

ATAL BHUJAL YOJANA (AtalJal)

State : HARYANA

**Department : IRRIGATION & WATER
RESOURCE DEPARTMENT**

BLOCK : KARNAL

DISTRICT : KARNAL

YEAR : 2023-2024

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

HYDROGEOLOGICAL REPORT

(YEAR: 2023-24)

STATE	:	HARYANA
DISTRICT	:	KARNAL
BLOCK/TALUK	:	KARNAL
BLOCK/TALUK HQs	:	KARNAL

A GENERAL INFORMATION			
1.	Geographical area (Ha)	:	29171.37
2.	No. of Gram Panchayats	:	41
3.	No. of towns	:	2
4.	No. of villages	:	52
5.	Population (2022)	:	Male
			Female
			Total
			57610
			54385
			111995
6.	Rainfall (mm) (2022)	:	Monsoon
			Non-monsoon
			Annual
			640.41
			213.9
			854.31
7.	River basin	:	Yamuna river basin and partially in Ghaggar basin
8.	Major soil types	:	Loamy to Sandy loamy in texture

B LAND USE			
1.	Forest area (Ha)	:	82.8
2.	Cultivable area (Ha)	:	18052
3.	Net sown area (Ha)	:	17759.30
4.	Gross cropped area (Ha)	:	34685

C CROPPING PATTERN (As in 2022-23)					
1.	Major crops grown	:	Kharif	Rabi	
			Summer	Perennial	
			Paddy	Wheat	Moong
			Sugar cane		
			Jawar	Mustard	Maize
			Seasonal vegetable	Potato & other seasonal vegetable	

D IRRIGATION FACILITIES (As in 2022-23)					
1.	Net irrigated area (Ha)	:	17647.30		
2.	Gross irrigated area (Ha)	:	29818		
3.	Area under irrigation (Ha) (Source-wise)	:	DW	BW/TW	Tanks/Ponds
			Canals	Others	
			0	27880	1938
			0		

E GEOLOGY & HYDROGEOLOGY			
1.	Predominant rocktype	:	Sand, Silt, Clay and Kankar
2.	Major geological formations	:	Older & Newer Alluvium
3.	Important water-bearing formations	:	Sand & Silt mixed with Kankar at some places
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	0	0	7	34	41
2.	Monitoring mechanism (Nos.)	:	Manual		DWLR		Telemetry	
			CGWB	SGWB	CGWB	SGWB	CGWB	SGWB
			4	16	0	18	0	18
3.	Monitoring frequency	:	Agency	No. of times monitored/year				
			CGWB	2 times/year Pre and Post Monsoon				
			SGWB	2 times/year Pre and Post Monsoon				
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)		6.6 (Mustfabad)			23.10 (Rattangarh)		
	Post-monsoon (2023)		6.26 (Ramba)			24.50 (Rattangarh)		
6.	Seasonal WL fluctuation range (m)	:	Minimum/ Village			Maximum/ Village		
			-4.6 (Nalvipar)			5.2 (Pundrak)		

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	0	0	9	28	37
2.	Monitoring frequency		Agency	No. of times monitored/year				
			CGWB	1 time				
			SGWB	1 time				
3.	Period of water quality data availability		Agency	Period of WQ data availability (Years)				
			CGWB	2015 to 2023				
			SGWB	2020 to 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				
			I&WRD	pH, EC, TH, Ca, Mg, Na, K, CO ₃ , HCO ₃ , SO ₄ , Cl, F, NO ₃				
5.	Known ground water quality issues, if any		As such there is no ground water problem in Karnal Block					

H. GROUND WATER RESOURCES							
1.	Latest assessment year	2022					
2.	Assessment Unit	Block					
3.	Annual extractable GW resource (ha.m)	9990.65					
4.	Current annual GW extraction (ha.m)	16931.68					
5.	Net GW availability for future use (ha.m)	0					
6.	Stage of GW extraction (%)	169.48%					
7.	Category of block/taluk (2022)	Over Exploited					
8.	Category of block/taluk/ in previous assessments	2020	2017	2013	2011	2009	2004
		Over Exploited	Over Exploited	Over Exploited	Over Exploited	Over Exploited	Over Exploited

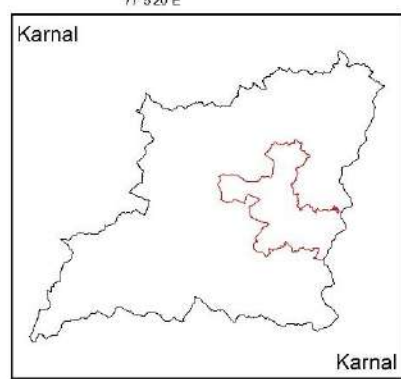
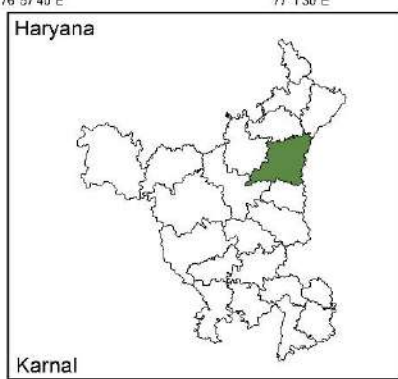
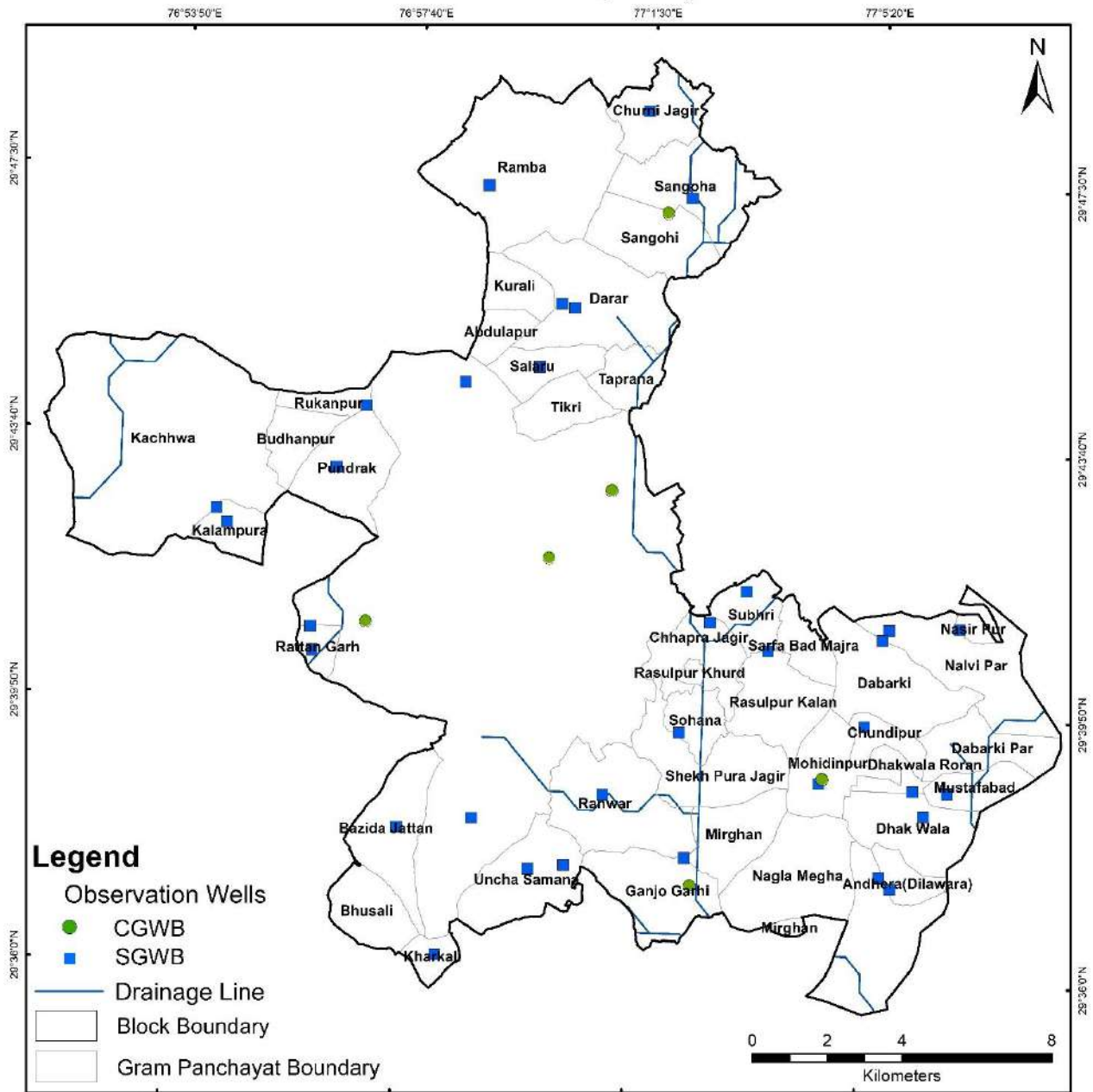
I WATER-RELATED SCHEMES

1.	Schemes with a bearing on ground water, being implemented in the block / taluk.		
	Centrally Sponsored /Central Sector Schemes	i)	PMKSY
		ii)	JJM
		iii)	MGNREGA
		iv)	RKVY
	State Schemes	i)	State Plan Scheme (Head 2402)
		ii)	MPMV
		iii)	
		iv)	

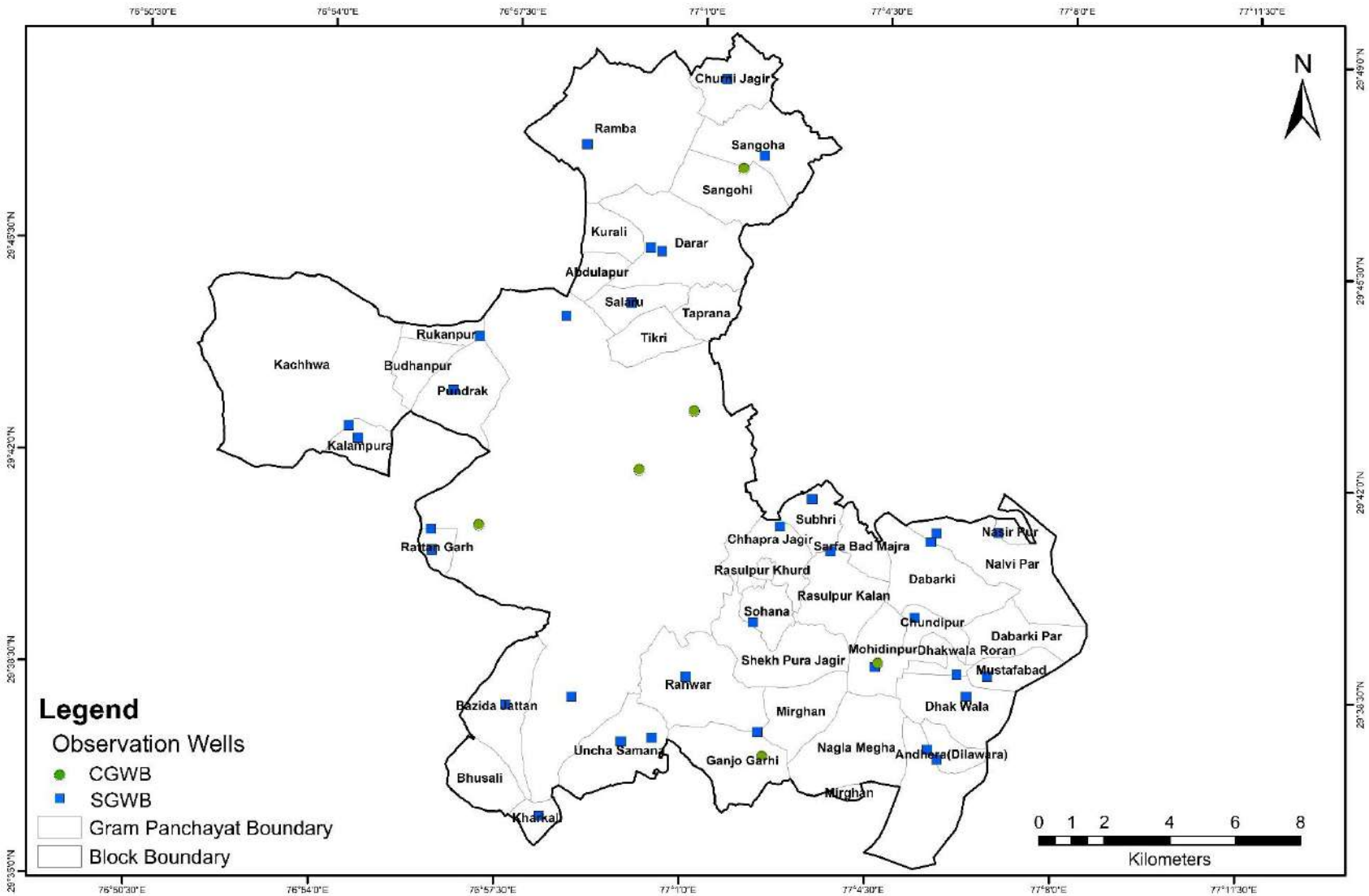
J	GROUND WATER RELATED ISSUES		
1.	Ground water related issues of the block/		
	i) Issues related to GW availability	:	Due to over exploitation of Groundwater subsequently the present stage of ground water extraction is 169.48%
	ii) Issues related to GW quality	:	Ground water is alkaline in nature and is fresh to moderately saline.
	iii) Other issues if any.	:	No

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

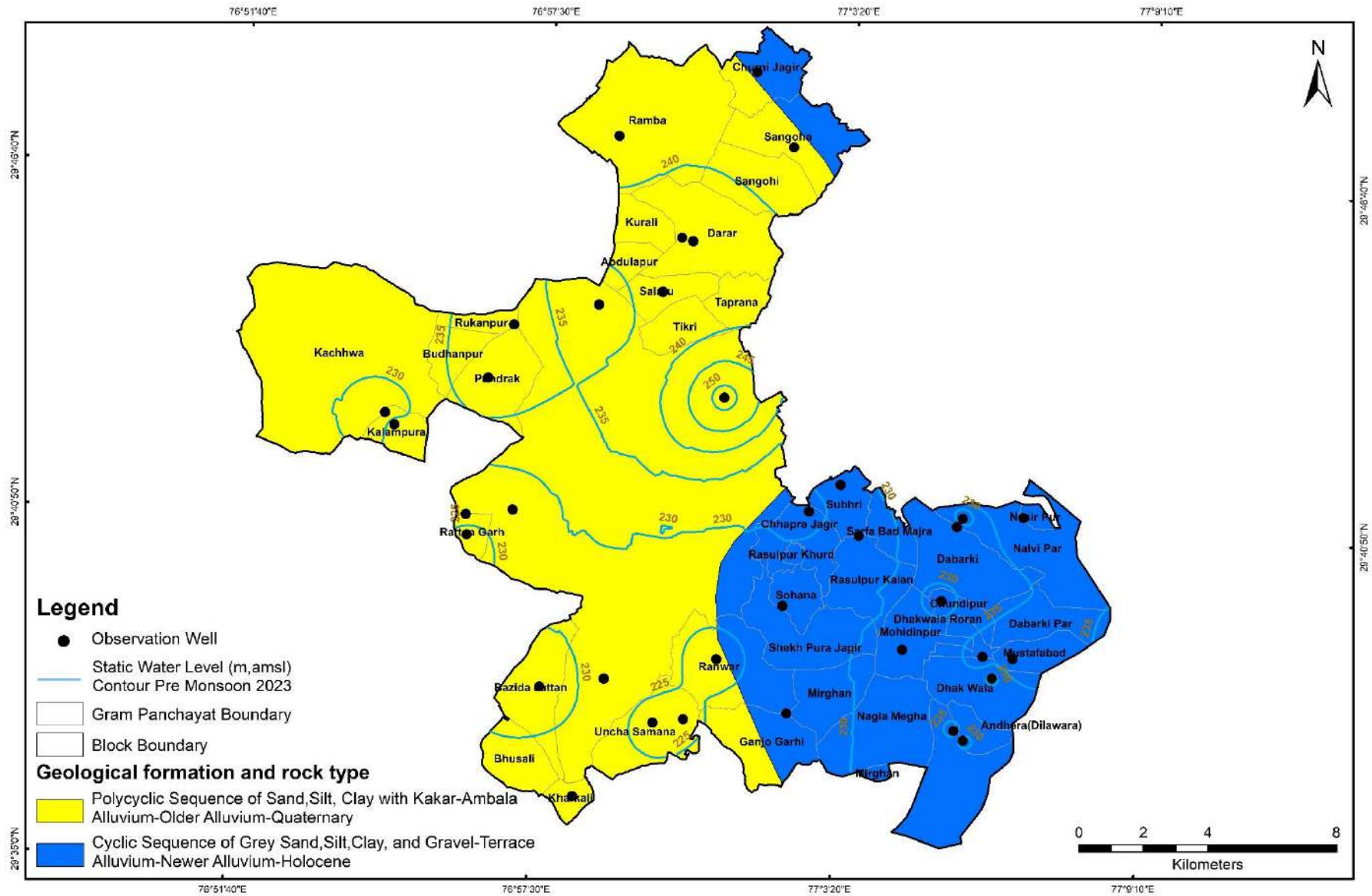
Location Map of Block- Karnal, District- Karnal, Haryana



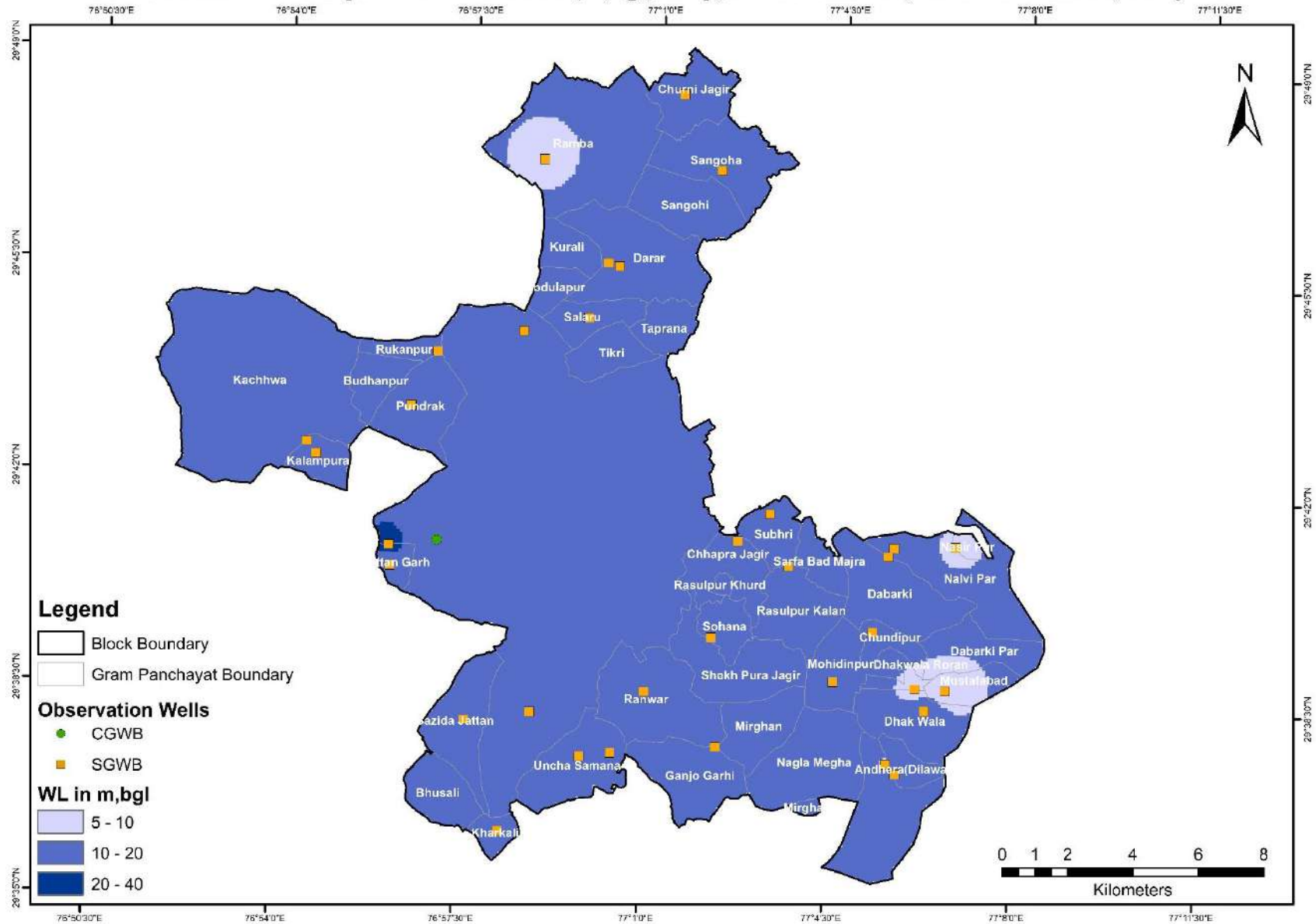
Location of Observation Wells for Monitoring Water Levels and Water Quality, Block-Karnal, District- Karnal, Haryana



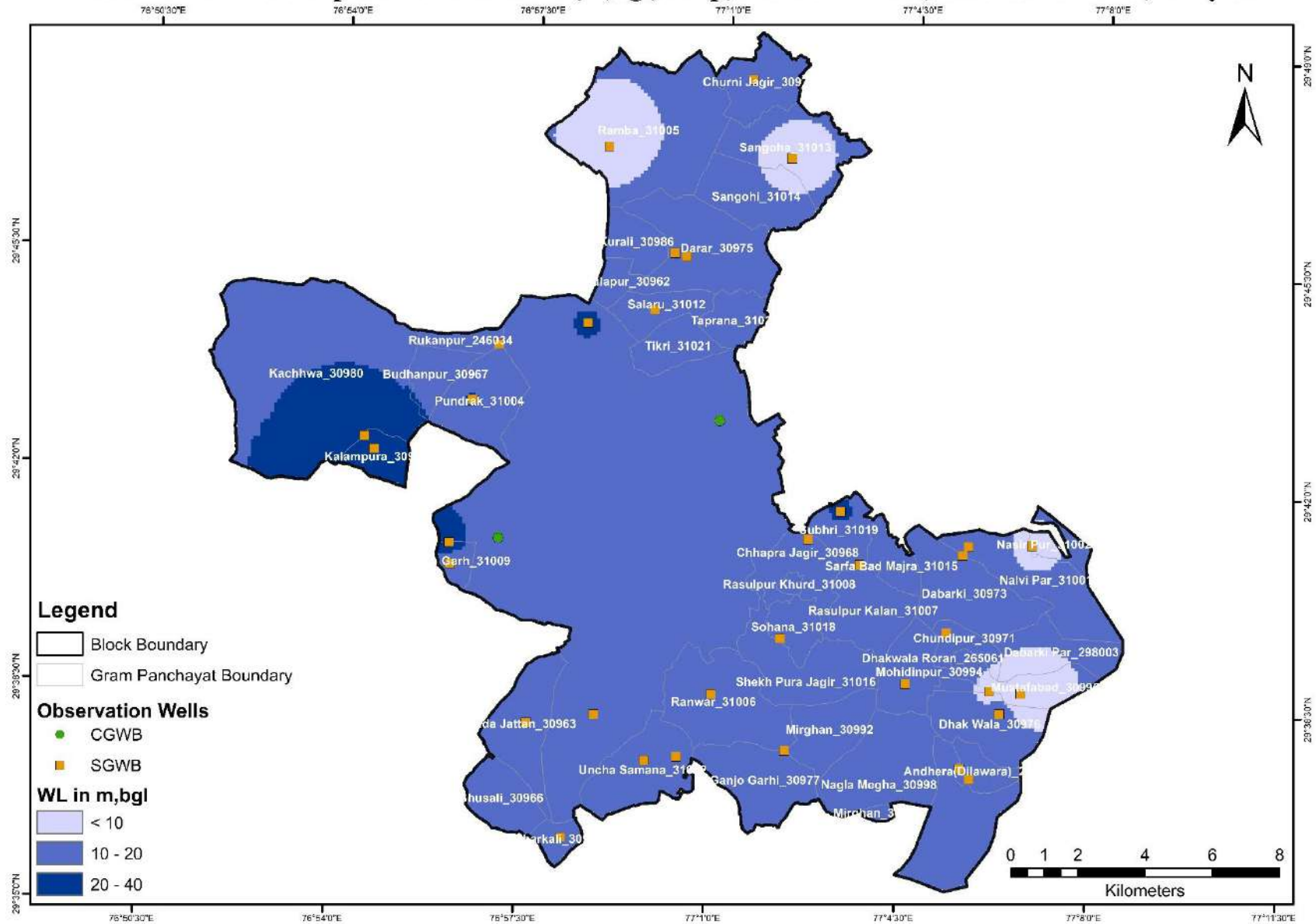
Hydrogeological Map, Block- Karnal, District- Karnal, Haryana



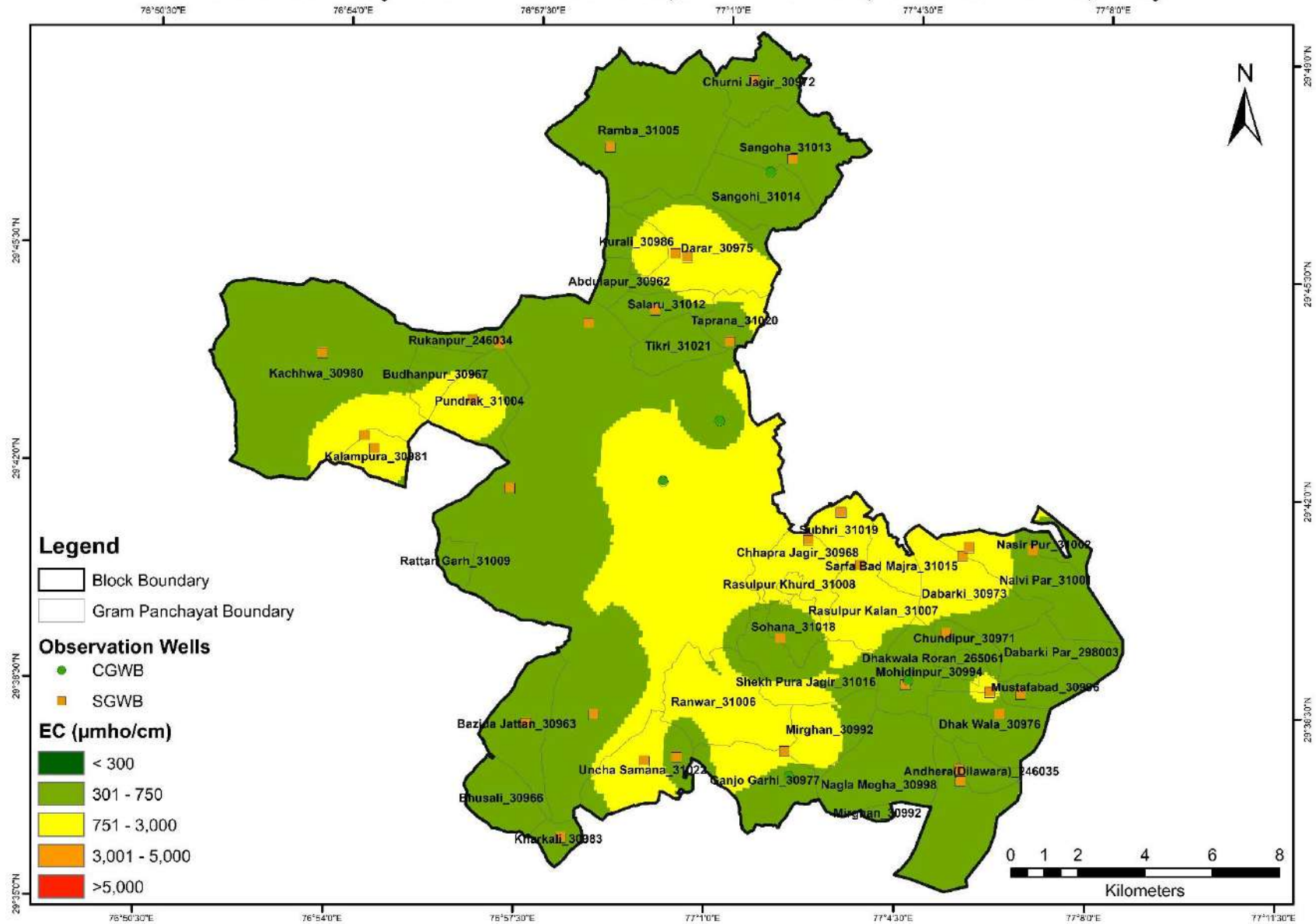
Pre Monsoon 2023 Depth to Water Level (m,bgl) Map, Block - Karnal, District - Karnal, Haryana



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



Electrical Conductivity of Groundwater-2023, Block - Karnal, District - Karnal, Haryana



ANNEXURE: 1
BASIC DATA OF MONITORING WELLS

State	Haryana	District	Karnal	Block	Karnal
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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	Ch_29.662_77.089	Chundipur_30971	Chundipur	Govt. Middle School.	29.661717	77.08854	TW	242.6	Unconfined to Semi Confined	0.7	106.4	0.254	Both	Manual	SGWB
2	An_29.622_77.094	Andhera(Dilawara)_246035	Andhera	Near Veterinary Hospital	29.6224	77.0943	TW	242.5	Unconfined to Semi Confined	0.7	18.2	0.254	Both	Manual	SGWB
3	Ka_29.731_76.894	Kachhwa_30980	Kachhwa	Veterinary Hospital	29.731246	76.89407	PZ	247.65	Unconfined to Semi Confined	0.62	58	0.1	Both	Manual	SGWB
4	Ka_29.706_76.911	Kalampura_30981	Kalampura	In front of Goga Mehri.	29.70597	76.91111	TW	250.25	Unconfined to Semi Confined	0.2	103.7	0.254	Both	Manual	SGWB
5	Mu_29.646_77.112	Mustafabad_30996	Mustafabad	Govt. Primary School.	29.646185	77.11194	PZ	246.75	Unconfined to Semi Confined	0.62	60	0.1	Both	Manual	SGWB
6	Na_29.685_77.095	Nalvi Par_31001	Nalipar	Govt. High school.	29.685042	77.09454	PZ	242.45	Unconfined to Semi Confined	0.62	59.5	0.1	Both	Manual	SGWB
7	Na_29.685_77.114	Nasir Pur_31002	Nasirpur	Govt. Middle School.	29.68457	77.11406	PZ	247.25	Unconfined to Semi Confined	0.62	52	0.1	Both	Manual	SGWB

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8	Pu_29.72_76.941	Pundrak_31004	Pundrak	Govt SR. Sec. School	29.720039	76.94072	PZ	252.07	Unconfined to Semi Confined	0.62	62	0.1	Both	Manual	SGWB
9	Ra_29.789_76.98	Ramba_31005	Ramba	Govt. High School near West Yamuna River	29.789034	76.98017	PZ	254.5	Unconfined to Semi Confined	0.62	42.7	0.1	Both	Manual	SGWB
10	Ta_29.741_77.018	Taprana_31020	Taprana	Aagawadi Kendra Taprana	29.741534	77.018	PZ	244.75	Unconfined to Semi Confined	0.62	47	0.1	Both	Manual	SGWB
11	Su_29.693_77.055	Subhri_31019	Subri	Govt. Sr. Sec. School.	29.693347	77.05494	PZ	245.25	Unconfined to Semi Confined	0.62	60	0.1	Both	Manual	SGWB
12	Da_29.761_77.001	Darar_30975	Darar	Near CSC Darar	29.761111	77.00139	TW	248.32	Unconfined to Semi Confined	0.7	198.2	0.254	Both	Manual	SGWB
13	Ra_29.643_77.016	Ranwar_31006	Ranwar	Govt. High School.	29.643296	77.01699	Pz	NA	Unconfined to Semi Confined	0.5	53	0.1	WL	Manual	SGWB
14	Ka_29.637_76.981	Kambopura	Kambopura	On G.T. Road	29.636751	76.98117	Tube Well	NA	Unconfined to Semi Confined	NA	100	0.254	WL	Manual	SGWB
15	Ka_29.640_77.105	Dhak Wala_30976	Manglora	In the village settlement near road	29.640501	77.10556	Tube Well	NA	Unconfined to Semi Confined	NA	80	0.1	WL	Manual	SGWB
16	Uc_29.742_76.975	Uchana	Uchana	On the entrance of village.	29.741551	76.97546	Tube Well	NA	Unconfined to Semi Confined	NA	90	0.1	WL	Manual	SGWB
17	W282109076571701	Chorpur 1(D)	Chorpur 1(D)	Chorpur	29.796389	77.11667	Piezometer	NA	Unconfined to Semi Confined	NA	241	0.1	WL	Manual	CGWB

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18	W282109 076571701	Jaroli Khurd	Jaroli Khurd	Jaroli Khurd-Pz	29.745556	77.10417	Piezomete r	NA	Unconfined to Semi Confined	NA	90	0.1	WL	Manual	CGW B
19	W282109 076571701	Karnal D	Karnal D	Karnal D	29.694722	76.95	Piezomete r	NA	Unconfined to Semi Confined	NA	263	0.1	WL	Manual	CGW B
20	W282109 076571701	Nalvi Kalan	Nalvi Kalan	Nalvi Kalan-Pz	29.694722	77.09861	Piezomete r	NA	Unconfined to Semi Confined	NA	86	0.1	WL	Manual	CGW B
21	HR_GW_ 383	Andhera(Dil awara)_2460 35	Andhera	Governme nt Primary School, Andhera	29.625458	77.09383	PZ	246	Unconfined To Semi-Confined	0.5	57	0.1	Both	Telemetr y	SGWB
22	HR_GW_ 384	Bazida Jattan_30963	Bazida Jattan	Gram Sachivalay a, Bazida Jattan	29.633943	76.96056	PZ	248	Unconfined To Semi-Confined	0.5	41	0.1	Both	Telemetr y	SGWB
23	HR_GW_ 385	Chhapra Jagir_30968	Chhapra Jagir	Ambedkar Land, Chhapra Jagir.	29.685605	77.04511	PZ	247	Unconfined To Semi-Confined	0.5	57	0.1	Both	Telemetr y	SGWB
24	HR_GW_ 386	Churni Jagir_30972	Churni Jagir	Governme nt Primary School, Churni Jagir	29.808224	77.02371	PZ	257	Unconfined To Semi-Confined	0.5	77	0.1	Both	Telemetr y	SGWB
25	HR_GW_ 387	Dabarki_309 73	Dabarki	Governme nt Sr Sec School, Dabarki	29.682634	77.09276	PZ	246	Unconfined To Semi-Confined	0.5	69	0.1	Both	Telemetr y	SGWB
26	HR_GW_ 388	Darar_30975	Darar	Governme nt Sr Sec School, Darar	29.760252	77.00499	PZ	250	Unconfined To Semi-Confined	0.5	73	0.1	Both	Telemetr y	SGWB

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27	HR_GW_400	Dhakwala Roran_265061	Dhakwala Roran	Government Primary School, Dhakwala Roran	29.646454	77.10235	PZ	245	Unconfined To Semi-Confined	0.5	68	0.1	WL	Telemetry	SGWB
28	HR_GW_389	Ganjo Garhi_30977	Ganjo Garhi	Panchayat Ghar, Ganjogarhi	29.628801	77.04005	PZ	246	Unconfined To Semi-Confined	0.5	67	0.1	Both	Telemetry	SGWB
29	HR_GW_390	Kalampura_30981	Kalampura	Government High School, Kalampura	29.70936	76.90802	PZ	248	Unconfined To Semi-Confined	0.5	72	0.1	Both	Telemetry	SGWB
30	HR_GW_391	Kharkali_30983	Kharkali	Government Primary School, Kharkali	29.603562	76.9723	PZ	245	Unconfined To Semi-Confined	0.5	69	0.1	Both	Telemetry	SGWB
31	HR_GW_392	Mohidinpur_30994	Mohidinpur	Government Sr. Sec. School, Mohidinpur	29.647724	77.07645	PZ	245	Unconfined To Semi-Confined	0.5	67	0.1	Both	Telemetry	SGWB
32	HR_GW_399	Rasulpur Kalan_31007	Rasulpur Kalan	Community Banquet Hall, Rasulpur Kalan	29.679217	77.06128	PZ	240	Unconfined To Semi-Confined	0.5	67	0.1	Both	Telemetry	SGWB
33	HR_GW_393	Rattan Garh_31009	Rattangarh	Vyamshala ground, Rattangarh.	29.675877	76.93554	PZ	247	Unconfined To Semi-Confined	0.5	69	0.1	WL	Telemetry	SGWB
34	HR_GW_394	Rukanpur_246034	Rukanpur	Shamshan Ghat, Rukanpur	29.735178	76.94843	PZ	252	Unconfined To Semi-Confined	0.5	73	0.1	Both	Telemetry	SGWB

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35	HR_GW_397	Salaru_31012	Salaru	Government Primary School, Salaru	29.745756	76.99581	PZ	253	Unconfined To Semi-Confined	0.5	76	0.1	Both	Telemetry	SGWB
36	HR_GW_395	Sangoha_31013	Sangoha	Punjabi Dharmshala, Sangoha	29.787516	77.03632	PZ	252	Unconfined To Semi-Confined	0.5	73	0.1	Both	Telemetry	SGWB
37	HR_GW_396	Sohana_31018	Sohana	Government Primary School, Sohana	29.658863	77.0376	PZ	246	Unconfined To Semi-Confined	0.5	77	0.1	Both	Telemetry	SGWB
38	HR_GW_398	Uncha Samana_31022	Uncha Samana	Shamshan Ghat, Uncha Samana.	29.626179	77.00699	PZ	243	Unconfined To Semi-Confined	0.5	76	0.1	Both	Telemetry	SGWB
39	W294300077010002	Shekh Pura Jagir_31016	Sekhpura 1(m)	Sekhpura 1(m)-Pz	29.872594	77.01037	PZ	NA	Unconfined to Semi Confined	0.5	134.5	0.1	WL	Manual	CGWB
40	W294626076442903	Amupur Chakda	Amupur Chakda	Amupur Chakda	29.773889	76.74139	Hand Pump	248	Alluvium	1	NA	0.152	WQ	Manual	CGWB
41	W294700077070001	Chorpur	Chorpur	Chorpur	29.783333	77.11667	Hand Pump	NA	Alluvium	NA	241	NA	Both	Manual	CGWB
42	W294557076582001	Dadupur Khurd	Dadupur Khurd	Dadupur Khurd	29.767222	77.9725	Tube Well	235	Alluvium	0.6	NA	0.152	WQ	Manual	CGWB
43	W293720077023001	Ganjo Garhi_30977	Kairwali	Kairwali	29.622222	77.04167	Tube Well	245	Alluvium	1	NA	0.152	WQ	Manual	CGWB
44	W294100076570001	Karnal	Karnal	Karnal-CSSRI	29.7	77	Tube Well	NA	Alluvium	NA	NA	NA	WQ	Manual	CGWB
45	W293008077000501	Mohidinpur_30994	Mohidinpur	Mohidinpur	29.648889	77.07722	Tube Well	229	Alluvium	0.6	NA	0.152	WQ	Manual	CGWB
46	W294400077030003	Newal	Newal	Newal	29.723889	77.04667	Hand Pump	246	Alluvium	1.05	NA	0.101	WQ	Manual	CGWB

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47	San_29.74 9_76.994	Sangohi_3101 4	Sangoi	Sangoi	29.783889	77.02972	Tube Well	255	Alluvium	0.6	NA	0.152	WQ	Manual	CGW B
48	W2939150 77015301	Shekhpura	Shekhpur a	Shekhpura	29.716667	77.01667	Tube Well	NA	Alluvium	NA	NA	NA	WQ	Manual	CGW B

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

State	Haryana	District	Karnal	Block	Karnal
Month of Pre-monsoon Water Level Measurement					June
Month of Post-monsoon water Level measurement					October

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	Chundipur_3 0971	SGWB	Tube Well	29.66172	77.08854	20	19	20.8	20.2	21.6	20.7	23.6	20.9	19.3	NA	16.2	18	16.2	16.6	17	15.7	16.4	11.9
2	Andhera (Dilawara)_2 46035	SGWB	Tube Well	29.6228	77.09693	9.8	9.6	11.5	11.1	12.3	11.3	13.7	11.6	11	NA	11.2	10	12.3	11	12.9	11.1	13.7	12.6
3	Rattan Garh_31009	SGWB	Piezo meter	29.68156	76.93504	19	19	21.3	21.3	22	21.1	23.5	21.2	22.1	NA	22.1	23	22.3	22.1	21.8	23.6	23.1	24.5
4	Kalampura_3 0981	SGWB	Tube Well	29.70597	76.91111	14	17	19.4	19.2	20.2	19.5	21.7	20.5	22.4	NA	22.1	23	22.3	21.8	22	23	19.4	21.5
5	Kambopura	SGWB	Tube Well	29.63675	76.98117	18	17	20	19.4	20.5	20.8	22	20.9	23	NA	19.6	20	21.1	19.7	19.2	19.6	19.6	18.8
6	Dhak Wala_30976	SGWB	Tube Well	29.6405	77.10556	11	11	13	12.2	13.7	13.2	15.2	13.6	12.7	NA	13	11	13.4	10.9	13.6	11.7	15	11.2
7	Mustafabad_ 30996	SGWB	Piezo meter	29.64619	77.11194	8.7	8.3	10	9.75	10.7	10.5	11.7	10.8	8.95	NA	9.33	7.1	9.15	5.6	8.2	5.45	6.6	6.62
8	Nalvi Par_31001	SGWB	Piezo meter	29.68504	77.09454	14	14	15.8	16	16.5	15.8	17.9	16	14.8	NA	13.6	13	14.6	12.9	14.5	11.8	15.9	11.3

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25	Churni Jagir_30972	SGWB	Piezo meter	29.80822	77.02371	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.6	11.2
26	Dabarki_30973	SGWB	Piezo meter	29.68263	77.09276	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.8	10.8
27	Darar_30975	SGWB	Piezo meter	29.76025	77.00499	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.1	13.7
28	Dhakwala Roran_265061	SGWB	Piezo meter	29.64645	77.10235	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.5	9.3
29	Ganjo Garhi_30977	SGWB	Piezo meter	29.6288	77.04005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.2	17.4
30	Kalampura_30981	SGWB	Piezo meter	29.70936	76.90802	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.9	21.8
31	Kharkali_30983	SGWB	Piezo meter	29.60356	76.9723	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.6	18.5
32	Mohidinpur_30994	SGWB	Piezo meter	29.64772	77.07645	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.3	19.3
33	Rasulpur Kalan_31007	SGWB	Piezo meter	29.67922	77.06128	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15	13.9
34	Rattan Garh_31009	SGWB	Piezo meter	29.67588	76.93554	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.8	15
35	Rukanpur_246034	SGWB	Piezo meter	29.73518	76.94843	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.4	16.7
36	Salaru_31012	SGWB	Piezo meter	29.74576	76.99581	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.2	15.6
37	Sangoha_31013	SGWB	Piezo meter	29.78752	77.03632	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.5	8.7
38	Sohana_31018	SGWB	Piezo meter	29.65886	77.0376	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.1	17.6
39	Uncha Samana_31022	SGWB	Piezo meter	29.62618	77.00699	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	18.3	18.7
40	Shekh Pura Jagir_31016	CGWB	Piezo meter	29.87259	77.01037	NA	19	26.1	19.6	22	NA	19.3	18.5	18.9	NA	NA	NA	24.7	24.7	18.2	NA	NA	NA	17.8

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

State	Haryana	District	Karnal	Block	Karnal
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	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2015	8.6	859	ND	173.5	12.3	34.7	120.0	7.3	93.6	273.7	10.0	31.3	0.66	2.40	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2016	8.8	825	ND	59.0	12.0	7.2	175.0	11.0	59.0	234.0	125.0	7.1	4.35	9.63	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2017	Sample not collected from this location														
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2018	8.24	715	ND	170.0	16.0	32.0	112.0	7.6	0.0	366.0	72.0	28.0	0.05	9.00	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2019	8.08	1342	ND	100.0	32.0	5.0	306.0	1.0	0.0	122.0	72.0	397.0	0.45	18.00	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2020	8.2	935	ND	210.0	24.0	36.0	148.0	12.0	0.0	500.0	45.0	43.0	0.71	11.00	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2021	8.1	2705	ND	942.5	136.1	146.5	202.0	12.0	0.0	181.7	729.0	306.6	0.27	17.00	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2022	8.01	2380	ND	840.0	112.0	136.2	176.0	7.4	0.0	174.0	638.0	276.0	0.24	14.00	
Amupur Chakda	CGWB	Hp	29.7593	76.7267	2023	7.51	2650	ND	910.0	184.0	109.4	178.0	16.0	0.0	439.2	384.0	347.9	0.48	26.00	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2015	8.75	908	ND	163.3	8.2	34.7	137.0	6.0	35.1	142.8	235.0	27.8	0.27	BDL	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2016	8.5	500	ND	143.0	37.0	12.0	65.0	4.2	37.0	149.0	82.0	10.0	0.33	0.81	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2017	8.5	1080	ND	190.0	28.0	29.0	175.0	6.3	38.0	192.0	288.0	28.0	0.35	13.00	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2018	8.48	635	ND	130.0	20.0	20.0	68.0	4.5	48.0	110.0	90.0	14.0	0.29	2.00	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2019	8.4	340	ND	80.0	16.0	10.0	76.2	1.2	36.0	109.0	BDL	64.0	0.63	3.01	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2020	8.38	672	ND	170.0	24.0	27.0	85.0	6.2	36.0	110.0	167.0	21.0	0.01	0.15	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2021	8.48	318	ND	94.6	16.8	12.8	33.0	1.4	24.0	134.2	0.0	14.2	0.11	0.00	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2022	8.52	345	ND	98.0	16.0	14.1	32.0	2.4	24.0	129.0	0.0	21.0	0.09	0.10	
Chorpur	CGWB	Hp	29.78333333	77.11666667	2023	8.42	500	ND	120.0	24.0	14.6	70.0	2.7	24.0	219.6	0.0	35.5	0.90	0.38	
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2015	Sample not collected from this location														
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2016	8.4	447	ND	157.0	43.0	12.0	39.0	5.7	23.0	192.0	25.0	14.0	0.69	2.12	
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2017	8.1	460	ND	170.0	40.0	17.0	41.0	4.8	0.0	231.0	50.0	14.0	0.73	2.22	

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Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2018	8.2	465	ND	130.0	12.0	24.0	46.0	6.1	0.0	220.0	7.0	35.0	0.05	0.20	
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2019	Sample not collected from this location														
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2020	8.51	538	ND	170.0	16.0	32.0	61.0	8.4	60.0	195.0	0.0	43.0	0.10	0.71	
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2021	8.65	838	ND	262.7	25.3	48.5	76.0	1.4	36.0	207.5	35.0	70.9	0.51	60.00	
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2022	8.42	490	ND	172.0	20.0	29.7	39.0	1.0	32.0	162.0	0.0	35.0	0.37	38.00	
Dadupur Khurd	CGWB	Tw	29.76722222	77.9725	2023	Sample not collected from this location														
Kairwali	CGWB	Tw	29.622	77.042	2015	8.45	934	ND	336.9	45.0	54.6	65.0	7.4	29.3	89.2	170.0	118.1	0.65	21.00	
Kairwali	CGWB	Tw	29.622	77.042	2016	8.25	1063	ND	439.0	86.0	55.0	65.0	7.5	0.0	224.0	214.0	118.0	0.66	11.00	
Kairwali	CGWB	Tw	29.622	77.042	2017	8.46	776	ND	278.0	62.0	30.0	58.0	8.0	38.0	243.0	35.0	62.0	0.43	27.00	
Kairwali	CGWB	Tw	29.622	77.042	2018	8.63	600	ND	120.0	16.0	20.0	79.0	3.4	48.0	183.0	41.0	14.0	0.82	1.00	
Kairwali	CGWB	Tw	29.622	77.042	2019	8.71	467	ND	100.0	24.0	9.7	76.2	1.0	24.0	232.0	2.9	21.0	0.11	0.20	
Kairwali	CGWB	Tw	29.622	77.042	2020	8.52	485	ND	140.1	20.0	21.9	71.0	3.4	48.0	207.5	20.0	14.2	0.11	0.88	
Kairwali	CGWB	Tw	29.622	77.042	2021	8.7	467	ND	168.1	16.8	30.6	39.0	0.5	36.0	219.7	0.0	14.2	0.14	0.22	
Kairwali	CGWB	Tw	29.622	77.042	2022	8.21	565	ND	188.0	19.0	34.2	40.0	0.8	0.0	254.0	14.0	35.0	0.18	1.20	
Kairwali	CGWB	Tw	29.622	77.042	2023	7.94	456	ND	200.0	20.0	36.5	26.0	4.4	0.0	183.0	0.0	71.0	1.60	0.26	
Karnal	CGWB	Tw	29.7	77	2015	Sample not collected from this location														
Karnal	CGWB	Tw	29.7	77	2016	8.39	500	ND	186.0	20.0	33.0	38.0	8.5	35.0	179.0	42.0	14.0	0.67	5.37	
Karnal	CGWB	Tw	29.7	77	2017	8.27	580	ND	206.0	41.0	25.0	59.0	5.2	0.0	299.0	55.0	21.0	0.43	2.32	
Karnal	CGWB	Tw	29.7	77	2018	8.22	720	ND	220.0	20.0	41.0	80.0	7.2	0.0	305.0	97.0	28.0	0.82	11.00	
Karnal	CGWB	Tw	29.7	77	2019	8.66	540	ND	200.0	56.0	15.0	63.2	4.8	60.0	183.0	32.0	35.0	0.64	5.40	
Karnal	CGWB	Tw	29.7	77	2020	8.51	591	ND	180.0	16.0	34.0	49.0	6.9	36.0	232.0	0.0	21.0	5.50	0.68	
Karnal	CGWB	Tw	29.7	77	2021	8.72	579	ND	231.2	21.0	43.4	32.0	5.4	48.0	219.7	0.0	21.3	0.54	5.80	
Karnal	CGWB	Tw	29.7	77	2022	8.51	617	ND	245.0	22.0	46.2	30.0	4.1	48.0	237.0	0.0	21.0	0.47	2.70	
Karnal	CGWB	Tw	29.7	77	2023	7.99	830	ND	260.0	40.0	38.9	96.2	7.6	0.0	463.6	0.0	56.8	1.20	9.07	
Mohidinpur	CGWB	Tw	29.64888889	77.07722222	2015	Sample not collected from this location														
Mohidinpur	CGWB	Tw	29.64888889	77.07722222	2016	8.7	475	ND	59.0	24.0	ND	94.0	1.6	47.0	156.0	41.0	7.1	0.79	BDL	
Mohidinpur	CGWB	Tw	29.64888889	77.07722222	2017	8.65	560	ND	114.0	29.0	10.0	95.0	1.9	59.0	179.0	58.0	7.1	0.89	BDL	
Mohidinpur	CGWB	Tw	29.64888889	77.07722222	2018	8.22	550	ND	70.0	12.0	10.0	105.0	2.7	0.0	232.0	74.0	21.0	0.82	2.00	
Mohidinpur	CGWB	Tw	29.64888889	77.07722222	2019	8.53	481	ND	90.0	20.0	9.7	81.7	1.0	24.0	220.0	23.0	14.0	0.78	0.20	

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Shekhpura	CGWB	Tw	29.717	77.017	2022	8.02	665	ND	174.0	18.0	31.4	72.0	6.8	0.0	221.0	88.0	41.0	0.39	4.10
Shekhpura	CGWB	Tw	29.717	77.017	2023	7.68	650	ND	205.0	36.0	28.0	50.0	4.0	0.0	280.6	24.0	42.6	0.52	0.47
Bazida Jattan_30963	SGWB	Pz	29.633943	76.960557	2023	7.58	591	336.87	172.68	53.24	9.64	38	12.1	0	148	27.5	92.6	0.34	24.2
Mohidinpur_30994	SGWB	Pz	29.647724	77.076454	2023	7.67	816	530.4	271.36	84.79	14.4	59.9	19	0	238	43.4	147	0.87	38.1
Sangoha_31013	SGWB	Pz	29.787516	77.03632	2023	7.69	724	427.16	222.02	67.04	13.2	48.2	15.3	0	190	34.9	118	0.97	30.7
Sohana_31018	SGWB	Pz	29.658863	77.0376	2023	7.84	527	321.47	162.82	51.27	8.44	36.3	11.5	0	142	26.3	87.8	0.34	23.1
Rukanpur_246034	SGWB	Pz	29.735178	76.948426	2023	7.9	503	296.77	152.95	47.32	8.44	33.5	10.6	0	130	24.2	80.7	0.43	21.3
Dabarki_30973	SGWB	Pz	29.682634	77.092761	2023	7.99	760	486.4	251.63	76.9	14.4	54.9	17.5	0	220	39.8	135	0.68	35
Darar_30975	SGWB	Pz	29.760252	77.004985	2023	7.99	821	541.86	281.23	84.79	16.8	61.2	19.5	0	243	44.3	149	0.34	39
Kharkali_30983	SGWB	Pz	29.603562	76.972304	2023	8.08	687	425.94	217.09	67.04	12	48.1	15.3	0	190	34.8	118	1.01	30.6
Rasulpur Kalan_31007	SGWB	Pz	29.679217	77.061277	2023	8.25	769	476.78	246.69	74.93	14.4	53.8	17.1	0	214	39	133	0.66	34.3
Salaru_31012	SGWB	Pz	29.745756	76.995812	2023	7.48	681	388	221.63	67.98	12.6	34.16	11.65	0	164.3	30.99	110.18	0.49	23.26
Churni Jagir_30972	SGWB	Pz	29.808224	77.023711	2023	7.55	661	376.77	192.42	59.16	10.8	42.5	13.5	0	166	30.8	104	0.23	27.1
Ganjo Garhi_30977	SGWB	Pz	29.628801	77.040051	2023	7.57	1253	801.92	414.45	128.1	22.9	90.6	28.8	0	362	65.6	223	1.12	57.7
Chhapra Jagir_30968	SGWB	Pz	29.685605	77.045113	2023	7.57	1279	741.82	384.84	118.3	21.7	83.8	26.7	0	339	60.8	206	1.33	53.3
Andhera(Dilawara)_246035	SGWB	Pz	29.625458	77.093827	2023	7.57	593	391.38	202.29	61.13	12	44.2	14	0	178	32	109	0.65	28.1
Kalampura_30981	SGWB	Pz	29.70936	76.90802	2023	7.96	812	470.96	241.76	74.93	13.2	53.2	16.9	0	214	38.6	130	0.54	33.9
Uncha Samana_31022	SGWB	Pz	29.626179	77.006992	2023	8.02	671	395.89	202.29	63.1	10.8	44.7	14.2	0	178	32.4	109	0.65	28.5

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
Karnal_67	Karnal_514	SGWB	Kachwa	29.7312	76.8941	700	700	700	650
Karnal_67	Karnal_514	SGWB	Pundrak	29.72	76.9407	550	600	600	850
Karnal_67	Karnal_514	SGWB	Uchana	29.7416	76.9755	620	650	650	600

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Karnal_67	Karnal_514	SGWB	Darar	29.76111	77.00139	980	900	900	900
Karnal_67	Karnal_514	SGWB	Karnal	29.6967	76.953	630	600	650	650
Karnal_67	Karnal_514	SGWB	Phusgarh	29.4149	77.015	500	500	550	500
Karnal_67	Karnal_514	SGWB	Kambopura	29.6368	76.9812	NA	550	650	700
Karnal_67	Karnal_514	SGWB	Chundipur	29.6617	77.0885	750	750	700	750
Karnal_67	Karnal_514	SGWB	Subri	29.6933	77.0549	840	800	750	1400
Karnal_67	Karnal_514	SGWB	Nalipar	29.685	77.0945	480	500	550	950
Karnal_67	Karnal_514	SGWB	Andhera	29.6224	77.0943	545	550	600	500
Karnal_67	Karnal_514	SGWB	Nasirpur	29.6846	77.1141	500	600	500	700
Karnal_67	Karnal_514	SGWB	Mustfabad	29.6462	77.1119	640	650	650	350
Karnal_67	Karnal_514	SGWB	Kalampura	29.706	76.9111	780	750	750	750
Karnal_67	Karnal_514	SGWB	Manglora	29.6405	77.1056	590	600	600	500
Karnal_67	Karnal_514	SGWB	Ramba	29.789	76.9802	650	650	500	300
Karnal_67	Karnal_514	SGWB	Ranwar	29.6249	76.9972	560	600	550	900
Karnal_67	Karnal_514	SGWB	Taprana	29.738	77.019	500	500	600	700
Karnal_67	Karnal_514	SGWB	Bazida Jattan_30963	29.63394	76.96056	NA	NA	NA	591

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Karnal_67	Karnal_514	SGWB	Mohidinpur_30994	29.64772	77.07645	NA	NA	NA	816
Karnal_67	Karnal_514	SGWB	Sangotha_31013	29.78752	77.03632	NA	NA	NA	724
Karnal_67	Karnal_514	SGWB	Sohana_31018	29.65886	77.0376	NA	NA	NA	527
Karnal_67	Karnal_514	SGWB	Rukanpur_246034	29.73518	76.94843	NA	NA	NA	503
Karnal_67	Karnal_514	SGWB	Dabarki_30973	29.68263	77.09276	NA	NA	NA	760
Karnal_67	Karnal_514	SGWB	Darar_30975	29.76025	77.00499	NA	NA	NA	821
Karnal_67	Karnal_514	SGWB	Kharkali_30983	29.60356	76.9723	NA	NA	NA	687
Karnal_67	Karnal_514	SGWB	Rasulpur Kalan_31007	29.67922	77.06128	NA	NA	NA	769
Karnal_67	Karnal_514	SGWB	Salaru_31012	29.74576	76.99581	NA	NA	NA	681
Karnal_67	Karnal_514	SGWB	Churni Jagir_30972	29.80822	77.02371	NA	NA	NA	661
Karnal_67	Karnal_514	SGWB	Ganjo Garhi_30977	29.6288	77.04005	NA	NA	NA	1253
Karnal_67	Karnal_514	SGWB	Chhapra Jagir_30968	29.68561	77.04511	NA	NA	NA	1279
Karnal_67	Karnal_514	SGWB	Andhera(Dilawara)_246035	29.62546	77.09383	NA	NA	NA	593
Karnal_67	Karnal_514	SGWB	Kalampura_30981	29.70936	76.90802	NA	NA	NA	812

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Karnal_67	Karnal_514	SGWB	Uncha Samana_31022	29.62618	77.00699	NA	NA	NA	671
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