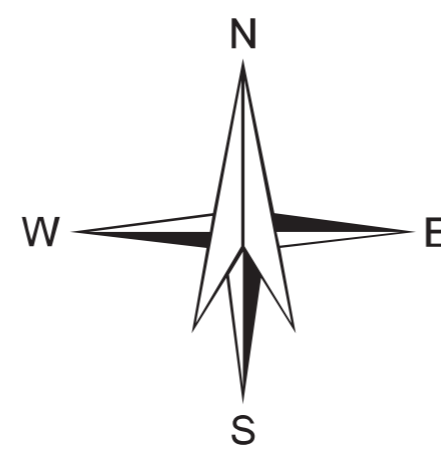
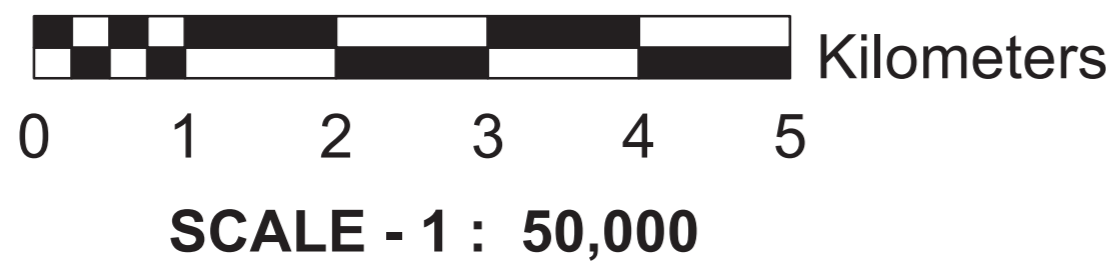


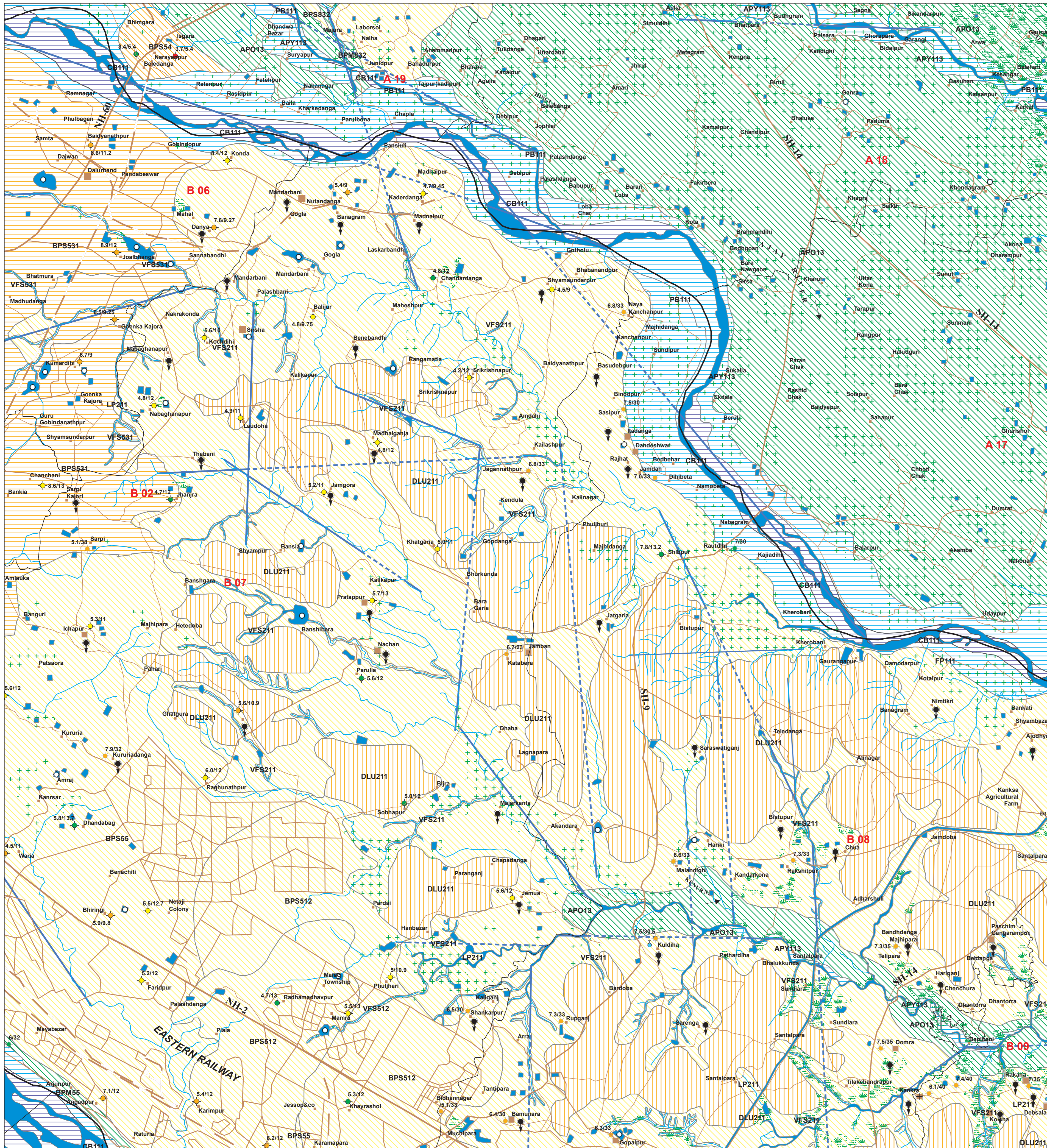
# GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)



MAP SHEET NO. 73M/6

BANKURA, BARDHAMAN & BIRBHUM DISTRICTS, WEST BENGAL



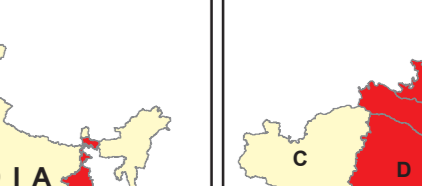
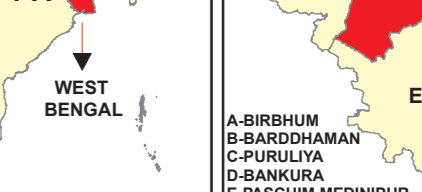
## LEGEND

MAP UNIT (HYDROGEOLOGIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATES 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) NO. OF WELLS OBSERVED	RECHARGE CONDITIONS BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES)	GROUND WATER PROSPECTS							RECHARGE STRUCTURES SUITABLE & PRIORITY	REMARKS (PROBLEMS / LIMITATIONS)
					AQUIFER MATERIAL LS = LOOSE SEDIMENTS FR = FISSURED ROCK FR + FRACTURED ROCK WM = WEATHERED MATERIAL IM = IMPERVIOUS MATERIAL	TYPE OF WELLS RW = RABBIT WELL DW = DRILL WELL TW = TUBE WELL DWC = DOG CURET WELL	DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	YIELD RANGE OF WELLS (EXPECTED) (IN LPM OR m <sup>3</sup> /day)	HOMOGENEITY IN THE UNIT RATE OF WELLS (PROBABILITY)	QUALITY OF WATER POTABLE (P) NON-POTABLE (NP) (INDICATE RECHARGE P) (NON-POTABLE)	GROUND WATER AREA (APPROX. RANGE IN PERCENTAGE)		
PB111	Alluvium (Sand Dominant) (111)	Point Bar (PB)	6	Very Good	LS	RW	5-10 m	300-400 LPM	Very High	P	7%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
CB111		Channel Bar (CB)	5-6	Excellent	LS	RW	5-10 m	400-500 LPM	Very High	P	42%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
FP111		Flood Plain (FP)	5-22	Very Good	LS	RW	<30 m	400-800 LPM	Very High	P	93%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
APY113	Alluvium (Sand and Silt) (113)	Alluvial Plain Younger (APY)	7.01 - 7.05	Very Good	LS	DW	10 - 12 m	125 - 150 m <sup>3</sup> /day	Very High	P	50%	Not Required	Aquifer is formed of Sandy part of alluvium. Recharge structures not required as good recharge conditions prevail
APY113	Alluvium (Sand with silt and clay) (113)	Alluvial Plain Older (APO)	No wells observed	Good	LS	DW	10 - 20 m	80 - 100 m <sup>3</sup> /day	High	P	25%	Not Required	Aquifer is formed of Sandy part of alluvium. Recharge structures not required as good recharge conditions prevail
VFS211	Laterite (Ferricrete-hard crust, lateritic nodules and lithomarge clay) (211)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	50 - 60 m	75 - 100 LPM	Moderate	P	10%	DT Moderate	Recharge structures will increase the sustainability of groundwater
LP211		Laterite Plain (LP)	4.59 - 8.44	Limited	WM+FR	DW	15 - 20 m	25 - 50 m <sup>3</sup> /day	Moderate	P	20%	RW / DT High	Areas of exposed lithomarge clay. Fracture zones form the aquifer/recharge structures will enhance groundwater development
DLU211		Dissected Laterite Upland (DLU)	4.27 - 6.79	Nil to moderate	WM+IR (Impervious material)	TW / BW	80 - 100 m	30 - 50 LPM	Low	P	Nil	Not Required	Essentially run-off zone where hard capping is present. Areas of nodular laterites are recharge zones with deep water table conditions. Primarily forest areas with sparse settlements. Not suitable for large scale development of groundwater
VFS512	Sandstone (Supra Panchet) (Mahadeva Formation) (512)	Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	TW / BW	30 - 50 m	150 - 175 LPM	Moderate	P	Nil	RP / DT Moderate	Groundwater prospects good. Recharge structures will increase groundwater development
BPS512		Buried Pediplain Shallow (BPS)	4.77 - 6.23	Moderate	WM+FR	DW	5 - 10 m	15 - 25 m <sup>3</sup> /day	Low	P	Negligible	RP / DT High	Weathered and Fractured Sandstone form the aquifer. Better prospects along fracture zones
BPS55		Buried Pediment Medium (BPM)	6.00	Moderate	WM+FR	DW	15 - 20 m	10 - 15 m <sup>3</sup> /day	Moderate	P	Nil	Not Required	Recharge structures not required since there are no settlements in the unit
BPS55	Shale with Sandstone Bands (Panchet Formation) (55)	Buried Pediplain Shallow (BPS)	4.52 - 7.94	Limited	WM+FR	DW	15 - 20 m	5 - 10 m <sup>3</sup> /day	Low	P	10%	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply
VFS531		Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	TW / BW	20 - 25 m	75 - 100 LPM	Moderate	P	10%	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply
BPS531		Buried Pediplain Shallow (BPS)	4.77 - 8.95	Moderate	WM+FR	DW	5 - 10 m	10 - 15 m <sup>3</sup> /day	Low	P	Negligible	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supply
BPS54	Sandy Shale (Barren Measure) (54)	Buried Pediplain Shallow (BPS)	3.45 - 3.79	Limited	WM+FR	DW	5 - 10 m	<5 m <sup>3</sup> /day	Low	P	20%	RW / DT Moderate	Recharge structures will increase scope for groundwater development
VFS532		Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50 m	150 - 175 LPM	Moderate	P	10%	CD Moderate	Prospects inferred as no wells observed. Recharge condition is moderate with moderate groundwater prospects
BPS532		Buried Pediplain Moderate (BPM)	No wells observed	Limited	WM+FR	DW	5 - 10 m	15 - 25 m <sup>3</sup> /day	Moderate	P	50%	RP Moderate	Recharge structures will improve ground water prospects
BPS532	Granitoid Gneiss (83)	Buried Pediplain Shallow (BPS)	No wells observed	Limited	WM+FR	DW	5 - 10 m	10 - 15 m <sup>3</sup> /day	Low	P	30%	RP High	Recharge structures will improve sustainability of groundwater sources

F --- F / --- F --- 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.

D --- D / --- D / --- D --- 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	COLOUR CODE	DEPTH RANGE OF WELLS			DESCRIPTION	SYMBOL	BEDDING		DIPS	SYNCLINITY / SYNTIFORM	ESCAPMENT	LITHOLOGY / GEOMORPHIC UNIT BOUNDARY	SYMBOL	DESCRIPTION	STATE INDEX	DISTRICT INDEX			
		SHALLOW ( $\leq 10$ METERS)	MODERATE 30 - 100 METERS	DEEP ( $\geq 100$ METERS)			SHALLOW ( $\leq 15^\circ$ )	MODERATE ( $15^\circ - 45^\circ$ )									STEEP ( $45^\circ - 80^\circ$ )	SUB-VERTICAL TO VERTICAL ( $> 80^\circ$ )	ANTICLINE / ANTIFORM
> 800 LPM	VIOLET				CANAL / TANK IRRIGATED AREA									NH - 2	NATIONAL HIGHWAY				
400 - 800 LPM	INDIGO				GROUND WATER IRRIGATED AREA									SH - 9	STATE HIGHWAY				
200 - 400 LPM	BLUE				RIVER / STREAM (with sand)										METALLED ROAD				
100 - 200 LPM	GREEN				WATER BODY / SPRING										OTHER ROAD				
50 - 100 LPM	YELLOW				CANAL										RAILWAY				
30 - 50 LPM	ORANGE				RAIN GUAGE STATION (With average annual rainfall in mm)										CITY / VILLAGE				
20 - 25 LPM	BROWN				PERCOLATION TANK											HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)			
10 - 20 LPM	PINK				NALA BUND														
Prospects	RED				DESILTING OF TANK														
Prospects	RED				SUBSURFACE DYKE														
Prospects	RED				80% CONSERVATION MEASURES														
Prospects	RED				ARTESIAN WELL														
Prospects	RED				ARTESIAN WELL														
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