

11. Bore Logs and Core Sample Photo



**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

Sheet : 1 of 3

**DRILLHOLE BH C1**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 17.12.2012	Drilling started : 12.12.2012
Date of photograph : 17.12.2012	Drilling completed : 15.12.2012
Location : Chittrakoot	Hole diameter : 76 mm
Drilling method : Rotary Head	Depth : 48.60 m
Drilling rig : APAFOR 48	

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% > 100 mm)	STRATA	
							Legend	Thickness (m)
00.00							00.00	<b>00.00 - 05.00 m</b> Dark brown stiff, moderately plastic GRAVELLY SILTY CLAY (possibly COLLUVIUM!).
01.00			1.00	100	0	0		
02.00			1.80	100	0	0	(05.00)	
03.00		SPT1	3.00	100	15	15		
04.00		N = 20	3.45	100	0	0		
05.00			04.00	100	0	0		
06.00			05.00	100	0	0		
07.00			06.00	100	0	0	05.00	<b>05.00 - 06.65 m</b> Brown to greyish brown, weak HIGHLY TO COMPLETELY WEATHERED BASALT/AGGLOMERATE.
08.00			06.65	100	0	0	(01.65)	
09.00			07.35	100	50	45	06.65	<b>06.65 - 10.15 m</b> Grey, weak to moderately strong to strong with occasional tiny vesicles, medium to fine grained HIGHLY TO MODERATELY WEATHERED BASALT/AGGLOMERATE, 50% fragmented,
10.00			08.55	100	38	32	(03.50)	
11.00			10.00	100	25	25		
12.00			11.00	100	98	98	10.15	<b>10.15 - 20.00 m</b> Grey to purplish grey with occasional brown discoloration at fractures, strong to very strong, almost compact with occasional tiny voids infilled with white deposits, medium to fine grained SLIGHTLY WEATHERED BASALT/AGGLOMERATE - basalt and agglomerate occurring in alternate segments. Fractures are very closely to moderately spaced, almost clean, subhorizontal to subvertical, rough and stepped/undulated.
13.00			12.00	100	98	90		
14.00			13.15	100	91	79		
15.00			14.65	100	90	85		
16.00			16.00	100	75	53	(09.85)	
17.00			17.00	100	93	85		
18.00			17.85	100	93	85		
19.00			19.00	100	70	55		
20.00			20.00	100	45	26	20.00	(Stratum continues down to 20.00 m.)



**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

Sheet : 2 of 3

**DRILLHOLE BH C1**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 17.12.2012	Drilling started : 12.12.2012
Date of photograph : 17.12.2012	Drilling completed : 15.12.2012
Location : Chittrakoot	Hole diameter : 76 mm
Drilling method : Rotary Head	Depth : 48.60 m
Drilling rig : APAFOR 48	

**STRATA**

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (%>100 mm)	Legend	Thickness (m)	STRATA DESCRIPTIONS
00.00								20.00	(Continued) <u>10.15 - 43.00 m</u> Grey to purplish grey with occasional brown discoloration at fractures, strong to very strong, almost compact with occasional tiny voids infilled with white deposits, medium to fine grained SLIGHTLY WEATHERED BASALT/AGGLOMERATE - basalt and agglomerate occurring in alternate segments. Fractures are very closely to moderately spaced, almost clean, subhorizontal to subvertical, rough and stepped/undulated.
21.00			21.00	100	91	91			
22.00			22.00	100	80	45			
23.00			23.00	100	85	72			
24.00			24.00	100	87	84			
25.00			25.00	100	95	94			
26.00			26.00	100	92	88			
27.00			27.00	100	84	65			
28.00			28.00	100	50	50			
29.00			29.00	100	85	85			
30.00			30.00	100	88	88		(20.00)	
31.00			31.00	100	95	95			
32.00			32.00	100	86	72			
33.00			33.00	100	90	82			
34.00			34.00	100	98	98			
35.00			35.00	100	95	90			
36.00			36.00	100	92	70			
37.00			37.00	100	93	78			
38.00			38.00	100	74	74			
39.00			39.00	100	95	87			
40.00			40.00	100	76	68			40.00

(Stratum continues down to 40.00 m.)



## BH-C1

PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C1  
DEPTH : 0.00 - 3.00 m  
DATE : 12.12.12

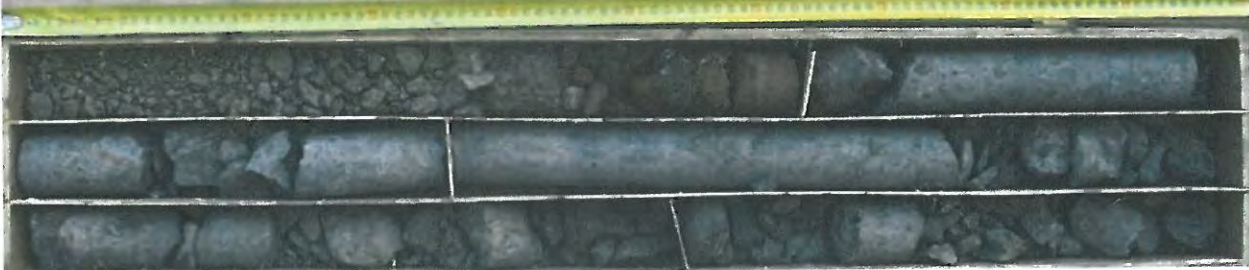


PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C1  
DEPTH : 5.00 - 6.00 m  
DATE : 13.12.12

SPT N°1 (3.00 - 3.45 m)  
0 - 150 = 4  
150 - 225 = 5  
225 - 300 = 5  
300 - 375 = 4  
375 - 450 = 6  
N<sub>v</sub> = 20



PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C1  
DEPTH : 6.00 - 9.00 m  
DATE : 13.12.12



## BH-C1

PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C1  
DEPTH : 9.00 - 12.00 m  
DATE : 13.12.12



PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C1  
DEPTH : 12.00 - 15.00 m  
DATE : 13.12.12



PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C1  
DEPTH : 15.00 - 18.00 m  
DATE : 14.12.12



## BH-C1

PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH - C1  
DEPTH : 18.00 - 21.00 m  
DATE :



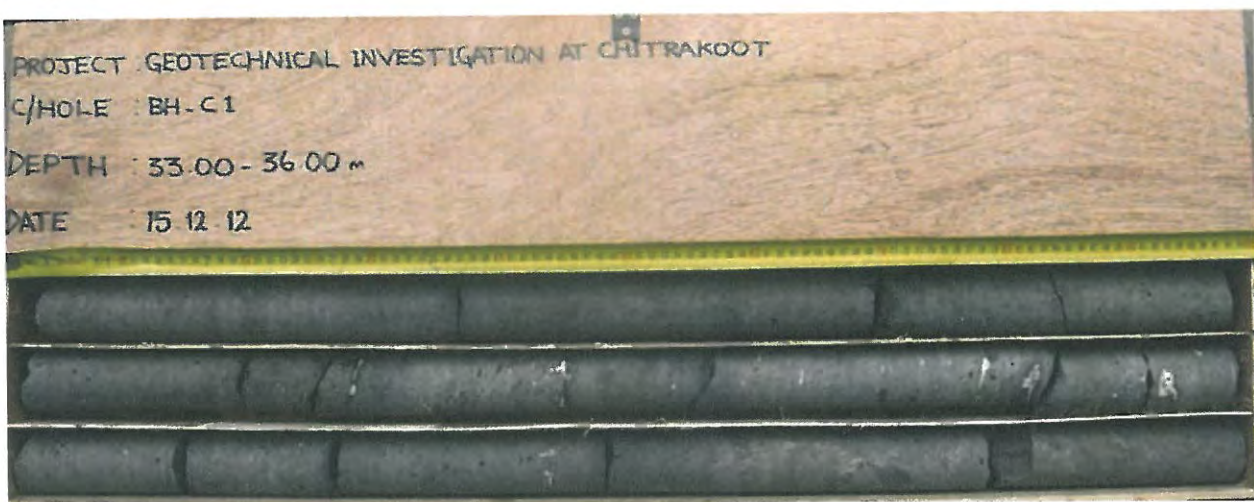
PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH - C1  
DEPTH : 21.00 - 24.00 m  
DATE : 14.12.12



PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH - C1  
DEPTH : 24.00 - 27.00 m  
DATE : 14.12.12



## BH-C1

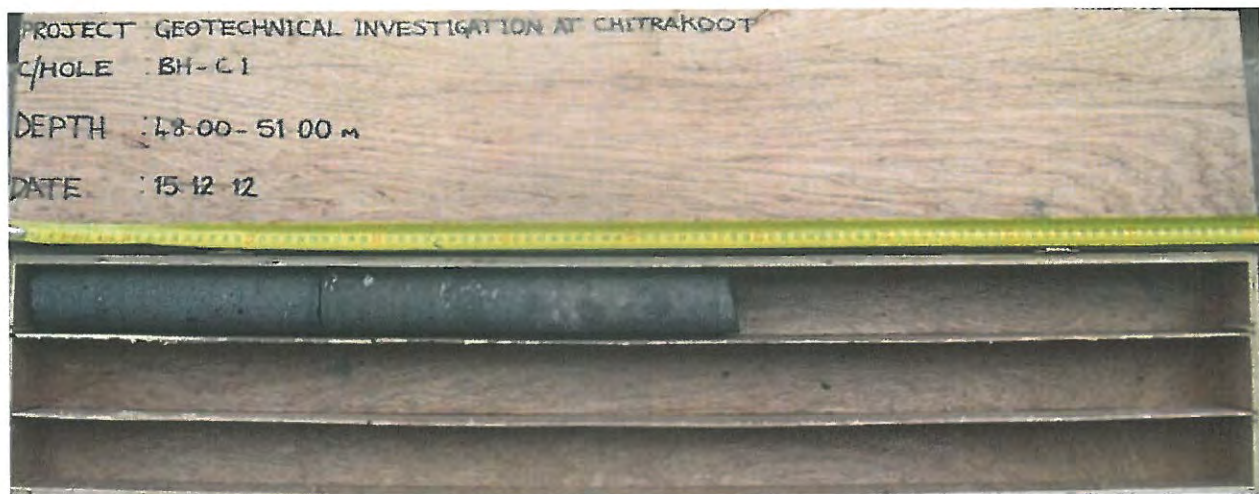




# BH-C1



## BH-C1





**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

**DRILLHOLE BH C2**

Sheet : 1 of 3

Logged by : RG	Drilled by : S.Guy
Date of Logging : 17.12.2012	Drilling started : 04.12.2012
Date of photograph : 17.12.2012	Drilling completed : 09.12.2012
Location : Chittrakoot	Hole diameter : 101 mm
Drilling method : Rotary Head	Depth : 50.00 m
Drilling rig : APAFOR 48	

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (%>100 mm)	STRATA		STRATA DESCRIPTIONS
							Legend	Thickness (m)	
00.00								00.00	<b>00.00 - 01.00 m</b> Dark grey, firm to moderately stiff GRAVELLY SILTY CLAY with thick roots. TOP SOIL.
01.00			0.85	100	0	0		(01.00)	
			1.35	100	0	0		01.00	<b>01.00 - 08.00 m</b> Brown, stiff to very stiff GRAVELLY SILTY CLAY with occasional cobbles, boulders and thick roots (possibly COLLUVIUM). CORE LOSS between 5.35 and 5.75.
02.00		SPT1	2.20	100	0	0			
		N = 33	2.65	100	0	0			
03.00		SPT2	3.35	100	0	0			
		N = 23	3.80	100	0	0			
04.00									
			4.80	100	0	0		(07.00)	
05.00	U2 N1		5.25	100	0	0		05.35	
		CORE LOSS	5.35	100	0	0		CORE LOSS	
06.00			5.75	0	0	0		05.75	
		SPT3	6.55	100	0	0			
07.00		N = 21	7.00	100	0	0			
			7.30	100	0	0			
08.00		SPT4	8.00	100	0	0		08.00	<b>08.00 - 09.70 m</b> Grey, weak HIGHLY WEATHERED BASALT/AGGREGATE reduced to gravels and cobbles.
		N = 19	8.45	100	0	0		(01.70)	
09.00								09.70	<b>09.70 - 26.00 m</b> Grey to purplish brown with occasional brown to greyish brown discoloration at fractures, strong to very strong, almost compact with occasional tiny voids infilled with white deposits, medium to fine grained SLIGHTLY WEATHERED BASALT/AGGLOMERATE with basalt and agglomerate occurring in alternate segments. Fractures are closely to moderately spaced, almost clean, subhorizontal, rough and undulated.
10.00			9.50	100	0	0			
			10.35	100	70	70			
11.00			11.00	100	95	85			
			12.00	100	95	95			
12.00			13.00	100	92	85			
			14.00	100	78	72			
14.00			14.40	100	92	92			
			15.00	100	60	60			
15.00			16.00	100	95	87		(16.30)	
16.00									
17.00									
			17.60	100	90	85			
18.00			18.00	100	100	100			
19.00			19.00	100	98	98			
20.00			20.00	100	78	78		20.00	(Stratum continues down to 26.00 m.)



**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

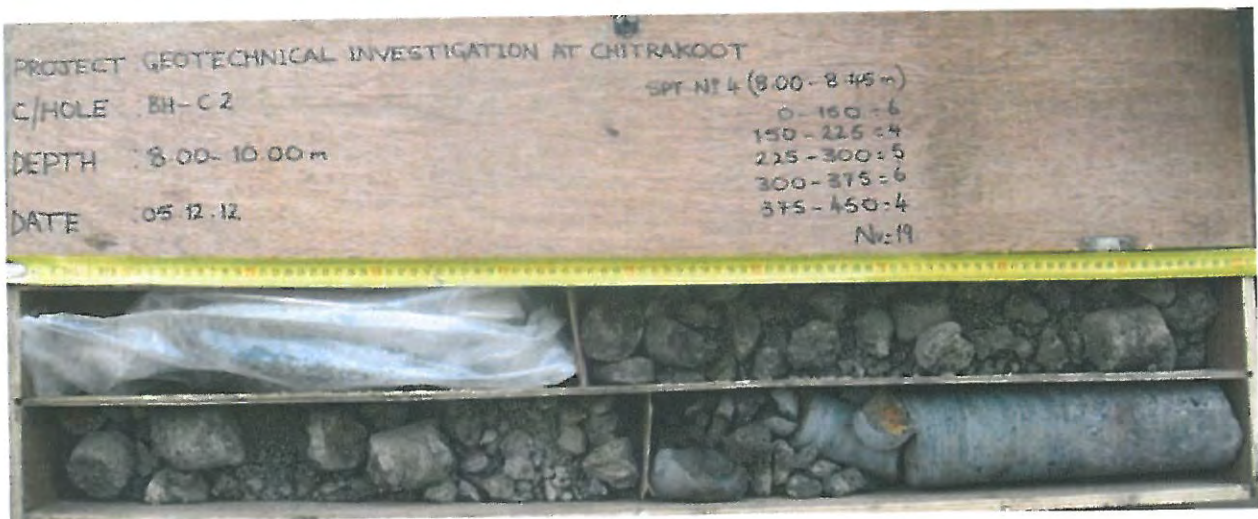
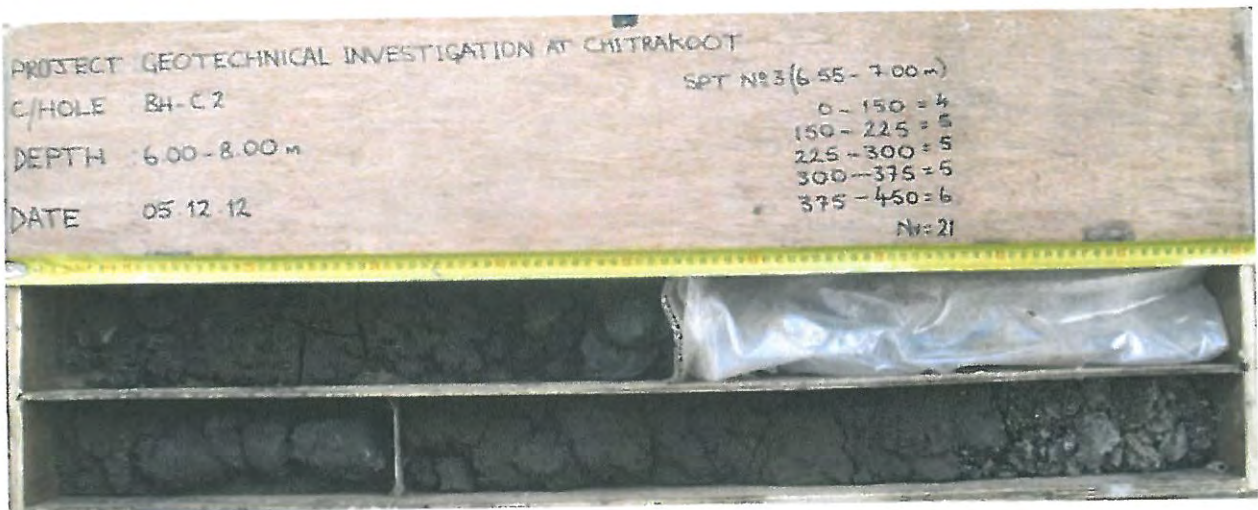
Sheet : 3 of 3

**DRILLHOLE BH C2**

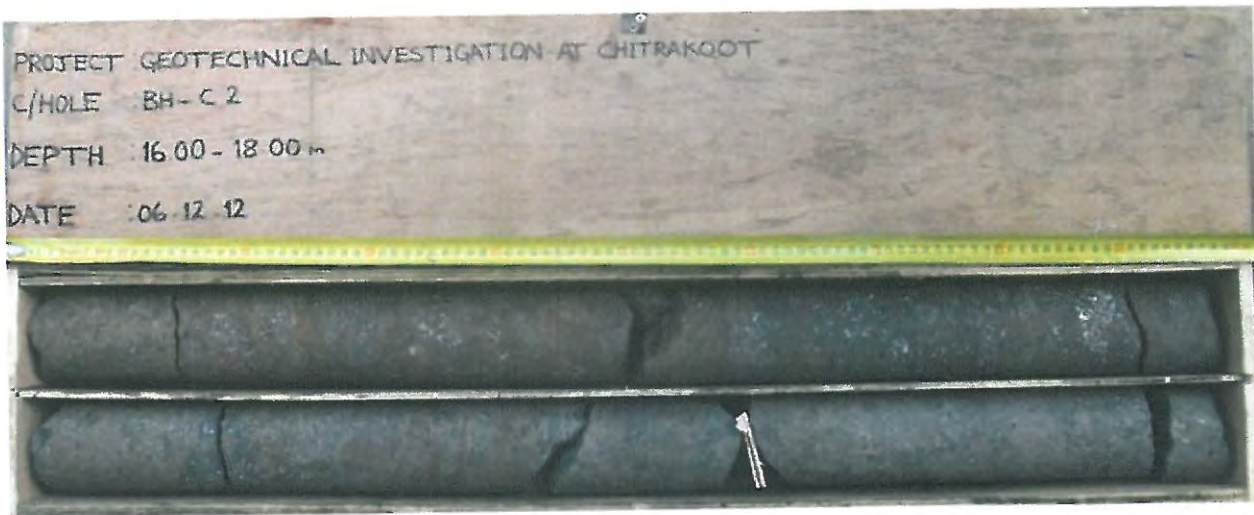
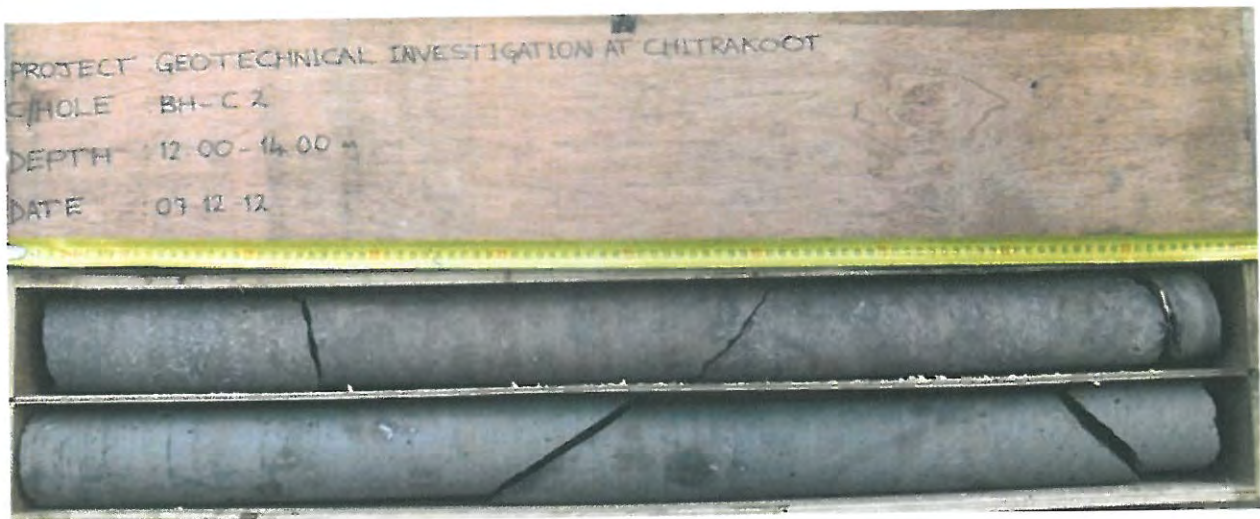
Logged by : RG	Drilled by : S.Guy
Date of Logging : 17.12.2012	Drilling started : 04.12.2012
Date of photograph : 17.12.2012	Drilling completed : 09.12.2012
Location : Chittrakoot	Hole diameter : 101 mm
Drilling method : Rotary Head	Depth : 50.00 m
Drilling rig : APAFOR 48	

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% < 100 mm)	STRATA	
							Legend	Thickness (m)
40.00								<b>STRATA DESCRIPTIONS</b>
41.00			41.00	100	70	66		<p><b>(Continued)</b> <b>28.00 - 50.00 m</b></p> <p>Grey to purplish brown with occasional brown to greyish brown discoloration at fractures, strong to very strong, almost compact with occasional tiny voids infilled with white deposits, medium to fine grained SLIGHTLY WEATHERED BASALT/AGGLOMERATE with basalt and agglomerate occurring in alternate segments. Fractures are closely to widely spaced, almost clean, subhorizontal, rough and undulated.</p>
42.00			42.40	100	98	98		
43.00			43.00	100	93	83		
44.00			44.00	100	90	75		
45.00			45.00	100	96	96		
45.40			45.40	100	98	98		
46.00			46.00	100	87	75		
46.90			46.90	100	97	97		
48.00			48.00	100	95	95		
49.00			49.00	100	100	100		
50.00			50.00	100	95	95		
50.00								<p>End of borehole</p>

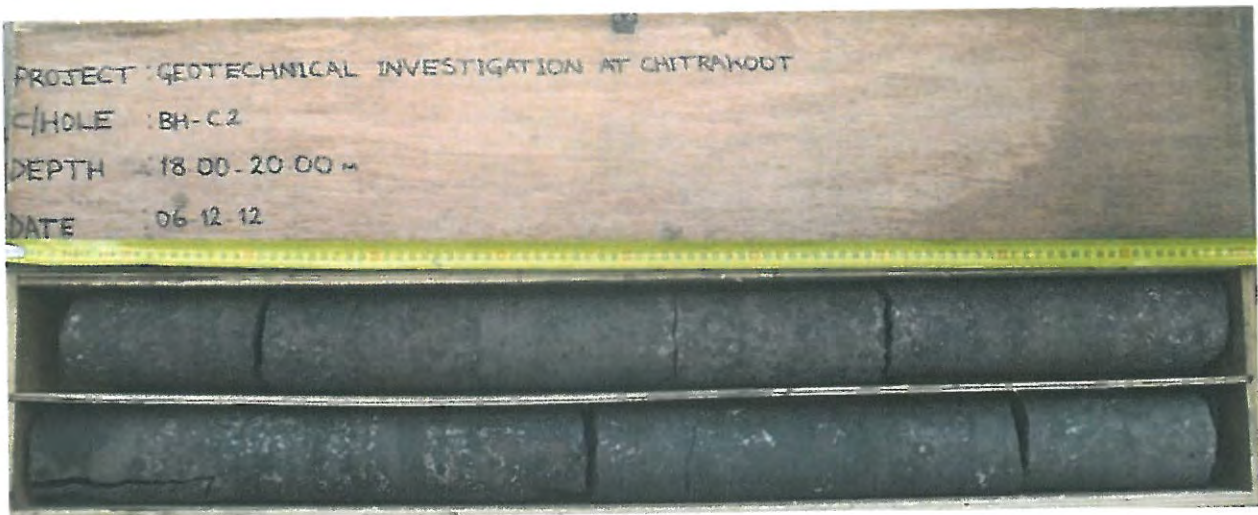
**BH-C2**



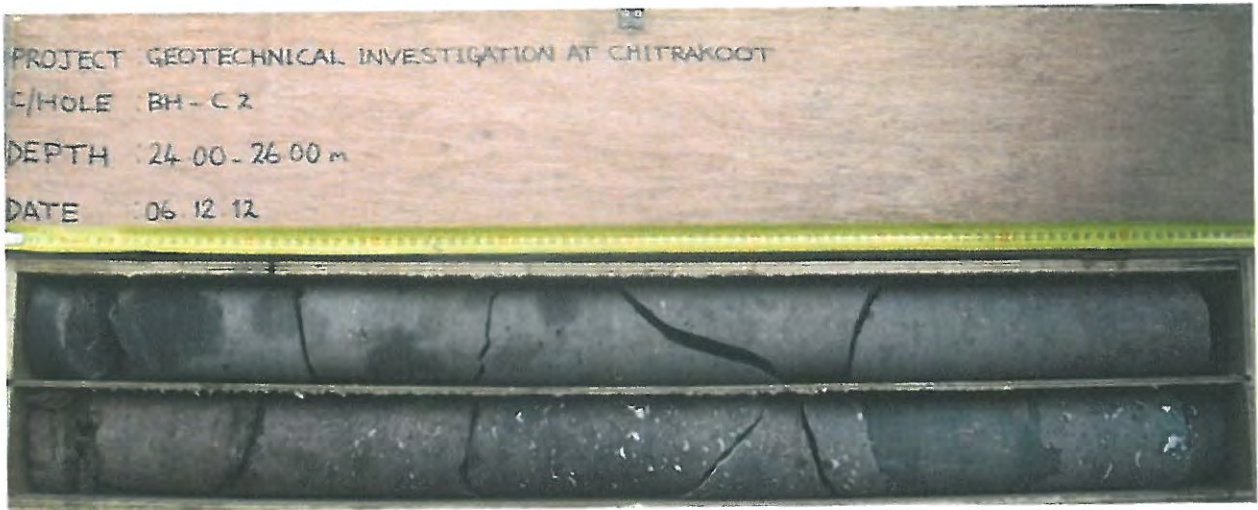
# BH-C2



## BH-C2

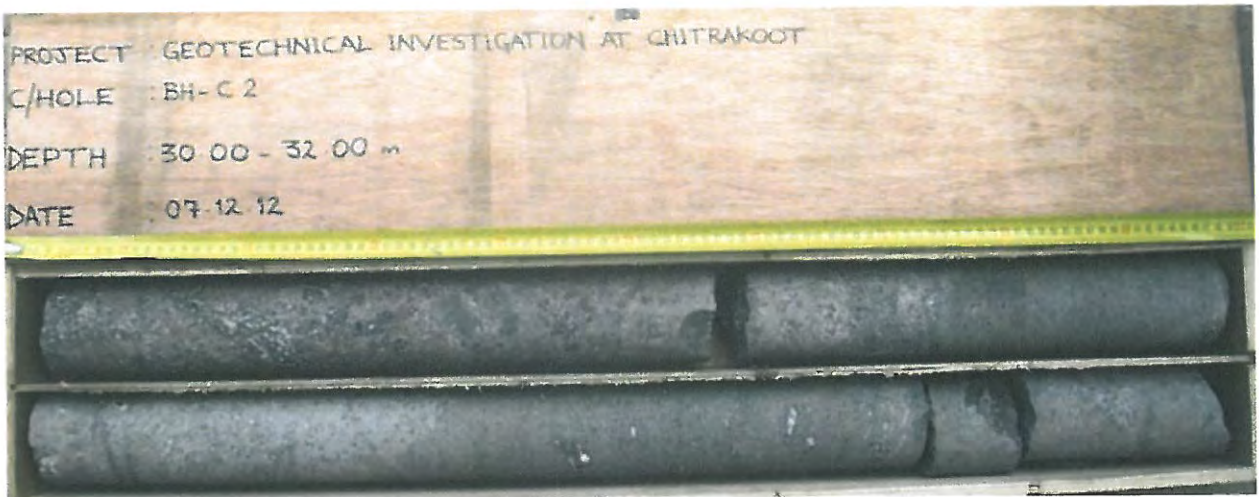


## BH-C2





## BH-C2

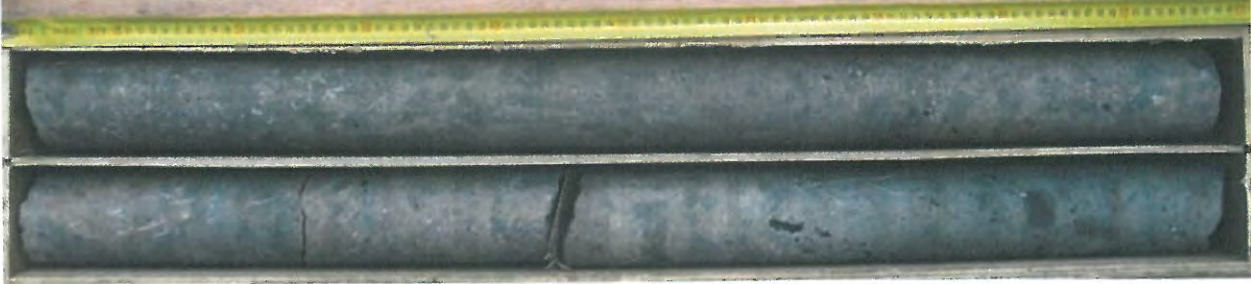


## BH-C2

PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C2  
DEPTH : 36.00 - 38.00 m  
DATE : 08.12.12



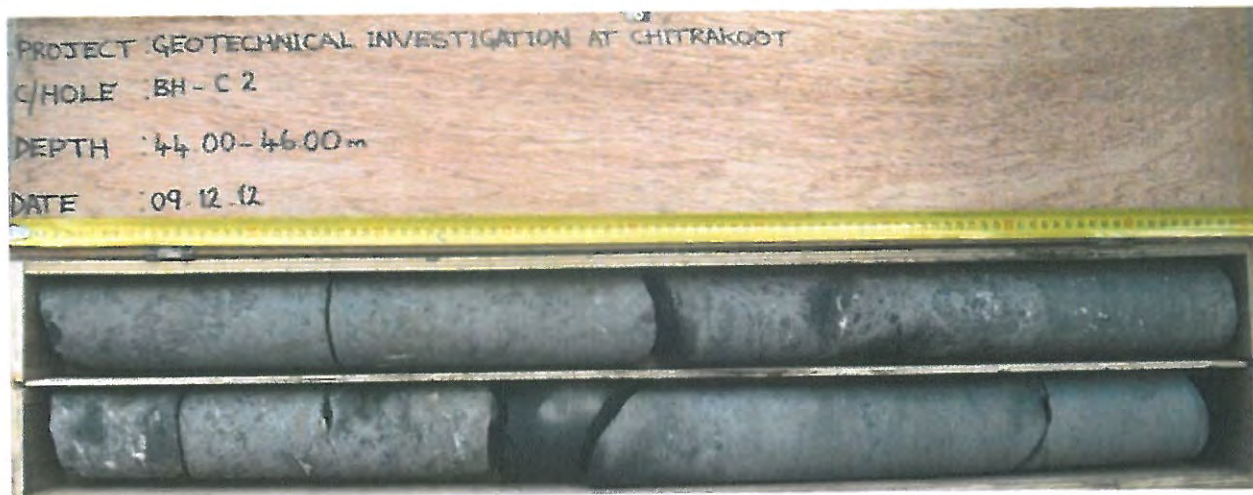
PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C2  
DEPTH : 38.00 - 40.00 m  
DATE : 08.12.12



PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
C/HOLE : BH-C2  
DEPTH : 40.00 - 42.00 m  
DATE : 08.12.12



## BH-C2









**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

Sheet : 3 of 3

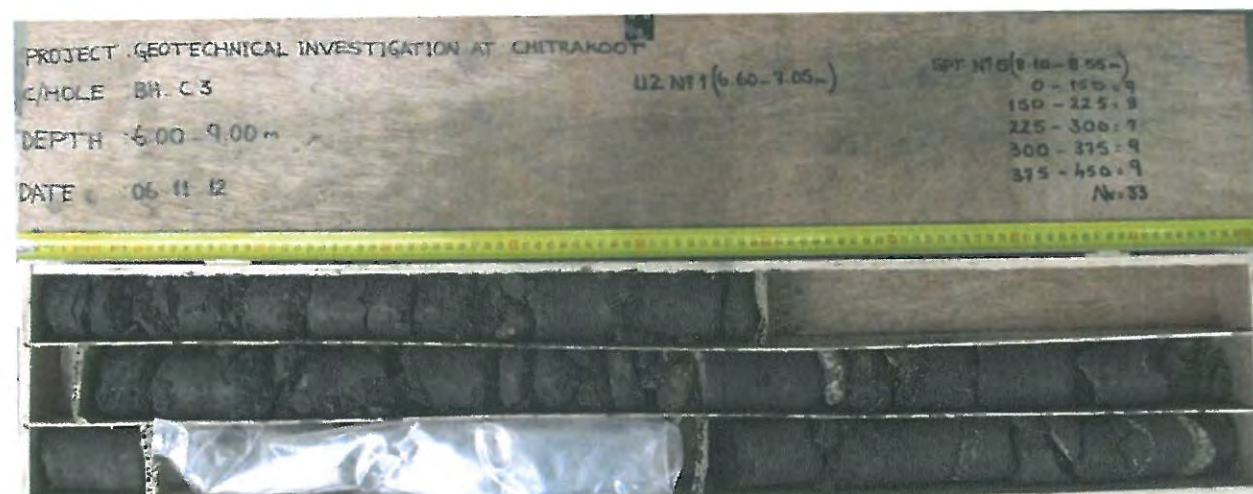
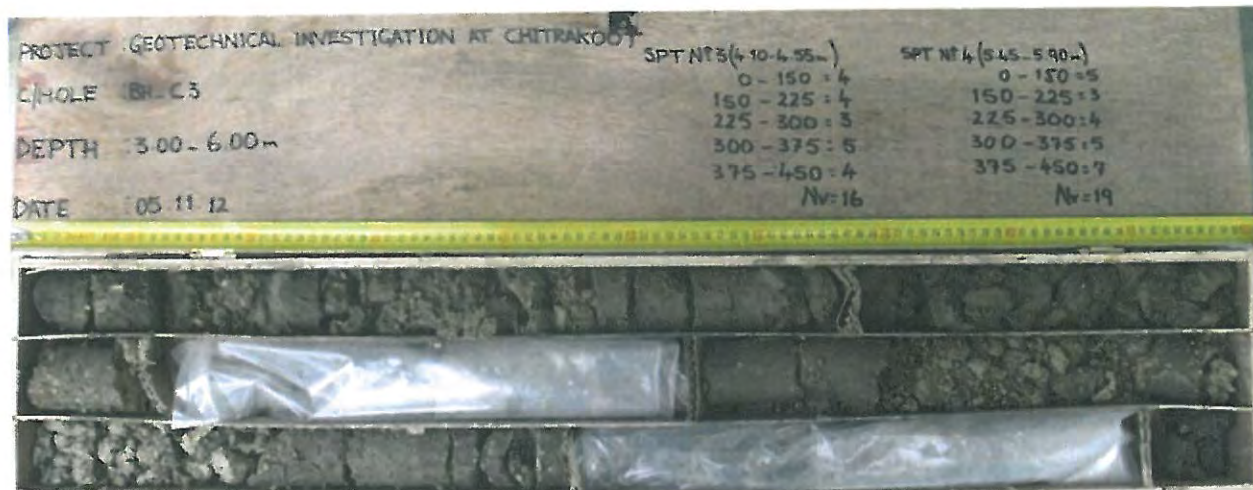
**DRILLHOLE BH C3**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 19.11.2012	Drilling started : 05.11.2012
Date of photograph : 19.11.2012	Drilling completed : 08.11.2012
Location : Chittrakoot	Hole diameter : 76 mm
Drilling method : Rotary Head	Depth : 50.00 m
Drilling rig : APAFOR 48	

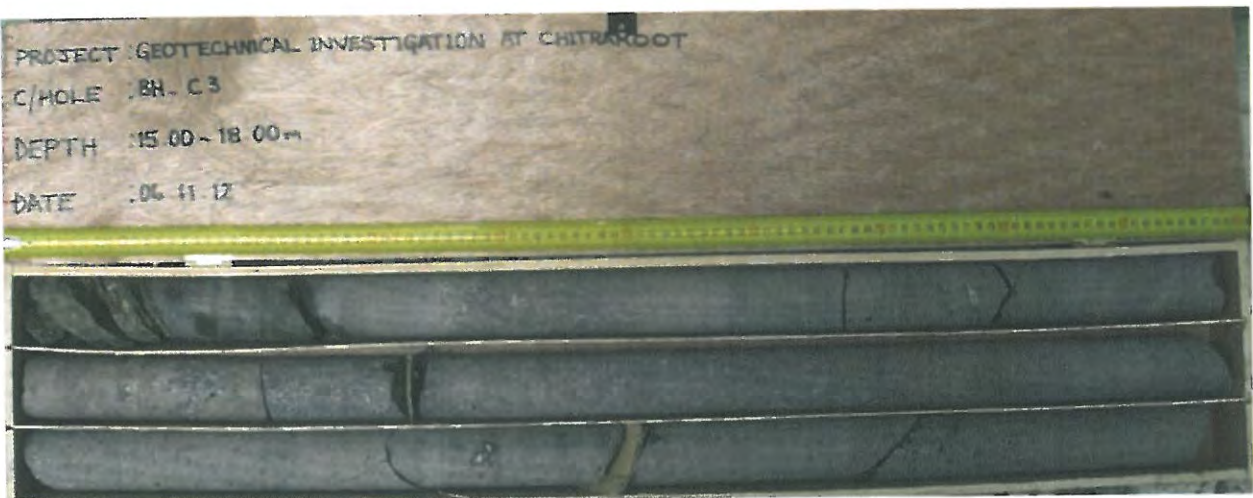
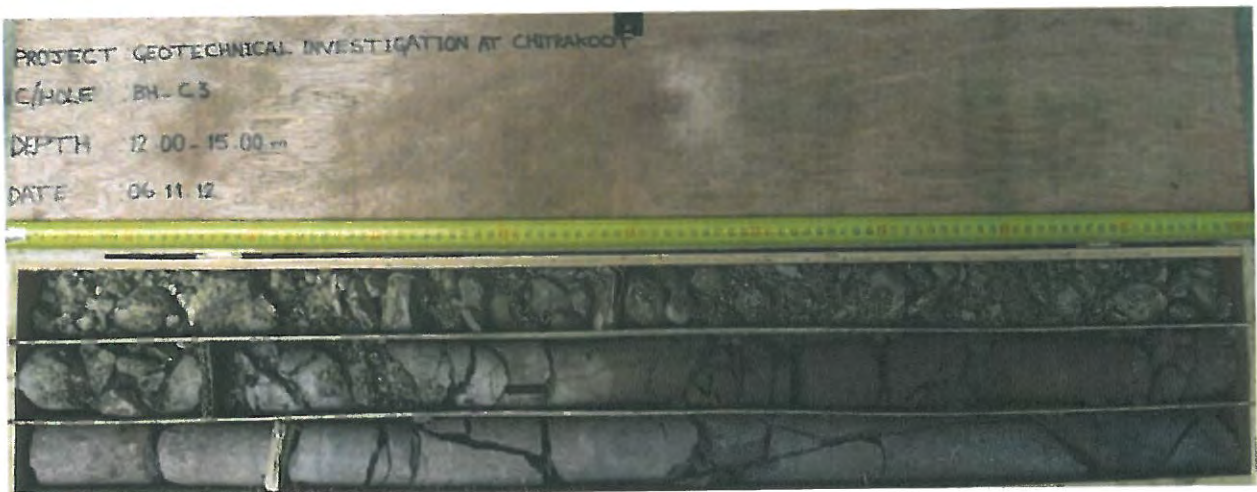
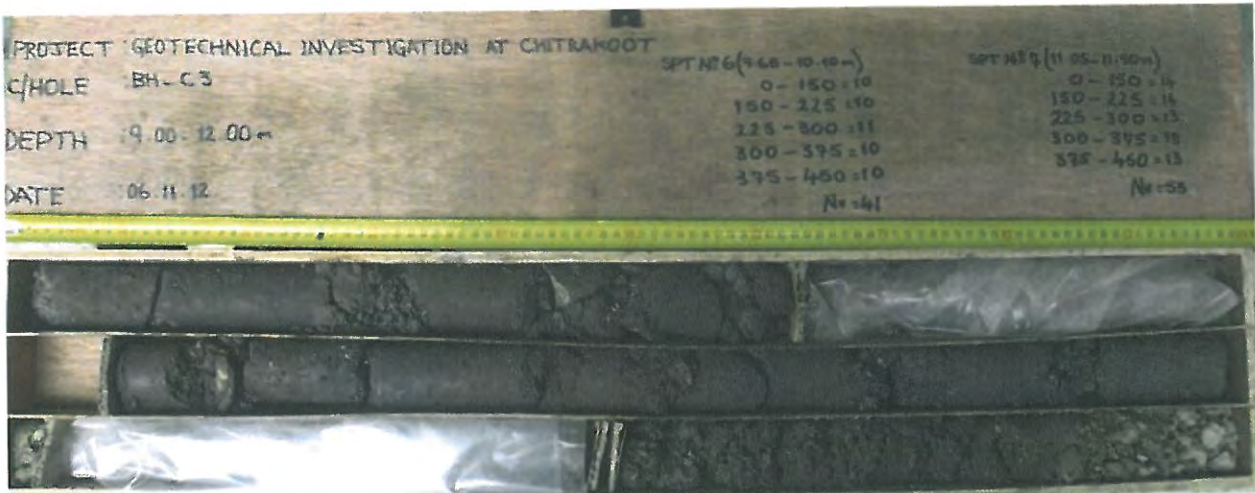
Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (%>100 mm)	STRATA	
							Legend	Thickness (m)
40.00			40.60	100	98	98		20.00
41.00								<p><b>(Continued)</b> <b>32.00 - 50.00 m</b></p> <p>Grey to purplish grey, strong to very strong, compact, medium to fine grained SLIGHTLY WEATHERED AGGLOMERATE and BASALT with basalt and agglomerate occurring in alternate segments. Fractures are closely to widely spaced, clean, subhorizontal, rough and stepped/undulated.</p>
42.00			42.00	100	82	78		
43.00			43.00	100	98	98		
44.00			44.30	100	92	83		
45.00			45.00	100	88	82		
46.00			46.55	100	92	92		
47.00								
48.00			48.00	100	98	98		
49.00			49.00	100	92	92		
50.00			50.00	100	99	99	(18.00)	
51.00								50.00
52.00								
53.00								
54.00								
55.00								
56.00								
57.00								
58.00								
59.00								
60.00								

**End of borehole**

**BH-C3**

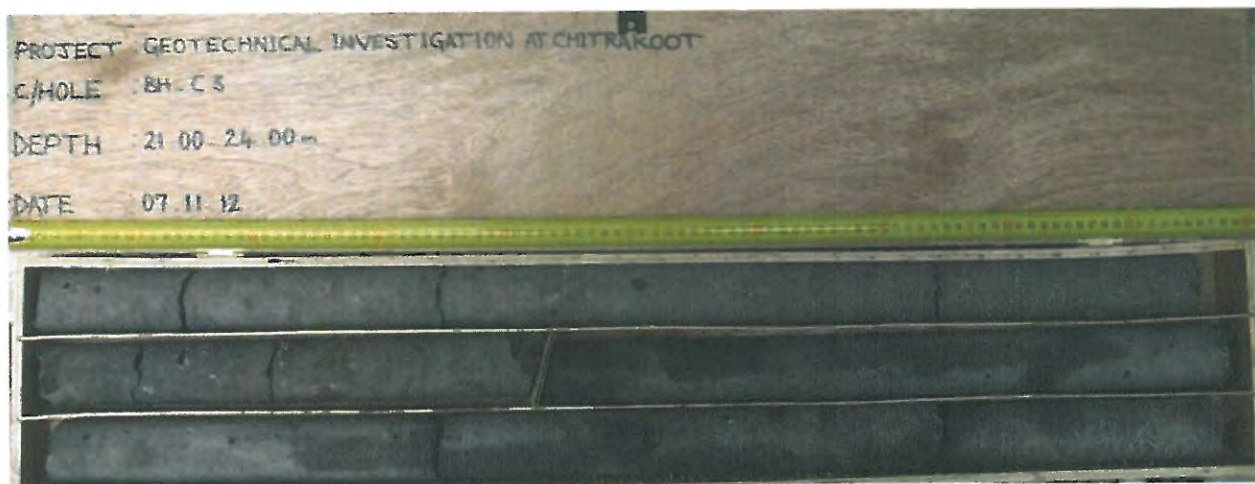
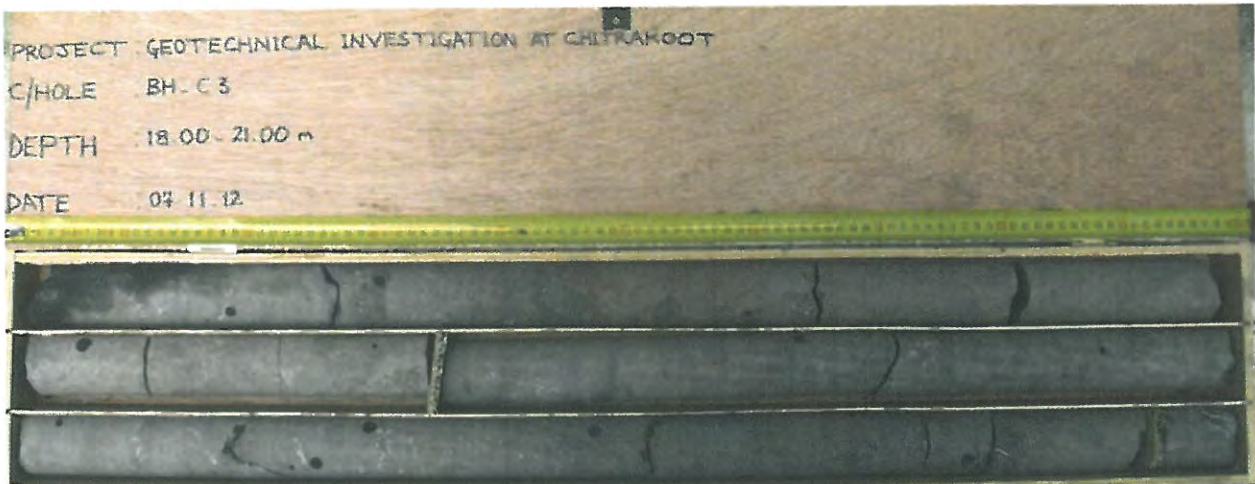


**BH-C3**

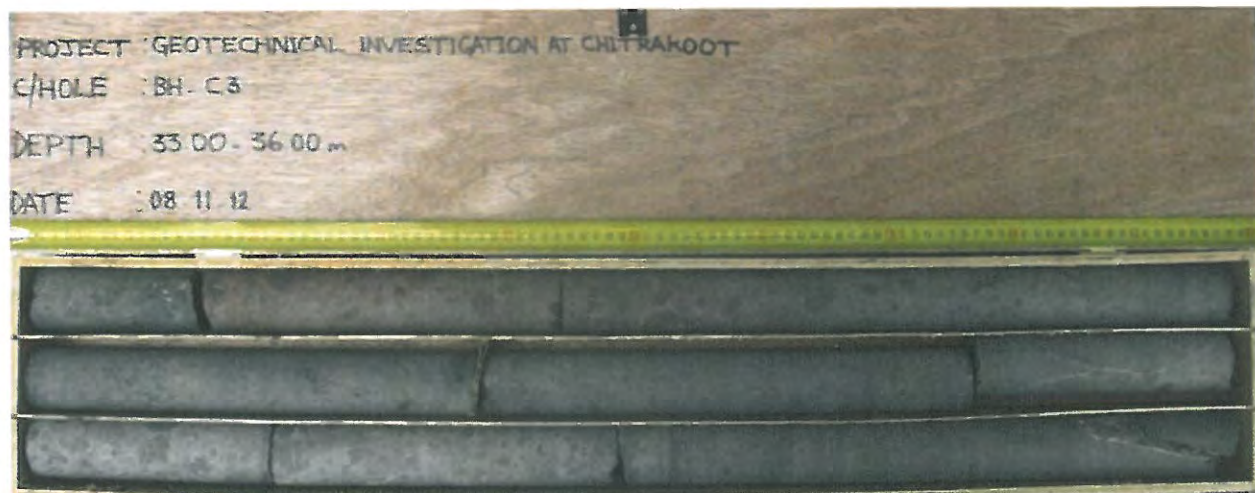
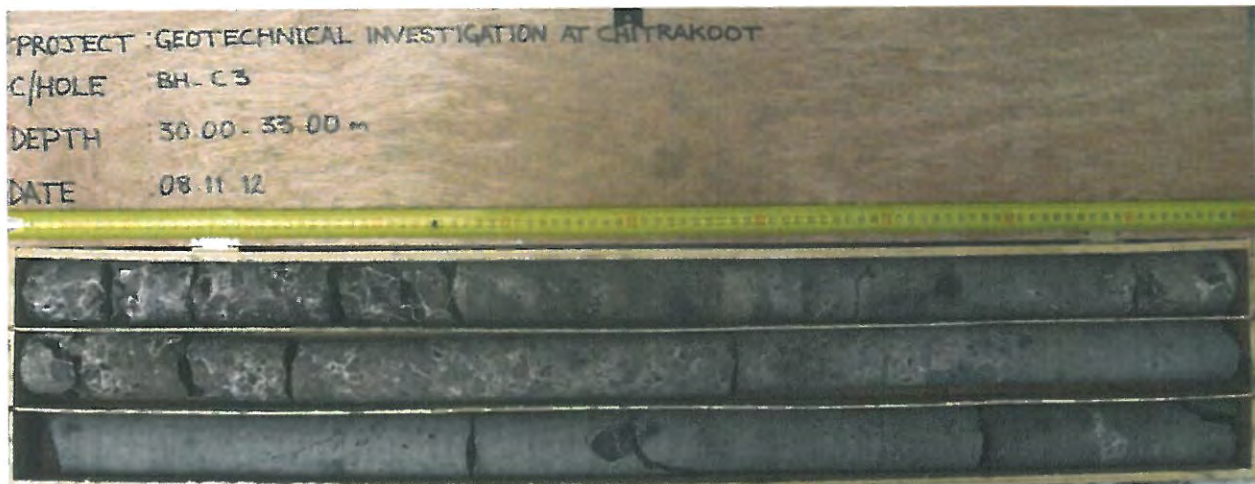




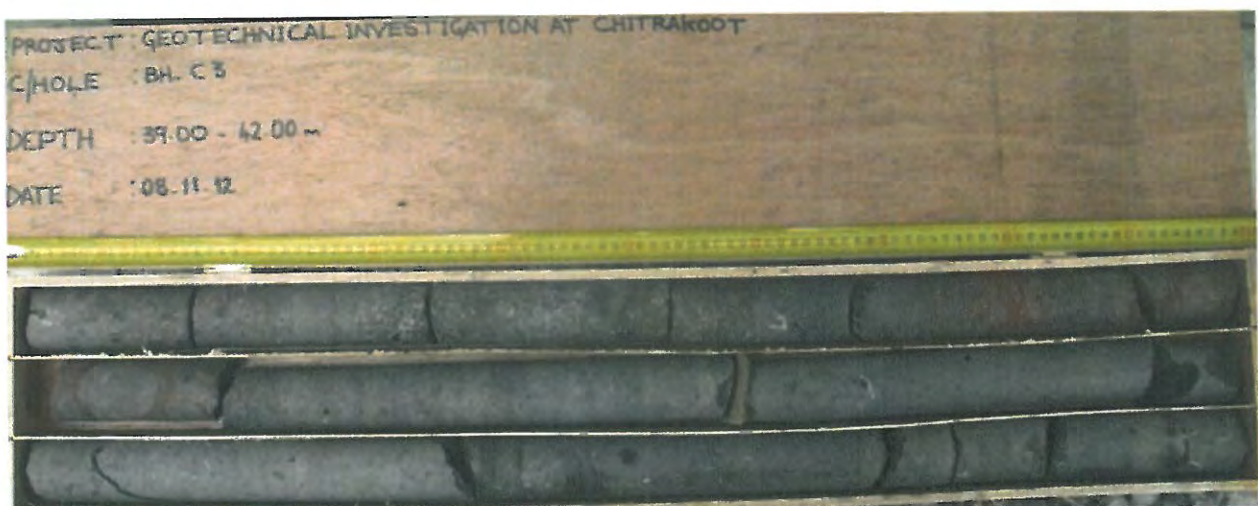
## BH-C3



## BH-C3



### BH-C3



## BH-C3





# COREHOLE LOGGING

## GEOTECHNICAL INVESTIGATION AT CHITRAKOOT

Sheet : 1 of 2

**DRILLHOLE BH C4**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 20.11.2012	Drilling started : 30.10.2012
Date of photograph : 20.11.2012	Drilling completed : 01.11.2012
Location : Chittrakoot	Hole diameter : 76 mm
Drilling method : Rotary Head	Depth : 30.00 m
Drilling rig : APAFOR 48	

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% > 100 mm)	per metre	STRATA	
								Legend	Thickness (m)
00.00			0.45	100	0	0		(00.50)	<b>00.00 - 00.50 m</b> Dark brown, loose GRAVELLY SILTY CLAY with thin roots. TOP SOIL.
01.00			1.00	100	0	0		00.50	<b>00.50 - 07.55 m</b> Dark brown to reddish brown, stiff GRAVELLY SILTY CLAY with occasional cobbles (possibly COLLUVIUM).
02.00			1.85	100	40	0			
			2.20	100	55	0			
		SPT1	2.55	100	0	0			
03.00		N = 26	3.00	100	0	0			
04.00			3.70	100	0	0			
			4.50	100	6	0		(07.05)	
05.00		SPT2	5.00	100	0	0			
		N = 10	5.45	100	0	0			
06.00			6.35	100	0	0			
		SPT3	6.80	100	0	0			
07.00		N = 28	7.55	100	0	0			
			8.00	100	0	0			
08.00		SPT4	8.45	100	0	0		07.55	<b>07.55 - 12.30 m</b> Light brown to greyish brown, very stiff, non plastic COMPLETELY WEATHERED AGGLOMERATE.
		N = 36	9.35	100	0	0			
09.00			9.85	100	0	0			
		SPT5	10.30	100	0	0		(04.75)	
10.00		N = 34	11.45	100	0	0			
11.00			12.35	100	0	0			
12.00			13.00	100	72	28		12.30	<b>12.30 - 14.00 m</b> Purplish to greyish brown with brown discoloration at fractures, weak to moderately strong with occasional tiny voids infilled with white deposits, medium to fine grained HIGHLY TO MODERATELY WETHERED AGGLOMERATE. Fractures are extremely closely spaced, subhorizontal to subvertical, rough and undulated/stepped.
13.00			13.70	100	15	0		(01.70)	
14.00			15.00	100	77	77		14.00	<b>14.00 - 15.00 m</b> Grey, strong to very strong, compact SLIGHTLY WEATHERED BASALT. Fractures are medium to widely spaced, subhorizontal, clean, rough and undulated/stepped.
15.00			15.80	100	98	98		(01.00)	
16.00			17.30	100	91	91		15.00	<b>15.00 - 18.00 m</b> Brownish to purplish grey, strong with occasional tiny voids, medium to fine grained SLIGHTLY WEATHERED AGGLOMERATE. Fractures are moderately to widely spaced, subhorizontal, clean, rough and undulated.
17.00			18.00	100	93	93		(03.00)	
18.00			18.85	100	82	70		18.00	<b>18.00 - 20.00 m</b> Grey, strong to very strong, compact, medium to fine grained SLIGHTLY WEATHERED BASALT. Fractures are subhorizontal to subvertical, closely to moderately spaced, clean, rough and undulated/stepped.
19.00			19.75	100	90	90		(02.00)	
20.00								20.00	(Borehole continues to 30.00 m)




# BH-C4

PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
 C/HOLE : BH-C4  
 DEPTH : 0.00 - 3.00 m  
 DATE : 30.10.12

SPT N°1 (2.55 - 3.00 m)

0 - 150	= 5
150 - 225	= 4
225 - 300	= 5
300 - 375	= 7
375 - 450	= 10



PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
 C/HOLE : BH-C4  
 DEPTH : 3.00 - 6.00 m  
 DATE : 30.10.12

SPT N°2 (5.00 - 5.45 m)

0 - 150	= 3
150 - 225	= 2
225 - 300	= 2
300 - 375	= 2
375 - 450	= 4
Nv = 10	




PROJECT : GEOTECHNICAL INVESTIGATION AT CHITRAKOOT  
 C/HOLE : BH-C4  
 DEPTH : 6.00 - 9.00 m  
 DATE : 30.10.12

SPT N°3 (6.35 - 6.80 m)

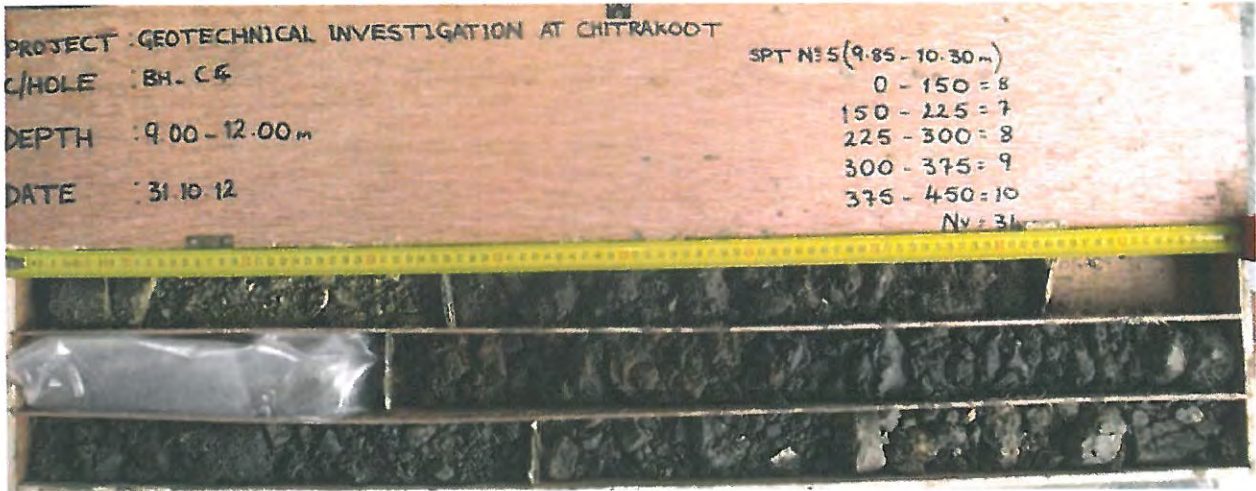
0 - 150	= 9
150 - 225	= 11
225 - 300	= 9
300 - 375	= 8
375 - 450	= 10
Nv = 28	

SPT N°4 (8.00 - 8.45 m)

0 - 150	= 11
150 - 225	= 8
225 - 300	= 9
300 - 375	= 10
375 - 450	= 9
Nv = 36	

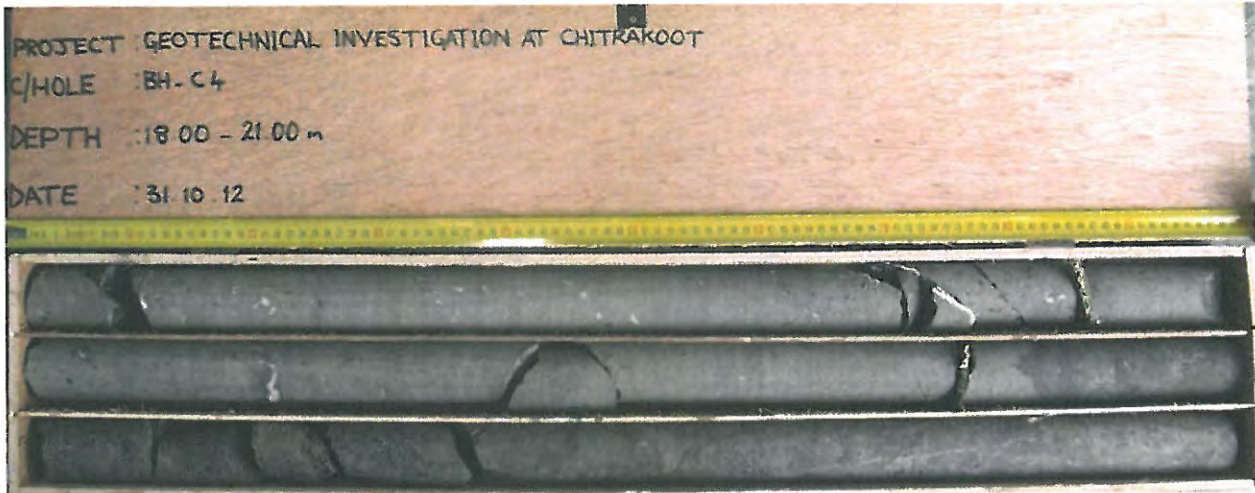


# BH-C4





## BH-C4







**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

Sheet : 1 of 2

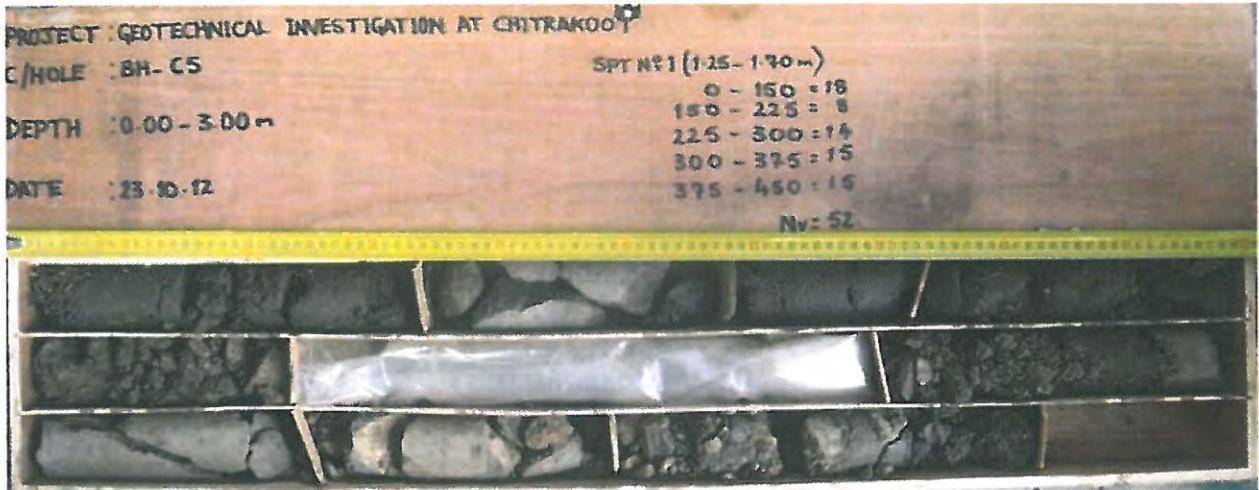
**DRILLHOLE BH C5**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 20.11.2012	Drilling started : 23.10.2012
Date of photograph : 20.11.2012	Drilling completed : 26.10.2012
Location : Chittrakoot	Hole diameter : 76 mm
Drilling method : Rotary Head	Depth : 30.00 m
Drilling rig : APAFOR 48	

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% <math>100\text{ mm}</math>)	STRATA		STRATA DESCRIPTIONS
							Legend	Thickness (m)	
00.00			0.35	100	0	0		(01.00)	<b>00.00 - 01.00 m</b> Grey, stiff, moderately plastic to plastic GRAVELLY SILTY CLAY with thin roots. TOP SOIL.
			0.60	100	0	0			
01.00		SPT1	0.75	100	0	0		(04.75)	<b>01.00 - 05.75 m</b> Brownish grey, stiff to very stiff GRAVELLY SILTY CLAY with occasional cobbles and boulders from highly to moderately weathered basalt. COLLUVIUM.
			1.25	100	0	0			
		N = 52	1.70	100	0	0			
			2.25	100	0	0			
			2.50	100	0	0			
		SPT2	2.80	100	0	0			
			3.25	100	0	0			
		N = 31	3.50	100	0	0			
			3.65	100	0	0			
		SPT3	4.25	100	0	0			
			4.70	100	0	0			
		N = 56	5.00	100	0	0			
		SPT4	5.75	100	0	0			
		N-Ref.	5.90	100	0	0			
			6.50	100	0	0			
			6.70	100	30	0			
			6.85	100	0	0			
			7.50	100	0	0			
			8.60	100	0	0			
			8.55	100	0	0			
			9.25	100	0	0			
			10.00	100	37	0			
			11.45	100	56	35			
			12.30	100	15	0			
			13.50	100	33	0			
			14.40	100	10	0			
			15.15	100	50	23			
			16.00	100	45	23			
			16.85	100	65	60			
			18.00	100	75	60			
			19.50	100	95	95			
20.00									(stratum continues up to 26.00 m)



**BH-C5**



## BH-C5



## BH-C5



## BH-C5







**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

Sheet : 1 of 3

**DRILLHOLE BH C6**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 21.11.2012	Drilling started : 12.11.2012
Date of photograph : 21.11.2012	Drilling completed : 16.11.2012
Location : Chittrakoot	Hole diameter : 101 mm
Drilling method : Rotary Head	Depth : 50.00 m
Drilling rig : APAFOR 48	

Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% > 100 mm)	STRATA	
							Legend	Thickness (m)
00.00			0.55	100	0	0	(00.55)	<b>00.00 - 00.55 m</b> Brown, soft SILTY CLAY with fine gravels and thin roots. TOP SOIL.
01.00			1.45	100	0	0	00.55	<b>00.55 - 07.00 m</b> Dark brown, soft to stiff, moderately plastic SILTY CLAY with occasional cobbles and boulders (possibly COLLUVIUM).
02.00	SPT1	2.00	100	0	0			
	N = 8 No recovery	2.45	100	0	0		2.45	
03.00		3.00	100	0	0		3.00	
	SPT2	3.85	100	0	0		(06.45)	
04.00	N = 5	4.30	100	0	0			
05.00		5.30	100	0	0			<b>07.00 - 13.00 m</b> Light brown, stiff to very stiff, non plastic GRAVELLY SILTY CLAY. COMPLETELY WEATHERED BASALT/AGGLOMERATE.
06.00		5.75	100	0	0			
07.00	SPT4	7.00	100	0	0		07.00	
	N = 14	7.45	100	0	0			
08.00		8.00	100	0	0			
09.00	SPT5	8.80	100	0	0		(06.00)	
10.00	N = 32	9.25	100	0	0			<b>13.00 - 15.45 m</b> Grey to purplish grey with light brown discoloration at fractures, strong, compact, medium to fine grained SLIGHTLY TO MODERATELY WEATHERED AGGLOMERATE. Fractures are closely spaced, subhorizontal to subvertical, rough and stepped/undulated.
11.00		10.00	100	0	0			
12.00	SPT6	10.65	100	0	0		13.00	
	N = 26	11.10	100	0	0		(02.45)	
13.00		12.00	100	0	0		15.45	
14.00		12.50	100	65	60		(00.45)	
15.00		13.00	100	70	53		15.90	
16.00		14.40	100	70	53			<b>15.45-15.90m</b> Greyish brown, weak HIGHLY WEATHERED AGGLOMERATE reduced to gravel and cobble size.
17.00		15.45	100	62	62			
18.00		16.00	100	10	0		(13.60)	
19.00		17.00	100	90	90			
20.00		18.00	100	79	79			
		19.60	100	45	32			
20.00		20.00	100	82	55		20.00	<b>15.90 - 29.50 m</b> Grey to purplish grey with occasional brown discoloration at fractures, moderately strong to very strong, compact, medium to fine grained MODERATELY TO SLIGHTLY WEATHERED AGGLOMERATE, occasionally fragmented. Fractures are very closely to closely to moderately spaced, subhorizontal, almost clean (with occasional brown discoloration), rough and undulated.  (Stratum continues down to 29.50 m.)



**GEOTECHNICAL INVESTIGATION  
AT CHITRAKOOT**

**COREHOLE LOGGING**

Sheet : 2 of 3

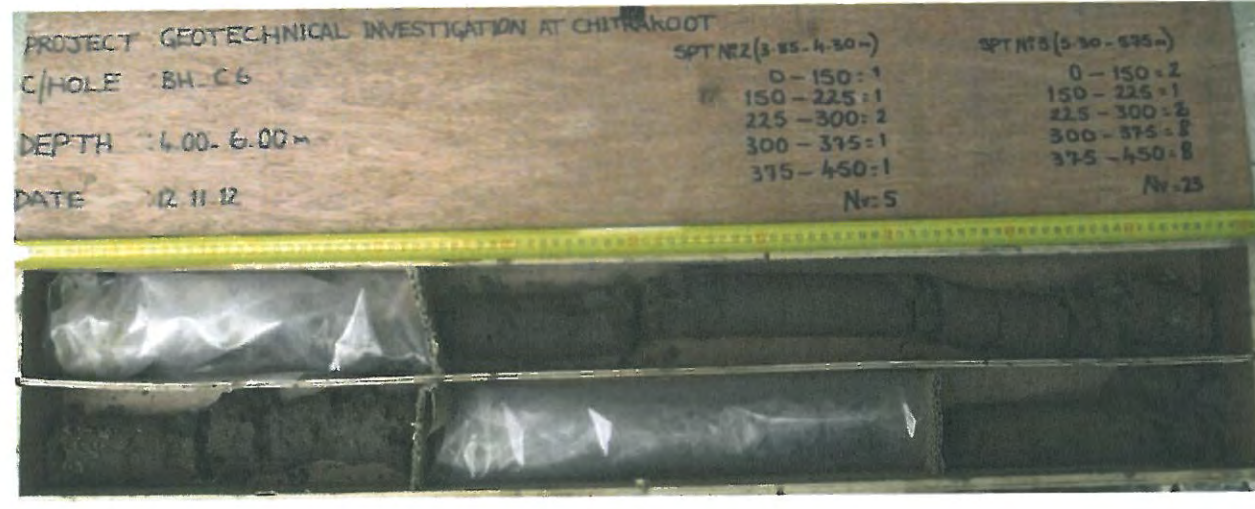
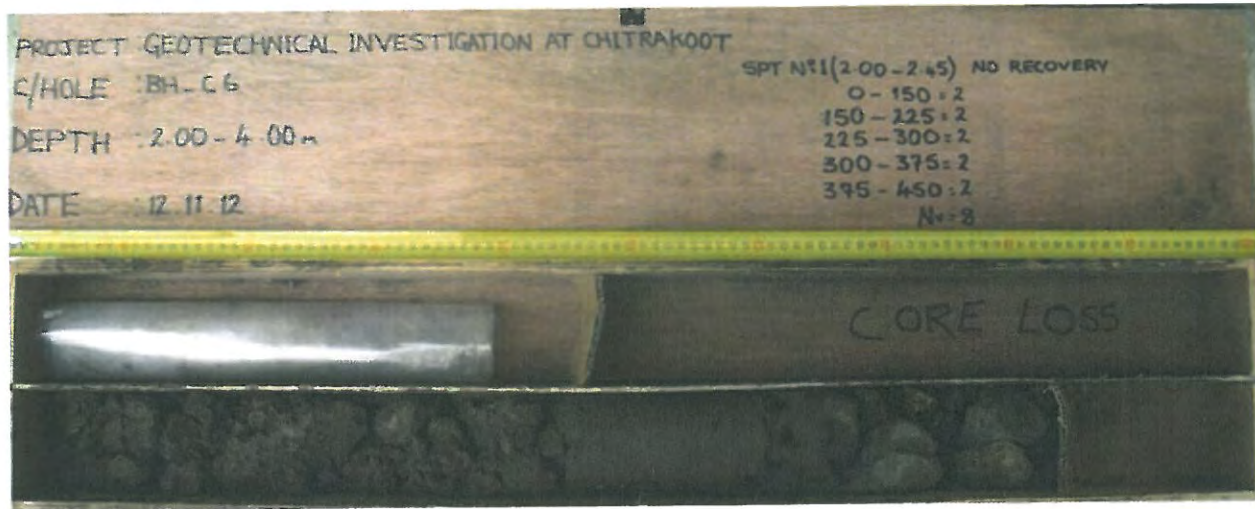
**DRILLHOLE BH C6**

Logged by : RG	Drilled by : S.Guy
Date of Logging : 21.11.2012	Drilling started : 12.11.2012
Date of photograph : 21.11.2012	Drilling completed : 16.11.2012
Location : Chittrakoot	Hole diameter : 101 mm
Drilling method : Rotary Head	Depth : 50.00 m
Drilling rig : APAFOR 38	

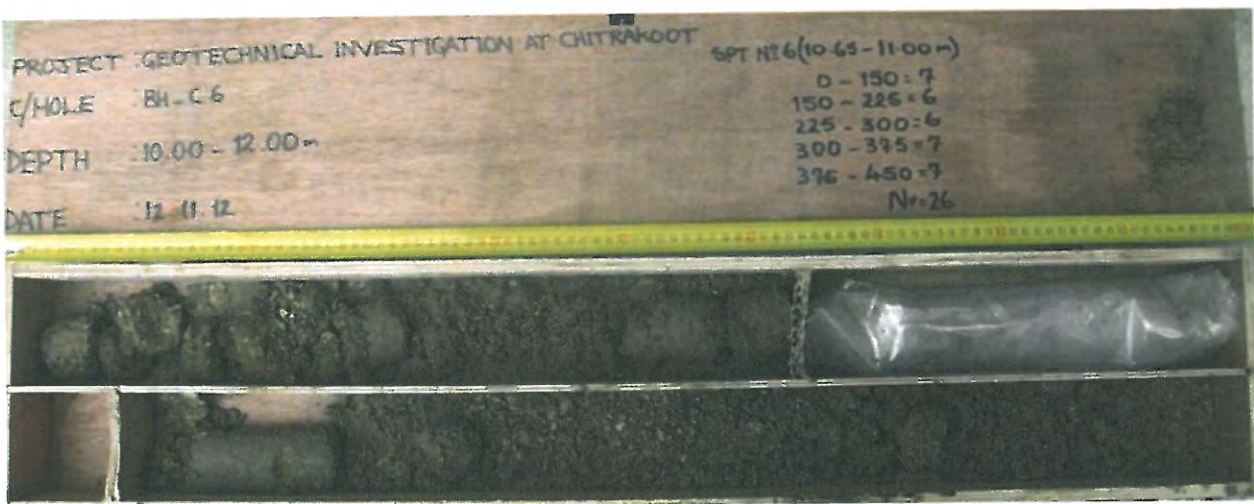
Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% - 100 mm)	STRATA		STRATA DESCRIPTIONS
							Legend	Thickness (m)	
00.00									(Continued)
21.00			20.85	100	94	94			<b>15.90 - 29.50 m</b> Grey to purplish grey with occasional brown discoloration at fractures, moderately strong to very strong, compact, medium to fine grained MODERATELY TO SLIGHTLY WEATHERED AGGLOMERATE, occasionally fragmented. Fractures are very closely to closely to moderately spaced, subhorizontal, almost clean (with occasional brown discoloration), rough and undulated.
22.00			22.00	100	72	72			
23.00			23.25	100	85	75			
24.00			24.00	100	98	98		(13.60)	
25.00			25.50	100	98	98			
26.00			26.00	100	64	22			
27.00			27.15	100	90	90			
28.00			28.00	100	95	95			
29.00			29.00	100	92	92			
30.00			30.00	100	67	45		29.50	<b>29.50 - 33.00 m</b> Purplish brown with light brown/cream discoloration at fractures, moderately weak to moderately strong, non vesicular, medium to fine grained MODERATELY WEATHERED AGGLOMERATE. Fractures are extremely closely to closely spaced, randomly oriented, rough and stepped/undulated.
31.00			30.85	100	59	25		(03.50)	
32.00			32.00	100	52	12			
33.00			33.00	100	73	60		33.00	<b>33.00 - 35.90 m</b> Grey, strong to very strong, compact, fine grained SLIGHTLY WEATHERED BASALT. Fractures are closely to moderately spaced, subhorizontal, clean, rough and undulated.
34.00			34.00	100	94	94		(02.90)	
35.00			35.00	100	80	72			
36.00			35.45	100	89	89			
36.00			36.00	100	60	30		35.90	<b>35.90 - 36.50 m</b> Purplish grey, weak to moderately strong, non vesicular, laminated, medium medium to fine grained HIGHLY TO MODERATELY WEATHERED AGGLOMERATE. Fractures are extremely closely spaced, subhorizontal, rough and undulated.
37.00			37.00	100	62	42		(00.60)	
38.00			38.00	100	95	95		36.50	<b>36.50 - 43.00 m</b> Purplish grey, strong to very strong, compact, medium to fine grained SLIGHTLY WEATHERED AGGLOMERATE. Fractures are medium to widely spaced, subhorizontal, clean, rough and undulated.
39.00			39.00	100	94	94		(06.50)	
40.00			40.00	100	100	100		40.00	(Stratum continues down to 43.00 m.)



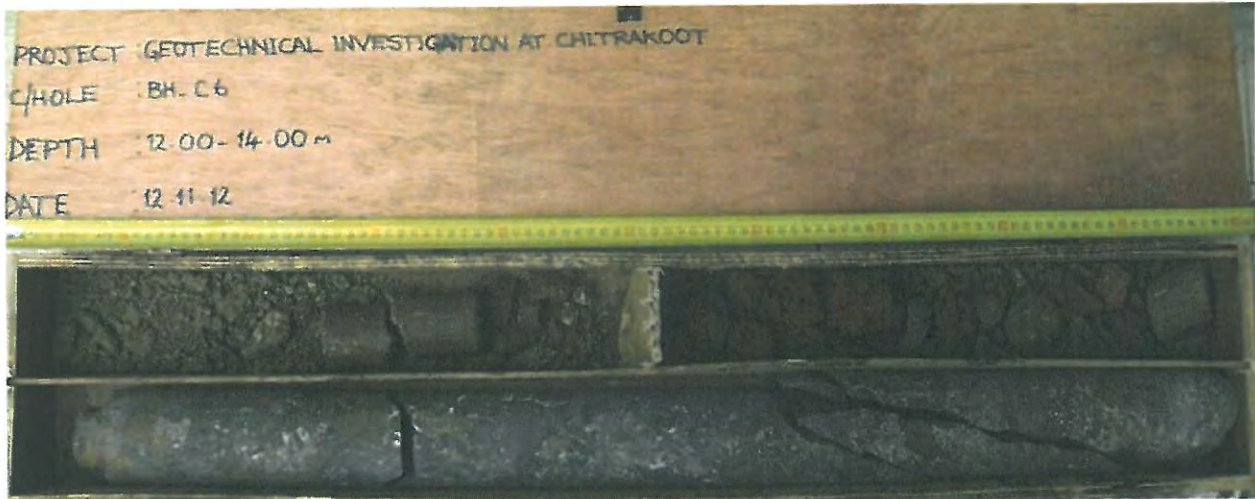
**BH-C6**



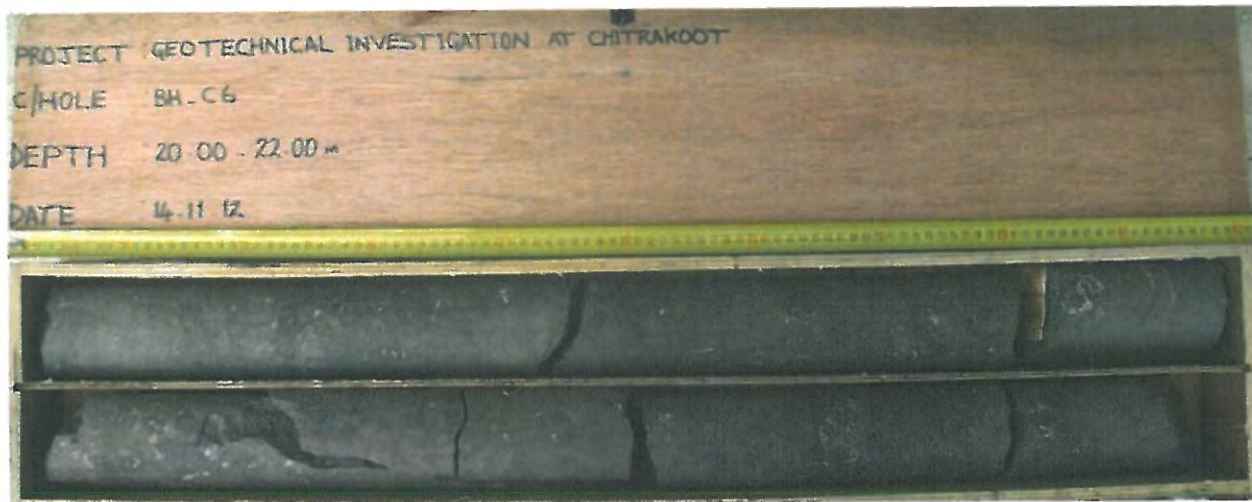
**BH-C6**



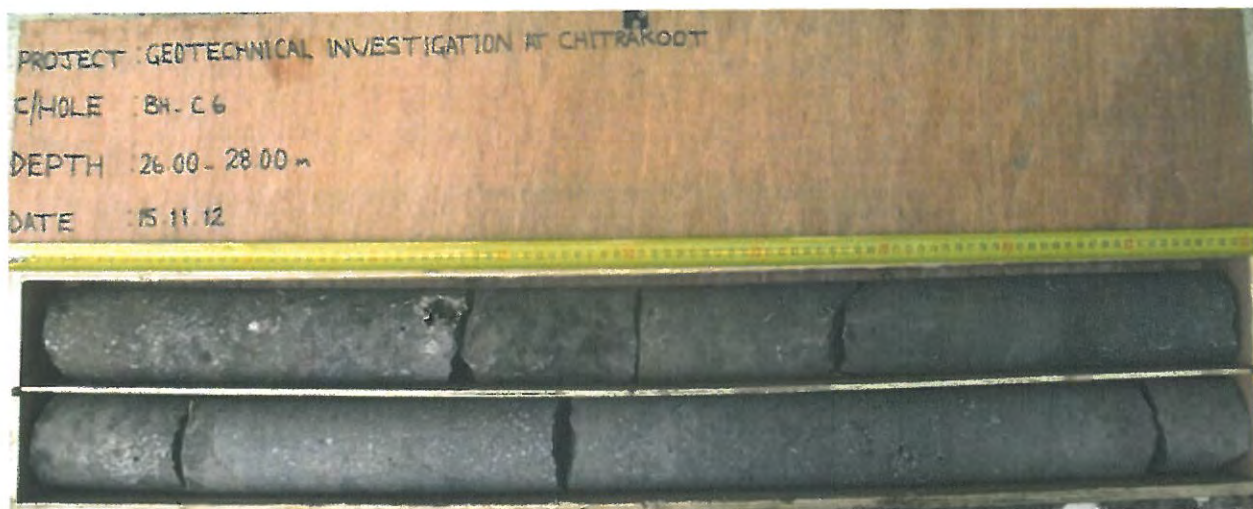
## BH-C6



## BH-C6

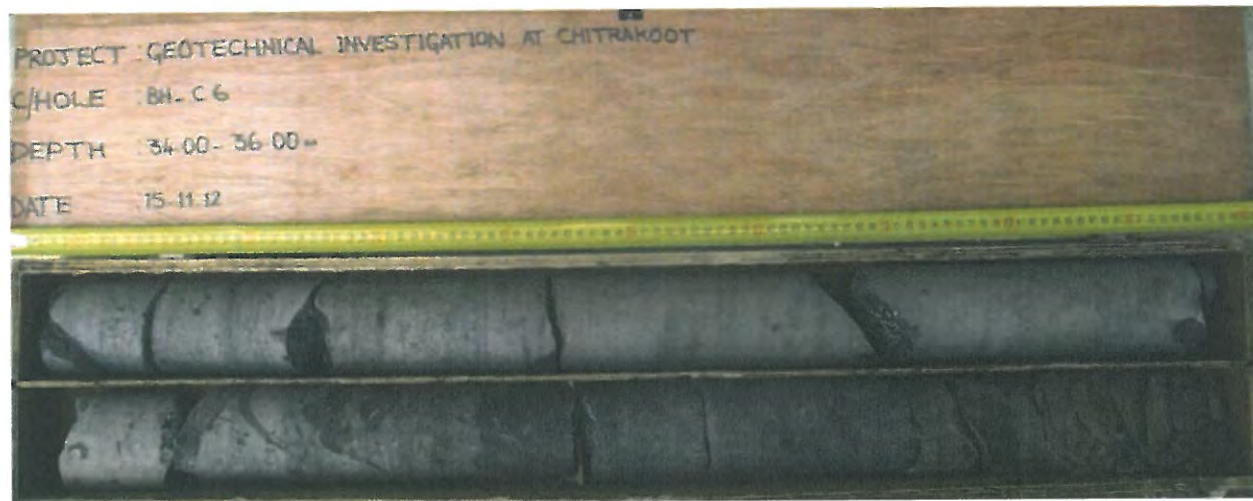
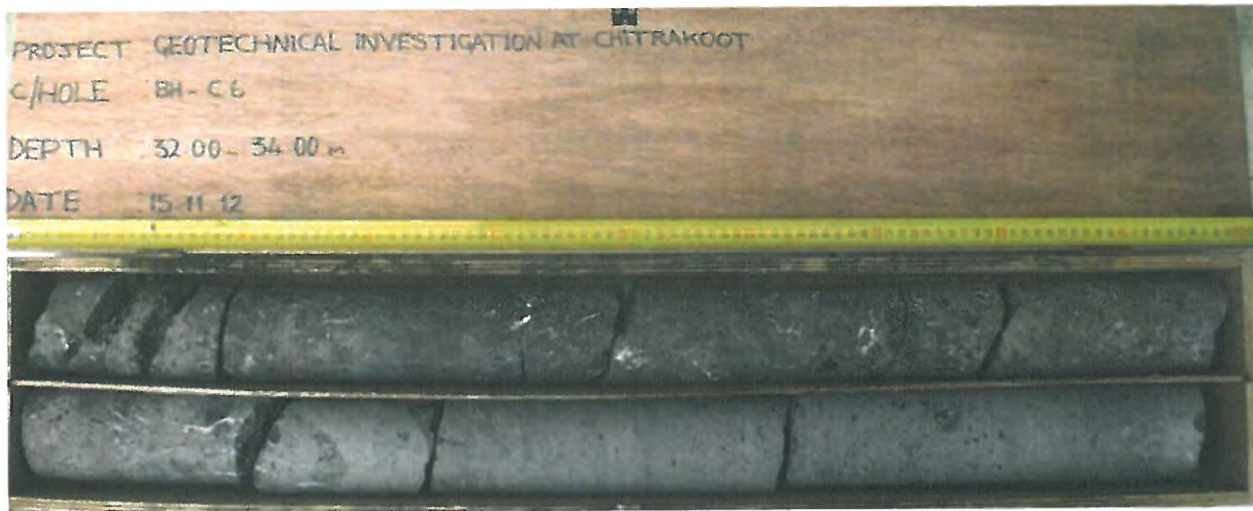


## BH-C6

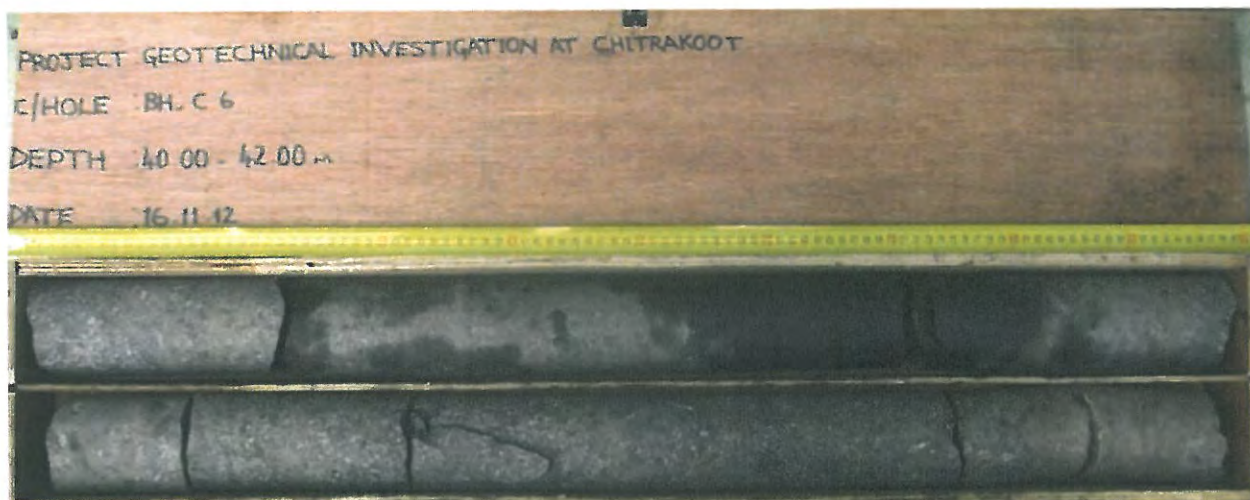




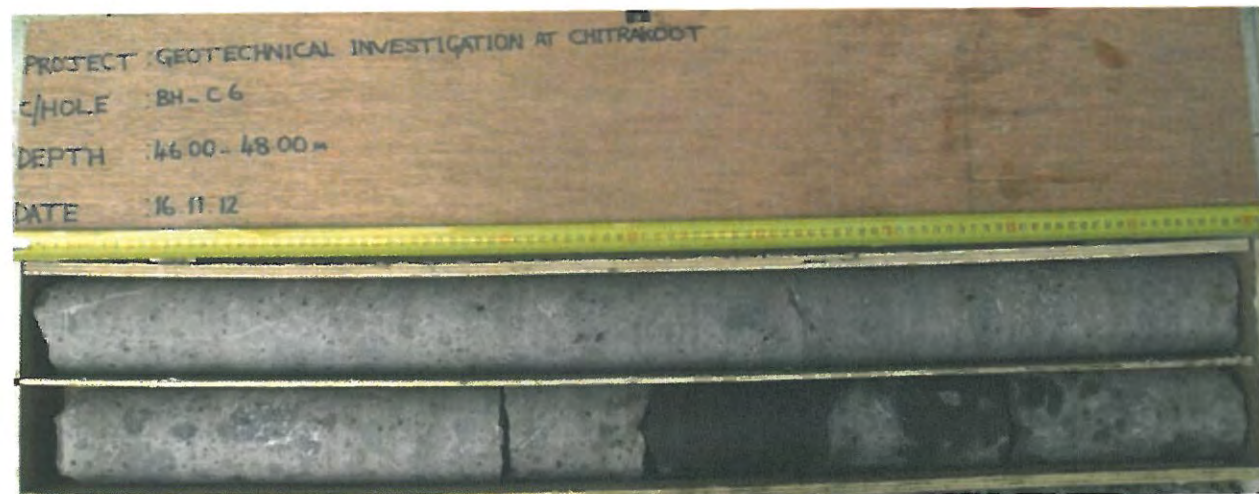
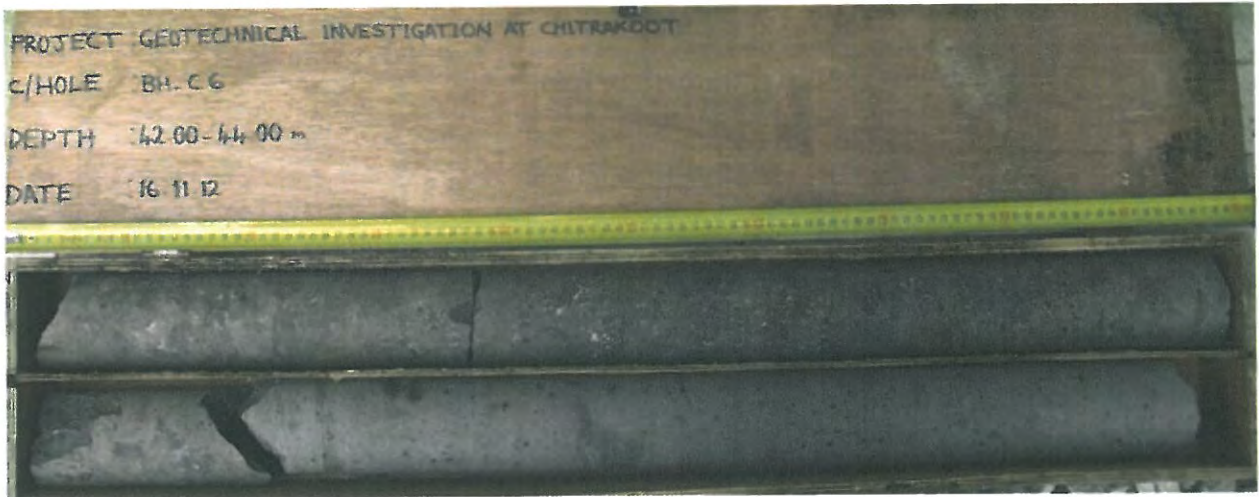
## BH-C6



## BH-C6



## BH-C6







**GEOTECHNICAL INVESTIGATION  
AT QUATRE SOEURS.**

**COREHOLE LOGGING**

**DRILLHOLE BH Q1**

Sheet : 1 of 2

Logged by : RG	Drilled by : L.Casimir
Date of Logging : 19.10.2012	Drilling started : 10.10.2012
Date of photograph : 19.10.2012	Drilling completed : 13.10.2012
Location : Quatre Soeurs	Hole diameter : 76 mm
Drilling method : Rotary Head	Depth : 21.00 m
Drilling rig : APAFOR 38	

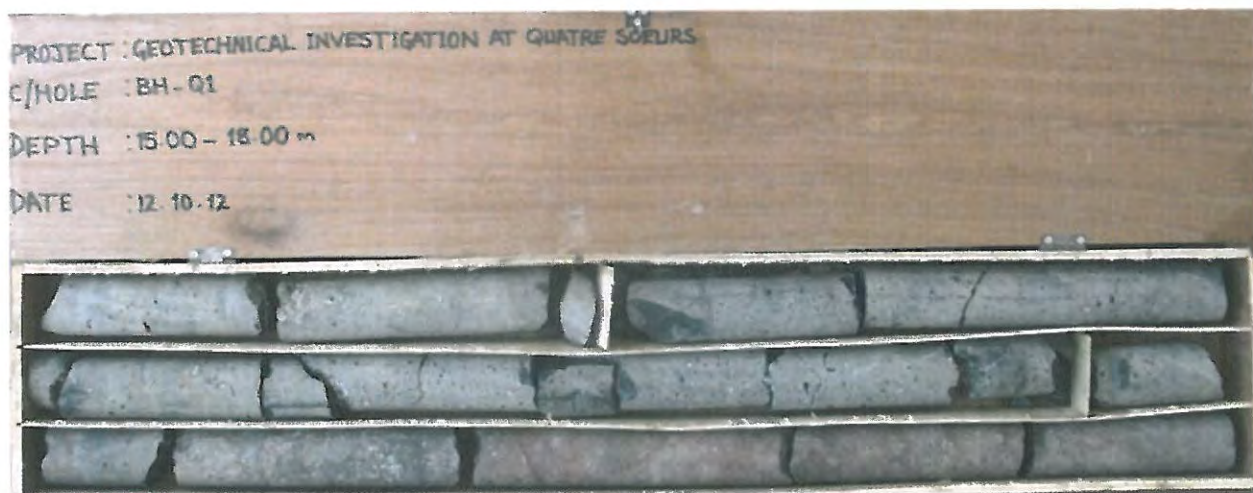
Depth (m)	Type of sample for lab testing	SPT	Drilling Run	Total core recovery (%)	Solid core recovery (%)	Rock Quality Designation (% - 100 mm)	STRATA		STRATA DESCRIPTIONS
							Legend	Thickness (m)	
00.00			0.55	100	0	0	[Cross-hatch pattern]	(00.55)	<b>00.00 - 00.55 m</b> Grey, soft to firm GRAVELLY SILTY CLAY.
01.00		SPT1 N = 6	0.80	100	0	0		00.55	<b>00.55 - 02.00 m</b>
			1.00	100	0	0	[Diagonal lines]	(01.45)	Brownish grey, firm to stiff, moderately plastic GRAVELLY SILTY CLAY, COLLUVIUMS.
			1.45	100	0	0		02.00	<b>02.00 - 03.50 m</b>
			2.00	100	0	0	[Hexagonal pattern]	(01.50)	Grey to brownish grey with cream discoloration at fractures, weak HIGHLY WEATHERED AGGLOMERATE/BRECCIA.
			2.50	100	0	0		03.50	<b>03.50 - 07.80 m</b>
			3.00	100	0	0	[Vertical lines]	(04.30)	Grey with brown discoloration at fractures, weak to moderately strong, non vesicular, medium to fine grained HIGHLY TO MODERATELY WEATHERED BASALT, occasionally fragmented. Fractures are very closely to closely spaced, subhorizontal to subvertical, smooth to rough and undulated.
			3.50	100	28	0		07.80	<b>07.80 - 08.70 m</b> Grey, strong to very strong, compact, fine grained SLIGHTLY WEATHERED. Fractures are closely spaced, subhorizontal, clean, smooth to rough and undulated.
			4.00	100	0	0	[Horizontal lines]	(08.70)	<b>08.70 - 10.00 m</b> Purplish brown, strong with occasional tiny voids, medium to fine grained SLIGHTLY WEATHERED AGGLOMERATE/BRECCIA. Fractures are moderately spaced, clean, smooth to rough and undulated.
			4.45	100	33	33		10.00	<b>10.00 - 17.00 m</b>
			5.10	100	20	20	[Diagonal lines]	(07.00)	Grey, strong to very strong with occasional vesicles and tiny voids, medium to fine grained SLIGHTLY WEATHERED BASALT with occasional segments of agglomerate. Fractures are subhorizontal to subvertical, closely to widely spaced, clean, rough undulated and occasionally infilled with quartz/zeolite.
			6.00	100	22	11		17.00	<b>17.00 - 18.00 m</b> Purplish grey to purplish brown, strong to very strong, compact, medium to fine grained SLIGHTLY WEATHERED AGGLOMERATE/BRECCIA. Fractures are moderately spaced, subhorizontal, rough and undulated.
			6.45	100	0	0	[Hexagonal pattern]	(01.30)	<b>18.00 - 21.00 m</b> Grey, strong to very strong with occasional vesicles, medium to fine grained SLIGHTLY WEATHERED BASALT. Fractures are closely to moderately spaced, subhorizontal, clean, rough and undulated.
			7.25	100	25	19		21.00	(Stratum continues down to 21.00 m.)
			7.35	100	0	0	[Diagonal lines]	(03.00)	
			8.00	100	30	18			
			8.85	100	68	59			
			9.00	100	100	100			
			9.90	100	92	92			
			11.00	100	91	86			
			11.50	100	44	30			
			12.00	100	74	74			
			12.70	100	78	70			
			13.00	100	100	100			
			14.00	100	95	85			
			15.00	100	78	63			
			15.45	100	82	82			
			16.00	100	72	54			
			16.85	100	60	45			
			18.00	100	92	92			
			18.45	100	90	90			
			19.00	100	65	50			
			20.00	100	50	50			



# BH-Q1



## BH-Q1





## BH-Q1

PROJECT : GEOTECHNICAL INVESTIGATION AT QUATRE SOIRS  
C/HOLE : BH-Q1  
DEPTH : 18.00 - 21.00 m  
DATE : 13-10-12







**BH-Q2**

PROJECT : GEOTECHNICAL INVESTIGATION AT QUATRE SOEURS  
 C/HOLE : BH-Q2  
 DEPTH : 0.00 - 3.00 m  
 DATE : 02.10.12

SPT N°1 (1.13 - 1.58 m)	SPT N°2 (2.20 - 2.65 m)
0 - 150 = 3	0 - 150 = 5
150 - 225 = 3	150 - 225 = 4
225 - 300 = 3	225 - 300 = 5
300 - 375 = 3	300 - 375 = 4
375 - 450 = 3	375 - 450 = 4
Nv = 12	Nv = 17



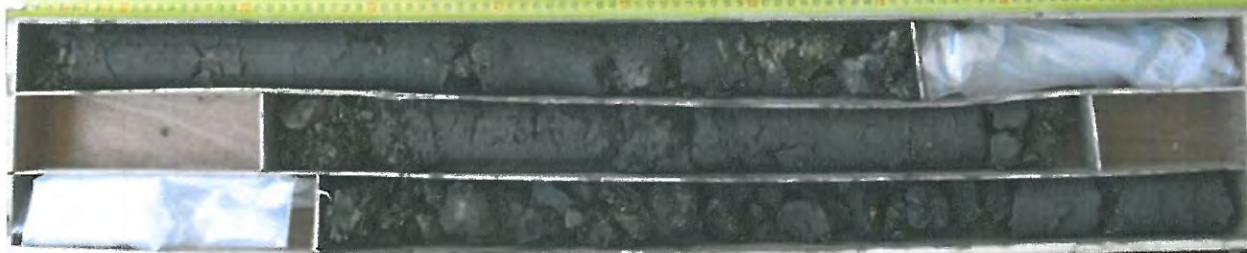
PROJECT : GEOTECHNICAL INVESTIGATION AT QUATRE SOEURS  
 C/HOLE : BH-Q2  
 DEPTH : 3.00 - 6.00 m  
 DATE : 02.10.12

SPT N°3 (3.85 - 4.00 m)	SPT N°4 (5.00 - 5.45 m)
0 - 150 = 3	0 - 150 = 6
150 - 225 = 3	150 - 225 = 3
225 - 300 = 3	225 - 300 = 4
300 - 375 = 5	300 - 375 = 3
375 - 450 = 4	375 - 450 = 5
Nv = 15	Nv = 15



PROJECT : GEOTECHNICAL INVESTIGATION AT QUATRE SOEURS  
 C/HOLE : BH-Q2  
 DEPTH : 6.00 - 9.00 m  
 DATE : 05.10.12

L12 N°1 (7.85 - 8.25 m) (NO RECOVERY)	SPT N°5 (6.75 - 7.20 m)
	0 - 150 = 2
	150 - 225 = 2
	225 - 300 = 4
	300 - 375 = 4
	375 - 450 = 4
	Nv = 14



**BH-Q2**

PROJECT: GEOTECHNICAL INVESTIGATION AT QUATRE SOEURS  
 C/HOLE: BH-Q2  
 DEPTH: 9.00 - 12.00 m  
 DATE: 03.10.12

U2 N°2 (9.00-9.40m)

SPT N°6 (10.35-10.80 m)  
 0 - 150 = 3  
 150 - 225 = 3  
 225 - 300 = 4  
 300 - 375 = 4  
 375 - 450 = 5  
 Nv=16



PROJECT: GEOTECHNICAL INVESTIGATION AT QUATRE SOEURS  
 C/HOLE: BH-Q2  
 DEPTH: 12.00 - 15.00 m  
 DATE: 03.10.12

SPT N°7 (13.45-13.90 m)  
 0 - 150 = 6  
 150 - 225 = 11  
 REFUSAL



PROJECT: GEOTECHNICAL INVESTIGATION AT QUATRE SOEURS  
 C/HOLE: BH-Q2  
 DEPTH: 15.00 - 18.00 m  
 DATE: 04.10.12



## BH-Q2

