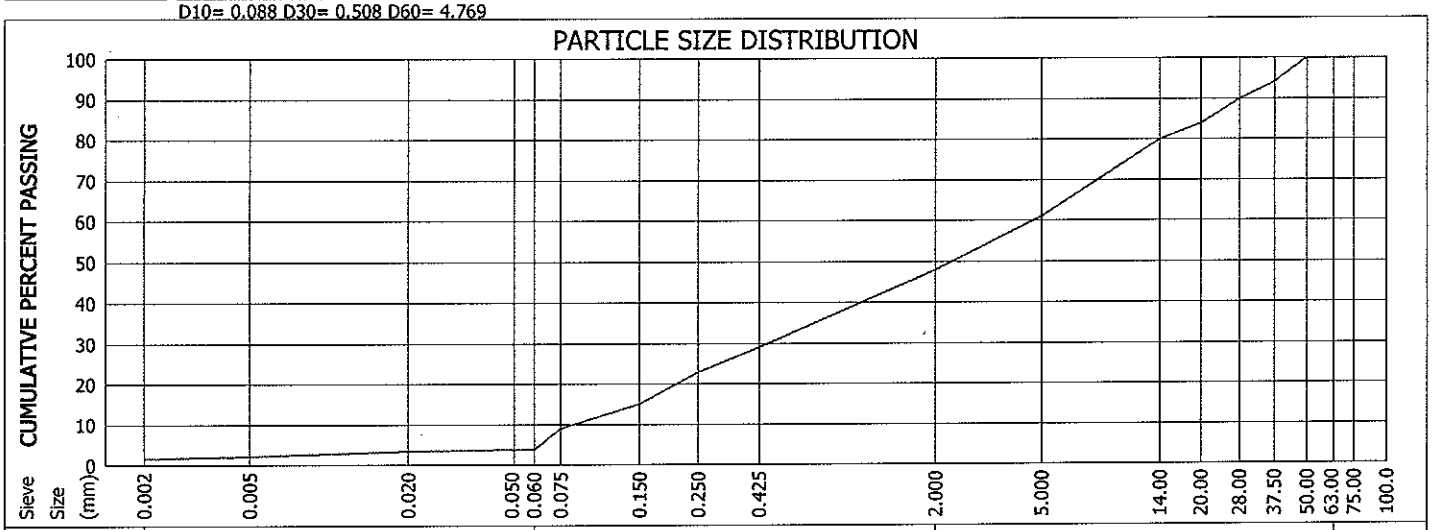
Soil Mortar	2.000 - 0.425	39
	0.425 - 0.250	14
	0.250 - 0.150	16
	0.150 - 0.075	13
	< 0.075	19
Effective Size		0.088
Uniformity Coefficient		54.2
Curvature Coefficient		0.6
Oversize Index		6.0
Shrinkage Product		29.0
Grading Coefficient		25.6
Grading Modulus		2.10
Atterberg Limits	Liquid Limit	15
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-a(0)

D10= 0.088 D30= 0.508 D60= 4.769









% Clay = 1.6	% Silt = 2.2	% Sand = 44.2	% Gravel = 52.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-09

Project : Okiep 100 Infill

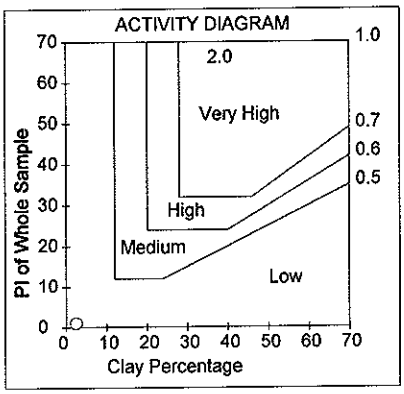
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

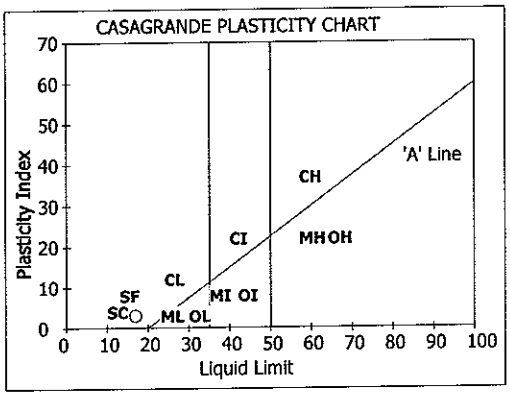
Sample No.	: U9054
Position	: TP 72; 0.0-0.3m
Layer Type	: Sample 49
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

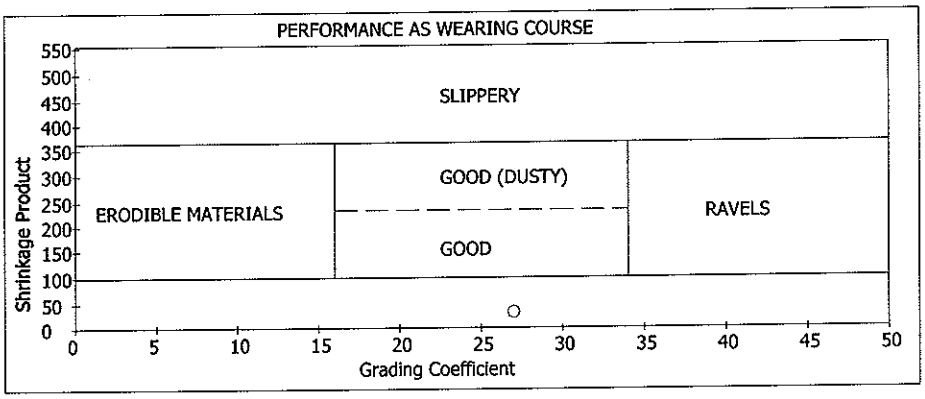
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	98
28.00	94
20.00	88
14.00	86
5.000	71
2.000	56
0.425	32
0.250	25
0.150	18
0.075	11
0.060	5,0
0.050	4,7
0.020	4,1
0.005	3,5
0.002	2,4

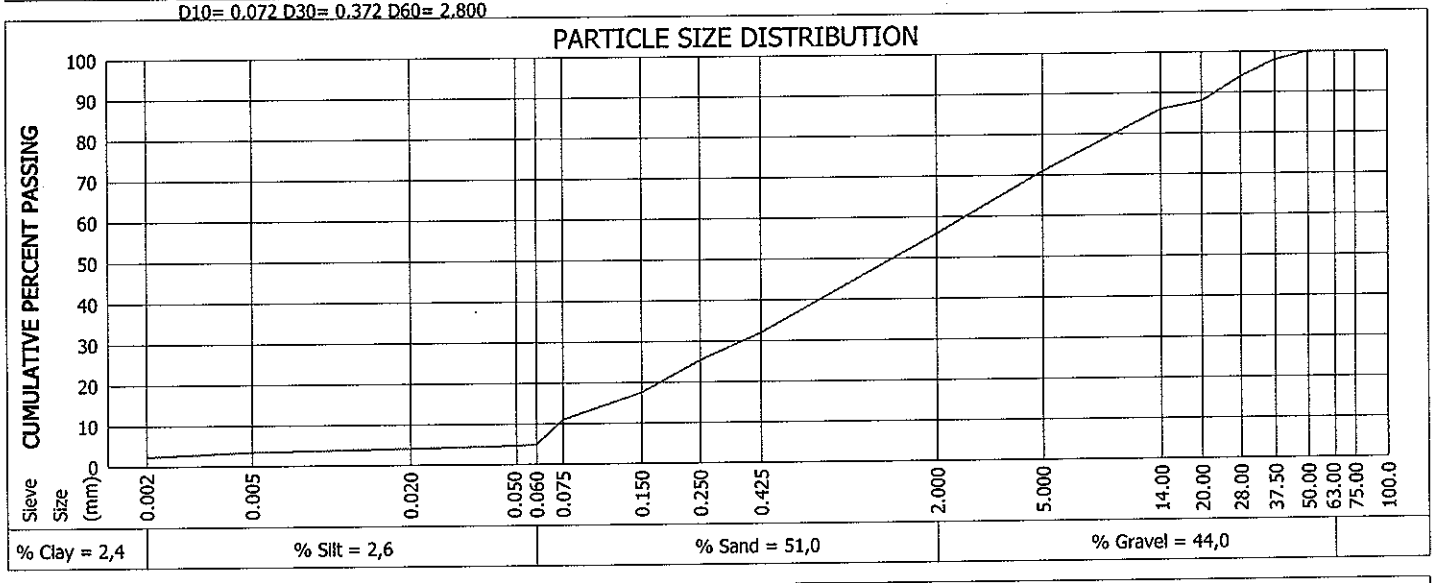
Soil Mortar	2.000 - 0.425	42
	0.425 - 0.250	13
	0.250 - 0.150	14
	0.150 - 0.075	12
	< 0.075	20
Effective Size		0,072
Uniformity Coefficient		38,9
Curvature Coefficient		0,7
Oversize Index		2,0
Shrinkage Product		32,0
Grading Coefficient		27,0
Grading Modulus		2,00
Atterberg Limits	Liquid Limit	17
	Plasticity Index	3.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.072 D30= 0.372 D60= 2.800









Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-19

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9055			
HOLE NO./ Km / CHAINAGE		TP73			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 50			
LAYER TESTED/SAMPLED		0.0 - 0.3m			
SAMPLE DEPTH		0.0 - 0.3m			
DATE SAMPLED		2020-01-31			
COLOUR OF SAMPLE		Dark Brown			
TYPE OF SAMPLE		Mix Quartzstone			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	98			
	37.5 mm	97			
	28.0 mm	95			
	20.0 mm	95			
	14.0 mm	90			
	5.0 mm	73			
	2.0 mm	58			
	0.425 mm	33			
	0.075 mm	13			
GM %		2,0			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425	44			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	12			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	23			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	18			
	PLASTICITY INDEX	3.1			
	LINEAR SHRINKAGE	1.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G8			
	TRH 14	G8			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	9,5			
	MDD (kg/m³)	2191			
	COMP MC %	9,6			
SWELL % @	MOD | NRB | PRO	0,02 | 0,04 | 0,07			
C.B.R. SANS GR40	100 %	35			
	98 %	27			
	97 %	24			
	95 %	18			
	93 %	14			
	90 %	10			
STABILISER IN LAB		N/A			
TEST TYPE		CBR			
SAMPLING METHOD		Client			
WEATHER WHEN SAMPLED		Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB™

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-18

Project : Okiep 100 Infill

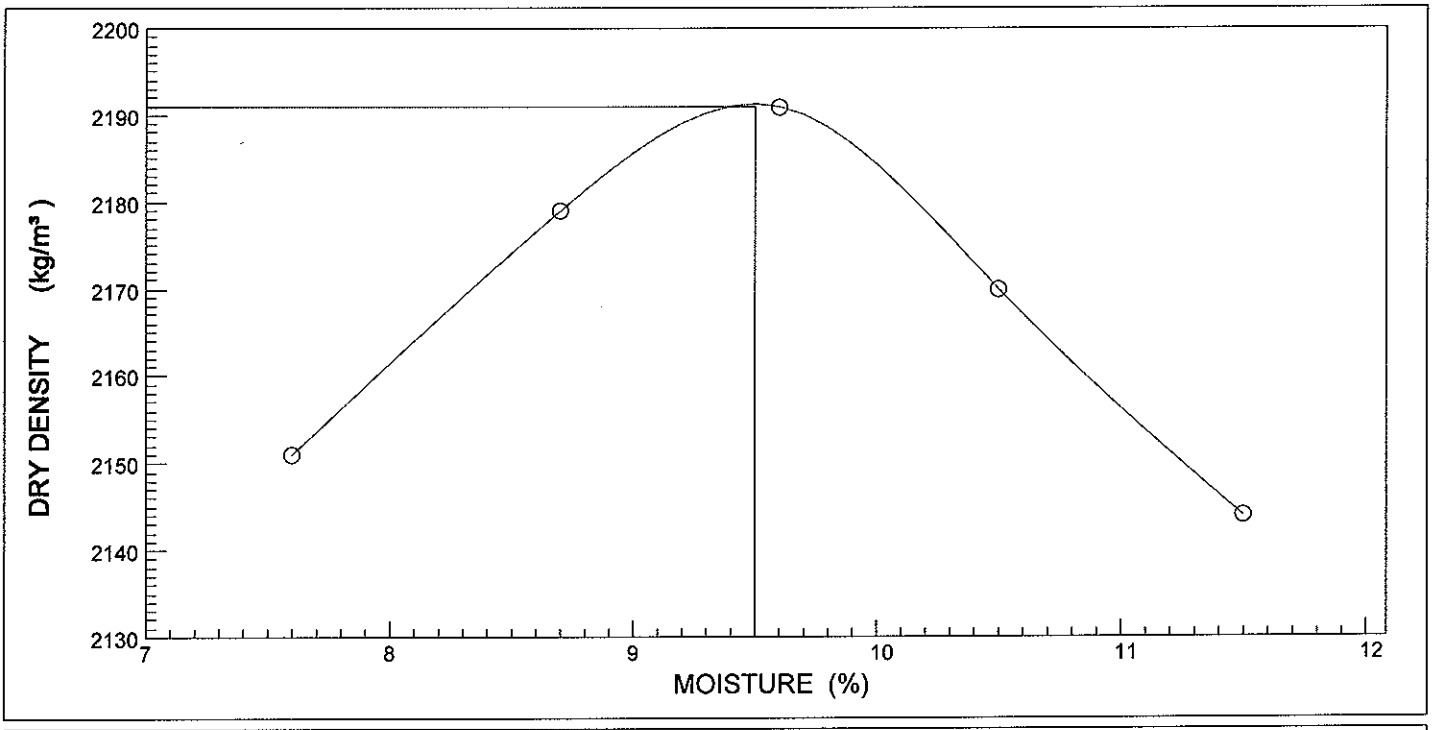
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9055
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	96kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.3m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP73
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9055
COLOUR AND TYPE	Dark Brown Gravelly Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2151	2179	2191	2170	2144			
MOISTURE (%)	7.6	8.7	9.6	10.5	11.5			

MAXIMUM DRY DENSITY (kg/m³) : 2191	OPTIMUM MOISTURE CONTENT (%) : 9.5



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-09

Project : Okiep 100 Infill

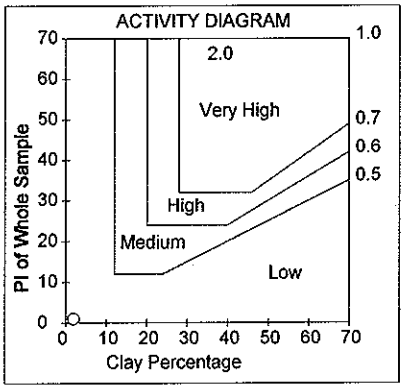
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

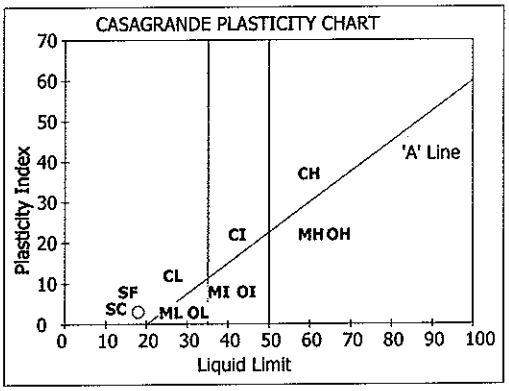
Sample No.	: U9055
Position	: TP 73; 0.0-0.3m
Layer Type	: Sample 50
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

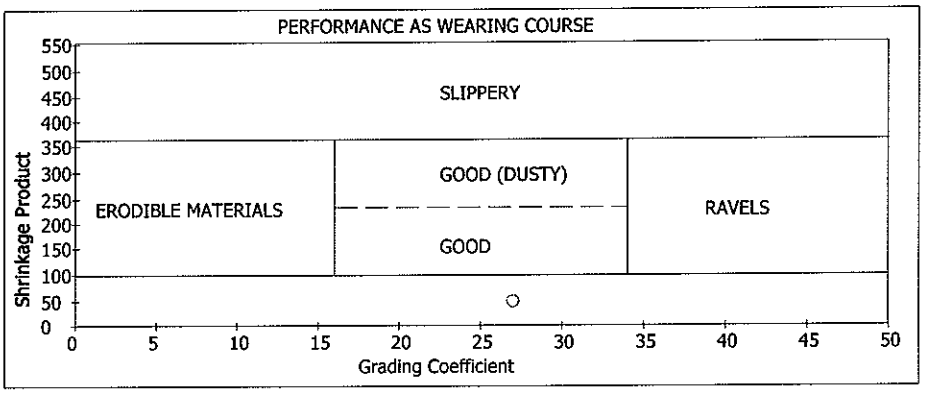
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	98
37.50	97
28.00	95
20.00	95
14.00	90
5.000	73
2.000	58
0.425	33
0.250	26
0.150	19
0.075	13
0.060	4,9
0.050	4,7
0.020	4,1
0.005	3,3
0.002	2,2

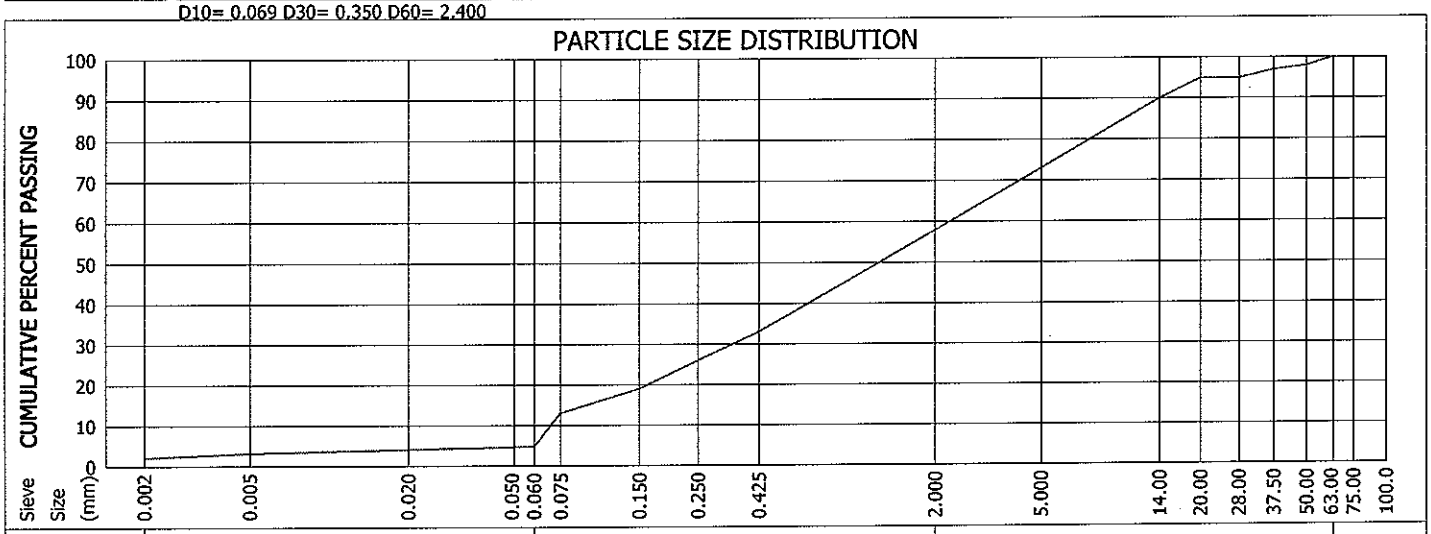
Soil Mortar	2.000 - 0.425	44
	0.425 - 0.250	11
	0.250 - 0.150	12
	0.150 - 0.075	11
	< 0.075	23
Effective Size		0,069
Uniformity Coefficient		34,8
Curvature Coefficient		0,7
Oversize Index		1,0
Shrinkage Product		49,5
Grading Coefficient		27,0
Grading Modulus		2,00
Atterberg Limits	Liquid Limit	18
	Plasticity Index	3.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.069 D30= 0.350 D60= 2.400









% Clay = 2,2	% Silt = 2,7	% Sand = 53,1	% Gravel = 42,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-27

Project : Okiep 100 Infill

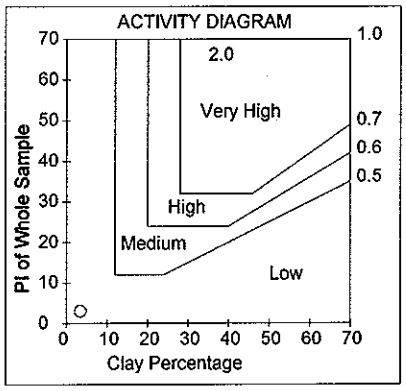
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

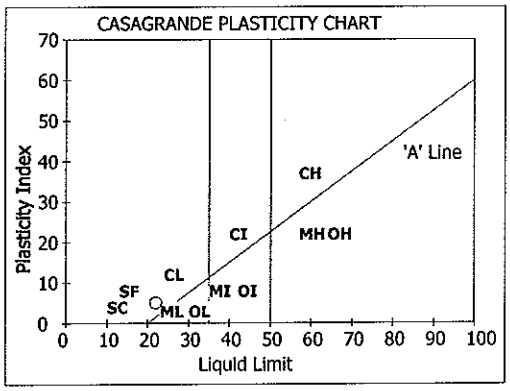
Sample No.	: U9056
Position	: TP 75; 0.4-0.7m
Layer Type	: Sample 51
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

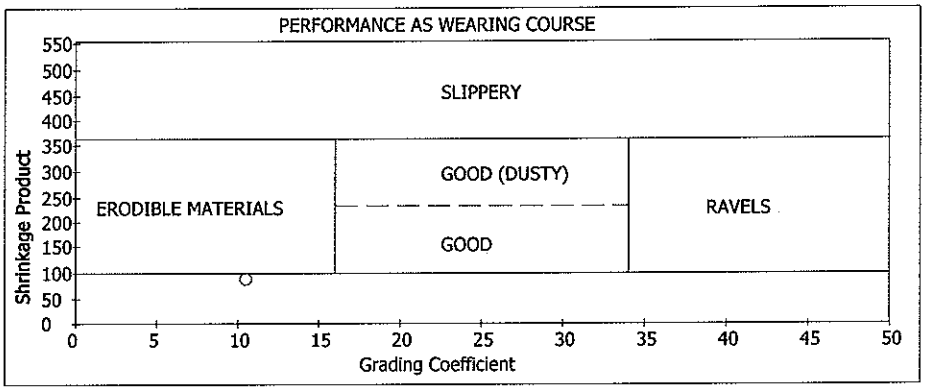
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	99
14.00	98
5.000	95
2.000	89
0.425	59
0.250	48
0.150	34
0.075	22
0.060	9.6
0.050	9.2
0.020	7.7
0.005	5.6
0.002	3.5

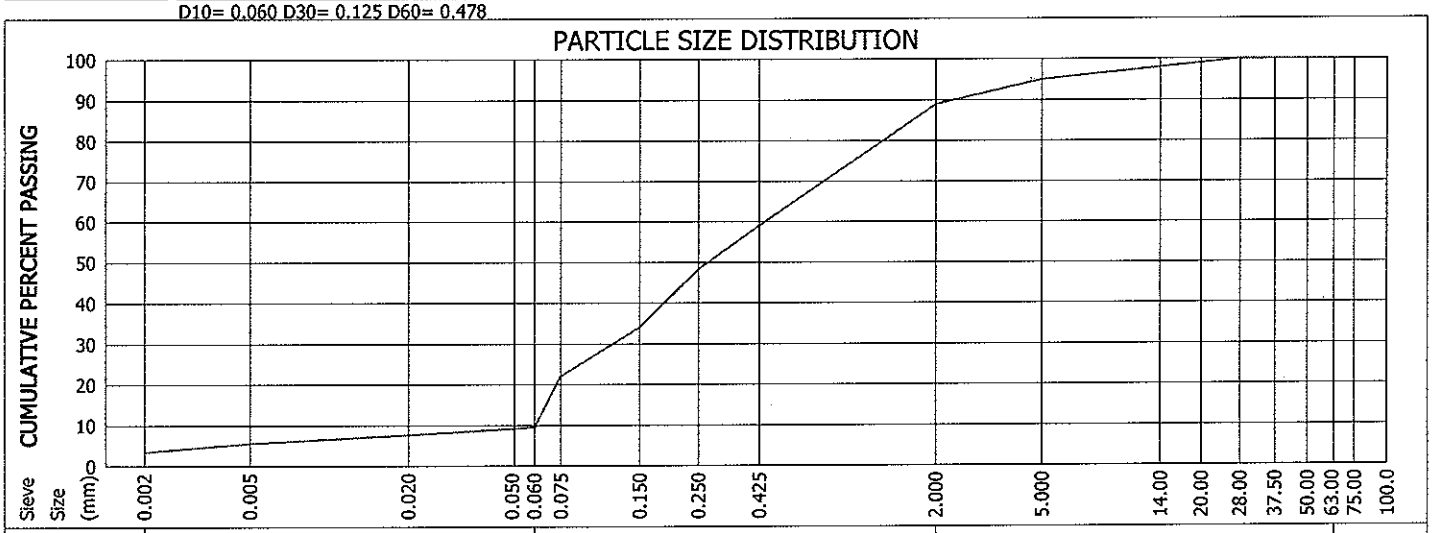
Soil Mortar	2.000 - 0.425	34
	0.425 - 0.250	12
	0.250 - 0.150	16
	0.150 - 0.075	14
	< 0.075	25
Effective Size		0.060
Uniformity Coefficient		8.0
Curvature Coefficient		0.5
Oversize Index		0.0
Shrinkage Product		88.5
Grading Coefficient		10.4
Grading Modulus		1.30
Atterberg Limits	Liquid Limit	22
	Plasticity Index	5
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-2-4(0)

D10= 0.060 D30= 0.125 D60= 0.478









% Clay = 3.5	% Silt = 6.1	% Sand = 79.4	% Gravel = 11.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-19

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9057			
HOLE NO./ Km / CHAINAGE	TP77			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 52			
LAYER TESTED/SAMPLED	0.4 - 0.7m			
SAMPLE DEPTH	0.4 - 0.7m			
DATE SAMPLED	2020-01-30			
COLOUR OF SAMPLE	Dark Reddish Orange			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	96			
	37.5 mm	95			
	28.0 mm	91			
	20.0 mm	89			
	14.0 mm	84			
	5.0 mm	67			
	2.0 mm	53			
	0.425 mm	31			
	0.075 mm	9			
GM %		2,1			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	41			
COARSE FINE SAND	0.425 - 0.250	15			
MEDIUM FINE SAND	0.250 - 0.150	15			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	17			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	16			
	PLASTICITY INDEX	2.1			
	LINEAR SHRINKAGE	1.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G8			
	TRH 14	G8			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6,6			
	MDD (kg/m³)	2216			
	COMP MC %	6,3			
SWELL % @	MOD | NRB | PRO	0,02 | 0,05 | 0,09			
C.B.R. SANS GR40	100 %	35			
	98 %	27			
	97 %	24			
	95 %	18			
	93 %	14			
	90 %	10			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill

Attention : Aurey Nonyana

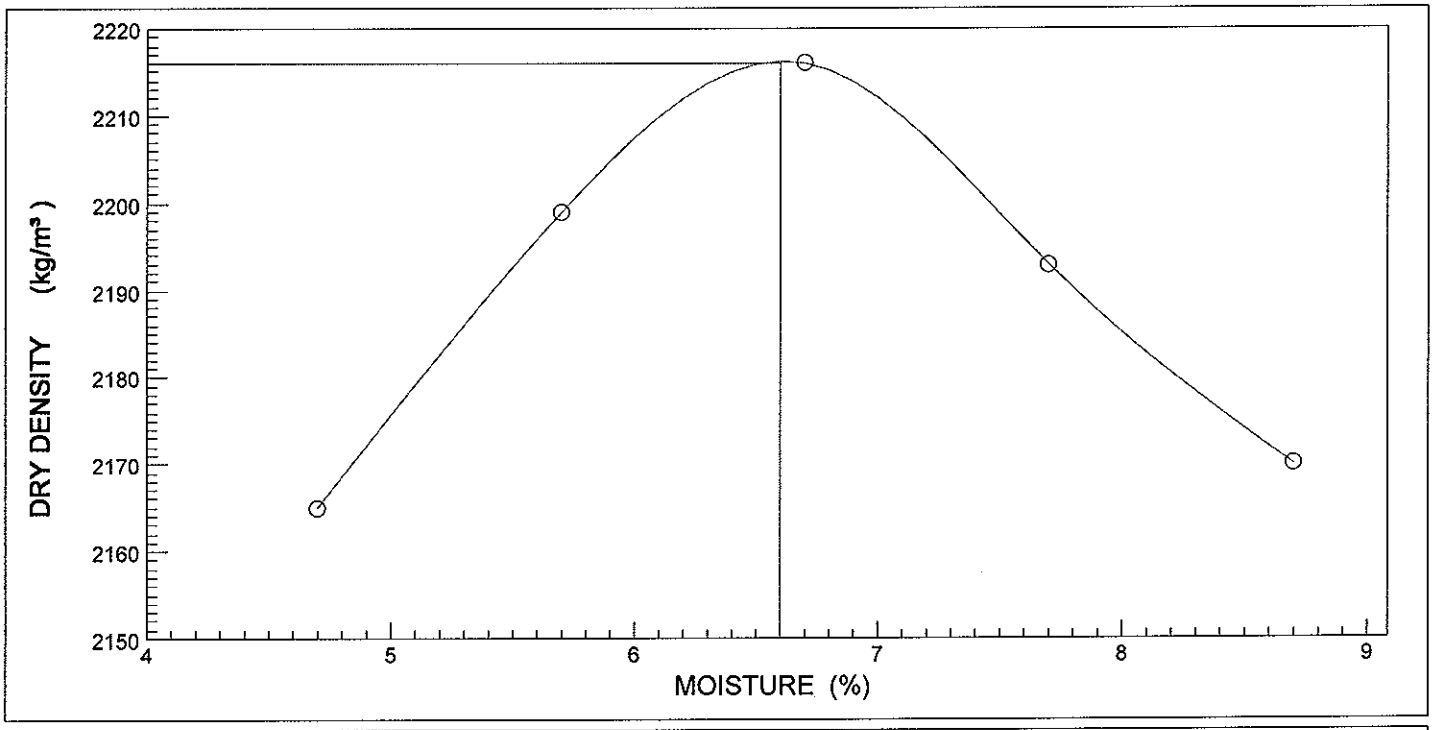
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9057
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	96kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.4 - 0.7m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP77
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-30
CLIENT MARKING	U9057
COLOUR AND TYPE	Dark Orange Gravelly Mix

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2165	2199	2216	2193	2170			
MOISTURE (%)	4.7	5.7	6.7	7.7	8.7			

MAXIMUM DRY DENSITY (kg/m³) : 2216	OPTIMUM MOISTURE CONTENT (%) : 6.6



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-09

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

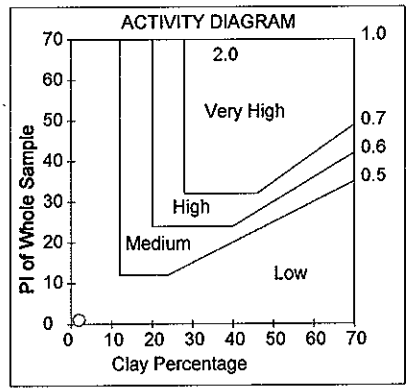
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

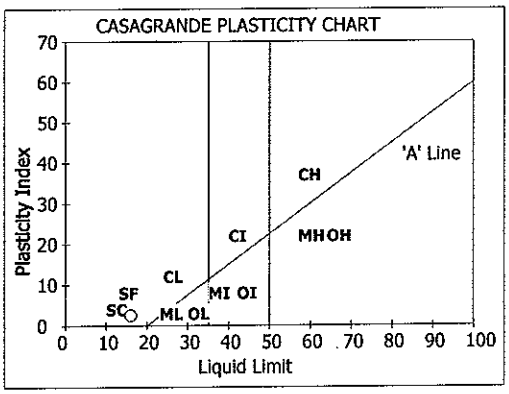
Sample No.	: U9057
Position	: TP 77; 0.4-0.7m
Layer Type	: Sample 52
Sample Colour	: Dark Reddish Orange
Sample Type	: Mix Quartzstone

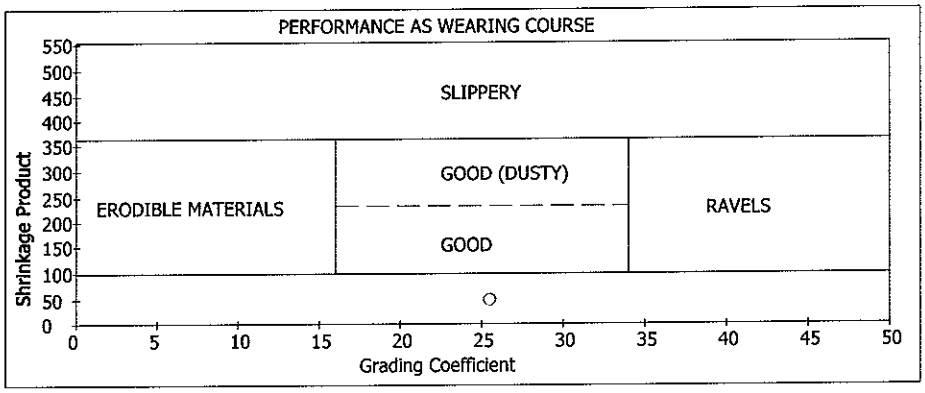
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	96
37.50	95
28.00	91
20.00	89
14.00	84
5.000	67
2.000	53
0.425	31
0.250	23
0.150	15
0.075	9,0
0.060	4,4
0.050	4,2
0.020	3,4
0.005	2,7
0.002	1,9

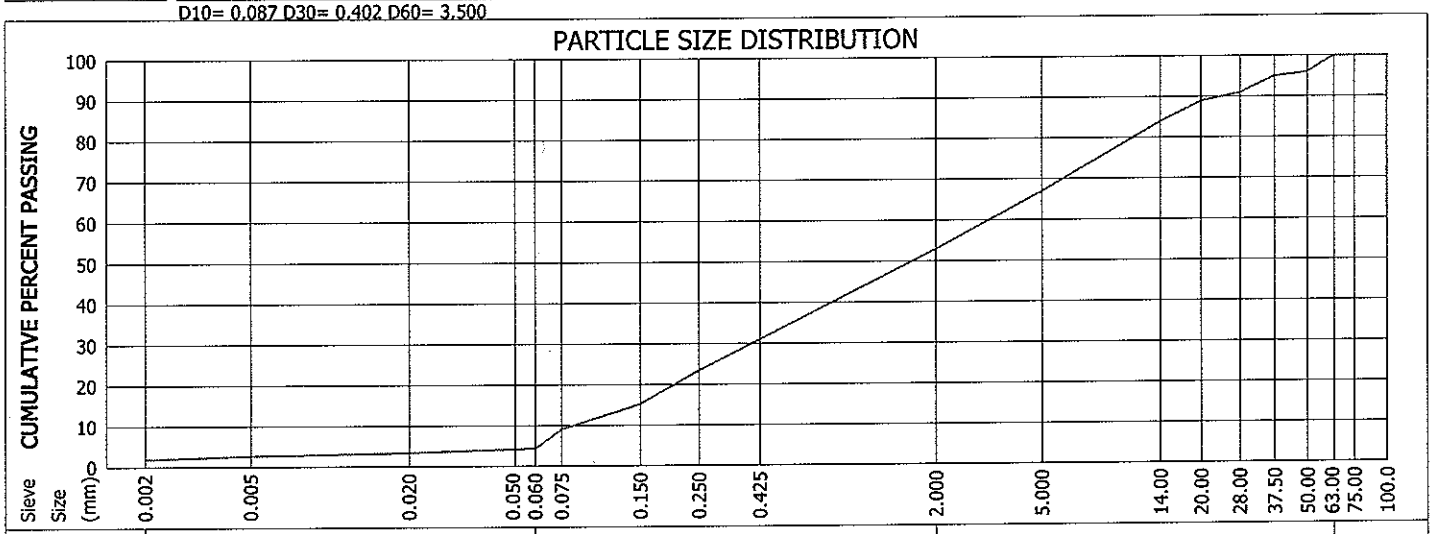
Soil Mortar	2.000 - 0.425	41
	0.425 - 0.250	15
	0.250 - 0.150	15
	0.150 - 0.075	12
	< 0.075	17
Effective Size		0,087
Uniformity Coefficient		40,2
Curvature Coefficient		0,5
Oversize Index		1,0
Shrinkage Product		46,5
Grading Coefficient		25,5
Grading Modulus		2,10
Atterberg Limits	Liquid Limit	16
	Plasticity Index	2.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.087 D30= 0.402 D60= 3.500









% Clay = 1,9	% Silt = 2,5	% Sand = 48,6	% Gravel = 47,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-09

Project : Okiep 100 Infill

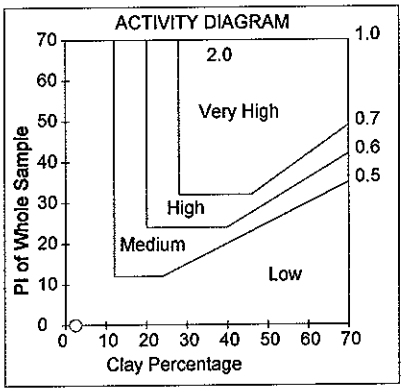
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

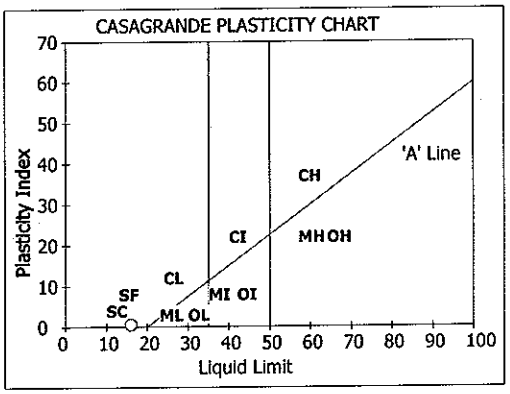
Sample No.	: U9058
Position	: TP 79; 0.4-0.7m
Layer Type	: Sample 53
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

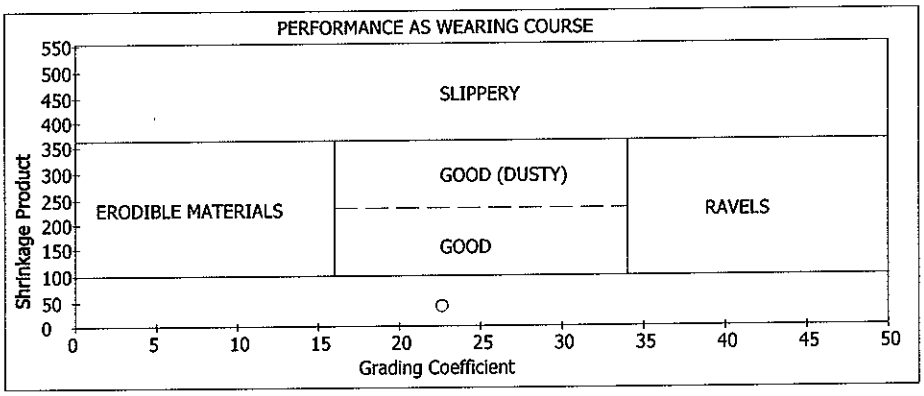
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	98
28.00	96
20.00	95
14.00	93
5.000	81
2.000	68
0.425	40
0.250	31
0.150	21
0.075	12
0.060	5,8
0.050	5,4
0.020	4,4
0.005	3,5
0.002	2,3

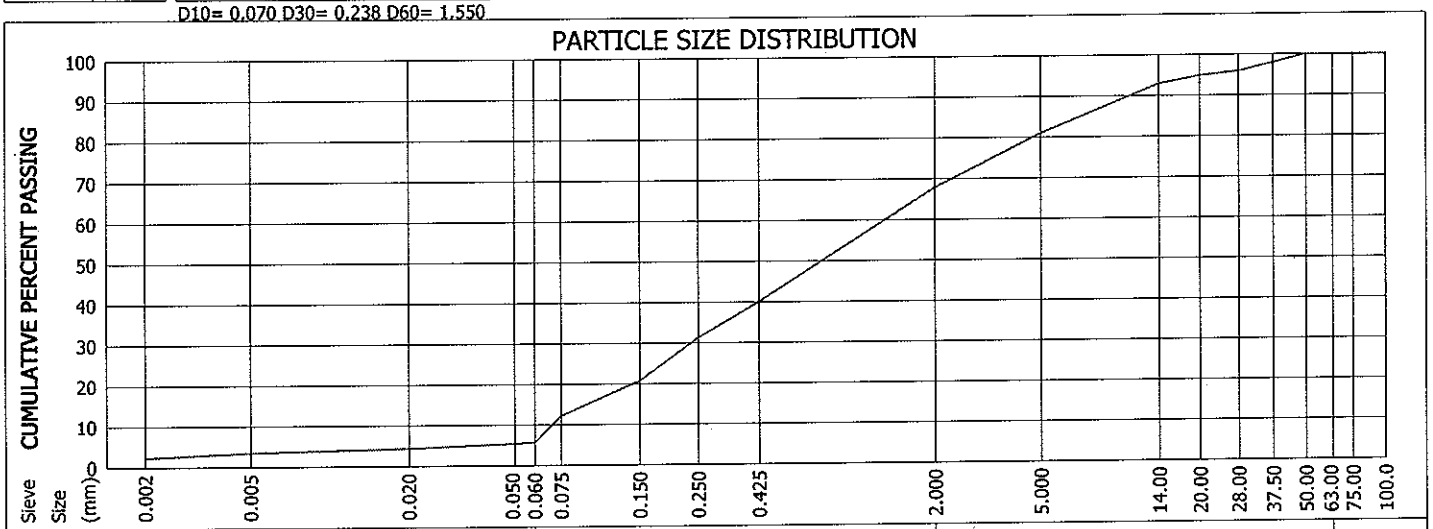
Soil Mortar	2.000 - 0.425	41
	0.425 - 0.250	13
	0.250 - 0.150	16
	0.150 - 0.075	13
	< 0.075	18
Effective Size		0,070
Uniformity Coefficient		22,1
Curvature Coefficient		0,5
Oversize Index		2,0
Shrinkage Product		40,0
Grading Coefficient		22,7
Grading Modulus		1,80
Atterberg Limits	Liquid Limit	16
	Plasticity Index	1,0
	Linear Shrinkage	1,0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.070 D30= 0.238 D60= 1.550









% Clay = 2,3	% Silt = 3,5	% Sand = 62,2	% Gravel = 32,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-27

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

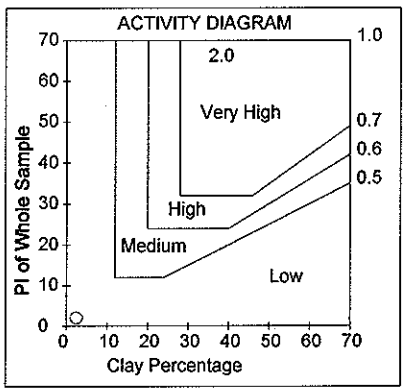
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

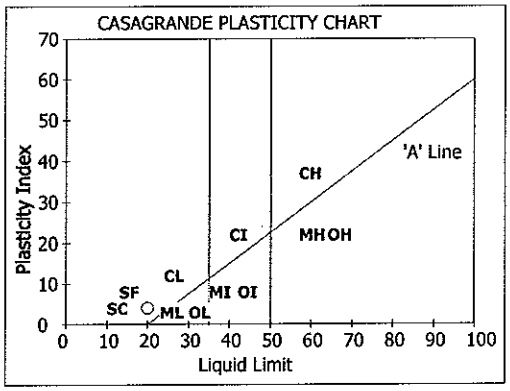
Sample No.	: U9059
Position	: TP 80; 0.0-0.4m
Layer Type	: Sample 54
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

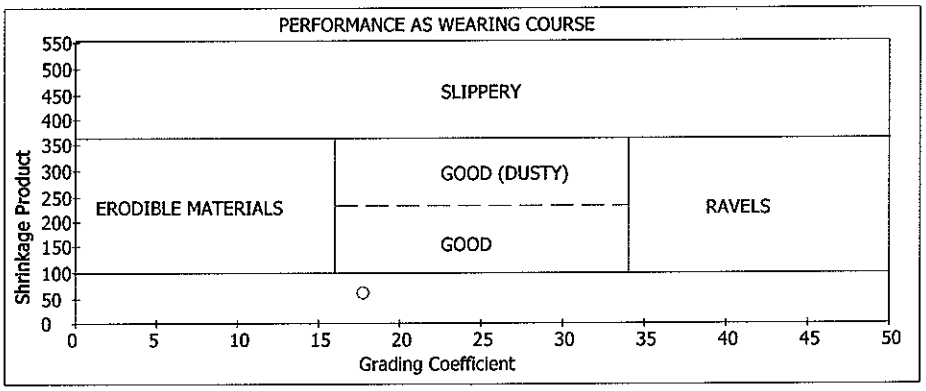
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	96
37.50	91
28.00	89
20.00	86
14.00	83
5.000	74
2.000	65
0.425	41
0.250	33
0.150	22
0.075	13
0.060	6.1
0.050	5.8
0.020	5.3
0.005	3.9
0.002	2.4

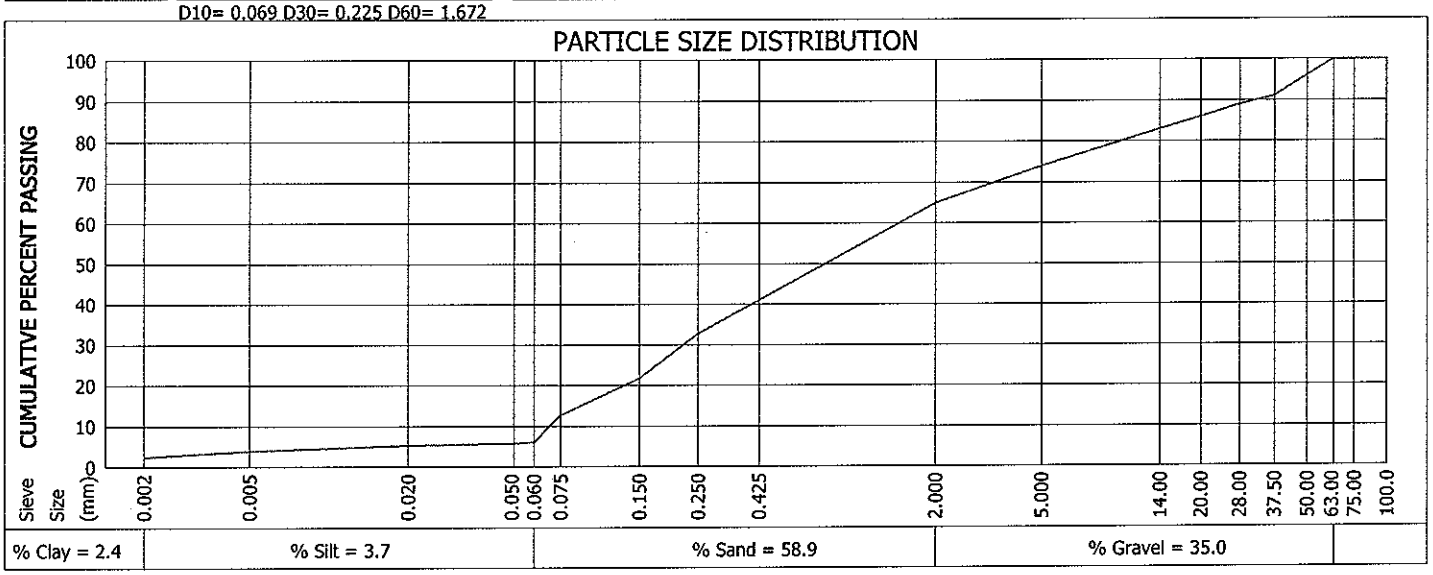
Soil Mortar	2.000 - 0.425	38
	0.425 - 0.250	12
	0.250 - 0.150	17
	0.150 - 0.075	14
	< 0.075	20
Effective Size		0.069
Uniformity Coefficient		24.2
Curvature Coefficient		0.4
Oversize Index		5.0
Shrinkage Product		61.5
Grading Coefficient		17.8
Grading Modulus		1.80
Atterberg Limits	Liquid Limit	20
	Plasticity Index	4.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.069 D30= 0.225 D60= 1.672









% Clay = 2.4	% Silt = 3.7	% Sand = 58.9	% Gravel = 35.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-09

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9060			
HOLE NO./ Km / CHAINAGE	TP81			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 55			
LAYER TESTED/SAMPLED	0.0 - 0.5m			
SAMPLE DEPTH	0.0 - 0.5m			
DATE SAMPLED	2020-01-30			
COLOUR OF SAMPLE	Dark Orange Brown			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm	100			
	37.5 mm	99			
	28.0 mm	96			
	20.0 mm	95			
	14.0 mm	90			
	5.0 mm	71			
	2.0 mm	56			
	0.425 mm	32			
	0.075 mm	10			
GM %		2,0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	43			
COARSE FINE SAND	0.425 - 0.250	14			
MEDIUM FINE SAND	0.250 - 0.150	13			
FINE FINE SAND	0.150 - 0.075	11			
SILT CLAY	0.075	18			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	22			
	PLASTICITY INDEX	8			
	LINEAR SHRINKAGE	2.5			
CLASSIFICATION	H.R.B.	A-2-4(0)			
	COLTO	G8			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	8,9			
	MDD (kg/m³)	2084			
	COMP MC %	8,6			
SWELL % @	MOD | NRB | PRO	0,01 | 0,03 | 0,09			
C.B.R. SANS GR40	100 %	50			
	98 %	34			
	97 %	28			
	95 %	19			
	93 %	13			
	90 %	7			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-18

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

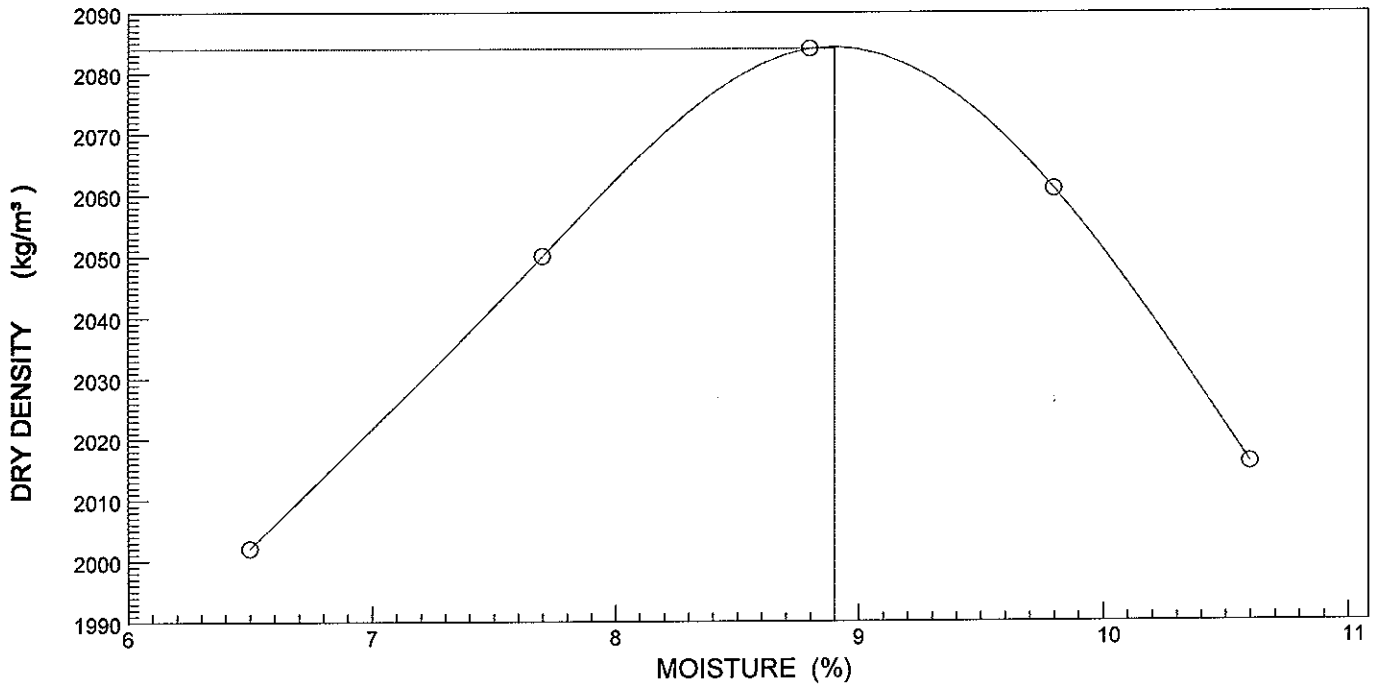
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9060
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	96kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.5m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP81
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-30
CLIENT MARKING	U9060
COLOUR AND TYPE	Dark Orange Gravelly Mix

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2002	2050	2084	2061	2016			
MOISTURE (%)	6.5	7.7	8.8	9.8	10.6			

MAXIMUM DRY DENSITY (kg/m³) : 2084	OPTIMUM MOISTURE CONTENT (%) : 8.9



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-09

Project : Okiep 100 Infill

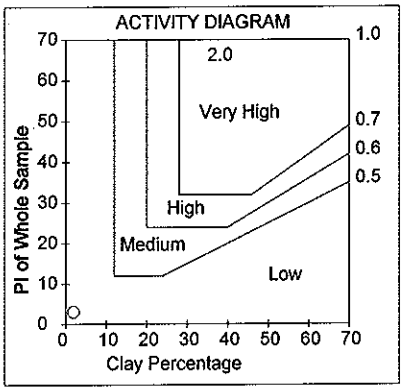
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

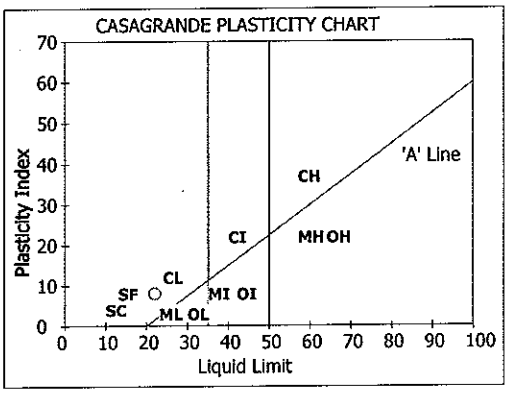
Sample No.	: U9060
Position	: TP 81; 0.0-0.5m
Layer Type	: Sample 55
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

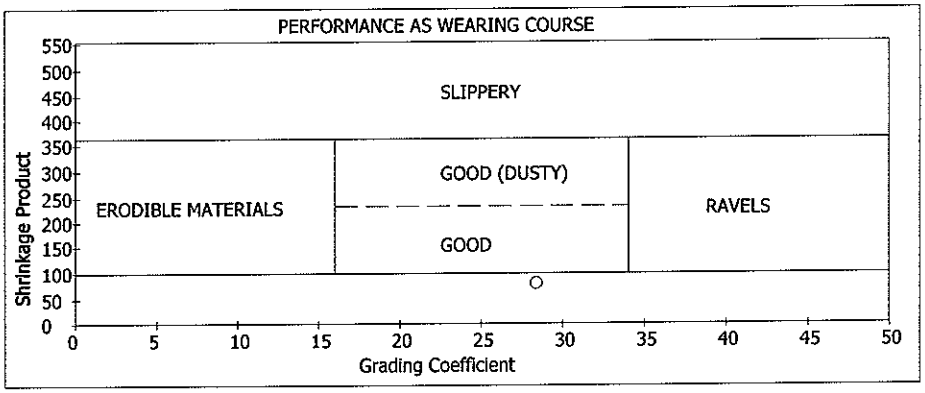
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	96
20.00	95
14.00	90
5.000	71
2.000	56
0.425	32
0.250	24
0.150	16
0.075	10
0.060	4,2
0.050	4,1
0.020	3,3
0.005	2,4
0.002	1,8

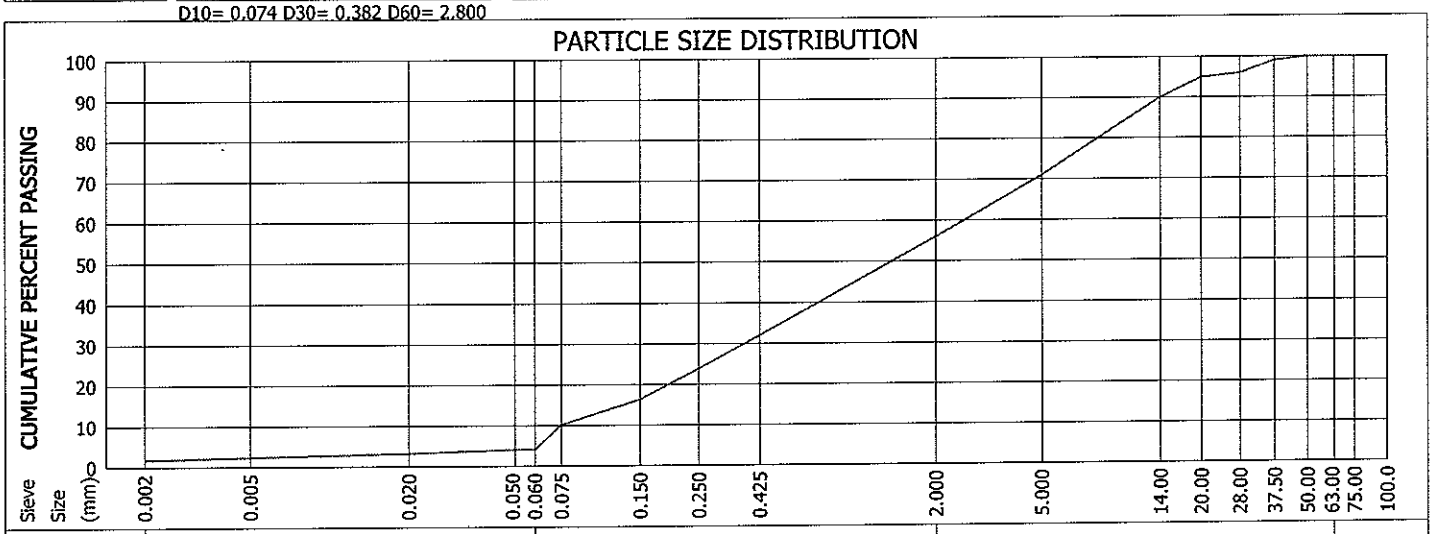
Soil Mortar	2.000 - 0.425	43
	0.425 - 0.250	14
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	18
Effective Size		0,074
Uniformity Coefficient		37,8
Curvature Coefficient		0,7
Oversize Index		1,0
Shrinkage Product		80,0
Grading Coefficient		28,4
Grading Modulus		2,00
Atterberg Limits	Liquid Limit	22
	Plasticity Index	8
	Linear Shrinkage	2.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-2-4(0)

D10= 0.074 D30= 0.382 D60= 2.800









% Clay = 1,8	% Silt = 2,4	% Sand = 51,8	% Gravel = 44,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-27

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

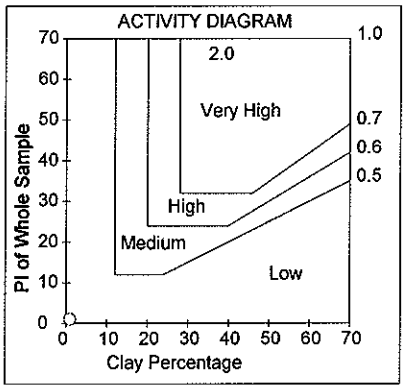
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

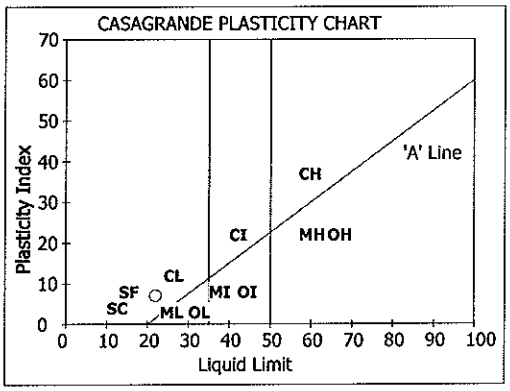
Sample No.	: U9061
Position	: TP 83; 0.0-0.4m
Layer Type	: Sample 56
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

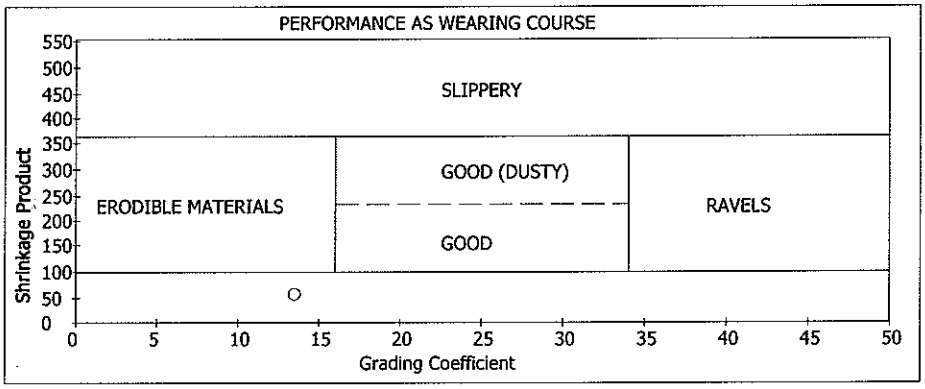
Sieve Size(mm)	% Passing
100.0	100
75.00	89
63.00	83
50.00	80
37.50	72
28.00	65
20.00	59
14.00	54
5.000	41
2.000	32
0.425	19
0.250	16
0.150	12
0.075	7.6
0.060	3.2
0.050	3.1
0.020	2.8
0.005	1.8
0.002	1.2

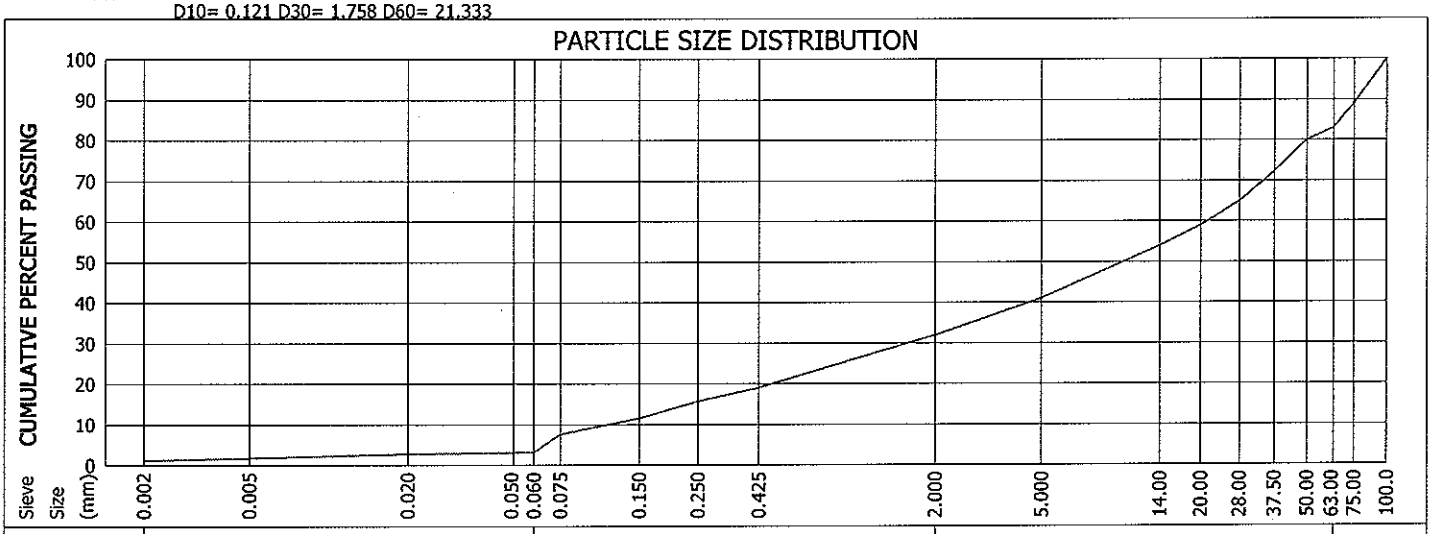
Soil Mortar	2.000 - 0.425	41
	0.425 - 0.250	11
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	25
Effective Size		0.121
Uniformity Coefficient		176.3
Curvature Coefficient		1.2
Oversize Index		8.0
Shrinkage Product		57.0
Grading Coefficient		13.5
Grading Modulus		2.40
Atterberg Limits	Liquid Limit	22
	Plasticity Index	7
	Linear Shrinkage	3.0
	PI < 0.075	
Unified Soil Classification		GW-GM-GC
US Highway Classification		A-2-4(0)

D10= 0.121 D30= 1.758 D60= 21.333









% Clay = 1.2	% Silt = 2.0	% Sand = 28.8	% Gravel = 51.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
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Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-27

Project : Okiep 100 Infill

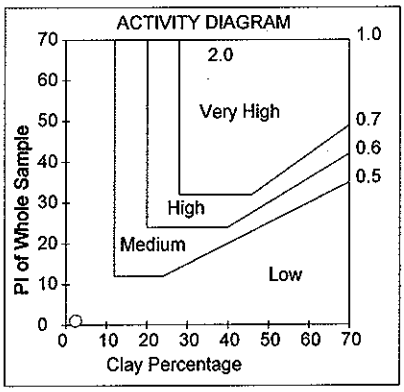
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

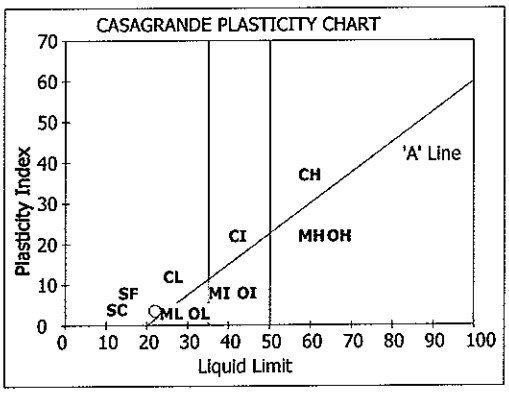
Sample No.	: U9062
Position	: TP 84; 0.4-0.7m
Layer Type	: Sample 57
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

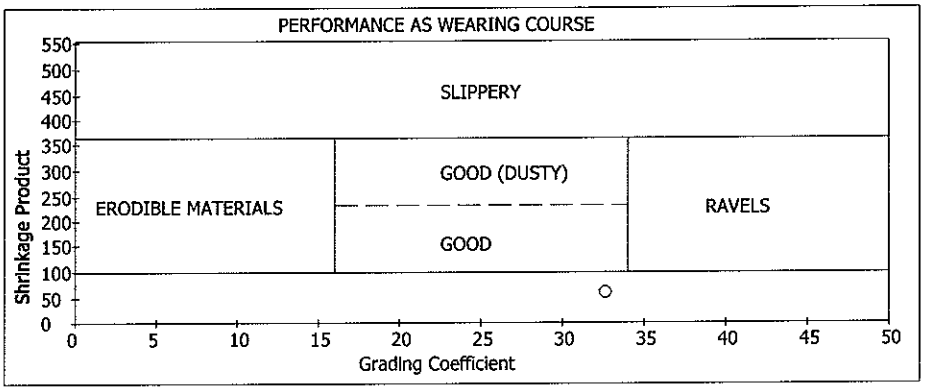
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	96
20.00	92
14.00	89
5.000	71
2.000	50
0.425	24
0.250	19
0.150	13
0.075	8.8
0.060	4.1
0.050	4.0
0.020	3.5
0.005	3.0
0.002	2.3

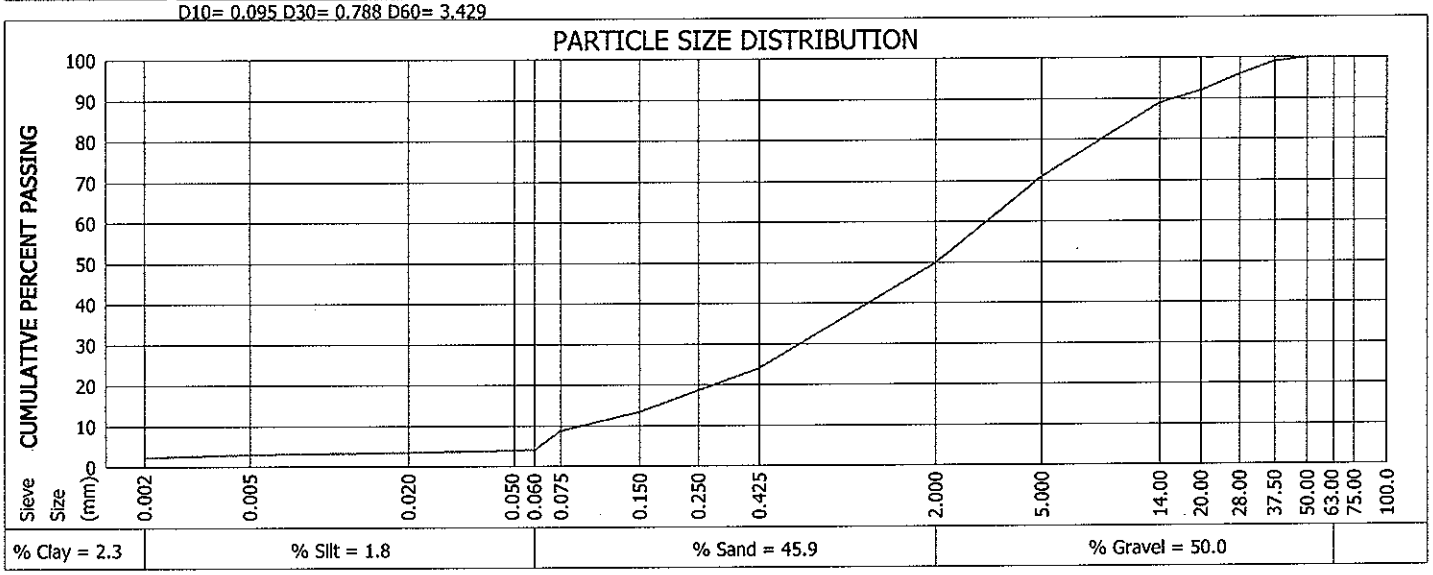
Soil Mortar	2.000 - 0.425	53
	0.425 - 0.250	10
	0.250 - 0.150	10
	0.150 - 0.075	9
	< 0.075	18
Effective Size		0.095
Uniformity Coefficient		36.1
Curvature Coefficient		1.9
Oversize Index		1.0
Shrinkage Product		60.0
Grading Coefficient		32.7
Grading Modulus		2.20
Atterberg Limits	Liquid Limit	22
	Plasticity Index	4.0
	Linear Shrinkage	2.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-a(0)

D10= 0.095 D30= 0.788 D60= 3.429









Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-09

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9063			
HOLE NO./ Km / CHAINAGE		TP85			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 58			
LAYER TESTED/SAMPLED		0.4 - 1.3m			
SAMPLE DEPTH		0.4 - 1.3m			
DATE SAMPLED		2020-01-30			
COLOUR OF SAMPLE		Light Brown			
TYPE OF SAMPLE		Mix Weathered Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	96			
	37.5 mm	94			
	28.0 mm	93			
	20.0 mm	87			
	14.0 mm	83			
	5.0 mm	65			
	2.0 mm	53			
	0.425 mm	34			
	0.075 mm	16			
GM %		2,0			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	35			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	12			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	31			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	42			
	PLASTICITY INDEX	11			
	LINEAR SHRINKAGE	6.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G9			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6,7			
	MDD (kg/m³)	2172			
	COMP MC %	6,6			
SWELL % @	MOD | NRB | PRO	0,02 | 0,04 | 0,07			
C.B.R. SANS GR40	100 %	16			
	98 %	12			
	97 %	11			
	95 %	8			
	93 %	6			
	90 %	4			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-18

Project : Okiep 100 Infill

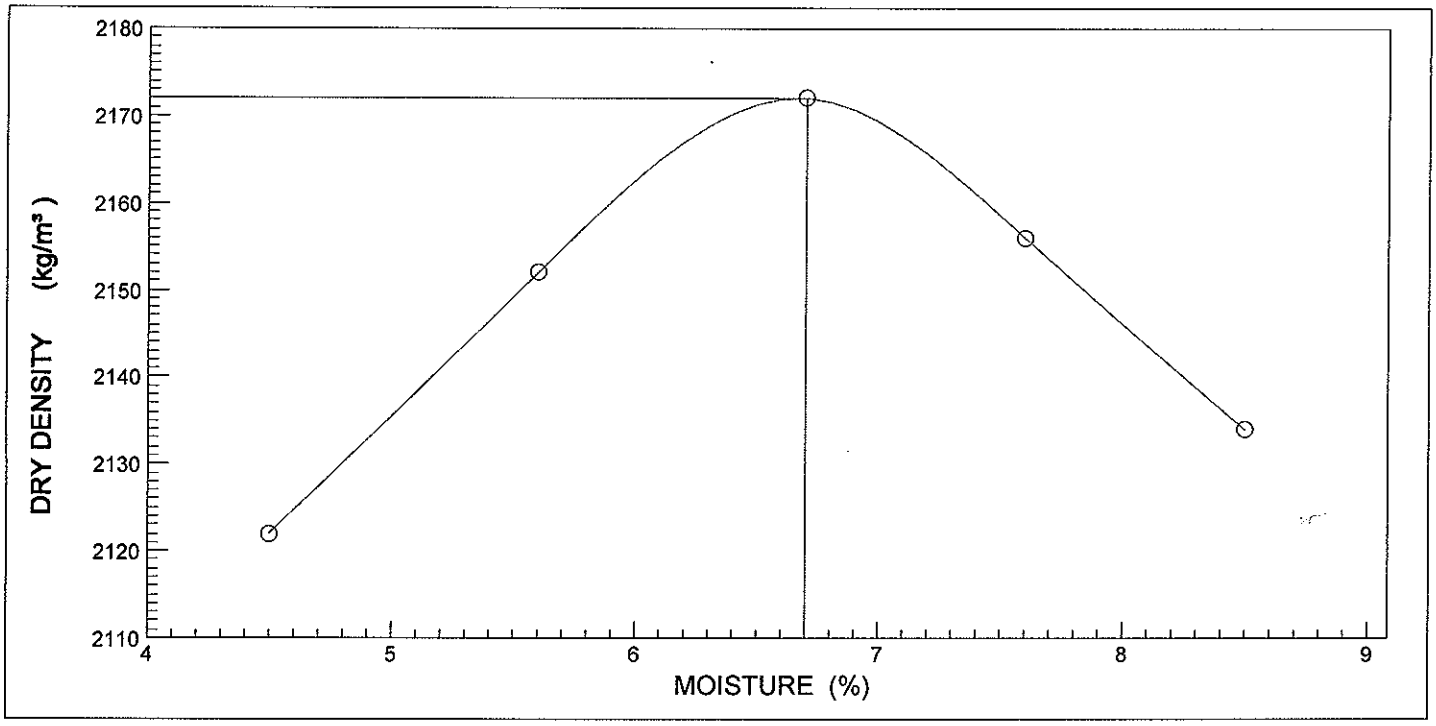
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9063
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	98kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.4 - 1.3m
MATERIAL DESCRIPTION	Mix Weathered Quartz
HOLE NO./ km / CHAINAGE	TP85
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-30
CLIENT MARKING	U9063
COLOUR AND TYPE	Light Brown Gravel Mix

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2122	2152	2172	2156	2134			
MOISTURE (%)	4.5	5.6	6.7	7.6	8.5			

MAXIMUM DRY DENSITY (kg/m³) : 2172	OPTIMUM MOISTURE CONTENT (%) : 6.7



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-09

Project : Okiep 100 Infill

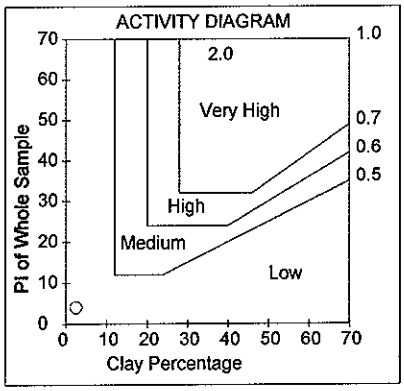
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

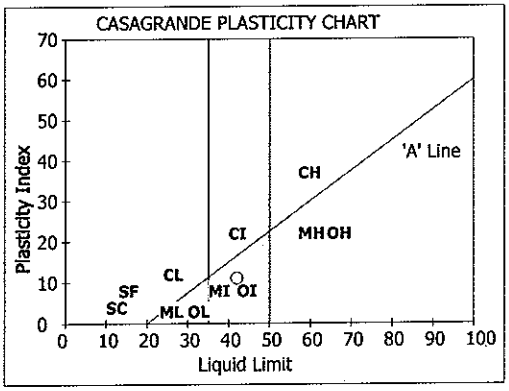
Sample No.	: U9063
Position	: TP 85; 0.4-1.3m
Layer Type	: Sample 58
Sample Colour	: Light Orange Brown
Sample Type	: Mix Quartzstone

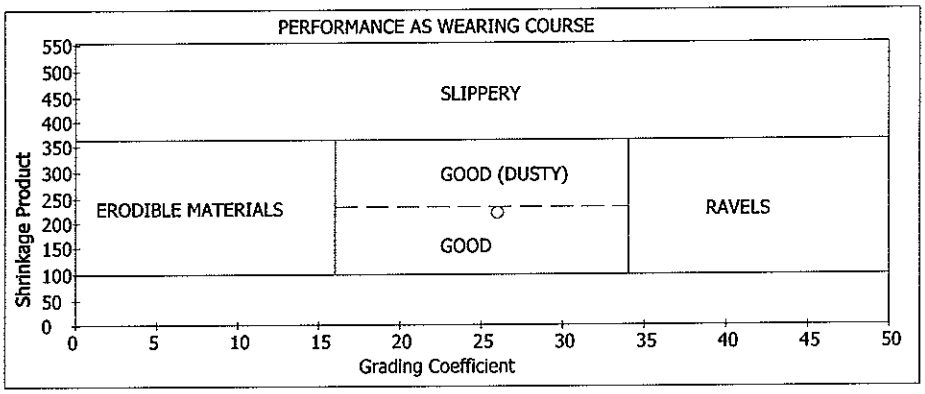
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	96
37.50	94
28.00	93
20.00	87
14.00	83
5.000	65
2.000	53
0.425	34
0.250	29
0.150	23
0.075	16
0.060	6,7
0.050	6,5
0.020	4,9
0.005	3,7
0.002	2,6

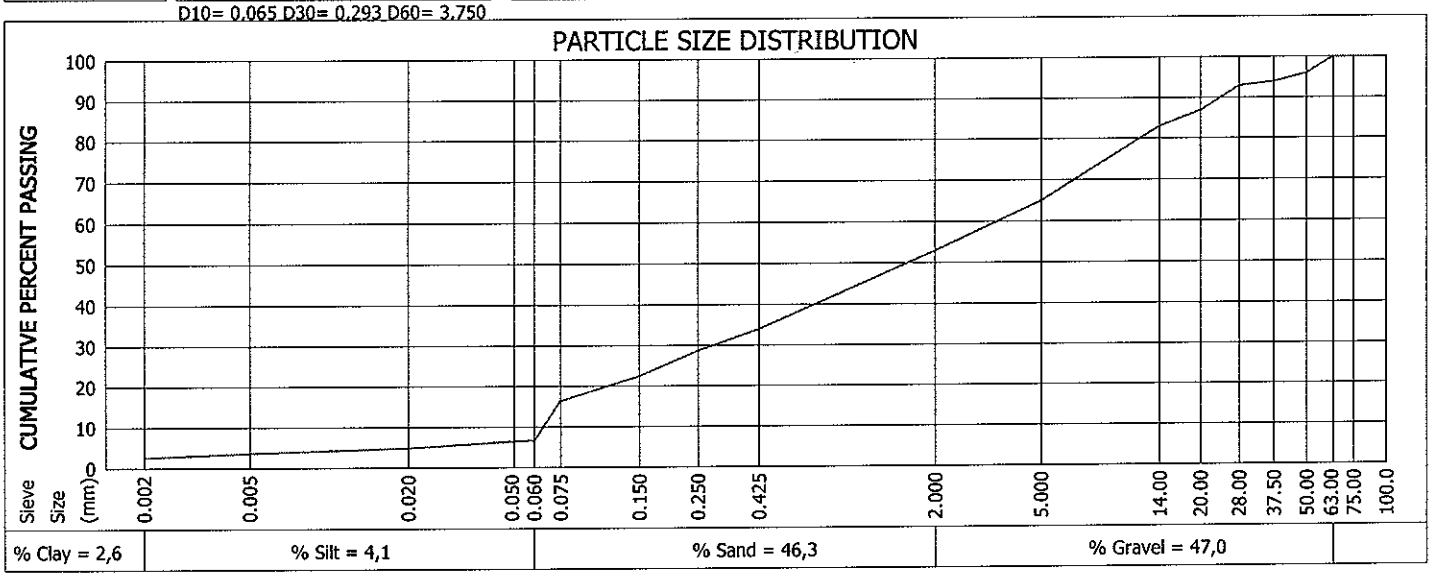
Soil Mortar	2.000 - 0.425	35
	0.425 - 0.250	11
	0.250 - 0.150	12
	0.150 - 0.075	12
	< 0.075	31
Effective Size		0,065
Uniformity Coefficient		57,7
Curvature Coefficient		0,4
Oversize Index		2,0
Shrinkage Product		221,0
Grading Coefficient		26,0
Grading Modulus		2,00
Atterberg Limits	Liquid Limit	42
	Plasticity Index	11
	Linear Shrinkage	6.5
	PI < 0.075	
Unified Soil Classification		SM
US Highway Classification		A-2-7(0)

D10= 0.065 D30= 0.293 D60= 3.750









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-03

Project : Okiep 100 Infill

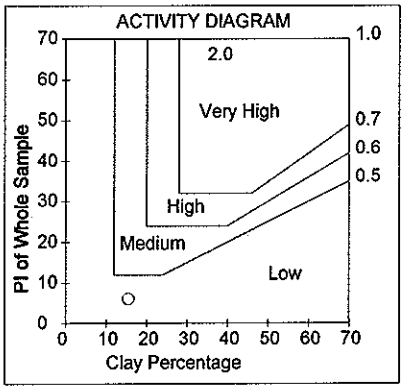
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

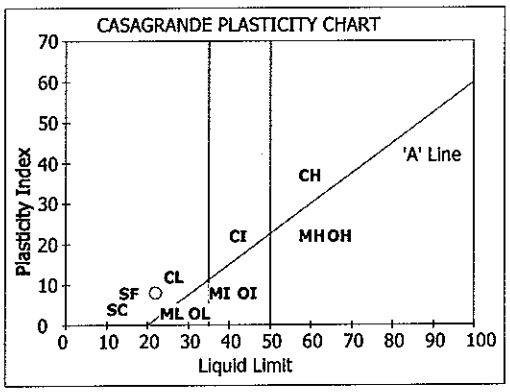
Sample No.	: U9064
Position	: TP 87 - 0.0-0.4m
Layer Type	: Sample 59
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartz

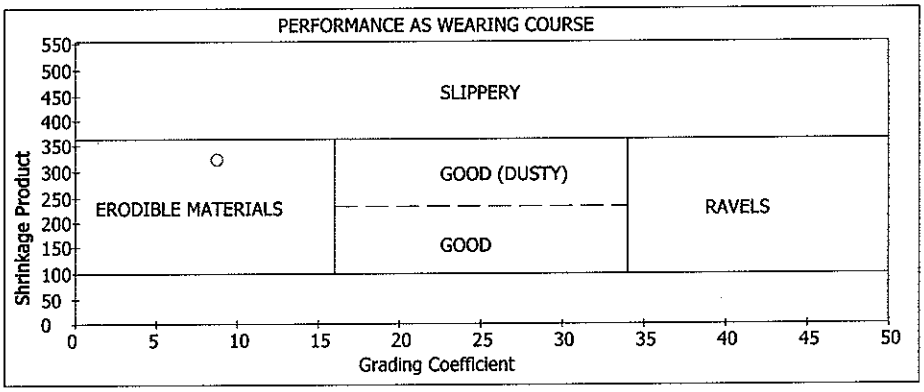
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	97
2.000	91
0.425	72
0.250	63
0.150	51
0.075	41
0.060	22
0.050	21
0.020	19
0.005	18
0.002	15

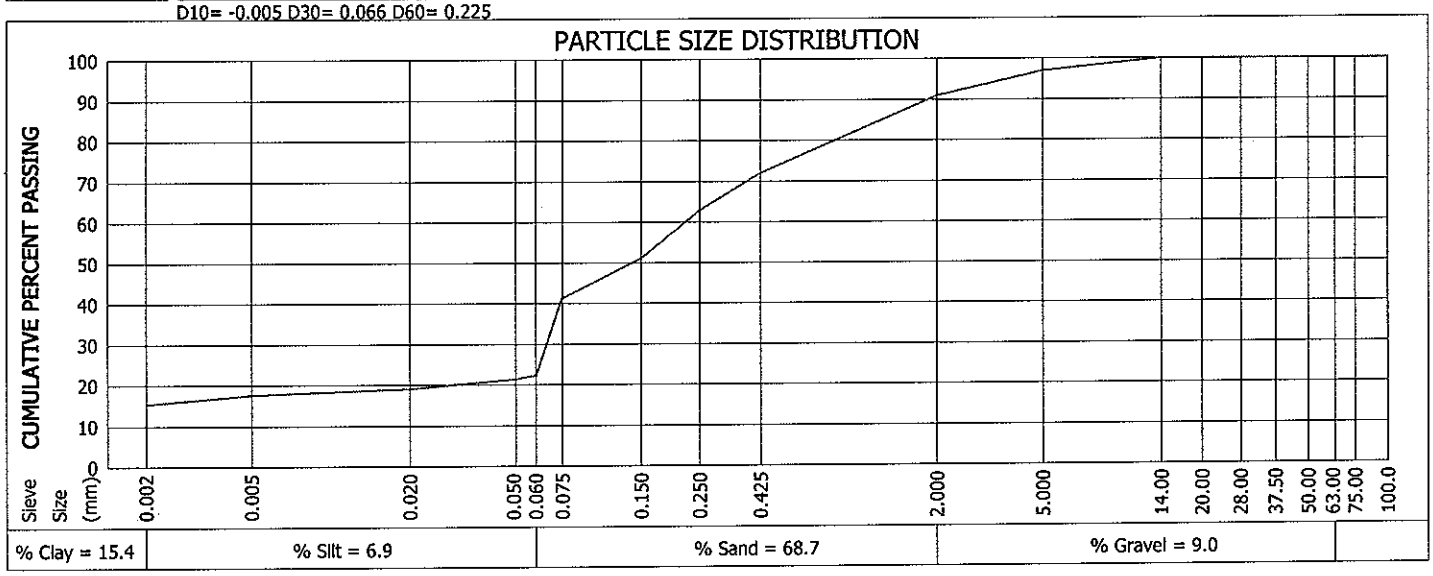
Soil Mortar	2.000 - 0.425	22
	0.425 - 0.250	10
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	45
Effective Size		-0.005
Uniformity Coefficient		-45.0
Curvature Coefficient		-3.9
Oversize Index		0.0
Shrinkage Product		324.0
Grading Coefficient		8.7
Grading Modulus		1.00
Atterberg Limits	Liquid Limit	22
	Plasticity Index	8
	Linear Shrinkage	4.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-4(1)

D10= -0.005 D30= 0.066 D60= 0.225









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-27

Project : Okiep 100 Infill

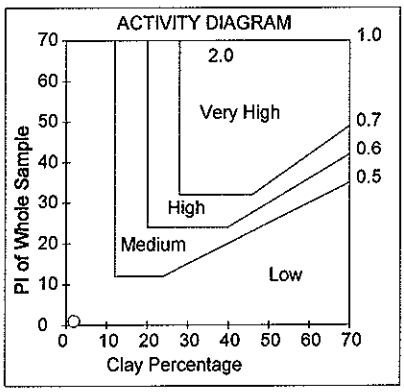
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

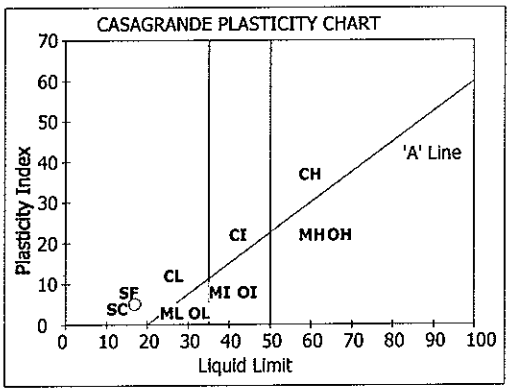
Sample No.	: U9065
Position	: TP 88; 0.0-0.4m
Layer Type	: Sample 60
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

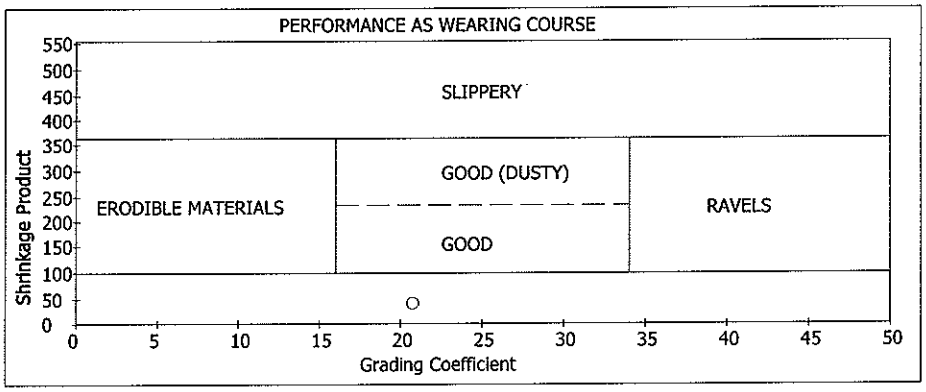
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	96
50.00	93
37.50	87
28.00	80
20.00	75
14.00	69
5.000	46
2.000	35
0.425	21
0.250	17
0.150	12
0.075	8.0
0.060	4.2
0.050	4.0
0.020	3.6
0.005	3.0
0.002	2.2

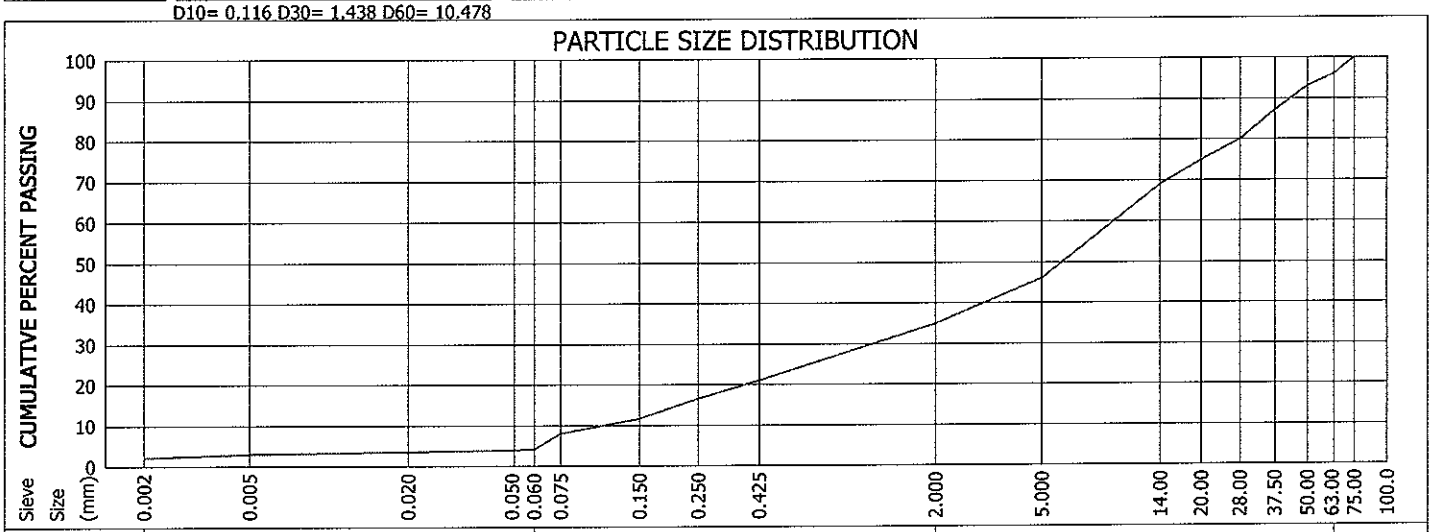
Soil Mortar	2.000 - 0.425	39
	0.425 - 0.250	14
	0.250 - 0.150	14
	0.150 - 0.075	11
	< 0.075	23
Effective Size		0.116
Uniformity Coefficient		90.3
Curvature Coefficient		1.7
Oversize Index		6.0
Shrinkage Product		42.0
Grading Coefficient		20.7
Grading Modulus		2.40
Atterberg Limits	Liquid Limit	17
	Plasticity Index	5
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		GW-GM-GC
US Highway Classification		A-1-a(0)

D10= 0.116 D30= 1.438 D60= 10.478









% Clay = 2.2	% Silt = 2.0	% Sand = 30.8	% Gravel = 61.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-20

Project : Okiep 100 Infill

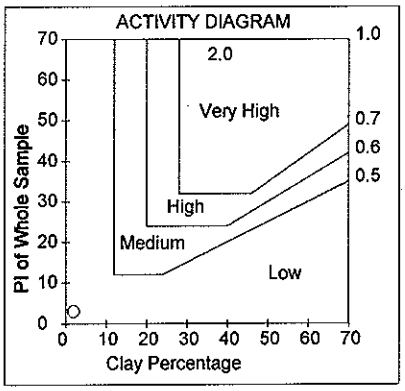
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

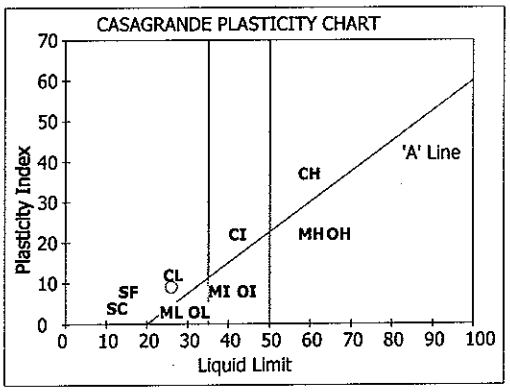
Sample No.	: U9066
Position	: TP 90; 0.0-0.5m
Layer Type	: Sample 61
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

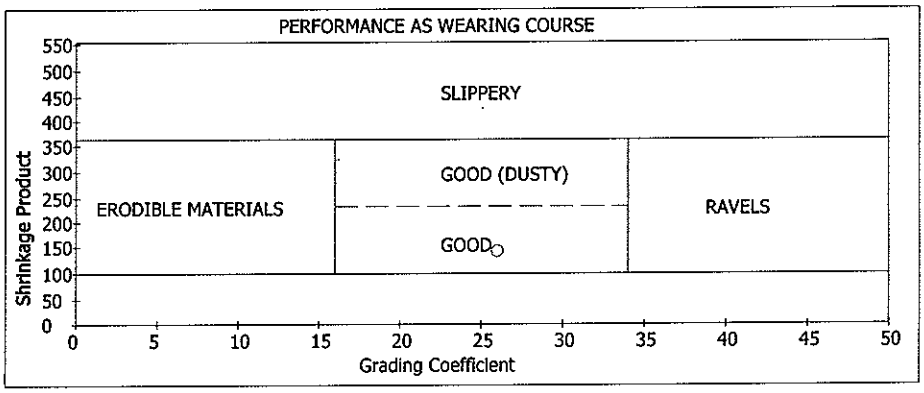
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	93
20.00	87
14.00	81
5.000	65
2.000	53
0.425	32
0.250	26
0.150	19
0.075	13
0.060	5.9
0.050	5.8
0.020	4.3
0.005	3.6
0.002	2.1

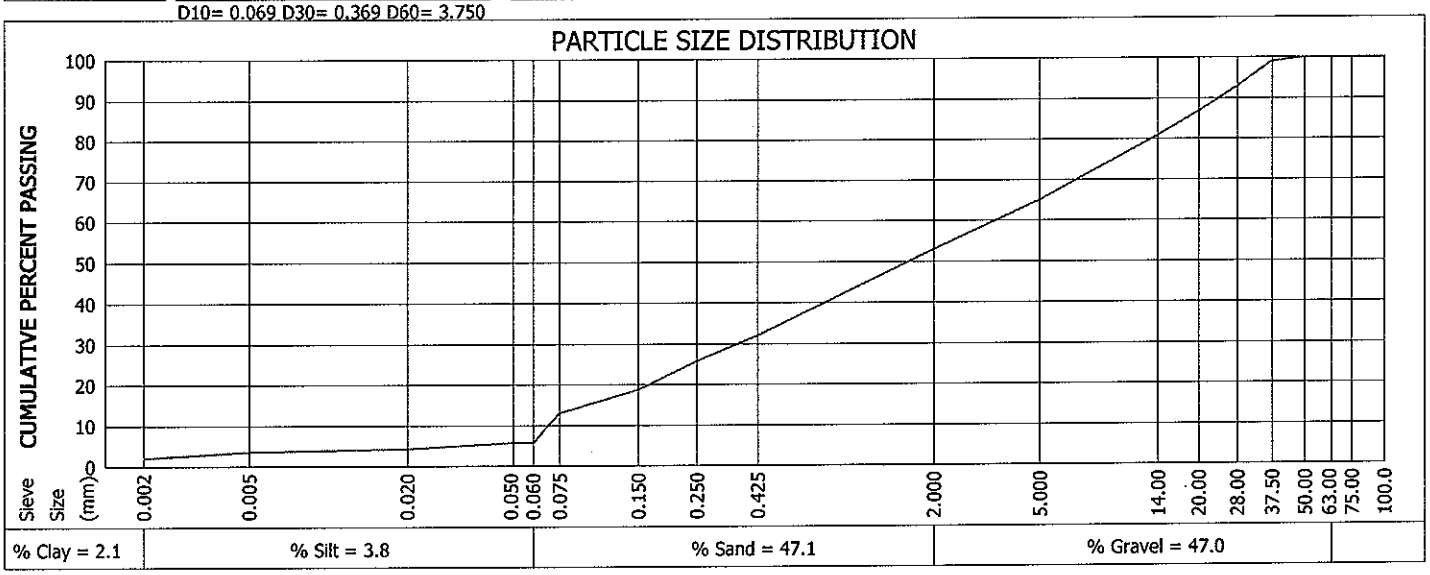
Soil Mortar	2.000 - 0.425	39
	0.425 - 0.250	12
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	25
Effective Size		0.069
Uniformity Coefficient		54.3
Curvature Coefficient		0.5
Oversize Index		1.0
Shrinkage Product		144.0
Grading Coefficient		26.0
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	26
	Plasticity Index	9
	Linear Shrinkage	4.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.069 D30= 0.369 D60= 3.750









Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 8. & Conductivity = 0.4 S/m [SANS 5854]

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Manager

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Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-02-27

Project : Okiep 100 Infill

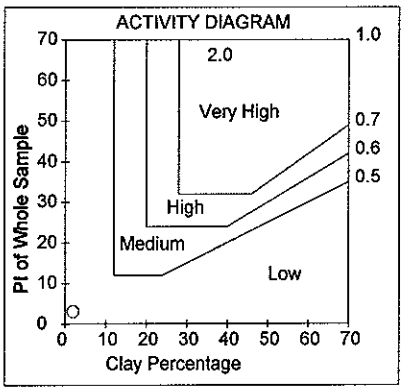
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

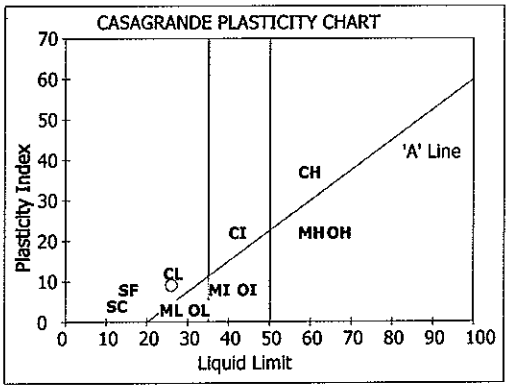
Sample No.	: U9066
Position	: TP 90; 0.0-0.5m
Layer Type	: Sample 61
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Quartzstone

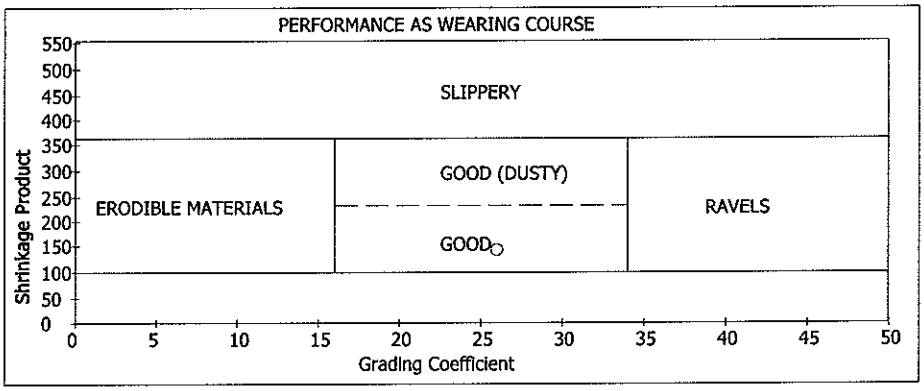
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	93
20.00	87
14.00	81
5.000	65
2.000	53
0.425	32
0.250	26
0.150	19
0.075	13
0.060	5.9
0.050	5.8
0.020	4.3
0.005	3.6
0.002	2.1

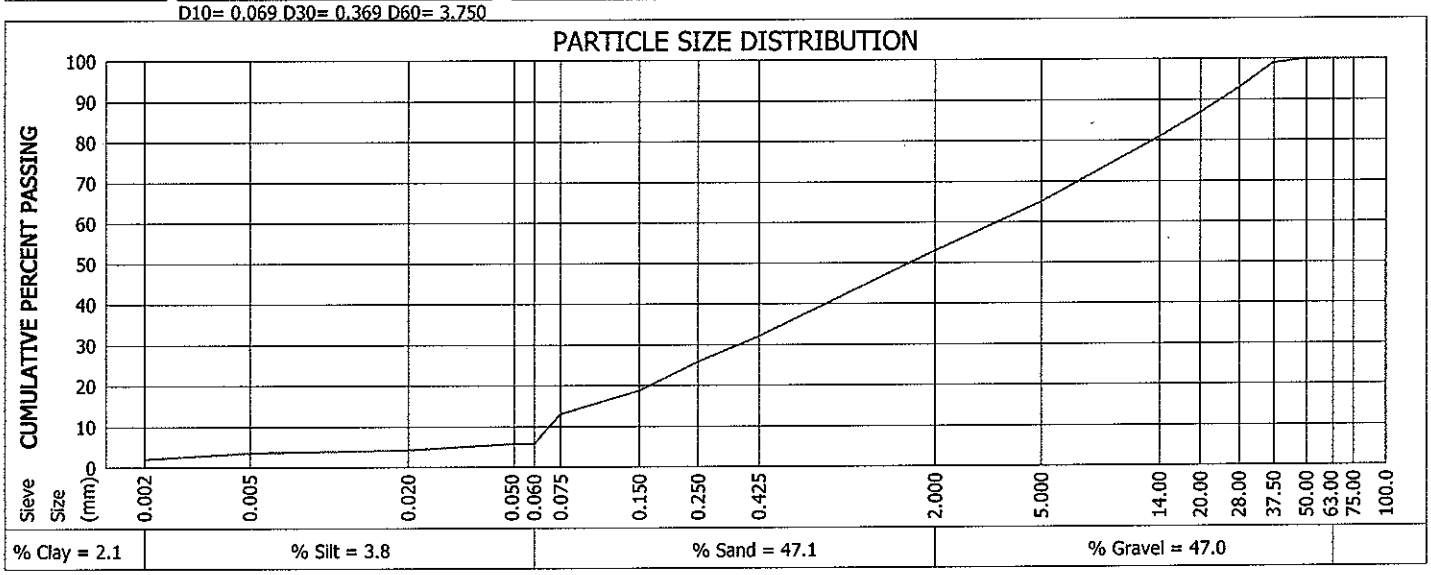
Soil Mortar	2.000 - 0.425	39
	0.425 - 0.250	12
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	25
Effective Size		0.069
Uniformity Coefficient		54.3
Curvature Coefficient		0.5
Oversize Index		1.0
Shrinkage Product		144.0
Grading Coefficient		26.0
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	26
	Plasticity Index	9
	Linear Shrinkage	4.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.069 D30= 0.369 D60= 3.750









% Clay = 2.1	% Silt = 3.8	% Sand = 47.1	% Gravel = 47.0

Deviation from Test Method :
Remarks and Notes :

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The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-12

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

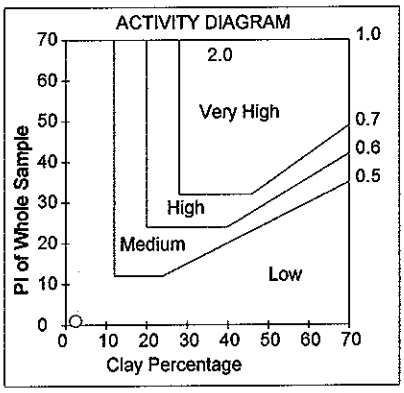
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

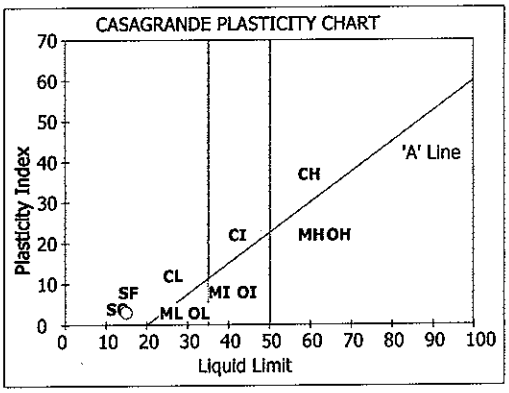
Sample No.	: U9067
Position	: TP 91 - 0.0-0.4m
Layer Type	: Sample 62
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

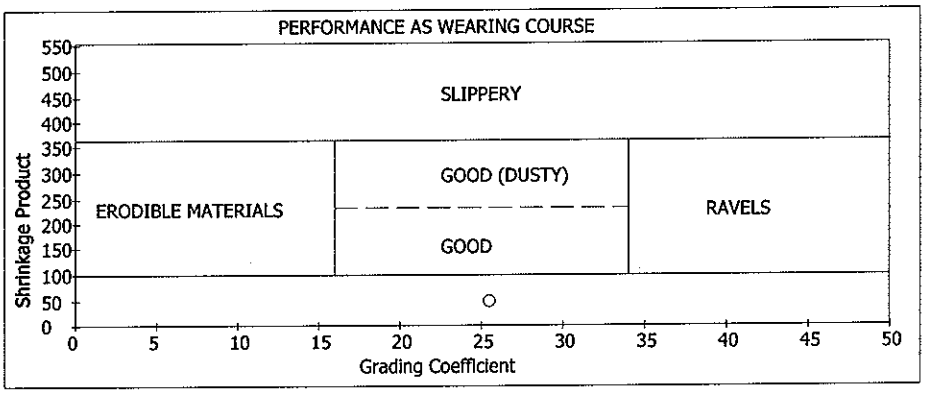
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	99
37.50	92
28.00	89
20.00	85
14.00	81
5.000	67
2.000	51
0.425	32
0.250	24
0.150	17
0.075	11
0.060	4.5
0.050	4.4
0.020	3.5
0.005	2.7
0.002	2.3

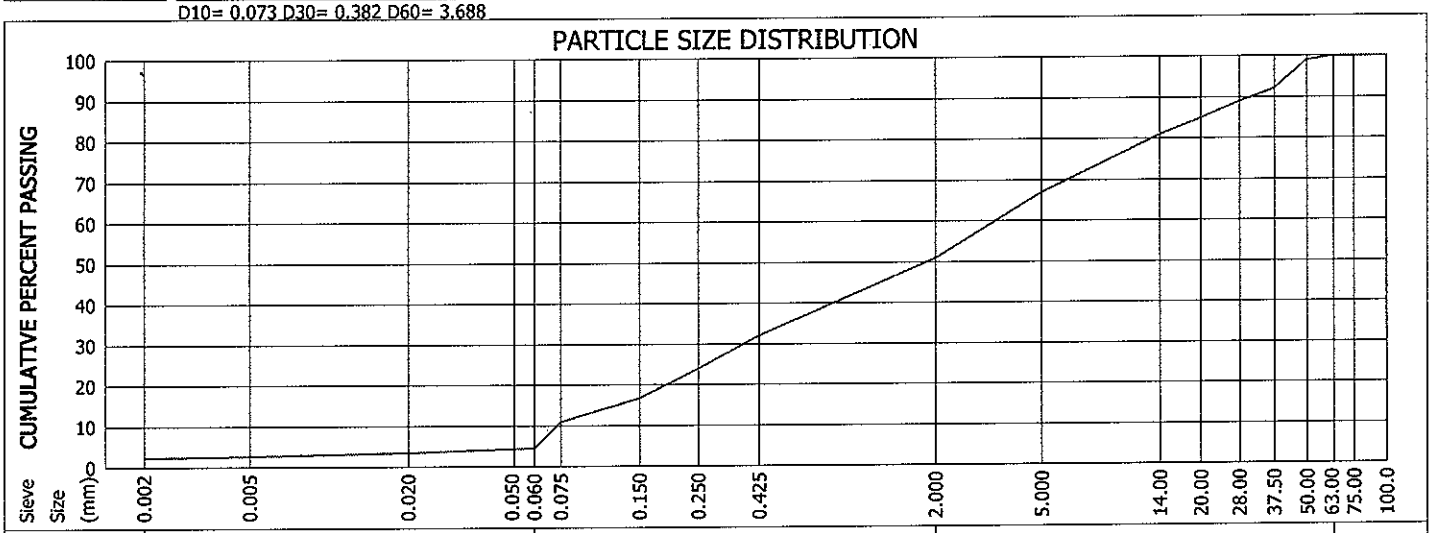
Soil Mortar	2.000 - 0.425	37
	0.425 - 0.250	16
	0.250 - 0.150	14
	0.150 - 0.075	11
	< 0.075	22
Effective Size		0.073
Uniformity Coefficient		50.5
Curvature Coefficient		0.5
Oversize Index		7.0
Shrinkage Product		48.0
Grading Coefficient		25.5
Grading Modulus		2.10
Atterberg Limits	Liquid Limit	15
	Plasticity Index	3.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.073 D30= 0.382 D60= 3.688









% Clay = 2.3	% Silt = 2.2	% Sand = 46.5	% Gravel = 49.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-12

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

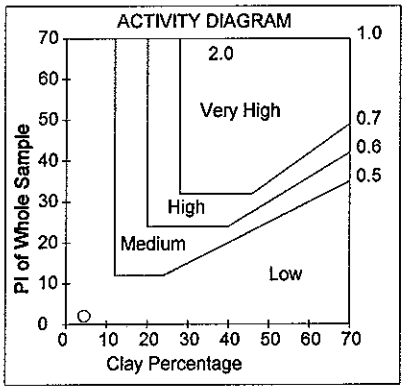
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

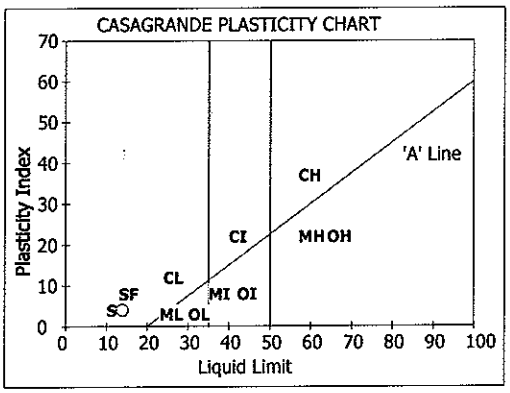
Sample No.	: U9068
Position	: TP 92 - 0.0-0.2m
Layer Type	: Sample 62
Sample Colour	: Orange Brown
Sample Type	: Mix Quartz

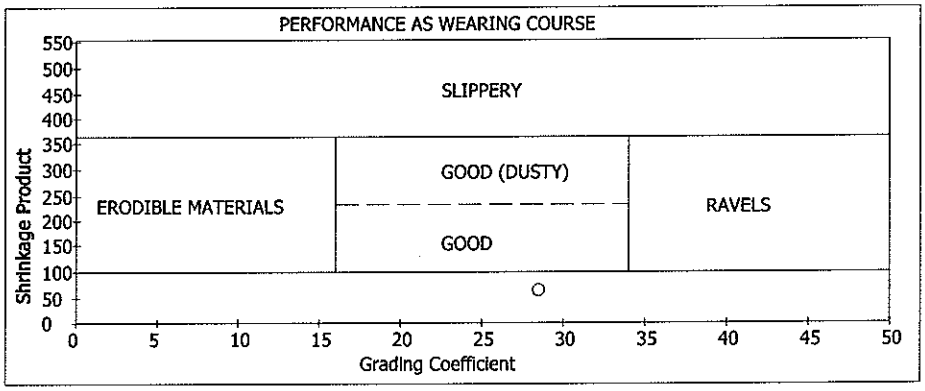
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	96
14.00	92
5.000	77
2.000	63
0.425	44
0.250	36
0.150	26
0.075	18
0.060	8.5
0.050	8.2
0.020	6.7
0.005	5.1
0.002	4.3

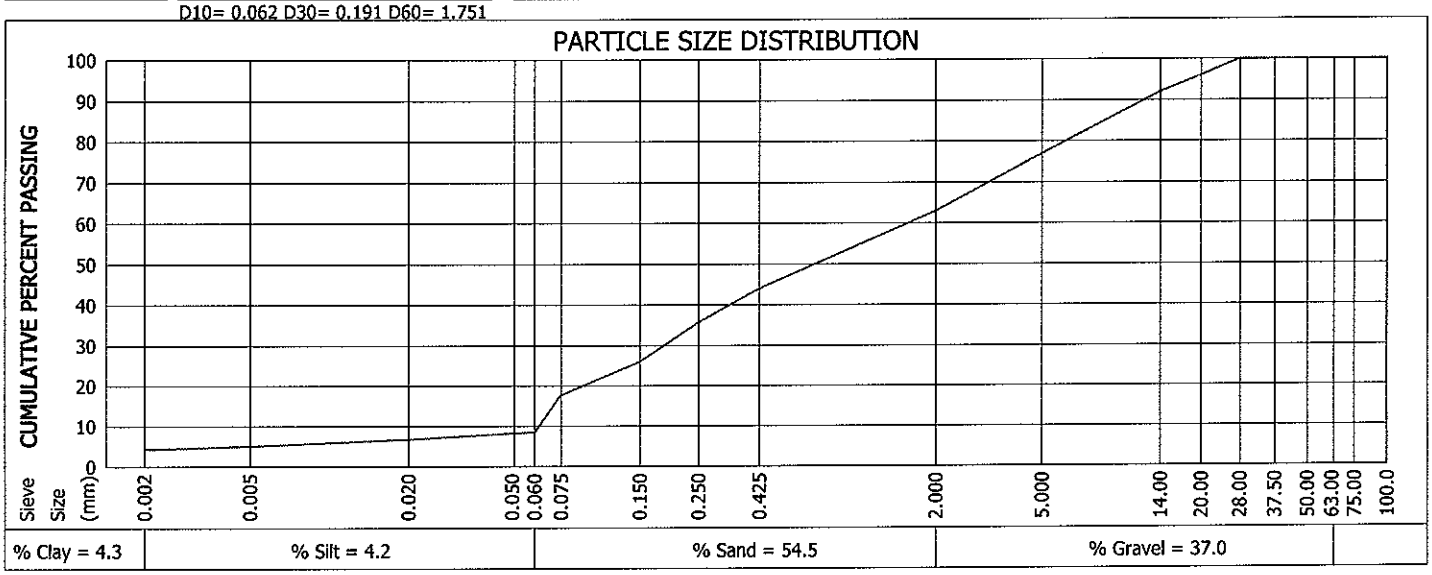
Soil Mortar	2.000 - 0.425	31
	0.425 - 0.250	13
	0.250 - 0.150	15
	0.150 - 0.075	13
	< 0.075	28
Effective Size		0.062
Uniformity Coefficient		28.2
Curvature Coefficient		0.3
Oversize Index		0.0
Shrinkage Product		66.0
Grading Coefficient		28.5
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	14
	Plasticity Index	4.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.062 D30= 0.191 D60= 1.751









% Clay = 4.3	% Silt = 4.2	% Sand = 54.5	% Gravel = 37.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-12

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9069			
HOLE NO./ Km / CHAINAGE		TP94			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 64			
LAYER TESTED/SAMPLED		0.3 - 0.7m			
SAMPLE DEPTH		0.3 - 0.7m			
DATE SAMPLED		2020-01-30			
COLOUR OF SAMPLE		Dark Brown			
TYPE OF SAMPLE		Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm	100			
	63.0 mm	98			
	50.0 mm	98			
	37.5 mm	92			
	28.0 mm	89			
	20.0 mm	87			
	14.0 mm	82			
	5.0 mm	61			
	2.0 mm	47			
	0.425 mm	28			
	0.075 mm	9			
GM %		2.2			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	41			
COARSE FINE SAND	0.425 - 0.250	15			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	19			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	16			
	PLASTICITY INDEX	1.4			
	LINEAR SHRINKAGE	1.0			
CLASSIFICATION	H.R.B.	A-1-a(0)			
	COLTO	G8			
	TRH 14	G9			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	5.5			
	MDD (kg/m³)	2221			
	COMP MC %	5.7			
SWELL % @	MOD | NRB | PRO	0.01 | 0.03 | 0.06			
C.B.R. SANS GR40	100 %	38			
	98 %	27			
	97 %	23			
	95 %	16			
	93 %	12			
	90 %	7			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-18

Project : Okiep 100 Infill

Attention : Aurey Nonyana

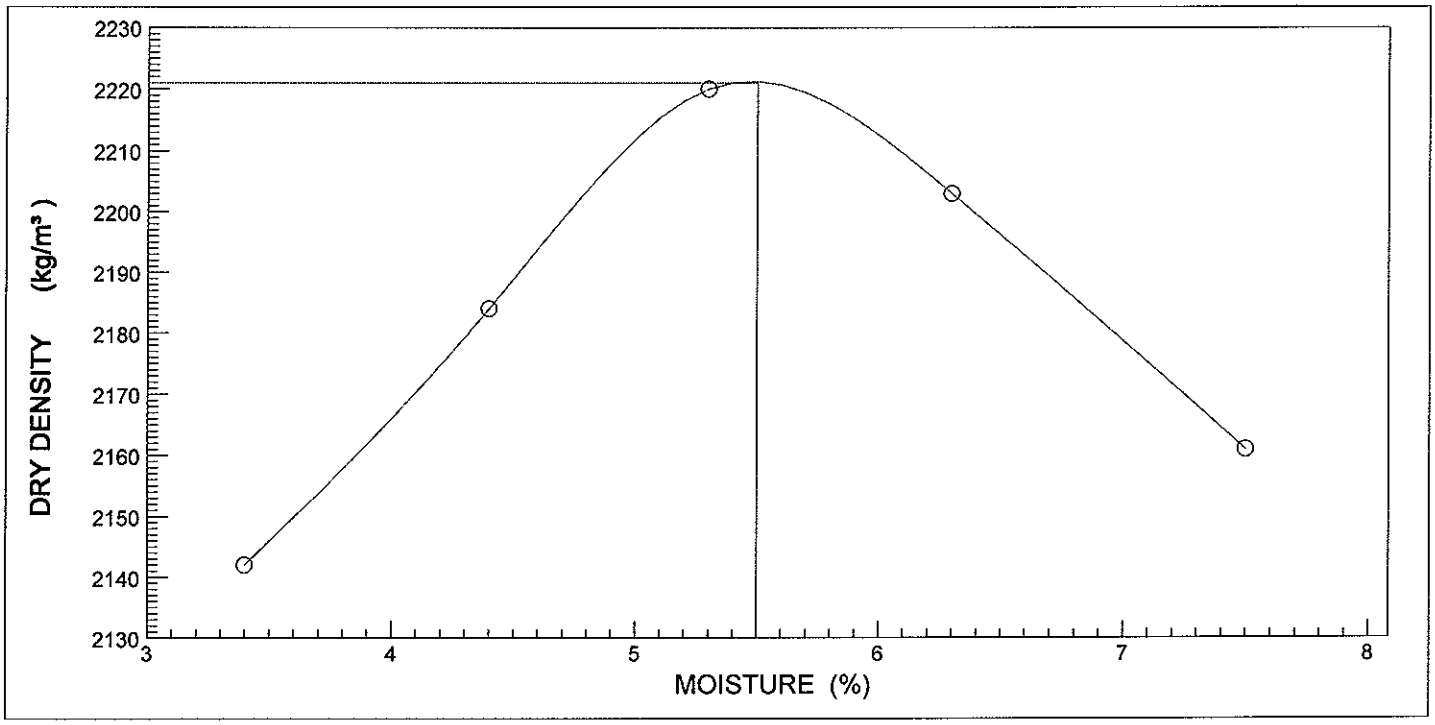
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	U9069
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.3 - 0.7m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP94
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-30
CLIENT MARKING	U9069
COLOUR AND TYPE	Dark Brown Gravel Mix

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2142	2184	2220	2203	2161			
MOISTURE (%)	3.4	4.4	5.3	6.3	7.5			

MAXIMUM DRY DENSITY (kg/m³) : 2221	OPTIMUM MOISTURE CONTENT (%) : 5.5



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-12

Project : Okiep 100 Infill

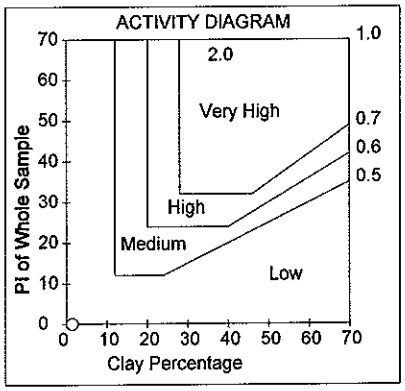
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

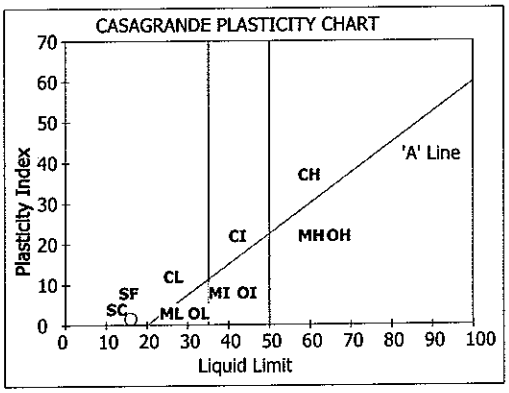
Sample No.	: U9069
Position	: TP 94 - 0.3-0.7m
Layer Type	: Sample 64
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

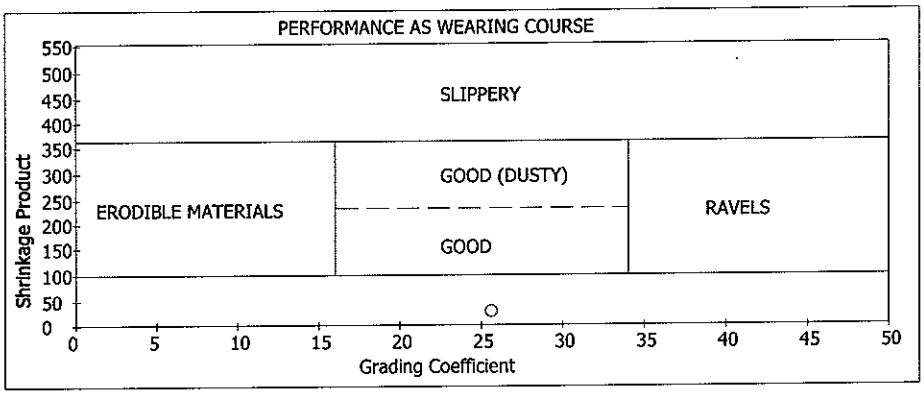
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	98
50.00	98
37.50	92
28.00	89
20.00	87
14.00	82
5.000	61
2.000	47
0.425	28
0.250	21
0.150	14
0.075	8,8
0.060	3,2
0.050	3,1
0.020	2,5
0.005	1,8
0.002	1,5

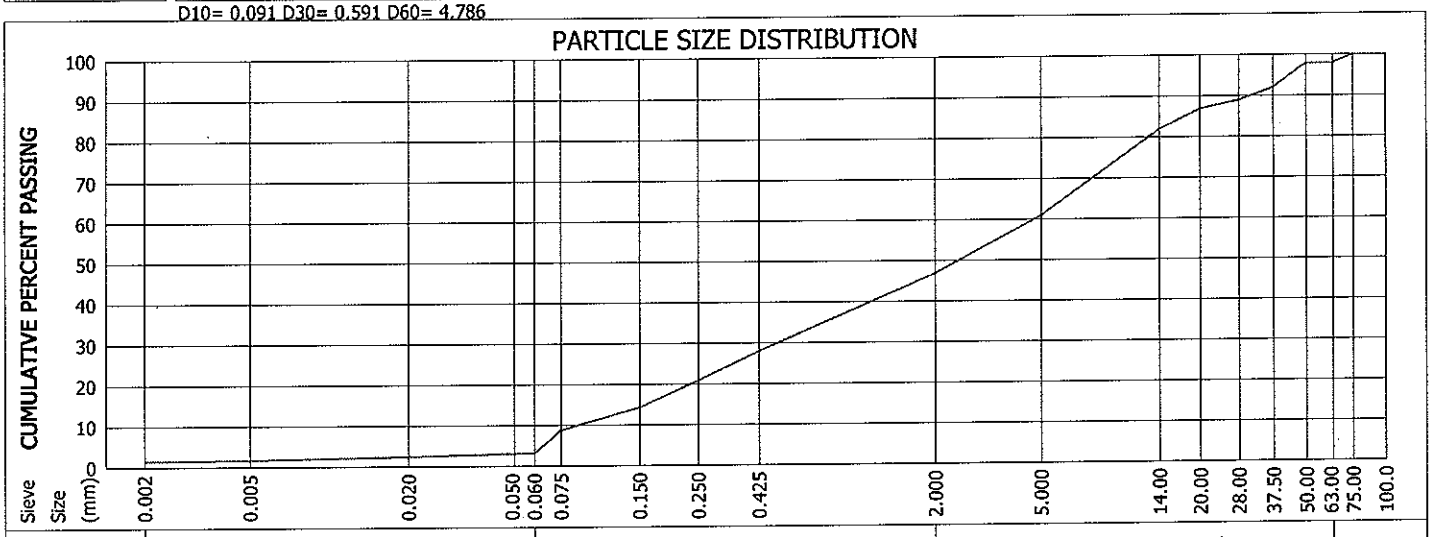
Soil Mortar	2.000 - 0.425	41
	0.425 - 0.250	15
	0.250 - 0.150	14
	0.150 - 0.075	12
	< 0.075	19
Effective Size		0,091
Uniformity Coefficient		52,6
Curvature Coefficient		0,8
Oversize Index		6,0
Shrinkage Product		28,0
Grading Coefficient		25,6
Grading Modulus		2,20
Atterberg Limits	Liquid Limit	16
	Plasticity Index	1,0
	Linear Shrinkage	1,0
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-a(0)

D10= 0.091 D30= 0.591 D60= 4.786









% Clay = 1,5	% Silt = 1,7	% Sand = 43,8	% Gravel = 51,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-12

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

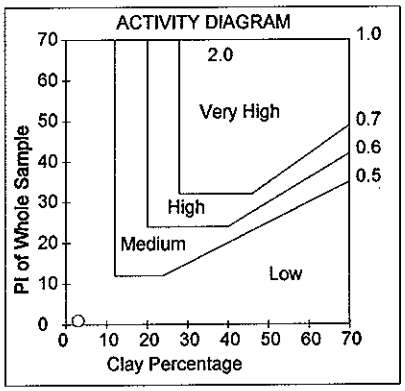
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

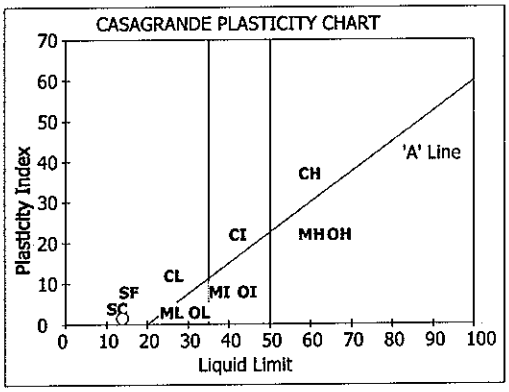
Sample No.	: U9070
Position	: TP 95 - 0.0-0.3m
Layer Type	: Sample 65
Sample Colour	: Orange Brown
Sample Type	: Mix Quartz

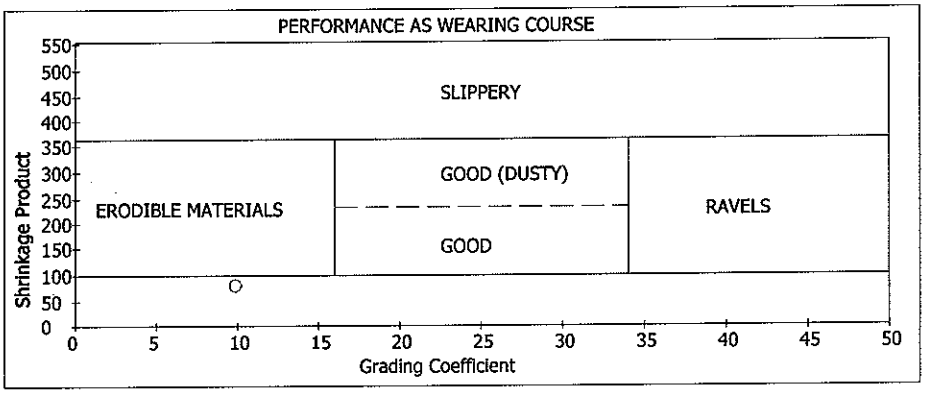
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	99
2.000	90
0.425	54
0.250	45
0.150	36
0.075	28
0.060	9.7
0.050	9.4
0.020	7.0
0.005	4.0
0.002	2.8

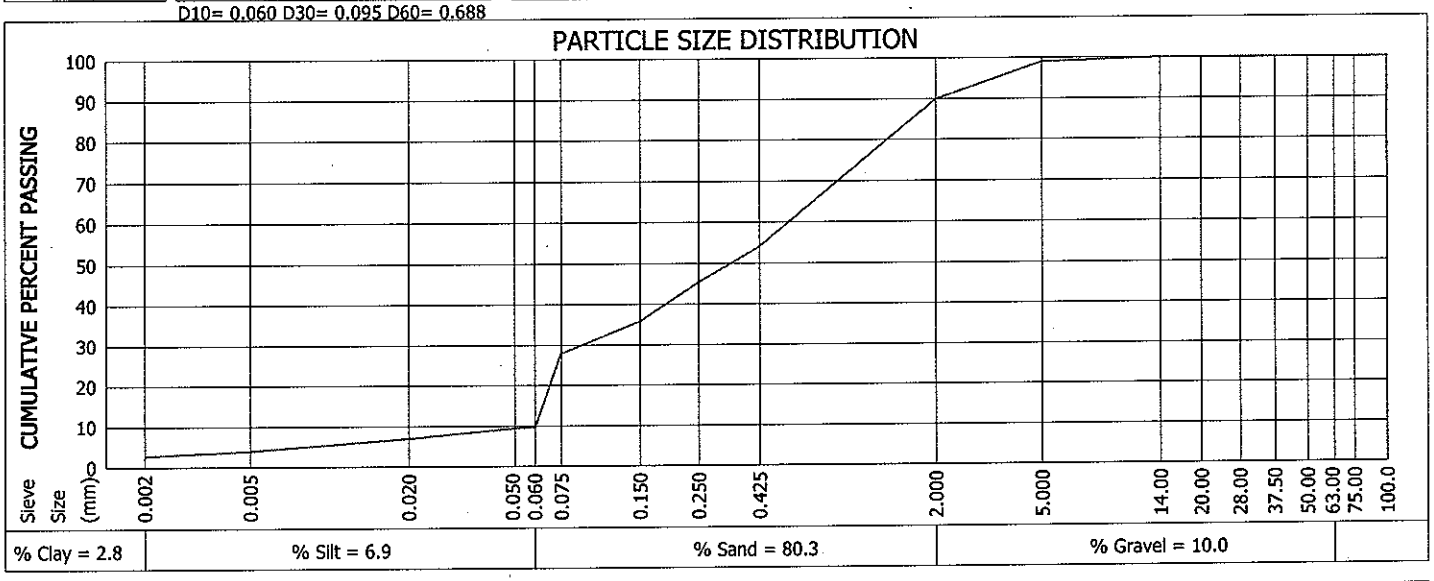
Soil Mortar	2.000 - 0.425	40
	0.425 - 0.250	10
	0.250 - 0.150	11
	0.150 - 0.075	9
	< 0.075	31
Effective Size		0.060
Uniformity Coefficient		11.5
Curvature Coefficient		0.2
Oversize Index		0.0
Shrinkage Product		81.0
Grading Coefficient		9.9
Grading Modulus		1.30
Atterberg Limits	Liquid Limit	14
	Plasticity Index	1.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.060 D30= 0.095 D60= 0.688









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-03

Project : Okiep 100 Infill

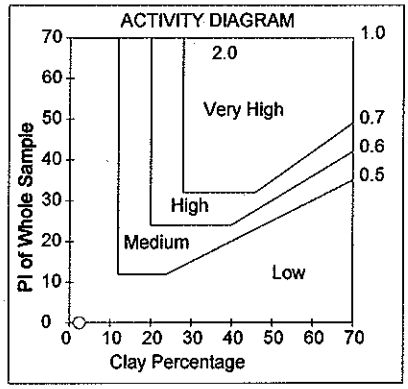
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

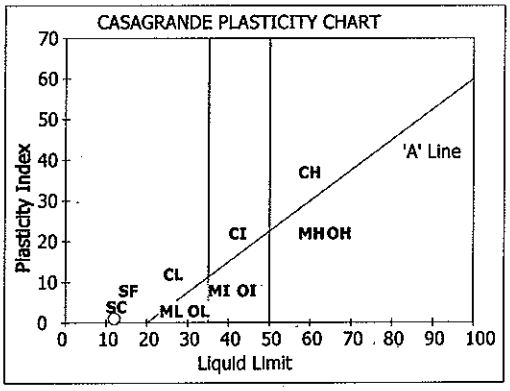
Sample No.	: U9071
Position	: TP 96 - 0.0-0.4m
Layer Type	: Sample 66
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

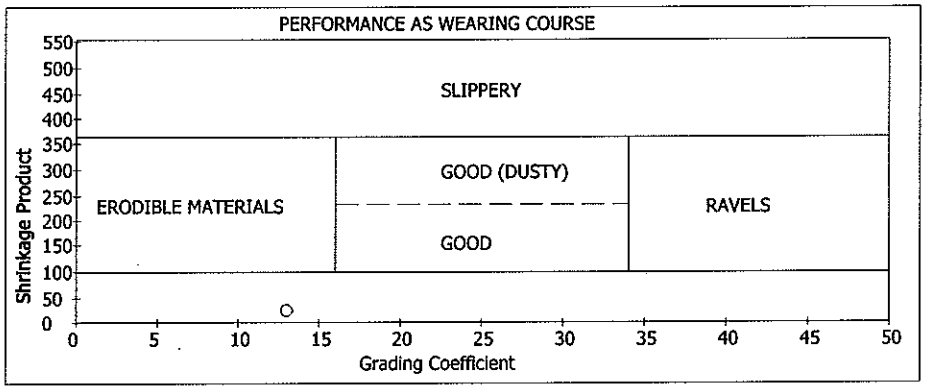
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	98
20.00	97
14.00	97
5.000	93
2.000	84
0.425	49
0.250	39
0.150	28
0.075	19
0.060	5,5
0.050	5,5
0.020	4,2
0.005	3,3
0.002	2,4

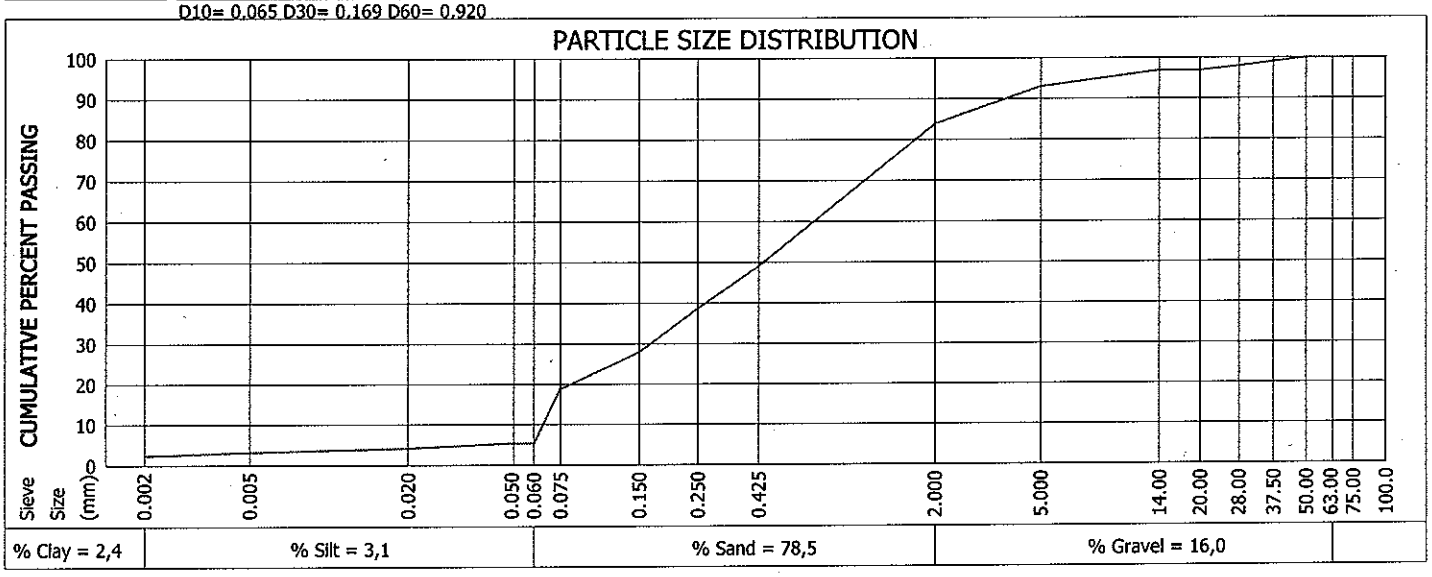
Soil Mortar	2.000 - 0.425	41
	0.425 - 0.250	12
	0.250 - 0.150	13
	0.150 - 0.075	11
	< 0.075	23
Effective Size		0,065
Uniformity Coefficient		14,2
Curvature Coefficient		0,5
Oversize Index		1,0
Shrinkage Product		24,5
Grading Coefficient		13,0
Grading Modulus		1,50
Atterberg Limits	Liquid Limit	12
	Plasticity Index	1,0
	Linear Shrinkage	0,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.065 D30= 0.169 D60= 0.920









% Clay = 2,4	% Silt = 3,1	% Sand = 78,5	% Gravel = 16,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-12

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9072			
HOLE NO./ Km / CHAINAGE	TP97			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 67			
LAYER TESTED/SAMPLED	0.0 - 0.5m			
SAMPLE DEPTH	0.0 - 0.5m			
DATE SAMPLED	2020-01-31			
COLOUR OF SAMPLE	Dark Brown			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	97			
	37.5 mm	95			
	28.0 mm	92			
	20.0 mm	90			
	14.0 mm	86			
	5.0 mm	74			
	2.0 mm	63			
	0.425 mm	38			
	0.075 mm	13			
GM %		1.9			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	40			
COARSE FINE SAND	0.425 - 0.250	14			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	21			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	15			
	PLASTICITY INDEX	3.0			
	LINEAR SHRINKAGE	1.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G6			
	TRH 14	G7			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	7.4			
	MDD (kg/m³)	1993			
	COMP MC %	7.6			
SWELL % @	MOD | NRB | PRO	0.03 | 0.06 | 0.10			
C.B.R. SANS GR40	100 %	74			
	98 %	52			
	97 %	44			
	95 %	31			
	93 %	22			
	90 %	13			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-02-24

Project : Okiep 100 Infill

Attention : Aurey Nonyana

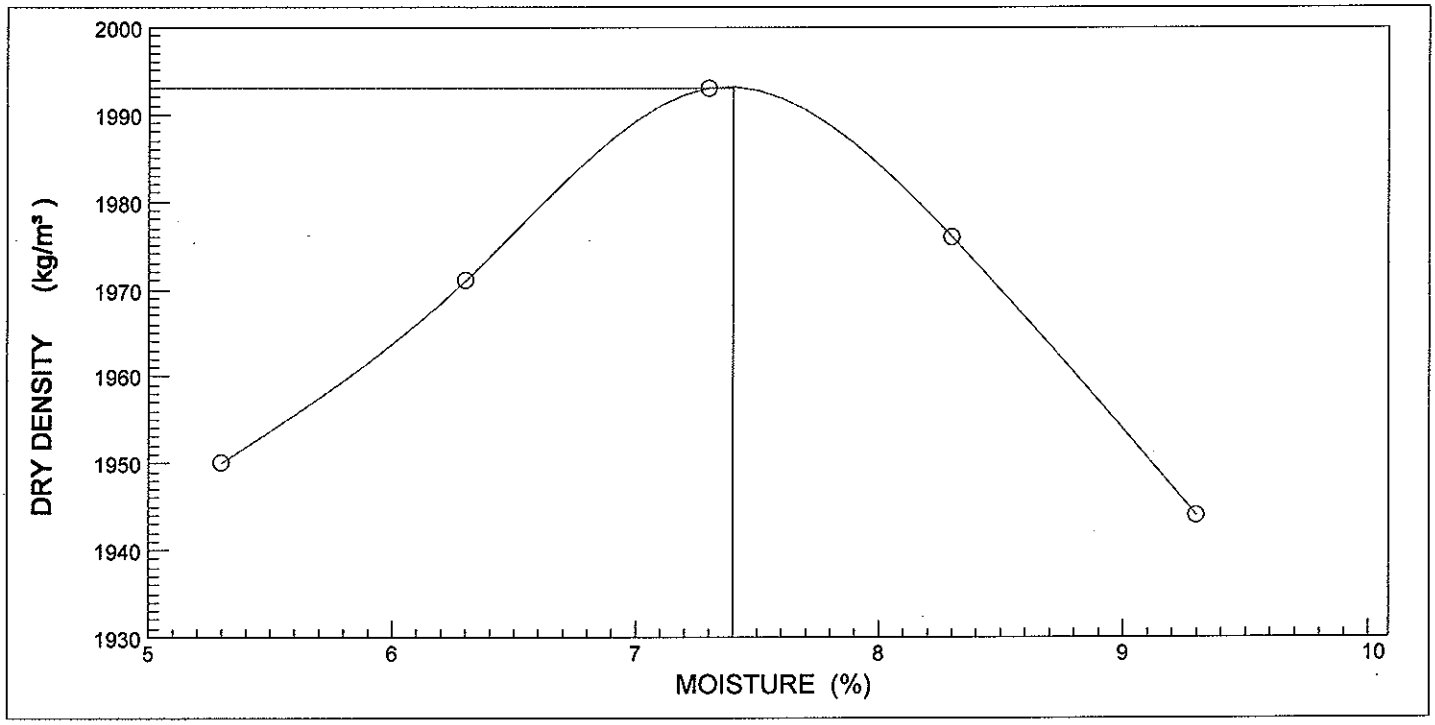
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 67
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.5m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP97
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9072
COLOUR AND TYPE	Dark Brown Gravel Mix

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	1950	1971	1993	1976	1944			
MOISTURE (%)	5.3	6.3	7.3	8.3	9.3			

MAXIMUM DRY DENSITY (kg/m³) : 1993	OPTIMUM MOISTURE CONTENT (%) : 7.4



Deviation from Test Method :
Remarks and Notes :

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Job Request No.: RU3410

Date Reported : 2020-03-12

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

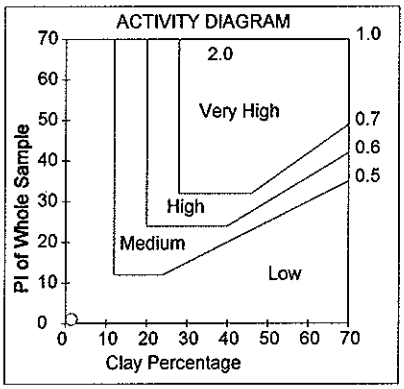
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

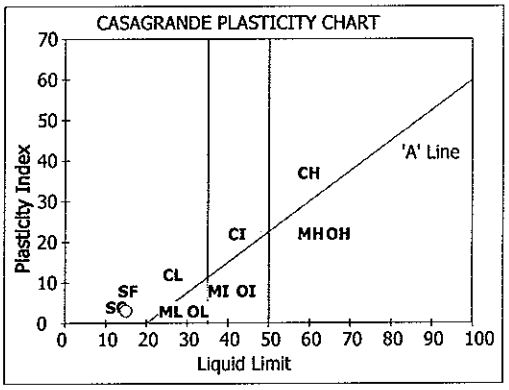
Sample No.	: U9072
Position	: TP 97 - 0.0-0.5m
Layer Type	: Sample 67
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

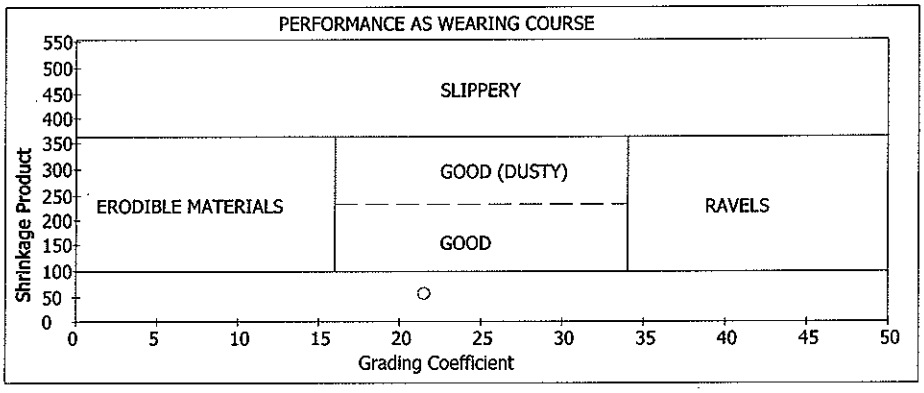
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	97
37.50	95
28.00	92
20.00	90
14.00	86
5.000	74
2.000	63
0.425	38
0.250	29
0.150	20
0.075	13
0.060	4,5
0.050	4,3
0.020	3,6
0.005	2,0
0.002	1,4

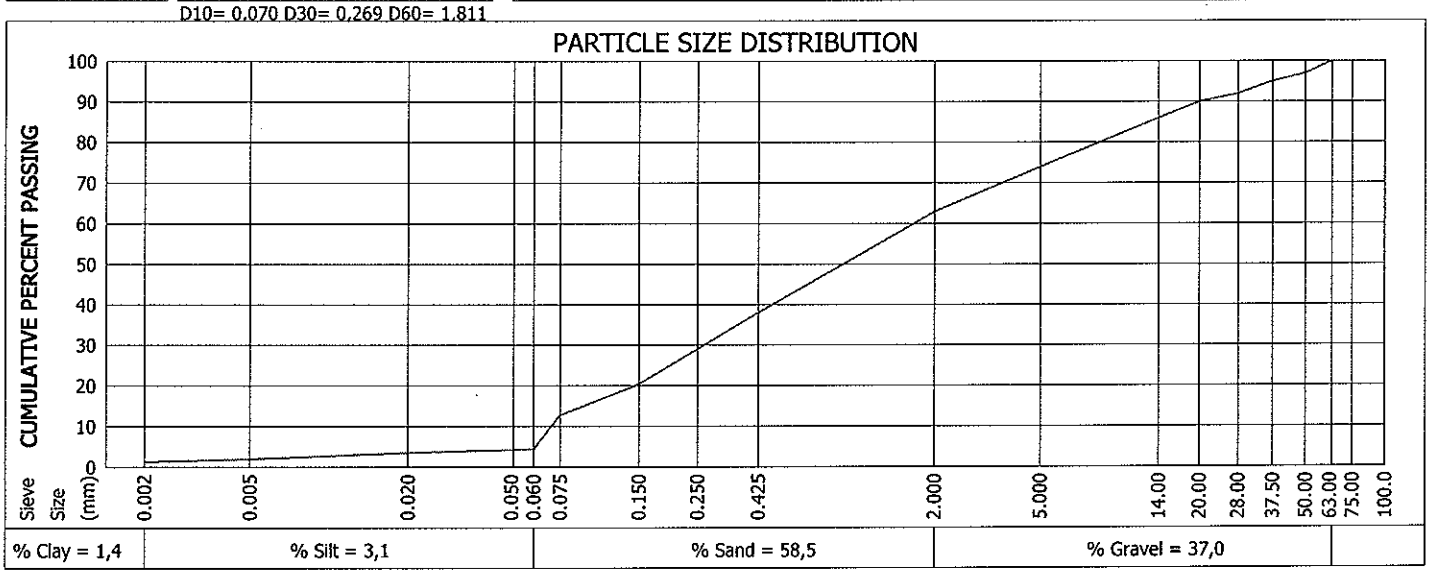
Soil Mortar	2.000 - 0.425	40
	0.425 - 0.250	14
	0.250 - 0.150	14
	0.150 - 0.075	12
	< 0.075	21
Effective Size		0,070
Uniformity Coefficient		25,9
Curvature Coefficient		0,6
Oversize Index		2,0
Shrinkage Product		57,0
Grading Coefficient		21,5
Grading Modulus		1,90
Atterberg Limits	Liquid Limit	15
	Plasticity Index	3.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.070 D30= 0.269 D60= 1.811









% Clay = 1,4	% Silt = 3,1	% Sand = 58,5	% Gravel = 37,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-12

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9073			
HOLE NO./ Km / CHAINAGE	TP98			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 68			
LAYER TESTED/SAMPLED	0.4 - 0.7m			
SAMPLE DEPTH	0.4 - 0.7m			
DATE SAMPLED	2020-01-31			
COLOUR OF SAMPLE	Dark Brown			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm	100			
	63.0 mm	98			
	50.0 mm	98			
	37.5 mm	92			
	28.0 mm	89			
	20.0 mm	87			
	14.0 mm	82			
	5.0 mm	61			
	2.0 mm	47			
	0.425 mm	28			
	0.075 mm	9			
GM %		2.2			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	41			
COARSE FINE SAND	0.425 - 0.250	15			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	19			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	17			
	PLASTICITY INDEX	4			
	LINEAR SHRINKAGE	2.5			
CLASSIFICATION	H.R.B.	A-1-a(0)			
	COLTO	G6			
	TRH 14	G6			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	5.8			
	MDD (kg/m³)	2176			
	COMP MC %	6.2			
SWELL % @	MOD | NRB | PRO	0.02 | 0.05 | 0.09			
C.B.R. SANS GR40	100 %	104			
	98 %	72			
	97 %	60			
	95 %	42			
	93 %	29			
	90 %	17			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Manager

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Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-24

Project : Okiep 100 Infill

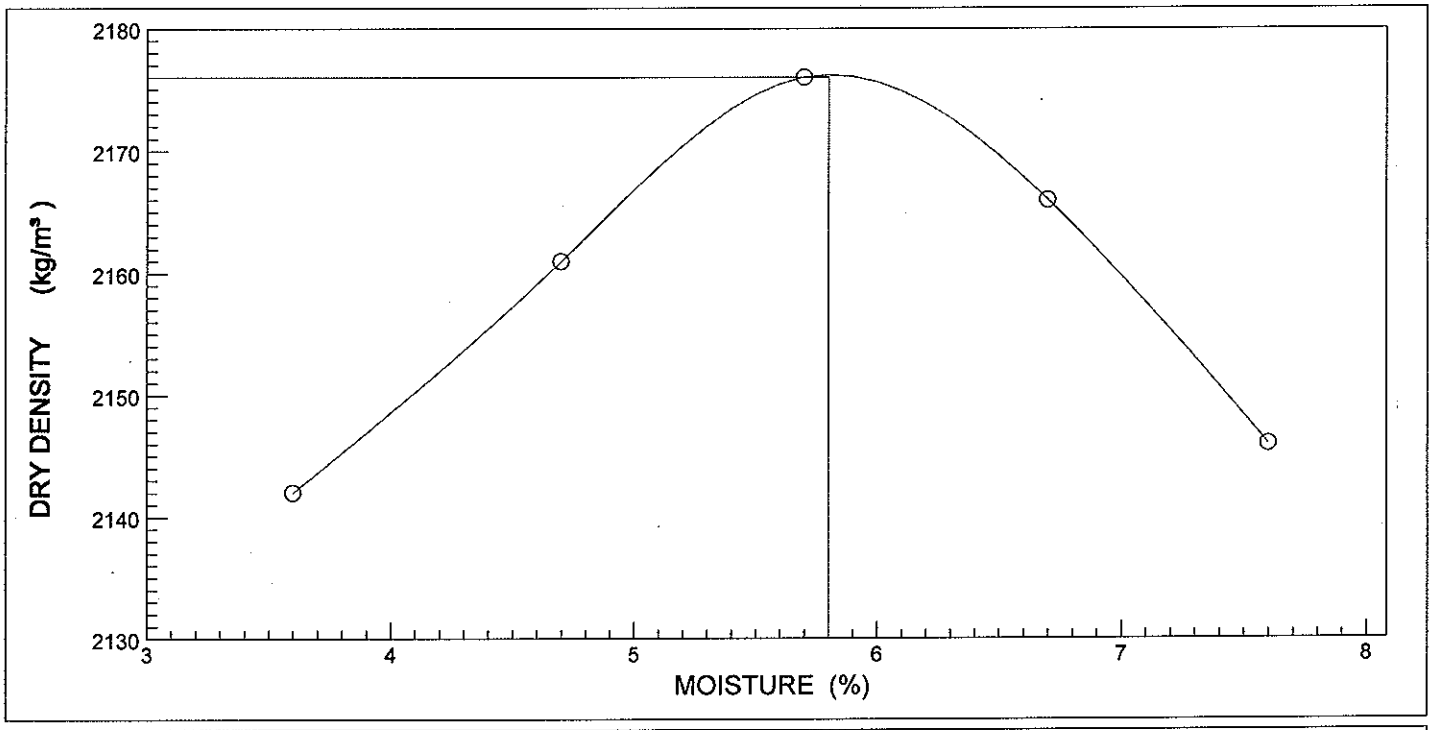
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 68
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.4 - 0.7m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP98
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9073
COLOUR AND TYPE	Dark Brown Gravel Mix

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2142	2161	2176	2166	2146			
MOISTURE (%)	3.6	4.7	5.7	6.7	7.6			

MAXIMUM DRY DENSITY (kg/m³) : 2176	OPTIMUM MOISTURE CONTENT (%) : 5.8



Deviation from Test Method :
Remarks and Notes :

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Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-12

Project : Okiep 100 Infill

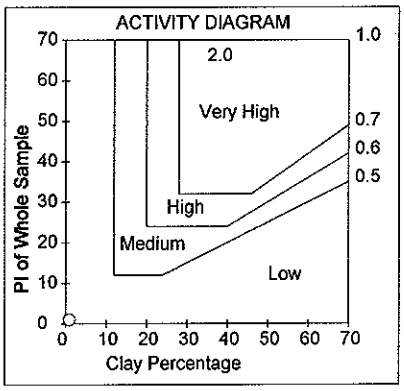
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

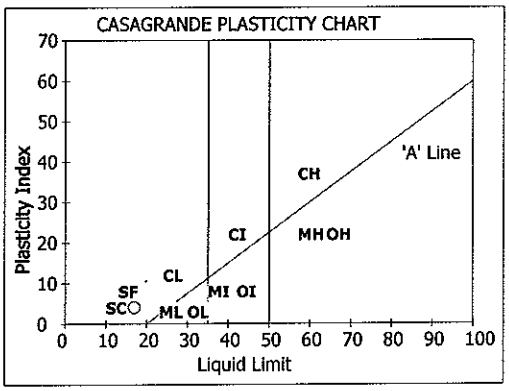
Sample No.	: U9073
Position	: TP 98 - 0.4-0.7m
Layer Type	: Sample 68
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

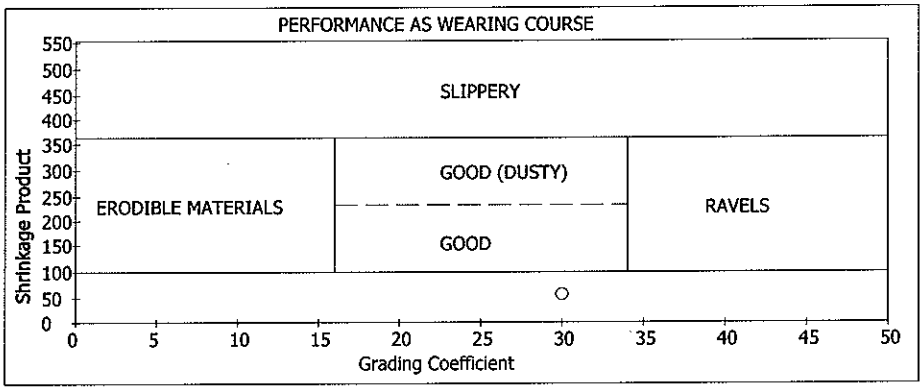
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	98
37.50	95
28.00	93
20.00	88
14.00	84
5.000	60
2.000	43
0.425	23
0.250	17
0.150	12
0.075	8,8
0.060	3,0
0.050	2,9
0.020	2,4
0.005	1,5
0.002	1,2

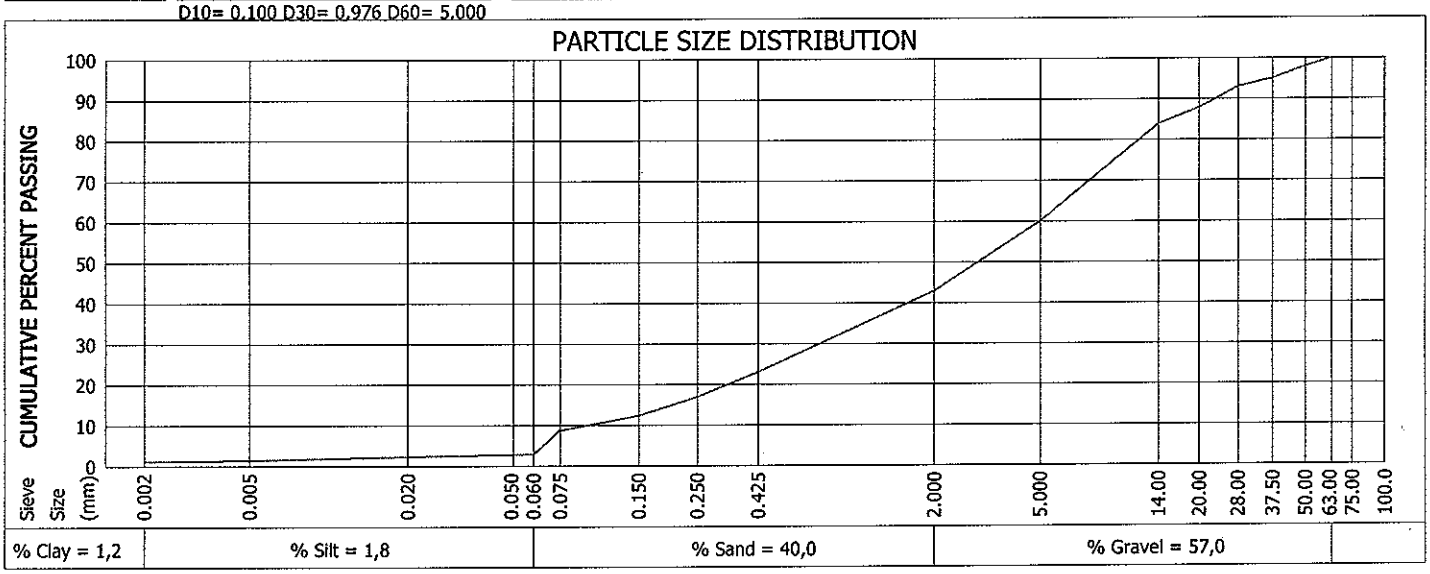
Soil Mortar	2.000 - 0.425	47
	0.425 - 0.250	13
	0.250 - 0.150	11
	0.150 - 0.075	8
	< 0.075	21
Effective Size		0,100
Uniformity Coefficient		50,0
Curvature Coefficient		1,9
Oversize Index		3,0
Shrinkage Product		57,5
Grading Coefficient		30,0
Grading Modulus		2,30
Atterberg Limits	Liquid Limit	17
	Plasticity Index	4
	Linear Shrinkage	2.5
	PI < 0.075	
Unified Soil Classification		SW-SM-SC
US Highway Classification		A-1-a(0)

D10= 0.100 D30= 0.976 D60= 5.000









% Clay = 1,2	% Silt = 1,8	% Sand = 40,0	% Gravel = 57,0

Deviation from Test Method :
Remarks and Notes :

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Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-20

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

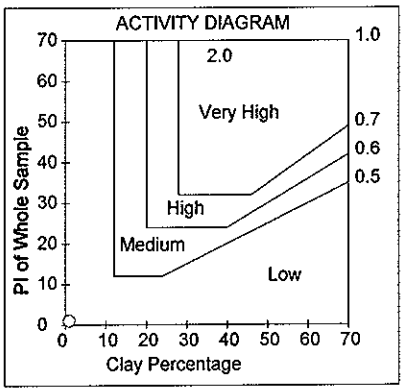
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

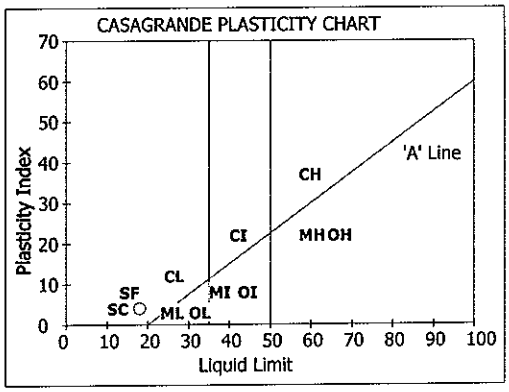
Sample No.	: U9100
Position	: TP 99 - 0.0-0.4m
Layer Type	: Sample
Sample Colour	: .Brown
Sample Type	: Mix Quartzitic Stone

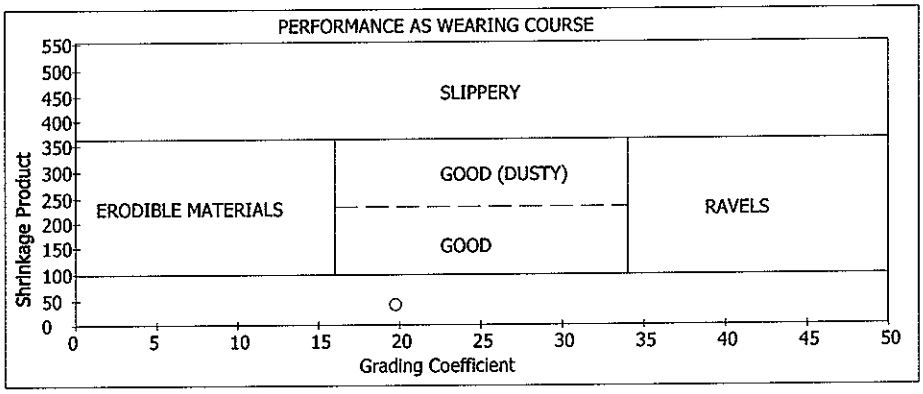
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	94
37.50	84
28.00	78
20.00	71
14.00	66
5.000	45
2.000	34
0.425	19
0.250	16
0.150	12
0.075	8.1
0.060	3.0
0.050	2.9
0.020	2.1
0.005	1.5
0.002	1.1

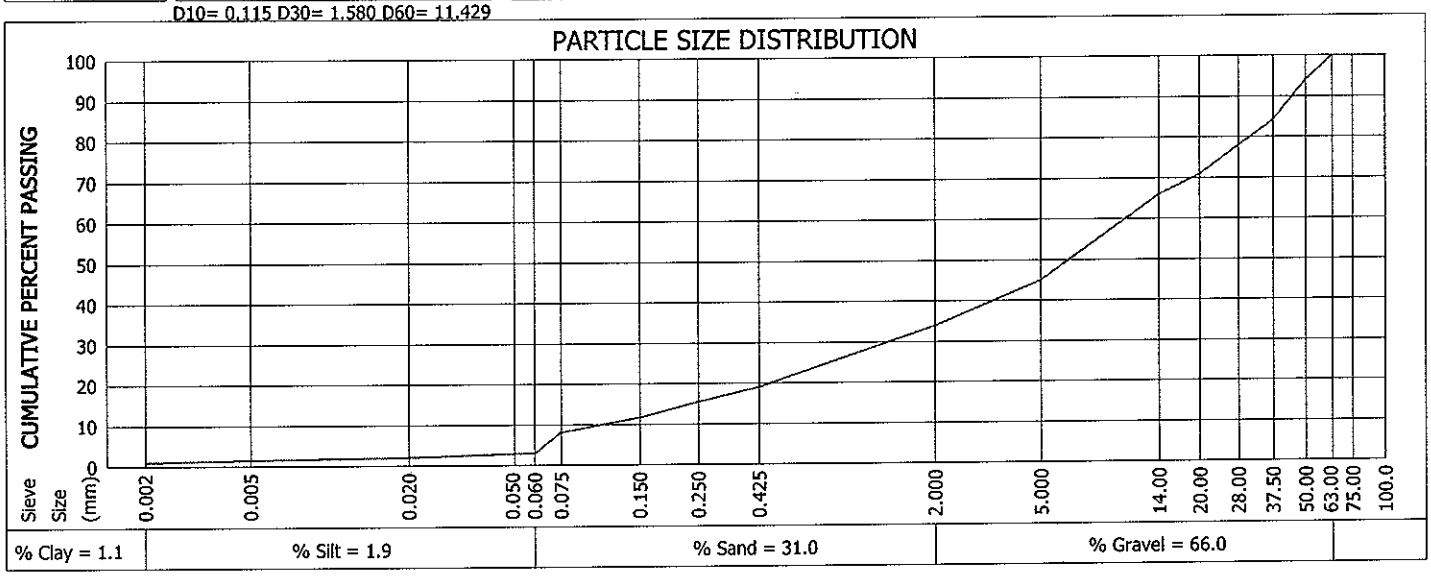
Soil Mortar	2.000 - 0.425	44
	0.425 - 0.250	11
	0.250 - 0.150	11
	0.150 - 0.075	11
	< 0.075	23
Effective Size		0.115
Uniformity Coefficient		99.4
Curvature Coefficient		1.9
Oversize Index		10.0
Shrinkage Product		38.0
Grading Coefficient		19.8
Grading Modulus		2.40
Atterberg Limits	Liquid Limit	18
	Plasticity Index	4
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		GW-GM-GC
US Highway Classification		A-1-a(0)

D10= 0.115 D30= 1.580 D60= 11.429









Deviation from Test Method :
Remarks and Notes :

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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-12

Project : Okiep 100 Infill

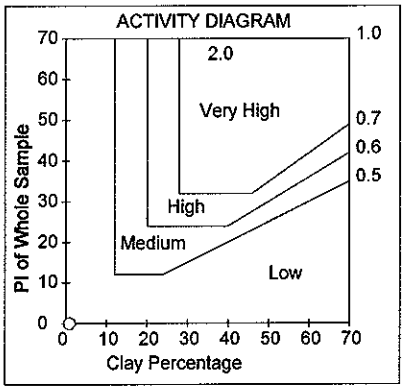
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

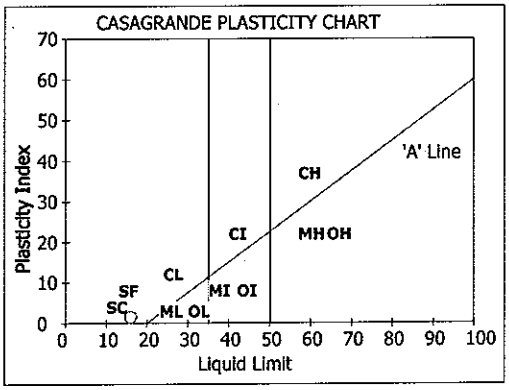
Sample No.	: U9074
Position	: TP100 - 0.0-0.6m
Layer Type	: Sample 69
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

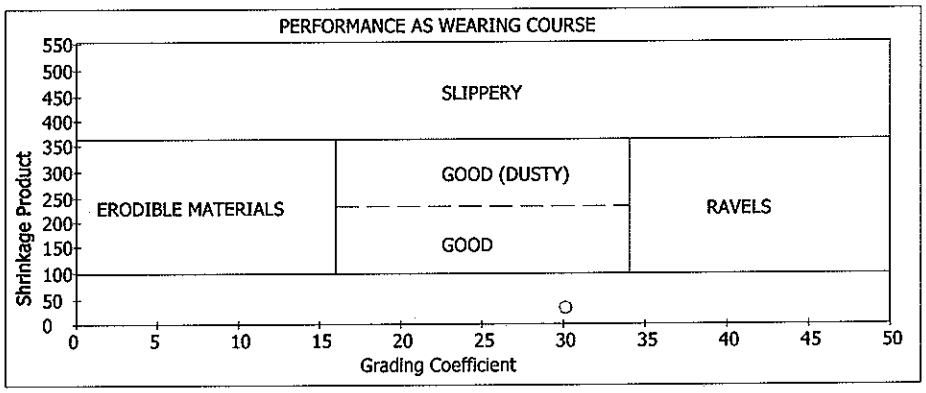
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	99
20.00	95
14.00	90
5.000	70
2.000	56
0.425	31
0.250	23
0.150	16
0.075	11
0.060	3.8
0.050	3.7
0.020	2.8
0.005	1.7
0.002	1.0

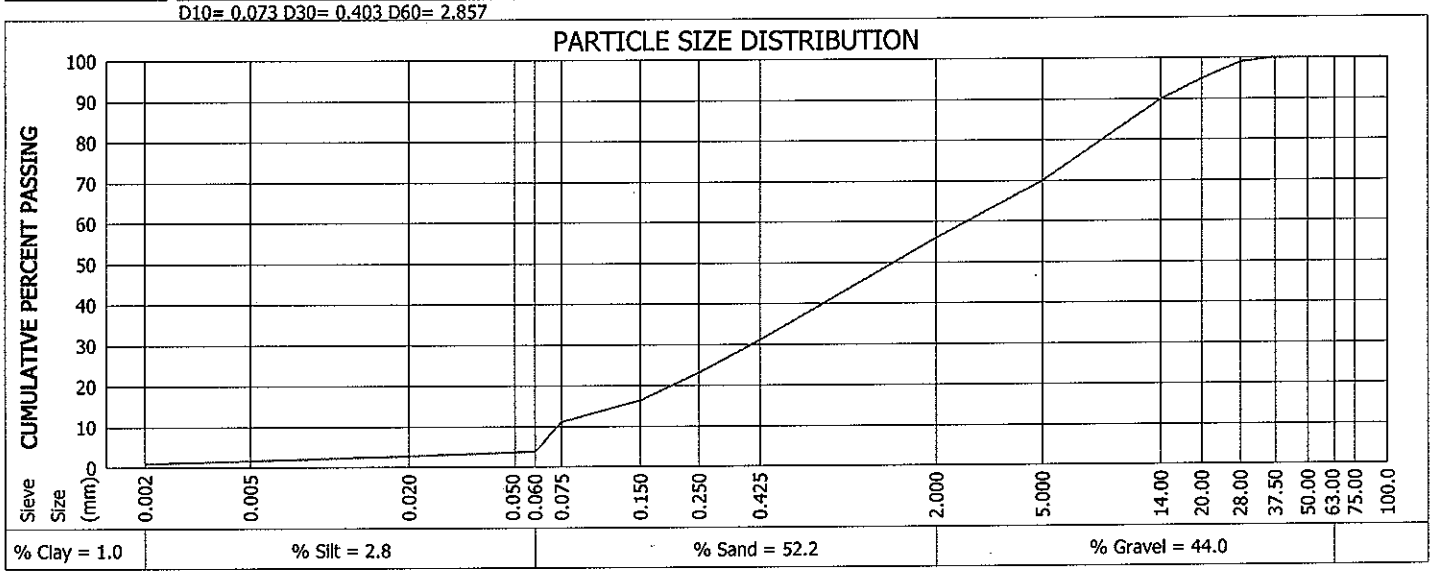
Soil Mortar	2.000 - 0.425	45
	0.425 - 0.250	14
	0.250 - 0.150	12
	0.150 - 0.075	10
	< 0.075	20
Effective Size		0.073
Uniformity Coefficient		39.1
Curvature Coefficient		0.8
Oversize Index		0.0
Shrinkage Product		31.0
Grading Coefficient		30.1
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	16
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.073 D30= 0.403 D60= 2.857









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-12

Project : Okiep 100 Infill

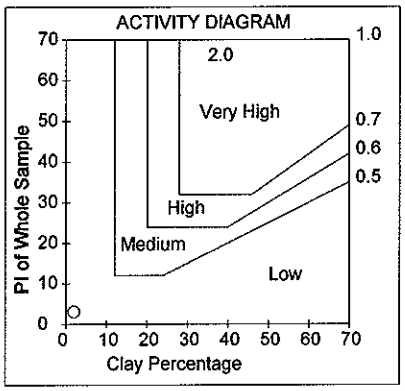
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

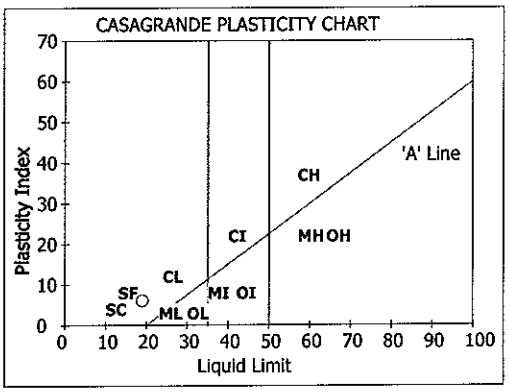
Sample No.	: U9075
Position	: TP101 - 0.2-0.3m
Layer Type	: Sample 70
Sample Colour	: Brown
Sample Type	: Mix Weathered Quartz

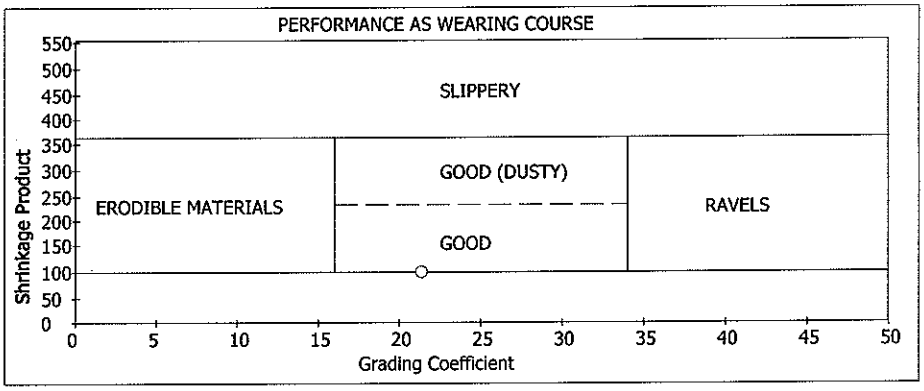
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	98
50.00	98
37.50	94
28.00	90
20.00	85
14.00	82
5.000	69
2.000	59
0.425	50
0.250	37
0.150	26
0.075	17
0.060	6,8
0.050	6,5
0.020	5,0
0.005	2,7
0.002	1,8

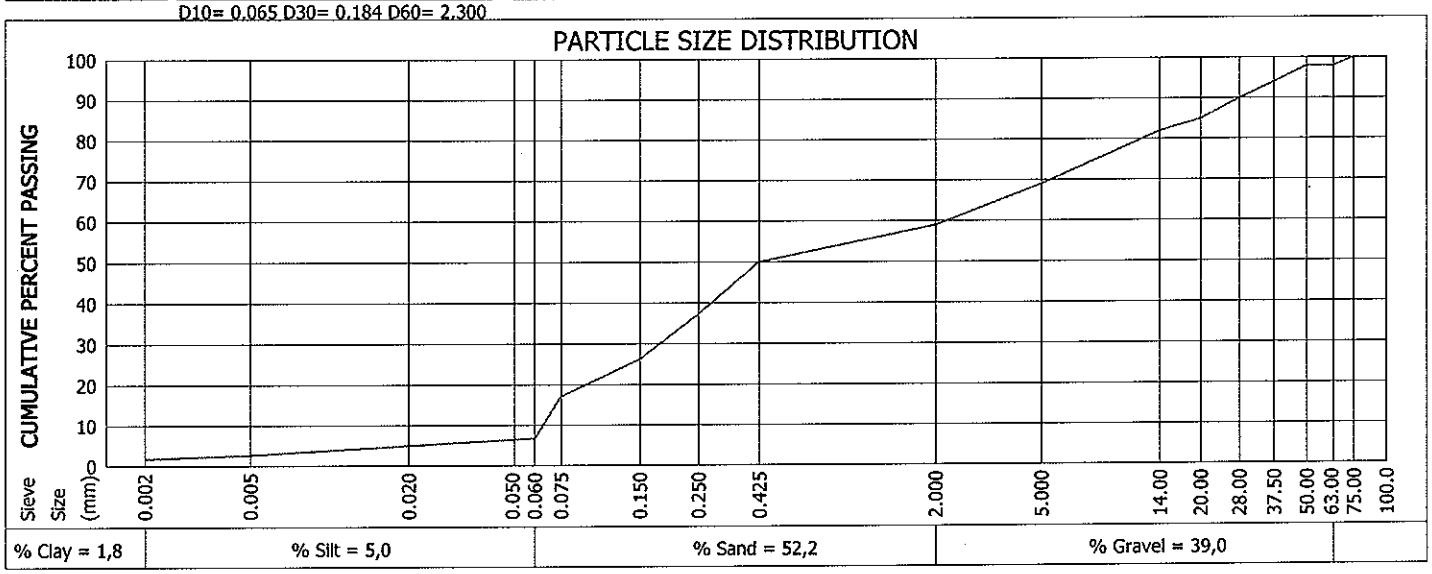
Soil Mortar	2.000 - 0.425	16
	0.425 - 0.250	21
	0.250 - 0.150	19
	0.150 - 0.075	16
	< 0.075	29
Effective Size		0,065
Uniformity Coefficient		35,4
Curvature Coefficient		0,2
Oversize Index		4,0
Shrinkage Product		100,0
Grading Coefficient		21,4
Grading Modulus		1,70
Atterberg Limits	Liquid Limit	19
	Plasticity Index	6
	Linear Shrinkage	2.0
	PI < 0.075	
Unified Soil Classification		SM-SC
US Highway Classification		A-1-b(0)

D10= 0.065 D30= 0.184 D60= 2.300









% Clay = 1,8	% Silt = 5,0	% Sand = 52,2	% Gravel = 39,0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-12

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

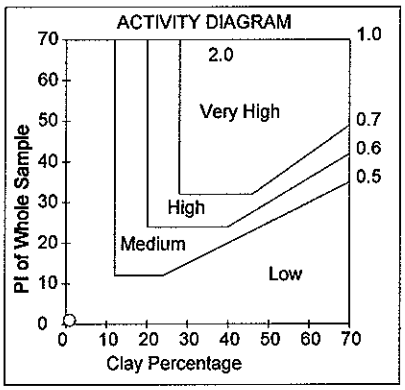
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

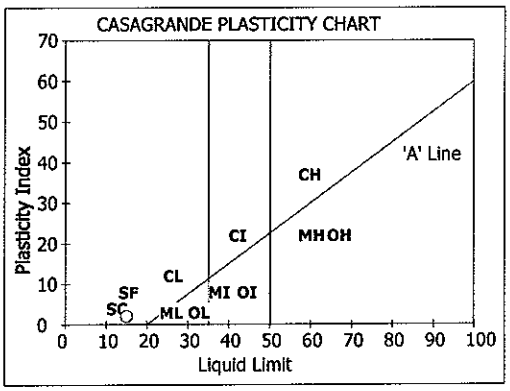
Sample No.	: U9076
Position	: TP103 - 0.0-0.4m
Layer Type	: Sample 71
Sample Colour	: Light Orange Brown
Sample Type	: Mix Quartzstone

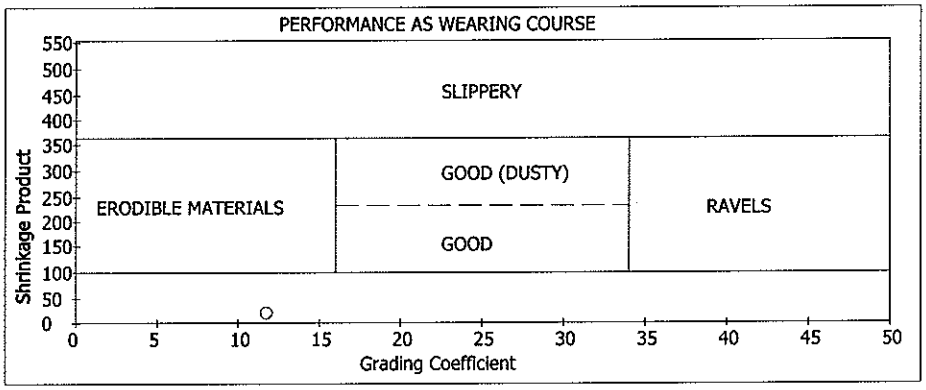
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	99
37.50	92
28.00	88
20.00	85
14.00	84
5.000	78
2.000	73
0.425	42
0.250	29
0.150	19
0.075	11
0.060	3.2
0.050	3.1
0.020	2.5
0.005	1.4
0.002	1.2

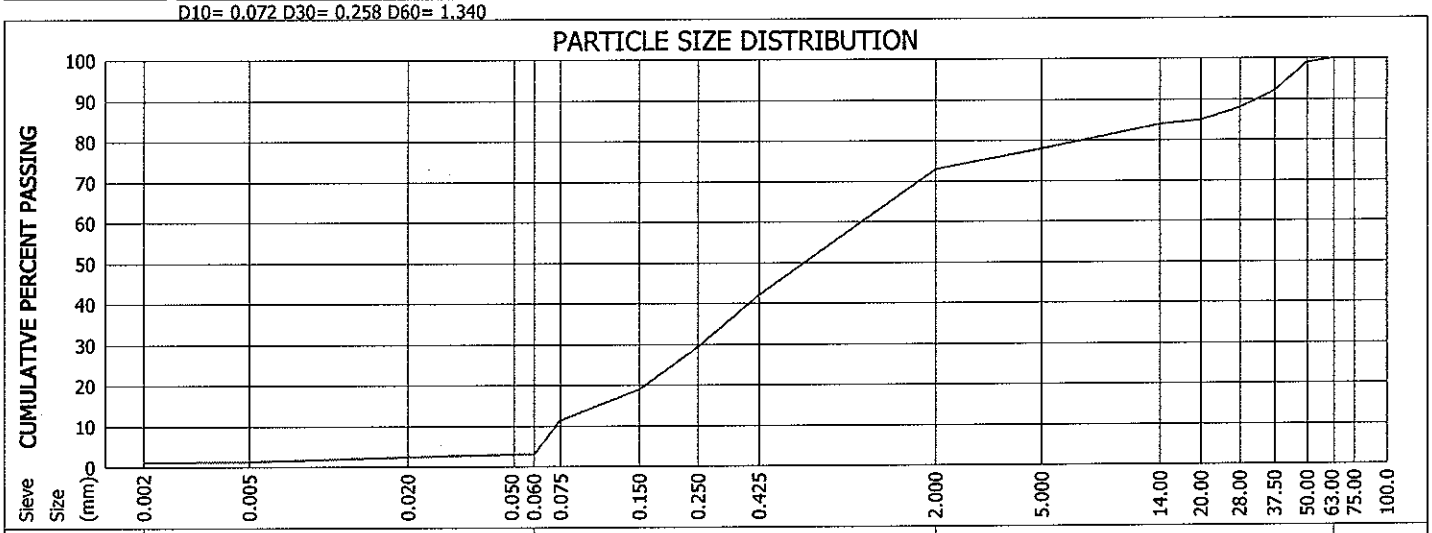
Soil Mortar	2.000 - 0.425	43
	0.425 - 0.250	17
	0.250 - 0.150	14
	0.150 - 0.075	11
	< 0.075	15
Effective Size		0.072
Uniformity Coefficient		18.6
Curvature Coefficient		0.7
Oversize Index		7.0
Shrinkage Product		21.0
Grading Coefficient		11.7
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	15
	Plasticity Index	2.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.072 D30= 0.258 D60= 1.340









% Clay = 1.2	% Silt = 2.0	% Sand = 69.8	% Gravel = 27.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

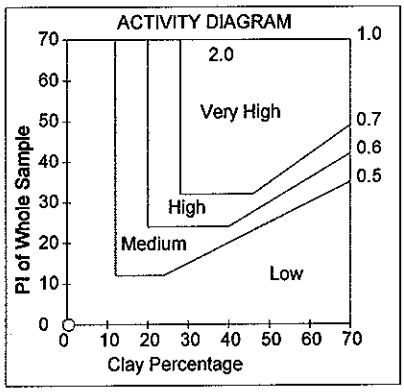
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

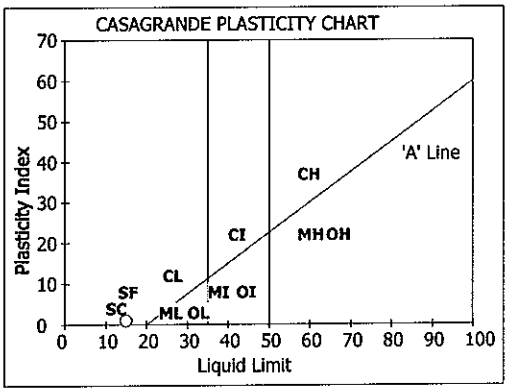
Sample No.	: U9077
Position	: TP105 - 0.3-0.7m
Layer Type	: Sample 72
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

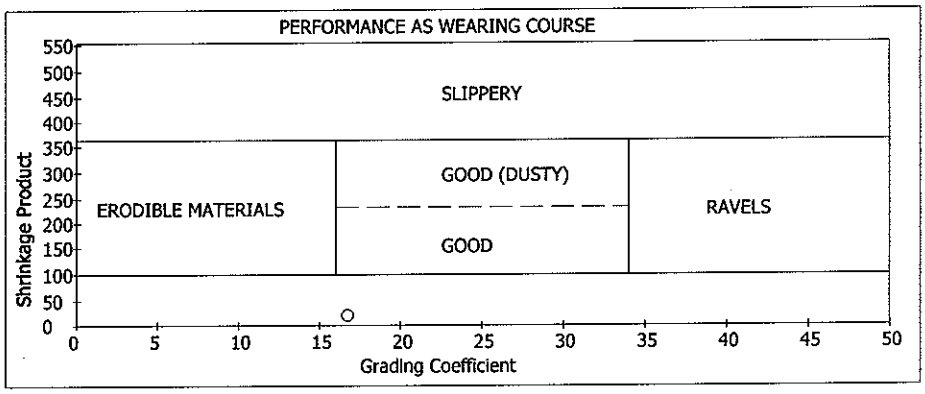
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	99
20.00	96
14.00	95
5.000	88
2.000	80
0.425	40
0.250	28
0.150	17
0.075	9.4
0.060	2.7
0.050	2.7
0.020	2.2
0.005	1.6
0.002	0.6

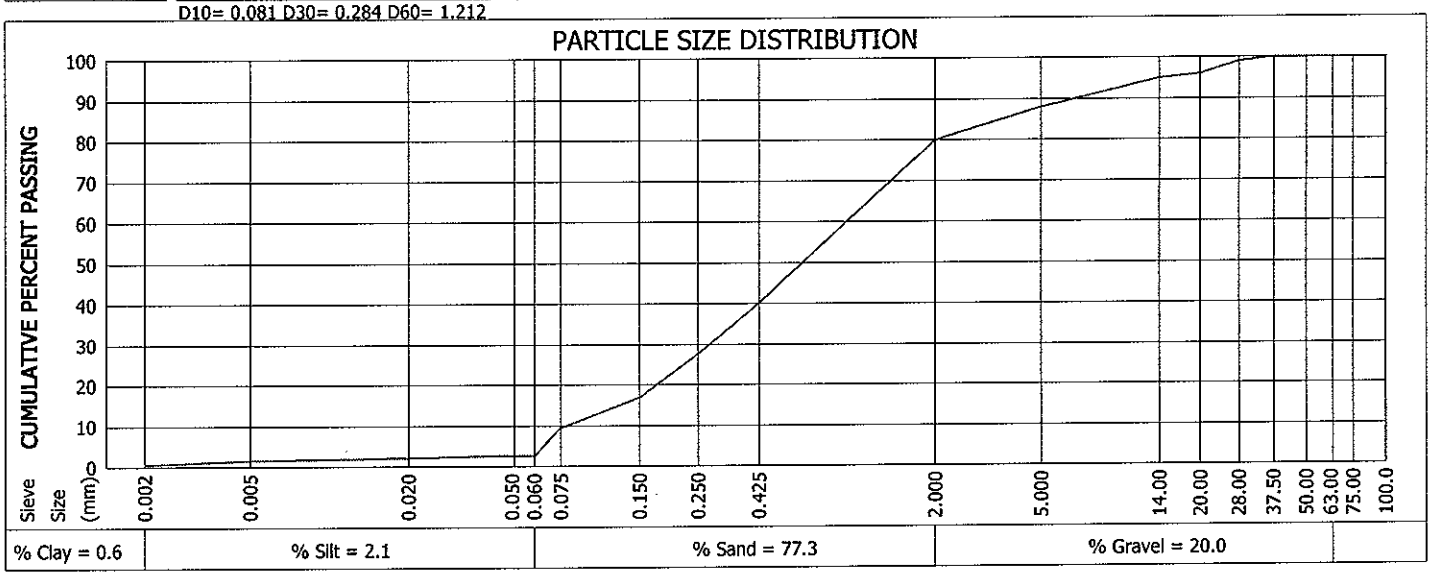
Soil Mortar	2.000 - 0.425	50
	0.425 - 0.250	16
	0.250 - 0.150	13
	0.150 - 0.075	10
	< 0.075	11
Effective Size		0.081
Uniformity Coefficient		15.0
Curvature Coefficient		0.8
Oversize Index		0.0
Shrinkage Product		20.0
Grading Coefficient		16.7
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	15
	Plasticity Index	1.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.081 D30= 0.284 D60= 1.212









% Clay = 0.6	% Silt = 2.1	% Sand = 77.3	% Gravel = 20.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-16

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

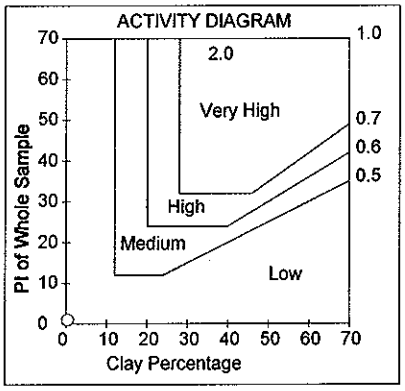
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

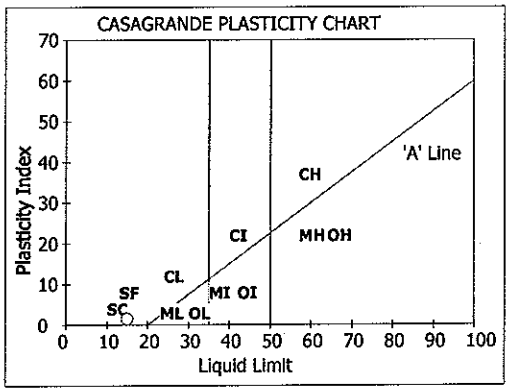
Sample No.	: U9078
Position	: TP107 - 0.0-0.4m
Layer Type	: Sample 73
Sample Colour	: Dark Orange Brown
Sample Type	: Mix Weathered Quartz

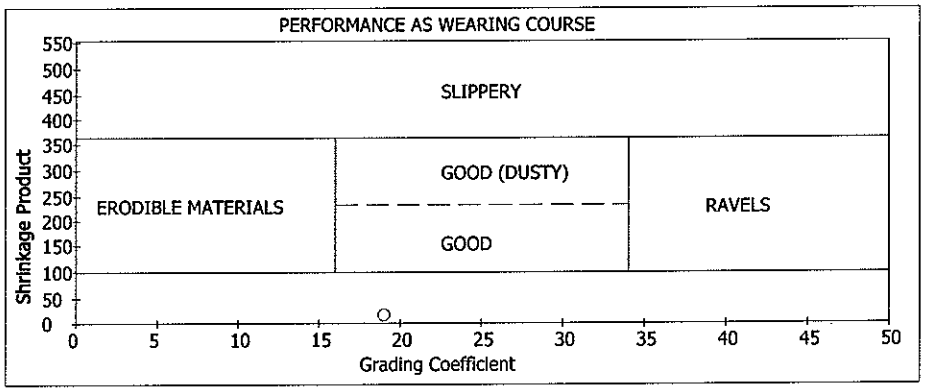
Sieve Size(mm)	% Passing
100.0	100
75.00	96
63.00	96
50.00	96
37.50	93
28.00	88
20.00	82
14.00	81
5.000	68
2.000	60
0.425	34
0.250	25
0.150	17
0.075	10
0.060	3.0
0.050	2.9
0.020	2.2
0.005	1.4
0.002	0.7

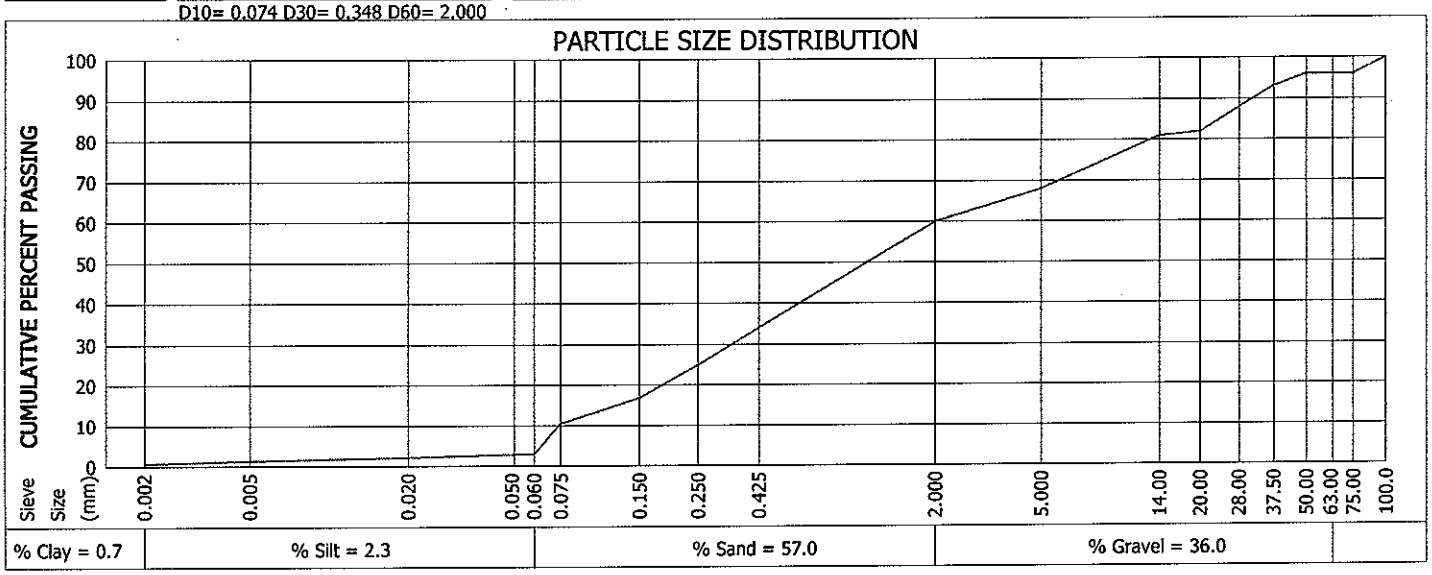
Soil Mortar	2.000 - 0.425	44
	0.425 - 0.250	15
	0.250 - 0.150	14
	0.150 - 0.075	11
	< 0.075	17
Effective Size		0.074
Uniformity Coefficient		27.0
Curvature Coefficient		0.8
Oversize Index		3.0
Shrinkage Product		17.0
Grading Coefficient		19.0
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	15
	Plasticity Index	2.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.074 D30= 0.348 D60= 2.000









% Clay = 0.7	% Silt = 2.3	% Sand = 57.0	% Gravel = 36.0

Deviation from Test Method :
Remarks and Notes :

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Manager

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Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

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Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-20

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

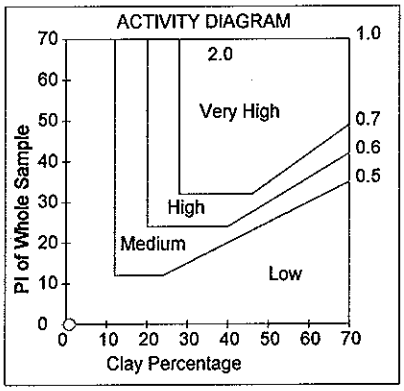
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

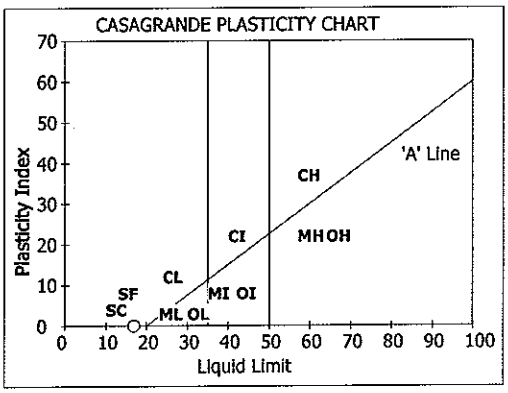
Sample No.	: U9079
Position	: TP110 - 0.2-1.3m
Layer Type	: Sample 74
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

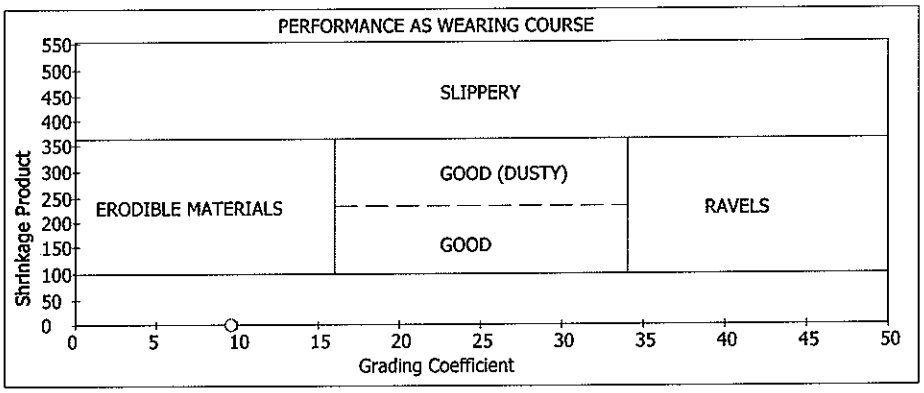
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	99
20.00	99
14.00	98
5.000	96
2.000	89
0.425	45
0.250	34
0.150	22
0.075	13
0.060	4.0
0.050	3.8
0.020	2.7
0.005	1.8
0.002	1.0

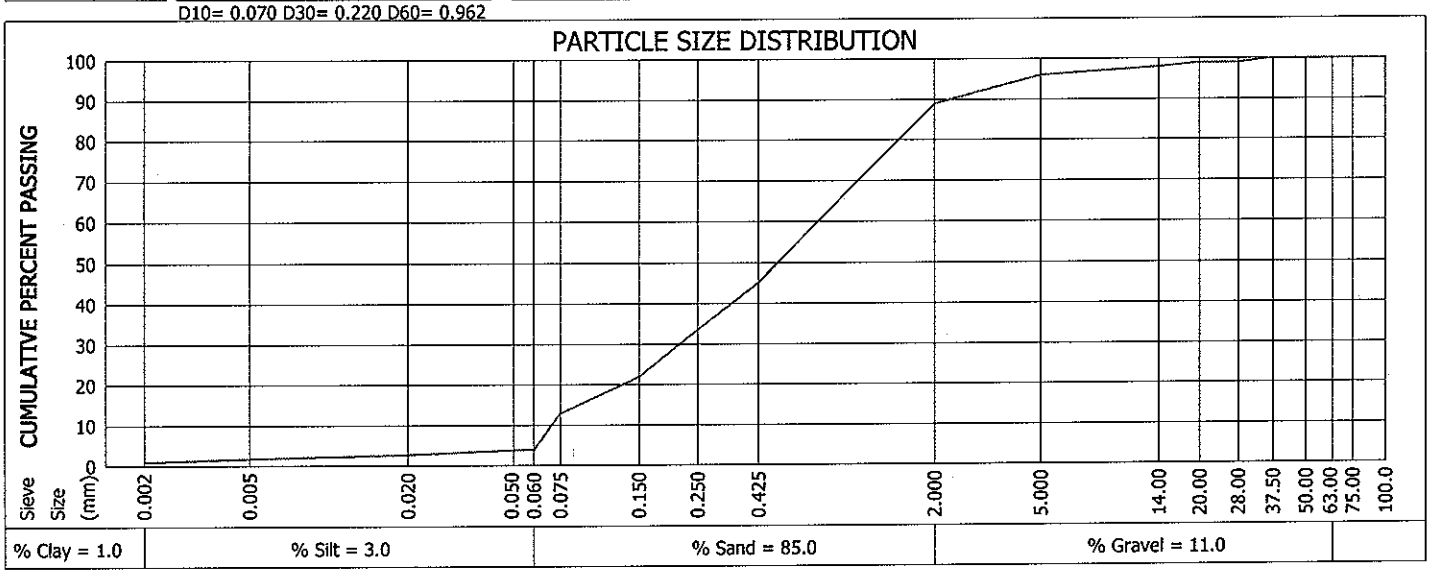
Soil Mortar	2.000 - 0.425	50
	0.425 - 0.250	13
	0.250 - 0.150	13
	0.150 - 0.075	10
	< 0.075	15
Effective Size		0.070
Uniformity Coefficient		13.7
Curvature Coefficient		0.7
Oversize Index		0.0
Shrinkage Product		0.0
Grading Coefficient		9.6
Grading Modulus		1.50
Atterberg Limits	Liquid Limit	17
	Plasticity Index	0.0
	Linear Shrinkage	0.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.070 D30= 0.220 D60= 0.962









Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 6.2 & Conductivity = 0.68 S/m [SANS 5854]

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

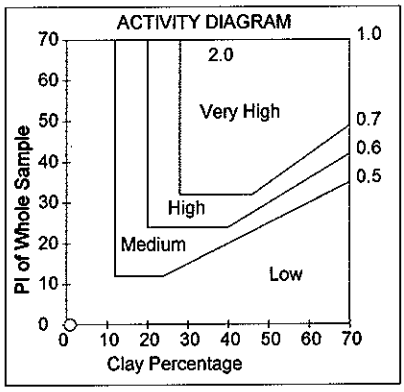
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

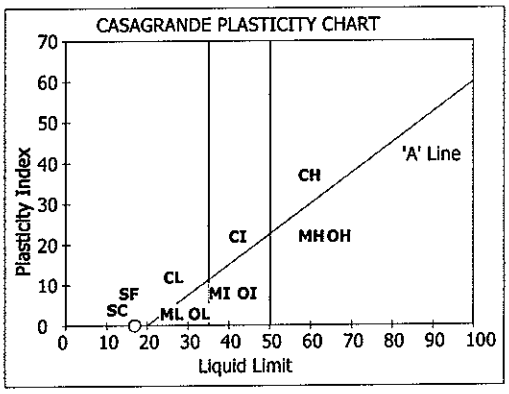
Sample No.	: U9079
Position	: TP110 - 0.2-1.3m
Layer Type	: Sample 74
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

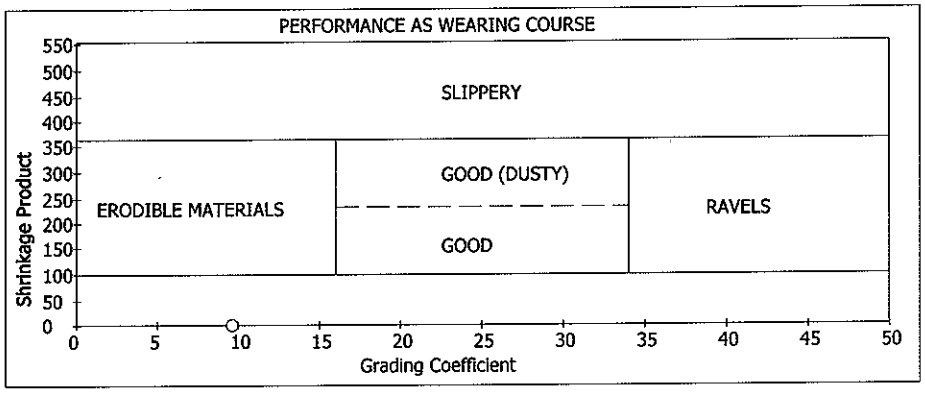
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	99
20.00	99
14.00	98
5.000	96
2.000	89
0.425	45
0.250	34
0.150	22
0.075	13
0.060	4.0
0.050	3.8
0.020	2.7
0.005	1.8
0.002	1.0

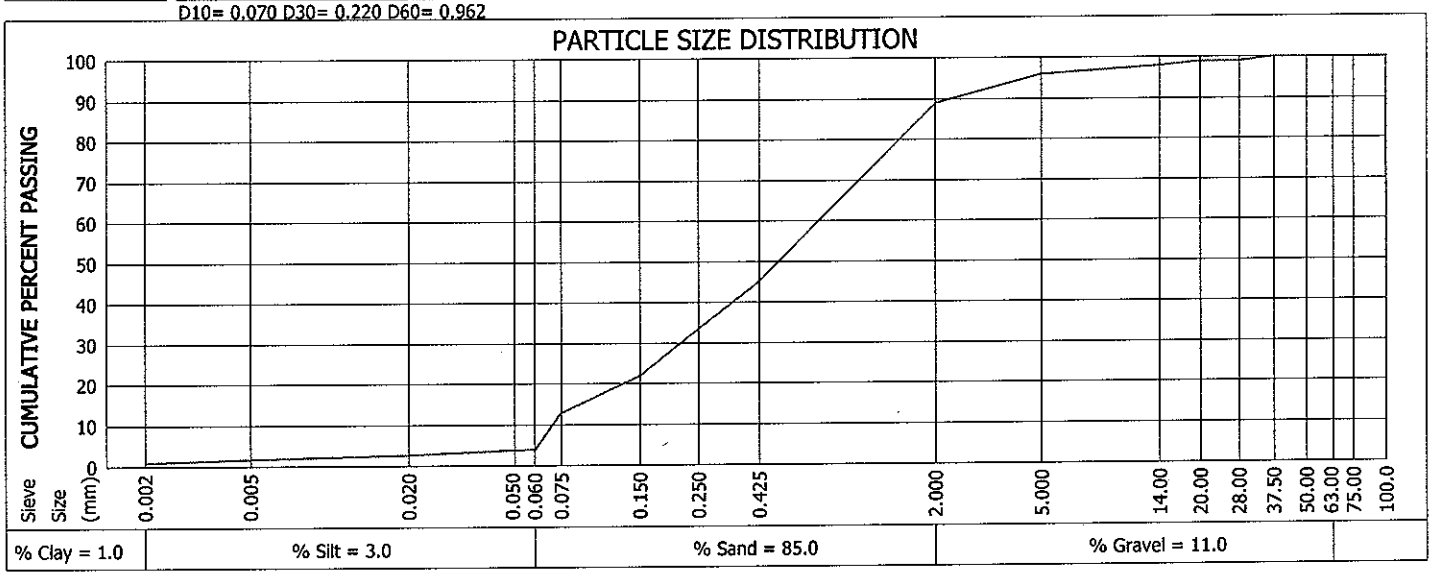
Soil Mortar	2.000 - 0.425	50
	0.425 - 0.250	13
	0.250 - 0.150	13
	0.150 - 0.075	10
	< 0.075	15
Effective Size		0.070
Uniformity Coefficient		13.7
Curvature Coefficient		0.7
Oversize Index		0.0
Shrinkage Product		0.0
Grading Coefficient		9.6
Grading Modulus		1.50
Atterberg Limits	Liquid Limit	17
	Plasticity Index	0.0
	Linear Shrinkage	0.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.070 D30= 0.220 D60= 0.962









% Clay = 1.0	% Silt = 3.0	% Sand = 85.0	% Gravel = 11.0

Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-03

Project : Okiep 100 Infill

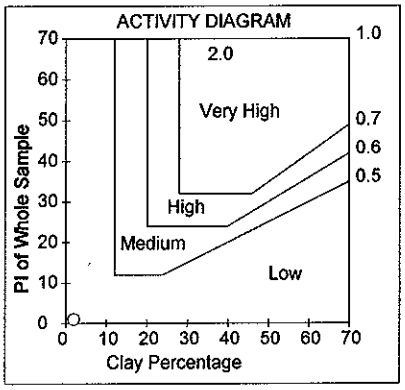
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

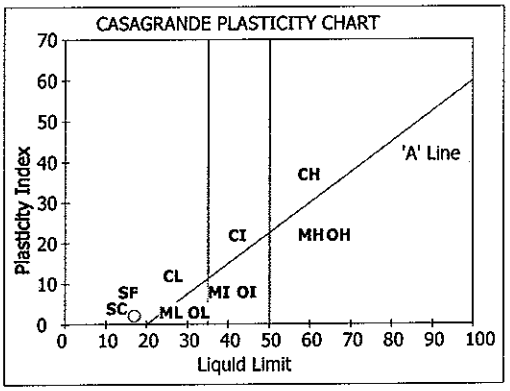
Sample No.	: U9080
Position	: TP111 - 0.3-0.6m
Layer Type	: Sample 75
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

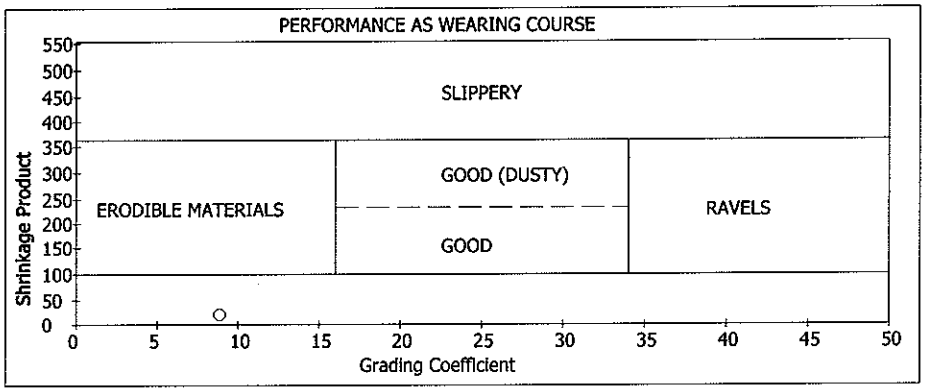
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	100
5.000	99
2.000	91
0.425	42
0.250	28
0.150	20
0.075	13
0.060	4.6
0.050	4.2
0.020	3.6
0.005	2.6
0.002	1.9

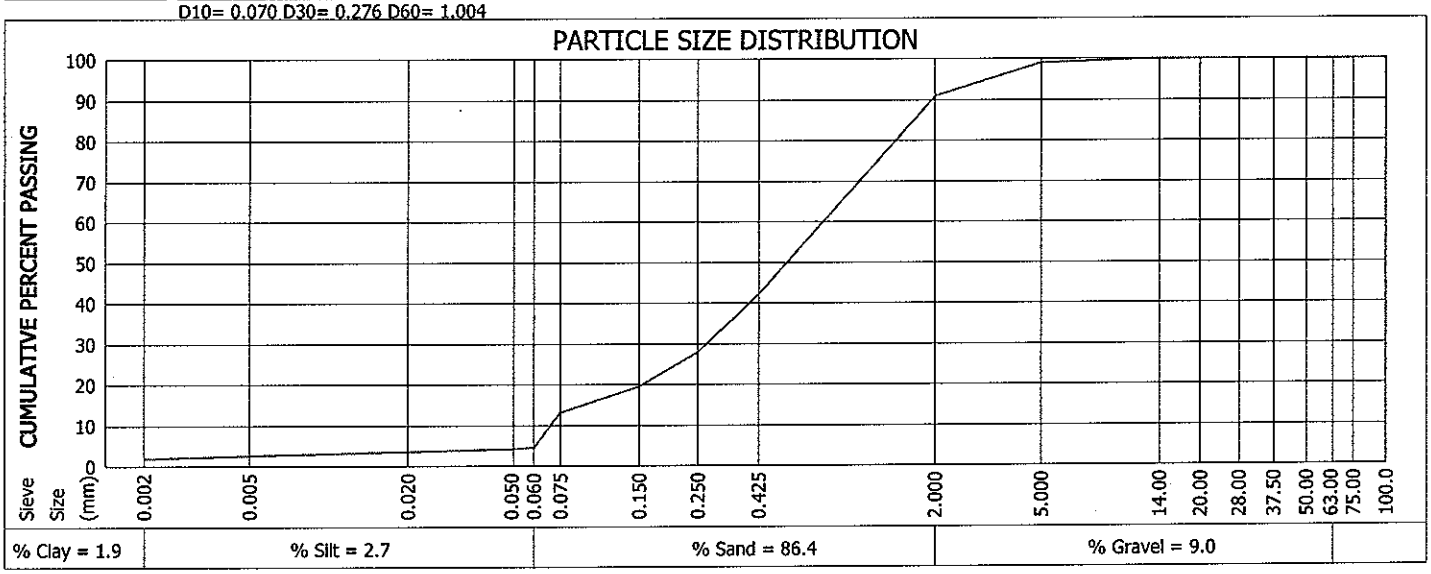
Soil Mortar	2.000 - 0.425	53
	0.425 - 0.250	16
	0.250 - 0.150	9
	0.150 - 0.075	7
	< 0.075	14
Effective Size		0.070
Uniformity Coefficient		14.3
Curvature Coefficient		1.1
Oversize Index		0.0
Shrinkage Product		21.0
Grading Coefficient		8.9
Grading Modulus		1.50
Atterberg Limits	Liquid Limit	17
	Plasticity Index	2.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.070 D30= 0.276 D60= 1.004









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB™

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-16

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9081			
HOLE NO./ Km / CHAINAGE		TP113			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 76			
LAYER TESTED/SAMPLED		0.0 - 0.5m			
SAMPLE DEPTH		0.0 - 0.5m			
DATE SAMPLED		2020-01-31			
COLOUR OF SAMPLE		Light Brown			
TYPE OF SAMPLE		Mix Weathered Quartz			
SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)					
SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	98			
	37.5 mm	98			
	28.0 mm	97			
	20.0 mm	95			
	14.0 mm	93			
	5.0 mm	80			
	2.0 mm	62			
	0.425 mm	29			
	0.075 mm	11			
GM %		2.0			
SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)					
COARSE SAND	2.000 - 0.425	53			
COARSE FINE SAND	0.425 - 0.250	13			
MEDIUM FINE SAND	0.250 - 0.150	10			
FINE FINE SAND	0.150 - 0.075	7			
SILT CLAY	0.075	18			
ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)					
ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	18			
	PLASTICITY INDEX	1.3			
	LINEAR SHRINKAGE	1.0			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G6			
	TRH 14	G7			
CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)					
SANS GR30 MAX. DRY DENSITY	OMC %	7.0			
	MDD (kg/m³)	2076			
	COMP MC %	6.8			
SWELL % @	MOD | NRB | PRO	0.02 | 0.05 | 0.07			
C.B.R. SANS GR40	100 %	101			
	98 %	63			
	97 %	50			
	95 %	31			
	93 %	19			
	90 %	9			
STABILISER IN LAB		N/A			
TEST TYPE		CBR			
SAMPLING METHOD		Client			
WEATHER WHEN SAMPLED		Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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The test results reported relate to the samples tested.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-24

Project : Okiep 100 Infill

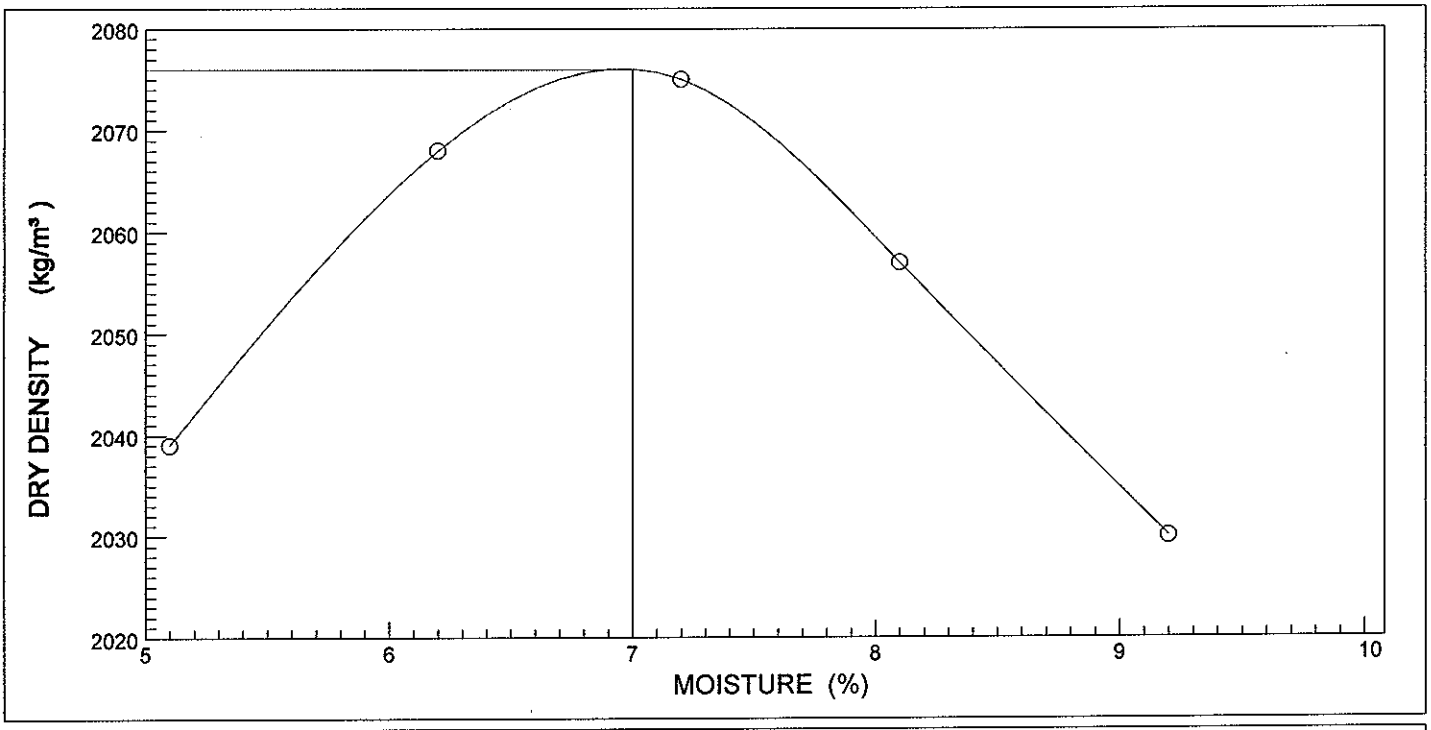
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 76
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	97kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.5m
MATERIAL DESCRIPTION	Mix Weathered Quartzstone
HOLE NO./ km / CHAINAGE	TP113
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9081
COLOUR AND TYPE	Light Brown Gravel

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2039	2068	2075	2057	2030			
MOISTURE (%)	5.1	6.2	7.2	8.1	9.2			

MAXIMUM DRY DENSITY (kg/m³) : 2076	OPTIMUM MOISTURE CONTENT (%) : 7.0



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

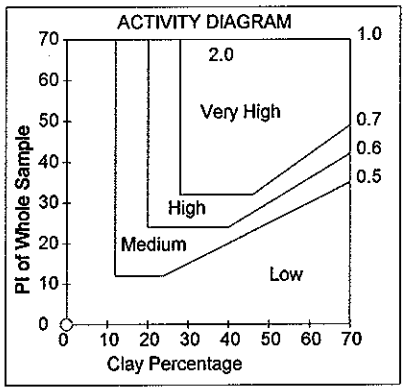
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

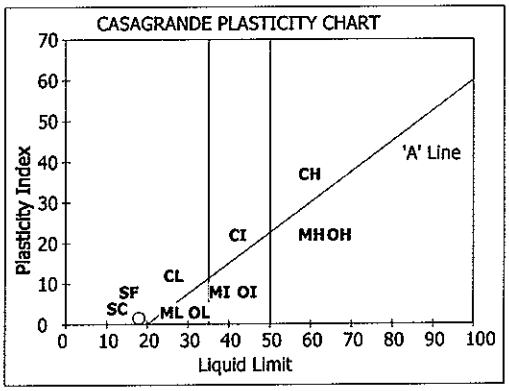
Sample No.	: U9081
Position	: TP 113 - 0.0-0.5m
Layer Type	: Sample 76
Sample Colour	: Light Brown
Sample Type	: Mix Weathered Quartz

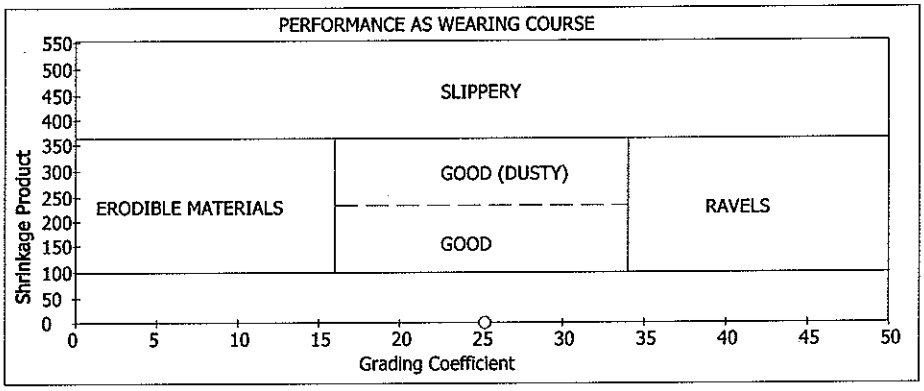
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	90
37.50	90
28.00	83
20.00	71
14.00	69
5.000	55
2.000	37
0.425	2.0
0.250	1.4
0.150	1.0
0.075	0.7
0.060	0.2
0.050	0.2
0.020	0.2
0.005	0.1
0.002	0.1

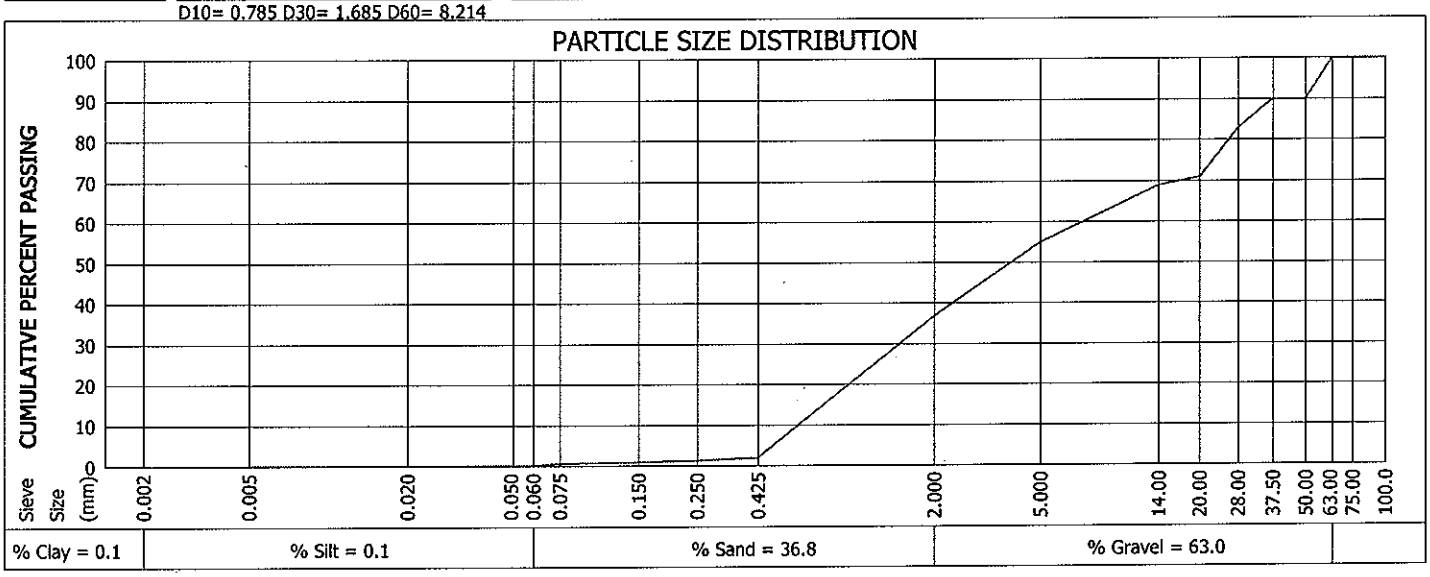
Soil Mortar	2.000 - 0.425	95
	0.425 - 0.250	2
	0.250 - 0.150	1
	0.150 - 0.075	0
	< 0.075	3
Effective Size		0.785
Uniformity Coefficient		10.5
Curvature Coefficient		0.4
Oversize Index		0.0
Shrinkage Product		2.0
Grading Coefficient		25.3
Grading Modulus		2.60
Atterberg Limits	Liquid Limit	18
	Plasticity Index	1.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SW
US Highway Classification		A-1-a(0)

D10= 0.785 D30= 1.685 D60= 8.214









% Clay = 0.1	% Silt = 0.1	% Sand = 36.8	% Gravel = 63.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-03

Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Attention : Aubrey Nonyana

Project : Okiep 100 Infill

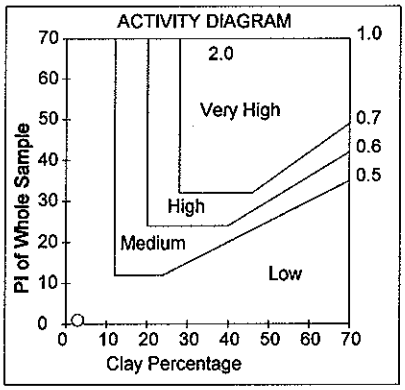
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

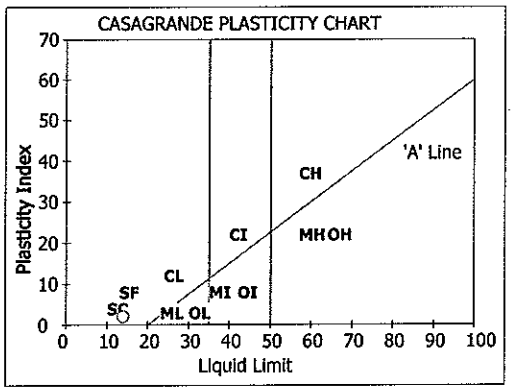
Sample No.	: U9082
Position	: TP116 - 0.4-1.1m
Layer Type	: Sample 77
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

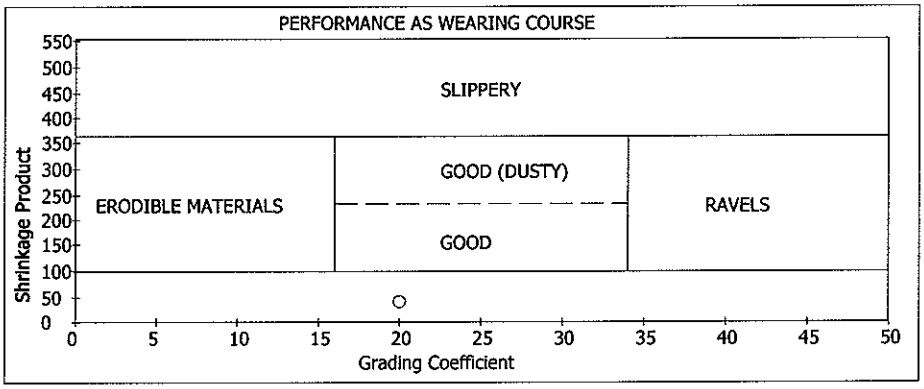
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	95
14.00	95
5.000	91
2.000	78
0.425	38
0.250	28
0.150	19
0.075	13
0.060	5.3
0.050	5.2
0.020	4.4
0.005	3.6
0.002	2.8

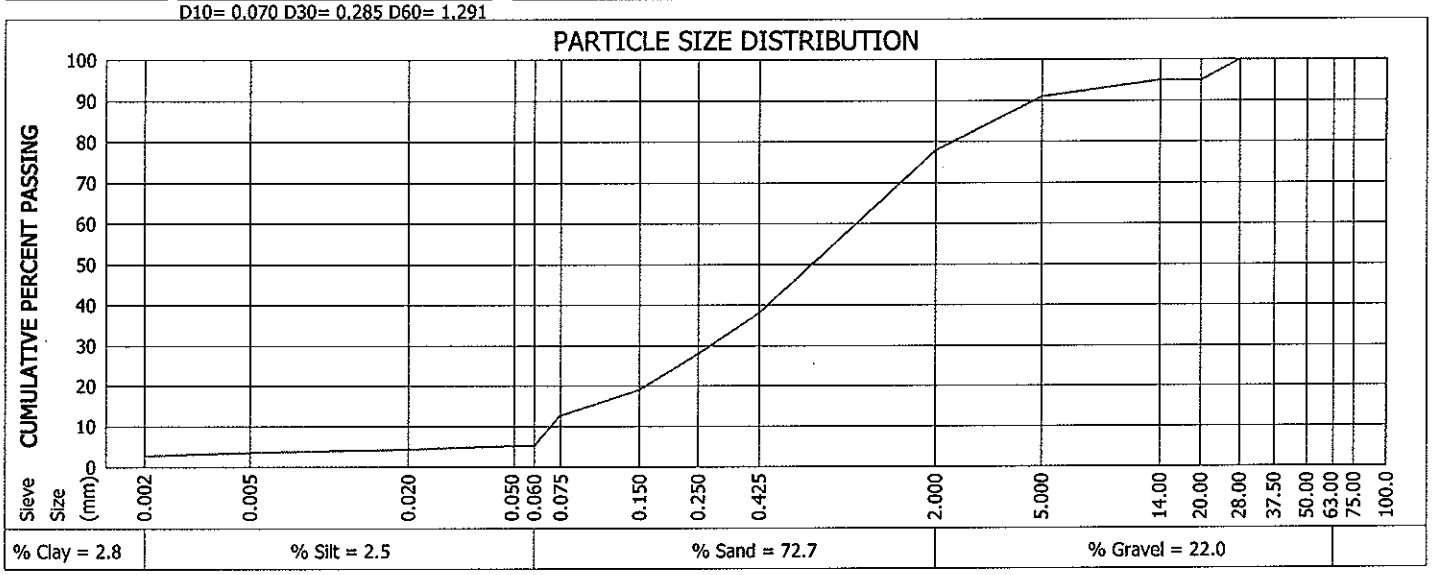
Soil Mortar	2.000 - 0.425	51
	0.425 - 0.250	13
	0.250 - 0.150	11
	0.150 - 0.075	8
	< 0.075	17
Effective Size		0.070
Uniformity Coefficient		18.4
Curvature Coefficient		0.9
Oversize Index		0.0
Shrinkage Product		38.0
Grading Coefficient		20.0
Grading Modulus		1.70
Atterberg Limits	Liquid Limit	14
	Plasticity Index	2.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-1-b(0)

D10= 0.070 D30= 0.285 D60= 1.291









% Clay = 2.8	% Silt = 2.5	% Sand = 72.7	% Gravel = 22.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-16

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9083			
HOLE NO./ Km / CHAINAGE		TP117			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample 78			
LAYER TESTED/SAMPLED		0.0 - 0.6m			
SAMPLE DEPTH		0.0 - 0.6m			
DATE SAMPLED		2020-02-31			
COLOUR OF SAMPLE		Brown G.Sand			
TYPE OF SAMPLE		Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm				
	50.0 mm	100			
	37.5 mm	98			
	28.0 mm	98			
	20.0 mm	97			
	14.0 mm	96			
	5.0 mm	91			
	2.0 mm	83			
	0.425 mm	44			
	0.075 mm	10			
GM %		1,6			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	48			
COARSE FINE SAND	0.425 - 0.250	17			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	10			
SILT CLAY	0.075	12			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	16			
	PLASTICITY INDEX	2.9			
	LINEAR SHRINKAGE	0.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G6			
	TRH 14	G7			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	7,4			
	MDD (kg/m³)	2039			
	COMP MC %	7,7			
SWELL % @	MOD | NRB | PRO	0,01 | 0,03 | 0,08			
C.B.R. SANS GR40	100 %	48			
	98 %	38			
	97 %	33			
	95 %	26			
	93 %	20			
	90 %	14			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-24

Project : Okiep 100 Infill

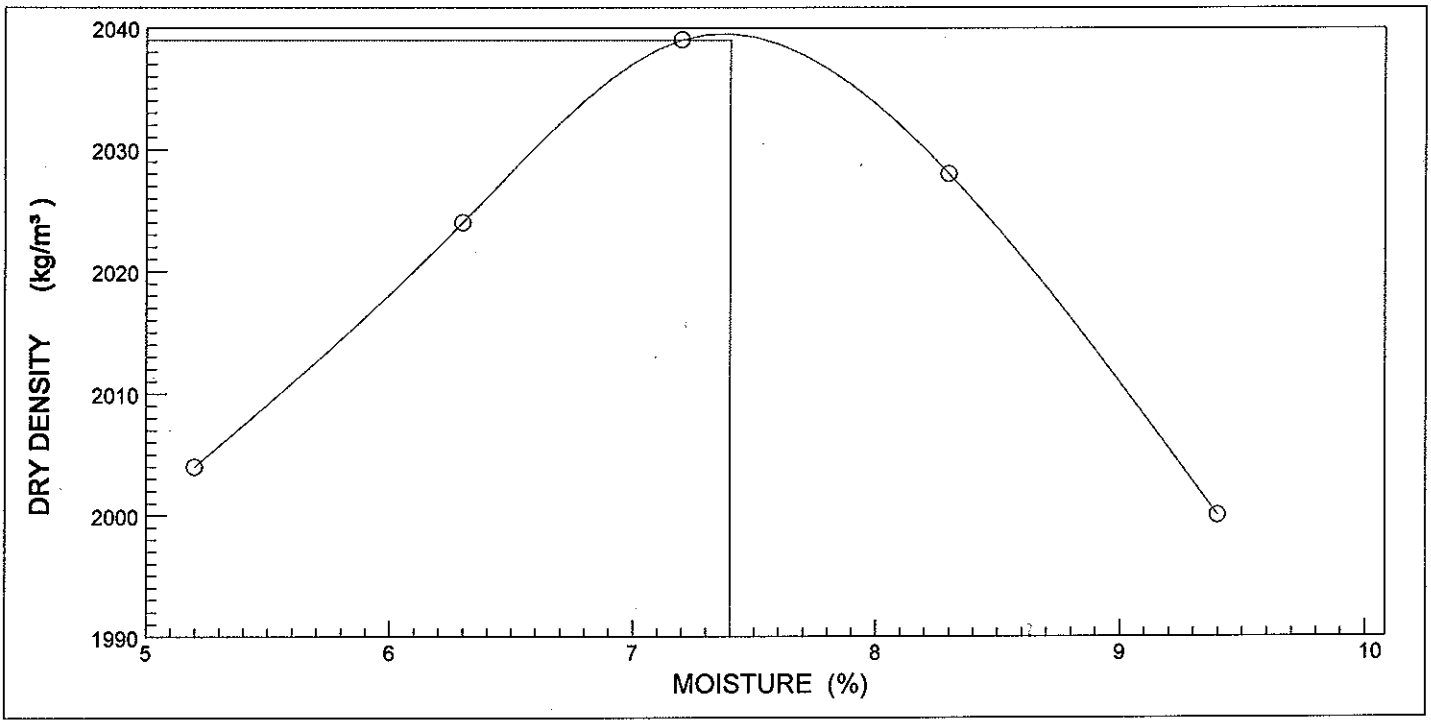
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 78
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	109kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.6m
MATERIAL DESCRIPTION	Mix Quartzstone
HOLE NO./ km / CHAINAGE	TP117
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9083
COLOUR AND TYPE	Brown Gravelly Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2004	2024	2039	2028	2000			
MOISTURE (%)	5.2	6.3	7.2	8.3	9.4			

MAXIMUM DRY DENSITY (kg/m³) : 2039	OPTIMUM MOISTURE CONTENT (%) : 7.4



Deviation from Test Method :
Remarks and Notes :

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The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

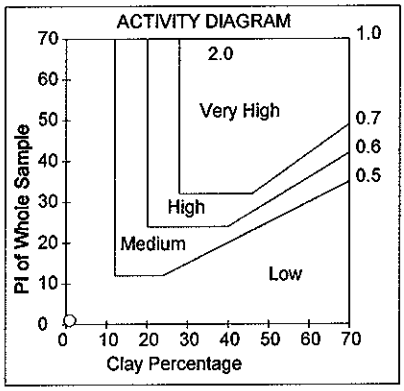
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

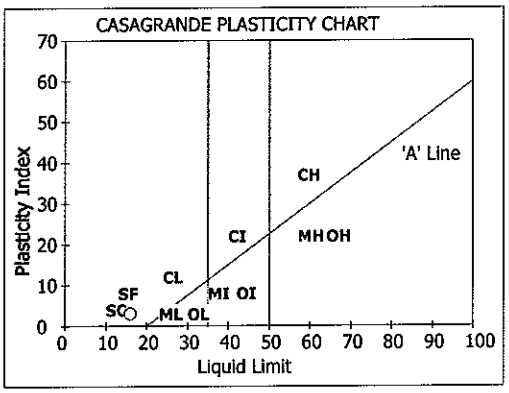
Sample No.	: U9083
Position	: TP 117 - 0.0-0.6m
Layer Type	: Sample 78
Sample Colour	: Brown
Sample Type	: Mix Quartzstone

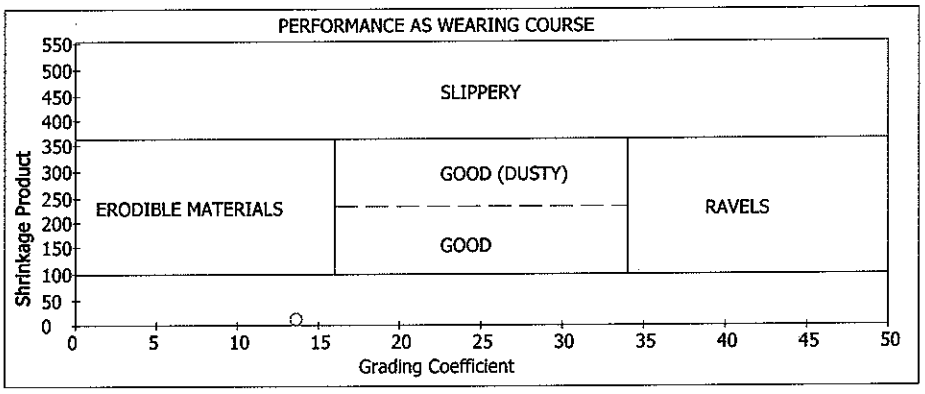
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	90
28.00	86
20.00	82
14.00	81
5.000	76
2.000	68
0.425	27
0.250	18
0.150	11
0.075	6.2
0.060	2.5
0.050	2.3
0.020	1.8
0.005	1.4
0.002	0.8

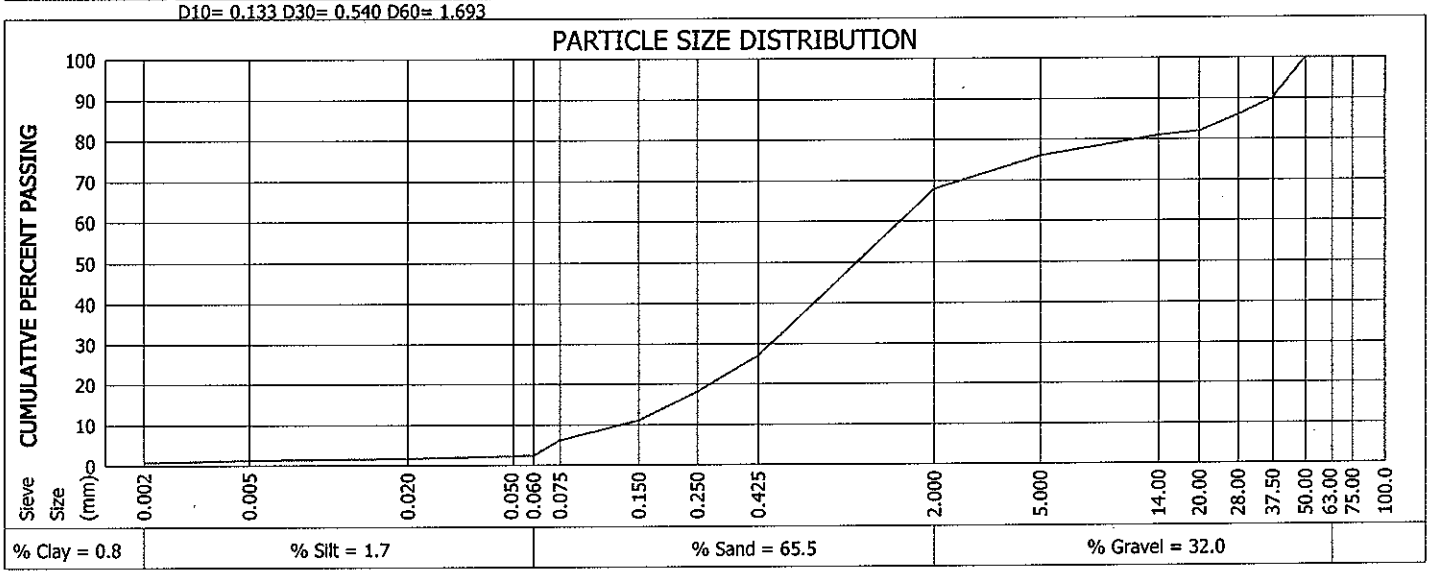
Soil Mortar	2.000 - 0.425	61
	0.425 - 0.250	13
	0.250 - 0.150	10
	0.150 - 0.075	8
	< 0.075	9
Effective Size		0.133
Uniformity Coefficient		12.7
Curvature Coefficient		1.3
Oversize Index		10.0
Shrinkage Product		13.5
Grading Coefficient		13.7
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	16
	Plasticity Index	3.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.133 D30= 0.540 D60= 1.693









% Clay = 0.8	% Silt = 1.7	% Sand = 65.5	% Gravel = 32.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

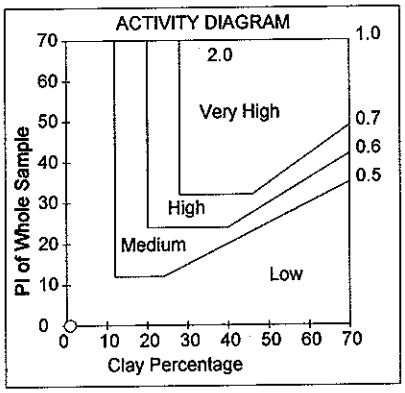
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

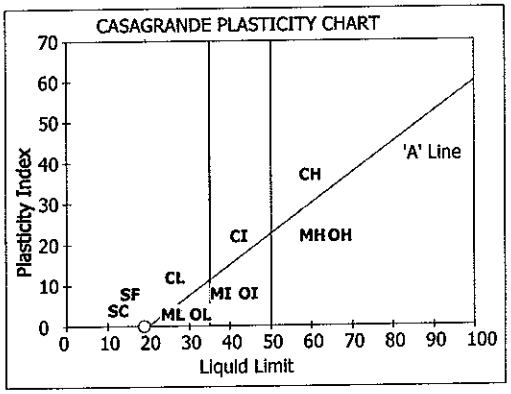
Sample No.	: U9084
Position	: TP119 - 0.2-0.7m
Layer Type	: Sample 79
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

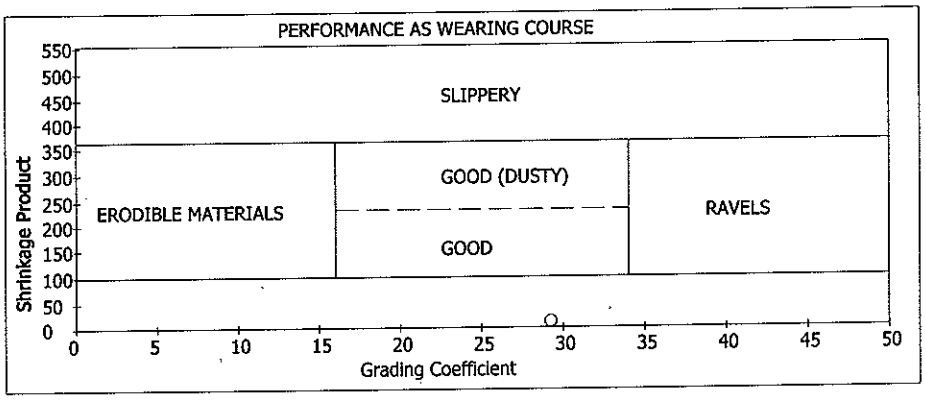
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	98
28.00	98
20.00	96
14.00	93
5.000	79
2.000	61
0.425	27
0.250	18
0.150	11
0.075	6.9
0.060	2.5
0.050	2.3
0.020	2.1
0.005	1.3
0.002	1.0

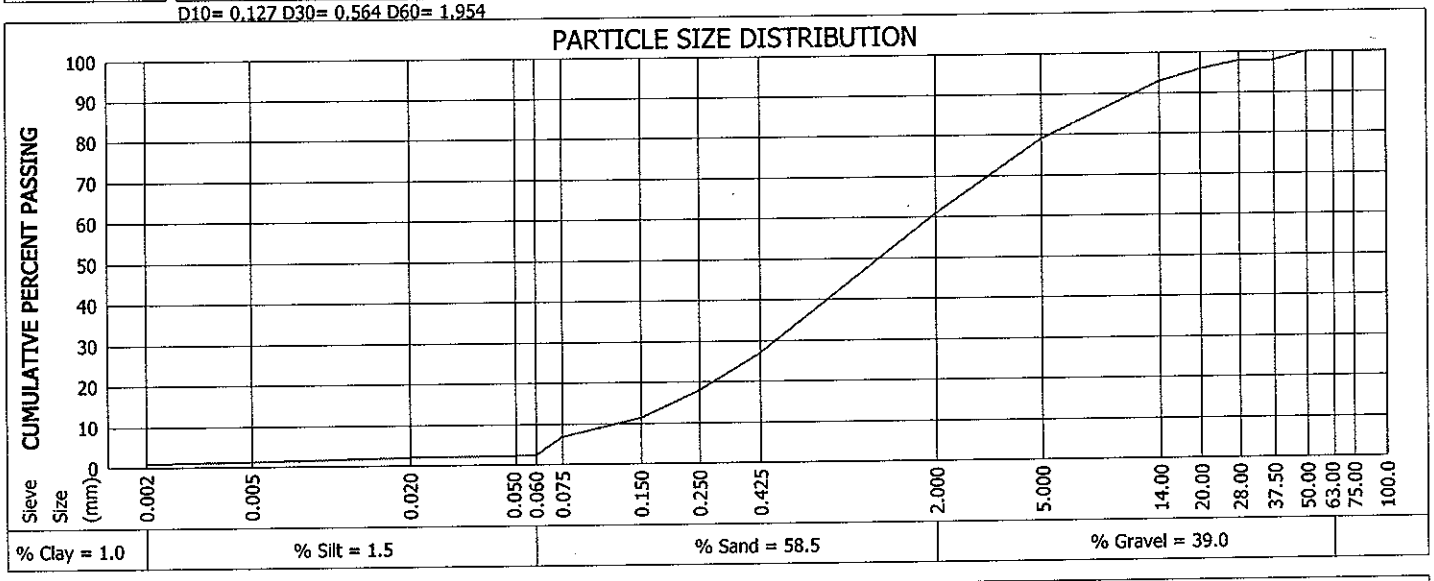
Soil Mortar	2.000 - 0.425	55
	0.425 - 0.250	15
	0.250 - 0.150	11
	0.150 - 0.075	7
	< 0.075	12
Effective Size		0.127
Uniformity Coefficient		15.4
Curvature Coefficient		1.3
Oversize Index		2.0
Shrinkage Product		13.5
Grading Coefficient		29.2
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	19
	Plasticity Index	0.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.127 D30= 0.564 D60= 1.954









Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

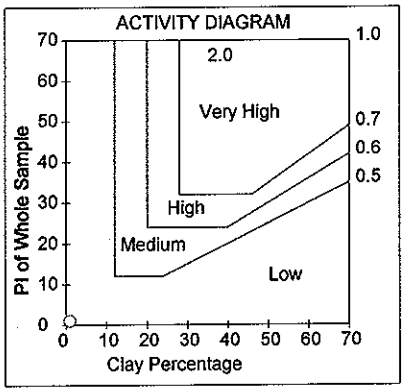
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

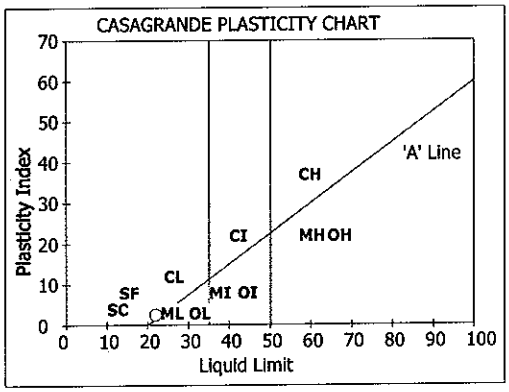
Sample No.	: U9085
Position	: TP120 - 0.0-0.5m
Layer Type	: Sample 80
Sample Colour	: Orange Brown
Sample Type	: Mix Weathered Quartz

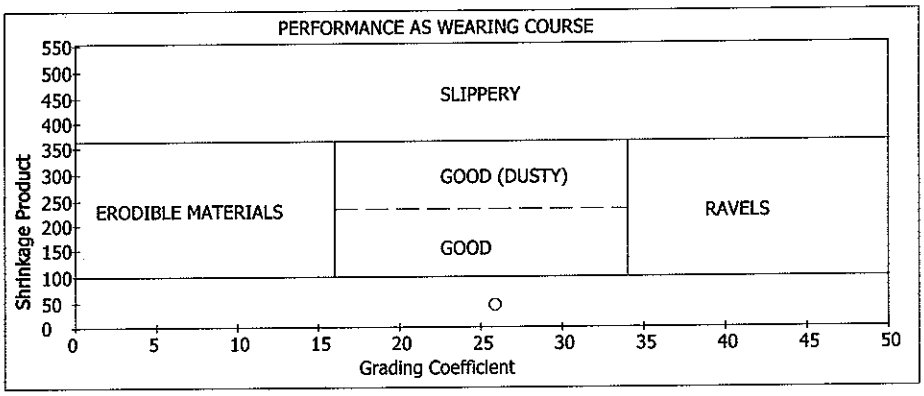
Sieve Size(mm)	% Passing
100.0	100
75.00	96
63.00	96
50.00	96
37.50	96
28.00	93
20.00	91
14.00	89
5.000	74
2.000	58
0.425	29
0.250	21
0.150	14
0.075	8.8
0.060	3.5
0.050	3.2
0.020	2.3
0.005	1.5
0.002	1.0

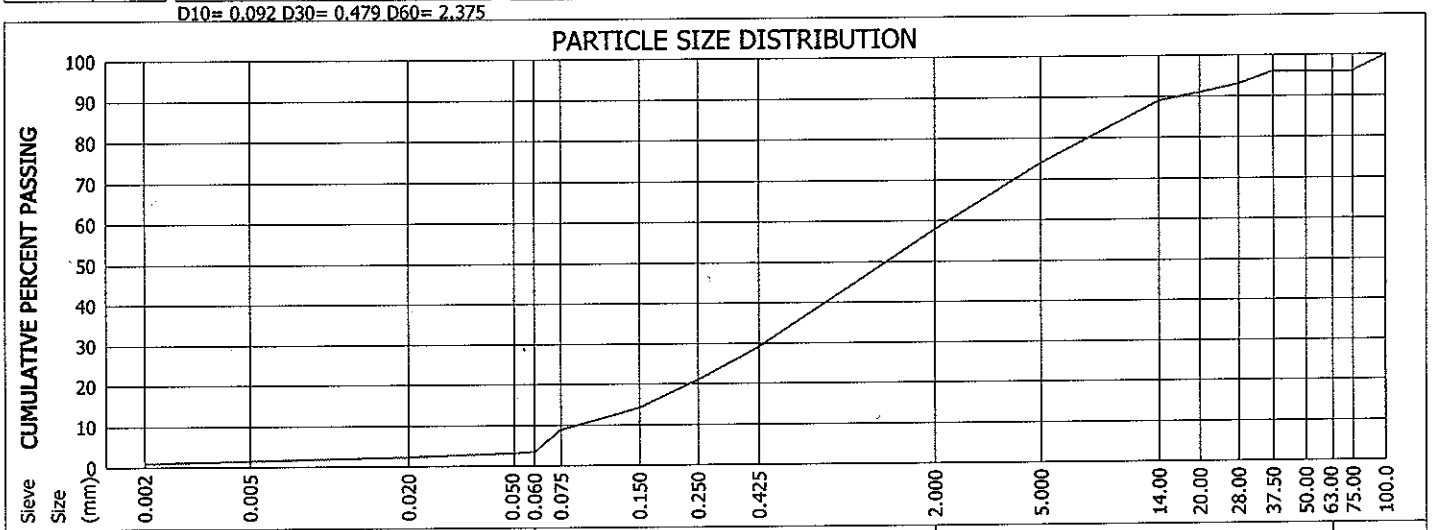
Soil Mortar	2.000 - 0.425	49
	0.425 - 0.250	15
	0.250 - 0.150	12
	0.150 - 0.075	9
	< 0.075	16
Effective Size		0.092
Uniformity Coefficient		25.8
Curvature Coefficient		1.1
Oversize Index		0.0
Shrinkage Product		43.5
Grading Coefficient		25.9
Grading Modulus		2.00
Atterberg Limits	Liquid Limit	22
	Plasticity Index	2.0
	Linear Shrinkage	1.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.092 D30= 0.479 D60= 2.375









% Clay = 1.0	% Silt = 2.5	% Sand = 54.5	% Gravel = 38.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-20

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		U9097			
HOLE NO./ Km / CHAINAGE		TP121			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Sample			
LAYER TESTED/SAMPLED		0.0 - 0.4m			
SAMPLE DEPTH		0.0 - 0.4m			
DATE SAMPLED		2020-02-01			
COLOUR OF SAMPLE		Brown S.Sand			
TYPE OF SAMPLE		Mix Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm	100			
	75.0 mm	96			
	63.0 mm	96			
	50.0 mm	96			
	37.5 mm	94			
	28.0 mm	94			
	20.0 mm	93			
	14.0 mm	92			
	5.0 mm	84			
	2.0 mm	75			
	0.425 mm	44			
	0.075 mm	15			
GM %		1,7			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	41			
COARSE FINE SAND	0.425 - 0.250	12			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	13			
SILT CLAY	0.075	20			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	14			
	PLASTICITY INDEX	0.9			
	LINEAR SHRINKAGE	0.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G6			
	TRH 14	G7			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	5,1			
	MDD (kg/m³)	2143			
	COMP MC %	5,1			
SWELL % @	MOD | NRB | PRO	0,00 | 0,02 | 0,05			
C.B.R. SANS GR40	100 %	100			
	98 %	66			
	97 %	54			
	95 %	36			
	93 %	24			
	90 %	13			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-25

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

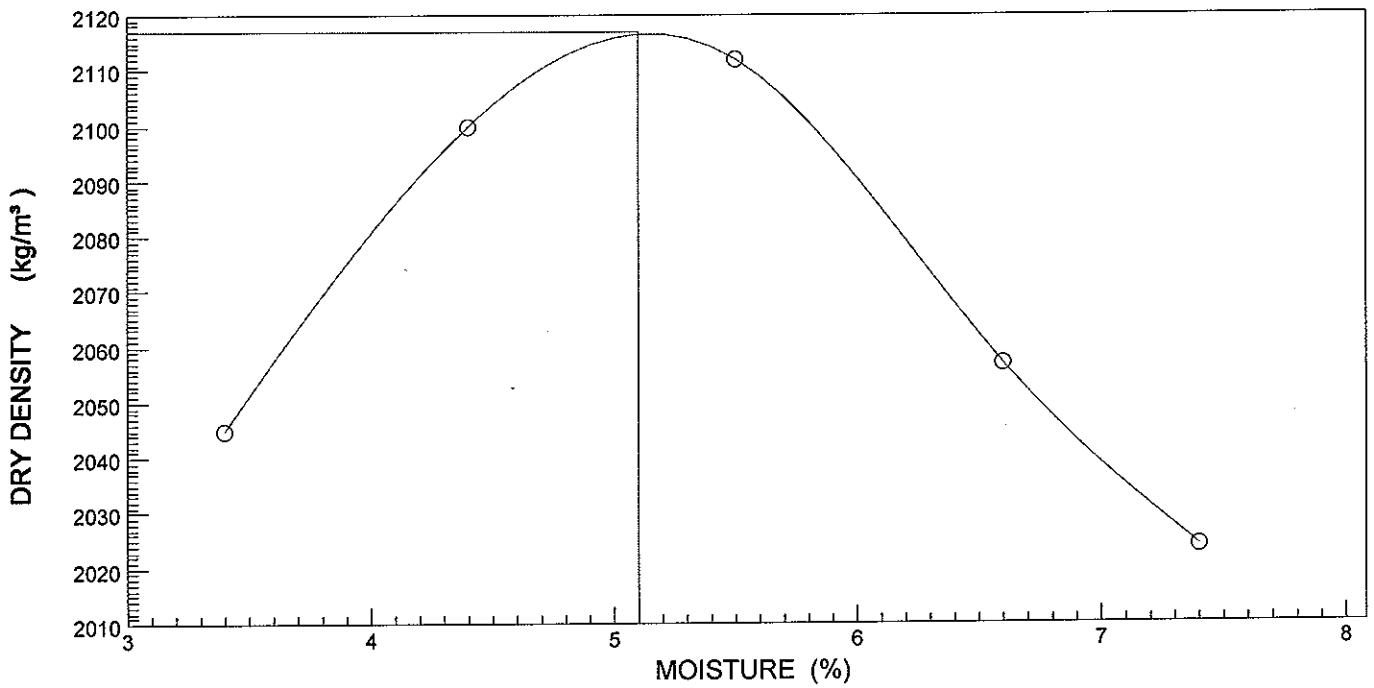
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample ??
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	94kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0-0.4m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP121
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-02-01
CLIENT MARKING	U9097
COLOUR AND TYPE	Brown S.Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2045	2100	2112	2057	2024			
MOISTURE (%)	3.4	4.4	5.5	6.6	7.4			

MAXIMUM DRY DENSITY (kg/m³) : 2117	OPTIMUM MOISTURE CONTENT (%) : 5.1



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-20

Project : Okiep 100 Infill

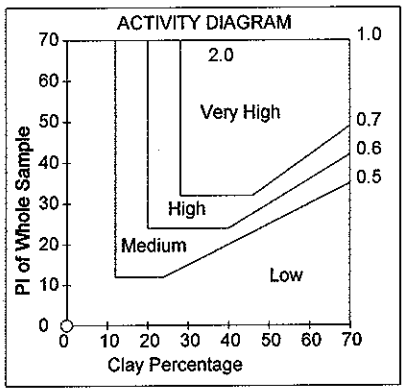
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

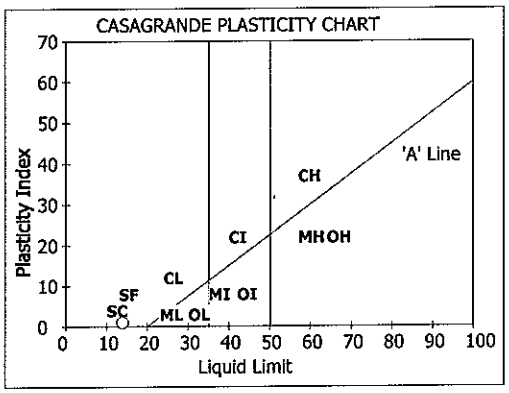
Sample No.	: U9097
Position	: TP 121 - 0.0-0.4m
Layer Type	: Sample
Sample Colour	: Brown
Sample Type	: Mix Quartz

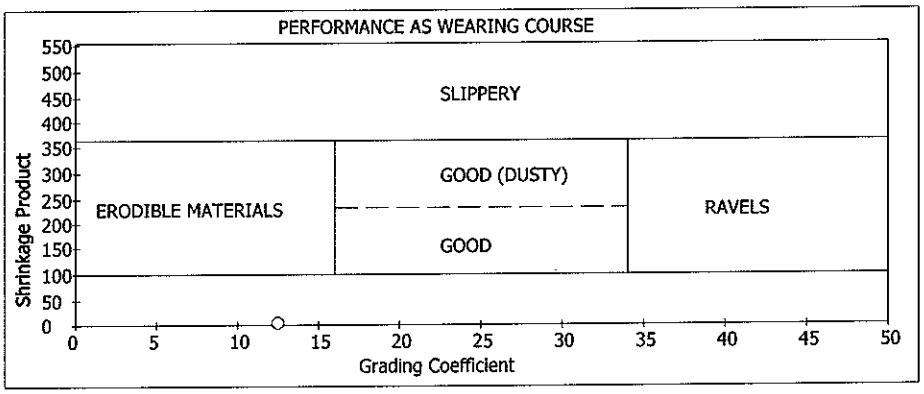
Sieve Size(mm)	% Passing
100.0	100
75.00	77
63.00	77
50.00	77
37.50	68
28.00	64
20.00	57
14.00	56
5.000	48
2.000	38
0.425	5.0
0.250	3.6
0.150	2.5
0.075	1.5
0.060	0.6
0.050	0.6
0.020	0.4
0.005	0.3
0.002	0.2

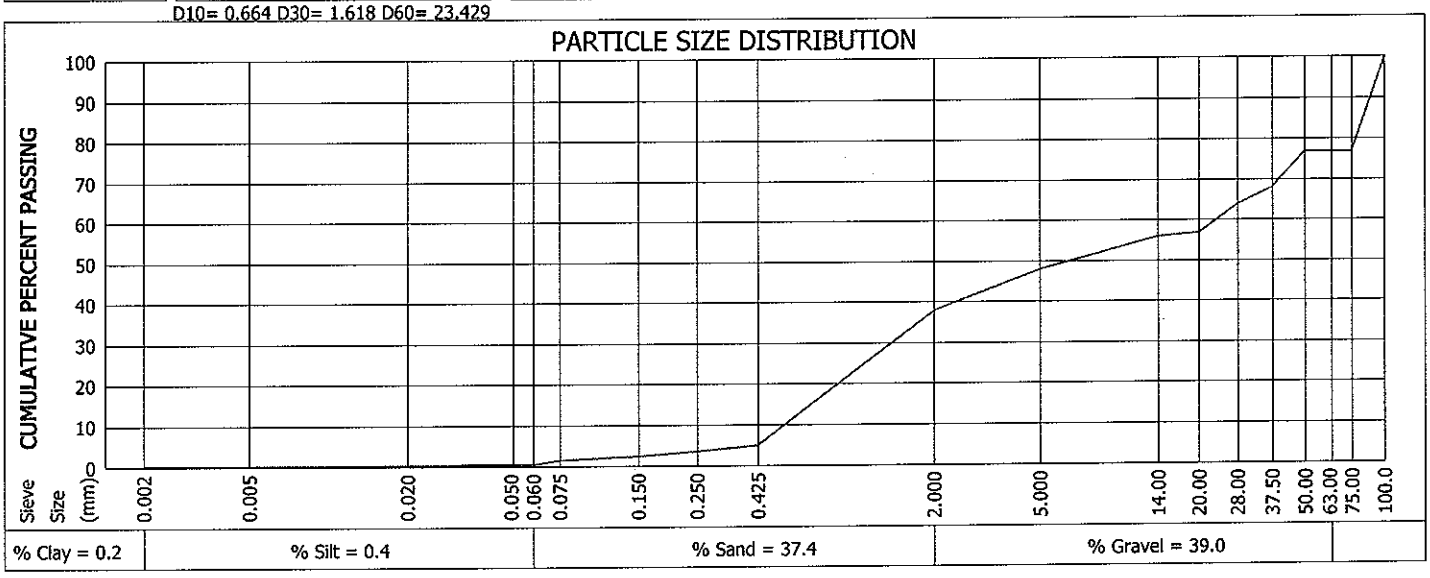
Soil Mortar	2.000 - 0.425	88
	0.425 - 0.250	3
	0.250 - 0.150	3
	0.150 - 0.075	1
	< 0.075	5
Effective Size		0.664
Uniformity Coefficient		35.3
Curvature Coefficient		0.2
Oversize Index		9.0
Shrinkage Product		2.5
Grading Coefficient		12.5
Grading Modulus		2.60
Atterberg Limits	Liquid Limit	14
	Plasticity Index	1.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		GW
US Highway Classification		A-1-a(0)

D10= 0.664 D30= 1.618 D60= 23.429









% Clay = 0.2	% Silt = 0.4	% Sand = 37.4	% Gravel = 39.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

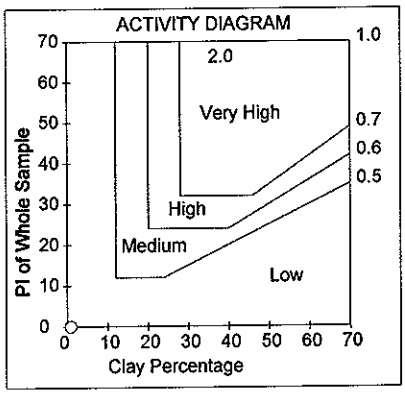
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

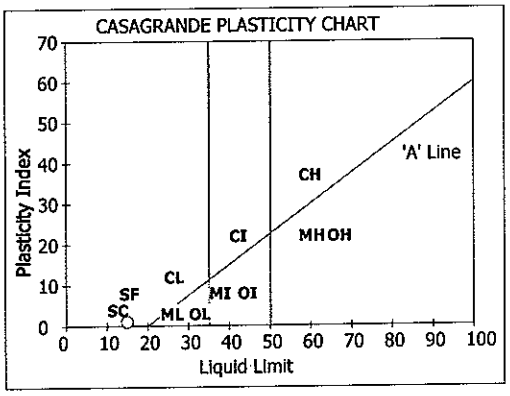
Sample No.	: U9086
Position	: TP122 - 0.0-0.4m
Layer Type	: Sample 81
Sample Colour	: Orange Brown
Sample Type	: Mix Quartzstone

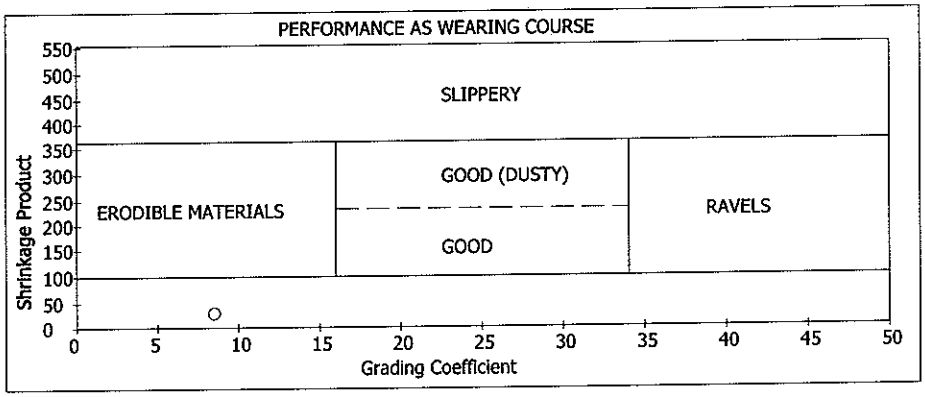
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	98
20.00	98
14.00	97
5.000	95
2.000	89
0.425	56
0.250	46
0.150	34
0.075	22
0.060	7.0
0.050	6.5
0.020	4.6
0.005	2.3
0.002	1.2

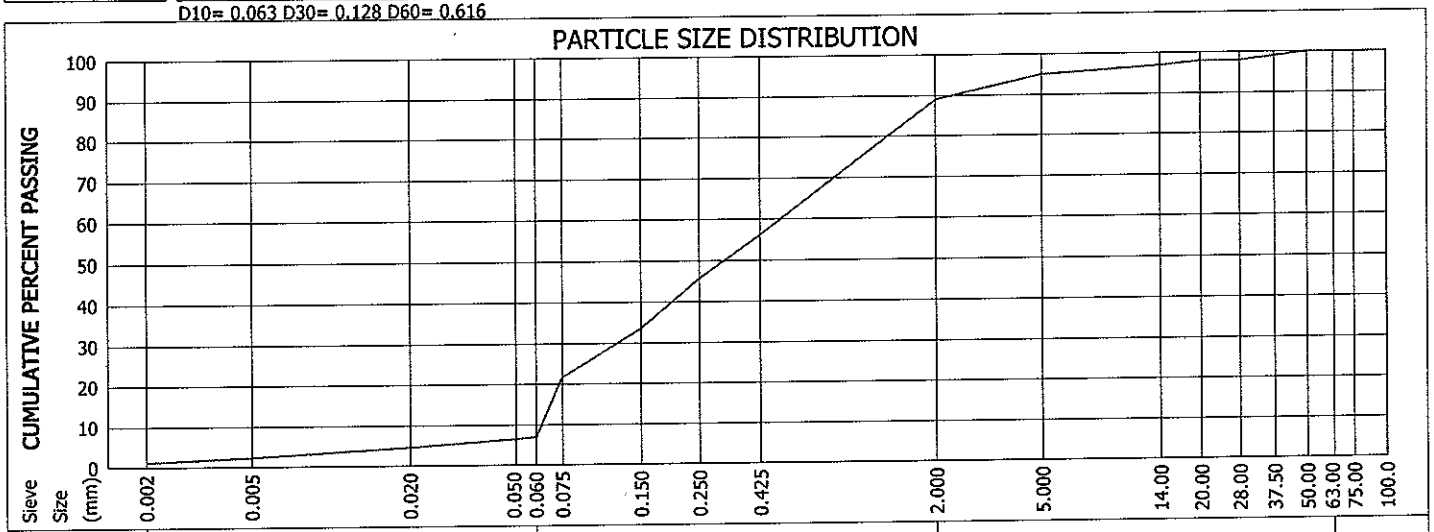
Soil Mortar	2.000 - 0.425	38
	0.425 - 0.250	11
	0.250 - 0.150	14
	0.150 - 0.075	13
	< 0.075	25
Effective Size		0.063
Uniformity Coefficient		9.8
Curvature Coefficient		0.4
Oversize Index		1.0
Shrinkage Product		28.0
Grading Coefficient		8.6
Grading Modulus		1.30
Atterberg Limits	Liquid Limit	15
	Plasticity Index	1.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.063 D30= 0.128 D60= 0.616









% Clay = 1.2	% Silt = 5.8	% Sand = 82.0	% Gravel = 11.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-03-16

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9087			
HOLE NO./ Km / CHAINAGE	TP127			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 82			
LAYER TESTED/SAMPLED	0.0 - 0.4m			
SAMPLE DEPTH	0.0 - 0.4m			
DATE SAMPLED	2020-02-01			
COLOUR OF SAMPLE	Brown G.Sand			
TYPE OF SAMPLE	Mix Quartzstone			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	98			
	37.5 mm	95			
	28.0 mm	93			
	20.0 mm	92			
	14.0 mm	90			
	5.0 mm	84			
	2.0 mm	73			
	0.425 mm	46			
	0.075 mm	16			
GM %		1.6			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	37			
COARSE FINE SAND	0.425 - 0.250	15			
MEDIUM FINE SAND	0.250 - 0.150	14			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	22			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	18			
	PLASTICITY INDEX	2.7			
	LINEAR SHRINKAGE	1.0			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G6			
	TRH 14	G6			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	4.5			
	MDD (kg/m³)	2187			
	COMP MC %	4.7			
SWELL % @	MOD | NRB | PRO	0.02 | 0.05 | 0.08			
C.B.R. SANS GR40	100 %	88			
	98 %	61			
	97 %	51			
	95 %	35			
	93 %	25			
	90 %	14			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Roelof Lategan
Manager

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410

Date Reported : 2020-02-24

Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Project : Okiep 100 Infill

Attention : Aurey Nonyana

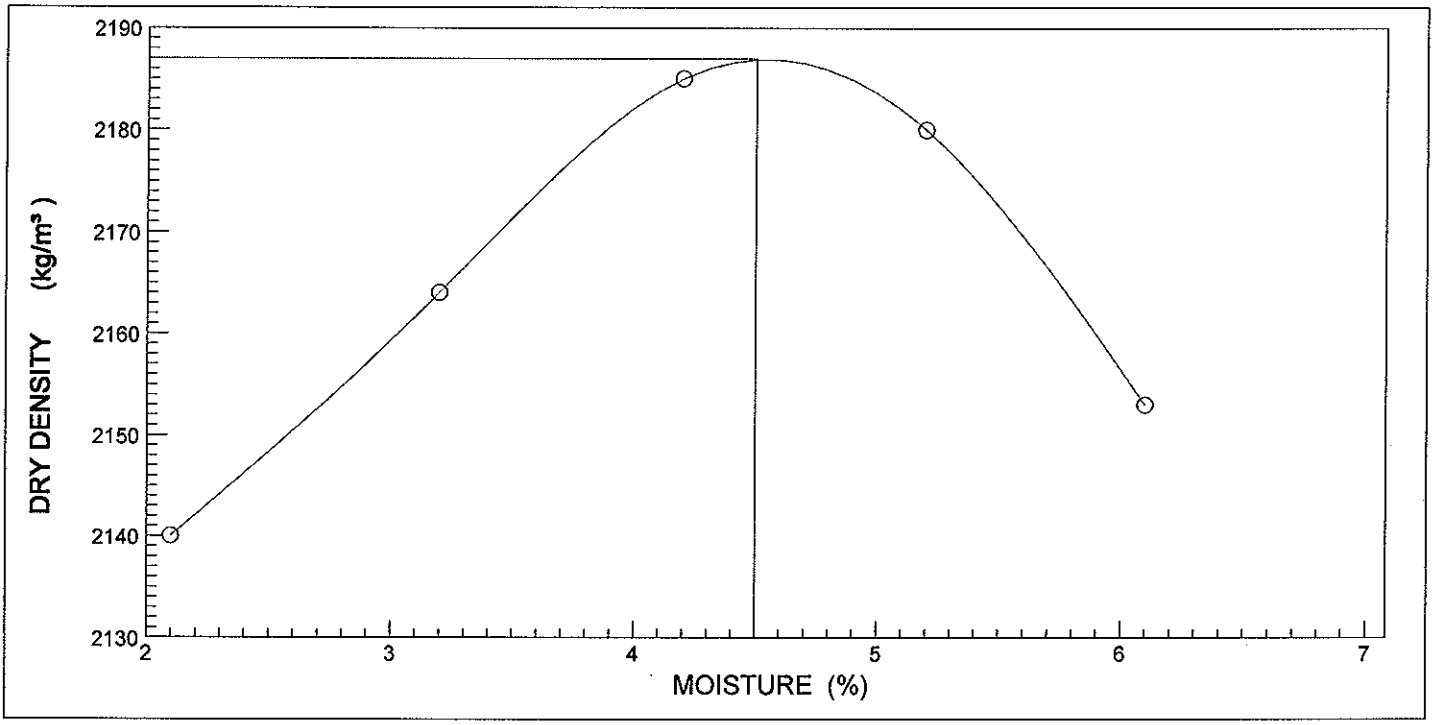
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 82
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	96kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.4m
MATERIAL DESCRIPTION	Mix Quartz
HOLE NO./ km / CHAINAGE	TP127
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9087
COLOUR AND TYPE	Brown Gravelly Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2140	2164	2185	2180	2153			
MOISTURE (%)	2.1	3.2	4.2	5.2	6.1			

MAXIMUM DRY DENSITY (kg/m³) : 2187	OPTIMUM MOISTURE CONTENT (%) : 4.5



Deviation from Test Method :
Remarks and Notes :

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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-16

Project : Okiep 100 Infill

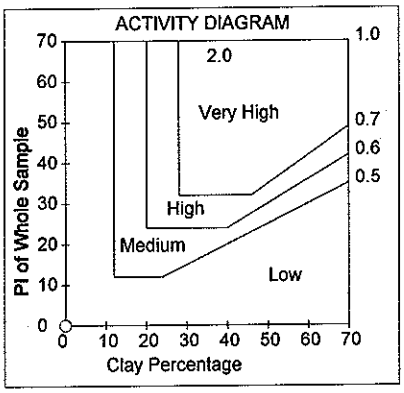
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

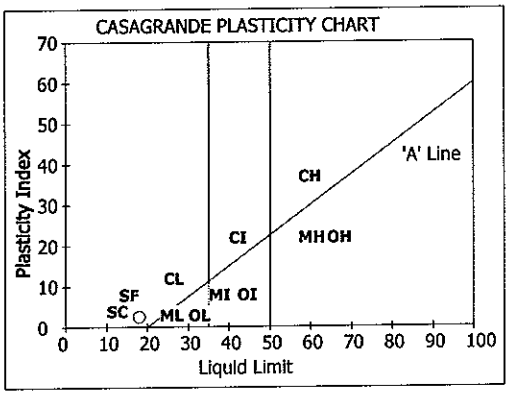
Sample No.	: U9087
Position	: TP 127 - 0.0-0.4m
Layer Type	: Sample 82
Sample Colour	: Brown
Sample Type	: Mix Quartz

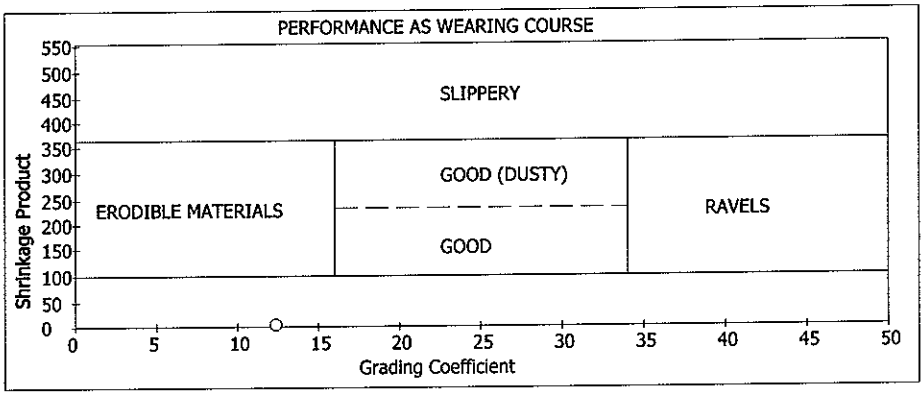
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	91
37.50	72
28.00	61
20.00	55
14.00	52
5.000	46
2.000	34
0.425	4.0
0.250	3.4
0.150	2.4
0.075	1.5
0.060	0.4
0.050	0.4
0.020	0.3
0.005	0.2
0.002	0.1

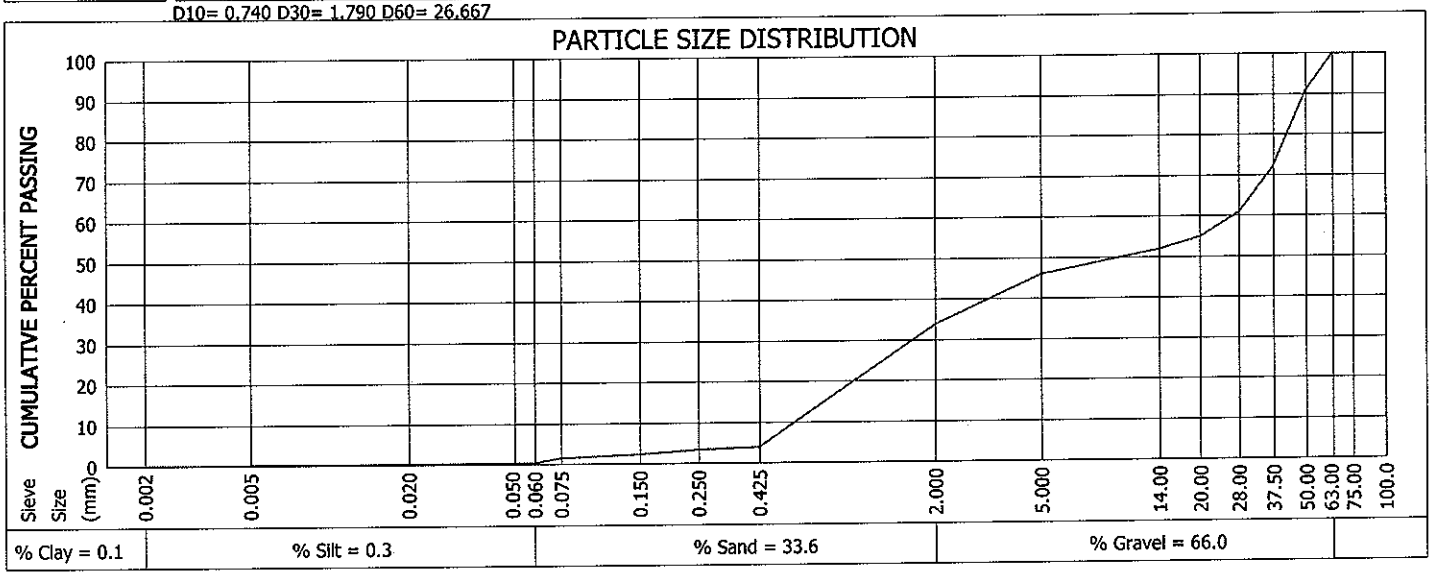
Soil Mortar	2.000 - 0.425	87
	0.425 - 0.250	3
	0.250 - 0.150	3
	0.150 - 0.075	1
	< 0.075	6
Effective Size		0.740
Uniformity Coefficient		36.0
Curvature Coefficient		0.2
Oversize Index		19.0
Shrinkage Product		4.0
Grading Coefficient		12.4
Grading Modulus		2.60
Atterberg Limits	Liquid Limit	18
	Plasticity Index	3.0
	Linear Shrinkage	1.0
	PI < 0.075	
Unified Soil Classification		GW
US Highway Classification		A-1-a(0)

D10= 0.740 D30= 1.790 D60= 26.667









% Clay = 0.1	% Silt = 0.3	% Sand = 33.6	% Gravel = 66.0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO Box 2893, Upington, 8800
Tel: 082 781 1255 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920
Attention : Aubrey Nonyana

Date Reported : 2020-03-20

Project : Okiep 100 Infill

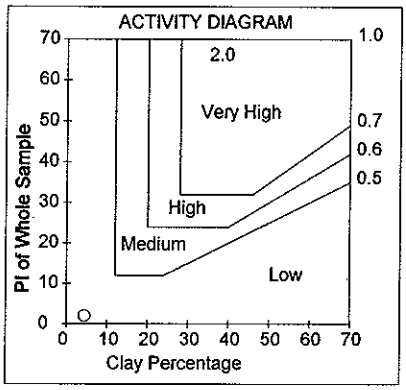
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

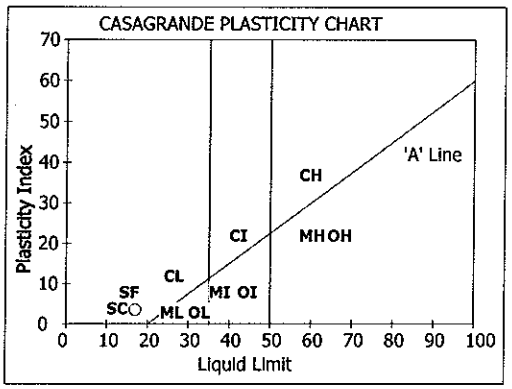
Sample No.	: U9088
Position	: TP129 - 0.0-0.4m
Layer Type	: Sample 83
Sample Colour	: Dark Brown
Sample Type	: Mix Quartzstone

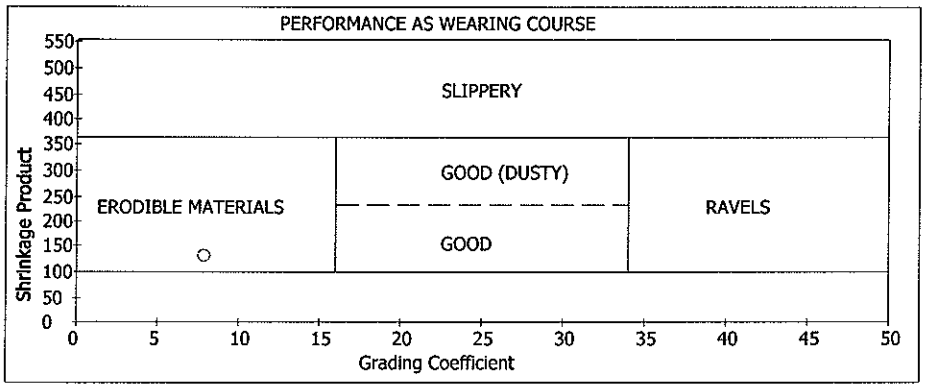
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	99
5.000	98
2.000	92
0.425	53
0.250	44
0.150	35
0.075	26
0.060	9,9
0.050	9,4
0.020	7,7
0.005	5,8
0.002	4,6

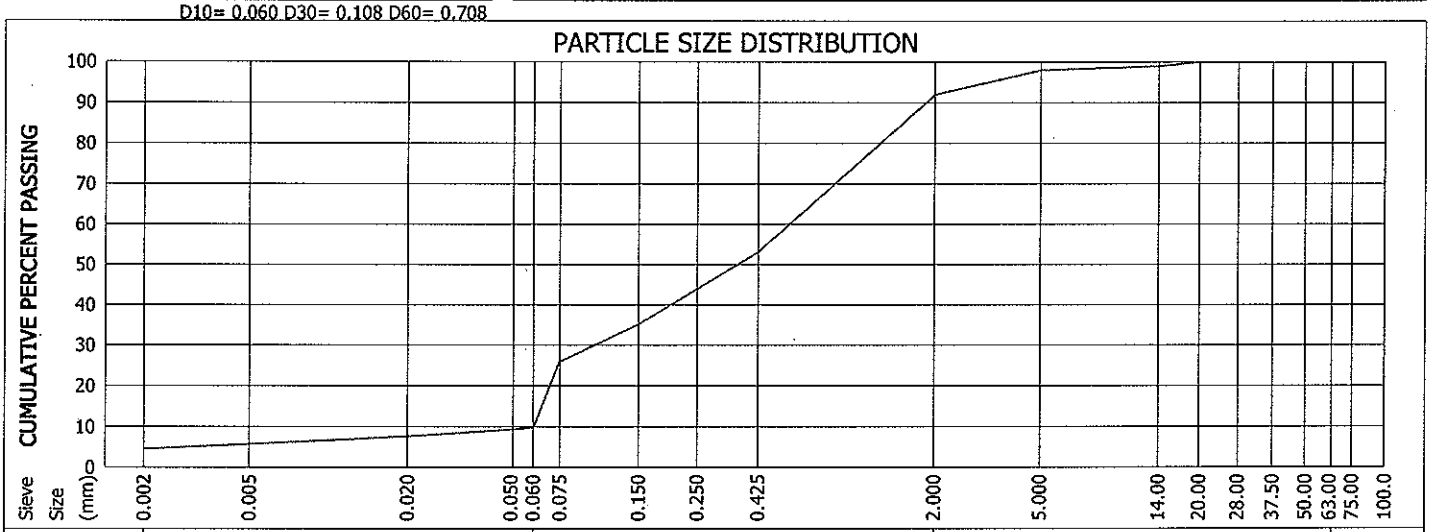
Soil Mortar	2.000 - 0.425	43
	0.425 - 0.250	9
	0.250 - 0.150	10
	0.150 - 0.075	10
	< 0.075	28
Effective Size		0,060
Uniformity Coefficient		11,8
Curvature Coefficient		0,3
Oversize Index		0,0
Shrinkage Product		132,5
Grading Coefficient		7,8
Grading Modulus		1,30
Atterberg Limits	Liquid Limit	17
	Plasticity Index	4,0
	Linear Shrinkage	2,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-4(0)

D10= 0.060 D30= 0.108 D60= 0.708









% Clay = 4,6	% Silt = 5,3	% Sand = 82,1	% Gravel = 8,0

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-20

Project : Okiep 100 Infill Springbok

Attention : Aurey Nonyana

Determination of the California Bearting Ratio Test Report SANS 3001 - GR1 / GR10 / GR20 / GR30 / GR40 / PR5

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.	U9089			
HOLE NO./ Km / CHAINAGE	TP132			
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2	Sample 84			
LAYER TESTED/SAMPLED	0.0 - 0.3m			
SAMPLE DEPTH	0.0 - 0.3m			
DATE SAMPLED	2020-01--31			
COLOUR OF SAMPLE	Light Brown G.Sand			
TYPE OF SAMPLE	Mix Weathered Quartz			

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

SIEVE ANALYSIS (GR 1) % PASSING	100.0 mm				
	75.0 mm				
	63.0 mm	100			
	50.0 mm	98			
	37.5 mm	96			
	28.0 mm	95			
	20.0 mm	95			
	14.0 mm	95			
	5.0 mm	92			
	2.0 mm	83			
	0.425 mm	45			
	0.075 mm	17			
GM %		1.5			

SOIL MORTAR ANALYSIS (SANS 3001-PR5:2011)

COARSE SAND	2.000 - 0.425	45			
COARSE FINE SAND	0.425 - 0.250	11			
MEDIUM FINE SAND	0.250 - 0.150	11			
FINE FINE SAND	0.150 - 0.075	12			
SILT CLAY	0.075	20			

ATTERBERG LIMITS ANALYSIS - *(SANS 3001-GR10:2010)

ATTERBERG LIMITS (%) SANS GR10,GR11	LIQUID LIMIT	14			
	PLASTICITY INDEX	0.8			
	LINEAR SHRINKAGE	0.5			
CLASSIFICATION	H.R.B.	A-1-b(0)			
	COLTO	G6			
	TRH 14	G6			

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30 MAX. DRY DENSITY	OMC %	6.6			
	MDD (kg/m³)	2098			
	COMP MC %	6.7			
SWELL % @	MOD | NRB | PRO	0.02 | 0.04 | 0.07			
C.B.R. SANS GR40	100 %	117			
	98 %	77			
	97 %	63			
	95 %	41			
	93 %	27			
	90 %	15			

STABILISER IN LAB	N/A			
TEST TYPE	CBR			
SAMPLING METHOD	Client			
WEATHER WHEN SAMPLED	Not Specified			

Deviation from Test Method : Client sampled material - this may have an influence on the validity of the results.
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
The samples were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM).
The test results reported relate to the samples tested.
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Roelof Lategan
Manager

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ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceburg Trading 751 CC
P.O Box 1364
Louis Trichardt
0920
Attention : Aurey Nonyana

Date Reported : 2020-02-24

Project : Okiep 100 Infill

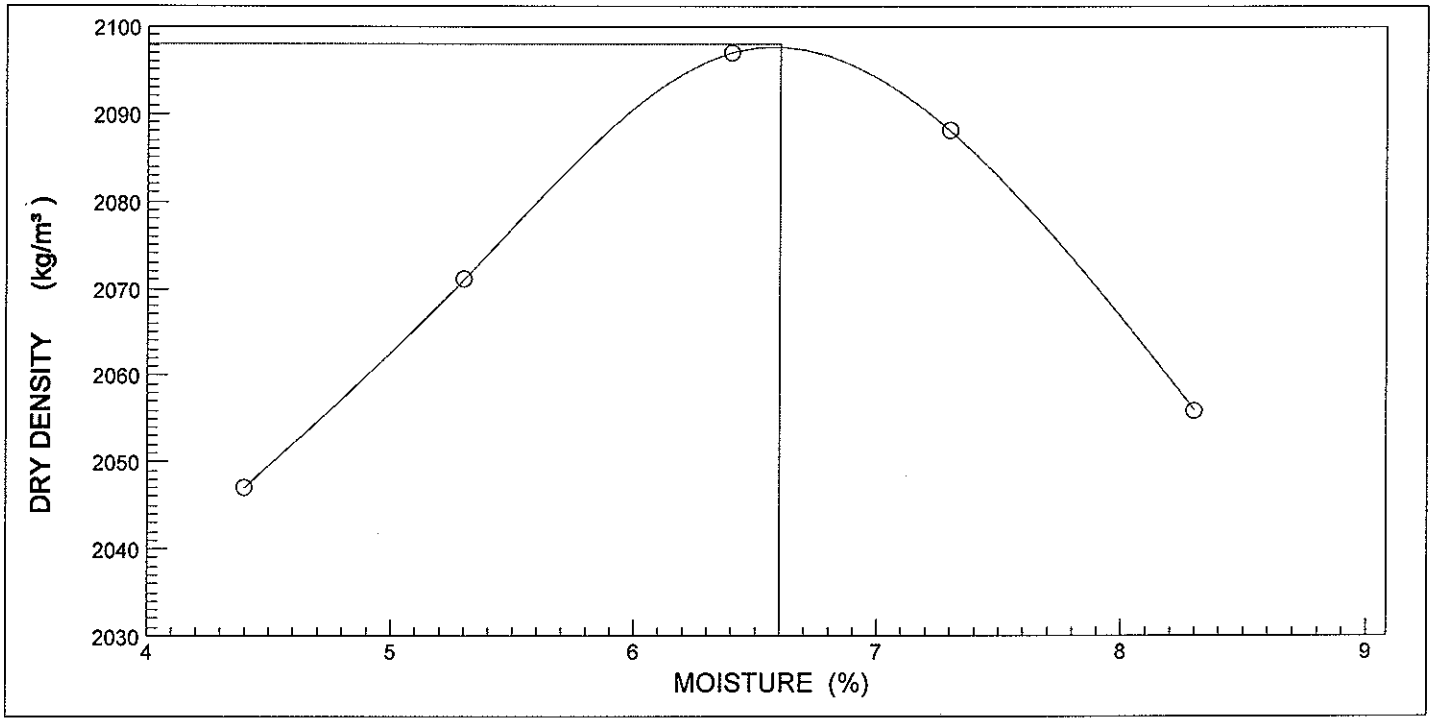
Determination Maximum Dry Density & Optimum Moisture Content Test Report

SANS 3001 - GR20 / GR30

SAMPLE NO.	Sample 84
CONTAINER FOR SAMPLING	White Nylon Bag
SIZE / APPROX. MASS OF SAMPLE	89kg
MOISTURE CONDITION OF SAMPLE	Moist
LAYER TESTED / SAMPLED FROM	0.0 - 0.3m
MATERIAL DESCRIPTION	Mix Weathered Quartz
HOLE NO./ km / CHAINAGE	TP132
ROAD NO.	Not Specified
DATE RECEIVED	2020-02-04
DATE SAMPLED	2020-01-31
CLIENT MARKING	U9089
COLOUR AND TYPE	Light Brown Gravelly Sand

POINT NO.	1	2	3	4	5			
DRY DENSITY (kg/m³)	2047	2071	2097	2088	2056			
MOISTURE (%)	4.4	5.3	6.4	7.3	8.3			

MAXIMUM DRY DENSITY (kg/m³) : 2098	OPTIMUM MOISTURE CONTENT (%) : 6.6



Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our scope of works.
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Report compiled by : Juraine Okkies

Roelof Lategan
Manager

Prog.ver 10.7 (2019/11/07)

ROADLAB

Upington
11 Swakara Street, Industria, Upington, 8801
PO 2893, Upington, 8800
Tel: 054 334 0838 Fax:
Email: roelof@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RU3410
Iceberg Trading
PO Box 1364
Louis Trichardt
0920

Date Reported : 2020-03-20

Project : Okiep 100 Infill

Attention : Aubrey Nonyana

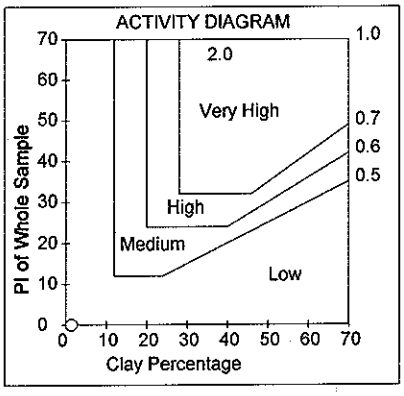
Foundation Indicator Test Report SANS 3001 - GR1 / GR3 / GR10

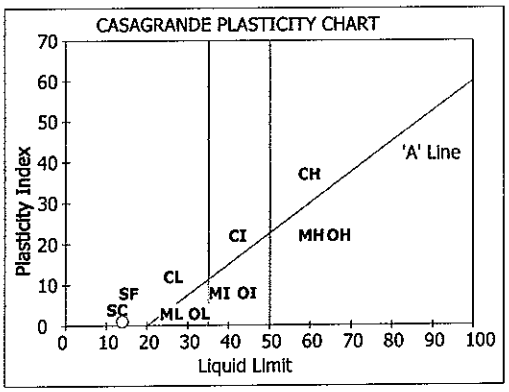
Sample No.	: U9089
Position	: TP 132 - 0.0-0.3m
Layer Type	: Sample 84
Sample Colour	: Light Brown
Sample Type	: Mix Weathered Quartz

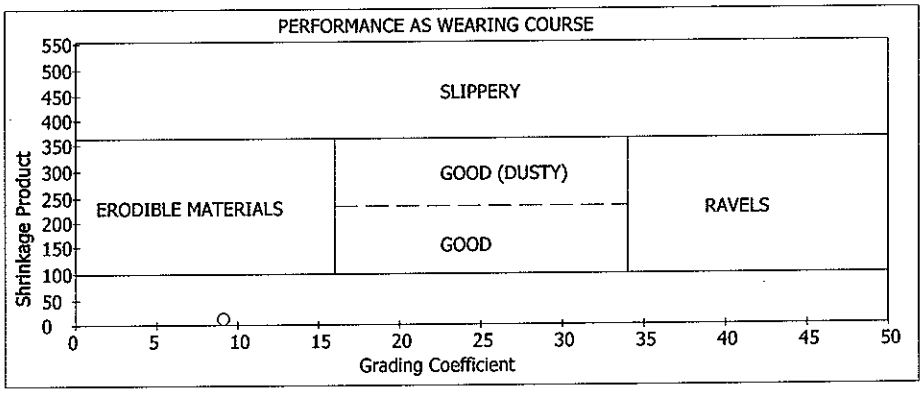
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	89
37.50	79
28.00	74
20.00	74
14.00	73
5.000	70
2.000	61
0.425	21
0.250	17
0.150	13
0.075	8.1
0.060	2.9
0.050	2.8
0.020	2.3
0.005	1.9
0.002	1.7

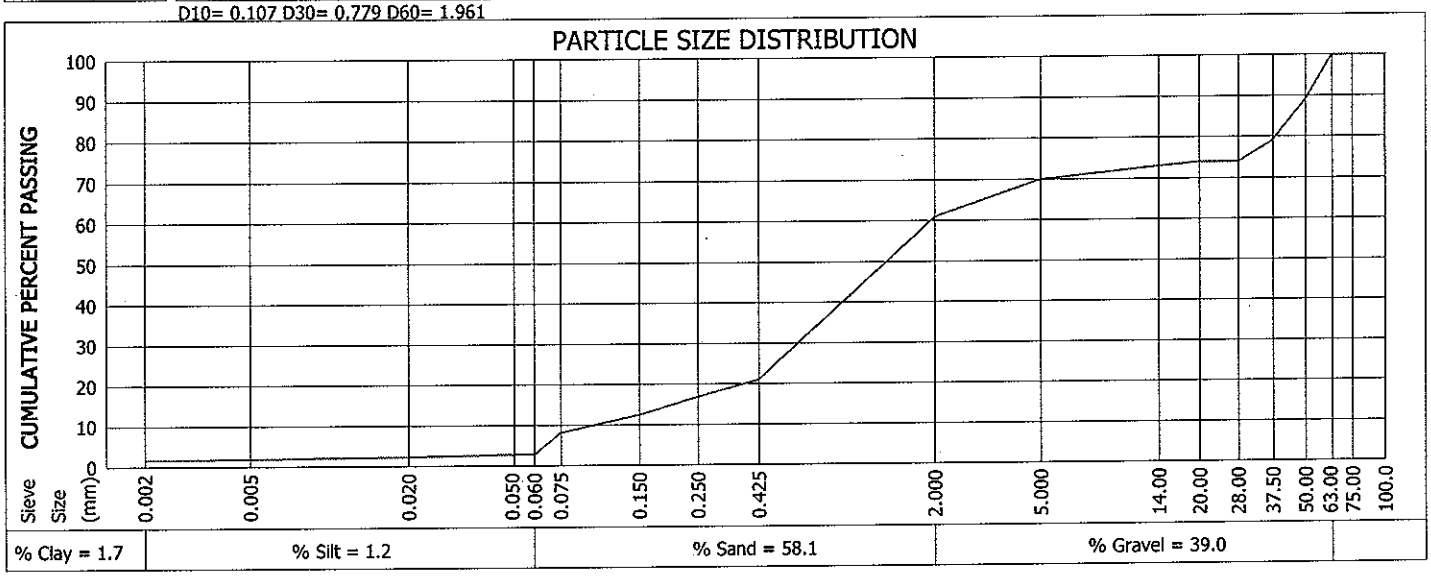
Soil Mortar	2.000 - 0.425	65
	0.425 - 0.250	7
	0.250 - 0.150	7
	0.150 - 0.075	7
	< 0.075	13
Effective Size		0.107
Uniformity Coefficient		18.3
Curvature Coefficient		2.9
Oversize Index		10.0
Shrinkage Product		10.5
Grading Coefficient		9.1
Grading Modulus		2.10
Atterberg Limits	Liquid Limit	14
	Plasticity Index	1.0
	Linear Shrinkage	0.5
	PI < 0.075	
Unified Soil Classification		SW-SC
US Highway Classification		A-1-b(0)

D10= 0.107 D30= 0.779 D60= 1.961









% Clay = 1.7	% Silt = 1.2	% Sand = 58.1	% Gravel = 39.0

Deviation from Test Method :
Remarks and Notes : Chemistry: pH = 7.9 & Conductivity = 0.06 S/m [SANS 5854]

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