GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

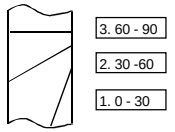
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 1 | ELEVATION: 5.428mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726105.68 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.02m | Y = 53585.103 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						17.20	SILTSTONE	54	1.97			2-3	2-3	3	1	3	7	1	1	2	10	1
1.50	1.50	0.66	44			↓												2	5	8	10	1
1.95	0.45	0.24	53			19.17												3	5	8	10	1
3.00	1.05	0.40	38			**1.97**				0	0	0	0									
3.45	0.45	0.24	53																			
4.50	1.05	0.47	45																			
4.95	0.45	0.37	82			**G1**																
6.00	1.05	0.39	37			19.17	MUDSTONE	30	3.39			2-4	3	5	5	2	12	1	1	2	10	1
6.45	0.45	0.36	80			↓												2	1	2	10	1
7.50	1.05	0.40	38			22.78												3	5	8	10	1
7.95	0.45	0.27	60			**3.61**				0.22	M3/M6	2-4	3									
9.00	1.05	0.65	62																			
9.45	0.45	0.34	76																			
10.50	1.05	0.67	64			**G2**																
10.95	0.45	0.45	100			22.78	GREYWACKE	19	1.40			3-4	2	0	4	6	10	1	0	0	0	0
12.00	1.05	0.54	51			↓												2	5	8	10	1
12.45	0.45	0.45	100			24.40												3	5	8	10	1
13.50	1.05	0.34	32			**1.62**				0.22	M3/M6	3-4	2									
13.95	0.45	0.45	100																			
15.00	1.05	0.64	61																			
15.95	0.95	0.30	32			**G3**																
16.50	0.55	0.50	91			24.40	MUDSTONE	9	0.55			2-3	2-4	4	0	0	4	1	1	2	10	1
16.95	0.45	0.30	67			↓												2	0	0	0	0
18.02	1.07	0.82	77	0.28	26	25.80												3	0	0	0	0
19.52	1.50	1.42	95	0.78	52	**1.40**				0.85	M3/M6	2-3	4									
21.02	1.50	1.13	75	0.36	24																	
22.52	1.50	1.40	93	0.71	47																	
24.02	1.50	1.33	89	0.31	21	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 1
INCLINATION: VERTICAL
FINAL DEPTH: 30.02m

ELEVATION: 5.428mamsl
CO-ORDS: X = 3726105.68
Y = 53585.103

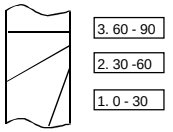
PAGE: 2 OF 2
DATE: 28-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
24.02						25.80	GREYWACKE	2	0.43			3-4	1	10	1	6	17	1	2	2	6	1
25.52	1.50	1.26	84	0.13	9	↓												2	1	2	10	1
27.02	1.50	1.24	83	0.00	0	30.02												3	1	3	10	1
28.52	1.50	0.61	41	0.00	0	**4.22**				3.79	M3/M6	3-4	1									
30.02	1.50	1.13	75	0.10	7																	
END OF HOLE - FINAL DEPTH 30.02m																						
						G5																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
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4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

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6.ROUGH UNDULATING
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Non-softening sheared material
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MATRIX TYPE
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M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 5 | ELEVATION: 12.140mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727221.24 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 29.96m | Y = 52883.806 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						22.55	GREYWACKE	59	4.02			2-3	3	4	5	7	16	1	1	2	10	1
1.50	1.50	0.52	35			↓												2	1	2	10	1
1.95	0.45	0.23	51			26.86												3	1	2	10	1
3.00	1.05	0.47	45			**4.31**				0.29	M5	2	3-4									
3.45	0.45	0.27	60																			
4.50	1.05	0.50	48																			
4.95	0.45	0.21	47			**G1**																
6.00	1.05	0.58	55			26.86	GREYWACKE	41	3.11			2-3	3	6	2	3	11	1	1	2	10	1
6.45	0.45	0.20	44			↓												2	1	2	10	1
7.50	1.05	0.46	44			29.96												3	1	2	10	1
7.95	0.45	0.33	73			**3.10**				0	0	0	0									
9.00	1.05	0.60	57																			
9.45	0.45	0.26	58																			
10.50	1.05	1.10	105			**G2**																
10.95	0.45	0.21	47																			
12.00	1.05	0.98	93																			
12.45	0.45	0.29	64																			
13.50	1.05	0.71	68																			
13.95	0.45	0.28	62																			
15.00	1.05	0.33	31																			
15.95	0.95	0.32	34																			
16.50	0.55	0.64	116																			
16.95	0.45	0.25	56																			
18.00	1.05	0.71	68																			
18.45	0.45	0.21	47																			
19.50	1.05	0.46	44																			
19.95	0.45	0.32	71																			
21.00	1.05	0.54	51																			

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
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WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
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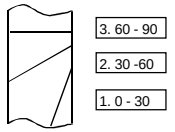
JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
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INFILL TYPE
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Soft sheared material, e.g. Talc
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JOINT WALL ALT.
1.WALL = ROCK HARDNESS
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GEOTECHNICAL BOREHOLE LOG

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PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 5 | ELEVATION: 12.140mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727221.24 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 29.96m | Y = 52883.806 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																						
21.45	0.45	0.31	69																			
22.46	1.01	0.29	29																			
23.96	1.50	0.81	54	0.63	62																	
25.46	1.50	1.30	87	1.14	76																	
26.96	1.50	1.47	98	0.77	51																	
28.46	1.50	1.47	98	0.54	36																	
29.96	1.50	1.50	100	0.74	49																	
END OF HOLE - FINAL DEPTH 29.96m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
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WEATHERING
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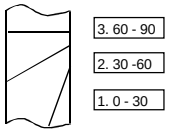
JOINT DISTRIBUTION



JOINT CONDITION
MACRO
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Soft sheared material, e.g. Talc
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M1. FAULTS
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GEOTECHNICAL BOREHOLE LOG

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Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 6 | ELEVATION: 11.736mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727017.97 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 40.52m | Y = 52985.997 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						14.00	SHALE	12	2.78			2	3	5	5	11	21	1	2	5	3	1
1.50	1.50	0.47	31			↓												2	2	5	3	1
1.95	0.45	0.26	58			16.98												3	1	2	3	1
3.00	1.05	0.55	52			**2.98**				0.20	M5	2	2									
3.45	0.45	0.22	49																			
4.50	1.05	0.51	49																			
4.95	0.45	0.27	60			**G1**																
6.00	1.05	0.55	52			16.98	SHALE	54	1.26			2	1	3	2	8	13	1	1	2	3	1
6.45	0.45	0.29	64			↓												2	1	2	3	1
7.50	1.05	0.49	47			18.27												3	1	2	3	1
7.95	0.45	0.28	62			**1.29**				0.03	M5/M6	2	3									
9.00	1.05	0.51	49																			
9.45	0.45	0.32	71																			
10.50	1.05	0.59	56			**G2**																
10.95	0.45	0.22	49			18.27	GREYWACKE	27	1.51			3	1	3	3	12	18	1	2	6	10	1
12.00	1.05	0.44	42			↓												2	1	2	10	1
12.45	0.45	0.28	62			19.95												3	1	2	10	1
13.50	1.05	0.53	50			**1.68**				0.17	M6	3	1									
13.95	0.45	0.27	60																			
15.00	1.05	0.69	66																			
16.50	1.50	1.29	86	0.25	17	**G3**																
18.00	1.50	1.42	95	0.81	54	19.95	GREYWACKE	61	2.72			3	1	1	1	16	18	1	1	2	10	1
19.50	1.50	1.35	90	0.30	20	↓												2	1	2	10	1
21.00	1.50	1.38	92	0.48	32	22.72												3	1	3	10	1
22.50	1.50	1.44	96	1.19	79	**2.77**				0.05	M6	3	1									
24.00	1.50	1.56	104	1.27	85																	
25.50	1.50	1.35	90	0.83	55																	
27.00	1.50	1.39	93	0.92	61	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
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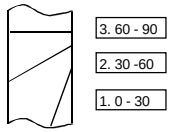
JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
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4.UNI DIRECTIONAL WAVY
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2.SMOOTH PLANAR
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1.GOUGE t. > Amplit. of IRREG.
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Soft sheared material, e.g. Talc
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M1. FAULTS
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GEOTECHNICAL BOREHOLE LOG

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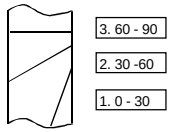
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 6 | ELEVATION: 11.736mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727017.97 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 40.52m | Y = 52985.997 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
27.00						22.72	GREYWACKE	70	3.03			4	1	0	1	11	12	1	0	0	0	0
28.60	1.60	1.60	100	1.43	89	↓												2	2	6	7	1
30.20	1.60	1.57	98	1.40	88	25.75												3	1	2	10	1
31.73	1.53	1.54	101	1.11	73	**3.03**																
33.23	1.50	1.48	99	0.80	53					0	0	0	0									
34.73	1.50	1.49	99	1.29	86																	
36.23	1.50	1.49	99	1.35	90	**G5**																
37.73	1.50	1.47	98	1.42	95	25.75	GREYWACKE											1	3	5	10	1
39.27	1.54	1.50	97	0.93	60	↓			4.75			4	1	1	2	8	11	2	1	2	10	1
40.52	1.25	1.25	100	1.25	100	30.50												3	3	5	10	1
END OF HOLE - FINAL DEPTH 40.52m						**4.75**		80														
										0	0	0	0									
						G6																
						30.50	GREYWACKE											1	1	2	10	1
						↓			3.10			4	1	1	5	12	18	2	1	2	10	1
						33.60												3	3	5	10	1
						3.10		59														
										0	0	0	0									
						G7																
						33.60	GREYWACKE											1	0	0	0	0
						↓			6.92			4	1	0	3	12	15	2	2	5	10	1
						40.52												3	1	2	10	1
						6.92		87														
										0	0	0	0									
						G8																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

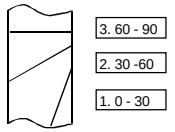
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 7 | ELEVATION: 10.083mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726815.12 | DATE: 03-05-2010
PROJECT No: 385908/42C | FINAL DEPTH: 54.25m | Y = 53069.914 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.40												1	1	3	10	1
1.50	1.50	0.96	64	0.00	0	↓			1.01			3	1-2	4	6	4	14	2	1	2	9	1
1.95	0.45	0.39	87	0.00	0	20.54	GREYWACKE											3	1	2	10	1
3.00	1.05	0.94	90	0.00	0	**1.14**		0														
3.45	0.45	0.41	91	0.00	0																	
4.50	1.05	0.87	83	0.00	0					0.13	M3/M5	3	1-2	Yellowish green stained.								
4.95	0.45	0.45	100	0.00	0	**G1**																
6.00	1.05	0.93	89	0.00	0	20.54												1	1	2	10	1
6.45	0.45	0.44	98	0.00	0	↓			14.71			4	1-2	59	36	51	146	2	1	2	10	1
7.50	1.05	0.87	83	0.00	0	36.43	GREYWACKE											3	1	2	10	1
7.95	0.45	0.39	87	0.00	0	**15.89**		7														
9.00	1.05	0.93	89	0.00	0					1.18	M3/M5	4	1-2									
9.45	0.45	0.35	78	0.00	0																	
10.50	1.05	0.96	91	0.00	0	**G2**																
10.95	0.45	0.40	89	0.00	0	36.43												1	1	2	3	1
12.00	1.05	0.95	90	0.00	0	↓			3.62			4	1	13	3	14	30	2	5	8	3	1
12.45	0.45	0.42	93	0.00	0	40.05	GREYWACKE											3	1	2	10	1
13.50	1.05	1.00	95	0.00	0	**3.62**		29														
13.95	0.45	0.34	76	0.00	0					0	0	0	0	2. Talc / Chlorite <1mm.								
15.00	1.05	0.90	86	0.00	0																	
15.95	0.95	0.37	39	0.00	0	**G3**																
16.50	0.55	0.95	173	0.00	0	40.05												1	1	2	10	1
16.95	0.45	0.43	96	0.00	0	↓			1.94			4	1	6	0	15	21	2	0	0	0	0
18.12	1.17	0.92	79	0.00	0	41.99	GREYWACKE											3	1	2	10	1
18.57	0.45	0.43	96	0.00	0	**1.94**		31														
19.62	1.05	0.33	31	0.00	0					0	0	0	0									
21.11	1.49	1.01	68	0.00	0																	
22.61	1.50	1.40	93	0.42	28	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

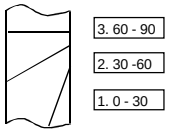
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 7 | ELEVATION: 10.083mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726815.12 | DATE: 03-05-2010
PROJECT No: 385908/42C | FINAL DEPTH: 54.25m | Y = 53069.914 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
22.61						41.99																
24.11	1.50	1.24	83	0.00	0	↓			4.03			4	1	7	8	15	30	1	1	2	10	1
25.61	1.50	1.20	80	0.25	17	46.08	GREYWACKE											2	1	2	10	1
27.11	1.50	1.61	107	0.21	14	**4.09**		45										3	1	2	10	1
28.61	1.50	1.35	90	0.00	0					0.06	M6	4	1									
30.11	1.50	1.07	71	0.15	10																	
31.61	1.50	1.43	95	0.14	9	**G5**																
33.11	1.50	1.44	96	0.00	0	46.08												1	1	2	10	1
34.61	1.50	1.44	96	0.00	0	↓			1.97			3	1	6	4	14	24	2	1	3	6	1
36.11	1.50	1.32	88	0.00	0	48.05	GREYWACKE											3	1	2	10	1
37.61	1.50	1.47	98	0.57	38	**1.97**		27														
39.11	1.50	1.45	97	0.28	19					0	0	0	0									
40.05	0.94	0.90	96	0.19	20																	
41.65	1.60	1.53	96	0.60	38	**G6**																
43.25	1.60	1.65	103	0.73	46	48.05												1	1	3	6	1
44.85	1.60	1.62	101	0.52	33	↓			1.49			4	1	2	0	2	4	2	0	0	0	0
46.45	1.60	1.52	95	0.58	36	49.54	GREYWACKE											3	1	3	10	1
48.05	1.60	1.53	96	0.53	33	**1.49**		64														
49.65	1.60	1.52	95	0.95	59					0	0	0	0									
51.25	1.60	1.50	94	0.27	17																	
52.75	1.50	1.47	98	1.10	73	**G7**																
54.25	1.50	1.26	84	0.40	27	49.54												1	1	2	10	1
END OF HOLE - FINAL DEPTH 54.25m						↓			4.49			3	1	14	1	14	29	2	1	2	10	1
						54.25	GREYWACKE											3	1	2	10	1
						4.71		38														
										0.22	M5/M6	3	1									
						G8																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

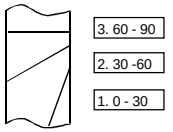
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 8 | ELEVATION: 10.129mamsl | PAGE: 1 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726614.42 | DATE: 02-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 40.45m | Y = 53162.192 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						20.20												1	1	2	10	1
1.50	1.50	0.53	35	0.00	0	↓	GREYWACKE		1.03			2	4	1	1	0	2	2	1	2	10	1
1.95	0.45	0.37	82	0.00	0	21.23												3	0	0	0	0
3.00	1.05	0.32	30	0.00	0	**1.03**		44														
3.45	0.45	0.27	60	0.00	0					0	0	0	0									
4.50	1.05	0.59	56	0.00	0																	
4.95	0.45	0.39	87	0.00	0	**G1**																
6.00	1.05	0.47	45	0.00	0	21.23												1	1	3	10	1
6.45	0.45	0.28	62	0.00	0	↓	GREYWACKE		1.62			2-3	4-5	2	4	2	8	2	1	9	10	1
7.50	1.05	0.51	49	0.00	0	23.95												3	1	9	10	1
7.95	0.45	0.42	93	0.00	0	**2.72**		10														
9.00	1.05	0.81	77	0.00	0					1.10	M5/M6	2-3	4-5									
9.45	0.45	0.43	96	0.00	0																	
10.50	1.05	0.59	56	0.00	0	**G2**																
10.95	0.45	0.29	64	0.00	0	23.95												1	1	2	3	1
12.00	1.05	0.83	79	0.00	0	↓	GREYWACKE		1.08			2	4	4	3	11	18	2	1	3	10	1
12.45	0.45	0.45	100	0.00	0	26.18												3	1	2	10	1
13.50	1.05	0.39	37	0.00	0	**2.23**		35														
13.95	0.45	0.42	93	0.00	0					0.15	M5	2	4									
15.00	1.05	0.45	43	0.00	0																	
15.45	0.45	0.38	84	0.00	0	**G3**																
16.45	1.00	0.75	75	0.00	0	26.18												1	1	2	3	1
17.95	1.50	0.60	40	0.00	0	↓	GREYWACKE		1.60			2	4	4	2	2	8	2	1	2	10	1
18.30	0.35	0.25	71	0.00	0	28.45												3	1	2	10	1
19.45	1.15	0.86	75	0.00	0	**2.27**		0														
19.80	0.35	0.35	100	0.00	0					0.67	M5/M6	2	4									
20.95	1.15	0.75	65	0.45	39																	
22.45	1.50	1.18	79	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG. Soft sheared material, e.g. Talc
2.GOUGE t. < Amplit. of IRREG. Non-softening sheared material
3.FINE
4.MEDIUM
5.COARSE
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

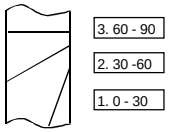
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 8 | ELEVATION: 10.129mamsl | PAGE: 2 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726614.42 | DATE: 02-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 40.45m | Y = 53162.192 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
22.45						28.45																
23.95	1.50	1.30	87	0.28	19	↓			0.90			2	4	2	0	0	2	2	0	0	0	0
25.45	1.50	1.18	79	0.34	23	29.35	GREYWACKE											3	0	0	0	0
26.95	1.50	1.56	104	0.45	30	**0.90**		0														
28.45	1.50	0.98	65	0.00	0					0	0	0	0									
29.95	1.50	1.17	78	0.00	0																	
31.45	1.50	1.02	68	0.35	23	**G5**																
32.95	1.50	1.42	95	0.00	0	29.35												1	0	0	0	0
34.45	1.50	1.17	78	0.29	19	↓			0.60			1-2	4-5	0	0	0	0	2	0	0	0	0
35.95	1.50	1.26	84	0.00	0	29.95	GREYWACKE											3	0	0	0	0
37.45	1.50	1.45	97	0.14	9	**0.60**		0														
38.95	1.50	1.06	71	0.54	36					0	0	0	0									
40.45	1.50	1.03	69	0.11	7	**G6**																
END OF HOLE - FINAL DEPTH 40.45m						29.95												1	1	2	9	1
						↓			2.05			2	4	6	2	5	13	2	1	2	9	1
						32.35	GREYWACKE											3	1	2	10	1
						2.40		15														
										0.35	M5	2	4									
						G7																
						32.35												1	0	0	0	0
						↓			0.00			0	0	0	0	0	0	2	0	0	0	0
						33.10	GREYWACKE											3	0	0	0	0
						0.75		0														
										0.75	M5/M6	2	4									
						G8																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting Engineers and Scientists

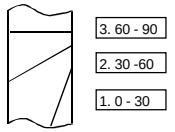
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 8 | ELEVATION: 10.129mamsl | PAGE: 3 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726614.42 | DATE: 02-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 40.45m | Y = 53162.192 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
						33.10 ↓ 33.65	GREYWACKE	55	0.55			3	3	2	1	0	3	1	1	9	10	1
																		2	1	9	3	1
																		3	0	0	0	0
						0.55				0	0	0	0									
						G9																
						33.65 ↓ 35.95	GREYWACKE	13	1.39			2	4	4	3	2	9	1	1	3	10	1
																		2	1	3	10	1
																		3	1	2	10	1
						2.30				0.91	M5/M6	2	4									
						G10																
						35.95 ↓ 37.45	GREYWACKE	9	1.30			3	3	4	1	2	7	1	1	2	10	1
																		2	1	3	9	1
																		3	1	2	10	1
						1.50				0.2	M5/M6	3	3									
						G11																
						37.45 ↓ 40.45	GREYWACKE	22	2.75			3	1	8	3	4	15	1	1	3	10	1
																		2	1	3	10	1
																		3	1	3	10	1
						3.00				0.25	M5/M6	3	1									
						G12																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

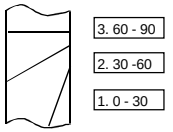
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 9 | ELEVATION: 12.407mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726417.11 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53258.424 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						24.50	GREYWACKE	11	1.35			1	4	3	2	2	7	1	1	2	10	1
1.50	1.50	0.43	29			↓												2	1	2	10	1
1.95	0.45	0.19	42			25.85												3	2	5	10	1
3.00	1.05	0.56	53			**1.35**				0	0	0	0									
3.45	0.45	0.26	58																			
4.50	1.05	0.48	46																			
4.95	0.45	0.23	51			**G1**																
6.00	1.05	0.49	47			25.85	GREYWACKE	10	1.50			2	4	4	1	5	10	1	1	2	10	1
6.45	0.45	0.25	56			↓												2	1	2	9	1
7.50	1.05	0.47	45			27.91												3	1	2	9	1
7.95	0.45	0.24	53			**2.06**				0.56	M3/M5	1-2	4	2. Yellow stained 3. Clayey infill								
9.00	1.05	0.61	58																			
9.45	0.45	0.23	51																			
10.50	1.05	0.46	44			**G2**																
10.95	0.45	0.24	53			27.91	GREYWACKE	33	2.09			2	3	2	4	5	11	1	1	2	10	1
12.00	1.05	0.49	47			↓												2	1	2	9	1
12.45	0.45	0.29	64			30.00												3	1	2	9	1
13.50	1.05	0.54	51			**2.09**				0	0	0	0	2. Yellow stained 3. Yellow stained								
13.95	0.45	0.26	58																			
15.00	1.05	0.51	49																			
15.45	0.45	0.25	56			**G3**																
16.50	1.05	0.45	43																			
16.95	0.45	0.28	62																			
18.00	1.05	0.48	46																			
18.45	0.45	0.26	58																			
19.50	1.05	0.52	50																			
19.95	0.45	0.26	58																			
21.00	1.05	0.51	49																			

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

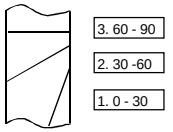
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 9 | ELEVATION: 12.407mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726417.11 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53258.424 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																						
21.45	0.45	0.27	60																			
22.50	1.05	0.51	49																			
22.95	0.45	0.30	67																			
24.00	1.05	0.57	54																			
24.45	0.45	0.25	56																			
25.50	1.05	1.05	100	0.15	14																	
27.00	1.50	1.40	93	0.11	7																	
28.50	1.50	1.36	91	0.23	15																	
30.00	1.50	1.48	99	0.58	39																	
END OF HOLE - FINAL DEPTH 30.00m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

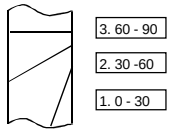
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 10 | ELEVATION: 17.816mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726329.75 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 26.92m | Y = 53060.803 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						20.51	GREYWACKE	5	2.20			2-3	3	8	2	10	20	1	1	2	10	1
1.50	1.50	0.95	63			↓												2	3	6	10	1
1.95	0.45	0.31	69			24.76												3	1	2	10	1
3.00	1.05	0.62	59			**4.25**				2.05	M3/M6	2-3	3									
3.45	0.45	0.20	44																			
4.50	1.05	0.48	46																			
4.95	0.45	0.24	53			**G1**																
6.00	1.05	0.72	69			24.76	GREYWACKE	70	2.16			3-4	2	0	2	10	12	1	0	0	0	0
6.45	0.45	0.22	49			↓												2	5	9	10	1
7.50	1.05	0.70	67			26.92												3	1	2	10	1
7.95	0.45	0.19	42			**2.16**				0	0	0	0	2. Coarse quartz crystals								
9.00	1.05	0.45	43																			
9.45	0.45	0.45	100																			
10.50	1.05	0.77	73			**G2**																
10.95	0.45	0.30	67																			
12.00	1.05	0.97	92																			
12.30	0.30	0.13	43																			
13.50	1.20	0.86	72																			
13.95	0.45	0.23	51																			
15.00	1.05	0.60	57																			
15.45	0.45	0.29	64																			
16.50	1.05	0.51	49																			
16.95	0.45	0.31	69																			
18.00	1.05	0.72	69																			
18.45	0.45	0.14	31																			
19.50	1.05	0.82	78																			
19.75	0.25	0.27	108																			
20.92	1.17	0.58	50																			

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 10
INCLINATION: VERTICAL
FINAL DEPTH: 26.92m

ELEVATION: 17.816mamsl
CO-ORDS: X = 3726329.75
Y = 53060.803

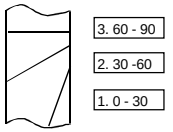
PAGE: 2 OF 2
DATE: 28-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
20.92																						
22.42	1.50	1.02	68	0.13	9																	
23.92	1.50	0.68	45	0.00	0																	
25.42	1.50	1.50	100	0.75	50																	
26.92	1.50	1.57	105	0.86	57																	
END OF HOLE - FINAL DEPTH 26.92m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting Engineers and Scientists

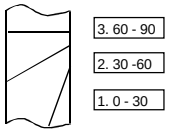
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 11 | ELEVATION: 16.221mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726527.38 | DATE: 03-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 30.13m | Y = 52967.352 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						26.48												1	0	0	0	0
1.50	1.50	1.06	71	0.00	0	↓			0.00			1	5	0	0	0	0	2	0	0	0	0
1.95	0.45	0.19	42	0.00	0	27.26												3	0	0	0	0
3.00	1.05	1.03	98	0.00	0	**0.78**	SHALE	0		0.78	M6	1	5									
3.45	0.45	0.32	71	0.00	0																	
4.50	1.05	1.18	112	0.00	0																	
4.95	0.45	0.21	47	0.00	0	**G1**																
6.00	1.05	1.21	115	0.00	0	27.26												1	5	8	10	1
6.45	0.45	0.20	44	0.00	0	↓			0.56			2	3	5	2	0	7	2	2	5	9	1
7.50	1.05	0.83	79	0.00	0	27.93												3	0	0	0	0
7.95	0.45	0.45	100	0.00	0	**0.67**	GREYWACKE	19		0.11	M5/M6	2	3									
9.00	1.05	0.89	85	0.00	0																	
9.45	0.45	0.41	91	0.00	0																	
10.50	1.05	0.95	90	0.00	0	**G2**																
10.95	0.45	0.35	78	0.00	0	27.93												1	1	2	10	1
12.00	1.05	0.84	80	0.00	0	↓			0.14			1	4-5	2	3	1	6	2	2	5	3	1
12.45	0.45	0.45	100	0.00	0	28.42												3	1	2	10	1
13.50	1.05	0.82	78	0.00	0	**0.49**	GREYWACKE	0		0.35	M5/M6	1	4-5									
13.95	0.45	0.45	100	0.00	0																	
15.00	1.05	0.84	80	0.00	0																	
15.45	0.45	0.45	100	0.00	0	**G3**																
16.50	1.05	0.80	76	0.00	0	28.42												1	2	5	3	1
16.95	0.45	0.42	93	0.00	0	↓			1.46			2-3	2	3	6	0	9	2	1	2	3	1
18.13	1.18	0.84	71	0.00	0	29.88												3	0	0	0	0
18.58	0.45	0.38	84	0.00	0	**1.46**	GREYWACKE	22		0	0	0	0									
19.63	1.05	0.86	82	0.00	0																	
20.08	0.45	0.45	100	0.00	0																	
21.13	1.05	0.78	74	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

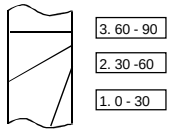
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 11 | ELEVATION: 16.221mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726527.38 | DATE: 03-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 30.13m | Y = 52967.352 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.13						29.88												1	0	0	0	0
21.58	0.45	0.29	64	0.00	0	↓			0.00			2	4	0	1	0	1	2	2	5	3	1
22.63	1.05	0.60	57	0.00	0	30.13	GREYWACKE											3	0	0	0	0
23.08	0.45	0.32	71	0.00	0	**0.25**		0														
24.13	1.05	0.51	49	0.00	0					0.25	M5/M6	2	4									
24.58	0.45	0.31	69	0.00	0																	
25.63	1.05	0.85	81	0.00	0	**G5**																
26.08	0.45	0.28	62	0.00	0													1				
27.13	1.05	0.70	67	0.00	0													2				
28.63	1.50	1.41	94	0.13	9													3				
30.13	1.50	1.41	94	0.32	21																	
END OF HOLE - FINAL DEPTH 30.13m																						
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting Engineers and Scientists

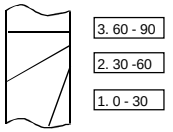
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 12 | ELEVATION: 16.367mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726736.26 | DATE: 03-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 40.14m | Y = 52859.935 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						24.45	GREYWACKE	35	3.58			3	2	3	17	8	28	1	1	3	9	1
1.50	1.50	0.76	51	0.00	0	↓												2	1	2	6	1
1.95	0.45	0.19	42	0.00	0	28.10												3	3	5	9	1
3.00	1.05	0.63	60	0.00	0	**3.65**				0.07	M5/M6	3	2	2. Calcite								
3.45	0.45	0.17	38	0.00	0																	
4.50	1.05	0.62	59	0.00	0																	
4.95	0.45	0.24	53	0.00	0	**G1**																
6.00	1.05	0.77	73	0.00	0	28.10	GREYWACKE	16	3.94			3	2-3	3	4	37	44	1	2	5	3	1
6.45	0.45	0.32	71	0.00	0	↓												2	5	8	9	1
7.50	1.05	0.96	91	0.00	0	32.54												3	2	5	10	1
7.95	0.45	0.31	69	0.00	0	**4.44**				0.50	M5/M6	2-3	2-3	1. Quartz infill 1mm								
9.00	1.05	0.84	80	0.00	0																	
9.45	0.45	0.23	51	0.00	0																	
10.50	1.05	0.91	87	0.00	0	**G2**																
10.95	0.45	0.29	64	0.00	0	32.54	GREYWACKE	50	7.59			4	1	4	11	31	46	1	3	5	10	1
12.00	1.05	0.83	79	0.00	0	↓												2	1	2	3	1
12.45	0.45	0.25	56	0.00	0	40.14												3	2	5	3	1
13.50	1.05	0.71	68	0.00	0	**7.60**				0.11	M6	4	1	Clayey infill								
13.95	0.45	0.38	84	0.00	0																	
15.00	1.05	0.86	82	0.00	0																	
15.45	0.45	0.28	62	0.00	0	**G3**																
16.50	1.05	0.87	83	0.00	0																	
16.95	0.45	0.24	53	0.00	0																	
18.00	1.05	0.59	56	0.00	0																	
18.45	0.45	0.28	62	0.00	0																	
19.50	1.05	0.65	62	0.00	0																	
19.95	0.45	0.26	58	0.00	0																	
21.00	1.05	0.66	63	0.00	0																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 12
INCLINATION: VERTICAL
FINAL DEPTH: 40.14m

ELEVATION: 16.367mamsl
CO-ORDS: X = 3726736.26
Y = 52859.935

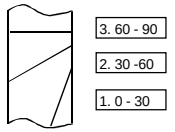
PAGE: 2 OF 2
DATE: 03-04-2009
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																						
21.45	0.45	0.25	56	0.00	0																	
22.50	1.05	0.81	77	0.00	0																	
22.95	0.45	0.29	64	0.00	0																	
24.00	1.05	0.73	70	0.00	0																	
24.45	0.45	0.24	53	0.00	0																	
25.50	1.05	0.93	89	0.59	56																	
27.00	1.50	1.43	95	0.38	25																	
27.40	0.40	0.35	88	0.38	95																	
28.50	1.10	1.04	95	0.32	29																	
30.00	1.50	1.45	97	0.27	18																	
31.50	1.50	1.56	104	0.36	24																	
33.00	1.50	1.46	97	0.38	25																	
34.20	1.20	1.16	97	0.61	51																	
35.80	1.60	1.56	98	0.38	24																	
37.40	1.60	1.59	99	0.85	53																	
38.90	1.50	1.52	101	0.64	43																	
40.14	1.24	1.21	98	1.05	85																	
END OF HOLE - FINAL DEPTH 40.14m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

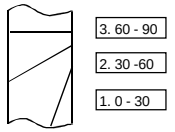
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 13 | ELEVATION: 15.493mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726931.63 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 28.50m | Y = 52768.018 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						22.95												1	0	0	0	0
1.50	1.50	0.44	29	0.00	0	↓			0.00			2-3	3	0	0	0	0	2	0	0	0	0
1.95	0.45	0.21	47	0.00	0	24.00	GREYWACKE											3	0	0	0	0
3.00	1.05	0.43	41	0.00	0	**1.05**		0														
3.45	0.45	0.20	44	0.00	0																	
4.50	1.05	0.37	35	0.00	0					1.05	M5/M6	2-3	3									
4.95	0.45	0.19	42	0.00	0	**G1**																
6.00	1.05	0.37	35	0.00	0	24.00												1	1	2	9	1
6.45	0.45	0.20	44	0.00	0	↓			0.61			2-3	3	2	1	1	4	2	1	2	10	1
7.50	1.05	0.46	44	0.00	0	24.61	GREYWACKE											3	2	6	10	1
7.95	0.45	0.22	49	0.00	0	**0.61**		0														
9.00	1.05	0.49	47	0.00	0																	
9.45	0.45	0.21	47	0.00	0					0	0	2-3	3	1. Clayey Silt.								
10.50	1.05	0.48	46	0.00	0	**G2**																
10.95	0.45	0.19	42	0.00	0	24.61												1	0	0	0	0
12.00	1.05	0.47	45	0.00	0	↓			0			2	4	0	0	0	0	2	0	0	0	0
12.45	0.45	0.17	38	0.00	0	24.80	GREYWACKE											3	0	0	0	0
13.50	1.05	0.51	49	0.00	0	**0.19**		0														
13.95	0.45	0.20	44	0.00	0																	
15.00	1.05	0.55	52	0.00	0					0.19	M3/M5	2	4									
15.45	0.45	0.20	44	0.00	0	**G3**																
16.50	1.05	0.50	48	0.00	0	24.80												1	2	5	9	1
16.95	0.45	0.22	49	0.00	0	↓			2.45			3	2-3	8	6	5	19	2	2	5	9	1
18.00	1.05	0.56	53	0.00	0	27.43	GREYWACKE											3	1	2	9	1
18.45	0.45	0.18	40	0.00	0	**2.63**		15														
19.50	1.05	0.45	43	0.00	0																	
19.95	0.45	0.21	47	0.00	0					0.18	M6	2-3	2-3	1. Clayey Silt Infill. 2. Clayey Silt Infill. 3. Clayey Silt infill.								
21.00	1.05	0.51	49	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

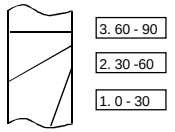
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 13 | ELEVATION: 15.493mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726931.63 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 28.50m | Y = 52768.018 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00						27.43	QUARTZITIC SANDSTONE											1	1	2	9	1
21.45	0.45	0.25	56	0.00	0	↓			1.07			3	1	4	1	6	11	2	1	2	10	1
22.50	1.05	0.50	48	0.00	0	28.50												3	1	2	10	1
22.95	0.45	0.23	51	0.00	0	**1.07**		26														
24.00	1.05	0.39	37	0.00	0					0	0	0	0	1. Clayey Silt Infill.								
25.50	1.50	1.30	87	0.17	11																	
27.00	1.50	1.39	93	0.38	25	**G5**																
28.50	1.50	1.45	97	0.28	19													1				
END OF HOLE - FINAL DEPTH 28.50m																		2				
																		3				
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 14 | ELEVATION: 15.636mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727135.09 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 27.05m | Y = 52676.96 | LOGGED BY: JB

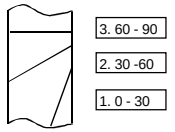
Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.95												1	1	2	10	1
1.50	1.50	0.75	50	0.00	0	↓			3.94			3	1	13	20	8	41	2	1	2	10	1
1.95	0.45	0.12	27	0.00	0	24.26	GREYWACKE											3	1	2	10	1
3.05	1.10	0.46	42	0.00	0	**4.31**		6														
3.50	0.45	0.15	33	0.00	0					0.37	M3/M6	3	1									
4.55	1.05	0.40	38	0.00	0																	
5.00	0.45	0.25	56	0.00	0	**G1**																
6.00	1.00	0.78	78	0.00	0	24.26												1	2	5	10	1
6.45	0.45	0.29	64	0.00	0	↓			1.05			3	2	5	4	0	9	2	1	2	10	1
7.50	1.05	0.65	62	0.00	0	25.70												3	0	0	0	0
7.95	0.45	0.29	64	0.00	0	**1.44**	SHALE	0														
9.00	1.05	0.55	52	0.00	0					0.39	M3/M5	3	2									
9.45	0.45	0.31	69	0.00	0																	
10.50	1.05	0.58	55	0.00	0	**G2**																
10.95	0.45	0.14	31	0.00	0	25.70												1	0	0	0	0
12.00	1.05	0.69	66	0.00	0	↓			1.29			3	1	0	3	7	10	2	2	5	10	1
12.45	0.45	0.30	67	0.00	0	27.05												3	5	9	6	1
13.50	1.05	0.77	73	0.00	0	**1.35**	GREYWACKE	19														
13.95	0.45	0.32	71	0.00	0					0.06	M6	3	1									
15.00	1.05	0.78	74	0.00	0																	
15.45	0.45	0.32	71	0.00	0	**G3**																
16.50	1.05	0.58	55	0.00	0													1				
16.95	0.45	0.45	100	0.00	0													2				
18.00	1.05	0.24	23	0.00	0													3				
18.45	0.45	0.45	100	0.00	0																	
19.50	1.05	0.52	50	0.00	0																	
19.95	0.45	0.45	100	0.00	0																	
21.05	1.10	1.15	105	0.26	24																	

3. Quartz Crystals.

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 14
INCLINATION: VERTICAL
FINAL DEPTH: 27.05m

ELEVATION: 15.636mamsl
CO-ORDS: X = 3727135.09
Y = 52676.96

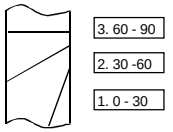
PAGE: 2 OF 2
DATE: 29-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.05																		1				
22.55	1.50	1.54	103	0.00	0													2				
24.05	1.50	1.35	90	0.00	0													3				
25.55	1.50	0.94	63	0.00	0																	
27.05	1.50	1.40	93	0.25	17																	
END OF HOLE - FINAL DEPTH 27.05m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION

MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 17 | ELEVATION: 7.149mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727058.02 | DATE: 03-05-2010
PROJECT No: 385908/42C | FINAL DEPTH: 21.58m | Y = 53079.818 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1-5 (MPa)	Weathering 1-5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						16.02												1	1	2	10	1
1.50	1.50	0.85	57	0.00	0	↓			0.97			2	3	9	0	3	12	2	0	0	0	0
1.95	0.45	0.44	98	0.00	0	16.99												3	2	6	10	1
3.00	1.05	0.88	84	0.00	0	**0.97**	SHALE	0														
3.45	0.45	0.39	87	0.00	0					0	0	0	0									
4.50	1.05	0.85	81	0.00	0																	
4.95	0.45	0.34	76	0.00	0	**G1**																
6.00	1.05	0.84	80	0.00	0	16.99												1	1	2	10	1
6.45	0.45	0.29	64	0.00	0	↓			0.82			2-3	2	3	1	0	4	2	1	2	10	1
7.50	1.05	0.81	77	0.00	0	17.81												3	0	0	0	0
7.95	0.45	0.31	69	0.00	0	**0.82**	GREYWACKE	50														
9.00	1.05	0.83	79	0.00	0					0	0	0	0									
9.45	0.45	0.45	100	0.00	0																	
10.50	1.05	0.86	82	0.00	0	**G2**																
10.95	0.45	0.28	62	0.00	0	17.81												1	2	5	10	1
12.00	1.05	0.69	66	0.00	0	↓			0.15			2	4	1	1	3	5	2	1	2	10	1
12.45	0.45	0.17	38	0.00	0	18.08												3	1	2	10	1
13.50	1.05	0.43	41	0.00	0	**0.27**	GREYWACKE	0														
13.95	0.45	0.36	80	0.00	0					0.12	M3	2	4									
15.00	1.05	0.62	59	0.00	0																	
15.45	0.45	0.23	51	0.00	0	**G3**																
16.58	1.13	0.56	50	0.00	0	18.08												1	3	5	9	1
18.08	1.50	1.25	83	0.41	27	↓			1.85			3	1	1	3	0	4	2	2	5	9	1
19.58	1.50	1.27	85	1.15	77	19.93												3	0	0	0	0
21.58	2.00	1.67	84	1.11	56	**1.85**	GREYWACKE	79														
END OF HOLE - FINAL DEPTH 21.58m										0	0	0	0									
						G4																

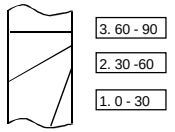
1. Yellowish Green Stained.

3. Yellowish Green Stained.

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting — Engineers and Scientists

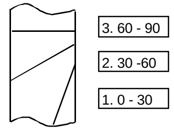
PROJECT: ESKOM GEOTECH INVEST	HOLE NO: KB 17	ELEVATION: 7.149mamsl	PAGE: 2 OF 2
SITE: DUYNEFONTEIN	INCLINATION: VERTICAL	CO-ORDS: X = 3727058.02	DATE: 03-05-2010
PROJECT No: 385908/42C	FINAL DEPTH: 21.58m	Y = 53079.818	LOGGED BY: JB

Drilling Interval	Recovery m Drill	Recovery m Rec	Recovery % Rec	RQD m	RQD %	Geotech Interval	Rock Type	Int. RQD %	Rock Competence Solid m	Rock Competence Matrix m	Rock Competence Matrix Type	Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution 1 $0^0 - 30^0$	Joint Distribution 2 $30^0 - 60^0$	Joint Distribution 3 $60^0 - 90^0$	Joint Distribution Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
						19.96 → 21.58	SHALE	48	1.47			3	1	4	0	1	5	1	1	2	10	1
																		2	0	0	0	0
																		3	1	2	10	1
						1.62 **G5**				0.15	M3	3	1									
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION

MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

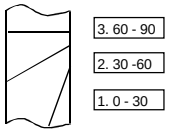
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 18 | ELEVATION: 14.470mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726978.93 | DATE: 03-05-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.10m | Y = 52881.178 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.95												1	1	2	9	1
1.50	1.50	0.60	40	0.00	0	↓			2.80			3	2	6	5	14	25	2	1	2	10	1
1.95	0.45	0.23	51	0.00	0	22.80	GREYWACKE											3	1	2	10	1
3.00	1.05	0.43	41	0.00	0	**2.85**		19														
3.45	0.45	0.24	53	0.00	0					0.05	M3/M6	3	2	1. Yellowish green stained.								
4.50	1.05	0.46	44	0.00	0																	
4.95	0.45	0.27	60	0.00	0	**G1**																
6.00	1.05	0.48	46	0.00	0	22.80												1	1	2	10	1
6.45	0.45	0.21	47	0.00	0	↓			2.60			3	2	6	7	7	20	2	1	2	9	1
7.50	1.05	0.59	56	0.00	0	25.40	GREYWACKE											3	1	2	10	1
7.95	0.45	0.29	64	0.00	0	**2.60**		43														
9.00	1.05	0.53	50	0.00	0					0	0	0	0	2. Iron - stained.								
9.45	0.45	0.24	53	0.00	0																	
10.50	1.05	0.55	52	0.00	0	**G2**																
10.95	0.45	0.21	47	0.00	0	25.40												1	1	2	10	1
12.00	1.05	0.48	46	0.00	0	↓			1.60			4	1	7	4	6	17	2	1	2	10	1
12.45	0.45	0.19	42	0.00	0	27.00	GREYWACKE											3	1	2	9	1
13.50	1.05	0.54	51	0.00	0	**1.60**		13														
13.95	0.45	0.25	56	0.00	0					0	0	0	0	3. Iron - stained.								
15.00	1.05	0.49	47	0.00	0																	
15.45	0.45	0.27	60	0.00	0	**G3**																
16.50	1.05	0.45	43	0.00	0	27.00												1	1	2	10	1
16.95	0.45	0.26	58	0.00	0	↓			3.10			4	1	6	3	11	20	2	1	2	10	1
18.00	1.05	0.56	53	0.00	0	30.10	GREYWACKE											3	1	2	10	1
18.45	0.45	0.28	62	0.00	0	**3.10**		37														
19.50	1.05	0.57	54	0.00	0					0	0	0	0									
19.95	0.45	0.23	51	0.00	0																	
21.00	1.05	0.49	47	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 18
INCLINATION: VERTICAL
FINAL DEPTH: 30.10m

ELEVATION: 14.470mamsl
CO-ORDS: X = 3726978.93
Y = 52881.178

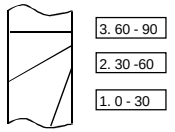
PAGE: 2 OF 2
DATE: 03-05-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																		1				
22.50	1.50	1.53	102	0.40	27													2				
24.00	1.50	1.46	97	0.94	63													3				
25.50	1.50	1.48	99	0.31	21																	
27.00	1.50	1.43	95	0.20	13																	
28.60	1.60	1.57	98	0.21	13																	
30.10	1.50	1.48	99	0.93	62																	
END OF HOLE - FINAL DEPTH 30.10m																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION

MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

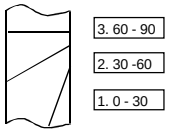
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 19 | ELEVATION: 10.016mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726858.33 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 29.60m | Y = 53167.492 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						23.82												1	0	0	0	0
1.50	1.50	0.36	24	0.00	0	↓			2.49			2-3	2	0	12	5	17	2	1	2	10	1
1.95	0.45	0.22	49	0.00	0	26.31	GREYWACKE											3	1	2	10	1
3.00	1.05	0.46	44	0.00	0	**2.49**		39														
3.45	0.45	0.21	47	0.00	0					0	0	0	0	1. Clayey Silt Infill.								
4.50	1.05	0.39	37	0.00	0																	
4.95	0.45	0.24	53	0.00	0	**G1**																
6.00	1.05	0.47	45	0.00	0	23.61												1	0	0	0	0
6.45	0.45	0.22	49	0.00	0	↓			0.12			2	3-4	0	4	0	4	2	1	2	10	1
7.50	1.05	0.44	42	0.00	0	26.64	GREYWACKE											3	0	0	0	0
7.95	0.45	0.23	51	0.00	0	**3.03**		0														
9.00	1.05	0.36	34	0.00	0					0.21	M3/M5	2	3-4	1. Clayey Silt Infill.								
9.45	0.45	0.22	49	0.00	0																	
10.50	1.05	0.31	30	0.00	0	**G2**																
10.95	0.45	0.22	49	0.00	0	26.64												1	1	2	10	1
12.00	1.05	0.44	42	0.00	0	↓			2.82			2-3	2-3	5	19	3	27	2	1	2	10	1
12.45	0.45	0.21	47	0.00	0	29.60	GREYWACKE											3	1	2	10	1
13.50	1.05	0.45	43	0.00	0	**2.96**		22														
13.95	0.45	0.23	51	0.00	0					0.14	M6	2-3	2-3									
15.00	1.05	0.53	50	0.00	0																	
15.45	0.45	0.23	51	0.00	0	**G3**																
16.50	1.05	0.43	41	0.00	0													1				
16.95	0.45	0.20	44	0.00	0													2				
18.00	1.05	0.46	44	0.00	0													3				
18.45	0.45	0.21	47	0.00	0																	
19.50	1.05	0.52	50	0.00	0																	
19.95	0.45	0.25	56	0.00	0																	
21.00	1.05	0.64	61	0.00	0																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

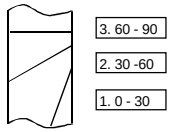
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 19 | ELEVATION: 10.016mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726858.33 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 29.60m | Y = 53167.492 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																		1				
21.45	0.45	0.23	51	0.00	0													2				
22.50	1.05	0.47	45	0.00	0													3				
22.95	0.45	0.24	53	0.00	0																	
24.00	1.05	0.94	90	0.13	12																	
25.50	1.50	1.50	100	0.47	31																	
27.00	1.50	1.38	92	0.48	32																	
28.10	1.10	1.06	96	0.26	24													1				
29.60	1.50	1.35	90	0.29	19													2				
END OF HOLE - FINAL DEPTH 29.60m																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

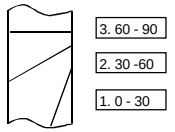
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 21 | ELEVATION: 5.836mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726674.66 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 54.95m | Y = 53284.895 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.00												1	2	5	9	1
1.50	1.50	0.53	35	0.00	0	↓			0.34			1	4	5	0	1	6	2	0	0	0	0
1.95	0.45	0.21	47	0.00	0	19.95	GREYWACKE											3	3	5	10	1
3.00	1.05	0.53	50	0.00	0	**1.95**		10														
3.45	0.45	0.24	53	0.00	0					1.61	M3/M5	1	4	1. Clayey Silt Infill.								
4.50	1.05	0.43	41	0.00	0																	
4.95	0.45	0.26	58	0.00	0	**G1**																
6.00	1.05	0.39	37	0.00	0	19.95												1	1	2	10	1
6.45	0.45	0.18	40	0.00	0	↓			8.40			2-3	3	24	10	26	60	2	1	2	10	1
7.50	1.05	0.50	48	0.00	0	29.45	GREYWACKE											3	1	2	10	1
7.95	0.45	0.18	40	0.00	0	**9.50**		16														
9.00	1.05	0.50	48	0.00	0					1.10	M3/M5	2-3	3									
9.45	0.45	0.25	56	0.00	0																	
10.50	1.05	0.49	47	0.00	0	**G2**																
10.95	0.45	0.16	36	0.00	0	29.45												1	1	2	9	1
12.00	1.05	0.37	35	0.00	0	↓			3.79			3	1	5	3	13	21	2	1	3	10	1
12.45	0.45	0.24	53	0.00	0	33.24	GREYWACKE											3	1	3	10	1
13.50	1.05	0.55	52	0.00	0	**3.79**		43														
13.95	0.45	0.22	49	0.00	0					0	0	0	0	1. Clayey Silt Infill.								
15.00	1.05	0.50	48	0.00	0																	
15.45	0.45	0.24	53	0.00	0	**G3**																
16.50	1.05	0.70	67	0.00	0	33.24												1	0	0	0	0
16.95	0.45	0.20	44	0.00	0	↓			0.56			3	3	0	0	0	0	2	0	0	0	0
18.00	1.05	0.59	56	0.00	0	33.80	SHALE											3	0	0	0	0
18.45	0.45	0.22	49	0.00	0	**0.56**		39														
19.95	1.50	1.12	75	0.19	13						M1	3	3	FAULT								
20.45	0.50	0.48	96	0.00	0																	
21.95	1.50	1.46	97	0.17	11	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting — Engineers and Scientists

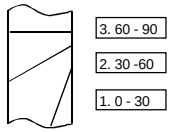
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 21 | ELEVATION: 5.836mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726674.66 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 54.95m | Y = 53284.895 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.95						33.80																
23.45	1.50	1.45	97	0.31	21	↓			7.65			4	1	18	10	21	49	1	1	2	6	1
24.95	1.50	1.47	98	0.47	31	41.45	GREYWACKE											2	1	2	10	1
26.45	1.50	1.44	96	0.42	28	**7.65**		26										3	1	2	10	1
27.95	1.50	1.47	98	0.00	0																	
29.45	1.50	1.20	80	0.13	9					0	0	0	0	1. Greenish Talc / Calc <2mm.								
30.95	1.50	1.43	95	0.40	27	**G5**																
32.45	1.50	1.45	97	0.85	57	41.45												1	1	2	6	1
33.95	1.50	1.49	99	0.55	37	↓			11.95			5	1	29	11	13	53	2	1	2	6	1
35.45	1.50	1.43	95	0.41	27	53.40	GREYWACKE											3	1	2	6	1
36.95	1.50	1.41	94	0.41	27	**11.95**		54														
38.45	1.50	1.42	95	0.17	11					0	0	0	0	1. Calc <1mm. 2. Calc <1mm. 3. Calc <1mm.								
39.95	1.50	1.37	91	0.72	48																	
41.45	1.50	1.41	94	0.27	18	**G6**																
42.95	1.50	1.40	93	0.67	45	53.40												1	5	8	6	1
44.55	1.60	1.49	93	0.79	49	↓			1.55			4	1	1	1	1	3	2	5	8	6	1
46.15	1.60	1.56	97	0.51	32	54.95	GREYWACKE											3	5	8	6	1
47.55	1.40	1.52	109	0.67	48	**1.55**		70														
49.05	1.50	1.47	98	0.79	53					0	0	0	0	1. Calc <1mm. 2. Calc <1mm. 3. Calc / Quartz <10mm.								
50.35	1.30	1.23	95	0.83	64																	
51.90	1.55	1.54	99	0.97	63	**G7**																
53.40	1.50	1.44	96	1.26	84													1				
54.95	1.55	1.47	95	1.09	70													2				
END OF HOLE - FINAL DEPTH 54.95m																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG. Soft sheared material, e.g. Talc
2.GOUGE t. < Amplit. of IRREG. Non-softening sheared material
3.FINE
4.MEDIUM
5.COARSE
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

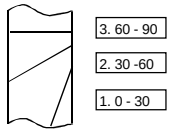
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 25 | ELEVATION: 4.724mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726697.64 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 24.00m | Y = 53361.561 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.50												1	0	0	0	0
1.50	1.50	0.77	51			↓			0.00			1	4	0	0	0	0	2	0	0	0	0
1.95	0.45	0.27	60			18.91	SILTSTONE											3	0	0	0	0
3.00	1.05	0.78	74			**0.41**		0														
3.45	0.45	0.28	62							0.41	M5/M6	1	4									
4.50	1.05	0.39	37																			
4.95	0.45	0.22	49			**G1**																
6.00	1.05	0.46	44			18.91												1	0	0	0	0
6.45	0.45	0.29	64			↓			0.59			2	4	0	2	1	3	2	1	2	10	1
7.50	1.05	0.68	65			19.60	SILTSTONE / SHALE											3	1	3	10	1
7.95	0.45	0.28	62			**0.69**		100														
9.00	1.05	0.58	55							0.10	M5	2	4									
9.45	0.45	0.29	64																			
10.50	1.05	0.56	53			**G2**																
10.95	0.45	0.29	64			19.60												1	0	0	0	0
12.00	1.05	0.85	81			↓			0.00			1	4-5	0	0	0	0	2	0	0	0	0
12.45	0.45	0.25	56			20.02												3	0	0	0	0
13.50	1.05	0.56	53			**0.42**	SHALE	0														
13.95	0.45	0.28	62							0.42	M5/M6	1	4-5									
15.00	1.05	0.49	47																			
15.45	0.45	0.20	44			**G3**																
16.50	1.05	0.54	51			20.02												1	0	0	0	0
16.95	0.45	0.21	47			↓			0.54			1	3-4	0	2	1	3	2	1	3	9	1
18.00	1.05	0.71	68			20.56												3	1	3	9	1
18.45	0.45	0.20	44			**0.54**	SHALE	0														
19.50	1.05	1.03	98	0.71	68					0	0	0	0									
21.00	1.50	1.48	99	0.47	31																	
22.50	1.50	1.36	91	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

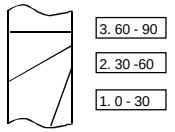
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 25 | ELEVATION: 4.724mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726697.64 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 24.00m | Y = 53361.561 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
22.50						20.56												1	0	0	0	0
24.00	1.50	1.40	93	0.31	21	↓			0.00			1	4-5	0	0	0	0	2	0	0	0	0
END OF HOLE - FINAL DEPTH 24.00m						21.02	SILTSTONE											3	0	0	0	0
						0.46		0		0.46	M5/M6	1	4-5									
						G5																
						21.02												1	1	2	10	1
						↓			0.83			1	4-5	5	0	0	5	2	0	0	0	0
						22.55												3	0	0	0	0
						1.53	SHALE	0		0.70	M5/M6	1	4-5									
						G6																
						22.55												1	1	2	10	1
						↓			1.04			1-2	4	3	2	0	5	2	1	3	10	1
						24.00												3	0	0	0	0
						1.45	SHALE	21		0.41	M5/M6	1-2	4									
						G7																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

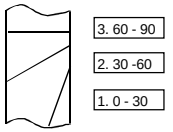
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 26 | ELEVATION: 5.178mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727099.40 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53180.532 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.50	GREYWACKE	16	4.70			1	4-5	10	15	8	33	1	1	2	10	1
1.50	1.50	0.55	37			↓												2	1	2	10	1
1.95	0.45	0.32	71			23.64												3	1	2	10	1
3.00	1.05	0.39	37			**5.14**				0.44	M3/M5	1	4-5	Clayey silt infill								
3.45	0.45	0.31	69																			
4.50	1.05	0.53	50																			
4.95	0.45	0.29	64			**G1**																
6.00	1.05	0.44	42			23.64	GREYWACKE	0	0.23			1	4-5	1	1	0	2	1	2	5	10	1
6.45	0.45	0.30	67			↓												2	2	5	10	1
7.50	1.05	0.50	48			24.23												3	0	0	0	0
7.95	0.45	0.26	58			**0.59**				0.36	M3/M5	1	4-5	Clayey silt infill								
9.00	1.05	0.58	55																			
9.45	0.45	0.28	62																			
10.50	1.05	0.57	54			**G2**																
10.95	0.45	0.26	58			24.23	GREYWACKE	4	1.10			2-3	3	8	3	6	17	1	3	5	10	1
12.00	1.05	0.42	40			↓												2	2	5	10	1
12.45	0.45	0.25	56			27.35												3	2	5	10	1
13.50	1.05	0.56	53			**3.12**				2.02	M3/M5	2-3	3									
13.95	0.45	0.24	53																			
15.00	1.05	0.52	50																			
15.45	0.45	0.26	58			**G3**																
16.50	1.05	0.49	47			27.35	GREYWACKE	28	2.65			2-3	2	3	4	12	19	1	5	8	10	1
16.95	0.45	0.33	73			↓												2	5	8	10	1
18.00	1.05	0.54	51			30.00												3	1	2	10	1
18.45	0.45	0.30	67			**2.65**				0	0	0	0	3. Coarse quartz crystals								
19.50	1.05	1.00	95	0.28	27																	
21.00	1.50	1.42	95	0.00	0																	
22.50	1.50	1.46	97	0.28	19	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 26
INCLINATION: VERTICAL
FINAL DEPTH: 30.00m

ELEVATION: 5.178mamsl
CO-ORDS: X = 3727099.40
Y = 53180.532

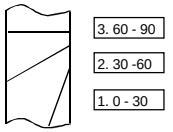
PAGE: 2 OF 2
DATE: 28-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
22.50																						
24.00	1.50	1.40	93	0.24	16																	
25.50	1.50	1.30	87	0.00	0																	
27.00	1.50	1.39	93	0.11	7																	
28.50	1.50	1.40	93	0.27	18																	
30.00	1.50	1.47	98	0.48	32																	
END OF HOLE - FINAL DEPTH 30.00m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

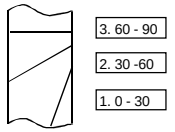
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 27 | ELEVATION: 5.985mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727181.33 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 22.63m | Y = 53090.174 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.50												1	2	5	3	1
1.50	1.50	0.45	30	0.00	0	↓			1.16			2	3	1	2	11	14	2	1	2	3	1
1.95	0.45	0.13	29	0.00	0	19.75	MUDSTONE											3	3	5	3	1
3.00	1.05	0.71	68	0.00	0	**1.25**		43														
3.45	0.45	0.30	67	0.00	0					0.09	M6	2	3	Clayey infill								
4.50	1.05	0.82	78	0.00	0																	
4.95	0.45	0.24	53	0.00	0	**G1**																
6.00	1.05	0.75	71	0.00	0	19.75												1	1	2	3	1
6.45	0.45	0.25	56	0.00	0	↓			2.78			2	3	7	16	14	37	2	1	2	3	1
7.50	1.05	0.84	80	0.00	0	22.63	MUDSTONE											3	3	5	3	1
7.95	0.45	0.26	58	0.00	0	**2.88**		11														
9.00	1.05	0.80	76	0.00	0					0.10	M5/M6	2	3	Clayey infill								
9.45	0.45	0.27	60	0.00	0																	
10.50	1.05	0.77	73	0.00	0	**G2**																
10.95	0.45	0.35	78	0.00	0																	
12.00	1.05	0.94	90	0.00	0																	
12.45	0.45	0.30	67	0.00	0																	
13.50	1.05	0.82	78	0.00	0																	
13.95	0.45	0.20	44	0.00	0																	
15.00	1.05	0.96	91	0.00	0																	
15.45	0.45	0.28	62	0.00	0																	
16.50	1.05	0.80	76	0.00	0																	
16.95	0.45	0.30	67	0.00	0																	
18.00	1.05	0.62	59	0.00	0																	
18.45	0.45	0.19	42	0.00	0																	
18.77	0.32	0.40	125	0.00	0																	
19.75	0.98	1.03	105	0.54	55																	
21.15	1.40	1.34	96	0.11	8																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 27
INCLINATION: VERTICAL
FINAL DEPTH: 22.63m

ELEVATION: 5.985mamsl
CO-ORDS: X = 3727181.33
Y = 53090.174

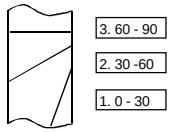
DATE: 17-07-2008
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.15																						
22.63	1.48	1.37	93	0.20	14																	
END OF HOLE - FINAL DEPTH 22.63m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

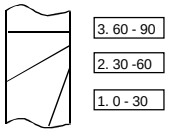
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 29 | ELEVATION: 6.567mamsl | PAGE: 1 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726781.60 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53267.456 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.45												1	1	2	10	1
1.50	1.50	0.54	36	0.00	0	↓			0.27			1	4-5	3	0	0	3	2	0	0	0	0
1.95	0.45	0.18	40	0.00	0	19.50	GREYWACKE											3	0	0	0	0
3.00	1.05	0.59	56	0.00	0	**1.05**		0														
3.45	0.45	0.22	49	0.00	0					0.78	M3/M5	1	4-5									
4.50	1.05	0.58	55	0.00	0																	
4.95	0.45	0.24	53	0.00	0	**G1**																
6.00	1.05	0.47	45	0.00	0	19.50												1	0	0	0	0
6.45	0.45	0.24	53	0.00	0	↓			0.68			2	4	0	3	0	3	2	1	2	10	1
7.50	1.05	0.59	56	0.00	0	20.18	GREYWACKE											3	0	0	0	0
7.95	0.45	0.23	51	0.00	0	**0.68**		21														
9.00	1.05	0.60	57	0.00	0					0	0	0	0									
9.45	0.45	0.23	51	0.00	0																	
10.50	1.05	0.55	52	0.00	0	**G2**																
10.95	0.45	0.27	60	0.00	0	20.18												1	1	2	9	1
12.00	1.05	0.63	60	0.00	0	↓			0.46			1-2	4	5	1	0	6	2	5	8	10	1
12.45	0.45	0.28	62	0.00	0	20.87	SHALE											3	0	0	0	0
13.50	1.05	0.60	57	0.00	0	**0.69**		0														
13.95	0.45	0.23	51	0.00	0					0.23	M3/M5	1-2	4	1. Black stained.								
15.00	1.05	0.74	70	0.00	0																	
15.45	0.45	0.23	51	0.00	0	**G3**																
16.50	1.05	0.53	50	0.00	0	20.87												1	2	5	10	1
16.95	0.45	0.28	62	0.00	0	↓			2.18			2	4	3	4	2	9	2	1	2	10	1
18.00	1.05	0.44	42	0.00	0	23.25	GREYWACKE											3	5	8	10	1
18.45	0.45	0.32	71	0.00	0	**2.38**		9														
19.50	1.05	0.66	63	0.00	0					0.20	M5/M6	2	4									
21.00	1.50	1.34	89	0.14	9																	
22.50	1.50	1.23	82	0.21	14	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

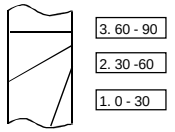
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 29 | ELEVATION: 6.567mamsl | PAGE: 2 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726781.60 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53267.456 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
22.50						23.25	SHALE	8	0.33			1-2	4-5	1	2	0	3	1	3	5	10	1
24.00	1.50	1.25	83	0.00	0	↓												2	1	2	10	1
25.50	1.50	1.38	92	0.12	8	24.80												3	0	0	0	0
27.00	1.50	0.82	55	0.00	0	**1.55**				1.22	M3/M5	1	5									
28.50	1.50	1.52	101	0.67	45																	
30.00	1.50	1.38	92	0.21	14	**G5**																
END OF HOLE - FINAL DEPTH 30.00m						24.80	GREYWACKE	0	0.35			2	3	2	0	2	4	1	1	2	10	1
						↓												2	0	0	0	0
						25.15												3	3	5	10	1
						0.35				0	0	0	0									
						G6																
						25.15	GREYWACKE	0	1.68			1-2	4-5	6	0	2	8	1	1	2	10	1
						↓												2	0	0	0	0
						27.00												3	1	2	10	1
						1.85				0.17	M3/M5	1-2	4-5									
						G7																
						27.00	GREYWACKE	78	0.86			2	4	2	2	1	5	1	1	2	10	1
						↓												2	1	2	10	1
						27.86												3	1	2	10	1
						0.86				0	0	0	0									
						G8																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

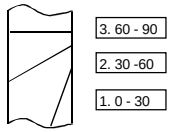
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 29 | ELEVATION: 6.567mamsl | PAGE: 3 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726781.60 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53267.456 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
						27.86 ↓ 28.50	GREYWACKE	0	0			2	4	2	0	0	2	1	1	2	10	1
																		2	0	0	0	0
																		3	0	0	0	0
						0.64		0		0.64	M3/M5	2	4									
						G9																
						28.50 ↓ 30.00	GREYWACKE	14	1.50			2-3	2	6	8	2	16	1	1	2	10	1
																		2	1	2	10	1
																		3	1	2	10	1
						1.50				0	0	0	0									
						G10																
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

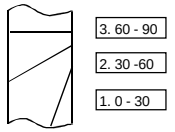
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 30 | ELEVATION: 4.909mamsl | PAGE: 1 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726580.47 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 25.50m | Y = 53356.720 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.00												1	1	2	9	1
1.50	1.50	0.86	57	0.00	0	↓			0.30			2	4-5	3	0	0	3	2	0	0	0	0
1.95	0.45	0.36	80	0.00	0	19.50	SHALE											3	0	0	0	0
3.00	1.05	0.87	83	0.00	0	**1.50**		15														
3.45	0.45	0.38	84	0.00	0					1.20	M3/M5	2	4-5	1. Clayey Silt.								
4.50	1.05	0.95	90	0.00	0																	
4.95	0.45	0.34	76	0.00	0	**G1**																
6.00	1.05	0.98	93	0.00	0	19.50												1	1	2	10	1
6.45	0.45	0.27	60	0.00	0	↓			3.00			2-3	3	7	0	1	8	2	0	0	0	0
7.50	1.05	0.70	67	0.00	0	22.50	SHALE											3	3	5	10	1
7.95	0.45	0.36	80	0.00	0	**3.00**		45														
9.00	1.05	0.59	56	0.00	0					0	0	0	0									
9.45	0.45	0.19	42	0.00	0																	
10.50	1.05	0.49	47	0.00	0	**G2**																
10.95	0.45	0.35	78	0.00	0	22.50												1	1	2	10	1
12.00	1.05	0.68	65	0.00	0	↓			3.00			2	2	6	2	0	8	2	3	5	10	1
12.45	0.45	0.29	64	0.00	0	25.50	SHALE											3	0	0	0	0
13.50	1.05	0.41	39	0.00	0	**3.00**		62														
13.95	0.45	0.29	64	0.00	0					0	0	0	0									
15.00	1.05	0.52	50	0.00	0																	
15.45	0.45	0.27	60	0.00	0	**G3**																
16.50	1.05	0.97	92	0.00	0													1				
16.95	0.45	0.45	100	0.00	0													2				
18.00	1.05	0.80	76	0.00	0													3				
19.50	1.50	1.10	73	0.22	15																	
21.00	1.50	1.38	92	0.60	40																	
22.50	1.50	1.07	71	0.76	51																	
24.00	1.50	1.24	83	0.91	61																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 30
INCLINATION: VERTICAL
FINAL DEPTH: 25.50m

ELEVATION: 4.909mamsl
CO-ORDS: X = 3726580.47
Y = 53356.720

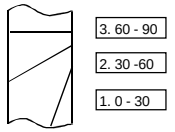
PAGE: 2 OF 2
DATE: 29-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
24.00																		1				
25.50	1.50	1.50	100	0.95	63													2				
																		3				
END OF HOLE - FINAL DEPTH 25.50m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

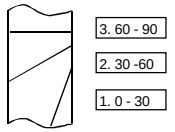
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 31 | ELEVATION: 6.610mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727292.05 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.18m | Y = 53093.098 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						22.95												1	1	2	10	1
1.50	1.50	0.70	47	0.00	0	↓			1.15			3	2	4	3	1	8	2	1	2	10	1
3.00	1.50	0.70	47	0.00	0	24.10	MUDSTONE											3	5	8	10	1
3.45	0.45	0.22	49	0.00	0	**1.15**		55														
4.50	1.05	0.66	63	0.00	0					0	0	0	0									
4.95	0.45	0.16	36	0.00	0																	
6.00	1.05	0.60	57	0.00	0	**G1**																
6.45	0.45	0.25	56	0.00	0	24.10												1	1	2	10	1
7.50	1.05	0.48	46	0.00	0	↓			0.00			2-3	2	2	0	1	3	2	0	0	0	0
7.95	0.45	0.21	47	0.00	0	25.53	GREYWACKE											3	1	2	10	1
9.00	1.05	0.69	66	0.00	0	**1.43**		68														
9.45	0.45	0.28	62	0.00	0					0	0	0	0									
10.50	1.05	0.58	55	0.00	0																	
10.95	0.45	0.23	51	0.00	0	**G2**																
12.00	1.05	0.74	70	0.00	0	25.53												1	1	2	10	1
12.45	0.45	0.26	58	0.00	0	↓			2.21			2-3	1	7	0	4	11	2	0	0	0	0
13.50	1.05	0.54	51	0.00	0	27.85	MUDSTONE											3	1	3	9	1
13.95	0.45	0.30	67	0.00	0	**2.32**		58														
15.00	1.05	0.61	58	0.00	0					0.10	M6	2-3	1	3. Yellow stained.								
15.45	0.45	0.23	51	0.00	0																	
16.50	1.05	0.66	63	0.00	0	**G3**																
16.95	0.45	0.21	47	0.00	0	27.85												1	1	3	10	1
18.00	1.05	0.85	81	0.00	0	↓			2.18			3	1	7	5	7	19	2	1	2	10	1
18.45	0.45	0.23	51	0.00	0	30.18	SILTSTONE											3	1	2	10	1
19.50	1.05	0.87	83	0.00	0	**2.33**		26														
19.95	0.45	0.24	53	0.00	0					0.05	M5	3	1									
21.00	1.05	0.80	76	0.00	0																	
21.45	0.45	0.24	53	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG. Soft sheared material, e.g. Talc
2.GOUGE t. < Amplit. of IRREG. Non-softening sheared material
3.FINE
4.MEDIUM
5.COARSE
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

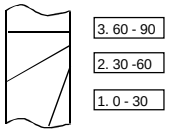
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 31 | ELEVATION: 6.610mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727292.05 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.18m | Y = 53093.098 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.45																		1				
22.50	1.05	0.77	73	0.00	0													2				
22.95	0.45	0.21	47	0.00	0													3				
24.10	1.15	1.31	114	0.63	55																	
25.68	1.58	1.44	91	0.97	61																	
27.03	1.35	1.28	95	0.54	40																	
28.63	1.60	1.48	93	0.81	51																	
30.18	1.55	1.48	95	0.57	37													1				
																		2				
END OF HOLE - FINAL DEPTH 30.18m																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting — Engineers and Scientists

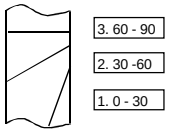
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 32 | ELEVATION: 6.981mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726897.19 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 40.20m | Y = 53267.65 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1-5 (MPa)	Weathering 1-5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.95																
1.50	1.50	0.40	27	0.00	0	↓			0.20			1	4-5	3	0	0	3	2	0	0	0	0
1.95	0.45	0.22	49	0.00	0	21.10	GREYWACKE											3	0	0	0	0
3.00	1.05	0.43	41	0.00	0	**1.15**		0														
3.45	0.45	0.22	49	0.00	0					0.95	M3/M5	1	4-5									
4.50	1.05	0.40	38	0.00	0																	
4.95	0.45	0.23	51	0.00	0	**G1**																
6.00	1.05	0.32	30	0.00	0	21.10												1	1	2	9	1
6.45	0.45	0.23	51	0.00	0	↓			0.67			2	4	1	0	6	7	2	0	0	0	0
7.50	1.05	0.42	40	0.00	0	21.77	GREYWACKE											3	1	2	9	1
7.95	0.45	0.19	42	0.00	0	**0.67**		0														
9.00	1.05	0.40	38	0.00	0					0	0	0	0	1. Iron-stained. 3. Iron-stained.								
9.45	0.45	0.24	53	0.00	0																	
10.50	1.05	0.42	40	0.00	0	**G2**																
10.95	0.45	0.19	42	0.00	0	21.77												1	1	2	10	1
12.00	1.05	0.39	37	0.00	0	↓			0.00			1	4-5	4	0	1	5	2	0	0	0	0
12.45	0.45	0.21	47	0.00	0	22.63	GREYWACKE											3	1	2	10	1
13.50	1.05	0.34	32	0.00	0	**0.86**		0														
13.95	0.45	0.23	51	0.00	0					0.86	M2/M3	1	4-5									
15.00	1.05	0.41	39	0.00	0																	
15.45	0.45	0.22	49	0.00	0	**G3**																
16.50	1.05	0.30	29	0.00	0	22.63												1	2	5	9	1
16.95	0.45	0.25	56	0.00	0	↓			1.15			2	3	10	6	3	19	2	2	5	9	1
18.00	1.05	0.39	37	0.00	0	24.88	GREYWACKE											3	2	5	9	1
18.45	0.45	0.21	47	0.00	0	**2.25**		0														
19.50	1.05	0.39	37	0.00	0					1.10	M3/M5	2	3	1. Iron-stained/clayey silt. 2. Iron-stained /clayey silt. 3. Clayey silt.								
19.95	0.45	0.23	51	0.00	0																	
21.00	1.05	1.03	98	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

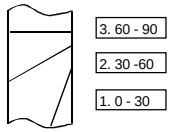
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 32 | ELEVATION: 6.981mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726897.19 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 40.20m | Y = 53267.65 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00						24.88												1	0	0	0	0
22.50	1.50	1.39	93	0.00	0	↓			0.00			1	4-5	0	0	0	0	2	0	0	0	0
24.00	1.50	1.26	84	0.00	0	25.50	GREYWACKE											3	0	0	0	0
25.50	1.50	1.37	91	0.00	0	**0.62**		0														
27.00	1.50	1.34	89	0.00	0					0.62	M3/M5	1	4-5	Could be driller's induced.								
28.50	1.50	1.39	93	0.00	0																	
30.00	1.50	1.42	95	0.15	10	**G5**																
31.50	1.50	1.42	95	1.35	90	25.50												1	3	5	10	1
33.10	1.60	1.55	97	1.01	63	↓			0.00			2-3	3	4	5	7	16	2	1	2	10	1
34.10	1.00	1.00	100	0.16	16	26.90	GREYWACKE											3	1	2	10	1
35.70	1.60	1.48	92	0.56	35	**1.40**		0														
37.30	1.60	1.52	95	1.06	66					1.40	M3/M5	2-3	3									
38.90	1.60	1.48	92	0.10	6																	
40.20	1.30	1.20	92	0.85	65	**G6**																
END OF HOLE - FINAL DEPTH 40.20m						26.90												1	1	2	10	1
						↓			0.93			2-3	3	17	13	9	39	2	1	2	10	1
						29.90	GREYWACKE											3	1	2	10	1
						3.00		0														
										2.07	M3	2-3	3									
						G7																
						29.90												1	3	5	10	1
						↓			9.86			3	1	28	4	25	57	2	2	5	10	1
						40.20	SHALE											3	1	2	10	1
						10.30		51														
										0.44	M3/M5	3	1									
						G8																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG. Soft sheared material, e.g. Talc
2.GOUGE t. < Amplit. of IRREG. Non-softening sheared material
3.FINE
4.MEDIUM
5.COARSE
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting — Engineers and Scientists

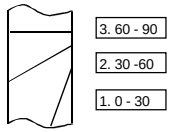
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 33 | ELEVATION: 4.757mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726498.54 | DATE: 03-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53449.088 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						13.95												1	2	5	3	1
1.50	1.50	0.63	42			↓			1.30			3	3	1	4	4	9	2	2	5	3	1
1.95	0.45	0.23	51			15.25	GREYWACKE											3	5	9	10	1
3.00	1.05	0.44	42			**1.30**		47														
3.45	0.45	0.23	51							0	0	0	0									
4.50	1.05	0.63	60																			
4.95	0.45	0.24	53			**G1**																
6.00	1.05	0.77	73			15.25												1	5	9	10	1
6.45	0.45	0.28	62			↓			1.12			2-3	3	3	7	0	10	2	3	6	9	1
7.50	1.05	0.91	87			16.37	GREYWACKE											3	0	0	0	0
7.95	0.45	0.27	60			**1.12**		30														
9.00	1.05	0.77	73							0	0	0	0									
9.45	0.45	0.26	58																			
10.50	1.05	0.85	81			**G2**																
10.95	0.45	0.23	51			16.37												1	2	6	7	1
12.00	1.05	0.85	81			↓			4.25			3	2	6	17	7	30	2	2	6	3	1
12.45	0.45	0.27	60			21.00	GREYWACKE											3	5	9	3	1
13.50	1.05	0.49	47			**4.63**		29														
13.95	0.45	0.29	64							0.38	M5/M6	3	2	2. Clayey infill 1mm.								
15.00	1.05	1.04	99	0.61	58																	
16.50	1.50	1.50	100	0.34	23	**G3**																
18.00	1.50	1.37	91	0.79	53	21.00												1	1	3	10	1
19.50	1.50	1.26	84	0.33	22	↓			2.95			3	1	5	5	11	21	2	2	5	10	1
21.00	1.50	1.52	101	0.22	15	24.00	GREYWACKE											3	1	2	9	1
22.50	1.50	1.51	101	0.82	55	**3.00**		39														
24.00	1.50	1.44	96	0.36	24					0.05	M6	3	1	3. Staining								
25.50	1.50	1.46	97	0.68	45																	
27.00	1.50	1.49	99	0.79	53	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

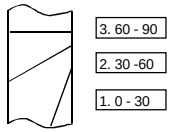
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 33 | ELEVATION: 4.757mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726498.54 | DATE: 03-04-2009
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53449.088 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
27.00						24.00	GREYWACKE		3.10			4	1	5	3	14	22	1	1	2	10	1
28.50	1.50	1.42	95	0.14	9	↓												2	2	6	10	1
30.00	1.50	1.41	94	0.10	7	27.20												3	1	2	10	1
END OF HOLE - FINAL DEPTH 30.00m						**3.20**		50		0.10	M6	4	1									
						G5																
						27.20	GREYWACKE		1.28			3	1	11	3	2	16	1	3	5	10	1
						↓												2	2	5	10	1
						30.00												3	2	5	10	1
						2.80		4		1.52	M5/M6	3	1									
						G6																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG. Soft sheared material, e.g. Talc
2.GOUGE t. < Amplit. of IRREG. Non-softening sheared material
3.FINE
4.MEDIUM
5.COARSE
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

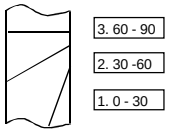
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 34 | ELEVATION: 7.621mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726541.48 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.14m | Y = 53249.274 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.60												1	1	2	10	1
1.50	1.50	0.94	63	0.00	0	↓			1.60			1	4-5	4	3	0	7	2	1	2	9	1
1.95	0.45	0.38	84	0.00	0	21.94	GREYWACKE											3	0	0	0	0
3.00	1.05	0.98	93	0.00	0	**3.34**		4														
3.45	0.45	0.34	76	0.00	0					1.74	M5	1	4-5	2. Clayey Silt.								
4.50	1.05	1.01	96	0.00	0																	
4.95	0.45	0.45	100	0.00	0	**G1**																
6.00	1.05	0.95	90	0.00	0	21.94												1	1	2	10	1
6.45	0.45	0.31	69	0.00	0	↓			0.70			2	4	1	0	0	1	2	0	0	0	0
7.50	1.05	1.12	107	0.00	0	22.64	GREYWACKE											3	0	0	0	0
7.95	0.45	0.25	56	0.00	0	**0.70**		85														
9.00	1.05	1.01	96	0.00	0					0	0	0	0									
9.45	0.45	0.28	62	0.00	0																	
10.50	1.05	1.06	101	0.00	0	**G2**																
10.95	0.45	0.30	67	0.00	0	22.64												1	1	2	9	1
12.00	1.05	1.05	100	0.00	0	↓			0.20			1	4-5	3	0	0	3	2	0	0	0	0
12.45	0.45	0.29	64	0.00	0	24.14	GREYWACKE											3	0	0	0	0
13.50	1.05	0.96	91	0.00	0	**1.50**		0														
13.95	0.45	0.36	80	0.00	0					1.30	M3/M5	1	4-5	1. Clayey Silt.								
15.00	1.05	0.91	87	0.00	0																	
15.45	0.45	0.42	93	0.00	0	**G3**																
16.50	1.05	0.85	81	0.00	0	24.14												1	2	5	9	1
16.95	0.45	0.45	100	0.00	0	↓			3.60			2	3-4	8	3	3	14	2	1	2	9	1
18.00	1.05	0.81	77	0.00	0	28.49	GREYWACKE											3	2	5	9	1
18.45	0.45	0.45	100	0.00	0	**4.35**		48														
19.60	1.15	1.02	89	0.00	0					0.95	M3/M5	2	3-4	1. Clayey Silt. 2. Clayey Silt. 3. Clayey Silt.								
21.14	1.54	1.22	79	0.12	40																	
21.44	0.30	0.27	90	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 34
INCLINATION: VERTICAL
FINAL DEPTH: 30.14m

ELEVATION: 7.621mamsl
CO-ORDS: X = 3726541.48
Y = 53249.274

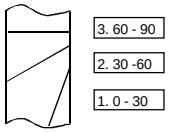
PAGE: 2 OF 2
DATE: 29-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.44						28.49												1	2	5	9	1
22.64	1.20	1.05	88	0.57	48	↓			1.32			2-3	3	4	0	2	6	2	0	0	0	0
24.14	1.50	1.18	79	0.00	0	30.14												3	5	8	9	1
25.64	1.50	1.32	88	0.84	56	**1.65**	GREYWACKE	10						Vertical joint throughout (M3).								
27.14	1.50	1.47	98	0.82	55					0.33	M5/M6	2-3	3									
28.64	1.50	1.43	95	0.42	28																	
30.14	1.50	1.43	95	0.17	11	**G5**																
END OF HOLE - FINAL DEPTH 30.14m																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION

MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

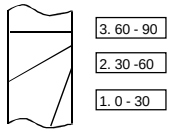
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 36 | ELEVATION: 10.125mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726939.14 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.04m | Y = 53080.390 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						15.00												1	1	2	9	1
0.08	0.08	0.08	100	0.00	0	↓			0.55			3	2	3	6	0	9	2	1	2	9	1
1.50	1.42	0.85	60	0.00	0	15.55	HORNFELS											3	0	0	0	0
1.95	0.45	0.39	87	0.00	0	**0.55**		0														
3.04	1.09	0.32	29	0.00	0																	
3.49	0.45	0.45	100	0.00	0					0	0	0	0	Yellow oxide stained.								
4.54	1.05	0.39	37	0.00	0	**G1**																
4.99	0.45	0.40	89	0.00	0	15.55												1	1	2	3/6	1
6.04	1.05	0.30	29	0.00	0	↓			5.49			4	1	15	25	10	50	2	1	2	10	1
6.49	0.45	0.39	87	0.00	0	21.04	HORNFELS											3	1	2	10	1
7.54	1.05	0.42	40	0.00	0	**5.49**		27														
7.99	0.45	0.26	58	0.00	0																	
9.04	1.05	0.52	50	0.00	0					0	0	0	0	1. Powder and Calcite.								
9.49	0.45	0.44	98	0.00	0	**G2**																
10.54	1.05	0.75	71	0.00	0	21.04												1	1	2	10	1
10.99	0.45	0.45	100	0.00	0	↓			5.72			4	1	11	13	0	24	2	1	2	10	1
12.04	1.05	0.61	58	0.00	0	26.76	HORNFELS											3	0	0	0	0
12.49	0.45	0.45	100	0.00	0	**5.72**		51														
13.54	1.05	0.29	28	0.00	0																	
13.99	0.45	0.32	71	0.00	0					0	0	0	0									
15.04	1.05	0.70	67	0.00	0	**G3**																
16.54	1.50	1.42	95	0.66	44	26.76												1	2	6	10	1
18.04	1.50	1.53	102	0.14	9	↓			0.00			3	1	2	0	0	2	2	0	0	0	0
19.54	1.50	1.51	101	0.29	19	27.04	HORNFELS											3	0	0	0	0
21.04	1.50	1.41	94	0.41	27	**0.28**		0														
22.54	1.50	1.61	107	0.65	43																	
24.04	1.50	1.48	99	0.96	64					0.28	m2	3	1									
25.54	1.50	1.40	93	0.83	55	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | SITE: DUYNEFONTEIN | PROJECT No: 385908/42C

HOLE NO: KB 36 | INCLINATION: VERTICAL | FINAL DEPTH: 30.04m

ELEVATION: 10.125mamsl | CO-ORDS: X = 3726939.14, Y = 53080.390

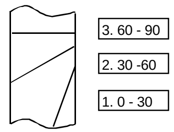
 | DATE: 29-04-2010 | LOGGED BY: JB

Drilling Interval	Recovery m Drill	Recovery m Rec	Recovery % Rec	RQD m	RQD %	Geotech Interval	Rock Type	Int. RQD %	Rock Competence Solid m	Rock Competence Matrix m	Rock Competence Matrix Type	Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution 1 0^0 - 30^0	Joint Distribution 2 30^0 - 60^0	Joint Distribution 3 60^0 - 90^0	Joint Distribution Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
25.54						27.04	HORNFELS	19	3.00			4	1	6	16	5	27	1	2	5	10	1
27.04	1.50	1.29	86	0.50	33	↓												2	1	2	6	1
28.54	1.50	1.41	94	0.47	31	30.04												3	5	8	10	1
30.04	1.50	1.43	95	0.12	8	**3.00**				0	0	0	0	1. Calc <1mm.								
END OF HOLE - FINAL DEPTH 30.04m																						
						G5																
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION

MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

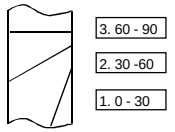
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 37 | ELEVATION: 11.173mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727139.66 | DATE: 03-05-2008
PROJECT No: 385908/42C | FINAL DEPTH: 30.17m | Y = 52987.447 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.50												1	3	5	10	1
1.50	1.50	0.90	60	0.00	0	↓			3.19			3-4	1	3	10	5	18	2	1	2	10	1
1.95	0.45	0.35	78	0.00	0	23.55	SILTSTONE											3	1	2	10	1
3.00	1.05	0.82	78	0.00	0	**4.05**		6														
3.45	0.45	0.28	62	0.00	0					0.86	M3/M6	3-4	1									
4.50	1.05	1.00	95	0.00	0																	
4.95	0.45	0.20	44	0.00	0	**G1**																
6.00	1.05	0.83	79	0.00	0	23.55												1	1	2	10	1
6.45	0.45	0.45	100	0.00	0	↓			2.12			3	1	7	7	2	16	2	1	2	10	1
7.50	1.05	0.85	81	0.00	0	25.67	SILTSTONE											3	1	2	10	1
7.95	0.45	0.45	100	0.00	0	**2.12**		31														
9.00	1.05	0.81	77	0.00	0					0	0	0	0									
9.45	0.45	0.45	100	0.00	0																	
10.50	1.05	0.56	53	0.00	0	**G2**																
10.95	0.45	0.19	42	0.00	0	25.67												1	1	2	10	1
12.00	1.05	0.55	52	0.00	0	↓			0.78			3	1	3	0	4	7	2	0	0	0	0
12.45	0.45	0.23	51	0.00	0	26.70	SILTSTONE											3	1	2	10	1
13.50	1.05	0.55	52	0.00	0	**1.03**		42														
13.95	0.45	0.24	53	0.00	0					0.25	M3/M5	3	1									
15.00	1.05	0.47	45	0.00	0																	
15.45	0.45	0.25	56	0.00	0	**G3**																
16.50	1.05	0.56	53	0.00	0	26.70												1	1	2	10	1
16.95	0.45	0.33	73	0.00	0	↓			3.39			3-4	1	7	5	3	15	2	2	5	10	1
18.00	1.05	1.00	95	0.00	0	30.17	SILTSTONE											3	2	5	10	1
18.45	0.45	0.27	60	0.00	0	**3.47**		49														
19.50	1.05	0.91	87	0.00	0					0.08	M3/M6	3-4	1									
20.08	0.58	0.24	41	0.00	0																	
21.58	1.50	1.03	69	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 37
INCLINATION: VERTICAL
FINAL DEPTH: 30.17m

ELEVATION: 11.173mamsl
CO-ORDS: X = 3727139.66
Y = 52987.447

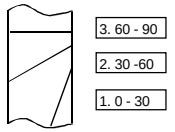
PAGE: 2 OF 2
DATE: 03-05-2008
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.58																		1				
22.67	1.09	1.04	95	0.26	24													2				
24.17	1.50	1.24	83	0.00	0													3				
25.67	1.50	1.37	91	0.66	44																	
27.17	1.50	1.48	99	0.78	52																	
28.67	1.50	1.54	103	0.85	57																	
30.17	1.50	1.24	83	0.49	33																	
END OF HOLE - FINAL DEPTH 30.17m																		1				
																		2				
																		3				
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting — Engineers and Scientists

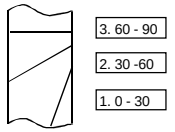
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 38 | ELEVATION: 14.016mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727093.42 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 25.56m | Y = 52876.429 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.80	GREYWACKE	0	0.37			4	1	1	1	0	2	1	2	5	10	1
1.50	1.50	0.54	36	0.00	0	↓												2	3	5	10	1
1.95	0.45	0.34	76	0.00	0	21.06												3	0	0	0	0
3.00	1.05	0.39	37	0.00	0	**1.26**				0.89	M5/M6	4	1	Depth of rock could be wrong?								
3.45	0.45	0.24	53	0.00	0																	
4.50	1.05	0.67	64	0.00	0																	
4.95	0.45	0.31	69	0.00	0	**G1**																
6.00	1.05	0.53	50	0.00	0	21.06	SILTSTONE / MUDSTONE	6	1.67			3	1-2	12	8	1	21	1	2	5	10	1
6.45	0.45	0.27	60	0.00	0	↓												2	1	2	10	1
7.50	1.05	0.50	48	0.00	0	25.56												3	5	9	10	1
7.95	0.45	0.26	58	0.00	0	**4.50**				2.83	M3/M6	3	1-2									
9.00	1.05	0.95	90	0.00	0																	
9.45	0.45	0.25	56	0.00	0																	
10.50	1.05	0.72	69	0.00	0	**G2**																
10.95	0.45	0.25	56	0.00	0													1				
12.00	1.05	0.46	44	0.00	0													2				
12.45	0.45	0.25	56	0.00	0													3				
13.50	1.05	0.55	52	0.00	0																	
13.95	0.45	0.26	58	0.00	0																	
15.00	1.05	0.71	68	0.00	0																	
15.45	0.45	0.30	67	0.00	0																	
16.50	1.05	0.37	35	0.00	0													1				
16.95	0.45	0.23	51	0.00	0													2				
18.00	1.05	0.68	65	0.00	0													3				
18.45	0.45	0.32	71	0.00	0																	
19.50	1.05	0.74	70	0.00	0																	
19.80	0.30	0.23	77	0.00	0																	
21.06	1.26	0.44	35	0.00	0																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

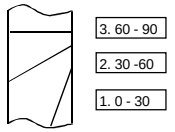
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 38 | ELEVATION: 14.016mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727093.42 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 25.56m | Y = 52876.429 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.06																		1				
22.56	1.50	1.21	81	0.00	0													2				
24.06	1.50	1.27	85	0.13	9													3				
25.56	1.50	1.35	90	0.12	8																	
END OF HOLE - FINAL DEPTH 25.56m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

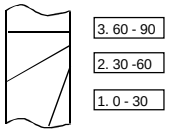
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 40 | ELEVATION: 6.654mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727398.61 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53065.497 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.95												1	3	5	9	1
1.50	1.50	0.60	40	0.00	0	↓			2.30			3	2-3				0	2	2	5	10	1
1.95	0.45	0.23	51	0.00	0	22.50	GREYWACKE											3	3	5	10	1
3.00	1.05	0.42	40	0.00	0	**2.55**		16														
3.45	0.45	0.23	51	0.00	0					0.25	M3/M5	2-3	3-4	2. Clayey Silt / Yellow Stained.								
4.50	1.05	0.47	45	0.00	0																	
4.95	0.45	0.23	51	0.00	0	**G1**																
6.00	1.05	0.49	47	0.00	0	22.50												1	1	2	10	1
6.45	0.45	0.24	53	0.00	0	↓			5.87			2-3	2	31	9	10	50	2	3	5	10	1
7.50	1.05	0.47	45	0.00	0	30.00												3	1	2	10	1
7.95	0.45	0.22	49	0.00	0	**7.50**	SHALE	6														
9.00	1.05	0.42	40	0.00	0					1.63	M2/M3	2-3	2									
9.45	0.45	0.21	47	0.00	0																	
10.50	1.05	0.35	33	0.00	0	**G2**																
10.95	0.45	0.31	69	0.00	0													1				
12.00	1.05	0.42	40	0.00	0													2				
12.45	0.45	0.24	53	0.00	0													3				
13.50	1.05	0.52	50	0.00	0																	
13.95	0.45	0.23	51	0.00	0																	
15.00	1.05	0.39	37	0.00	0																	
15.45	0.45	0.21	47	0.00	0																	
16.50	1.05	0.42	40	0.00	0													1				
16.95	0.45	0.29	64	0.00	0													2				
18.00	1.05	0.49	47	0.00	0													3				
18.45	0.45	0.22	49	0.00	0																	
19.50	1.05	0.49	47	0.00	0																	
19.95	0.45	0.21	47	0.00	0																	
21.00	1.05	1.07	102	0.00	0																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

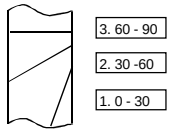
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 40 | ELEVATION: 6.654mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727398.61 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.00m | Y = 53065.497 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																		1				
22.50	1.50	1.24	83	0.41	27													2				
24.00	1.50	1.42	95	0.00	0													3				
25.50	1.50	1.43	95	0.00	0																	
27.00	1.50	1.35	90	0.17	11																	
28.50	1.50	1.32	88	0.16	11																	
30.00	1.50	1.33	89	0.00	0																	
END OF HOLE - FINAL DEPTH 30.00m																		1				
																		2				
																		3				
																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
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4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
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3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

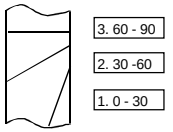
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 41 | ELEVATION: 9.952mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726491.50 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 23.75m | Y = 53158.993 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						18.75												1	1	2-3	9	1
1.50	1.50	0.48	32	0.00	0	↓			0.76			2	3	5	7	2	14	2	3	5	10	1
1.95	0.45	0.23	51	0.00	0	19.60	GREYWACKE											3	2	6	10	1
3.00	1.05	0.42	40	0.00	0	**0.85**		0		0.09	M3/M6	1-2	3-4	1. Clayey infill.								
3.45	0.45	0.24	53	0.00	0																	
4.50	1.05	0.41	39	0.00	0																	
4.95	0.45	0.23	51	0.00	0	**G1**																
6.00	1.05	0.46	44	0.00	0	19.60												1	1	2	10	1
6.45	0.45	0.22	49	0.00	0	↓			0.00			3-4	1-2	8	23	4	35	2	1	2	10	1
7.50	1.05	0.51	49	0.00	0	23.75	GREYWACKE											3	1	2	10	1
7.95	0.45	0.29	64	0.00	0	**4.15**		38		4	0.15	0	0	1. Iron-stained occasionally oxide.								
9.00	1.05	0.47	45	0.00	0																	
9.45	0.45	0.19	42	0.00	0																	
10.50	1.05	0.48	46	0.00	0	**G2**																
10.95	0.45	0.18	40	0.00	0													1				
12.00	1.05	0.44	42	0.00	0													2				
12.45	0.45	0.20	44	0.00	0													3				
13.50	1.05	0.45	43	0.00	0																	
13.95	0.45	0.20	44	0.00	0																	
15.00	1.05	0.53	50	0.00	0																	
15.45	0.45	0.26	58	0.00	0																	
16.50	1.05	0.46	44	0.00	0													1				
16.95	0.45	0.25	56	0.00	0													2				
18.00	1.05	0.54	51	0.00	0													3				
18.45	0.45	0.24	53	0.00	0																	
19.50	1.05	0.71	68	0.00	0																	
20.75	1.25	1.22	98	0.73	58																	
22.25	1.50	1.26	84	0.41	27																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 41
INCLINATION: VERTICAL
FINAL DEPTH: 23.75m

ELEVATION: 9.952mamsl
CO-ORDS: X = 3726491.50
Y = 53158.993

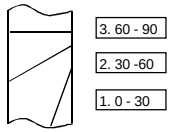
PAGE: 2 OF 2
DATE: 28-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
22.25																		1				
23.75	1.50	1.47	98	0.44	29													2				
END OF HOLE - FINAL DEPTH 23.75m																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION

MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

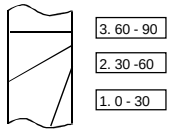
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 42 | ELEVATION: 17.674mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726452.93 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.04m | Y = 53041.468 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						27.07	GREYWACKE	47	2.97			2-3	1	5	2	1	8	1	1	2	10	1
1.50	1.50	0.61	41	0.00	0	↓												2	5	8	10	1
1.95	0.45	0.26	58	0.00	0	30.04												3	2	6	10	1
3.00	1.05	0.37	35	0.00	0	**2.97**				0	0	0	0									
3.45	0.45	0.41	91	0.00	0																	
4.50	1.05	0.45	43	0.00	0																	
4.95	0.45	0.39	87	0.00	0	**G1**																
6.00	1.05	0.95	90	0.00	0													1				
6.45	0.45	0.30	67	0.00	0													2				
7.50	1.05	0.65	62	0.00	0													3				
7.95	0.45	0.23	51	0.00	0																	
9.00	1.05	0.46	44	0.00	0																	
9.45	0.45	0.25	56	0.00	0																	
10.50	1.05	0.60	57	0.00	0																	
10.95	0.45	0.17	38	0.00	0													1				
12.00	1.05	0.42	40	0.00	0													2				
12.45	0.45	0.39	87	0.00	0													3				
13.50	1.05	0.49	47	0.00	0																	
13.95	0.45	0.29	64	0.00	0																	
15.00	1.05	0.73	70	0.00	0																	
15.45	0.45	0.24	53	0.00	0																	
16.50	1.05	0.76	72	0.00	0													1				
16.95	0.45	0.45	100	0.00	0													2				
18.00	1.05	0.82	78	0.00	0													3				
18.45	0.45	0.54	120	0.00	0																	
19.50	1.05	0.74	70	0.00	0																	
19.95	0.45	0.45	100	0.00	0																	
21.00	1.05	0.76	72	0.00	0																	

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

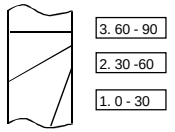
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 42 | ELEVATION: 17.674mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726452.93 | DATE: 28-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.04m | Y = 53041.468 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																		1				
21.30	0.30	0.37	123	0.00	0													2				
22.50	1.20	1.00	83	0.00	0													3				
22.80	0.30	0.27	90	0.00	0																	
24.04	1.24	0.19	15	0.00	0																	
25.54	1.50	0.19	13	0.00	0																	
27.04	1.50	0.50	33	0.00	0																	
28.54	1.50	1.22	81	0.91	61													1				
28.54	0.00	0.00	0	0.00	0													2				
30.04	1.50	0.74	49	0.48	32													3				
END OF HOLE - FINAL DEPTH 30.04m																						

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

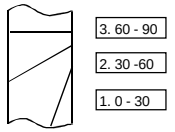
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 43 | ELEVATION: 12.264mamsl | PAGE: 1 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727317.80 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 31.46m | Y = 52844.077 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0⁰ - 30⁰	2 30⁰ - 60⁰	3 60⁰ - 90⁰	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00																		1				
1.50	1.50	0.59	39	0.00	0	↓			0.00			0	0				0	2				
1.65	0.15	0.11	73	0.00	0													3				
3.00	1.35	0.58	43	0.00	0	**0.00**		0														
3.45	0.45	0.21	47	0.00	0					0.00	0	0	0									
4.50	1.05	0.59	56	0.00	0																	
4.95	0.45	0.45	100	0.00	0	**G1**																
6.00	1.05	0.86	82	0.00	0													1				
6.45	0.45	0.42	93	0.00	0	↓			0.00			0	0				0	2				
7.50	1.05	0.90	86	0.00	0													3				
7.95	0.45	0.45	100	0.00	0	**0.00**		0														
9.00	1.05	0.87	83	0.00	0					0.00	0	0	0									
9.45	0.45	0.42	93	0.00	0																	
10.50	1.05	0.84	80	0.00	0	**G2**																
10.95	0.45	0.24	53	0.00	0													1				
12.00	1.05	0.76	72	0.00	0	↓			0.00			0	0				0	2				
12.45	0.45	0.45	100	0.00	0													3				
13.50	1.05	0.96	91	0.00	0	**0.00**		0														
13.95	0.45	0.34	76	0.00	0					0.00	0	0	0									
15.00	1.05	1.03	98	0.00	0																	
15.45	0.45	0.33	73	0.00	0	**G3**																
16.50	1.05	1.04	99	0.00	0													1				
16.95	0.45	0.26	58	0.00	0	↓			0.00			0	0				0	2				
18.00	1.05	0.96	91	0.00	0													3				
18.45	0.45	0.39	87	0.00	0	**0.00**		0														
19.50	1.05	0.90	86	0.00	0					0.00	0	0	0									
19.95	0.45	0.34	76	0.00	0																	
21.00	1.05	1.03	98	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

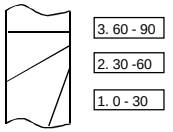
PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 43 | ELEVATION: 12.264mamsl | PAGE: 2 OF 3
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727317.80 | DATE: 17-07-2008
PROJECT No: 385908/42C | FINAL DEPTH: 31.46m | Y = 52844.077 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00																		1				
21.45	0.45	0.28	62	0.00	0	↓			0.00			0	0				0	2				
22.50	1.05	0.85	81	0.00	0													3				
22.95	0.45	0.34	76	0.00	0	0.00																
23.96	1.01	0.48	48	0.00	0					0.00	0	0	0									
25.46	1.50	0.76	51	0.00	0																	
26.96	1.50	1.40	93	0.16	11	G5																
28.46	1.50	1.45	97	0.28	19													1				
28.46	0.00	0.00	0	0.00	0	↓			0.00			0	0				0	2				
29.96	1.50	1.32	88	0.35	23													3				
31.46	1.50	1.36	91	0.70	47	0.00																
END OF HOLE - FINAL DEPTH 31.46m										0.00	0	0	0									
						G6																
																		1				
						↓			0.00			0	0				0	2				
																		3				
						0.00																
										0	0	0	0									
						G7																
																		1				
						↓			0.00			0	0				0	2				
																		3				
						0.00																
										0	0	0	0									
						G8																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 43
INCLINATION: VERTICAL
FINAL DEPTH: 31.46m

ELEVATION: 12.264mamsl
CO-ORDS: X = 3727317.80
Y = 52844.077

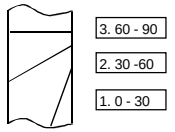
PAGE: 3 OF 3
DATE: 17-07-2008
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
						↓			0.00			0	0				0	1				
																		2				
																		3				
						0.00				0	0	0	0									
						G9																
						↓			0.00			0	0				0	1				
																		2				
																		3				
						0.00				0	0	0	0									
						G10																
						↓			0.00			0	0				0	1				
																		2				
																		3				
						0.00				0	0	0	0									
						G11																
						↓			0.00			0	0				0	1				
																		2				
																		3				
						0.00				0	0	0	0									
						G12																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 44 | ELEVATION: 17.109mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726855.62 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 54.78m | Y = 52868.65 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						19.95												1	2	5	10	1
1.50	1.50	0.70	47	0.00	0	↓			2.86			3	2	10	3	0	13	2	5	9	10	1
1.95	0.45	0.36	80	0.00	0	23.10	GREYWACKE											3				
3.00	1.05	0.78	74	0.00	0	**3.15**		19		0.29	M3/M6	3	2									
3.45	0.45	0.42	93	0.00	0																	
4.50	1.05	0.87	83	0.00	0																	
4.95	0.45	0.44	98	0.00	0	**G1**																
6.00	1.05	0.95	90	0.00	0	23.10												1	0	0	0	0
6.45	0.45	0.39	87	0.00	0	↓			0.21			3-4	1	0	0	0	0	2	0	0	0	0
7.50	1.05	0.87	83	0.00	0	23.60	SHEAR ZONE											3	0	0	0	0
7.95	0.45	0.44	98	0.00	0	**0.50**		0		0.29	M2	3-4	1	VUGGY / QUARTZ								
9.00	1.05	0.87	83	0.00	0																	
9.45	0.45	0.43	96	0.00	0																	
10.50	1.05	0.93	89	0.00	0	**G2**																
10.95	0.45	0.38	84	0.00	0	23.60												1	2	6	6	1
12.00	1.05	0.94	90	0.00	0	↓			11.08			3-4	1	13	21	34	68	2	1	2	6	1
12.45	0.45	0.41	91	0.00	0	35.01	GREYWACKE											3	1	3	10	1
13.50	1.05	0.91	87	0.00	0	**11.41**		39		0.33	M6	3-4	1	1. Quartz Crystals. 2. Calc <1mm.								
13.95	0.45	0.40	89	0.00	0																	
15.00	1.05	0.88	84	0.00	0																	
15.45	0.45	0.41	91	0.00	0	**G3**																
16.50	1.05	0.90	86	0.00	0	35.01												1	5	9	6	1
16.95	0.45	0.41	91	0.00	0	↓			0.90			3	1-2	3	2	3	8	2	1	2	10	1
18.00	1.05	0.94	90	0.00	0	35.91	GREYWACKE											3	1	2	10	1
18.45	0.45	0.38	84	0.00	0	**0.90**		0		0	0	0	0	2. Quartz Crystals.								
19.50	1.05	0.95	90	0.00	0																	
19.95	0.45	0.36	80	0.00	0																	
21.00	1.05	0.56	53	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
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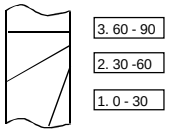
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
3.ROUGH PLANAR
4.SLICKENSIDED UNDULATING
5.SMOOTH UNDULATING
6.ROUGH UNDULATING
7.SLICKENSIDED STEPPED
8.SMOOTH STEPPED
9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
5.COARSE
Non-softening sheared material
6.FINE
7.MEDIUM
8.COARSE
9.STAINING
10.NONE

JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 44 | ELEVATION: 17.109mamsl | PAGE: 2 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3726855.62 | DATE: 29-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 54.78m | Y = 52868.65 | LOGGED BY: JB

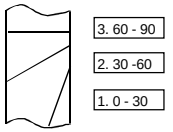
Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1-5 (MPa)	Weathering 1-5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.00						35.91																
22.50	1.50	1.39	93	0.47	31	↓			4.40			4	1	3	4	13	20	2	3	6	9	1
24.00	1.50	1.57	105	0.40	27	40.31	GREYWACKE											3	2	6	10	1
25.55	1.55	1.56	101	1.04	67	**4.40**		58														
27.05	1.50	1.16	77	0.28	19					0	0	0	0	1. Calc <1mm.								
28.30	1.25	1.20	96	0.67	54									2. Yellow stained.								
29.15	0.85	0.83	98	0.20	24	**G5**																
30.65	1.50	1.43	95	0.66	44	40.31												1	5	9	6	1
31.95	1.30	1.33	102	0.22	17	↓			8.67			3-4	1	1	7	18	26	2	2	5	6	1
33.06	1.11	1.05	95	0.23	21	49.05												3	1	2	9	1
34.46	1.40	1.31	94	0.87	62	**8.74**	META - GREYWACKE	69														
35.01	0.55	0.58	105	0.00	0					0.07	M6	3-4	1	1. Quartz crystals.								
36.61	1.60	1.58	99	0.00	0									2. Calc <1mm.								
38.11	1.50	1.54	103	1.24	83	**G6**								3. Iron-staining and Pyrite.								
39.11	1.00	1.00	100	0.31	31	49.05												1	1	2	6	1
40.31	1.20	1.21	101	1.00	83	↓			4.80			3	1-2	3	8	24	35	2	2	5	6	1
40.92	0.61	0.61	100	0.34	56	54.79												3	1	2	10	1
42.52	1.60	1.60	100	1.20	75	**5.74**	META - SHALE	30														
43.29	0.77	0.76	99	0.42	55					0.93	M3/M6	3	1-2	1. Brown staining and Calc 1mm.								
44.75	1.46	1.43	98	1.36	93									2. Calc <1mm.								
45.58	0.83	0.80	96	0.67	81	**G7**																
47.18	1.60	1.56	97	0.92	58													1				
48.78	1.60	1.63	102	1.04	65													2				
50.28	1.50	1.37	91	0.45	30													3				
51.88	1.60	1.57	98	0.31	19																	
53.48	1.60	1.62	101	0.38	24																	
54.78	1.30	1.30	100	0.70	54																	

END OF HOLE - FINAL DEPTH 54.78m

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
5.COMPLETELY

JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

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1.POLISHED
2.SMOOTH PLANAR
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9.ROUGH STEPPED / IRREGULAR

INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
2.GOUGE t. < Amplit. of IRREG. Soft sheared material, e.g. Talc
3.FINE
4.MEDIUM
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Non-softening sheared material
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JOINT WALL ALT.
1.WALL = ROCK HARDNESS
2.WALL > ROCK HARDNESS
3.WALL < ROCK HARDNESS

MATRIX TYPE
M1. FAULTS
M2. SHEARS
M3. INTENSE JOINTING
M4. INTENSE MINERALISATION
M5. DEFORMABLE MATERIAL
M6. INTENSE DRILLING FRACTURES

GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST | HOLE NO: KB 45 | ELEVATION: 13.798mamsl | PAGE: 1 OF 2
SITE: DUYNEFONTEIN | INCLINATION: VERTICAL | CO-ORDS: X = 3727058.86 | DATE: 30-04-2010
PROJECT No: 385908/42C | FINAL DEPTH: 30.06m | Y = 52777.735 | LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0° - 30°	2 30° - 60°	3 60° - 90°	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
0.00						20.98												1	5	9	10	1
1.50	1.50	0.56	37	0.00	0	↓			1.98			2-3	3-4	1	7	12	20	2	2	5	9	1
1.95	0.45	0.29	64	0.00	0	23.06	GREYWACKE											3	1	3	10	1
3.00	1.05	0.50	48	0.00	0	**2.08**		8														
3.45	0.45	0.42	93	0.00	0					0.10	M5/M6	2-3	3-4	2. Clayey Silt Infill.								
4.50	1.05	0.93	89	0.00	0																	
4.95	0.45	0.43	96	0.00	0	**G1**																
6.00	1.05	0.94	90	0.00	0	23.06												1	0	0	0	0
6.45	0.45	0.37	82	0.00	0	↓			1.45			3	2	0	1	9	10	2	1	3	10	1
7.50	1.05	1.00	95	0.00	0	24.51	GREYWACKE											3	2	6	10	1
7.95	0.45	0.38	84	0.00	0	**1.45**		60														
9.00	1.05	1.00	95	0.00	0					0	0	0	0									
9.45	0.45	0.37	82	0.00	0																	
10.50	1.05	0.93	89	0.00	0	**G2**																
10.95	0.45	0.39	87	0.00	0	24.51												1	0	0	0	0
12.00	1.05	0.92	88	0.00	0	↓			2.57			4	2	0	13	13	26	2	3	6	6	1/2
12.45	0.45	0.31	69	0.00	0	27.31	GREYWACKE											3	1	2	10	1
13.50	1.05	1.02	97	0.00	0	**2.80**		33														
13.95	0.45	0.36	80	0.00	0					0.23	M6	4	2	2. Quartz Crystals / Calc 2mm.								
15.00	1.05	1.01	96	0.00	0																	
15.45	0.45	0.32	71	0.00	0	**G3**																
16.50	1.05	1.05	100	0.00	0	27.31												1	1	2	10	1
16.95	0.45	0.31	69	0.00	0	↓			2.65			4-5	1	6	10	5	21	2	1	2	10	1
18.00	1.05	0.92	88	0.00	0	30.06	GREYWACKE											3	2	5	10	1
18.45	0.45	0.35	78	0.00	0	**2.75**		44														
19.50	1.05	0.95	90	0.00	0					0.10	M6	4-5	1									
19.95	0.45	0.36	80	0.00	0																	
21.06	1.11	0.57	51	0.00	0	**G4**																

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
3.HARD (25-45)
4.VERY HARD (45-105)
5.EXTREMELY HARD (105+)

WEATHERING
1.UNWEATHERED
2.SLIGHTLY
3.MODERATELY
4.HIGHLY
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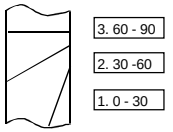
JOINT DISTRIBUTION



JOINT CONDITION
MACRO
1.STRAIGHT
2.SLIGHT UNDULATION
3.CURVED
4.UNI DIRECTIONAL WAVY
5.MULTI DIRECTIONAL WAVY

MICRO
1.POLISHED
2.SMOOTH PLANAR
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4.SLICKENSIDED UNDULATING
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INFILL TYPE
1.GOUGE t. > Amplit. of IRREG.
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Soft sheared material, e.g. Talc
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GEOTECHNICAL BOREHOLE LOG

SRK Consulting
Engineers and Scientists

PROJECT: ESKOM GEOTECH INVEST
SITE: DUYNEFONTEIN
PROJECT No: 385908/42C

HOLE NO: KB 45
INCLINATION: VERTICAL
FINAL DEPTH: 30.06m

ELEVATION: 13.798mamsl
CO-ORDS: X = 3727058.86
Y = 52777.735

PAGE: 2 OF 2
DATE: 30-04-2010
LOGGED BY: JB

Drilling Interval	Recovery			RQD		Geotech Interval	Rock Type	Int. RQD %	Rock Competence			Hardness 1 - 5 (MPa)	Weathering 1 - 5	Joint Distribution				Joint Surface Condition				
	m Drill	m Rec	% Rec	m	%				Solid m	Matrix m	Matrix Type			1 0^0 - 30^0	2 30^0 - 60^0	3 60^0 - 90^0	Total	Jt	Macro 1 - 5	Micro 1 - 9	Infill Type 1 - 10	Wall Alter 1 - 3
21.06																		1				
22.56	1.50	1.12	75	0.00	0													2				
24.06	1.50	1.42	95	0.92	61													3				
25.56	1.50	1.42	95	0.61	41																	
27.06	1.50	1.47	98	0.42	28																	
28.56	1.50	1.38	92	0.50	33																	
30.06	1.50	1.52	101	0.70	47																	
END OF HOLE - FINAL DEPTH 30.06m																		1				
																		2				
																		3				
																		1				
																		2				
																		3				

HARDNESS (MPa)
1.VERY SOFT (0-5)
2.SOFT (5-25)
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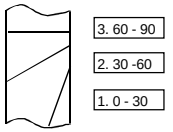

JOINT CONDITION

MACRO
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INFILL TYPE
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2.GOUGE t. < Amplit. of IRREG.
Soft sheared material, e.g. Talc
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Non-softening sheared material
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JOINT WALL ALT.
1.WALL = ROCK HARDNESS
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MATRIX TYPE
M1. FAULTS
M2. SHEARS
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