Appendix A

Summary of standard soil and rock profile description terminology

STANDARD DESCRIPTIONS USED IN SOIL PROFILING

1. MOISTURE CONDITION

Term	Description
Dry	
Slightly moist	Requires addition of water to reach optimum moisture content for compaction
Moist	Near optimum content
Very Moist	Requires drying to attain optimum content
Wet	Fully saturated and generally below water table

2. COLOUR

The Predominant colours or colour combinations are described including secondary coloration described as banded, streaked, blotched, mottled, speckled or stained.

3. CONSISTENCY

3.1 Non-Cohesive Soils

Term	Description
Very Loose	Crumbles very easily when scraped with geological pick
Loose	Small resistance to penetration by sharp end of geological pick
Medium Dense	Considerable resistance to penetration by sharp end of geological pick
Dense	Very high resistance to penetration to sharp end of geological pick. Requires many blows of hand pick for excavation.
Very Dense	High resistance to repeated blows of geological pick. Requires power tools for excavation

3.2 Cohesive Soils

Term	Description
Very soft	Easily penetrated by thumb. Sharp end of pick can be pushed in 30 - 40mm. Easily moulded by fingers.
Soft	Pick head can easily be pushed into the shaft of handle. Moulded by fingers with some pressure.
Firm	Indented by thumb with effort. Sharp end of pick can be pushed in up to 10mm. Can just be penetrated with an ordinary spade.
Stiff	Penetrated by thumbnail. Slight indentation produced by pushing pick point into soil. Cannot be moulded by fingers. Requires hand pick for excavation.
Very Stiff	Indented by thumbnail. Slight indentation produced by blow of pick point. Requires power tools for excavation.

4. STRUCTURE

Term	Description
Intact	Absence of fissures or joints
Fissured	Presence of closed joints
Shattered	Presence of closely spaced air filled joints giving cubical fragments
Micro-shattered	Small scale shattering with shattered fragments the size of sand grains
Slickensided	Polished planar surfaces representing shear movement in soil
Bedded Foliated	Many residual soils show structures of parent rock.

5. SOIL TYPE

5.1 Particle Size

Term	Size (mm)
Boulder	>200
Pebbles	60 – 200
Gravel	60 – 2
Sand	2 – 0,06
Silt	0,06 – 0,002
Clay	<0,002

6. ORIGIN

6.1 Transported Soils

Term	Agency of Transportation
Colluvium	Gravity deposits
Talus	Scree or coarse colluvium
Hillwash	Fine colluvium
Alluvial	River deposits
Aeolian	Wind deposits
Littoral	Beach deposits
Estuarine	Tidal – river deposits
Lacustrine	Lake deposits

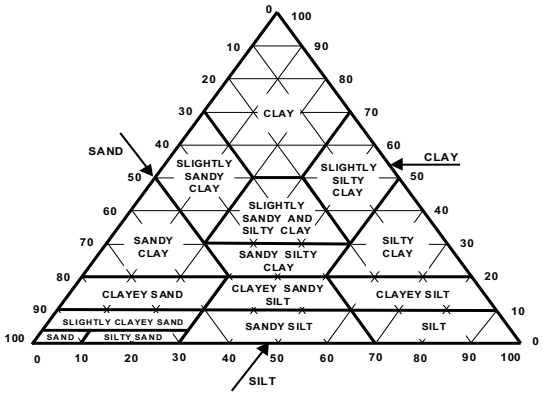
6.2 Residual soils

These are products of in situ weathering of rocks and are described as e.g. Residual Shale

6.3 Pedocretes

Formed in transported and residual soils etc. calcrete, silcrete, manganocrete and ferricrete.

5.2 Soil Classification



SUMMARY OF DESCRIPTIONS USED IN ROCK CORE LOGGING

1. WEATHERING

Term	Symbol	Diagnostic Features
Residual Soil	W5	Rock is discoloured and completely changed to a soil in which original rock fabric is completely destroyed. There is a large change in volume.
Completely Weathered	W5	Rock is discoloured and changed to a soil but original fabric is mainly preserved. There may be occasional small corestones.
Highly Weathered	W4	Rock is discoloured, discontinuities may be open and have discoloured surfaces, and the original fabric of the rock near the discontinuities may be altered; alternation penetrates deeply inwards, but corestones are still present.
Moderately Weathered	W3	Rock is discoloured, discontinuities may be open and will have discoloured surfaces with alteration starting to penetrate inwards, intact rock is noticeably weaker than the fresh rock.
Slightly Weathered	W2	Rock may be slightly discoloured, particularly adjacent to discontinuities, which may be open and will have slightly discoloured surfaces, the intact rock is not noticeably weaker than the fresh rock.
Unweathered	W1	Parent rock showing no discolouration, loss of strength or any other weathering effects.

2. HARDNESS

Classification	Field Test	Compressive Strength Range MPa
Extremely Soft Rock	Easily peeled with a knife	<1
Very Soft Rock	Can be peeled with a knife. Material crumbles under firm blows with the sharp end of a geological pick.	1 to 3
Soft Rock	Can be scraped with a knife, indentation of 2 to 4 mm with firm blows of the pick point.	3 to 10
Medium Hard Rock	Cannot be scraped or peeled with a knife. Hand held specimen breaks with firm blows of the pick.	10 to 25
Hard Rock	Point load tests must be carried out in order to distinguish between these classifications	25 - 70
Very Hard Rock	These results may be verified by uniaxial compressive strength tests on selected samples.	70 - 200
Extremely Hard Rock		>200

3. COLOUR

The predominant colours or colour combination are described including secondary colouration described as banded, streaked, blotched, mottled, speckled or stained.

4. FABRIC

4.1 Grain Size

Term	Size (mm)
Very Coarse	>2,0
Coarse	0,6 – 2,0
Medium	0,2 – 0,6
Fine	0,06 – 0,2
Very Fine	< 0,06

4.2 Discontinuity Spacing

Description for: Bedding, foliation, laminations	Spacing (mm)	Descriptions for joints, faults, etc.
Very Thickly Bedded	> 2000	Very Widely
Thickly Bedded	600 – 2000	Widely
Medium Bedded	200 – 600	Medium
Thinly Bedded	60 – 200	Closely
Laminated	3 – 60	Very closely
Thinly Laminated	<3	

5. ROCK NAME

Classified in terms of origin:

IGNEOUS	Granite, Diorite, Gabbro, Syenite, , Dolerite, Trachyte, Andesite, Basalt.
METAMORPHIC	Slate, Felsite, Gneiss, Schist, Quartzite
SEDIMENTARY	Shale, Mudstone, Siltstone, Sandstone, Dolomite, Conglomerate, Tillite, Limestone.

6. STRATIGRAPHIC HORIZON

Identification of rock type in terms of stratigraphic horizons.

Appendix B

Soil Profile Descriptions

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HOLE No: TP01
Sheet 1 of 1

JOB NUMBER: 000

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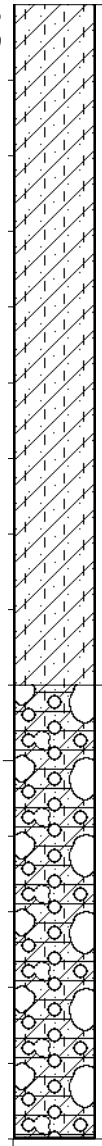

0.00 Slightly moist, dark grey brown, SOFT TO FIRM, shattered, silty sandy clay with roots. **Transported**.

0.90 Moist, orangey greyish brown, FIRM TO STIFF, silty sandy clay with very soft mudrock fragments and gravel and cobbles. **Residual**.

1.50 END OF HOLE

NOTES

1) Sidewalls are stable.
2) No refusal
3) FI sample taken @ 00--0.90m
4) No groundwater seepage intercepted.

CONTRACTOR :
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HOLE No: TP01

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP02
Sheet 1 of 1

JOB NUMBER: 000

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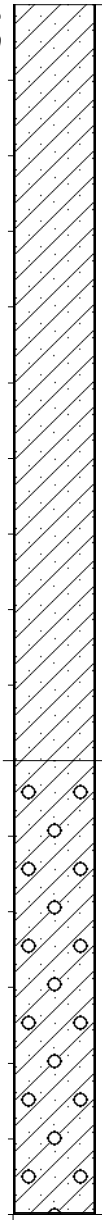

0.00 Slightly moist, dark grey brown, SOFT, intact, sandy clay with roots. **Transported**.

1.00 Slightly moist, greyish olive brown, FIRM TO STIFF, intact, slightly gravelly sandy clay. **Residual mud rock** .

1.60 END OF HOLE

NOTES

1) Sidewalls are stable.
2) No refusal
3) No groundwater seepage intercepted.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE :	DIAM :	X-COORD :
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HOLE No: TP02

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HOLE No: TP03
Sheet 1 of 1

JOB NUMBER: 000

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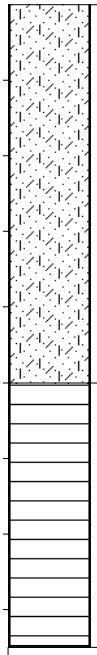

0.00

0Slightly moist, dark grey brown, LOOSE, intact, slightly clayey silty sand with roots. **Transported**.

0.50

Light greyish brown mottled orangey brown, moderately weathered, thinly bedded close jointed, soft rock **shale**.

0.85

END OF HOLE

NOTES

1) Sidewalls are stable.
2) Refusal on rock
3) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
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INCLINATION :
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HOLE No: TP03
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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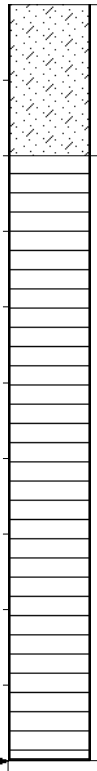
HOLE No: TP04
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Slightly moist, dark grey brown, LOOSE, intact, slightly clayey sand with roots. **Transported**.

0.20 Light greyish brown stained orangey yellowish brown, moderately weathered, thinly bedded close jointed, soft rock **shale**.

1.00m

1.00 END OF HOLE

NOTES

1) Sidewalls are stable.
2) Refusal on rock
3) Groundwater seepage intercepted @ 1.00m.

CONTRACTOR :
MACHINE :
DRILLED BY :
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ELEVATION :
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HOLE No: TP04
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP05
Sheet 1 of 1

JOB NUMBER: 000

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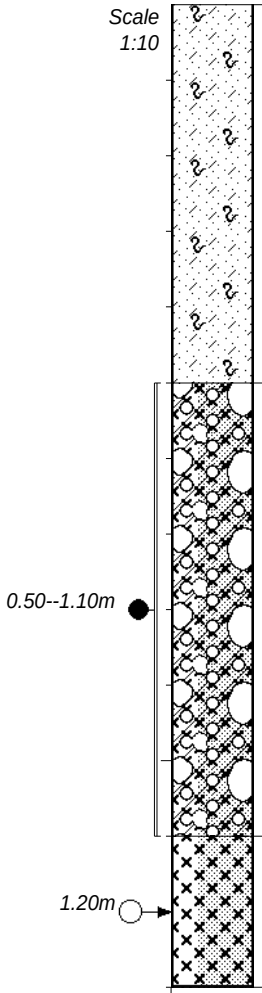

0.00 Slightly moist, dark grey brown, MEDIUM DENSE, clayey sand with roots. **Transported**.

0.50 Slightly moist, dark greyish brown mottled orangey yellowish brown, STIFF, gravelly sandy clay with very soft rock fragments, gravel and cobbles. **Residual dolerite**.

1.10 Dark greyish brown, highly weathered, highly fractured, soft rock **DOLERITE**.

1.30 END OF HOLE

NOTES

1) Sidewalls are stable.
2) Refusal on dolerite
3) Mod/Cbr sample taken @ 0.50--1.10m
4) Groundwater seepage intercepted @ 1.20m.

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HOLE No: TP05
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP06
Sheet 1 of 1

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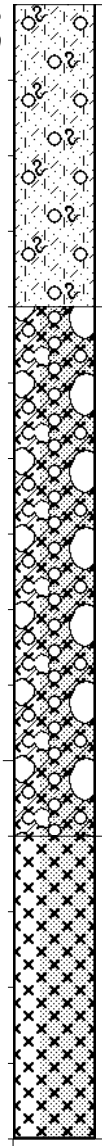

0.00 Slightly moist, dark orangey grey brown, MEDIUM DENSE, gravelly slightly clayey silty sand with roots. **Transported**.

0.40 Slightly moist, dark greyish brown mottled reddish brown, STIFF, gravelly sandy clay with very soft rock fragments, gravel and cobbles. **Residual dolerite**.

1.10 Dark greyish brown, highly weathered, highly fractured, soft rock **DOLERITE**.

1.50 END OF HOLE

NOTES

1) Sidewalls are stable.
2) No refusal
3) No groundwater seepage intercepted.

CONTRACTOR :
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HOLE No: TP06
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

eThekwini Municipality

HOLE No: TP07
Sheet 1 of 1

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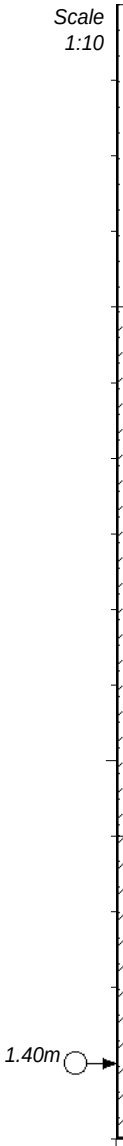

0.00 Moist, greyish brown, MEDIUM DENSE, intact silty sand with roots. **Transported**.

0.40 Moist, light yellowish brown, MEDIUM DENSE, intact clayey silty sand with roots. **Transported**.

1.10 Moist, yellowish brown, FIRM, silty sandy clay with traces of fine gravel. **Residual Mudrock**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) Groundwater seepage intercepted @ 1.40m.
4) Stream not far from the test pit.

CONTRACTOR :
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HOLE No: TP07
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP08
Sheet 1 of 1

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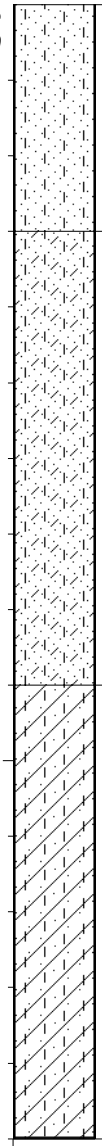

0.00 Moist, greyish brown, MEDIUM DENSE, intact silty sand with roots. **Transported**.

0.30 Moist, light yellowish brown, MEDIUM DENSE, intact clayey silty sand with roots. **Transported**.

0.90 Moist, yellowish brown, FIRM, silty sandy clay with traces of fine gravel. **Residual Mudrock**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) FI sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :
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HOLE No: TP08

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP09
Sheet 1 of 1

JOB NUMBER: 000

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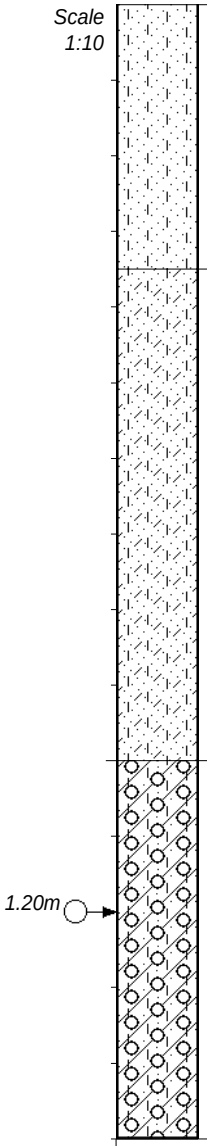

0.00 Moist, greyish brown, MEDIUM DENSE, intact silty sand with roots. **Transported**.

0.35 Moist, light yellowish brown, MEDIUM DENSE, intact clayey silty sand with roots. **Transported**.

1.00 Moist, yellowish brown, FIRM, silty sandy clay with traces of fine gravel. **Residual Mudrock**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) Groundwater seepage intercepted @ 1.20m.
5) Stream not far from the test pit.

CONTRACTOR :
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HOLE No: TP09

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP10
Sheet 1 of 1

JOB NUMBER: 000

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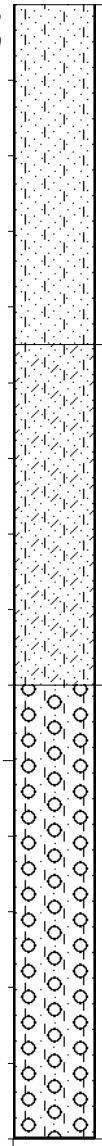

0.00 Moist, light greyish brown, MEDIUM DENSE, intact silty sand with roots. **Transported**.

0.45 Moist, light yellowish brown, MEDIUM DENSE, intact clayey silty sand with roots. **Transported**.

0.90 Moist, yellowish brown, FIRM, silty sandy clay with traces of fine gravel. **Residual Mudrock**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

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X-COORD :
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HOLE No: TP10

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP11
Sheet 1 of 1

JOB NUMBER: 000

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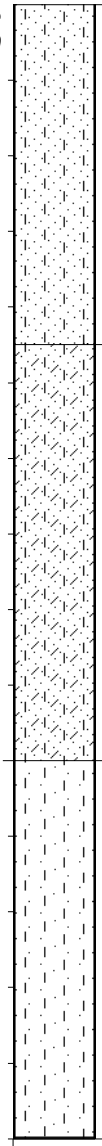

0.00 Moist, greyish brown, MEDIUM DENSE, intact silty sand with roots. **Transported**.

0.45 Moist, light yellowish brown, MEDIUM DENSE, intact clayey silty sand with roots. **Transported**.

1.00 Moist, yellowish brown, FIRM, silty sandy clay with traces of fine gravel. **Residual Mudrock**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
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HOLE No: TP11
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

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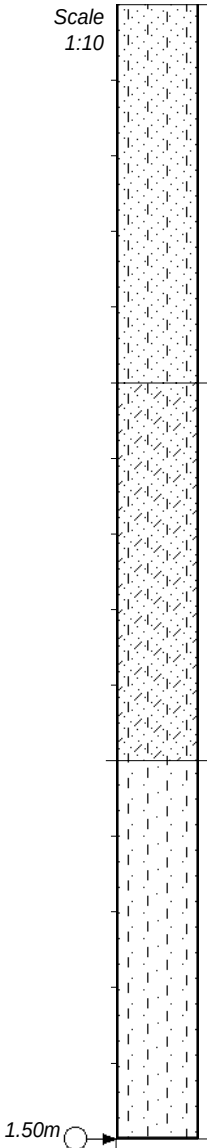
eThekwini Municipality

HOLE No: TP12
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with roots. **Fill**.

0.50 Moist, light yellowish brown, MEDIUM DENSE, intact clayey silty sand with roots. **Transported**.

1.00 Moist, yellowish brown, FIRM, silty sandy clay with traces of fine gravel. **Residual Mudrock**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) Groundwater seepage intercepted @ 1.50m.

CONTRACTOR :
MACHINE :
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SETUP FILE : STANDARD.SET

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ELEVATION :
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HOLE No: TP12

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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HOLE No: TP13
Sheet 1 of 1

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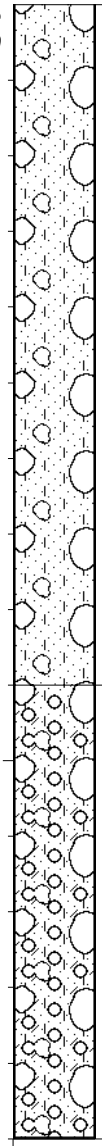

0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.90 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE :	DIAM :	X-COORD :
DRILLED BY :	DATE :	Y-COORD :
PROFILED BY :	DATE : 10/01/2025	
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HOLE No: TP13

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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eThekwini Municipality

HOLE No: TP14
Sheet 1 of 1

JOB NUMBER: 000

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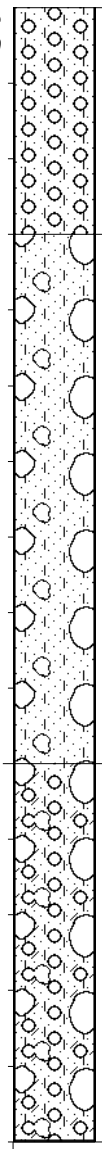

0.00 Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.

0.30 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

1.00 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
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DATE : 10/01/2025
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ELEVATION :
X-COORD :
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HOLE No: TP14

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

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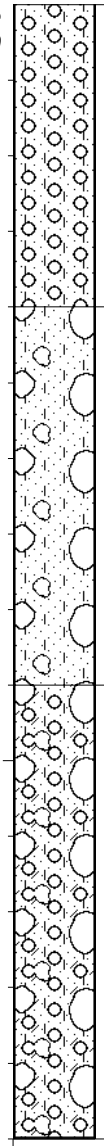
HOLE No: TP15
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.

0.40 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.90 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 10/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP15

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

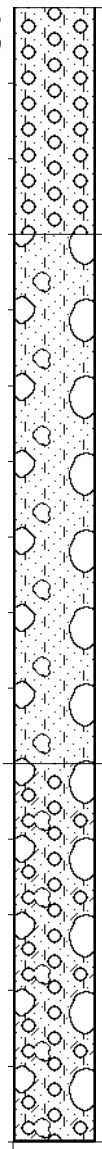
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP16
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.

0.30 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

1.00 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 10/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP16

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

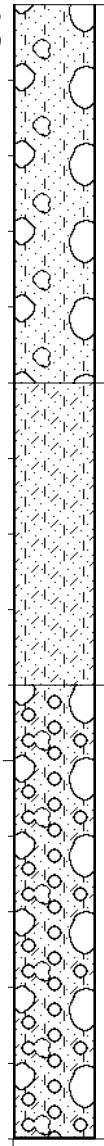
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP17
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.50 Moist, greyish brown, MEDIUM DENSE, intact, slightly clayey silty sand with roots. **Transported**.

0.90 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE :	DIAM :	X-COORD :
DRILLED BY :	DATE :	Y-COORD :
PROFILED BY :	DATE : 10/01/2025	
TYPE SET BY :	DATE :	
SETUP FILE : STANDARD.SET	TEXT :	

HOLE No: TP17

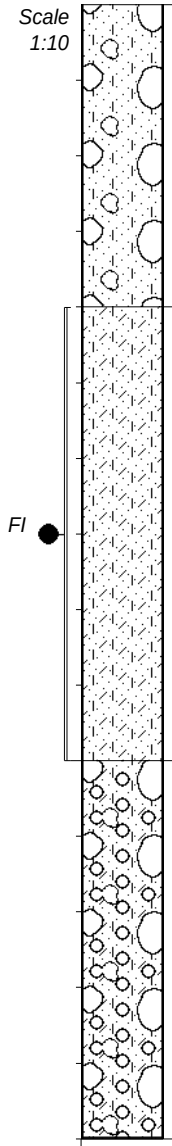
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

eThekwini Municipality

HOLE No: TP18
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.40 Moist, greyish brown, MEDIUM DENSE, intact, slightly clayey silty sand with roots. **Transported**.

1.00 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) FI sample taken @ 0.40--1.0m
4) No groundwater seepage intercepted

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE :	DIAM :	X-COORD :
DRILLED BY :	DATE :	Y-COORD :
PROFILED BY :	DATE : 10/01/2025	
TYPE SET BY :	DATE :	
SETUP FILE : STANDARD.SET	TEXT :	

HOLE No: TP18

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

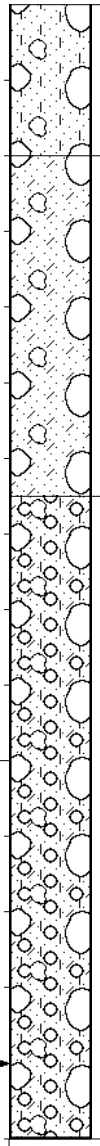
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP19
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.20 Moist, greyish brown with traces of yellowish brown, MEDIUM DENSE, gravely clayey sand with traces of cobbles and roots. **Fill**.

0.65 Moist to wet, light greyish brown, DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) Groundwater seepage intercepted @ 1.40.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 10/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

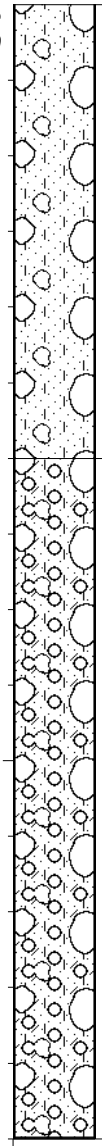
HOLE No: TP19
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

eThekwini Municipality

HOLE No: TP20
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.60 Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE :	DIAM :	X-COORD :
DRILLED BY :	DATE :	Y-COORD :
PROFILED BY :	DATE : 10/01/2025	
TYPE SET BY :	DATE :	
SETUP FILE : STANDARD.SET	TEXT :	

HOLE No: TP20

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

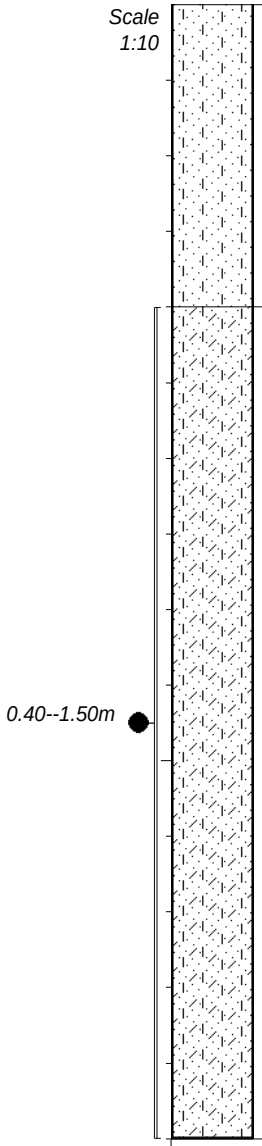
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP21
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, intact, silty sand with roots. **Transported**.

0.40 Moist, greyish brown, MEDIUM DENSE, slightly clayey silty sand with roots. **Transported**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) FI sample taken @ 0--0.40m
4) Ph/Conductivity sample taken @ 0.40--1.50m
5) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP21

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

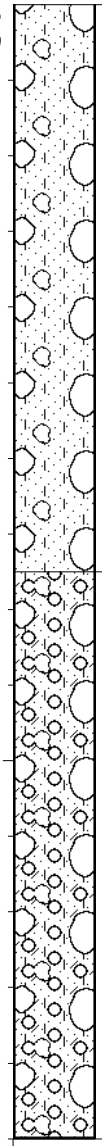
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP22
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravely silty sand with traces of cobbles and roots. **Fill**.

0.75 Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) No sample taken
4) No groundwater seepage intercepted.

CONTRACTOR :	INCLINATION :	ELEVATION :
MACHINE :	DIAM :	X-COORD :
DRILLED BY :	DATE :	Y-COORD :
PROFILED BY :	DATE : 11/01/2025	
TYPE SET BY :	DATE :	
SETUP FILE : STANDARD.SET	TEXT :	

HOLE No: TP22

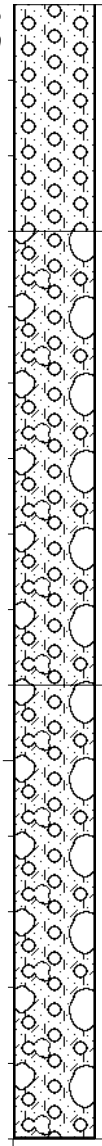
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

eThekwini Municipality

HOLE No: TP23
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.

0.30 Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill**.

0.90 Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal.
3) No sample taken.
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP23

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

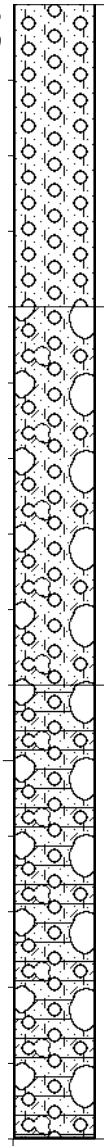
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP24
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.

0.40 Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill**.

0.90 Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal.
3) No sample taken.
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP24

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

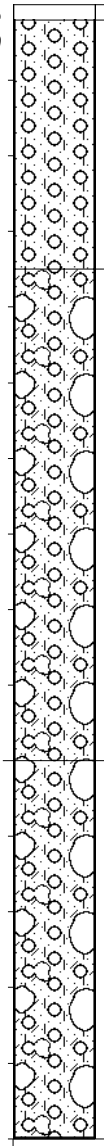
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP25
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	Asphalt
0.02	Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.
0.35	Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill**.
1.00	Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.
1.50	END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal.
3) No sample taken.
4) No groundwater seepage intercepted.
5) Underground cables exposed.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP25
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

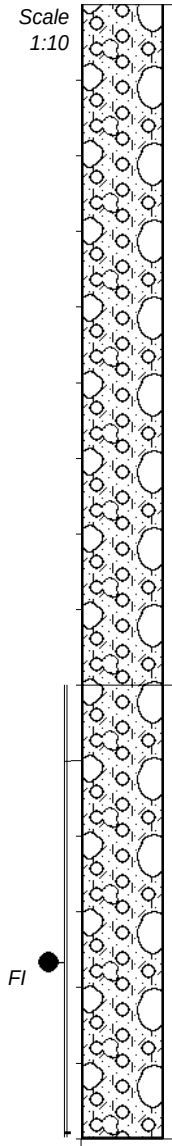
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP26
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill.**

0.90 Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.50 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal.
3) FI sample taken @ 0.90--1.50m.
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP26

Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

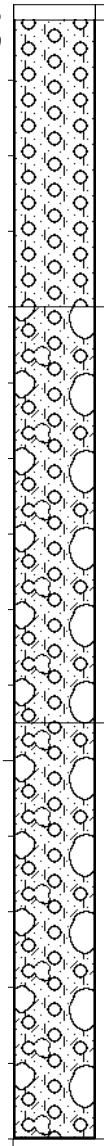
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP27
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	Asphalt
0.02	Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.
0.40	Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill**.
0.95	Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.
1.50	END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal.
3) No sample taken.
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP27
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

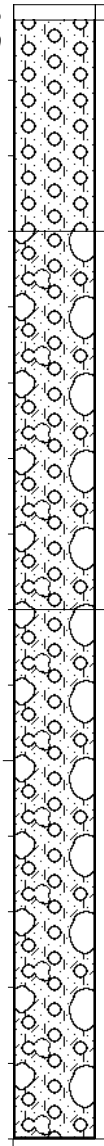
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP28
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00	Asphalt
0.02	Moist, light greyish brown, MEDIUM DENSE, gravel in a matrix of silty sand and roots. **Fill**.
0.30	Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill**.
0.80	Moist, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.
1.50	END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal.
3) No sample taken.
4) No groundwater seepage intercepted.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP28
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

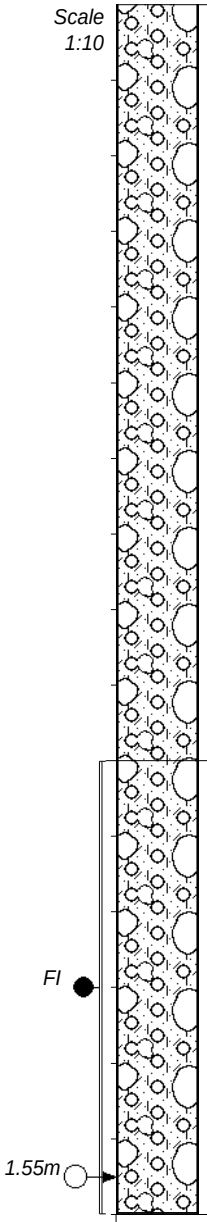
dotPLOT 7022 PBpH67

eThekwini Municipality

HOLE No: TP29
Sheet 1 of 1

JOB NUMBER: 000

Scale 1:10



0.00 Moist, light greyish brown, MEDIUM DENSE, slightly clayey silty sand with gravel and cobbles and roots. **Fill**.

1.00 Moist to wet, light greyish brown, MEDIUM DENSE, clayey silty sand with gravel cobbles and traces of shale fragments. **Residual shale**.

1.60 END OF HOLE.

NOTES

1) Sidewalls are stable.
2) No refusal
3) FI sample taken @ 1.0--1.60m
4) Groundwater seepage intercepted @ 1.55m.

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE : 11/01/2025
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

HOLE No: TP29
Blackburn Reservoir to Phoenix 1 Reservoir Watermain

D09D TERRECO

dotPLOT 7022 PBpH67

eThekwini Municipality

LEGEND
Sheet 1 of 1

JOB NUMBER: 000

	GRAVEL	{SA02}
	GRAVELLY	{SA03}
	SAND	{SA04}
	SANDY	{SA05}
	SILTY	{SA07}
	CLAY	{SA08}
	CLAYEY	{SA09}
	MUDROCK/shale	{SA12}
	DOLERITE	{SA18}{SA42}
Name ●	DISTURBED SAMPLE	{SA38}
	ROOTS	{SA40}
11.5 ○→	WATER SEEPAGE/water strike	{CH50}
	COBBLES	{SA58}

CONTRACTOR :
MACHINE :
DRILLED BY :
PROFILED BY :
TYPE SET BY :
SETUP FILE : STANDARD.SET

INCLINATION :
DIAM :
DATE :
DATE :
DATE :
TEXT :

ELEVATION :
X-COORD :
Y-COORD :

LEGEND
SUMMARY OF SYMBOLS

Appendix C

Laboratory Test results

Roadlab KZN (Pty) Ltd

Civil Materials Testing
Registration No:
2012/080975/07
VAT No: 4870266444

+27 32 944 5977
jay@roadlab.co.za
13 Bhoola Road, Trurolands,
Tongaat, Durban, 4399

>material **Passion.**
>trusted **Accuracy.**
>timeous **Excellence.**

Client:	Elite Geotech and Enviro Construction Services (Pty) Ltd	Date Sampled:	07/02/2025
Address:	80 Fyfe Road Morningside Durban ,4001	Date Received:	07/02/2025
		Date Tested:	07/02/2025- 20/02/2025
Attention:	Mr.Kuben Govender	Date Reported:	20/02/2025
Project:	Blackburn Phoenix Pipeline	Clients Reference No:	N/A
		Order No:	COD

TEST REPORT REFERENCE NUMBER: RD 9030/25

Dear Sir,

Enclosed herewith please find test reports(s) pertaining to the above-mentioned project. All tests were in accordance with the prescribed test method(s). Information herein consists of the following:

5 X Foundation Indicators, 3 X Ph & Conductivity, 1 X Maximum Dry Density, and California Bearing Ratio

Test Carried Out / Test Method					
SANS 3001 – GR 1	X	SANS 3001 – GR 50		SANS 3001 – AG 5	
SANS 3001 – GR 10	X	SANS 3001 – GR 51		SANS 3001 – AG 22	
SANS 3001 – GR 11	X	SANS 3001 – GR 53		SANS 3001 – AS 1	
SANS 3001 – GR 12		SANS 3001 – GR 54		ASTM D36-95	
SANS 3001 – GR 20	X	SANS 3001 – NG 5		SANS 3001 – AS 10	
SANS 3001 – GR 30	X	SANS 3001 – AG 1		SANS 3001 – AS 11	
SANS 3001 – GR 40	X	SANS 3001 – AG 2		SANS 5854 & SANS 6250	X
SANS 3001 – GR 31		SANS 3001 – AG 4		SANS 3001-GR 3 & 5	X
Total number of pages in this Report:					8

Sample Information	Field Technician / Tested By
Sampler(s) Name:	Client
Sampling Environmental Condition:	Not Supplied
NB: Sample Location and Test Positions Identified by Client	

TMH 5 (1981) - Sampling Method									
MA2		MB1		MC1		MC2		MB7	

TMH 5 (1981) - Sample Preparation			
MD1	X	MD2	X

We would like to take this opportunity to thank you for your continuous support. Should you have any further queries please do not hesitate to contact me.

Yours faithfully,

Technical Signatory: Mr.J Sarjooparsad

KZN
13 Bhoola Road,Truroland, Tongaat 4399
P.O.Box 63477 Verulam 4340
Tel: (032) 944 5977 Fax:
Email: durban@roadlab.co.za
Web: www.roadlab.co.za

Job Request No.: RD9060-25

Date Reported : 20/02/2025

Elite Geotech and Enviro Construction Services(Pty) Ltd
80 Fyfe Road
Morningside
Durban 4001

Project : Blackburn to Phoenix Pipeline

Attention : Mr.K.Govender

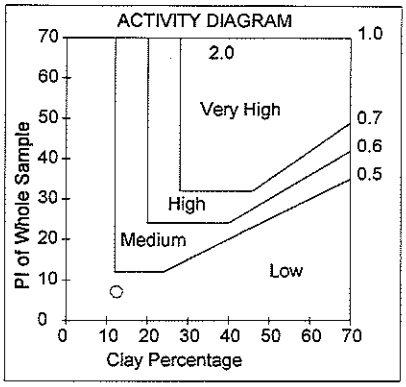
Test Report: Foundation Indiactor

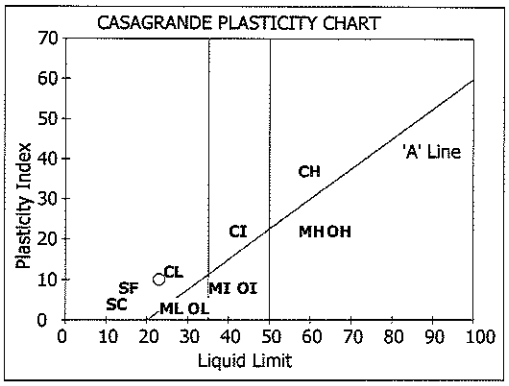
Sample No.	: D29514
Position	: TP1
Layer Type	: Not Supplied
Sample Colour	: Dk Br
Sample Type	: Clay Wth Gravel

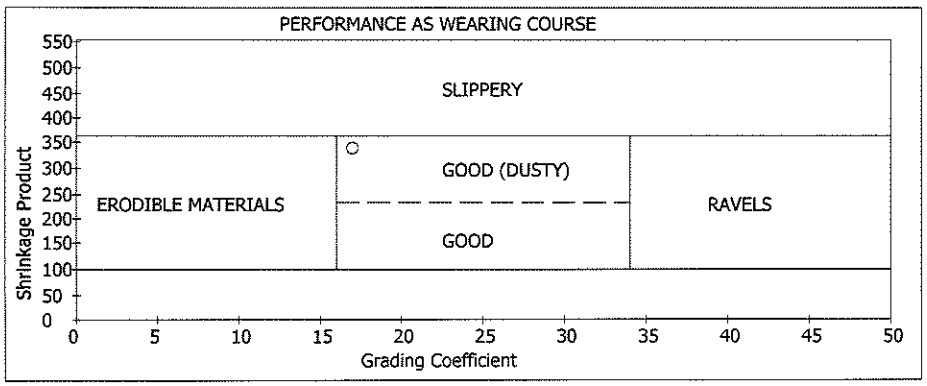
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	96
20.00	79
14.00	79
5.000	77
2.000	74
0.425	68
0.250	57
0.150	54
0.075	52
0.060	49
0.050	48
0.020	41
0.005	32
0.002	12

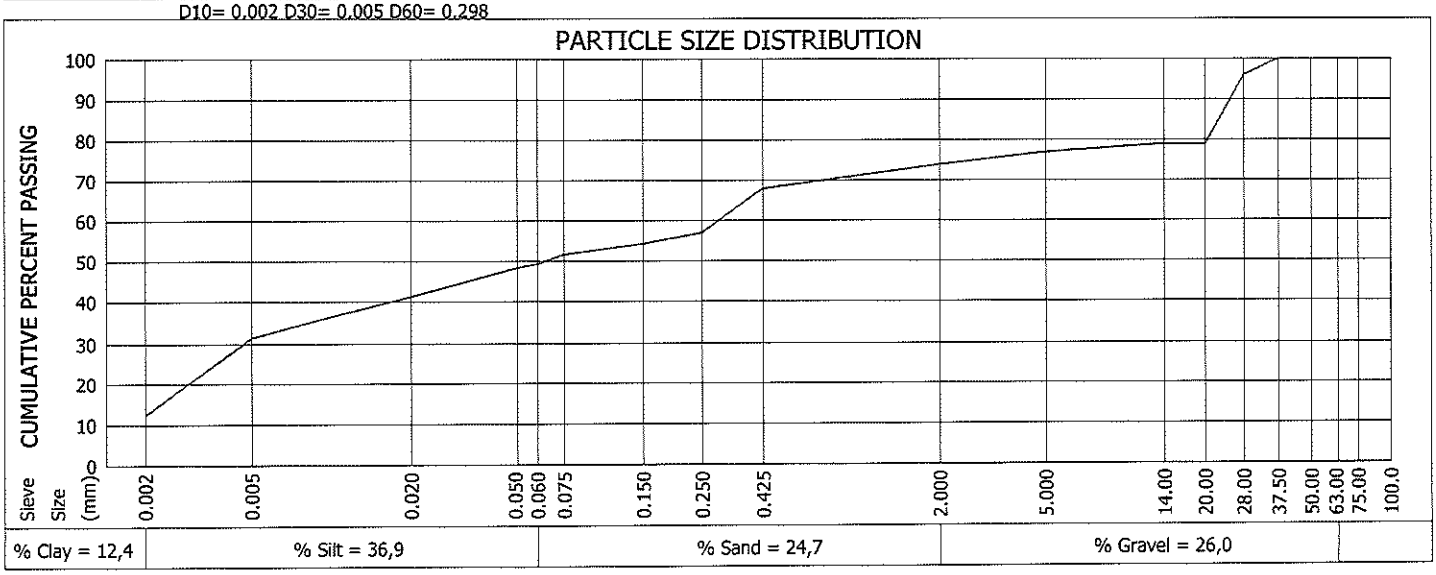
Soil Mortar	2.000 - 0.425	9
	0.425 - 0.250	15
	0.250 - 0.150	4
	0.150 - 0.075	3
	< 0.075	70
Effective Size		0,002
Uniformity Coefficient		149,0
Curvature Coefficient		0,0
Oversize Index		0,0
Shrinkage Product		340,0
Grading Coefficient		16,9
Grading Modulus		1,10
Atterberg Limits	Liquid Limit	23
	Plasticity Index	10
	Linear Shrinkage	5,0
	PI < 0.075	
Unified Soil Classification		CL
US Highway Classification		A-4(3)

D10= 0.002 D30= 0.005 D60= 0.298









% Clay = 12,4	% Silt = 36,9	% Sand = 24,7	% Gravel = 26,0

Deviation from Test Method :
Remarks and Notes : Moisture Content: 14.6%

Report compiled by : Priyanka Brijnath

Jay Sarjooparsad
Technical Signatory

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Job Request No.: RD9030/25

Date Reported : 20/02/2025

Elite Geotech and Enviro Construction Services(Pty) Ltd
80 Fyfe Road
Morningside
Durban 4001

Project : Blackburn to Phoenix Pipeline

Attention : Mr.K.Govender

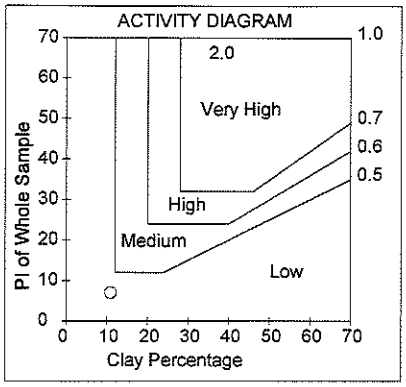
Test Report: Foundation Indicator

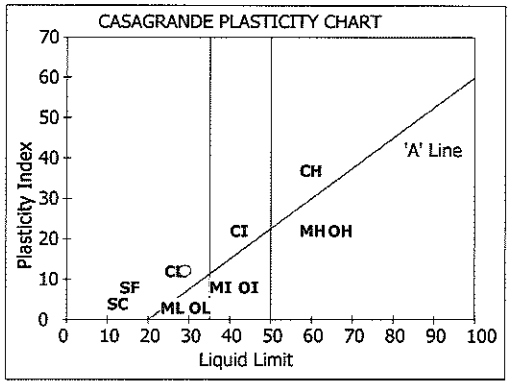
Sample No.	: D29515
Position	: TP10
Layer Type	: Not Supplied
Sample Colour	: Dk Br
Sample Type	: Clayey Sand

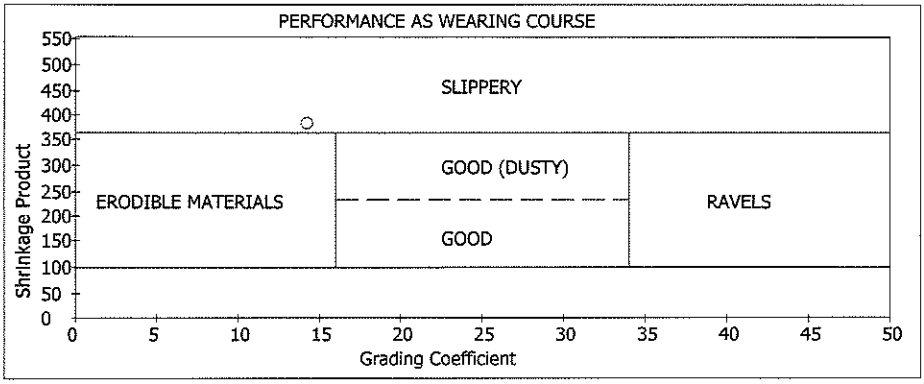
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	98
37.50	92
28.00	84
20.00	70
14.00	69
5.000	65
2.000	62
0.425	59
0.250	52
0.150	49
0.075	46
0.060	43
0.050	42
0.020	36
0.005	27
0.002	11

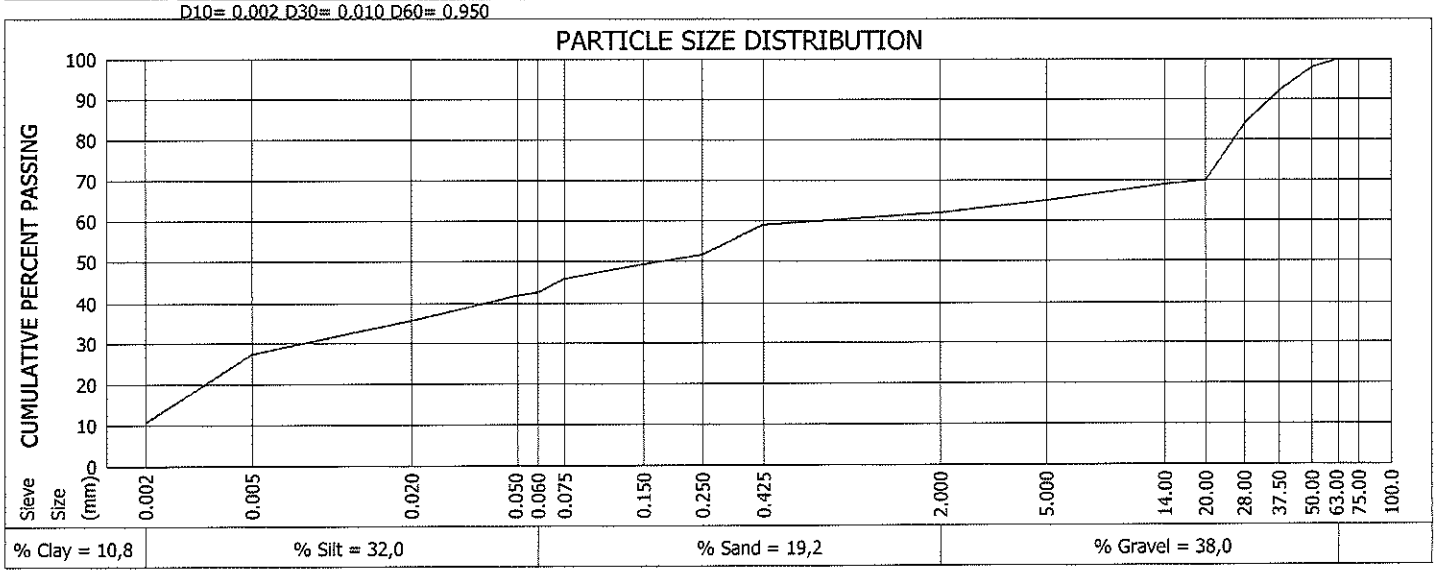
Soil Mortar	2.000 - 0.425	6
	0.425 - 0.250	11
	0.250 - 0.150	4
	0.150 - 0.075	5
	< 0.075	74
Effective Size		0,002
Uniformity Coefficient		475,0
Curvature Coefficient		0,1
Oversize Index		6,0
Shrinkage Product		383,5
Grading Coefficient		14,3
Grading Modulus		1,30
Atterberg Limits	Liquid Limit	29
	Plasticity Index	12
	Linear Shrinkage	6,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-6(3)

D10= 0.002 D30= 0.010 D60= 0.950









% Clay = 10,8	% Silt = 32,0	% Sand = 19,2	% Gravel = 38,0

Deviation from Test Method :
Remarks and Notes : Moisture Content: 19.3%

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Jay Sarjooparsad
Technical Signatory

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Job Request No.: RD9030/25

Date Reported : 20/02/2025

Elite Geotech and Enviro Construction Services(Pty) Ltd
80 Fyfe Road
Morningside
Durban 4001

Attention : Mr.K.Govender

Project : Blackburn to Phoenix Pipeline

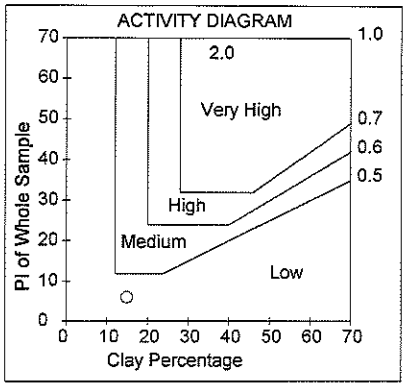
Test Report:Foundation Indiacator

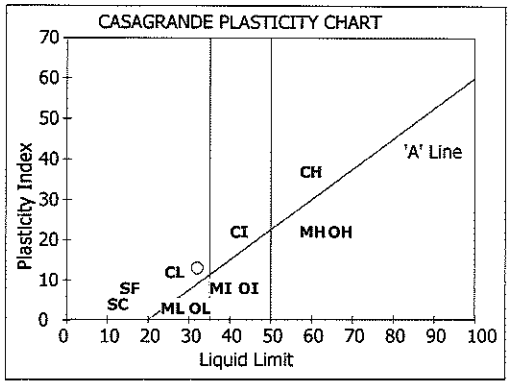
Sample No.	: D26516
Position	: TP18
Layer Type	: Not Supplied
Sample Colour	: Dk Br
Sample Type	: Clayey Sand

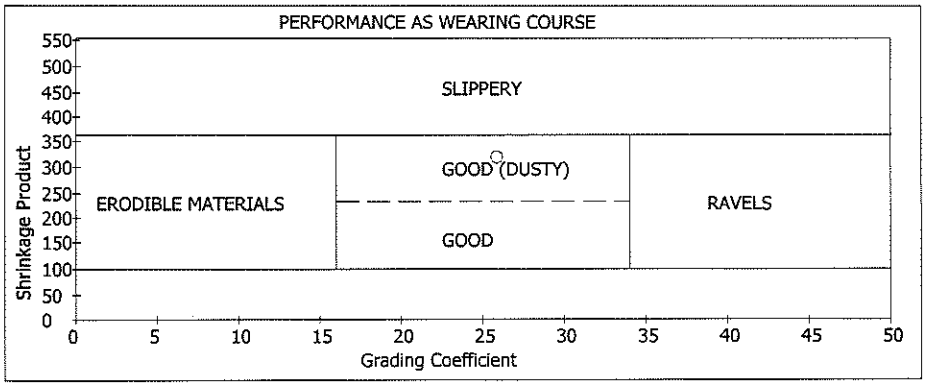
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	99
28.00	97
20.00	77
14.00	74
5.000	63
2.000	56
0.425	49
0.250	46
0.150	34
0.075	33
0.060	31
0.050	30
0.020	24
0.005	21
0.002	15

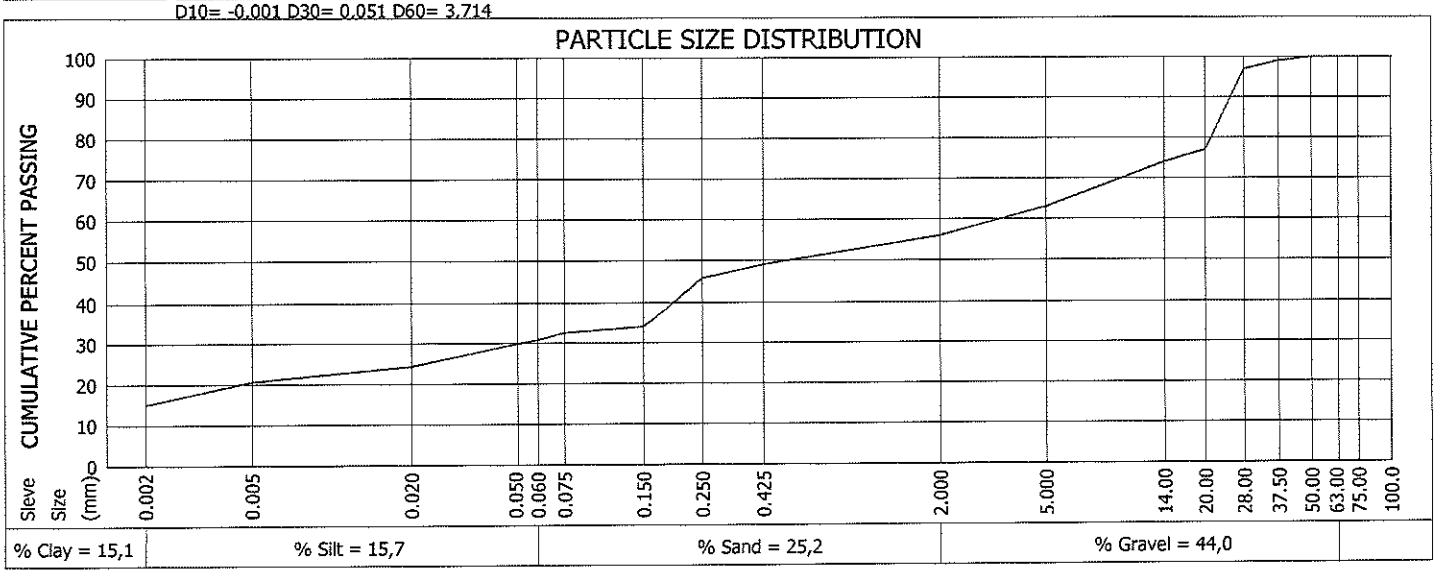
Soil Mortar	2.000 - 0.425	13
	0.425 - 0.250	6
	0.250 - 0.150	20
	0.150 - 0.075	2
	< 0.075	59
Effective Size		-0,001
Uniformity Coefficient		-3714,0
Curvature Coefficient		-0,7
Oversize Index		1,0
Shrinkage Product		318,5
Grading Coefficient		25,8
Grading Modulus		1,60
Atterberg Limits	Liquid Limit	32
	Plasticity Index	13
	Linear Shrinkage	6,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-6(1)

D10= -0,001 D30= 0,051 D60= 3,714









% Clay = 15,1	% Silt = 15,7	% Sand = 25,2	% Gravel = 44,0

Deviation from Test Method :
Remarks and Notes : Moisture Content: 17.6%

Report compiled by : Priyanka Brijnath

Jay Sarjooparsad
Technical Signatory

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Job Request No.: RD9030/25

Date Reported : 20/02/2025

Elite Geotech and Enviro Construction Services(Pty) Ltd
80 Fyfe Road
Morningside
Durban 4001

Attention : Mr K.Govender

Project : Blackburn to Phoenix Pipeline

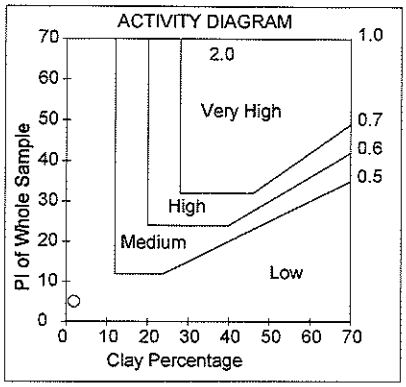
Test ReportL Foundation Indicator

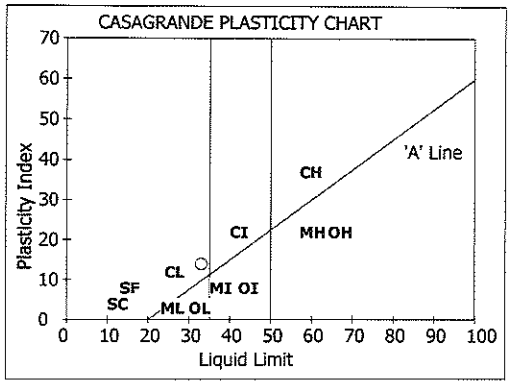
Sample No.	: D29518
Position	: TP21
Layer Type	: Not Supplied
Sample Colour	: Dk Br
Sample Type	: Clayey Sand

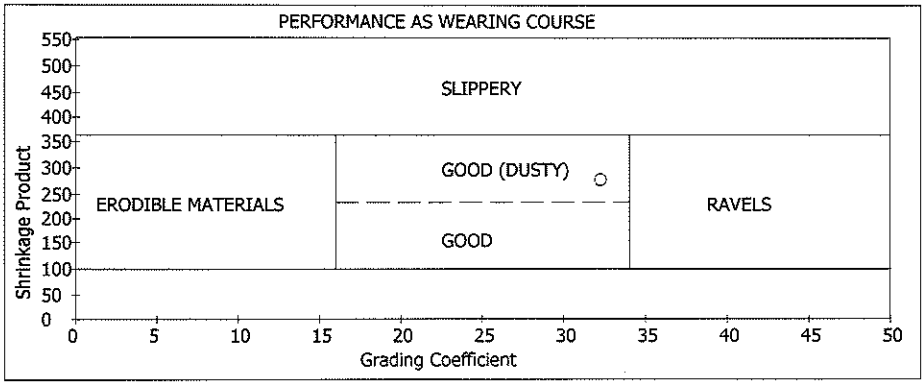
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	100
37.50	100
28.00	100
20.00	100
14.00	98
5.000	70
2.000	54
0.425	37
0.250	32
0.150	28
0.075	24
0.060	17
0.050	16
0.020	11
0.005	5,1
0.002	2,1

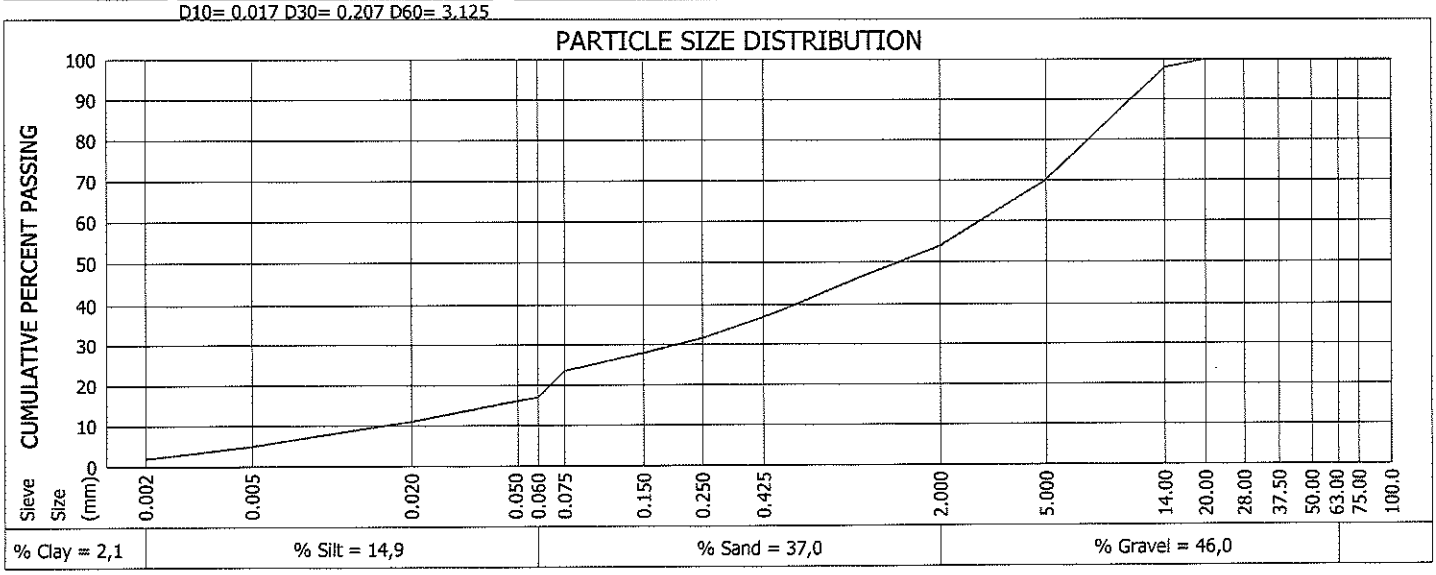
Soil Mortar	2.000 - 0.425	32
	0.425 - 0.250	10
	0.250 - 0.150	7
	0.150 - 0.075	7
	< 0.075	44
Effective Size		0,017
Uniformity Coefficient		183,8
Curvature Coefficient		0,8
Oversize Index		0,0
Shrinkage Product		277,5
Grading Coefficient		32,2
Grading Modulus		1,90
Atterberg Limits	Liquid Limit	33
	Plasticity Index	14
	Linear Shrinkage	7,5
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-2-6(0)

D10= 0.017 D30= 0.207 D60= 3.125









% Clay = 2,1	% Silt = 14,9	% Sand = 37,0	% Gravel = 46,0

Deviation from Test Method :
Remarks and Notes : Moisture Content: 21.5%

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Job Request No.: RD9030/25

Date Reported : 20/02/2025

Elite Geotech and Enviro Construction Services(Pty) Ltd
80 Fyfe Road
Morningside
Durban 4001

Project : Blackburn to Phoenix Pipeline

Attention : Mr.K.Govender

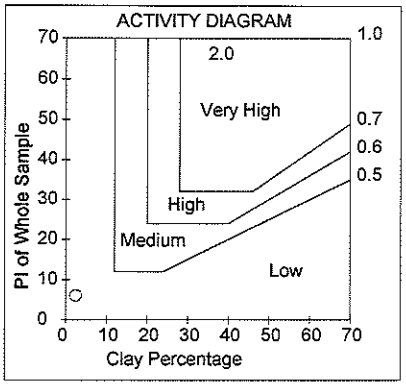
Test Report: Foundation Indicator

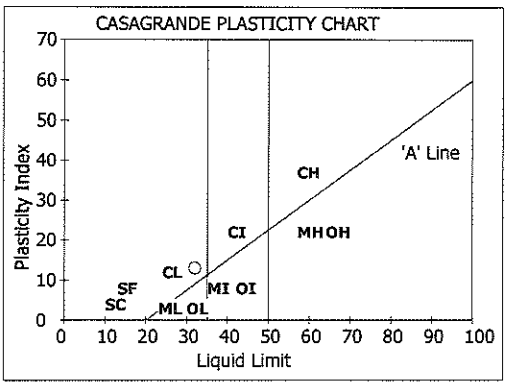
Sample No.	: D29519
Position	: TP29
Layer Type	: Not Supplied
Sample Colour	: Dk Br
Sample Type	: Clay Sand

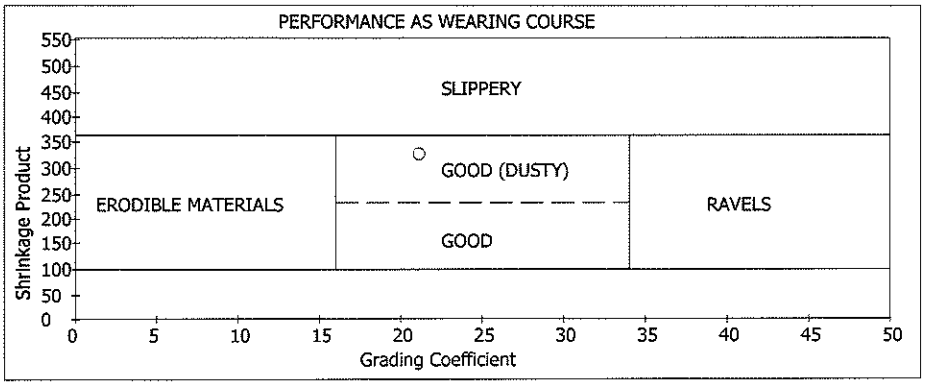
Sieve Size(mm)	% Passing
100.0	100
75.00	100
63.00	100
50.00	97
37.50	95
28.00	89
20.00	78
14.00	77
5.000	64
2.000	56
0.425	47
0.250	42
0.150	41
0.075	39
0.060	24
0.050	21
0.020	14
0.005	5,9
0.002	2,6

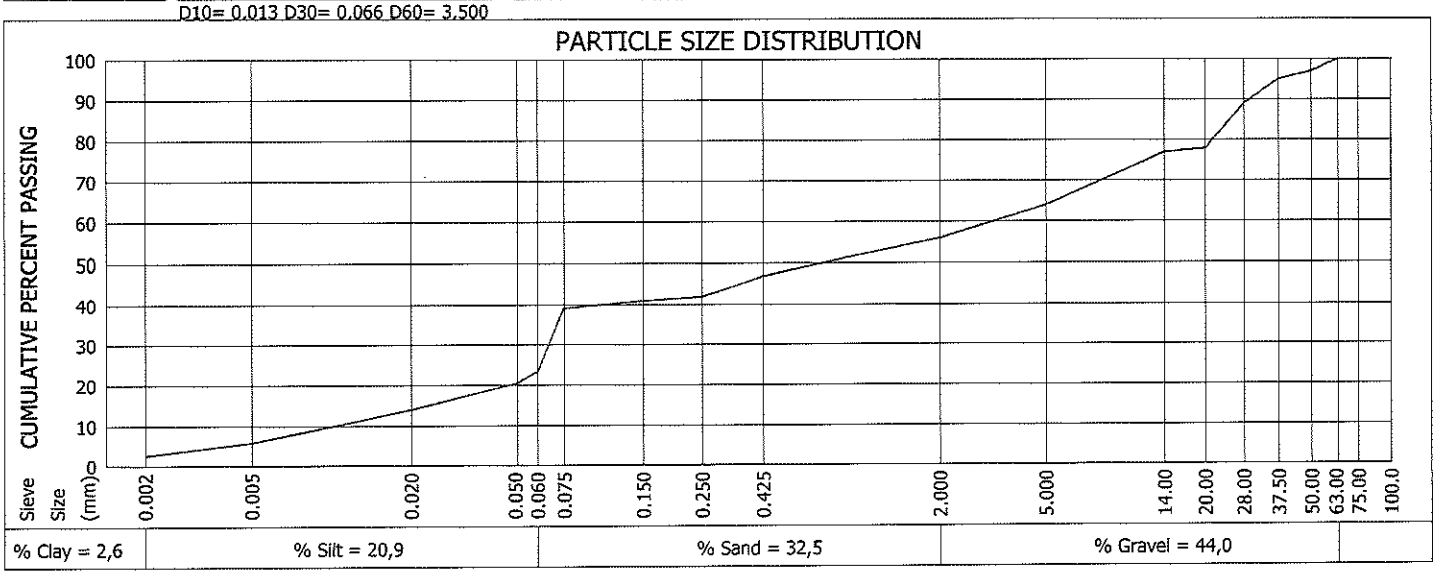
Soil Mortar	2.000 - 0.425	16
	0.425 - 0.250	9
	0.250 - 0.150	2
	0.150 - 0.075	4
	< 0.075	70
Effective Size		0,013
Uniformity Coefficient		269,2
Curvature Coefficient		0,1
Oversize Index		2,0
Shrinkage Product		329,0
Grading Coefficient		21,1
Grading Modulus		1,60
Atterberg Limits	Liquid Limit	32
	Plasticity Index	13
	Linear Shrinkage	7,0
	PI < 0.075	
Unified Soil Classification		SC
US Highway Classification		A-6(2)

D10= 0.013 D30= 0.066 D60= 3.500









% Clay = 2,6	% Silt = 20,9	% Sand = 32,5	% Gravel = 44,0

Deviation from Test Method :
Remarks and Notes : Moisture Content: 19.0%

Report compiled by : Priyanka Brijnath

Jay Sarjooparsad
Technical Signatory

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Job Request No.: RD9030/25

Date Reported : 20/02/2025

Elite Geotech and Enviro Construction Services(Pty) Ltd
80 Fyfe Road
Morningside
Durban 4001

Attention : Mr.K.Govender

Project : Blackburn to Phoenix Pipeline

Test Report:Maximum Dry Density and California bearing Ratio

SAMPLE INFORMATION AND PROPERTIES

SAMPLE NO.		D29517	D29518		
HOLE NO./ Km / CHAINAGE		TP20	TP5		
ROAD NO./ NAME Line 1 ROAD NO./ NAME Line 2		Not Supplied	Not Supplied		
LAYER TESTED/SAMPLED		Not Supplied	Not Supplied		
SAMPLE DEPTH		Not Supplied	Not Supplied		
DATE SAMPLED		07/02/2025	07/02/2025		
COLOUR OF SAMPLE		Dk Br	Dk Br		
TYPE OF SAMPLE		Silty Clayey Sand	Silty Clayey Sand		

SIEVE ANALYSIS - % PASSING SIEVES *(SANS 3001-GR1:2010, SANS 3001-GR2:2010)

CALIFORNIA BEARING RATIO - *(SANS 3001-GR30:2010, SANS 3001-GR40:2010)

SANS GR30	OMC %	10,4	11,9		
MAX. DRY DENSITY	MDD (kg/m³)	2097	1936		
	COMP MC %	10,0	10,0		
SWELL % @	MOD | NRB | PRO	0,91 | 0,98 | 1,05	0,91 | 0,98 | 1,0		
	100 %	10	6,7		
	98 %	8	6		
C.B.R.	97 %	7	5,5		
SANS GR40	95 %	6	4,9		
	93 %	5	4		
	90 %	3	2,6		
STABILISER IN LAB		N/A	N/A		
TEST TYPE		MDD/CBR	MDD/CBR		
SAMPLING METHOD		Sampled by Client	Sampled by Client		
WEATHER WHEN SAMPLED		Not Supplied	Not Supplied		

Deviation from Test Method :
Remarks and Notes :

Opinions and interpretations are not included in our schedule of accreditation.
The sample were subjected to analysis according to (SANS)(TMH5)(DOT)(ASTM)
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Report compiled by : Priyanka Brijnath

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› trusted **Accuracy.**
› timeous **Excellence.**

Client: Elite Geotech and Enviro Construction Services (Pty) Ltd

Our Ref: RD9030/25

Project: Black burn to Phoenix Pipepline

Date Reported: 20/02/2025

Attention: Mr Kuben Govender

TEST REPORT
PH & CONDUCTIVITY
SANS 5854 & SANS 6250

SAMPLE NO.	D29514	D29515	D29518		
FIELD NO / CLIENT MARKING	TP1	TP10	TP21		
ROAD NO OR NAME	Not Supplied	Not Supplied	Not Supplied		
HOLE NO. / KM OR CHAINAGE	Not Supplied	Not Supplied	Not Supplied		
LAYER	Not Supplied	Not Supplied	Not Supplied		
DEPTH (mm)	Not Supplied	Not Supplied	Not Supplied		
DATE SAMPLED	07 02 2025	07 02 2025	07 02 2025		
DESCRIPTION OF SAMPLE	Dk Br Clayey Wth Gravel	Dk Br Clay Sand	Dk Br Clay Sand		
CONDUCTIVITY					
Temperature (°C)	25°C	25°C	25°C		
Conductivity (mS/m)	136	135	137		
PH TESTING					
Temperature (°C)	25°C	25°C	25°C		
PH Value	8,1	8,0	8,2		

Remarks :
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Test marked * is not Accredited.
Report Compiled By: Priyanka Brijnath

Mr. J. Sarjooparsad
Technical Signatory

Appendix D

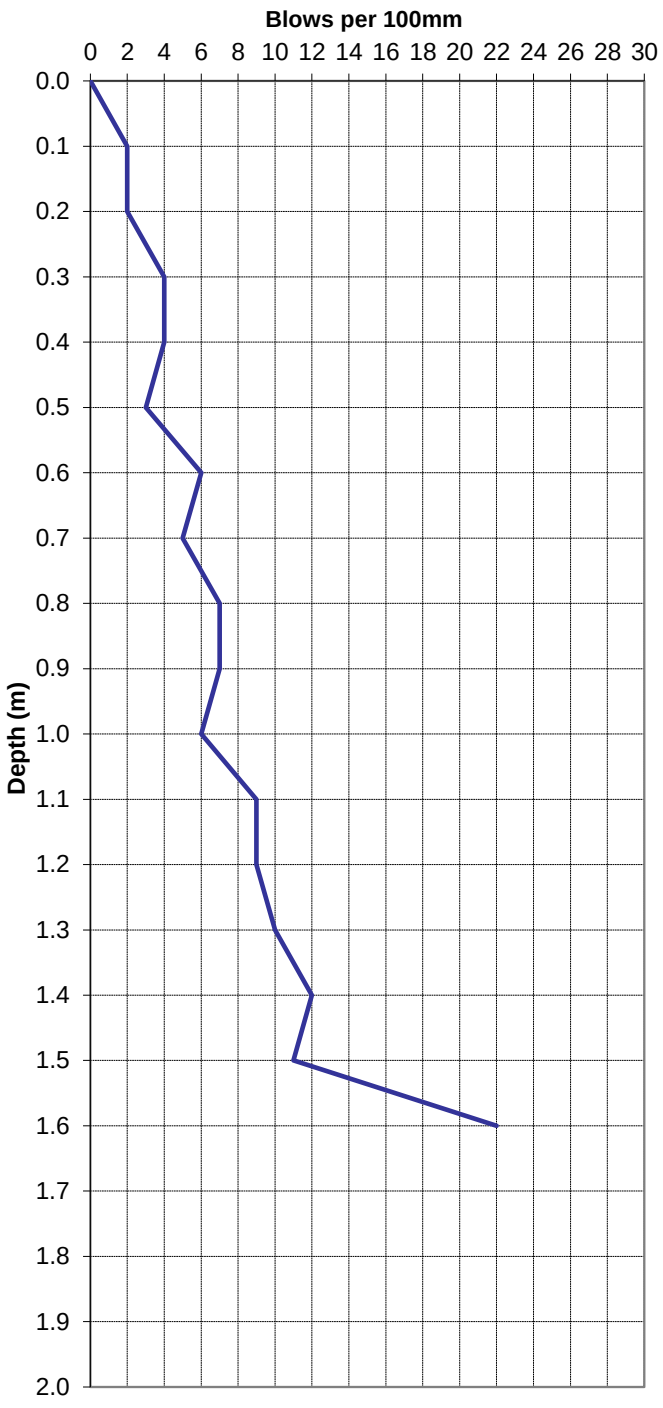
DCP Results

Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP1***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	2	Loose	<30 deg	3
0.2	2	Loose	<30 deg	3
0.3	4	Med.Dense	30 deg	7
0.4	4	Med.Dense	30 deg	7
0.5	3	Loose	<30 deg	5
0.6	6	Med.Dense	33 deg	10
0.7	5	Med.Dense	32 deg	8
0.8	7	Med.Dense	34 deg	12
0.9	7	Med.Dense	34 deg	12
1.0	6	Med.Dense	33 deg	10
1.1	9	Med.Dense	35 deg	15
1.2	9	Med.Dense	35 deg	15
1.3	10	Med.Dense	36 deg	17
1.4	12	Dense	36 deg	21
1.5	11	Dense	36 deg	19
1.6	22	Dense	38 deg	42
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				



Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP2***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	5	Med.Dense	32 deg	8
0.2	3	Loose	<30 deg	5
0.3	3	Loose	<30 deg	5
0.4	4	Med.Dense	30 deg	7
0.5	3	Loose	<30 deg	5
0.6	4	Med.Dense	30 deg	7
0.7	4	Med.Dense	30 deg	7
0.8	5	Med.Dense	32 deg	8
0.9	3	Loose	<30 deg	5
1.0	8	Med.Dense	35 deg	14
1.1	7	Med.Dense	34 deg	12
1.2	9	Med.Dense	35 deg	15
1.3	9	Med.Dense	35 deg	15
1.4	16	Dense	37 deg	29
1.5	18	Dense	37 deg	33
1.6	20	Dense	38 deg	37
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
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3.3				
3.4				
3.5				
3.6				
3.7				
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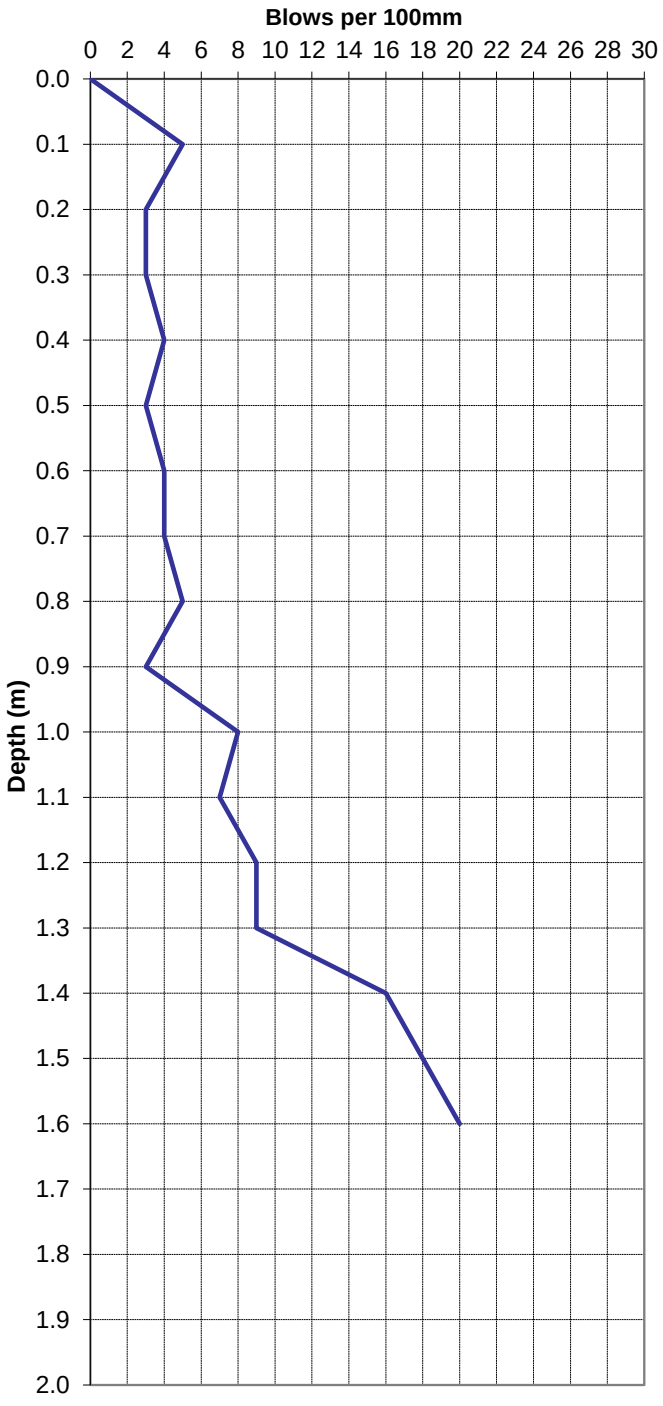

Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP3***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	5	Med.Dense	32 deg	8
0.3	7	Med.Dense	34 deg	12
0.4	7	Med.Dense	34 deg	12
0.5	8	Med.Dense	35 deg	14
0.6	12	Dense	36 deg	21
0.7	15	Dense	37 deg	27
0.8	22	Dense	38 deg	42
0.9	23	Dense	38 deg	44
1.0				
1.1				
1.2				
1.3				
1.4				
1.5				
1.6				
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
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3.3				
3.4				
3.5				
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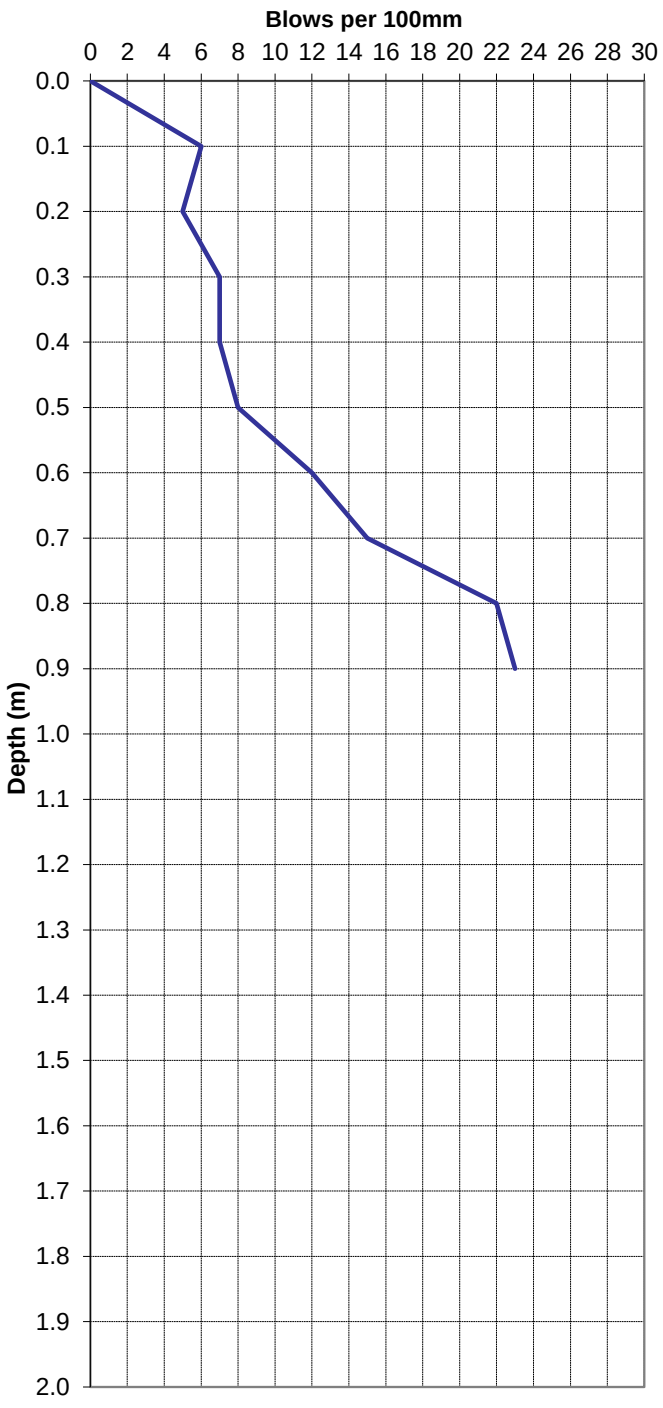
3.7				
3.8				
3.9				
4.0				

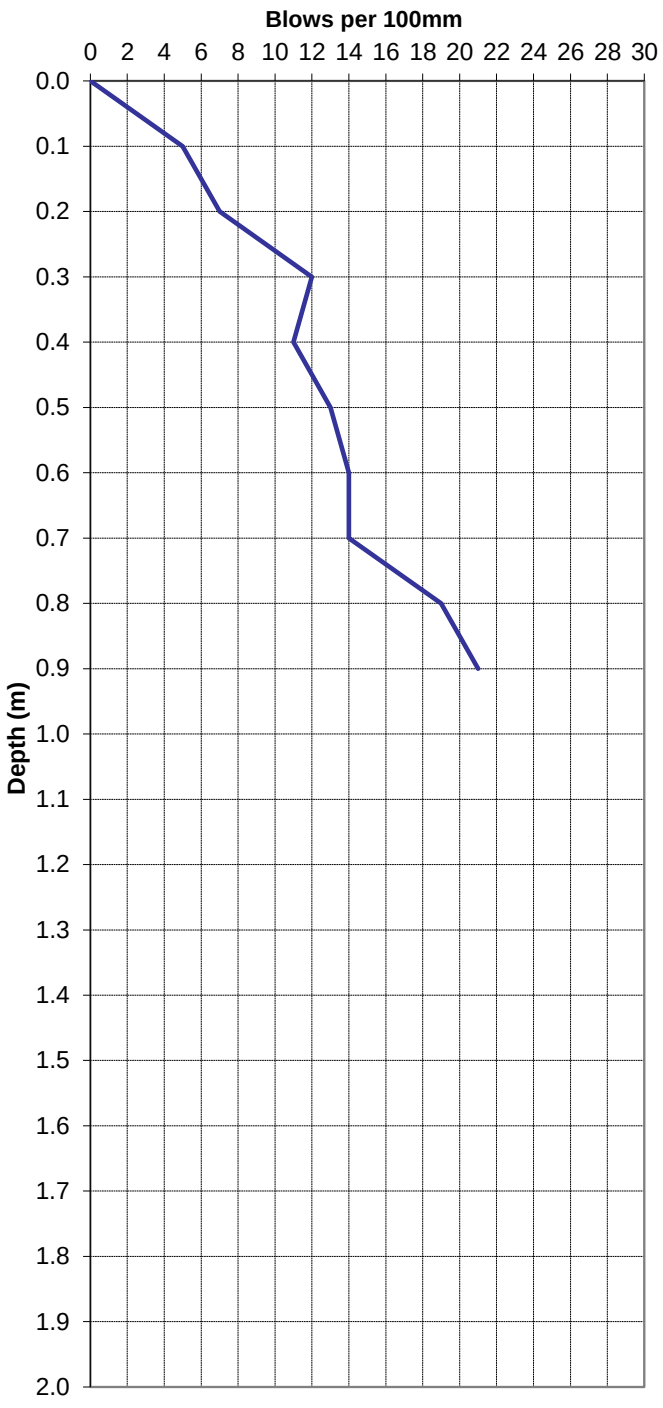


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP4***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	5	Med.Dense	32 deg	8
0.2	7	Med.Dense	34 deg	12
0.3	12	Dense	36 deg	21
0.4	11	Dense	36 deg	19
0.5	13	Dense	37 deg	23
0.6	14	Dense	37 deg	25
0.7	14	Dense	37 deg	25
0.8	19	Dense	37 deg	35
0.9	21	Dense	38 deg	40
1.0				
1.1				
1.2				
1.3				
1.4				
1.5				
1.6				
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

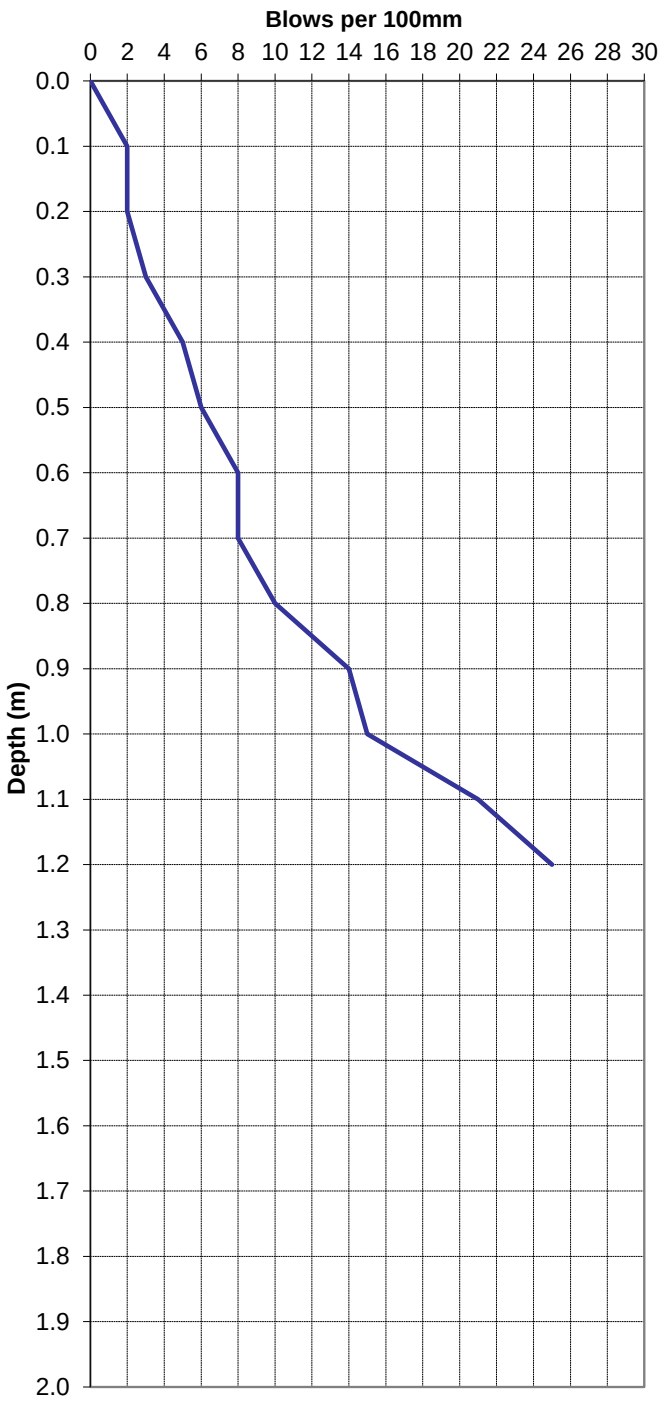


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP5***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	2	Loose	<30 deg	3
0.2	2	Loose	<30 deg	3
0.3	3	Loose	<30 deg	5
0.4	5	Med.Dense	32 deg	8
0.5	6	Med.Dense	33 deg	10
0.6	8	Med.Dense	35 deg	14
0.7	8	Med.Dense	35 deg	14
0.8	10	Med.Dense	36 deg	17
0.9	14	Dense	37 deg	25
1.0	15	Dense	37 deg	27
1.1	21	Dense	38 deg	40
1.2	25	V.Dense	38 deg	49
1.3				
1.4				
1.5				
1.6				
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				



Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP6***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	3	Loose	<30 deg	5
0.2	6	Med.Dense	33 deg	10
0.3	6	Med.Dense	33 deg	10
0.4	12	Dense	36 deg	21
0.5	14	Dense	37 deg	25
0.6	14	Dense	37 deg	25
0.7	16	Dense	37 deg	29
0.8	15	Dense	37 deg	27
0.9	16	Dense	37 deg	29
1.0	18	Dense	37 deg	33
1.1	17	Dense	37 deg	31
1.2	18	Dense	37 deg	33
1.3	17	Dense	37 deg	31
1.4	18	Dense	37 deg	33
1.5	20	Dense	38 deg	37
1.6				
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
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3.5				
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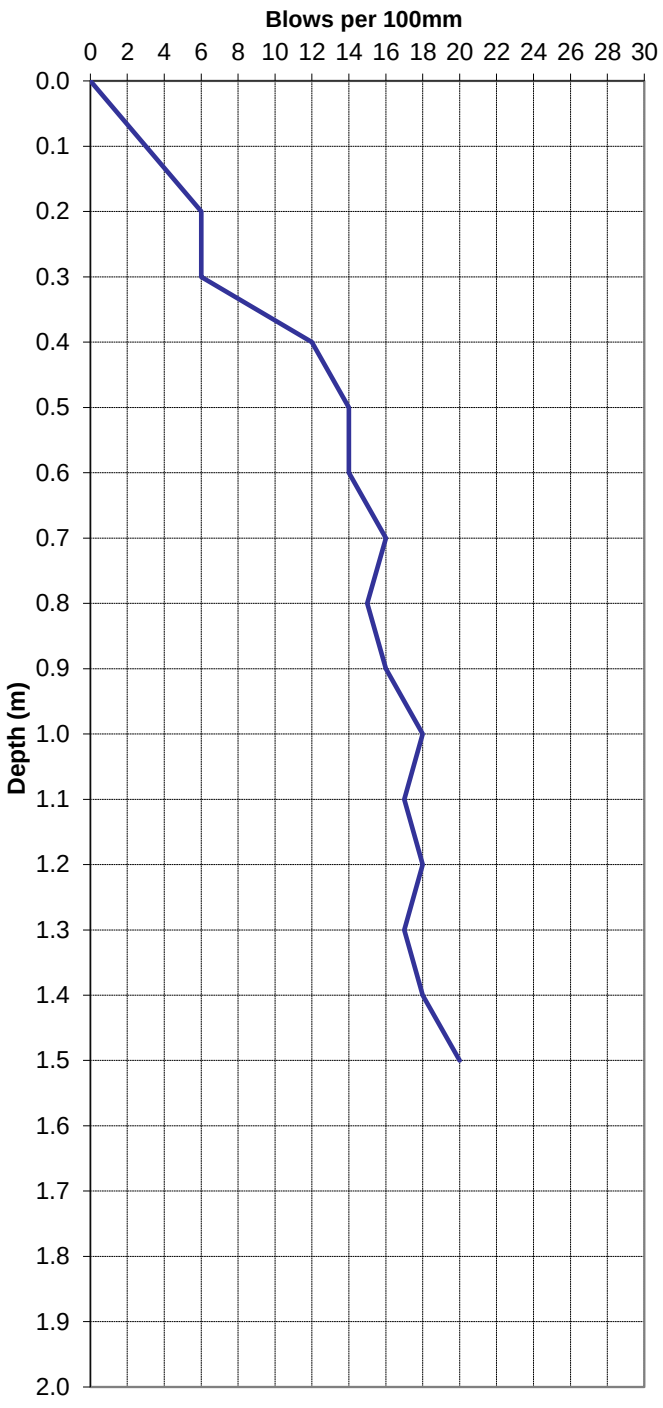
3.7				
3.8				
3.9				
4.0				



Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP7***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	3	Loose	<30 deg	5
0.2	3	Loose	<30 deg	5
0.3	5	Med.Dense	32 deg	8
0.4	5	Med.Dense	32 deg	8
0.5	7	Med.Dense	34 deg	12
0.6	8	Med.Dense	35 deg	14
0.7	10	Med.Dense	36 deg	17
0.8	12	Dense	36 deg	21
0.9	9	Med.Dense	35 deg	15
1.0	9	Med.Dense	35 deg	15
1.1	10	Med.Dense	36 deg	17
1.2	11	Dense	36 deg	19
1.3	10	Med.Dense	36 deg	17
1.4	12	Dense	36 deg	21
1.5	12	Dense	36 deg	21
1.6	13	Dense	37 deg	23
1.7	15	Dense	37 deg	27
1.8	19	Dense	37 deg	35
1.9	19	Dense	37 deg	35
2.0	21	Dense	38 deg	40
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
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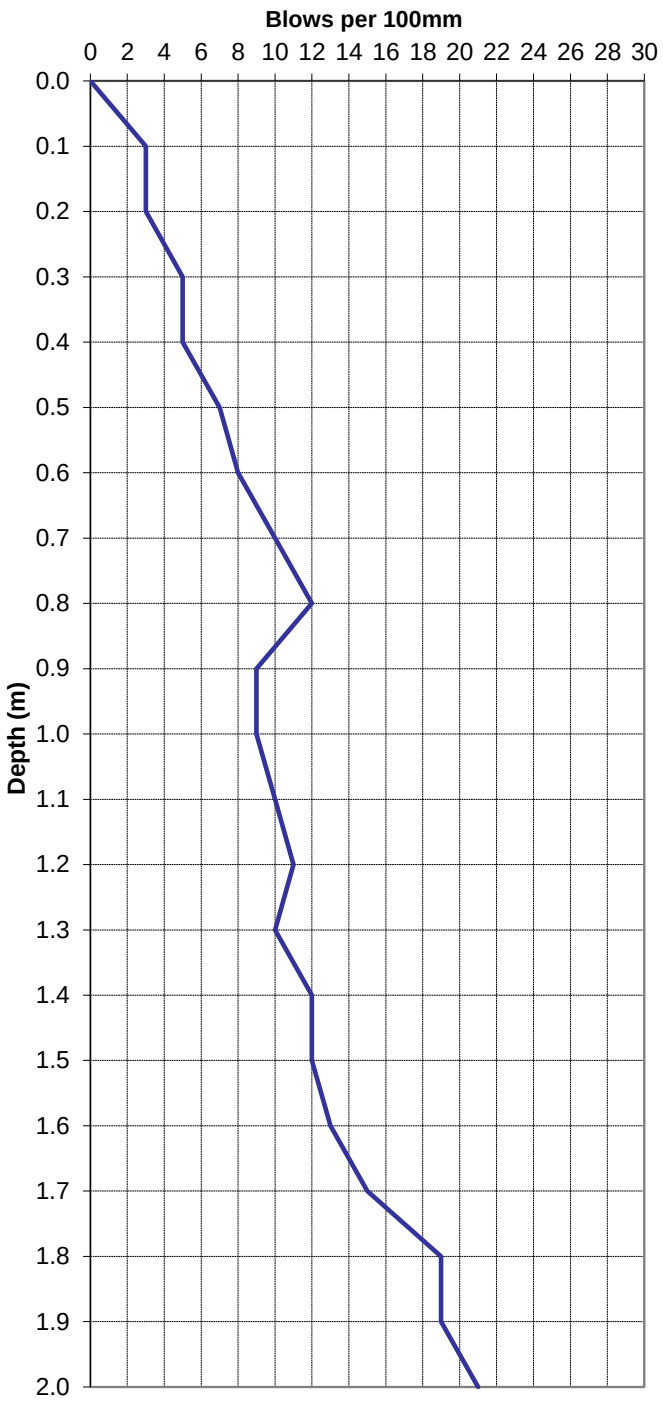
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

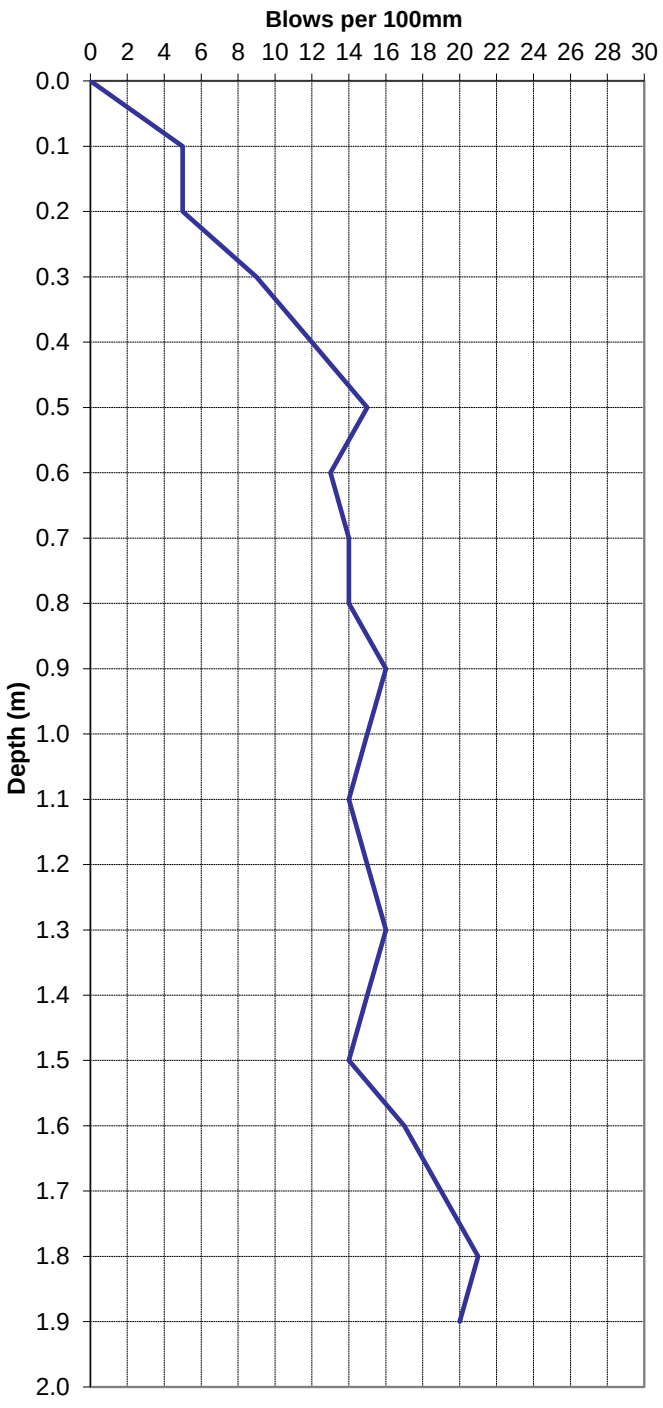


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP8***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	5	Med.Dense	32 deg	8
0.2	5	Med.Dense	32 deg	8
0.3	9	Med.Dense	35 deg	15
0.4	12	Dense	36 deg	21
0.5	15	Dense	37 deg	27
0.6	13	Dense	37 deg	23
0.7	14	Dense	37 deg	25
0.8	14	Dense	37 deg	25
0.9	16	Dense	37 deg	29
1.0	15	Dense	37 deg	27
1.1	14	Dense	37 deg	25
1.2	15	Dense	37 deg	27
1.3	16	Dense	37 deg	29
1.4	15	Dense	37 deg	27
1.5	14	Dense	37 deg	25
1.6	17	Dense	37 deg	31
1.7	19	Dense	37 deg	35
1.8	21	Dense	38 deg	40
1.9	20	Dense	38 deg	37
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

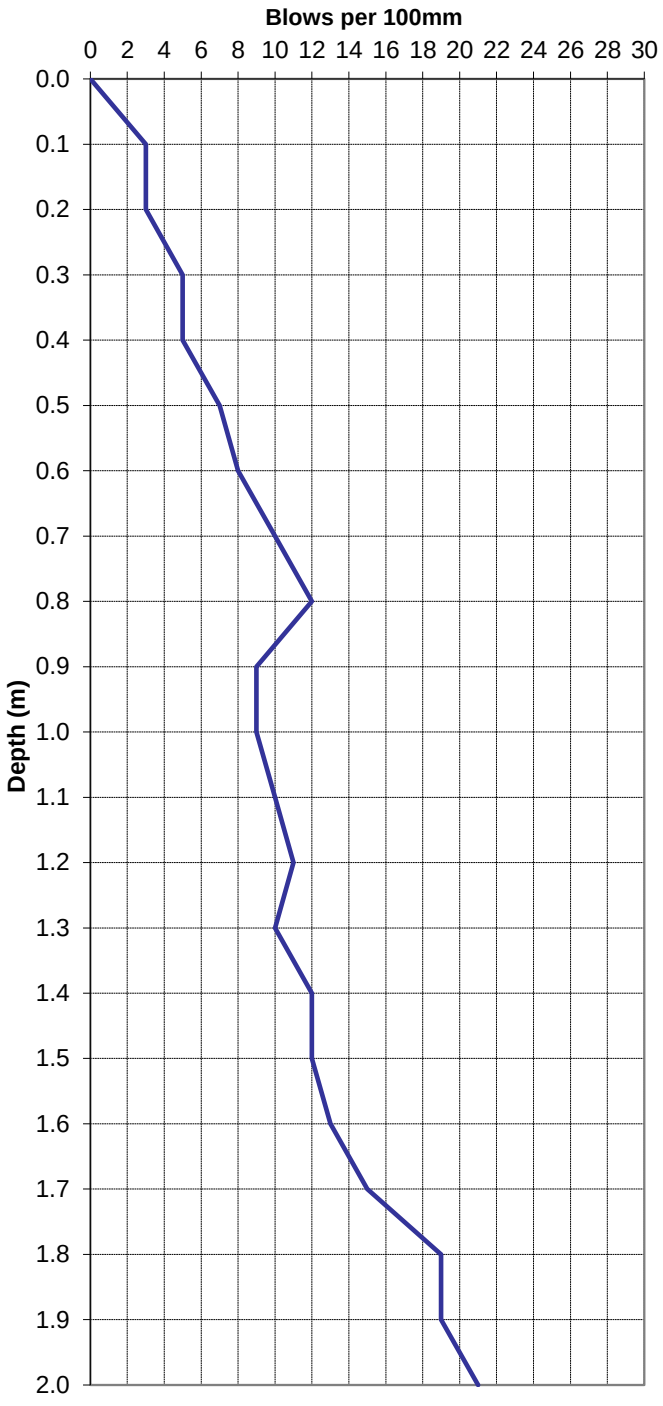


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP9***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	3	Loose	<30 deg	5
0.2	3	Loose	<30 deg	5
0.3	5	Med.Dense	32 deg	8
0.4	5	Med.Dense	32 deg	8
0.5	7	Med.Dense	34 deg	12
0.6	8	Med.Dense	35 deg	14
0.7	10	Med.Dense	36 deg	17
0.8	12	Dense	36 deg	21
0.9	9	Med.Dense	35 deg	15
1.0	9	Med.Dense	35 deg	15
1.1	10	Med.Dense	36 deg	17
1.2	11	Dense	36 deg	19
1.3	10	Med.Dense	36 deg	17
1.4	12	Dense	36 deg	21
1.5	12	Dense	36 deg	21
1.6	13	Dense	37 deg	23
1.7	15	Dense	37 deg	27
1.8	19	Dense	37 deg	35
1.9	19	Dense	37 deg	35
2.0	21	Dense	38 deg	40
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

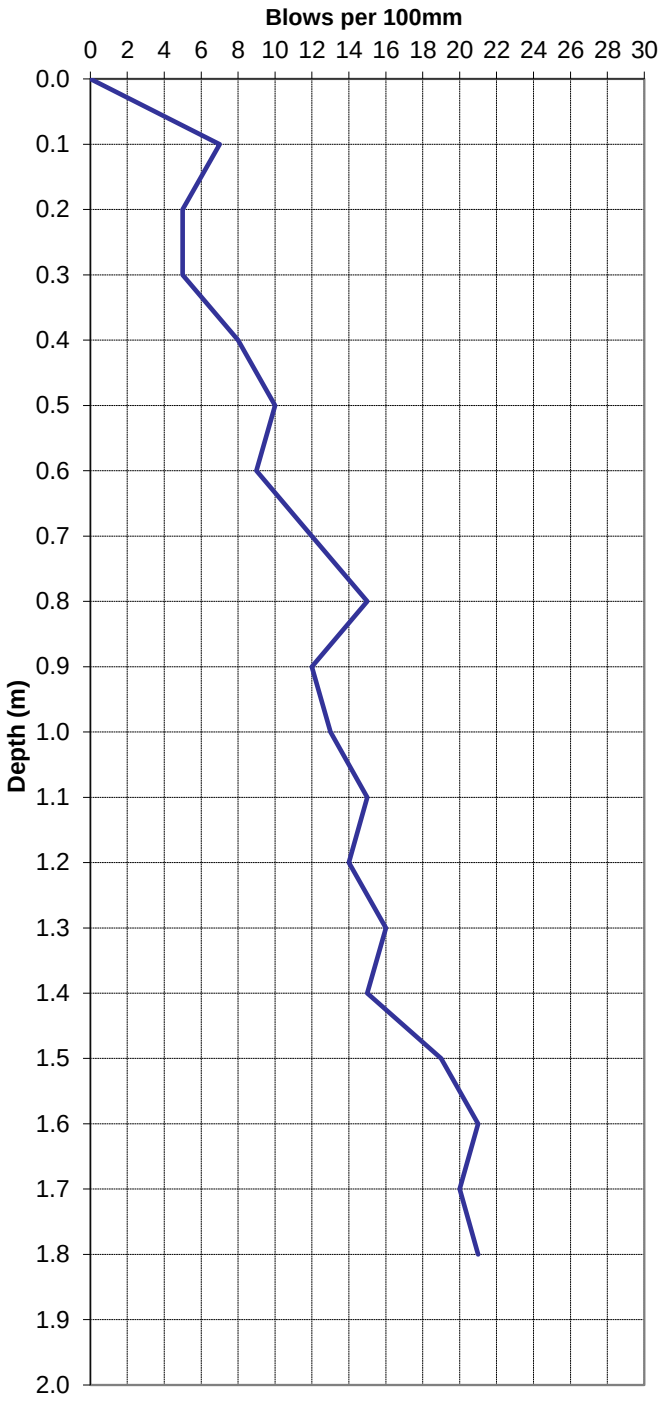


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP10***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	7	Med.Dense	34 deg	12
0.2	5	Med.Dense	32 deg	8
0.3	5	Med.Dense	32 deg	8
0.4	8	Med.Dense	35 deg	14
0.5	10	Med.Dense	36 deg	17
0.6	9	Med.Dense	35 deg	15
0.7	12	Dense	36 deg	21
0.8	15	Dense	37 deg	27
0.9	12	Dense	36 deg	21
1.0	13	Dense	37 deg	23
1.1	15	Dense	37 deg	27
1.2	14	Dense	37 deg	25
1.3	16	Dense	37 deg	29
1.4	15	Dense	37 deg	27
1.5	19	Dense	37 deg	35
1.6	21	Dense	38 deg	40
1.7	20	Dense	38 deg	37
1.8	21	Dense	38 deg	40
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

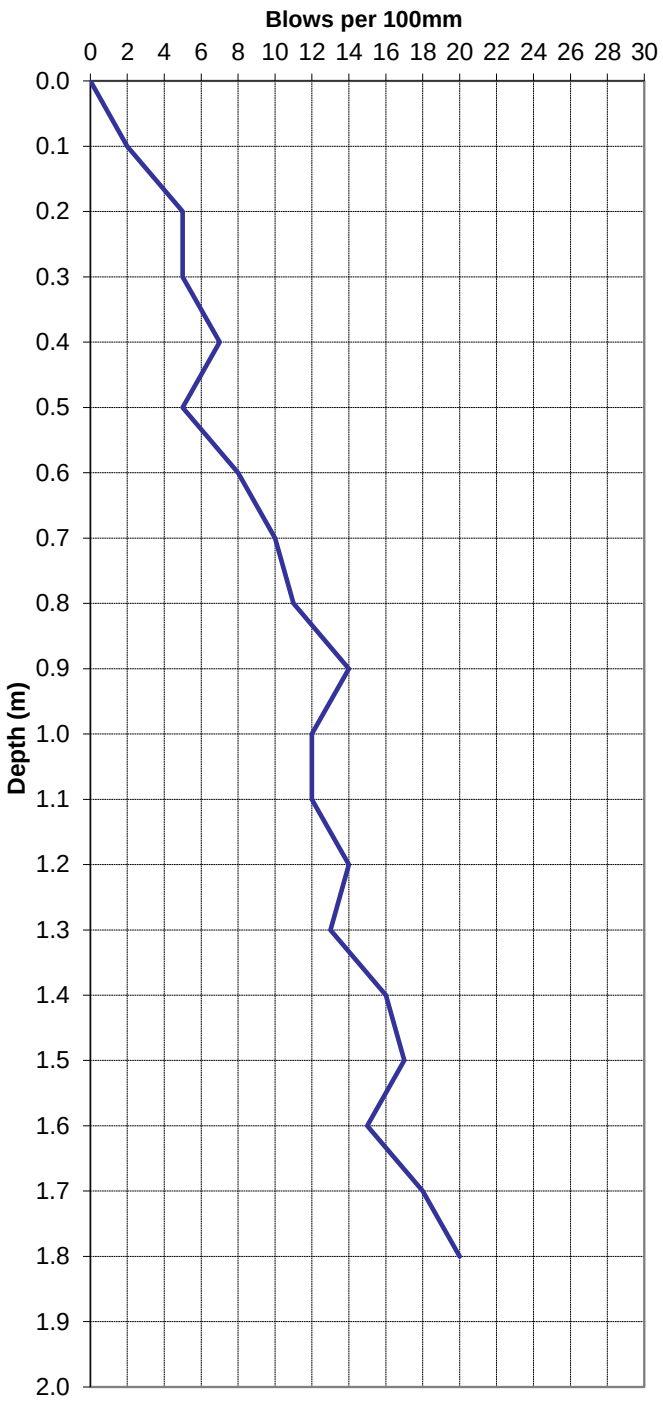


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP11***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	2	Loose	<30 deg	3
0.2	5	Med.Dense	32 deg	8
0.3	5	Med.Dense	32 deg	8
0.4	7	Med.Dense	34 deg	12
0.5	5	Med.Dense	32 deg	8
0.6	8	Med.Dense	35 deg	14
0.7	10	Med.Dense	36 deg	17
0.8	11	Dense	36 deg	19
0.9	14	Dense	37 deg	25
1.0	12	Dense	36 deg	21
1.1	12	Dense	36 deg	21
1.2	14	Dense	37 deg	25
1.3	13	Dense	37 deg	23
1.4	16	Dense	37 deg	29
1.5	17	Dense	37 deg	31
1.6	15	Dense	37 deg	27
1.7	18	Dense	37 deg	33
1.8	20	Dense	38 deg	37
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

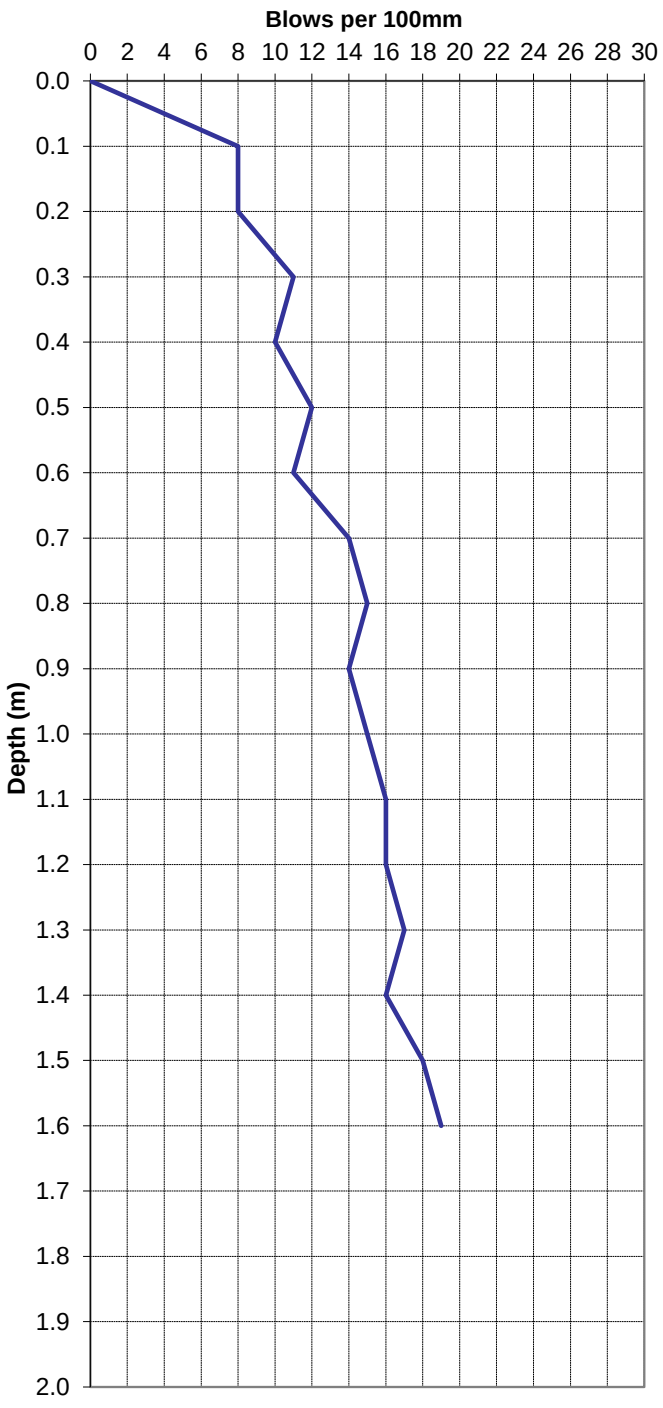


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP12***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	8	Med.Dense	35 deg	14
0.2	8	Med.Dense	35 deg	14
0.3	11	Dense	36 deg	19
0.4	10	Med.Dense	36 deg	17
0.5	12	Dense	36 deg	21
0.6	11	Dense	36 deg	19
0.7	14	Dense	37 deg	25
0.8	15	Dense	37 deg	27
0.9	14	Dense	37 deg	25
1.0	15	Dense	37 deg	27
1.1	16	Dense	37 deg	29
1.2	16	Dense	37 deg	29
1.3	17	Dense	37 deg	31
1.4	16	Dense	37 deg	29
1.5	18	Dense	37 deg	33
1.6	19	Dense	37 deg	35
1.7				
1.8				
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				



Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP13***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	8	Med.Dense	35 deg	14
0.2	8	Med.Dense	35 deg	14
0.3	9	Med.Dense	35 deg	15
0.4	7	Med.Dense	34 deg	12
0.5	10	Med.Dense	36 deg	17
0.6	11	Dense	36 deg	19
0.7	10	Med.Dense	36 deg	17
0.8	12	Dense	36 deg	21
0.9	10	Med.Dense	36 deg	17
1.0	13	Dense	37 deg	23
1.1	12	Dense	36 deg	21
1.2	14	Dense	37 deg	25
1.3	14	Dense	37 deg	25
1.4	17	Dense	37 deg	31
1.5	16	Dense	37 deg	29
1.6	18	Dense	37 deg	33
1.7	17	Dense	37 deg	31
1.8	19	Dense	37 deg	35
1.9	20	Dense	38 deg	37
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
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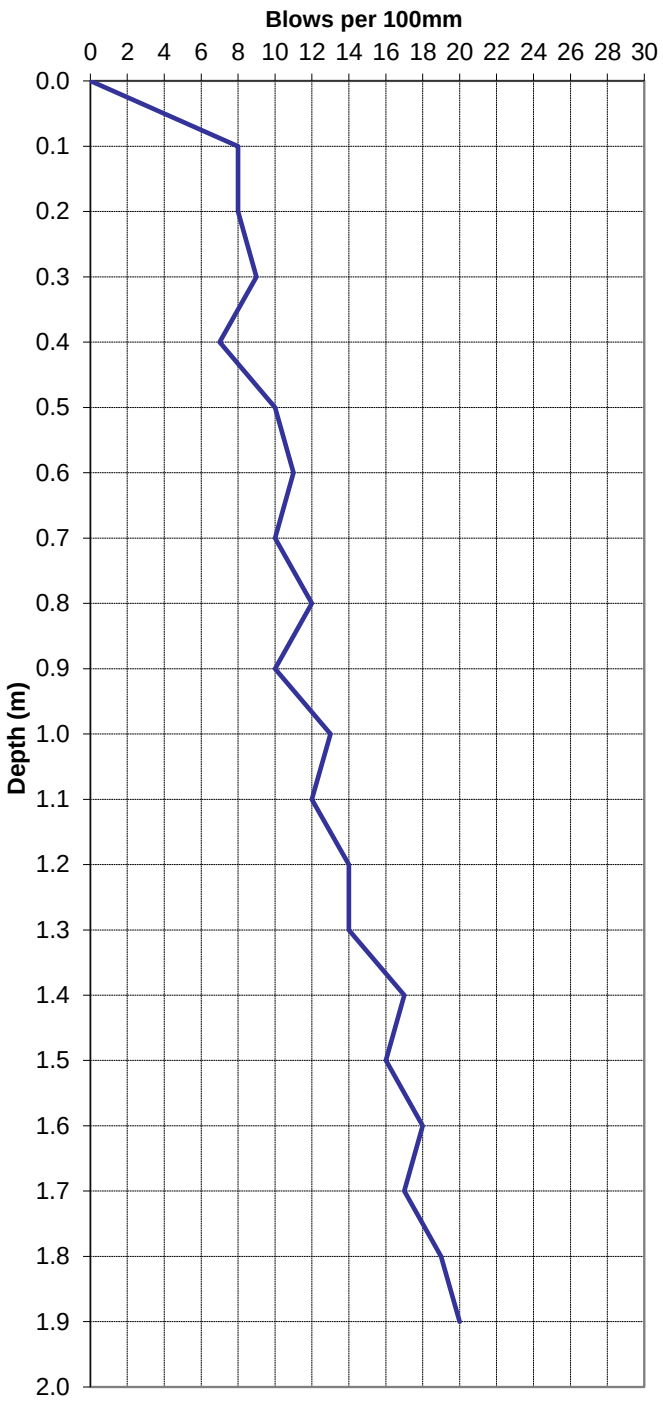
3.6				
3.7				
3.8				
3.9				
4.0				

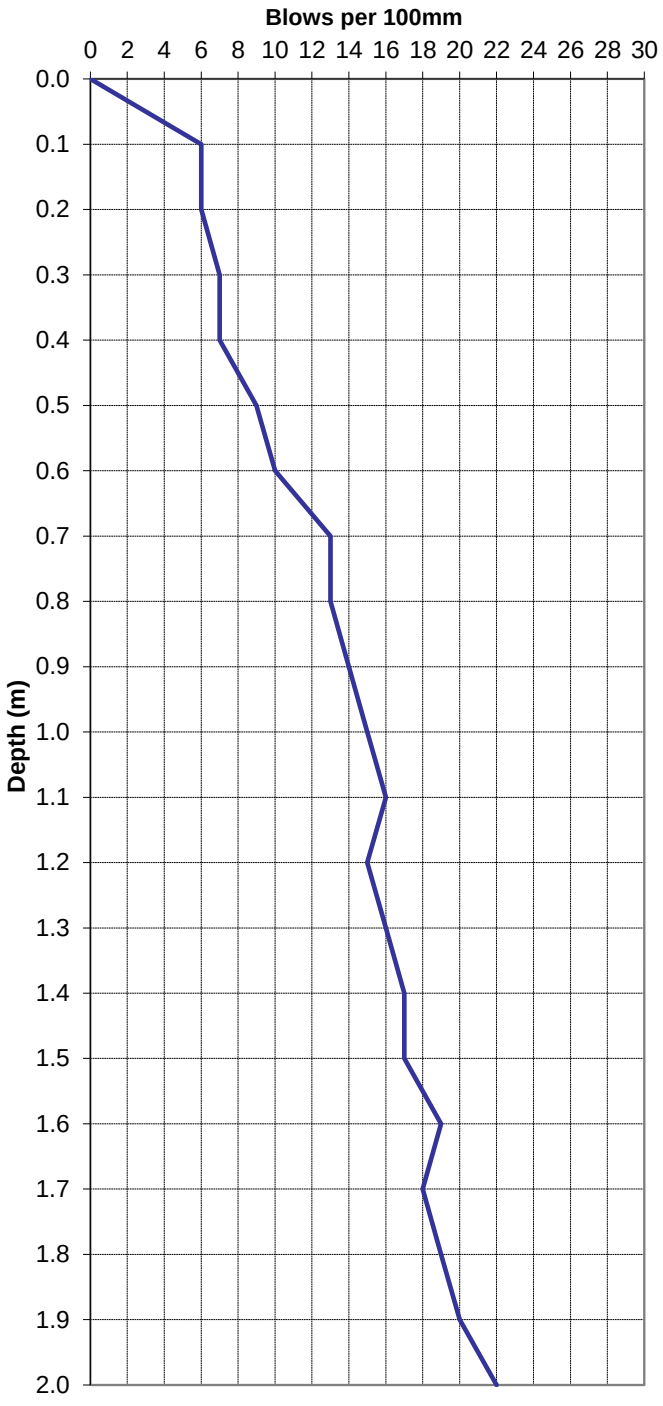


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP14***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	6	Med.Dense	33 deg	10
0.3	7	Med.Dense	34 deg	12
0.4	7	Med.Dense	34 deg	12
0.5	9	Med.Dense	35 deg	15
0.6	10	Med.Dense	36 deg	17
0.7	13	Dense	37 deg	23
0.8	13	Dense	37 deg	23
0.9	14	Dense	37 deg	25
1.0	15	Dense	37 deg	27
1.1	16	Dense	37 deg	29
1.2	15	Dense	37 deg	27
1.3	16	Dense	37 deg	29
1.4	17	Dense	37 deg	31
1.5	17	Dense	37 deg	31
1.6	19	Dense	37 deg	35
1.7	18	Dense	37 deg	33
1.8	19	Dense	37 deg	35
1.9	20	Dense	38 deg	37
2.0	22	Dense	38 deg	42
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				



Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP15***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	9	Med.Dense	35 deg	15
0.2	5	Med.Dense	32 deg	8
0.3	8	Med.Dense	35 deg	14
0.4	6	Med.Dense	33 deg	10
0.5	10	Med.Dense	36 deg	17
0.6	9	Med.Dense	35 deg	15
0.7	11	Dense	36 deg	19
0.8	10	Med.Dense	36 deg	17
0.9	10	Med.Dense	36 deg	17
1.0	11	Dense	36 deg	19
1.1	12	Dense	36 deg	21
1.2	11	Dense	36 deg	19
1.3	14	Dense	37 deg	25
1.4	15	Dense	37 deg	27
1.5	16	Dense	37 deg	29
1.6	16	Dense	37 deg	29
1.7	17	Dense	37 deg	31
1.8	20	Dense	38 deg	37
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
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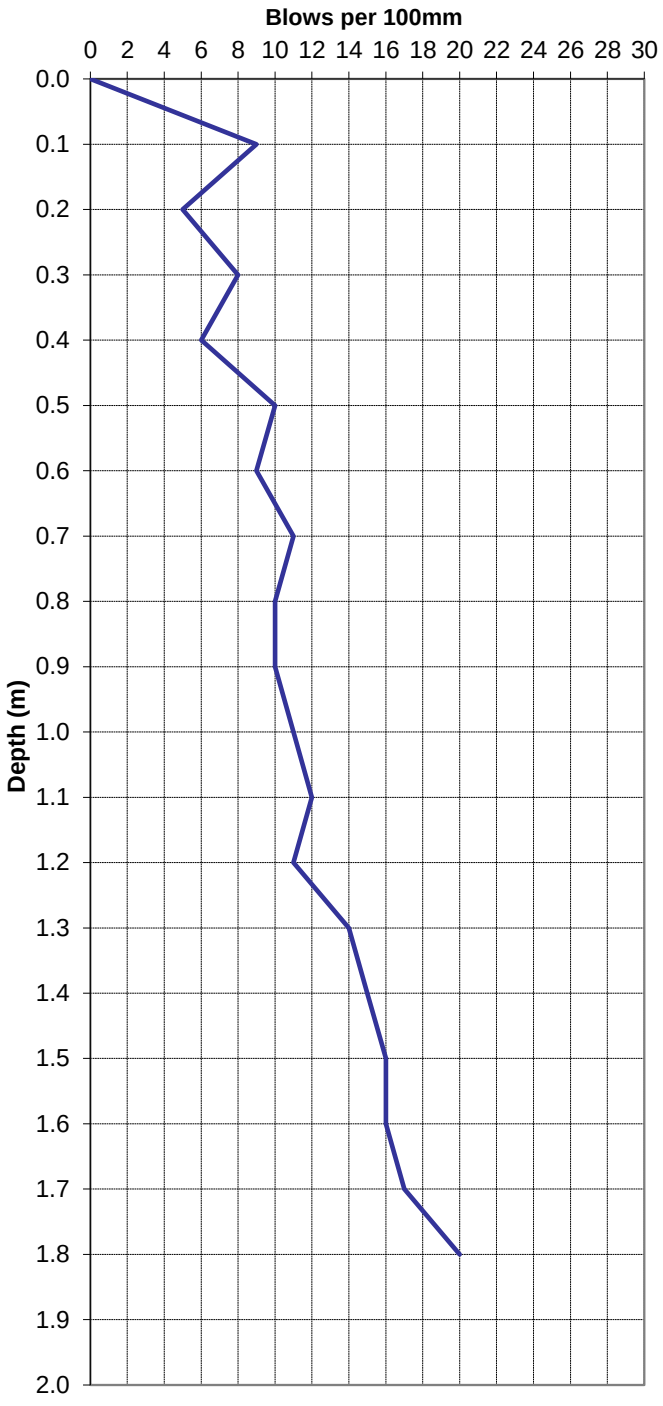
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

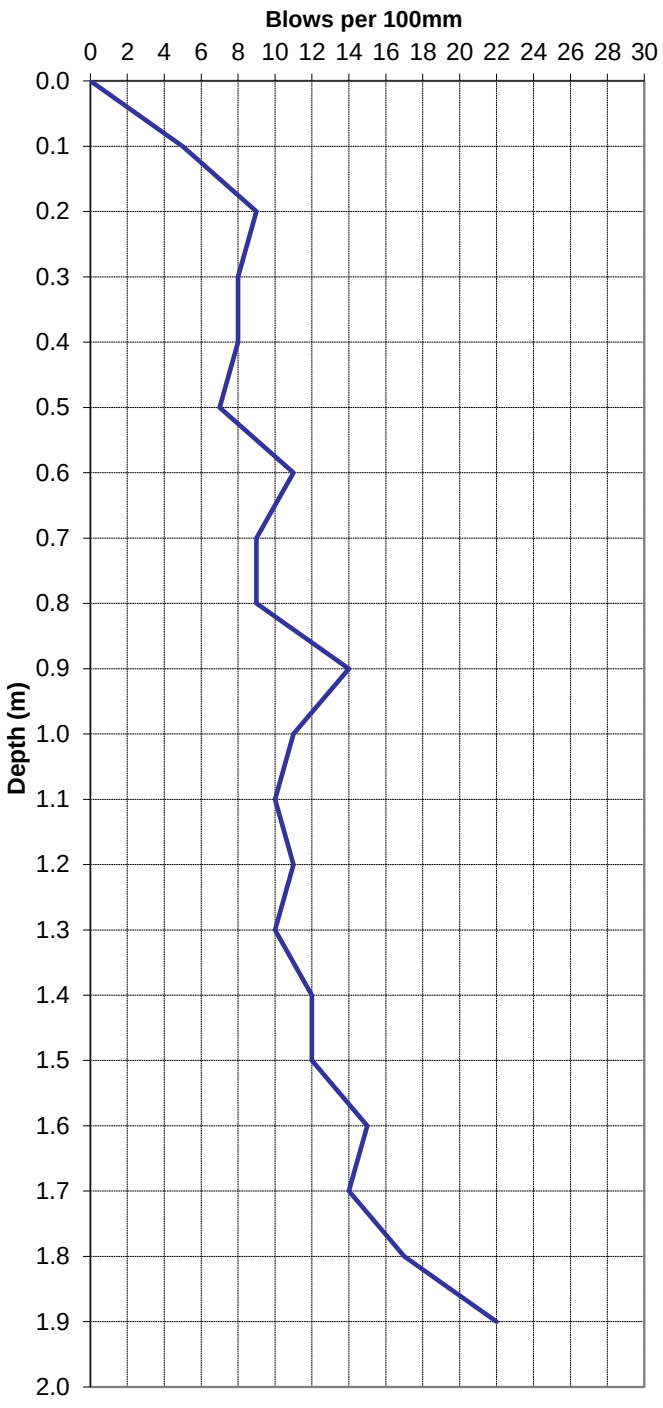


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP16***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	5	Med.Dense	32 deg	8
0.2	9	Med.Dense	35 deg	15
0.3	8	Med.Dense	35 deg	14
0.4	8	Med.Dense	35 deg	14
0.5	7	Med.Dense	34 deg	12
0.6	11	Dense	36 deg	19
0.7	9	Med.Dense	35 deg	15
0.8	9	Med.Dense	35 deg	15
0.9	14	Dense	37 deg	25
1.0	11	Dense	36 deg	19
1.1	10	Med.Dense	36 deg	17
1.2	11	Dense	36 deg	19
1.3	10	Med.Dense	36 deg	17
1.4	12	Dense	36 deg	21
1.5	12	Dense	36 deg	21
1.6	15	Dense	37 deg	27
1.7	14	Dense	37 deg	25
1.8	17	Dense	37 deg	31
1.9	22	Dense	38 deg	42
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

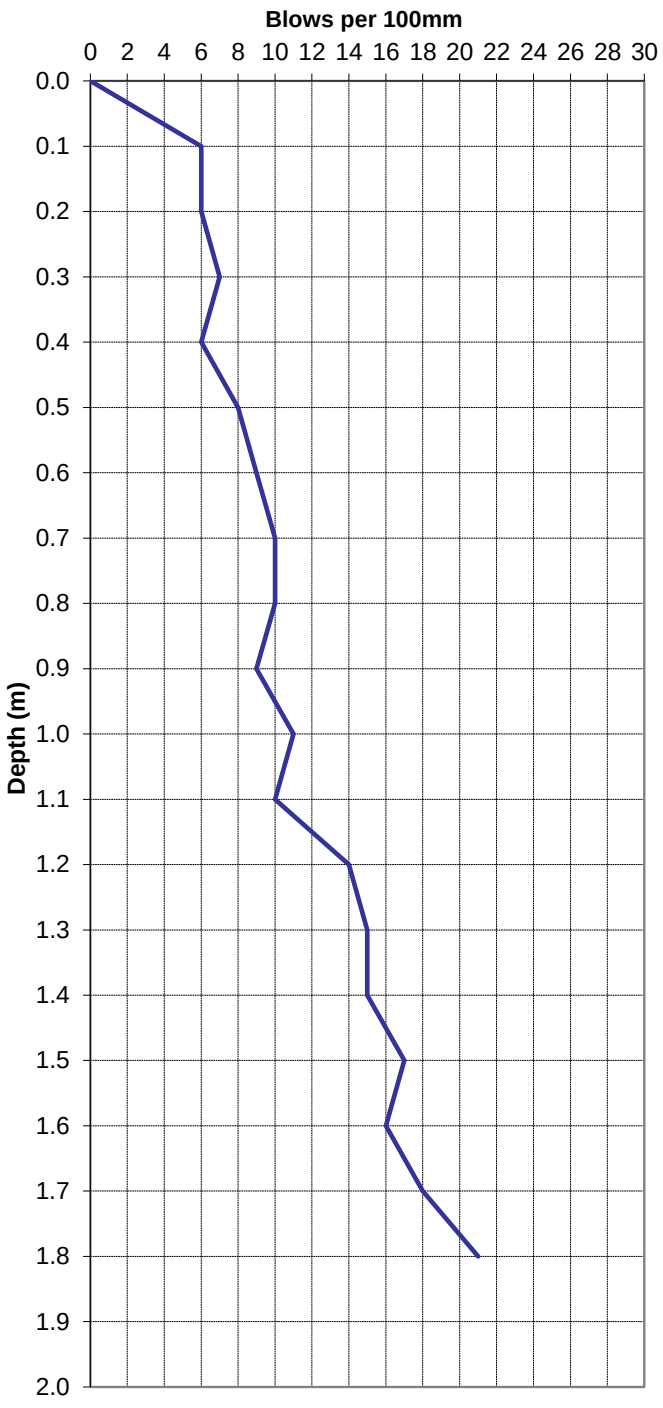


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP17***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	6	Med.Dense	33 deg	10
0.3	7	Med.Dense	34 deg	12
0.4	6	Med.Dense	33 deg	10
0.5	8	Med.Dense	35 deg	14
0.6	9	Med.Dense	35 deg	15
0.7	10	Med.Dense	36 deg	17
0.8	10	Med.Dense	36 deg	17
0.9	9	Med.Dense	35 deg	15
1.0	11	Dense	36 deg	19
1.1	10	Med.Dense	36 deg	17
1.2	14	Dense	37 deg	25
1.3	15	Dense	37 deg	27
1.4	15	Dense	37 deg	27
1.5	17	Dense	37 deg	31
1.6	16	Dense	37 deg	29
1.7	18	Dense	37 deg	33
1.8	21	Dense	38 deg	40
1.9				
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

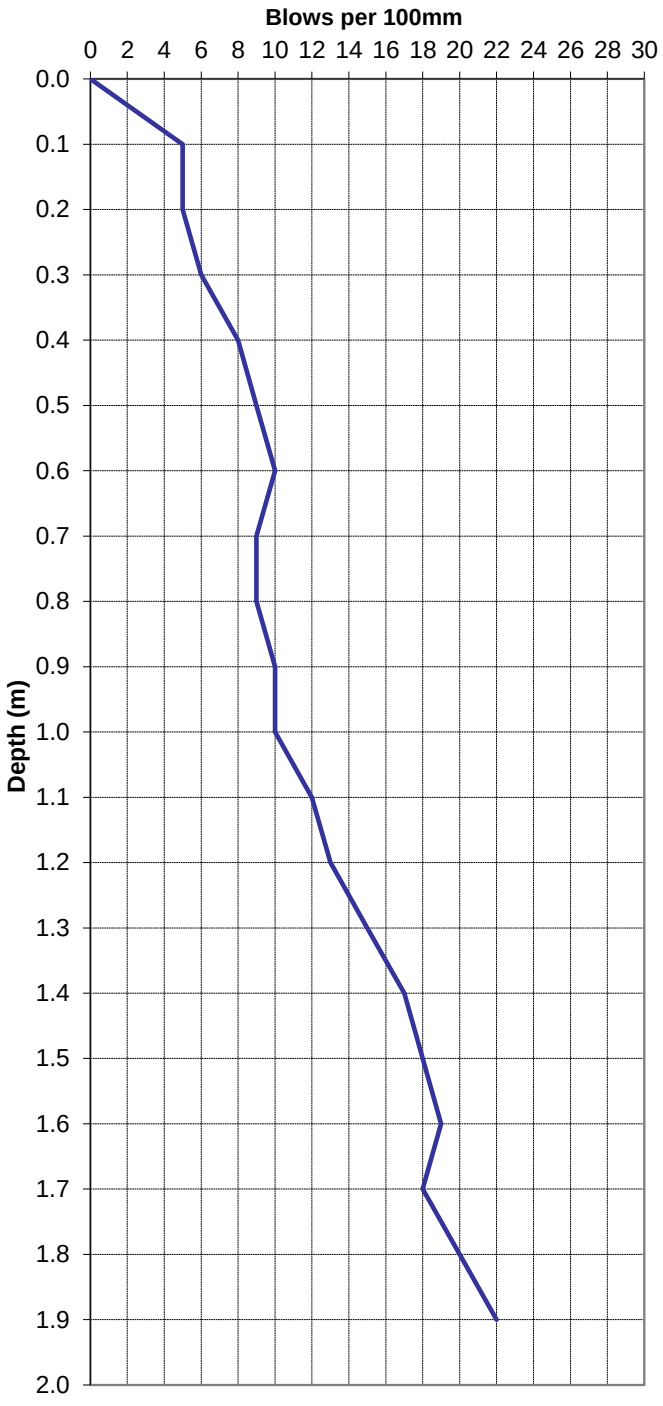


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP18***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	5	Med.Dense	32 deg	8
0.2	5	Med.Dense	32 deg	8
0.3	6	Med.Dense	33 deg	10
0.4	8	Med.Dense	35 deg	14
0.5	9	Med.Dense	35 deg	15
0.6	10	Med.Dense	36 deg	17
0.7	9	Med.Dense	35 deg	15
0.8	9	Med.Dense	35 deg	15
0.9	10	Med.Dense	36 deg	17
1.0	10	Med.Dense	36 deg	17
1.1	12	Dense	36 deg	21
1.2	13	Dense	37 deg	23
1.3	15	Dense	37 deg	27
1.4	17	Dense	37 deg	31
1.5	18	Dense	37 deg	33
1.6	19	Dense	37 deg	35
1.7	18	Dense	37 deg	33
1.8	20	Dense	38 deg	37
1.9	22	Dense	38 deg	42
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

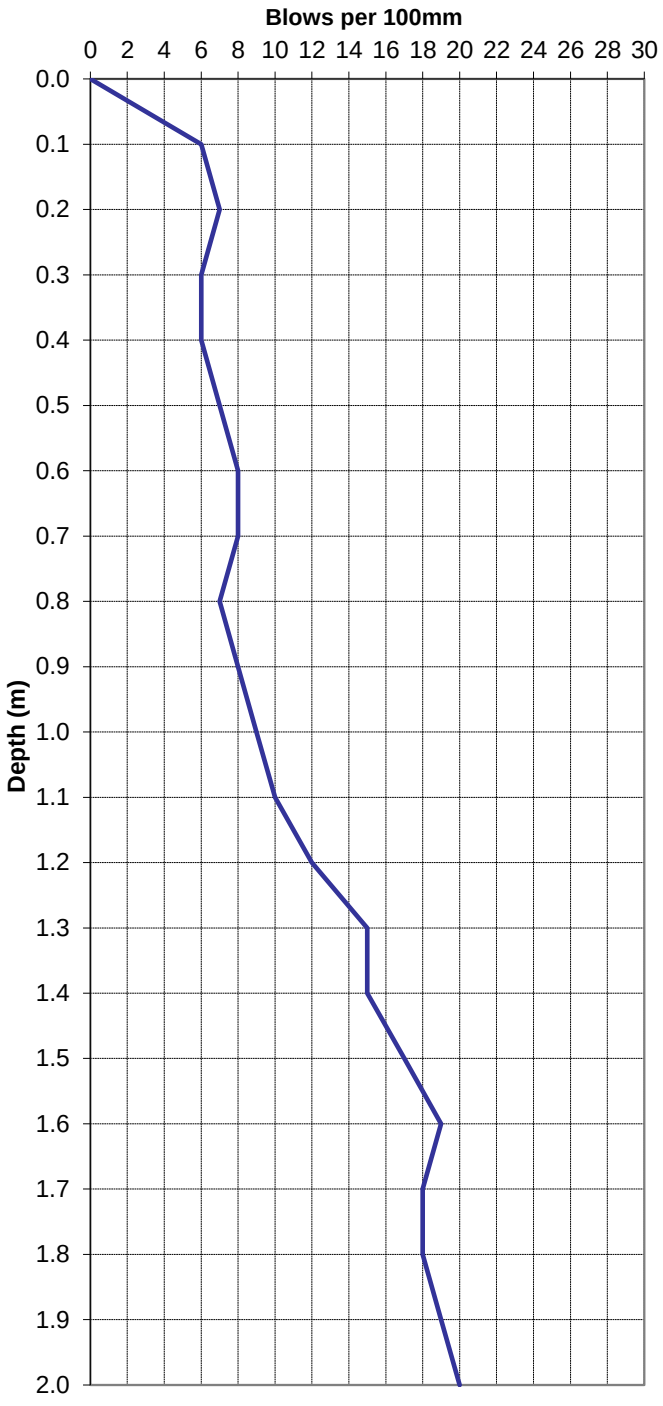


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP19***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	7	Med.Dense	34 deg	12
0.3	6	Med.Dense	33 deg	10
0.4	6	Med.Dense	33 deg	10
0.5	7	Med.Dense	34 deg	12
0.6	8	Med.Dense	35 deg	14
0.7	8	Med.Dense	35 deg	14
0.8	7	Med.Dense	34 deg	12
0.9	8	Med.Dense	35 deg	14
1.0	9	Med.Dense	35 deg	15
1.1	10	Med.Dense	36 deg	17
1.2	12	Dense	36 deg	21
1.3	15	Dense	37 deg	27
1.4	15	Dense	37 deg	27
1.5	17	Dense	37 deg	31
1.6	19	Dense	37 deg	35
1.7	18	Dense	37 deg	33
1.8	18	Dense	37 deg	33
1.9	19	Dense	37 deg	35
2.0	20	Dense	38 deg	37
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

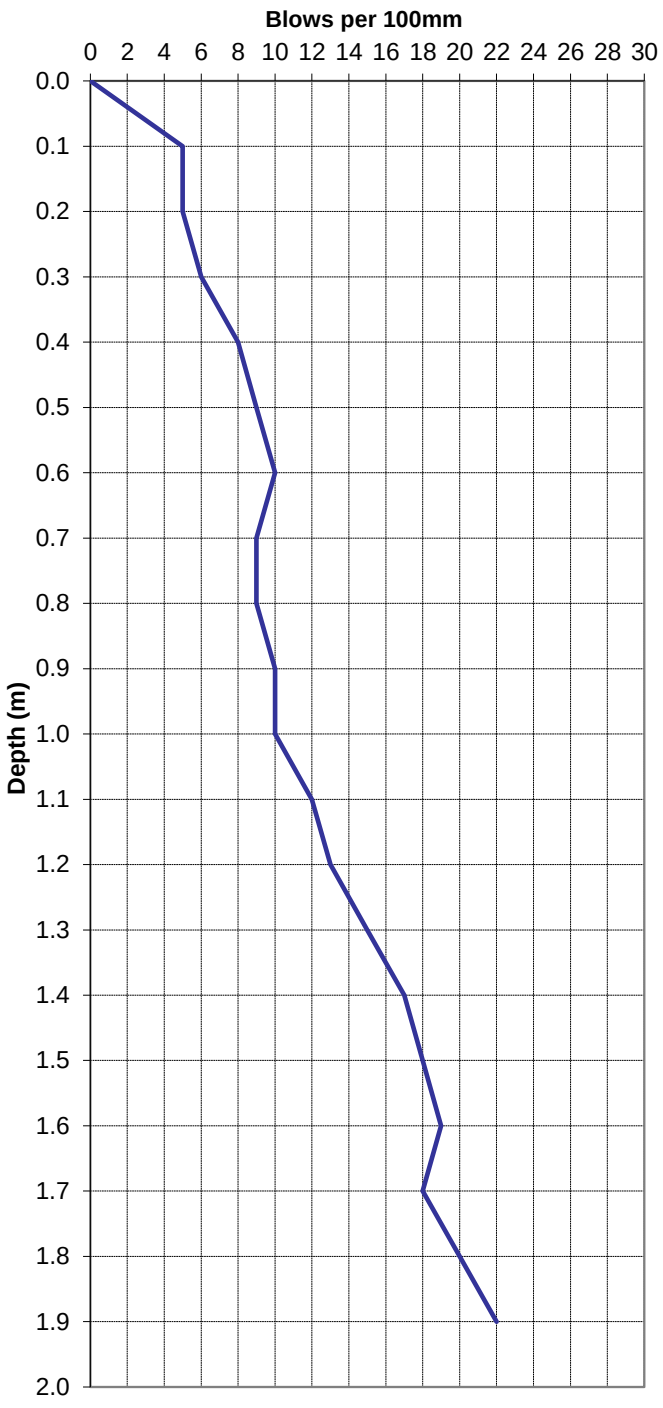


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP20***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	5	Med.Dense	32 deg	8
0.2	5	Med.Dense	32 deg	8
0.3	6	Med.Dense	33 deg	10
0.4	8	Med.Dense	35 deg	14
0.5	9	Med.Dense	35 deg	15
0.6	10	Med.Dense	36 deg	17
0.7	9	Med.Dense	35 deg	15
0.8	9	Med.Dense	35 deg	15
0.9	10	Med.Dense	36 deg	17
1.0	10	Med.Dense	36 deg	17
1.1	12	Dense	36 deg	21
1.2	13	Dense	37 deg	23
1.3	15	Dense	37 deg	27
1.4	17	Dense	37 deg	31
1.5	18	Dense	37 deg	33
1.6	19	Dense	37 deg	35
1.7	18	Dense	37 deg	33
1.8	20	Dense	38 deg	37
1.9	22	Dense	38 deg	42
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

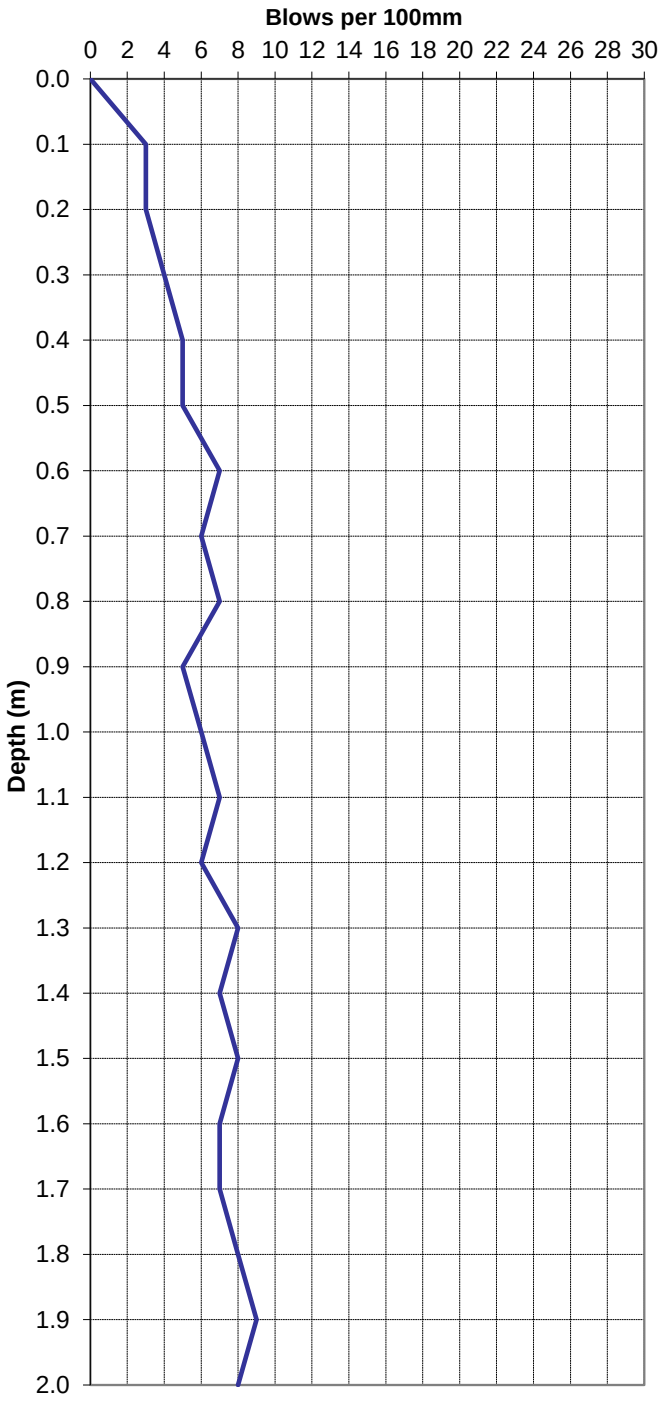


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP21***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	3	Loose	<30 deg	5
0.2	3	Loose	<30 deg	5
0.3	4	Med.Dense	30 deg	7
0.4	5	Med.Dense	32 deg	8
0.5	5	Med.Dense	32 deg	8
0.6	7	Med.Dense	34 deg	12
0.7	6	Med.Dense	33 deg	10
0.8	7	Med.Dense	34 deg	12
0.9	5	Med.Dense	32 deg	8
1.0	6	Med.Dense	33 deg	10
1.1	7	Med.Dense	34 deg	12
1.2	6	Med.Dense	33 deg	10
1.3	8	Med.Dense	35 deg	14
1.4	7	Med.Dense	34 deg	12
1.5	8	Med.Dense	35 deg	14
1.6	7	Med.Dense	34 deg	12
1.7	7	Med.Dense	34 deg	12
1.8	8	Med.Dense	35 deg	14
1.9	9	Med.Dense	35 deg	15
2.0	8	Med.Dense	35 deg	14
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

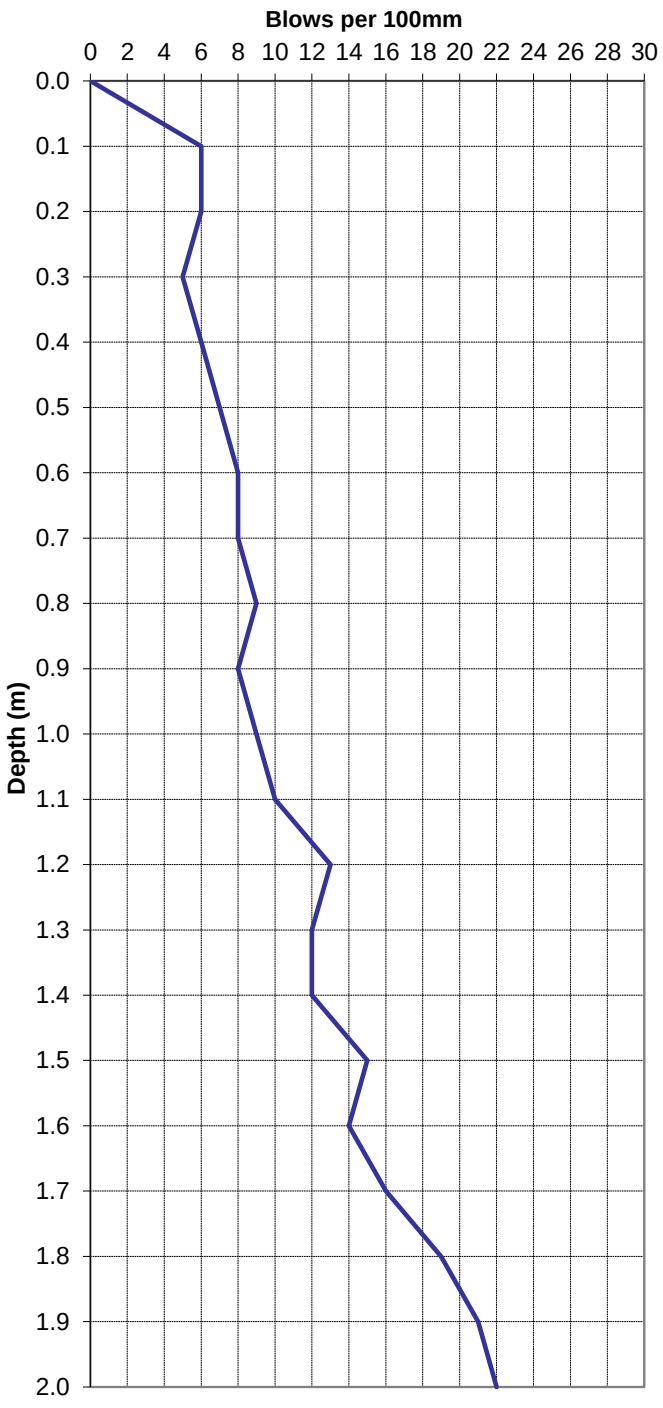


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP22***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	6	Med.Dense	33 deg	10
0.3	5	Med.Dense	32 deg	8
0.4	6	Med.Dense	33 deg	10
0.5	7	Med.Dense	34 deg	12
0.6	8	Med.Dense	35 deg	14
0.7	8	Med.Dense	35 deg	14
0.8	9	Med.Dense	35 deg	15
0.9	8	Med.Dense	35 deg	14
1.0	9	Med.Dense	35 deg	15
1.1	10	Med.Dense	36 deg	17
1.2	13	Dense	37 deg	23
1.3	12	Dense	36 deg	21
1.4	12	Dense	36 deg	21
1.5	15	Dense	37 deg	27
1.6	14	Dense	37 deg	25
1.7	16	Dense	37 deg	29
1.8	19	Dense	37 deg	35
1.9	21	Dense	38 deg	40
2.0	22	Dense	38 deg	42
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

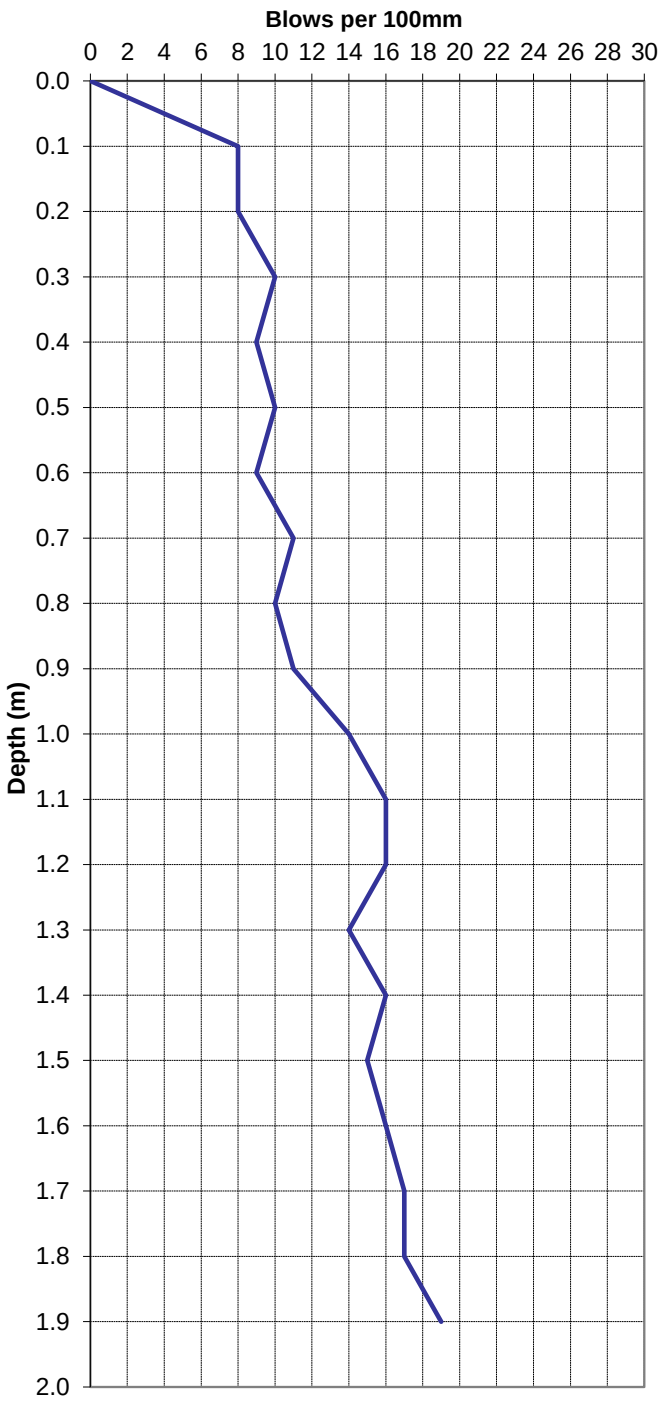


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP23***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	8	Med.Dense	35 deg	14
0.2	8	Med.Dense	35 deg	14
0.3	10	Med.Dense	36 deg	17
0.4	9	Med.Dense	35 deg	15
0.5	10	Med.Dense	36 deg	17
0.6	9	Med.Dense	35 deg	15
0.7	11	Dense	36 deg	19
0.8	10	Med.Dense	36 deg	17
0.9	11	Dense	36 deg	19
1.0	14	Dense	37 deg	25
1.1	16	Dense	37 deg	29
1.2	16	Dense	37 deg	29
1.3	14	Dense	37 deg	25
1.4	16	Dense	37 deg	29
1.5	15	Dense	37 deg	27
1.6	16	Dense	37 deg	29
1.7	17	Dense	37 deg	31
1.8	17	Dense	37 deg	31
1.9	19	Dense	37 deg	35
2.0				
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

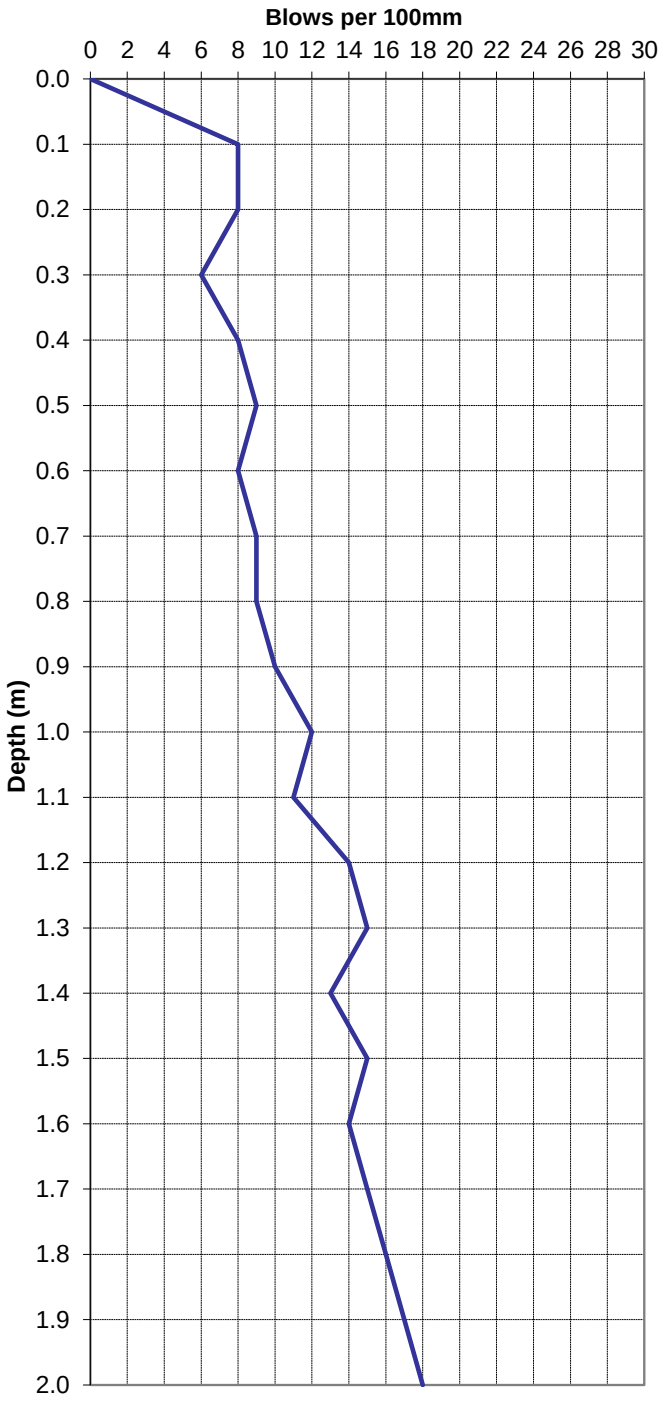


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP24***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	8	Med.Dense	35 deg	14
0.2	8	Med.Dense	35 deg	14
0.3	6	Med.Dense	33 deg	10
0.4	8	Med.Dense	35 deg	14
0.5	9	Med.Dense	35 deg	15
0.6	8	Med.Dense	35 deg	14
0.7	9	Med.Dense	35 deg	15
0.8	9	Med.Dense	35 deg	15
0.9	10	Med.Dense	36 deg	17
1.0	12	Dense	36 deg	21
1.1	11	Dense	36 deg	19
1.2	14	Dense	37 deg	25
1.3	15	Dense	37 deg	27
1.4	13	Dense	37 deg	23
1.5	15	Dense	37 deg	27
1.6	14	Dense	37 deg	25
1.7	15	Dense	37 deg	27
1.8	16	Dense	37 deg	29
1.9	17	Dense	37 deg	31
2.0	18	Dense	37 deg	33
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

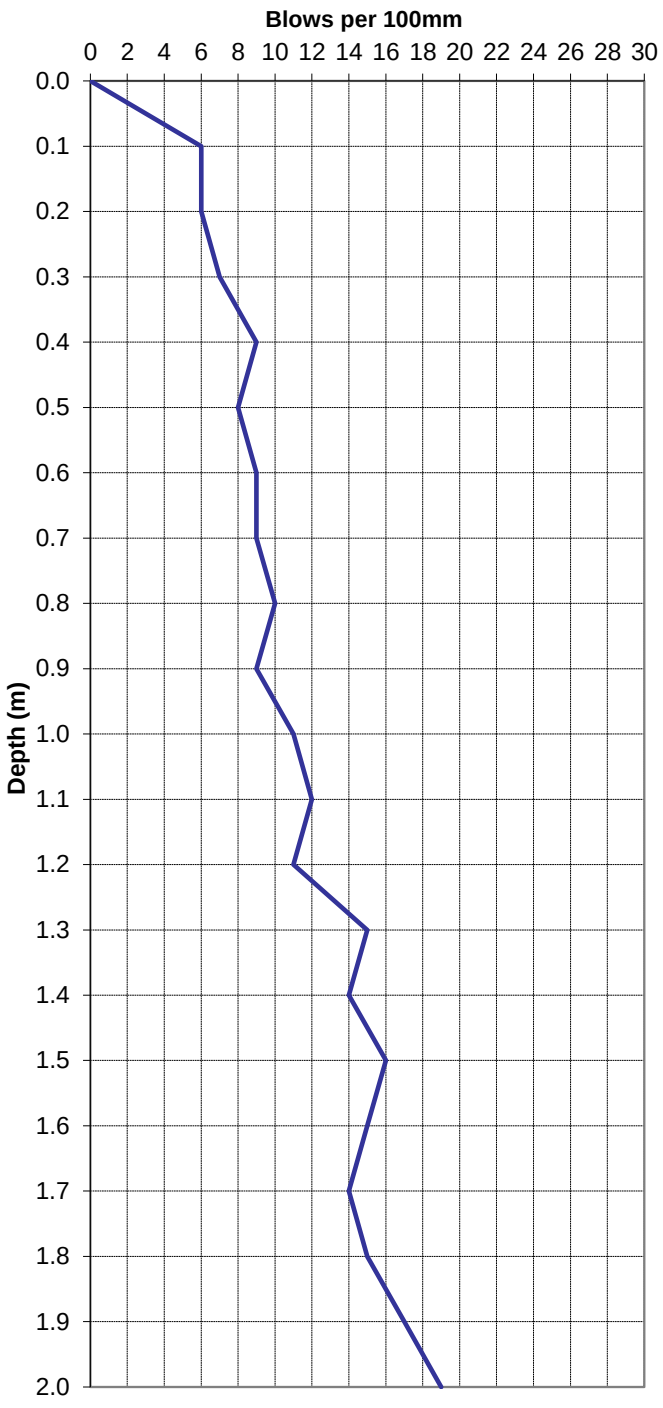


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP25***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	6	Med.Dense	33 deg	10
0.3	7	Med.Dense	34 deg	12
0.4	9	Med.Dense	35 deg	15
0.5	8	Med.Dense	35 deg	14
0.6	9	Med.Dense	35 deg	15
0.7	9	Med.Dense	35 deg	15
0.8	10	Med.Dense	36 deg	17
0.9	9	Med.Dense	35 deg	15
1.0	11	Dense	36 deg	19
1.1	12	Dense	36 deg	21
1.2	11	Dense	36 deg	19
1.3	15	Dense	37 deg	27
1.4	14	Dense	37 deg	25
1.5	16	Dense	37 deg	29
1.6	15	Dense	37 deg	27
1.7	14	Dense	37 deg	25
1.8	15	Dense	37 deg	27
1.9	17	Dense	37 deg	31
2.0	19	Dense	37 deg	35
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

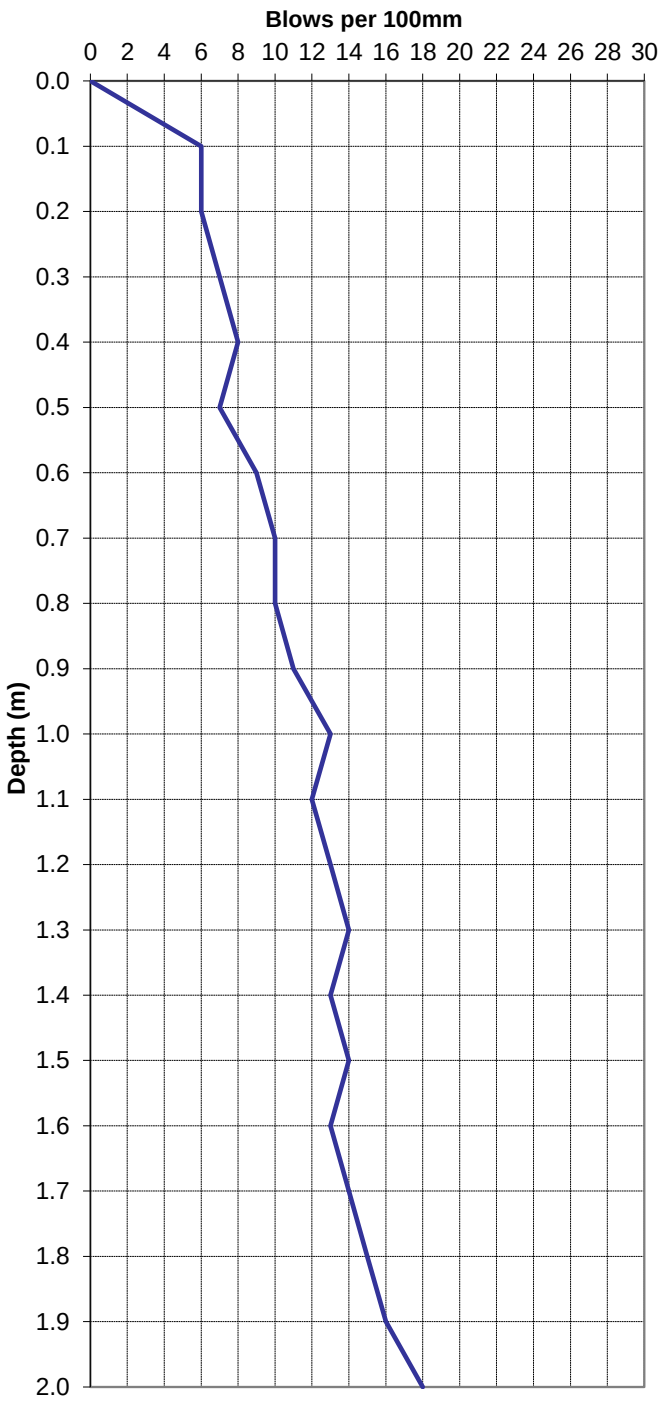


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP26***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	6	Med.Dense	33 deg	10
0.2	6	Med.Dense	33 deg	10
0.3	7	Med.Dense	34 deg	12
0.4	8	Med.Dense	35 deg	14
0.5	7	Med.Dense	34 deg	12
0.6	9	Med.Dense	35 deg	15
0.7	10	Med.Dense	36 deg	17
0.8	10	Med.Dense	36 deg	17
0.9	11	Dense	36 deg	19
1.0	13	Dense	37 deg	23
1.1	12	Dense	36 deg	21
1.2	13	Dense	37 deg	23
1.3	14	Dense	37 deg	25
1.4	13	Dense	37 deg	23
1.5	14	Dense	37 deg	25
1.6	13	Dense	37 deg	23
1.7	14	Dense	37 deg	25
1.8	15	Dense	37 deg	27
1.9	16	Dense	37 deg	29
2.0	18	Dense	37 deg	33
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

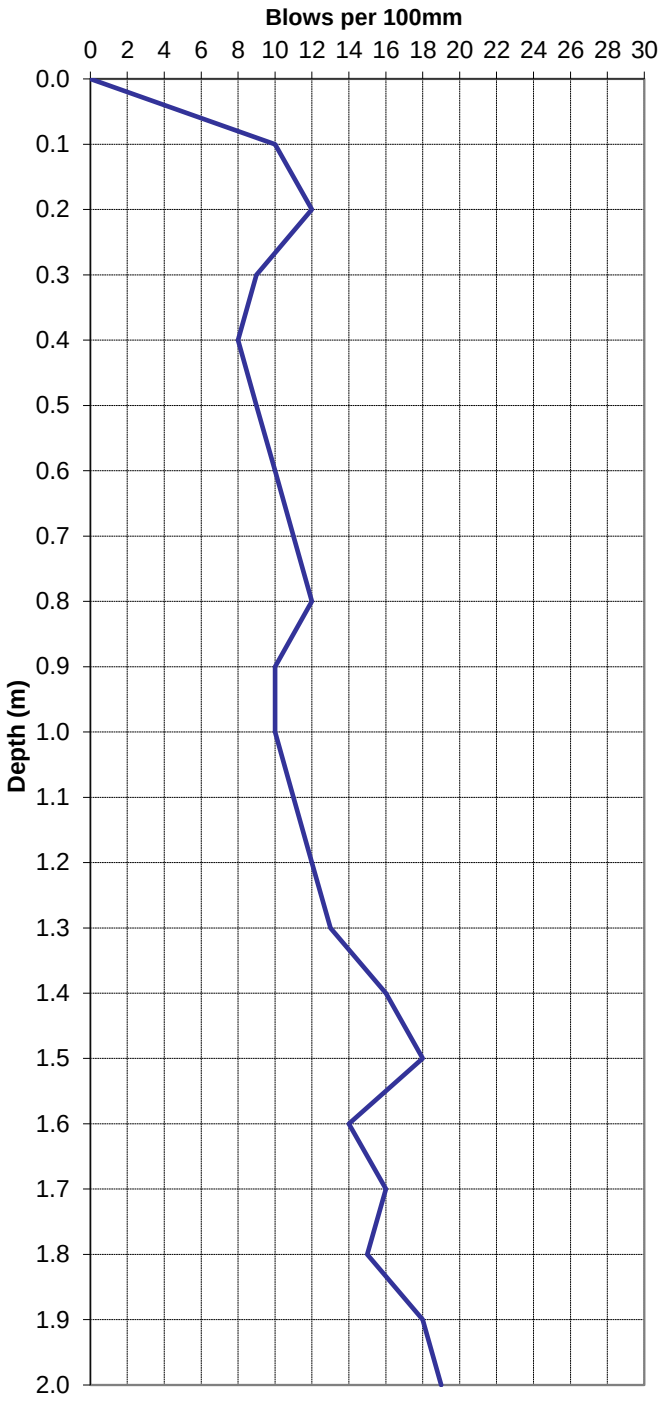


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP27***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	10	Med.Dense	36 deg	17
0.2	12	Dense	36 deg	21
0.3	9	Med.Dense	35 deg	15
0.4	8	Med.Dense	35 deg	14
0.5	9	Med.Dense	35 deg	15
0.6	10	Med.Dense	36 deg	17
0.7	11	Dense	36 deg	19
0.8	12	Dense	36 deg	21
0.9	10	Med.Dense	36 deg	17
1.0	10	Med.Dense	36 deg	17
1.1	11	Dense	36 deg	19
1.2	12	Dense	36 deg	21
1.3	13	Dense	37 deg	23
1.4	16	Dense	37 deg	29
1.5	18	Dense	37 deg	33
1.6	14	Dense	37 deg	25
1.7	16	Dense	37 deg	29
1.8	15	Dense	37 deg	27
1.9	18	Dense	37 deg	33
2.0	19	Dense	37 deg	35
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				

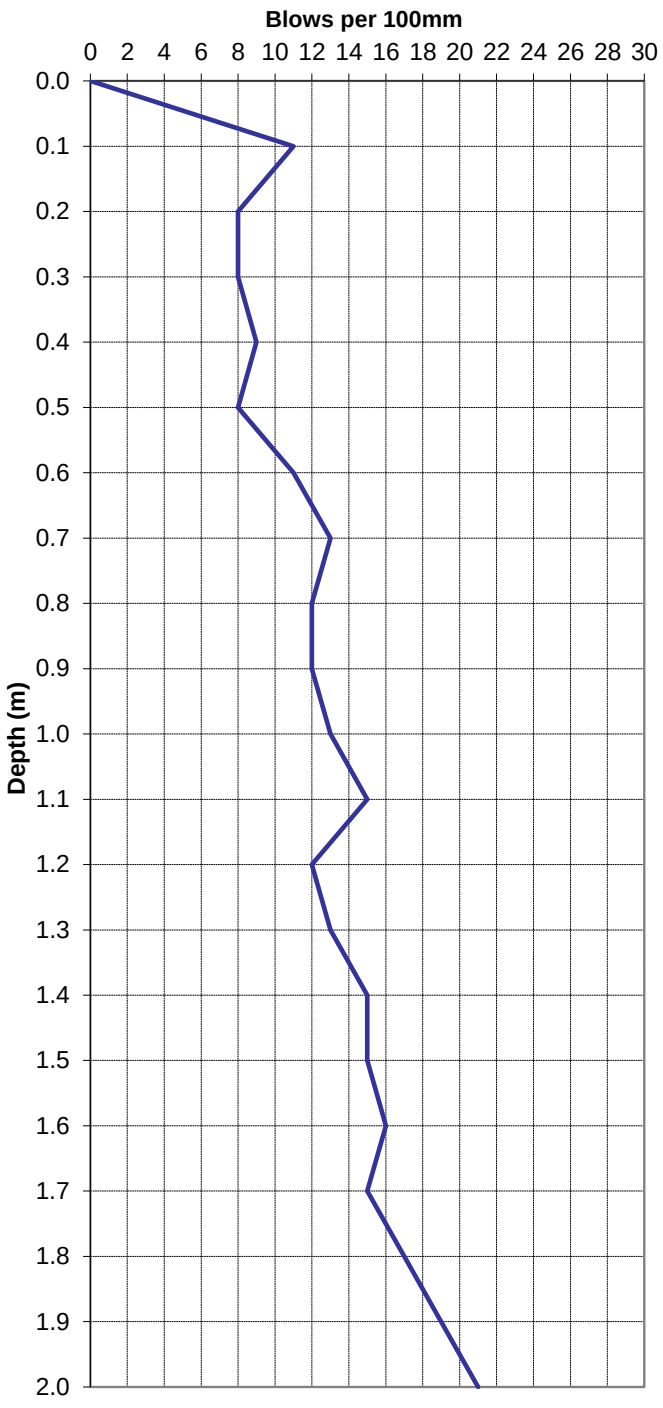


Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP28***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	11	Dense	36 deg	19
0.2	8	Med.Dense	35 deg	14
0.3	8	Med.Dense	35 deg	14
0.4	9	Med.Dense	35 deg	15
0.5	8	Med.Dense	35 deg	14
0.6	11	Dense	36 deg	19
0.7	13	Dense	37 deg	23
0.8	12	Dense	36 deg	21
0.9	12	Dense	36 deg	21
1.0	13	Dense	37 deg	23
1.1	15	Dense	37 deg	27
1.2	12	Dense	36 deg	21
1.3	13	Dense	37 deg	23
1.4	15	Dense	37 deg	27
1.5	15	Dense	37 deg	27
1.6	16	Dense	37 deg	29
1.7	15	Dense	37 deg	27
1.8	17	Dense	37 deg	31
1.9	19	Dense	37 deg	35
2.0	21	Dense	38 deg	40
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0				



Client:	eThekwini Municipality.	**Ref. No.:**	EGE2025-02
Project:	Blackburn to Phoenix 1 Reservoir, Watermain	**Date:**	12-Jan-25
Section:	Blackburn Reservoir to Phoenix 1	**Operator:**	NE

CBR DYNAMIC CONE PENETROMETER PROBE — ***TEST No DCP29***

THE STRENGTH AND CBR VALUES ARE EMPIRICAL AND DEPEND ON FACTORS SUCH AS MOISTURE CONTENT WHICH HAVE NOT BEEN DETERMINED. THEY ARE THEREFORE INDICATIVE AND SHOULD BE VERIFIED BY TEST OR OBSERVATION.

Depth (m)	Blows/ 100mm	Inferred Consistency	Shear Strength	CBR %
0.0	0			
0.1	9	Med.Dense	35 deg	15
0.2	9	Med.Dense	35 deg	15
0.3	7	Med.Dense	34 deg	12
0.4	8	Med.Dense	35 deg	14
0.5	10	Med.Dense	36 deg	17
0.6	12	Dense	36 deg	21
0.7	11	Dense	36 deg	19
0.8	12	Dense	36 deg	21
0.9	14	Dense	37 deg	25
1.0	17	Dense	37 deg	31
1.1	16	Dense	37 deg	29
1.2	16	Dense	37 deg	29
1.3	15	Dense	37 deg	27
1.4	16	Dense	37 deg	29
1.5	16	Dense	37 deg	29
1.6	17	Dense	37 deg	31
1.7	18	Dense	37 deg	33
1.8	19	Dense	37 deg	35
1.9	21	Dense	38 deg	40
2.0	21	Dense	38 deg	40
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
3.0				
3.1				
3.2				
3.3				
3.4				
3.5				
3.6				
3.7				
3.8				
3.9				
4.0