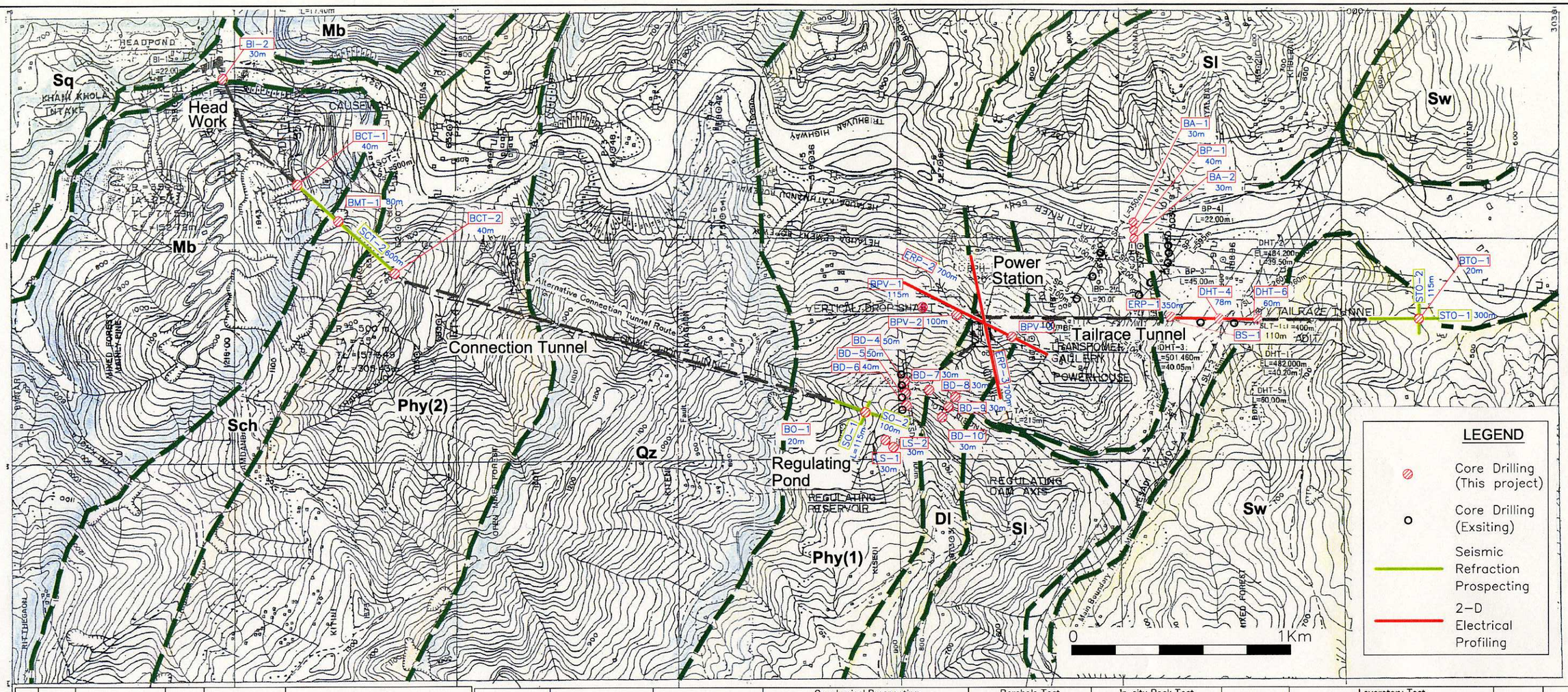

AGE	GROUP	FORMATION	SYMBOL	ROCK TYPE	GEOLOGY
Cenozoic	Recent Deposits		Rd	Riverbed deposits	Sand and gravels with bolders
			Ta	Talus and/or Terrace	Talus deposits and terrace deposits.
		(Uncomformity)			
	Siwalik Group		Sw	Conglomerate, Sandstone, Mudstone	Sandstone, mudstone, and small portions of conglomerates. Relatively soft and fractured near MBT.
		(Main Boundary Thrust)			
Paleozoic	Upper Nawakot Group		Phy (2)	Phyllite (2)	Blue green slatic phyllites, generally chloritic. Intercalation of calcalious beds. Relatively compact in general.
		Robang Formation	Qz	Quartzite	Quartzite. Intercalation of thin phyllite at some localities. Massive and compact in general.
			Phy (1)	Phyllite (1)	Blue green phyllites, generally chloritic. Relatively compact in general.
		Malekhu Formation	DI	Siliceous Dolomite	Light-to-dark and greenish gray siliceous dolomites. Intercalation of thin crystalline limestone and calc-phyllites. Massive and relatively well bedded.
		Berighat Formation	SI	Slate(Phyllitic)	Dark gray slates and phyllites together with black carbonaceous slate. Fractured and weathered near MBT.
		(Mahabharat Thrust)			
Pre-Cambrian	Bhimphedi Group	Kalitar Formation	Sq	Schist, Quarzite	Dark green to gray colored two mica and biotite schist with intercalation of quartzite and garnets. Strongly folded and fractured at places.
		Bhaise Dobhan Formation	Mb	Limestone	Coarse crystalline marble, limestone with intercalation of thin schist. Marble and limestone are massive and well bedded.
		Raduwa Formation	Sch	Schist	Coarse-crystalline, highly gametiferous mica schist, gneissic schist. Some quartzites are also seen in this formation.

Structure	Demanded Data for Detailedl Design	Core Boring			Geophysical Prospecting: Seismic Refraction Prospecting			Geophysical Prospecting: 2-D Electrical Resistivity Prospecting			Borehole Test: Standard Penetration Test		Borehole Test: Lugeon Test		In-situ Rock Test: Rock Shear Test		In-situ Rock Test: Plate Loading Test		River-bed Material Test		Lavoratory Test: Unit Weight	Lavoratory Test: Absorption	Lavoratory Test: Ultra sonic measurement	Lavoratory Test: Uniaxial strength	Lavoratory Test: Tensile strength		Engineering Works	Remarks
		No.	(m)	Total	No.	(m)	Total	No.	(m)	Total		Total	Nos	Total	Nos	Total	Nos	Total	Nos	Total	Nos	Nos	Nos	Nos	Nos	Total		
Headworks	Depth of sound rock	BI-2	30		–	–		–	–		–		–		–		–				4	1	5	4	4		–	–
Vertical Adit	Rock grade	BS-1	110		–	–		–	–		29		–		–		–				–	–	–	–	–		–	
Power House	Geological information for layout and designing of underground structures	BPV-1	115		–	–		ERP-2	700		–		12								18	19	31	18	31		Analysis of joint and fault set. FEM analysis.	Drilling in test adit.
		BPV-2A	20					ERP-3	700		3		–								3	3	–	3	–			
		BPV-2B	79					–	–		1		8		3		3				3	4	4	3	4			
		BPV-3	100					–	–		–		6								3	1	–	3	–			
		BPH-1	60					–	–		–		7								10	8	9	10	9			
Vertical Work Adit	Rock grade	DHT-4	78		–	–		–	–		11		2		–		–				5	1	3	5	3		–	–
Tailrace Tunnel	Depth of sound rock around tunnel portal	DHT-6	60		STO-1	300		ERP-1	350		1		–		–		–				6	3	2	5	3		–	–
		BTO-1	20		STO-2	115					6										2	1	2	2	2			
					–	–					–										–	–	–	–	–			
Bridges	Depth of sound rock near abutment and pier	BA-1	30								6										–	–	–	–	–		–	–
		BA-2	30		–	–		–	–		6		–		–		–				–	–	–	–	–			
		BP-1	40								14										–	–	–	–	–			
Conection Tunnels	Geological condition of ridges to decide tunnel route	BCT-1	40		SCT-1	600															11	12	13	11	13		–	–
		BCT-2	40		SO-1	130		–	–		–		–		–		–				2	1	–	2	–			
		BO-1	20		SO-2	100															2	3	–	1	–			
		BMT-1	80		–	–															1	3	2	1	–			
Regulating Pondage	Contour map of sound rock Permeability of dam foundation .Rock properties for designing	BD-4	50								–		9								6	4	–	4	–		Survey of slope stability around the reservoir. Esitmate of accretion of sand.	–
		BD-5	50								–		6								2	2	9	2	9			
		BD-6	40								–		5								1	1	6	–	6			
		BD-7	30								–		1								3	3	7	4	7			
		BD-8	30		–	–		–	–		–		5		–		–				–	–	–	–	–			
		BD-9	30								–		4								–	–	–	–	–			
		BD-10	30								–		3								2	6	5	1	5			
		LS-1	30								11		–								–	1	–	–	–			
		LS-2	30								13		–								2	3	2	2	2			
Total		26		1,272	5		1,245	3		1,750		101		68		3		3	6	6	86	80	100	81	98	445	–	–

THE UPGRADING FEASIBILITY STUDY ON THE DEVELOPMENT OF THE KULEKHANI III HYDROPOWER PROJECT IN THE KINGDOM OF NEPAL

JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 3.3.5

Location Map of Geological Investigation