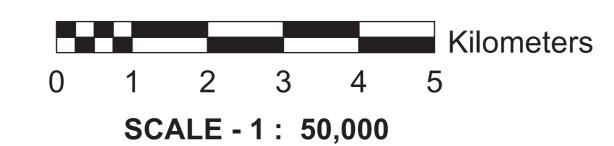
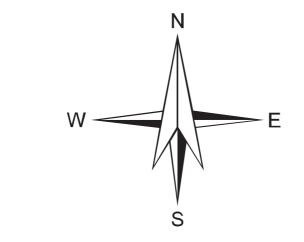
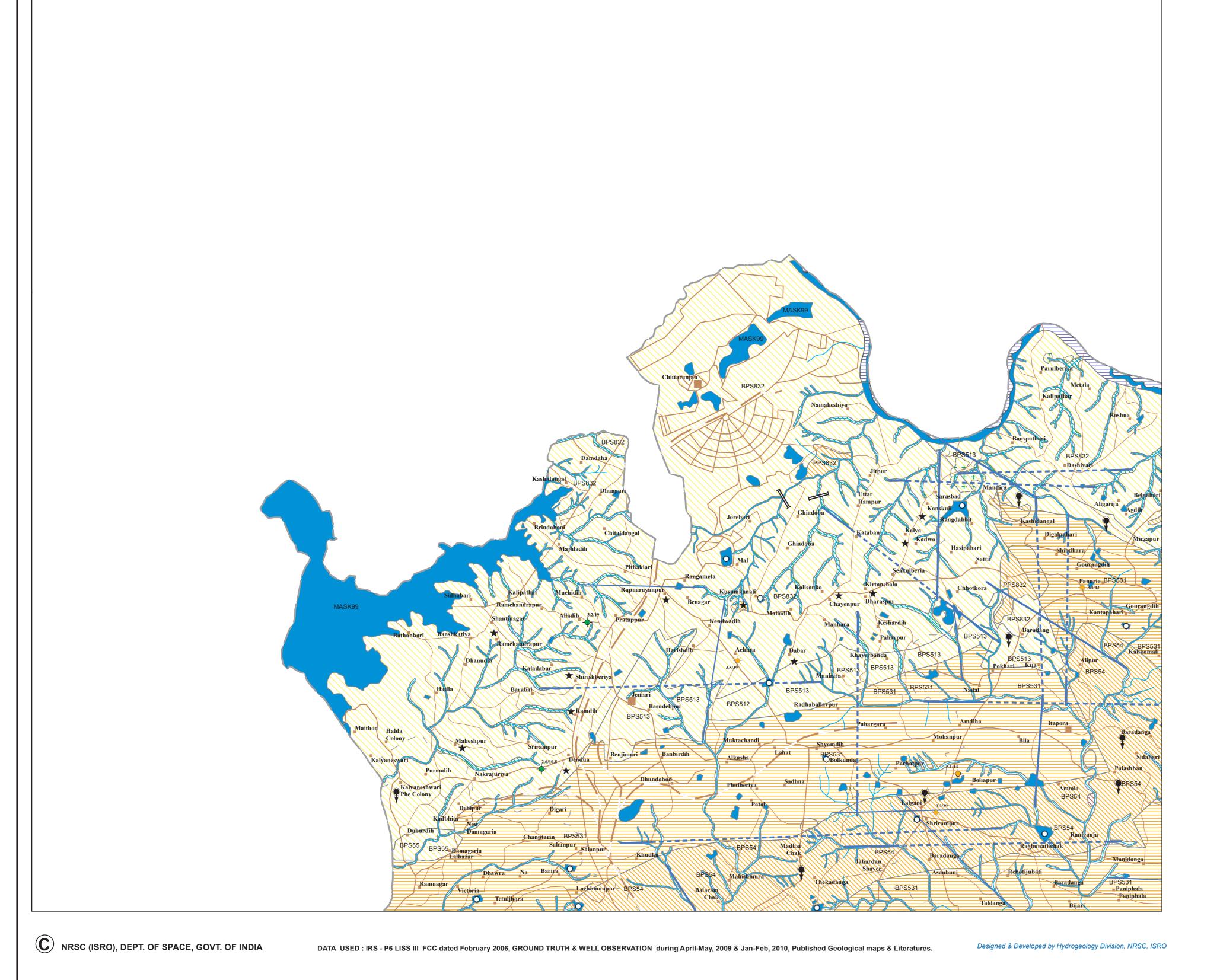
GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)





MAP SHEET NO. 73I/13
BARDDHAMAN DISTRICT, WEST BENGAL



L E G E N D

MAP UNIT (HYDROGEOMORPHIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE (COLOUR INDICATES YIELD RANGE AND HATCHING INDICATE DEPTH RANGE)	GEC	DLOGICAL SEQUENCE / ROCK TYPE	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)		GRO	RECHARGE STRUCTURES	REMARKS					
		(REPRESENTED IN THE MAP WITH NUMERIC CODE)				AQUIFER MATERIAL LS = LOOSE SEDIMENTS PR = PERMEABLE ROCK FIR = FISSURED ROCK FR = FRACTURED ROCK WR /= WEATHERED ROCK / WM WEATHERED MATERIAL IR = IMPERIVIOUS ROCK	TYPE OF WELLS SUITABLE DW = DUG WELL RW = RING WELL BW = BORE WELL TW = TUBE WELL DBW /= DUG CUM-BORE WELL / DTW DUG CUM-TUBE WELL	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)	SUITABLE & PRIORITY PT = PERCOLATION TANK CD = CHECK DAM NB = NALA BUND RW = RECHARGE WELL DT = DESILTING OF TANK RP = RECHARGE PIT SD = SUBSURFACE DYKE RS = RECHARGE SHAFT ST = STORAGE TANK SCM = SOIL CONSERVATION MEASURES	(PROBLEMS / LIMITATIONS)
CB111		Alluvium (Sand Dominant) (111)	Channel Bar (CB)	<u>5 - 6</u> 2	Excellant	LS	RW TW	5-10	400-500	Very High	Р	42%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.
BPS512		Sandstone (Supra Panchet) (Mahadeva Formation) (512)	Buried Pediplain Shallow (BPS)	5 - 5.38 DW - 2 HP - 1	Limited	WM+FR	DW TW / BW	5 - 10 40 - 50	15 - 25 m ³ /day 75 - 100 LPM	Low	Р	Negligible	RW / DT High	Aquifer conditions modified by coal mining activities.Groundwater development may not be sustainable in the long run
VFS55		Shale with	Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	Underlain by		100 - 125 LPM	Moderate	Р	Nil	CD Moderate	Prospects inferred as no wells observed Recharge condition is moderate with moderate groundwater prospects
BPS55			Buried Pediplain Shallow (BPS)	No wells observed	Limited	WM+FR	DW TW/ BW	15 - 20 40 - 60	5 - 10 m ³ /day 50 - 100 LPM	Low	Р	Nil	RW / DT High	Weathered and fractured Sandstone form the aquifer.Better prospects along fracture zones
VFS531			Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	TW / BW	20 - 25	75 - 100 LPM	Moderate	Р	Nil	Not Required	Aquifer conditions modified by coal mining activities. Groundwater development may not be sustainable in the long run. Areas of piped water supp
BPS531	group ic)		Buried Pediplain Shallow (BPS)	No wells observed	Moderate	WM+FR	DW TW / BW	5 - 10 20 - 30	10 - 15 m ³ /day 30 - 50 LPM	Low	Р	Negligible	Not Required	Aquifer conditions modified by coal mining activities.Groundwater development may not be sustainable the long run.Areas of piped water sup
VFS54	S u p e r us to Jurass	Sandy Shale (Barren Measure) (54)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	50 - 75 LPM	Moderate	Р	Nil	RW / DT Moderate	Groundwater prospects moderate, recharge structures will improve the sustainability of groundwater
BPS54	d w a n a Carbonifero		Buried Pediplain Shallow (BPS)	3.21 HP - 1	Lim ite d	WM+FR	DW TW / BW	5 - 10 40 - 60	< 5 m ³ /day 30 - 50 LPM	Low	Р	Nil	RW / DT High	Prospects limited along fracture zones
PPS54	G o n		Weathered Pediplain Shallow (PPS)	No wells observed	Poor	FR	TW / BW	40 - 60	20 -30 LPM	Low	Р	Negligible	Not Required	Very small unit,recharge structure not required
VFS532		Sandstone & Shale with Coal (Barakar Formation) (532)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	20 - 25	75 - 100 LPM	Moderate	Р	Nil	CD Moderate	Aquifer conditions modified by coal mi activities Groundwater development mot be sustainable in the long run. Area piped water supply
PPS532			Weathered Pediplain Shallow (PPS)	No wells observed	Limited	FR	DW TW / BW	5 - 10 20 - 30	5 - 10 m ³ /day 30 - 50 LPM	Low	Р	Nil	Not Required	Aquifer conditions modified by coal m activities Groundwater development n not be sustainable in the long run. Are piped water supply
VFS513			Valley Fill Shallow (VFS)	No wells observed	Good	LS Underlain by WM+FR	TW / BW	30 - 50	150 - 175 LPM	Moderate	Р	Negligible	DT Moderate	Ground water prospects good. Recharge structures will increase groundwater development
BPS513		Boulder Bed with Sandstone (Talchir Formation) (513)	Buried Pediplain Shallow (BPS)	No wells observed	Moderate	WM+FR	DW TW / BW	5 - 10 40 - 60	15 - 25 m ³ /day 75 - 100 LPM	Low	Р	Nil	RW / DT High	Weathered and fractured Standstone form the aquifer.Better prospects along fracture zones
PPS513			Weathered Pediplain Shallow (PPS)	No wells observed	Limited	FR	DW TW / BW	5 - 10 40 - 60	10 - 15 m ³ /day 30 - 50 LPM	Low	Р	Nil	RW / DT High	Essentially run-off zones. Recharge structures may help in limited ground water development
VF\$832	sic Complex 2400 mill.yrs.)	E 00	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	150 - 175 LPM	Moderate	Р	Negligible	CD Moderate	Prospects inferred as no wells observ Recharge condition is moderate with moderate groundwater prospects
BPS832	gpur Gneiss erozoic-2300 - 3	Granitoid Gneiss (832)	Buried Pediplain Shallow (BPS)	2.6 - 3.5 DW - 2 HP - 1	Limited	WM+FR	DW TW / BW	5 - 10 40 - 60	10 - 15 m ³ /day 75 - 100 LPM	Low	Р	Negligible	RP High	Recharge structures will improve sustainability of groundwater sources
PPS832	Chhotanaç (Lower Prote		Weathered Pediplain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m ³ /day 30 - 50 LPM	Low	Р	Nil	RP High	Due to high run-off and poor infiltration recharge structures are required to maintain sustainability of groundwater sources

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 Q Q P P P 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.

GROUN	D WATE	R PROSPEC	TS INFOR	MATION	HYDROLOGICAL INFORMATION	ON	STRUCTU	RAL INFORMAT	TION	BASE	MAP INFORMATION	LOCATION II	NFORMATION	
YIELD	COLOUR	DEPTH R	ANGE OF	WELLS	DESCRIPTION	SYMBOL	DIPS	BEDDING	SCHISTOSITY/ FOLIATION	SYMBOL	DESCRIPTION	STATE INDEX	DISTRICT I	NDEX
	CODE	1 1	MODERATE	DEEP		M&	GENTLE (<15)	/	A	NH - 2	NATIONAL HIGHWAY			2~
OI WEELS		< 30 METERS	30 - 80 METERS	> 80 METERS	GROUND WATER IRRIGATED AREA	+ + +	MODERATE (15 - 45)	*	Á					33
> 800 LPM	VIOLET				RIVER / STREAM (with sand)		STEEP (45 - 80)	ķ	Á	SH - 9	STATE HIGHWAY		her 20g	A
					WATER BODY / SPRING	≦/ ŏ	SUB - VERTICAL TO VERTICAL (> 80)		X		METALLED ROAD			Jumy of
400 - 800 LPM	INDIGO				CANAL LILL	<u></u> 800	ANTICLINE / ANTIFORM		←		OTHER ROAD	INDIA	С	В
					(With average annual rainfall in mm)		0,410,1115,10,4150,011							And more
200 - 400 LPM	BLUE				PERCOLATION TANK CHECK DAM		SYNCLINE / SYNFORM				RAILWAY	WEST BENGAL A	E	5
					NALA BUND HELD RECHARGE N	Y I	TREND LINE				CITY / WILL AGE		A-BIRBHUM B-BARDDHAMAN C-PURULIYA	<i></i>
100 - 200 LPM	GREEN				SUBSURFACE DYKE IIIIIIII RECHARGE S	\sim	ESCARPMENT	<u>^</u>	The state of the s	/	CITY / VILLAGE		D-BANKURA E-PASCHIM MEDINIPUR	~
					MEASURES WELLS OBSERVED DURING FIELD VISIT	ANK 🗣	ESCARFINIENT	^>	YATATA A		HABITATIONS : NON - COVERED (NC)			
50 - 100 LPM	YELLOW				YIELD RANGE BORE / YIELD RANGE IN LPM TUBE WELL IN m³/ day	DUG WELL / RING WELL	LITHOLOGY / GEOMORPHIC BOUNDARY	UNIT			PARTIALLY COVERED (PC)			
					> 800 LPM	8/15	FAULT F	MINOR	MAJOR		BOUNDARY:	BLOCK INDEX	MAPSHEET	INDEX
30 - 50 LPM	ORANGE				400 - 800 LPM	● 8/15 ● 8/15	THRUST T	т	F T T		STATE		72L/12 72L/1	6 72P/4
					100 - 200 LPM	8/15	FRACTURE / LINEAMENT	'			DISTRICT		721/12 721/1	72174
20 - 30 LPM	BROWN				50 - 100 LPM	8/15	FRACTURE / LINEAMENT				вьоск			
					30 - 50 LPM	<u>8</u> /15	(Inferred)						731/9 731/13	3 73M
10 - 20 LPM	PINK				20 - 30 LPM 15/70 10 - 15 m³/day	● 8/15	SHEAR ZONE (Con	nfirmed / Inferred) S	S/S S	c	THER INFORMATION			_
Prospects limited to valley					10 - 20 LPM	8/15 8/15	DYKE (Con	nfirmed / Inferred)	D / DD		- f - II	B01 B02	731/10 731/14	4 73M
portions only (Hills, Plateaus					< 10 LPM 15/70 < 5 m³ / day Colour inside well symbol indicates yield range. The figure.		QUARTZ REEF (Con	nfirmed / Inferred)	Q/QQ	Rai	nfall: 1322 mm	B01 SALANPUR X ASANSOL		
etc.)	RED				hand side of well indicate the depth to water level and depth		PEGMATITIE VEIN (Con	nfirmed / Inferred)	P/P-P		Source IMD)	B02 BARABANI		
Run-off zone/ Barrier for G.W. movement		(I	nselberg / Rid	ge / Dyke etc.)	ARTESIAN WELL ARTESIAN WELL OBSERV	RVATION WELL OF EPT. / C.G.W.B.	Lithologic contacts are info	erred at places & Ge	omorphic boundaries	(Bource IIIID)			
PREPARED BY TECHNICAL GUIDANCE & QUALITY CHECK				PARTICIPATING ORGANIZATIONS			*/~ METHODOLO	GY & PROJECT EXECUTION	SPONSORED BY					
GEOINFORMATICS & REMOTE SENSING CELL W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY DEPARTMENT OF SCIENCE AND TECHNOLOGY				इसरो ंडाव	SURVEY OF INDIA GEOLOGICAL SURVEY OF INDIA			इसरो ंडाव		RAJIV GANDHI NATIONAL DRINKING WATER MISS (PHASE III B) DEPARTMENT OF DRINKING WATER SUPPLY (DD)				
				NATIONAL REMOTE SENSING				NATIONAL RE	MOTE SENSING CENTRE					
GOVERNMENT OF WEST BENGAL				INDIAN SPACE RESEARCH ORGANISA	PHED, GOVT. OF WEST BENGAL			INDIAN SPACE R	ESEARCH ORGANISATION (ISRO)	MINISTRY OF RURA	AL DEVELOPME	•		
4TH FLOOR, BIKASH BHAVAN SALT LAKE, KOLKATA 700 091					DEPT. OF SPACE, GOVT. OF I	STATE WATER INVESTIGATION DIRECTORATE, GOWB P.S.MAPS (LAND RECORD), GOVT OF WEST BENGAL			1	SPACE, GOVT. OF INDIA	GOVERNMEN NEW D			
S	ALI LAI	NE, KULKA	IA /UU 09	/1	BALANAGAR, HYDERABAD - 5	0UU 625	P.S.WAPS (LAND REC	UKD), GUVI U	L MESI BENGAL	BALANAG	AR, HYDERABAD - 500 625	NEW D	/LLNI	