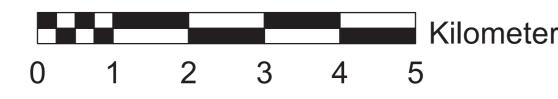
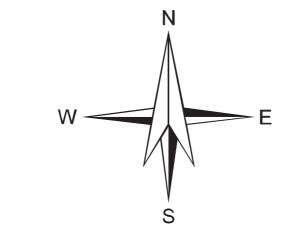
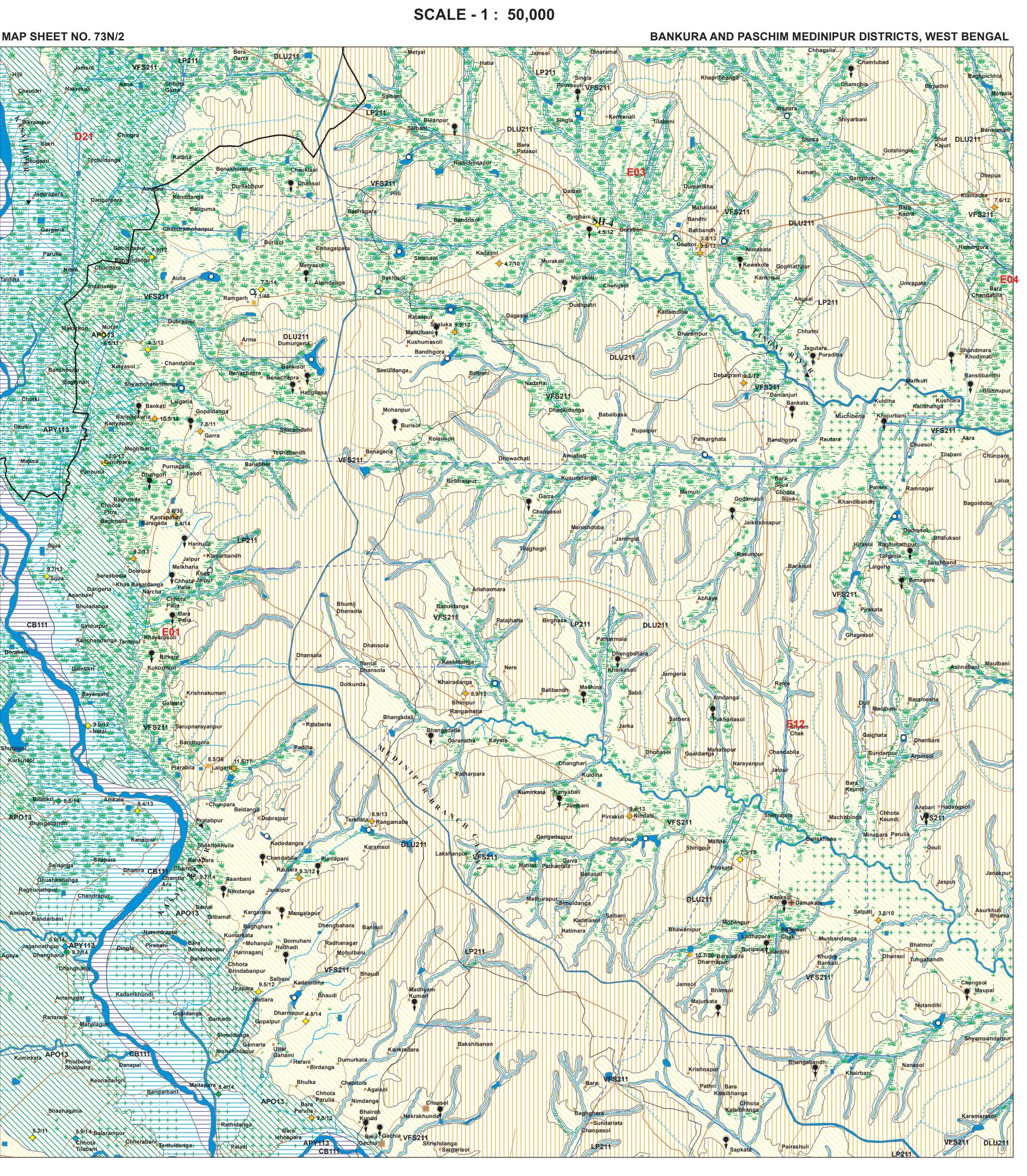
GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)





Designed & Developed by Hydrogeology Division, NRSC, ISRO



DATA USED: IRS - P6 LISS III FCC dated February 2006, GROUND TRUTH & WELL OBSERVATION during April-May, 2009 & Jan-Feb, 2010, Published Geological maps & Literatures.

C NRSC (ISRO), DEPT. OF SPACE, GOVT. OF INDIA

LEGEND

MAP UNIT (HYDROGEOMORPHIC 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) NO. OF WELLS OBSERVED	RECHARGE CONDITIONS BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES)	PR = PERMEABLE ROCK		UNDW DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	YIELD RANGE OF WELLS (EXPECTED) (in LPM or m³/day)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY) VERY HIGH HIGH MODERATE LOW	QUALITY OF WATER POTABLE (P) NON - POTABLE (NP) (INDICATE REASONS IF NON POTABLE)	GROUND WATER IRRIGATED AREA (APPROX. RANGE IN PERCENTAGE)	RECHARGE STRUCTURES SUITABLE & PRIORITY PT = PERCOLATION TANK CD = CHECK DAM NB = NALA BUND RW = RECHARGE WELL DT = DESILTING OF TANK RP = RECHARGE OF TANK RP = SUBSURFACE DYKE RS = RECHARGE SHAFT ST = STORAGE TANK SCM = SOIL CONSERVATION MEASURES	REMARKS (PROBLEMS / LIMITATIONS)
CB111	(Present Day Deposits (Present Day) Maintenance (Present Day) (Present Day) (Present Day) (Present Day) (Present Day) (Present Day) (Included Day)	Channel Bar (CB)	<u>5 - 6</u> 2	Excellent	LS	TW	5-10 m	400-500 LPM	Very High	Р	42%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
		Ox-bow Lake (OL)	No Well Observed	Very Good	LS	RW TW	10-15 m	200-300 LPM	Very High	Р	Nil	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
APY113	(Early to Late Holocene) (Early to Late Holocene) (Early to Late Holocene) (Itility to Late Holocene) (Itility to Late Holocene)	Alluvial Plain Younger (APY)	8.4 - 9.7 DW - 5	Very Good	LS	DW TW	10 - 12 m 20 - 30 m	100 - 125 m ³ day 200 - 250 LPM	Very High	Р	25%	Not Required	Aquifer is formed of sandy part of alluviun Recharge structures are not required as good recharge condition prevails
APO13	(Lt Pleistocene - Er Holocene) (Sand'Silt and Clah) (13) (13)	Alluvial Plain Older (APO)	5.3 - 10 DW - 10	Good	LS	DW TW	10 - 15 m 40 - 60 m	50 - 75 m ³ /day 150 - 200 LPM	High	Р	20%	Not Required	Aquifer is formed of sandy part of alluvium Recharge structures are not required as good recharge condition prevails
VFS211	u o	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM + FR	TW / BW	40 - 50 m	50 - 100 LPM	Moderate	Р	20%	DT Moderate	Recharge structure will increase the sustainability of ground water prospects
LP211	(Middle to Upper Pleistocene) (Middle to Upper Pleistocene) (Middle to Upper Pleistocene) (Aiddle to Upper Pleistocene)	Lateritic Plain (LP) (Lithomarge Clay)	3.8 -11.6 DW - 13 HP - 2	Limited	WM + FR	DW TW / BW	15 - 20 m 50 - 60 m	15 - 25 m³/day 50 - 100 LPM	Moderate	Р	35%	RW / DT High	Recharge wells have high priority as the lithomarge clay layer needs to be penetrated to recharge underlying aquifer formed of weathered material and fractured rock
DLU211	Lal.	Dissected Lateritic Upland (DLU) (Hard crust and lateritic nodules)	3.8 - 9.5 ————————————————————————————————————	Poor to limited	WM + IR (Impervious Material)	TW / BW	80 -100 m	30 - 50 LPM	Low	P	Nil	Not Required	Essentially run-off zone where hard crust is present. Areas of lateritic nodules are recharge zones with deep water table conditions. Primarily forest areas with sparse settlements. Not suitable for large scale development of ground water.
FF//Q DD /QQ /	These are fac				nard rocks. Along these zones, a		higher and wells are l	l ikely to be sustainable	e for longer duration.	However, the inferred fi	ractures need to be com	firmed by detailed ground surveys.	

STRUCTURAL INFORMATION BASE MAP INFORMATION LOCATION INFORMATION DESCRIPTION CANAL / TANK IRRIGATED AREA NATIONAL HIGHWAY GROUND WATER IRRIGATED AREA MODERATE (15 - 45) RIVER / STREAM (with sand) STATE HIGHWAY SUB - VERTICAL TO VERTICAL (> 80) WATER BODY / SPRING METALLED ROAD OTHER ROAD With average annual rainfall in mm) SYNCLINE / SYNFORM 200 - 400 LPM PERCOLATION TANK DESILTING OF TANK RECHARGE PIT SUBSURFACE DYKE | | | | | | | | RECHARGE SHAFT SOIL CONSERVATION HABITATIONS : NON - COVERED (NC)
PARTIALLY COVERED (PC) 50 - 100 LPM **BLOCK INDEX** > 400 m³ / day **BOUNDARY**: 200 - 400 m³ / day 30 - 50 LPM ----100 - 200 m³ / day 73J/13 73N/1 73N/5 THRUST 50 - 100 m³/day FRACTURE / LINEAMENT 20 - 30 LPM BROWN 25 - 50 m³ / day FRACTURE / LINEAMENT <u>8/15</u> 15 - 25 m³/ day 10 - 20 LPM SHEAR ZONE (Confirmed / Inferred) S — S /S — S 10 - 15 m³/ day OTHER INFORMATION 5 - 10 m³ / day (Confirmed / Inferred) Prospects limited to valley portions only (Hills, Plateaus etc.) D21 RAIPUR EO3 GARBETA - II EO1 GARBETA - I < 5 m³ / day (Confirmed / Inferred) Colour inside well symbol indicates yield range. The figures on the top right hand side of well indicate the depth to water level and depth of well in meters PEGMATITIE VEIN (Confirmed / Inferred) (Source IMD) DUG - CUM- BORE WELL Lithologic contacts are inferred at places & Geomorphic boundaries TECHNICAL GUIDANCE & QUALITY CHECK PARTICIPATING ORGANIZATIONS PREPARED BY METHODOLOGY & PROJECT EXECUTION SPONSORED BY RAJIV GANDHI NATIONAL DRINKING WATER MISSION GEOINFORMATICS & REMOTE SENSING CELL SURVEY OF INDIA (PHASE III B) W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY NATIONAL REMOTE SENSING CENTRE NATIONAL REMOTE SENSING CENTRE DEPARTMENT OF DRINKING WATER SUPPLY (DDWS) GEOLOGICAL SURVEY OF INDIA DEPARTMENT OF SCIENCE AND TECHNOLOGY MINISTRY OF RURAL DEVELOPMENT GOVERNMENT OF WEST BENGAL INDIAN SPACE RESEARCH ORGANISATION (ISRO) PHED, GOVT. OF WEST BENGAL INDIAN SPACE RESEARCH ORGANISATION (ISRO) **GOVERNMENT OF INDIA** DEPT. OF SPACE, GOVT. OF INDIA STATE WATER INVESTIGATION DIRECTORATE, GOWB 4TH FLOOR, BIKASH BHAVAN DEPT. OF SPACE, GOVT. OF INDIA SALT LAKE, KOLKATA 700 091 BALANAGAR, HYDERABAD - 500 625 **NEW DELHI** P.S.MAPS (LAND RECORD), GOVT OF WEST BENGAL BALANAGAR, HYDERABAD - 500 625

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.