

# ATAL BHUJAL YOJANA (AtalJal)

**State : HARYANA**

**Department : IRRIGATION & WATER  
RESOURCE DEPARTMENT**

**BLOCK : HASSANPUR**

**DISTRICT : PALWAL**

**YEAR : 2023-2024**

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*Towards partial fulfilment of requirements for Disbursement of  
Incentive under DLI -1*

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# HYDROGEOLOGICAL REPORT

## (YEAR: 2023-24)

STATE	:	HARYANA
DISTRICT	:	PALWAL
BLOCK/TALUK	:	HASSANPUR
BLOCK/TALUK HQs	:	HASSANPUR

A		GENERAL INFORMATION			
1.	Geographical area (Ha)	:	17426.44		
2.	No. of Gram Panchayats	:	33		
3.	No. of towns	:	1		
4.	No. of villages	:	38		
5.	Population (2022)	:	Male	Female	Total
			61169	53807	114976
6.	Rainfall (mm)(2022)	:	Monsoon	Non-monsoon	Annual
			435.65	240.1	675.75
7.	River basin	:	Yamuna river basin		
8.	Major soil types	:	Tropical and Brown Soil		

B		LAND USE		
1.	Forest area (Ha)	:	0	
2.	Cultivable area (Ha)	:	14989	
3.	Net sown area (Ha)	:	14001	
4.	Gross cropped area (Ha)	:	25660	

C		CROPPING PATTERN (As in 2022-23)				
1.	Major crops grown	:	Kharif	Rabi	Summer	Perennial
			Paddy	Wheat	Pulses	NA
			Pulses	Mustard	Tomato	
			Sesame	Vegetable		
			Vegetable			
			Cotton			

D		IRRIGATION FACILITIES (As in 2022-23)					
1.	Net irrigated area (Ha)	:	14001				
2.	Gross irrigated area (Ha)	:	22113				
3.	Area under irrigation (Ha) (Source-wise)	:	DW	BW/TW	Tanks/Ponds	Canals	Others
			0	22113	0	0	0

E		GEOLOGY & HYDROGEOLOGY		
1.	Predominant rocktype	:	Sand, Silt and Clay	
2.	Major geological formations	:	Older and Newer Alluvium	

3.	Important water-bearing formations	:	Coarse grain sand
4.	Status of coverage under NAQUIM		Covered

F GROUND WATER CONDITIONS								
1.	No. of wells used for WaterLevel (WL) monitoring.	:	Open wells			BW/TW/ PZ		
			CGWB	SGWB	Total	CGWB	SGWB	Total
			0	7	7	3	1	4
1	Monitoring mechanism (Nos.)	:	Manual		DWLR		Telemetry	
			CGWB	SGWB	CGWB	SGWB	CGWB	SGWB
			3	8	0	0	0	0
3.	Monitoring frequency	:	Agency	No. of times monitored/year				
			CGWB	02 times/ year				
			SGWB	02 times/ year				
4.	Period of water level data availability.	:	Agency	Period of WL data availability (From - To)				
				From (year)		To (year)		
			CGWB	2015		2023		
			SGWB	2015		2023		
5.	Water level range (m.bgl)	:	Minimum/Village			Maximum/Village		
	Pre-monsoon (2023)		9.4 (Piragarhi)			25.0 (Hassanpur)		
	Post-monsoon (2023)		9.4 (Piragarhi)			22.0 (Hassanpur)		
6.	Seasonal WL fluctuation range (m)	:	Minimum/ Village			Maximum/ Village		
			-2.6 (Hassanpur)			0.25 (Gulawad)		

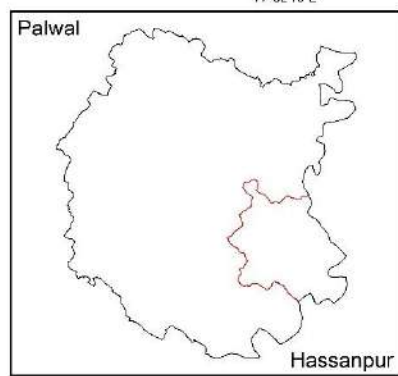
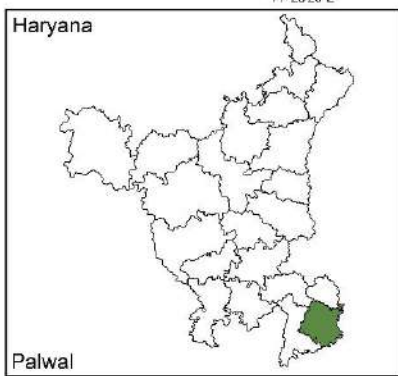
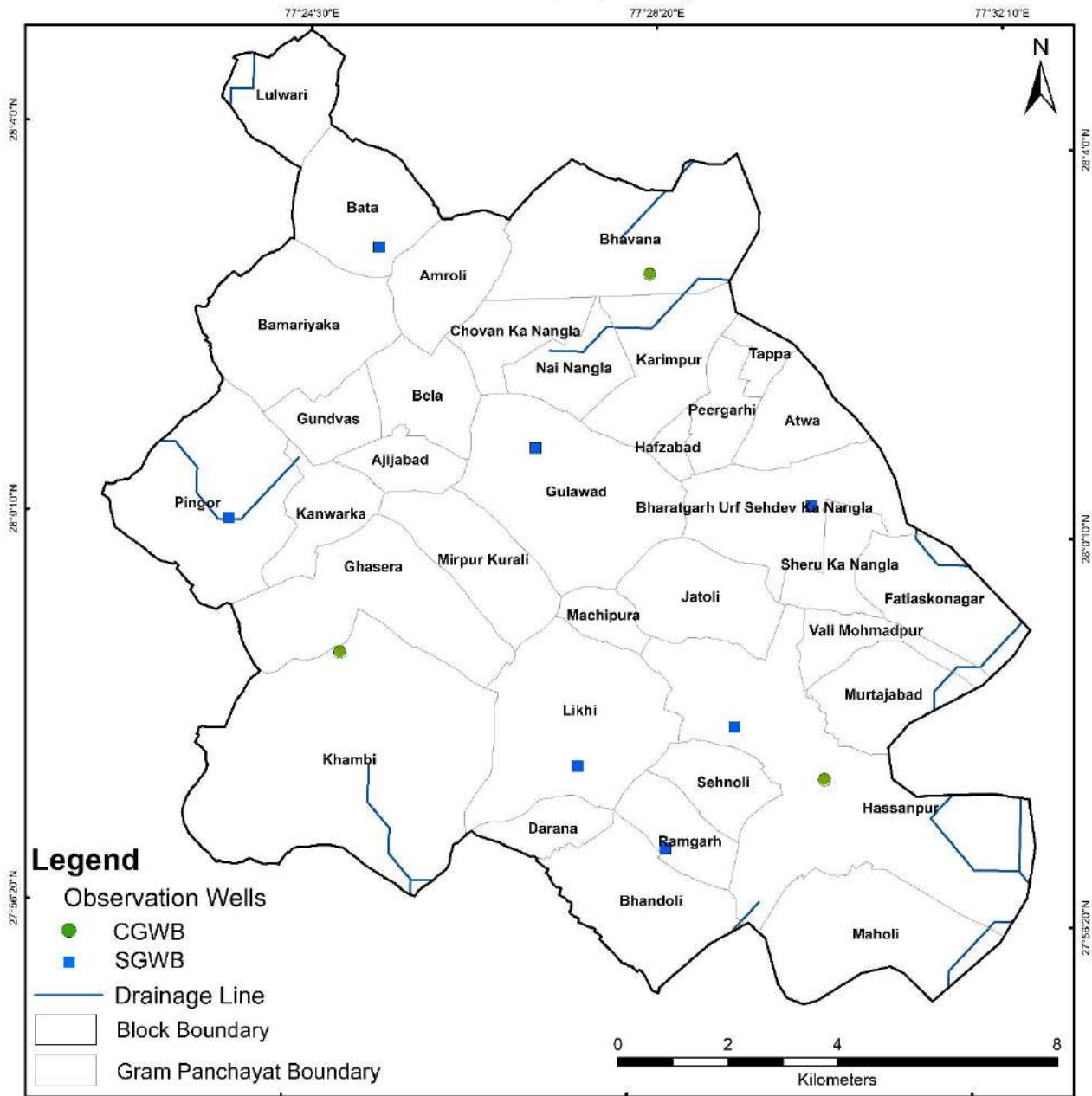
G GROUND WATER QUALITY								
1.	No. of wells used for Water Quality (WQ) monitoring.		Open Wells			BW/TW/ PZ		
			CGWB	SGWB	Total	CGWB	SGWB	Total
			0	7	7	0	1	1
2.	Monitoring frequency		Agency	No. of times monitored/year				
			CGWB	1 times/ year				
			SGWB	1 times/ year				
3.	Period of water quality data availability		Agency	Period of WQ data availability (Years)				
			CGWB	Not Available				
			SGWB	2020 to 2023				
4.	Parameters analysed		Agency	Parameters Analysed				
			CGWB	pH, EC, TH, Ca, Mg, Na, K, CO <sub>3</sub> , HCO <sub>3</sub> , SO <sub>4</sub> , Cl, F, NO <sub>3</sub>				
			SGWB	EC				
5.	Known ground water quality issues, if any		Moderately to highly saline					
H GROUND WATER RESOURCES								
1.	Latest assessment year		2022					
2.	Assessment Unit		Block					
3.	Annual extractable GW resource (ha.m)		5990.56					
4.	Current annual GW extraction (ha.m)		5729.7					
5.	Net GW availability for future use (ha.m)		260.86					
6.	Stage of GW extraction (%)		95.65%					
7.	Category of block/taluk		Critical					

	(2022)							
8.	Category of block/taluk/ in previous assessments		2020	2017	2013	2011	2009	2004
			Critical	Over Exploited	Over Exploited	Over Exploited	Over Exploited	Critical
<b>I WATER-RELATED SCHEMES</b>								
1.	Schemes with a bearing on ground water, being implemented in the block / taluk.							
	Centrally Sponsored /Central Sector Schemes	i)	PMKSY					
		ii)	MGNREGA					
		iii)	JJM					
		iv)	RKVY					
		v)	NHP					
		iv)	NAQUIM					
	State Schemes	i)	State Plan Scheme for providing assistance on adopting water saving technologies (2402)					
		ii)	MPMV					
		iii)						
		iv)						

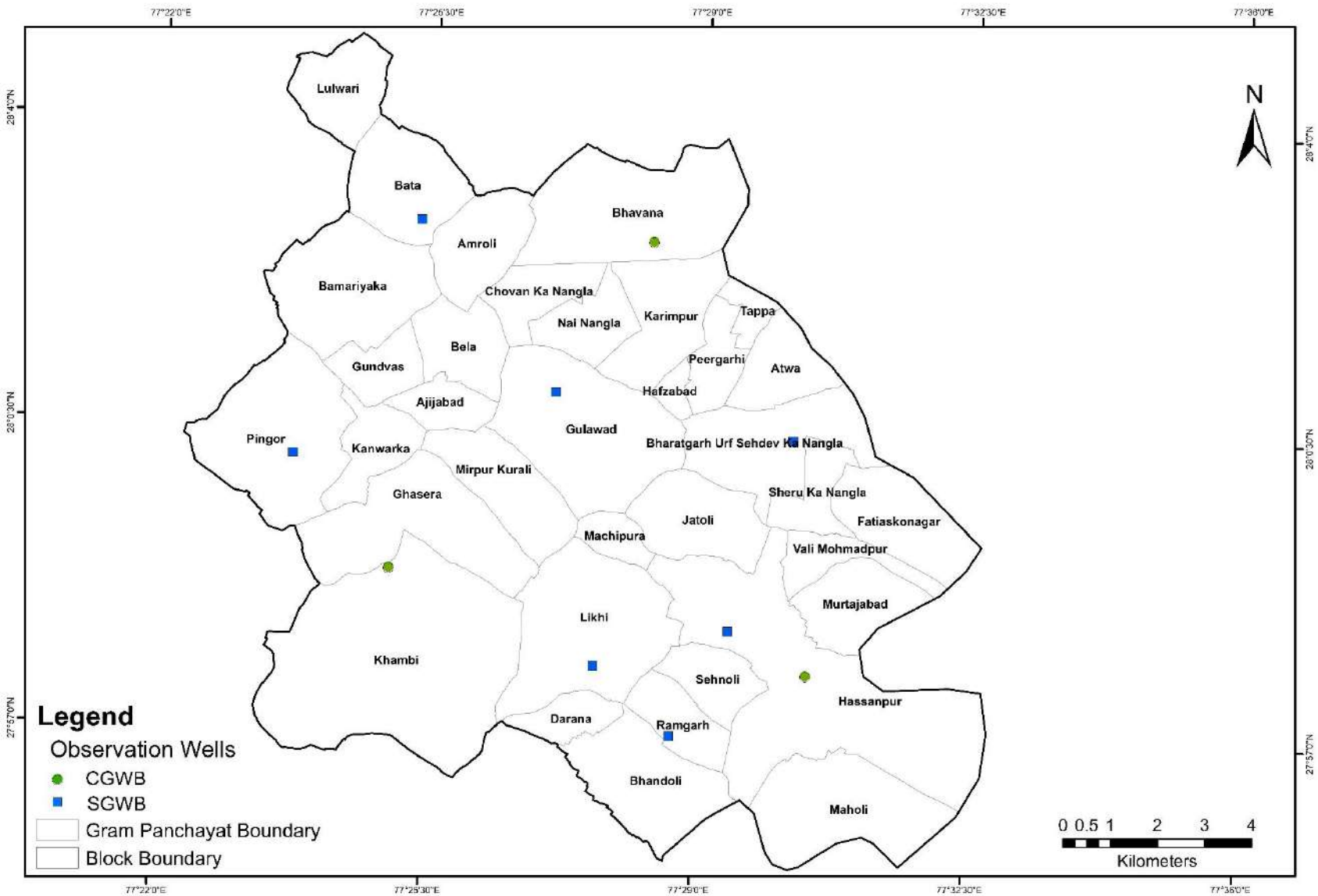
<b>J GROUND WATER RELATED ISSUES</b>		
1.	Ground water related issues of the block/	
	i) Issues related to GW availability	: Sustainability issues, over exploitation of ground water
	ii) Issues related to GW quality	: The shallow ground water of the block is alkaline in nature and is moderately to highly saline. It is found that more than half of the ground waters are not suitable for drinking purposes mainly due to fluoride content that exceeds the maximum permissible limit of 1.5mg/l. These waters are not suitable for customary irrigation as they may cause salinity and sodium hazards.
	iii) Other issues if any.	:

<b>K</b>	<b>ANNEXURES</b>
I	Basic data of observation wells – Attached
II.	Historical water level data – Attached
III.	Historical water quality data – Attached

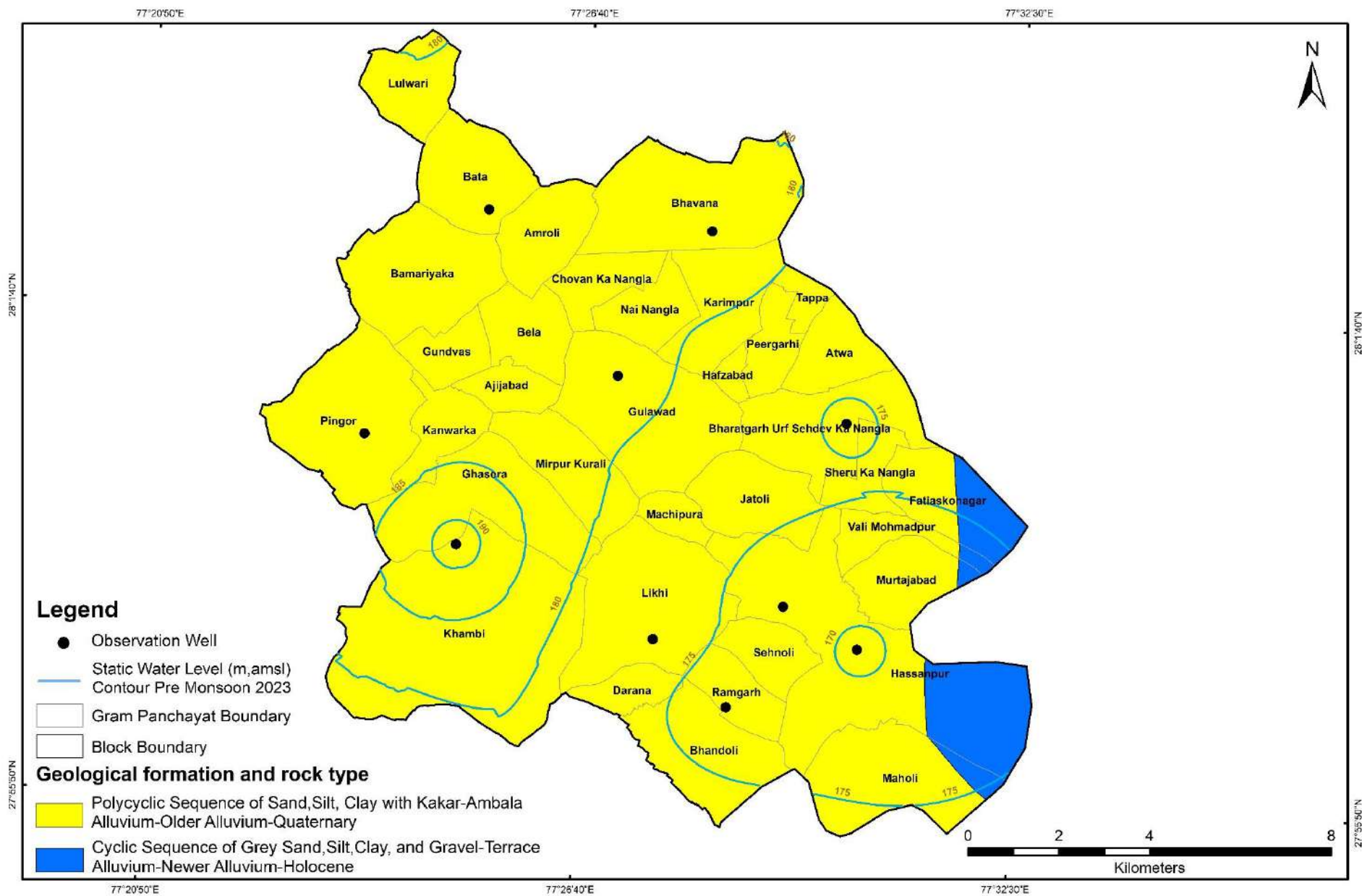
## Location Map of Block- Hassanpur, District- Palwal, Haryana



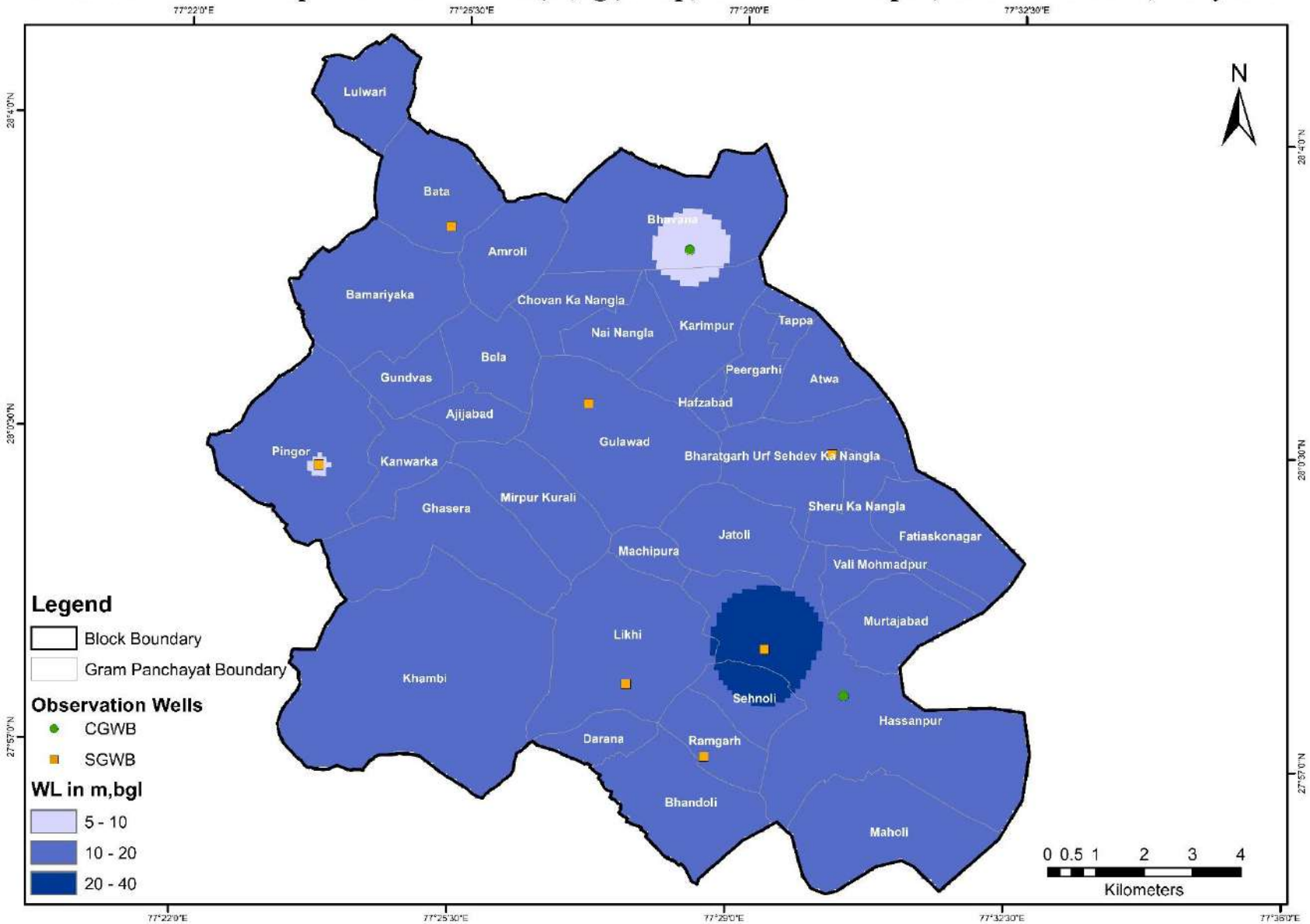
### Location of Observation Wells for Monitoring Water Levels and Water Quality, Block- Hassanpur, District- Palwal, Haryana



# Hydrogeological Map, Block- Hassanpur, District- Palwal, Haryana

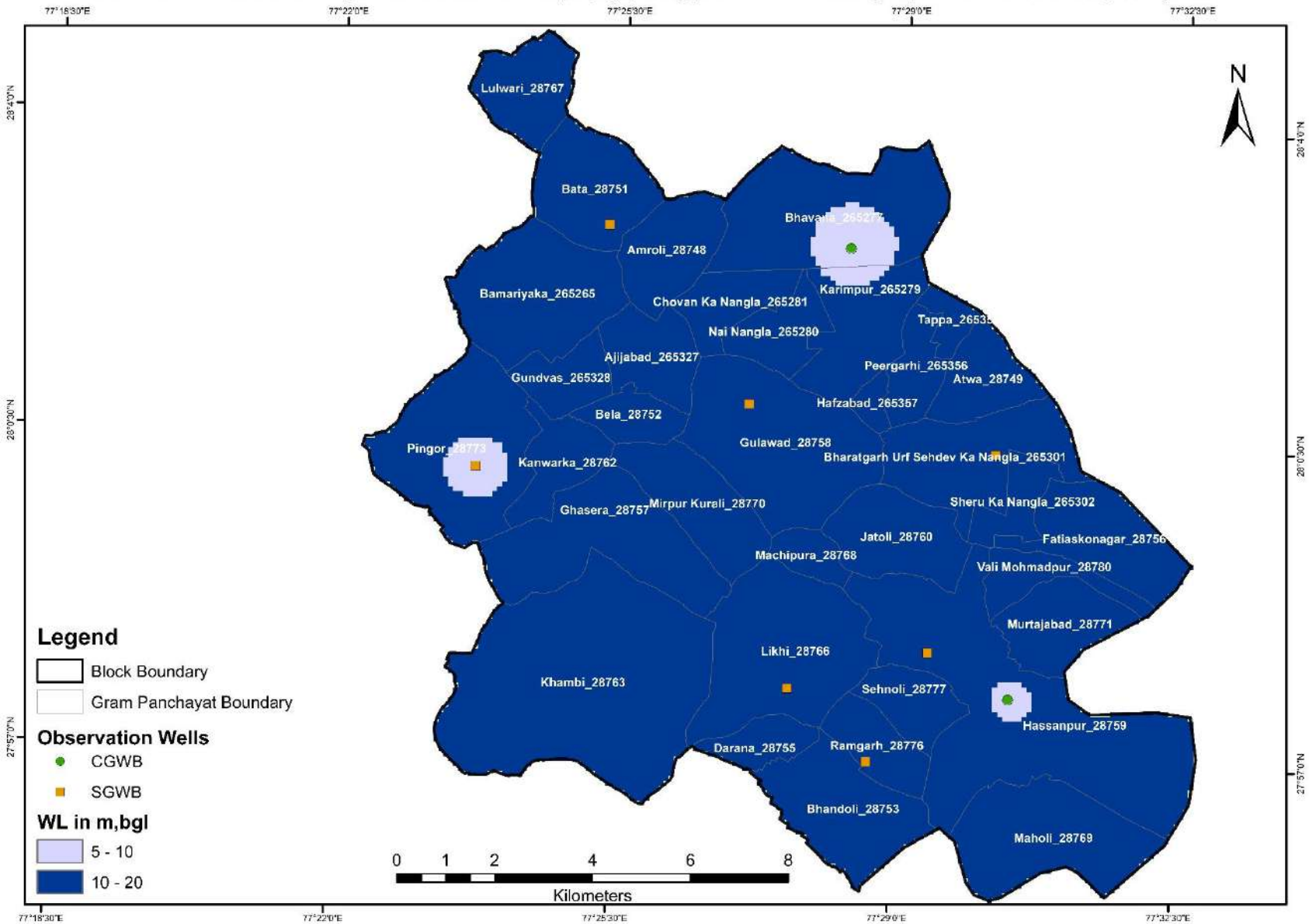


### Pre Monsoon 2023 Depth to Water Level (m,bgl) Map, Block - Hassanpur, District - Palwal, Haryana

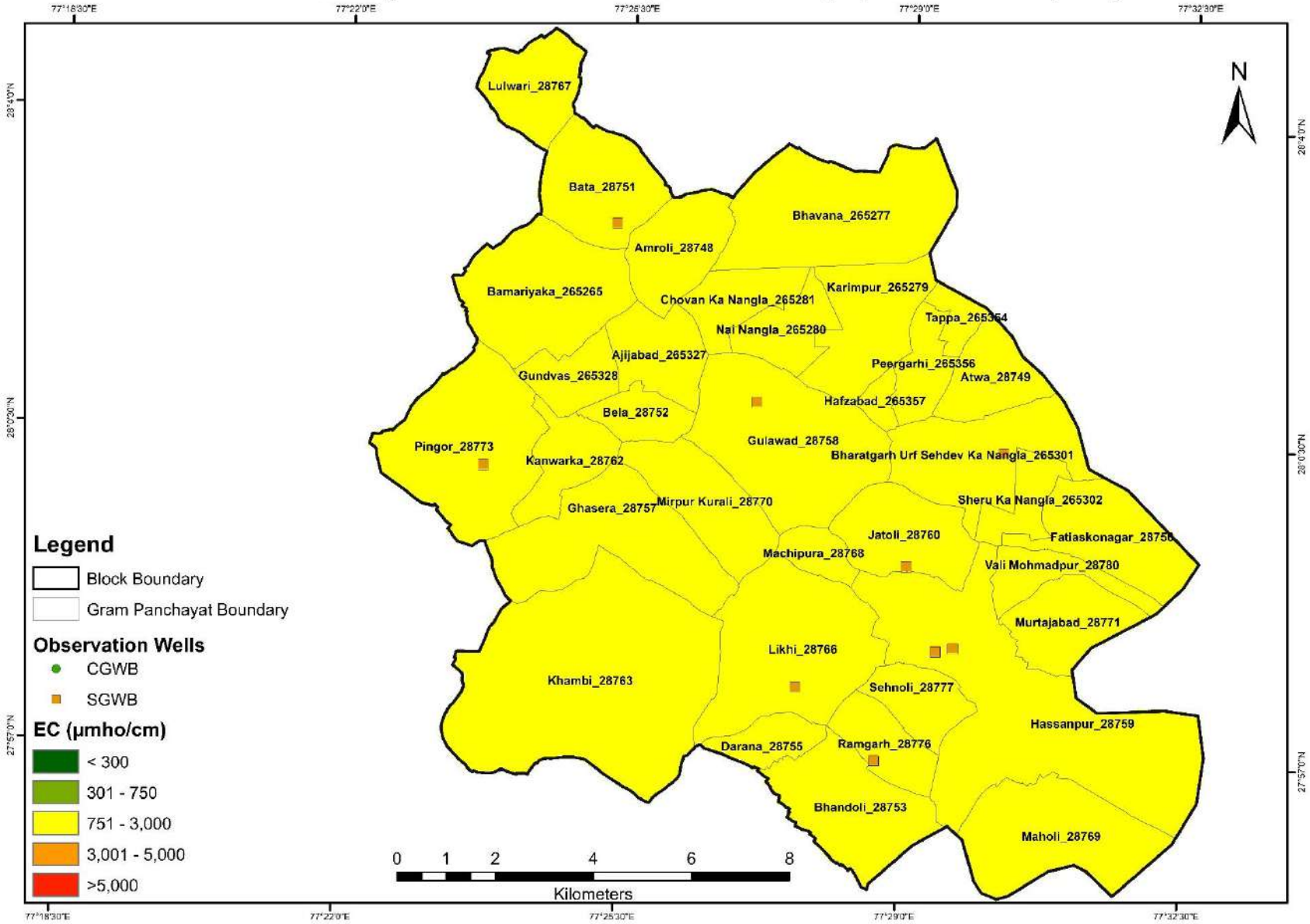




### Post Monsoon 2023 Depth to Water Level (m,bgl) Map, Block - Hassanpur, District - Palwal, Haryana



### Electrical Conductivity of Groundwater-2023, Block - Hassanpur, District - Palwal, Haryana



**ANNEXURE: 1**  
**BASIC DATA OF MONITORING WELLS**

State	Haryana				District	Palwal			Block	Hassanpur					
S.No	Well ID	GP Name	Name of the village	Site Name	Latitude	Longitude	Type of Well (DW/Pz)	Reduced Level (m,asl)	Aquifer Type/Lithology	Height of Measuring (m,agl)	Depth (m,bgl)	Diameter (m)	Purpose of Monitoring (WL/WQ)	Monitoring Mechanism	Agency
1	Gu_28.015_77.452	Gulawad_28758	Gulawad	Panchyati near Ramji lal Sharma house, OW	28.0152	77.452	DW	189.34	Unconfined to Semi Confined	1.25	19	2	Both	Manual	SGWB
2	Ha_27.9_77.49	Hassanpur_28759	Hassanpur	Mandir well behind police station, KOW	27.9703	77.4904	DW	190.05	Unconfined to Semi Confined	1.25	40	2	Both	Manual	SGWB
3	Ha_27.9_77.49	Hassanpur_28759	Hassanpur	Panchyati in front of school, OW	27.9703	77.4904	PZ	189.95	Unconfined to Semi Confined	0.65	40	0.1	Both	Manual	SGWB
6	Ka_28.00_77.503	Bharatgarh Urf Sehdev Ka Nangla_265301	Kashipur	Rumal nambardar S/o Amir near bus stand and behnmal house, OW	28.007	77.5034	DW	187.22	Unconfined to Semi Confined	1.25	20	2	Both	Manual	SGWB
8	Li_27.963_77.462	Likhi_28766	Likhi	Bhure S/o Naren west of village near road towards Machipur, OW	27.9631	77.4615	DW	193.9	Unconfined to Semi Confined	1.25	15	2	Both	Manual	SGWB
9	Na_28.04_77.422	Bata_28751	Nandgaon	Panchyati east of village in Rumal s/o Yadh ram field LHS of approach road, OW	28.0475	77.4221	DW	192.2	Unconfined to Semi Confined	1.25	30	2	Both	Manual	SGWB
10	Pi_28.002_77.396	Pingor_28773	Pingora	Harijan well in harijan dharamshalla RHS of approach road turning of the boundary of mandir, OW	28.0023	77.3957	DW	192.9	Unconfined to Semi Confined	1.25	20	2	Both	Manual	SGWB

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12	Ra_27.9 5_77.478	Ramgar h_28776	Ramgar h	Adjoining to sh. hariram s/o harigovind house south of village, OW	27.95	77.4783	DW	193.64	Unconfined to Semi Confined	1.25	42	2	Both	Manual	SGWB
13	W27581 5077250 001	Khambi _28763	Khambi	Khambi	27.980 9	77.4169	Piezome ter	NA	Unconfined to Semi Confined	0.5	200.15	o.1	WL	Manual	CGWB
14	W2802 4007728 2001	Peergar hi_2653 56	Pirgarhi	Pirgarhi- Pz	28.029 2	77.4838	Piezome ter	191	Unconfined to Semi Confined	1	100	0.1	WL	Manual	CGWB
15	W27580 0077292 501	Hassanp ur_2875 9	HASSA NPUR	HASSANPUR-Pz	27.962 2	77.5072	Piezome ter	2013	Unconfined to Semi Confined	0.5	40	0.1	WL	Telemet ry	CGWB

ANNEXURE: 2  
WATER LEVEL (WL) DATA OF MONITORING WELLS

State	Haryana	District	Palwal	Block	Hassanpur
Month of Pre-monsoon Water Level Measurement					June
Month of Post-monsoon water Level measurement					October/November

S.No.	Observation Point	Source	Well Types	Co-ordinate		Water Level (m)																	
				Latitude	Longitude	2015		2016		2017		2018		2019		2020		2021		2022		2023	
						Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	Gulawad_28758	SG WB	Dug Well	28.0152	77.452009	10	10	11	11	11	12	11	11	12	12	14	13	NA	NA	14	NA	14	15
2	Hassanpur_28759	SG WB	Dug Well	27.9703	77.490375	19	19	19	20	21	20	21	20	22	22	23	22	24	21	24	22	25	22
3	Hassanpur_28759	SG WB	Piezometer	27.9703	77.490375	19	19	19	19	19	20	19	19	20	20	21	21	20	19	20	19	19	19
4	Bharatgarh Urf Sehdev Ka Nangla_265301	SG WB	Dug Well	28.007	77.503432	10	10	11	11	11	11	11	10	11	11	11	11	NA	NA	12	NA	12	11
5	Likhi_28766	SG WB	Dug Well	27.9631	77.461523	11	11	12	12	12	12	12	12	13	13	14	13	14	13	13	12	13	11
6	Bata_28751	SG WB	Dug Well	28.0475	77.422121	7.4	7.3	8	8.1	8.1	7.9	8.2	8.1	8.6	8.4	9.4	9.1	9.6	11	11	10	11	10
7	Pingor_28773	SG WB	Dug Well	28.0023	77.395715	5.8	5.7	6.6	6.7	7.1	6.9	7.2	7	7.4	7.3	7.9	7.7	7.8	8.2	8.4	9.7	10	9.7
8	Ramgarh_28776	SG WB	Dug Well	27.95	77.478253	18	17	18	18	19	19	19	18	19	19	20	20	20	18	19	19	19	18
9	Khambi_28763	CG WB	Piezometer	27.9809	77.416881	3.3	3.1	3.7	3.3	3.5	3.8	4	2.9	4.1	9.4	3.7	2.1	4	13	Abandoned	Abandoned	Abandoned	Abandoned
10	Peergarhi_265356	CG WB	Piezometer	28.0292	77.483762	9.7	9.5	9.5	8.9	9.9	7.9	NA	8.8	10	NA	12	9.5	10	7.7	12	13	9.4	9.4
11	Hassanpur_28759	CG WB	Piezometer	27.9622	77.5072	19	22	21	NA	21	21	22	22	11	17	21	25	21	21	21	19	18	Erratic DWLR data

ANNEXURE: 3  
HISTORICAL WATER QUALITY (WQ) DATA OF MONITORING WELLS BY SGWB

State	Haryana	District	Faridabad	Block	Hassanpur
Month of Collection of samples for WQ monitoring*					June

Name of District	Name of Block	Source	Name of village/ OW data	Latitude	Longitude	Value of EC June 2020	Value of EC June-2021	Value of EC June-2022	Value of EC June- 2023
Palwal_619	Hassanpur_465	SGWB	GULAWAD	28.0152	77.452009	2850	1500	NA	NA
Palwal_619	Hassanpur_465	SGWB	HASSANPUR	27.97032	77.490375	2300	NA	2600	2200
Palwal_619	Hassanpur_465	SGWB	JATAULY	27.98577	77.483862	2600	2350	1800	2050
Palwal_619	Hassanpur_465	SGWB	KAMBHT	28.02724	77.329242	1500	1550	1600	1350
Palwal_619	Hassanpur_465	SGWB	KASHIPUR	28.00702	77.503432	2200	NA	NA	NA
Palwal_619	Hassanpur_465	SGWB	LALGARH	27.95752	77.272594	3350	3350	NA	NA
Palwal_619	Hassanpur_465	SGWB	LIKHI	27.96312	77.461523	2900	NA	2100	2300
Palwal_619	Hassanpur_465	SGWB	NANDGAON	28.04747	77.422121	3550	3600	2300	2100
Palwal_619	Hassanpur_465	SGWB	PINGORA	28.00232	77.395715	3000	2950	1700	1350
Palwal_619	Hassanpur_465	SGWB	RAHIMPUR	27.94533	77.344954	2600	2700	NA	NA
Palwal_619	Hassanpur_465	SGWB	RAMGARH	27.95004	77.478253	2000	2000	2600	2200
Palwal_619	Hassanpur_465	SGWB	HASSANPUR	27.971	77.494	3250	NA	1700	2200

Note: 1. CGWB water quality data for Hassanpur block is not available.  
2. Only EC data of SGWB is available.