GROUND WATER PROSPECTS MAP

(PREPARED FROM SATELLITE IMAGE INTERPRETATION WITH LIMITED FIELD CHECKS)

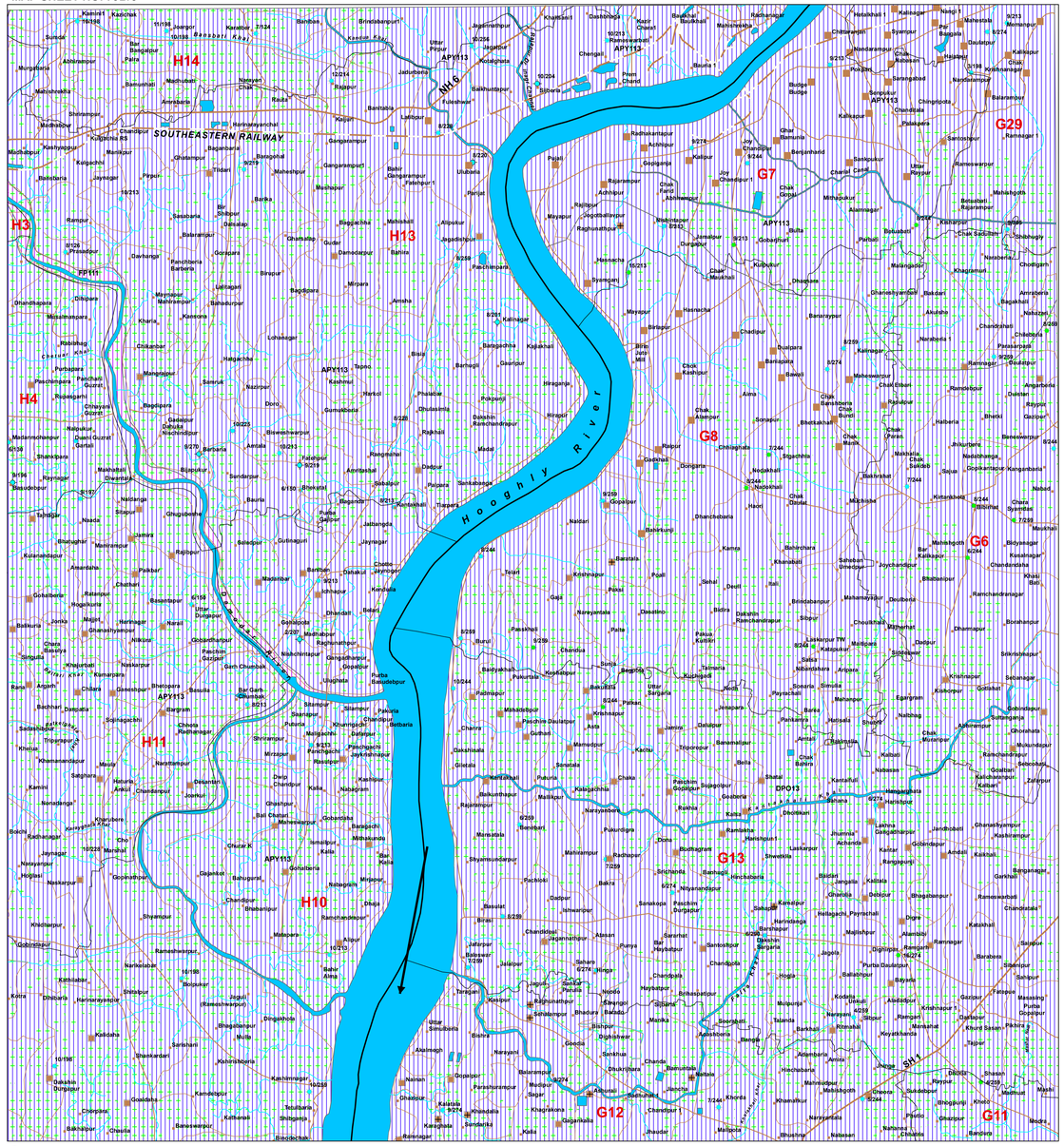
Kilometers

0 1 2 3 4 5

SCALE - 1 : 50,000

MAP SHEET NO. 79B/3

HOWRAH & SOUTH 24 PARGANAS DISTRICTS, WEST BENGAL



© NRSC (ISRO), DEPT. OF SPACE, GOVT. OF INDIA DATA USED : IRS - P6 LISS III FCC dated September 2005-February 2006,GROUND TRUTH & WELL OBSERVATION during March-June, 2012 & Oct 2012-Jan 2013,Published Geological maps & Literatures. *Designed & Developed by Hydrogeology Division, NRSC, ISRO*

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)	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: AQUIFER MATERIAL	TYPE OF WELLS SUITABLE	DEPTH RANGE OF WELLS (SUGGESTED) MIN - MAX (IN METERS)	YIELD RANGE OF WELLS (EXPECTED) (in LPM or m / 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	REMARKS (PROBLEMS / LIMITATIONS)
IPI111	Hugli/Bhagirathi Formation(Present day Deposits (Present Day)	Alluvium (Sand Dominant) (111)	Flood Plain (FP)	12 - 9 / 1	Very Good	LS	TW	>150 m	>800 LPM	Very High	NP (As & Fe) [At shallow depth]	0.46	RW Low	Areas with high Arsenic and Iron concentration.Potable water available at depth range above 150m.
APY113	Panskura/Kalwa(Basudebpur Formation (Early to Late Holocene)	Alluvium (Sand and Silt) (113)	Alluvial Plain Younger (APY)	10 / 6 / 46	Good	LS	TW	150-250 m	500-600 LPM	High	NP (As & Fe) [At shallow depth]	82.6	RW Low	Areas with high Arsenic and Iron concentration.Potable water available at depth range above 150m.
DPO13		Alluvium (Sand,Silt & Clay) (13)	Deltaic Plain Older (DPO)	10 / 6 / 34	Good	LS	TW	>250 m	600-800 LPM	High	NP (Salinity) [At shallow depth]	12.8	RW Moderate to High	Areas affected by saline water intrusion.Fresh water aquifers found at depth ranges of 250m and above.

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 /Q___Q / P___P
D— — -D /Q— — -Q / 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.

RECHARGE STRUCTURES SUITABLE & PRIORITY:
FC = PERCOLATION TANK
CD = CHECK DAM
NB = NALA BUND
RW = RECHARGE WELL
DT = DESILTING OF TANK
RP = RECHARGE PIT
RS = RECHARGE SHAFT
DS = DESILTING OF DYKE
ST = STORAGE TANK
SCM = SOIL CONSERVATION MEASURES

GROUND WATER PROSPECTS INFORMATION

YIELD RANGE OF WELLS	COLOUR CODE	DEPTH RANGE OF WELLS: SHALLOW < 30 METERS	MODERATE 30 - 50 METERS	DEEP > 50 METERS
> 800 LPM	VIOLET			
400 - 800 LPM	INDIGO			
200 - 400 LPM	BLUE			
100 - 200 LPM	GREEN			
50 - 100 LPM	YELLOW			
30 - 50 LPM	ORANGE			
20 - 30 LPM	BROWN			
10 - 20 LPM	PINK			
Prospects limited to valley portions only (Hills, Plateaus etc.)	RED			
Run-off zone/ Barren for G.W. movement	RED	(Inselberg / Ridge / Dyke etc.)		

HYDROLOGICAL INFORMATION

DESCRIPTION	SYMBOL
CANAL / TANK IRRIGATED AREA	
GROUND WATER IRRIGATED AREA	
RIVER / STREAM (with sand)	
WATER BODY / SPRING	
CANAL	
RAIN GUAGE STATION (With average annual rainfall in mm)	800

RECHARGE STRUCTURES SUGGESTED

PERCOLATION TANK		CHECK DAM	
NALA BUND		RECHARGE WELL	
DESILTING OF TANK		RECHARGE PIT	
SUBSURFACE DYKE		RECHARGE SHAFT	
SOIL CONSERVATION MEASURES		STORAGE TANK	

WELLS OBSERVED DURING FIELD VISIT

YIELD RANGE IN LPM	BORE / TUBE WELL	YIELD RANGE IN m³/day	DUG WELL / RING WELL
> 800 LPM	15/70	> 400 m³ / day	8/15
400 - 800 LPM	15/70	200 - 400 m³ / day	8/15
200 - 400 LPM	15/70	100 - 200 m³ / day	8/15
100 - 200 LPM	15/70	50 - 100 m³ / day	8/15
50 - 100 LPM	15/70	25 - 50 m³ / day	8/15
30 - 50 LPM	15/70	15 - 25 m³ / day	8/15
20 - 30 LPM	15/70	10 - 15 m³ / day	8/15
10 - 20 LPM	15/70	5 - 10 m³ / day	8/15
< 10 LPM	15/70	< 5 m³ / day	8/15

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

DUG - CUM- BORE WELL
ARTESIAN WELL
HAND PUMP WELL
OBSERVATION WELL OF G.W DEPT. / C.G.W.B.

STRUCTURAL INFORMATION

DIPS	BEDDING	SCHISTOSITY/ FOLIATION
GENTLE (< 15)		
MODERATE (15 - 45)		
STEEP (45 - 80)		
SUB - VERTICAL TO VERTICAL (> 80)		

ANTICLINE / ANTIFORM

SYNCLINE / SYNFORM

TREND LINE

ESCARPMENT

LITHOLOGY / GEOMORPHIC UNIT BOUNDARY

	MINOR	MAJOR
FAULT	F F	F F
THRUST	T T	T T
FRACTURE / LINEAMENT		
FRACTURE / LINEAMENT (Inferred)		
SHEAR ZONE	(Confirmed / Inferred)	S S / S S
DYKE	(Confirmed / Inferred)	D D / D D
QUARTZ REEF	(Confirmed / Inferred)	Q Q / Q Q
PEGMATITIE VEIN	(Confirmed / Inferred)	P P / P P

Lithologic contacts are inferred at places & Geomorphic boundaries are gradational

BASE MAP INFORMATION

SYMBOL	DESCRIPTION
NH - 2	NATIONAL HIGHWAY
SH - 9	STATE HIGHWAY
	METALLED ROAD
	OTHER ROAD
	RAILWAY
	CITY / VILLAGE
	HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)

BOUNDARY :
INTERNATIONAL
STATE
DISTRICT
BLOCK

OTHER INFORMATION

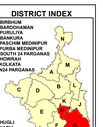
Rainfall : 1542 mm

(Source IMD)

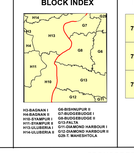
LOCATION INFORMATION

STATE INDEX

DISTRICT INDEX



BLOCK INDEX



H3-BAGNAN I
H4-BAGNAN II
H10-CHANDIPUR
H11-DIMAPUR I
H13-ULUBERIA I
H14-ULUBERIA II
G6-DIGHA
G7-MOHISHILA
G8-KHEJURI
G11-HARIPUR
G12-BHAGABANPUR I
G13-PALTA
G29-DIAMOND HARBOUR I
G29-DIAMOND HARBOUR II
G29-T. MAHESHTOLA

MAPSHEET INDEX

73N14	79B02	79B06
73N15	79B03	79B07
73N16	79B04	79B08

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