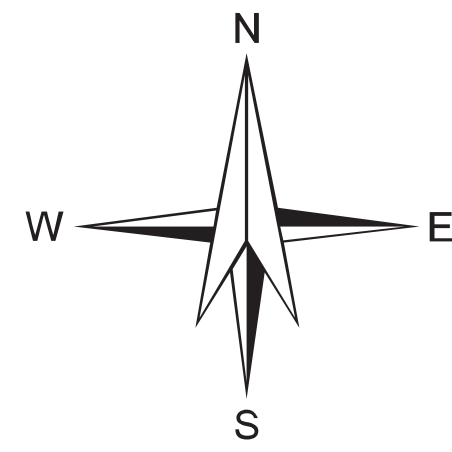
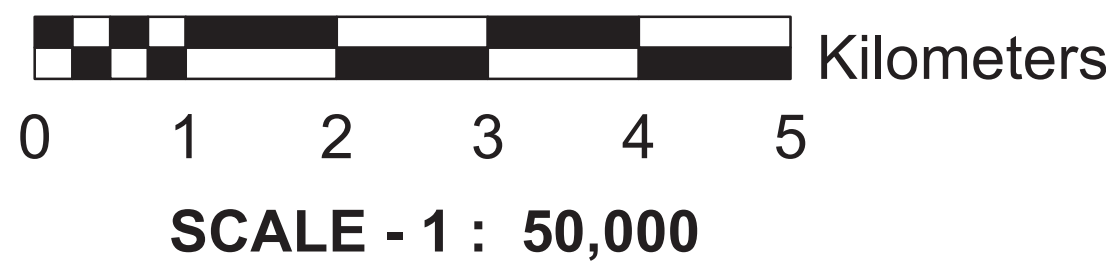


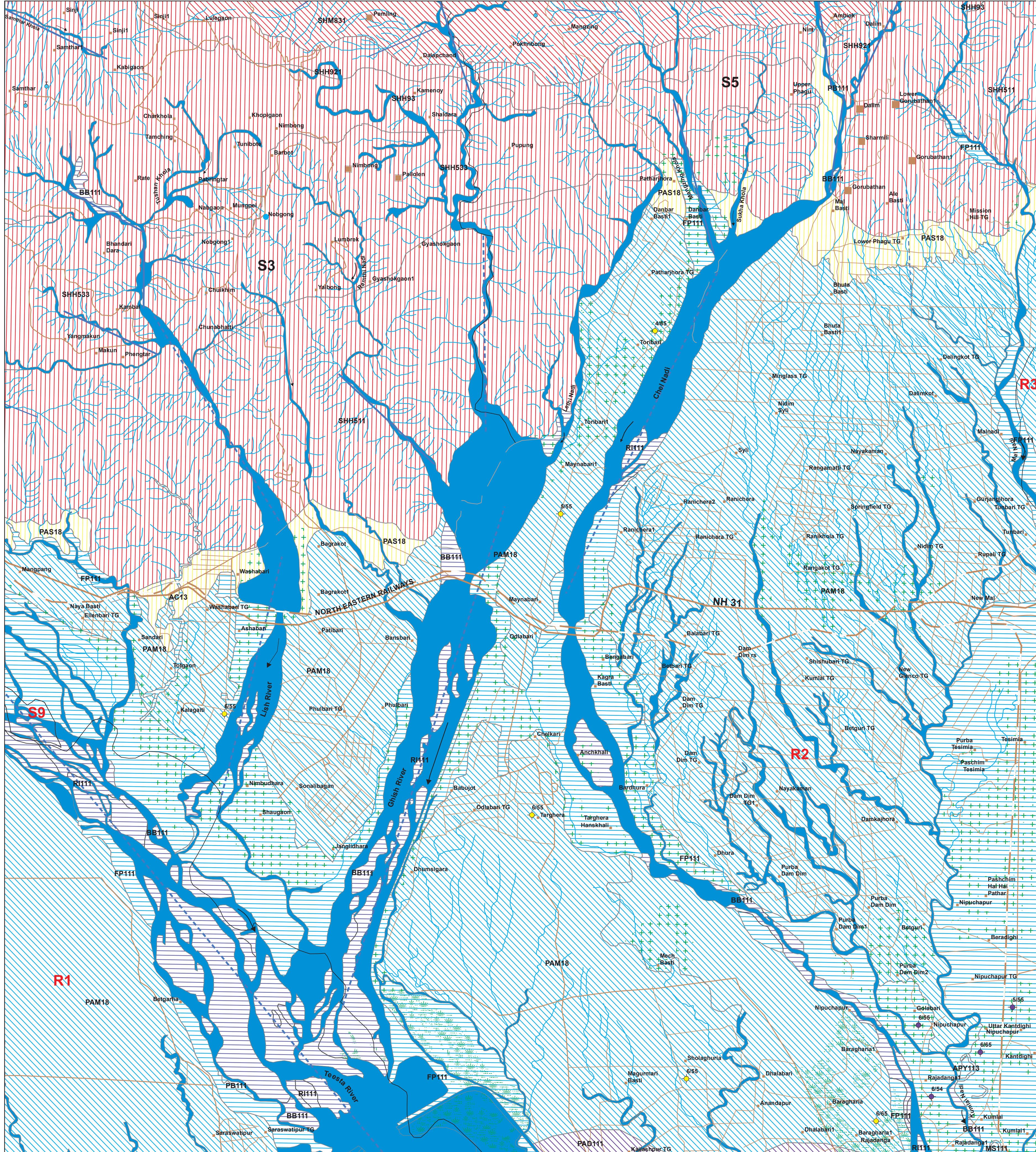
GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)



MAP SHEET NO. 78B/9

DARJEELING & JALPAIGURI DISTRICTS, WEST BENGAL



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 PRE / POST-MONSOON (AVERAGE IN METERS)	RECHARGE CONDITIONS BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES)	GROUND WATER PROSPECTS							RECHARGE STRUCTURES SUITABLE & PRIORITY PT = FRESHWATER TANK CD = CHECK DAM SD = SAND DUNE RW = RIVERWATER WELL DT = DISTURBED TOP TANK RE = RECHARGE REEF RS = RECHARGE RAMP ST = STORAGE TANK SCM = SOIL CONDENSATION MEASURES	RE MARKS (PROBLEMS / LIMITATIONS)
					AQUIFER MATERIAL LS = LOOSE SEDIMENTS PS = PERMEABLE ROCK FS = FRESHWATER ROCK RW = WEATHERED ROCK / RIVER WEATHERED MATERIAL R = IMPERVIOUS ROCK	TYPE OF WELLS SUITABLE DW = DUG WELL RW = RIVER WELL RW = RIVER WELL RW = RIVER WELL RW = RIVER WELL DW = DUG CUM DOME WELL DTP = DUG CUM DOME WELL	DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	YIELD RANGE OF WELLS (ESTIMATED) (IN LPM OR m ³ / day)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY) VERY HIGH HIGH MODERATE LOW	QUALITY OF WATER (POTABLE (P) NON - POTABLE (NP) (UNSURE BECAUSE OF NON - POTABLE)	GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)		
BB111	Alluvium (Sand Dominant) (111)	Braid Bar (BB)	No Well Observed	Excellent	LS	TW	5-10 m	400-500 LPM	Very High	P	Nil	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
PB111		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. Recharge structures not required.
RI111		River Island (RI)	No Well Observed	Very Good	LS	TW	5-10 m	400-500 LPM	High	P	Nil	Not Required	Highly productive aquifer in shallow depth.Good recharge.
MS111		Meander Scar (MS)	No Well Observed	Very Good	LS	TW	10-15 m	200- 250 LPM	High	P	Nil	Not Required	Highly productive shallow aquifers with good recharge.
FP111		Flood Plain (FP)	No Well Observed	Very Good	LS	TW	<30 m	250-350 LPM	Very High	P	Nil	Not Required	It receives good recharge and forms shallow aquifer.Overall quality of the water is potable.
PAD111		Piedmont Alluvium Deep (PAD)	No Well Observed	Good	LS	TW	60-80 m	400-500 LPM	Moderate	P	Nil	Not Required	Good ground water prospect at greater depth as the principal aquifer occurs below PAM.
APY113		Alluvium (Sand and Silt) (113)	Alluvial Plain Younger (APY)	No Well Observed	Good	LS	TW	25-30 m	200-250 LPM	High	P	Nil	Not Required
AC13	Alluvium (Sand,Silt & clay) (13)	Abandoned Channel (AC)	No Well Observed	Excellent to Very Good	LS	TW	10-15 m	250-300 LPM	Very High	P	Nil	Not Required	Highly productive shallowaquifers with good recharge from base flow.
PAM18	Piedmont Alluvium (L.P.Pleistocene)	Piedmont Alluvium Moderate (PAM)	No Well Observed	Good	LS	TW	40-60 m	300-400 LPM	Moderate	P	10	Not Required	Good ground water prospect at greater depth along piedmont slope.
PAS18		Piedmont Alluvium Shallow (PAS)	No Well Observed	Good	LS	TW DTW	5 - 10m	50-100 LPM	Low to Moderate	P	Nil	Not Required	Moderate ground water prospect at shallow depth due to piedmont slope.
SHH511	Shale & Phyllite (Tertiary - Quaternary)	Sandstone & Conglomerate (511)	Structural Hill Highly Dissected (SHH)										
SHH533		Sandstone with Shale (533)	Structural Hill Highly Dissected (SHH)										
SHH93		Phyllite (93)	Structural Hill Highly Dissected (SHH)										
SHH921		Schist (921)	Structural Hill Highly Dissected (SHH)										
SHH831	Granitoid Gneiss/ Gneissic Granitoid/ Granitoid Complex (831)	Structural Hill Moderately Dissected (SHH)											
Essentially run-off zone. Drinking water sources primarily from springs and river/stream water. Limited prospects within intermontane Valleys.													
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/Linesaments 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	COLOUR CODE	DEPTH RANGE OF WELLS	DESCRIPTION	SYMBOL	RECHARGE STRUCTURES SUGGESTED	DIPS	BEDDING	SCHISTOSITY / FOLIATION	SYMBOL	DESCRIPTION	BOUNDARY	STATE INDEX	DISTRICT INDEX	BLOCK INDEX
> 800 LPM	VIOLET	SHALLOW	CANAL / TANK IRRIGATED AREA		PERCOLATION TANK	GENTLE (< 15)				NH - 34	INTERNATIONAL			
400 - 800 LPM	INDIGO	MODERATE	GROUND WATER IRRIGATED AREA		RECHARGE WELL	MODERATE (15 - 45)				SH - 12	STATE			
200 - 400 LPM	BLUE	DEEP	RIVER / STREAM (with sand)		SUBSURFACE DYKE	STEEP (45 - 80)					METALLED ROAD			
100 - 200 LPM	GREEN		WATER BODY / SPRING		SOIL CONSERVATION MEASURES	VERY STEEP (> 80)					OTHER ROAD			
50 - 100 LPM	YELLOW		CANAL			ANTICLINE / ANTIFORM					RAILWAY			
35 - 50 LPM	ORANGE		RAIN GAUGE STATION (With average annual rainfall in mm)			SYNCLINE / SYNFORM					CITY / VILLAGE			
20 - 30 LPM	BROWN		PERCOLATION TANK			ESCAPMENT					HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)			
10 - 20 LPM	RED		MALE BIRD			LITHOLOGY / GEOMORPHIC UNIT BOUNDARY					BOUNDARY :			
			RECHARGE OF TANK			FAULT					INTERNATIONAL			
			RECHARGE WELL			THRUST					STATE			
			RECHARGE PIT			FRacture / LINEAMENT (Inferred)					DISTRICT			
			RECHARGE SHAFT			FRacture / LINEAMENT (Confirmed)					BLOCK			
			STORAGE TANK			SHEAR ZONE (Confirmed / Inferred)					OTHER INFORMATION			
						DYKE (Confirmed / Inferred)					Rainfall : 3102 mm			
						QUARTZ REE (Confirmed / Inferred)					Rain gauge Station : Jalpaiguri			
						PEGMATITE VEIN (Confirmed / Inferred)					(Source IMD)			
						Lithologic contacts are inferred at places & Geomorphologic boundaries are gradational								
PREPARED BY GEOINFORMATICS & REMOTE SENSING CELL WB. 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 NATIONAL REMOTE SENSING CENTRE INDIAN SPACE RESEARCH ORGANISATION (ISRO) DEPT. OF SPACE, GOVT. OF INDIA BALANAGAR, HYDERABAD - 500 625			PARTICIPATING ORGANIZATIONS PHED, GOVT. OF WEST BENGAL GEOINFORMATICS & REMOTE SENSING CELL WB. 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 BALANAGAR, HYDERABAD - 500 625			SPONSORED BY RAJIV GANDHI NATIONAL DRINKING WATER MISSION (PHASE IV) DEPARTMENT OF DRINKING WATER SUPPLY (DDWS) MINISTRY OF DRINKING WATER AND SANITATION (MDWS) GOVERNMENT OF INDIA NEW DELHI		