KULEKHANI-III HYDROPOWER PROJECT

BORE HOLE LOG

DRILL HOLE NO. BPH-1

COORDINATES :3040705.228,602589.264,578.717

INCLINATION : HORIZONTAL

DRILLING MACHINE : TONE-UD5

DRILLING METHOD : ROTARY

START DATE : 18-05-2002

COMPLETION DATE : 03-07-2002

COLLAR ELEVATION :578.717

ELEVATION OF HOLE END : 578.717

LOCATION : POWERHOUSE

Depth.m	Casing size	Core Log	DESCRIPTION OF ROCK /SOIL	S P T Blows per 15 cm 0-15	15-30	30-45	DESCRIPTION OF DISCONTINUITIES WATER LEVEL/m	ALTERATION	ORIENTATION	ROUGHNESS	JOINT/m	CORE RECOVERY RQD % REC %	RQD%	20	40	60	80	100	LU PERMEABILITY	LAB TEST	SCREEN PIPE
20.00																					
			GRAY COLOR THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	CALCITE	70°	r	1	100	58								
21.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	CALCITE	68°	r	1	100	81						Lu=3.839 Lit/min/m/mpa, K=4.99E-05cm/Sec		
22.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	CLAY	40° 68°	r	2	100	68								
23.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	CLAY	68°	r	1	100	46						Lu=7.780 Lit/min/m/mpa, K=1.01E-04cm/sec.		
24.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	35								
25.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW		68°	pl. r	6	100	30								
26.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED FRACTURED SILICIOUS DOLOMITE.				FLOW	STAINING	68°	pl. r	6	100	15								
27.00																					
			W2,STRONG,FRACTURED SILICOUS DOLOMITE.				FLOW	-	-	-	-	50	-								
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED FRACTURED, SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	-								
28.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED FRACTURED , SILICIOUS DOLOMITE.				FLOW	STAINING	68°	pl. r	5	100	56								
29.00																					
			W2,STRONG,WHITE GRAY THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	STAINING	68°	r	1	100	88						Lu=6.50Lit/min/m/mpa,K=9.75E-05cm/sec.		
30.00																					

ABBREVIATION Rough =r, Irregular=ir, Stepped= st, Smooth= s, Slickensided= sl, Undulating= un, Planner= pl, Clay= cl, Sand= sa, Mica= mi, Crusbed= cr, Iron stain=Fea, Fractured zone = f2, Mechanical Breakage= MB, Fresh = W1, Slightly Weathered = W2,Mod. Weathered =W3, Highly Weathered= W4, Decomposed = W5.

DRILLED BY :M. SHRESTHA/B.B KARKI/R. ADHIKARI(DRILLING SUPARVISOR/FOREMAN),SRCL

KULEKHANI-III HYDROPOWER PROJECT

BORE HOLE LOG

DRILL HOLE NO. BPH-1

COORDINATES :3040705.228,602589.264,578.717

INCLINATION : HORIZONTAL

DRILLING MACHINE : TONE-UD5

DRILLING METHOD : ROTARY

START DATE : 18-05-2002

COMPLETION DATE : 03-07-2002

COLLAR ELEVATION :578.717

ELEVATION OF HOLE END : 578.717

LOCATION : POWERHOUSE

Depth.m	Casing size	Core Log	DESCRIPTION OF ROCK /SOIL	SPT Blows per 15 cm 0-15	15-30	30-45	DESCRIPTION OF DISCONTINUITIES WATER LEVEL/m	ALTERATION	ORIENTATION	ROUGHNESS	JOINT/m	CORE RECOVERY RQD % REC %	RQD%	20	40	60	80	100	LU PERMEABILITY	LAB TEST	SCREEN PIPE
30.00																					
			W2, STRONG,GRAY COLOR THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	35								
31.00																					
			W3,MEDIUM,STRONG, HARD,GREENISH GRAY,THINLY FOLIATED SILICIOUS WITH MICRO				FLOW	-	-	-	-	100	59								
32.00																					
			W3,MEDIUM, STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS WITH MICRO				FLOW	-	-	-	-	100	90								
33.00																					
			W3,MEDIUM STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	92								
34.00																					
			W3,MEDIUM STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	STAINING	65°	r	1	100	88								
35.00																					
			W2,STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	-								
36.00																					
			W4,WEAK,GREENISH GRAY,THINLY FOLIATED MICA-CHIORITE DOMINATED FRACTURED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	-								
37.00																					
			W3,MEDIUM STRONG,GREENISH GRAY,THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	72								
38.00																					
			CLAY MIXED SAND (SHEARPLANE)				FLOW	-	-	-	-	-	-								
			W4,WEAK,GRAY COLOR FRACTURED SIL.DOL.				FLOW	-	-	-	-	100	-								
			CLAY MIXED SAND (SHEAR PLANE)				FLOW	-	-	-	-	-	-								
39.00																					
			W3,MEDIUM STRONG,WHITE GRAY THINLY FOLIATED SILICIOUS DOLOMITE.				FLOW	-	-	-	-	100	-								
40.00																					

Lu=5.840 Lit/min/m/mpa,K=8.760E-05cm/sec.

Lu=8.450Lit/min/m/mpa,K=1.268E-04cm/sec.

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DRILLED BY :M. SHRESTHA/B.B KARKI/R. ADHIKARI(DRILLING SUPARVISOR/FOREMAN),SRCL

KULEKHANI-III HYDROPOWER PROJECT

BORE HOLE LOG

DRILL HOLE NO. BPH-1

COORDINATES :3040705.228,602589.264,578.717

INCLINATION : HORIZONTAL

DRILLING MACHINE : TONE-UD5

DRILLING METHOD : ROTARY

START DATE : 18-05-2002

COMPLETION DATE : 03-07-2002

COLLAR ELEVATION :578.717

ELEVATION OF HOLE END : 578.717

LOCATION : POWERHOUSE

Depth.m	Casing size	Core Log	DESCRIPTION OF ROCK /SOIL	S P T Blows per 15 cm 0-15	15-30	30-45	DESCRIPTION OF DISCONTINUITIES: WATER LEVEL/m	ALTERATION	ORIENTATION	ROUGHNESS	JOINT/m	CORE RECOVERY RQD %: REC %	RQD%	LU: PERMEABILITY	LAB TEST	SCREEN PIPE
40.00																
			W1,VERY STRONG,GRAY COLOR FINE GRAINED LAMINATED FRACTURED SILICIOUS DOLOMITE.				FLOW OUT	STAINING	68° 15°	r PL.	4	100	25			
41.00			W1,VERY STRONG,GRAY COLOR FINE GRAINED LAMINATED FRACTURED SILICIOUS DOLOMITE.				FLOW OUT	STAINING	68° 15°	r PL.	4	100	-			
			W1,VERY STRONG,GRAY COLOR FINE GRAINED LAMINATED FRACTURED ,SILICIOUS DOLOMITE.				FLOW OUT	-	-	-	-	100	80			
42.00			W2,STRONG,GRAY COLOR FINE GRAINED LAMINATED FRACTURED SILICIOUS DOLOMITE. 42.40-42.55 CLAY MIXED SAND (SHEAR PLANE)				FLOW OUT	-	-	-	-	86	25			
43.00			42.55-42.85m CLAY MIXED SAND(SHEAR PLANE) 42.85-43.30 W3,MEDIUM STRONG, GREENISH GRAY PHYLLITE MIXED SILICIOUS DOLOMITE. <10cm CORE.				FLOW OUT	-	-	-	-	67	-			
			43.30-43.75m CLAY MIXED SAND (SHEAR P;ANE) 43.75-44.10 W2, STRONG,GRAY COLOR, LAMINATED FINE GRAINED FRACTURED , SILICIOUS DOLOMITE.				FLOW OUT	-	-	-	-	44	13			
44.00			44.10-44.65m W1 FRESH,VERY STRONG,WHITE GRAY COLOR,FINEGRAINED SILICIOUS DOLOMITE.				FLOW OUT	-	-	-	-	100	96			
			W1, VERY STRONG,WHITE GRAY COLOR, SILICIOUS DOLOMITE.				FLOW OUT	-	-	-	-	100	93			
45.00			W1,VERY STRONG,WHITE GRAY COLOR, SILICIOUS DOLOMITE.				FLOW OUT	CL.COTING	68° 10°	S PL.	5	100				
			W2,STRONG,WHITE GRAY COLOR,FINE GRAINED LAMINATED SILICIOUS DOLOMITE <10cm CORE.				FLOW OUT	CL.COTING	68° 10°	S PL.	5	100	40			
46.00			W2, STRONG,WHITE GRAY COLOR,FINE GRAINED LAMINATED SILICIOUS DOLOMITE <10cm CORE.				FLOW OUT	CL.COT.	68° 10°	S PL.	5	100	-			
			46.55-47.00m BROWN COLOR,CLAY MIXED SAND 47-47.15m W2 ,STRONG,FRACTURED SILICIOUS DOLOMITE <10cm CORES				FLOW OUT	-	-	-	-	25	-			
47.00			47.15-47.50m BROWN COLOR,CLAY MIXED SAND 47-50.48.15m W1,VERY STRONG, GRAY COLOR SILICIOUS DOLOMITE.				FLOW OUT	-	-	-	-	65	48			
48.00			48.15-48.90-49.15m BROWN COLOR CLAY MIXED SAND 47.50-48.15m W1,VERY STRONG, GRAY COLOR, SILICIOUES DOLOMITE				FLOW OUT	-	-	-	-	25	15			
49.00			W1,VERY STRONG,WHITE GRAY COLOR FINE GRAINED LAMINATED, SILICIOUS DOLOMITE				FLOW OUT	-	-	-	-	100	45			
50.00			49.70-50.10m W1 V. STRONG,SIL. DOLOMITE.				FLOW OUT	-	-	-	-	100	50			

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DRILLED BY :M. SHRESTHA/B.B KARKI/R. ADHIKARI(DRILLING SUPARVISOR/FOREMAN),SRCL

KULEKHANI-III HYDROPOWER PROJECT

BORE HOLE LOG

DRILL HOLE NO. BPH-1

COORDINATES :3040705.228,602589.264,578.717

INCLINATION : HORIZONTAL

DRILLING MACHINE : TONE-UD5

DRILLING METHOD : ROTARY

START DATE : 18-05-2002

COMPLETION DATE : 03-07-2002

COLLAR ELEVATION :578.717

ELEVATION OF HOLE END : 578.717

LOCATION : POWERHOUSE

Depth.m	Casing size	Core Log	DESCRIPTION OF ROCK /SOIL	S P T Blows per 15 cm 0-15	15-30	30-45	DESCRIPTION OF DISCONTINUITIES WATER LEVEL/m	ALTERATION	ORRENTATION	ROUGHNESS	JOINT/m	CORE RECOVERY RQD % REC %	RQD%	20	40	60	80	100	LU PERMEABILITY	LAB TEST	SCREEN PIPE
50.00			49.70-50.10m W1 SILICIOUS DOLOMITE.				FLOW OUT														
51.00			50.10-50.25m W3,MEDIUM STRONG,FRACTURED SILICIOUS DOLOMITE50.25-50.75m BROWN COLOR CLAY MIXEDSAND 50.75-51.35m W2, FRACTURED SILICIOUS DOLOMITE.				FLOW OUT					60	-								
52.00			51.35-52.15m CLAY SILT MIXED SAND (WEAK ZONE) THEN 52.15-52.55 W2,GRAY COLOR,FRACTURED SILICIOUS DOLOMITE <10cm CORE.				FLOW OUT					33	-								
53.00			52.55-53.30 mSILT CLAY MIXED SAND (WEAK ZONE)THEN 53.30-53.55 m W2 SILICIOUS DOLOMITE.				FLOW OUT					25	23								
54.00			53.55-54.30m SILT CLAY MIXED SAND (WEAK ZONE) THEN 54.30-55.05m W3-4,MED. STRONG- WEAK,SILICIOUS DOLOMITE.				FLOW OUT					50	19								
55.00			55.05-55.25m SILT CLAY MIXED SAND THEN W2 FRACTURED SILICIOUS DOLOMITE,<10cm CORE				FLOW OUT					69	-								
56.00			55.70-56.10m SILT CLAY MIXED SAND THE W2,FRACTURED SILICIOUS DOLOMITE <10cm CORE				FLOW OUT					33	-								
			56.30-56.70m SILT CLAY MIXED SAND THEN W2,FRACTURED SILICIOUS DOLOMITE <10cm CORES				FLOW OUT					33	-								
57.00			W1 FRACTURED SILICIOUSES DOLOMITE.				FLOW OUT					100	-								
			57.05-57.50m SILT CLAY MIXED SAND THEN W2,FRACTURED SILICIOUS DOLOMITE <10cm CORE				FLOW OUT					40	-								
58.00			57.80-58.05m W2 FRACTURED SILICIOUSES DOLOMITE.58.05-58.20 SAND 58.20-58.30 W2,FRACTURED SILICIOUS DOLOMITE.				FLOW OUT					70	-								
59.00			58.30-59.15m SAND THEN 59.15-59.40 W2,FRACTURED SILICIOUS DOLOMITE <10cm CORE				FLOW OUT					23	-								
60.00			59.40-59.95 W2,FRACTURED , SILICIOUS DOLOMITE <10cm CORE				FLOW OUT					100	-								

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DRILLED BY :M. SHRESTHA/B.B KARKI/R. ADHIKARI(DRILLING SUPARVISOR/FOREMAN),SRCL

KULEKHANI-III HYDROPOWER PROJECT

BORE HOLE LOG

DRILL HOLE NO. BPV-1
COORDINATES 3040702.412,602587.308,577.596
INCLINATION : VERTICAL
DRILLING MACHINE : TONE UD-5
DRILLING METHOD : ROTARY

START DATE : 2 JUNE 2002
COMPLETION DATE : 13 JULY 2002
COLLAR ELEVATION :577.596
ELEVATION OF HOLE END : 465.596
LOCATION : POWERHOUSE

Depth.m	Casing size	Core Log	DESCRIPTION OF ROCK /SOIL	S P T Blows per 15 cm 0–15	15–30	30–45	DESCRIPTION OF DISCONTINUITIES: WATER LEVEL/m	ALTERATION	ORIENTATION	ROUGHNESS	JOINT/m	CORE RECOVERY RQD %: REC %	RQD%	LU 20	40	60	80	100	PERMEABILITY	LAB TEST	SCREEN PIPE
0.00																					
			FRACTURED (GRAVEI LIKE) WITH MIXE OF SAND OF SILICIOUS DOLAMITE.				FLOW		–	–	–	28									
1.00																					
			UPTO 30cm THICK SAND AND BELOW IT W2,STRONG,FRACTURED SILICIOUS DOLOMITE.				FLOW		–	–	–	50									
			UPTO 25cm THCK SAND ONLY BELOW IT W2,STRONG,FRACTUERED SILICIOUS DOLOMITE.				FLOW		–	–	–	11									
2.00																					
3.00			W1,FRESH,VERY STRONG,GRAY COLOR,FINE GRAINED THINLY FOLIATEDSILICIOUS DOLOMITE <10cm.CORE				FLOW	CALCITE COATING	65°	r	3	100	54								
4.00																					
5.00			ABOUT 85cm. THICK GRAY COLOR SAND,BELOW IT W3,COMPLETELY FRACTURED SILICIOUS DOLOMITE <10cm.CORE				FLOW		–	–	–	32									
6.00			W2, STRONG,GRAY COLOR,FINE GRAINED,THINLY FOLIATED, SILICIOUS DOLOMITE.				FLOW	CALCITE COATING	70° 45°	r	4	100	50								
7.00			W1,VERY STRONG,GRAY COLOR,FINE GRAINED, THINLY FOLIATED,SILICIOUS DOLOMITE.				FLOW	CALCITE COATING	70°	r	3	100	70								
8.00			W2,STRONG,GREENISH GRAY COLOR, CHLORITE CONTENTSILICIOUS DOLOMITE.				FLOW	CALCITE COATING	78°	r	3	100	75								
			10cm THICK SAND AND W2,STRONG FRACTURED SILICIOUS DOLMITE.					CL. COAL	–	–	–	66	–								
9.00			FRACTURED ROCK WITH MIXED OF SAND				FLOW		–	–	–	100	–								
			W1,VERY STRONG,GRAY COLOR,FINE GRANED, FOLIATED,SILICIOUS DOLOMITE.				FLOW	CALCITE COATING	78°	r	2	100	60								
10.00			ABOUT 30cm. THICK W2, CHLORITE DOMINENT DOLOMITE,REST IS W1,VERY STRONG, SILICIOUS DOLOMITE.				FLOW	CALCITE COATING	–	–	–	100	30								

Lu=4.62 Lit/min/m/mpa ,K=6.93E-05cm/sec.

ABBREVIATION Rough =r, Irregular=ir, Stepped= st, Smooth= s, Slickensided= sl, Undulating= un, Planner= pl, Clay= cl, Sand= sa, Mica= mi, Crusbed= cr, Iron stain=Fe, Fractured zone = f2, Mechanical Breakage= MB, Fresh = W1, Slightly Weathered = W2,Mod. Weathered =W3, Highly Weathered= w4, Decomposed = w5.

DRILLED BY :B.B. KARKI/M.B. SHRESTHA/RISHI ADHIKARI(DRILLING SUPARVISOR/FOREMAN),SRCL

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BO-1
COORDINATES: 3041106.595N, 602207.389E
DRILLING MACHINE: KOKEN
DRILLING METHOD: ROTARY

START DATE: 17/04/2002
COLLAR ELEVATION: 599.753 m
ELEVATION HOLE END:579.753 m
LOCATION: YANGRANG KHOLA
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m.	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Recov RQD% kg/cm2 20 40 60 80 100	Laboratory
0.00	NX		Colluvium depoosition of dark brown sandy mud and greenish grey, laminated phyllite.	9	9	10 45/28	- 1.10	-	-	-	-	100	-		
1.00	76mm		Colluvium deposition of brown, fine grain sand and boulder size, greenish grey, fine grain, laminated phyllite with quartz vein.	14	23	13 34/50	2.10	-	-	-	-	41	-		
2.00			Colluvium deposition of greenish grey, medium, to coarse grain sand and pebble to cobble size gravel of greenish grey, laminated phyllite.	D C P T 80	-	- 15/80		-	-	-	-	53	-		
3.00			Colluvium deposition of greenish grey, fine grain sand and pebble to cobble size, greenish grey, fine grain, laminated phyllite with Quartz.	65	15	- 19/80		-	-	-	-	36	-		
4.00			Colluvium deposition of reenish grey, fine grain sand as sludge.	55	25	- 21/80		-	-	-	-	0	-		
5.00			The run of 76mm is colluvium deposition of fine grain sand and greenish grey phyllite. From 5.76 m bed rock is observed. W1-W3, medium to strong hard, greenish grey, fine grain phyllite.	73	7	- 16/80	4.90	-	20° 50°	Ir	4	33	-		
6.00			W1-W2, medium to strong hard, greenish grey, fine grain, laminated, fractured phyllite.Core loss : 6.47 to 6.84 m					-	30° 50°	Ir	6	63	-		
7.00			W1-W2, strong hard, greenish grey, fine grain, laminated, fractured phyllite with quartz vein.					-	20° 50°	Ir	8	100	38		
8.00			W1-W2, strong hard, greenish grey, fine grain, laminated, jointed and fractured phyllite with Quartz vein FZ : 8.28 to 9.00 m					-	10°-15° 20° 50°	Ir	8	100	23		
9.00			W1, strong hard, greenish grey, fine grain, laminated phyllite. Core loss : 9.70 to 9.89 m				6.40	-	50°	Ir	4	81	64		
10.00															

ABBREVIATION rough=r, smooth=s, slickensided=sl, un=undulating, pl=planar, clay=cl, sand=sa, mica=mi, crushed=cr, iron stain=FeO
Zone, MB=Mechanical Breakage, W1=Fresh, W2=slightly Weathered, W3=Moderately Weathered, W4=Highly Weathered, W5=Decomposed.
FZ= Fractured, CL= Core loss

Drilled by: BINOD MAGAR

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BO-1
COORDINATES: 3041106.595N, 602207.389E
DRILLING MACHINE: KOKEN
DRILLING METHOD: ROTARY

START DATE: 17/04/2002
COLLAR ELEVATION: 599.753 m
ELEVATION HOLE END:579.753 m
LOCATION: YANGRANG KHOLA
INCLINATION: VERTICAL

Core Recovery
RQD%
kg/cm2

Depth, m	Barrel Size	Core Log	Description	Water Level m	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Laboratory
10.00	76mm		W1, strong hard, greenish grey, fine grain, laminated, fractured phyllite Core loss : 10.15 to 10.36 m		-	20° 50°	Ir	6	79	35	
11.00			W1-W2, medium to strong hard, greenish grey, fine grain, jointed, laminated and gractured phyllite Core loss : 11.82 to 12.00 m		-	20° 50°	Ir	6	82	16	
12.00			W1-w2, medium to strong hard, greenish grey, fine grain, laminated, highly jointed and fractured phyllite with Quartz vein.Cl :12.19 to 12.74 m		-	30° 50°	Ir	5	45	20	
13.00			W1, medium to strong hard, greenish grey, fine grain, laminated, fractured phyllite. Core loss : 13.00 to 13.33 m		-	15° 30° 50°	Ir	8	67	-	
14.00			W1, strong hard, greenish grey, fine grain, laminated, highly jointed and fractured phyllite. Core loss : 14.70 to 15.00 m	9.20	-	20° 50°	Ir	6	70	13	
15.00			W1, strong hard, greenish grey, fine grain, laminated, jointed and fractured phyllite with Quartz Core loss : 15.47 to 15.77 m		-	20° 30° 50°	Ir	10	70	10	
16.00			W1, strong hard, greenish grey, fine grain, laminated, highly jointed and fractured phyllite. Core loss : 16.21 to 16.44 m		-	20° 50°	Ir	8	77	-	
17.00			W1, strong hard, greenish grey, fine grain, laminated, fractured phyllite. Core loss : 17.00 to 17.20 m		-	30° 50°	Ir	5	80	24	
18.00			W1, strong hard, greenish grey, fine grain, laminated, highly jointed and fragmented phyllite		-	20° 30° 50°	Ir	11	100	-	
19.00			W1, strong hard, greenish grey, fine grain, laminated phyllite with Quartz vein	10.20	-	15° 50°	Ir	5	100	59	
20.00											

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Zone, MB=Mechanical Breakage, W1=Fresh, W2=slightly Weathered, W3=Moderately Weathered, W4=Highly Weathered, W5=Decomposed.
FZ= Fractured, CL= Core loss

Drilled by:JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BTO-1
COORDINATES: 3038600.372N, 602652.253E
DRILLING MACHINE: KOKEN
DRILLING METHOD: ROTARY

START DATE: 07/05/2002
COLLAR ELEVATION: 478.746m
ELEVATION HOLE END: 458.746 m.
LOCATION: NAKAULI VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	DCPT Blows per 15 cm 0-15	15-30	30-45	Water Table m	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Recovery RQD% 20 40 60 80 100	Results Permeability	Results Laboratory
0.00							-									
	NX		Colluvium deposition of grey to light brown, medium to fine grain sand and boulder size gravel of brown, fine grain sand stone.	80	-	- 6/80	0.90	-	-	-	-	100	-			
1.00			Colluvium deposition of light brown, medium to fine grain sand and cobble to boulder size gravel of light grey, fine grain sand stone.	80	-	- 14/80		-	-	-	-	17	-			
2.00			Colluvium deposition of light grey, fine grain sand and cobble size gravel of dark brown, fine grain sand stone.	80	-	- 11/80	Dry	-	-	-	-	8	-			
3.00	N.X		Colluvium deposition of light grey, fine grain sand and boulder size gravel of light grey, medium grain sand stone.	7	7.0	20.0 45/34		-	-	-	-	10	-			
4.00			Colluvium deposition of light grey to light brown, fine grain sand as sludge.	10	10.0	25.0 45/45		-	-	-	-	0	-			
5.00			Colluvium deposition of light grey, fine grain sand as sludge.	80	-	- 7/80		-	-	-	-	0	-			
6.00			Initial 52 cm is colluvium deposition of pebble size gravel of light grey to light brown,fine grainsandstone Bed rock started from 6.52 m that is W1-W2, medium to strong hard, dark grey to greenish, fine grain ss.				1.50	-	40° 50°	Ir	4	65	16			
7.00			W1-W2, medium to strong hard, dark grey to greenish, fine grain sand stone and massive mud stone. Core loss: 7.18 to 7.67 m.					-	40°	Ir	6	51	18			
8.00	66mm		W!-W2, medium to strong hard, light grey to greenish, fine grain, massive sand stone. MB : 8.72 m					-	20° 40° 50°	Ir	8	100	54			
9.00			W!-W2, medium to strong hard, dark grey to greenish, fine grain, massive sand stone Core loss : 9.19 to 9.49 m				1.06	-	30° 50°	Ir	5	70	29			
10.00																

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Zone, MB=Mechanical Breakage, W1=Fresh, W2=slightly Weathered, W3=Moderately Weathered, W4=Highly Weathered, W5=Decomposed.
FZ= Fractured, CL= Core loss

Drilled by: KAMAL BHANDARI

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BTO-1
COORDINATES: 3038600.372N, 602652.253E
DRILLING MACHINE: KOKEN
DRILLING METHOD: ROTARY

START DATE: 07/05/2002
COLLAR ELEVATION: 478.746m
ELEVATION HOLE END: 458.746 m.
LOCATION: NAKAULI VILLAGE
INCLINATION: VERTICAL

Depth, m	Barel size	Core Log	Description	Water Table m.	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Recovery RQD% 20	40	60	80	100	Results LU	Results kg/cm2 Permeability	Laboratory
10.00																		
	66		W1-W2, medium to strong hard, dark grey to greenish, fine grain, massive sand stone. MB : 10.75m ; 10.81 m and 10.88 m		-	20° 40° 50°	Ir	11	100	46								
11.00			W1-W2, medium to strong hard, dark grey to greenish, fine grain, massive sand stone. MB : 11.76 m and 11.83 m		-	20° 40° 50°	Ir	10	100	52								
12.00			W1-W2, medium to strong hard, dark grey to greenish, fine grain, massive sand stone. MB : 12.32 m and 12.51 m		-	30° 50°	Ir	7	100	58								
13.00			W1-W2, medium to strong hard, dark grey to greenish, fine grain sand stone with pebble size clast.		-	20° 50°	Ir	6	100	20								
14.00			W1-W2, medium hard, dark grey to greenish, fine grain sand stone with pebble size clast.		-	30° 50°	Ir	5	100	31								
15.00			W1-W3, medium hard, dark grey to greenish, fine grain, massive sand stone with pebble size clast.	1.74 4.42	-	30° 50°	Ir	4	100	63								
16.00			W1-W3, medium hard, dark grey to dark brown, fine grain, massive sand stone.		-	50°	Ir	6	100	68								
17.00			W1-W2, medium hard, greenish grey to dark brown, fine grain, massive sand stone with pebble size clast. MB : 17.31 m ; 17.64 m and 17.68 m		-	50°	Ir	5	100	77								
18.00			W1-W3, medium hard, dark grey to dark brown, fine grain, massive sand stone with pebble clast.		-	50°	Ir	6	100	35								
19.00			W1-W2, medium hard, greenish grey to dark grey, fine grain, massive sand stone with pebble clast. Core loss : 19.17 to 19.37 m		-	50°	Ir	11	80	-								
20.00																		

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Zone, MB=Mechanical Breakage, W1=Fresh, W2=slightly Weathered, W3=Moderately Weathered, W4=Highly Weathered, W5=Decomposed.
FZ= Fractured, CL= Core loss

Drilled by: KAMAL BHANDARI

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Reco RQD% kg/cm2 20 40 60 80 100	Laboratory
0.00	NX		Colluvium of clay, sand and gravel of phyllite and Quartzite. Clayey material of dark brown . W2-W3, fine grain phyllite and Quartzite and dolomite.	3	4	5 45/12	- Dry	-	-	-	-	100	-		
1.00															
1.50			Colluvium deposition of clay and pebble, cobble size rock fragments of phyllitie Quartzite & dolomite. The loose material is dark brown.	10	10	14 45/34	Dry	-	-	-	-	100	-		
2.00															
3.00			Colluvium deposition of dark brown coloured clay with pebble cobble size phyllitie Quartzite amd dolomite	9	11	30 40/50		-	-	-	-	100	-		
4.00	76mm		Colluvium deposition of light to dark brown coloured clay with coarse grained sand and cobble, boulder size, W2-W3, fine grain phyllitie Quartzite and dolomite	D C P T 10	13	9 45/32	Dry	-	-	-	-	100	-		
5.00			Colluvium deposition of light brown coloured clayey mud with pebble cobble size, W2-W3, fine grain, light grey to brown phyllitie Quartzite and dolomite	9	8	6 45/23		-	-	-	-	100	-		
6.00			Colluvium deposition of mud, coarse grain sand with pebble, cobble size, W2-W3, light to dark grey, fine grain phyllitie Quartzite and dolomite	6	6	7 45/19		-	-	-	-	78	-		
7.00			Colluvium deposition of mud and pebble, cobble size, W2-W3, light to dark grey, fine grain, phyllitie Quartzite and dolomite	6	6	8 45/20		-	-	-	-	30	-		
8.00			Colluvium deposition of clayey mud and pebble, cobble size, W2-W3, light to dark grey, fine grain phyllitie Quartzite and dolomite	9	10	13 45/32		-	-	-	-	50	-		
9.00			Colluvium deposition of clayey mud and pebble, cobble size, W2-W3, light to dark grey, brownish, fine grain phyllitie Quartzite and dolomite	6	9	12 45/27		-	-	-	-	44	-		
10.00															

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FZ= Fractured, CL= Core loss

Drilled by: JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	D C P T Blows per 15 cm 0-15	15-30	30-45	Water Level m	Alteration	Orientation	Spacing cm	Roughness	Filling material	Joint/R cm	Core Recovery RQD% kg/cm2 REC%	RQD%	20	40	60	80	100	Laboratory
10.00	76 mm		Colluvium deposition of clayey mud and pebble, cobble size, W2-W3, grey to brown, fine grain phyllitie dolomite	11	16	18 45/45	Dry	-	-		-		-	28	-						
11.00			Colluvium deposition of pebble to cobble size, W2, light to dark grey, fine grain, fragmented phyllitie dolomite	13	26	37 45/76		-	-		-		-	40	-						
12.00			Colluvium deposition of clayey mud and pebble, cobble size, W2-W3, light grey to light brown, fome grain, fragmented phullitie dolomite with Quartz vein	11	11	20 45/42		-	-		-		-	38	-						
13.00			Colluvium deposition of clayey mud and pebble, cobble size, W2, light to dark grey, fine grain, phyllite with Quartz.	8	12	16 45/36		-	-		-		-	38	-						
14.00			Colluvium deposition of pebble cobble size, W2-W3, light to dark grey, fine grain, laminated phyllite.	12	16	18 45/46	6.30	-	-		-		-	40	-						
15.00			Colluvium deposition of pebble, cobble size, W2-W3, light grey to light brown, fine grain, phyllitie Dolomite with Quartz.	25	55	- 24/80		-	-		-		-	37	-						
16.00			Colluvium deposition of pebble cobble size, W2-W3, light to dark grey, fine grain, phyllitie Dolomite	47	33	- 28/80		-	-		-		-	33	-						
17.00			Colluvium deposition fo medium grain sand and pebble, cobble size, W2-W3, light to dark grey, fine grain phyllitie dolomite	35	45	- 23/80	13.10	-	-		-		-	25	-						
18.00			Colluvium deposition of fien grain sand and pebble, cobble size, W2-W3, light to dark grey, fine grain pyllitie dolomite	53	27	- 19/80		-	-		-		-	26	-						
19.00			Colluvium deposition of pebble cobble size, W2-W3, light to dark grey, brownish fine grain phyllitie dolomite	50	30	- 24/80		-	-		-		-	22	-						
20.00																					

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FZ= Fractured, CL= Core loss

Drilled by:JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Casing Size	Core Log	Description	D C P T Blows per 15 cm 0-15	15-30	30-45	Water Level m	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Recov RQD% 20	40	60	80	100 kg/cm2	Laboratory
20.00	76mm		Colluvium deposition of pebble, cabble size, W2-W3, light to dark grey, fine grain, fragmented phyllite and dolomite.	49	31	- 29/80		-	-	-	-	40	-						
21.00			Colluvium deposition of pebble to boulder size, W2-W3, light to dark grey, fine grain phyllite and dolomite.	56	24	- 22/80		-	-	-	-	30	-						
22.00			Colluvium deposition of coarse grain sand pebble size, W2-W3, grey to brown, fine grain phyllite.	52	28	- 20/80	11.24	-	-	-	-	28	-						
23.00			Colluvium deposition of coarse grain sand and pebble size, W2-W3, grey to light brown, fine grain, laminated phyllite.	55	25	- 25/80		-	-	-	-	17	-						
24.00			Colluvium deposition of fine grain sand and pebble, boulder size, W2, light grey to brown, fine grain, phyllite and dolomite with Quartz vein.	27	53	- 20/80		-	-	-	-	30	-						
25.00			Colluvium deposite of fine grain, sand and pebble size, W2, light grey, fragmented phyllite with Quartz.	35	39	6 32/80	15.10	-	-	-	-	8	-						
26.00			Colluvium deposition of fine toi medium grain sand and pebble size, W2, light grey to light brown fine grained phyllite	39	41	- 28/80		-	-	-	-	7	-						
27.00			Colluvium deposition fo medium to coarse grain sand and pebble size, W1-W2, light grey to light brown, fine grain phyllite with Quartz.	30	50	- 24/80		-	-	-	-	7	-						
28.00			Colluvium deposition of fine grain sand and pebble to boulder size, W1-W2, light grey, fine grain, laminated phyllite.	60	20	- 21/80	17.20	-	-	-	-	17	-						
29.00			Colluvium deposition of fine to medium grain sand and pebble to boulder size, W1-W2, white to ligt grey, fine to medium grain phyllitie and phyllitie dolomite	51	29	- 18/80		-	-	-	-	36	-						
30.00																			

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FZ= Fractured, CL= Core loss

Drilled by: JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Casing Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m	Alteration	Orientation	Roughness	Joint/R cm	Core Recovery RQD% REC%	RQD%	kg/cm2 20 40 60 80 100	Laboratory
30.00	76mm		Colluvium deposition of fine to medium grain sand and pebble to boulder size, W2-W3, white to light grey, fine grain phyllite.					-	-	-	-	60	-		
31.00			Colluvium deposition of fine grain sand and pebble to boulder size white to greenish grey phyllite and dolomite.				19.80	-	-	-	-	84	-		
32.00			Colluvium deposition of fine grain sand.					-	-	-	-	0	-		
32.50			Colluvium deposition of pebble, cobble size, W2-W3, greenish to light grey, fine grain phyllite.					-	-	-	-	60	-		
33.00															
33.50			Bed rock observed from 33.50m W2, soft to medium hard, dark grey, fine grain slate with Quartz vein. Core loss : 33.50 to 34.35m.				22.20	-	20^{U} 30^{U}	Ir		15	-		
34.00															
34.50			W2-W3, soft to medium hard, dark grey, fine grain slate with Quartz vein.Cl: 34.50 to 34.94m.					-	-	-	4	12	-		
35.00			W2-W3, soft to medium hard, dark grey, fine grain, slate with Quartz vein. coreloss due to soft and slaty cleavage slate with almost vertical dipping. Core loss : 35.00 to 35.83 m					-	10^{U} 40^{U}	Ir	4	17	-		
36.00			W2-W3, soft to medium hard, dark grey, fine grain, fragmented slate with Quartz vein. Core loss :36.00 to 36.73 m				22.60	-	-	-	0	27	-		
37.00			W2-W3, soft to medium hard, dark grey, fine grain, fragmented slate with Quartz. Core loss : 37.00 to 37.70 m					-	-	-	0	37	-		
38.00			W2, soft to medium hard, dark grey, fine grain, fragmented slate. Core loss : 38.00 to 38.40 m & 38.49 to 38.94 m				22.64	-	-	-	0	15	-		
39.00			Total core loss due to slaty cleavage slate and dipping almost vertical sludge as fine grain, dark grey material found. Core loss : 39.00 to 40.00 m				22.20	-	-	-	0	0	-		
40.00															

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FZ= Fractured, CL= Core loss

Drilled by: JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m.	Alteration	Orientation	Roughness	Joint/R cm	Core Recovery RQD% REC%	RQD%	20	40	60	80	100	kg/cm2 Laboratory
40.00	76mm		Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL: 40.0 to 41.0 m.					-	-	-	0	0	-						
41.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL : 41.0 to 42.0 m.					-	-	-	0	0	-						
42.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL : 42.0 to 43.0 m.				22.80	-	-	-	0	0	-						
43.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL : 43.0 to 44.0 m.					-	-	-	0	0	-						
44.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL: 44.0 to 45.0 m.				21.20	-	-	-	0	0	-						
45.00	BX		Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL : 45.0 to 46.0 m.				22.00	-	-	-	0	0	-						
46.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL 46.0 to 47.0 m.				22.50	-	-	-	0	0	-						
47.00	66		Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL: 47.0 to 48.0 m.				22.10	-	-	-	0	0	-						
48.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL : 48.0 to 49.0 m.				21.95	-	-	-	0	0	-						
49.00			Total core loss. CL due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL :49.0 to 50.0 m.					-	-	-	0	0	-						
50.00																			

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FZ= Fractured, CL= Core loss

Drilled by: JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m.	Alteration	Orientation	Roughness	Joint/R cm	Core Recovery REC%	RQD%	kg/cm2 20	40	60	80	100	Laboratory
50.00	66 mm		Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL 50.0 to 51.0 m.				21.60	-	-	-	0	0	-						
51.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL 51.0 to 52.0 m					-	-	-	0	0	-						
52.00			Total core loss Core loss : 52.00 to 52.50 m					-	-	-	3	0	-						
52.50	BX		W1-W2, medium hard, dark grey to black, slaty cleavage slate Core loss :52.50 to 52.66 m				22.50	-	40°	r		68	-						
53.00			W1, medium hard, dark grey to black fine grain, slaty cleavage slate Core loss : 53.00 to 53.91 m					-	30°	r	4	9	-						
54.00			W1, medium hard, dark grey to black fine grain, slaty cleavage slate with Quartz vein. Core loss : 54.00 to 54.85 m				22.30	-	30° 50°	r	3	15	-						
55.00			W1-W3, soft, black, fine grain, crushed material of slate are found CL: 55.12 to 56.0 m				22.25	-	-	-	0	12	-						
56.00			W1-W2, medium hard, dark grey to black, fine grain, slaty cleavage slate. CL: 56.0 to 56.85 m.					-	20° 50°	Ir	5	15	-						
57.00			W1-W2, medium to strong hard, dark grey to black, fine grain, slaty cleavage slate.CL: 57.0 to 57.74 m.				22.20	-	20° 50°	Ir	6	26	-						
58.00			W1, medium hard, dark grey to black, fine grain, slaty cleavage slate.CL :58.00 to 58.44 m & 58.52 to 59.00 m					-	60°	Ir	2	8	-						
59.00			W1, medium hard, dark grey to black fine grain slate.CL: 59.0 to 59.91 m					-	30° 40°	Ir	4	9	-						
60.00																			

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Zone, MB=Mechanical Breakage, W1=Fresh, W2=slightly Weathered, W3=Moderately Weathered, W4=Highly Weathered, W5=Decomposed.
FZ= Fractured, CL= Core loss
Drilled by: JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m.	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Recovery RQD% 20	40	60	80	100 kg/cm2	Laboratory
60.00	BX		W1, medium hard, dark grey to black fine grain, slate with Quartz vein. CL 60.0 to 60.66 m				22.20	-	30° 40°	Ir	7	34	-						
61.00			W1, medium hard, dark grey to black fine grain, slate with quartz vein. CL: 61.0 to 61.37 m					-	20°	Ir	4	26	-						
61.50			Total core lossCL : 61.50 to 62.0 m.				22.25	-	-	-			-						
62.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL: 62.00 to 63.00 m.					-	-	-	0	0	-						
63.00			W1-W3,medium hard, dark grey to black, fine grain slate with Quartz vein. CL : 63.00 to 63.49 m					-	30°	Ir	6	51	29						
64.00			W1-W2, medium hard, dark grey to black, fine grain slate with Quartz vein. Core loss : 64.00 to 64.27 m 64.48 to 65.00 m					-	20° 30°	Ir	4	21	-						
65.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL : 65.00 to 66.00 m.				22.30	-	-	-	0	0	-						
66.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL : 66.00 to 67.00 m					-	-	-	0	0	-						
67.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL : 67.0 to 68.0 m					-	-	-	0	0	-						
68.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL : 68.0 to 69.0 m				23.10	-	-	-	0	0	-						
69.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. CL : 69.0 to 70.0 m					-	-	-	0	0	-						
70.00																			

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Drilled by: JOON SHRESTHA

EAST DRILLING COMPANY (P) LTD.

BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
COLLAR ELEVATION: 505.384 m
ELEVATION HOLE END:395.384m
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	SPT Blows per 15 cm 0-15	15-30	30-45	Water Level	Alteration	Orientation	Roughness	Joint/R cm	REC%	RQD%	Core Recovery RQD% 20	40	60	80	100	kg/cm2 Laboratory
70.00	BX		Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL:70. to 71 m					-	-	-	0	0	-						
71.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL 71 to 72. m					-	-	-	0	0	-						
72.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL 72.0 to 73. m					-	-	-	0	0	-						
73.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL: 73 to 74.m				22.25	-	-	-	0	0	-						
74.00	56		Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found.CL 74. to 75.m					-	-	-	0	0	-						
75.00			W1, medium hard, dark grey to black, fine grain highly jointed and fragmented slate (calcite) with quartz vein.CL: 75. to 75.76 m.					-	20° 50°	Ir	3	24	-						
76.00			W1-W2, medium hard, dark grey to black fine grain, fractured and fragmednted slate Core loss : 76.00 to 76.43 m.					-	20°	Ir	5	14	-						
76.50			W1-W2, medium to strong hard, dark grey to black, fine grain slate with Quartz vein. Cl : 75.50 to 76.80 m.				22.20	-	20° 30°	Ir		40	-						
77.00			W1-W2, medium to strong hard, dark grey to black, fine grain, fragmented slate with quartz vein.CL: 77.0 to 77.74 m					-	20° 55°	Ir	3	26	-						
78.00			W1, strong hard, dark grey to black fine grain, calcarious slate. CL:: 78.0 to 78.42 m &78.52 to 79 m					-	30° 50°	Ir	3	10	-						
79.00			W1, medium to strong hard, dark grey to black, fine grain, ighly jointed and fragmented slate with Quartz vein.CL 79.0 to 79.55 m					-	30° 60°	Ir	4	45	-						
80.00																			

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BORE HOLE LOG

KULEKHANI-3 HYDROELECTRIC POWER PROJECT

DRILL HOLE NO.: BS-1
COORDINATES:3039796.489N, 602636.927E
DRILLING MACHINE: JOY
DRILLING METHOD: ROTARY

START DATE: 12/03/2002
ELEVATION HOLE END:395.384m
ELEVATION HOLE END:
LOCATION: SANUTAR VILLAGE
INCLINATION: VERTICAL

Depth, m	Barrel Size	Core Log	Description	S P T Blows per 15 cm 0-15	15-30	30-45	Water Level m.	Alteration	Orientation	Roughness	Joint/R cm	Core Recovery RQD% REC%	RQD%	20	40	60	80	100	Results LU Permeability	kg/cm2 Laboratory
80.00	56		W1, strong hard, dark grey kto kblack, fine grain, highly jointed and fragmented slate with Quartz vein. Core loss : 80.00 to 80.82 m.				22.70	-	30˘ 50˘	Ir	4	8	-							
81.00			W1, strong hard, dark grey to black, fine grain, fragmented slate with Quartz vein. Core loss : 81.00 to 81.47 m and 81.56 to 82.00 m					-	10˘ 60˘	Ir	3	9	-							
82.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. Core loss : 82.00 to 83.00 m					-	-	-	0	0	-							
83.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. Core loss : 83.00 to 84.00 m				22.10	-	-	-	0	0	-							
84.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. Core loss : 84.00 to 85.00 m					-	-	-	0	0	-							
85.00			W1, strong hard, dark grey, fine grain, calcarious slate with Quartz vein. Core loss : 85.00 to 85.83 m.					-	30˘ 50˘	Ir	4	17	-							
86.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. Core loss : 86.00 to 87.00 m				22.05	-	-	-	0	0	-							
87.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. Core loss : 87.00 to 88.00 m				22.25 23.60	-	-	-	0	0	-							
88.00			Total core loss. Core loss due to soft rock and crushed zone of slate. Dark grey, fine to medium grain sand size sludge are found. Core loss : 88.00 to 89.00 m					-	-	-	0	0	-							
89.00			W1, strong hard, dark grey, fine grain, slaty cleavage slate with Quartz vein. Core loss : 89.00 to 89.91 m					-	50˘	Ir	3	9	-							
90.00																				

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