

BORE HOLE LOG

SHEET 3/3

DRILL HOLE NO.: B-10

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core Rec. RQD				Permeability (Lugeons)	Other tests	Rock Mass Classification				
					Weathering	Orientation	Roughness	Infilling materials			20	40	60	80			100	Classification	Weathering	Hardness	Joint spacing
			Grey, hard fine grained dolomite	>20					54	0											
	20.45		In several runs the cores are broken into small fragments due to mechanical grinding in fractured zones and in closely spaced joints. This has also resulted the core loss in many sections. Mechanical breaks are observed from 21.40 m - 21.75 m 22.80 m - 23.00 m 25.00 m - 25.20 m 27.25 m - 27.35 m 28.20 m - 28.70 m 29.25 m - 30.00 m	20	F	40° 60°	R, Pl		100	0							CM	1	3	4	
	20.80			18	F	40° 50°	sm, pl	calc	100	0								CM	1	2 3	3 4
21.00				15	F	60° 50°			100	10											
	21.40			19	F	40°, 50° 60°	r-sm pl		100	25								CH	1	2 3	3
	22.00			23.00														CM	1	3	4
	22.80																				
	23.00																				
	23.70																				
	24.00																				
	24.00																				
	25.00																				
	25.00																				
	25.85																				
	26.00																				
	26.58																				
	27.00																				
	27.35																				
	27.80																				
	28.00																				
	28.20																				
	28.70																				
	29.00																				
	29.25																				
	30.00																				

Hole ended at 30.00 m

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered
 MB-Mechanical Break, CL-Coreloss, Pl-Planar, Sm-Smooth, R-Rough, Ir-Irregular, FeO-Iron Oxide, Cl-Clay, St-Silt, calc-calcic

SRC Lab, NEA

Started: 2062.01.28

Completed: 2062.02.03

Drilled by: U.B. Chhetri/T. Neupane

Logged by: S. Shrestha

Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 1/12

DRILL HOLE NO.: B-12

COORDINATES:

X: 3092723.719

Y: 525502.468

Z: 401.6

INCLINATION: 45°

DIRECTION: 020°

DRILLING MACHINE: Long Year

CASING DEPTH : NW: 12 m

DRILLING METHOD: Rotary Drilling / Wire line System

WATER TABLE: none

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core				Permeability (Lugeons)	Other tests	Rock Mass Classification				
					Weathering	Orientation	Roughness	Infilling materials			20	40	60	80			100	Classification	Weathering	Hardness	Joint spacing
			Drilled from the bedrock NW casing advancement upto 1.5 m.																		
1.00			Dolomite Grey, med. hard, slightly weathered fine grained					0	0												
1.50																					
2.00			In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in weathered section, fractured zones and closely spaced joints.					0	0												
2.40																					
3.00				SW			FeO,cl	4	0												
3.60			The actual depth of lost zones could not be traced because of its broken nature.																		
4.00				SW			R FeO	18	0												
5.00			Joint parameters can't be measured because of smaller fragments.																		
5.20			Mechanical breaks are observed from																		
6.00			4.90 m to 5.10 m 6.50 m to 6.70 m 7.75 m to 7.95 m 7.95 m to 8.25 m 9.25 m to 9.55 m 8.00 m to 8.50 m 9.55 m to 9.80 m					13	0												
6.70				SW				16	0												
7.00																					
8.00			Coreloss is observed from																		
8.25			0.00 m to 3.55 m 3.60 m to 4.90 m 5.20 m to 6.50 m 6.70 m to 7.75 m 8.25 m to 9.25 m 9.80 m to 10.00 m																		
9.00				SW			Calc,cl	100	0												
9.55																					
9.80				SW			Cl	23	0												
10.00																					
				SW			Calc	100	0												

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SRC Lab, NEA

Started: 2062.02.27

Completed: 2062.04.29

Drilled by: U.B. Chhetri, S.R. Timishina, D. Shvakoti

Logged by: S.Shrestha

Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 5/12

DRILL HOLE NO.: B-12

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core				Permeability (Lugeons)	Other tests	Rock Mass Classification		
					Weathering	Orientation	Roughness	Infilling materials			Rec. RQD	20	40	60			80	100	Classification
			Dolomite Grey, hard, fresh, fine grained																
41.00								6	0										
41.50			In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in fractured zones and closely spaced joints.																
42.00				4	F-SW	80°,60°	R,ir	Calc,cl	29	8									
42.70			Mechanical breaks are observed from																
43.00																			
43.70			41.40 m to 41.50 m 42.35 m to 42.40 m 43.00 m to 43.35 m 44.45 m to 45.00 m 45.15 m to 45.25 m 45.60 m to 46.00 m 48.00 m to 48.20 m 48.75 m to 49.00 m 49.75 m to 50.00 m	12	F-SW	80°,60°	R,pl,ir	Calc,cl FeO	100	10									
44.00																			
45.00	45.00			6	F	50°,70°	R,ir	Cl	100	0									
46.00	46.00		Coreloss is observed from 40.00 m to 41.40 m 41.50 m to 42.35 m 46.00 m to 46.50 m 47.50 m to 48.00 m 48.20 m to 48.75 m 49.00 m to 49.75 m																
47.00																			
47.50			The actual depth of lost zones could not be traced because of its broken nature.																
48.00																			
48.20			Joint parameters can't be measured in all runs because of smaller fragments.	6	F	50°,60°		Cl	31	0									
49.00	49.00																		
50.00	50.00																		

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SRC Lab, NEA

Started: 2062.02.27

Completed: 2062.04.29

Drilled by: U.B. Chhetri, S.R. Timilshina, D. Shivakoti

Logged by: S.Shrestha

Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 7/12

DRILL HOLE NO.: B-12

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core				Permeability (Lugeons)	Other tests	Rock Mass Classification				
					Weathering	Orientation	Roughness	Infilling materials			20	40	60	80			100	Classification	Weathering	Hardness	Joint spacing
	60.25		Dolomite with quartz veins light grey to grey, hard, fresh, fine grained.	13	F	50°, 10°	R, pl, ir	Cl	80	0					Lugeon Value 0.61						
	61.00		In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in fractured zones and closely spaced joints.	7	F	40°, 60° 70°, 25°	R, pl, ir	Calc	100	55						CH	1 2	2	3	61	
	62.00		Mechanical breaks are observed from																		
	62.30																				
	63.00			64.25 m to 64.30 m	10	F	40°, 60° 10°	R, Pl		72						11	CH	1 2	2	3	63
	63.40			64.60 m to 64.74 m																	
	63.40			66.00 m to 66.35 m																	
	64.00			67.65 m to 67.80 m	8	F	20°, 40° 70°	R, Pl	Calc	58						18					
	64.00			67.15 m to 67.25 m																	
	64.00			67.90 m to 68.20 m																	
	64.40			68.30 m to 68.45 m	15	F	40°	R, Pl	Calc	100						30	CH	1 2	2	3	64
	64.40			69.10 m to 69.15 m																	
	65.00			69.45 m to 70.00 m																	
	65.00			Coreloss is observed from	10	F	0°, 10° 70°	R, Pl	Calc	100						0	CM	1-2 2-3 3-4			65
	65.80			60.25 m to 60.40 m																	
	66.00		62.50 m to 62.75 m																		
	66.00		63.40 m to 63.65 m																		
	66.00		65.50 m to 65.75 m	4	F	20°	R, ir		70	0		1 2	2-3 3-4	66							
	66.35		67.80 m to 67.90 m																		
	67.00		The actual depth of lost zones could not be traced because of its broken nature.	15	F	40°, 10°	R, Pl	Cl	100	12											
	67.80			12	F	70°	R, Pl		100	58											
	68.00			8	F	45°, 80°	R, pl, ir		80	0	CM	1 3	2 4	68							
	68.30			9	F	70°, 60°	R, Pl	Cl	100	27											
	69.00																				
	69.10																				
	70.00			8	F	50°, 60° 80°	R, ir	FeO, cl	100	11		1	3	4	70						

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SRC Lab, NEA

Started: 2062.02.27

Completed: 2062.04.29

Drilled by: U.B. Chhetri, S.R. Timilshina, D. Shrivakoti

Logged by: S. Shrestha

Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 8/12

DRILL HOLE NO.: B-12

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core Rec. RQD				Permeability (Lugeons)	Other tests	Rock Mass Classification				
					Weathering	Orientation	Roughness	Infilling materials			20	40	60	80			100	Classification	Weathering	Hardness	Joint spacing
	70.25		Dolomite with quartz veins light grey to grey, hard, fresh, fine grained.		F				100	0						CM	2	3	4		
	70.75				F				20	0											
	71.00		In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in fractured zones and closely spaced joints.		F	10°	R,Pl		53	0						CM	2	3	4		
	71.50			7															71		
	72.00				F	80°,50°	R,ir	Calc	57	0						CM	2	3	4		
	72.20			9															72		
	73.00		Mechanical breaks are observed from		F		R	Calc,cl	19	0									73		
	73.00		70.00 m to 70.25 m																		
	73.60		70.65 m to 70.75 m	17	F	40°,60°	R,Pl	Calc,cl	100	0						CM	1	3	4		
	74.00		71.05 m to 71.35 m																		
	74.00		72.85 m to 73.00 m		F	50°	R,Pl	FeO,cl	76	12						CH	1	2	2		
	74.45		73.00 m to 73.60 m	8															74		
	75.00		73.60 m to 73.80 m		F	30°,70°	R,ir	Calc	100	76						B	1	2	2		
	75.80		Coreloss is observed from 70.25 m to 70.65 m 70.75 m to 71.05 m 71.50 m to 71.80 m 72.20 m to 72.85 m 73.60 m to 73.80 m	5															75		
	78.00		The actual depth of lost zones could not be traced because of its broken nature.		F	40°,10° 50°	R,pl,ir	FeO Calc	100	32						CM	1	2	3		
	77.00			9															76		
	77.50																				
	78.00			7	F	50°,30° 20°	R,pl,ir	Calc	100	43						B	1	2	2		
	79.00															CH			3		
	79.65																		77		
	79.00			9	F	5°,40° 50°	R,Pl	Calc	100	18						CH	1	2	3		
	80.00															CM	2	2	4		

Lugeon Value 1.36

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 SRC Lab, NEA Started: 2062.02.27 Completed: 2062.04.29
 Drilled by: U.B. Chhetri, S.R. Timishina, D. Shivakoti Logged by: S.Shrestha Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 10/12

DRILL HOLE NO.: B-12

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core				Permeability (Lugeons)	Other tests	Rock Mass Classification						
					Weathering	Orientation	Roughness	Infilling materials			20	40	60	80			100	Classification	Weathering	Hardness	Joint spacing		
	90.25		Dolomite with quartz veins light grey to grey, hard, fresh, fine grained.																				
	91.00		In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in fractured zones and closely spaced joints.	F			FeO	20	0													91	
	92.00		91.85		F				55	0							CM 1-2	3	4			92	
	92.30																						
	93.00			Mechanical breaks are observed from	2	F	40°	R,PI		38	0						CM 1-2	3	4			93	
	94.00			91.55 m to 91.85 m 92.10 m to 92.30 m 93.25 m to 93.35 m 94.55 m to 94.85 m 95.50 m to 95.75 m 96.30 m to 96.45 m 97.60 m to 97.85 m																			94
	95.00		94.85		F			FeO	17	0							CM 1-2	3	4			95	
	96.00		95.75	Coreloss is observed from 90.35 m to 91.95 m 91.85 m to 92.10 m 92.30 m to 92.95 m 93.35 m to 94.55 m 94.85 m to 95.50 m 96.55 m to 97.60 m 97.85 m to 99.25 m 99.35 m to 100.00 m																			
	97.00		96.55		12	F	40°,50°	R,PI	100	0							CM 2	2-3	3-4				
	98.00		97.85	The actual depth of lost zones could not be traced because of its broken nature.	2	F	25°	R,PI	19	0													97
	99.00	99.35	Joint parameters can't be measured because of smaller fragments.	2	F	50°	R,ir	6	0													98	
	100.00				F			31	0													99	

Lugeon Value 3.86

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SRC Lab, NEA Started: 2062.02.27 Completed: 2062.04.29

Drilled by: U.B. Chhetri, S.R. Timilshina, D. Shivakoti Logged by: S.Shrestha Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 11/12

DRILL HOLE NO.: B-12

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core Rec.	Permeability (Lugeons)	Classification			
					Weathering	Orientation	Roughness	Infilling materials					20	40	60	80
	100.30		Dolomite Grey, hard, fresh, fine grained										CM	2	3	4
	101.00		In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in fractured zones and closely spaced joints.		F				2	0						
	101.25		Mechanical breaks are observed from						0	0						
	102.00		100.00 m to 100.30 m 104.75 m to 105.00 m 106.00 m to 106.90 m 107.20 m to 107.60 m 108.20 m to 108.35 m 109.85 m to 110.00 m						0	0						
	102.75		Coreloss is observed from													
	103.00		100.35 m to 101.23 m 101.25 m to 104.75 m 105.00 m to 106.00 m 108.35 m to 109.20 m 109.50 m to 109.85 m		F		FeO		33	0						
	104.00		The actual depth of lost zones could not be traced because of its broken nature.		F		FeO Calc		33	0						
	104.25		Joint parameters can't be measured in all runs because of smaller fragments.													
	105.00			6	F	0°, 10°	R, PI	FeO, cl	100	20						
	106.00															
	106.50															
	107.00			5	F	50°, 70°	R, PI	Calc	100	0						
	107.60															
	108.00			5	F	50°, 10° 15°	R, ir	Calc	100	17						
	108.35															
	109.00			3	F	20°, 30° 40°	R, ir	FeO	20	13						
	109.50															
	110.00				F				30	0						

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 SRC Lab, NEA
 Started: 2062.02.27 Completed: 2062.04.29
 Drilled by: U.B. Chhetri, S.R. Timilshina, D. Shivakoti Logged by: S.Shrestha Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 12/12

DRILL HOLE NO.: B-12

LOCATION: Dam Axis (L/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	Core Rec. 20 40 60 80 100	Permeability (Lugeons)	Other tests	Classification			
					Weathering	Orientation	Roughness	Infilling materials						Classification	Weathering	Hardness	Joint spacing
			Dolomite with quartz vein Light grey, fine grained, medium hard to hard	8	F	10°, 20° 50°	R, Pl	Calc, cl	100	0			CM	2	3	4	
110.50			In several runs low core recovery is obtained and cores are broken into small fragments due to mechanical grinding with in fractured zones and closely spaced joints.		F				20	0							
111.00						F				20	0						
111.50						F				20	0						
112.00			The actual depth of lost zones could not be traced because of its broken nature.		F				75	0				2	3	4	
112.50						F				72	0						
113.00			Mechanical breaks are observed from	4	F	30°	R, Pl	FeO, cl	100	20			CM	1	2	3	
113.50						F	40°, 60° 25°	R, Pl	Cl	59	0				2	3	4
114.00			110.00 m to 110.50 m	10	F	30°, 60° 10°	R, Ir	FeO	60	13							
114.15			111.35 m to 111.50 m		F	30°	R, Ir		100	0							
114.30			112.30 m to 112.50 m	7	F				100	36							
114.45			112.65 m to 113.10 m		F				100	30				1	2	3	
114.60			113.25 m to 113.40 m		F				100	47				2	3	4	
114.75			113.75 m to 113.85 m	7	F				28	0							
114.90			114.50 m to 114.60 m		F												
115.00	115.00		114.70 m to 114.80 m		F												
115.15			115.60 m to 116.20 m		F												
115.30			116.45 m to 116.75 m		F												
115.45			116.85 m to 117.00 m		F												
115.60			117.17 m to 117.24 m		F												
115.75			118.15 m to 118.25 m	6-12	F	0°, 30°	R, pl, Ir	FeO, cl	100	0			CM	1	2	3	
115.90			119.40 m to 119.65 m		F	0°, 30° 40°	R, Pl	FeO	100	36							
116.00	116.20		Coreloss is observed from 110.50 m to 111.30 m 111.50 m to 112.30 m 112.50 m to 112.65 m 113.10 m to 113.25 m 114.15 m to 114.50 m 115.00 m to 115.30 m 119.65 m to 119.90 m	9	F	20°, 30° 75°	R, Pl	FeO	100	30				CH	1	2	3
116.15						F											
116.30						F											
116.45						F											
116.60						F											
116.75			Joint parameters can't be measured in all runs because of smaller fragments.	3	F	40°, 30°	R, Pl	FeO	100	47							
116.90						F											
117.00	117.00				F												
117.15					F												
117.30					F												
117.45					F												
117.60					F												
117.75					F												
117.90					F												
118.00	118.15				F												
118.15					F												
118.30					F												
118.45					F												
118.60					F												
118.75					F												
118.90					F												
119.00	119.65				F												
119.15					F												
119.30					F												
119.45					F												
119.60					F												
119.75					F												
119.90					F												
120.00	120.00		Hole Terminated at 120.00 m		F												

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 SRC Lab, NEA Started: 2062.02.27 Completed: 2062.04.29
 Drilled by: U.B. Chhetri, S.R. Timlishina, D. Shrivakoti Logged by: S.Shrestha Reviewed by: J. M. Tamrakar

BORE HOLE LOG

SHEET 2/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	CORE					Permeability (Lugeon)	Other Tests	Rock Mass Classification											
					Weathering	Orientation	Roughness	Infilling Material			20	40	60	80	100			Classification	Weathering	Hardness	Joint spacing								
	10.20		materials of dolomite						0	0																			
	10.70		Light grey to grey, hard fine grained dolomite	>20	SW	20°	R, Ir	cl	13	0																			
11.00																													
	12.00		Washout materials are observed from 10.70 m to 12.00 m 12.20 m to 13.50 m 13.70 m to 14.00 m 15.20 m to 16.00 m 16.15 m to 16.45 m 16.70 m to 17.00 m 17.30 m to 17.65 m	>20	SW		R, Pl	cl	13	0																			
12.00																													
13.00																													
13.00																													
13.00																													
	13.70		The washout materials consist of fine grains (dust) of dolomite	>20	SW	10°, 30° 50°	R, Pl	FeO, cl	54	0																			
14.00																													
	14.35		Most of the cores are broken due to mechanical grinding in fractured zones and closely spaced joints. Most of the cores are broken into small fragments from	>20	SW		R, Pl Ir	FeO	35	0																			
15.00																													
15.00																													
	16.00		12.00 m to 12.20 m 13.50 m to 13.70 m 14.00 m to 14.35 m 14.90 m to 15.20 m 16.00 m to 16.15 m 16.45 m to 16.70 m 17.00 m to 17.30 m 18.00 m to 18.10 m 19.40 m to 19.65 m	>20	SW	20°, 25° 70°	R, Pl	none	16	0																			
16.00																													
16.00																													
16.00																													
16.00																													
	16.70		16.00 m to 16.15 m 16.45 m to 16.70 m 17.00 m to 17.30 m	>20	SW		R, Pl	FeO	50	0																			
17.00																													
	17.90		18.00 m to 18.10 m 19.40 m to 19.65 m	>20	F-SW	70°	Sm - P Pl - Ir	FeO	69	0																			
18.00																													
	18.10		18.00 m to 18.10 m 19.40 m to 19.65 m	>20	SW	5° 70°	R, Pl	FeO, cl	100	15																			
18.00																													
	19.00		18.00 m to 18.10 m 19.40 m to 19.65 m	>20	F-SW	5°, 60° 70°	R, Pl	FeO	100	0																			
19.00																													
	19.40		18.00 m to 18.10 m 19.40 m to 19.65 m	>20	F-SW	5°, 60° 70°	R, Pl	FeO	100	0																			
19.00																													
	19.90		18.00 m to 18.10 m 19.40 m to 19.65 m																										

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered, MB-Mechanical Break, Pl-Planar, Sm-Smooth, R-Rough, FeO-iron Oxide, Cl-Clay, Sl-Silt

SRC Lab, NEA

Started: 2006/05/02

Completed: 2006/07/11

Drilled by: R. K. Adhikari, K. B. Shrestha

Logged by: S. Shrestha

Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

BORE HOLE LOG

SHEET 3/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	CORE					Permeability (Lugeon)	Other Tests	Rock Mass Classification					
					Weathering	Orientation	Roughness	Infilling Material			20	40	60	80	100			Classification	Weathering	Hardness	Joint spacing		
			DOLOMITE Light grey to grey, hard fine grained dolomite	11	SW	5°, 75° 85° 40°-60°	R, PI	FeO, cl	100	0								CM	2	3	3 4 3	21	
21.00																							
	21.00		Washout materials are observed between 21.55 m to 21.85 m	>20	F-SW	70°	R, PI	FeO	57	0								CM	2	3	3 4	22	
	22.00		22.65 m to 22.90 m	>20	F-SW		R	none	75	0								CL	2	3	3 4 5	22	
23.00			Most of the cores are broken due to mechanical grinding in fractured zones and closely spaced joints. Most of the cores are broken into small fragments from	15	F-SW	5°, 60° 70°, 80°	R, PI	FeO, cl	100	33								CM	2	3	2 3	23	
	24.00		20.55 m to 20.85 m	>20	SW	40°	R, PI lr	FeO, cl	100	0								CM	2	3	3 5	24	
	24.20		26.20 m to 28.10 m	>20	SW		R, PI lr	FeO, cl	100	0								CM	2	3	3 4 3	25	
	24.80			>20	SW	50°	R, PI lr	none	100	0								CM	2	3	3 3	26	
25.00				>20	SW	60°	R, PI lr	cl	100	0								CL	2	3	4 5	27	
	25.60			>20	F-SW		R, PI	none	100	0								CL	2	3	4 5	28	
	26.00			>20	F-SW	5°	R, PI	none	100	0								CM	2	3	4	29	
	26.20			>20	F-SW	5°, 70°	R, PI	FeO	100	0								CM	2	3	3	29	
	26.80			11	F-SW	5°, 30° 70°, 80°	R, PI lr	FeO	100	25								CM	2	3	3	30	
	27.00																						
	27.80																						
	28.00																						
	28.10																						
	28.60																						
	29.00																						
	29.30																						
	30.00																						

Luagon Value = 6.5

Luagon Value = 17.50

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered, MB-Mechanical Break, PI-Planar, Sm-Smooth, R-Rough, FeO-Iron Oxide, Cl-Clay, Sl-Silt

SRC Lab, NEA Started: 2006/06/02 Completed: 2006/07/11

Drilled by: R. K. Adhikari, K. B. Shrestha Logged by: S. Shrestha Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

BORE HOLE LOG

SHEET 4/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	CORE					Permeability (Lugeon)	Other Tests	Rock Mass Classification					
					Weathering	Orientation	Roughness	Infilling Material			20	40	60	80	100			Classification	Weathering	Hardness	Joint spacing		
																						Rec. RGD	
			DOLOMITE Light grey to grey, hard fine grained dolomite with solution cavities																				
	30.70																						
	31.00			20	F-SW	30°,60°	R, PI	cl	100	33								CH	2	2	3	31	
	31.30		solution cavities are either open or filled with clayey materials	9	F-SW	40°,60°	R, PI	cl	100	50								CH	2	2	3	32	
	32.00																						
	32.10		Most of the cores are broken due to mechanical grinding in fractured zones and closely spaced joints.		F-SW		R, PI	cl	100	33													
	32.40																	CM	2	2	3	32	
	32.85		Most of the cores are broken into small fragments from	15	F-SW	30°,80°	R, PI	none	100	35													
	33.00																						
	34.00		30.40 m to 30.60 m 32.20 m to 32.40 m 34.30 m to 34.45 m 35.00 m to 35.20 m 35.80 m to 36.00 m 36.60 m to 36.85 m 37.00 m to 37.65 m	>20	F-SW	30°,60° 70°	R, PI	none	100	9								CM	2	3	4	3	34
	35.00			12	F-SW	40,70°	R, PI	none	100	0													
	35.20																	CM	2	3	3	4	35
	35.80			>20	F-SW	10°,50°	R, PI	none	100	0													
	36.00																						
	36.30			>20	F-SW	30°,10° 50°,80°	R, PI	FeO,cl	100	0								CH	2	2	3		36
	36.65			9	F-SW	30° 60°,80°	R, PI	cl	100	0													
	37.00																	CM	2	3	3	4	37
	38.00			12	SW	30° 60°,80°	R, PI	FeO,cl	100	0													
	38.30																						
	39.00			>20	SW	30°,60° 50°,80°	R, PI	cl	100	0								CM	2	3	3	4	39
	39.80			20	SW	40° 30°,60° 70°,80°	R, PI	none	100	0								CM	2	3	3		40

Lugeon Value = 36.0

Lugeon Value = 11.50

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered, MB-Mechanical Break, PI-Planar, Sm-Smooth, R-Rough, FeO-Iron Oxide, Cl-Clay, SI-Silt

SRC Lab, NEA

Started: 2006/06/02

Completed: 2006/07/11

Drilled by: R. K. Adhikari, K. B. Shrestha

Logged by: S. Shrestha

Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

BORE HOLE LOG

SHEET 5/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	CORE					Permeability (Lugeon)	Other Tests	Rock Mass Classification			
					Weathering	Orientation	Roughness	Infilling Material			20	40	60	80	100			Classification	Weathering	Hardness	Joint spacing
			DOLOMITE Light grey to grey, hard fine grained dolomite	13	SW	5°,60° 70°,80°	R, Pl lr	cl	100	22						Lugeon Value=11.50					41
41.00	41.25		washout materials (dolomite in powdered form) is obtained from														CM	2	3	3	42
42.00			43.40 m to 43.95 m 44.70 m to 45.00 m	10	SW	40° 60°,80°	R, Pl	none	100	17							CM	2	3	3 4	43
43.00	42.75		Most of the cores are broken due to mechanical grinding in fractured zones and closely spaced joints. Most of the cores are broken into small fragments from	>20	SW	60°,80°	R, Pl	none	63	0							X				44
44.00			41.30 m to 41.40 m 42.25 m to 42.50 m 43.95 m to 44.25 m 45.00 m to 45.35 m 45.00 m to 48.00 m	>20	SW	5° 70°	R, Pl	none	72	0							X				45
45.00	45.35			>20	SW	40°,70°	R, Pl	cl	100	0							CM	2	3	4	46
46.00	46.05			>20	SW	60°	R, Pl	cl	100	0											47
47.00	46.60			>20	SW	40°,60°	R, Pl	cl	100	0											48
48.00	47.50			13	F-SW	5°,60° 40°,70°	R, Pl	none	100	8							CM	2	3	3	49
49.00	46.70			5	F-SW	5°,60° 40°,70°	R, Pl lr	none	100	0							CM	2	3	4	50
50.00																					

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered, MB-Mechanical Break, PI-Planar, Sm-Smooth, R-Rough, FeO-Iron Oxide, Cl-Clay, Si-Silt

SRC Lab, NEA

Started: 2006/06/02

Completed: 2006/07/11

Drilled by: R. K. Adhikari, K. B. Shrestha

Logged by: S. Shrestha

Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

BORE HOLE LOG

SHEET 6/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	ROD %	CORE					Permeability (Lugeon)	Other Tests	Rock Mass Classification			
					Weathering	Orientation	Roughness	Infilling Material			20	40	60	80	100			Classification	Weathering	Hardness	Joint spacing
	50.00		DOLomite Light grey to grey, hard fine grained dolomite	10	F-SW	5°, 20° 70°	R, Ir	FeO, cl	100	33						Lugeon Value = 9.20					
	51.00		White coloured washout materials (dolomite in powdered form) is obtained from																		
	51.80		57.00 m to 57.95 m																		
	52.00		57.00 m to 57.95 m																		
	53.00		57.00 m to 57.95 m																		
	53.40		57.00 m to 57.95 m																		
	54.00		57.00 m to 57.95 m																		
	55.00		57.00 m to 57.95 m																		
	56.00		57.00 m to 57.95 m																		
	56.50		57.00 m to 57.95 m																		
	57.00																				
	58.00																				
	58.75																				
	59.00																				
	59.50																				
	60.00																				

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered,

CW-Completely Weathered, MB-Mechanical Break, PI-Planar, Sm-Smooth, R-Rough, FeO-Iron Oxide, Cl-Clay, Sl-Silt

SRC Lab, NEA

Started: 2006/06/02

Completed: 2006/07/11

Drilled by: R. K. Adhikari, K. B. Shrestha

Logged by: S. Shrestha

Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

BORE HOLE LOG

SHEET 8/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	CORE					Permeability (Lugeon)	Other Tests	Rock Mass Classification									
					Weathering	Orientation	Roughness	Infilling Material		RQD	Rec. RQD						Classification	Weathering	Hardness	Joint spacing						
											20	40	60	80							100					
			DOLOMITE Light grey to grey, hard fine grained dolomite	>20	F-SW	40°, 80°	R, PI	cl	100	0	Lugeon Value = 1.8					CL	2	3	4	5						
71.00	71.00																									
			White coloured washout materials (dolomite in powdered form) is obtained from	20	F-SW	60°, 70°	R, PI	FeO	100	0											CM	2	3	4		
72.00	71.60																									
			79.00 m to 79.85 m	18	F-SW	5°, 30° 40°, 70°	R, PI	FeO, cl	100	0											CL	2	3	3	4	5
73.00	73.00																									
			Most of the cores are broken due to mechanical grinding in fractured zones and closely spaced joints. Most of the cores are broken into small fragments from	>20	F-SW	15°, 30° 70°, 20°	R, PI	FeO, cl	100	11											CM	2	3	4		
74.00	74.40																									
			70.60 m to 70.90 m 71.00 m to 71.10 m 72.90 m to 73.00 m 73.00 m to 73.35 m 73.65 m to 73.90 m 75.50 m to 76.00 m 77.00 m to 79.00 m 79.85 m to 80.00 m	17	F-SW	30°, 70°	R, PI	none	100	22											CM	2	3	3	4	
75.00	75.00																									
76.00	76.20																									
77.00	77.70																									
78.00																										
79.00	79.00																									
80.00	80.00			5	SW		R, PI	cl	15	0																

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered, MB-Mechanical Break, PI-Planar, Sm-Smooth, R-Rough, FeO-Iron Oxide, Cl-Clay, SI-Silt

Started: 2006/06/02 Completed: 2006/07/11

Drilled by: R. K. Adhikari, K. B. Shrestha Logged by: S. Shrestha Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

BORE HOLE LOG

SHEET 9/10

Drill Hole No: BP-1

LOCATION: Underground Powerhouse (R/B)

Depth, m	Run Depth, m	Log	Description of Rock/Soil	Joints/m	Discontinuity Characteristics				Recovery %	RQD %	CORE					Permeability (Lugeon)	Rock Mass Classification				
					Weathering	Orientation	Roughness	Infilling Material			20	40	60	80	100		Other Tests	Classification	Weathering	Hardness	Joint spacing
	80.60		DOLomite Light grey to grey, hard fine grained dolomite with iron staining	>20	SW		R, Pl	cl	50	0											
	81.00		White coloured washout materials (dolomite in powdered form) is obtained from	>20	SW	5°, 10°	R, Pl	FeO, cl	67	0											
	82.00		80.10 m to 80.40 m																		
	82.10		81.20 m to 81.70 m																		
	83.00		83.00 m to 83.60 m																		
	83.60		83.75 m to 84.40 m																		
	83.00		85.15 m to 86.00 m	>20	SW	5°, 20°	R, Pl	FeO, cl	60	0											
	83.00		87.15 m to 87.50 m																		
	83.60		89.60 m to 90.00 m																		
	84.00		Most of the cores are broken due to mechanical grinding in fractured zones and closely spaced joints.																		
	84.00		Most of the cores are broken into small fragments from	>20	F-SW	10°	R, Pl	cl	67	0											
	85.00		80.40 m to 81.20 m																		
	85.10		81.70 m to 82.10 m																		
	85.10		82.10 m to 83.00 m																		
	86.00		83.60 m to 83.75 m																		
	86.00		84.40 m to 85.15 m																		
	86.00		86.00 m to 86.60 m																		
	86.60		86.60 m to 87.15 m																		
	86.60		88.10 m to 89.60 m																		
	87.00			>20	SW	5°	R, Pl	FeO, cl	77	0											
	88.00																				
	88.10																				
	88.00			>20	SW	5°, 30° 70°, 50°	R, Pl	FeO	100	0											
	89.00																				
	89.60																				
	90.00																				

Lugeon Value = 1.0

Lugeon Value = 1.36

ABBREVIATIONS: F- Fresh, SW-Slightly Weathered, MW-Moderately Weathered, HW-Highly Weathered, CW-Completely Weathered, MB-Mechanical Break, Pl-Planar, Sm-Smooth, R-Rough, FeO-Iron Oxide, Cl-Clay, Sl-Silt

SRC Lab, NEA Started: 2006/06/02 Completed: 2006/07/11
 Drilled by: R. K. Adhikari, K. B. Shrestha Logged by: S. Shrestha Reviewed by: J.M. Tamrakar

Angles of the discontinuities are measured with respect to the drill core axis.

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006.
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)		
					Colour	Weathering	Hardness	Core Cutting	Description					
0			0-100%							0	Lugeon	100	0	430.950
0-1		Colluvium	100	NQ HW	White to Grey				Colluvium deposit of dark brown clayey materials with rock fragments.					
1-2		Colluvium	44		White to Grey				Colluvium deposit of brown, medium grained sand and pebble, cobble of dolomitic quartzite.					
2-3		Colluvium	69		White to Grey				Run of 76 cm is colluvium deposit of brown, medium grained sand. From 2.76 m Bed Rock is observed. Fine grained, highly jointed dolomite.					
3-4		Dolomite		NW	Light grey	2	3	3-4	Fine grained, highly jointed, thinly bedded dolomite with quartz vein.					
4-5		Dolomite	30		Light grey				Do					
5-6		Dolomite	18		White				Core loss Fine grained, moderately jointed, thinly bedded dolomite. Core loss : 5.00 to 5.44 m					
6-7		Dolomite	20		White				Do					
7-8		Dolomite	40		White to Light Grey	2	2	2-3	Do Core loss : 7.15 to 7.24 m					
8-9		Dolomite	33		White				Fine grained, moderately jointed, thinly bedded dolomite. Core loss : 7.85 to 8.00 m					
9-10		Dolomite	18		White				Fine grained, jointed, thinly bedded dolomite. MB : 9.00 m					
10		Dolomite	22		White	2	2-3	3	Do					

Note	Abbreviation
RQD	Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
Core Loss	Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
Colluvium	Core Cutting : 1 (Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)
Alluvium	Lugeon Value
Dolomite/Quartzite/Dolomitic Quartzite	Dolomite


Hydro Engineering & Development Co. (P) Ltd . <small>(ENGINEERING PROJECT MANAGEMENT CONSTRUCTION & DEVELOPMENT) P. O. Box : 7025 Nagpokan, Haraz, Kathmandu.</small>	Employer Electric Power Development Co., Ltd Nippon Koei Co., Ltd Tokyo, Japan	Title CORE LOGGING Upper Seti (Damauli) Storage Hydroelectric Project	SHEET NO : 8H-1 1/9
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

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting	Description					
10			0-100%						76 mm			100	420.950	
11		Dolomite	10, 22, 37, 47		White	2	2-3	3	Fine grained, moderately jointed, fractured, thinly bedded dolomite. Core loss : 10.00 to 10.22 m					
12		Dolomite	10, 30, 43		White to Light gray	2	3	4	Fine grained, jointed, thinly bedded dolomite. Core loss : 11.30 to 11.60 m					
13		Dolomite	10, 30, 34		White to Light gray	2	2	2-3	Fine grained, highly jointed, fractured, thinly bedded dolomite. Core loss : 12.00 to 12.30 m					
14		Dolomite	18, 55		White to Light gray	2	3	3-4	Fine grained, jointed, medium bedded dolomite. MB : 13.31 m & 13.34 m Core loss : 13.50 to 14.16 m					
15		Dolomite/Quartzite/Dolomitic Quartzite	58		White	2	2	2-3	Fine grained, jointed, thinly bedded dolomite. Do MB : 15.46 m					
16		Dolomite/Quartzite/Dolomitic Quartzite	50		White	2	2	2-3	Do MB : 15.87 m & 15.91 m					
17		Dolomite/Quartzite/Dolomitic Quartzite	49		White to Light gray	2	2	3-4	Fine grained, moderately jointed, thinly bedded dolomitic quartzite and quartzite. MB : 16.95 m					
18		Dolomite/Quartzite/Dolomitic Quartzite	33		White to Light gray	2	2	3-4	Do Core loss : 17.15 to 17.46 m					
19		Dolomite/Quartzite/Dolomitic Quartzite	78		Light grey	3	3-4	4-5	Fine grained, highly jointed, thinly bedded dolomitic quartzite. Core loss : 18.10 to 19.19 m					
20		Dolomite/Quartzite/Dolomitic Quartzite	44		Light grey	3	3-4	4-5	Do Core loss : 19.50 to 19.22 m					


Note	Abbreviation
RQD 	Weathering : w1- Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4- Highly Weathered; w5- Decomposed
Core Loss 	Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft
Colluvium 	Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)
Alluvium 	Dolomite/Quartzite/Dolomitic Quartzite 
	Dolomite 
	Lugeon Value 

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-1


Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core Cutting	Lugeon							
20			0-100%										0	100	20	410.950
21			67		Light grey	2	3-4	4.5		Core loss : 20.00 to 21.00 m					21	409.950
22			27		Light grey					Core loss : 21.15 to 21.35 m					22	
23			64		White to light grey	2	2	2-3		Fine grained, jointed, thinly bedded dolomitic quartzite and quartzite with calcite.					23	
24			38		White					Do					24	
25			30		White	2	2	4		Do					25	
26			62		White to light grey					Fine grained, jointed, thinly bedded quartzite.					26	
27			19		White to light grey					Do					27	
28			34		White	2	2	2-3		Core loss : 26.15 to 26.27 m					28	
29			10		White to light grey					Do					29	
30			15		Light grey	2	2	2-3		Core loss : 26.50 to 26.65 m					30	

Note

RQD 

Core Loss 


Colluvium 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed


Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Lugeon Value 

Alluvium 

Dolomite/Quartzite/Dolomitic Quartzite 

Dolomite 

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 Nippon Koei Co., Ltd
 Tokyo Japan

Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-1
 3/9

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core Cutting						
30			0-100%								0	100	30	400.950
31			88		Light grey to Brown					Fine grained, jointed, medium bedded dolomite.			31	
32			77		Light grey to Brown	2	2	2-3		Do			32	
33			37		Light grey to Brown					Fine grained, jointed, medium bedded dolomite.			33	397.950
34			43		Light grey to Brown					Do			34	396.950
35		Dolomite	31		Light grey to Brown	3	2-3	3		Fine grained, moderately jointed, medium bedded dolomite with calcite vein.			35	
36			31		Light grey to Brown	2	2	2-3		Fine grained, highly jointed, thin bedded dolomite.			36	
37			47		Light grey to Brown					Fine grained, moderately jointed, medium bedded dolomite calcite vein.			37	
38			27		White to Light grey	2	3	4		MB : 37.50 m			38	
39			24		White to Light grey					Fine grained, moderately jointed, thin bedded dolomite.			39	
40										Do			40	

Note

RQD

Core Loss

Colluvium

Abbreviation

Weathering : w1-Fresh; w2-Slightly Weathered; w3-Moderately Weathered; w4-Highly Weathered; w5-Decomposed

Hardness : H1-Strong Hard; H2-Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium

Dolomite/Quartzite/Dolomitic Quartzite

Dolomite

Lugeon Value



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Tokyo, Japan

Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-1
4/9








Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006.
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
40			0-100%								0	40	390.950
41					Light grey	2	2	3-4		Core loss Fine grained, moderately jointed, thinly bedded dolomite. Core loss : 40.00 to 40.36 m	Lugeon	41	
42					Light grey				Core loss Do Core loss : 41.35 to 42.00 m	42			
43					Light grey	2	2	3	Core loss Do Core loss : 42.00 to 42.42 m	43			
44					White to light grey	3	3	4-5	Fine grained, highly jointed, thinly bedded dolomite.	44			
45					Light grey	3	3	4	Core loss Fine grained, highly jointed, thinly bedded dolomite with calcite. Core loss : 45.00 to 45.48 m	45		385.950	
46					Light grey	2	2	3	Core loss Fine grained, moderately jointed, thinly bedded dolomite with calcite. Core loss : 45.80 to 46.46 m	46			
47					Light grey	2-3	3	4	Core loss Fine grained, highly jointed, thinly bedded dolomite. Core loss : 46.75 to 46.25 m	47			
48					Light grey	2-3	3	3-4	Do Fine grained, moderately jointed, thinly bedded dolomite.	48	382.950		
49						2-3	3	3-4	Core loss Fine grained, highly jointed, thinly bedded dolomite.	49			
50						2-3	3	3-4	Core loss Do Core loss : 49.00 to 49.48 m	50			

Note	Abbreviation
RQD 	Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
Core Loss 	Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
Colluvium 	Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)
Alluvium 	Dolomite/Quartzite/Dolomitic Quartzite 
	Dolomite 
	Lugeon Value 

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Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-2


Location: Diversion Outlet	Depth of Hole: 50 m.	Commenced: 21 July, 2006
Elevation: 320.092 m.	Depth of Overburden: 31.22m	Completed: 26th Aug, 2006
Coordinate: 525737.629E/3092966.836N	Length of Rock Drilling: 18.78 m	Drilled by: Santa Majhi
Angle From Horizontal: 90°	Total Length of Core: 28.09 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 56.18%	Water Table : 12.05m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit	Casing	Colour	Weathering	Hardness	Core Cutting	Observation of Core Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
0			0-100%								Lugeon	0	320.092
1										Colluvium deposit of light grey, coarse grained calcareous clay with sand and cobble of dark grey limestone.		1	
2										Colluvium deposit of light grey, coarse grained sand and pebble, cobble of limestone.		2	
3										Colluvium deposit of light grey, fine grained silty sand and pebble of limestone.		3	
4										Colluvium deposit of pebble, cobble of dark grey, fine grained limestone with calcite.		4	
5										Colluvium deposit of pebble, cobble of light grey to brown limestone with calcite and quartz vein.		5	
6										Do		6	
7										Colluvium deposit of light grey, fine grained silty sand and pebble, cobble of limestone with calcite.		7	
8										Colluvium deposit of pebble of dark grey, fine grained limestone.		8	
9										Do		9	310.742
10										Colluvium deposit of light grey, fine grained silty sand.		10	

Note

RQD 

Core Loss 


Colluvium 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 {Stick}; 2 {Substick}; 3 {Pieces}; 4 {Fragment}; 5 {Grain}

Alluvium 

Dolomite 

Schist 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO: BH-2
1/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-2

Location: Diversion Outlet	Depth of Hole: 50 m.	Commenced: 21 July, 2006
Elevation: 320.092 m.	Depth of Overburden: 31.22m	Completed: 26th Aug, 2006
Coordinate: 525737.629E/3092966.836N	Length of Rock Drilling: 18.78 m	Drilled by: Santa Majhi
Angle From Horizontal: 90°	Total Length of Core: 28.09 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 56.18%	Water Table : 12.05m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting	76 mm				
10			0-100%								0	40	310.0
11										Colluvium deposit of light grey to brown, fine grained sand with boulder of limestone.			
12										Colluvium deposit of light grey to brown, fine grained sand and pebble of limestone.			308.3
13										Colluvium deposit of light grey, fine grained sand and pebble of limestone.			307.6
14										Colluvium deposit of light grey, fine grained sand and boulder of limestone with calcite vein.			
15										Colluvium deposit of light grey, fine grained sand and pebble of limestone with calcite vein.			
16										Alluvium deposit of pebble of dark grey limestone.			
17										Alluvium deposit of light grey, fine grained sand and pebble, cobble of limestone.			
18										Do			
19										Do			
20										Do			

Note

- RQD
- Core Loss

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
 w3- Moderately Weathered; w4-Highly Weathered ;
 w5-Decomposed
 Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
 Core Cutting : 1 (Stack); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)



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 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-2
 2/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-2


Location: Diversion Outlet	Depth of Hole: 50 m.	Commenced: 21 July, 2006
Elevation: 320.092 m.	Depth of Overburden: 31.22m	Completed: 26th Aug, 2006
Coordinate: 525737.629E/3092966.836N	Length of Rock Drilling: 18.78 m	Drilled by: Santa Majhi
Angle From Horizontal: 90°	Total Length of Core: 28.09 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 56.18%	Water Table : 12.05m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting	Description					
20			0-100%							0	Lugeon	40	20	300.092
21									Alluvium deposit of light grey, fine grained sand and pebble, cobble of limestone.				21	
22									Alluvium deposit of pebble of limestone. Water loss in drill hole.				22	
23									Alluvium deposit of light grey, fine grained sand and pebble of limestone.				23	
24									Alluvium deposit of pebble of limestone.				24	
25									Alluvium deposit of light grey, fine grained sand and pebble of limestone.				25	
26									Alluvium deposit of pebble of limestone.				26	
27									Alluvium deposit of light grey, fine grained sand and pebble of limestone.				27	
28									Alluvium deposit of pebble of limestone.				28	
29									Alluvium deposit of light grey, coarse grained sand and pebble of limestone.				29	
30									Alluvium deposit of light grey, fine grained sand and pebble of reddish to grey limestone.				30	

Note

RQD 

Core Loss 


Colluvium 


Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pices); 4 (Fragment); 5 (Grain)

Alluvium 

Dolomite 

Schist 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-2
3/5







Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-2

Location: Diversion Outlet	Depth of Hole: 50 m.	Commenced: 21 July, 2006
Elevation: 320.092 m.	Depth of Overburden: 31.22m	Completed: 26th Aug, 2006
Coordinate: 525737.629E/3092966.836N	Length of Rock Drilling: 18.78 m	Drilled by: Santa Majhi
Angle From Horizontal: 90°	Total Length of Core: 28.09 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 56.18%	Water Table : 12.05m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
30			0-100%										40	30	290.092
31		Aluvium	84							Aluvium deposit of light grey, fine grained sand and pebble of reddish to grey calcareous schist and limestone.					
32			76							Run of 22 cm is aluvium deposit of light grey, fine grained sand, from 31.22 m Bed Rock is observed. Fine grained, highly jointed and fragmented dolomite. Sludge found as light brown, fine grained sand. Core loss : 31.30 to 31.84 m					
33			61		White					Fine grained, highly jointed and fragmented dolomite. Sludge as sand are found. Core loss : 32.28 to 32.89 m					
34			100							Total core loss. Sludge found as light grey, fine grained sand. Core loss : 33.00 to 34.00 m					
35			89		White to Grey					Fine grained, highly jointed and fragmented dolomite. Core loss : 34.00 to 34.89 m					
36		Dolomite	24			2-3	3	3-4		Fine grained, highly jointed and fragmented dolomite. Crushing materials found as coarse grained sand. Core loss : 35.00 to 35.12 m					
37			49		White					Fine grained, highly jointed and fragmented dolomite. Sludge found as sand. Core loss : 36.15 to 36.30 m & 36.48 to 36.65 m					
38			20							Do					
39			22							Do					
40			44		White to Pink grey	2	3	4		Fine grained, moderately jointed dolomite. Core loss : 37.75 to 37.83 m					
			17							Fine grained, highly jointed dolomite. Core loss : 38.35 to 38.41 m					
			33			2	3	3-4		Fine grained, highly jointed dolomite. Core loss : 38.66 to 38.89 m					
			31							Do					
			55							Core loss : 39.28 to 39.45 m					
										Do					

Note	Abbreviation
RQD 	Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
Core Loss 	Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
Colluvium 	Core Cutting : 1 (Stck); 2 (Substck); 3 (Pices); 4 (Fragment); 5 (Grain)
Alluvium 	Dolomite 
Schist 	


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Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-2


Location: Diversion Outlet	Depth of Hole: 50 m.	Commenced: 21 July, 2006
Elevation: 320.092 m.	Depth of Overburden: 31.22m	Completed: 26th Aug, 2006
Coordinate: 525737.629E/3092966.836N	Length of Rock Drilling: 18.78 m	Drilled by: Santa Majhi
Angle From Horizontal: 90°	Total Length of Core: 28.09 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 56.18%	Water Table : 12.05m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit	Observation of Core					Description	Water Table  Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
40			0-100%								0	40	280.092
41					Pink to Grey	2	2	2-3		MB : 39.81 m Fine grained, moderately jointed dolomite. Core loss : 40.70 to 40.76 m		41	
42					Pink					Do MB : 42.24 m; 42.34 m Fine grained, highly jointed dolomite.		42	
43					Pink to Grey					MB : 42.45 m Fine grained, highly jointed dolomite. Sludge ore found as sand. Core loss : 43.32 to 43.53 m		43	
44					Pink grey	2	3	3-4		Do Core loss : 44.41 to 44.51 m		44	
45					Pink to Grey					Fine grained, highly jointed, mica parting dolomite. Core loss : 45.48 to 45.71 m		45	
46					Pink to Dark grey	2	2	2		Fine grained, moderately jointed, mica parting dolomite. Core loss : 46.40 to 46.55 m MB : 46.05 m; 46.06 m		46	
47					Pink to White					Do Core loss : 47.00 to 47.35 m		47	
48						3	4	5		Do Core loss : 48.32 to 48.61 m		48	
49						2	3	4		Do Core loss : 49.15 to 49.64 m		49	
50												50	

Note

RQD 

Core Loss 


Colluvium 


Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium 

Dolomite 

Schist 



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Title
CORE LOGGING
Upper Seti(Damauli) Storage Hydroelectric Project

SHEET NO: BH-2
5/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006.
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core Cutting	Lugeon					
50			0-100%								0	100	50	380.950
51			92.7	Light grey to Brown	Light grey	2-3	3	3-4		Fine grained, highly jointed, thinly bedded dolomite. Core loss : 50.00 to 50.10 m			51	
52			90							Do Core loss : 50.60 to 51.20 m			52	
53										Fine grained, highly jointed, thinly bedded dolomite.			53	
54			7							Core loss Core loss : 51.25 to 52.64 m			54	
55			17							Fine grained, highly jointed, thinly bedded, fractured dolomite.			55	
56			3							Fine grained, moderately jointed, thinly bedded, fractured dolomite.			56	
57			10							Fine grained, moderately jointed, thinly bedded dolomite with calcite and quartz.			57	
58			10							Do MB : 56.43 m			58	372.950
59			35							Do			59	371.950
60										Core loss Core loss : 59.00 to 59.35 m			60	

Note

- RQD
- Core Loss
- Colluvium

Abbreviation

- Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
- Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
- Core Cutting : 1 (Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)
- Lugeon Value

- Alluvium
- Dolomite/Quartzite/Dolomitic Quartzite
- Dolomite



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Title
CORE LOGGING
Upper Seti(Damauli) Storage Hydroelectric Project

SHEET NO : BH-1
6/9

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
60			0-100%								0	100	370.950
60-61					2	2-3	4-5		Core loss	Fine grained, highly jointed, thinly bedded dolomite with calcite. Core loss : 60.00 to 60.27 m			
61-62					2	2	4		Core loss	Do Core loss : 61.20 to 61.54 m			
62-63									Core loss	Do Core loss : 62.00 to 62.22 m			
63-64					2	2	3-4			Do			
64-65									Core loss	fine grained, moderately jointed, thinly bedded dolomite with calcite. Core loss : 64.00 to 64.33 m MB : 64.56 m			
65-66										Do			
66-67					2	2-3	3-4			MB : 65.31 m Fine grained, highly jointed, thinly bedded dolomite with quartz vein.			
67-68										Fine grained, moderately jointed, thinly bedded dolomite with calcite and quartz vein. MB : 67.72 m & 67.76 m			
68-69									Core loss	Fine grained, highly jointed, fragmented, thinly bedded dolomite. Core loss : 68.00 to 68.79 m			
69-70					2	3	4-5		Core loss	Do			
					2	2	4			Core loss : 69.00 to 69.50 m			

Note

RQD

Core Loss

Colluvium

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium

Dolomite/Quartzite/Dolomitic Quartzite

Dolomite

Lugeon Value



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 Tokyo, Japan

Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-1
 7/9








Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-1

Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 200
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation Kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core Cutting							
70			0-100%									0	100	70	360.95
71					Grey					Core loss Core loss : 70.00 to 71.00 m				71	
72										Total core loss due to highly jointed and fractured core. Fine grained sand found as sludge. Core loss : 71.20 to 71.90 m				72	
73					Light grey					Fine grained, highly jointed, thin bedded dolomite. Core loss : 71.90 to 72.62 m				73	
74										Do Core loss : 72.75 to 73.85 m				74	
75										Total core loss Core loss : 74.15 to 75.00 m				75	355.95
76					White to Grey					Fine grained, highly jointed, thin bedded dolomite. Core loss : 75.00 to 75.26 m				76	
77										Do Core loss : 75.50 to 76.50 m				77	
78					Light grey to Brown					Do Core loss : 77.00 to 78.00 m MB : 78.11 m				78	
79										Do Core loss : 78.55 to 79.56 m				79	
80														80	

Note	Abbreviation
RQD 	Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
Core Loss 	Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
Colluvium 	Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)
Alluvium 	Dolomite/Quartzite/Dolomitic Quartzite 
	Dolomite 
	Lugeon Value 


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Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-1


Location: Intake	Depth of Hole: 90.00 m	Commenced: 2nd Aug., 2006
Elevation: 430.950	Depth of Overburden: 2.76 m	Completed: 11th Sept., 2006
Coordinate: 525567.697E/3092659.422N	Length of Rock Drilling: 87.24 m	Drilled by: S.R. Timilsina
Angle From Horizontal: 90°	Total Length of Rock Drill: 59.24m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 65.82%	Water Table: 81m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core	Cutting							
80			0-100%										0	100	80	450.950
81			55							Total core loss due to highly weathered and jointed. Core loss : 80.00 to 81.00 m					81	349.950
82			100							Fine grained, highly jointed, fragmented, thinly bedded dolomite. Core loss : 81.00 to 81.41 m					82	
83			100							Total core loss. Core loss : 81.75 to 83.25 m					83	
84			80							Fine grained, highly jointed, fragmented, thinly bedded dolomite. Core loss : 83.25 to 83.85 m					84	
85			70							Do Core loss : 84.00 to 84.70 m					85	
86			36							Fine grained, highly jointed, fragmented, thinly bedded dolomite with calcite. Core loss : 85.00 to 85.27 m					86	
87			50							Do Core loss : 86.00 to 86.40 m					87	
88			43							Fine grained, moderately jointed, fragmented, thinly bedded dolomite. Core loss : 87.37 to 87.80 m					88	
89			7							Do Core loss : 87.80 to 88.25 m					89	
90			27							Do Core loss : 88.85 to 89.50 m					90	

Note

RQD 

Core Loss 


Colluvium 


Abbreviation


Weathering : w1- Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4- Highly Weathered ; w5- Decomposed


Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pices); 4 (Fragment); 5 (Grain)

Alluvium 

Dolomite/Quartzite/Dolomitic Quartzite 

Dolomite 

Lugeon Value 



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Tokyo, Japan.

Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-1
9/9







Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-3

Location: Tailrace Outlet	Depth of Hole: 50.00 m	Commenced: 12 June, 2006
Elevation: 331.788 m.	Depth of Overburden: 39.87 m	Completed: 14 July, 2006
Coordinate: 525634.116E/3092947.201N	Length of Rock Drilling: 10.13 m	Drilled by: Santa Majhi
Angle From Horizontal	Total Length of Core: 23.75 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 47.5%	Water Table : 24.10m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
0			0-100%								0	331.788	
0-0.75		Alluvium		76 mm HW						Initially 75 cm is alluvium deposit of pebble with sand particles then colluvium deposit of light brown pebbly sand with silty clay and pebble of limestone			
0.75-1.5		Colluvium								Colluvium deposit of light grey to brown, fine grained silty sand pebble of limestone			
1.5-2.0		Colluvium								Colluvium deposit of pebble, cobble of light grey, fine grained limestone			
2.0-2.5		Colluvium								Colluvium deposit of light brown, fine grained silty sand and pebble of light grey, fine grained limestone			
2.5-3.0		Colluvium								Colluvium deposit of light brown, fine grained silty sand and pebble of light grey, fine grained limestone			
3.0-3.5		Colluvium								Colluvium deposit of pebble of light grey to brownish, fine grained limestone			
3.5-4.0		Colluvium								Colluvium deposit of pebble, cobble of light grey to brown, fine grained limestone with calcite			
4.0-4.5		Colluvium								Colluvium deposit of light brown, fine grained silty sand and pebble, cobble of limestone with calcite		327.536	
4.5-5.0		Colluvium								Colluvium deposit of pebble of light grey to brownish, fine grained limestone			
5.0-5.5		Colluvium								Colluvium deposit of pebble of quartz, limestone			
5.5-6.0		Colluvium								Colluvium deposit of pebble of quartz, limestone			
6.0-6.5		Colluvium								Colluvium deposit of light grey, fine grained silty sand and pebble of light grey, fine grained limestone with calcite		324.980	
6.5-7.0		Colluvium								Colluvium deposit of pebble of limestone			
7.0-7.5		Colluvium								Colluvium deposit of light grey, medium grained sand and pebble of limestone			
7.5-8.0		Colluvium								Colluvium deposit of light grey, fine grained sand and pebble of limestone			
8.0-8.5		Colluvium								Colluvium deposit of light brown, fine grained sand and pebble of limestone		321.888	

Note	Abbreviation
RQD 	Weathering : w1-Fresh; w2-Slightly Weathered; w3-Moderately Weathered; w4-Highly Weathered; w5-Decomposed
Core Loss 	Hardness : H1-Strong Hard; H2-Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
Colluvium 	Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)
Alluvium 	Slate 
Dolomite 	


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Geologic Log of Drill Hole



Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-3

Location: Tailrace Outlet	Depth of Hole: 50.00 m	Commenced: 12 June, 2006
Elevation: 331.788 m.	Depth of Overburden: 39.87 m	Completed: 14 July, 2006
Coordinate: 525634.116E/3092947.201N	Length of Rock Drilling: 10.13 m	Drilled by: Santa Majhi
Angle From Horizontal	Total Length of Core: 23.75 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 47.5%	Water Table : 24.10m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting	Description					
10			0-100%						76 mm				10	321.7
10.5									Colluvium deposit of light grey to brown, fine grained sand and pebble of light grey to brown limestone					
11									Colluvium deposit of dark grey, fine grained sand and pebble of light grey to brown limestone					
11.5									Colluvium deposit of pebble of dark grey, fine grained limestone					
12									Colluvium deposit of dark grey, fine grained sand and pebble, cobble of dark grey limestone					
12.5									Colluvium deposit of dark grey, fine grained sand and pebble, cobble of dark grey limestone with calcite					
13									Colluvium deposit of pebble of dark grey limestone					
13.5									Do					
14									Colluvium deposit of dark grey to brown, fine grained sand and pebble of limestone					
14.5									Colluvium deposit of pebble of dark grey to brown limestone with calcite					
15									Colluvium deposit of pebble of dark grey to brown quartz, limestone with calcite					
15.5									Colluvium deposit of light grey, fine grained sand and pebble, cobble of limestone					
16									Colluvium deposit of pebble of dark grey limestone with calcite					
16.5									Do					
17									Colluvium deposit of dark grey, fine grained sand and pebble of limestone					
17.5									Do					
18									Colluvium deposit of dark grey, fine grained sand and pebble of limestone					
18.5									Do					
19									Do					
19.5									Do					
20									Do					

Note

RQD 
Core Loss 

Abbreviation

Weathering : w1- Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4- Highly Weathered; w5- Decomposed
Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft
Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)



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Nippon Koei Co., Ltd
Tokyo, Japan

Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO: BH-3
2/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-3


Location: Tailrace Outlet	Depth of Hole: 50.00 m	Commenced: 12 June, 2006
Elevation: 331.788 m.	Depth of Overburden: 39.87 m	Completed: 14 July, 2006
Coordinate: 525634.116E/3092947.201N	Length of Rock Drilling: 10.13 m	Drilled by: Santa Majhi
Angle From Horizontal	Total Length of Core: 23.75 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 47.5%	Water Table : 24.10m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting	Description					
20			0-100%									0	40	311.788
21									Colluvium deposit of dark grey to light brown, fine grained sand and pebble of limestone					
22									Do					
23									Colluvium deposit of light brown to grey, fine grained sand and pebble of dark grey to brown limestone					
24									Colluvium deposit of pebble of light to dark grey, fine grained limestone					
25									Colluvium deposit of light grey, fine grained sand and pebble of light grey to brown limestone					
26									Colluvium deposit of pebble of light grey to brown, fine grained limestone, quartzite with quartz vein					
27									Colluvium deposit of light grey, fine grained sand and pebble of light grey limestone					307.688
28									Colluvium deposit of boulder of light grey, fine grained limestone with calcite					
29									Do					
30									Colluvium deposit of pebble of light grey, fine grained limestone with calcite					
									Colluvium deposit of light grey, fine grained sand and pebble of light grey, fine grained limestone with calcite					
									Colluvium deposit of pebble of light grey, fine grained limestone with calcite					
									Colluvium deposit of pebble of light grey, fine grained limestone and dolomite					
									Colluvium deposit of light grey, fine grained sand and pebble of light grey to brown, fine grained limestone and alluvium deposit from 29.57 m with rounded pebble of limestone, quartzite.					

Note

RQD 


Core Loss 

Colluvium 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
 Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
 Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium 

Slate 

Dolomite 



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 Tokyo, Japan

Title
CORE LOGGING
 Upper Seti(Damauli) Storage Hydroelectric Project


SHEET NO : BH-3
 3/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-3


Location: Tailrace Outlet	Depth of Hole: 50.00 m	Commenced: 12 June, 2006
Elevation: 331.788 m.	Depth of Overburden: 39.87 m	Completed: 14 July, 2006
Coordinate: 525634.116E/3092947.201N	Length of Rock Drilling: 10.13 m	Drilled by: Santa Majhi
Angle From Horizontal	Total Length of Core: 23.75 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 47.5%	Water Table : 24.10m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core Cutting								
30			0-100%										0	Lugeon	40	301.788
31				56 mm NX						Alluvium deposit of light grey, medium grained sand pebble of light grey, fine grained limestone and slate					31	
32										Alluvium deposit of dark grey, medium grained sand and pebble of white to light grey, fine grained quartzite and limestone					32	
33										Alluvium deposit of pebble of light grey, fine grained limestone					33	
34										Alluvium deposit of light grey, fine grained sand and pebble of light grey, fine grained limestone					34	
35										Alluvium deposit of pebble of light grey, fine grained limestone					35	
36										Alluvium deposit of light grey, fine grained sand and pebble of light grey, fine to medium grained limestone and gneiss					36	
37										Do					37	
38										Alluvium deposit of pebble of light grey, fine to medium grained quartzite, gneiss and limestone					38	
39										Alluvium deposit of light grey, fine grained sand and pebble of white, light grey to brown, fine to medium grained quartzite, limestone and gneiss					39	
40										Run of 87 cm is alluvium deposit of light grey, fine grained sand. From 39.87 m BED ROCK is observed. Fine grained, highly jointed, thinly bedded dolomite with stolic structure					40	

Note

RQD 

Core Loss 


Colluvium 

Abbreviation


Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered; w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium 

Slate 

Dolomite 



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Title
 CORE LOGGING
 Upper Seti(Damauli) Storage Hydroelectric Project

SHEET NO : BH-1
 4/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-3


Location: Tailrace Outlet	Depth of Hole: 50.00 m	Commenced: 12 June, 2006
Elevation: 331.788 m.	Depth of Overburden: 39.87 m	Completed: 14 July, 2006
Coordinate: 525634.116E/3092947.201N	Length of Rock Drilling: 10.13 m	Drilled by: Santa Majhi
Angle From Horizontal	Total Length of Core: 23.75 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 47.5%	Water Table : 24.10m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
40			0-100%								0	40	291.788
41			68	Light grey		2-3	4	5		Core loss: 41.16 to 41.84 m		41	
42			65							Core loss: 42.00 to 42.65 m		42	
43			79							Core loss: 43.21 to 43.50 m		43	
44			65							Core loss: 43.50 to 44.85 m		44	
45			78	Light grey		2-3	3	5		Core loss: 45.22 to 46.00 m		45	
46			71							Core loss: 46.00 to 46.71 m		46	
47			75							Core loss: 47.00 to 47.75 m		47	
48			65			3	4	5		Core loss: 48.35 to 49.00 m		48	
49			53							Core loss: 49.00 to 49.53 m		49	
50												50	

Note

RQD 

Core Loss 

Colluvium 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Dolomite 



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CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO. : BH-3
5/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-4

Location: Alternative Intake	Depth of Hole: 90 m.	Commenced: 23 June 2006
Elevation: 427.017m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation Kind of Bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core	Cutting				
0			0-100%								Lugeon	0	427.017
0-1.15		Colluvium		NO	HW					Initially dark grey to brown, coarse grained sand found as sludge during drilling.			
1.15-1.85				Light grey to Brown	NW					Bed Rock encountered from 1.15 m. Fine grained, highly jointed, thin bedded slate with quartz vein.			
1.85-2.00						3	3	3-4		Fine grained, highly jointed, thin bedded slate with quartz vein.			
2.00-2.80										Core loss: 1.85 to 2.00 m			
2.80-3.40										Core loss: 2.80 to 3.40 m			
3.40-4.00						3	3	3-4		Do			
4.00-4.20										Core loss: 4.00 to 4.20 m			
4.20-4.40						3	3	4		Do			
4.40-5.00										Core loss: 5.00 to 5.80 m			
5.00-5.80										Core loss: 5.00 to 5.80 m			
5.80-6.20						3	3	3-4		Fine grained, highly jointed, thin bedded phyllitic slate.			
6.20-7.80										Do			
7.80-8.20						3	3	4		Fine grained, highly jointed, thin bedded slate with quartz vein.			
8.20-8.60										Core loss: 7.80 to 8.20 m			
8.60-8.80						3	3-4	5		Fine grained, highly jointed, thin bedded phyllitic slate.			
8.80-9.10										Core loss: 8.20 to 8.60 m			
9.10-9.75						3	3-4	5		Do			
9.75-10.00										Core loss: 9.10 to 9.75 m			

Note

- RQD
- Core Loss
- Colluvium

Abbreviation


- Weathering : w1- Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4- Highly Weathered; w5- Decomposed
- Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft
- Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

- Colluvium
- Alluvium
- Slate
- Schist
- Lugeon Value


Geologic Log of Drill Hole


Upper Seti (Damauli) Storage Hydroelectric Project
Hole No: BH-4

Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting	Description					
10			0-100%									0	100	417.0
10-11									Fine grained, highly jointed, thinly bedded phyllitic slate.					
11									Core loss: 10.15 to 11.15 m					
12						3	3	3-4	Fine grained, highly jointed, thinly bedded phyllitic slate with quartz vein.					
13									Do					
14						3	3	3	Fine grained, highly jointed, thinly bedded slate.					413.0
14-15									Core loss: 14.20 to 14.40 m					
15						3	3	3-4	Core loss: 14.40 to 14.61 m					
16									Fine grained, highly jointed, thinly bedded phyllitic slate with quartz vein, Dark grey, fine grained sand or sludge.					
16-17									Core loss: 15.15 to 16.26 m					
17						3	3	4	Do					409.8
18									Core loss: 16.65 to 18.00 m					409.0
19						3	3	4	Do					408.3
19-20									Core loss: 18.15 to 19.64 m					407.5
20									Core loss					

Note

RQD 

Core Loss 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft


Core Cutting : 1 {Stick}; 2 {Substick}; 3 {Pieces}; 4 {Fragment}; 5 {Grain}

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-4


Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017 m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table  Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
20			0-100%								0	20	407.017
21												21	
22												22	
23												23	
24												24	
25												25	
26												26	
27												27	
28												28	
29												29	
30												30	

Note

RQD 

Core Loss 


Colluvium 

Abbreviation

Weathering : w1- Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4- Highly Weathered ;
w5- Decomposed


Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pices); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Schist 

Lugeon Value 



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Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-4
 3/9








Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-4

Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017 m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
30			0-100%										0	100	397.017
30		Phyllitic slate/Slate			Dark grey					Fine grained, highly jointed, thinly bedded phyllitic slate with calcite vein.					
31										Core loss: 30.00 to 30.73 m					
32										Core loss: 31.00 to 31.45 m					
33										Core loss: 31.80 to 32.00 m					
34										Core loss: 32.30 to 32.50 m					
35										Core loss: 32.85 to 32.93 m					
36										Core loss: 33.30 to 33.67 m					
37										Core loss: 33.80 to 34.77 m					
38										Core loss: 35.65 to 36.10 m					
39										Core loss: 38.00 to 38.10 m					
40										Core loss: 38.30 to 38.58 m					

Note	Abbreviation
RQD 	Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
Core Loss 	Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
Colluvium 	Core Cutting : 1 (Stick); 2 (Substick); 3 (Plices); 4 (Fragment); 5 (Grain)
Alluvium 	Slate 
Schist 	Lugeon Value 


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Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-4

Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017 m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
40			0-100%										0	100	387.017
40										Fine grained, highly jointed, thin bedded slate with calcite. Core loss: 40.00 to 40.36 m					
41						2	3	3-4		Do Core loss: 40.40 to 40.57 m					
42										Do Core loss: 40.90 to 41.22 m					
43										Do Core loss: 41.50 to 41.72 m & 42.00 to 42.34 m					
44										Do Core loss: 43.00 to 43.50 m					
45										Do Core loss: 44.00 to 44.13 m					
46										Do Core loss: 45.00 to 45.25 m					
47										Do Core loss: 45.50 to 45.76 m					
48										Do Core loss: 46.30 to 46.53 m					
49										Do Core loss: 47.45 to 47.64 m					
50										Do Core loss: 48.20 to 48.42 m					
										Do Core loss: 49.20 to 49.53 m M8: 49.70 m & 49.78 m					

Note

RQD 

Core Loss 


Colluvium 


Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed


Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium 

Slate 

Schist 

Lugeon Value 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO: BH-4
5/9








Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-4

Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation Kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
50			0-100%										0	100	377.01
50		Slate	28		Dark grey	2	2	2-3		Fine grained, moderately jointed, thinly bedded slate. Core loss: 50.00 to 50.13 m					
51		Slate	33							Do					
51		Slate	37							Core loss: 50.40 to 50.48 m					
51		Slate	27							Fine grained, highly jointed, thinly bedded calcareous slate with calcite. Core loss: 50.70 to 50.83 m					
52		Slate	24			2	2	3		Do					
52		Slate	62							Core loss					
52		Slate								Core loss: 52.04 to 52.35 m					
53		Slate								Do					
53		Slate	17							Fz: 52.35 to 52.45 m					
54		Slate	4			2	2	2-3		Do					
54		Slate	40							Do					
54		Slate								Fz: 54.30 to 54.40 m					
55		Slate	20							Do					
55		Slate	32			2	3	4		Core loss: 55.00 to 55.16 m					
56		Slate	22			2	2	3		Do					
56		Slate								Core loss					
56		Slate	45			2	2	3		Core loss: 56.00 to 56.29 m					
57		Slate	33							Do					
57		Slate				2	2	3		Core loss: 56.65 to 56.90 m					
58		Slate	47							Do					
58		Slate								Core loss: 57.40 to 57.68 m					
58		Slate	80							Do					
58		Slate								Core loss: 58.00 to 58.25 m					
59		Slate	50			2	3	4		Do					
59		Slate								Core loss: 58.50 to 58.75 m					
59		Slate								Do					
60		Slate								Do					

Note	Abbreviation
RQD 	Weathering : w1- Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4- Highly Weathered; w5- Decomposed
Core Loss 	Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft
Colluvium 	Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)
Alluvium 	Slate 
Schist 	Lugeon Value 


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Geologic Log of Drill Hole


Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-4


Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017 m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
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Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
60			0-100%										0	100	367.017
60				NG						Fine grained, highly jointed, thinly bedded calcareous slate.					
61						2	2-3	3-4		Do					
62										Do					
62										Do					
62										Do					
62										Core loss: 62.00 to 62.13 m					
63						2	3	3-4		Do					
63										Core loss: 62.40 to 62.60 m					
63										Do					
63										Core loss: 62.85 to 63.00 m					
64						2	3-4	4-5		Do					
64										Core loss: 63.45 to 63.79 m					
64										Do					
65						2	3	3-4		Do					
65										Core loss: 64.85 to 65.00 m					
65										Do					
65										Core loss: 65.00 to 65.11 m					
66						2	3	4		Do					
66										Core loss: 65.45 to 65.66 m					
66										Do					
66										Core loss: 65.90 to 66.30 m					
67						2	4	3-4		Do					
67										Do					
68						2	3-4	4-5		Do					
68										Do					
69										Do					
69										Do					
70						2	3	3-4		Do					
70										Core loss: 69.50 to 69.61 m					

Note

RQD 

Core Loss 


Colluvium 


Abbreviation


Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed


Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium 

Slate 

Schist 


Lugeon Value 

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-4


Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017 m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table: 18.7 m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
70			0-100%										0	70	357.01
71			86	NQ		2	3-4	5		Fine grained, highly jointed, thin bedded slate.				71	
72			91							Fine grained, highly jointed, thin bedded phyllic slate with calcite.				72	
73			56							Do				73	
74			54							Do				74	
75			79			2	3	4		Do				75	
76			60							Do				76	
77			16							Do				77	
78			20			1-2	2-3	3-4		Fine grained, jointed, thin bedded slate with calcite.				78	
79			45							Do				79	
80										Do				80	

Note

RQD 

Core Loss 

Colluvium 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed


Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Schist 

Lugeon Value 

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Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-4
 8/9

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-4

Location: Alternative Intake	Depth of Hole: 90.00 m	Commenced: 23 June 2006
Elevation: 427.017m	Depth of Overburden: 1.15 m	Completed: 25 July 2006
Coordinate: 525669.118E/3092472.343N	Length of Rock Drilling: 88.85 m	Drilled by: S.R. Timilsina
Angle From Horizontal	Total Length of Rock Drill: 54.91 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery: 61.01%	Water Table : 18.7m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)		
					Colour	Weathering	Hardness	Core Cutting									
80			0-100%										0	Lugeon	100	80	347.017
81				NO		1-2	2-3	3-4		Fine grained, highly jointed, thin bedded slate with calcite.						81	
82						1-2	3	4		Do						82	
83						1-2	2-3	3-4		Do						83	
84						1-2	3	3-4		Do						84	
85						1-2	2	3		Do						85	
86						1-2	2-3	3-4		Do						86	
87						1-2	2-3	3-4		Do						87	
88						1-2	2	2-3		Do						88	
89						1-2	2-3	3-4		Do						89	
90						1-2	2-3	3-4		Do						90	

Note

RQD 

Core Loss 

Colluvium 

Abbreviation

Weathering : w1- Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4- Highly Weathered; w5- Decomposed


Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Schist 

Lugeon Value 



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Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-4
 9/9

Geologic Log of Drill Hole




Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-5

Location: Left bank downstream of Dam Axis	Depth of Hole: 50 m.	Commenced: 10 June, 2006
Elevation: 358.312 m.	Depth of Overburden: 39.84 m	Completed: 7 July, 2006
Coordinate: 525591.511 E/309303.786 N	Length of Rock Drilling: 10.16 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 24.58 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 49.16%	Water Table : 40.5m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Colour	Weathering	Hardness	Core Cutting	Observation of Core	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
									Description					
0			0-100%							0			40	358.312
1									Thinly, top soil of dark brown muddy clay.					
1									Colluvium deposit of cobble of light grey, fine grained limestone					
1									Colluvium deposit of dark brown silty clay					
2									Colluvium deposit of pebble of light grey, fine grained limestone					
2									Colluvium deposit of pebble of light grey to pinkish, fine grained limestone and dolomitic limestone					
2									Colluvium deposit of pebble of light grey, fine grained limestone					
3									Colluvium deposit of brownish grey, fine grained sand and pebble of limestone					
3									Colluvium deposit of pebble of light grey to white, fine grained limestone					
4									Colluvium deposit of pebble of light grey to white, fine grained limestone with calcite, quartz					
4									Do					
5									Do					
6									Colluvium deposit of pebble, cobble of light grey to white, fine grained quartz, limestone with calcite					
6									Colluvium deposit of pebble of light grey to white, fine grained quartz, limestone					
7									Colluvium deposit of pebble of light grey, fine grained quartz, limestone with calcite					
8									Colluvium deposit of pebble of white to light grey, fine grained limestone and dolomitic quartzite					
9									Colluvium deposit of pebble, cobble of white to light grey, fine grained dolomitic quartzite, limestone					

Note


- RQD 
- Core Loss 
- Colluvium 

Abbreviation

- Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
- Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
- Core Cutting : 1 (Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

Alluvium 

Slate 

Phyllitic schist 



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Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-5
 1/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-5

Location: Left bank downstream of Dam Axis	Depth of Hole: 50.00 m	Commenced: 10 June, 2006
Elevation: 358.312 m.	Depth of Overburden: 39.84 m	Completed: 7 July, 2006
Coordinate: 525591.511E/309303.786N	Length of Rock Drilling: 10.16 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 24.58 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 49.16%	Water Table : 40.5m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Colour	Weathering	Hardness	Core Cutting	Observation of Core Description 76 mm	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
10			0-100%							Lugeon	40	348.3
11									Colluvium deposit of pebble, cobble of white to light grey, fine grained dolomitic quartzite and limestone			
12									Colluvium deposit of pebble of light grey, fine grained limestone			
13									Do			
14									Colluvium deposit of pebble of light grey to brown, fine grained, weathered limestone			
15									Do			
16									Do			
17									Colluvium deposit of pebble of white to light grey, fine grained limestone			
18									Colluvium deposit of pebble, boulder of white to light grey, fine grained dolomitic limestone			
19									Colluvium deposit of pebble, cobble of white to light grey, fine grained dolomitic limestone			
20									Colluvium deposit of pebble, cobble of white to light grey, concreted dolomitic quartzite and limestone			
									Colluvium deposit of pebble, cobble of light brown to grey, concreted dolomitic quartzite and limestone with calcite			
									Colluvium deposit of pebble of light grey, fine grained dolomitic quartzite and limestone			
									Colluvium deposit of pebble, cobble of light grey, fine grained dolomitic quartzite and limestone with calcite			

Note

RQD 

Core Loss 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;

w3- Moderately Weathered; w4-Highly Weathered ;

w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 {Stick}; 2 {Substick}; 3 {Pieces}; 4 {Fragment}; 5 {Grain}



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-5
2/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-5


Location: Left bank downstream of Dam Axis	Depth of Hole: 50.00 m	Commenced: 10 June, 2006
Elevation: 358.312 m.	Depth of Overburden: 39.84 m	Completed: 7 July, 2006
Coordinate: 525591.511E/309303.786N	Length of Rock Drilling: 10.16 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 24.58 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 49.16%	Water Table : 40.5m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit	Casing	Colour	Weathering	Hardness	Core Cutting	Observation of Core Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
20			0-100%								0	20	338.312
21										Colluvium deposit of pebble of light grey, white to pink, fine grained dolomitic quartzite and limestone		21	
22										Colluvium deposit of pebble of light grey to white, fine grained quartzite, dolomitic quartzite and limestone		22	
23										Colluvium deposit of pebble, cobble of light grey to white, fine grained dolomitic quartzite and limestone		23	
24										Colluvium deposit of cobble of white, fine grained quartzite		24	
25										Colluvium deposit of pebble of white to pinkish grey, fine grained dolomitic quartzite and quartzite		25	
26										Colluvium deposit of pebble of light grey to white, fine grained quartzite and limestone		26	
27										Colluvium deposit of pebble of white to pinkish grey, fine grained quartzite and dolomitic quartzite		27	330.912
28										Colluvium deposit of pebble of light grey to white, fine grained dolomitic quartzite and limestone		28	
29										Colluvium deposit of pebble of light to dark grey, fine grained dolomitic quartzite and limestone		29	
30										Colluvium deposit of light brown, fine grained sand and pebble of white, pink to light grey dolomite and limestone		30	

Note

RQD 

Core Loss 

Colluvium 

Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Phyllitic schist 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-5
3/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-5


Location: Left bank downstream of Dam Axis	Depth of Hole: 50.00 m	Commenced: 10 June, 2006
Elevation: 358.312 m.	Depth of Overburden: 39.84 m	Completed: 7 July, 2006
Coordinate: 525591.511E/309303.786N	Length of Rock Drilling: 10.16 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 24.58 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 49.16%	Water Table : 40.5m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)		
					Colour	Weathering	Hardness	Core Cutting									
30			0-100%										0	Lugeon	40	30	328.312
31			88							Colluvium deposit of light brown, fine grained sand and pebble of white, pink to grey dolomite and limestone					31		
32			76							Colluvium deposit of light grey to brown, fine grained sand and pebble of white, pink to light grey limestone					32		
33			85							Colluvium deposit of light brown, fine grained sand and pebble of pink to light grey limestone					33		
34			81							Colluvium deposit of greenish grey, fine grained sand and pebble of pink to light grey quartzite and limestone					34		323.782
35			41							Colluvium deposit of pebble of white, pink to light grey quartzite, dolomite and limestone					35		
36			42							Do					36		
37			100							Colluvium deposit of greenish grey, fine grained sand found as sudge					37		
38			100							Do					38		
39			90							Colluvium deposit of greenish grey, fine grained sand and pebble of green schist					39		
40			84							Initially 84 cm is greenish grey, fine grained sand. From 39.84 m Bed Rock is observed, fine grained, highly jointed schist					40		

Note

RQD 

Core Loss 


Colluvium 

Abbreviation


Weathering : w1- Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4- Highly Weathered; w5- Decomposed

Hardness : H1- Strong Hard; H2- Medium Hard; H3- Hard; H4- Soft; H5- Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Phyllitic schist 



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Title
 CORE LOGGING
 Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-5
 4/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-5

Location: Left bank downstream of Dam Axis	Depth of Hole: 50 m	Commenced: 10 June, 2006
Elevation: 358.312 m.	Depth of Overburden: 39.84 m	Completed: 7 July, 2006
Coordinate: 525591.511E/309303.786N	Length of Rock Drilling: 10.16 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 24.58 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 49.16%	Water Table : 40.5m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of bit Casing	Observation of Core					Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting					
40			0-100%								0	40	318.312
41										Fine grained, moderately jointed, thinly bedded schist with quartz vein		41	317.812
42						2	3	3		Fine grained, highly jointed, thinly bedded phyllitic schist with quartz vein		42	
43										Greenish grey, fine grained sand found as sludge Core loss: 42.51 to 42.68 m		43	
44										Do Core loss: 43.10 to 43.79 m		44	
45										Do Core loss: 44.25 to 44.50 m		45	
46										Total core loss, sludge found as fine grained sand Core loss: 44.50 to 45.00 m		46	
47										Fine grained, highly jointed, thinly bedded phyllitic schist Core loss: 45.00 to 45.78 m		47	
48										Do Core loss: 46.24 to 46.78 m		48	
49										Do Core loss: 47.26 to 47.51 m		49	
50										Fine grained, highly jointed, thinly bedded phyllitic schist with quartz vein Core loss: 48.20 to 48.86 m		50	
										Do Coarse sand partial found as crush materials Core loss: 49.23 to 49.72 m			

Note

RQD 

Core Loss 

Colluvium 

Abbreviation


Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

Alluvium 

Slate 

Phyllitic schist 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-5
5/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-6

Location: Tailrace outlet (Alternative) Depth of Hole: 50 m.

Commenced: 12 Aug, 2006

Elevation: 313.596 m.

Depth of Overburden: 6.49 m

Completed: 4 Sept., 2006

Coordinate: 527052.143E/3092078.266N

Length of Rock Drilling: 43.51 m

Drilled by: Joon Shrestha

Angle From Horizontal


Total Length of Core: 36.16 m

Logged by: R. Sthapit

Bearing of Angle Hole


Core Recovery : 72.32%

Water Table : 21.90m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
0			0-100%										0	313.596	
0				NX HW						Colluvium deposit of dark brown clay with rock fragments and coarse grained sand and gravel of white quartzite.					
1										Colluvium deposit of light brown, fine grained sand and pebble of white to grey quartzite.					
2										Do					
3										Colluvium deposit of pebble, cobble of greenish to grey quartzite.					
4										Colluvium deposit of light brown, fine grained sand and pebble of greenish to grey quartzite.					
5										Do					
6										Colluvium deposit of pebble of light grey quartzite.					
6										Do					
6										Do					
6										Run of 49 cm is colluvium deposit of pebble of quartzite. From 4.49 m Bed Rock is observed. Fine grained, moderately jointed schistose quartzite.					
7										Fine grained, moderately jointed schistose quartzite.				306.196	
8										Do					
9										Do				304.896	
9										Fine grained, moderately jointed and fractured schistose quartzite.				304.096	
10										Fine grained, highly jointed and fractured schistose quartzite.					

Note

RGD 

Core Loss 

Colluvium 


Abbreviation


Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered; w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Plices); 4 (Fragment); 5 (Grain)

Dolomite 

schistose quartzite 

Phyllite 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project


SHEET NO : BH-6
1/5

Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-6

Location: Tailrace outlet (Alternative)	Depth of Hole: 50.00 m	Commenced: 12 Aug, 2006
Elevation: 313.596 m.	Depth of Overburden: 6.49 m	Completed: 4 Sept., 2006
Coordinate: 527052.143E/3092078.266N	Length of Rock Drilling: 43.51 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 36.16 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 72.32%	Water Table : 21.90m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Observation of Core					Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)	
					Colour	Weathering	Hardness	Core Cutting	Description						
10			0-100%									0	40	303.5	
11		Schistose quartzite	20	66 mm NX	Light grey	3	3	4	Fine grained, highly jointed and fractured schistose quartzite.						
12			86						Do						
13									Fine grained, highly jointed and mica poring schistose quartzite. Core loss : 11.48 to 11.65 m Free fall : 11.45 to 11.65 m						
14			100						Do Core loss : 11.65 to 12.51 m Free fall : 11.65 to 12.30 m						
15			55						Do Total core loss. Sludge found as light gre. fine grained sand. Core loss : 13.15 to 14.00 m						
16			29						Fine grained, highly jointed quartzite. Fined grained, highly jointed calcareous quartzite. Core loss : 14.40 to 14.73 m						
17			87						Do						
18			59						Fine grained, highly jointed and mica poring schistose quartzite with calcite vein. Core loss : 16.39 to 16.65 m Free fall : 16.40 to 16.65 m					297.5 297.0	
19			29						Do Fine grained, highly jointed quartzite. Core loss : 16.65 to 17.34 m						
20			18						Do Fine grained, highly jointed and mica poring quartzite & phyllite with calcite vein. Core loss : 17.65 to 18.32 m						
			54						Do Core loss : 18.85 to 19.08 m					294.0	
									Fine grained, moderately jointed and fractured quartzite & phyllite with calcite.						

Note

RQD



Core Loss



Abbreviation

Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1(Stick); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)



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Title
CORE LOGGING
Upper Seti(Damauli) Storage Hydroelectric Project

SHEET NO : BH-6
2/5

Geologic Log of Drill Hole




Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-6

Location: Tailrace outlet (Alternative)	Depth of Hole: 50.00 m	Commenced: 12 Aug, 2006
Elevation: 313.596 m.	Depth of Overburden: 6.49 m	Completed: 4 Sept., 2006
Coordinate: 527052.143E/3092078.266N	Length of Rock Drilling: 43.51 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 36.16 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 72.32%	Water Table : 21.90m




Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Colour	Weathering	Hardness	Core Cutting	Observation of Core Description	Water Table Water Pressure Test Leakage of Drilling Water	Depth (m)	Elevation (m)
20			0-100%						Core loss : 19.65 to 20.19 m MB : 20.35 m, 20.39 m & 20.43 m		20	293.596
21		Schistose quartzite	18, 54, 27	66 mm		2	2-3	3-4	Fine grained, moderately jointed and fractured quartzite with calcite. Core loss : 20.65 to 20.81 m		21	
22			51		Light to Dark grey	2	4	4-5	Fine grained, moderately jointed and fractured quartzite & phyllite with calcite vein. Core loss : 21.75 to 22.13 m		22	291.696
23			43						Fine grained, moderately jointed and fractured quartzite and phyllite with calcite. Core loss : 22.50 to 22.84 m		23	
24			46, 15			2	2	2-3	Do Core loss : 23.85 to 24.00 m		24	
25			36			2	3	4	Fine grained, highly jointed and fractured phyllite with calcite vein. Core loss : 24.30 to 24.55 m		25	
26		Phyllite	46, 20, 19, 49			2	3	2-3	Fine grained, moderately jointed and laminated phyllite with calcite vein. Fine grained, jointed and fractured phyllite with calcite. Core loss : 25.65 to 25.80 m		26	
27			49		Dark grey	2	3	4	Do MB : 26.58 m, 26.59 m & 26.61 m Fine grained, highly jointed and fractured phyllite with calcite.		27	
28			35, 39			2	2	2-3	Fine grained, moderately jointed and fractured phyllite with calcite. Do		28	
29			32, 64			2	3	4	Core loss : 28.41 to 28.74 m. MB : 28.13 m & 28.21 m Do		29	
30						2	2	2-3	MB : 29.14 m & 29.19 m Do MB : 29.53 m & 29.65 m		30	

Note

- RQD 
- Core Loss 
- Colluvium 

Abbreviation

- Weathering : w1-Fresh; w2-Slightly Weathered; w3-Moderately Weathered; w4-Highly Weathered; w5-Decomposed
- Hardness : H1-Strong Hard; H2-Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
- Core Cutting : 1(Stack); 2(Substick); 3(Pieces); 4(Fragment); 5(Grain)

- Dolomite 
- Schistose quartzite 
- Phyllite 

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Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project

Hole No: BH-6

Location: Tailrace outlet (Alternative)	Depth of Hole: 50.00 m	Commenced: 12 Aug, 2006
Elevation: 313.596 m.	Depth of Overburden: 6.49 m	Completed: 4 Sept., 2006
Coordinate: 527052.143E/3092078.266N	Length of Rock Drilling: 43.51 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 36.16 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 72.32%	Water Table : 21.90m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casing	Colour	Weathering	Hardness	Core Cutting	Description	Water Table Water Pressure Test Leakage of Drilling Water	Lugeon	Depth (m)	Elevation (m)
30			0-100%								0	30	283.596
31		Phyllite	75	66 mm	Light to Dark grey				Fine grained, jointed and fractured phyllite and dolomite. MB : 30.15 m; 30.33 m & 30.90 m.			31	
32		Dolomite	85		Light to Dark grey				Fine grained, jointed dolomite. MB : 31.19 m; 31.30 m; 31.35 m & 31.80 m.			32	
33			88		Light grey	2	2	2-3	Do			33	
34			10		Light grey				Fine grained, moderately jointed dolomite.			34	
35			36						Do Core loss : 34.00 to 34.07 m; MB : 34.34 m.			35	
36			58			2	2-3	4	Fine grained, jointed and mica parting phyllite and dolomite. MB : 34.67 m.			36	
37			46			2	2-3	3	Fine grained, highly jointed and mica parting phyllite and dolomite. MB : 35.13 m.			37	
38			37		Light to Dark grey				Do Core loss : 37.00 to 37.54m.			38	
39			10		Light grey	2	2-3	3	Fine grained, moderately jointed and mica parting phyllite and dolomite.			39	
40			37			2	3	4	Do MB : 39.13 m.			40	

Note

- RQD
- Core Loss
- Colluvium

Abbreviation

- Weathering : w1-Fresh; w2- Slightly Weathered; w3- Moderately Weathered; w4-Highly Weathered ; w5-Decomposed
- Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft
- Core Cutting : 1 (Stick); 2 (Substick); 3 (Pieces); 4 (Fragment); 5 (Grain)

- Dolomite
- schistose quartzite
- Phyllite


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Geologic Log of Drill Hole

Upper Seti (Damauli) Storage Hydroelectric Project


Hole No: BH-6

Location: Tailrace outlet (Alternative)	Depth of Hole: 50.00 m	Commenced: 12 Aug, 2006
Elevation: 313.596 m.	Depth of Overburden: 6.49 m	Completed: 4 Sept., 2006
Coordinate: 527052.143E/3092078.266N	Length of Rock Drilling: 43.51 m	Drilled by: Joon Shrestha
Angle From Horizontal	Total Length of Core: 36.16 m	Logged by: R. Sthapit
Bearing of Angle Hole	Core Recovery : 72.32%	Water Table : 21.90m

Depth (m)	Log	Rock Name	Core Recovery (%)	Cementation kind of Bit Casting	Observation of Core					Description	Water Table 	Water Pressure Test	Leakage of Drilling Water	Depth (m)	Elevation (m)
					Colour	Weathering	Hardness	Core Cutting							
40			0-100%										0	40	273.596
41						2	3	3-4		Fine grained, highly jointed and mica parting phyllite. Core loss : 40.00 to 40.21 m.				41	
42										Fine grained, moderately jointed and mica parting phyllite. Fine grained, light grey sand found as sludge.				42	
43										Core loss : 40.64 to 40.81 m.				43	
44										Fine grained, highly jointed and mica parting phyllite.				44	
45										Core loss : 41.45 to 42.14 m. MB : 42.40 m & 42.43 m.				45	
46										Fine grained, highly jointed and mica parting phyllite with calcite & quartz vein.				46	
47										Core loss : 42.75 to 43.10 m.				47	
48										Fine grained, highly jointed and fragmented phyllite.				48	
49										Fine grained, highly jointed phyllite. Core loss : 43.90 to 44.00 m.				49	
50										Fine grained, highly jointed, fragmented and mica parting phyllite with calcite.				50	

Note

RQD 

Core Loss 


Colluvium 


Abbreviation


Weathering : w1-Fresh; w2- Slightly Weathered;
w3- Moderately Weathered; w4-Highly Weathered ;
w5-Decomposed

Hardness : H1-Strong Hard; H2- Medium Hard; H3-Hard; H4-Soft; H5-Very Soft

Core Cutting : 1 (Stick); 2 (Substick); 3 (Pices); 4 (Fragment); 5 (Grain)

Dolomite 

schistose quartzite 

Phyllite 



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Title
CORE LOGGING
Upper Seti (Damauli) Storage Hydroelectric Project

SHEET NO : BH-6
5/5