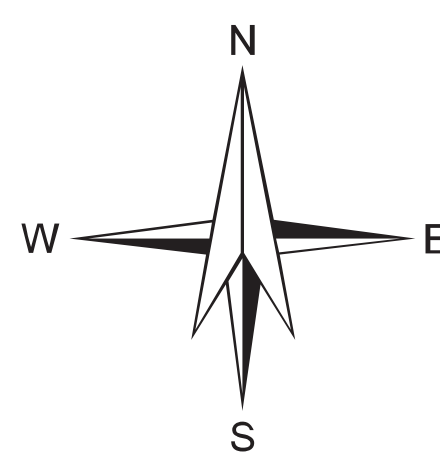


(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)



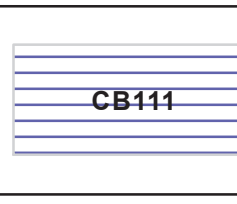
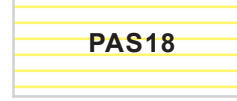







MAP SHEET NO. 78B/1

DARJEELING DISTRICT, WEST BENGAL



# N E P A L

## LEGEND

MAP UNIT (HYDROGEOLOGIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE  (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATE DEPTH RANGE)	GEOLOGICAL SEQUENCE / ROCK TYPE  (REPRESENTED IN THE MAP WITH NUMERIC CODE)	GEOMORPHIC UNIT / LANDFORM  (REPRESENTED IN THE MAP WITH ALPHABETIC CODE)	DEPTH TO WATER LEVEL  (NO. OF WELLS OBSERVED)	RECHARGE CONDITIONS  (BASED ON AVAILABILITY OF WATER  (RAINFALL & OTHER SOURCES))	GROUND WATER PROSPECTS							RECHARGE STRUCTURES SUITABLE & PRIORITY	RE MARKS (PROBLEMS / CAUTIONS)
					AQUIFER MATERIAL	TYPE OF WELLS SUITABLE	DEPTH RANGE OF WELLS (SUGGESTED)	YIELD RANGE OF WELLS (EXPECTED)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY)	QUALITY OF WATER (POTABLE (P), NON- POTABLE (NP))  (INDICATE REASONS IF NON POTABLE)	GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)		
 <b>CB111</b>	<b>Shalston Formation (Present Day Deposits)</b> <b>(Present Day)</b>	Channel Bar (CB)	No Well Observed	Excellent	LS	TW	5- 10 m	400-500 LPM	Very High	P	Nil	Not Required	Highly productive shallow aquifer with good recharge from the river base flow.
		Braid Bar (BB)	No Well Observed	Excellent	LS	TW	5- 10 m	400-500 LPM	Very High	P	Nil	Not Required	Highly productive shallow aquifer with good recharge from the river base flow.
		Point Bar (PB)	No Well Observed	Very Good	LS	RW TW	5-10 m	300-400 LPM	Very High	P	Nil	Not Required	Groundwater prospects very high with high recharge potential.
		Flood Plain (FP)	No Well Observed	Very Good	LS	RW TW	<30 m	250-350 LPM	Very High	P	Nil	Not Required	Potable water available at shallow depth.
 <b>PAS18</b>	<b>Chitna Manjar (Piedmont Alluvium Shallow)</b> <b>(Alluvium Shallow)</b>	Piedmont Alluvium Shallow (PAS)	No Well Observed	Good	LS	RW TW	5 - 10m	50-100 LPM	Low to Moderate	P	Nil	Not Required	Moderate ground water prospect at shallow depth along piedmont slope.
 <b>PAM18</b>		Piedmont Alluvium Moderate (PAM)	No Well Observed	Good	LS	RW TW	40-60 m	300-400 LPM	Moderate	P	Nil	Not Required	Good ground water prospect at moderate depth along piedmont slope.
 <b>SHH511</b>	<b>Shalston Formation (Present Day Deposits)</b> <b>(Present Day)</b>	Sandstone & Conglomerate (511)											
 <b>SHH533</b>		Sandstone with Shale (533)											
 <b>SHH93</b>		Phyllite (93)											
 <b>SHH521</b>		Schist (521)											
 <b>SHH521</b>		Schist (521)											
 <b>SHH831</b>		Granitoid Gneiss/ Gneissic Granitoid/ Granitoid Complex (831)											

F --- F / --- / ---

D --- D / Q --- Q / P --- P

D --- D / Q --- Q / P --- P

These are fault / fracture zones, which generally act as conduits for movement of ground water in hard rocks. Along these zones, the yields are significantly higher and wells are likely to be sustainable for longer duration. However, the inferred fractures need to be confirmed by detailed ground surveys.

These are dykes, quartz reefs and pegmatite veins, which generally act as barriers for ground water movement.

N.B.-The depth range and yield range of wells may vary within the unit because of certain inhomogeneities. Fractures/lineaments which are clearly observed / inferred from the satellite image are indicated on the map. There could be some obscured fractures which also influence the ground water prospects. Locations of the recharge structures shown in the map are tentative. This map is useful for narrowing down the target zones, and exact location on the ground for wells and recharge structures should be identified based on follow-up ground hydrogeological/geophysical surveys.

GROUND WATER PROSPECTS INFORMATION		HYDROLOGICAL INFORMATION		STRUCTURAL INFORMATION		BASE MAP INFORMATION		LOCATION INFORMATION				
YIELD RANGE OF WELLS	COLOR CODE	DEPTH	RANGE OF WELLS	DESCRIPTION	SYMBOL	DIPS	BEDDING	SYCHSTOBITY FOLIATION	SYMBOL	DESCRIPTION	STATE INDEX	DISTRICT INDEX
SHALLOW	SHALLOW	SHALLOW	SHALLOW	CANAL, TANK, IRRIGATED AREA	SHALLOW	GENTLE ( $< 15^\circ$ )	SHALLOW	SHALLOW	SH - 34	NATIONAL HIGHWAY		
> 800 LPM	VIOLET	800 - 400 LPM	400 - 200 LPM	RIVER / STREAM (with sand)	800 - 400 LPM	Moderate ( $15 - 45^\circ$ )	Moderate	SH - 12	STATE HIGHWAY			
400 - 200 LPM	INDIGO	200 - 100 LPM	100 - 50 LPM	WATER BODY / SPRING	200 - 100 LPM	STEEP ( $> 45^\circ$ )	STEEP		METALLED ROAD			
200 - 100 LPM	BLUE	100 - 50 LPM	50 - 10 LPM	CANAL	100 - 50 LPM	SUB - VERTICAL TO VERTICAL ( $> 80^\circ$ )	SUB - VERTICAL TO VERTICAL		OTHER ROAD			
50 - 10 LPM	GREEN	10 - 5 LPM	5 - 1 LPM	RAIN GAUGE STATION (With average annual rainfall in mm)	5 - 1 LPM	ANTICLINE / ANTIFORM	ANTICLINE		RAILWAY			
10 - 5 LPM	YELLOW	5 - 1 LPM	1 - 0.5 LPM	RECHARGE STRUCTURES SUGGESTED	1 - 0.5 LPM	SYNCLINE / SYNFORM	SYNCLINE		CITY / VILLAGE			
5 - 1 LPM	ORANGE	0.5 - 0.1 LPM	0.1 - 0.05 LPM	PERCOLATION TANK	0.1 - 0.05 LPM	ESCAPAMENT	ESCAPAMENT		HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)			
0.5 - 0.1 LPM	BROWN	0.1 - 0.05 LPM	0.05 - 0.01 LPM	WATER TOWER	0.05 - 0.01 LPM	LITHOLOGICAL / GEOMORPHIC UNIT BOUNDARY	LITHOLOGICAL / GEOMORPHIC UNIT BOUNDARY		BOUNDARY :			
0.1 - 0.05 LPM	PINK	0.05 - 0.01 LPM	0.01 - 0.005 LPM	CHECK DAM	0.01 - 0.005 LPM	FAULT	FAULT		INTERNATIONAL			
0.05 - 0.01 LPM	RED	0.01 - 0.005 LPM	0.005 - 0.001 LPM	WATER TOWER	0.005 - 0.001 LPM	THRUST	THRUST		STATE			
0.005 - 0.001 LPM	RED	0.001 - 0.0005 LPM	0.0005 - 0.0001 LPM	WATER TOWER	0.0005 - 0.0001 LPM	FRACUTURE / LINEAMENT	FRACUTURE / LINEAMENT		DISTRICT			
0.001 - 0.0005 LPM	RED	0.0005 - 0.0001 LPM	0.0001 - 0.00005 LPM	WATER TOWER	0.0001 - 0.00005 LPM	FRACUTURE / LINEAMENT (Inferred)	FRACUTURE / LINEAMENT (Inferred)		BLOCK			
0.0005 - 0.0001 LPM	RED	0.0001 - 0.00005 LPM	0.00005 - 0.00001 LPM	WATER TOWER	0.00005 - 0.00001 LPM	SHEAR ZONE	SHEAR ZONE		OTHER INFORMATION			
0.0001 - 0.00005 LPM	RED	0.00005 - 0.00001 LPM	0.00001 - 0.000005 LPM	WATER TOWER	0.00001 - 0.000005 LPM	DYKE	DYKE		Rainfall : 2628 mm			
0.00005 - 0.00001 LPM	RED	0.00001 - 0.000005 LPM	0.000005 - 0.000001 LPM	WATER TOWER	0.000005 - 0.000001 LPM	QUARTZ REEP	QUARTZ REEP		Rain gauge Station : Darjeeling (Source IMD)			
0.00001 - 0.000005 LPM	RED	0.000005 - 0.000001 LPM	0.000001 - 0.0000005 LPM	WATER TOWER	0.000001 - 0.0000005 LPM	PEGMATITE VEIN	PEGMATITE VEIN					
PREPARED BY GEONFORMATICS & REMOTE SENSING CELL W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY DEPARTMENT OF SCIENCE AND TECHNOLOGY GOVERNMENT OF WEST BENGAL 4TH FLOOR, BIKASH BHAVAN, SALT LAKE, KOLKATA 700 091		TECHNICAL GUIDANCE & QUALITY CHECK INDIAN SPACE RESEARCH ORGANISATION (ISRO) DEPT. OF SPACE, GOVT. OF INDIA BALAKrishNA HYDRABAD - 500 825		PARTICIPATING ORGANIZATIONS PHED, GOVT. OF WEST BENGAL GEONFORMATICS & REMOTE SENSING CELL W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY/GOWB STATE WATER INVESTIGATION DIRECTORATE, GOWB		METHODOLOGY & PROJECT EXECUTION NATIONAL REMOTE SENSING CENTRE INDIAN SPACE RESEARCH ORGANISATION (ISRO) DEPT. OF SPACE, GOVT. OF INDIA BALAKrishNA HYDRABAD - 500 825		SPONSORED BY RAJIV GANDHI NATIONAL DRINKING WATER MISSION (PHASE IV) DEPARTMENT OF DRINKING WATER SUPPLY (DDWS) MINISTRY OF DRINKING WATER AND SANITATION (MOWS) GOVERNMENT OF INDIA NEW DELHI				