

ATAL BHUJAL YOJANA (AtalJal)

State : HARYANA

**Department : IRRIGATION & WATER
RESOURCE DEPARTMENT**

BLOCK : Ateli Nangal

DISTRICT : Mahendragarh

YEAR : 2023-2024

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

HYDROGEOLOGICAL REPORT

(YEAR: 2023-24)

STATE	:	Haryana
DISTRICT	:	Mahendragarh
BLOCK	:	Ateli Nangal
BLOCK HQ	:	Ateli

A- GENERAL INFORMATION				
1. Geographical Area (Ha)	:	21879.87		
2. No. of Gram Panchayat	:	43		
3. No. of Towns	:	1		
4. No. of Villages	:	46		
5. Population (Census 2022)	:	Male	Female	Total
	:	84961	76281	161242
6. Rainfall (mm) (2022)	:	Monsoon	Non-Monsoon	Annual
	:	522.51	161.62	684.13
River Basin	:	Yamuna river basin		
Major Soil Type	:	Loamy sand, Sandy soil		

B- LAND USE	
1. Forest Area (Ha)	: 37.1
2. Cultivable Area (Ha)	: 16858
3. Net sown Area (Ha)	: 16124
4. Gross Cropping Area (Ha)	: 30070

C- CROPPING PATTERN (As in 2022-23)					
1. Major Crops grown		Kharif	Rabi	Summer	Perennial
		Bajra	Wheat	Pulses	NA
		Gawar	Oilseeds	Tomato	
		Cotton	Mustard	Vegetable	

D- IRRIGATION FACILITIES (As in 2022-23)						
1. Net Irrigation Area (Ha)	:	15990				
2. Gross Irrigated Area (Ha)	:	23965				
3. Area under irrigation (Ha) source wise	:	DW	BW/TW	TANK/PON DS	CANAL	OTHE RS
	:	NA	22805	NA	1160	NA

E-GEOLOGY & HYDROGEOLOGY	
Predominant Rock type	Sand with silt and kankar, Quartzite, Phyllite, Schist, Slate
Major Geological Formation	Older Alluvium and Ajabgarh group/ formation
Important water bearing formation	Coarse grain sand & fractured/jointed hardrocks
Status of coverage under NAQUIM	Covered

F-GROUND WATER RELATED CONDITION						
1.No. of wells used for water level (WL) monitoring	Open Well			BW/TW/PZ		
	CGWB	SGWB	Total	CGWB	SGWB	Total
	0	0	0	0	34	10
2.Monitoring Mechanism (Nos.)	Manual		DWLR		Manual	
	CGWB	SGWB	CGWB	SGWB	CGWB	SGWB
	0	10	0	16	0	16
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	NA		NA		
	SGWB	2015		2023		
5. Water Level Range (m.bgl)	Minimum/Village			Maximum/Village		
	60.6 (Kheri)			126 (Ganiyar)		
	60.6 (Kheri)			126 (Ganiyar)		
6.Seasonal WL fluctuation range (m)	Minimum/Village			Maximum/Village		
	-2.32 (Bhilwara)			1.48 (Begpur)		

G-GROUND WATER QUALITY						
1. No. of wells used for water quality (WQ) monitoring	Open Well			BW/TW/PZ		
	CGWB	SGWB	Total	CGWB	SGWB	Total
	0	0	0	0	24	24
2. Monitoring frequency	Agency	No of items monitored/year				
	CGWB	01 times/year				
	SGWB	01 times/year				
3. Period of water quality data availability	Agency	Period of WQ data availability (Years)				
	CGWB	NA				
	SGWB	2020-2023				
	SGWB New	2023				
4. Parameters analysed	Agency	Parameters Analysed				
	CGWB	pH, EC, TH, Ca, Mg, Na, K, CO ₃ , HCO ₃ , SO ₄ , Cl, F, NO ₃				
	SGWB	EC				
	SGWB New	pH, EC, TDS, TH, Ca, Mg, Na, K, CO ₃ , HCO ₃ , SO ₄ , Cl, F, NO ₃				

5. Known ground water quality issues, if any	Salinity issue
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H- GROUND WATER RESOURCES

1. Latest Assessment Year	2022					
2. Assessment Unit	Block					
3. Annual Extractable GW Resource (ham)	3495.38					
4. Current Annual GW Resource (ham)	4231.72					
5. Net GW Availability for future use (ham)	0					
6. Stage of Extraction (%)	121.06%					
7. Category of block 2022	Over Exploited					
8. Category of block/taluk/in previous assessments	2020	2017	2013	2011	2009	2004
	Critical	Semi Critical	Over Exploited	Over Exploited	Over Exploited	Critical

I- WATER-RELATED SCHEMES

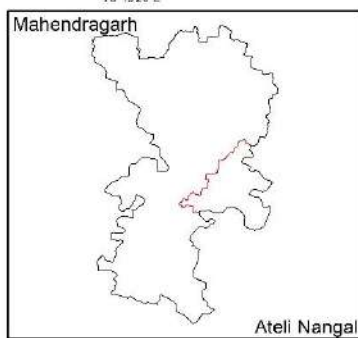
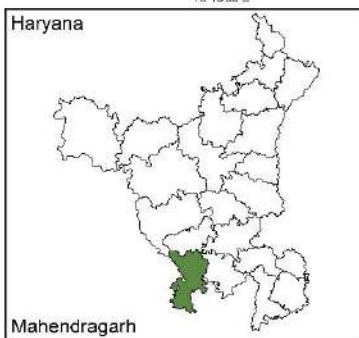
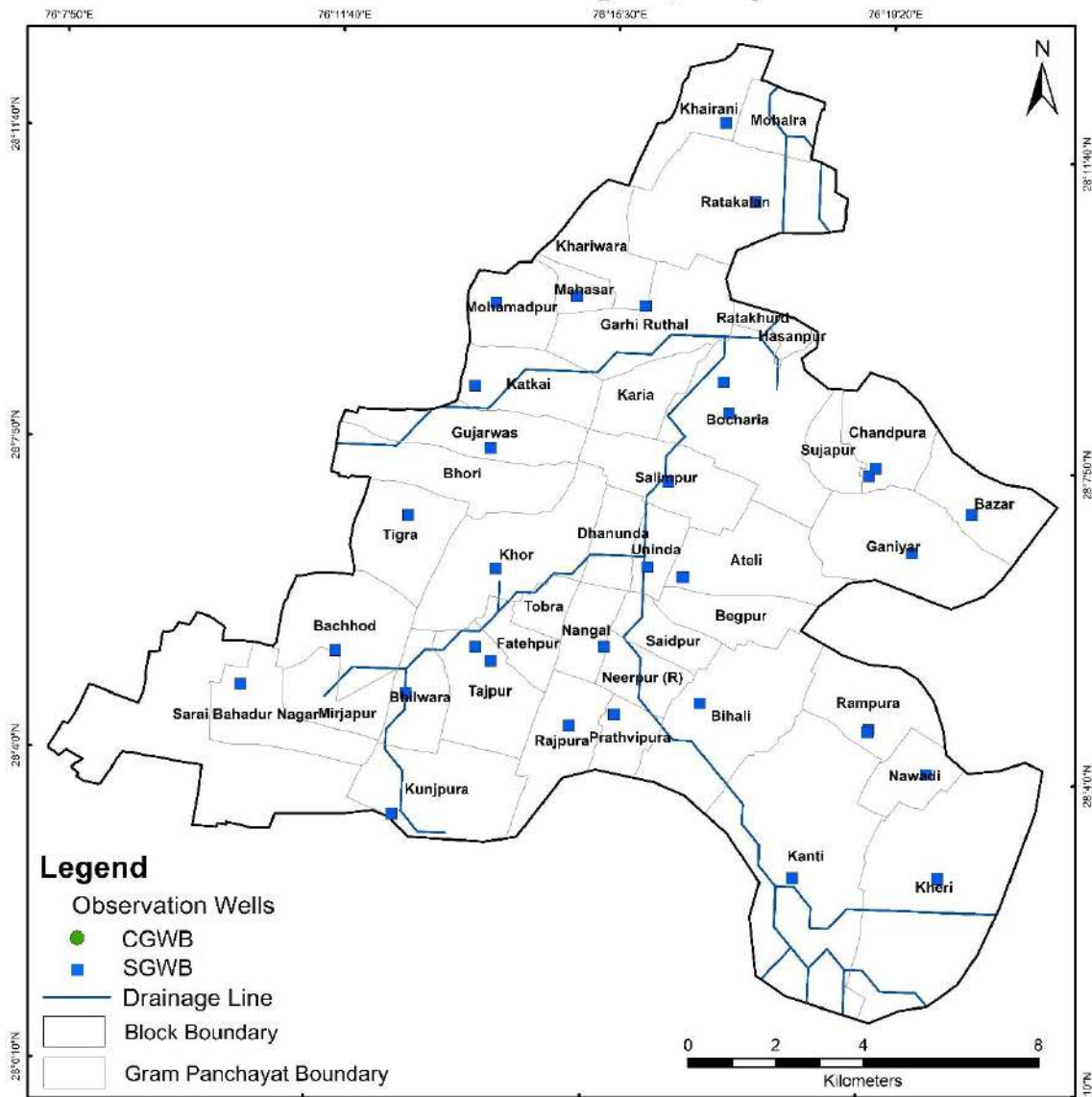
1. Schemes with a bearing on ground water, bearing implemented in the block/taluk		
Centrally Sponsored/Central Sector Scheme	i)	PMKSY
	ii)	MGNREGA
	iii)	RKVY
	iv)	NAQUIM
	v)	JJM
	vi)	NHP
State Scheme	i)	State Plan Scheme for providing assistance on adopting water saving technologies (2402)
	ii)	MPMV
	iii)	
	iv)	

J- GROUND WATER RELATED ISSUES

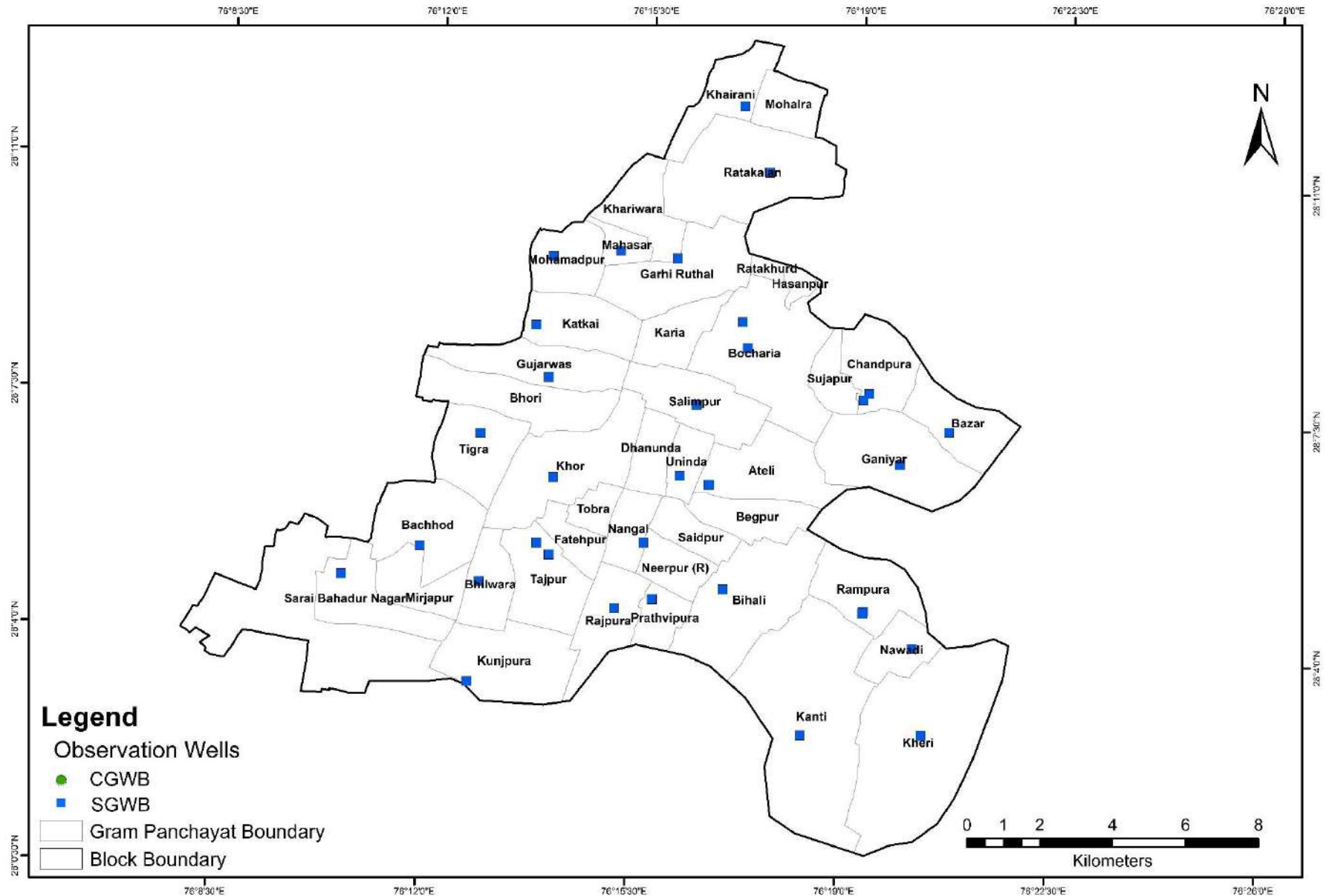
1. GROUND WATER RELATED ISSUES OF THE BLOCK		
i) Issues related to GW Availability		Ground water depletion issues due to over extraction of groundwater for agriculture and other uses
ii) Issues related to GW quality		Salinity issue, groundwater contamination in the vicinity of Mahasar village
iii) Other issues if any		-

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

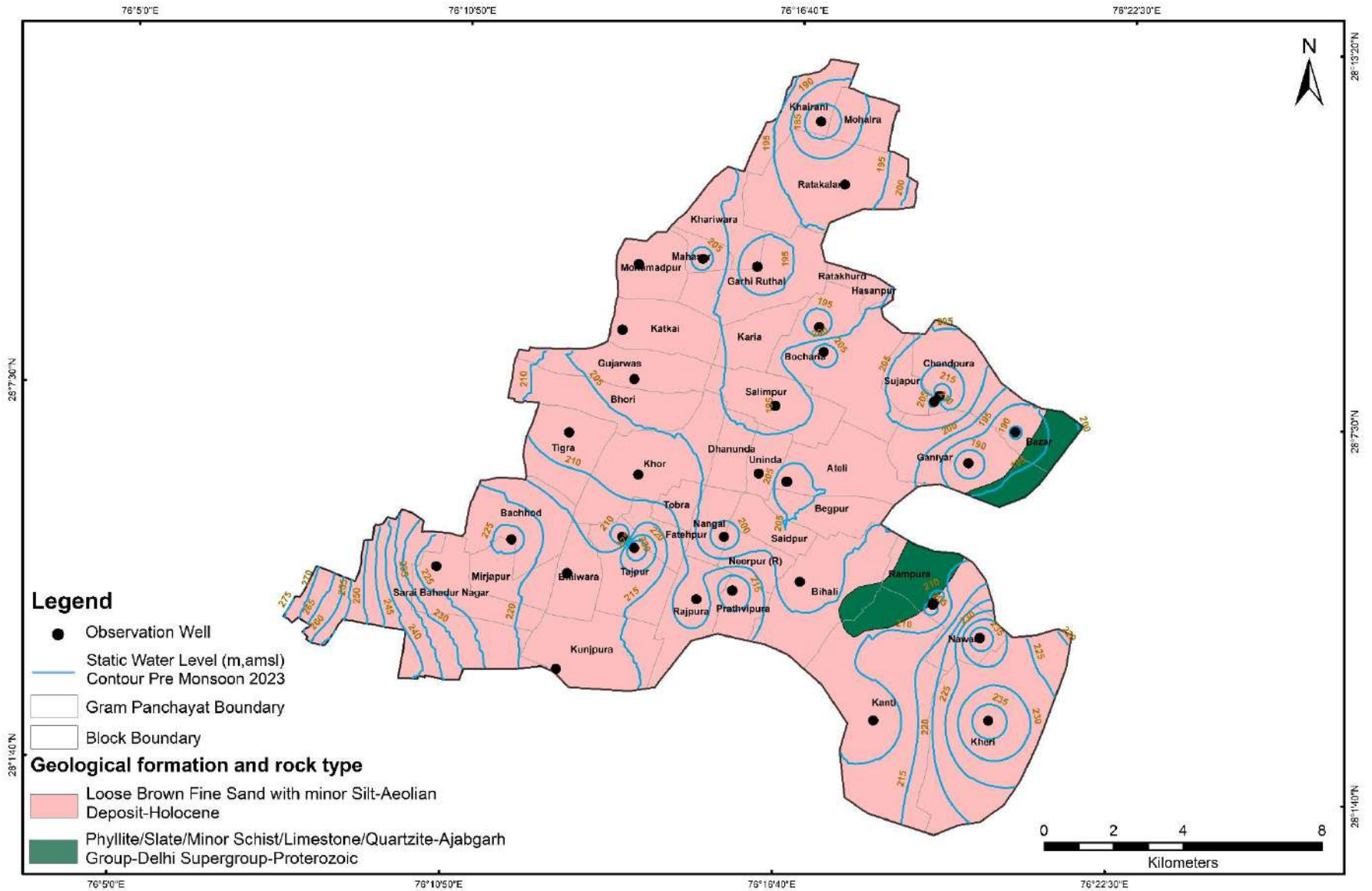
Location Map of Block- Ateli Nangal, District- Mahendragarh, Haryana



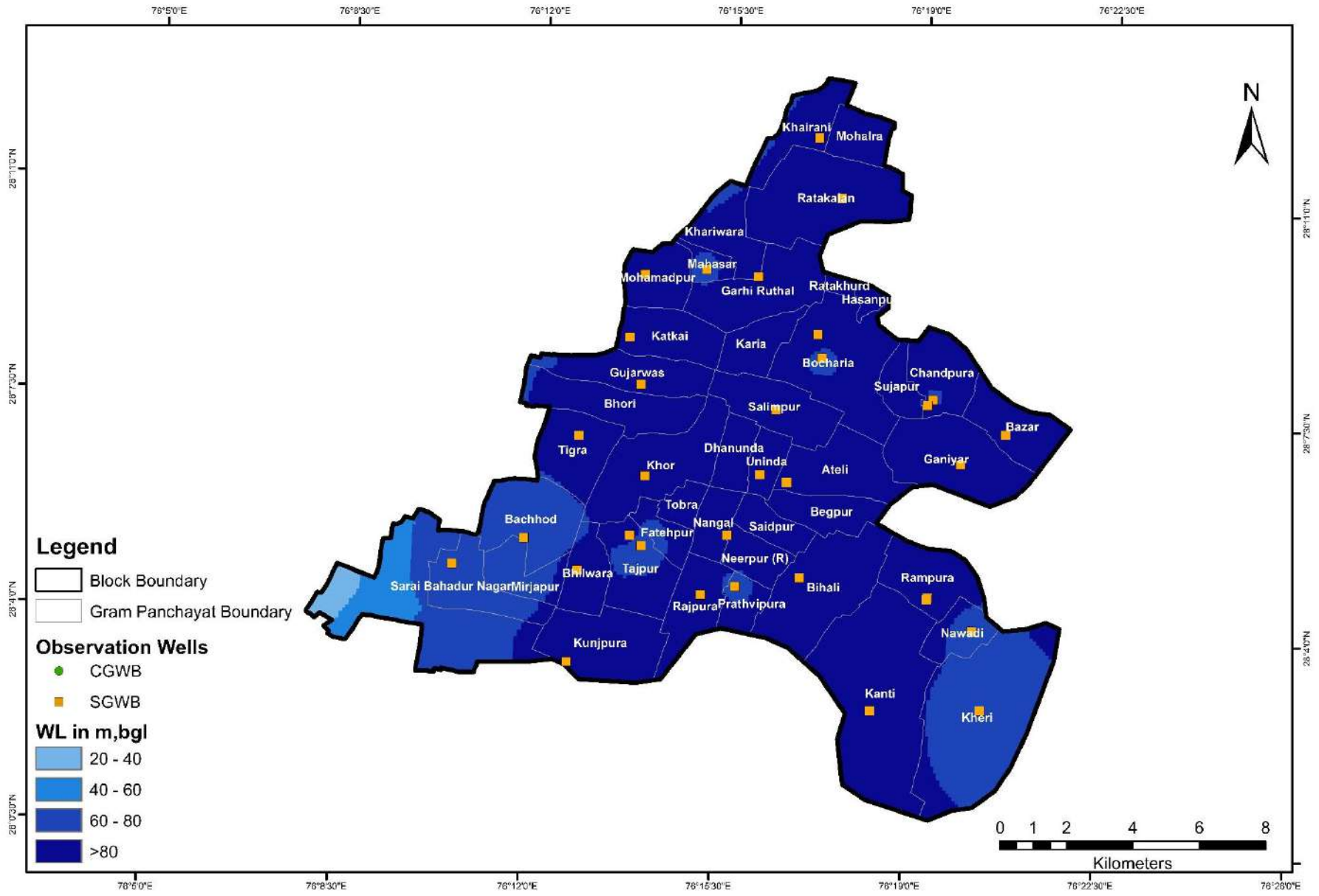
Location of Observation Wells for Monitoring Water Levels and Water Quality, Block-Ateli Nangal, District- Mahendragarh, Haryana



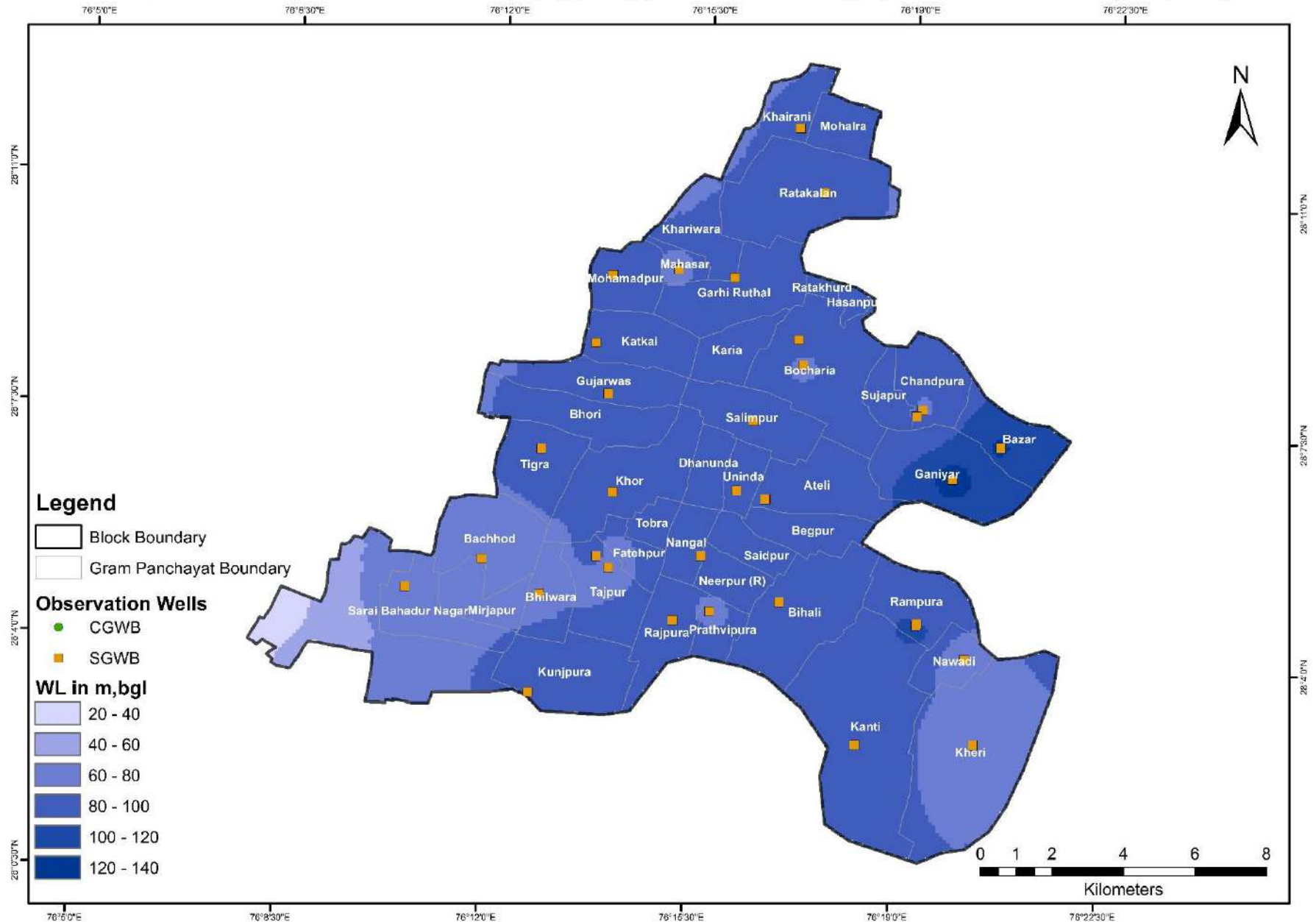
Hydrogeological Map, Block- Ateli Nangal, District- Mahendragarh, Haryana



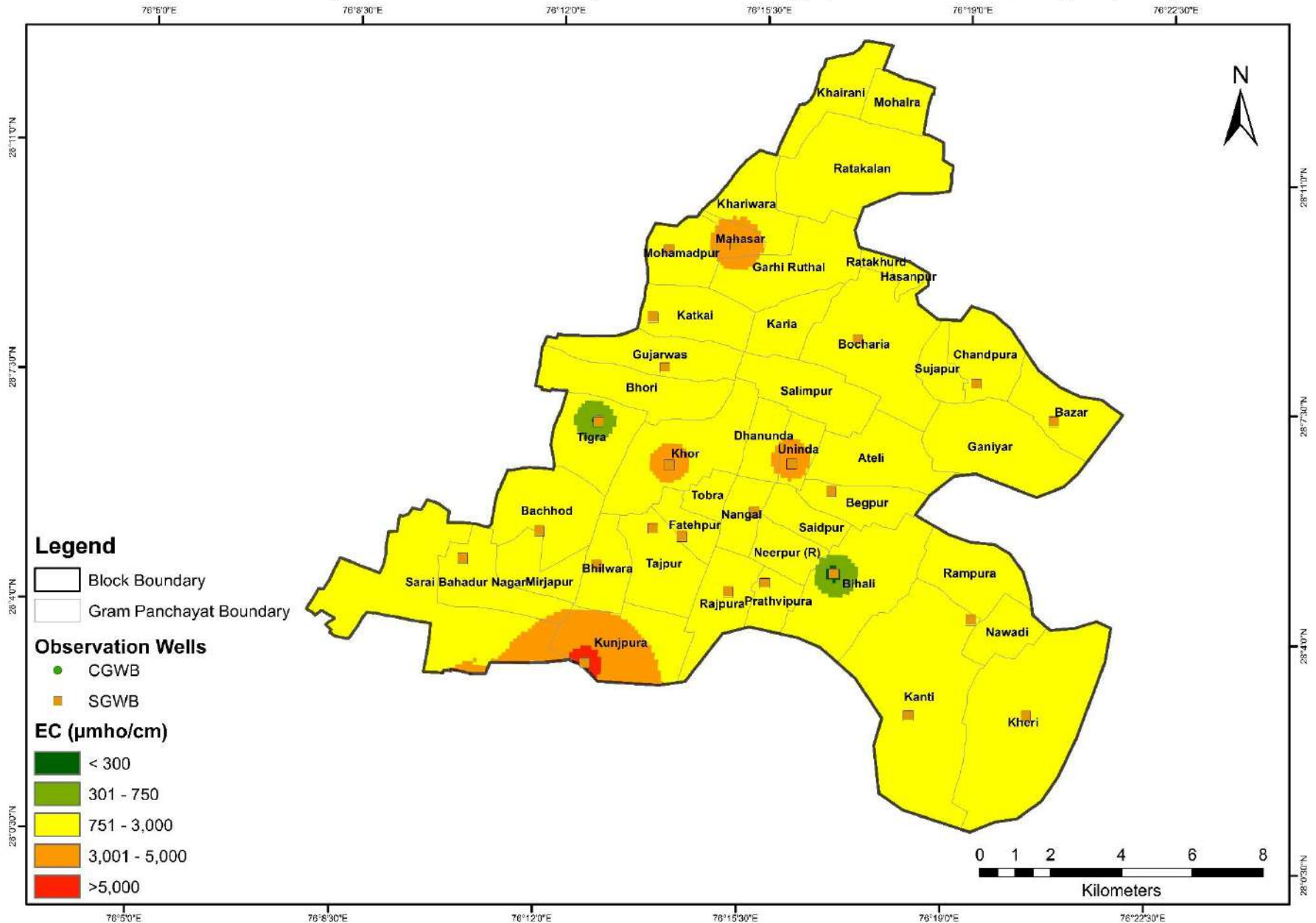
Pre Monsoon 2023 Depth to Water Level (m,bgl) Map, Block- Ateli Nangal, District - Mahendragarh, Haryana



Post Monsoon 2023 Depth to Water Level (m,bgl) Map, Block - Ateli Nangal, District - Mahendragarh, Haryana



Electrical Conductivity of Groundwater-2023, Block - Ateli Nangal, District - Mahendragarh, Haryana



ANNEXURE: 1
BASIC DATA OF MONITORING WELLS

State		Haryana					District	Mahendragarh					Block	Ateli Nangal	
S. No	Well ID	Gram Panchayat	Name of the village	Site Name	Latitude	Longitude	Type of Well	Reduced Level	Aquifer Type/Lithology	Height of Measuring (m, agl)	Depth (m,bgl)	Diameter (m)	Purpose of Monitoring (WL/WQ)	Monitoring Mechanism	Agency
1	Ch_28.13_76.322	Chandpura_31473	Chandpura	Near bus stand (Vetanary Hospital -PT	28.1303	76.3216	TW	280.29	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB
2	At_28.102_76.281	Ateli_31465	Ateli	BDPO Block Ateli PT	28.1017	76.2812	PZ	288.2	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.65	100	0.1	Both	Manual	SGWB
3	Ba_28.089_76.198	Bachhod_31466	Bachhod	PHC bachood PT	28.0888	76.198	TW	293.5	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	150	0.254	Both	Manual	SGWB
4	Ka_28.144_76.228	Katkai_31482	Katkai	In the Village	28.1442	76.2281	TW	287.15	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB
5	Kh_28.047_76.339	Kheri_31485	Kheri	GGMS-PT	28.0465	76.3395	PZ	296.3	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.65	200.0	0.1	Both	Manual	SGWB
6	Ma_28.163_76.251	Mahasar_31488	Mahasar	East of vilage -PH	28.1634	76.2509	TW	285	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB
7	Pr_28.078_76.263	Prathvipura_31495	Prithipura	Near moolchand house -DCB	28.0777	76.2632	TW	295	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB
8	Ra_28.07_76.323	Rampura_31497	Rampura	Near Sukh dev house -GB	28.0703	76.3226	TW	296.73	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB
9	Sa_28.081_76.176	Sarai Bahadur Nagar_31502	Sarai Bahadur	Near durgaNabardar house -GB	28.081	76.1764	TW	292.47	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB
10	Ta_28.089_76.239	Tajpur_31504	Tazpur	Right hand side of aproach road of viollage -PT	28.0887	76.2389	TW	304.6	Aeolian Alluvium (Silt/ Sand) & Hard Formation	0.7	200.0	0.254	Both	Manual	SGWB

11	HR_GW_505	Bazar_31467	Bazar	Govt. middle school bazar	28.1216	76.3442	PZ	311.0	Semi-Confined To Confined	0.5	130	0.1	WL	Telemetry	SGWB
12	HR_GW_522	Begpur_31468	Begpur	Govt. middle school begpur	28.1065	76.2778	PZ	288.0	Semi-Confined To Confined	0.5	126	0.1	WL	Telemetry	SGWB
13	HR_GW_521	Bhilwara_31469	Bhilwara	Govt. Middle School Bhilwara	28.0805	76.2147	PZ	299.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
14	HR_GW_506	Bihali_31471	Bihali	Govt. Senior Seacondary School bihali	28.0807	76.2828	PZ	299.0	Unconfined To Semi-Confined	0.5	123.5	0.1	WL	Telemetry	SGWB
15	HR_GW_507	Bocharia_31472	Bocharia	Govt. Senior Seacondary School bochariya	28.1469	76.2856	PZ	285.0	Semi-Confined To Confined	0.5	124	0.1	WL	Telemetry	SGWB
16	HR_GW_524	Ganiyar_31476	Ganiyar	Old Dharamshala Ganiyar	28.1131	76.3308	PZ	313.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
17	HR_GW_508	Gujarwas_31478	Gujarwas	Govt. high school gujarwas	28.1315	76.2321	PZ	291.0	Semi-Confined To Confined	0.5	130	0.1	WL	Telemetry	SGWB
18	HR_GW_509	Hasanpur_31719	Hasanpur	Govt. primary school hasnpur	28.1405	76.2872	PZ	283.0	Semi-Confined To Confined	0.5	130	0.1	WL	Telemetry	SGWB
19	HR_GW_510	Kanti_31480	Kanti	Govt.primary school kanti	28.0455	76.3058	PZ	299.0	Semi-Confined To Confined	0.5	130	0.1	WL	Telemetry	SGWB
20	HR_GW_525	Khairani_31483	Khairani	Govt. middle school khairani	28.2002	76.2839	PZ	273.0	Semi-Confined To Confined	0.5	123	0.1	WL	Telemetry	SGWB
21	HR_GW_511	Khariwara_31484	Khariwara	Govt. primary school khariwara	28.1619	76.2668	PZ	285.0	Semi-Confined To Confined	0.5	128	0.1	WL	Telemetry	SGWB
22	HR_GW_526	Khor_31486	Khor	Govt. Middle School Khor	28.1068	76.2344	PZ	289.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
23	HR_GW_504	Kunjpura_31487	Kunjpura	Govt. High School Kunjpura	28.0556	76.2125	PZ	309.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
24	HR_GW_512	Mohamadpur_31491	Mohammadpur	Govt. Vetnart Hospityal Mohammadpur	28.1614	76.2321	PZ	286.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
25	HR_GW_513	Nangal_31492	Nangal	Govt. Primary School Nangal	28.0916	76.2602	PZ	289.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
26	HR_GW_514	Nawadi_31493	Nawdi	Govt. Primary School Nawdi	28.0679	76.3361	PZ	303.0	Confined	0.5	130	0.1	WL	Telemetry	SGWB
27	HR_GW_515	Rajpura_31496	Rajpura	Govt. Middle School Rajpura Rajpura	28.0751	76.2528	PZ	301.0	Unconfined To Semi-Confined	0.5	130	0.1	WL	Telemetry	SGWB

28	HR_GW_5 27	Rampura_31 497	Rampura	Dharamshala near school	28.0761	76.322	PZ	309.0	Confined	0.5	130	0.1	WL	Telemet ry	SGWB
29	HR_GW_5 28	Ratakalan_3 1498	Ratakalan	Govt. Senior Seacondary School Ratakalan	28.1841	76.2915	PZ	277.0	Semi-Confined	0.5	115.5	0.1	WL	Telemet ry	SGWB
30	HR_GW_51 6	Salimpur_31 501	Salimpur	Govt. Primary School Salimpur	28.1261	76.2736	PZ	286.0	Confined	0.5	130	0.1	WL	Telemet ry	SGWB
31	HR_GW_51 7	Sujapur_315 03	Sujapur	Govt. ITI collage sujapur	28.1287	76.3201	PZ	295.0	Semi-Confined To Confined	0.5	115	0.1	WL	Telemet ry	SGWB
32	HR_GW_51 8	Tajpur_3150 4	Tajpur	Govt. High School Tajpur	28.0905	76.2304	PZ	288.0	Confined	0.5	130	0.1	WL	Telemet ry	SGWB
33	HR_GW_51 9	Tigra_31505	Tigra	Govt. High School Tigra	28.1171	76.2137	PZ	291.0	Confined	0.5	130	0.1	WL	Telemet ry	SGWB
34	HR_GW_5 20	Uninda_315 07	Uninda	Govt. Primary School Uninda	28.1083	76.2696	PZ	287.0	Confined	0.5	130	0.1	WL	Telemet ry	SGWB

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

25	Nangal_31492	SGWB	PZ	28.0916	76.260193	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.2	92.9
26	Nawadi_31493	SGWB	PZ	28.0679	76.336063	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	64.9	64.9
27	Rajpura_31496	SGWB	PZ	28.0751	76.252815	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93.7	94.6
28	Rampura_31497	SGWB	PZ	28.0761	76.322	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	119	119
29	Ratakalan_31498	SGWB	PZ	28.1841	76.291507	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	86.4	87.3
30	Salimpur_31501	SGWB	PZ	28.1261	76.273621	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.1	91.5
31	Sujapur_31503	SGWB	PZ	28.1287	76.320103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.8	92.2
32	Tajpur_31504	SGWB	PZ	28.0905	76.230448	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82.6	81.9
33	Tigra_31505	SGWB	PZ	28.1171	76.213734	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	83.3	83.9
34	Uninda_31507	SGWB	PZ	28.1083	76.269594	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.2	88.6

Note: Well Type: DW (Dug well); BW (Bore well - hard rock); TW (Tube well - soft rock); PZ (Piezometer)

WATER QUALITY (WQ) DATA OF MONITORING WELLS

State	Haryana	District	Mahendragarh	Block	Ateli
Month of Collection of samples for WQ monitoring*					June

Village	Source	Type of well	Latitude	Longitude	Year	pH	EC	TDS	TH	Ca	Mg	Na	K	CO ₃	HCO ₃	SO ₄	Cl	F	NO ₃
Bazar_31467	SGWB	Pz	28.121579	76.3442	2023	7.12	1810	1216	510	170	20.69	190	100	0	570	56	310	0.48	20
Rajpura_31496	SGWB	Pz	28.075096	76.252815	2023	7.17	2410	1390	320	56	43.74	356	0.85	0	240	182	218	0.56	21
Gujarwas_31478	SGWB	Pz	28.131518	76.232145	2023	7.29	2800	1820	937.4	236.6	84.2	203.8	58.2	0	833	136.5	475	1.72	78.2
Uninda_31507	SGWB	Pz	28.108326	76.269594	2023	7.48	3420	1980	442	77.6	60.26	548	2.12	0	156	329	480	0.65	42
Tigra_31505	SGWB	Pz	28.117053	76.213734	2023	7.4	9120	5210	924	180	115	1610	3.6	0	220	1025	1356	1.59	69
Rampura_31497	SGWB	Pz	28.07608	76.322	2023	7.51	1559	919.81	310.84	102.54	13.3	231	25.26	0	196.35	72.85	308.77	1.91	37.86
Hasanpur_31719	SGWB	Pz	28.14049	76.287184	2023	7.52	2240	1388.8	690.8	193.3	50.6	155.5	44.4	0	654.5	104.1	356.3	1.65	59.7
Tajpur_31504	SGWB	Pz	28.090533	76.230448	2023	7.56	2140	1262.6	641.4	175.5	49.3	141.4	40.4	0	595	94.6	332.5	1.76	54.3
Nangal_31492	SGWB	Pz	28.091564	76.260193	2023	7.59	1940	1232	420	140	20.19	230	50	0	392.2	84	420	2.52	60
Mohamadpur_31491	SGWB	Pz	28.161394	76.232149	2023	7.62	2680	1496	204	42	24	488	1.25	0	180	242	272	0.59	32
Kunjpura_31487	SGWB	Pz	28.055616	76.212501	2023	7.68	5388	3125	478	78.4	68.53	910	2.56	0	266	650	680	0.74	42
Bhilwara_31469	SGWB	Pz	28.080518	76.214741	2023	7.81	2510	1430	318	52	45.68	396	1.96	0	282	242	179	0.61	25
Khor_31486	SGWB	Pz	28.106807	76.234396	2023	7.85	3480	1925	330	53	48	562	1.96	0	296	436	310	0.78	29
Bihali_31471	SGWB	Pz	28.080694	76.28284	2023	8.17	205	139	60	20	2.76	20	10	0	70	8	40	0.43	Nil

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
Mahendragarh_69	Ateli Nangal_522	SGWB	Tazpur	28.088735	76.2389	1900	2000	1800	1600
Mahendragarh_69	Ateli Nangal_522	SGWB	Kheri PT	28.046509	76.3395	2200	2700	2500	2200
Mahendragarh_69	Ateli Nangal_522	SGWB	Rampura	28.0703	76.3226	2500	2800	2800	2400
Mahendragarh_69	Ateli Nangal_522	SGWB	katkai	28.14423	76.2281	2400	2600	2400	2200
Mahendragarh_69	Ateli Nangal_522	SGWB	saraibhadur	28.081024	76.1764	1700	1700	1500	1200
Mahendragarh_69	Ateli Nangal_522	SGWB	Ateli (Naodi)	28.101681	76.2812	2700	2900	2500	2300
Mahendragarh_69	Ateli Nangal_522	SGWB	Chandpura	28.130336	76.3216	2000	2000	2000	1700
Mahendragarh_69	Ateli Nangal_522	SGWB	Mahasar	28.16344	76.2509	3100	3600	3400	3200
Mahendragarh_69	Ateli Nangal_522	SGWB	Bachhod	28.088752	76.198	1900	1700	1600	1200
Mahendragarh_69	Ateli Nangal_522	SGWB	Prithipura	28.077705	76.2632	1800	1800	1900	1600
Mahendragarh_69	Ateli Nangal_522	SGWB	Ateli PT	28.095685	76.2594	1900	2200	2100	2000
Mahendragarh_69	Ateli Nangal_522	SGWB	Bazar_31467	28.121579	76.3442	NA	NA	NA	1810
Mahendragarh_69	Ateli Nangal_522	SGWB	Rajpura_31496	28.075096	76.2528	NA	NA	NA	2410
Mahendragarh_69	Ateli Nangal_522	SGWB	Gujarwas_31478	28.131518	76.2321	NA	NA	NA	2800
Mahendragarh_69	Ateli Nangal_522	SGWB	Uninda_31507	28.108326	76.2696	NA	NA	NA	3420
Mahendragarh_69	Ateli Nangal_522	SGWB	Tigra_31505	28.117053	76.2137	NA	NA	NA	9120

Mahendragarh_69	Ateli Nangal_522	SGWB	Rampura_31497	28.63415	76.0619	NA	NA	NA	1559
Mahendragarh_69	Ateli Nangal_522	SGWB	Hasanpur_31719	28.14049	76.2872	NA	NA	NA	2240
Mahendragarh_69	Ateli Nangal_522	SGWB	Tajpur_31504	28.090533	76.2304	NA	NA	NA	2140
Mahendragarh_69	Ateli Nangal_522	SGWB	Nangal_31492	28.549745	75.6609	NA	NA	NA	1940
Mahendragarh_69	Ateli Nangal_522	SGWB	Mohamadpur_31491	28.161394	76.2321	NA	NA	NA	2680
Mahendragarh_69	Ateli Nangal_522	SGWB	Kunjpora_31487	28.055616	76.2125	NA	NA	NA	5388
Mahendragarh_69	Ateli Nangal_522	SGWB	Bhilwara_31469	28.080518	76.2147	NA	NA	NA	2510
Mahendragarh_69	Ateli Nangal_522	SGWB	Khor_31486	28.106807	76.2344	NA	NA	NA	3480
Mahendragarh_69	Ateli Nangal_522	SGWB	Bihali_31471	28.080694	76.2828	NA	NA	NA	205