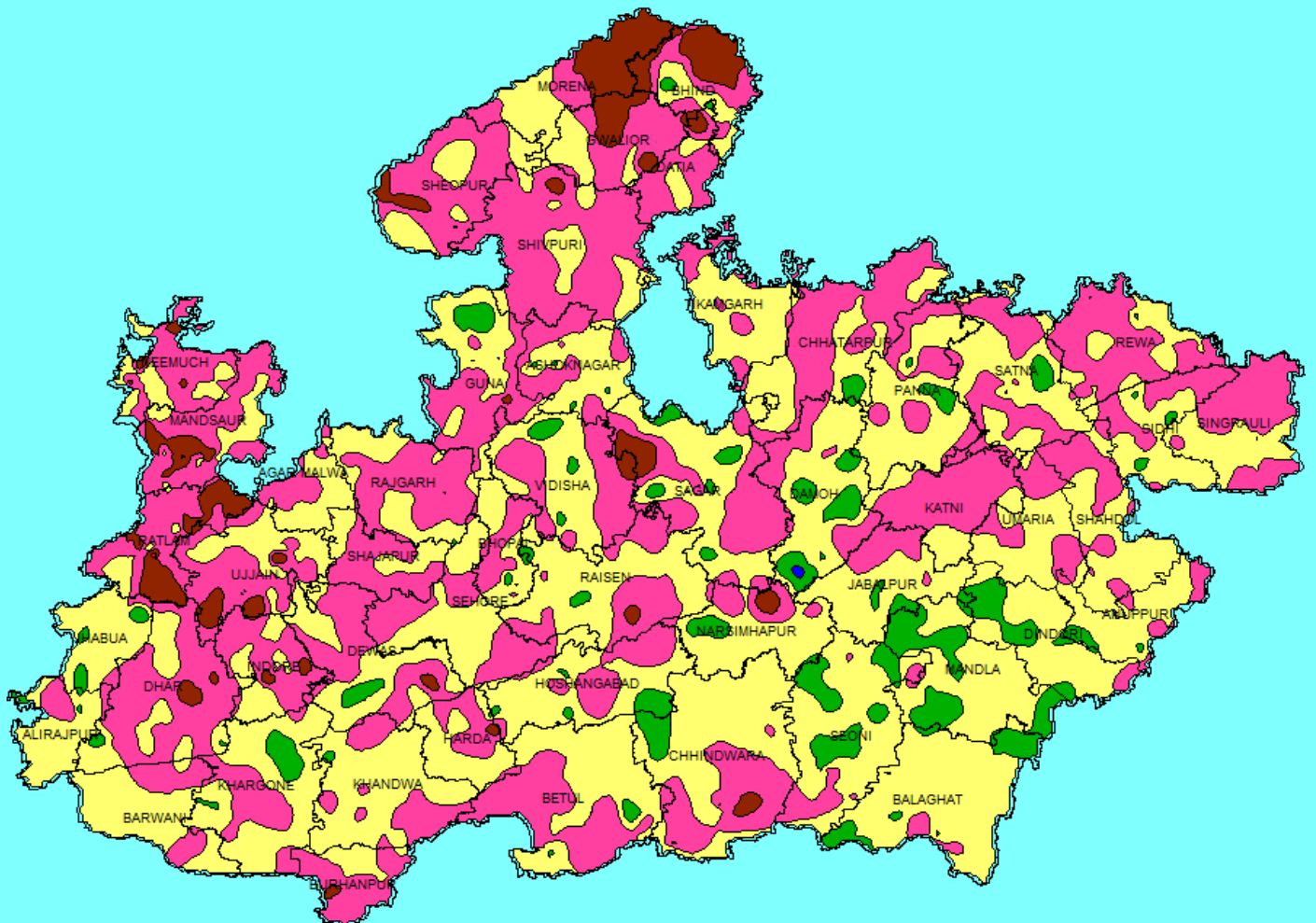




# Ground Water Year Book - Madhya Pradesh (2016-17)



**Central Ground Water Board**  
North Central Region  
**Ministry of Water Resources, River Development and Ganga Rejuvenation**  
**Government of India**

January 2018



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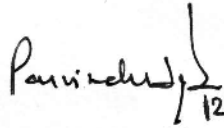
**January 2018**

## FOREWORD

Ground Water is of fundamental importance to meet the rapidly expanding drinking, agricultural and industrial water requirement of the country. Periodic monitoring of the ground water regime is an essential prerequisite for effective planning, management and sustenance of quantity as well quality of this precious resource. To keep track of the changes in ground water regime, Central Ground Water Board monitors ground water level four times in a year, i.e. during May, August, November and January, through a network of Ground Water monitoring Wells scattered throughout the length and breadth of the country. The present report gives an overview of the status of ground water level monitored during the water year 2016-17 by the officers of Central Ground Water Board in the State of Madhya Pradesh. Presently there are 1487 as on 31.03.2016 and 1529 as on 31.03.2017, Ground Water monitoring Wells under this programme in entire Madhya Pradesh.

Water samples are collected once in a year during May and are subjected to detailed chemical analysis to monitor the changes in chemical quality of ground water. Water samples are also collected for selected stations for every year in May for analysis of heavy metals. The water level and water quality data so generated are updated and stored in computer and subjected to rigorous analyses using the latest software. The results of the analyses are reflected in the periodic reports on Status of Ground Water Level, which are usually issued within a month of completion of each monitoring. As such, four reports are issued every year beside the Ground Water Year Book, which is published annually. The presents report deals with the cumulative action of the work done during the water year 2016-17. During this water year, the existing network stations were monitored during May 2016, August 2016, November 2016 and January 2017.

The ground water regime monitoring work is a joint endeavor of all the officers and staff of this Region, and their contribution in this important activity is highly appreciated. Preparation of this report has been an arduous task which has been successfully completed by *Shri R. M. Verma, Scientist D (Hydrogeology) and Shri Tej Singh, Assistant Chemist*. I hope that the State Government and other user agencies would utilize the data incorporated in the report for proper planning of the ground water development and management activities in the State.

  
(Parvinder Singh) 12/1/18  
Regional Director

## **EXECUTIVE SUMMARY**

Central Ground Water Board, North Central Region, monitors ground water levels in entire State of Madhya Pradesh through 1529 Ground Water Monitoring Wells, four times in a hydrological year in order to bring out the spatial and temporal changes in the ground water regime. This continuous monitoring provides a valuable tool to decipher the seasonal and long-term changes in ground water levels and quality, and in turn helps in managing the ground water resources in a more scientific and effective manner. The present report incorporates the overall behavior of the ground water regime including the quality aspects in the State of Madhya Pradesh on the basis of the detailed analyses of the field data collected from observation wells during the water year 2016-17.

Total geographical area of Madhya Pradesh State is 3, 08,252 km<sup>2</sup>, which comprises fifty one districts. The State exhibits six distinct physiographic units namely the Malwa plateau, the Satpura range, The Vindhyan range, the Mahakoshal range, the Bundelkhand region and the river valleys. There are six river basins in Madhya Pradesh as six major rivers originate from the State namely Ganga basin (Yamuna sub basin - Chambal sub-sub basin, Kunwari sindh sub-sub basin, Jamni sub-sub basin, Betwa sub-sub basin, Dhasan sub-sub basin, Ken sub-sub basin, Paisuni and Waidhan sub sub basin, Tons sub basin, Sone sub basin), Narmada basin, Godavari basin, Tapti basin, Mahi basin and Mahanadi basin.

Central Ground Water Board, North Central Region has set up a network of monitoring wells spread over the State in different hydrogeological conditions, consisting of 1204 Dugwells and 325 Piezometers, which are being monitored four times in a year. The periods of monitoring are – January 1<sup>st</sup> to 10<sup>th</sup>, May 20<sup>th</sup> to 30<sup>th</sup>, August 20<sup>th</sup> to 30<sup>th</sup> and November 1<sup>st</sup> to 10<sup>th</sup>. Water samples are being collected for analysis during the month of May, when concentrations of different chemical constituents are expected to be highest.

The State has varied hydrogeological set-up due to which ground water potential differs from place to place. The area is underlain by various geological formations ranging in age from Archaean to Recent. Hard rock areas cover more than 80% of total land area of the State. These hard rock areas show wide variations and complexities in nature and composition of rocks, geological structures, geomorphological set up and hydrometeorological conditions. The crystalline rocks of Archaean age like granite, gneiss, granulites, schist, quartzite and granitoids occupy about 14.7% of geographical area of the State. The basaltic rocks of Deccan lava flows are the predominant formations and occupy nearly 44.5% of total geographical area. The consolidated sedimentary rocks of Vindhyan Super Group and Mahakoshal (Cuddapah) Super Group of Proterozoic age occupy about 19.1% of total geographical area and the semi consolidated (Gondwana Formation) occupies about 6.7%. Recent unconsolidated alluvial sediments occupy about 14.4% of total geographical area.

Monsoon rainfall is the sole source of natural recharge to ground water regime and rainfall pattern has an important impact on groundwater levels in the phreatic aquifer. Rainfall in the State occurs during south-west monsoon season (mid June to September) and sometimes during winter (November to February). Most of the rainfall (more than 90%) occurs during the south-west monsoon season, August being the rainiest month.

Monsoon rainfall within  $\pm 19\%$  of the normal monsoon rainfall is considered normal. Monsoon rainfall above 19% of the normal monsoon rainfall is considered excess and monsoon rainfall less than -19%



and more than -59% of the normal monsoon rainfall is considered deficit and if the monsoon rainfall is lesser than -59% of the normal monsoon rainfall, it is considered scanty.

The normal rainfall of the Madhya Pradesh State is 952.3 mm. About 1131 mm rainfall as an average of state rainfall was received during 2016 monsoon period. About 19.0% more rainfall has occurred during the year with respect to normal rainfall. The percent departures of the monsoon rainfall from the normal rainfall worked out, which show that all most entire state has received normal or more than normal rainfall except in Bhind, Morena, Datia, Gwalior and Balaghat districts. Hoshangabad rain gauge station has received the highest rainfall of 2101.3 mm and Datia rain gauge station has received the least rainfall of 526 mm.

The groundwater level monitored in May is the pre-monsoon water level and the water level as it stands at the end of the ground water year after all the inputs and outputs have taken place. It is the resultant ultimate/deepest water level. Depth to water level (DTW) during May 2016 ranged from 1.10 to 49.40 metres below ground level (mbgl) in Madhya Pradesh. About 0.44% percent of the wells in the state recorded a water level up to 2 m bgl, 10.59% between 2-5 m bgl, 45.70% between 5-10 m bgl, 37.48% between 10-20 m bgl, 4.96% between 20-40 m bgl and 0.81% in more than 40 m bgl. Depth to water levels between 5-10 m bgl is the most prominent over the entire State.

The groundwater level monitored in November is the post-monsoon water level and the water level as it stands after the major portion of rainfall recharge has taken place. Depth to water level (DTW) during November 2016 ranged from 0.01 m agl to 39.40 m bgl in Madhya Pradesh. 11.01% percent of the wells in the state recorded a water level up to 2 m bgl, 42.19% between 2-5 m bgl, 34.52% between 5-10 m bgl, 9.90% between 10-20 m bgl, and 2.38% between 20-40 m bgl and there is no well comes under more than 40 m bgl. Water level between 2-5 m bgl and 5-10 m bgl are most prominent over the entire state.

Ground water is a dynamic system. The ground water level or head is subject to change both due to natural and man made causes. Comparison of November 2016 water levels with that of May 2016 shows that there is a rise in the ground water level in about 94.33% of the wells due to monsoon recharge and only 5.67% of wells show decline in water level. Rise in the order of 0-2 m is seen in about 17.87% of wells in the state. 30.06% of wells show a rise in the order of 2-4 m. About 46.40% wells recorded a rise of water level by more than 4 m. About 4.83% of the wells show a decline in water level up to 2 m, 0.46% of the wells show a decline in water level between 2 to 4 m and no wells shows decline more than 4 m. Such a rise is a natural phenomenon in the hydrological cycle since the monsoon rainfall recharges the ground water regime.

Long term behaviour of water levels of the phreatic zone have been analysed by comparing the average water level data of last ten years with the current water level of different measurements during the year. The groundwater levels were influenced by monsoon rainfall received in the area during the year 2015. The ground water levels of May 2015 were compared with the 10 years May (2005-2014) average ground water levels to decipher the long-term changes in the ground water regime. It is observed that about 58.76% of the wells show rise and about 41.24% wells show decline in water levels in the state. The rise in water level is in the order of 0-2 m in 38.33% of the wells, 2-4 m in 12.52% of the wells and more than 4 m in about 7.91% of the wells. The decline in water levels in the order of 0-2 m is about 29.65% of the wells, between 2-4 m in 6.61% of the wells and more than 4 m in 4.99% of the wells.

Ground water levels trend map of pre-monsoon period (May 2007 to May 2016) shows that there is a general rising trend up to (0.10 m/year) of ground water levels during the past decade in the almost all the districts of the State. The rising trend at higher rate (0.10 to 0.2 m/year) is found in sporadic patches of smaller areal extent in Indore, Dewas, Sheopur, Gwalior, Panna, Satna and Shajapur district. The rising trend more than 0.20 m/year has been observed in Sheopur, Dewas, Damoh, Bhind, and in many districts of the State. Declining trend at a rate up to (-0.10 m/year) is observed in patches mainly in central and southern parts of the state. The declining trend at higher rate (-0.10 to -0.20 m/year) has been observed in almost all the districts of the state. The declining trend of pre-monsoon water levels reflects the ground water developmental activities in an area, whereas the rising trend indicates that either the developmental activities have reduced, or that, recharge due to sources other than the rainfall, such as applied irrigation has increased. About 37.5% of monitoring wells are showing declining water levels trend while 62.5 % monitoring wells are showing rising ground water level trend.

Ground water levels trend map of post-monsoon period (Nov 2007 to Nov 2016) shows that there is a general rising trend up to 0.10 m/year of ground water levels during the past decade in all most all the districts of the State. Rising trend at a rate 0.10 to 0.20 m/year is observed only in central and south eastern parts of the state. The rising trend at rate more than 0.20 m/year) is found north, northwestern and north eastern parts of the state. The declining trend up to 0.10 m/year has been observed in patches mainly in Southern and central parts of state. The declining trend at rate (-0.10 to -.20 m/year) is found in patches mainly in Betul, Chhindwara, Narsinghpur, and Jabalpur districts. Declining water levels trend more than (-0.20 m/year) has been observed only Betul, Narsinghgarh, Morena, Chhindwara and in many districts of the state. The declining trend in post-monsoon water levels suggests that a part of the aquifer is being dewatered every year, due either to deficient rainfall or to developmental activities. The rising post-monsoon trend, on the other hand, shows that additional water is being stored in the aquifer, due either to increased rainfall or to seepage through applied irrigation. About 33.6 % of monitoring wells are showing declining water levels trend while 66.4 % monitoring wells are showing rising ground water level trend.

1050 number of ground water samples was collected from the ground water monitoring wells during May 2014 in entire Madhya Pradesh State. The analyses of ground water samples indicate that ground water in state of Madhya Pradesh state is generally good. In most part of the State the ground water has low to medium salinity ( $EC \approx 1000 \mu\text{s/cm}$ ) except in few pockets. In some parts of the State very high electrical conductivity i.e. more than  $3000 \mu\text{s/cm}$  at  $25^\circ\text{C}$  (1.52%) has been recorded specially in Ashoknagar, Bhind, Damoh, Datia, Dewas, Gwalior, Khargone, Mandla, Neemuch, Sehore, Shajapur, Shivpuri and Ujjain districts.

1118 number of ground water samples was collected from the ground water monitoring wells during May 2015 in entire Madhya Pradesh State. The analyses of ground water samples indicate that ground water in state of Madhya Pradesh state is generally good. In most part of the State the ground water has low to medium salinity ( $EC \approx 1000 \mu\text{s/cm}$ ) except in few pockets. In some parts of the State very high electrical conductivity i.e. more than  $3000 \mu\text{s/cm}$  at  $25^\circ\text{C}$  (1.43%) has been recorded specially in Balaghat, Bhind, Damoh, Gwalior, Mandsaur, Sagar, Sheopur and Ujjain districts.

Fluoride concentration more than permissible limit i.e. 1.5 mg/l is observed in Agar Malwa, Anuppur, Barwani, Betul, Bhind, Chhindwara, Dewas, Dhar, Harda, Jabalpur, Shajapur, Tikamgarh and Ujjain districts. The maximum fluoride concentration has been observed at Barela (5.30 mg/l) Jabalpur

district. In Madhya Pradesh, 91.59% wells have been recorded fluoride concentration within the desirable limit of 1.0 mg/l where as 2.42% wells show fluoride concentration more than the maximum permissible limit of 1.5 mg/l.

The analyses of ground water samples indicate that 69.81% wells have nitrate concentration within the permissible limit of 45mg/l, while 30.14% wells have nitrate concentration above permissible limit. Nitrate concentration more than permissible limits have been observed in Agar Malwa, Alirajpur, Anuppur, Ashok Nagar, Balaghat, Barwani, Betul, Bhind, Bhopal, Burhanpur, Chhatarpur, Chhindwara, Damoh, Datia, Dewas, Dhar, Dindori, Guna, Gwalior, Harda, Hoshangabad, Indore, Jabalpur, Jhabua, Katni, Khandwa, Khargone, Mandla, Mandsaur, Morena, Narsinghpur, Neemuch, Panna, Raisen, Rajgarh, Ratlam, Rewa, Sagar, Satna, Sehore, Seoni, Shahdol, Shajapur, Sheopur, Shivpuri, Sidhi, Tikamgarh, Ujjain, Umariya, and Vidisha districts. Very high Nitrate concentration more than 3000 mg/l has been observed at Mau (348 mg/l), Bhind district observation wells.

Total Hardness in ground water samples ranges between 20 to 1400 mg/l. Most of the waters are calcium bicarbonate type attributing to temporary hardness of water. The analyses reveal that 6.08% of wells show hardness more than the permissible limit of 600 mg/l. In general the ground water is good for drinking purposes and suitable for irrigation.

# **GROUND WATER YEAR BOOK - MADHYA PRADESH (2016- 17)**

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# GROUND WATER YEAR BOOK - MADHYA PRADESH (2016- 17)

## 1. INTRODUCTION

Madhya Pradesh is located in the central part of India and is a land-locked State, bordered on the west by Gujarat, on the northwest by Rajasthan, on the northeast by Uttar Pradesh, on the east by Chhattisgarh, and on the south by Maharashtra. It has a geographical area of 3,08,252 km<sup>2</sup> and is situated between north latitudes 21° 04' and 26° 54' and east longitudes 74° 00' and 82° 50'. There are 51 districts and 313 Community Development blocks in Madhya Pradesh. The population of State as per census 2011 is 7,25,97,565 with a population density of 236 persons per Km<sup>2</sup> area. Out of total population, 75% lives in the villages and their main occupation is agriculture. The important urban areas in the State are Bhopal, Indore, Jabalpur, Ujjain and Gwalior. Dhupgarh in Pachmarhi is the highest point in the State.

Madhya Pradesh comprises several linguistically and culturally distinct regions, of which the major regions are:

**Malwa plateau** region is located in the northwest of the State and north of the Vindhya Range, with its distinct language and culture. Indore is the major city of the region, while Ujjain is a town of historical importance. Bhopal, the capital city lies on the extension of Malwa Region and on the edge of Bundelkhand region.

**Nimar region** is located in the western portion of the Narmada River valley, lying south of the Vindhyas in the southwest portion of the State. Khandwa, Khargone, Burhanpur and Barwani are the major district of the Nimar region.

**Bundelkhand** is a region of rolling hills and fertile valleys in the northern part of the State, which slopes down toward the Indo-Gangetic plain to the north. Gwalior is an historic center of the region. This region encompasses Gwalior, Sagar, Damoh, Panna, Chhatarpur and Tikamgarh Districts.

**Chambal region** is located in the north-western parts of the State. The climate is harsh, and the area is known for murderous pirates who were active in hundreds in the late 1900s. This region is comprised of Sheopur, Morena and Bhind districts.

**Baghelkhand** is a hilly region in the northeast parts of the State, which includes the eastern end of the Vindhya Range. Satna, Rewa and Sidhi districts lie in this region.

**Mahakoshal (Mahakaushal)** is the southeastern portion of the State, which includes the eastern end of the Narmada river valley and the eastern Satpuras. Jabalpur is the most important city in the region. Katni and Jabalpur districts lie in this region.

**Central Vindhyan and Satpura region** is occupying most parts of the central Narmada river valley. Hoshangabad, Harda, Narsimhapur districts lies in this region.

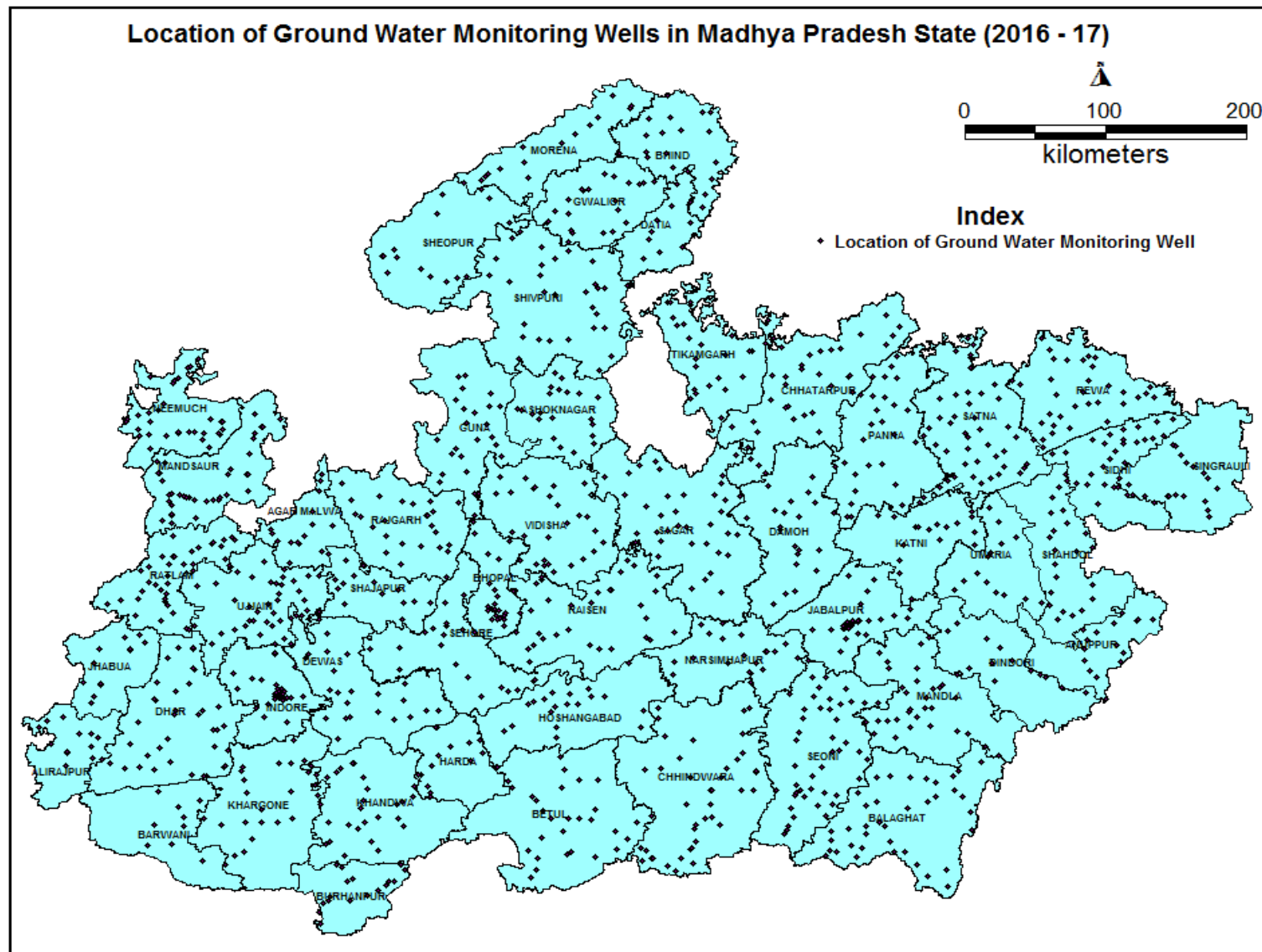
Agriculture is the main stay of the people of Madhya Pradesh State. Water is essential for irrigation purposes, but its indiscriminate use can lead not only to shortages, but also to the deterioration of crop yields and soils. Ground water resource of a region is one of the building blocks for balanced economic development of the area, especially in an agriculture based society. Dependence on ground water for irrigation and increasing water requirements in urban areas in Madhya Pradesh has necessitated judicious and planned uses of ground water resources in order to reach sustainability. For proper planning and management of ground water development in a judicious and socio-economically equitable manner, assessment of ground water scenario is one of the most important prerequisites.

Central Ground Water Board monitors ground water levels all over the country four times in a year in order to bring out the spatial and temporal changes in the ground water regime. This continuous monitoring provides a valuable tool to decipher the annuals, seasonal and long-term changes in ground water regime, and in turn helps in managing the ground water resources in a scientific manner.

The North Central Region office of Central Ground Water Board, based at Bhopal, monitor the ground water wells spread all over the state. As on start of the year i.e. 31-03-2016, the number of ground water monitoring well is 1487 which includes 1161 dugwells and 326 piezometers. During the year some new additional dug wells were established. Few of the exiting dugwells and Piezometers were declared as abandoned. At the close of the Year i.e 31-03-2017, the number of ground water monitoring well is 1529 which includes 1204 dugwells and 325 piezometers. District-wise distribution of Ground Water Monitoring Wells in Madhya Pradesh during 2016-17 is given in Table 1. The locations of these monitoring wells are shown in Figure 1. All monitoring wells are monitored four times in a given hydrological year in the months of August (20<sup>st</sup> to 30<sup>th</sup> day), November (postmonsoon) (1<sup>st</sup> to 10<sup>th</sup> day), January (1<sup>st</sup> to 10<sup>th</sup> day) and May (premonsoon) (20<sup>th</sup> to 30<sup>th</sup> day). The long-term data generated during these monitoring seasons are important for computation, comparison and analysis of ground water utilization and its availability.

Reports on the status of ground water levels are produced within one month from each monitoring period and contain analysis of ground water levels in that particular season, and compare these water levels with those of the same season previous year, premonsoon period and previous seasons of the same hydrological year and decadal mean (10 years of average) of the same season.

Fig 1



**Table 1 District-Wise Distribution of Ground Water Monitoring Wells in Madhya Pradesh State (2016-17)**

S No.	District	No of monitoring wells As on 31-03-2016			No of monitoring wells As on 31-03-2017		
		DW	PZ	Total	DW	PZ	Total
1	Agar Malwa	13	3	16	13	3	16
2	Alirajpur	12	2	14	12	2	14
3	Anuppur	17	5	22	20	5	25
4	Ashok Nagar	18	5	23	18	5	23
5	Balaghat	42	6	48	41	6	47
6	Barwani	9	2	11	9	2	11
7	Betul	27	5	32	28	4	32
8	Bhind	18	1	19	19	1	20
9	Bhopal	23	4	27	26	4	30
10	Burhanpur	14	0	14	17		17
11	Chhatarpur	32	7	39	32	7	39
12	Chhindwara	38	11	49	38	11	49
13	Damoh	21	6	27	21	7	28
14	Datia	10	0	10	12	0	12
15	Dewas	20	9	29	20	8	28
16	Dhar	26	19	45	26	19	45
17	Dindori	14	2	16	14	2	16
18	Guna	23	5	28	21	5	26
19	Gwalior	18	4	22	18	4	22
20	Harda	12	2	14	12	2	14
21	Hoshangabad	19	0	19	19	0	19
22	Indore	22	26	48	22	27	49
23	Jabalpur	34	7	41	35	6	41
24	Jhabua	10	3	13	10	4	14
25	Katni	16	1	17	16	1	17
26	Khandwa	30	1	31	30	1	31
27	Khargone	21	6	27	21	6	27
28	Mandla	31	2	33	31	2	33
29	Mandsaur	24	25	49	24	25	49
30	Morena	14	0	14	14	0	14
31	Narsinghpur	17	4	21	19	2	21
32	Neemuch	24	13	37	24	13	37
33	Panna	26	4	30	26	4	30
34	Raisen	28	5	33	28	5	33
35	Rajgarh	19	13	32	21	13	34
36	Ratlam	26	22	48	28	23	51
37	Rewa	30	7	37	32	7	39
38	Sagar	36	9	45	38	9	47
39	Satna	47	7	54	48	7	55
40	Sehore	17	9	26	20	9	29
41	Seoni	45	3	48	45	2	47
42	Shahdol	20	3	23	28	3	31
43	Shajapur	14	4	18	14	5	19
44	Sheopur	18	2	20	21	2	23
45	Shivpuri	30	6	36	32	6	38
46	Sidhi	28	6	34	29	6	35

S No.	District	No of monitoring wells As on 31-03-2016			No of monitoring wells As on 31-03-2017		
		DW	PZ	Total	DW	PZ	Total
47	Singrauli	17	4	21	20	4	24
48	Tikamgarh	20	7	27	20	7	27
49	Ujjain	30	22	52	28	22	50
50	Umaria	14	2	16	15	2	17
51	Vidisha	27	5	32	29	5	34
	<b>State Total</b>	<b>1161</b>	<b>326</b>	<b>1487</b>	<b>1204</b>	<b>325</b>	<b>1529</b>

## 1.1 PHYSIOGRAPHY

The State of Madhya Pradesh exhibits six distinct physiographic units as follows:

The Malwa Plateau

The Satpura Range

The Vindhyan Range

The Mahakoshal Range

The Bundelkhand Region

The River valleys

The Malwa Plateau marks the northern span of the Deccan Plateau and this region forms a part of the vast Deccan plateau of Central India. The hill ranges run across the plateau. The Satpura range located in the southern part of the State is E-W trending. It has an average elevation of 600 m amsl and highest elevation of 1350 m amsl. The Vindhyan range occupies in the northern and central part of the region and has ENE-WSW trend. The Mahakoshal Range also has a similar trend. The Vindhyan range extends into the Malwa plateau and Bundelkhand region. The Vindhyan range and Mahakoshal range are separated from the Satpura range by the Narmada River and vast tract of its basin area. The river valleys, other than the Narmada alluvial plain and Chambal alluvial plain, are very limited and form narrow belts along the rivers.

## 1.2 DRAINAGE

Madhya Pradesh State represents great river basins and the watershed of a number of rivers. Catchments of many rivers of India lie in Madhya Pradesh. There are six river basins in Madhya Pradesh as six major rivers originate from the State- 1 Ganga basin (1.1 Yamuna sub basin - Chambal sub-sub basin, Kunwari sindh sub-sub basin, Jamni sub-sub basin, Betwa sub-sub basin, Dhasan sub-sub basin, Ken sub-sub basin, Paisuni and Baidhan sub sub basin 1.2 Tons sub basin, 1.3 Sone sub basin), 2 Narmada basin, 3 Godavari basin, 4 Tapti basin, 5 Mahi basin and 6 Mahanadi basin. As Madhya Pradesh is located in the center of India, most of the rivers are interState rivers. The rivers namely, Chambal, Sindh, Betwa, Ken flows northward and meet with Yamuna, whereas the river

Sone falls directly into Ganga. Narmada, Tapti and Mahi rivers flow westward and meet Arabian Sea whereas Wainganga and Pench rivers meet Godavari in the south. The Narmada (originating from Amarkantak) and Tapti (originating from Multai in Betul District) rivers and their basins divide the State in two, with the northern part draining largely into the Ganga basin and the southern part into the Godavari and Mahanadi systems. The Vindhyas form the southern boundary of the Ganga basin, with the western part of the Ganga basin draining into the Yamuna and the eastern part directly into the Ganga itself. All the rivers, which drain into the Ganga, flow from south to north, with the Chambal, Kshipra, Kalisindh, Parbati, Kuno, Sind, Betwa, Dhasan and Ken rivers being the main tributaries of the Yamuna. The land drained by these rivers is agriculturally rich, with the natural vegetation largely consisting of grass and dry deciduous forest types. The eastern part of the Ganga basin consists of the Son, the Tons and the Rihand Rivers, with the Son being the major tributary. This is also the junction point of the Satpura and the Vindhya ranges, with the Maikal and Kaimur Hills being the fulcrum. The forests here are much richer than the thorn forests of the northwestern part of Madhya Pradesh. The Son River is of great significance in that it is the largest tributary going into the Ganga on the south bank and arising out of the hills of Madhya Pradesh rather than from the Himalayas. This river and its tributaries contribute the bulk of the monsoon flow into Ganga, because the north bank tributaries are all snow fed.

The major tributary of the Ganga, the Son, arises in one of the most important watersheds in India, the Maikal hills around Amarkantak. Three of the great rivers of India, Narmada, Mahanadi and Son, are given birth to by these hills. This is also one of the few ranges in the State having a north south configuration. The Mahanadi itself, together with its tributaries such as Hasdeo, Mand and Kharun flows southeast into Orissa and converts that State into a green rice bowl. The upper Mahanadi catchment contains some of the finest forests in the State, ranging from mixed deciduous to teak, bamboo and sal. Just as the Mahanadi flows east from the Maikal hills and the Son flows north, the mighty Narmada charts a westerly course from these very hills. The Narmada flows through a rift valley, with the Vindhyas marching along its northern bank and the Satpuras along the southern. Its tributaries include Banjar, Tawa, Machna, Denwa and Sonbhardra rivers. Taken in combination with its parallel sister river, the Tapti, which also flows through a rift valley, the Narmada - Tapti systems carry an enormous volume of water and provide drainage for almost a quarter of the land area of Madhya Pradesh.

The Satpuras, in the Gawligarh and Mahadeo Hills, also contain a watershed, which is south facing. The Indrawati, Wainganga, Wardha, Pench, Kanhan and Penganga rivers, discharge an enormous volume of water into the Godavari system. The Godavari is the lifeline of Andhra Pradesh, but the water which feeds it is a gift of the central India watershed.

### **1.3 HYDROGEOLOGY**

The State of Madhya Pradesh has varied hydrogeological characteristics due to which ground water potential differs from place to place. The area is underlain by various geological formations ranging in age from the Archaean to the Recent. Hard rock areas cover more than 80% of total land area of the State. These hard-rock areas show wide variations and complexities in nature and composition of rocks, geological structures, geomorphological set up and hydrometeorological conditions. The crystalline rocks of Archaean age like granite, gneiss, granulites, schist, quartzite and granitoids occupy about 14.7% of geographical area of the State. The basaltic rocks of Deccan lava flows are the predominant formations and occupy nearly 44.5% of total geographical area. The consolidated sedimentary rocks of Vindhyan Super Group and Mahakoshal (Cuddapah) Super Group of Proterozoic age occupy about 19.1% of total geographical area and the semi consolidated (Gondwana Formation) occupies about 6.7%. Recent unconsolidated alluvial sediments occupy about 14.4% of total geographical area. Hydrogeological units of Madhya Pradesh State are given in Table 2 and Hydrogeological map of Madhya Pradesh State has been given in Fig 2A and Fig 2B.

#### **Archeans**

Archeans comprise of old metamorphics, granites, gneisses and schists. They are hard and compact formations with low primary permeability, forming poor aquifers. Ground water occurs in these only in the weathered mantle and underlying fractured zone. Dug wells in this formation have depths of 5-30 m with water levels between 3-17 mbgl. Where thickness of aquifer is considerable, specific capacity ranges from 20-200 lpm/m of draw down. Hydraulic conductivity is generally less than 1 m/d and specific yield less than 5%. The yield of open wells ranges between 40-135 m<sup>3</sup>/d.

#### **Vindhyan**

Vindhyan Group of rocks comprise of sandstone, shale and limestone. The sandstone and shale are hard and compact and form poor aquifers. Ground water occurs in these in the weathered mantle and fractured zone or bedding plane fissures. The limestone is different in its hydrogeological properties having large solution cavities, which give rise to immense secondary permeability. The wells in limestone formations yield 100-500 m<sup>3</sup>/day for less than 5m draw down. Specific capacity ranges from 100-300 lpm/m of draw down, hydraulic conductivity varies between 5-15 m/d and specific yield ranges from 5-15% in good karstic zones.

#### **Gondwanas**

The Gondwanas are sedimentary formations rich in granular zones and form good aquifers. They support both dugwells and tubewells, capable of yielding 100-500 m<sup>3</sup>/d for the drawdown of 6-10 m. the specific capacity ranges between 75-250 lpm/m of drawdown, hydraulic conductivity varies



between 10-25 m/d and specific yield is from 10-15%. However, the clayey and silty formations (shales/claystone/siltstone) of Denwas are poor aquifers.

### **Infra Trappeans**

The Bagh and Lameta beds and Nimar Sandstone are also sedimentary formations but have a limited extent and poor to moderate permeability. The limestone and calcareous clays when karstified form productive aquifers. The corraling limestone, the marls and nodular limestone are hard and compact having poor permeability. The Nimar sandstone has intergranular porosity, joints, fracture, bedding planes, which give moderate scope for ground water movement. The depth of wells varies from 3 to 13 m and depth to water level between 2 to 12 mbgl.

### **Deccan Traps**

These form the most important aquifers in the region. The weathered, fractured, jointed and vesicular units of basalts form moderate to good aquifers. These formations have highly variable yields ranging from 10 to 750 m<sup>3</sup>/d. Dugwells range in depth from 4 to 20 m with water levels varying between 2 and 14 mbgl. The specific capacity ranges from 50 to 150 lpm/m of drawdown, hydraulic conductivity varies between 5 and 15 m/d and the specific yield is 5-10%. The Deccan Traps formations can be tapped by dug-cum-bore and drilled wells. It is observed that the yield increases by 5-10 times when 10-15 m bores extending down to the lower vesicular zone are drilled at the base of dugwells. Yields of 400-600 m<sup>3</sup>/d can be obtained in this way. In some areas the control of doleritic dykes on occurrence of ground water was observed. Wells located on the upstream side of these dykes gave better yields. Also wells located on tectonic lineaments gave better yields.

### **Alluvium**

It comprises of unconsolidated gravel, sand, silt, clay in various proportions and has primary intergranular porosity and permeability. Hence it is the most promising formation for ground water development. The thickness of alluvium varies from 10 to 318 m with aquifer thickness from 10 to 160 m being more in the Ganga basin than in the Narmada basin. The depth to water ranges from 5 to 30 mbgl. The transmissivity is high in the Ganga basin being up to 300 m<sup>2</sup>/d. In the Narmada basin transmissivity ranges between 83-283 m<sup>2</sup>/d. the yields vary from 30 to 50 m<sup>3</sup>/hr in shallow well and 30-200 m<sup>3</sup>/hr for deep wells in the Ganga basin. In the Narmada basin the yields are of the order of 15-30 m<sup>3</sup>/hr in the phreatic zone and 70-200 m<sup>3</sup>/hr in the deeper zone. In the Wainganga sub basin the wells yield 60-600 m<sup>3</sup>/d. In the Tapi basin, the yields are 25-95 m<sup>3</sup>/d.

Fig 2A

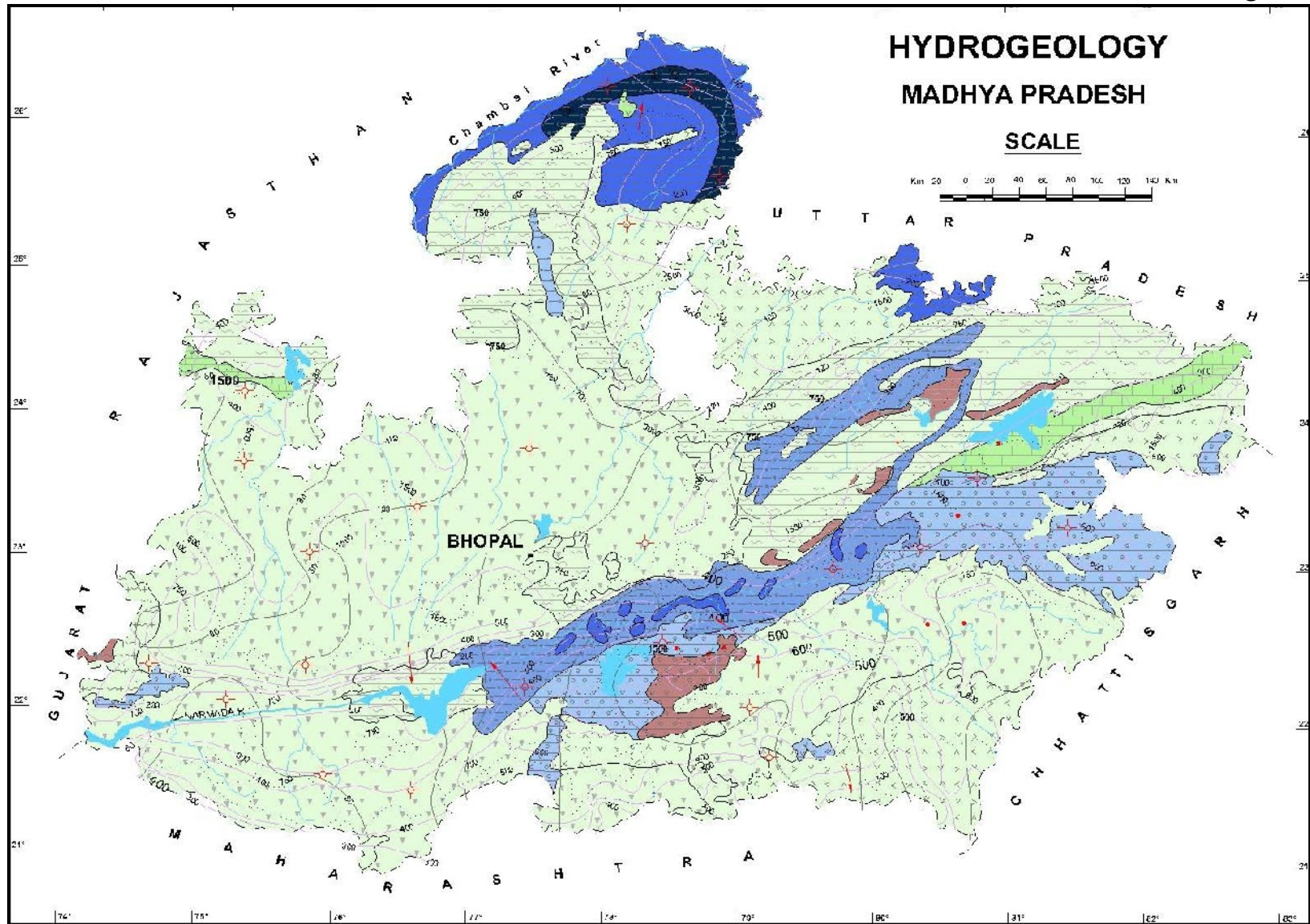
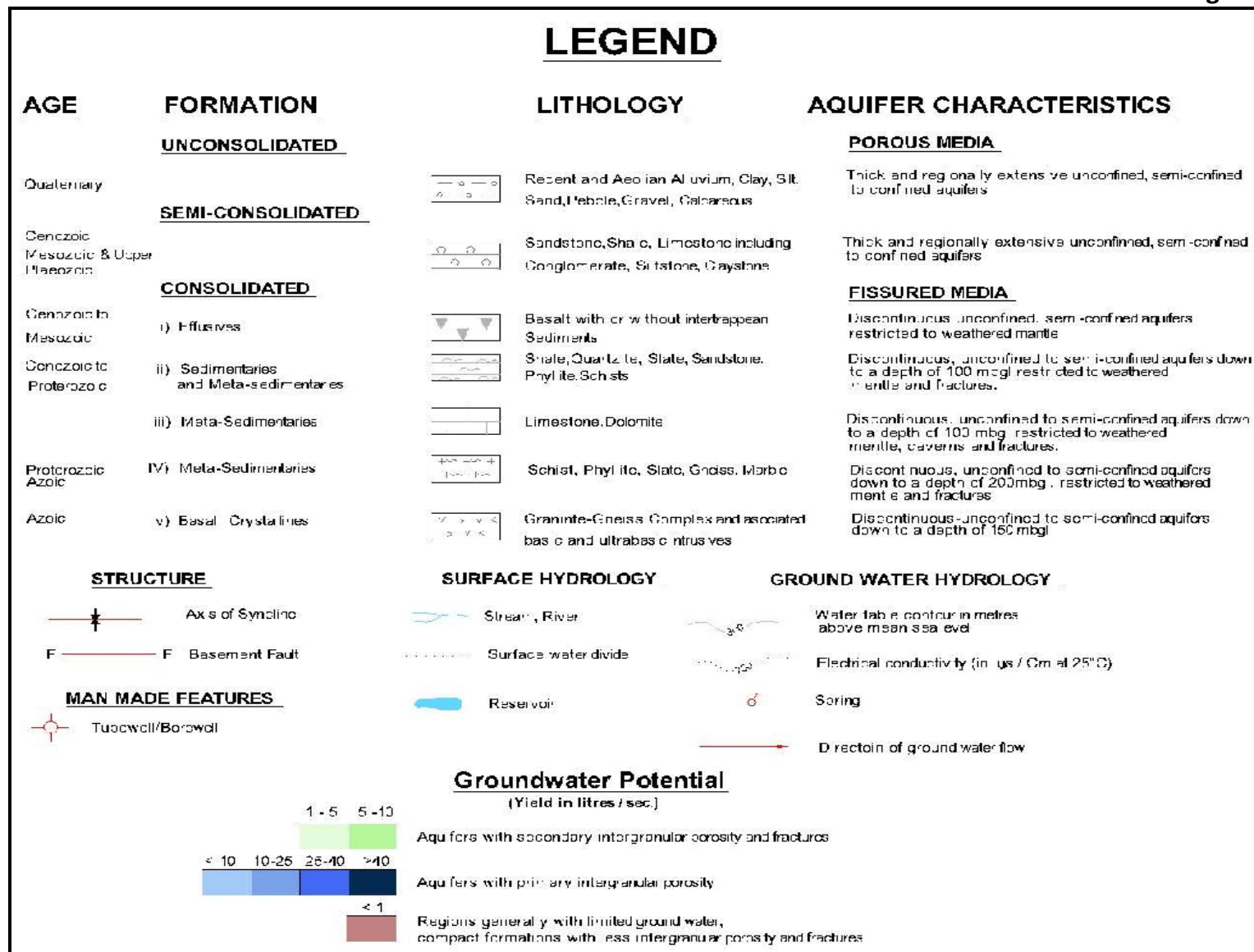


Fig 2B



**Table 2 Hydrogeological Units in Madhya Pradesh, their Potential and Ground Water Scenario**

<b>Geological Age</b>	<b>Group</b>	<b>Rock Formation</b>	<b>Surface Exposure Area (Approx.)</b>	<b>Occurrence and Hydrogeological Characters.</b>
Pleistocene to Recent	Alluvial plains (older and Newer Alluvium)	Unconsolidated clays and silts, gravels and sands of different mix. Lenses of Peat and organic matter carbonate and siliceous concretions (Kankars)	38,000 Sq.Km.	Occur widespread in Bhind (Chambal basin), Hoshangabad and Narsimhapur districts (Narmada basin) and also in Sheopur, Morena, Datia, Chhatarpur, Jabalpur, Katni, Khandwa, Burhanpur, Raisen, Sidhi and Balaghat districts and along rivers in some other districts. Form very potential ground water reservoirs with a thick sequence of sandy aquifers down to great depths (>300 m.bgl). The aquifers are unconfined, semi-confined (leaky confined) or confined.
Creataceous to Eocene	Deccan Trap	Basalts	1,43,300 Sq.Km.	Occupy the Malwa plateau covering Nimuch, Mandsaur, Indore, Dhar, Ratlam, Shajapur, Sagar, Rajgarh, Sehore, Badwani, Khargone, Khandwa and Burhanpur districts and parts of Jhabua, Raisen, Guna, Ashoknagar, Vidisha, Bhopal, Sehore, Betul, Jabalpur, Katni, Hoshangabad, Harda, Narsimhapur, Chhindwara, Seoni, Dindori, Mandla, Shahdol and Anuppur districts.
	Bagh and Lameta Groups	Sandstones cherty limestones	8,500 Sq.Km.	Infra Trappean formation of Bagh & Lameta occurs in Dhar, Jhabua & Jabalpur districts and small patches in Sagar, Hoshangabad and Narsimhapur districts. Weathered, Fractured and vesicular basaltic layers of Traps, inter-trappeans and infratrappeans form productive unconfined hallow aquifers and leaky confined/confined deeper aquifers and yield upto 5 lips. (Infra trappeans are less productive). Storativity 1 to 4% Hydraulic conductivity 5-15 m/day.

Geological Age	Group	Rock Formation	Surface Exposure Area (Approx.)	Occurrence and Hydrogeological Characters.
Palaeozoic to Cretaceous	<u>Gondwana super Group.</u> Jabalpur, Mahadeva, Panchet, Raniganj, Barakars and Talchir Groups	Boulder beds Sand-stones, shales, clays, limestone, coal seams	28,000 Sq.Km.	Occur in Betul, Chhindwara, Narsimhapur, Hoshangabad, Jabalpur, Katni, Sidhi, Umaria, Shahdol and Anuppur districts. Possess moderate primary porosity. Groundwater occurs under phreatic as well as semi-confined to confined conditions. Free flowing conditions with free flow discharge of 150 to 200 lpm have been recorded in North-eastern part of Jabalpur district.
Precambrian (Proteozoic)	<u>Vindhyan Super Group.</u> Bhandar, Rewa, Kaimur and Semri Groups. Mahakoshal (Cuddaph) Super Group Bijawar and Gwalior Groups.	Shales, Sandstones, limestones	58,700 Sq.Km.	Occur in Gwalior, Morena, Sheopur, Shivpuri, Guna, Ashoknagar, Rewa, Panna, Satna, Jabalpur, Katni, Damoh, Sagar, Chhatarpur, Raisen, Bhopal, Vidisha, Nimuch, Mandasaur and Dewas districts. Generally, devoid of any primary porosity. Weathering and denudation, structurally weak planes and fractures impart porosity and permeability in the rock mass. Solution cavities (Cavernous) in carbonate rocks, at places give rise to large groundwater storage/circulation. Sp. Yield value of unconfined aquifer is generally low (0.2% to 3%). Hydraulic conductivity varies widely depending upon fracture incidence (2 to 10 m/day.)
Archaean	<u>Older Metamorphics</u> Sausar, Sakoli and Chilpi Groups. & Bundelkhand Granites.	Granitoid gneisses, schists, gneisses, quartzites and granites	31,500 Sq.Km.	Occur in Seoni, Balaghat, Shahdol, Anuppur, Mandla, Dindori, Sidhi, Rewa, Panna, Datia, Tikamgarh, Gwalior, Chhatarpur, Jabalpur, Katni, Jhabua and Shivpuri districts, as also parts of Chhindwara, Harda, Hoshangabad, Narsimhapur and Dewas districts. Do not possess primary porosity. Weathering, fracturing, jointing impart secondary porosity. Groundwater mostly occurs under phreatic conditions and at some places also under confined/semi confined conditions.

#### **1.4 MONSOON RAINFALL DISTRIBUTION 2016**

Monsoon rainfall is the sole source of natural recharge to ground water and rainfall pattern has an important impact on groundwater levels in the phreatic aquifer. Rainfall in the State of Madhya Pradesh occurs during south-west monsoon season (mid June to September) and sometimes during winter season (November to February). Most of the rainfall (more than 90%) occurs during the south-west monsoon season, August being the rainiest month.

The rainfall data for the period 01<sup>st</sup> June 2016 to 30<sup>th</sup> September 2016 (monsoon period) of 51 rain gauge stations located in Madhya Pradesh State, collected from IMD website is given in Table 3. The isohyetal map of monsoon rainfall 2016, prepared on the basis of this data is given in Fig 3. Monsoon rainfall within  $\pm 19\%$  of the normal monsoon rainfall is considered as normal rainfall. Monsoon rainfall above 19% of the normal monsoon rainfall is considered excess rainfall. Monsoon rainfall less than -19% and less than -59% of the normal monsoon rainfall is considered deficit and if the monsoon rainfall is even lesser than -59% of the normal monsoon rainfall, it is considered scanty rainfall.

The normal rainfall of the Madhya Pradesh State is 952.3 mm. About 1131 mm rainfall as an average of state rainfall was received during 2016 monsoon period. About 19.0% more rainfall has occurred during the year with respect to normal rainfall. The percent departures of the monsoon rainfall from the normal rainfall worked out, which show that all most entire state has received normal or more than normal rainfall except in Bhind, Morena, Datia, Gwalior and Balaghat districts. Hoshangabad rain gauge station has received the highest rainfall of 2101.3 mm and Datia rain gauge station has received the least rainfall of 526 mm. The percent monsoon rainfall departure from normal rainfall of Madhya Pradesh State for the year 2016 is presented in Fig 4.

**Table 3 Rainfall in Madhya Pradesh**

Sr. No.	Name of Station	Normal rainfall Monsoon (1 <sup>st</sup> June- 30 <sup>th</sup> Sept)	Actual rainfall (01.06.2016 to 30.09.2016)	Departure% wrt Monsoon Rainfall- 2016	Category
1	Agar Malwa	873.9	1325.2	52%	Excess
2	Alirajpur	799	991.4	24%	Excess
3	Anuppur	1174.8	1003	-15%	Normal
4	Ashok Nagar	865.1	974	13%	Normal
5	Balaghat	1334.6	965.5	-28%	Deficit
6	Barwani	635.4	528.2	-17%	Normal
7	Betul	918.5	997.6	9%	Normal
8	Bhind	685.5	538.8	-21%	Deficit
9	Bhopal	998.6	1464.1	47%	Excess
10	Burhanpur	784.2	782.5	0%	Normal
11	Chhatarpur	985	1455.7	48%	Excess
12	Chhindwara	882.8	935.7	6%	Normal
13	Damoh	1071	1508.2	41%	Excess
14	Datia	775.8	526	-32%	Deficit
15	Dewas	949.8	889.8	-6%	Normal
16	Dhar	826.8	856.4	4%	Normal
17	Dindori	1205.9	1361.7	13%	Normal
18	Guna	943	1275.5	35%	Excess
19	Gwalior	790.6	528.2	-33%	Deficit
20	Harda	1042.3	942.3	-10%	Normal
21	Hoshangabad	1289.1	2101.3	63%	Excess
22	Indore	839.7	888.2	6%	Normal
23	Jabalpur	1090.3	1360.8	25%	Excess
24	Jhabua	745.3	976.9	31%	Excess
25	Katni	1051.3	1326.2	26%	Excess
26	Khandwa	850.8	958.6	13%	Normal
27	Khargone	758.5	674.5	-11%	Normal
28	Mandla	1245.8	1450.9	16%	Normal
29	Mandsaur	780	1002	28%	Excess
30	Morena	708.2	528.2	-25%	Deficit
31	Narsinghpur	1067.1	1120.6	5%	Normal
32	Neemuch	747.4	1074.9	44%	Excess
33	Panna	1072.1	1660	55%	Excess
34	Raisen	1114.8	1403.3	26%	Excess
35	Rajgarh	890.2	1321	48%	Excess
36	Ratlam	871.3	1298.3	49%	Excess
37	Rewa	971.7	1209.2	24%	Excess
38	Sagar	1088.1	1328.3	22%	Excess



Sr. No.	Name of Station	Normal rainfall Monsoon (1 <sup>st</sup> June- 30 <sup>th</sup> Sept)	Actual rainfall (01.06.2016 to 30.09.2016)	Departure% wrt Monsoon Rainfall-2016	Category
39	Satna	953.2	1609.9	69%	Excess
40	Sehore	1067.5	1460.4	37%	Excess
41	Seoni	1038.4	1156.9	11%	Normal
42	Shahdol	994.7	1094.6	10%	Normal
43	Shajapur	873.9	1132.5	30%	Excess
44	Sheopur	727.4	691.8	-5%	Normal
45	Shivpuri	779.8	844.3	8%	Normal
46	Sidhi	1016.4	1304.4	28%	Excess
47	Singrauli	832.3	1091.6	31%	Excess
48	Tikamgarh	853.2	738	-14%	Normal
49	Ujjain	833.7	1137.4	36%	Excess
50	Umaria	1093.9	1194.1	9%	Normal
51	Vidisha	1005	1453.6	45%	Excess
	<b>State: Madhya Pradesh</b>	<b>852.3</b>	<b>1131</b>	<b>19%</b>	Normal

Source: www.imd.gov.in

Fig 3

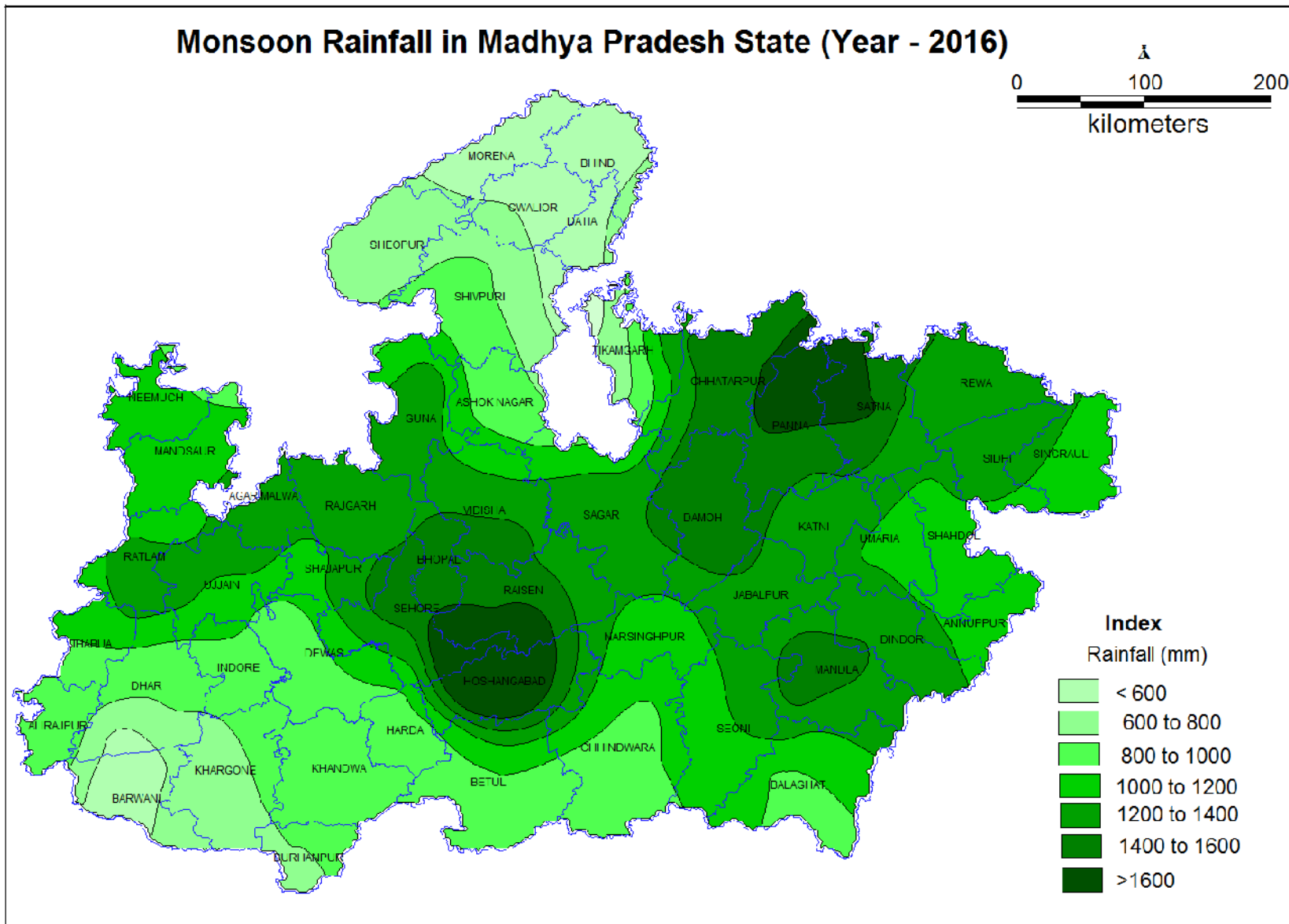
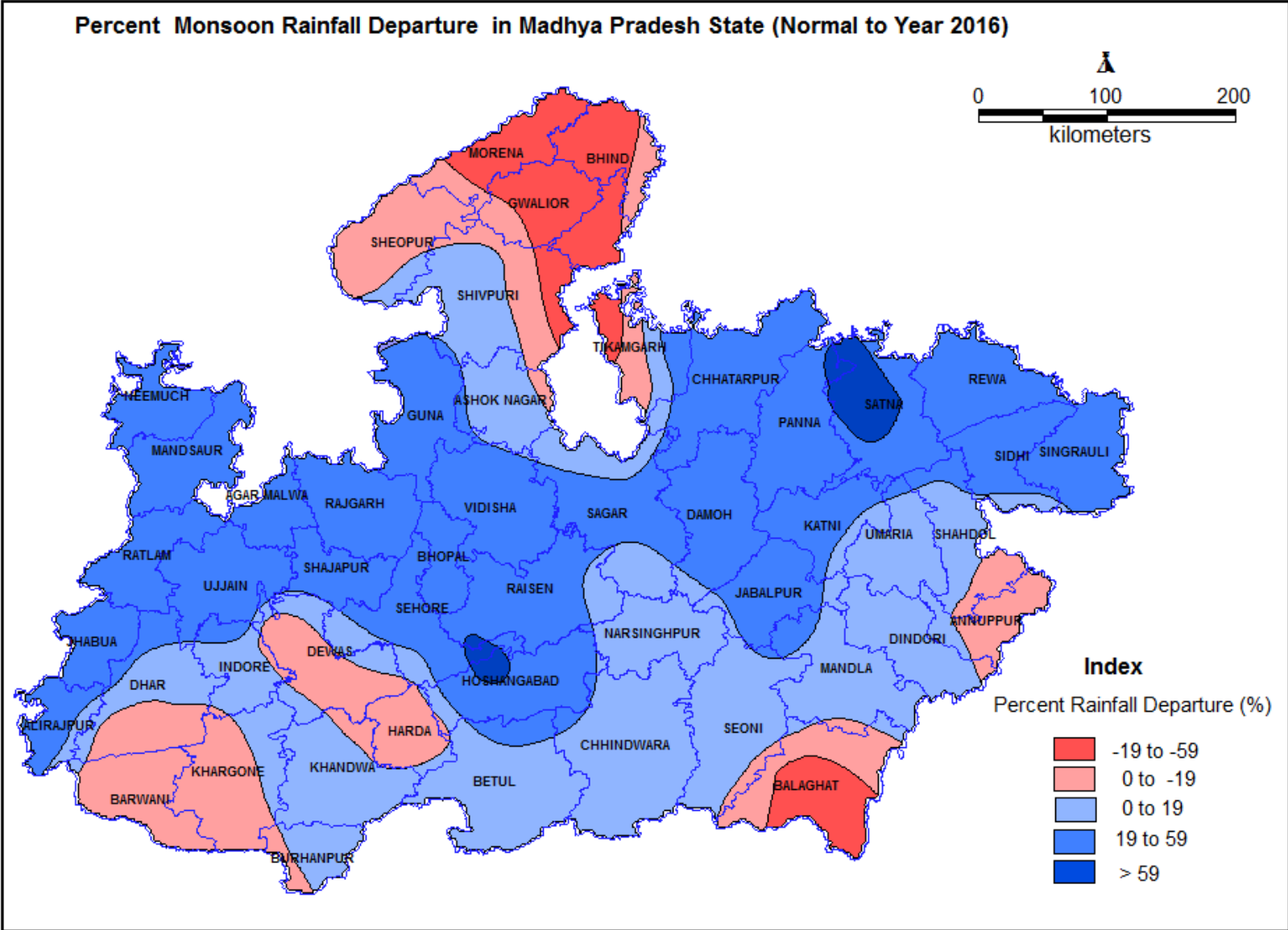


Fig 4



## **2.1 DEPTH TO WATER LEVELS**

During the water year, the existing monitoring wells were monitored four times, i.e., during May 2016, August 2016, November 2016 and January 2017. With the field data, maps were prepared for visual interpretation of the behaviours of the ground water levels. Depth to ground water levels were demarcated into various zones in the ranges of less than 2 m, 2-5 m, 5-10 m, 10-20 m, 20-40 m and more than 40 m. The description of the depth to water levels during different monitoring seasons is as follows:

### **DEPTH TO WATER LEVEL MAY 2016**

Depth to Water levels ranges from 1.10 to 49.40 m bgl in Madhya Pradesh. Very shallow water levels up to 2 m bgl are very few and observed in part of Damoh, district of the state. Only 0.44% of wells in Madhya Pradesh State fall in this category. About 10.59% of wells spreading all over Madhya Pradesh State has recorded a water level in depth range of 2-5 m bgl occurring mainly in south-east and in sporadic patches in entire state. Depth to water levels ranging 5-10 m bgl is prominently spreading all parts of the State. About 45.70% of wells fall under this category. Deeper ground water levels ranging 10-20 m bgl are seen mostly in northern and western parts, north eastern parts of the state and in isolated patches in many parts of the state. About 37.48% of wells in the State fall in this category. Ground water levels of 20-40 m bgl are found in about 4.96% of the wells and occur mainly in Bhind, Morena, Gwalior, Mandsaur, Ratlam, Dhar, Ujjain, and in many districts in patches. Depth to water level more than 40 m bgl is very few and has been recorded in Mandsaur, Ratlam and Ujjain districts. About 0.81% of wells fall under this category

### **DEPTH TO WATER LEVEL AUGUST 2016**

Depth to Water levels ranges from ground level to 1.12 m agl to 39.40 m bgl in Madhya Pradesh state. During this year the state has received very good rainfall and many times flood situation has occurred. Very shallow water levels up to 2 m bgl are seen in almost entire state except north, in Bhind Morena, Gwalior, and in Khandwa and Burhanpur districts. About 42.18% of monitoring wells recorded water level less than 2 m bgl category. About 35.98% of monitoring wells spreading all over Madhya Pradesh state has recorded a water level in the depth range of 2-5 m bgl. Depth to water levels ranging 5-10 m bgl is noticed prominently in northern, eastern, and south-western parts of the state and in pockets in many districts of the state. About 14.88% of wells fall in this category. Deeper ground water levels ranging 10-20 m bgl are seen in northern part and in isolated patches in Burhanpur, Khargone, Barwani Narsinghpur, Sagar and Rewa districts. About 5.39% of wells in the state fall in this category. Ground water levels of more than 20 m are found in about 1.57% of the wells and are seen in Bhind, Morena, Gwalior, Sheopur and Burhanpur districts.

## **DEPTH TO WATER LEVEL NOVEMBER 2016**

Depth to Water levels ranges from ground level to 0.01 m agl to 39.40 m bgl in Madhya Pradesh state. During this year the state has received very good rainfall. Very shallow water levels up to 2 m bgl are seen in mainly central, eastern and in western parts of the state in patches only. About 11.01% of monitoring wells recorded water level less than 2 m bgl category. About 42.19% of monitoring wells spreading all over Madhya Pradesh state has recorded a water level in the depth range of 2-5 m bgl. Depth to water levels ranging 5-10 m bgl is noticed prominently in northern, eastern, and south-eastern parts of the state and in pockets in many districts of the state. About 34.52% of wells fall in this category. Deeper ground water levels ranging 10-20 m bgl are seen in northern part in Bhind, Morena, Sheopur, Datia and Gwalior and in isolated patches in many districts of the state. About 9.90% of wells in the state fall in this category. Ground water levels of more than 20 m are found in about 2.38% of the wells and are seen in Bhind, Morena, Gwalior, Sheopur, Shivpuri and Burhanpur, Ratlam, Harda and Sagar districts.

## **DEPTH TO WATER LEVEL JANUARY 2017**

Depth to Water levels ranges from ground level to 0.52 m agl to 40.25 m bgl in Madhya Pradesh state. During the year 2016 the state has received very good rainfall. Very shallow water levels up to 2 m bgl are seen in Vidisha, Damoh, Sagar and Mandla districts and in few patches only. Very shallow water level is mainly due to canal command irrigations. About 3.56% of monitoring wells recorded water level less than 2 m bgl category. About 27.80% of monitoring wells spreading all over Madhya Pradesh state has recorded a water level in the depth range of 2-5 m bgl. Depth to water levels ranging 5-10 m bgl is noticed prominently in northern, eastern, and south-eastern parts of the state and in pockets in many districts of the state. About 45.30% of wells fall in this category. Deeper ground water levels ranging 10-20 m bgl are seen in northern part in Bhind, Morena, Sheopur, Datia and Gwalior and in isolated patches in many districts of the state. About 20.91% of wells in the state fall in this category. Ground water levels of more than 20 m are found in about 2.35% of the wells and are seen in Bhind, Morena, Gwalior, Sheopur, Shivpuri, Burhanpur, Ratlam and Chhindwara districts.

Depth to ground water level at a glance is shown in Fig 5. The depth to water level maps of different period has been depicted in Fig (6 to 9). The district wise frequency distribution of wells under different water level/fluctuation ranges for different monitoring period is given in Annexures (I to IV).

Fig 5

### DEPTH TO WATER LEVEL AT A GLANCE

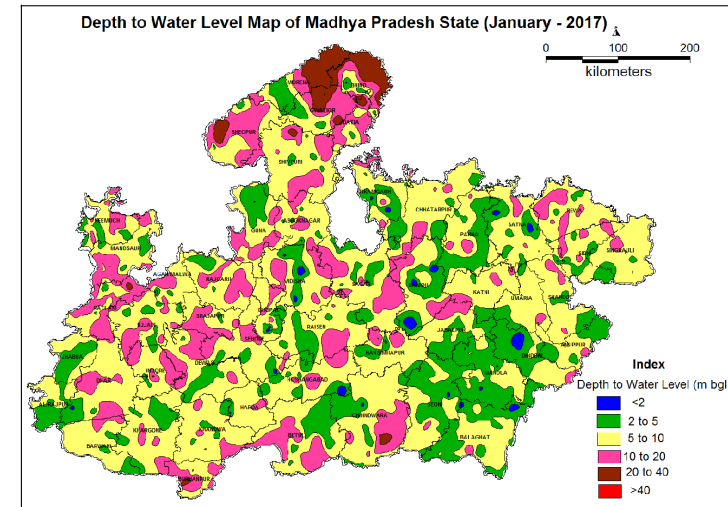
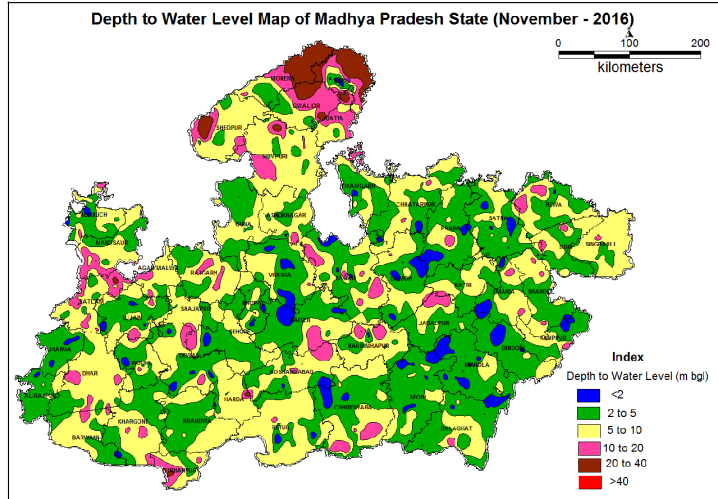
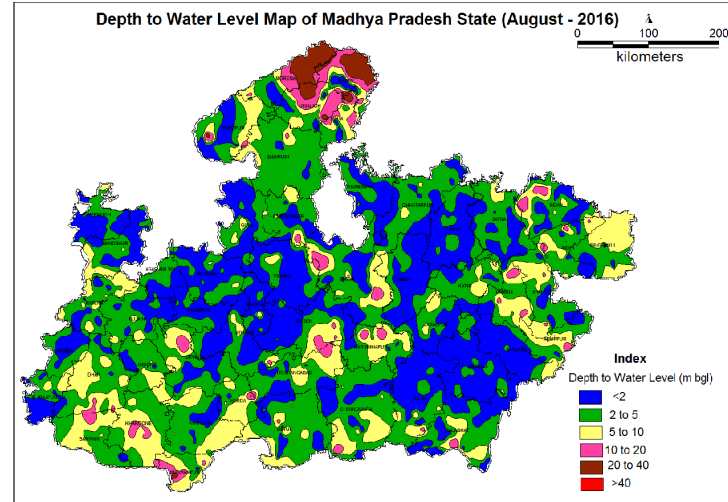
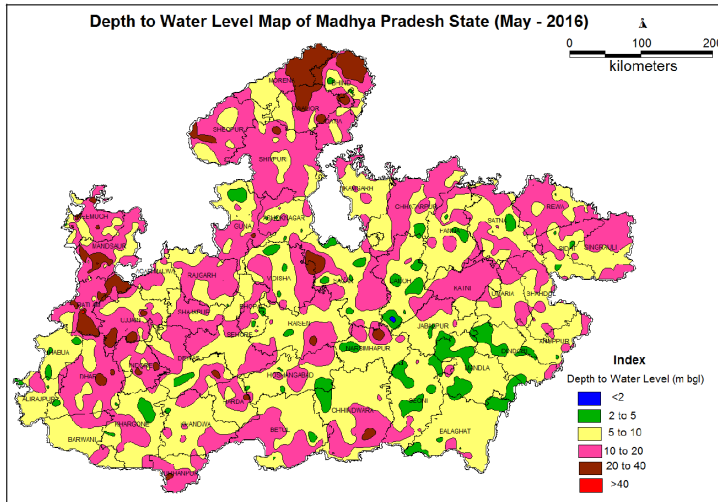


Fig 6

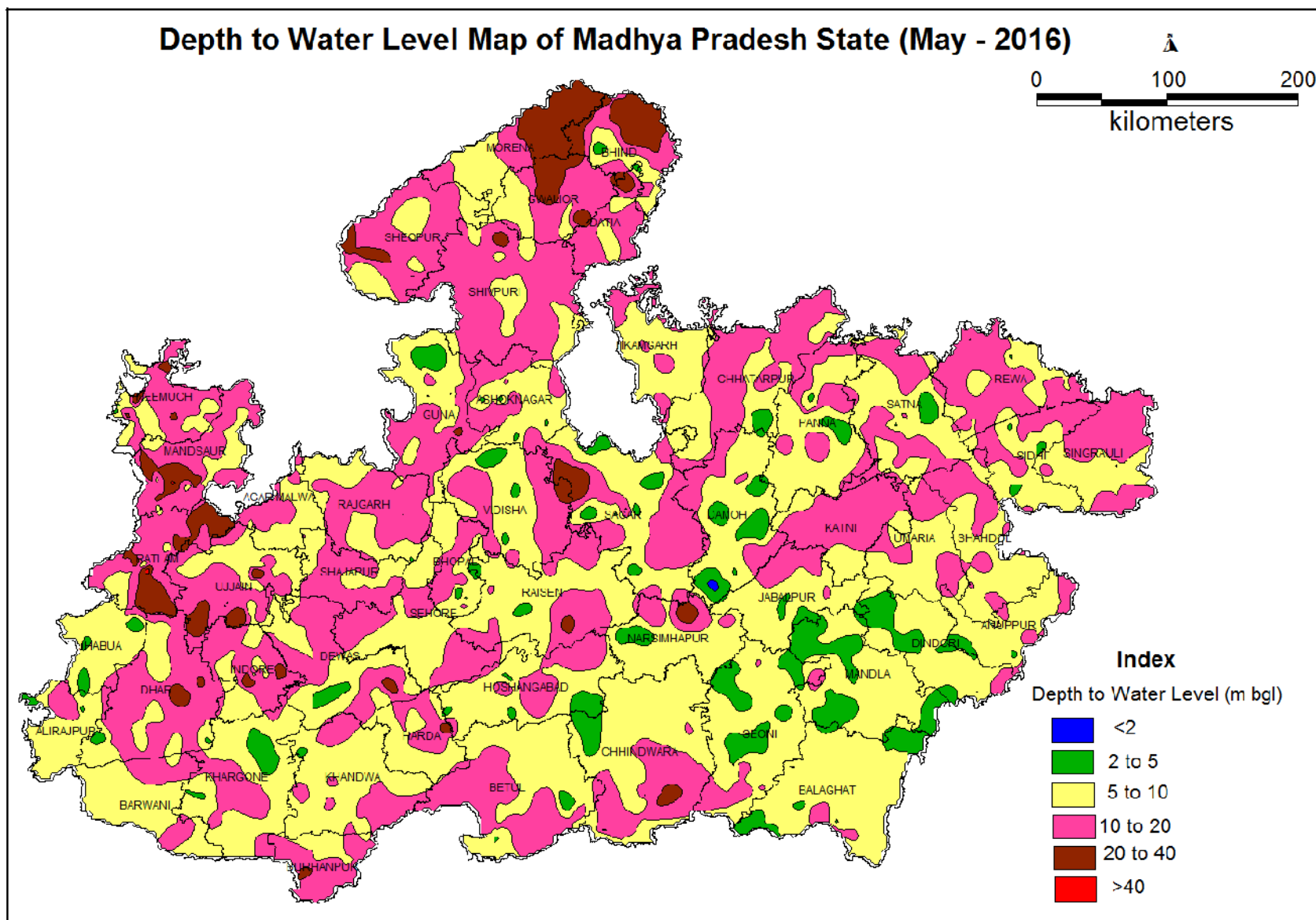




Fig 7

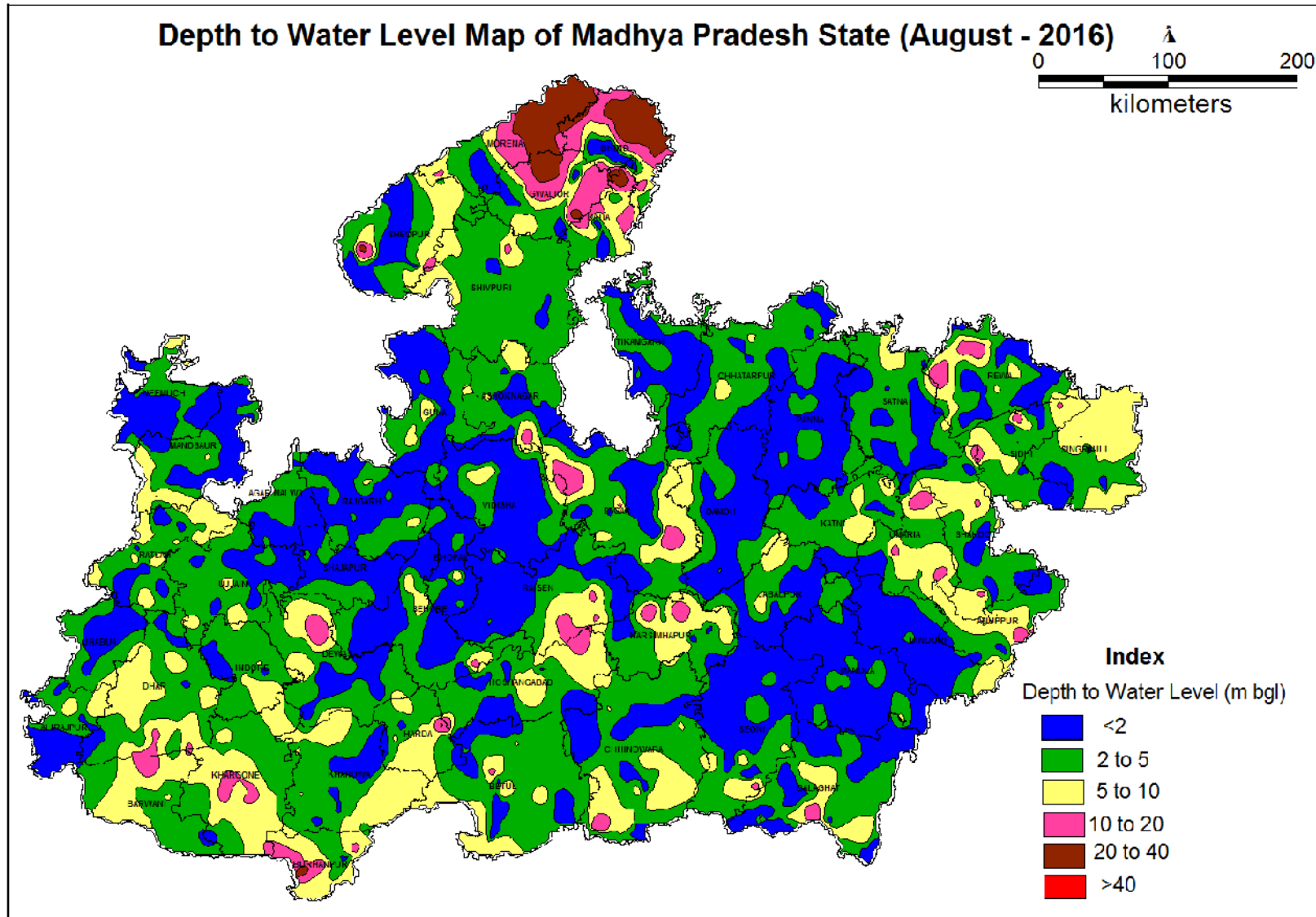


Fig 8

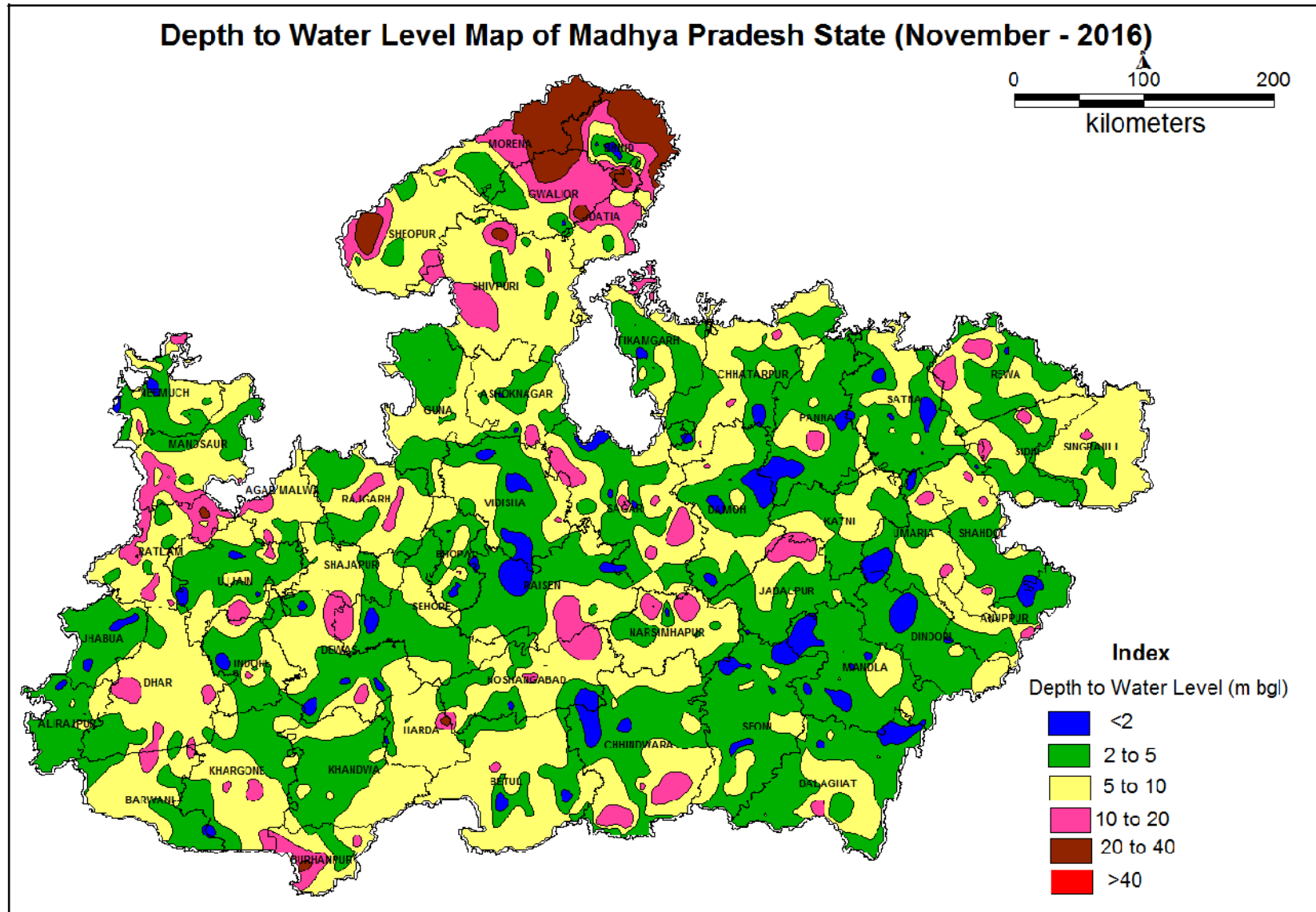
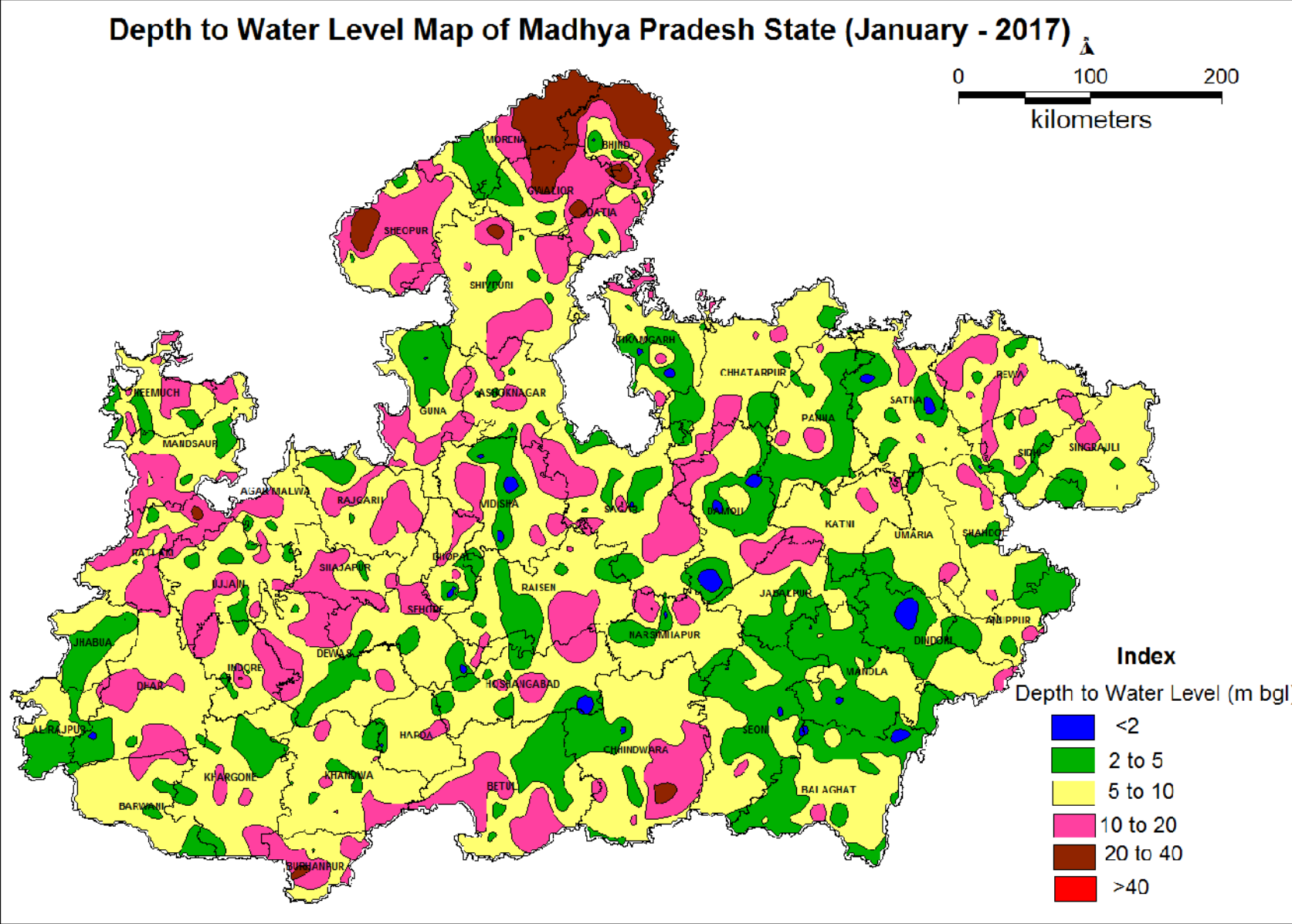


Fig 9



## **2.2 WATER LEVEL FLUCTUATIONS**

Water level fluctuations were analysed and maps were prepared after every water level measurement comparing the current water levels with that of the same season of the previous year, preceding season, pre-monsoon season and the decadal seasonal mean. These fluctuations were carefully examined to decipher the ground water situation with respect to time.

### **2.2a ANNUAL WATER LEVEL FLUCTUATIONS**

#### **WATER LEVEL FLUCTUATION MAY 2015 TO MAY 2016**

The ground water levels of monitoring wells during May 2016 were compared with those of May 2015 to decipher the changes that took place in the ground water regime. In Madhya Pradesh, 26.39% of the wells show a rise and the rest 73.61% wells show a decline in water levels. About 19.50% of the wells show a rise in water level up to 2 m spreading in sporadic patches in many parts of the state. 4.64% of the wells show a rise in water level between 2 to 4 m and, and 2.24% of the wells shows rise more than 4 m. The rises in water in the range of 2-4 m and more than 4 m are mainly seen in Malwa region, especially in Dhar, Indore, Dewas and Ujjain district and in patches in many district of the state.

About 51.93% of the wells show a decline in water level up to 2 m in almost all district of the state. 13.39% of the wells show a decline in water level between 2 to 4 m and occur in sporadic patches of the state. About 8.28% of the wells shows decline more than 4 m. Water level decline more than 4 m is seen mostly in northern parts of State especially in Bhind Morena, Gwalior and Shivpuri districts and in pockets in many districts. In general this year there is a decline of water level in the state as compared to last year.

#### **WATER LEVEL FLUCTUATION AUGUST 2015 TO AUGUST 2016**

About 82.29% of wells show rise and 17.71% decline in water levels in August 2016 compared to those in August 2015. About 20.49% of wells in Madhya Pradesh state, show rise in water levels up to 2 m and seen mainly in entire state except in Bhind Morena, Gwalior and Khargone districts. Rise of 2-4 m has occurred in 20.49% of wells mostly in Mandsaur, Ratlam, and north-eastern part and in patches in many districts of the state. About 11.68% of wells spread in north eastern parts of state and Mandsaur, Ratlam, Sheopur, Gwalior and Shivpuri districts show rise in water levels more than 4 m.

Ground water levels decline is recorded in about 17.71% of the wells, mostly spread in Bhind, Morena, Gwalior, Khargone, Indore, Dewas and parts of Balaghat districts. Decline in water levels up to 2 m are seen in about 13.23% of wells. Decline in water level between 2-4 m is observed in 2.71% of wells spread in Bhind, Morena, Gwalior, Khargone, Indore, Dewas and parts of Balaghat districts. Decline in water in more than 4 m is observed by 1.78% monitoring wells spread in Barwani, Khargone, Indore, Dewas, Bhind, Morena, Gwalior and Balaghat districts.

#### **WATER LEVEL FLUCTUATION NOVEMBER 2015 TO NOVEMBER 2016**

About 71.74% of wells show rise and 28.26% decline in water levels in November 2016 compared to those in November 2015. About 44.25% of wells in Madhya Pradesh state, show rise in water levels up to 2 m and seen mainly in entire state except in Bhind Morena and Gwalior districts. Rise of 2-4 m has occurred in 17.16% of wells mostly in Mandsaur, Ratlam, and north-eastern part and in patches in many districts of the state. About 10.33% of wells spread in north eastern parts of state and Mandsaur, Ratlam, Dhar, Indore, Chhindwara districts shows a rise in water levels more than 4 m.

Ground water levels decline is recorded in about 28.26% of the wells, mostly spread in Bhind, Morena, Gwalior, Khargone, Dewas and in parts of south eastern districts of the state. Decline in water levels up to 2 m are seen in about 21.97% of wells. Decline in water level between 2-4 m is observed in 4.19% of wells spread in Bhind, Morena, Gwalior, Khargone, Dewas and Narsinghpur districts. Decline in water in more than 4 m is observed by 2.10% monitoring wells spread in Bhind, Morena, Gwalior, Sheopur, Dewas, Narsinghpur, Rajgarh and Vidisha districts.

#### **WATER LEVEL FLUCTUATION JANUARY 2016 TO JANUARY 2017**

The water level fluctuation map for the period January 2017 with reference to January 2016 depict that there is remarkable rise in water level in north-eastern and western part of the state, while south eastern part of has recorded decrease in water level. About 69.45% of wells show rise and 30.55% decline in water levels in January 2017 compared to those in January 2016. About 44.11% of wells in Madhya Pradesh state, show rise in water levels up to 2 m and seen mainly in entire state except in Bhind Morena and Gwalior districts. Rise of 2-4 m has occurred in 15.0% of wells mostly in Mandsaur, Ratlam, and north-eastern part and in patches in many districts of the state. About 10.34% of wells spread in north eastern parts of state and Mandsaur, Ratlam, Dhar, Sheopur, and Shivpuri districts show a rise in water levels more than 4 m.

Ground water levels decline is recorded in about 30.55% of the wells, mostly spread in Bhind, Morena, Gwalior, Khargone, Dewas and in parts of south eastern districts of the state. Decline in water levels up to 2 m are seen in about 23.98% of wells. Decline in water level between 2-4 m is observed in 4.17% of wells spread in Bhind, Morena, Gwalior, Khargone, Dewas, Narsinghpur and Chhindwara districts. Decline in water in more than 4 m is observed by 2.41% monitoring wells spread in Bhind, Morena, Gwalior, Sheopur, Hoshangabad, Chhindwara, Rajgarh and Shivpuri districts.

Annual water level fluctuation at a glance is shown in Fig 10. The annual water level fluctuation maps of different period have been depicted in Fig (11 to 14). The district wise annual water level fluctuation and frequency distribution of wells in different ranges is given in Annexures (V to VIII).

Fig 10

### ANNUAL WATER LEVEL FLUCTUATION AT A GLANCE

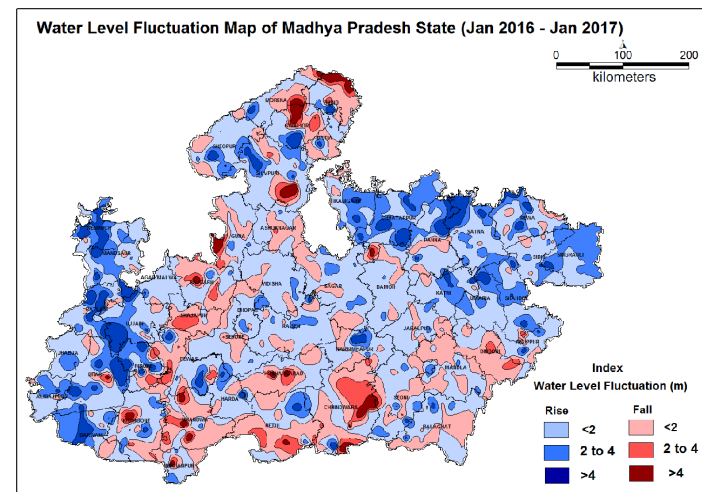
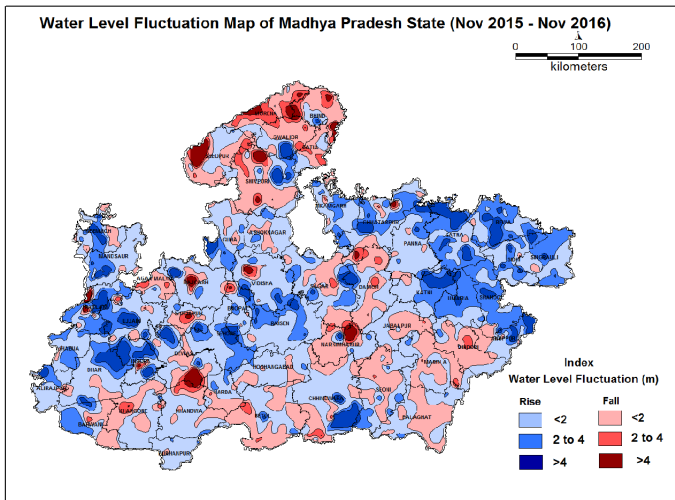
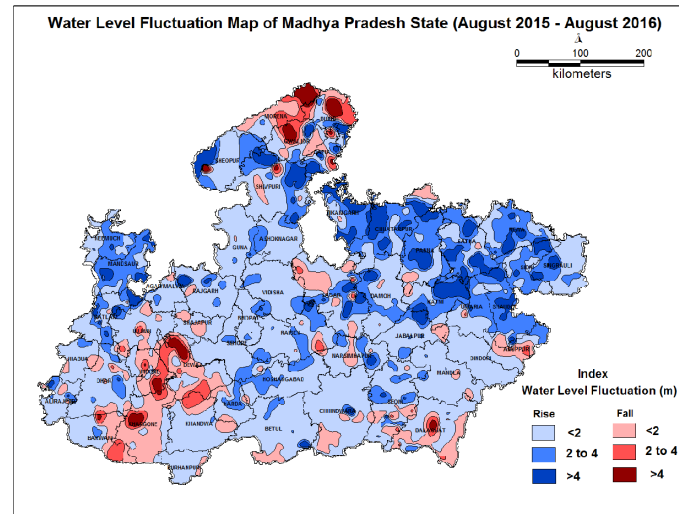
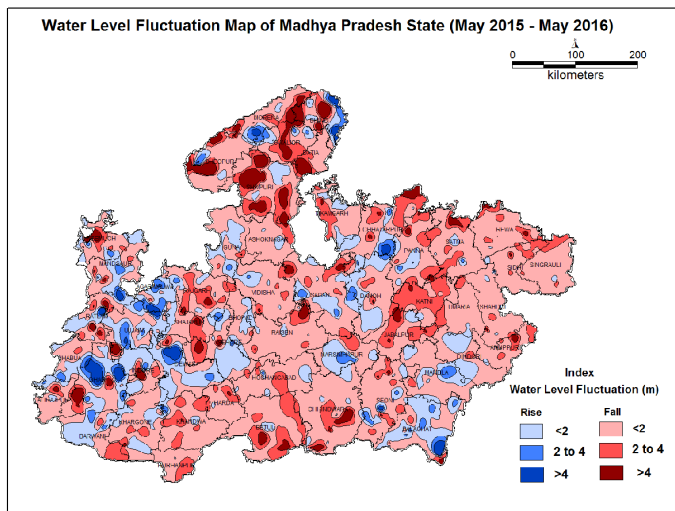


Fig 11

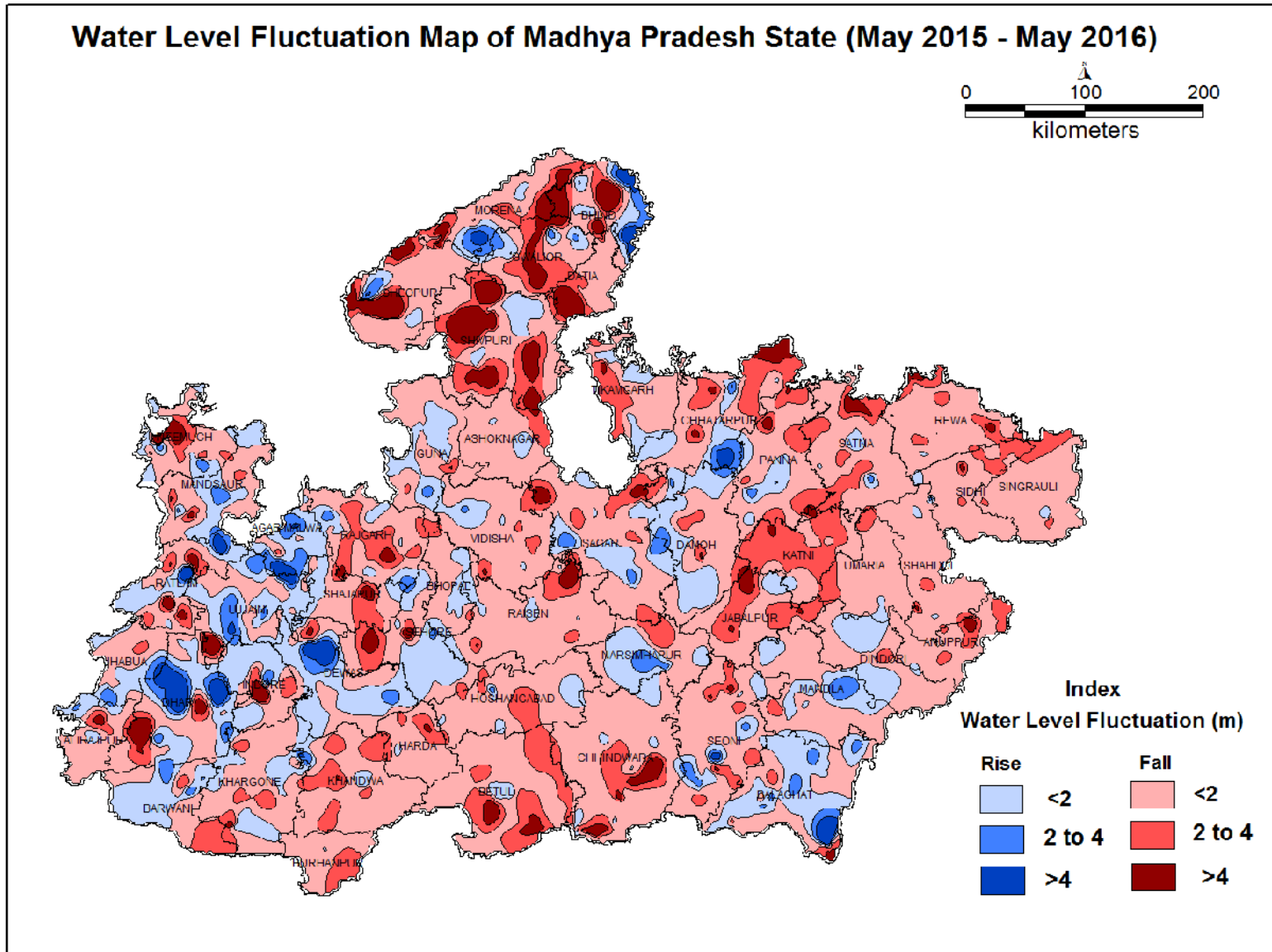




Fig 12

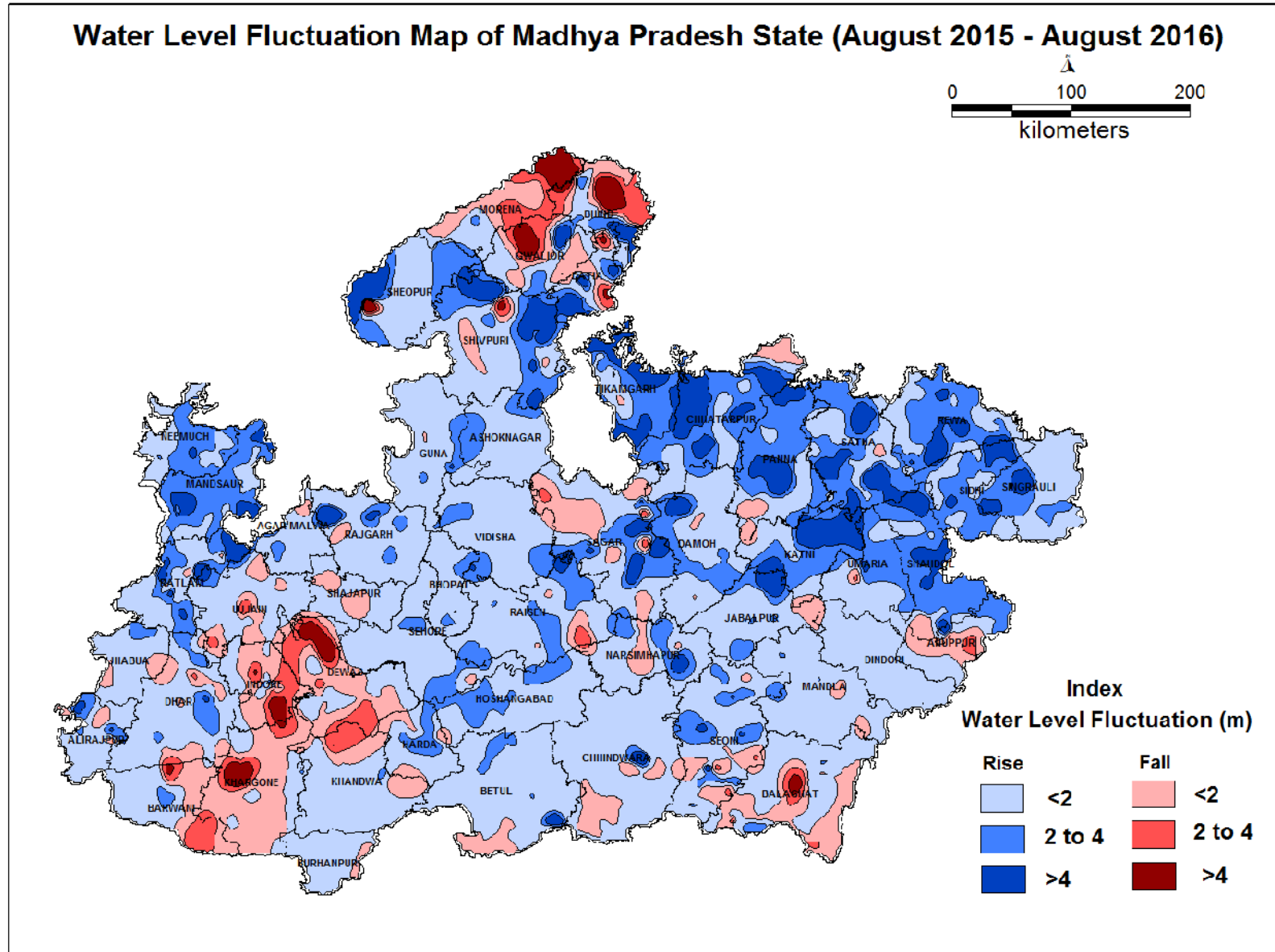


Fig 13

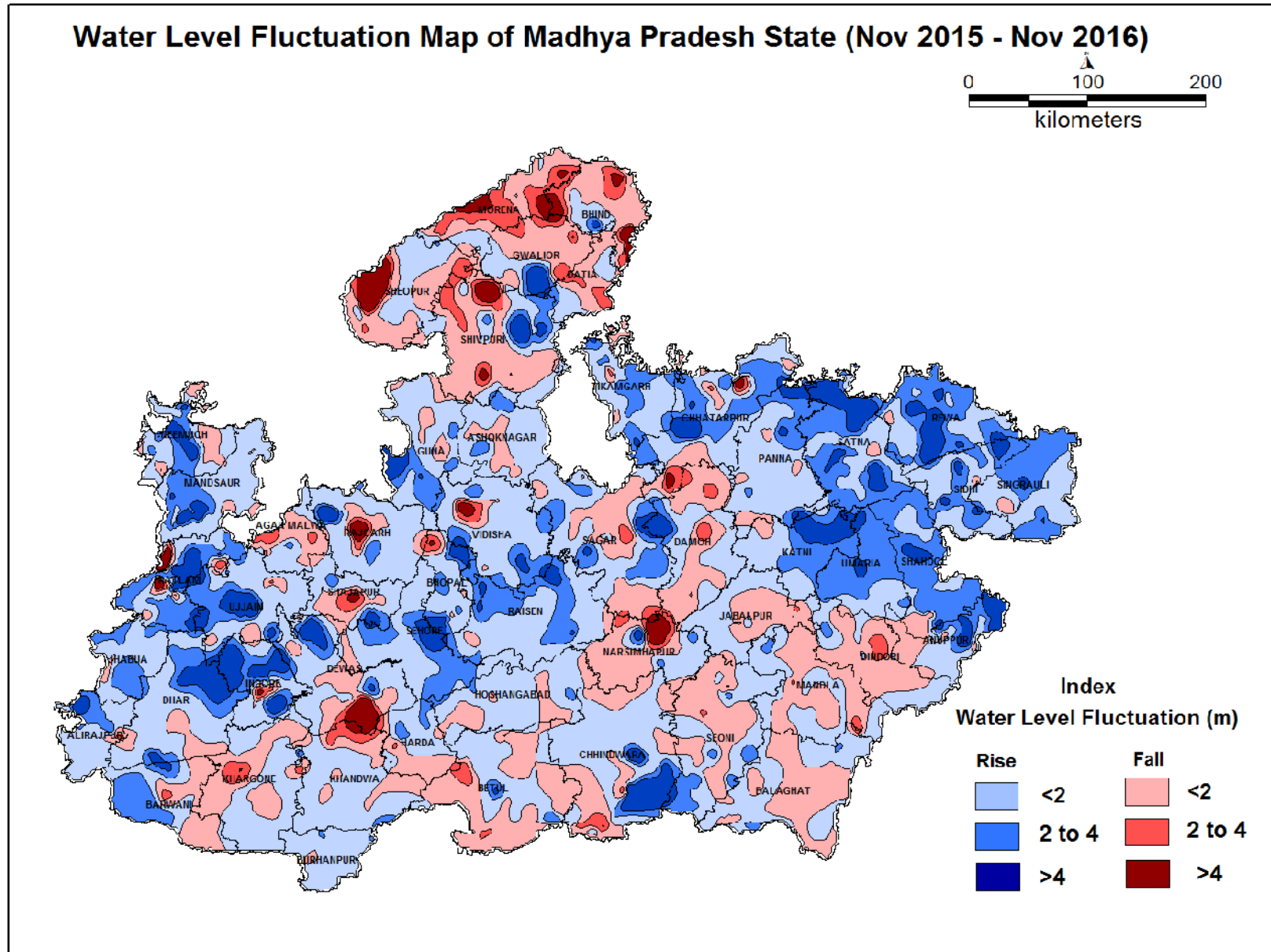
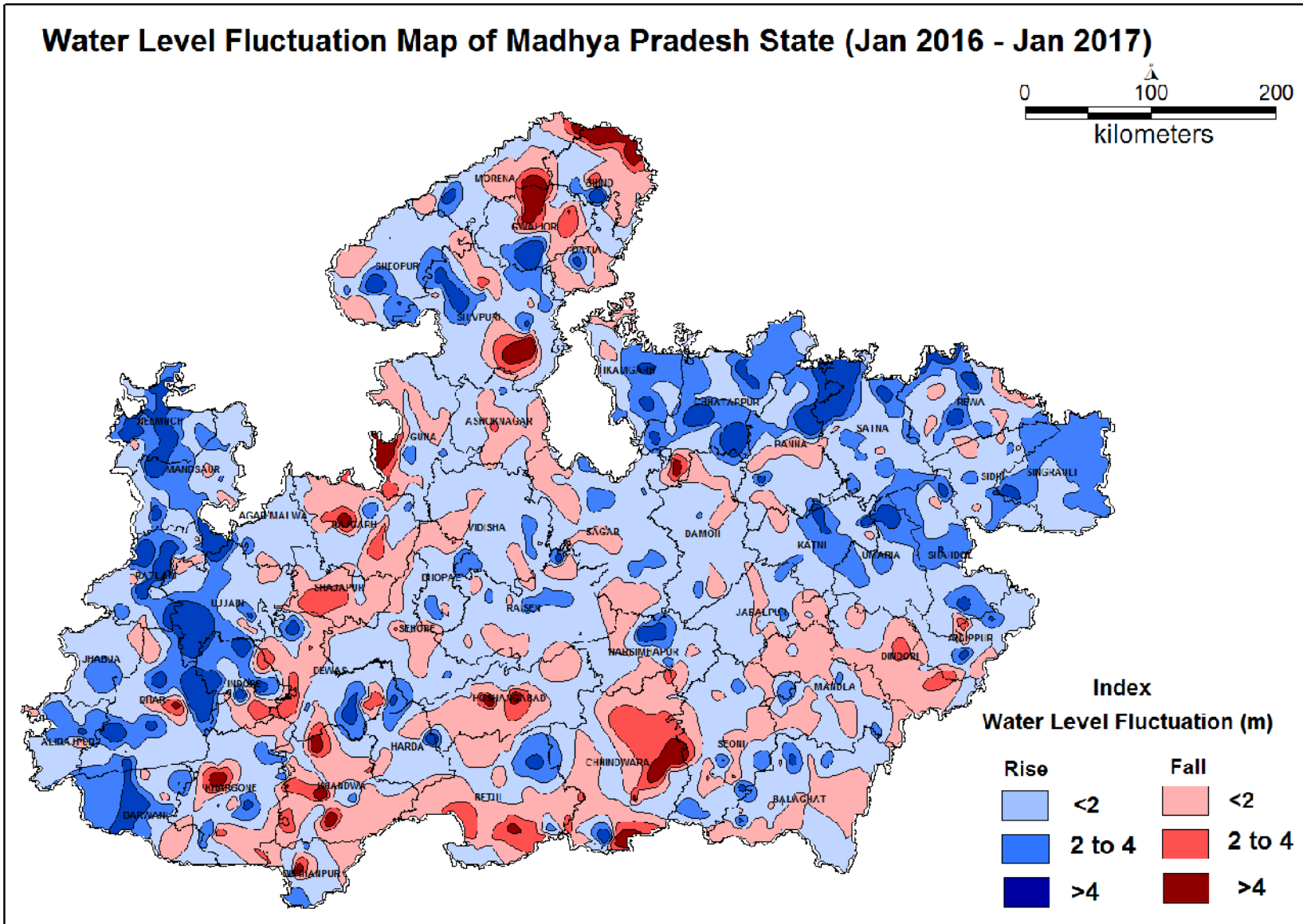


Fig 14



## **2.2b SEASONAL WATER LEVEL FLUCTUATIONS**

### **WATER LEVEL FLUCTUATION MAY 2016 TO AUGUST 2016**

Water levels have shown a general rise in 98.85% of the wells. Such a rise is a normal phenomenon in the hydrological cycle since the monsoon rainfall forms the sole source of natural recharge to ground water regime in the state. Rise in the order of 0 to 2 m is seen in 9.17% of wells and are seen in Khargone, Barwani, Bhind, Morena, Gwalior, Narsinghpur and in patches in some of the districts of the state. About 16.20% of the wells have shown a rise of 2-4 m and are seen in north, Barwani, Khargone, Narsinghpur, and in south eastern parts of the state. Significant rise of >4 m is found in 73.49% of wells, in entire parts of the state

About 0.99% of the wells in Madhya Pradesh state show a marginal decline in water level up to 2 m and 0.15% wells more than 2 m. The Marginal decline in water level is mainly due to pumping wells and is observed mainly in Bhind of the state.

### **WATER LEVEL FLUCTUATION MAY 2016 TO NOVEMBER 2016**

Water levels have shown a general rise in 94.33% of the wells of the state. Such a rise is a normal phenomenon in the hydrological cycle since the monsoon rainfall forms the sole source of natural recharge to ground water regime in the state. Rise in the order of 0 to 2 m is seen in 17.87% of wells and are seen in Khargone, Barwani, Bhind, Morena, Gwalior, Narsinghpur and in patches in some of the districts of the state. About 30.06% of the wells have shown a rise of 2-4 m and are seen in north, Barwani, Khargone, Narsinghpur, and in south eastern parts of the state. Significant rise of >4 m is found in 46.40% of wells, in entire parts of the state

About 4.83% of the wells in Madhya Pradesh state show a marginal decline in water level up to 2 m and 0.46% wells more than 2 m. The Marginal decline in water level is mainly due to pumping wells and less rainfall as it is observed mainly in Bhind, Morena districts of the state.

### **WATER LEVEL FLUCTUATION MAY 2016 TO JANUARY 2017**

Water levels have shown a general rise in 86.85% of the wells of the state. Such a rise is a normal phenomenon in the hydrological cycle since the monsoon rainfall forms the sole source of natural recharge to ground water regime in the state. Rise in the order of 0 to 2 m is seen in 36.22% of wells and are seen in Khargone, Barwani, Bhind, Morena, Gwalior, Narsinghpur and in patches in some of the districts of the state. About 29.76% of the wells have shown a rise of 2-4 m and are seen in

north, Barwani, Khargone, Narsinghpur, and in south eastern parts of the state. Significant rise of >4 m is found in 20.87% of wells, in most parts of the state

About 9.84% of the wells in Madhya Pradesh state show a marginal decline in water level up to 2 m and 3.31% wells more than 2 m. The marginal decline in water level is mainly due to pumping wells and less rainfall as it is observed mainly in Bhind, Morena, Gwalior, Shivpuri and Chhindwara districts of the state.

Seasonal water level fluctuations at a glance are shown in Fig 15. The seasonal water level fluctuation maps of different period have been depicted in Fig (16 to 18). The district wise seasonal water level fluctuation and frequency distribution of wells in different ranges is given in Annexures (IX to XI).

Fig 15

### SEASONAL WATER LEVEL FLUCTUATION AT A GLANCE

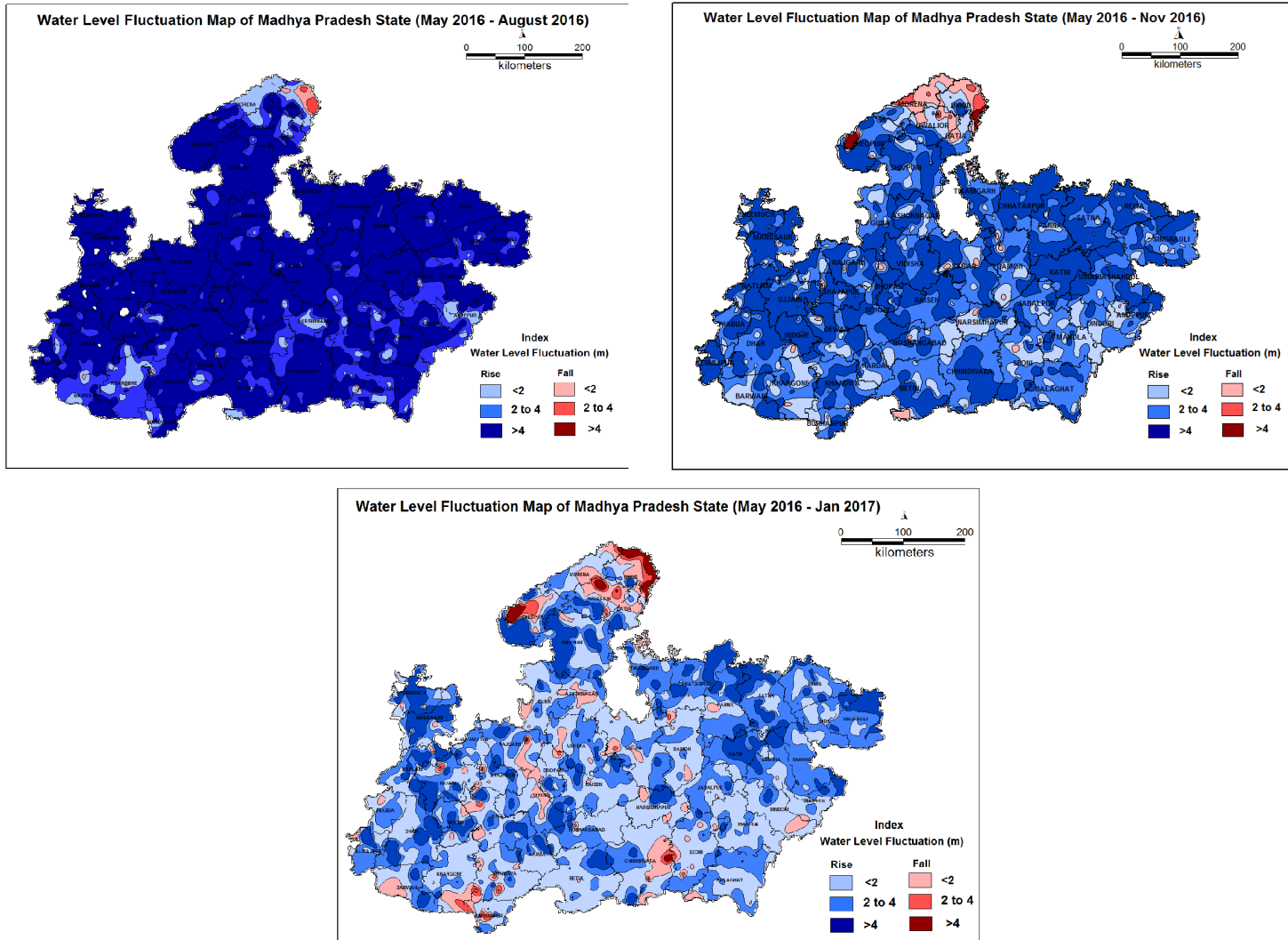


Fig 16

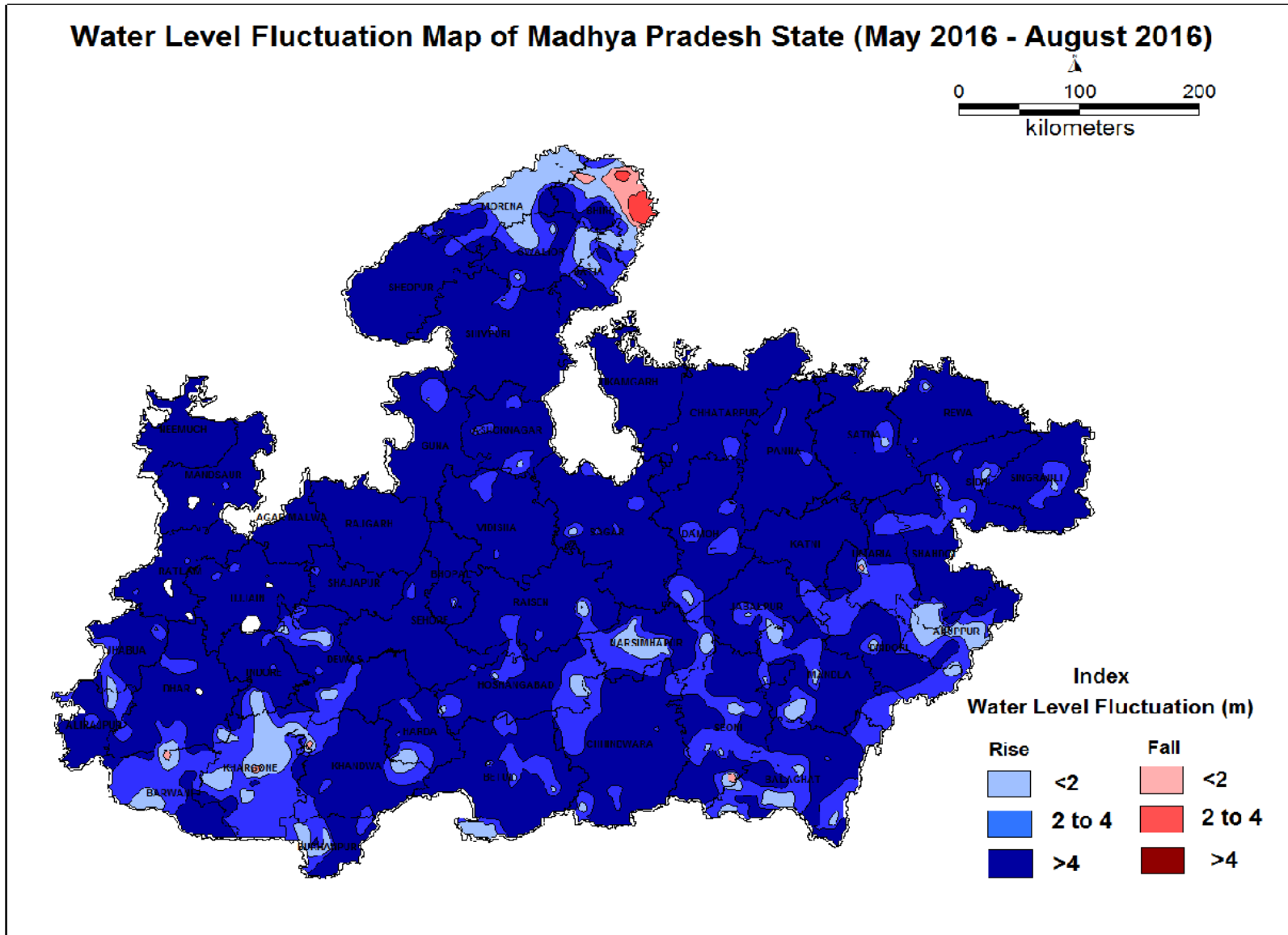




Fig 17

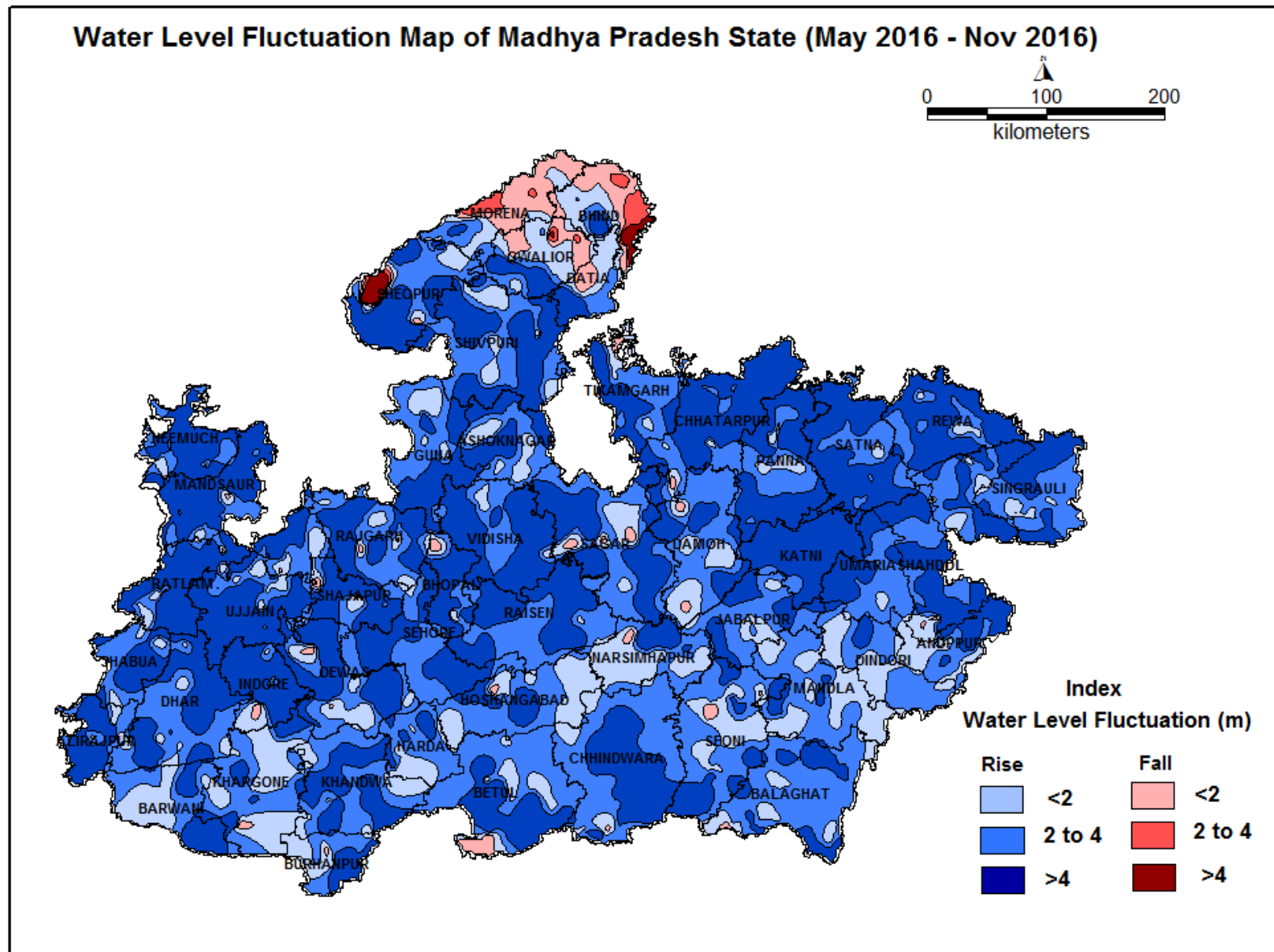
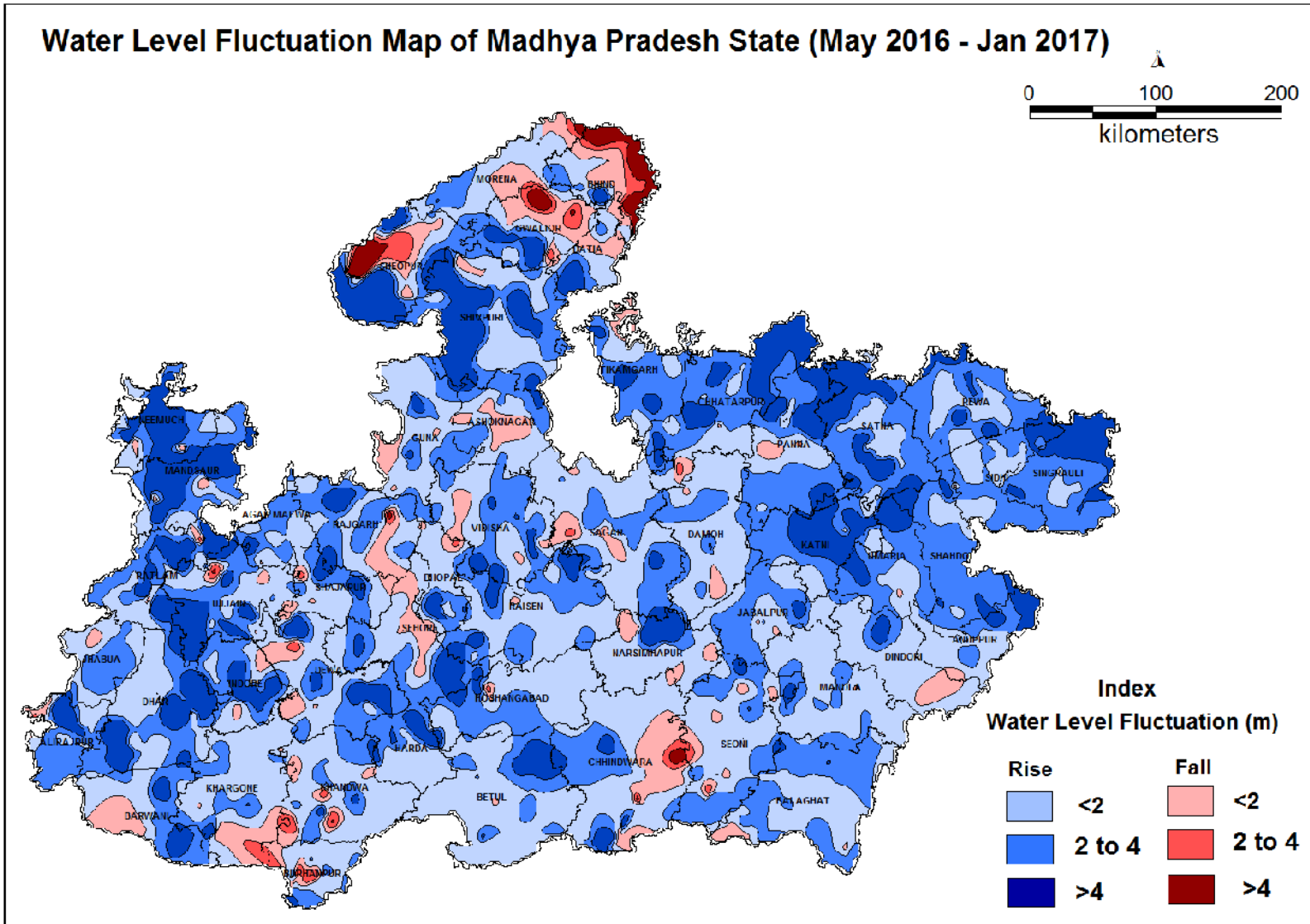




Fig 18



## **2.2c DECADAL WATER LEVEL FLUCTUATIONS**

Depth to ground water level of a particular monitoring season is compared with its 10 years of mean data, i.e., decadal mean of water levels, to get an idea about the water level conditions of that particular season with respect to the decadal mean. Such a comparison helps in the assessment of drought situations or otherwise of the abundance of ground water resources in a particular monitoring season.

### **WATER LEVEL FLUCTUATIONS DECADAL MEAN (MAY 2006-2015) TO MAY 2016**

The ground water levels of May 2016 were compared with the 10 years May (2006-2015) average ground water levels to decipher the long-term changes in the ground water regime. It is observed that about 37.02% of the wells show rise and about 62.98% of wells show decline in water levels in the state. The rise in water level is in the order of 0-2 m in 37.55% of the wells, 2-4 m in 7.37% of the wells and more than 4 m in about 3.39% of the wells. The rise in water level more than 4 m is observed mostly in district of Malwa region and Bhind, Morena, Sheopur and Damoh district. The decline in water levels in the order of 0-2 m is about 44.09% of the wells, between 2-4 m in 11.59% of the wells and more than 4 m in 7.30% of the wells. Decline in water level more than 4 m is seen in sporadic patches in many district of the state. In general by comparing mean of water level of previous 10 year and current year water level, it is inferred that there is significant decline in water level in most parts of the state except Malwa region.

### **WATER LEVEL FLUCTUATION DECADAL MEAN (AUGUST 2006-2015) TO AUGUST 2016**

There is a rise in the water levels in about 76.92% of wells and fall in 23.08% wells. About 48.14% of wells spreading all over the north, north western parts, central, north eastern and in many districts in patches shows a rise in water level up to 2 m. About 20.20% of the wells show a rise in the order of 2- 4 m and is spread in north and north western part and north eastern parts of the state. Rise in water level of more than 4 m is found in about 8.58% of the wells and are seen in patches in north and north western part and north eastern parts of the state

Water level decline up to 2 m is recorded in about 17.31% of wells spread in south of Narmada river and Bhind, Morena and Gwalior districts. About 3.72% of the wells show a decline in the order of 2- 4 m and 2.05% in the order of more than 4m, mostly spread in Bhind, Morena, Gwalior, Khargone, Sagar and Balaghat

### **WATER LEVEL FLUCTUATION MEAN (NOVEMBER 2006-2015) TO NOVEMBER 2016**

There is a rise in the water levels in about 63.07% of wells and fall in 36.93% wells. About 44.16% of wells spreading all over the north, north western parts, central, north eastern and in many districts in patches shows a rise in water level up to 2 m. About 13.04% of the wells show a rise in the order of 2- 4 m and is spread in north and north western part and north eastern parts of the state. Rise in water level of more than 4 m is found in about 5.88% of the wells and are seen in patches in north, north western part and north eastern parts of the state

Water level decline up to 2 m is recorded in about 27.88% of wells spread in south of Narmada river and Bhind, Morena and Gwalior districts. About 6.10% of the wells show a decline in the order of 2- 4 m and 2.94% in the order of more than 4m, mostly spread in Bhind, Morena, Gwalior, Sagar and Chhindwara districts and in many parts of state.

### **WATER LEVEL FLUCTUATION MEAN (JANUARY 2007-2016) TO JANUARY 2017**

There is a rise in the water levels in about 52.66% of wells and fall in 47.34% wells. About 40.49% of wells spreading all over the west, north eastern, central and in many districts in patches shows a rise in water level up to 2 m. About 8.75% of the wells show a rise in the order of 2- 4 m and is spread in north and north western part and north eastern parts of the state. Rise in water level of more than 4 m is found in about 3.42% of the wells and are seen in patches in north, north western part and north eastern parts of the state.

Water level decline up to 2 m is recorded in about 35.16% of wells spread in south of Narmada river and Bhind, Morena and Gwalior districts. About 8.14% of the wells show a decline in the order of 2- 4 m and 4.03% in the order of more than 4m, mostly spread in Bhind, Morena, Gwalior, Betul and Chhindwara districts and in many parts of state.

Decadal water level fluctuations at a glance are shown in Fig 19. The decadal water level fluctuation maps of different period have been depicted in Fig (20 to 23). The district wise decadal water level fluctuation and frequency distribution of wells in different ranges is given in Annexures (XII to XV).

Fig 19

### DECADAL WATER LEVEL FLUCTUATION AT A GLANCE

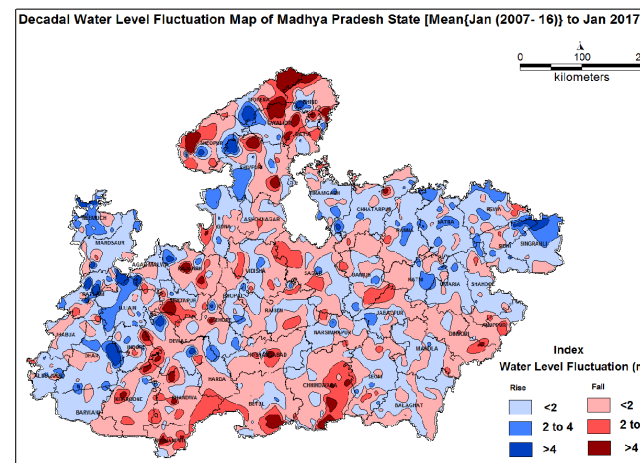
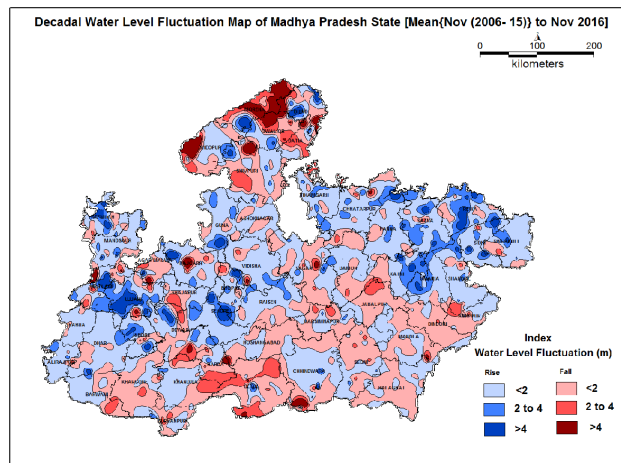
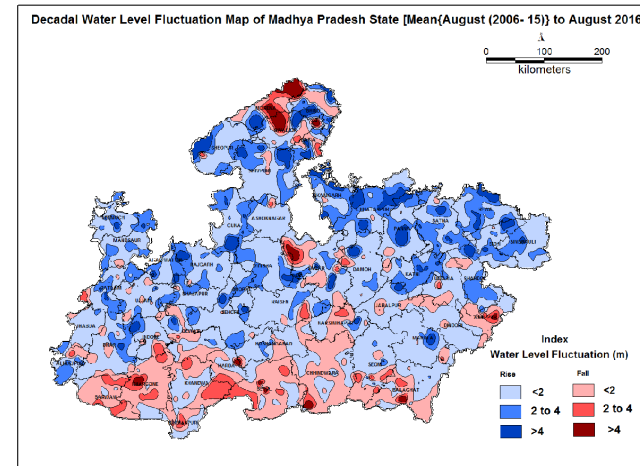
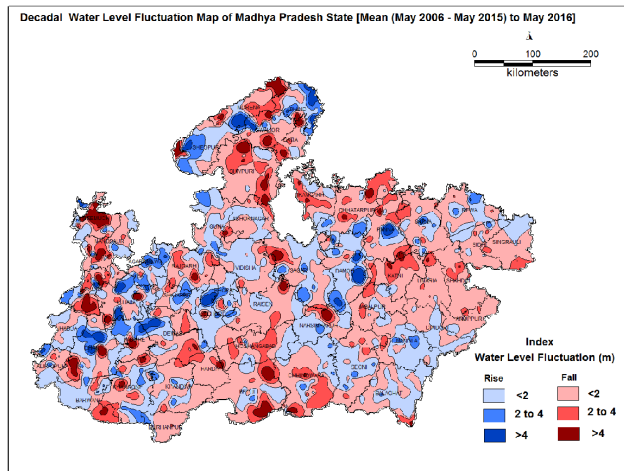


Fig 20

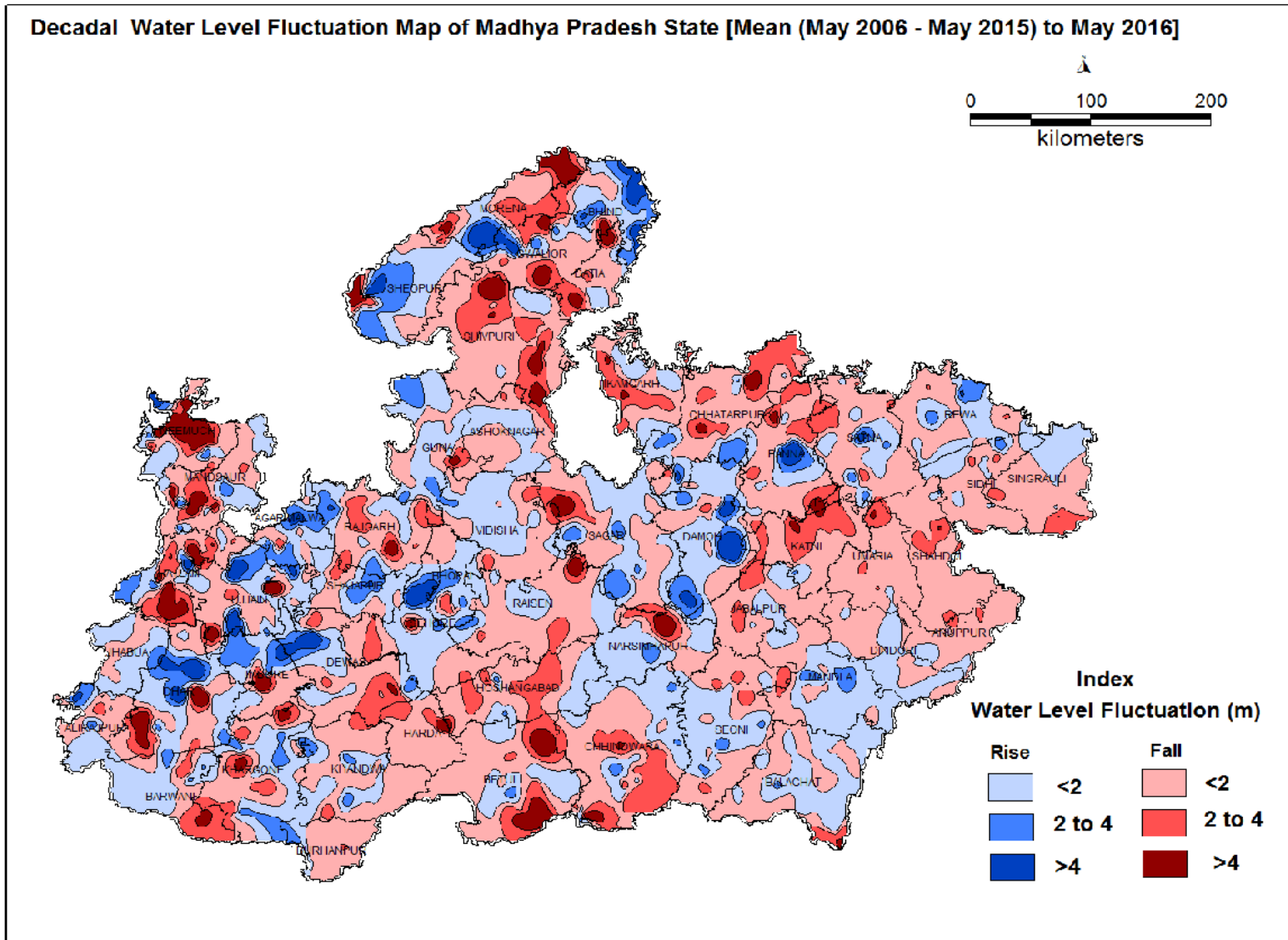


Fig 21

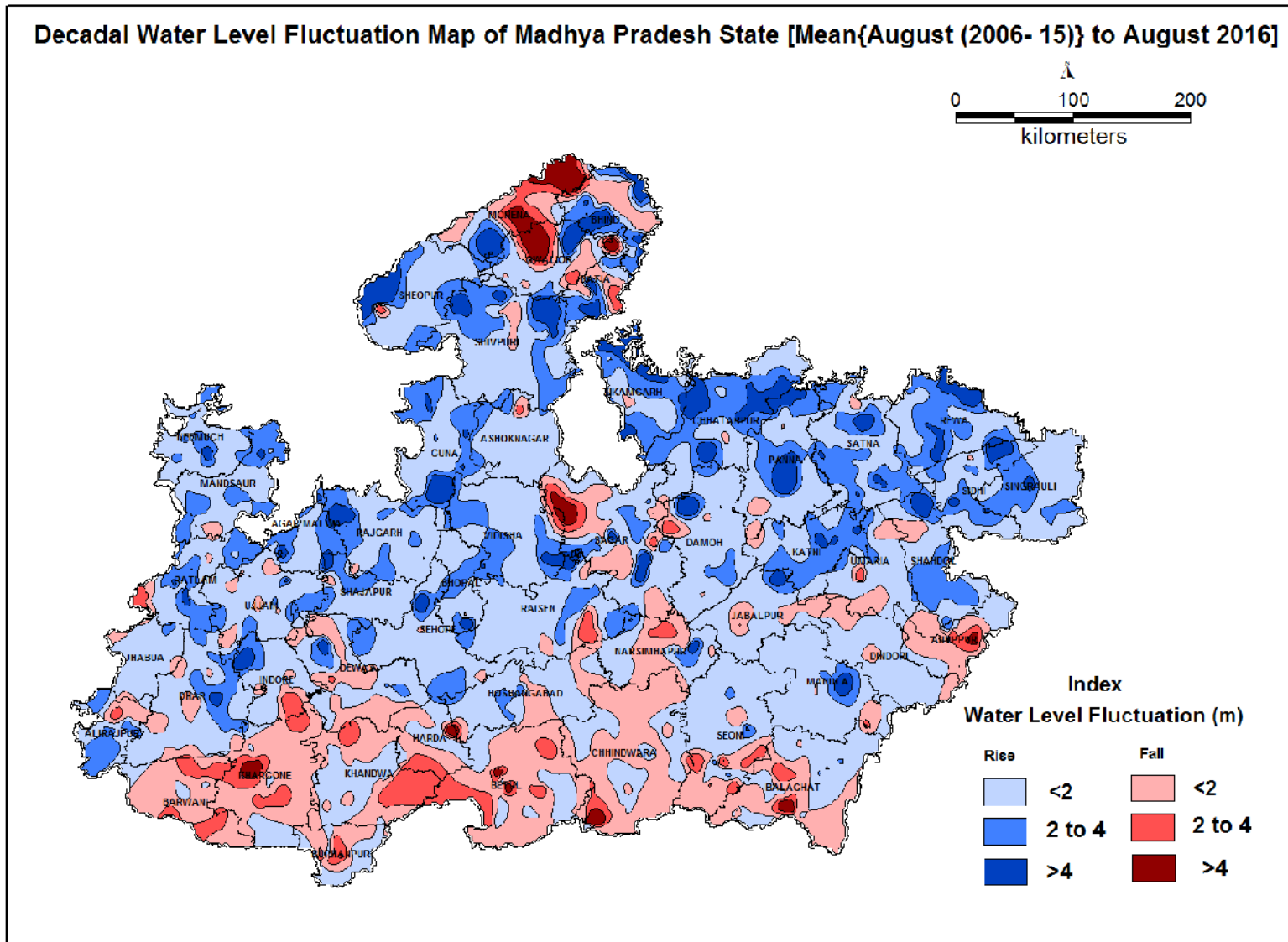
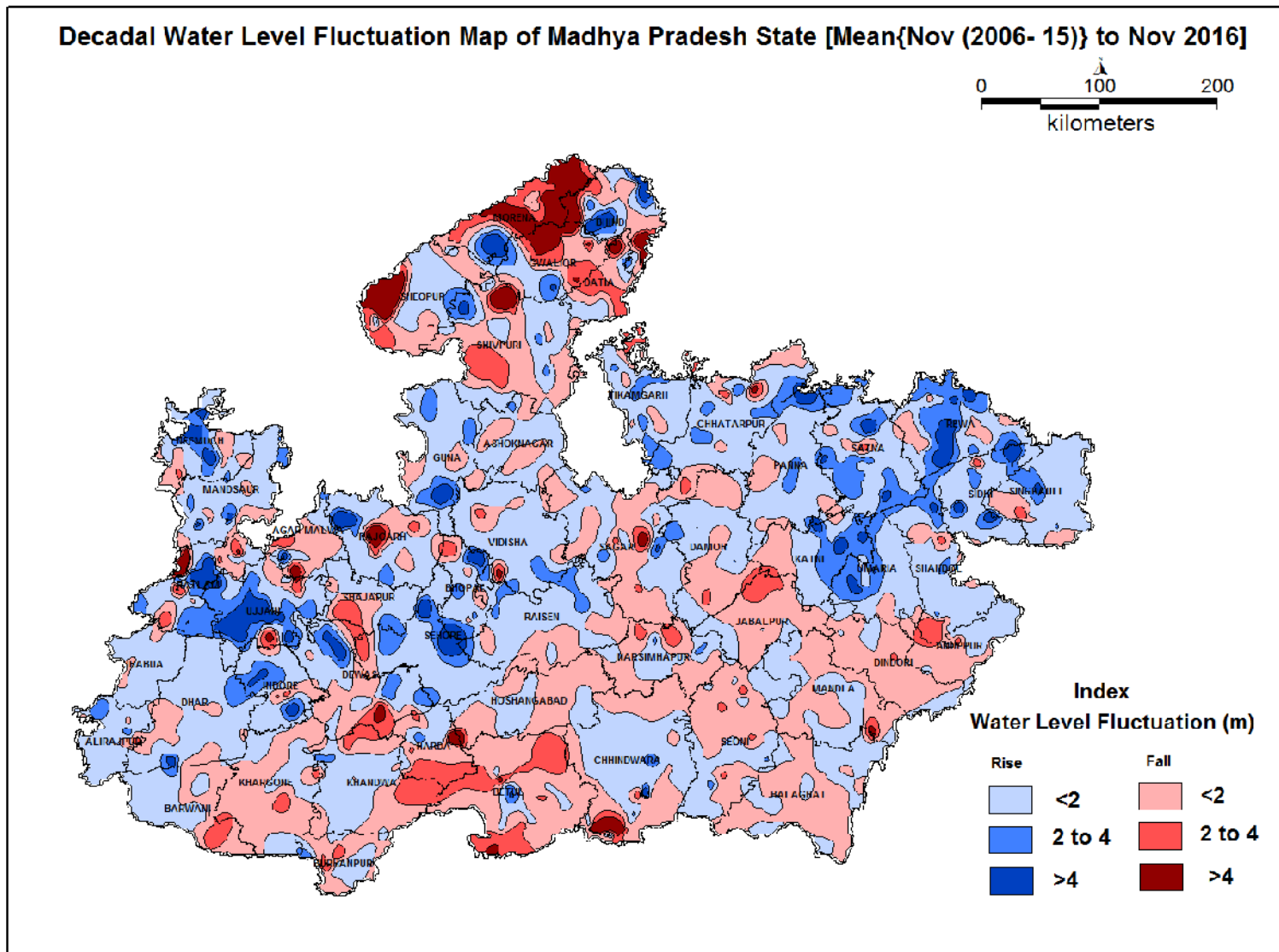
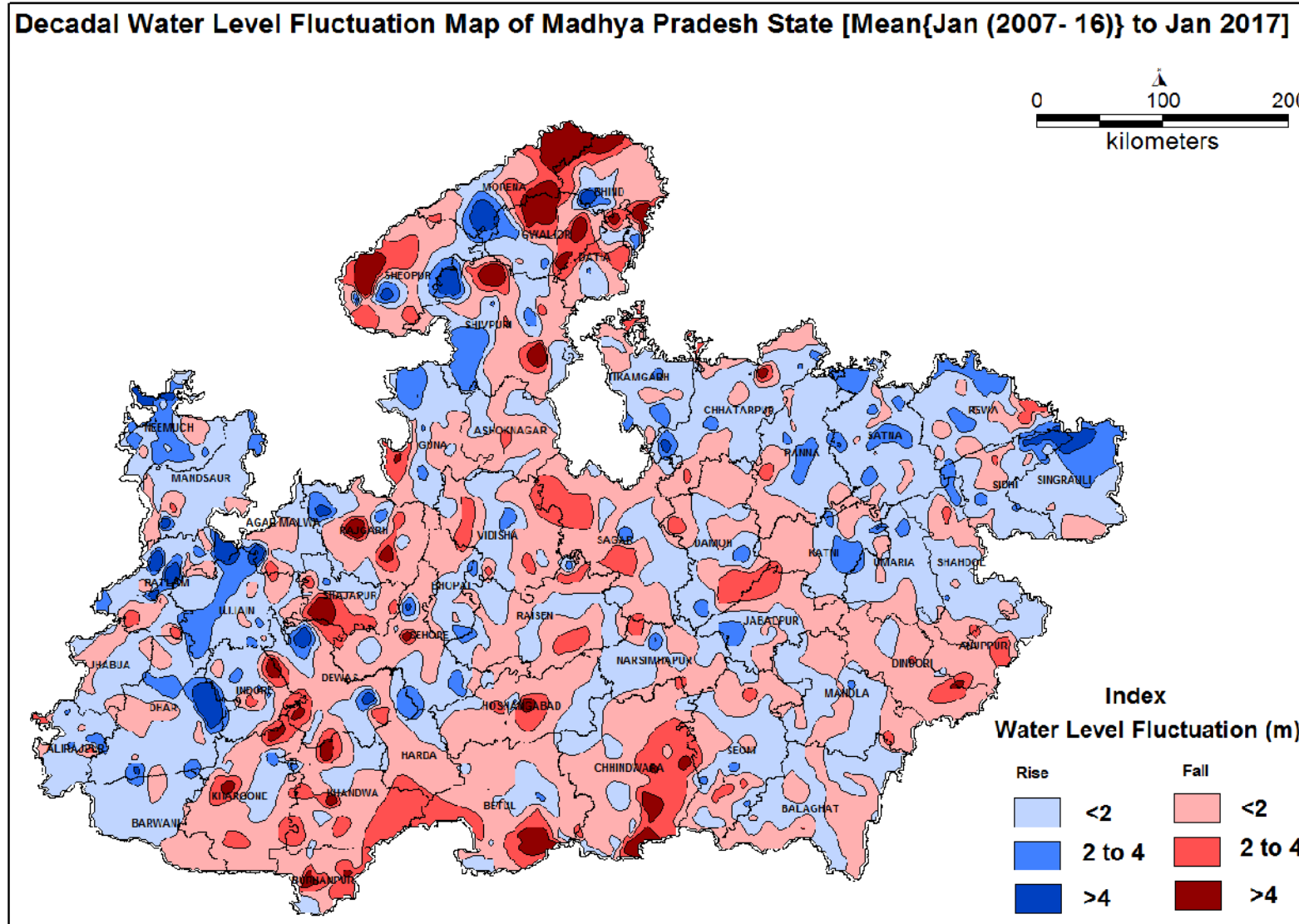


Fig 22





**Fig 23**





### **2.3 LONG-TERM TREND OF GROUND WATER LEVELS**

The trend analysis of depth to ground water levels (time series analysis) using the data from the hydrograph network stations for the past one decade 2007-16 was carried out using the least square method. Based on this analysis, maps are prepared demarcating various zones of rising and declining trends for the decade 2007-16.

#### **GROUND WATER LEVELS TREND PRE MONSOON (May 2007 to May 2016)**

Ground water levels trend map of pre-monsoon period (May 2007 to May 2016) in Madhya Pradesh state has been depicted in **Fig 24**. The Map shows that there is a general rising trend up to (0.10 m/year) of ground water levels during the past decade in the almost all the districts of the State. The rising trend at higher rate (0.10 to 0.2 m/year) is found in sporadic patches of smaller areal extent in Indore, Dewas, Sheopur, Gwalior, Panna, Satna and Shajapur district. The rising trend more than 0.20 m/year has been observed in Sheopur, Dewas, Damoh, Bhind, and in many districts of the State. Declining trend at a rate up to (-0.10 m/year) is observed in patches mainly in central and southern parts of the state. The declining trend at higher rate (-0.10 to -0.20 m/year) has been observed in almost all the districts of the state. The declining trend of pre-monsoon water levels reflects the ground water developmental activities in an area, whereas the rising trend indicates that either the developmental activities have reduced, or that, recharge due to sources other than the rainfall, such as applied irrigation has increased. About 37.5% of monitoring wells are showing declining water levels trend while 62.5 % monitoring wells are showing rising ground water level trend.

#### **GROUND WATER LEVELS TREND POST MONSOON (Nov 2007 to Nov 2016)**

Ground water levels trend map of post-monsoon period (Nov 2007 to Nov 2016) in Madhya Pradesh state has been depicted in **Fig 25**. The Map shows that there is a general rising trend up to 0.10 m/year of ground water levels during the past decade in all most all the districts of the State. Rising trend at a rate 0.10 to 0.20 m/year is observed only in central and south eastern parts of the state. The rising trend at rate more than 0.20 m/year) is found north, northwestern and north eastern parts of the state. The declining trend up to 0.10 m/year has been observed in patches mainly in Southern and central parts of state. The declining trend at rate (-0.10 to -.20 m/year) is found in patches mainly in Betul, Chhindwara, Narsinghpur, and Jabalpur districts. Declining water levels trend more than (-0.20 m/year) has been observed only Betul, Narsinghgarh, Morena, Chhindwara and in many districts of the state. The declining trend in post-monsoon water levels suggests that a part of the aquifer is being dewatered every year, due either to deficient rainfall or to

developmental activities. The rising post-monsoon trend, on the other hand, shows that additional water is being stored in the aquifer, due either to increased rainfall or to seepage through applied irrigation. About 33.6 % of monitoring wells are showing declining water levels trend while 66.4 % monitoring wells are showing rising ground water level trend.

Fig 24

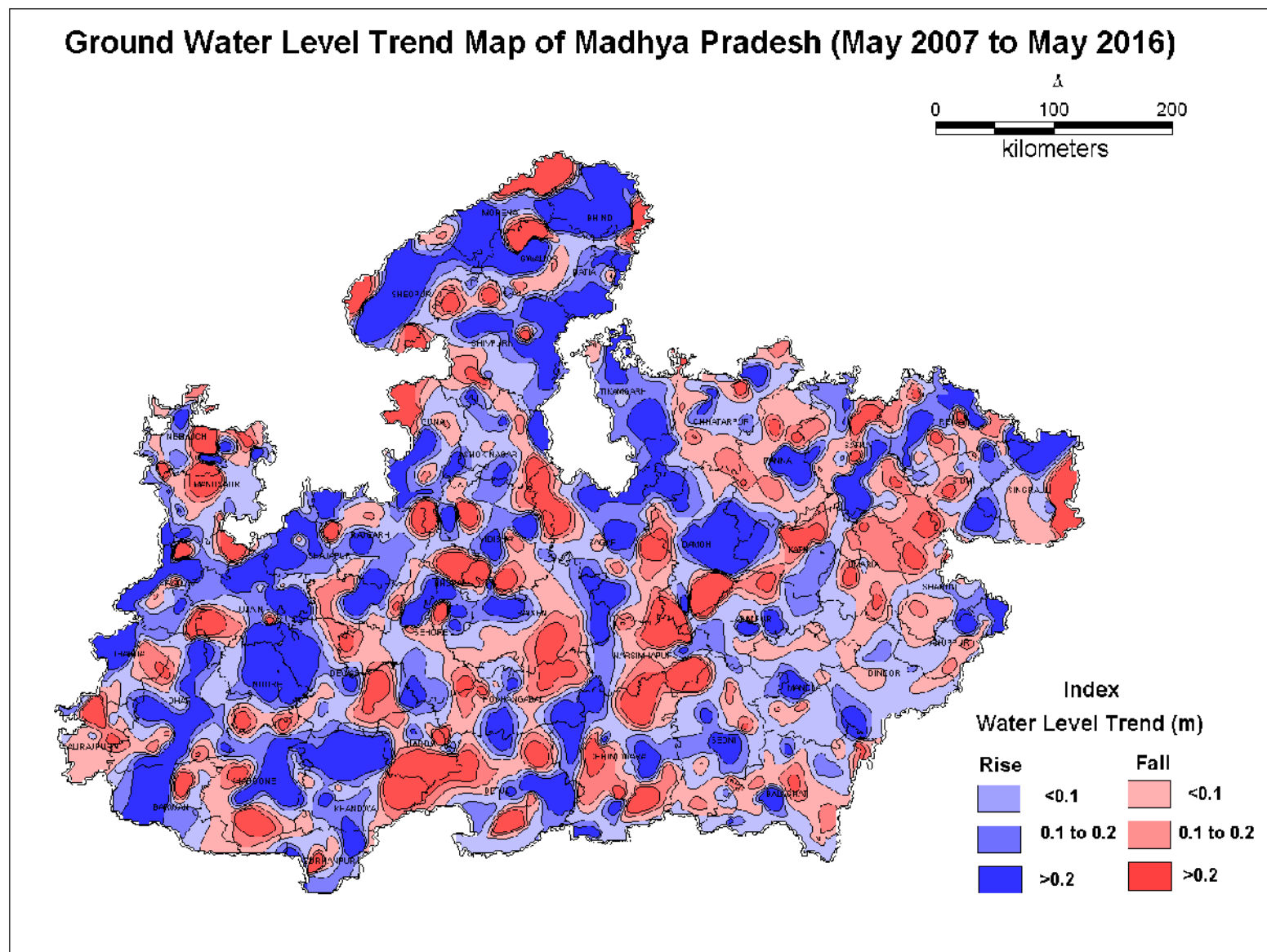
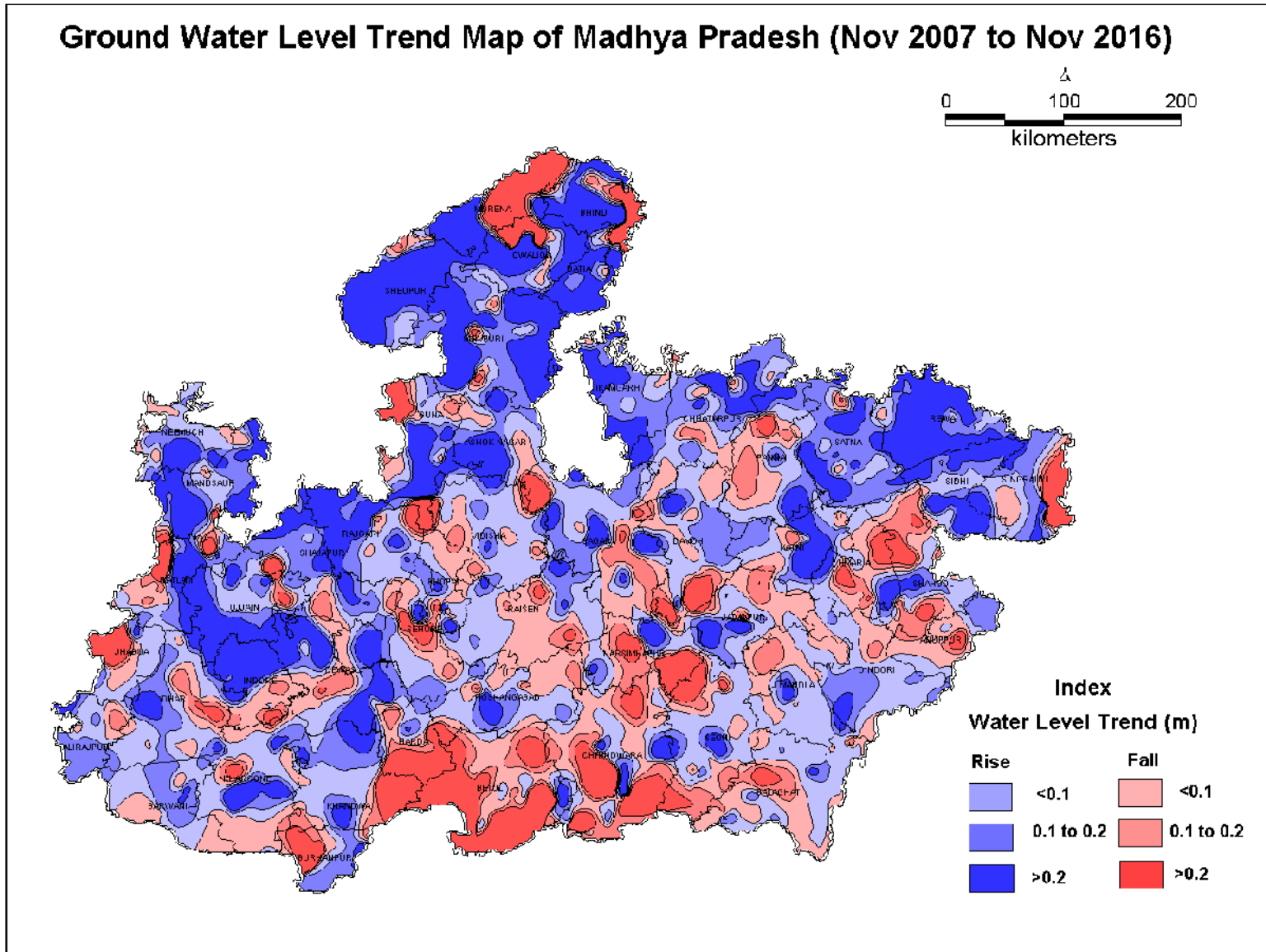


Fig 25



### 3. HYDROCHEMISTRY OF GROUND WATER (2015)

Water samples were collected from 1118 Ground Water Monitoring Wells during May 2015 and monitored for chemical quality of ground water (phreatic aquifer) and their location is given in Fig 26. Detailed analysis of the chemical samples was carried out for 15 parameters. The results of chemical analysis data observed has been tabulated in Annexure - XVI.

#### 3.1 SALINITY

The salinity of water is represented by electrical conductivity. Electrical conductivity is a numerical expression of the ability of water to conduct an electric current. It depends on the total concentration of the ionized substances dissolved in water and the temperature at which the measurement is made. Electrical conductivity increases by about 2% per degree Celsius rise in temperature. The mobility of the dissolved ions, their valencies and their concentration affect conductivity. As electrical conductivity is an index of salinity in water, high electrical conductivity means high salinity. High salinity not only imparts bad taste to drinking water but such water is not suitable for irrigation purposes as it leads to deposition of salt content in the soil and affects the fertility of soil in the absence of adequate soil management practices.

The water having electrical conductivity upto 1000  $\mu\text{S}/\text{cm}$  at 25°C may be considered fresh & suitable for drinking purpose. The Ground water quality of Madhya Pradesh is generally good as 66.99% wells have electrical conductivity below 1000  $\mu\text{S}/\text{cm}$  at 25°C. The salinity tolerant crop may be grown in the area where electrical conductivity is more than 2000  $\mu\text{S}/\text{cm}$  25°C.

The chemical quality of ground water of Madhya Pradesh is generally good as the perusal of the frequency distribution of electrical conductivity in phreatic aquifer. Table-4 shows that 88.46% wells fall in the range of 0-1500  $\mu\text{S}/\text{cm}$  at 25°C and only 1.43% wells have electrical conductivity more than 3000  $\mu\text{S}/\text{cm}$  at 25°C.

**Table 4 Frequency distribution of electrical conductivity in phreatic aquifer range**

Range $\mu\text{S}/\text{cm}$ at 25°C	No. of Samples	%
0-1500	989	88.46
1501-3000	113	10.11
>3001	16	1.43

The distribution of major ions indicates that in Madhya Pradesh in ground water with low to medium salinity (EC  $\leq$  1000  $\mu\text{s}/\text{cm}$ ) bicarbonate is the predominant anion but there is conspicuous increase in Chloride, Sulphate and Nitrate ion concentration with increase in salinity which indicates that the leaching of minerals of these constituents or human activity is contributing towards salinity in ground water of the area. Generally the ground water in Madhya Pradesh is alkaline earth bicarbonate type. The list of samples having electrical conductivity more than 3000  $\mu\text{s}/\text{cm}$  at 25 $^{\circ}\text{C}$  is given in Table 5 and distribution of Electrical Conductivity in Madhya Pradesh is given in the Fig 27.

**Table 5 : Locations showing electrical conductivity above 3000  $\mu\text{s}/\text{cm}$  at 25 $^{\circ}\text{C}$ .**

Sl. No.	District	Block	Location	Latitude	Longitude	EC ( $\mu\text{s}/\text{cm}$ at 25 $^{\circ}\text{C}$ )
1	Balaghat	Khairlanji	Miragpur	21.631	79.839	3740
2	Bhind	Gohad	Bhagathar	26.344	78.492	3576
3	Bhind	Gohad	Bhirkhari	26.475	78.478	3090
4	Bhind	Gohad	Mau	26.27	78.667	4679
5	Bhind	Lahar	Balaji	26.296	78.98	3324
6	Bhind	Mehgaon	Chirole	26.355	78.634	5560
7	Damoh	Damoh	Palar	23.929	79.469	4240
8	Damoh	Patera	Kumhari	23.926	79.815	3340
9	Damoh	Patera	Majhgawa	24.066	79.64	3030
10	Gwalior	Ghatigaon	Mohna	25.897	77.777	3390
11	Mandsaur	Mandsaur	Kachnera	23.864	75.103	3360
12	Sagar	Malthon	Khimlasa	24.201	78.363	3630
13	Sheopur	Sheopur	Pandola	25.546	76.644	3140
14	Sheopur	Vijaypur	Vijaypurcolony	26.057	77.364	3950
15	Ujjain	Mahidpur	Mahidpurroad	23.567	75.508	3386
16	Ujjain	Tarana	Kaiytha	23.233	76.018	3345

Fig 26

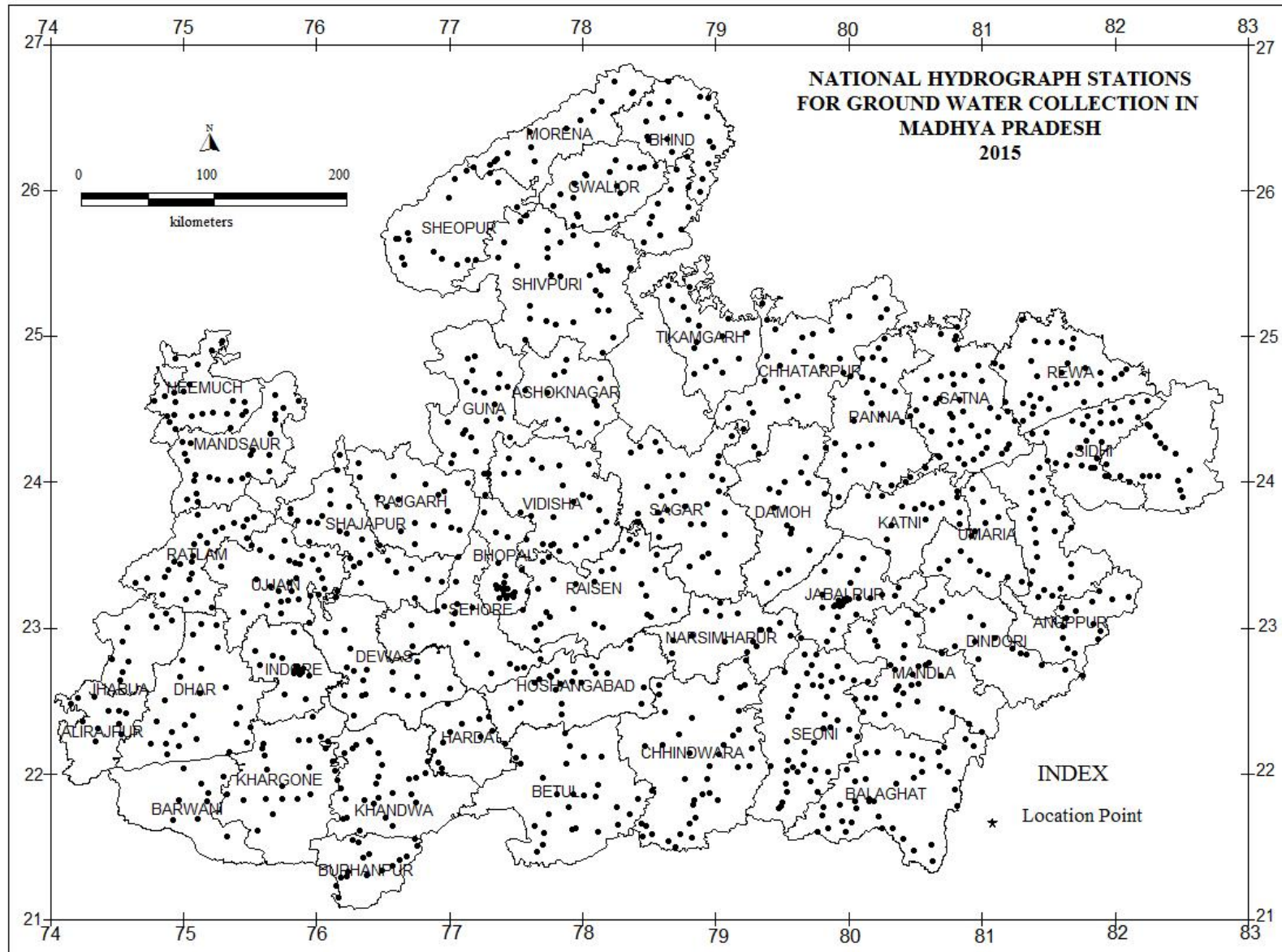
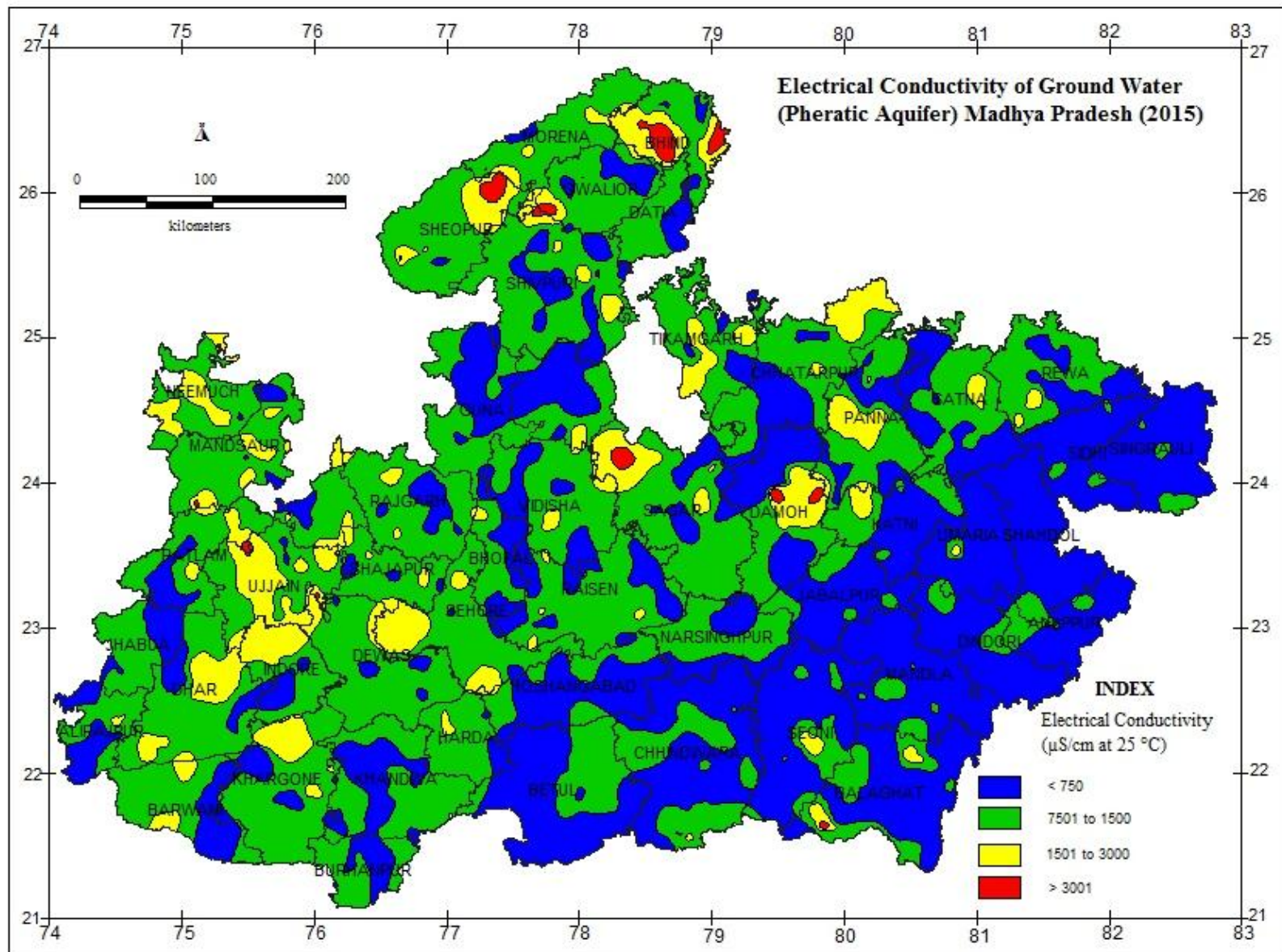




Fig 27





### 3.2 FLUORIDE

Generally fluoride is present in low concentration in natural water. The presence of fluoride in ground water is very important from health point of view for human consumption as in low concentration; it prevents dental caries (upto 1.0 mg/l). However the high concentration of fluoride above the permissible limit of 1.5 mg/l in drinking water (IS: 10500 Drinking water standards) is harmful for human consumption as it causes mottling of teeth and skeletal fluorosis. Its accumulation leads not only to high skeletal concentration, but also has crippling ill effects.

In Madhya Pradesh fluoride rich water in shallow aquifer occurs in Agar Malwa, Anuppur, Barwani, Betul, Bhind, Chhindwara, Dewas, Dhar, Harda, Jabalpur, Shajapur, Tikamgarh and Ujjain districts. The distribution of fluoride in the State is shown in Fig 28. Fluoride analysis reveals that there is no specific trend observed for distribution of Fluoride in the State. The maximum fluoride concentration has been observed at Barela (5.30 mg/l) Jabalpur district.

**Table 6 Frequency Distribution of Fluoride in Phreatic Aquifer**

Range mg/l	No. of Samples	%
0-1	1024	91.59
1-1.5	67	5.99
>1.5	27	2.42

The frequency distribution of Fluoride is give in the Table 6 shows that in 91.59% wells Fluoride concentration is within the desirable limit of 1.0 mg/l where as 2.42% wells show Fluoride concentration above the maximum permissible limit of 1.5 mg/l. The list of locations having Fluoride concentration more than 1.5mg/l is given in Table 7.

**Table 7 Locations showing fluoride exceeding 1.5 mg/l in ground water**

Sl. No.	District	Block	Location	Lattitude	Longitude	F ( more than 1.50 mg/l)
1	Agar Malwa	Nalkhera	Nalkhera	23.836	76.244	1.75
2	Anuppur	Pushprajgarh	Amarkantak	22.674	81.761	1.70
3	Anuppur	Jaithari	Jamudi	23.066	81.633	1.60
4	Barwani	Rajpur	Julwania	21.871	75.185	1.56
5	Betul	Multai	Ghatpiparia	21.882	78.519	1.60
6	Betul	Betul	Khedi	21.857	77.803	1.59
7	Bhind	Gohad	Bhirkhari	26.475	78.478	1.68
8	Chhindwara	Chaurai	Chaurai1	22.054	79.251	1.88
9	Dewas	Tonk Khurd	Alari	23.213	76.151	2.00
10	Dewas	Kannod	Satwas New	22.534	76.682	1.68
11	Dhar	Badnawar	Badnawar New	23.019	75.246	1.71

12	Dhar	Bagh	Bagh New	22.363	74.796	1.51
13	Dhar	Kukshi	Dehari	22.288	74.916	1.83
14	Dhar	Gandhwani	Gandhwani	22.336	75.005	1.72
15	Dhar	Dharamपुरi	Gujri1	22.321	75.500	1.73
16	Dhar	Sardarpur	Julana	22.781	74.989	1.73
17	Dhar	Bagh	Tanda	22.505	74.855	1.56
18	Harda	Harda	Handia	22.484	76.981	1.71
19	Harda	Harda	Masangaon	22.291	77.003	1.55
20	Harda	Khirkiya	Morgarhidw	22.008	76.944	1.54
21	Jabalpur	Jabalpur	Barela	23.096	80.055	5.3
22	Shajapur	Shajapur	Choma	23.649	76.225	1.77
23	Tikamgarh	Jatara	Jatara	25.003	79.048	2.2
24	Tikamgarh	Jatara	Palera	25.024	79.238	2.02
25	Ujjain	Khacharod	Khachrod1	23.426	75.283	1.89
26	Ujjain	Ujjain	Mohanpura	23.182	75.733	1.52
27	Ujjain	Ghatia	Nazarpur	23.345	75.849	1.52

### 3.3 NITRATE

Undesirable changes in the natural quality of ground water due to anthropogenic activities of man are a matter of great concern. The contribution of atmospheric and geological sources for Nitrate in ground water is small in comparison to the sources related to pollution as a result of activities of man. Sewage and animal waste contain considerable amount of Nitrate and its discharge on land & subsequent leaching by rainfall causes enrichment of Nitrate in ground water. Similarly agricultural sources such as excessive use of fertilizers, irrigation with wastewaters, legumes and farm yard wastes contribute nitrate to ground water.

Concentration of nitrate in excess of 45mg/l in water is harmful for human consumption, particularly for infants as it may cause blue baby disease. The highest desirable and maximum permissible limit of nitrate is 45mg/l (IS: 10500 Drinking water standards). The locations of wells in Madhya Pradesh, where concentration of nitrate ion was more than 45mg/l in ground water are shown in Fig 29. Perusal of frequency distribution of Nitrate in ground water reveals that 69.86% (781 nos.) wells have nitrate concentration within the permissible limit of 45mg/l while 30.14% (337 nos.) well water contain nitrate in excess of 45 mg/l (Table 8).

**Table 8 Frequency distribution of Nitrate in shallow aquifer**

Range mg/l	No. of Samples	%
0-45	781	69.86
>45-100	231	20.66
>100	106	9.48

In Madhya Pradesh, nitrate concentration in shallow aquifer occurs in Agar Malwa, Alirajpur, Anuppur, Ashok Nagar, Balaghat, Barwani, Betul, Bhind, Bhopal, Burhanpur, Chhatarpur, Chhindwara, Damoh, Datia, Dewas, Dhar, Dindori, Guna, Gwalior, Harda, Hoshangabad, Indore, Jabalpur, Jhabua, Katni, Khandwa, Khargone, Mandla, Mandsaur, Morena, Narsimhapur, Neemuch, Panna, Raisen, Rajgarh, Ratlam, Rewa, Sagar, Satna, Sehore, Seoni, Shahdol, Shajapur, Sheopur, Shivpuri, Sidhi, Tikamgarh, Ujjain, Umaria, and Vidisha districts. The distribution of nitrate concentration in the State is shown in Fig 29. Very high Nitrate concentration of 348 mg/l was found in the ground water sample from Mau, Bhind district. The locations having more than 45 mg/l nitrate in ground water of Madhya Pradesh are shown in Table 9.

Fig 28

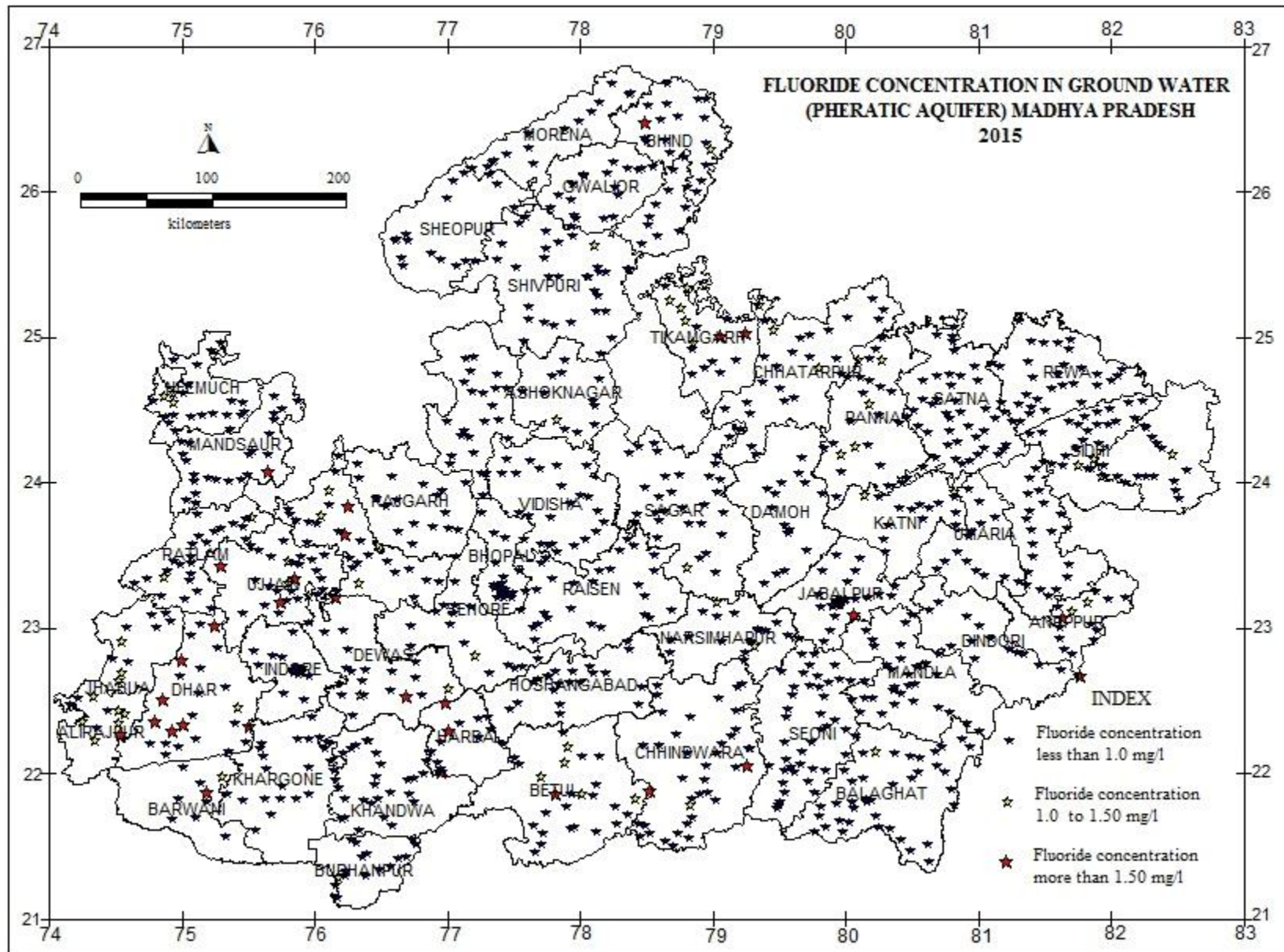
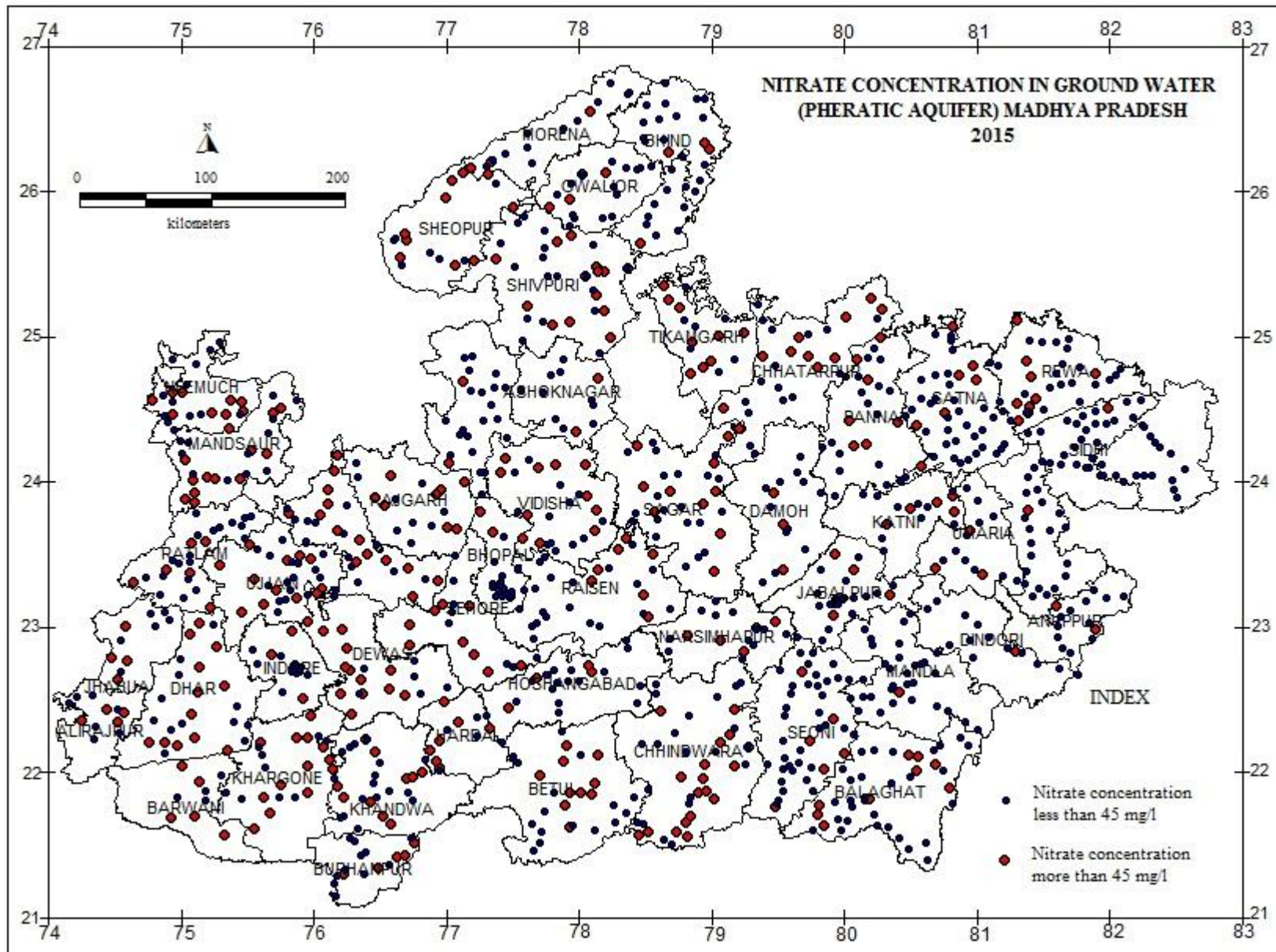


Fig 29





**Table 9 Locations showing nitrate more than 45 mg/l in ground water**

Sl. No.	District	Block	Location	Latitude	Longitude	NO3 (more than 45 mg/l)
1	Agar Malwa	Agar	Amla	23.853	76.104	117
2	Agar Malwa	Badod	Barod	23.788	75.806	122
3	Agar Malwa	Susner	Guradi Bangla	24.08	76.155	106
4	Agar Malwa	Agar	Kanad	23.668	76.174	72
5	Agar Malwa	Agar	Kashi Bardiya	23.773	76.044	60
6	Agar Malwa	Susner	Soyat	24.188	76.174	223
7	Agar Malwa	Susner	Susner	23.945	76.101	46
8	Alirajpur	Alirajpur	Ambua	22.43	74.437	91
9	Alirajpur	Kattiwada	Chandpur	22.357	74.243	116
10	Alirajpur	Jobat	Jobat New	22.413	74.57	111
11	Alirajpur	Alirajpur	Khattali	22.348	74.518	239
12	Anuppur	Jaithari	Deohara	23.143	81.597	53
13	Anuppur	Jaithari	Lapta	22.984	81.889	46
14	Ashok Nagar	Mungoali	Bahadurpur	24.342	77.969	136
15	Ashok Nagar	Chanderi	Chanderi	24.712	78.136	64
16	Balaghat	Baihar	Baihar1	22.104	80.551	156
17	Balaghat	Balaghat	Balaghat	21.813	80.184	154
18	Balaghat	Birsa	Damoh2	21.896	80.795	73
19	Balaghat	Katangi	Katangi	21.771	79.803	70
20	Balaghat	Katangi	Katedhara	21.714	79.797	52
21	Balaghat	Paraswada	Khurmundi	22.125	80.481	130
22	Balaghat	Khairlanji	Miragpur	21.631	79.839	254
23	Balaghat	Baihar	Mohagaon	22.052	80.681	46
24	Balaghat	Baihar	Parsatola	22.012	80.546	48
25	Barwani	Barwani	Borlai	22.039	75.002	276
26	Barwani	Sendhawa	Chachariya	21.569	75.324	56
27	Barwani	Newali	Niwali1	21.683	74.923	109
28	Barwani	Rajpur	Rajpur	21.936	75.136	63
29	Barwani	Sendhawa	Sendhwa	21.694	75.103	56
30	Betul	Amla	Amla1	21.924	78.118	140
31	Betul	Athner	Athner1	21.621	77.921	141
32	Betul	Betul	Betul1	21.86	77.927	54
33	Betul	Chicholi	Jogli	21.975	77.701	60
34	Betul	Betul	Kolgaon	21.769	77.894	69
35	Betul	Chicholi	Nimpani	22.072	77.875	51
36	Betul	Ghoradongri	Sarni	22.118	78.143	89
37	Betul	Multai	Sasundra	21.847	78.092	139
38	Betul	Shahpur	Shahpur	22.189	77.904	49
39	Betul	Betul	Thapa	21.855	78.005	47
40	Bhind	Lahar	Balaji	26.296	78.98	78

41	Bhind	Gohad	Mau	26.27	78.667	348
42	Bhind	Ron Mihona	Ron	26.34	78.948	47
43	Bhopal	Phanda	Barkheda Pathani	23.214	77.475	66
44	Bhopal	Phanda	Lal Ghati	23.277	77.376	57
45	Bhopal	Berasia	Nagirabad	23.794	77.256	135
46	Bhopal	Berasia	Ramgarha	23.654	77.347	59
47	Bhopal	Phanda	Shahjahana Bad	23.266	77.398	48
48	Burhanpur	Burhanpur	Burhanpurdw	21.299	76.223	64
49	Burhanpur	Khaknar	Dedtalai	21.509	76.758	72
50	Burhanpur	Khaknar	Karkheda	21.337	76.487	53
51	Burhanpur	Khaknar	Manjrod Kalan	21.413	76.628	61
52	Burhanpur	Khaknar	Pipalpani	21.43	76.679	116
53	Chhatarpur	Chhatarpur	Chhatarpur	24.9	79.591	132
54	Chhatarpur	Rajnagar	Ganj	24.792	79.795	90
55	Chhatarpur	Gaurihar	Gaurihar	25.268	80.194	78
56	Chhatarpur	Bada Malhara	Ghuara	24.509	79.091	81
57	Chhatarpur	Chhatarpur	Issanagar	24.862	79.385	56
58	Chhatarpur	Rajnagar	Khajuraho	24.85	79.931	89
59	Chhatarpur	Rajnagar	Kurri	24.868	79.72	65
60	Chhatarpur	Laundi	Laundi	25.139	80.006	75
61	Chhatarpur	Chhatarpur	Niwari	24.996	79.651	65
62	Chhatarpur	Gaurihar	Sarwai	25.186	80.287	63
63	Chhindwara	Pandhurana	Bangaon1	21.573	78.447	62
64	Chhindwara	Amarwara	Banjari	22.26	79.132	96
65	Chhindwara	Pandhurana	Borgaon1	21.559	78.816	165
66	Chhindwara	Chhindwara	Chhindwara	22.053	78.949	81
67	Chhindwara	Tamia	Delakhari	22.421	78.618	63
68	Chhindwara	Mohkhed	Goni	21.821	79.013	99
69	Chhindwara	Mohkhed	Linga Rly.Stn.	21.963	78.938	76
70	Chhindwara	Chaurai	Marka Handi	22.045	79.164	58
71	Chhindwara	Pandhurana	Pandurna	21.589	78.518	62
72	Chhindwara	Pandhurana	Piplanarayanwar	21.588	78.731	167
73	Chhindwara	Sausar	Ramakona New	21.702	78.843	99
74	Chhindwara	Chaurai	Ramgarh	22.175	79.272	85
75	Chhindwara	Chhindwara	Saonri1	21.965	78.77	50
76	Chhindwara	Mohkhed	Sarangbheri	21.867	78.953	75
77	Chhindwara	Sausar	Sausar	21.655	78.806	99
78	Chhindwara	Amarwara	Singhori	22.201	79.062	96
79	Chhindwara	Amarwara	Surla	22.433	79.172	307
80	Chhindwara	Mohkhed	Tansara Mal	21.862	78.898	60
81	Damoh	Damoh	Abhana	23.705	79.537	76
82	Damoh	Damoh	Palar	23.929	79.469	90
83	Damoh	Tendukheda	Tendukheda	23.396	79.539	55
84	Datia	Datia	Datia	25.645	78.459	90
85	Dewas	Bagli	Bagli1	22.639	76.347	54

86	Dewas	Bagli	Bamohri	22.709	76.275	120
87	Dewas	Sonkatch	Bhonrasa	22.988	76.207	76
88	Dewas	Kannod	Bijawad	22.699	76.572	48
89	Dewas	Dewas	Dewas	22.974	76.068	95
90	Dewas	Kannod	Kantaphor	22.576	76.566	61
91	Dewas	Bagli	Karnawad	22.73	76.229	126
92	Dewas	Bagli	Nevri	22.858	76.25	93
93	Dewas	Bagli	Pipri	22.399	76.278	183
94	Dewas	Bagli	Punjabura	22.546	76.37	54
95	Dewas	Kannod	Satwas New	22.534	76.682	78
96	Dewas	Bagli	Udainagardw	22.538	76.204	71
97	Dhar	Sardarpur	Amjhira	22.556	75.123	116
98	Dhar	Badnawar	Chayan	23.025	75.137	106
99	Dhar	Sardarpur	Dasai	22.722	75.132	180
100	Dhar	Dhar	Dhar	22.591	75.318	162
101	Dhar	Dharamपुरi	Dharamपुरi1	22.153	75.347	105
102	Dhar	KUKSHI	Dhulsar	22.205	74.869	210
103	Dhar	Badnawar	Kanwan New	22.87	75.258	94
104	Dhar	Kukshi	Kukshi1	22.204	74.755	114
105	Dhar	Umarban	Manawar1	22.236	75.093	163
106	Dhar	Sardarpur	Rajod	22.954	75.067	84
107	Dhar	Manawar	Singhana	22.188	74.969	78
108	Dhar	Gandhwani	Zeerabad	22.398	75.07	55
109	Dindori	Bajag	Sagar Tola	22.828	81.292	49
110	Guna	Chachaura	Penchi	24.136	77.01	103
111	Guna	Bamori	Suhaya New	24.691	77.124	64
112	Gwalior	Ghatigaon	Aron	25.952	77.931	155
113	Gwalior	Morar	Bhatkheri	26.133	78.199	112
114	Gwalior	Ghatigaon	Mohna	25.897	77.777	76
115	Gwalior	Ghatigaon	Nayagaon2	26.118	78.021	95
116	Harda	Khirkhya	Chhipawaddw	22.155	76.877	154
117	Harda	Khirkhya	Chhuri Khal	22.034	76.94	61
118	Harda	Harda	Handia	22.484	76.981	71
119	Harda	Harda	Hardadw	22.346	77.088	117
120	Harda	Khirkhya	Mandla	22.219	76.947	60
121	Harda	Khirkhya	Sonpura Colony	22.078	76.916	153
122	Harda	Timarni	Temagaon	22.298	77.321	146
123	Hoshangabad	Babai	Baharpur	22.736	78.074	76
124	Hoshangabad	Hoshangabad	Sanwalkhera	22.65	77.677	56
125	Hoshangabad	Sohagpur	Semri Harchand	22.689	78.092	65
126	Hoshangabad	Seoni Malwa	Seonimalwa	22.448	77.466	64
127	Indore	Mhow	Nandpura	22.514	75.918	58
128	Indore	Indore	Polo Ground	22.739	75.854	53
129	Indore	Sanwer	Sanwer	22.971	75.828	71
130	Indore	Depalpur	Ushapura	22.809	75.674	49



131	Jabalpur	Jabalpur	Jabalpur	23.198	79.963	48
132	Jabalpur	Sihora	Kachupura	23.399	80.065	95
133	Jabalpur	Kundam	Kundam	23.219	80.346	83
134	Jabalpur	Majhauri	Majholi	23.499	79.927	176
135	Jabalpur	Jabalpur	Manegaon1	23.078	79.913	53
136	Jhabua	Jhabua	Jhabua1	22.771	74.59	53
137	Jhabua	Jhabua	Pitol	22.785	74.466	54
138	Jhabua	Ranapur	Ranapur	22.639	74.523	81
139	Jhabua	Thandla	Thandla1	23.008	74.579	66
140	Katni	Vijay Raghavgarh	Barhi	23.902	80.811	69
141	Katni	Badwara	Kewlari	23.797	80.83	78
142	Katni	Katni	Lakhapateri	23.708	80.317	57
143	Katni	Katni	Majhgawan1	23.822	80.499	67
144	Katni	Vijay Raghavgarh	Piparia2	23.862	80.699	65
145	Khandwa	Pandhana	Balwara1	21.7	76.516	52
146	Khandwa	Punasa	Bangarda	22.145	76.462	62
147	Khandwa	Harsud	Bedia	21.97	76.744	74
148	Khandwa	Harsud	Bori Saray	22.006	76.817	82
149	Khandwa	Harsud	Chanera	21.962	76.698	82
150	Khandwa	Chhegaon Makhan	Chhegaonmakhan	21.832	76.218	59
151	Khandwa	Punasa	Daulatpur	22.232	76.391	70
152	Khandwa	Chhegaon Makhan	Deshgaon New	21.902	76.179	49
153	Khandwa	Chhegaon Makhan	Dhangaon	22.088	76.118	114
154	Khandwa	Pandhana	Gurhi	21.639	76.574	109
155	Khandwa	Khandwa	Jaswadi1	21.794	76.428	72
156	Khargone	Badwah	Amba	22.043	75.946	116
157	Khargone	Maheshwar	Baddiya	22.234	75.948	180
158	Khargone	BARWAHA	Balwara	22.394	75.975	91
159	Khargone	Bhikangaon	Bhikangaon1	21.862	75.956	170
160	Khargone	Bhikangaon	Daudwa	22.021	76.137	251
161	Khargone	Maheshwar	Dhargaon	22.209	75.597	143
162	Khargone	Bhagwanpura	Dhulkot	21.61	75.553	86
163	Khargone	Gogawan	Ghatti	21.723	75.667	83
164	Khargone	Gogawan	Gogaon	21.918	75.744	110
165	Khargone	Khargone	Khargone	21.828	75.619	55
166	Khargone	Maheshwar	Piptyabuzrug	22.234	75.861	183
167	Khargone	Badwah	Sanawad New	22.173	76.071	74
168	Mandla	Mandla	Padmi Choraha	22.55	80.41	67
169	Mandsaur	Bhanpura	Babulda	24.474	75.688	179
170	Mandsaur	Garoth	Barkheranayak	24.219	75.522	133
171	Mandsaur	Mandsaur	Basakheda	24.032	75.198	86

172	Mandsaur	Bhanpura	Bhanpura	24.512	75.749	72
173	Mandsaur	Mandsaur	Botalganj	24.148	75.029	136
174	Mandsaur	Mandsaur	Chirmoliya	24.022	75.257	163
175	Mandsaur	Mandsaur	Daloda1	23.925	75.099	125
176	Mandsaur	Mandsaur	Kachnera	23.864	75.103	59
177	Mandsaur	Mandsaur	Manpura	23.884	75.026	122
178	Mandsaur	Mandsaur	Nayakhera	24.014	75.083	54
179	Mandsaur	Garoth	Shamgarh1	24.191	75.64	191
180	Mandsaur	Sitamau	Surjani	24.025	75.445	90
181	Morena	Morena	Khera Mewda	26.551	78.08	95
182	Morena	Sabalgarh	Ranipura	26.206	77.335	48
183	Narsimhapur	Gotegaon	Gotegaon	23.039	79.481	60
184	Narsimhapur	Narsimhapur	Karakbel New	22.991	79.338	47
185	Narsimhapur	Kareli	Kareli Basti	22.911	79.068	109
186	Narsimhapur	Chawarpatha	Koudiya	22.946	78.816	65
187	Narsimhapur	Narsimhapur	Sundernagar	22.838	79.234	68
188	Neemuch	Manasa	Besla	24.554	75.457	79
189	Neemuch	Manasa	Bhadanadw	24.561	75.369	82
190	Neemuch	Manasa	Chachor	24.372	75.357	117
191	Neemuch	Neemuch	Girdola	24.462	74.932	55
192	Neemuch	Manasa	Gota Pipliya	24.48	75.223	100
193	Neemuch	Manasa	Jamalpura	24.487	75.464	48
194	Neemuch	Manasa	Kundaliya	24.467	75.331	53
195	Neemuch	Jawad	Lalpura	24.614	74.926	55
196	Neemuch	Jawad	Morban1	24.622	75	84
197	Neemuch	Neemuch	Nayagaon2	24.561	74.776	56
198	Panna	Ajaigarh	Ajaigarh	24.99	80.268	87
199	Panna	Gunnor	Amanganj	24.421	80.034	76
200	Panna	Ajaigarh	Bariyarpur	24.849	80.095	76
201	Panna	Pawai	Hathkuri	24.246	80.069	55
202	Panna	Panna	Panna	24.706	80.181	154
203	Panna	Pawai	Powai	24.265	80.165	136
204	Panna	Gunnor	Salleha	24.413	80.403	95
205	Raisen	Begamganj	Begumganj	23.607	78.349	145
206	Raisen	Gairatganj	Dehgaon	23.319	78.091	79
207	Raisen	Silwani	Dhangwan	23.221	78.478	86
208	Raisen	Gairatganj	Garhi	23.394	78.142	80
209	Raisen	Begamganj	Paloha	23.532	78.296	131
210	Raisen	Begamganj	Sultanganj	23.503	78.555	87
211	Raisen	Udaipura	Udaipura	23.075	78.513	65
212	Rajgarh	Biaora	Barkheda	23.942	76.955	56
213	Rajgarh	Biaora	Biora	23.913	76.917	64
214	Rajgarh	Jirapur	Chhapihera	23.897	76.453	61
215	Rajgarh	Narsingharh	Ganayari	23.691	77.008	140
216	Rajgarh	Narsingharh	Gandhigram	23.674	77.069	73

217	Rajgarh	Khilchipur	Khilchipur	24.043	76.579	91
218	Rajgarh	Sarangpur	Sandavta	23.834	76.526	49
219	Rajgarh	Biaora	Suthaliya	23.996	77.138	62
220	Ratlam	Bajna	Bajna	23.309	74.638	94
221	Ratlam	Ratlam	Rattagarhkhera	23.139	75.216	72
222	Ratlam	Sailana	Saser	23.4	74.887	51
223	Ratlam	Ratlam	Sejawata	23.377	75.06	48
224	Ratlam	Piploda	Sohangarh	23.58	75.08	60
225	Ratlam	Jaora	Ukediya	23.585	75.18	48
226	Rewa	Rewa	Amilki	24.425	81.308	200
227	Rewa	Gangeo	Baikunthpur1	24.728	81.409	46
228	Rewa	Jawa	Dabhura	25.114	81.302	125
229	Rewa	Rewa	Kanauji	24.472	81.378	155
230	Rewa	Mauganj	Pahadi	24.75	81.886	122
231	Rewa	Rewa	Raipur	24.578	81.437	212
232	Rewa	Rewa	Reethi	24.522	81.39	118
233	Rewa	Rewa	Rewa	24.544	81.303	85
234	Rewa	Sirmour	Sirmaur1	24.834	81.365	75
235	Sagar	Malthon	Bamhori Lal	24.246	78.433	90
236	Sagar	Banda	Dalpatpur	24.134	79.017	76
237	Sagar	Deori	Deorikhas	23.386	79.016	82
238	Sagar	Shahgarh	Hirapur	24.366	79.211	224
239	Sagar	Rahatgarh	Jaruakhera	23.973	78.482	65
240	Sagar	Sagar	Khajuria	23.94	78.686	55
241	Sagar	Banda	Manjla	23.937	79.021	80
242	Sagar	Sagar	Parsoria	23.854	78.936	190
243	Sagar	Rehli	Rehli	23.641	79.065	54
244	Sagar	Shahgarh	Shahgarh	24.32	79.119	121
245	Sagar	Jaisinagar	Sihora	23.798	78.561	98
246	Satna	Maihar	Amdara	24.104	80.576	48
247	Satna	Rampur Baghelan	Birsinghpur	24.798	80.97	81
248	Satna	Majhgawan	Chitrakoot	25.067	80.817	76
249	Satna	Sohawal	Jaitwara	24.74	80.867	72
250	Satna	Sohawal	Kotar1	24.699	80.995	98
251	Satna	Unchehara	Pahari	24.392	80.547	64
252	Satna	Unchehara	Pondipithourabd	24.472	80.759	116
253	Sehore	Ichhawar	Amlaha	23.118	76.903	46
254	Sehore	Ashta	Ashta	23.023	76.716	269
255	Sehore	Budni	Bayan	22.734	77.556	66
256	Sehore	Sehore	Heerapur	23.143	77.173	47
257	Sehore	Sehore	Jattakheda	23.153	76.963	59
258	Sehore	Ashta	Khachrod	22.872	76.718	56
259	Sehore	Nasrullaganj	Larkui New	22.817	77.209	52
260	Sehore	Ichhawar	Nadan	22.897	77.122	48
261	Sehore	Nasrullaganj	Rala	22.69	77.314	137

262	Seoni	Seoni	Kaniwara	22.212	79.74	90
263	Seoni	Barghat	Kauria	22.017	79.843	65
264	Seoni	Keolari	Keolari	22.371	79.911	53
265	Seoni	Kurai	Khawasa	21.762	79.472	48
266	Seoni	Lakhnadon	Makarjhir	22.691	79.683	72
267	Seoni	Keolari	Pandiachhappara	22.126	80.002	47
268	Shahdol	Jaysing Nagar	Karki	23.808	81.388	54
269	Shajapur	Kalapipal	Arandia	23.208	76.739	77
270	Shajapur	Shajapur	M.Barodia1	23.606	76.341	107
271	Shajapur	Shajapur	Majhania	23.448	76.321	78
272	Shajapur	Kalapipal	Nandni	23.318	76.938	46
273	Shajapur	Shajapur	Panwadi	23.504	76.404	81
274	Shajapur	Moman Badodia	Salsalai	23.464	76.538	57
275	Shajapur	Shujalpur	Shujalpur	23.406	76.709	54
276	Sheopur	Vijaypur	Garhi1	26.12	77.306	109
277	Sheopur	Vijaypur	Ghaswani	25.892	77.506	51
278	Sheopur	Vijaypur	Harkui	26.159	77.179	74
279	Sheopur	Karahal	Karahal	25.493	77.057	144
280	Sheopur	Karahal	Kunorh	25.529	77.199	115
281	Sheopur	Vijaypur	Panchoncolony	26.135	77.124	103
282	Sheopur	Sheopur	Pandola	25.546	76.644	79
283	Sheopur	Vijaypur	Pura	25.953	76.991	250
284	Sheopur	Sheopur	Rajpura	25.71	76.681	87
285	Sheopur	Sheopur	Sheopur	25.664	76.696	80
286	Sheopur	Vijaypur	Shyampur	26.081	77.034	68
287	Shivpuri	Khaniyadhana	Achhroni New	24.992	78.231	50
288	Shivpuri	Pichhore	Dhola	25.283	78.13	105
289	Shivpuri	Badarwas	Ganeshkhara	25.087	77.793	120
290	Shivpuri	Karera	Karera	25.454	78.136	75
291	Shivpuri	Karera	Languri	25.484	78.123	62
292	Shivpuri	Narwar	Mangroni	25.696	77.933	83
293	Shivpuri	Kolaras	Manipura New	25.213	77.606	73
294	Shivpuri	Khaniyadhana	Masoori	25.1	77.93	121
295	Shivpuri	Narwar	Narwar	25.651	77.833	165
296	Shivpuri	Pichhore	Pichhore	25.179	78.191	200
297	Shivpuri	Pohri	Pohari	25.541	77.365	93
298	Shivpuri	Karera	Sikandara	25.472	78.365	50
299	Shivpuri	Karera	Sirsod Chouraha	25.422	78.051	250
300	Shivpuri	Karera	Toda Karee	25.453	78.185	66
301	Sidhi	Sidhi	Hatwa	24.508	81.992	56
302	Tikamgarh	Palera	Digaura	24.966	78.851	98
303	Tikamgarh	Jatara	Jatara	25.003	79.048	120
304	Tikamgarh	Tikamgarh	Majna	24.836	78.997	178
305	Tikamgarh	Tikamgarh	Mawai	24.794	78.928	87
306	Tikamgarh	Prithvipur	Nengawan	25.255	78.673	56

307	Tikamgarh	Niwari	Orchha	25.349	78.641	190
308	Tikamgarh	Jatara	Palera	25.024	79.238	124
309	Tikamgarh	Prithvipur	Prithipur	25.206	78.754	65
310	Tikamgarh	Tikamgarh	Tikamgarh	24.744	78.838	167
311	Ujjain	Ujjain	Chakrawada Grid	23.256	75.711	123
312	Ujjain	Badnagar	Chhoti Ghadsod	23.108	75.453	108
313	Ujjain	Tarana	Dablahardu	23.493	75.895	49
314	Ujjain	Tarana	Kaiytha	23.233	76.018	147
315	Ujjain	Khacharod	Khachrod1	23.426	75.283	50
316	Ujjain	Badnagar	Kharotia	23.157	75.624	178
317	Ujjain	Mahidpur	Khera Khajuria	23.462	75.796	59
318	Ujjain	Mahidpur	Mahidpurroad	23.567	75.508	52
319	Ujjain	Ujjain	Palkhanda	23.041	75.948	49
320	Ujjain	Ujjain	Patpala	23.197	75.867	108
321	Ujjain	Tarana	Rupakhedi	23.473	75.971	95
322	Ujjain	Tarana	Sumra Kheda	23.267	76.062	84
323	Ujjain	Khacharod	Unhel	23.336	75.549	193
324	Umaria	Pali	Birsinghpur1	23.367	81.04	48
325	Umaria	Karkeli	Nigahari	23.409	80.683	55
326	Umaria	Bandhavgarh	Parasi	23.664	80.944	54
327	Vidisha	Lateri	*Lateri1	24.061	77.407	49
328	Vidisha	Lateri	Anandpur	24.167	77.443	81
329	Vidisha	Vidisha	Bilari	23.578	77.698	178
330	Vidisha	Basoda	Ghatera	23.807	78.124	108
331	Vidisha	Gyaraspur	Gyaraspur1	23.667	78.114	48
332	Vidisha	Kurwai	Kurwai1	24.125	78.043	99
333	Vidisha	Sironj	Patharia	24.115	77.819	162
334	Vidisha	Vidisha	Salaiya	23.608	77.576	70
335	Vidisha	Sironj	Sironj1	24.099	77.689	159
336	Vidisha	Neteran	Tinsiyai	23.772	77.609	68
337	Vidisha	Basoda	Udaipur	23.901	78.055	109

### 3.4 TOTAL HARDNESS

Hardness is mainly caused by the presence of Calcium and Magnesium Bicarbonate, Sulphate and Chloride ions. As per Bureau of Indian Standard IS:10500: 2012 (Drinking water), the desirable limit of total hardness is 200 mg/l and permissible limit is 600 mg/l. Total Hardness in the shallow ground water in Madhya Pradesh ranges between 20 to 1400 mg/l (1400 mg/l in Raipur, Rewa district). Most of the waters are calcium bicarbonate type attributing to temporary hardness of water. Permanent hardness of water caused by Calcium and Magnesium, Sulphate and Chloride can be removed by ion exchange.

**Table 10 Frequency distribution of Total Hardness in shallow aquifer**

Range mg/l	No. of Samples	%
<200	346	30.95
200-600	704	62.97
>600	68	6.08

The study of Total Hardness in ground water reveals that 68 nos. (6.08%) of well waters contain hardness more than the permissible limit of 600mg/l and 704 nos. (62.97%) of well waters has total hardness above the desirable limit of 200 mg/l but below the permissible limit of 600 mg/l (Table 10). The locations having Total Hardness more than 600 mg/l in ground water of Madhya Pradesh are shown in Table 11.

**Table 11 Locations showing Total Hardness exceeding 600 mg/l in ground water.**

Sl. No.	District	Block	Location	Lattitude	Longitude	Total Hardness (More Than 600 Mg/L)
1	Ashok Nagar	Mungoali	Bahadurpur	24.342	77.969	823
2	Bhind	Lahar	Balaji	26.296	78.980	685
3	Agar Malwa	Badod	Barod	23.788	75.806	785
4	Bhind	Mehgaon	Chirole	26.355	78.634	1210
5	Alirajpur	Alirajpur	Khattali	22.348	74.518	680
6	Agar Malwa	Susner	Soyat	24.188	76.174	900
7	Bhopal	Phanda	Bairagarh	23.273	77.352	758
8	Barwani	Barwani	Borlai	22.039	75.002	770
9	Mandsaur	Bhanpura	Babulda	24.474	75.688	950
10	Bhind	Gohad	Mau	26.270	78.667	1175
11	Chhatarpur	Laundi	Laundi	25.139	80.006	833
12	Bhopal	Phanda	Barkheda Pathani	23.214	77.475	626
13	Mandsaur	Garoth	Barkheranayak	24.219	75.522	960
14	Barwani	Newali	Niwali1	21.683	74.923	690
15	Mandsaur	Mandsaur	Kachnera	23.864	75.103	960
16	Balaghat	Khairlanji	Miragpur	21.631	79.839	1020
17	Bhopal	Berasia	Nagirabad	23.794	77.256	755
18	Rewa	Rewa	Kanauji	24.472	81.378	735
19	Rewa	Rewa	Amilki	24.425	81.308	955
20	Mandsaur	Garoth	Shamgarh1	24.191	75.640	800
21	Damoh	Patera	Kumhari	23.926	79.815	721
22	Mandsaur	Sitamau	Surjani	24.025	75.445	675
23	Damoh	Damoh	Palar	23.929	79.469	917
24	Dhar	Sardarpur	Dasai	22.722	75.132	795
25	Panna	Gunnor	Amanganj	24.421	80.034	1153
26	Dhar	Dhar	Dhar	22.591	75.318	625
27	Chhindwara	Pandhurana	Borgaon1	21.559	78.816	645

28	Neemuch	Neemuch	Kacholi	24.363	74.941	915
29	Dhar	KUKSHI	Dhulsar	22.205	74.869	625
30	Neemuch	Manasa	Kundaliya	24.467	75.331	795
31	Rewa	Mauganj	Pahadi	24.750	81.886	630
32	Panna	Gunnor	Gunaur	24.463	80.251	821
33	Rewa	Rewa	Raipur	24.578	81.437	1400
34	Neemuch	Neemuch	Neemuch	24.454	74.874	810
35	Morena	Morena	Khera Mewda	26.551	78.080	735
36	Satna	Maihar	Amdara	24.104	80.576	653
37	Chhindwara	Pandhurana	Piplanarayanwar	21.588	78.731	612
38	Ratlam	Alot	Kharwa Kalan	23.615	75.478	660
39	Indore	Sanwer	Sanwer	22.971	75.828	1100
40	Sheopur	Vijaypur	Vijaypurcolony	26.057	77.364	640
41	Sagar	Malthon	Khimlasa	24.201	78.363	1059
42	Indore	Depalpur	Ushapura	22.809	75.674	685
43	Ratlam	Alot	Tal	23.722	75.383	660
44	Satna	Sohawal	Kotar1	24.699	80.995	755
45	Sagar	Sagar	Parsoria	23.854	78.936	931
46	Shajapur	Kalapipal	Kalapipal	23.334	76.833	640
47	Satna	Nagod	Nagod	24.572	80.578	622
48	Khargone	Maheshwar	Baddiya	22.234	75.948	620
49	Khargone	Bhikangaon	Bhikangaon1	21.862	75.956	695
50	Khargone	Bhikangaon	Daudwa	22.021	76.137	735
51	Satna	Sohawal	Rampur1	24.511	81.056	658
52	Khargone	Maheshwar	Dhargaon	22.209	75.597	670
53	Tikamgarh	Prithvipur	Birorakhet	25.115	78.792	684
54	Sehore	Ashta	Ashta	23.023	76.716	970
55	Ujjain	Mahidpur	Ghosla	23.439	75.876	1060
56	Khargone	Maheshwar	Piplyabuzrug	22.234	75.861	905
57	Ujjain	Tarana	Kaiytha	23.233	76.018	1250
58	Sehore	Ashta	Khachrod	22.872	76.718	606
59	Ujjain	Badnagar	Kharotia	23.157	75.624	880
60	Tikamgarh	Tikamgarh	Tikamgarh	24.744	78.838	745
61	Ujjain	Mahidpur	Mahidpurroad	23.567	75.508	1090
62	Sehore	Nasrullaganj	Rala	22.690	77.314	687
63	Ujjain	Ghatia	Ruie	23.286	75.652	770
64	Vidisha	Vidisha	Bilari	23.578	77.698	606
65	Ujjain	Khacharod	Unhel	23.336	75.549	970
66	Vidisha	Sironj	Patharia	24.115	77.819	631
67	Seoni	Seoni	Kaniwara	22.212	79.740	686

### 3.5 SUITABILITY FOR IRRIGATION

The crop productivity depends on the quality of the water used for irrigation. Water suitability for irrigation needs to be evaluated on the basis of hazards it can create in the soil, affecting yield & quality of crops. The potential hazards to crop growth are salinity, sodicity, alkalinity and toxicity.

## SODIUM ADSORPTION RATIO

Sodium Adsorption Ratio (SAR) is an estimate of the degree to which Sodium will be absorbed by soil from water. Sodium in irrigation, waters adversely affects soil structure and permissibility by replacing Ca and Mg ions.

$$SAR = \frac{N}{[Ca^{+2} + Mg^{+2} / ]^{1/2}}$$

Where: Na<sup>+</sup>, Ca<sup>+2</sup> and Mg<sup>+2</sup> are expressed in meq/l

**Table 12 Quality of Water on the basis of SAR values**

S.No.	Range of SAR	No. of Sample	% of Samples	Quality of Water
1.	<10	1110	99.28	Low Sodium hazard good quality
2.	10-18	7	0.63	Medium Sodium hazard medium quality
3.	18-26	0	0.00	High Sodium hazard bad quality
4.	>26	1	0.09	Very High Sodium hazard very bad quality

Table 12 shows that the quality of water samples as per SAR is good as 99.28% wells have SAR value below 10.

## RESIDUAL SODIUM CARBONATE

Residual Sodium Carbonate (RSC): Equals the sum of bicarbonate and Carbonate ion concentration minus the sum of Calcium & Magnesium ions, when all the ions are expressed in meq/l.

$$RSC = (CO_3^{--} + HCO_3^-) - (Ca^{++} + Mg^{++})$$

According to Eaton (1950) and USSL (1954), irrigation waters containing residual sodium carbonate (RSC) above 2.5 meq/l are not suitable for irrigation purpose. Water containing 1.25 to 2.5 meq/l of RSC is marginally suitable & those containing less than 1.25 meq/l of RSC are safe. The water quality of Madhya Pradesh has been evaluated on the basis of RSC in Table 13.



**Table 13 Number of wells falling in different RSC ranges**

S.No.	RSC Range in meq/l	No. of wells	% of wells	Suitability
1.	< 1.25	1042	93.20	Suitable
2.	1.25 – 2.5	52	4.65	Marginally suitable
3.	>2.5	24	2.15	Unsuitable

Nearly 97.85% of dug well waters of Madhya Pradesh were found to have RSC values below 2.5meq/l, which infers that the water is free from alkalinity hazards. However 2.14% (24 Nos.) of wells have RSC more than 2.5 meq/l. Excessive use of these high RSC waters for irrigation can adversely affect fertility of the soil in the area by making it alkaline, resulting at times in hardening of the soil due to deposition of sodium carbonate. For safe use of such waters gypsum requirement for different soils needs to be evaluated.

**Table 14 Table showing maximum and minimum values and values exceeding desirable and permissible limit for drinking use of different parameters**

	pH	TH	Ca	Mg	Na	K	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	EC	
		mg/l											μS/cm at 25°C	
Range of values (Max.)	9.24	1400	456	238	690	117	108	952	1255	850	348	5.30	Maximum	5560
Range of values (Min.)	6.98	20	4	1	2	0	0	12	2	0	0	0.00	Minimum	84
IS:10500 drinking water (desirable limit)	6.5-8.5	200	75	30				Bicarbonate alkalinity 200	250	200	45	1	Range of EC	% of samples
IS: 10500 drinking water (permissible limit)	6.5-8.5	600	200	100				600	1000	400	45	1.5	<1500	88.46
% samples exceeding desirable limit	2.24%	62.97	24.78	40.70				69.77	8.05	4.29	30.14	5.99	1501-3000	10.11
% samples exceeding permissible limit	2.24%	6.08	1.61	2.41				0.98	0.09	1.70	30.14	2.42	>3000	1.43



**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of May-2016 (Unconfined)**

Annexure- I

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	2.34	19.10	0	0.00	1	6.67	7	46.67	7	46.67	0	0.00	0	0.00
2	Alirajpur	13	3.88	15.70	0	0.00	2	15.38	9	69.23	2	15.38	0	0.00	0	0.00
3	Anuppur	19	4.35	15.85	0	0.00	1	5.26	12	63.16	6	31.58	0	0.00	0	0.00
4	Ashok Nagar	21	2.78	19.70	0	0.00	4	19.05	8	38.10	9	42.86	0	0.00	0	0.00
5	Balaghat	40	2.53	14.52	0	0.00	6	15.00	31	77.50	3	7.50	0	0.00	0	0.00
6	Barwani	9	6.18	14.69	0	0.00	0	0.00	5	55.56	4	44.44	0	0.00	0	0.00
7	Betul	30	2.55	18.90	0	0.00	3	10.00	13	43.33	14	46.67	0	0.00	0	0.00
8	Bhind	19	2.20	32.45	0	0.00	2	10.53	6	31.58	5	26.32	6	31.58	0	0.00
9	Bhopal	26	1.30	16.56	1	3.85	6	23.08	12	46.15	7	26.92	0	0.00	0	0.00
10	Burhanpur	17	6.95	32.35	0	0.00	0	0.00	6	35.29	9	52.94	2	11.76	0	0.00
11	Chhatarpur	38	3.77	21.47	0	0.00	1	2.63	15	39.47	20	52.63	2	5.26	0	0.00
12	Chhindwara	43	4.10	34.30	0	0.00	1	2.33	22	51.16	17	39.53	3	6.98	0	0.00
13	Damoh	22	1.43	14.35	2	9.09	6	27.27	10	45.45	4	18.18	0	0.00	0	0.00
14	Datia	10	4.35	33.00	0	0.00	1	10.00	4	40.00	4	40.00	1	10.00	0	0.00
15	Dewas	24	3.14	26.06	0	0.00	3	12.50	12	50.00	8	33.33	1	4.17	0	0.00
16	Dhar	39	3.48	31.47	0	0.00	3	7.69	16	41.03	17	43.59	3	7.69	0	0.00
17	Dindori	14	2.61	10.08	0	0.00	6	42.86	7	50.00	1	7.14	0	0.00	0	0.00
18	Guna	24	2.64	24.72	0	0.00	4	16.67	9	37.50	10	41.67	1	4.17	0	0.00
19	Gwalior	22	4.38	34.62	0	0.00	1	4.55	7	31.82	10	45.45	4	18.18	0	0.00
20	Harda	14	1.10	26.00	1	7.14	2	14.29	3	21.43	7	50.00	1	7.14	0	0.00
21	Hoshangabad	19	2.01	18.30	0	0.00	4	21.05	10	52.63	5	26.32	0	0.00	0	0.00
22	Indore	36	3.07	30.50	0	0.00	4	11.11	13	36.11	16	44.44	3	8.33	0	0.00
23	Jabalpur	35	1.77	17.65	1	2.86	13	37.14	17	48.57	4	11.43	0	0.00	0	0.00
24	Jhabua	12	2.47	11.57	0	0.00	6	50.00	4	33.33	2	16.67	0	0.00	0	0.00
25	Katni	17	6.35	19.45	0	0.00	0	0.00	6	35.29	11	64.71	0	0.00	0	0.00
26	Khandwa	30	3.95	13.50	0	0.00	2	6.67	22	73.33	6	20.00	0	0.00	0	0.00

**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of May-2016 (Unconfined)**

Annexure- I

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	3.98	14.60	0	0.00	6	25.00	11	45.83	7	29.17	0	0.00	0	0.00
28	Mandla	34	2.18	11.87	0	0.00	13	38.24	20	58.82	1	2.94	0	0.00	0	0.00
29	Mandsaur	41	4.53	49.40	0	0.00	1	2.44	17	41.46	15	36.59	6	14.63	2	4.88
30	Morena	14	5.08	39.40	0	0.00	0	0.00	5	35.71	3	21.43	6	42.86	0	0.00
31	Narsinghpur	19	3.24	27.00	0	0.00	2	10.53	11	57.89	5	26.32	1	5.26	0	0.00
32	Neemuch	33	3.88	36.91	0	0.00	1	3.03	14	42.42	12	36.36	6	18.18	0	0.00
33	Panna	27	3.42	18.12	0	0.00	3	11.11	12	44.44	12	44.44	0	0.00	0	0.00
34	Raisen	31	4.57	21.62	0	0.00	2	6.45	17	54.84	11	35.48	1	3.23	0	0.00
35	Rajgarh	28	4.92	17.62	0	0.00	1	3.57	11	39.29	16	57.14	0	0.00	0	0.00
36	Ratlam	44	5.24	49.40	0	0.00	0	0.00	8	18.18	21	47.73	8	18.18	7	15.91
37	Rewa	35	4.45	19.90	0	0.00	2	5.71	11	31.43	22	62.86	0	0.00	0	0.00
38	Sagar	38	1.92	36.52	1	2.63	6	15.79	12	31.58	16	42.11	3	7.89	0	0.00
39	Satna	51	2.70	24.28	0	0.00	3	5.88	26	50.98	21	41.18	1	1.96	0	0.00
40	Sehore	21	6.27	16.92	0	0.00	0	0.00	8	38.10	13	61.90	0	0.00	0	0.00
41	Seoni	46	2.13	13.85	0	0.00	12	26.09	26	56.52	8	17.39	0	0.00	0	0.00
42	Shahdol	22	6.50	15.75	0	0.00	0	0.00	13	59.09	9	40.91	0	0.00	0	0.00
43	Shajapur	18	4.95	15.70	0	0.00	1	5.56	9	50.00	8	44.44	0	0.00	0	0.00
44	Sheopur	17	5.10	29.40	0	0.00	0	0.00	5	29.41	8	47.06	4	23.53	0	0.00
45	Shivpuri	31	5.52	24.42	0	0.00	0	0.00	11	35.48	19	61.29	1	3.23	0	0.00
46	Sidhi	33	4.20	19.98	0	0.00	3	9.09	13	39.39	17	51.52	0	0.00	0	0.00
47	Singrauli	20	4.60	18.27	0	0.00	1	5.00	10	50.00	9	45.00	0	0.00	0	0.00
48	Tikamgarh	24	5.50	17.89	0	0.00	0	0.00	15	62.50	9	37.50	0	0.00	0	0.00
49	Ujjain	47	3.49	46.94	0	0.00	1	2.13	22	46.81	19	40.43	3	6.38	2	4.26
50	Umaria	14	6.30	14.87	0	0.00	0	0.00	10	71.43	4	28.57	0	0.00	0	0.00
51	Vidisha	30	3.15	19.14	0	0.00	3	10.00	14	46.67	13	43.33	0	0.00	0	0.00
	<b>Total</b>	<b>1350</b>	<b>1.1</b>	<b>49.40</b>	<b>6</b>	<b>0.44</b>	<b>143</b>	<b>10.59</b>	<b>617</b>	<b>45.70</b>	<b>506</b>	<b>37.48</b>	<b>67</b>	<b>4.96</b>	<b>11</b>	<b>0.81</b>

**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of August-2016**

**Annexure- II**

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	0.31	4.75	7	46.67	8	53.33	0	0.00	0	0.00	0	0.00	0	0.00
2	Alirajpur	13	0.64	9.60	5	38.46	6	46.15	2	15.38	0	0.00	0	0.00	0	0.00
3	Anuppur	19	0.50	15.86	6	31.58	6	31.58	4	21.05	3	15.79	0	0.00	0	0.00
4	Ashok Nagar	21	0.37	12.45	9	42.86	6	28.57	5	23.81	1	4.76	0	0.00	0	0.00
5	Balaghat	41	0.04	14.04	19	46.34	14	34.15	6	14.63	2	4.88	0	0.00	0	0.00
6	Barwani	9	2.30	14.97	0	0.00	4	44.44	4	44.44	1	11.11	0	0.00	0	0.00
7	Betul	30	-1.05	13.53	9	30.00	13	43.33	7	23.33	1	3.33	0	0.00	0	0.00
8	Bhind	18	0.01	30.40	4	22.22	1	5.56	4	22.22	4	22.22	5	27.78	0	0.00
9	Bhopal	26	-0.04	9.10	21	80.77	4	15.38	1	3.85	0	0.00	0	0.00	0	0.00
10	Burhanpur	17	1.35	32.35	1	5.88	6	35.29	3	17.65	6	35.29	1	5.88	0	0.00
11	Chhatarpur	38	0.08	8.69	16	42.11	19	50.00	3	7.89	0	0.00	0	0.00	0	0.00
12	Chhindwara	43	0.08	34.30	9	20.93	21	48.84	12	27.91	0	0.00	1	2.33	0	0.00
13	Damoh	22	-0.24	6.56	16	72.73	5	22.73	1	4.55	0	0.00	0	0.00	0	0.00
14	Datia	10	0.01	33.00	3	30.00	2	20.00	2	20.00	2	20.00	1	10.00	0	0.00
15	Dewas	24	0.38	17.75	8	33.33	10	41.67	5	20.83	1	4.17	0	0.00	0	0.00
16	Dhar	40	1.14	15.63	7	17.50	18	45.00	11	27.50	4	10.00	0	0.00	0	0.00
17	Dindori	15	-0.03	9.75	11	73.33	3	20.00	1	6.67	0	0.00	0	0.00	0	0.00
18	Guna	23	0.01	13.57	14	60.87	7	30.43	1	4.35	1	4.35	0	0.00	0	0.00
19	Gwalior	21	0.01	29.60	5	23.81	4	19.05	3	14.29	6	28.57	3	14.29	0	0.00
20	Harda	14	0.18	20.80	3	21.43	5	35.71	4	28.57	1	7.14	1	7.14	0	0.00
21	Hoshangabad	19	-0.19	11.17	8	42.11	6	31.58	4	21.05	1	5.26	0	0.00	0	0.00
22	Indore	37	0.01	8.47	12	32.43	21	56.76	4	10.81	0	0.00	0	0.00	0	0.00
23	Jabalpur	33	0.11	10.26	17	51.52	13	39.39	2	6.06	1	3.03	0	0.00	0	0.00
24	Jhabua	12	0.01	3.95	9	75.00	3	25.00	0	0.00	0	0.00	0	0.00	0	0.00
25	Katni	16	1.14	6.83	7	43.75	6	37.50	3	18.75	0	0.00	0	0.00	0	0.00
26	Khandwa	30	0.75	10.60	9	30.00	13	43.33	7	23.33	1	3.33	0	0.00	0	0.00

**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of August-2016**

Annexure- II

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	1.53	11.73	1	4.17	12	50.00	8	33.33	3	12.50	0	0.00	0	0.00
28	Mandla	32	-0.04	7.20	24	75.00	6	18.75	2	6.25	0	0.00	0	0.00	0	0.00
29	Mandsaur	42	-0.24	22.36	26	61.90	10	23.81	3	7.14	1	2.38	2	4.76	0	0.00
30	Morena	14	0.32	39.40	2	14.29	3	21.43	1	7.14	2	14.29	6	42.86	0	0.00
31	Narsinghpur	18	0.80	17.60	4	51.43	6	33.33	6	33.33	2	11.11	0	0.00	0	0.00
32	Neemuch	33	-0.27	6.90	20	60.61	10	30.30	3	9.09	0	0.00	0	0.00	0	0.00
33	Panna	27	-0.14	4.76	14	51.85	13	48.15	0	0.00	0	0.00	0	0.00	0	0.00
34	Raisen	31	0.19	11.07	18	58.06	7	22.58	3	9.68	3	9.68	0	0.00	0	0.00
35	Rajgarh	28	0.28	5.88	15	53.57	11	39.29	2	7.14	0	0.00	0	0.00	0	0.00
36	Ratlam	44	0.02	12.02	11	25.00	19	43.18	12	27.27	2	4.55	0	0.00	0	0.00
37	Rewa	35	-0.75	17.71	15	42.86	12	34.29	4	11.43	4	11.43	0	0.00	0	0.00
38	Sagar	40	-0.26	14.91	16	40.00	11	27.50	10	25.00	3	7.50	0	0.00	0	0.00
39	Satna	50	0.34	13.90	24	48.00	22	44.00	2	4.00	2	4.00	0	0.00	0	0.00
40	Sehore	21	0.23	11.24	10	47.62	6	28.57	4	19.05	1	4.76	0	0.00	0	0.00
41	Seoni	45	-0.90	11.60	31	68.89	9	20.00	4	8.89	1	2.22	0	0.00	0	0.00
42	Shahdol	22	0.40	12.60	4	18.18	10	45.45	6	27.27	2	9.09	0	0.00	0	0.00
43	Shajapur	16	0.30	3.20	11	68.75	5	31.25	0	0.00	0	0.00	0	0.00	0	0.00
44	Sheopur	16	-1.12	24.00	7	43.75	3	18.75	4	25.00	1	6.25	1	6.25	0	0.00
45	Shivpuri	29	0.58	11.10	4	13.79	23	79.31	1	3.45	1	3.45	0	0.00	0	0.00
46	Sidhi	33	0.60	13.60	6	18.18	12	36.36	11	33.33	4	12.12	0	0.00	0	0.00
47	Singrauli	20	0.60	12.77	8	40.00	6	30.00	5	25.00	1	5.00	0	0.00	0	0.00
48	Tikamgarh	24	0.42	5.26	13	54.17	10	41.67	1	4.17	0	0.00	0	0.00	0	0.00
49	Ujjain	44	-0.02	7.17	19	43.18	22	50.00	3	6.82	0	0.00	0	0.00	0	0.00
50	Umaria	13	-0.20	12.22	4	30.77	4	30.77	2	15.38	3	23.08	0	0.00	0	0.00
51	Vidisha	30	-0.15	8.38	22	73.33	5	16.67	3	10.00	0	0.00	0	0.00	0	0.00
	<b>Total</b>	<b>1337</b>	<b>-1.12</b>	<b>39.40</b>	<b>564</b>	<b>42.18</b>	<b>481</b>	<b>35.98</b>	<b>199</b>	<b>14.88</b>	<b>72</b>	<b>5.39</b>	<b>21</b>	<b>1.57</b>	<b>0</b>	<b>0.00</b>

**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of November-2016**

**Annexure- III**

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	0.88	14.02	1	6.67	3	20.00	8	53.33	3	20.00	0	0.00	0	0.00
2	Alirajpur	13	1.77	6.98	2	15.38	8	61.54	3	23.08	0	0.00	0	0.00	0	0.00
3	Anuppur	19	0.81	15.86	4	21.05	9	47.37	4	21.05	2	10.53	0	0.00	0	0.00
4	Ashok Nagar	21	1.30	13.20	3	14.29	6	28.57	10	47.62	2	9.52	0	0.00	0	0.00
5	Balaghat	41	0.94	12.47	5	12.20	25	60.98	9	21.95	2	4.88	0	0.00	0	0.00
6	Barwani	9	2.38	14.45	0	0.00	4	44.44	4	44.44	1	11.11	0	0.00	0	0.00
7	Betul	30	0.36	13.53	2	6.67	10	33.33	17	56.67	1	3.33	0	0.00	0	0.00
8	Bhind	18	1.10	30.40	3	16.67	1	5.56	4	22.22	2	11.11	8	44.44	0	0.00
9	Bhopal	25	0.01	11.05	7	28.00	9	36.00	8	32.00	1	4.00	0	0.00	0	0.00
10	Burhanpur	17	1.70	32.35	1	5.88	4	23.53	4	23.53	7	41.18	1	5.88	0	0.00
11	Chhatarpur	39	1.11	11.92	2	5.13	18	46.15	16	41.03	3	7.69	0	0.00	0	0.00
12	Chhindwara	42	1.15	34.30	2	4.76	18	42.86	18	42.86	3	7.14	1	2.38	0	0.00
13	Damoh	23	0.14	11.25	6	26.09	10	43.48	6	26.09	1	4.35	0	0.00	0	0.00
14	Datia	10	2.70	33.00	0	0.00	2	20.00	3	30.00	4	40.00	1	10.00	0	0.00
15	Dewas	24	1.07	11.60	4	16.67	8	33.33	11	45.83	1	4.17	0	0.00	0	0.00
16	Dhar	41	1.46	16.02	2	4.88	13	31.71	19	46.34	7	17.07	0	0.00	0	0.00
17	Dindori	15	0.50	9.38	4	26.67	8	53.33	3	20.00	0	0.00	0	0.00	0	0.00
18	Guna	21	1.98	9.94	2	9.52	9	42.86	10	47.62	0	0.00	0	0.00	0	0.00
19	Gwalior	21	1.40	30.90	2	9.52	4	19.05	4	19.05	7	33.33	4	19.05	0	0.00
20	Harda	14	0.50	24.07	1	7.14	6	42.86	5	35.71	1	7.14	1	7.14	0	0.00
21	Hoshangabad	19	0.76	14.53	2	10.53	7	36.84	7	36.84	3	15.79	0	0.00	0	0.00
22	Indore	37	0.65	11.70	5	13.51	15	40.54	16	43.24	1	2.70	0	0.00	0	0.00
23	Jabalpur	36	0.55	13.35	5	13.89	21	58.33	7	19.44	3	8.33	0	0.00	0	0.00
24	Jhabua	12	0.60	5.70	5	41.67	6	50.00	1	8.33	0	0.00	0	0.00	0	0.00
25	Katni	17	2.46	9.73	0	0.00	8	47.06	9	52.94	0	0.00	0	0.00	0	0.00
26	Khandwa	31	2.15	9.92	0	0.00	21	67.74	10	32.26	0	0.00	0	0.00	0	0.00



**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of November-2016**

Annexure- III

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	1.48	12.30	1	4.17	10	41.67	11	45.83	2	8.33	0	0.00	0	0.00
28	Mandla	34	0.73	9.50	11	32.35	19	55.88	4	11.76	0	0.00	0	0.00	0	0.00
29	Mandsaur	37	1.56	17.52	3	8.11	17	45.95	12	32.43	5	13.51	0	0.00	0	0.00
30	Morena	14	2.59	39.40	0	0.00	3	21.43	2	14.29	3	21.43	6	42.86	0	0.00
31	Narsinghpur	19	1.04	20.40	1	51.43	5	26.32	9	47.37	3	15.79	1	5.26	0	0.00
32	Neemuch	34	0.85	12.28	4	11.76	16	47.06	12	35.29	2	5.88	0	0.00	0	0.00
33	Panna	27	0.51	14.79	3	11.11	15	55.56	8	29.63	1	3.70	0	0.00	0	0.00
34	Raisen	31	1.25	15.92	4	12.90	19	61.29	7	22.58	1	3.23	0	0.00	0	0.00
35	Rajgarh	28	2.09	12.56	0	0.00	11	39.29	11	39.29	6	21.43	0	0.00	0	0.00
36	Ratlam	41	0.50	33.02	3	7.32	7	17.07	21	51.22	8	19.51	2	4.88	0	0.00
37	Rewa	33	1.67	17.51	1	3.03	20	60.61	9	27.27	3	9.09	0	0.00	0	0.00
38	Sagar	40	1.09	22.00	5	12.50	18	45.00	9	22.50	7	17.50	1	2.50	0	0.00
39	Satna	49	0.73	14.37	8	16.33	24	48.98	15	30.61	2	4.08	0	0.00	0	0.00
40	Sehore	21	1.25	14.20	1	4.76	9	42.86	9	42.86	2	9.52	0	0.00	0	0.00
41	Seoni	44	1.30	9.13	8	18.18	24	54.55	12	27.27	0	0.00	0	0.00	0	0.00
42	Shahdol	22	1.47	14.22	1	4.55	11	50.00	7	31.82	3	13.64	0	0.00	0	0.00
43	Shajapur	18	1.86	8.40	1	5.56	7	38.89	10	55.56	0	0.00	0	0.00	0	0.00
44	Sheopur	18	1.99	29.50	1	5.56	5	27.78	8	44.44	1	5.56	3	16.67	0	0.00
45	Shivpuri	29	2.52	24.42	0	0.00	9	31.03	14	48.28	5	17.24	1	3.45	0	0.00
46	Sidhi	33	1.87	17.79	2	6.06	14	42.42	13	39.39	4	12.12	0	0.00	0	0.00
47	Singrauli	20	1.84	13.29	1	5.00	7	35.00	9	45.00	3	15.00	0	0.00	0	0.00
48	Tikamgarh	24	1.37	12.18	2	8.33	11	45.83	8	33.33	3	12.50	0	0.00	0	0.00
49	Ujjain	41	0.95	12.20	7	17.07	20	48.78	13	31.71	1	2.44	0	0.00	0	0.00
50	Umaria	13	0.69	11.15	3	23.08	3	23.08	6	46.15	1	7.69	0	0.00	0	0.00
51	Vidisha	30	1.12	10.51	7	23.33	12	40.00	9	30.00	2	6.67	0	0.00	0	0.00
	<b>Total</b>	<b>1334</b>	<b>0.01</b>	<b>39.40</b>	<b>148</b>	<b>11.09</b>	<b>569</b>	<b>42.65</b>	<b>464</b>	<b>34.78</b>	<b>123</b>	<b>9.22</b>	<b>30</b>	<b>2.25</b>	<b>0</b>	<b>0.00</b>

**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of January-2017**

**Annexure- IV**

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	14	1.90	17.48	1	7.14	2	14.29	6	42.86	5	35.71	0	0.00	0	0.00
2	Alirajpur	13	2.75	9.50	0	0.00	6	46.15	7	53.85	0	0.00	0	0.00	0	0.00
3	Anuppur	19	2.22	15.86	0	0.00	9	47.37	8	42.11	2	10.53	0	0.00	0	0.00
4	Ashok Nagar	21	1.60	16.90	2	9.52	4	19.05	9	42.86	6	28.57	0	0.00	0	0.00
5	Balaghat	42	1.18	13.52	1	2.38	21	50.00	18	42.86	2	4.76	0	0.00	0	0.00
6	Barwani	9	3.70	14.92	0	0.00	2	22.22	6	66.67	1	11.11	0	0.00	0	0.00
7	Betul	29	2.13	19.08	0	0.00	8	27.59	11	37.93	10	34.48	0	0.00	0	0.00
8	Bhind	17	1.55	34.90	1	5.88	3	17.65	4	23.53	2	11.76	7	41.18	0	0.00
9	Bhopal	26	0.88	14.90	5	19.23	9	34.62	8	30.77	4	15.38	0	0.00	0	0.00
10	Burhanpur	17	4.66	32.35	0	0.00	1	5.88	7	41.18	7	41.18	2	11.76	0	0.00
11	Chhatarpur	39	2.00	15.34	1	2.56	10	25.64	21	53.85	7	17.95	0	0.00	0	0.00
12	Chhindwara	40	1.68	22.05	1	2.50	6	15.00	20	50.00	11	27.50	2	5.00	0	0.00
13	Damoh	23	0.67	15.47	5	21.74	8	34.78	6	26.09	4	17.39	0	0.00	0	0.00
14	Datia	10	4.25	33.00	0	0.00	3	30.00	2	20.00	4	40.00	1	10.00	0	0.00
15	Dewas	24	2.52	16.55	0	0.00	7	29.17	12	50.00	5	20.83	0	0.00	0	0.00
16	Dhar	38	1.60	16.53	1	2.63	9	23.68	20	52.63	8	21.05	0	0.00	0	0.00
17	Dindori	15	0.52	9.62	1	6.67	9	60.00	5	33.33	0	0.00	0	0.00	0	0.00
18	Guna	23	1.95	15.77	1	4.35	6	26.09	9	39.13	7	30.43	0	0.00	0	0.00
19	Gwalior	21	2.40	40.25	0	0.00	4	19.05	5	23.81	7	33.33	4	19.05	1	4.76
20	Harda	14	0.76	14.53	1	7.14	3	21.43	7	50.00	3	21.43	0	0.00	0	0.00
21	Hoshangabad	17	1.53	15.55	1	5.88	5	29.41	7	41.18	4	23.53	0	0.00	0	0.00
22	Indore	35	2.30	21.32	0	0.00	9	25.71	19	54.29	6	17.14	1	2.86	0	0.00
23	Jabalpur	35	1.76	14.47	2	5.71	20	57.14	10	28.57	3	8.57	0	0.00	0	0.00
24	Jhabua	12	1.90	7.35	1	8.33	7	58.33	4	33.33	0	0.00	0	0.00	0	0.00
25	Katni	16	4.54	13.94	0	0.00	3	18.75	9	56.25	4	25.00	0	0.00	0	0.00
26	Khandwa	31	3.09	14.85	0	0.00	9	29.03	17	54.84	5	16.13	0	0.00	0	0.00

**District-wise Depth to water Level and Distribution of Percentage of Wells for the Period of January-2017**

Annexure- IV

S. No.	Name of District	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	23	2.85	11.24	0	0.00	8	34.78	12	52.17	3	13.04	0	0.00	0	0.00
28	Mandla	33	1.18	9.75	5	15.15	16	48.48	12	36.36	0	0.00	0	0.00	0	0.00
29	Mandsaur	37	2.49	32.30	0	0.00	11	29.73	15	40.54	9	24.32	2	5.41	0	0.00
30	Morena	12	3.38	39.40	0	0.00	3	25.00	2	16.67	2	16.67	5	41.67	0	0.00
31	Narsinghpur	19	1.35	20.40	1	51.43	3	15.79	11	57.89	3	15.79	1	5.26	0	0.00
32	Neemuch	34	2.40	13.10	0	0.00	13	38.24	12	35.29	9	26.47	0	0.00	0	0.00
33	Panna	27	2.15	15.60	0	0.00	10	37.04	14	51.85	3	11.11	0	0.00	0	0.00
34	Raisen	31	2.75	19.72	0	0.00	8	25.81	18	58.06	5	16.13	0	0.00	0	0.00
35	Rajgarh	28	2.12	19.60	0	0.00	5	17.86	12	42.86	11	39.29	0	0.00	0	0.00
36	Ratlam	39	2.94	25.80	0	0.00	5	12.82	12	30.77	21	53.85	1	2.56	0	0.00
37	Rewa	35	2.70	17.35	0	0.00	4	11.43	21	60.00	10	28.57	0	0.00	0	0.00
38	Sagar	39	1.45	21.28	2	5.13	11	28.21	14	35.90	11	28.21	1	2.56	0	0.00
39	Satna	51	1.40	17.15	2	3.92	15	29.41	30	58.82	4	7.84	0	0.00	0	0.00
40	Sehore	21	1.19	18.26	1	4.76	3	14.29	9	42.86	8	38.10	0	0.00	0	0.00
41	Seoni	46	1.64	12.22	3	6.52	19	41.30	22	47.83	2	4.35	0	0.00	0	0.00
42	Shahdol	22	1.45	15.05	1	4.55	2	9.09	14	63.64	5	22.73	0	0.00	0	0.00
43	Shajapur	18	3.94	13.60	0	0.00	3	16.67	9	50.00	6	33.33	0	0.00	0	0.00
44	Sheopur	18	2.40	29.40	0	0.00	3	16.67	7	38.89	5	27.78	3	16.67	0	0.00
45	Shivpuri	28	3.08	24.42	0	0.00	4	14.29	15	53.57	8	28.57	1	3.57	0	0.00
46	Sidhi	33	2.00	17.15	1	3.03	6	18.18	17	51.52	9	27.27	0	0.00	0	0.00
47	Singrauli	20	3.40	14.97	0	0.00	7	35.00	10	50.00	3	15.00	0	0.00	0	0.00
48	Tikamgarh	24	1.24	14.56	2	8.33	6	25.00	12	50.00	4	16.67	0	0.00	0	0.00
49	Ujjain	39	2.77	15.80	0	0.00	11	28.21	16	41.03	12	30.77	0	0.00	0	0.00
50	Umari	13	2.97	11.30	0	0.00	4	30.77	8	61.54	1	7.69	0	0.00	0	0.00
51	Vidisha	30	0.79	19.15	4	13.33	4	13.33	17	56.67	5	16.67	0	0.00	0	0.00
	<b>Total</b>	<b>1320</b>	<b>0.52</b>	<b>40.25</b>	<b>47</b>	<b>3.56</b>	<b>367</b>	<b>27.80</b>	<b>598</b>	<b>45.30</b>	<b>276</b>	<b>20.91</b>	<b>31</b>	<b>2.35</b>	<b>1</b>	<b>0.08</b>

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from May 2015 to May 2016**

**Annexure -V**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	14	0.15	7.72	0.29	2.78	5	35.71	2	14.29	2	14.29	4	28.57	1	7.14	0	0.00	9	64.29	5	35.71
2	Alirajpur	12	1.31	2.18	0.01	4.87	2	16.67	1	8.33	0	0.00	7	58.33	1	8.33	1	8.33	3	25.00	9	75.00
3	Anuppur	19	0.01	0.01	0.10	5.50	1	5.26	0	0.00	0	0.00	12	63.16	4	21.05	2	10.53	1	5.26	18	94.74
4	Ashok Nagar	15	0.10	1.54	0.04	3.36	2	13.33	0	0.00	0	0.00	12	80.00	1	6.67	0	0.00	2	13.33	13	86.67
5	Balaghat	40	0.06	8.55	0.20	4.46	11	27.50	5	12.50	1	2.50	20	50.00	1	2.50	2	5.00	17	42.50	23	57.50
6	Barwani	9	0.69	3.70	0.46	3.36	2	22.22	3	33.33	0	0.00	2	22.22	2	22.22	0	0.00	5	55.56	4	44.44
7	Betul	30	0.80	1.38	0.15	6.95	3	10.00	0	0.00	0	0.00	17	56.67	8	26.67	2	6.67	3	10.00	27	90.00
8	Bhind	17	0.55	12.52	0.17	11.10	4	23.53	1	5.88	2	11.76	6	35.29	1	5.88	3	17.65	7	41.18	10	58.82
9	Bhopal	24	0.24	2.35	0.05	2.80	6	25.00	1	4.17	0	0.00	16	66.67	1	4.17	0	0.00	7	29.17	17	70.83
10	Burhanpur	15	0.10	0.10	0.30	4.10	1	6.67	0	0.00	0	0.00	12	80.00	1	6.67	1	6.67	1	6.67	14	93.33
11	Chhatarpur	38	0.15	5.02	0.10	7.65	5	13.16	1	2.63	2	5.26	17	44.74	8	21.05	5	13.16	8	21.05	30	78.95
12	Chhindwara	41	0.23	2.90	0.01	8.00	5	12.20	2	4.88	0	0.00	25	60.98	3	7.32	6	14.63	7	17.07	34	82.93
13	Damoh	22	0.05	2.35	0.03	4.53	8	36.36	1	4.55	0	0.00	10	45.45	2	9.09	1	4.55	9	40.91	13	59.09
14	Datia	10	0.15	0.15	0.47	9.60	1	10.00	0	0.00	0	0.00	6	60.00	2	20.00	1	10.00	1	10.00	9	90.00
15	Dewas	24	0.18	8.92	0.04	4.84	10	41.67	4	16.67	2	8.33	7	29.17	0	0.00	1	4.17	16	66.67	8	33.33
16	Dhar	37	0.10	16.45	0.14	17.02	9	24.32	3	8.11	5	13.51	15	40.54	2	5.41	3	8.11	17	45.95	20	54.05
17	Dindori	14	0.01	1.25	0.05	3.40	6	42.86	0	0.00	0	0.00	7	50.00	1	7.14	0	0.00	6	42.86	8	57.14
18	Guna	21	0.10	2.36	0.05	4.52	10	47.62	1	4.76	0	0.00	7	33.33	2	9.52	1	4.76	11	52.38	10	47.62
19	Gwalior	21	0.19	3.40	0.18	5.40	2	9.52	3	14.29	0	0.00	7	33.33	4	19.05	5	23.81	5	23.81	16	76.19
20	Harda	13	0.32	0.60	0.05	8.22	2	15.38	0	0.00	0	0.00	7	53.85	2	15.38	2	15.38	2	15.38	11	84.62
21	Hoshangabad	18	0.31	3.06	0.40	3.80	2	11.11	1	5.56	0	0.00	13	72.22	2	11.11	0	0.00	3	16.67	15	83.33
22	Indore	34	0.13	14.53	0.07	18.00	10	29.41	3	8.82	3	8.82	12	35.29	2	5.88	4	11.76	16	47.06	18	52.94
23	Jabalpur	33	0.02	1.95	0.02	5.19	5	15.15	0	0.00	0	0.00	20	60.61	5	15.15	3	9.09	5	15.15	28	84.85
24	Jhabua	12	1.36	3.44	0.12	4.90	1	8.33	1	8.33	0	0.00	9	75.00	0	0.00	1	8.33	2	16.67	10	83.33
25	Katni	17	0.75	0.75	0.20	4.20	1	5.88	0	0.00	0	0.00	8	47.06	7	41.18	1	5.88	1	5.88	16	94.12
26	Khandwa	30	0.03	4.60	0.03	4.24	2	6.67	1	3.33	1	3.33	19	63.33	6	20.00	1	3.33	4	13.33	26	86.67

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from May 2015 to May 2016**

**Annexure -V**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	0.02	5.81	0.13	4.75	6	2.00	1	4.17	1	4.17	10	41.67	5	20.83	1	4.17	8	33.33	16	66.67
28	Mandla	34	0.29	3.48	0.05	3.79	5	14.71	2	5.88	0	0.00	25	73.53	2	5.88	0	0.00	7	20.59	27	79.41
29	Mandsaur	38	0.07	7.15	0.08	7.51	10	26.32	2	5.26	1	2.63	20	52.63	2	5.26	3	7.89	13	34.21	25	65.79
30	Morena	14	0.40	4.63	0.10	9.18	1	7.14	0	0.00	1	7.14	7	50.00	2	14.29	3	21.43	2	14.29	12	85.71
31	Narsinghpur	16	0.90	3.70	0.10	4.00	3	18.75	2	12.50	0	0.00	8	50.00	3	18.75	0	0.00	5	31.25	11	68.75
32	Neemuch	32	0.01	3.77	0.11	23.73	7	21.88	2	6.25	0	0.00	13	40.63	6	18.75	4	12.50	9	28.13	23	71.88
33	Panna	27	0.09	3.66	0.58	6.20	4	14.81	2	7.41	0	0.00	12	44.44	6	22.22	3	11.11	6	22.22	21	77.78
34	Raisen	30	0.05	0.41	0.05	7.22	4	13.33	0	0.00	0	0.00	20	66.67	4	13.33	2	6.67	4	13.33	26	86.67
35	Rajgarh	26	0.15	2.78	0.24	6.88	4	15.38	2	7.69	0	0.00	10	38.46	8	30.77	2	7.69	6	23.08	20	76.92
36	Ratlam	42	0.05	10.62	0.02	20.04	17	40.48	1	2.38	2	4.76	14	33.33	2	4.76	6	14.29	20	47.62	22	52.38
37	Rewa	32	0.01	0.01	0.01	5.09	2	6.25	0	0.00	0	0.00	21	65.63	7	21.88	2	6.25	2	6.25	30	93.75
38	Sagar	37	0.02	3.95	0.05	5.52	10	27.03	3	8.11	0	0.00	18	48.65	4	10.81	2	5.41	13	35.14	24	64.86
39	Satna	49	0.11	6.52	0.03	6.08	2	4.08	0	0.00	1	2.04	33	67.35	7	14.29	6	12.24	3	6.12	46	93.88
40	Sehore	20	0.03	2.22	0.08	8.41	6	30.00	1	5.00	0	0.00	7	35.00	3	15.00	3	15.00	7	35.00	13	65.00
41	Seoni	46	0.08	5.80	0.08	4.62	7	15.22	3	6.52	1	2.17	24	52.17	8	17.39	3	6.52	11	23.91	35	76.09
42	Shahdol	22	0.20	0.35	0.10	4.80	2	9.09	0	0.00	0	0.00	18	81.82	1	4.55	1	4.55	2	9.09	20	90.91
43	Shajapur	17	0.13	1.50	0.25	6.58	6	35.29	0	0.00	0	0.00	6	35.29	4	23.53	1	5.88	6	35.29	11	64.71
44	Sheopur	16	1.80	4.47	0.12	15.60	1	6.25	0	0.00	1	6.25	8	50.00	1	6.25	5	31.25	2	12.50	14	87.50
45	Shivpuri	28	0.22	1.19	0.24	11.40	5	17.86	0	0.00	0	0.00	12	42.86	2	7.14	9	32.14	5	17.86	23	82.14
46	Sidhi	31	0.10	3.62	0.05	5.20	3	9.68	1	3.23	0	0.00	17	54.84	9	29.03	1	3.23	4	12.90	27	87.10
47	Singrauli	19	0.22	1.05	0.15	4.00	2	10.53	0	0.00	0	0.00	14	73.68	3	15.79	0	0.00	2	10.53	17	89.47
48	Tikamgarh	24	0.06	1.15	0.09	4.97	7	29.17	0	0.00	0	0.00	8	33.33	7	29.17	2	8.33	7	29.17	17	70.83
49	Ujjain	45	0.02	4.93	0.04	9.50	15	33.33	3	6.67	3	6.67	22	48.89	1	2.22	1	2.22	21	46.67	24	53.33
50	Umaria	14	0.10	0.10	0.25	3.20	1	7.14	0	0.00	0	0.00	11	78.57	2	14.29	0	0.00	1	7.14	13	92.86
51	Vidisha	29	0.05	2.20	0.03	4.30	6	20.69	1	3.45	0	0.00	16	55.17	5	17.24	1	3.45	7	24.14	22	75.86
	<b>Total</b>	<b>1292</b>	<b>0.01</b>	<b>16.45</b>	<b>0.01</b>	<b>23.73</b>	<b>252</b>	<b>19.50</b>	<b>60</b>	<b>4.64</b>	<b>29</b>	<b>2.24</b>	<b>671</b>	<b>51.93</b>	<b>173</b>	<b>13.39</b>	<b>107</b>	<b>8.28</b>	<b>341</b>	<b>26.39</b>	<b>951</b>	<b>73.61</b>

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from August 2015 to August 2016**

**Annexure -VI**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	0.25	3.55	1.45	1.45	13	86.67	1	6.67	0	0.00	1	6.67	0	0.00	0	0.00	14	93.33	1	6.67
2	Alirajpur	12	0.18	4.67	0.67	1.15	5	41.67	1	8.33	3	25.00	3	25.00	0	0.00	0	0.00	9	75.00	3	25.00
3	Anuppur	19	0.05	6.83	0.70	2.85	10	52.63	2	10.53	1	5.26	4	21.05	2	10.53	0	0.00	13	68.42	6	31.58
4	Ashok Nagar	15	0.30	3.30	-	-	13	86.67	2	13.33	0	0.00	0	0.00	0	0.00	0	0.00	15	100.00	0	0.00
5	Balaghat	41	0.18	3.54	0.15	5.20	22	53.66	2	4.88	0	0.00	13	31.71	2	4.88	2	4.88	24	58.54	17	41.46
6	Barwani	9	0.28	2.65	0.12	4.55	2	22.22	1	11.11	0	0.00	4	44.44	1	11.11	1	11.11	3	33.33	6	66.67
7	Betul	29	0.03	6.60	0.10	0.67	22	75.86	3	10.34	1	3.45	3	10.34	0	0.00	0	0.00	26	89.66	3	10.34
8	Bhind	16	0.51	10.80	0.19	10.50	5	31.25	3	18.75	1	6.25	4	25.00	2	12.50	1	6.25	9	56.25	7	43.75
9	Bhopal	24	0.03	3.66	0.04	0.10	19	79.17	3	12.50	0	0.00	2	8.33	0	0.00	0	0.00	22	91.67	2	8.33
10	Burhanpur	15	0.31	1.98	0.51	0.67	13	86.67	0	0.00	0	0.00	2	13.33	0	0.00	0	0.00	13	86.67	2	13.33
11	Chhatarpur	37	0.02	8.01	1.64	1.64	12	32.43	7	18.92	17	45.95	1	2.70	0	0.00	0	0.00	36	97.30	1	2.70
12	Chhindwara	42	0.04	8.65	0.04	2.20	30	71.43	1	2.38	1	2.38	9	21.43	1	2.38	0	0.00	32	76.19	10	23.81
13	Damoh	22	0.06	8.24	0.10	0.50	14	63.64	4	18.18	1	4.55	3	13.64	0	0.00	0	0.00	19	86.36	3	13.64
14	Datia	10	0.06	8.04	1.48	4.67	3	30.00	0	0.00	4	40.00	1	10.00	0	0.00	2	20.00	7	70.00	3	30.00
15	Dewas	24	0.30	1.58	0.13	8.11	8	33.33	0	0.00	0	0.00	10	41.67	3	12.50	3	12.50	8	33.33	16	66.67
16	Dhar	38	0.20	7.10	0.17	2.44	18	47.37	6	15.79	2	5.26	9	23.68	3	7.89	0	0.00	26	68.42	12	31.58
17	Dindori	14	0.02	2.24	-	-	13	92.86	1	7.14	0	0.00	0	0.00	0	0.00	0	0.00	14	100.00	0	0.00
18	Guna	22	0.01	4.80	0.01	0.16	16	72.73	3	13.64	1	4.55	2	9.09	0	0.00	0	0.00	20	90.91	2	9.09
19	Gwalior	21	0.25	11.21	0.05	8.32	9	42.86	1	4.76	1	4.76	5	23.81	2	9.52	3	14.29	11	52.38	10	47.62
20	Harda	13	0.26	3.28	0.22	1.28	5	38.46	3	23.08	0	0.00	5	38.46	0	0.00	0	0.00	8	61.54	5	38.46
21	Hoshangabad	19	0.39	3.30	-	-	11	57.89	8	42.11	0	0.00	0	0.00	0	0.00	0	0.00	19	100.00	0	0.00
22	Indore	36	0.09	8.45	0.20	7.68	15	41.67	5	13.89	2	5.56	8	22.22	3	8.33	3	8.33	22	61.11	14	38.89
23	Jabalpur	33	0.15	10.34	0.13	1.74	22	66.67	5	15.15	3	9.09	3	9.09	0	0.00	0	0.00	30	90.91	3	9.09
24	Jhabua	12	0.02	2.56	1.00	1.00	9	75.00	2	16.67	0	0.00	1	8.33	0	0.00	0	0.00	11	91.67	1	8.33
25	Katni	16	1.08	9.86	-	-	3	18.75	5	31.25	8	50.00	0	0.00	0	0.00	0	0.00	16	100.00	0	0.00
26	Khandwa	29	0.38	2.46	0.90	4.38	24	82.76	1	3.45	0	0.00	2	6.90	1	3.45	1	3.45	25	86.21	4	13.79

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from August 2015 to August 2016**

**Annexure -VI**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	23	0.24	2.21	0.01	8.49	5	2.00	1	4.35	0	0.00	13	56.52	2	8.70	2	8.70	6	26.09	17	73.91
28	Mandla	32	0.04	3.20	0.31	1.03	27	84.38	3	9.38	0	0.00	2	6.25	0	0.00	0	0.00	30	93.75	2	6.25
29	Mandsaur	42	0.10	7.32	0.10	1.14	13	30.95	18	42.86	9	21.43	2	4.76	0	0.00	0	0.00	40	95.24	2	4.76
30	Morena	11	1.38	2.49	0.08	9.20	1	9.09	1	9.09	0	0.00	5	45.45	2	18.18	2	18.18	2	18.18	9	81.82
31	Narsinghpur	16	0.40	6.60	0.51	1.56	7	43.75	4	25.00	1	6.25	4	25.00	0	0.00	0	0.00	12	75.00	4	25.00
32	Neemuch	33	0.30	5.50	0.63	0.63	22	66.67	8	24.24	2	6.06	1	3.03	0	0.00	0	0.00	32	96.97	1	3.03
33	Panna	27	0.05	12.84	1.48	1.78	5	18.52	16	59.26	4	14.81	2	7.41	0	0.00	0	0.00	25	92.59	2	7.41
34	Raisen	30	0.47	5.95	0.14	4.05	13	43.33	10	33.33	1	3.33	4	13.33	1	3.33	1	3.33	24	80.00	6	20.00
35	Rajgarh	26	0.02	10.23	0.06	1.45	20	76.92	2	7.69	2	7.69	2	7.69	0	0.00	0	0.00	24	92.31	2	7.69
36	Ratlam	40	0.20	11.73	0.10	0.75	16	40.00	8	20.00	11	27.50	5	12.50	0	0.00	0	0.00	35	87.50	5	12.50
37	Rewa	33	0.10	10.54	-	-	13	39.39	14	42.42	6	18.18	0	0.00	0	0.00	0	0.00	33	100.00	0	0.00
38	Sagar	40	0.12	7.44	0.27	3.40	12	30.00	7	17.50	9	22.50	9	22.50	3	7.50	0	0.00	28	70.00	12	30.00
39	Satna	51	0.40	17.16	0.55	0.55	14	27.45	21	41.18	15	29.41	1	1.96	0	0.00	0	0.00	50	98.04	1	1.96
40	Sehore	21	0.06	3.20	1.32	1.32	13	61.90	7	33.33	0	0.00	1	4.76	0	0.00	0	0.00	20	95.24	1	4.76
41	Seoni	43	0.03	8.46	0.09	2.58	18	41.86	13	30.23	4	9.30	4	9.30	4	9.30	0	0.00	35	81.40	8	18.60
42	Shahdol	22	0.67	6.12	1.01	1.01	4	18.18	10	45.45	7	31.82	1	4.55	0	0.00	0	0.00	21	95.45	1	4.55
43	Shajapur	15	0.05	1.30	0.15	1.75	10	66.67	0	0.00	0	0.00	5	33.33	0	0.00	0	0.00	10	66.67	5	33.33
44	Sheopur	16	0.43	24.63	10.75	10.75	9	56.25	4	25.00	2	12.50	0	0.00	0	0.00	1	6.25	15	93.75	1	6.25
45	Shivpuri	27	0.17	10.73	0.17	5.05	7	25.93	8	29.63	8	29.63	3	11.11	0	0.00	1	3.70	23	85.19	4	14.81
46	Sidhi	33	0.28	8.35	0.03	0.03	12	36.36	13	39.39	7	21.21	1	3.03	0	0.00	0	0.00	32	96.97	1	3.03
47	Singrauli	20	0.67	7.28	-	-	7	35.00	8	40.00	5	25.00	0	0.00	0	0.00	0	0.00	20	100.00	0	0.00
48	Tikamgarh	23	0.93	19.21	0.19	0.35	4	17.39	8	34.78	9	39.13	2	8.70	0	0.00	0	0.00	21	91.30	2	8.70
49	Ujjain	44	0.05	2.25	0.30	3.90	31	70.45	3	6.82	0	0.00	8	18.18	2	4.55	0	0.00	34	77.27	10	22.73
50	Umaria	13	0.63	4.98	2.65	2.65	7	53.85	4	30.77	1	7.69	0	0.00	1	7.69	0	0.00	12	92.31	1	7.69
51	Vidisha	29	0.10	4.57	0.08	0.08	22	75.86	4	13.79	2	6.90	1	3.45	0	0.00	0	0.00	28	96.55	1	3.45
	<b>Total</b>	<b>1293</b>	<b>0.01</b>	<b>24.63</b>	<b>0.01</b>	<b>10.75</b>	<b>648</b>	<b>50.12</b>	<b>265</b>	<b>20.49</b>	<b>151</b>	<b>11.68</b>	<b>171</b>	<b>13.23</b>	<b>35</b>	<b>2.71</b>	<b>23</b>	<b>1.78</b>	<b>1064</b>	<b>82.29</b>	<b>229</b>	<b>17.71</b>

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from Nov 2015 to Nov 2016**

**Annexure -VII**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	14	0.16	2.91	0.10	3.67	7	50.00	1	7.14	0	0.00	4	28.57	2	14.29	0	0.00	8	57.14	6	42.86
2	Alirajpur	12	0.87	5.36	0.36	3.12	5	41.67	3	25.00	1	8.33	2	16.67	1	8.33	0	0.00	9	75.00	3	25.00
3	Anuppur	18	0.15	5.71	0.42	1.17	7	38.89	3	16.67	5	27.78	3	16.67	0	0.00	0	0.00	15	83.33	3	16.67
4	Ashok Nagar	15	0.17	3.29	0.10	0.84	7	46.67	3	20.00	0	0.00	5	33.33	0	0.00	0	0.00	10	66.67	5	33.33
5	Balaghat	41	0.03	2.26	0.02	2.15	16	39.02	2	4.88	0	0.00	22	53.66	1	2.44	0	0.00	18	43.90	23	56.10
6	Barwani	9	0.07	4.27	0.13	2.39	3	33.33	1	11.11	1	11.11	3	33.33	1	11.11	0	0.00	5	55.56	4	44.44
7	Betul	28	0.05	4.55	0.03	3.47	11	39.29	2	7.14	1	3.57	12	42.86	2	7.14	0	0.00	14	50.00	14	50.00
8	Bhind	15	0.29	5.04	0.98	10.00	5	33.33	0	0.00	1	6.67	5	33.33	1	6.67	3	20.00	6	40.00	9	60.00
9	Bhopal	23	0.04	8.07	0.12	4.34	15	65.22	2	8.70	2	8.70	3	13.04	0	0.00	1	4.35	19	82.61	4	17.39
10	Burhanpur	15	0.19	3.04	0.51	0.51	12	80.00	2	13.33	0	0.00	1	6.67	0	0.00	0	0.00	14	93.33	1	6.67
11	Chhatarpur	38	0.17	9.53	0.59	7.21	8	21.05	16	42.11	5	13.16	6	15.79	1	2.63	2	5.26	29	76.32	9	23.68
12	Chhindwara	42	0.02	9.83	0.03	7.00	19	45.24	2	4.76	4	9.52	14	33.33	1	2.38	2	4.76	25	59.52	17	40.48
13	Damoh	22	0.04	7.69	0.17	2.92	12	54.55	0	0.00	1	4.55	6	27.27	3	13.64	0	0.00	13	59.09	9	40.91
14	Datia	10	0.17	1.79	0.15	2.87	3	30.00	0	0.00	0	0.00	4	40.00	3	30.00	0	0.00	3	30.00	7	70.00
15	Dewas	24	0.27	8.11	0.13	8.81	8	33.33	2	8.33	3	12.50	10	41.67	0	0.00	1	4.17	13	54.17	11	45.83
16	Dhar	39	0.10	6.59	0.10	1.25	16	41.03	6	15.38	7	17.95	10	25.64	0	0.00	0	0.00	29	74.36	10	25.64
17	Dindori	15	0.10	3.07	0.16	2.92	4	26.67	1	6.67	0	0.00	8	53.33	2	13.33	0	0.00	5	33.33	10	66.67
18	Guna	20	0.02	5.04	0.48	2.05	10	50.00	4	20.00	2	10.00	3	15.00	1	5.00	0	0.00	16	80.00	4	20.00
19	Gwalior	16	0.46	7.36	0.31	7.06	3	18.75	2	12.50	1	6.25	5	31.25	3	18.75	2	12.50	6	37.50	10	62.50
20	Harda	12	0.16	4.08	0.67	2.61	5	41.67	3	25.00	1	8.33	2	16.67	1	8.33	0	0.00	9	75.00	3	25.00
21	Hoshangabad	18	0.15	2.41	0.06	0.55	11	61.11	2	11.11	0	0.00	5	27.78	0	0.00	0	0.00	13	72.22	5	27.78
22	Indore	36	0.04	8.83	0.02	4.82	16	44.44	5	13.89	8	22.22	4	11.11	2	5.56	1	2.78	29	80.56	7	19.44
23	Jabalpur	32	0.02	2.70	0.01	2.58	13	40.63	2	6.25	0	0.00	15	46.88	2	6.25	0	0.00	15	46.88	17	53.13
24	Jhabua	12	0.28	6.11	0.25	0.64	6	50.00	3	25.00	1	8.33	2	16.67	0	0.00	0	0.00	10	83.33	2	16.67
25	Katni	17	0.20	8.73	0.24	0.24	5	29.41	4	23.53	7	41.18	1	5.88	0	0.00	0	0.00	16	94.12	1	5.88
26	Khandwa	31	0.20	3.77	0.17	3.42	23	74.19	1	3.23	0	0.00	6	19.35	1	3.23	0	0.00	24	77.42	7	22.58



**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from Nov 2015 to Nov 2016**

**Annexure -VII**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise				Fall			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%				
27	Khargone	24	0.10	1.77	0.08	4.11	14	2.00	0	0.00	0	0.00	8	33.33	1	4.17	1	4.17	14	58.33	10	41.67				
28	Mandla	33	0.02	2.62	0.21	3.93	14	42.42	2	6.06	0	0.00	15	45.45	2	6.06	0	0.00	16	48.48	17	51.52				
29	Mandsaur	42	0.05	18.45	0.06	1.00	24	57.14	8	19.05	5	11.90	5	11.90	0	0.00	0	0.00	37	88.10	5	11.90				
30	Morena	11	0.10	0.44	0.49	8.69	3	27.27	0	0.00	0	0.00	1	9.09	4	36.36	3	27.27	3	27.27	8	72.73				
31	Narsinghpur	14	0.02	5.61	0.28	7.87	3	21.43	2	14.29	1	7.14	6	42.86	1	7.14	1	7.14	6	42.86	8	57.14				
32	Neemuch	33	0.15	8.23	0.20	2.18	15	45.45	4	12.12	4	12.12	9	27.27	1	3.03	0	0.00	23	69.70	10	30.30				
33	Panna	27	0.20	5.77	0.02	1.45	14	51.85	5	18.52	2	7.41	6	22.22	0	0.00	0	0.00	21	77.78	6	22.22				
34	Raisen	30	0.03	6.42	1.55	1.55	17	56.67	7	23.33	5	16.67	1	3.33	0	0.00	0	0.00	29	96.67	1	3.33				
35	Rajgarh	26	0.13	8.50	0.10	7.54	17	65.38	2	7.69	1	3.85	4	15.38	1	3.85	1	3.85	20	76.92	6	23.08				
36	Ratlam	43	0.24	14.58	0.68	21.49	8	18.60	14	32.56	12	27.91	3	6.98	3	6.98	3	6.98	34	79.07	9	20.93				
37	Rewa	33	0.08	16.07	0.07	0.27	11	33.33	11	33.33	9	27.27	2	6.06	0	0.00	0	0.00	31	93.94	2	6.06				
38	Sagar	40	0.03	5.18	0.08	3.36	17	42.50	8	20.00	2	5.00	12	30.00	1	2.50	0	0.00	27	67.50	13	32.50				
39	Satna	49	0.14	10.84	0.77	0.77	18	36.73	21	42.86	9	18.37	1	2.04	0	0.00	0	0.00	48	97.96	1	2.04				
40	Sehore	21	0.01	7.78	0.14	0.14	12	57.14	5	23.81	3	14.29	1	4.76	0	0.00	0	0.00	20	95.24	1	4.76				
41	Seoni	43	0.01	3.79	0.03	2.36	19	44.19	6	13.95	0	0.00	16	37.21	2	4.65	0	0.00	25	58.14	18	41.86				
42	Shahdol	21	0.93	5.80	0.99	1.05	7	33.33	7	33.33	5	23.81	2	9.52	0	0.00	0	0.00	19	90.48	2	9.52				
43	Shajapur	18	0.14	5.08	0.08	4.83	10	55.56	1	5.56	1	5.56	5	27.78	0	0.00	1	5.56	12	66.67	6	33.33				
44	Sheopur	17	0.05	2.77	0.50	18.87	8	47.06	1	5.88	0	0.00	4	23.53	2	11.76	2	11.76	9	52.94	8	47.06				
45	Shivpuri	28	0.13	10.60	0.09	11.00	12	42.86	1	3.57	2	7.14	7	25.00	4	14.29	2	7.14	15	53.57	13	46.43				
46	Sidhi	33	0.21	8.78	0.30	0.30	14	42.42	12	36.36	6	18.18	1	3.03	0	0.00	0	0.00	32	96.97	1	3.03				
47	Singrauli	20	0.45	6.18	1.62	1.69	7	35.00	8	40.00	3	15.00	2	10.00	0	0.00	0	0.00	18	90.00	2	10.00				
48	Tikamgarh	24	0.04	7.63	0.15	2.73	11	45.83	7	29.17	2	8.33	2	8.33	2	8.33	0	0.00	20	83.33	4	16.67				
49	Ujjain	42	0.11	10.37	0.03	2.51	26	61.90	5	11.90	5	11.90	5	11.90	1	2.38	0	0.00	36	85.71	6	14.29				
50	Umariya	13	1.28	6.35	-	-	2	15.38	9	69.23	2	15.38	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00				
51	Vidisha	29	0.70	5.70	0.02	5.52	17	58.62	3	10.34	3	10.34	4	13.79	1	3.45	1	3.45	23	79.31	6	20.69				
	<b>Total</b>	<b>1288</b>	<b>0.01</b>	<b>18.45</b>	<b>0.01</b>	<b>21.49</b>	<b>570</b>	<b>44.25</b>	<b>221</b>	<b>17.16</b>	<b>133</b>	<b>10.33</b>	<b>283</b>	<b>21.97</b>	<b>54</b>	<b>4.19</b>	<b>27</b>	<b>2.10</b>	<b>924</b>	<b>71.74</b>	<b>364</b>	<b>28.26</b>				

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from January 2016 to January 2017**

**Annexure -VIII**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	14	0.10	3.95	0.30	0.30	12	85.71	1	7.14	0	0.00	1	7.14	0	0.00	0	0.00	13	92.86	1	7.14
2	Alirajpur	13	0.61	4.53	1.34	1.65	3	23.08	7	53.85	1	7.69	2	15.38	0	0.00	0	0.00	11	84.62	2	15.38
3	Anuppur	15	0.15	5.82	1.24	3.46	9	60.00	1	6.67	2	13.33	2	13.33	1	6.67	0	0.00	12	80.00	3	20.00
4	Ashok Nagar	20	0.17	2.22	0.09	2.15	10	50.00	1	5.00	0	0.00	8	40.00	1	5.00	0	0.00	11	55.00	9	45.00
5	Balaghat	41	0.01	4.66	0.10	2.09	19	46.34	2	4.88	2	4.88	17	41.46	1	2.44	0	0.00	23	56.10	18	43.90
6	Barwani	9	0.40	4.94	0.19	1.27	2	22.22	1	11.11	3	33.33	3	33.33	0	0.00	0	0.00	6	66.67	3	33.33
7	Betul	27	0.10	4.28	0.01	4.97	8	29.63	2	7.41	1	3.70	11	40.74	4	14.81	1	3.70	11	40.74	16	59.26
8	Bhind	13	0.05	8.50	1.35	8.40	5	38.46	2	15.38	1	7.69	1	7.69	2	15.38	2	15.38	8	61.54	5	38.46
9	Bhopal	24	0.03	4.37	0.26	2.10	15	62.50	1	4.17	1	4.17	6	25.00	1	4.17	0	0.00	17	70.83	7	29.17
10	Burhanpur	12	0.13	3.21	0.22	5.61	3	25.00	3	25.00	0	0.00	4	33.33	1	8.33	1	8.33	6	50.00	6	50.00
11	Chhatarpur	39	0.23	16.04	0.14	7.77	15	38.46	15	38.46	6	15.38	2	5.13	0	0.00	1	2.56	36	92.31	3	7.69
12	Chhindwara	38	0.04	6.52	0.08	7.53	15	39.47	0	0.00	1	2.63	8	21.05	8	21.05	6	15.79	16	42.11	22	57.89
13	Damoh	22	0.08	3.50	0.04	0.68	14	63.64	3	13.64	0	0.00	5	22.73	0	0.00	0	0.00	17	77.27	5	22.73
14	Datia	9	0.72	5.25	0.38	1.73	2	22.22	2	22.22	1	11.11	4	44.44	0	0.00	0	0.00	5	55.56	4	44.44
15	Dewas	24	0.08	5.44	0.06	3.88	10	41.67	2	8.33	3	12.50	3	12.50	6	25.00	0	0.00	15	62.50	9	37.50
16	Dhar	38	0.15	13.99	0.04	4.62	19	50.00	6	15.79	6	15.79	5	13.16	1	2.63	1	2.63	31	81.58	7	18.42
17	Dindori	15	0.49	1.25	0.13	3.50	5	33.33	0	0.00	0	0.00	8	53.33	2	13.33	0	0.00	5	33.33	10	66.67
18	Guna	22	0.21	3.34	0.02	5.00	9	40.91	3	13.64	0	0.00	8	36.36	1	4.55	1	4.55	12	54.55	10	45.45
19	Gwalior	15	0.30	7.10	1.34	9.35	7	46.67	1	6.67	1	6.67	2	13.33	1	6.67	3	20.00	9	60.00	6	40.00
20	Harda	13	0.47	6.69	0.19	1.44	5	38.46	0	0.00	2	15.38	6	46.15	0	0.00	0	0.00	7	53.85	6	46.15
21	Hoshangabad	16	0.04	0.60	0.03	6.02	5	31.25	0	0.00	0	0.00	9	56.25	0	0.00	2	12.50	5	31.25	11	68.75
22	Indore	35	0.02	15.76	0.19	3.72	13	37.14	5	14.29	8	22.86	7	20.00	2	5.71	0	0.00	26	74.29	9	25.71
23	Jabalpur	35	0.02	7.33	0.05	6.51	18	51.43	3	8.57	1	2.86	11	31.43	1	2.86	1	2.86	22	62.86	13	37.14
24	Jhabua	11	0.04	5.87	0.25	0.25	9	81.82	0	0.00	1	9.09	1	9.09	0	0.00	0	0.00	10	90.91	1	9.09
25	Katni	16	0.35	7.89	0.50	0.51	7	43.75	4	25.00	3	18.75	2	12.50	0	0.00	0	0.00	14	87.50	2	12.50
26	Khandwa	31	0.13	4.37	0.05	8.08	7	22.58	2	6.45	1	3.23	14	45.16	3	9.68	4	12.90	10	32.26	21	67.74

**District-Wise Annual Fluctuation & Frequency Distribution of Different Ranges from January 2016 to January 2017**

**Annexure -VIII**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	23	0.23	4.62	0.24	5.80	11	47.83	4	17.39	3	13.04	2	8.70	2	8.70	1	4.35	18	78.26	5	21.74
28	Mandla	32	0.01	4.77	0.09	1.87	9	28.13	2	6.25	1	3.13	20	62.50	0	0.00	0	0.00	12	37.50	20	62.50
29	Mandsaur	37	0.23	9.85	0.40	9.07	17	45.95	9	24.32	7	18.92	3	8.11	0	0.00	1	2.70	33	89.19	4	10.81
30	Morena	7	0.83	5.33	0.05	2.23	2	28.57	0	0.00	1	14.29	3	42.86	1	14.29	0	0.00	3	42.86	4	57.14
31	Narsinghpur	14	0.09	7.16	0.01	1.57	7	50.00	1	7.14	2	14.29	4	28.57	0	0.00	0	0.00	10	71.43	4	28.57
32	Neemuch	31	0.80	12.31	0.22	1.42	9	29.03	7	22.58	13	41.94	2	6.45	0	0.00	0	0.00	29	93.55	2	6.45
33	Panna	27	0.09	7.79	0.10	2.02	11	40.74	6	22.22	3	11.11	6	22.22	1	3.70	0	0.00	20	74.07	7	25.93
34	Raisen	31	0.05	4.93	0.17	1.28	14	45.16	5	16.13	2	6.45	10	32.26	0	0.00	0	0.00	21	67.74	10	32.26
35	Rajgarh	24	0.07	3.81	0.25	5.40	11	45.83	3	12.50	0	0.00	6	25.00	3	12.50	1	4.17	14	58.33	10	41.67
36	Ratlam	38	0.18	24.60	0.06	4.20	7	18.42	8	21.05	14	36.84	7	18.42	1	2.63	1	2.63	29	76.32	9	23.68
37	Rewa	30	0.48	10.50	0.02	2.08	12	40.00	8	26.67	4	13.33	5	16.67	1	3.33	0	0.00	24	80.00	6	20.00
38	Sagar	39	0.11	3.55	0.12	1.12	22	56.41	6	15.38	0	0.00	11	28.21	0	0.00	0	0.00	28	71.79	11	28.21
39	Satna	47	0.07	8.12	0.01	1.14	23	48.94	10	21.28	6	12.77	8	17.02	0	0.00	0	0.00	39	82.98	8	17.02
40	Sehore	21	0.04	2.10	0.27	2.27	15	71.43	1	4.76	0	0.00	4	19.05	1	4.76	0	0.00	16	76.19	5	23.81
41	Seoni	46	0.01	4.62	0.12	2.62	25	54.35	5	10.87	2	4.35	12	26.09	2	4.35	0	0.00	32	69.57	14	30.43
42	Shahdol	22	0.65	5.27	0.03	0.95	10	45.45	7	31.82	3	13.64	2	9.09	0	0.00	0	0.00	20	90.91	2	9.09
43	Shajapur	17	0.18	1.88	0.10	3.20	7	41.18	0	0.00	0	0.00	8	47.06	2	11.76	0	0.00	7	41.18	10	58.82
44	Sheopur	14	1.05	5.72	0.08	1.06	5	35.71	1	7.14	2	14.29	6	42.86	0	0.00	0	0.00	8	57.14	6	42.86
45	Shivpuri	24	0.13	5.14	0.04	7.20	9	37.50	4	16.67	3	12.50	5	20.83	1	4.17	2	8.33	16	66.67	8	33.33
46	Sidhi	31	0.45	6.95	0.11	5.77	14	45.16	7	22.58	4	12.90	5	16.13	0	0.00	1	3.23	25	80.65	6	19.35
47	Singrauli	20	0.51	4.70	0.41	0.41	11	55.00	5	25.00	3	15.00	1	5.00	0	0.00	0	0.00	19	95.00	1	5.00
48	Tikamgarh	24	0.27	6.88	0.05	2.26	9	37.50	7	29.17	3	12.50	4	16.67	1	4.17	0	0.00	19	79.17	5	20.83
49	Ujjain	38	0.30	8.07	0.15	1.03	18	47.37	8	21.05	5	13.16	7	18.42	0	0.00	0	0.00	31	81.58	7	18.42
50	Umaria	13	1.25	4.36	-	-	9	69.23	2	15.38	2	15.38	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00
51	Vidisha	30	0.15	4.74	0.02	1.93	17	56.67	4	13.33	1	3.33	8	26.67	0	0.00	0	0.00	22	73.33	8	26.67
	<b>Total</b>	<b>1247</b>	<b>0.01</b>	<b>24.60</b>	<b>0.01</b>	<b>9.35</b>	<b>550</b>	<b>44.11</b>	<b>187</b>	<b>15.00</b>	<b>129</b>	<b>10.34</b>	<b>299</b>	<b>23.98</b>	<b>52</b>	<b>4.17</b>	<b>30</b>	<b>2.41</b>	<b>866</b>	<b>69.45</b>	<b>381</b>	<b>30.55</b>

District-Wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from May 2016 to August 2016

Annexure -IX

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise				Fall			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%				
1	Agar Malwa	15	2.03	17.05	-	-	0	0.00	1	6.67	14	93.33	0	0.00	0	0.00	0	0.00	15	100.00	0	0.00				
2	Alirajpur	13	0.73	12.53	-	-	2	15.38	3	23.08	8	61.54	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00				
3	Anuppur	18	0.42	11.15	0.01	0.01	4	22.22	6	33.33	7	38.89	1	5.56	0	0.00	0	0.00	17	94.44	1	5.56				
4	Ashok Nagar	21	1.43	12.93	-	-	2	9.52	5	23.81	14	66.67	0	0.00	0	0.00	0	0.00	21	100.00	0	0.00				
5	Balaghat	40	0.48	8.23	-	-	9	22.50	10	25.00	21	52.50	0	0.00	0	0.00	0	0.00	40	100.00	0	0.00				
6	Barwani	9	1.67	7.60	0.28	0.28	1	11.11	4	44.44	3	33.33	1	11.11	0	0.00	0	0.00	8	88.89	1	11.11				
7	Betul	29	0.59	14.03	-	-	3	10.34	3	10.34	23	79.31	0	0.00	0	0.00	0	0.00	29	100.00	0	0.00				
8	Bhind	16	0.75	11.68	0.10	3.45	4	25.00	4	10.00	4	25.00	2	12.50	2	12.50	0	0.00	12	75.00	4	25.00				
9	Bhopal	26	0.84	15.67	-	-	3	11.54	5	19.23	18	69.23	0	0.00	0	0.00	0	0.00	26	100.00	0	0.00				
10	Burhanpur	16	1.23	9.24	0.01	0.01	2	12.50	7	43.75	6	37.50	1	6.25	0	0.00	0	0.00	15	93.75	1	6.25				
11	Chhatarpur	38	3.36	16.94	-	-	0	0.00	2	5.26	36	94.74	0	0.00	0	0.00	0	0.00	38	100.00	0	0.00				
12	Chhindwara	41	1.15	14.12	-	-	4	9.76	10	24.39	27	65.85	0	0.00	0	0.00	0	0.00	41	100.00	0	0.00				
13	Damoh	22	1.67	10.83	-	-	3	13.64	4	18.18	15	68.18	0	0.00	0	0.00	0	0.00	22	100.00	0	0.00				
14	Datia	9	1.16	15.31	0.11	0.11	1	11.11	3	33.33	4	44.44	1	11.11	0	0.00	0	0.00	8	88.89	1	11.11				
15	Dewas	24	0.10	23.47	0.22	0.22	4	16.67	5	20.83	14	58.33	1	4.17	0	0.00	0	0.00	23	95.83	1	4.17				
16	Dhar	39	1.35	28.88	0.26	0.26	2	5.13	10	25.64	26	66.67	1	2.56	0	0.00	0	0.00	38	97.44	1	2.56				
17	Dindori	14	0.33	8.46	-	-	4	28.57	3	21.43	7	50.00	0	0.00	0	0.00	0	0.00	14	100.00	0	0.00				
18	Guna	22	1.94	19.94	-	-	1	4.55	0	0.00	21	95.45	0	0.00	0	0.00	0	0.00	22	100.00	0	0.00				
19	Gwalior	18	0.25	13.74	-	-	4	22.22	6	33.33	8	44.44	0	0.00	0	0.00	0	0.00	18	100.00	0	0.00				
20	Harda	13	0.92	10.35	-	-	3	23.08	3	23.08	7	53.85	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00				
21	Hoshangabad	19	0.81	9.22	-	-	2	10.53	5	26.32	12	63.16	0	0.00	0	0.00	0	0.00	19	100.00	0	0.00				
22	Indore	36	0.10	23.75	-	-	3	8.33	5	13.89	28	77.78	0	0.00	0	0.00	0	0.00	36	100.00	0	0.00				
23	Jabalpur	33	0.02	12.27	-	-	12	36.36	7	21.21	14	42.42	0	0.00	0	0.00	0	0.00	33	100.00	0	0.00				
24	Jhabua	12	1.50	9.68	-	-	2	16.67	5	41.67	5	41.67	0	0.00	0	0.00	0	0.00	12	100.00	0	0.00				
25	Katni	16	4.52	16.72	-	-	0	0.00	0	0.00	16	100.00	0	0.00	0	0.00	0	0.00	16	100.00	0	0.00				
26	Khandwa	29	1.30	8.54	1.42	1.42	1	3.45	8	27.59	19	65.52	1	3.45	0	0.00	0	0.00	28	96.55	1	3.45				

District-Wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from May 2016 to August 2016

Annexure -IX

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	0.09	7.59	-	-	11	2.00	8	33.33	5	20.83	0	0.00	0	0.00	0	0.00	24	100.00	0	0.00
28	Mandla	32	1.01	7.85	-	-	5	15.63	7	21.88	20	62.50	0	0.00	0	0.00	0	0.00	32	100.00	0	0.00
29	Mandsaur	41	2.02	47.30	-	-	0	0.00	3	7.32	38	92.68	0	0.00	0	0.00	0	0.00	41	100.00	0	0.00
30	Morena	9	0.12	7.95	-	-	4	44.44	1	11.11	4	44.44	0	0.00	0	0.00	0	0.00	9	100.00	0	0.00
31	Narsinghpur	18	0.01	14.40	-	-	6	33.33	4	22.22	8	44.44	0	0.00	0	0.00	0	0.00	18	100.00	0	0.00
32	Neemuch	32	3.68	34.61	-	-	0	0.00	1	3.13	31	96.88	0	0.00	0	0.00	0	0.00	32	100.00	0	0.00
33	Panna	27	2.19	15.68	-	-	0	0.00	3	11.11	24	88.89	0	0.00	0	0.00	0	0.00	27	100.00	0	0.00
34	Raisen	31	2.29	12.83	0.12	0.12	0	0.00	5	16.13	25	80.65	1	3.23	0	0.00	0	0.00	30	96.77	1	3.23
35	Rajgarh	28	3.89	13.59	-	-	0	0.00	2	7.14	26	92.86	0	0.00	0	0.00	0	0.00	28	100.00	0	0.00
36	Ratlam	42	2.44	47.42	-	-	0	0.00	3	7.14	39	92.86	0	0.00	0	0.00	0	0.00	42	100.00	0	0.00
37	Rewa	35	0.30	17.19	-	-	1	2.86	1	2.86	33	94.29	0	0.00	0	0.00	0	0.00	35	100.00	0	0.00
38	Sagar	38	1.10	21.61	-	-	1	2.63	4	10.53	33	86.84	0	0.00	0	0.00	0	0.00	38	100.00	0	0.00
39	Satna	51	1.60	20.52	-	-	2	3.92	5	9.80	44	86.27	0	0.00	0	0.00	0	0.00	51	100.00	0	0.00
40	Sehore	21	3.07	12.93	-	-	0	0.00	2	9.52	19	90.48	0	0.00	0	0.00	0	0.00	21	100.00	0	0.00
41	Seoni	45	1.22	10.40	1.25	1.25	4	8.89	11	24.44	29	64.44	1	2.22	0	0.00	0	0.00	44	97.78	1	2.22
42	Shahdol	22	0.54	11.05	-	-	2	9.09	3	13.64	17	77.27	0	0.00	0	0.00	0	0.00	22	100.00	0	0.00
43	Shajapur	16	2.65	14.10	-	-	0	0.00	1	6.25	15	93.75	0	0.00	0	0.00	0	0.00	16	100.00	0	0.00
44	Sheopur	15	3.03	25.00	-	-	0	0.00	3	20.00	12	80.00	0	0.00	0	0.00	0	0.00	15	100.00	0	0.00
45	Shivpuri	29	1.90	21.22	-	-	1	3.45	3	10.34	25	86.21	0	0.00	0	0.00	0	0.00	29	100.00	0	0.00
46	Sidhi	33	1.43	13.20	0.50	0.50	3	9.09	5	15.15	24	72.73	1	3.03	0	0.00	0	0.00	32	96.97	1	3.03
47	Singrauli	20	1.10	9.15	-	-	2	10.00	3	15.00	15	75.00	0	0.00	0	0.00	0	0.00	20	100.00	0	0.00
48	Tikamgarh	24	4.16	16.50	-	-	0	0.00	0	0.00	24	100.00	0	0.00	0	0.00	0	0.00	24	100.00	0	0.00
49	Ujjain	45	2.29	39.77	-	-	0	0.00	3	6.67	42	93.33	0	0.00	0	0.00	0	0.00	45	100.00	0	0.00
50	Umaria	13	1.97	9.50	0.70	0.70	1	7.69	4	30.77	7	53.85	1	7.69	0	0.00	0	0.00	12	92.31	1	7.69
51	Vidisha	30	1.27	16.05	-	-	1	3.33	3	10.00	26	86.67	0	0.00	0	0.00	0	0.00	30	100.00	0	0.00
	<b>Total</b>	<b>1309</b>	<b>0.01</b>	<b>47.42</b>	<b>0.01</b>	<b>3.45</b>	<b>120</b>	<b>9.17</b>	<b>212</b>	<b>16.20</b>	<b>962</b>	<b>73.49</b>	<b>13</b>	<b>0.99</b>	<b>2</b>	<b>0.15</b>	<b>0</b>	<b>0.00</b>	<b>1294</b>	<b>98.85</b>	<b>15</b>	<b>1.15</b>

**District-Wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from May 2016 to Nov 2016**

**Annexure -X**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	14	0.28	5.94	0.20	1.15	2	14.29	3	21.43	7	50.00	2	14.29	0	0.00	0	0.00	12	85.71	2	14.29
2	Alirajpur	13	0.05	12.32	-	-	4	30.77	3	23.08	6	46.15	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00
3	Anuppur	19	0.85	9.79	0.01	0.01	5	26.32	5	26.32	8	42.11	1	5.26	0	0.00	0	0.00	18	94.74	1	5.26
4	Ashok Nagar	21	0.24	9.92	0.15	0.15	5	23.81	10	47.62	5	23.81	1	4.76	0	0.00	0	0.00	20	95.24	1	4.76
5	Balaghat	40	1.26	5.47	0.20	0.20	5	12.50	23	57.50	11	27.50	1	2.50	0	0.00	0	0.00	39	97.50	1	2.50
6	Barwani	9	0.24	6.68	-	-	4	44.44	2	22.22	3	33.33	0	0.00	0	0.00	0	0.00	9	100.00	0	0.00
7	Betul	29	0.70	10.17	1.19	1.82	6	20.69	9	31.03	12	41.38	2	6.90	0	0.00	0	0.00	27	93.10	2	6.90
8	Bhind	16	0.43	10.04	0.20	21.92	3	18.75	2	10.00	2	12.50	6	37.50	2	12.50	1	6.25	7	43.75	9	56.25
9	Bhopal	25	0.28	10.28	0.86	0.86	6	24.00	6	24.00	12	48.00	1	4.00	0	0.00	0	0.00	24	96.00	1	4.00
10	Burhanpur	16	0.75	8.44	0.01	0.50	3	18.75	7	43.75	4	25.00	2	12.50	0	0.00	0	0.00	14	87.50	2	12.50
11	Chhatarpur	38	0.12	17.39	2.21	2.21	2	5.26	8	21.05	27	71.05	0	0.00	1	2.63	0	0.00	37	97.37	1	2.63
12	Chhindwara	40	1.02	10.93	0.51	0.51	3	7.50	21	52.50	15	37.50	1	2.50	0	0.00	0	0.00	39	97.50	1	2.50
13	Damoh	22	0.27	10.22	0.18	1.05	6	27.27	6	27.27	8	36.36	2	9.09	0	0.00	0	0.00	20	90.91	2	9.09
14	Datia	9	1.09	9.36	0.28	1.80	2	22.22	3	33.33	1	11.11	3	33.33	0	0.00	0	0.00	6	66.67	3	33.33
15	Dewas	24	0.25	17.40	0.04	0.89	6	25.00	4	16.67	11	45.83	3	12.50	0	0.00	0	0.00	21	87.50	3	12.50
16	Dhar	39	0.40	23.83	0.15	0.94	7	17.95	12	30.77	18	46.15	2	5.13	0	0.00	0	0.00	37	94.87	2	5.13
17	Dindori	14	0.38	5.60	-	-	8	57.14	5	35.71	1	7.14	0	0.00	0	0.00	0	0.00	14	100.00	0	0.00
18	Guna	21	0.59	14.78	-	-	4	19.05	8	38.10	9	42.86	0	0.00	0	0.00	0	0.00	21	100.00	0	0.00
19	Gwalior	18	0.51	7.22	0.01	4.70	3	16.67	4	22.22	5	27.78	4	22.22	1	5.56	1	5.56	12	66.67	6	33.33
20	Harda	13	0.27	9.40	-	-	7	53.85	2	15.38	4	30.77	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00
21	Hoshangabad	18	1.25	7.70	1.64	1.64	5	27.78	8	44.44	4	22.22	1	5.56	0	0.00	0	0.00	17	94.44	1	5.56
22	Indore	36	0.06	19.58	0.01	4.62	3	8.33	7	19.44	23	63.89	2	5.56	0	0.00	1	2.78	33	91.67	3	8.33
23	Jabalpur	35	0.15	7.46	0.17	0.51	19	54.29	10	28.57	4	11.43	2	5.71	0	0.00	0	0.00	33	94.29	2	5.71
24	Jhabua	12	0.65	8.99	-	-	3	25.00	6	50.00	3	25.00	0	0.00	0	0.00	0	0.00	12	100.00	0	0.00
25	Katni	17	2.50	12.48	-	-	0	0.00	2	11.76	15	88.24	0	0.00	0	0.00	0	0.00	17	100.00	0	0.00
26	Khandwa	30	0.47	7.04	-	-	5	16.67	14	46.67	11	36.67	0	0.00	0	0.00	0	0.00	30	100.00	0	0.00

**District-Wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from May 2016 to Nov 2016**

**Annexure -X**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	0.60	8.79	0.20	0.81	8	2.00	8	33.33	6	25.00	2	8.33	0	0.00	0	0.00	22	91.67	2	8.33
28	Mandla	33	0.02	6.68	-	-	12	36.36	17	51.52	4	12.12	0	0.00	0	0.00	0	0.00	33	100.00	0	0.00
29	Mandsaur	41	1.20	32.88	0.47	1.23	2	4.88	9	21.95	28	68.29	2	4.88	0	0.00	0	0.00	39	95.12	2	4.88
30	Morena	9	1.42	5.92	0.12	3.92	2	22.22	1	11.11	2	22.22	2	22.22	2	22.22	0	0.00	5	55.56	4	44.44
31	Narsinghpur	17	0.64	11.55	0.02	1.50	5	29.41	5	29.41	5	29.41	2	11.76	0	0.00	0	0.00	15	88.24	2	11.76
32	Neemuch	33	0.42	27.79	-	-	5	15.15	12	36.36	16	48.48	0	0.00	0	0.00	0	0.00	33	100.00	0	0.00
33	Panna	27	0.01	11.64	-	-	4	14.81	7	25.93	16	59.26	0	0.00	0	0.00	0	0.00	27	100.00	0	0.00
34	Raisen	31	1.66	11.56	-	-	1	3.23	11	35.48	19	61.29	0	0.00	0	0.00	0	0.00	31	100.00	0	0.00
35	Rajgarh	28	0.85	11.83	0.53	1.23	4	14.29	7	25.00	15	53.57	2	7.14	0	0.00	0	0.00	26	92.86	2	7.14
36	Ratlam	44	0.39	45.90	0.02	4.31	4	9.09	4	9.09	32	72.73	3	6.82	0	0.00	1	2.27	40	90.91	4	9.09
37	Rewa	33	0.40	16.06	-	-	4	12.12	7	21.21	22	66.67	0	0.00	0	0.00	0	0.00	33	100.00	0	0.00
38	Sagar	38	0.84	25.35	0.94	1.21	4	10.53	13	34.21	18	47.37	3	7.89	0	0.00	0	0.00	35	92.11	3	7.89
39	Satna	49	1.15	13.01	-	-	3	6.12	15	30.61	31	63.27	0	0.00	0	0.00	0	0.00	49	100.00	0	0.00
40	Sehore	21	1.47	10.10	-	-	1	4.76	6	28.57	14	66.67	0	0.00	0	0.00	0	0.00	21	100.00	0	0.00
41	Seoni	44	0.15	7.77	0.42	0.80	14	31.82	15	34.09	13	29.55	2	4.55	0	0.00	0	0.00	42	95.45	2	4.55
42	Shahdol	22	1.51	7.32	1.08	1.08	1	4.55	8	36.36	12	54.55	1	4.55	0	0.00	0	0.00	21	95.45	1	4.55
43	Shajapur	18	1.70	10.73	0.10	1.51	2	11.11	1	5.56	13	72.22	2	11.11	0	0.00	0	0.00	16	88.89	2	11.11
44	Sheopur	15	1.20	17.45	2.00	14.37	2	13.33	3	20.00	8	53.33	1	6.67	0	0.00	1	6.67	13	86.67	2	13.33
45	Shivpuri	27	0.36	14.73	-	-	6	22.22	8	29.63	13	48.15	0	0.00	0	0.00	0	0.00	27	100.00	0	0.00
46	Sidhi	33	0.56	11.89	0.88	0.88	4	12.12	12	36.36	16	48.48	1	3.03	0	0.00	0	0.00	32	96.97	1	3.03
47	Singrauli	20	0.08	7.63	0.37	0.37	4	20.00	4	20.00	11	55.00	1	5.00	0	0.00	0	0.00	19	95.00	1	5.00
48	Tikamgarh	24	1.28	8.27	0.46	0.64	5	20.83	8	33.33	9	37.50	2	8.33	0	0.00	0	0.00	22	91.67	2	8.33
49	Ujjain	42	0.47	30.64	-	-	6	14.29	5	11.90	31	73.81	0	0.00	0	0.00	0	0.00	42	100.00	0	0.00
50	Umaria	13	1.38	9.08	-	-	1	7.69	8	61.54	4	30.77	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00
51	Vidisha	30	1.04	12.10	0.86	0.86	3	10.00	8	26.67	18	60.00	1	3.33	0	0.00	0	0.00	29	96.67	1	3.33
	<b>Total</b>	<b>1304</b>	<b>0.01</b>	<b>45.90</b>	<b>0.01</b>	<b>21.92</b>	<b>233</b>	<b>17.87</b>	<b>392</b>	<b>30.06</b>	<b>605</b>	<b>46.40</b>	<b>63</b>	<b>4.83</b>	<b>6</b>	<b>0.46</b>	<b>0</b>	<b>0.00</b>	<b>1230</b>	<b>94.33</b>	<b>74</b>	<b>5.67</b>

District-Wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from May 2016 to January 2017

Annexure -XI

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise				Fall			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%				
1	Agar Malwa	14	0.3	7.25	0.05	0.05	5	35.71	7	50.00	1	7.14	1	7.14	0	0.00	0	0.00	13	92.86	1	7.14				
2	Alirajpur	13	0.61	7.14	1.05	2.06	5	38.46	3	23.08	3	23.08	1	7.69	1	7.69	0	0.00	11	84.62	2	15.38				
3	Anuppur	18	0.35	7	0.01	0.01	8	44.44	5	27.78	4	22.22	1	5.56	0	0.00	0	0.00	17	94.44	1	5.56				
4	Ashok Nagar	21	0.12	4	0.31	1.74	8	38.10	7	33.33	0	0.00	6	28.57	0	0.00	0	0.00	15	71.43	6	28.57				
5	Balaghat	40	0.53	4.28	0.17	1.51	14	35.00	22	55.00	2	5.00	2	5.00	0	0.00	0	0.00	38	95.00	2	5.00				
6	Barwani	9	0.55	5.75	0.23	1.11	2	22.22	2	22.22	3	33.33	2	22.22	0	0.00	0	0.00	7	77.78	2	22.22				
7	Betul	29	0.06	5.16	0.18	0.18	18	62.07	7	24.14	3	10.34	1	3.45	0	0.00	0	0.00	28	96.55	1	3.45				
8	Bhind	16	0.03	8.5	0.97	21.92	5	31.25	2	12.50	1	6.25	3	18.75	2	12.50	3	18.75	8	50.00	8	50.00				
9	Bhopal	26	0.15	13.73	0.64	2.4	12	46.15	8	30.77	3	11.54	2	7.69	1	3.85	0	0.00	23	88.46	3	11.54				
10	Burhanpur	13	0.42	4.49	3.32	5.55	3	23.08	6	46.15	1	7.69	0	0.00	2	15.38	1	7.69	10	76.92	3	23.08				
11	Chhatarpur	38	0.74	16.58	0.34	3.82	9	23.68	12	31.58	15	39.47	1	2.63	1	2.63	0	0.00	36	94.74	2	5.26				
12	Chhindwara	39	0.23	6.32	0.47	6.42	17	43.59	4	10.26	5	12.82	9	23.08	1	2.56	3	7.69	26	66.67	13	33.33				
13	Damoh	21	0.23	6.46	0.28	1.26	9	42.86	8	38.10	2	9.52	2	9.52	0	0.00	0	0.00	19	90.48	2	9.52				
14	Datia	9	1.35	7.5	0.35	1.69	3	33.33	2	22.22	1	11.11	3	33.33	0	0.00	0	0.00	6	66.67	3	33.33				
15	Dewas	24	0.08	10.85	0.12	3.31	9	37.50	4	16.67	5	20.83	4	16.67	2	8.33	0	0.00	18	75.00	6	25.00				
16	Dhar	36	0.27	21.7	0.05	1.88	12	33.33	10	27.78	10	27.78	4	11.11	0	0.00	0	0.00	32	88.89	4	11.11				
17	Dindori	13	0.29	5.58	1.71	1.71	10	76.92	1	7.69	1	7.69	1	7.69	0	0.00	0	0.00	12	92.31	1	7.69				
18	Guna	22	0.06	10.52	0.22	1.25	11	50.00	5	22.73	3	13.64	3	13.64	0	0.00	0	0.00	19	86.36	3	13.64				
19	Gwalior	18	0.51	7.1	0.01	7.18	3	16.67	1	5.56	4	22.22	5	27.78	2	11.11	3	16.67	8	44.44	10	55.56				
20	Harda	13	0.34	11.47	-	-	7	53.85	1	7.69	5	38.46	0	0.00	0	0.00	0	0.00	13	100.00	0	0.00				
21	Hoshangabad	15	0.48	5.49	2.78	2.78	9	60.00	4	26.67	1	6.67	0	0.00	1	6.67	0	0.00	14	93.33	1	6.67				
22	Indore	33	0.08	13.38	0.79	2.45	7	21.21	8	24.24	14	42.42	3	9.09	1	3.03	0	0.00	29	87.88	4	12.12				
23	Jabalpur	35	0.13	7.23	0.05	5.96	19	54.29	8	22.86	2	5.71	5	14.29	0	0.00	1	2.86	29	82.86	6	17.14				
24	Jhabua	12	0.57	5.9	0.85	0.85	6	50.00	3	25.00	2	16.67	1	8.33	0	0.00	0	0.00	11	91.67	1	8.33				
25	Katni	16	0.33	8.91	-	-	5	31.25	4	25.00	7	43.75	0	0.00	0	0.00	0	0.00	16	100.00	0	0.00				
26	Khandwa	29	0.16	5.33	0.24	4.3	14	48.28	6	20.69	3	10.34	2	6.90	3	10.34	1	3.45	23	79.31	6	20.69				



**District-Wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from May 2016 to January 2017**

**Annexure -XI**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise				Fall			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%				
27	Khargone	23	0.25	6.63	0.07	1.88	13	56.52	5	21.74	3	13.04	2	8.70	0	0.00	0	0.00	21	91.30	2	8.70				
28	Mandla	33	0.22	4.97	0.03	0.06	21	63.64	8	24.24	2	6.06	2	6.06	0	0.00	0	0.00	31	93.94	2	6.06				
29	Mandsaur	36	0.3	17.28	0.02	4.03	6	16.67	15	41.67	11	30.56	3	8.33	0	0.00	1	2.78	32	88.89	4	11.11				
30	Morena	7	0.54	7.83	0.25	0.74	2	28.57	2	28.57	1	14.29	2	28.57	0	0.00	0	0.00	5	71.43	2	28.57				
31	Narsinghpur	17	0.13	10.58	1	1.5	9	52.94	3	17.65	3	17.65	2	11.76	0	0.00	0	0.00	15	88.24	2	11.76				
32	Neemuch	33	0.05	24.46	0.1	1.8	4	12.12	10	30.30	15	45.45	4	12.12	0	0.00	0	0.00	29	87.88	4	12.12				
33	Panna	27	1	9.23	0.09	0.44	5	18.52	12	44.44	6	22.22	4	14.81	0	0.00	0	0.00	23	85.19	4	14.81				
34	Raisen	31	0.08	9.58	0.1	0.1	17	54.84	8	25.81	5	16.13	1	3.23	0	0.00	0	0.00	30	96.77	1	3.23				
35	Rajgarh	28	0.16	8.6	0.26	5.11	9	32.14	8	28.57	6	21.43	4	14.29	0	0.00	1	3.57	23	82.14	5	17.86				
36	Ratlam	38	0.01	41.64	0.31	4	10	26.32	10	26.32	14	36.84	2	5.26	2	5.26	0	0.00	34	89.47	4	10.53				
37	Rewa	35	0.3	6.79	0.01	0.01	12	34.29	15	42.86	6	17.14	2	5.71	0	0.00	0	0.00	33	94.29	2	5.71				
38	Sagar	37	0.15	8.24	0.24	2.57	17	45.95	11	29.73	4	10.81	4	10.81	1	2.70	0	0.00	32	86.49	5	13.51				
39	Satna	50	0.19	12.5	-	-	17	34.00	18	36.00	15	30.00	0	0.00	0	0.00	0	0.00	50	100.00	0	0.00				
40	Sehore	21	0.04	9.93	0.02	6.2	4	19.05	5	23.81	6	28.57	5	23.81	0	0.00	1	4.76	15	71.43	6	28.57				
41	Seoni	46	0.18	6.87	0.06	2.96	19	41.30	14	30.43	6	13.04	6	13.04	1	2.17	0	0.00	39	84.78	7	15.22				
42	Shahdol	22	0.24	5.5	-	-	6	27.27	11	50.00	5	22.73	0	0.00	0	0.00	0	0.00	22	100.00	0	0.00				
43	Shajapur	18	0.06	8.03	0.03	2.8	5	27.78	5	27.78	4	22.22	3	16.67	1	5.56	0	0.00	14	77.78	4	22.22				
44	Sheopur	14	2.2	13.55	0.27	13.67	0	0.00	4	28.57	6	42.86	2	14.29	1	7.14	1	7.14	10	71.43	4	28.57				
45	Shivpuri	24	0.06	12.06	0.12	1.46	8	33.33	5	20.83	9	37.50	2	8.33	0	0.00	0	0.00	22	91.67	2	8.33				
46	Sidhi	33	0.5	7	0.1	3.2	9	27.27	16	48.48	5	15.15	2	6.06	1	3.03	0	0.00	30	90.91	3	9.09				
47	Singrauli	20	0.85	5.7	-	-	5	25.00	9	45.00	6	30.00	0	0.00	0	0.00	0	0.00	20	100.00	0	0.00				
48	Tikamgarh	23	0.22	6.31	0.01	3.02	6	26.09	10	43.48	5	21.74	1	4.35	1	4.35	0	0.00	21	91.30	2	8.70				
49	Ujjain	39	0.24	15.12	0.16	4.5	16	41.03	8	20.51	11	28.21	3	7.69	0	0.00	1	2.56	35	89.74	4	10.26				
50	Umaria	13	1.5	6.8	0.4	0.4	2	15.38	7	53.85	3	23.08	1	7.69	0	0.00	0	0.00	12	92.31	1	7.69				
51	Vidisha	30	0.53	9.81	0.18	1.2	8	26.67	9	30.00	7	23.33	6	20.00	0	0.00	0	0.00	24	80.00	6	20.00				
	<b>Total</b>	<b>1270</b>	<b>0.01</b>	<b>41.06</b>	<b>0.01</b>	<b>21.92</b>	<b>460</b>	<b>36.22</b>	<b>378</b>	<b>29.76</b>	<b>265</b>	<b>20.87</b>	<b>125</b>	<b>9.84</b>	<b>25</b>	<b>1.97</b>	<b>17</b>	<b>1.34</b>	<b>1103</b>	<b>86.85</b>	<b>167</b>	<b>13.15</b>				

District-Wise Decadal Water Level Fluctuation With [Mean May (2006 to 2015)and May 2016]

Annexure - XII

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	0.26	6.51	0.23	3.72	4	26.67	3	20.00	2	13.33	5	33.33	1	6.67	0	0.00	9	60.00	6	40.00
2	Alirajpur	12	0.23	4.53	0.70	2.59	2	16.67	2	16.67	1	8.33	6	50.00	1	8.33	0	0.00	5	41.67	7	58.33
3	Anuppur	19	0.29	0.89	0.32	4.10	3	15.79	0	0.00	0	0.00	13	68.42	2	10.53	1	5.26	3	15.79	16	84.21
4	Ashok Nagar	15	0.13	1.52	0.65	2.15	8	53.33	0	0.00	0	0.00	6	40.00	1	6.67	0	0.00	8	53.33	7	46.67
5	Balaghat	40	0.05	2.49	0.08	4.06	16	40.00	1	2.50	0	0.00	21	52.50	1	2.50	1	2.50	17	42.50	23	57.50
6	Barwani	9	0.50	2.74	0.09	4.33	2	22.22	3	33.33	0	0.00	2	22.22	1	11.11	1	11.11	5	55.56	4	44.44
7	Betul	30	0.04	2.81	0.05	6.28	10	33.33	1	3.33	0	0.00	14	46.67	3	10.00	2	6.67	11	36.67	19	63.33
8	Bhind	19	0.40	9.80	0.37	5.05	6	31.58	4	21.05	4	21.05	3	15.79	1	5.26	1	5.26	14	73.68	5	26.32
9	Bhopal	24	0.09	3.11	0.10	6.29	13	54.17	3	12.50	0	0.00	6	25.00	1	4.17	1	0.00	16	66.67	8	33.33
10	Burhanpur	17	0.24	6.32	0.04	2.34	1	5.88	0	0.00	1	5.88	14	82.35	1	5.88	0	0.00	2	11.76	15	88.24
11	Chhatarpur	38	0.02	5.58	0.08	8.60	3	7.89	4	10.53	1	2.63	17	44.74	10	26.32	3	7.89	8	21.05	30	78.95
12	Chhindwara	43	0.09	3.60	0.07	15.17	14	32.56	4	9.30	0	0.00	12	27.91	9	20.93	4	9.30	18	41.86	25	58.14
13	Damoh	22	0.13	8.67	0.17	2.58	7	31.82	1	4.55	3	13.64	10	45.45	1	4.55	0	0.00	11	50.00	11	50.00
14	Datia	10	1.69	1.69	0.08	6.97	1	10.00	0	0.00	0	0.00	6	60.00	1	10.00	2	20.00	1	10.00	9	90.00
15	Dewas	24	0.05	10.84	0.11	4.79	7	29.17	4	16.67	2	8.33	6	25.00	4	16.67	1	4.17	13	54.17	11	45.83
16	Dhar	39	0.08	11.80	0.07	12.14	12	30.77	4	10.26	5	12.82	13	33.33	2	5.13	3	7.69	21	53.85	18	46.15
17	Dindori	13	0.03	1.61	0.04	1.18	6	46.15	0	0.00	0	0.00	7	53.85	0	0.00	0	0.00	6	46.15	7	53.85
18	Guna	22	0.15	2.52	0.24	6.64	10	45.45	2	9.09	0	0.00	8	36.36	1	4.55	1	4.55	12	54.55	10	45.45
19	Gwalior	22	0.02	5.85	0.04	6.00	4	18.18	2	9.09	1	4.55	8	36.36	3	13.64	4	18.18	7	31.82	15	68.18
20	Harda	14	0.04	1.80	0.01	8.97	2	14.29	0	0.00	0	0.00	8	57.14	1	7.14	3	21.43	2	14.29	12	85.71
21	Hoshangabad	19	0.14	3.06	0.08	4.53	3	15.79	2	10.53	0	0.00	8	42.11	5	26.32	1	5.26	5	26.32	14	73.68
22	Indore	35	0.05	12.81	0.22	13.81	5	14.29	5	14.29	4	11.43	12	34.29	5	14.29	4	11.43	14	40.00	21	60.00
23	Jabalpur	35	0.05	1.93	0.10	4.09	12	34.29	0	0.00	0	0.00	19	54.29	3	8.57	1	2.86	12	34.29	23	65.71
24	Jhabua	12	0.46	1.42	0.21	2.30	5	41.67	0	0.00	0	0.00	6	50.00	1	8.33	0	0.00	5	41.67	7	58.33
25	Katni	17	2.06	2.06	0.54	4.68	0	0.00	1	5.88	0	0.00	9	52.94	6	35.29	1	5.88	1	5.88	16	94.12
26	Khandwa	30	0.10	4.60	0.25	3.20	10	33.33	3	10.00	1	3.33	14	46.67	2	6.67	0	0.00	14	46.67	16	53.33

**District-Wise Decadal Water Level Fluctuation With [Mean May (2006 to 2015)and May 2016]**

**Annexure - XII**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise				Fall			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%		
27	Khargone	24	0.28	6.94	0.03	5.19	6	25.00	3	12.50	2	8.33	6	25.00	5	20.83	2	8.33	11	45.83	13	54.17				
28	Mandla	33	0.03	3.19	0.07	2.04	11	33.33	4	12.12	0	0.00	17	51.52	1	3.03	0	0.00	15	45.45	18	54.55				
29	Mandsaur	40	0.26	8.65	0.06	15.93	9	22.50	4	10.00	1	2.50	17	42.50	5	12.50	4	10.00	14	35.00	26	65.00				
30	Morena	14	0.82	6.67	0.10	9.00	2	14.29	0	0.00	1	7.14	5	35.71	1	7.14	5	35.71	3	21.43	11	78.57				
31	Narsinghpur	17	0.42	2.34	0.36	6.51	8	47.06	1	5.88	0	0.00	4	23.53	3	17.65	1	5.88	9	52.94	8	47.06				
32	Neemuch	33	0.03	4.11	0.29	25.02	5	15.15	6	18.18	1	3.03	9	27.27	4	12.12	8	24.24	12	36.36	21	63.64				
33	Panna	27	0.58	8.40	0.07	6.45	5	18.52	1	3.70	1	3.70	11	40.74	7	25.93	2	7.41	7	25.93	20	74.07				
34	Raisen	30	0.10	4.05	0.04	6.76	4	13.33	1	3.33	1	3.33	21	70.00	1	3.33	2	6.67	6	20.00	24	80.00				
35	Rajgarh	26	0.57	4.24	0.15	6.11	7	26.92	2	7.69	1	3.85	9	34.62	5	19.23	2	7.69	10	38.46	16	61.54				
36	Ratlam	44	0.17	6.98	0.10	21.99	11	25.00	1	2.27	3	6.82	11	25.00	6	13.64	12	27.27	15	34.09	29	65.91				
37	Rewa	35	0.01	4.47	0.04	2.71	11	31.43	2	5.71	1	2.86	16	45.71	5	14.29	0	0.00	14	40.00	21	60.00				
38	Sagar	38	0.04	4.15	0.05	5.86	12	31.58	3	7.89	1	2.63	18	47.37	3	7.89	1	2.63	16	42.11	22	57.89				
39	Satna	51	0.04	15.66	0.02	5.43	10	19.61	2	3.92	2	3.92	28	54.90	6	11.76	3	5.88	14	27.45	37	72.55				
40	Sehore	21	0.02	7.30	0.15	8.39	6	28.57	2	9.52	3	14.29	5	23.81	3	14.29	2	9.52	11	52.38	10	47.62				
41	Seoni	46	0.07	3.78	0.03	3.89	14	30.43	3	6.52	0	0.00	23	50.00	6	13.04	0	0.00	17	36.96	29	63.04				
42	Shahdol	22	0.16	0.16	0.14	4.19	1	4.55	0	0.00	0	0.00	17	77.27	3	13.64	1	4.55	1	4.55	21	95.45				
43	Shajapur	18	0.28	4.17	0.05	3.15	7	38.89	1	5.56	1	5.56	7	38.89	2	11.11	0	0.00	9	50.00	9	50.00				
44	Sheopur	17	0.32	5.57	0.39	9.25	2	11.76	3	17.65	1	5.88	7	41.18	2	11.76	2	11.76	6	35.29	11	64.71				
45	Shivpuri	31	0.72	1.81	0.33	11.23	3	9.68	0	0.00	0	0.00	18	58.06	4	12.90	6	19.35	3	9.68	28	90.32				
46	Sidhi	33	0.14	5.30	0.13	3.27	7	21.21	4	12.12	1	3.03	18	54.55	3	9.09	0	0.00	12	36.36	21	63.64				
47	Singrauli	20	0.14	0.69	0.08	4.30	3	15.00	0	0.00	0	0.00	13	65.00	3	15.00	1	5.00	3	15.00	17	85.00				
48	Tikamgarh	24	0.06	4.17	0.08	4.74	4	16.67	1	4.17	1	4.17	11	45.83	5	20.83	2	8.33	6	25.00	18	75.00				
49	Ujjain	47	0.04	9.76	0.04	23.42	13	27.66	2	4.26	6	12.77	22	46.81	0	0.00	4	8.51	21	44.68	26	55.32				
50	Umaria	14	0.27	0.37	0.25	4.33	2	14.29	0	0.00	0	0.00	9	64.29	2	14.29	1	7.14	2	14.29	12	85.71				
51	Vidisha	29	0.19	2.31	0.15	5.43	12	41.38	3	10.34	0	0.00	11	37.93	2	6.90	1	3.45	15	51.72	14	48.28				
	<b>Total</b>	<b>1329</b>	<b>0.01</b>	<b>15.66</b>	<b>0.01</b>	<b>25.02</b>	<b>499</b>	<b>37.55</b>	<b>98</b>	<b>7.37</b>	<b>53</b>	<b>3.99</b>	<b>586</b>	<b>44.09</b>	<b>154</b>	<b>11.59</b>	<b>97</b>	<b>7.30</b>	<b>492</b>	<b>37.02</b>	<b>837</b>	<b>62.98</b>				

District-Wise Decadal Water Level Fluctuation With Mean [August (2006 to 2015)] and August 2016

Annexure -XIII

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	0.52	6.27	-	-	9	60.00	4	26.67	2	13.33	0	0.00	0	0.00	0	0.00	15	100.00	0	0.00
2	Alirajpur	12	0.36	4.20	0.05	0.40	2	16.67	5	41.67	1	8.33	4	33.33	0	0.00	0	0.00	8	66.67	4	33.33
3	Anuppur	19	0.02	3.49	0.16	4.87	6	31.58	1	5.26	0	0.00	9	47.37	2	10.53	1	5.26	7	36.84	12	63.16
4	Ashok Nagar	15	0.38	2.64	2.92	2.92	13	86.67	1	6.67	0	0.00	0	0.00	1	6.67	0	0.00	14	93.33	1	6.67
5	Balaghat	41	0.05	2.18	0.05	7.17	20	48.78	1	2.44	0	0.00	17	41.46	2	4.88	1	2.44	21	51.22	20	48.78
6	Barwani	9	0.48	0.59	0.40	3.30	2	22.22	0	0.00	0	0.00	3	33.33	4	44.44	0	0.00	2	22.22	7	77.78
7	Betul	30	0.06	1.25	0.05	7.88	12	40.00	0	0.00	0	0.00	11	36.67	5	16.67	2	6.67	12	40.00	18	60.00
8	Bhind	18	0.88	9.70	0.21	1.79	2	11.11	5	27.78	5	27.78	6	33.33	0	0.00	0	0.00	12	66.67	6	33.33
9	Bhopal	24	0.09	6.14	0.03	0.03	17	70.83	5	20.83	1	4.17	1	4.17	0	0.00	0	0.00	23	95.83	1	4.17
10	Burhanpur	17	0.55	3.83	0.28	4.09	8	47.06	1	5.88	0	0.00	5	29.41	2	11.76	1	5.88	9	52.94	8	47.06
11	Chhatarpur	37	0.32	6.81	0.24	1.70	9	24.32	14	37.84	11	29.73	3	8.11	0	0.00	0	0.00	34	91.89	3	8.11
12	Chhindwara	43	0.12	3.55	0.14	8.97	15	34.88	1	2.33	0	0.00	25	58.14	1	2.33	1	2.33	16	37.21	27	62.79
13	Damoh	22	0.14	9.41	0.13	3.10	14	63.64	4	18.18	1	4.55	2	9.09	1	4.55	0	0.00	19	86.36	3	13.64
14	Datia	10	0.34	7.82	1.76	7.71	1	10.00	2	20.00	3	30.00	2	20.00	1	10.00	1	10.00	6	60.00	4	40.00
15	Dewas	24	0.04	5.36	0.51	2.70	8	33.33	4	16.67	2	8.33	9	37.50	1	4.17	0	0.00	14	58.33	10	41.67
16	Dhar	40	0.10	5.23	0.03	3.96	18	45.00	7	17.50	3	7.50	10	25.00	2	5.00	0	0.00	28	70.00	12	30.00
17	Dindori	15	0.12	1.39	0.01	0.64	11	73.33	0	0.00	0	0.00	4	26.67	0	0.00	0	0.00	11	73.33	4	26.67
18	Guna	22	0.04	7.62	-	-	13	59.09	4	18.18	5	22.73	0	0.00	0	0.00	0	0.00	22	100.00	0	0.00
19	Gwalior	21	0.04	13.09	0.24	7.37	8	38.10	3	14.29	1	4.76	5	23.81	2	9.52	2	9.52	12	57.14	9	42.86
20	Harda	14	0.10	1.82	0.43	7.85	8	57.14	0	0.00	0	0.00	3	21.43	0	0.00	3	21.43	8	57.14	6	42.86
21	Hoshangabad	19	0.23	3.48	0.02	0.86	12	63.16	3	15.79	0	0.00	4	21.05	0	0.00	0	0.00	15	78.95	4	21.05
22	Indore	37	0.01	5.09	0.61	4.73	22	59.46	6	16.22	3	8.11	3	8.11	1	2.70	2	5.41	31	83.78	6	16.22
23	Jabalpur	33	0.16	4.33	0.04	2.08	23	69.70	3	9.09	1	3.03	5	15.15	1	3.03	0	0.00	27	81.82	6	18.18
24	Jhabua	12	0.04	2.92	-	-	11	91.67	1	8.33	0	0.00	0	0.00	0	0.00	0	0.00	12	100.00	0	0.00
25	Katni	16	0.62	5.83	-	-	4	25.00	9	56.25	3	18.75	0	0.00	0	0.00	0	0.00	16	100.00	0	0.00
26	Khandwa	29	0.04	1.55	0.24	4.38	18	62.07	0	0.00	0	0.00	9	31.03	1	3.45	1	3.45	18	62.07	11	37.93

**District-Wise Decadal Water Level Fluctuation With Mean [August (2006 to 2015)] and August 2016**

**Annexure -XIII**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	0.56	3.27	0.06	5.80	3	12.50	1	4.17	0	0.00	16	66.67	3	12.50	1	4.17	4	16.67	20	83.33
28	Mandla	32	0.03	5.36	0.04	2.66	26	81.25	2	6.25	1	3.13	2	6.25	1	3.13	0	0.00	29	90.63	3	9.38
29	Mandsaur	42	0.39	4.64	0.57	5.36	20	47.62	13	30.95	5	11.90	2	4.76	0	0.00	2	4.76	38	90.48	4	9.52
30	Morena	13	0.06	6.20	0.17	9.20	2	15.38	1	7.69	1	7.69	4	30.77	1	7.69	4	30.77	4	30.77	9	69.23
31	Narsinghpur	16	0.07	6.16	0.32	2.59	5	31.25	3	18.75	1	6.25	4	25.00	3	18.75	0	0.00	9	56.25	7	43.75
32	Neemuch	33	0.03	7.20	0.39	0.49	21	63.64	9	27.27	1	3.03	2	6.06	0	0.00	0	0.00	31	93.94	2	6.06
33	Panna	27	0.11	13.10	0.73	1.50	15	55.56	4	14.81	5	18.52	3	11.11	0	0.00	0	0.00	24	88.89	3	11.11
34	Raisen	30	0.08	5.19	1.10	3.30	18	60.00	4	13.33	3	10.00	2	6.67	3	10.00	0	0.00	25	83.33	5	16.67
35	Rajgarh	26	0.12	9.63	0.20	2.23	15	57.69	8	30.77	1	3.85	1	3.85	1	3.85	0	0.00	24	92.31	2	7.69
36	Ratlam	42	0.19	7.79	0.10	4.95	20	47.62	12	28.57	5	11.90	4	9.52	0	0.00	1	2.38	37	88.10	5	11.90
37	Rewa	35	0.30	6.30	0.16	0.16	15	42.86	14	40.00	5	14.29	1	2.86	0	0.00	0	0.00	34	97.14	1	2.86
38	Sagar	40	0.26	7.44	0.10	5.71	14	35.00	8	20.00	4	10.00	10	25.00	2	5.00	2	5.00	26	65.00	14	35.00
39	Satna	51	0.04	7.76	3.56	3.56	22	43.14	21	41.18	7	13.73	0	0.00	1	1.96	0	0.00	50	98.04	1	1.96
40	Sehore	21	0.26	6.90	0.07	0.92	11	52.38	5	23.81	2	9.52	3	14.29	0	0.00	0	0.00	18	85.71	3	14.29
41	Seoni	45	0.10	4.02	0.02	4.27	28	62.22	2	4.44	1	2.22	8	17.78	5	11.11	1	2.22	31	68.89	14	31.11
42	Shahdol	22	0.11	6.11	0.06	2.16	6	27.27	9	40.91	2	9.09	4	18.18	1	4.55	0	0.00	17	77.27	5	22.73
43	Shajapur	16	0.09	6.54	0.89	0.89	7	43.75	6	37.50	2	12.50	1	6.25	0	0.00	0	0.00	15	93.75	1	6.25
44	Sheopur	16	0.21	10.89	0.30	3.79	8	50.00	4	25.00	2	12.50	1	6.25	1	6.25	0	0.00	14	87.50	2	12.50
45	Shivpuri	29	0.06	6.62	0.21	1.79	12	41.38	9	31.03	4	13.79	4	13.79	0	0.00	0	0.00	25	86.21	4	13.79
46	Sidhi	33	0.06	7.33	0.01	0.22	14	42.42	12	36.36	5	15.15	2	6.06	0	0.00	0	0.00	31	93.94	2	6.06
47	Singrauli	20	0.90	6.06	-	-	9	45.00	9	45.00	2	10.00	0	0.00	0	0.00	0	0.00	20	100.00	0	0.00
48	Tikamgarh	23	0.26	8.10	0.73	0.73	7	30.43	9	39.13	6	26.09	1	4.35	0	0.00	0	0.00	22	95.65	1	4.35
49	Ujjain	45	0.08	4.95	0.19	1.98	26	57.78	7	15.56	2	4.44	10	22.22	0	0.00	0	0.00	35	77.78	10	22.22
50	Umaria	13	1.11	3.36	0.59	4.18	7	53.85	2	15.38	0	0.00	3	23.08	0	0.00	1	7.69	9	69.23	4	30.77
51	Vidisha	29	0.23	4.93	-	-	17	58.62	8	27.59	4	13.79	0	0.00	0	0.00	0	0.00	29	100.00	0	0.00
	<b>Total</b>	<b>1317</b>	<b>0.01</b>	<b>13.1</b>	<b>0.01</b>	<b>9.2</b>	<b>634</b>	<b>48.14</b>	<b>266</b>	<b>20.20</b>	<b>113</b>	<b>8.58</b>	<b>228</b>	<b>17.31</b>	<b>49</b>	<b>3.72</b>	<b>27</b>	<b>2.05</b>	<b>1013</b>	<b>76.92</b>	<b>304</b>	<b>23.08</b>

District-Wise Decadal Water Level Fluctuation With Mean [November (2006 to 2015)] and November 2016

Annexure - XIV

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	15	0.21	5.11	0.10	6.34	4	26.67	2	13.33	1	6.67	6	40.00	1	6.67	1	6.67	7	46.67	8	53.33
2	Alirajpur	12	0.61	2.86	0.20	3.12	5	41.67	3	25.00	0	0.00	3	25.00	1	8.33	0	0.00	8	66.67	4	33.33
3	Anuppur	19	0.33	2.28	0.03	3.13	10	52.63	2	10.53	0	0.00	5	26.32	2	10.53	0	0.00	12	63.16	7	36.84
4	Ashok Nagar	15	0.34	2.34	0.52	1.51	8	53.33	1	6.67	0	0.00	6	40.00	0	0.00	0	0.00	9	60.00	6	40.00
5	Balaghat	41	0.01	1.59	0.07	1.78	18	43.90	0	0.00	0	0.00	23	56.10	0	0.00	0	0.00	18	43.90	23	56.10
6	Barwani	9	0.65	1.80	0.04	2.93	3	33.33	0	0.00	0	0.00	5	55.56	1	11.11	0	0.00	3	33.33	6	66.67
7	Betul	30	0.03	4.36	0.35	6.12	8	26.67	1	3.33	1	3.33	11	36.67	7	23.33	2	6.67	10	33.33	20	66.67
8	Bhind	18	-	7.82	-	13.80	4	22.22	3	16.67	3	16.67	5	27.78	1	5.56	2	11.11	10	55.56	8	44.44
9	Bhopal	23	0.08	8.07	0.03	3.73	10	43.48	4	17.39	1	4.35	7	30.43	1	4.35	0	0.00	15	65.22	8	34.78
10	Burhanpur	17	0.25	6.07	0.14	4.07	7	41.18	0	0.00	1	5.88	6	35.29	2	11.76	1	5.88	8	47.06	9	52.94
11	Chhatarpur	39	0.02	5.14	0.10	5.41	17	43.59	11	28.21	1	2.56	6	15.38	3	7.69	1	2.56	29	74.36	10	25.64
12	Chhindwara	42	0.11	9.73	0.05	25.59	17	40.48	4	9.52	2	4.76	14	33.33	3	7.14	2	4.76	23	54.76	19	45.24
13	Damoh	23	-	3.35	0.03	3.41	12	52.17	3	13.04	0	0.00	7	30.43	1	4.35	0	0.00	15	65.22	8	34.78
14	Datia	10	0.29	1.13	0.14	6.42	3	30.00	0	0.00	0	0.00	2	20.00	4	40.00	1	10.00	3	30.00	7	70.00
15	Dewas	24	0.06	5.25	0.13	4.86	10	41.67	5	20.83	2	8.33	6	25.00	0	0.00	1	4.17	17	70.83	7	29.17
16	Dhar	41	0.14	5.25	0.20	2.45	21	51.22	6	14.63	1	2.44	12	29.27	1	2.44	0	0.00	28	68.29	13	31.71
17	Dindori	15	0.08	0.65	0.20	2.03	5	33.33	0	0.00	0	0.00	9	60.00	1	6.67	0	0.00	5	33.33	10	66.67
18	Guna	21	0.12	5.21	0.35	1.47	12	57.14	4	19.05	1	4.76	4	19.05	0	0.00	0	0.00	17	80.95	4	19.05
19	Gwalior	21	-	4.21	0.78	5.80	9	42.86	0	0.00	1	4.76	5	23.81	1	4.76	5	23.81	10	47.62	11	52.38
20	Harda	14	0.31	3.48	0.02	10.58	5	35.71	1	7.14	0	0.00	3	21.43	2	14.29	3	21.43	6	42.86	8	57.14
21	Hoshangabad	19	0.34	1.76	0.12	1.96	9	47.37	0	0.00	0	0.00	10	52.63	0	0.00	0	0.00	9	47.37	10	52.63
22	Indore	37	0.02	6.11	0.03	2.89	18	48.65	2	5.41	5	13.51	9	24.32	3	8.11	0	0.00	25	67.57	12	32.43
23	Jabalpur	34	0.02	1.14	0.04	3.74	8	23.53	0	0.00	0	0.00	22	64.71	4	11.76	0	0.00	8	23.53	26	76.47
24	Jhabua	12	0.06	1.73	0.30	0.44	9	75.00	0	0.00	0	0.00	3	25.00	0	0.00	0	0.00	9	75.00	3	25.00
25	Katni	17	0.13	9.83	0.45	0.46	8	47.06	5	29.41	2	11.76	2	11.76	0	0.00	0	0.00	15	88.24	2	11.76
26	Khandwa	31	0.02	3.77	0.16	3.27	19	61.29	3	9.68	0	0.00	8	25.81	1	3.23	0	0.00	22	70.97	9	29.03

**District-Wise Decadal Water Level Fluctuation With Mean [November (2006 to 2015)] and November 2016**

**Annexure - XIV**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	24	0.20	3.47	0.19	3.51	8	33.33	1	4.17	0	0.00	13	54.17	2	8.33	0	0.00	9	37.50	15	62.50
28	Mandla	33	0.13	1.67	0.04	5.25	12	36.36	0	0.00	0	0.00	20	60.61	0	0.00	1	3.03	12	36.36	21	63.64
29	Mandsaur	42	0.08	9.97	0.03	2.85	24	57.14	5	11.90	3	7.14	6	14.29	4	9.52	0	0.00	32	76.19	10	23.81
30	Morena	14	0.02	5.51	0.01	8.55	1	7.14	0	0.00	1	7.14	3	21.43	3	21.43	6	42.86	2	14.29	12	85.71
31	Narsinghpur	17	0.18	2.57	0.18	3.07	3	17.65	3	17.65	0	0.00	9	52.94	2	11.76	0	0.00	6	35.29	11	64.71
32	Neemuch	34	0.08	8.06	0.02	2.77	14	41.18	4	11.76	5	14.71	10	29.41	1	2.94	0	0.00	23	67.65	11	32.35
33	Panna	27	0.05	4.92	0.32	1.46	15	55.56	4	14.81	1	3.70	7	25.93	0	0.00	0	0.00	20	74.07	7	25.93
34	Raisen	30	0.09	6.57	0.09	1.59	18	60.00	5	16.67	1	3.33	6	20.00	0	0.00	0	0.00	24	80.00	6	20.00
35	Rajgarh	26	0.26	9.19	0.42	8.03	16	61.54	2	7.69	1	3.85	4	15.38	2	7.69	1	3.85	19	73.08	7	26.92
36	Ratlam	45	0.45	13.83	0.08	22.85	11	24.44	13	28.89	7	15.56	7	15.56	2	4.44	5	11.11	31	68.89	14	31.11
37	Rewa	33	0.34	7.97	0.06	1.35	9	27.27	8	24.24	7	21.21	9	27.27	0	0.00	0	0.00	24	72.73	9	27.27
38	Sagar	40	0.03	4.52	0.10	5.38	19	47.50	2	5.00	1	2.50	15	37.50	2	5.00	1	2.50	22	55.00	18	45.00
39	Satna	49	0.25	6.82	0.01	2.60	23	46.94	14	28.57	7	14.29	4	8.16	1	2.04	0	0.00	44	89.80	5	10.20
40	Sehore	21	0.01	7.78	2.76	2.76	15	71.43	3	14.29	2	9.52	0	0.00	1	4.76	0	0.00	20	95.24	1	4.76
41	Seoni	44	0.04	2.59	0.01	2.82	17	38.64	2	4.55	0	0.00	21	47.73	4	9.09	0	0.00	19	43.18	25	56.82
42	Shahdol	22	0.43	4.67	1.11	3.05	13	59.09	3	13.64	1	4.55	2	9.09	3	13.64	0	0.00	17	77.27	5	22.73
43	Shajapur	18	0.01	3.27	1.06	2.67	13	72.22	2	11.11	0	0.00	2	11.11	1	5.56	0	0.00	15	83.33	3	16.67
44	Sheopur	18	0.62	2.61	0.55	13.86	6	33.33	2	11.11	0	0.00	5	27.78	2	11.11	3	16.67	8	44.44	10	55.56
45	Shivpuri	29	0.03	4.52	0.16	13.17	9	31.03	2	6.90	1	3.45	12	41.38	4	13.79	1	3.45	12	41.38	17	58.62
46	Sidhi	33	0.07	6.67	3.50	3.50	18	54.55	8	24.24	6	18.18	0	0.00	1	3.03	0	0.00	32	96.97	1	3.03
47	Singrauli	20	0.04	6.18	0.41	3.70	9	45.00	5	25.00	2	10.00	2	10.00	2	10.00	0	0.00	16	80.00	4	20.00
48	Tikamgarh	24	0.51	3.75	0.04	3.53	10	41.67	7	29.17	0	0.00	6	25.00	1	4.17	0	0.00	17	70.83	7	29.17
49	Ujjain	43	0.13	11.50	1.02	4.63	21	48.84	10	23.26	8	18.60	1	2.33	2	4.65	1	2.33	39	90.70	4	9.30
50	Umariya	13	0.01	5.19	0.12	0.83	4	30.77	4	30.77	2	15.38	3	23.08	0	0.00	0	0.00	10	76.92	3	23.08
51	Vidisha	29	0.16	3.47	0.12	5.35	19	65.52	4	13.79	0	0.00	4	13.79	1	3.45	1	3.45	23	79.31	6	20.69
	<b>Total</b>	<b>1327</b>	<b>0.01</b>	<b>13.83</b>	<b>0.01</b>	<b>25.59</b>	<b>586</b>	<b>44.16</b>	<b>173</b>	<b>13.04</b>	<b>78</b>	<b>5.88</b>	<b>370</b>	<b>27.88</b>	<b>81</b>	<b>6.10</b>	<b>39</b>	<b>2.94</b>	<b>837</b>	<b>63.07</b>	<b>490</b>	<b>36.93</b>

District-Wise Decadal Water Level Fluctuation With Mean [January (2007 to 2016)] and January 2017

Annexure - XV

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Agar Malwa	14	0.12	9.27	0.32	3.43	8	57.14	0	0.00	1	7.14	4	28.57	1	7.14	0	0.00	9	64.29	5	35.71
2	Alirajpur	13	0.25	2.89	2.87	2.96	7	53.85	4	30.77	0	0.00	0	0.00	2	15.38	0	0.00	11	84.62	2	15.38
3	Anuppur	19	0.07	2.89	0.04	3.59	5	26.32	1	5.26	0	0.00	10	52.63	3	15.79	0	0.00	6	31.58	13	68.42
4	Ashok Nagar	21	0.02	1.84	0.03	2.15	11	52.38	0	0.00	0	0.00	8	38.10	2	9.52	0	0.00	11	52.38	10	47.62
5	Balaghat	42	0.07	2.01	0.04	2.13	21	50.00	1	2.38	0	0.00	19	45.24	1	2.38	0	0.00	22	52.38	20	47.62
6	Barwani	9	0.19	1.47	1.11	1.93	7	77.78	0	0.00	0	0.00	2	22.22	0	0.00	0	0.00	7	77.78	2	22.22
7	Betul	29	0.17	2.16	0.01	5.4	7	24.14	1	3.45	0	0.00	15	51.72	4	13.79	2	6.90	8	27.59	21	72.41
8	Bhind	17	-	6.61	0.32	13.21	5	29.41	2	11.76	1	5.88	5	29.41	2	11.76	2	11.76	8	47.06	9	52.94
9	Bhopal	24	0.01	2.64	0.04	2.1	10	41.67	2	8.33	0	0.00	11	45.83	1	4.17	0	0.00	12	50.00	12	50.00
10	Burhanpur	17	0.1	1.56	0.34	5.61	3	17.65	0	0.00	0	0.00	8	47.06	3	17.65	3	17.65	3	17.65	14	82.35
11	Chhatarpur	39	0.14	6.07	0.01	6.32	19	48.72	3	7.69	3	7.69	11	28.21	2	5.13	1	2.56	25	64.10	14	35.90
12	Chhindwara	40	0.04	1.46	0.03	8.26	13	32.50	0	0.00	0	0.00	12	30.00	8	20.00	7	17.50	13	32.50	27	67.50
13	Damoh	23	0.07	2.64	0.07	3.49	10	43.48	2	8.70	0	0.00	8	34.78	3	13.04	0	0.00	12	52.17	11	47.83
14	Datia	10	0.09	2.19	1.69	5.2	4	40.00	1	10.00	0	0.00	2	20.00	2	20.00	1	10.00	5	50.00	5	50.00
15	Dewas	24	0.01	6.29	0.48	4.22	7	29.17	3	12.50	2	8.33	9	37.50	2	8.33	1	4.17	12	50.00	12	50.00
16	Dhar	38	0.13	12.27	0.08	5.83	20	52.63	4	10.53	4	10.53	9	23.68	0	0.00	1	2.63	28	73.68	10	26.32
17	Dindori	15	0.03	1.03	0.03	4.44	4	26.67	0	0.00	0	0.00	9	60.00	1	6.67	1	6.67	4	26.67	11	73.33
18	Guna	23	0.24	3.66	0.1	3.69	9	39.13	3	13.04	0	0.00	10	43.48	1	4.35	0	0.00	12	52.17	11	47.83
19	Gwalior	21	0.98	2.47	0.02	15.49	4	19.05	2	9.52	0	0.00	6	28.57	4	19.05	5	23.81	6	28.57	15	71.43
20	Harda	14	0.12	1.17	0.01	4.22	6	42.86	0	0.00	0	0.00	7	50.00	0	0.00	1	7.14	6	42.86	8	57.14
21	Hoshangabad	17	0.01	2.36	0.08	4.78	5	29.41	1	5.88	0	0.00	9	52.94	1	5.88	1	5.88	6	35.29	11	64.71
22	Indore	35	0.05	7.24	0.01	5.91	13	37.14	1	2.86	4	11.43	11	31.43	5	14.29	1	2.86	18	51.43	17	48.57
23	Jabalpur	35	0.04	4.42	0.3	6.74	11	31.43	2	5.71	1	2.86	18	51.43	2	5.71	1	2.86	14	40.00	21	60.00
24	Jhabua	12	0.13	1.26	0.04	0.99	6	50.00	0	0.00	0	0.00	6	50.00	0	0.00	0	0.00	6	50.00	6	50.00
25	Katni	16	0.12	4.55	0.11	1.74	4	25.00	3	18.75	1	6.25	8	50.00	0	0.00	0	0.00	8	50.00	8	50.00
26	Khandwa	31	0.11	4.37	0.03	7.39	5	16.13	0	0.00	1	3.23	19	61.29	2	6.45	4	12.90	6	19.35	25	80.65



**District-Wise Decadal Water Level Fluctuation With Mean [January (2007 to 2016)] and January 2017**

**Annexure - XV**

S. No.	Name of District	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
27	Khargone	23	0.06	2.86	0.02	4.92	8	34.78	1	4.35	0	0.00	11	47.83	1	4.35	2	8.70	9	39.13	14	60.87
28	Mandla	33	0.03	3.68	0.19	3.22	18	54.55	1	3.03	0	0.00	12	36.36	2	6.06	0	0.00	19	57.58	14	42.42
29	Mandsaur	37	0.11	11.46	0.1	4.88	23	62.16	3	8.11	2	5.41	4	10.81	4	10.81	1	2.70	28	75.68	9	24.32
30	Morena	12	1.11	5.49	0.07	8.5	1	8.33	0	0.00	1	8.33	3	25.00	4	33.33	3	25.00	2	16.67	10	83.33
31	Narsinghpur	17	0.02	4.25	0.08	3.01	8	47.06	0	0.00	1	5.88	6	35.29	2	11.76	0	0.00	9	52.94	8	47.06
32	Neemuch	34	0.05	5.39	0.03	1.94	17	50.00	9	26.47	5	14.71	3	8.82	0	0.00	0	0.00	31	91.18	3	8.82
33	Panna	27	0.14	3.17	0.02	5.25	14	51.85	3	11.11	0	0.00	8	29.63	1	3.70	1	3.70	17	62.96	10	37.04
34	Raisen	31	0.02	2.94	0.06	3.49	13	41.94	2	6.45	0	0.00	12	38.71	4	12.90	0	0.00	15	48.39	16	51.61
35	Rajgarh	27	0.49	5.09	0.03	7.26	5	18.52	2	7.41	1	3.70	15	55.56	2	7.41	2	7.41	8	29.63	19	70.37
36	Ratlam	38	0.02	12.43	0.18	7.04	14	36.84	7	18.42	6	15.79	7	18.42	1	2.63	3	7.89	27	71.05	11	28.95
37	Rewa	35	0.08	3.75	0.05	4	16	45.71	7	20.00	0	0.00	9	25.71	2	5.71	1	2.86	23	65.71	12	34.29
38	Sagar	39	0	3.82	0.1	3.94	15	38.46	1	2.56	0	0.00	18	46.15	5	12.82	0	0.00	16	41.03	23	58.97
39	Satna	51	0.03	9.86	0.16	1.75	28	54.90	7	13.73	3	5.88	13	25.49	0	0.00	0	0.00	38	74.51	13	25.49
40	Sehore	21	0.26	4.43	0.19	6.64	6	28.57	2	9.52	1	4.76	9	42.86	2	9.52	1	4.76	9	42.86	12	57.14
41	Seoni	46	0	2.73	0.08	3.9	20	43.48	3	6.52	0	0.00	19	41.30	4	8.70	0	0.00	23	50.00	23	50.00
42	Shahdol	22	0.27	3.33	0.04	2.42	9	40.91	2	9.09	0	0.00	9	40.91	2	9.09	0	0.00	11	50.00	11	50.00
43	Shajapur	18	0.27	2.3	0.16	5.86	8	44.44	1	5.56	0	0.00	5	27.78	3	16.67	1	5.56	9	50.00	9	50.00
44	Sheopur	18	0.8	5.17	0.11	9.76	3	16.67	0	0.00	2	11.11	7	38.89	4	22.22	2	11.11	5	27.78	13	72.22
45	Shivpuri	28	0.01	6.43	0.12	9.87	7	25.00	4	14.29	1	3.57	10	35.71	4	14.29	2	7.14	12	42.86	16	57.14
46	Sidhi	33	0.07	7.98	0.06	6.15	13	39.39	5	15.15	4	12.12	9	27.27	1	3.03	1	3.03	22	66.67	11	33.33
47	Singrauli	20	0.16	2.7	0.06	0.53	13	65.00	3	15.00	0	0.00	4	20.00	0	0.00	0	0.00	16	80.00	4	20.00
48	Tikamgarh	24	0.3	3.52	0.06	4.52	11	45.83	4	16.67	0	0.00	7	29.17	1	4.17	1	4.17	15	62.50	9	37.50
49	Ujjain	39	0.06	3.38	0.16	1.86	19	48.72	9	23.08	0	0.00	11	28.21	0	0.00	0	0.00	28	71.79	11	28.21
50	Umaria	13	0.22	2.29	0.1	2.02	8	61.54	1	7.69	0	0.00	3	23.08	1	7.69	0	0.00	9	69.23	4	30.77
51	Vidisha	30	0.14	3.15	0.02	3.3	11	36.67	2	6.67	0	0.00	12	40.00	5	16.67	0	0.00	13	43.33	17	56.67
	<b>Total</b>	<b>1314</b>	<b>0.01</b>	<b>12.43</b>	<b>0.01</b>	<b>15.49</b>	<b>532</b>	<b>40.49</b>	<b>115</b>	<b>8.75</b>	<b>45</b>	<b>3.42</b>	<b>462</b>	<b>35.16</b>	<b>107</b>	<b>8.14</b>	<b>53</b>	<b>4.03</b>	<b>692</b>	<b>52.66</b>	<b>622</b>	<b>47.34</b>

## ANNEXURE - XVI

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
1	Agar Malwa	Agar	Agar New	7.46	947	0	238	177	15	9	0.07	40	400	86	45	31	0.3	0.140	0.67	-4.10
2	Agar Malwa	Agar	Amla	7.64	746	0	214	53	20	117	0.21	74	305	78	27	29	0.6	0.156	0.72	-2.60
3	Agar Malwa	Agar	Kanad	7.75	908	0	348	53	23	72	0.34	44	325	40	55	54	0.3	0.170	1.30	-0.80
4	Agar Malwa	Agar	Kashi Bardiya	8.03	1266	0	573	32	15	60	1.06	47	240	26	43	156	1.2	0.158	4.38	4.60
5	Agar Malwa	Agar	Tanodiya	8.01	1063	0	360	53	99	25	0.45	31	390	54	62	47	0.9	0.113	1.03	-1.90
6	Agar Malwa	Badod	Barod	7.69	1818	0	488	245	56	122	0.52	40	785	56	157	54	0.8	0.142	0.84	-7.70
7	Agar Malwa	Badod	Jahangirpura	8.32	451	18	165	14	0	28	0.18	64	155	44	11	18	0.2	0.301	0.63	-0.10
8	Agar Malwa	Badod	Jhounta	7.86	441	0	207	11	5	23	0.20	31	180	50	13	13	1.4	0.142	0.42	-0.20
9	Agar Malwa	Badod	Matkotra	7.86	1013	0	494	21	12	44	0.33	46	380	42	67	47	0.7	0.175	1.05	0.50
10	Agar Malwa	Nalkhera	Nalkhera	7.91	1488	0	122	241	56	8	1.75	38	75	20	6	197	1.3	0.136	9.89	0.50
11	Agar Malwa	Susner	Guradi Bangla	7.69	1079	0	360	85	25	106	0.49	55	430	54	72	45	0.4	0.147	0.94	-2.70
12	Agar Malwa	Susner	Soyat	7.68	2860	0	610	433	84	223	0.40	48	900	58	184	219	2.6	0.184	3.17	-8.00
13	Agar Malwa	Susner	Susner	7.99	773	0	183	106	32	46	1.13	38	70	20	5	138	1.4	0.171	7.17	1.60
14	Alirajpur	Alirajpur	Alirajpur	7.46	497	0	250	28	2	1	0.89	16	175	34	22	32	2.6	0.153	1.05	0.60
15	Alirajpur	Alirajpur	Ambua	7.59	1039	0	323	89	47	91	0.85	30	270	54	33	110	3.0	0.123	2.91	-0.10
16	Alirajpur	Alirajpur	Borkua	7.90	647	0	342	14	5	3	1.17	46	260	66	23	21	1.8	0.131	0.57	0.40
17	Alirajpur	Alirajpur	Khattali	7.38	1891	0	256	284	126	239	1.02	36	680	164	66	114	5.1	0.089	1.90	-9.40
18	Alirajpur	Alirajpur	Nanpur	7.92	706	0	207	96	33	4	1.50	26	150	26	21	87	3.0	0.126	3.09	0.40
19	Alirajpur	Bhabra	Bhabra	7.73	668	0	293	43	21	12	1.05	36	210	48	22	55	1.0	0.110	1.65	0.60
20	Alirajpur	Jobat	Badaguda	7.64	783	0	360	35	13	38	1.44	30	280	50	38	48	3.8	0.129	1.25	0.30
21	Alirajpur	Jobat	Jobat New	7.84	1497	0	531	110	54	111	1.13	50	515	46	97	98	6.5	0.129	1.88	-1.60
22	Alirajpur	Kattiwada	Chandpur	7.60	1103	0	305	121	30	116	1.35	54	325	62	41	101	1.1	0.102	2.44	-1.50
23	Alirajpur	Kattiwada	Kathiwara	7.71	657	0	293	43	7	13	0.73	41	240	52	27	35	1.4	0.120	0.98	0.00
24	Alirajpur	Kattiwada	Salampura	7.89	593	0	287	28	0	14	0.75	51	240	48	29	20	2.3	0.110	0.56	-0.10
25	Anuppur	Anuppur	Jhiriyatola	7.92	444	0	116	52	22	20	0.50	24	150	38	13	25	6.0	BDL	0.89	-1.10
26	Anuppur	Anuppur	Kotma	7.84	512	0	134	70	14	26	0.20	40	180	58	9	31	3.2	BDL	1.00	-1.40
27	Anuppur	Anuppur	Muddhoba	8.04	589	0	256	17	36	7	1.00	49	155	36	16	58	2.1	BDL	2.03	1.10
28	Anuppur	Jaithari	Anuppur I	7.55	684	0	293	42	19	9	1.30	48	240	52	27	42	0.8	BDL	1.18	0.00
29	Anuppur	Jaithari	Deohara	7.82	500	0	122	42	41	53	0.40	46	140	40	10	28	38.0	BDL	1.03	-0.80
30	Anuppur	Jaithari	Dhangaon	7.94	384	0	116	32	15	35	0.60	40	145	42	10	18	2.0	BDL	0.65	-1.00
31	Anuppur	Jaithari	Jamudi	7.88	548	0	281	17	9	3	1.60	68	205	50	19	28	1.1	BDL	0.85	0.50
32	Anuppur	Jaithari	Kerar	7.94	801	0	372	35	23	12	0.50	57	305	50	44	42	1.1	BDL	1.05	0.00
33	Anuppur	Jaithari	Lapta	7.73	409	0	98	32	32	46	0.65	29	140	40	10	28	1.1	BDL	1.03	-1.20
34	Anuppur	Jaithari	Phunga	7.76	946	0	299	135	19	15	1.10	42	370	64	51	46	1.4	BDL	1.04	-2.50
35	Anuppur	Jaithari	Venkat Nagar	7.89	401	0	189	17	9	3	0.50	39	155	44	11	18	0.2	BDL	0.63	0.00
36	Anuppur	Pushprajgarh	Amarkantak	7.03	172	0	31	17	13	13	1.70	40	65	14	7	6	0.2	BDL	0.32	-0.80
37	Anuppur	Pushprajgarh	Basaniha	7.67	372	0	171	15	8	11	0.80	21	135	34	12	20	0.7	BDL	0.75	0.10
38	Anuppur	Pushprajgarh	Bhejari	7.87	402	0	104	50	32	0	1.00	23	45	12	4	66	3.0	BDL	4.28	0.80
39	Anuppur	Pushprajgarh	Piparaha	7.71	497	0	201	35	21	6	0.40	29	180	42	18	29	1.5	BDL	0.94	-0.30

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
40	Anuppur	Pushprajgarh	Rajendra Gram	7.85	452	0	128	50	10	33	0.30	16	190	52	15	12	1.2	BDL	0.38	-1.70
41	Ashok Nagar	Ashok Nagar	Sankat Mochan	7.9	624	0	298	24	2	17	0.46	15	222	36	32	38	1.3	0.03	1.11	0.44
42	Ashok Nagar	Ashok Nagar	Semrisahabad	8.06	456	0	209	19	9	25	0.13	24	172	40	17	24	1.0	0.01	0.80	-0.02
43	Ashok Nagar	Chanderi	Chanderi	8.21	1047	18	357	83	22	64	0.18	41	298	91	17	62	65.0	4.58	1.56	0.19
44	Ashok Nagar	Isagarh	Dhakoni	7.82	461	0	220	19	9	3	0.23	48	202	44	22	12	0.3	0.05	0.37	-0.43
45	Ashok Nagar	Isagarh	Isagarh	7.84	412	0	197	19	2	6	0.31	29	177	46	15	10	1.2	0.02	0.33	-0.31
46	Ashok Nagar	Isagarh	Saraskheri	7.83	601	0	298	17	7	19	0.45	32	212	40	27	38	1.1	0.01	1.13	0.64
47	Ashok Nagar	Mungoali	Athaikhera	7.73	956	0	477	41	4	9	1.10	25	409	32	80	31	1.1	0.03	0.67	-0.37
48	Ashok Nagar	Mungoali	Bahadurpur	7.78	1851	0	411	226	105	136	0.24	34	823	73	156	39	5.4	0.03	0.59	-9.73
49	Ashok Nagar	Mungoali	Damdama	7.88	486	0	244	15	6	8	0.34	29	212	48	22	11	0.7	0.07	0.33	-0.24
50	Ashok Nagar	Mungoali	Khalilpur	7.83	181	0	77	7	7	4	0.08	7	66	18	5	9	1.0	0.02	0.48	-0.04
51	Ashok Nagar	Mungoali	Mungaoli	7.45	1317	0	226	245	80	25	0.22	36	550	117	63	46	1.7	0.04	0.85	-7.30
52	Ashok Nagar	Mungoali	Sahrai	7.81	504	0	232	10	6	29	0.46	36	232	59	21	7	0.7	0.03	0.20	-0.84
53	Balaghat	Baihar	Baihar I	7.43	1807	0	161	197	350	156	0.29	32	495	135	38	186	1.4	0.02	3.64	-7.26
54	Balaghat	Baihar	Bhaisanghat	7.87	595	0	238	10	81	2	0.23	30	247	59	25	23	0.6	0.01	0.64	-1.04
55	Balaghat	Baihar	Jawaditula	7.82	340	0	95	17	60	3	0.73	41	101	28	7	31	0.6	0.04	1.34	-0.46
56	Balaghat	Baihar	Laugur	8.21	440	6	143	15	60	9	0.23	27	131	36	10	40	1.4	0.02	1.52	-0.18
57	Balaghat	Baihar	Mohagaon	7.92	1122	0	226	99	190	46	0.36	44	308	67	34	115	2.0	0.014	2.85	-2.45
58	Balaghat	Baihar	Mukki	8.05	375	0	103	17	65	7	0.64	45	111	30	9	34	1.8	0.014	1.40	-0.53
59	Balaghat	Baihar	Parsatola	7.3	670	0	149	116	2	48	0.29	35	298	101	11	15	0.6	0.016	0.38	-3.52
60	Balaghat	Baihar	Samnapur	7.62	248	0	71	30	18	4	0.41	44	81	24	5	19	0.7	0.02	0.92	-0.45
61	Balaghat	Baihar	Supkhar	7.66	222	0	103	20	2	2	0.74	29	91	30	4	14	0.5	0.01	0.64	-0.12
62	Balaghat	Balaghat	Balaghat	7.56	605	0	36	85	25	154	0.25	36	121	32	10	75	14.0	0.009	2.96	-1.84
63	Balaghat	Balaghat	Lamta I	7.99	1233	0	280	95	220	26	0.25	22	379	109	26	108	2.2	0.01	2.41	-2.99
64	Balaghat	Balaghat	Magardarta	8.25	805	18	197	46	135	10	0.66	30	217	51	22	85	0.3	0.014	2.51	-0.83
65	Balaghat	Balaghat	Saleteka New	7.22	592	0	271	47	3	2	0.7	41	192	46	18	45	4.3	0.01	1.41	0.61
66	Balaghat	Birsa	Birsa	7.85	230	0	60	15	40	4	0.07	40	71	16	7	20	0.4	0.007	1.03	-0.44
67	Balaghat	Birsa	Damoh2	7.75	885	0	143	124	82	73	0.27	37	359	89	33	37	1.5	0.02	0.85	-4.83
68	Balaghat	Birsa	Saletekhri	7.04	175	0	65	12	5	11	0.21	29	61	12	7	11	1.6	0.02	0.61	-0.15
69	Balaghat	Katangi	Katangi	7.65	1705	0	238	216	280	70	0.56	33	424	79	55	196	1.0	0.01	4.14	-4.58
70	Balaghat	Katangi	Katedhara	7.57	2030	0	209	247	425	52	0.41	39	444	93	52	260	0.9	0.023	5.36	-5.47
71	Balaghat	Khairlanji	Bonkatta	7.62	707	0	214	87	45	3	0.61	33	258	69	21	42	1.9	0.017	1.14	-1.64
72	Balaghat	Khairlanji	Khairlanji	8.05	1042	0	304	66	157	6	0.79	40	278	32	48	108	0.8	0.02	2.82	-0.58
73	Balaghat	Khairlanji	Miragpur	7.42	3740	0	161	524	750	254	0.65	28	1020	291	71	385	4.5	0.021	5.24	-17.77
74	Balaghat	Khairlanji	Rampalli	7.61	700	0	200	69	55	25	0.63	29	227	69	13	52	1.6	0.02	1.50	-1.26
75	Balaghat	Kirnapur	Bhanegaon	8.05	715	0	203	39	120	11	0.32	29	202	53	17	70	0.7	0.02	2.14	-0.72
76	Balaghat	Kirnapur	Kirnapur	8.25	550	12	191	12	62	15	0.24	28	192	22	33	35	2.0	0.2	1.10	-0.52
77	Balaghat	Kirnapur	Rajegaon	7.53	935	0	304	151	3	2	0.27	33	273	65	27	89	0.3	0.015	2.34	-0.48
78	Balaghat	Lalbarra	Kanjai	7.7	1085	0	220	95	168	14	0.82	37	182	48	15	150	0.8	0.03	4.84	-0.02
79	Balaghat	Lalbarra	Katang Tola	7.65	1121	0	232	97	207	17	0.79	42	217	55	20	157	1.2	0.015	4.63	-0.53

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
80	Balaghat	Lanji	Baghatola	7.82	505	0	214	5	55	8	0.4	34	172	34	21	35	1.0	0.01	1.16	0.08
81	Balaghat	Lanji	Nandora	7.94	710	0	317	10	70	9	0.37	29	253	48	32	45	3.0	0.02	1.23	0.14
82	Balaghat	Lanji	Paldongri	7.85	1070	0	220	104	175	12	0.62	28	333	65	42	89	1.2	0.014	2.12	-3.06
83	Balaghat	Paraswada	Bagholi	7.65	408	0	54	46	75	13	0.48	19	76	20	6	58	0.9	0.01	2.90	-0.64
84	Balaghat	Paraswada	Khurmundi	7.63	1810	0	173	192	367	130	0.21	19	510	127	47	180	0.9	0.01	3.47	-7.37
85	Balaghat	Paraswada	Rangpatbaba	8.13	595	0	330	12	2	1	1.13	26	197	65	9	45	1.5	0.026	1.39	1.46
86	Balaghat	Waraseoni	Amai	7.35	485	0	42	51	110	20	0.22	25	76	22	5	75	2.1	0.02	3.75	-0.83
87	Balaghat	Waraseoni	Garra	7.87	560	0	185	15	98	4	0.77	46	162	40	15	53	1.0	0.02	1.81	-0.21
88	Balaghat	Waraseoni	Kanki	7.6	590	0	36	82	120	28	0.34	28	126	30	12	77	0.9	0.008	2.98	-1.94
89	Balaghat	Waraseoni	Kochwahi	8.03	470	0	48	51	94	22	0.25	42	71	22	4	69	7.8	0.19	3.57	-0.63
90	Balaghat	Waraseoni	Newargaon	7.84	1035	0	187	74	224	26	0.62	42	222	65	15	135	0.5	0.01	3.94	-1.37
91	Balaghat	Waraseoni	Waraseoni I	7.74	316	0	52	49	30	15	0.23	44	61	20	2	43	2.5	0.02	2.40	-0.36
92	Barwani	Barwani	Borlai	7.34	2109	0	305	316	130	276	0.44	66	770	158	91	112	31.0	0.114	1.75	-10.40
93	Barwani	Newali	Niwali I	8.05	1935	0	567	241	68	109	0.28	40	690	206	43	104	37.0	0.394	1.72	-4.50
94	Barwani	Rajpur	Balsamund	7.94	700	0	311	46	7	24	0.49	54	280	38	45	30	0.8	0.115	0.78	-0.50
95	Barwani	Rajpur	Baruphatak	8.01	581	0	305	21	3	8	1.45	55	175	40	18	52	0.9	0.128	1.71	1.50
96	Barwani	Rajpur	Julwania	8.08	451	0	201	28	8	7	1.56	57	95	22	10	57	0.2	0.110	2.54	1.40
97	Barwani	Rajpur	Palsud	8.10	823	0	232	106	44	45	0.31	29	225	54	22	91	0.5	0.173	2.64	-0.70
98	Barwani	Rajpur	Rajpur	7.95	1186	0	244	163	89	63	0.86	37	350	48	56	103	0.7	0.125	2.39	-3.00
99	Barwani	Sendhawa	Chachariya	7.85	474	0	207	11	3	56	0.23	54	200	48	19	15	0.4	0.139	0.46	-0.60
100	Barwani	Sendhawa	Sendhwa	7.76	765	0	250	57	46	56	0.23	44	290	62	33	40	1.3	0.119	1.02	-1.70
101	Betul	Amla	Amlal	7.87	1186	0	122	230	32	140	0.71	41	456	92	55	52	1.8	0.054	1.06	-7.12
102	Betul	Athner	Athner I	7.86	654	0	184	27	11	141	0.31	41	284	69	27	14	0.3	0.050	0.36	-2.67
103	Betul	ATHNER	Gujarmaal	8.46	324	30	122	10	10	0	0.20	52	123	20	18	12	1.1	0.077	0.47	0.05
104	Betul	Betul	Betul I	7.96	1112	0	110	201	85	54	0.12	44	335	96	21	78	2.0	0.059	1.85	-4.89
105	Betul	Betul	Khedi	8.45	694	24	238	67	29	4	1.59	42	103	16	15	109	2.6	0.046	4.67	2.24
106	Betul	Betul	Kolgaon	7.57	1233	0	226	216	67	69	0.31	38	422	116	32	88	1.8	0.059	1.86	-4.73
107	Betul	Betul	Thapa	8.16	575	0	184	49	19	47	1.40	49	240	63	20	15	3.4	0.035	0.42	-1.79
108	Betul	Bhainsdehi	Bhainsdehi I	8.29	292	18	116	16	11	0	0.19	44	123	27	13	10	0.3	0.055	0.39	-0.24
109	Betul	Bhainsdehi	Gudagaon	8.41	277	24	110	12	8	2	0.20	46	113	22	14	11	0.4	0.065	0.45	-0.05
110	Betul	Bhainsdehi	Jhallar	8.80	210	18	73	10	10	7	0.29	43	83	14	12	9	1.2	0.052	0.43	-0.17
111	Betul	Bhainsdehi	Kotal Kund	8.39	476	24	177	25	11	33	0.25	71	162	27	23	34	1.3	0.078	1.16	0.07
112	Betul	Bhainsdehi	Sanwal Medha	8.27	435	30	171	28	9	0	0.37	75	165	27	25	23	0.4	0.081	0.78	0.01
113	Betul	Chicholi	Chirapatala	7.90	388	0	178	20	12	8	0.27	68	120	36	6	33	0.3	0.074	1.31	0.51
114	Betul	Chicholi	Jogli	8.09	748	0	232	69	36	60	1.27	30	157	29	20	95	7.0	0.052	3.30	0.66
115	Betul	Chicholi	Khokharkheda	8.36	294	18	128	10	5	6	0.39	68	125	24	17	8	1.6	0.059	0.31	-0.10
116	Betul	Chicholi	Nimpani	7.97	690	0	196	71	38	51	1.26	30	170	35	19	75	7.1	0.081	2.50	-0.19
117	Betul	Chicholi	Pathakhera	8.51	243	18	98	10	6	5	0.30	67	95	20	14	11	0.5	0.074	0.49	0.00
118	Betul	Ghoradongri	Ghoradongri	7.63	1108	0	232	206	47	4	0.29	38	425	112	33	48	2.8	0.049	1.01	-4.69
119	Betul	Ghoradongri	Sarni	7.69	1180	0	183	221	45	89	0.72	43	441	92	51	63	1.7	0.058	1.30	-5.82

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
120	Betul	Multai	Ghatpiparia	8.74	682	42	238	49	26	2	1.60	43	127	25	15	91	2.1	0.054	3.50	2.05
121	Betul	Multai	Junapani	8.52	280	12	112	10	9	16	0.41	41	113	16	18	11	1.1	0.058	0.45	-0.21
122	Betul	Multai	Kapasia	8.07	491	0	257	16	8	1	1.45	40	165	39	18	34	2.9	0.044	1.15	0.92
123	Betul	Multai	Multaidw	8.90	844	60	250	106	14	0	0.26	52	235	59	26	64	36.0	1.560	1.82	0.40
124	Betul	Multai	Sasundra	7.36	1220	0	183	221	31	139	0.93	40	490	110	52	52	2.2	0.032	1.02	-6.80
125	Betul	Prabhat Pattam	Masod New	8.00	399	0	196	7	11	18	0.41	40	170	37	18	12	0.7	0.059	0.40	-0.19
126	Betul	Prabhat Pattam	Pattan	7.96	410	0	196	7	9	25	0.42	41	165	37	20	16	1.0	0.062	0.54	-0.09
127	Betul	Shahpur	Bhonra	7.88	698	0	196	86	20	24	0.11	23	245	43	33	34	2.8	0.059	0.94	-1.69
128	Betul	Shahpur	Shahpur	8.14	569	0	184	51	17	49	1.38	50	235	71	14	19	3.7	0.034	0.54	-1.69
129	Bhind	Ater	Ater	7.65	1460	0	336	152	220	10	0.30	43	205	48	21	240	2.4	BDL	7.29	1.40
130	Bhind	Ater	Kanuapuradw	7.50	700	0	183	64	78	32	0.43	34	250	64	22	45	0.9	BDL	1.24	-2.00
131	Bhind	Ater	Lavan	8.30	1134	72	232	103	132	34	0.37	44	280	92	12	129	0.8	BDL	3.35	-0.60
132	Bhind	Bhind	Naharakapura	7.48	767	0	336	35	29	32	0.34	30	185	40	21	90	0.8	BDL	2.88	1.80
133	Bhind	Bhind	Phuph	7.65	745	0	195	99	60	10	0.54	44	255	72	18	53	0.9	BDL	1.44	-1.90
134	Bhind	Bhind	Umri	7.80	675	0	281	25	62	9	0.76	42	255	70	19	37	1.7	BDL	1.01	-0.50
135	Bhind	Gohad	Bhagathar	8.31	3576	12	342	681	480	42	0.39	34	570	106	74	555	8.1	BDL	10.11	-5.60
136	Bhind	Gohad	Bhirkhari	8.24	3090	90	207	298	543	23	1.68	50	275	52	35	478	19.0	BDL	12.53	-0.60
137	Bhind	Gohad	Khader	7.62	1290	0	262	188	145	12	0.98	50	410	128	22	105	2.0	BDL	2.25	-3.90
138	Bhind	Gohad	Mau	7.24	4679	0	500	716	595	348	0.25	34	1175	398	44	526	2.3	BDL	6.67	-15.30
139	Bhind	Lahar	Alampur	7.80	705	0	275	50	40	12	0.59	63	220	46	26	59	1.0	BDL	1.73	0.10
140	Bhind	Lahar	Balaji	8.50	3324	66	952	316	300	78	1.06	24	685	116	96	445	3.4	BDL	7.39	3.00
141	Bhind	Lahar	Daboh	7.85	890	0	226	124	68	13	0.56	48	270	84	15	78	1.5	BDL	2.06	-1.70
142	Bhind	Lahar	Dewri	7.65	535	0	238	32	12	12	0.61	40	135	32	13	58	0.9	BDL	2.17	1.20
143	Bhind	Lahar	Lahar	8.26	1324	72	336	152	85	23	0.50	40	395	116	26	120	1.5	BDL	2.63	-1.20
144	Bhind	Mehgaon	Chirole	7.39	5560	0	409	1255	625	19	0.76	47	1210	292	117	690	54.0	0.003	8.62	-17.50
145	Bhind	Mehgaon	Gormi	7.45	756	0	323	64	13	9	0.34	35	210	58	16	76	1.2	0.002	2.28	1.10
146	Bhind	Mehgaon	Mehgaon	7.95	2910	0	580	298	514	11	0.51	36	560	174	30	398	13.0	0.039	7.31	-1.70
147	Bhind	Ron Mihona	Ron	7.48	1675	0	403	238	125	47	0.34	50	360	118	16	218	1.6	BDL	5.00	-0.60
148	Bhopal	Berasia	Berasia	8	559	0	238	29	9	20	0.32	42	192	42	21	39	0.4	0.08	1.22	0.07
149	Bhopal	Berasia	Gunga	8.74	1233	84	346	96	33	17	0.17	52	535	142	44	31	6.1	0.37	0.58	-3.63
150	Bhopal	Berasia	Nagirabad	8.21	1742	12	176	350	89	135	0.22	39	755	168	81	52	0.9	0.03	0.82	-12.01
151	Bhopal	Berasia	Ramgarha	7.66	702	0	207	64	27	59	0.34	77	285	72	26	28	0.2	0.06	0.72	-2.30
152	Bhopal	Phanda	Ayodhya Nagar	8.14	1113	0	328	155	51	6	0.93	41	359	53	55	87	2.3	0.07	2.00	-1.80
153	Bhopal	Phanda	Bairagarh	8.14	1929	0	405	318	138	12	0.31	27	758	184	72	84	12.9	0.79	1.33	-8.51
154	Bhopal	Phanda	Balampurghati	8.01	239	0	83	24	8	3	0.08	9	91	30	4	11	0.7	0.02	0.50	-0.45
155	Bhopal	Phanda	Barkheda Pathani	7.93	1692	0	209	342	96	66	0.57	40	626	103	90	87	1.2	0.04	1.51	-9.11
156	Bhopal	Phanda	Barkhera	8.24	757	23	274	41	23	18	0.99	34	293	42	45	36	1.2	0.08	0.91	-0.98
157	Bhopal	Phanda	Bilkhiria	7.99	842	0	322	73	40	11	0.42	16	247	46	32	69	16.0	0.07	1.91	0.32
158	Bhopal	Phanda	Chichli	8.05	349	0	89	39	15	24	0.02	22	126	38	7	18	2.1	0.16	0.70	-1.06
159	Bhopal	Phanda	Dig Bangla	8.43	940	48	249	108	28	5	0.53	24	220	32	34	114	2.9	0.02	3.34	0.48

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
160	Bhopal	Phanda	E- 2 Nursery	8.61	897	66	304	42	7	14	0.43	61	370	106	26	28	10.4	1.68	0.63	-1.32
161	Bhopal	Phanda	Gandhi Nagar	8.57	647	18	146	88	34	6	0.24	19	220	54	21	43	3.6	0.08	1.26	-1.71
162	Bhopal	Phanda	Islamnagar	8.45	1270	42	273	189	31	27	0.19	32	300	52	41	82	109.0	0.05	2.06	-0.82
163	Bhopal	Phanda	Lal Ghati	8.44	631	12	97	81	42	57	0.06	6	180	52	12	57	4.0	0.01	1.85	-1.81
164	Bhopal	Phanda	Navibagh	8.28	659	18	188	78	11	24	0.28	30	235	50	27	42	1.1	0.02	1.19	-1.31
165	Bhopal	Phanda	Patel Nagar	8.2	787	12	194	108	28	32	0.22	35	320	86	26	30	1.5	0.03	0.73	-3.01
166	Bhopal	Phanda	Piplani	8.6	425	18	140	25	14	4	0.20	17	160	42	13	18	1.6	0.08	0.62	-0.61
167	Bhopal	Phanda	Shahjahana Bad	8.15	939	0	366	84	6	48	0.18	25	290	86	18	67	23.0	0.26	1.71	0.20
168	Bhopal	Phanda	Shahpura	7.85	560	0	244	35	15	7	0.16	34	205	44	23	30	1.7	0.04	0.91	-0.10
169	Bhopal	Phanda	South T T Nagar	7.81	681	0	281	59	19	1	0.73	20	205	46	22	61	1.2	0.03	1.85	0.50
170	Burhanpur	Burhanpur	Bahadurpur I	8.74	1214	60	508	57	23	34	1.37	39	132	8	27	214	0.2	0.032	8.09	6.69
171	Burhanpur	BURHANPUR	Burhanpur New	7.97	592	0	275	22	14	27	0.23	51	215	35	29	35	0.8	0.045	1.04	0.20
172	Burhanpur	Burhanpur	Burhanpur dw	8.59	1152	36	329	124	39	64	0.46	63	275	14	58	134	0.9	0.038	3.51	0.50
173	Burhanpur	Burhanpur	Chandnidw	8.66	825	54	287	57	64	9	0.71	64	278	12	60	72	0.0	0.049	1.88	0.05
174	Burhanpur	Burhanpur	Dehnala	7.82	463	0	238	12	8	31	0.31	71	192	42	21	25	0.1	0.055	0.78	0.06
175	Burhanpur	Burhanpur	Ichhapur	8.40	884	36	305	74	22	26	0.44	65	263	20	52	76	0.3	0.047	2.04	0.35
176	Burhanpur	BURHANPUR	Jhiri	8.03	769	0	386	49	9	20	0.43	56	308	22	61	47	1.4	0.046	1.16	0.16
177	Burhanpur	Burhanpur	Nachankheda	7.96	521	0	250	20	13	24	0.23	50	217	38	29	22	0.6	0.042	0.65	-0.24
178	Burhanpur	Burhanpur	Sirpur	7.99	885	0	355	82	27	8	0.25	51	340	73	38	34	22.0	0.183	0.80	-0.98
179	Burhanpur	Khaknar	Dedtalai	7.92	725	0	147	87	39	72	0.16	70	300	61	36	19	1.6	0.055	0.48	-3.59
180	Burhanpur	Khaknar	Karkheda	8.00	497	0	178	30	16	53	0.21	46	205	40	25	19	0.4	0.045	0.58	-1.19
181	Burhanpur	Khaknar	Khaknardw	8.20	544	0	288	30	12	8	0.31	79	227	34	34	32	0.4	0.050	0.92	0.17
182	Burhanpur	Khaknar	Manjrod Kalan	8.93	787	72	214	52	20	61	0.38	56	260	6	60	54	0.6	0.054	1.46	-0.50
183	Burhanpur	Khaknar	Nepa Nagar	7.74	466	0	208	32	4	14	0.24	50	131	38	9	46	0.3	0.043	1.75	0.79
184	Burhanpur	Khaknar	Pipalpani	7.92	1384	0	423	181	43	116	0.47	57	485	89	64	116	2.1	0.056	2.29	-2.77
185	Burhanpur	Khaknar	Shekhpura	7.67	704	0	220	74	36	34	0.17	48	273	53	34	35	0.7	0.047	0.92	-1.84
186	Chhatarpur	Bada Malhara	Ghuara	7.15	810	0	227	43	86	81	0.38	51	248	63	22	70	0.8	0.01	1.93	-1.23
187	Chhatarpur	Bada Malhara	Sadwa	7.65	800	0	247	47	110	12	0.8	52	250	69	19	68	0.3	0.003	1.87	-0.95
188	Chhatarpur	Bada Malhara	Sendpa	7.46	1225	0	211	89	280	18	0.79	48	392	129	17	102	0.2	0.011	2.24	-4.39
189	Chhatarpur	Bijawar	Bijawar	7.76	655	0	341	28	2	4	0.01	41	262	59	28	30	0.6	0.001	0.81	0.34
190	Chhatarpur	Bijawar	Gulganj	7.87	455	0	209	26	2	23	0.02	49	198	73	4	12	0.9	0.002	0.37	-0.53
191	Chhatarpur	Bijawar	Khair Kalan	8.18	440	0	233	10	6	7	0.03	43	188	53	13	13	0.1	0	0.41	0.06
192	Chhatarpur	Bijawar	Tapra	7.94	500	0	223	10	32	12	0.02	53	196	59	12	23	1.9	0	0.71	-0.27
193	Chhatarpur	Buxwaha	Amodha	7.48	426	0	209	10	8	23	0.59	43	129	36	10	38	0.4	0.003	1.46	0.86
194	Chhatarpur	Buxwaha	Buxwaha	7.47	1055	0	185	166	124	3	0.03	47	500	135	40	12	0.2	0.02	0.23	-6.96
195	Chhatarpur	Chhatarpur	Chhatarpur	7.42	1190	0	221	171	54	132	0.43	44	515	170	22	36	0.2	0.016	0.69	-6.67
196	Chhatarpur	Chhatarpur	Issanagar	7.67	780	0	227	99	15	56	0.32	58	327	81	30	30	1.5	0.002	0.72	-2.81
197	Chhatarpur	Chhatarpur	Maharajpur	7.75	690	0	344	35	5	10	0.11	44	319	84	26	10	1.6	0.019	0.24	-0.74
198	Chhatarpur	Chhatarpur	Matgawan	7.85	730	0	265	72	20	32	0.76	54	319	104	14	19	2.3	0.003	0.46	-2.03
199	Chhatarpur	Chhatarpur	Niwari	8.18	714	0	247	32	50	65	0.56	51	191	45	19	76	0.2	0.002	2.39	0.23

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
200	Chhatarpur	Gaurihar	Gaurihar	7.89	1980	0	275	212	376	78	0.9	45	554	83	84	197	2.5	0.013	3.64	-6.58
201	Chhatarpur	Gaurihar	Sarwai	7.7	1480	0	386	220	56	63	0.75	54	402	67	57	154	2.7	0.013	3.34	-1.72
202	Chhatarpur	Gaurihar	Singhpur	8	755	0	338	17	65	7	0.21	45	201	45	21	79	1.6	0	2.42	1.51
203	Chhatarpur	Laundi	Laundi	7.4	2330	0	193	440	305	75	1	42	833	190	87	150	0.7	0.016	2.26	-13.51
204	Chhatarpur	Nowgaon	Kukrel	7.83	747	0	269	102	5	2	1.11	48	198	44	22	78	2.2	0.016	2.41	0.45
205	Chhatarpur	Nowgaon	Nowgaon	7.53	1356	0	217	129	290	12	1.48	49	422	116	32	115	2.7	0	2.44	-4.87
206	Chhatarpur	Nowgaon	Putaria	7.75	905	0	265	42	152	21	0.56	45	225	63	17	103	2.2	0.012	2.98	-0.16
207	Chhatarpur	Nowgaon	Tatampur	7.5	710	0	193	106	38	2	0.32	48	319	80	29	16	1.2	0.001	0.39	-3.21
208	Chhatarpur	Rajnagar	Chandra Nagar	7.82	733	0	185	97	57	23	0.12	53	277	61	30	41	0.7	0.002	1.07	-2.51
209	Chhatarpur	Rajnagar	Ganj	7.72	1695	0	126	189	360	90	1.02	38	480	111	49	168	1.3	0.002	3.33	-7.55
210	Chhatarpur	Rajnagar	Khajuraho	7.9	944	0	239	89	75	89	0.95	38	238	57	23	105	2.3	0.002	2.96	-0.83
211	Chhatarpur	Rajnagar	Kurri	7.77	1210	0	313	52	200	65	0.23	55	324	55	45	126	2.6	0.003	3.05	-1.33
212	Chhindwara	Amarwara	Amarwara	8.10	392	0	196	20	9	5	0.21	43	152	48	7	23	0.4	0.058	0.81	0.18
213	Chhindwara	Amarwara	Banjari	7.60	898	0	202	99	43	96	0.25	33	375	75	46	24	0.9	0.042	0.54	-4.19
214	Chhindwara	Amarwara	Singhori	7.57	895	0	216	93	49	96	0.27	33	318	59	42	54	1.3	0.033	1.32	-2.82
215	Chhindwara	Amarwara	Surla	8.32	763	6	12	68	19	307	0.18	3	146	38	12	74	56.0	0.020	2.66	-2.63
216	Chhindwara	Chaurai	Chaurai I	8.06	924	0	140	169	91	0	1.88	38	242	44	32	94	1.2	0.043	2.62	-2.56
217	Chhindwara	Chaurai	Marka Handi	8.11	522	0	165	51	5	58	0.14	57	197	36	26	28	0.9	0.025	0.87	-1.24
218	Chhindwara	Chaurai	Ramgarh	7.94	817	0	218	88	29	85	0.49	45	290	67	30	51	0.9	0.031	1.30	-2.23
219	Chhindwara	Chaurai	Thanvari Kunda	7.70	508	0	222	22	12	30	0.27	38	218	46	25	15	0.1	0.015	0.44	-0.72
220	Chhindwara	Chhindwara	Chhindwara	7.86	844	0	250	88	25	81	0.53	45	328	75	34	42	0.9	0.014	1.01	-2.47
221	Chhindwara	Chhindwara	Jamunia Ner	7.76	598	0	310	39	9	27	0.32	66	278	36	45	27	2.6	0.023	0.70	-0.48
222	Chhindwara	Chhindwara	Saonri I	7.98	428	0	121	35	11	50	0.07	45	165	41	15	15	2.5	0.018	0.51	-1.32
223	Chhindwara	Harai	Harraidw	8.57	481	18	37	93	42	15	0.09	10	106	14	17	58	0.0	0.023	2.45	-1.22
224	Chhindwara	Harai	Khapa	7.65	537	0	200	51	15	23	0.11	33	210	44	24	28	0.2	0.022	0.84	-0.91
225	Chhindwara	Harai	Kundali	8.74	609	24	122	93	24	35	0.05	38	162	22	26	66	0.0	0.023	2.26	-0.83
226	Chhindwara	Harai	Sathiya	7.96	552	0	235	33	10	30	0.19	40	237	46	29	16	1.7	0.032	0.45	-0.90
227	Chhindwara	Jamai	Damua	7.74	857	0	220	131	41	15	0.35	26	273	34	45	67	1.5	0.038	1.76	-1.85
228	Chhindwara	Jamai	Jamai	7.67	878	0	220	131	47	14	0.29	24	283	51	38	65	1.6	0.003	1.68	-2.06
229	Chhindwara	Mohkhed	Goni	7.72	719	0	232	58	13	99	0.27	50	303	59	38	28	0.8	0.020	0.70	-2.26
230	Chhindwara	Mohkhed	Linga Rly.Stn.	7.95	512	0	182	25	6	76	0.31	50	217	53	21	16	1.0	0.020	0.47	-1.36
231	Chhindwara	Mohkhed	Sarangbheri	7.92	516	0	188	23	8	75	0.35	51	204	53	17	23	0.9	0.020	0.70	-1.01
232	Chhindwara	Mohkhed	Silwani I	8.44	256	24	12	56	6	9	0.42	15	56	18	2	30	1.4	0.005	1.75	-0.50
233	Chhindwara	Mohkhed	Tansara Mal	8.04	512	0	173	38	11	60	0.13	45	217	59	17	16	2.8	0.019	0.47	-1.51
234	Chhindwara	Pandhurana	Bangaon I	7.73	709	0	250	59	13	62	0.33	60	300	53	41	24	0.7	0.052	0.60	-1.90
235	Chhindwara	Pandhurana	Borgaon I	7.64	1514	0	227	255	45	165	0.27	60	645	75	111	36	1.1	0.058	0.62	-9.19
236	Chhindwara	Pandhurana	Chinchkheda	7.83	490	0	225	18	11	22	0.36	61	200	32	29	17	1.2	0.018	0.52	-0.32
237	Chhindwara	Pandhurana	Chincholiwad	8.76	690	48	214	66	8	0	0.19	50	175	22	29	46	32.4	0.294	1.51	0.80
238	Chhindwara	Pandhurana	Mohi	7.81	480	0	262	18	13	18	0.34	61	217	30	34	23	0.7	0.020	0.68	-0.04
239	Chhindwara	Pandhurana	Pandurna	7.62	676	0	218	58	16	62	0.28	61	281	41	43	21	1.1	0.013	0.55	-2.04

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
240	Chhindwara	Pandhurana	Piplanarayanwar	7.62	1520	0	218	247	44	167	0.26	60	612	73	104	44	0.6	0.010	0.77	-8.67
241	Chhindwara	Pandhurana	Rajna	8.08	457	0	224	15	9	10	0.42	61	117	27	12	47	2.2	0.014	1.89	1.32
242	Chhindwara	Parasia	Lahgudna	7.76	829	0	226	129	31	14	0.31	25	263	38	41	67	1.5	0.002	1.80	-1.55
243	Chhindwara	Parasia	Sonapipri	7.90	338	0	171	13	4	2	0.32	39	101	24	10	28	1.0	0.016	1.21	0.78
244	Chhindwara	Sausar	Ramakona New	7.93	1076	0	230	144	46	99	0.34	57	398	41	72	55	1.5	0.027	1.20	-4.19
245	Chhindwara	Sausar	Sausar	7.72	1106	0	253	146	38	99	0.34	57	409	53	68	56	2.1	0.038	1.20	-4.03
246	Chhindwara	Sausar	Silwanighati	7.77	644	0	305	33	15	0	1.02	75	197	28	31	51	3.4	0.020	1.58	1.06
247	Chhindwara	Tamia	Chhindi	7.70	866	0	207	134	47	10	0.40	24	273	44	39	65	1.3	0.038	1.71	-2.05
248	Chhindwara	Tamia	Delakhari	7.99	461	0	98	58	2	63	0.04	22	185	46	17	13	1.2	0.015	0.42	-2.10
249	Chhindwara	Tamia	Mahaljhir	7.77	475	0	237	23	9	1	0.23	13	125	24	16	48	6.1	0.002	1.87	1.38
250	Chhindwara	Tamia	Renikhera	7.74	494	0	242	25	7	6	0.15	14	143	24	20	44	5.9	0.016	1.60	1.11
251	Damoh	Damoh	Abhana	7.96	1918	0	549	255	75	76	0.3	43	446	120	36	235	2.4	0.012	4.84	0.07
252	Damoh	Damoh	Damoh	7.55	835	0	223	124	29	30	0.43	52	294	59	36	56	0.8	0.012	1.42	-2.23
253	Damoh	Damoh	Palar	7.41	4240	0	313	497	850	90	0.98	48	917	163	124	545	9.1	0.023	7.83	-13.20
254	Damoh	Damoh	Piparia	7.92	660	0	210	57	55	24	0.42	43	209	41	26	55	0.3	0.003	1.65	-0.74
255	Damoh	Hata	Gaisabad	7.66	632	0	289	10	37	29	0.54	60	289	55	37	11	0.1	0.001	0.28	-1.04
256	Damoh	Hata	Hardua	7.86	525	0	259	22	2	22	0.64	49	211	49	21	24	0.1	0.02	0.72	0.03
257	Damoh	Jabera	Jabera	7.94	587	0	283	17	9	32	0.53	54	270	49	36	10	0.1	0.024	0.26	-0.75
258	Damoh	Jabera	Khamaria	7.98	455	0	163	25	35	23	0.5	48	147	39	12	37	0.2	0.012	1.33	-0.27
259	Damoh	Jabera	Nohta	7.96	1283	0	332	89	195	41	0.34	53	225	69	13	190	1.7	0	5.50	0.92
260	Damoh	Patera	Bangaon	7.82	365	0	181	10	5	15	0.65	49	152	49	7	15	0.2	0.016	0.53	-0.08
261	Damoh	Patera	Kumhari	7.48	3340	0	205	423	750	29	0.32	55	721	178	67	433	4.5	0.032	7.01	-11.05
262	Damoh	Patera	Majhgawa	7.99	3030	0	332	366	600	34	0.59	51	34	6	5	673	8.1	0.015	49.95	4.75
263	Damoh	Patera	Patera	7.68	2130	0	384	137	475	38	0.32	54	301	69	31	350	1.4	0.026	8.77	0.28
264	Damoh	Tendukheda	Dhangor	7.5	705	0	127	42	145	39	0.33	55	216	67	12	62	0.4	0.003	1.84	-2.24
265	Damoh	Tendukheda	Samnapur	7.97	848	0	252	45	126	20	0.36	44	276	88	14	67	0.7	0.012	1.76	-1.38
266	Damoh	Tendukheda	Tendukheda	8.02	617	0	222	15	58	55	0.26	51	194	53	15	52	0.2	0.031	1.62	-0.24
267	Datia	Bhander	Bhander	7.69	600	0	195	50	44	27	0.34	48	210	62	13	39	2.6	BDL	1.17	-1.00
268	Datia	Bhander	Pandokhar	7.49	560	0	262	14	26	16	0.45	36	200	42	23	35	1.6	BDL	1.08	0.30
269	Datia	Datia	Datia	7.38	1324	0	268	131	176	90	0.70	35	250	70	18	189	0.6	BDL	5.20	-0.60
270	Datia	Datia	Imaliya	8.65	834	30	195	82	87	28	0.14	30	260	74	18	71	0.9	BDL	1.91	-1.50
271	Datia	Datia	Ruduapura	7.69	786	0	390	21	22	21	0.50	34	265	94	7	56	2.5	BDL	1.50	1.10
272	Datia	Seondha	Chhikau	7.79	856	0	165	128	87	23	0.92	40	260	88	10	76	1.4	BDL	2.05	-2.50
273	Datia	Seondha	Indergarh New	7.62	790	0	329	64	18	17	0.23	36	265	82	15	58	1.4	BDL	1.55	0.10
274	Datia	Seondha	Kasherua	7.38	1305	0	512	124	38	12	0.33	40	255	78	15	180	0.7	BDL	4.90	3.30
275	Datia	Seondha	Seondha	7.49	875	0	354	53	34	43	0.74	52	240	76	12	88	3.0	BDL	2.47	1.00
276	Datia	Seondha	Tharet	7.95	1254	0	512	85	50	40	0.90	36	335	106	17	132	2.8	0.001	3.14	1.70
277	Dewas	Bagli	Bagli I	7.55	827	0	268	96	9	54	0.70	40	325	68	38	38	0.6	0.112	0.92	-2.10
278	Dewas	Bagli	Bamohri	7.47	1173	0	305	121	62	120	0.49	63	445	96	50	53	17.0	0.119	1.09	-3.90
279	Dewas	Bagli	Bhikupura	7.69	1119	0	342	149	57	2	1.21	16	375	102	29	79	3.5	0.128	1.77	-1.90



Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
280	Dewas	Bagli	Karnawad	7.69	888	0	250	64	41	126	0.49	56	360	66	47	35	2.2	0.111	0.80	-3.10
281	Dewas	Bagli	Matmore New	8.01	601	0	244	46	19	1	0.33	19	210	50	21	34	1.7	0.102	1.02	-0.20
282	Dewas	Bagli	Nevri	7.65	1130	0	342	113	47	93	0.38	49	495	58	85	31	0.7	0.112	0.61	-4.30
283	Dewas	Bagli	Pipri	8.00	1416	0	378	131	51	183	0.92	25	495	112	52	71	37.0	0.353	1.39	-3.70
284	Dewas	Bagli	Punjabura	8.22	1462	42	573	110	18	54	0.31	29	450	90	55	79	79.0	0.315	1.62	1.10
285	Dewas	Bagli	Udainagardw	7.73	1097	0	323	128	35	71	0.89	47	400	66	57	63	1.8	0.124	1.37	-2.70
286	Dewas	Dewas	Dewas	7.77	1330	0	207	227	87	95	0.61	24	295	84	21	166	1.3	0.123	4.20	-2.50
287	Dewas	Kannod	Bijawad	7.59	852	0	348	53	21	48	0.89	57	325	66	39	44	0.1	0.115	1.06	-0.80
288	Dewas	Kannod	Kannod	8.00	1036	0	512	28	0	36	0.92	28	180	52	12	141	2.3	0.110	4.57	4.80
289	Dewas	Kannod	Kantaphor	7.29	1120	0	317	135	54	61	0.76	62	350	62	47	94	0.7	0.150	2.18	-1.80
290	Dewas	Kannod	Kusumania	7.78	589	0	293	18	4	18	0.66	72	220	50	23	29	0.9	0.116	0.85	0.40
291	Dewas	Kannod	Satwas New	8.08	1296	0	525	92	19	78	1.68	41	410	42	74	107	0.8	0.172	2.30	0.40
292	Dewas	Khategaon	Dhayali	7.76	629	0	287	43	0	15	0.83	28	245	56	26	28	1.0	0.114	0.78	-0.20
293	Dewas	Khategaon	Pipilianankar	8.29	1334	30	622	18	0	44	1.45	46	205	46	22	179	1.5	0.112	5.44	6.60
294	Dewas	Sonkatch	Bhonrasa	7.95	896	0	336	53	30	76	0.45	47	370	98	30	32	2.4	0.112	0.72	-1.90
295	Dewas	Tonk Khurd	Alari	7.89	698	0	189	117	15	14	2.00	37	75	20	6	124	1.9	0.119	6.23	1.60
296	Dhar	Badnawar	Badnawar New	8.08	891	0	299	85	70	0	1.71	6	155	40	13	130	0.8	0.133	4.54	1.80
297	Dhar	Badnawar	Chayan	7.72	1247	0	244	78	72	106	0.69	48	405	76	52	28	3.1	0.105	0.60	-4.10
298	Dhar	Badnawar	Kanwan New	7.67	1235	0	281	191	37	94	0.25	31	495	82	71	55	0.4	0.217	1.07	-5.30
299	Dhar	Bagh	Bagh New	7.93	949	0	427	50	32	4	1.51	49	310	58	40	67	1.5	0.116	1.65	0.80
300	Dhar	Bagh	Tanda	7.83	885	0	262	113	49	11	1.56	38	205	54	17	101	8.3	0.181	3.07	0.20
301	Dhar	Dhar	Dhar	7.65	2180	0	403	333	149	162	0.05	59	625	84	101	183	54.0	0.186	3.18	-5.90
302	Dhar	Dharamपुरi	Dhamnod	7.89	777	0	293	74	5	34	0.62	49	315	56	43	29	0.2	0.218	0.71	-1.50
303	Dhar	Dharamपुरi	Dharamपुरi I	7.64	855	0	201	82	55	105	0.35	55	320	58	43	47	0.3	0.120	1.14	-3.10
304	Dhar	Dharamपुरi	Gujri I	8.34	1115	12	238	216	39	0	1.73	10	165	38	17	175	3.9	0.128	5.92	0.80
305	Dhar	Gandhwani	Gandhwani	8.02	1052	0	366	99	54	36	1.72	30	320	36	56	91	5.6	0.162	2.21	-0.40
306	Dhar	Gandhwani	Zeerabad	7.71	913	0	409	35	23	55	0.30	48	275	80	18	59	39.0	0.119	1.55	1.20
307	Dhar	Kukshi	Dehari	7.92	1283	0	348	163	89	2	1.83	45	365	44	62	106	11.0	0.175	2.41	-1.60
308	Dhar	KUKSHI	Dhulsar	7.46	1718	0	293	220	130	210	0.09	68	625	188	38	66	68.0	0.172	1.15	-7.70
309	Dhar	Kukshi	Kukshi I	7.79	1797	0	445	209	121	114	0.35	48	585	68	101	118	29.0	0.115	2.12	-4.40
310	Dhar	Manawar	Singhana	7.62	1087	0	378	92	37	78	0.13	40	305	58	39	95	25.0	0.122	2.37	0.10
311	Dhar	Nalchha	Mandu	7.99	728	0	390	21	6	3	0.13	37	275	68	26	23	27.0	0.741	0.60	0.90
312	Dhar	Nisarpur	Pipalya	7.98	1154	0	500	78	43	9	0.41	52	470	80	66	45	3.4	0.301	0.90	-1.20
313	Dhar	Sardarpur	Amjhira	8.03	1753	0	476	213	78	116	0.66	41	595	96	86	79	77.0	1.440	1.41	-4.10
314	Dhar	Sardarpur	Dasai	7.50	2230	0	403	376	94	180	0.23	15	795	84	142	129	26.0	0.130	1.99	-9.30
315	Dhar	Sardarpur	Julana	8.09	506	0	195	46	19	3	1.73	29	65	24	1	83	1.5	0.088	4.48	1.90
316	Dhar	Sardarpur	Rajod	7.62	841	0	299	43	41	84	0.30	39	365	80	40	23	0.5	0.095	0.52	-2.40
317	Dhar	Sardarpur	Sardarpur	7.82	384	0	171	18	20	4	0.23	17	155	42	12	15	1.6	0.104	0.52	-0.30
318	Dhar	Tirla	Lunera	7.86	610	0	177	82	34	2	1.32	40	50	18	1	112	2.4	0.110	6.89	1.90
319	Dhar	Umarban	Manawar I	7.56	1224	0	287	124	54	163	0.16	46	495	94	63	47	0.9	0.114	0.92	-5.20

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
320	Dindori	Amarpur	Amarpur1	7.8	590	0	297	27	3	6	0.37	35	207	51	20	39	0.8	0.024	1.18	0.73
321	Dindori	Bajag	Bijhauri	7.45	835	0	233	99	60	23	0.31	33	323	93	22	42	1.3	0.28	1.02	-2.65
322	Dindori	Bajag	Gadasarai	7.67	690	0	323	47	12	2	0.2	29	338	85	31	3	0.3	0.02	0.07	-1.47
323	Dindori	Bajag	Sagar Tola	8.12	705	0	244	79	2	49	0.14	29	328	95	22	11	1.0	0.014	0.26	-2.57
324	Dindori	Dindori	Dindori	7.7	990	0	220	106	155	8	0.24	34	298	69	31	92	1.6	0.02	2.32	-2.36
325	Dindori	Dindori	Salaiya	8.1	455	0	244	12	3	6	0.4	33	187	59	10	18	0.4	0.02	0.57	0.26
326	Dindori	Dindori	Shahpur	8.25	358	6	171	17	2	7	0.44	34	106	28	9	33	0.2	0.013	1.39	0.78
327	Dindori	Dindori	Vikrampur1	8.00	535	0	287	20	2	2	0.38	40	217	65	13	23	0.2	0.011	0.68	0.36
328	Dindori	Karanjiya	Gorakhpur	7.7	485	0	220	27	17	3	0.31	35	172	51	11	31	1.4	0.01	1.03	0.17
329	Dindori	Karanjiya	Karanjiya	7.67	563	0	201	64	5	23	0.43	38	253	69	20	13	0.8	0.008	0.36	-1.75
330	Dindori	Mehadwani	Harra	7.74	250	0	110	12	12	2	0.15	33	111	32	7	4	2.8	0.02	0.16	-0.42
331	Dindori	Shahpura	Katangi1	8.08	436	0	220	27	2	4	0.26	40	192	61	10	15	0.2	0.012	0.47	-0.24
332	Dindori	Shahpura	Shahpura Depot	7.75	1237	0	311	168	85	28	0.68	41	369	85	38	110	1.2	0.01	2.49	-2.28
333	Dindori	Shahpura	Shahpura2	8.15	950	0	311	121	22	24	0.31	37	359	101	26	52	0.5	0.014	1.19	-2.07
334	Guna	Aron	Aron	7.76	544	0	250	30	4	20	0.21	43	200	50	18	32	0.6	0.04	0.98	0.10
335	Guna	Aron	Rampur-I	8.23	1026	24	244	149	40	5	0.29	36	290	64	32	96	4.1	0.06	2.45	-1.40
336	Guna	Bamori	Akoda	8.21	453	12	201	12	9	7	0.17	26	185	54	12	15	1.9	0.08	0.48	-0.20
337	Guna	Bamori	Bamori New	7.75	756	0	226	101	28	20	0.20	16	295	66	32	37	3.2	0.03	0.94	-2.20
338	Guna	Bamori	Berkheri	7.74	583	0	250	25	12	37	0.21	49	235	46	29	24	0.6	0.04	0.68	-0.60
339	Guna	Bamori	Rampur-li	8.21	458	6	183	37	6	4	0.31	20	155	44	11	19	20.0	0.04	0.66	0.00
340	Guna	Bamori	Suhaya New	7.86	560	0	232	22	12	64	0.18	35	240	58	23	18	0.9	0.05	0.51	-1.00
341	Guna	Chachaura	Baroddw	7.67	928	0	244	114	59	42	0.29	45	315	76	30	65	0.3	0.04	1.59	-2.30
342	Guna	Chachaura	Binaganj	7.64	961	0	195	161	54	35	0.15	61	390	90	40	37	1.0	0.05	0.81	-4.60
343	Guna	Chachaura	Khatkiya	7.79	621	0	281	30	13	29	0.30	44	250	54	28	26	1.8	0.04	0.71	-0.40
344	Guna	Chachaura	Penchi	7.73	1101	0	238	136	62	103	0.17	58	440	92	51	44	0.8	0.08	0.91	-4.90
345	Guna	Guna	Jaitadongar	7.98	644	0	281	37	13	30	0.41	28	210	36	29	50	1.7	0.03	1.50	0.40
346	Guna	Guna	Mahugarha	7.93	638	0	287	27	18	23	0.24	43	245	60	23	30	2.1	0.06	0.83	-0.20
347	Guna	Guna	Pagara	7.99	695	0	348	17	3	11	0.20	41	185	24	30	71	1.0	0.04	2.27	2.00
348	Guna	Guna	Patai	8.28	752	24	323	32	9	1	0.35	21	320	98	18	19	6.8	1.36	0.46	-0.70
349	Guna	Guna	Singwasa	8.23	1081	30	427	47	21	33	0.43	43	380	90	38	66	5.4	0.54	1.47	-0.10
350	Guna	Raghogarh	Amlia	8.22	1052	24	403	82	14	23	0.25	45	405	44	72	52	1.4	0.05	1.12	-1.10
351	Guna	Raghogarh	Gunjari	7.9	592	0	275	20	11	19	0.27	32	220	40	29	31	0.8	0.04	0.91	0.10
352	Guna	Raghogarh	Janjali	8.26	1180	54	482	40	7	9	0.29	44	170	8	36	186	1.1	0.04	6.20	5.40
353	Guna	Raghogarh	Khairai	8.21	511	18	220	15	5	10	0.09	60	205	54	17	19	1.0	0.06	0.58	-0.20
354	Guna	Raghogarh	Maksudangarh	7.79	685	0	349	17	8	20	0.15	76	265	59	29	33	0.5	0.04	0.88	0.43
355	Guna	Raghogarh	Pipaliya	7.96	740	0	366	17	3	31	0.25	33	265	32	45	45	1.1	0.04	1.20	0.70
356	Gwalior	Bhitarwar	Bajna	7.84	756	0	214	74	65	34	0.60	50	210	66	11	76	0.3	BDL	2.28	-0.70
357	Gwalior	Bhitarwar	Dongarpur	7.84	1340	0	256	184	170	21	0.32	35	230	64	17	200	1.5	BDL	5.73	-0.40
358	Gwalior	Bhitarwar	Harsibandh	7.64	595	0	153	92	30	10	0.61	34	100	18	13	89	1.6	BDL	3.87	0.50
359	Gwalior	Dabra	Kariyawati	7.75	1020	0	207	142	110	28	0.32	42	305	86	22	92	2.4	BDL	2.29	-2.70

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
360	Gwalior	Dabra	Makoda	7.68	1100	0	238	170	85	17	0.34	40	340	94	26	94	1.8	0.001	2.22	-2.90
361	Gwalior	Dabra	Masoorpur New	7.45	1154	0	238	113	170	44	0.12	51	305	78	27	123	1.3	BDL	3.06	-2.20
362	Gwalior	Dabra	Tekanpur	7.48	985	0	177	131	125	37	0.23	40	320	106	13	78	0.6	0.001	1.90	-3.50
363	Gwalior	Ghatigaon	Aron	7.45	754	0	146	60	43	155	0.47	52	160	30	21	99	0.9	BDL	3.40	-0.80
364	Gwalior	Ghatigaon	Charai Shyampur	7.49	1324	0	214	138	250	33	0.80	32	205	54	17	208	0.8	BDL	6.32	-0.60
365	Gwalior	Ghatigaon	Ghantigaon	7.95	435	0	122	43	30	25	0.43	26	140	38	11	34	0.9	BDL	1.25	-0.80
366	Gwalior	Ghatigaon	Mohna	7.84	3390	0	207	823	265	76	0.12	35	605	186	34	498	2.7	BDL	8.80	-8.70
367	Gwalior	Ghatigaon	Nayagaon2	7.40	1890	0	305	209	290	95	0.43	42	595	196	26	158	2.2	BDL	2.82	-6.90
368	Gwalior	Ghatigaon	Panihar	7.90	1125	0	195	149	155	34	0.50	36	375	136	9	85	0.9	BDL	1.91	-4.30
369	Gwalior	Morar	Aarauli	7.84	450	0	110	74	8	23	0.76	47	160	36	17	29	1.4	BDL	1.00	-1.40
370	Gwalior	Morar	Bajrang Colony Dabka	7.74	245	0	37	46	12	15	0.28	35	80	18	9	18	0.7	BDL	0.87	-1.00
371	Gwalior	Morar	Behat	7.29	656	0	153	74	75	19	0.89	47	185	56	11	64	1.4	BDL	2.05	-1.20
372	Gwalior	Morar	Bhatkheri	7.54	550	0	153	35	5	112	0.32	42	100	26	9	78	1.8	BDL	3.39	0.50
373	Gwalior	Morar	Manpura	7.84	605	0	146	39	90	40	0.09	50	200	54	16	45	2.9	BDL	1.38	-1.60
374	Gwalior	Morar	Mohanpur	7.58	600	0	171	50	66	22	0.43	31	150	38	13	67	1.5	BDL	2.38	-0.20
375	Harda	Harda	Handia	7.95	1469	0	325	197	84	71	1.71	31	455	30	93	108	2.8	0.012	2.20	-3.77
376	Harda	Harda	Hardadw	7.80	1000	0	253	75	81	117	0.62	48	297	48	43	90	0.4	0.025	2.27	-1.79
377	Harda	Harda	Masangaon	8.25	1890	71	410	150	266	26	1.55	39	315	16	67	271	1.5	0.060	6.64	1.60
378	Harda	Khirkiya	Chhipawaddw	7.54	1436	0	205	207	101	154	0.14	47	510	95	66	75	14.2	0.016	1.44	-6.84
379	Harda	Khirkiya	Chhuri Khal	7.69	737	0	217	72	26	61	0.60	47	297	53	40	27	0.3	0.028	0.68	-2.38
380	Harda	Khirkiya	Mandla	7.68	717	0	211	75	27	60	0.55	47	297	48	43	27	0.3	0.018	0.68	-2.48
381	Harda	Khirkiya	Morgarhidw	8.24	2079	47	482	155	300	25	1.54	39	315	16	67	308	1.5	0.037	7.55	2.39
382	Harda	Khirkiya	Sonpura Colony	7.54	1439	0	211	207	89	153	0.23	47	485	77	71	83	14.0	0.018	1.64	-6.25
383	Harda	Timarni	Chhidgaon	7.93	691	0	306	37	18	29	0.32	45	188	24	31	71	1.9	0.049	2.25	1.26
384	Harda	Timarni	Mohanpur 1	7.94	929	0	344	72	54	23	0.46	51	267	26	49	88	0.2	0.030	2.34	0.28
385	Harda	Timarni	Temagaon	7.88	1162	0	295	107	38	146	0.33	47	272	36	45	128	0.6	0.043	3.37	-0.60
386	Harda	Timarni	Timarni	7.90	836	0	338	72	12	31	0.37	52	257	22	49	73	0.9	0.023	1.98	0.38
387	Hoshangabad	Babai	Babaidw	8.20	759	24	289	35	26	40	0.36	37	210	67	10	67	7.8	0.235	2.01	0.94
388	Hoshangabad	Babai	Bagratawadw	8.86	736	42	98	117	36	29	0.37	6	145	6	32	58	56.0	0.010	2.09	-0.61
389	Hoshangabad	Babai	Baharpur	7.74	1098	0	338	97	41	76	0.42	32	302	34	53	65	59.0	0.025	1.63	-0.51
390	Hoshangabad	Hoshangabad	Dolariadw	7.78	737	0	283	62	13	41	0.41	24	225	32	35	65	0.7	0.011	1.88	0.14
391	Hoshangabad	Hoshangabad	Nimsadia	7.76	578	0	250	27	8	38	0.30	31	180	34	23	46	3.0	0.002	1.49	0.50
392	Hoshangabad	Hoshangabad	Powerkheda	7.90	707	0	199	87	30	25	0.10	23	260	53	31	35	1.7	0.075	0.94	-1.94
393	Hoshangabad	HOSHANGABAD	Raisalpur	7.93	697	0	207	85	22	24	0.18	22	250	51	30	37	1.7	0.044	1.02	-1.60
394	Hoshangabad	Hoshangabad	Sanwalkhera	8.16	944	0	295	90	32	56	0.38	27	270	33	45	82	1.2	0.035	2.17	-0.56
395	Hoshangabad	Kesla	Gurra New	7.83	526	0	232	7	7	36	0.65	27	153	28	20	38	0.9	0.007	1.33	0.73
396	Hoshangabad	Kesla	Kesla	7.59	730	0	223	85	15	32	0.15	21	257	42	37	39	1.7	0.005	1.06	-1.49
397	Hoshangabad	Kesla	Pathrautadw	8.24	412	12	175	12	32	15	0.32	65	186	47	17	13	1.1	0.057	0.41	-0.66
398	Hoshangabad	Kesla	Sonkhera	7.94	713	0	205	74	19	26	0.14	22	265	51	33	23	1.7	0.030	0.61	-1.93
399	Hoshangabad	Kesla	Suktawa	7.89	750	0	223	100	12	25	0.19	22	279	51	37	35	1.7	0.011	0.91	-1.93

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
400	Hoshangabad	Pipariya	Garhaghat	8.20	885	36	344	35	36	2	0.18	37	134	14	24	122	0.7	0.082	4.59	3.55
401	Hoshangabad	Pipariya	Matkuli	7.83	407	0	201	12	4	15	0.65	28	150	30	18	22	0.8	0.007	0.78	0.30
402	Hoshangabad	Pipariya	Pachmarhi	7.87	526	0	256	15	3	29	0.36	18	203	44	23	25	0.9	0.042	0.76	0.14
403	Hoshangabad	Pipariya	Sandia	8.00	539	0	265	15	4	25	0.41	18	215	45	25	23	0.7	0.012	0.68	0.05
404	Hoshangabad	Seoni Malwa	Bhilatdeo	7.89	625	0	293	22	13	25	0.39	34	188	24	31	54	0.7	0.034	1.71	1.04
405	Hoshangabad	Seoni Malwa	Seonimalwa	8.51	1096	30	319	117	32	64	0.40	55	186	20	33	114	82.0	0.058	3.63	2.00
406	Hoshangabad	Sohagpur	Semri Harchand	8.00	1064	0	313	95	49	65	0.27	33	294	47	43	65	47.0	0.025	1.65	-0.74
407	Hoshangabad	Sohagpur	Sohagpur	7.95	548	0	265	15	5	28	0.13	18	205	45	22	28	0.9	0.010	0.85	0.25
408	Indore	Depalpur	Depalpur	7.77	2550	0	409	511	187	13	0.22	41	525	60	91	338	4.5	0.170	6.41	-3.80
409	Indore	Depalpur	Rangwasa	7.78	991	0	317	124	37	14	0.11	29	395	108	30	41	0.7	0.079	0.90	-2.70
410	Indore	Depalpur	Ushapura	7.82	2950	0	543	376	424	49	0.37	26	685	172	62	353	3.8	0.079	5.86	-4.80
411	Indore	Indore	Bhil Paltan	7.84	943	0	275	131	49	7	0.33	49	315	54	44	66	6.3	0.113	1.62	-1.80
412	Indore	Indore	Cable Factory	8.14	131	0	37	18	3	5	0.06	1	20	4	2	19	0.4	0.085	1.85	0.20
413	Indore	Indore	Dudhiya	7.70	1184	0	366	152	48	11	0.56	47	170	42	16	186	1.0	0.133	6.20	2.60
414	Indore	Indore	Footi Kothi	8.00	793	0	366	46	11	19	0.41	27	235	50	27	72	0.7	0.144	2.04	1.30
415	Indore	Indore	Gandhi Hall	7.77	1287	0	476	131	49	12	0.29	29	365	58	54	123	3.0	0.768	2.80	0.50
416	Indore	Indore	Hatod	7.51	1484	0	323	287	42	22	0.14	34	500	134	40	106	1.4	0.129	2.06	-4.70
417	Indore	Indore	Mari Mata	7.90	387	0	171	35	0	0	0.31	10	150	34	16	18	3.5	0.091	0.64	-0.20
418	Indore	Indore	Mushakhedi Phe	7.57	824	0	323	85	18	10	0.15	30	300	52	41	51	1.1	0.115	1.28	-0.70
419	Indore	Indore	Polo Ground	7.61	1554	0	409	213	93	53	0.19	34	480	40	92	135	1.6	0.122	2.68	-2.90
420	Indore	Indore	Prakash Nagar	7.72	612	0	305	32	5	5	0.40	22	235	42	32	32	0.3	0.064	0.91	0.30
421	Indore	Indore	Ranjeet Hanuman Temple	7.96	572	0	250	39	9	0	0.68	31	160	40	15	50	0.5	0.110	1.72	0.90
422	Indore	Indore	Sajjan Nagar	7.73	1126	0	439	103	47	6	0.24	34	385	60	57	77	5.2	0.633	1.71	-0.50
423	Indore	Indore	Soyabean Research Centre	7.97	808	0	329	67	13	15	0.79	33	165	50	10	103	1.6	0.762	3.49	2.10
424	Indore	Indore	Telephone Nagar	8.10	313	0	165	11	3	1	0.15	15	125	34	10	13	1.1	0.768	0.51	0.20
425	Indore	Mhow	Mhow	7.84	498	0	299	18	2	3	0.26	36	235	58	22	18	0.9	0.101	0.51	0.20
426	Indore	Mhow	Nandpura	7.47	990	0	281	124	33	58	0.36	43	405	74	54	37	0.9	0.140	0.80	-3.50
427	Indore	Sanwer	Sanwer	7.36	2690	0	360	582	150	71	0.07	40	1100	228	129	107	1.5	0.598	1.40	-16.10
428	Jabalpur	Jabalpur	Adhartal Naka	7.82	794	0	195	111	52	25	0.78	29	263	63	26	60	0.6	0.009	1.61	-2.05
429	Jabalpur	Jabalpur	Barela	8.22	888	6	140	87	185	1	5.3	34	71	20	5	170	1.2	0.014	8.79	0.99
430	Jabalpur	Jabalpur	Bargil	7.74	425	0	226	10	2	9	0.4	22	172	46	13	18	0.3	0.02	0.60	0.27
431	Jabalpur	Jabalpur	Bedi Nagar	8.15	885	0	348	89	2	31	1.02	38	283	99	9	72	0.9	0.023	1.86	0.04
432	Jabalpur	Jabalpur	Bus Stand	8.25	216	6	98	7	5	1	0.09	30	91	26	6	7	0.1	0.009	0.32	-0.12
433	Jabalpur	Jabalpur	Cherital	7.51	230	0	122	7	2	1	0.17	30	96	30	5	8	0.2	0.01	0.36	0.08
434	Jabalpur	Jabalpur	Datta Mandir	8.18	820	0	403	49	3	3	1.03	27	298	93	16	50	0.7	0.02	1.26	0.64
435	Jabalpur	Jabalpur	Deotal	8.19	225	0	116	10	1	1	0.21	28	91	26	6	9	0.4	0.014	0.41	0.08
436	Jabalpur	Jabalpur	Gokalpur	8.17	335	0	171	12	2	3	0.27	42	141	42	9	11	0.2	0.02	0.40	-0.03
437	Jabalpur	Jabalpur	Gorakhpur	8.19	317	6	146	12	12	2	0.31	40	130	34	11	12	0.1	0.009	0.46	-0.11
438	Jabalpur	Jabalpur	Jabalpur	8.01	690	0	164	74	36	48	0.66	32	245	68	18	45	0.4	0.014	1.25	-2.21
439	Jabalpur	Jabalpur	Jain Dharamshala	8.49	650	12	152	71	42	44	0.88	30	160	48	10	75	0.6	0.01	2.58	-0.51

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
440	Jabalpur	Jabalpur	Kanch Ghar	8.47	415	18	146	17	29	19	0.58	33	165	52	9	18	0.2	0.014	0.61	-0.61
441	Jabalpur	Jabalpur	Madan Mahal	8.33	247	6	109	5	10	7	0.13	38	95	24	9	12	0.4	0.019	0.54	-0.01
442	Jabalpur	Jabalpur	Manegaon I	8.26	491	6	115	42	15	53	0.31	44	180	54	11	26	0.9	0.02	0.84	-1.61
443	Jabalpur	Jabalpur	Nagar Nigam Complex	7.76	835	0	293	94	40	2	1.34	34	235	48	12	81	6.0	0.001	2.30	0.10
444	Jabalpur	Jabalpur	Padaria	7.62	425	0	238	5	5	2	0.31	48	180	54	14	14	0.5	0.01	0.45	0.30
445	Jabalpur	Jabalpur	Panchpedi	7.48	595	0	177	64	38	23	0.25	39	185	68	15	48	4.9	0.014	1.53	-0.80
446	Jabalpur	Jabalpur	Panda Ki Madhia	8	326	0	153	20	4	6	0.49	44	115	38	16	20	3.2	0.02	0.81	0.20
447	Jabalpur	Jabalpur	Raddi Chowki	7.99	220	0	122	5	2	1	0.28	38	95	26	17	6	1.5	0.01	0.27	0.10
448	Jabalpur	Jabalpur	Railway Station	8.03	275	0	140	10	6	2	0.23	45	105	28	18	14	1.3	0.01	0.59	0.20
449	Jabalpur	Jabalpur	Ranjhi	8.14	340	0	183	10	4	1	0.47	43	145	40	19	11	0.2	0.018	0.40	0.10
450	Jabalpur	Jabalpur	Sadar Bazar	7.92	630	0	232	84	3	3	0.5	52	200	50	21	52	1.3	0.02	1.60	-0.20
451	Jabalpur	Jabalpur	Sukri	7.82	560	0	239	40	8	21	0.21	33	183	40	23	44	0.2	0.02	1.41	0.25
452	Jabalpur	Jabalpur	Umariya	7.75	463	0	159	42	16	28	0.25	43	193	50	24	17	0.5	0.001	0.53	-1.25
453	Jabalpur	Kundam	Bishanpura	7.82	676	0	226	79	15	28	0.18	27	283	69	27	25	0.3	0.02	0.65	-1.96
454	Jabalpur	Kundam	Ghughara	7.84	440	0	244	7	2	4	0.37	35	187	57	11	15	0.2	0.019	0.48	0.26
455	Jabalpur	Kundam	Kundam	8.44	967	36	207	110	50	83	0.29	47	440	126	30	16	1.2	0.011	0.33	-4.82
456	Jabalpur	Majhauri	Majhauri	8.22	1175	6	194	145	55	176	0.16	42	410	86	47	76	2.1	0.008	1.63	-4.92
457	Jabalpur	Panagar	Rehepura	7.92	460	0	244	15	4	6	0.69	49	190	32	20	18	0.8	0.013	0.57	0.20
458	Jabalpur	Patan	Lohari	8.56	907	36	322	64	48	15	0.31	42	180	24	29	122	1.8	0.02	3.95	2.28
459	Jabalpur	Patan	Nunsar	8.1	650	0	317	40	2	8	0.87	43	150	24	13	80	1.0	0.02	2.84	2.20
460	Jabalpur	Shahpura	Bheraghat New	8.06	750	0	384	25	3	19	0.2	42	313	48	47	28	0.2	0.021	0.69	0.04
461	Jabalpur	Sihora	Kachupura	8.14	493	0	85	42	25	95	0.13	27	130	36	10	51	0.2	0.021	1.94	-1.21
462	Jabalpur	Sihora	Sihora I	8.02	689	0	196	12	125	40	0.41	29	297	79	22	22	0.3	0.009	0.56	-2.73
463	Jhabua	Jhabua	Jhabua I	7.64	1426	0	476	167	39	53	0.26	36	490	116	49	96	8.0	0.158	1.89	-2.00
464	Jhabua	Jhabua	Pitol	7.66	680	0	256	50	14	54	0.24	18	245	52	28	41	2.9	0.064	1.14	-0.70
465	Jhabua	Meghnagar	Meghnagar New	7.80	1424	0	451	181	52	24	1.02	22	275	54	34	195	0.2	0.074	5.11	1.90
466	Jhabua	Petlawad	Bamania	7.98	589	0	153	89	40	1	0.49	25	95	34	2	90	1.5	0.075	4.01	0.60
467	Jhabua	Petlawad	Karwar	7.89	701	0	317	43	0	27	0.16	32	265	56	30	34	2.6	0.173	0.91	-0.10
468	Jhabua	Petlawad	Petlabad	7.73	652	0	299	39	15	12	0.15	34	250	52	29	35	0.1	0.067	0.96	-0.10
469	Jhabua	Petlawad	Sarangi	7.74	576	0	232	28	23	32	0.31	47	225	60	18	24	1.9	0.063	0.70	-0.70
470	Jhabua	Ranapur	Ranapur	7.63	1252	0	390	121	63	81	1.13	19	335	70	39	132	0.1	0.064	3.14	-0.30
471	Jhabua	Ranapur	Tikadimoti	8.11	546	0	268	14	0	28	1.22	61	205	44	23	26	1.2	0.094	0.79	0.30
472	Jhabua	Thandla	Thandla I	7.67	1296	0	403	135	68	66	0.69	36	370	76	44	124	4.1	0.065	2.80	-0.80
473	Katni	Badwara	Badwara	7.71	666	0	238	57	31	20	0.70	23	245	52	28	35	3.1	BDL	0.97	-1.00
474	Katni	Badwara	Basadi	8.17	98	0	43	7	2	1	0.60	17	35	6	5	7	0.2	BDL	0.51	0.00
475	Katni	Badwara	Kewlari	7.82	878	0	250	67	55	78	0.25	15	300	80	24	30	49.0	BDL	0.75	-1.90
476	Katni	Badwara	Khitoli	7.97	84	0	31	2	10	2	0.10	16	30	4	5	5	0.2	BDL	0.40	-0.10
477	Katni	Dhimarkheda	Sleemanabad	7.77	579	0	275	27	8	5	0.25	78	200	50	18	38	1.2	BDL	1.17	0.50
478	Katni	Dhimarkheda	Umariapan	7.77	778	0	329	60	5	31	0.4	38	285	64	30	38	14.0	BDL	0.98	-0.30
479	Katni	Katni	Katni I	7.76	399	0	177	17	8	20	0.25	17	180	44	17	8	0.3	BDL	0.26	-0.70

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
480	Katni	Katni	Lakhapateri	7.82	470	0	134	40	19	57	0.10	15	145	44	9	25	27.0	BDL	0.90	-0.70
481	Katni	Katni	Majhgawan1	7.72	349	0	79	15	25	67	0.15	38	80	16	10	38	3.0	BDL	1.85	-0.30
482	Katni	Rithi	Deogawan	7.63	852	0	214	130	42	13	0.50	15	360	100	27	26	0.2	BDL	0.60	-3.70
483	Katni	Rithi	Rithi	7.52	2120	0	360	490	12	15	1.4	45	570	96	80	187	35.0	BDL	3.41	-5.50
484	Katni	Vijay Raghavgarh	Barchheka	8.57	165	12	61	10	3	3	0.50	17	55	12	6	12	1.0	BDL	0.70	0.10
485	Katni	Vijay Raghavgarh	Barhi	7.6	989	0	244	127	53	69	1.00	26	385	74	49	48	2.2	BDL	1.06	-3.70
486	Katni	Vijay Raghavgarh	Piparia2	7.64	742	0	256	65	5	65	0.55	36	155	32	18	97	1.0	BDL	3.39	1.10
487	Katni	Vijay Raghavgarh	Ubra	7.69	798	0	317	77	5	12	1.1	26	305	82	24	42	2.0	BDL	1.05	-0.90
488	Khandwa	Chhegaon Makhan	Chhegaonmakhan	7.92	848	0	271	60	43	59	0.25	60	260	49	33	59	9.0	0.050	1.59	-0.75
489	Khandwa	Chhegaon Makhan	Deshgaon New	7.97	1020	0	262	156	23	49	0.15	53	353	55	52	68	0.7	0.047	1.57	-2.76
490	Khandwa	Chhegaon Makhan	Dhangaon	7.89	976	0	250	92	41	114	0.38	62	348	63	46	56	1.3	0.055	1.31	-2.86
491	Khandwa	Chhegaon Makhan	Karoli	7.83	440	0	211	12	5	25	0.40	40	191	35	25	12	0.9	0.14	0.38	-0.37
492	Khandwa	Chhegaon Makhan	Kusumbiya	7.70	650	0	283	15	41	24	0.21	35	289	59	35	14	1.4	0.23	0.36	-1.14
493	Khandwa	Chhegaon Makhan	Pandhana	7.69	890	0	181	160	30	33	0.10	39	417	98	42	11	0.3	BDL	0.23	-5.37
494	Khandwa	Chhegaon Makhan	Roshiya	7.48	590	0	235	32	32	20	0.30	28	216	51	21	35	0.9	BDL	1.04	-0.46
495	Khandwa	HARSUD	Bedia	7.93	568	0	189	20	23	74	0.35	55	245	51	29	11	0.3	0.070	0.31	-1.80
496	Khandwa	Harsud	Bori Saray	9.24	534	12	49	40	80	82	0.57	23	142	25	19	52	0.3	0.033	1.90	-1.85
497	Khandwa	Harsud	Chanera	7.88	957	0	232	92	41	82	0.17	64	373	78	43	26	0.3	0.045	0.59	-3.65
498	Khandwa	Harsud	Dagad Khedi	8.18	470	0	187	20	7	31	0.34	52	59	18	4	72	0.3	0.046	4.08	1.89
499	Khandwa	Harsud	Khedi New	7.65	760	0	181	70	87	40	0.29	35	333	80	32	20	0.7	BDL	0.48	-3.70
500	Khandwa	Khalawa	Kalamkalan	7.54	920	0	223	97	100	35	0.46	34	402	82	48	25	1.2	BDL	0.54	-4.38
501	Khandwa	Khalawa	Khalwa1	7.85	840	0	229	37	140	32	0.20	42	338	27	66	36	0.5	BDL	0.85	-3.01
502	Khandwa	Khandwa	Jaswadi1	8.11	718	0	275	35	15	72	0.42	55	279	41	43	31	0.9	0.046	0.81	-1.09
503	Khandwa	Khandwa	Jawar	7.60	600	0	193	40	55	23	0.42	23	245	55	26	24	0.5	BDL	0.67	-1.74
504	Khandwa	Khandwa	Kahlari	7.67	460	0	157	32	28	17	0.23	27	108	37	4	52	0.4	BDL	2.18	0.41
505	Khandwa	Khandwa	Khandwadw	8.19	890	0	241	102	62	28	0.13	35	181	25	29	118	1.4	BDL	3.81	0.32
506	Khandwa	Khandwa	Rudhy Bhata	7.74	530	0	199	17	48	23	0.39	32	230	47	27	15	0.3	BDL	0.43	-1.35
507	Khandwa	Pandhana	Balwara1	7.99	510	0	199	21	7	52	0.62	51	201	49	19	21	0.3	0.045	0.64	-0.76
508	Khandwa	Pandhana	Borgaon Buzurg	7.90	795	0	171	110	76	16	0.56	36	167	59	5	102	1.0	0.031	3.44	-0.53
509	Khandwa	Pandhana	Gurhi	8.15	970	0	189	107	58	109	0.17	47	373	76	44	37	2.2	0.036	0.83	-4.35
510	Khandwa	Punasa	Bangarda	7.92	518	0	199	21	12	62	0.28	70	205	49	20	23	0.6	0.055	0.70	-0.84
511	Khandwa	Punasa	Daulatpur	8.43	646	12	171	45	32	70	0.59	64	245	35	38	26	1.5	0.056	0.72	-1.90
512	Khandwa	Punasa	Gujar Khedi	8.34	746	18	271	57	16	38	0.77	41	172	33	21	87	4.2	0.042	2.89	1.31
513	Khandwa	Punasa	Kelwa Kalan	8.15	430	0	133	22	57	12	0.39	36	167	27	24	20	3.0	BDL	0.67	-1.16
514	Khandwa	Punasa	Mundi	7.63	728	0	199	80	45	35	0.23	30	270	63	27	40	1.0	BDL	1.06	-2.13
515	Khandwa	Punasa	Thapana	8.16	1218	0	440	135	10	43	0.28	45	240	24	44	166	2.1	BDL	4.66	2.41
516	Khandwa	PUNASA	Udaipur	7.45	1170	0	175	70	280	40	0.23	29	431	75	60	68	1.0	BDL	1.42	-5.76
517	Khargone	Badwah	Amba	7.75	1048	0	329	71	55	116	0.19	52	355	70	44	72	8.0	0.079	1.66	-1.70
518	Khargone	Badwah	Barwah	7.66	769	0	287	57	19	45	0.31	20	260	52	32	47	6.9	0.065	1.27	-0.50
519	Khargone	Badwah	Sanawad New	7.75	1181	0	348	124	61	74	0.22	62	340	54	50	109	5.3	0.088	2.57	-1.10

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
520	Khargone	BARWAHA	Balwara	7.70	999	0	366	78	11	91	0.25	54	425	58	68	32	0.1	0.094	0.67	-2.50
521	Khargone	Bhagwanpura	Dhulkot	8.12	953	0	384	43	22	86	0.41	49	320	78	30	68	0.8	0.080	1.65	-0.10
522	Khargone	Bhikangaon	Bamnala New	7.78	498	0	73	113	23	4	0.47	23	65	24	1	84	0.2	0.058	4.53	-0.10
523	Khargone	Bhikangaon	Bhikangaon I	7.93	1673	0	427	177	74	170	0.01	46	695	124	94	55	0.4	0.131	0.91	-6.90
524	Khargone	Bhikangaon	Daudwa	7.59	1722	0	311	230	58	251	0.06	52	735	116	108	49	1.0	0.076	0.79	-9.60
525	Khargone	Gogawan	Divalgaon	7.97	521	0	110	78	44	11	0.53	28	100	34	4	70	2.0	0.090	3.04	-0.20
526	Khargone	Gogawan	Ghatti	7.57	1184	0	305	124	92	83	0.24	59	480	84	66	49	1.1	0.094	0.97	-4.60
527	Khargone	Gogawan	Gogaon	7.57	899	0	195	106	40	110	0.33	48	300	90	18	65	0.2	0.124	1.63	-2.80
528	Khargone	Kasrawad	Kasrawad I	7.93	382	0	183	21	3	1	0.24	16	130	30	13	24	1.4	0.084	0.92	0.40
529	Khargone	Kasrawad	Sawda	8.20	642	0	281	53	5	11	0.78	48	200	46	21	55	0.2	0.083	1.69	0.60
530	Khargone	Khargone	Khargone	7.80	1021	0	390	78	30	55	0.32	53	285	50	39	102	0.6	0.094	2.63	0.70
531	Khargone	Khargone	Un	7.88	1305	0	366	167	73	45	0.24	38	85	24	6	259	0.6	0.121	12.21	4.30
532	Khargone	Maheshwar	Baddiya	7.49	1754	0	293	252	118	180	0.07	62	620	116	80	47	110.0	0.101	0.82	-7.60
533	Khargone	Maheshwar	Dhargaon	7.80	2066	0	464	287	112	143	0.36	49	670	150	72	159	3.0	0.081	2.67	-5.80
534	Khargone	Maheshwar	Maheshwar	7.92	457	0	195	21	8	15	0.25	17	130	28	15	35	3.2	0.085	1.33	0.60
535	Khargone	Maheshwar	Piplyabuzrug	7.49	2910	0	342	532	265	183	0.30	64	905	152	128	211	76.0	0.101	3.05	-12.50
536	Khargone	Segaon	Segaon	8.12	793	0	262	71	34	35	0.59	43	205	60	13	80	0.9	0.086	2.43	0.20
537	Mandla	Bichhiya	Bichhial	7.6	775	0	245	90	50	2	0.11	29	277	38	28	50	0.5	0.012	1.31	-1.53
538	Mandla	Bichhiya	Sijhora	7.83	575	0	184	87	4	5	0.33	27	218	59	54	30	1.6	0.009	0.88	-1.34
539	Mandla	Bijadandi	Kalpi	8.17	550	0	269	32	2	1	0.15	37	243	44	35	14	0.3	0.016	0.39	-0.43
540	Mandla	Bijadandi	Khamher Kheda	8.18	385	0	208	10	3	2	0.33	34	59	18	36	60	1.0	0.008	3.38	2.23
541	Mandla	Ghughri	Ghughri	8	317	0	159	7	3	16	0.13	45	139	32	32	9	0.5	0.02	0.33	-0.16
542	Mandla	Mandla	Devgaon	7.99	810	0	337	67	28	2	0.32	43	381	65	30	11	0.2	0.02	0.24	-2.10
543	Mandla	Mandla	Gwari	8.06	530	0	288	20	3	3	0.21	27	223	32	33	21	1.2	0.018	0.61	0.26
544	Mandla	Mandla	Khari	8.02	335	0	159	10	13	4	0.1	45	144	32	37	9	0.4	0.013	0.33	-0.26
545	Mandla	Mandla	Mahania Patpara	7.86	605	0	306	25	5	8	0.28	39	208	24	39	43	0.7	0.02	1.30	0.86
546	Mandla	Mandla	Mahrajpur	7.72	1105	0	282	185	56	1	0.36	34	371	34	40	82	2.0	0.014	1.85	-2.81
547	Mandla	Mandla	Mandla I	8.11	1312	0	337	240	30	2	0.46	29	431	30	41	100	1.9	0.009	2.10	-3.09
548	Mandla	Mandla	Padmi Choraha	7.73	885	0	367	57	5	67	0.29	29	297	51	48	66	1.2	0.02	1.67	0.08
549	Mandla	Mandla	Pathiri Patpara	8.09	742	0	214	65	80	14	0.19	50	302	83	49	29	2.3	0.009	0.73	-2.53
550	Mandla	Mandla	Ramnagar I	8.33	560	18	135	37	80	17	0.91	45	89	24	51	87	0.8	0.01	4.01	0.73
551	Mandla	Mandla	Rehgaon	8.42	430	12	159	17	25	21	1.3	43	20	6	53	88	1.0	0.02	8.60	2.41
552	Mandla	Mawai	Mangli	7.87	465	0	245	7	13	8	0.14	33	198	30	43	15	1.0	0.012	0.46	0.06
553	Mandla	Mawai	Motinala	7.86	466	0	141	55	30	8	0.29	54	134	32	45	44	1.8	0.015	1.65	-0.36
554	Mandla	Mohgaon	Chabi	7.66	550	0	269	12	3	40	0.19	31	213	32	29	28	0.9	0.014	0.83	0.16
555	Mandla	Mohgaon	Indira	7.83	325	0	159	12	6	8	0.3	34	129	34	34	15	0.5	0.012	0.57	0.04
556	Mandla	Nainpur	Anjanina	7.84	615	0	129	92	65	1	0.42	33	178	59	25	58	1.6	0.007	1.89	-1.46
557	Mandla	Nainpur	Bamhni New	7.71	629	0	263	37	22	25	0.15	43	252	34	27	28	0.7	0.02	0.77	-0.73
558	Mandla	Nainpur	Dithori	8.13	702	0	318	40	25	5	0.89	33	238	26	31	49	5.0	0.01	1.38	0.47
559	Mandla	Nainpur	Nainpur	8.13	350	0	159	10	25	1	0.29	34	168	28	46	2	0.2	0.011	0.07	-0.76

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
560	Mandla	Nainpur	Pindrai	7.75	700	0	325	32	23	17	0.16	44	262	65	50	40	0.7	0.012	1.07	0.07
561	Mandla	Nainpur	Rampuri New	7.63	450	0	214	20	12	4	0.32	38	178	46	52	20	0.8	0.017	0.65	-0.05
562	Mandla	Nainpur	Surajpura	7.95	790	0	337	62	6	30	0.82	33	262	34	55	60	2.0	0.012	1.61	0.27
563	Mandla	Narayanganj	Babaliya	8.07	435	0	233	10	5	8	0.23	25	144	42	26	33	1.5	0.02	1.20	0.94
564	Mandla	Narayanganj	Kudomali New	8.12	290	0	159	5	3	4	0.23	40	119	26	38	12	1.0	0.005	0.48	0.23
565	Mandla	Narayanganj	Mangalganj	7.88	517	0	251	30	2	4	0.1	31	218	28	42	17	1.1	0.02	0.50	-0.24
566	Mandla	Niwas	Manikpur	8	556	0	196	67	2	22	0.15	27	178	44	44	42	6.0	0.017	1.37	-0.35
567	Mandla	Niwas	Niwas	8.11	435	0	239	10	4	3	0.17	53	193	50	47	11	0.2	0.019	0.34	0.05
568	Mandsaur	Bhanpura	Babulda	7.38	2150	0	329	340	150	179	0.20	52	950	180	122	45	4.0	0.185	0.63	-13.60
569	Mandsaur	Bhanpura	Badodiya	8.06	543	0	232	25	4	40	0.38	12	180	46	16	37	0.9	0.090	1.20	0.20
570	Mandsaur	Bhanpura	Bhanpura	7.85	1578	0	458	152	101	72	0.28	46	420	28	85	123	52.0	0.171	2.61	-0.90
571	Mandsaur	Bhanpura	Dudhkheri	8.01	1063	0	384	43	52	39	0.19	48	355	38	63	47	2.9	0.177	1.08	-0.80
572	Mandsaur	Bhanpura	Sandhara	7.98	833	0	287	74	34	33	0.61	14	270	70	23	54	11.4	0.176	1.43	-0.70
573	Mandsaur	Garoth	Barkheranayak	7.24	2320	0	360	433	88	133	0.05	54	960	196	114	58	14.0	0.188	0.81	-13.30
574	Mandsaur	Garoth	Dharmarajeswar	8.07	703	0	342	28	8	14	0.13	55	245	54	27	38	10.1	0.282	1.06	0.70
575	Mandsaur	Garoth	Garoth I	7.68	791	0	323	64	10	10	0.43	46	285	42	44	38	4.5	0.151	0.98	-0.40
576	Mandsaur	Garoth	Shamgarh I	7.56	1854	0	232	284	159	191	0.11	14	800	200	73	51	0.5	0.146	0.78	-12.20
577	Mandsaur	Malhargarh	Malhargarh	8.40	987	24	397	53	30	42	0.87	16	220	40	29	120	3.6	0.126	3.52	2.50
578	Mandsaur	Malhargarh	Narayangarh	8.26	1278	42	427	163	0	11	0.00	0	505	106	58	49	10.3	0.000	0.95	-2.40
579	Mandsaur	Malhargarh	Pipaliya	8.28	949	6	317	99	36	37	0.36	35	385	92	38	39	1.9	0.404	0.86	-2.40
580	Mandsaur	Mandsaur	Basakheda	7.80	992	0	256	103	49	86	0.21	39	350	50	55	57	1.3	0.136	1.32	-2.80
581	Mandsaur	Mandsaur	Botalganj	7.53	1106	0	262	113	35	136	0.39	65	400	64	58	54	3.0	0.174	1.17	-3.70
582	Mandsaur	Mandsaur	Chirmoliya	7.93	1097	0	159	131	79	163	0.21	40	450	102	47	35	1.5	0.155	0.72	-6.40
583	Mandsaur	Mandsaur	Daloda I	8.03	1036	0	323	67	42	125	0.45	47	365	56	55	64	1.0	0.191	1.46	-2.00
584	Mandsaur	Mandsaur	Kachnera	7.93	3360	0	732	560	165	59	0.37	46	960	240	88	300	0.8	0.149	4.21	-7.20
585	Mandsaur	Mandsaur	Mandsaur	8.30	862	18	305	67	0	42	0.00	0	335	32	62	42	1.2	0.000	1.00	-1.40
586	Mandsaur	Mandsaur	Manpura	7.92	1134	0	189	145	0	122	0.00	0	355	76	40	90	0.3	0.000	2.08	-4.00
587	Mandsaur	Mandsaur	Nayakhera	8.31	984	24	397	71	0	54	0.00	0	160	36	17	150	2.1	0.000	5.16	3.70
588	Mandsaur	Sitamau	Khejriya	8.20	2060	24	195	546	29	26	0.92	22	445	76	62	255	4.8	0.149	5.26	-5.30
589	Mandsaur	Sitamau	Sitamau	8.03	759	0	299	64	17	22	0.28	45	240	50	28	60	0.5	0.124	1.68	0.10
590	Mandsaur	Sitamau	Surjani	7.72	1638	0	281	316	63	90	0.28	41	675	116	94	64	1.2	0.112	1.07	-8.90
591	Mandsaur	Sitamau	Suwasara	8.14	715	0	189	92	40	32	1.50	24	175	46	15	81	1.4	0.123	2.66	-0.40
592	Morena	Joura	Huseinpur	7.86	580	0	287	32	3	5	0.73	48	260	52	32	12	1.2	BDL	0.32	-0.50
593	Morena	Joura	Jafrabad	8.14	1185	0	537	67	34	22	0.54	40	410	36	78	82	0.6	BDL	1.76	0.60
594	Morena	Kailaras	Kailaras	7.56	1814	0	818	92	95	3	0.63	35	360	34	67	250	1.2	BDL	5.73	6.20
595	Morena	Kailaras	Tonga Gaon	7.77	785	0	403	14	30	10	0.80	45	265	38	41	58	0.7	BDL	1.55	1.30
596	Morena	Morena	Khera Mewda	7.21	1785	0	732	145	5	95	0.59	42	735	40	154	70	0.7	BDL	1.12	-2.70
597	Morena	Morena	Morena	7.77	1010	0	464	39	50	13	0.66	31	370	50	60	60	0.9	BDL	1.36	0.20
598	Morena	Pahadgarh	Pahargarh	7.63	1235	0	647	39	32	16	0.77	48	250	24	46	175	1.6	BDL	4.81	5.60
599	Morena	Porsa	Aurethi	7.67	1254	0	159	160	225	35	0.42	41	350	108	19	125	2.1	BDL	2.91	-4.40



Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
600	Morena	Porsa	Bareha	7.49	975	0	201	99	150	23	0.75	35	270	86	13	98	1.0	BDL	2.59	-2.10
601	Morena	Porsa	Dimni New	7.50	1105	0	567	28	16	24	0.56	39	345	42	58	93	0.8	BDL	2.18	2.40
602	Morena	Porsa	Porsa	7.78	1243	0	592	25	89	8	0.41	52	285	32	50	153	2.0	BDL	3.94	4.00
603	Morena	Sabalgarh	Mangrol	7.50	1005	0	445	64	10	36	0.99	32	425	48	74	32	0.4	BDL	0.67	-1.20
604	Morena	Sabalgarh	Ranipura	7.80	1120	0	403	128	5	48	0.55	35	490	66	79	30	1.1	BDL	0.59	-3.20
605	Morena	Sabalgarh	Tentra	7.93	720	0	311	35	40	12	0.50	42	220	44	27	63	0.9	BDL	1.85	0.70
606	Narsimhapur	Chawarpatha	Dobhi	7.77	1070	0	337	92	76	11	0.19	44	376	53	61	57	2.3	0.019	1.28	-2.00
607	Narsimhapur	Chawarpatha	Gundrai(Ii)	8.04	1000	0	490	42	7	35	1.06	43	351	32	63	69	1.0	0.007	1.60	1.00
608	Narsimhapur	Chawarpatha	Koudiya	7.97	1045	0	380	88	12	65	0.43	44	328	43	54	87	1.2	0.01	2.09	-0.34
609	Narsimhapur	Gotegaon	Gotegaon	8.23	870	6	367	47	12	60	0.28	27	188	38	62	115	1.2	0.009	3.65	2.36
610	Narsimhapur	Gotegaon	Jhoteswar	7.58	826	0	269	70	45	30	0.3	29	302	53	64	49	1.8	0.02	1.23	-1.62
611	Narsimhapur	Gotegaon	Manegaon2	8	810	0	398	47	3	12	0.24	26	309	25	60	45	0.5	0.023	1.11	0.35
612	Narsimhapur	Kareli	Betli	7.67	623	0	227	50	23	34	0.12	34	243	51	58	31	1.0	0.02	0.87	-1.14
613	Narsimhapur	Kareli	Kareli Basti	7.97	775	0	306	30	5	109	0.21	42	228	36	66	73	0.5	0.015	2.10	0.47
614	Narsimhapur	Narsimhapur	Bachai	7.96	1226	0	490	115	40	3	1.19	42	455	40	56	45	45.0	0.016	0.92	-1.08
615	Narsimhapur	Narsimhapur	Bauchhar	8.12	515	0	257	10	7	28	0.45	36	183	34	57	34	0.5	0.014	1.09	0.55
616	Narsimhapur	Narsimhapur	Dangidhana	7.92	840	0	325	75	12	43	0.36	43	317	34	59	47	0.7	0.011	1.15	-1.02
617	Narsimhapur	Narsimhapur	Karakbel New	8.27	1054	6	374	112	12	47	0.22	33	396	16	65	60	0.3	0.016	1.31	-1.70
618	Narsimhapur	Narsimhapur	Ramkhiria	7.83	460	0	245	15	2	3	0.67	41	191	39	23	16	2.0	0.02	0.50	0.19
619	Narsimhapur	Narsimhapur	Sundernagar	7.56	1250	0	147	105	280	68	0.76	45	490	118	48	61	1.0	0.03	1.20	-7.39
620	Narsimhapur	Saikheda (Gadarwra)	Salichauka	8.31	735	12	67	130	76	37	0.45	37	250	45	33	52	0.7	0.009	1.43	-3.69
621	Narsimhapur	Saikheda(Gadarwra)	Deoribadwani	7.9	1495	0	668	120	10	22	0.33	39	391	34	60	160	6.0	0.013	3.52	3.12
622	Neemuch	Jawad	Dadoli	7.70	2820	0	390	461	409	3	0.36	11	550	104	71	382	16.0	0.109	7.08	-4.60
623	Neemuch	Jawad	Jat	7.76	1029	0	268	96	134	0	0.27	10	330	52	49	72	7.3	0.108	1.72	-2.20
624	Neemuch	Jawad	Jawad	7.82	1283	0	458	145	41	16	1.29	19	370	78	43	116	11.0	0.149	2.62	0.10
625	Neemuch	Jawad	Lalpura	7.95	1184	0	537	57	20	55	1.31	17	450	38	86	62	0.4	0.124	1.27	-0.20
626	Neemuch	Jawad	Morban I	8.14	1387	0	433	138	49	84	0.89	20	390	46	67	89	68.0	0.118	1.96	-0.70
627	Neemuch	Jawad	Patan I	8.01	1071	0	336	64	157	1	0.33	15	375	72	47	68	5.7	0.139	1.53	-2.00
628	Neemuch	Jawad	Ratangarh	7.93	1125	0	275	152	110	7	0.33	11	380	76	46	75	13.8	0.135	1.67	-3.10
629	Neemuch	Jawad	Singoli	7.72	1809	0	195	351	178	36	0.28	13	545	148	43	145	6.9	0.137	2.70	-7.70
630	Neemuch	Manasa	Besla	7.71	979	0	256	110	49	79	0.41	19	350	104	22	42	30.0	0.130	0.98	-2.80
631	Neemuch	Manasa	Bhadanadw	7.70	865	0	238	99	26	82	0.29	16	320	88	24	49	1.7	0.113	1.19	-2.50
632	Neemuch	Manasa	Chachor	7.65	1444	0	281	209	68	117	0.21	32	555	86	83	61	2.2	0.205	1.13	-6.50
633	Neemuch	Manasa	Gota Pipliya	7.87	1840	0	372	145	259	100	0.84	44	540	82	81	146	2.1	0.133	2.73	-4.70
634	Neemuch	Manasa	Jamalpura	7.72	844	0	287	85	18	48	0.61	16	280	58	33	60	2.5	0.112	1.56	-0.90
635	Neemuch	Manasa	Kundaliya	7.59	1820	0	329	298	140	53	0.20	32	795	160	96	36	4.3	0.192	0.56	-10.50
636	Neemuch	Manasa	Manasa	8.01	782	0	287	74	35	18	0.67	20	220	50	23	78	1.6	0.137	2.29	0.30
637	Neemuch	Manasa	Rampura	8.03	684	0	281	50	24	0	0.97	17	225	60	18	45	1.9	0.123	1.30	0.10
638	Neemuch	Neemuch	Girdola	7.84	1394	0	195	269	97	55	0.62	26	425	102	41	119	1.8	0.113	2.51	-5.30
639	Neemuch	Neemuch	Jamuniya Kalan	7.73	1610	0	287	273	125	6	0.35	11	320	52	46	197	5.6	0.110	4.79	-1.70

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
640	Neemuch	Neemuch	Kacholi	7.41	2160	0	244	525	89	7	0.33	42	915	196	103	56	2.0	0.135	0.80	-14.30
641	Neemuch	Neemuch	Nayagaon2	8.07	1476	0	336	220	100	56	0.53	16	340	58	47	160	37.0	0.131	3.77	-1.30
642	Neemuch	Neemuch	Neemuch	7.96	2840	0	708	518	78	14	0.58	26	810	120	124	269	6.7	0.849	4.11	-4.60
643	Neemuch	Neemuch	Savan	7.97	996	0	317	128	40	8	0.19	29	400	66	57	39	3.2	0.128	0.85	-2.80
644	Neemuch	Neemuch	Semali Chandrawat	8.16	1964	0	549	291	82	31	1.10	27	500	96	63	215	2.7	0.125	4.18	-1.00
645	Panna	Ajaigarh	Ajaigarh	7.83	1112	0	282	67	150	87	1	59	347	57	50	96	0.8	0.03	2.24	-2.31
646	Panna	Ajaigarh	Banahari Kalan	7.62	595	0	288	42	2	1	0.68	34	286	55	36	6	0.1	0.003	0.15	-0.99
647	Panna	Ajaigarh	Bariyarpur	7.6	990	0	366	85	1	76	1.21	38	352	51	55	61	0.3	0.032	1.41	-1.04
648	Panna	Ajaigarh	Pandepurwa	8.03	1220	0	534	42	82	30	1.47	29	439	104	43	78	1.2	0.003	1.62	-0.02
649	Panna	Ajaigarh	Sinhai	7.72	751	0	293	15	72	41	0.7	32	262	57	29	52	1.2	0.002	1.40	-0.44
650	Panna	Gunnor	Amanganj	7.44	2430	0	228	70	775	76	0.99	54	1153	324	83	27	0.2	0.043	0.35	-19.32
651	Panna	Gunnor	Badagaon	7.64	155	0	12	15	22	24	0.1	34	31	8	2	20	0.2	0.001	1.57	-0.42
652	Panna	Gunnor	Barrachh	7.98	550	0	306	10	3	7	1.09	42	235	76	11	18	0.1	0.001	0.51	0.33
653	Panna	Gunnor	Gunaur	7.5	1930	0	174	485	90	34	0.43	39	821	200	78	66	0.4	0.002	1.00	-13.57
654	Panna	Gunnor	Salleha	7.81	950	0	324	52	55	95	0.66	43	219	55	20	117	0.3	0.001	3.43	0.93
655	Panna	Panna	Akola	7.95	343	0	126	17	6	32	0.56	47	87	20	9	36	1.3	0.003	1.68	0.33
656	Panna	Panna	Backchur	7.88	350	0	186	10	1	4	0.32	44	158	51	7	7	0.1	0.033	0.24	-0.11
657	Panna	Panna	Bahera	7.53	175	0	36	15	18	3	0.14	29	66	12	9	4	0.1	0.012	0.21	-0.74
658	Panna	Panna	Madla	7.8	730	0	144	57	122	44	0.43	35	184	55	11	81	1.8	0.012	2.60	-1.31
659	Panna	Panna	Panna	7.59	1621	0	246	212	170	154	0.32	35	362	86	36	207	0.1	0.002	4.73	-3.21
660	Panna	Pawai	Hathkuri	7.7	990	0	378	35	80	55	1.2	41	316	88	24	82	0.1	0.001	2.00	-0.13
661	Panna	Pawai	Powai	7.84	1720	0	534	117	135	136	0.46	43	459	47	83	182	1.8	0.013	3.69	-0.43
662	Panna	Pawai	Semaria	7.75	767	0	329	10	65	34	0.54	29	262	73	19	55	0.9	0.002	1.48	0.14
663	Panna	Shahnagar	Dharamपुरa	7.79	423	0	222	22	1	1	0.89	32	204	63	11	3	0.2	0.012	0.09	-0.44
664	Panna	Shahnagar	Kharmora	7.88	738	0	270	27	70	43	0.79	44	204	45	22	75	0.5	0.014	2.28	0.35
665	Panna	Shahnagar	Kuankheda	7.9	635	0	204	92	2	23	0.84	51	184	45	17	60	0.9	0.002	1.92	-0.33
666	Panna	Shahnagar	Mohendra	7.6	1445	0	222	197	215	38	1.23	42	423	98	43	136	0.3	0.01	2.87	-4.83
667	Panna	Shahnagar	Saharan	7.92	555	0	210	10	65	27	0.38	39	184	59	9	40	2.5	0.01	1.28	-0.23
668	Raisen	Bareli	Bari	8.23	989	48	294	78	33	10	0.62	45	358	29	69	58	4.1	0.4	1.33	-1.53
669	Raisen	Bareli	Harsili	8.51	1098	66	472	12	3	7	0.69	29	83	29	2	208	9.0	0.07	9.91	7.17
670	Raisen	Begamganj	Begumganj	7.48	1229	0	184	181	69	145	0.07	59	490	108	54	51	1.9	0.06	1.00	-6.79
671	Raisen	Begamganj	Padahjir	7.79	527	0	214	25	6	41	0.34	57	181	29	26	28	11.5	0.06	0.90	-0.11
672	Raisen	Begamganj	Paloha	7.46	1253	0	257	189	26	131	0.18	72	436	31	87	81	0.6	0.07	1.69	-4.51
673	Raisen	Begamganj	Sultanganj	7.57	754	0	208	69	22	87	0.07	68	206	55	17	78	0.5	0.06	2.36	-0.70
674	Raisen	Gairatganj	Dehgaon	7.61	1151	0	214	189	48	79	0.16	41	431	55	71	61	0.5	0.06	1.28	-5.11
675	Raisen	Gairatganj	Gairatganj	8.25	812	12	67	194	28	20	0.48	31	181	33	24	99	1.4	0.04	3.20	-2.32
676	Raisen	Gairatganj	Garhi	7.66	732	0	184	71	30	80	0.32	70	265	37	42	41	1.3	0.06	1.10	-2.28
677	Raisen	Obaidullaganj	Barkheda	8.21	1681	60	331	262	53	28	0.44	28	505	39	99	137	21.0	0.41	2.65	-3.67
678	Raisen	Obaidullaganj	Chiklod	8.15	1589	0	429	262	37	11	0.34	18	524	49	98	103	28.0	0.47	1.96	-3.46
679	Raisen	Obaidullaganj	Goharganj	7.9	542	0	202	51	4	21	0.12	17	167	33	20	46	0.4	0.05	1.55	-0.02

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
680	Raisen	Obaidullaganj	Hathi Palan	7.89	637	0	227	56	11	28	0.57	51	162	10	33	69	0.7	0.05	2.36	0.48
681	Raisen	Obaidullaganj	Maindwa	8.02	625	0	184	76	22	7	0.15	6	157	18	27	64	3.3	0.04	2.22	-0.12
682	Raisen	Obaidullaganj	Sultanpur	8.21	1043	42	325	100	14	6	0.74	42	250	27	44	118	5.6	0.15	3.25	1.03
683	Raisen	Obaidullaganj	Tamot	8.21	859	30	214	91	66	4	0.52	21	176	14	35	111	7.1	0.09	3.63	0.49
684	Raisen	Sanchi	Khadera	7.97	499	0	251	10	10	2	0.64	19	191	27	30	23	0.8	0.05	0.72	0.29
685	Raisen	Sanchi	Kharwai	7.81	510	0	208	34	5	31	0.17	17	186	24	31	29	3.4	0.05	0.92	-0.31
686	Raisen	Sanchi	Raisen	7.72	1168	0	245	191	43	38	0.40	19	358	67	46	97	3.0	0.05	2.23	-3.14
687	Raisen	Sanchi	Salamatpurchoraha	8.21	772	36	245	64	11	18	0.36	21	181	45	17	89	3.9	0.37	2.87	0.99
688	Raisen	Sanchi	Sanchi	8.34	1879	108	472	213	21	14	0.26	42	387	102	32	245	5.4	1.67	5.41	1.80
689	Raisen	Silwani	Dhangwan	8.37	1029	36	294	76	18	86	0.48	44	319	25	62	86	1.3	0.06	2.10	-0.95
690	Raisen	Silwani	Siarmau	7.98	567	0	270	15	9	23	0.62	53	152	37	14	56	0.9	0.11	1.98	1.38
691	Raisen	Silwani	Silwani	7.93	715	0	325	34	10	25	0.43	62	270	22	52	37	0.7	0.07	0.98	-0.07
692	Raisen	Udaipura	Deori	7.8	583	0	276	32	3	15	0.26	73	211	45	24	33	3.4	0.1	0.99	0.30
693	Raisen	Udaipura	Khiria	8.22	1706	72	435	135	133	17	0.70	20	157	33	18	311	3.3	0.13	10.80	5.20
694	Raisen	Udaipura	Udaipura	7.89	991	0	355	81	27	65	0.15	41	323	27	62	77	1.0	0.06	1.86	-0.64
695	Rajgarh	Biaora	Barkheda	7.93	679	0	306	12	9	56	0.65	51	225	18	44	49	0.9	0.07	1.42	0.51
696	Rajgarh	Biaora	Biora	7.83	726	0	239	56	13	64	0.36	34	289	57	36	31	0.8	0.05	0.79	-1.87
697	Rajgarh	Biaora	Suthaliya	7.83	1223	0	300	172	45	62	0.30	43	510	67	83	43	1.2	0.07	0.83	-5.27
698	Rajgarh	Jirapur	Chhapihera	7.82	861	0	233	88	35	61	0.29	48	328	74	35	45	0.7	0.05	1.08	-2.75
699	Rajgarh	Jirapur	Machalpur	8.41	817	0	300	76	15	31	0.18	47	309	84	24	39	7.3	0.66	0.97	-1.25
700	Rajgarh	Jirapur	Zirapur I	7.75	751	0	208	87	31	33	0.20	44	247	51	29	56	1.1	0.08	1.55	-1.54
701	Rajgarh	Khilchipur	Khilchipur	7.71	1653	0	221	311	102	91	0.24	37	519	104	63	133	2.7	0.06	2.54	-6.77
702	Rajgarh	Narsinghgarh	Bhagaribungalow	7.9	679	0	288	25	10	42	0.39	41	181	45	17	69	0.5	0.05	2.23	1.09
703	Rajgarh	Narsinghgarh	Ganayari	7.74	1074	0	227	118	41	140	0.21	49	441	96	49	33	16.0	0.06	0.68	-5.11
704	Rajgarh	Narsinghgarh	Gandhigram	7.66	689	0	239	37	23	73	0.18	72	314	74	31	12	0.7	0.07	0.29	-2.36
705	Rajgarh	Narsinghgarh	Mandawar	7.88	581	0	190	56	15	40	0.25	45	216	47	24	31	0.5	0.08	0.92	-1.20
706	Rajgarh	Narsinghgarh	Pachor	7.63	1010	0	245	127	58	37	0.04	36	412	88	46	41	1.6	0.07	0.88	-4.22
707	Rajgarh	Narsinghgarh	Pilukhedi	7.71	1406	0	172	294	70	21	0.45	26	539	125	55	68	2.7	0.08	1.27	-7.97
708	Rajgarh	Narsinghgarh	Talen	8.01	1291	0	392	169	17	43	0.42	33	436	47	77	92	0.7	0.07	1.92	-2.30
709	Rajgarh	Rajgarh	Bawari	8.24	453	12	165	15	9	28	0.16	53	201	49	19	9	0.4	0.07	0.28	-1.11
710	Rajgarh	Sarangpur	Bamangaon	7.91	1029	0	368	83	34	41	0.78	49	255	10	56	116	1.1	0.08	3.16	0.93
711	Rajgarh	Sarangpur	Sandavta	7.92	670	0	306	15	8	49	0.36	47	201	43	23	58	1.0	0.09	1.78	1.00
712	Rajgarh	Sarangpur	Sarangpur	8.21	1169	0	153	250	54	36	1.10	25	123	41	5	207	1.3	0.08	8.13	0.06
713	Rajgarh	Sarangpur	Udhankheri	7.68	1553	0	251	294	67	36	0.65	33	495	93	64	115	6.6	0.06	2.25	-5.78
714	Ratlam	Alot	Alot	8.26	786	18	262	85	22	18	1.24	37	120	36	7	123	1.3	0.164	4.88	2.20
715	Ratlam	Alot	Gul Balod	8.32	1231	42	366	160	21	16	0.67	42	355	68	45	110	2.2	0.314	2.54	-0.40
716	Ratlam	Alot	Kharwa Kalan	7.97	2900	0	232	411	634	18	0.34	36	660	200	39	360	3.4	0.141	6.09	-9.40
717	Ratlam	Alot	Malakhera	7.65	1225	0	201	252	61	25	0.21	33	495	112	52	49	2.8	0.140	0.96	-6.60
718	Ratlam	Alot	Tal	7.65	2090	0	158	500	155	16	0.00	23	660	136	78	157	6.9	0.084	2.66	-10.61
719	Ratlam	Bajna	Bajna	7.64	1429	0	238	230	90	94	0.12	45	525	128	50	76	0.6	0.148	1.44	-6.60

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
720	Ratlam	Bajna	Rajapur	8.03	661	0	317	28	6	20	0.21	62	230	74	11	41	2.4	1.620	1.18	0.60
721	Ratlam	Bajna	Raoti I	8.09	592	0	281	21	17	5	0.24	34	190	38	23	42	0.1	0.207	1.32	0.80
722	Ratlam	Jaora	Dhodhar	8.30	1021	18	415	78	41	4	0.82	29	230	50	26	128	2.7	0.208	3.67	2.50
723	Ratlam	Jaora	Jaora	8.14	1253	0	238	266	36	1	0.48	12	280	50	38	148	4.9	0.140	3.85	-1.70
724	Ratlam	Jaora	Mindli	8.11	817	0	250	71	68	34	0.22	39	295	38	49	48	3.8	0.208	1.22	-1.80
725	Ratlam	Jaora	Sindurkiya	7.95	1025	0	365	108	16	45	0.23	46	425	56	69	36	1.0	0.083	0.76	-2.52
726	Ratlam	Jaora	Ukediya	8.33	1011	24	304	71	89	48	0.53	45	225	50	24	126	2.4	0.167	3.65	0.88
727	Ratlam	Piploda	Sohangarh	8.12	599	0	188	32	41	60	0.26	51	250	54	28	18	1.4	0.087	0.49	-1.91
728	Ratlam	Ratlam	Dhannod	7.95	982	0	305	117	46	34	0.32	32	225	48	26	119	5.8	0.146	3.45	0.50
729	Ratlam	Ratlam	Dharad	8.19	729	0	244	82	38	11	0.56	28	110	40	2	116	1.2	0.180	4.81	1.80
730	Ratlam	Ratlam	Mewasa	8.18	875	0	305	78	42	35	0.38	42	305	78	27	58	1.7	0.202	1.44	-1.10
731	Ratlam	Ratlam	Mundri	7.81	689	0	268	53	19	36	0.21	44	280	60	32	29	1.1	0.139	0.75	-1.20
732	Ratlam	Ratlam	Namli	8.04	1532	0	238	316	59	24	0.53	32	275	88	13	205	0.9	0.132	5.37	-1.60
733	Ratlam	Ratlam	Ratlam	7.67	1337	0	305	233	44	19	0.23	34	475	133	34	75	2.1	0.059	1.50	-4.50
734	Ratlam	Ratlam	Rattagarhkhera	8.09	871	0	183	94	37	72	0.54	26	131	38	9	112	4.0	0.084	4.25	0.37
735	Ratlam	Ratlam	Sejawata	7.67	2180	0	220	535	103	48	0.23	39	505	97	64	261	6.2	0.086	5.05	-6.50
736	Ratlam	Sailana	Sailana	8.11	728	0	214	77	35	14	0.33	32	182	48	15	68	0.9	0.074	2.19	-0.14
737	Ratlam	Sailana	Saser	7.89	719	0	171	87	36	51	0.42	43	121	38	6	100	1.8	0.088	3.95	0.38
738	Ratlam	Sailana	Shivgarh I	8.12	375	0	140	32	8	8	1.11	30	25	8	1	69	0.4	0.088	5.97	1.79
739	Rewa	Gangeo	Baikunthpur I	7.86	645	0	232	27	42	46	0.7	25	185	34	24	58	1.4	BDL	1.85	0.10
740	Rewa	Gangeo	Gangeo	7.59	987	0	201	142	62	35	0.25	33	335	102	19	65	1.9	BDL	1.54	-3.40
741	Rewa	Gangeo	Garh	7.73	560	0	238	35	5	28	0.55	49	245	60	23	13	2.9	BDL	0.36	-1.00
742	Rewa	Gangeo	Mangawan	7.42	485	0	153	45	18	25	0.1	55	190	28	29	18	1.1	BDL	0.57	-1.30
743	Rewa	Gangeo	Tikura	7.25	572	0	239	26	14	14	0.4	21	208	42	25	24	1.1	BDL	0.72	-0.24
744	Rewa	Hanumana	Hanumana	7.81	725	0	317	32	12	39	0.45	43	260	48	34	42	0.8	BDL	1.13	0.00
745	Rewa	Hanumana	Madha	7.74	748	0	317	52	8	7	0.4	32	305	64	35	22	1.2	BDL	0.55	-0.90
746	Rewa	Jawa	Barduhawan	7.83	678	0	268	52	15	15	0.4	49	235	54	24	42	2.1	BDL	1.19	-0.30
747	Rewa	Jawa	Dabhoura	7.58	1311	0	232	107	155	125	0.35	36	550	128	56	40	1.1	BDL	0.74	-7.20
748	Rewa	Jawa	Jawa I	7.89	542	0	262	17	10	8	0.1	42	225	44	28	15	1.8	BDL	0.43	-0.20
749	Rewa	Mauganj	Deotalav	7.77	925	0	287	125	12	29	0.45	32	345	64	45	48	2.2	BDL	1.12	-2.20
750	Rewa	Mauganj	Khatkhari	7.92	623	0	311	17	8	8	0.45	32	260	56	29	18	1.8	BDL	0.49	-0.10
751	Rewa	Mauganj	Mauganj I	7.74	828	0	201	102	42	27	0.45	49	340	90	28	28	0.5	BDL	0.66	-3.50
752	Rewa	Mauganj	Pahadi	7.56	1308	0	396	25	135	122	0.1	35	630	192	36	8	0.3	BDL	0.14	-6.10
753	Rewa	Mauganj	Sitapur	7.85	502	0	203	28	10	26	0.3	39	188	48	17	18	12.0	BDL	0.57	-0.43
754	Rewa	Naigarhi	Naigarhi I	7.67	1170	0	228	235	12	42	0.35	47	435	106	41	60	0.4	BDL	1.25	-4.96
755	Rewa	Raipur Karchuliyan	Gurh	7.69	1078	0	342	127	32	18	0.25	50	290	74	26	108	0.2	BDL	2.76	-0.20
756	Rewa	Rewa	Amilki	7.54	2060	0	226	245	220	200	0.25	65	955	250	80	16	2.9	BDL	0.23	-15.40
757	Rewa	Rewa	Chhijwar	7.84	745	0	311	52	5	15	0.3	48	265	44	38	42	0.3	BDL	1.12	-0.20
758	Rewa	Rewa	Kanauji	7.53	1560	0	214	175	185	155	0.3	54	735	216	47	18	3.2	BDL	0.29	-11.20
759	Rewa	Rewa	Kanauji New	7.56	744	0	293	18	62	42	0.6	45	356	63	48	8	1.2	BDL	0.18	-2.33

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
760	Rewa	Rewa	Raipur	7.46	2890	0	624	386	185	212	0.6	42	1400	456	63	12	0.8	BDL	0.14	-17.76
761	Rewa	Rewa	Reethi	7.54	1569	0	318	184	125	118	0.3	58	440	134	26	145	3.5	BDL	3.01	-3.58
762	Rewa	Rewa	Rewa	7.64	1240	0	186	139	146	85	0.5	65	450	100	49	73	1.5	BDL	1.50	-5.95
763	Rewa	Rewa	Sagra	7.58	1245	0	305	227	15	25	0.4	58	550	103	71	28	1.6	BDL	0.52	-5.99
764	Rewa	Sirmour	Bara	7.91	805	0	415	25	5	5	0.4	35	160	38	16	105	1.9	BDL	3.61	3.60
765	Rewa	Sirmour	Semaria2	7.95	1074	0	437	66	20	25	0.9	51	351	44	59	84	1.5	BDL	1.95	0.13
766	Rewa	Sirmour	Sirmaur1	7.82	1033	0	293	138	8	75	0.2	29	376	75	46	63	1.3	BDL	1.41	-2.72
767	Rewa	Teonthar	Katra	7.95	407	0	134	35	5	38	0.46	47	125	20	18	32	2.5	BDL	1.24	-0.30
768	Rewa	Teonthar	Kuthla	7.63	892	0	201	125	35	36	0.1	28	355	100	26	36	2.3	BDL	0.83	-3.80
769	Rewa	Teonthar	Sohagi	7.87	1086	0	466	56	11	35	0.4	42	436	40	82	32	0.5	BDL	0.67	-1.07
770	Sagar	Banda	Banda	7.75	1445	0	209	169	280	12	0.23	51	371	83	40	156	9.4	0.013	3.52	-3.99
771	Sagar	Banda	Behrol	7.88	475	0	203	34	12	4	0.37	29	218	71	10	5	0.3	0.012	0.15	-1.02
772	Sagar	Banda	Dalpatpur	7.753	1695	0	335	309	65	76	0.34	43	545	125	57	137	1.4	0.002	2.55	-5.40
773	Sagar	Banda	Manjla	7.6	1010	0	257	61	136	80	0.55	42	307	75	29	91	0.7	0.001	2.26	-1.92
774	Sagar	Banda	Prahlad Pura	8.2	550	0	203	17	60	18	0.54	37	153	24	22	52	0.7	0.002	1.83	0.27
775	Sagar	Deori	Deorikhas	7.92	922	0	120	169	45	82	0.65	48	317	63	39	66	0.5	0.0012	1.61	-4.38
776	Sagar	Deori	Gourjhamar	7.75	966	0	275	64	125	32	0.23	52	322	63	40	72	0.4	0.012	1.75	-1.93
777	Sagar	Jaisinagar	Bhapel	8.05	750	0	305	78	8	6	0.56	45	371	93	34	2	0.4	0.015	0.05	-2.43
778	Sagar	Jaisinagar	Jaisingh Nagar	8.03	1444	0	179	167	289	37	0.23	55	213	63	13	227	9.4	0.012	6.76	-1.32
779	Sagar	Jaisinagar	Sarkhedi	8.07	1205	0	155	252	98	17	0.45	39	77	18	7	242	0.6	0.021	12.03	1.02
780	Sagar	Jaisinagar	Sihora	7.79	725	0	275	25	15	98	0.45	33	219	49	24	62	1.4	0.011	1.82	0.12
781	Sagar	Kesli	Kesli	7.85	1285	0	215	132	250	13	1.3	54	381	103	30	118	2.5	0	2.63	-4.09
782	Sagar	Kesli	Nayanagar	7.96	935	0	466	7	55	19	0.65	43	292	36	49	78	4.5	0.016	1.98	1.80
783	Sagar	Malthon	Bamhori Lal	7.66	1882	0	299	206	313	90	0.34	53	520	71	83	192	2.3	0.001	3.66	-5.49
784	Sagar	Malthon	Bandri	7.87	1266	0	257	152	180	9	0.54	39	223	46	26	186	0.2	0.012	5.42	-0.24
785	Sagar	Malthon	Barodia	7.79	1610	0	437	93	285	19	0.13	43	450	131	30	162	1.3	0.023	3.32	-1.85
786	Sagar	Malthon	Khimlasa	7.46	3630	0	335	791	355	27	0.7	34	1059	164	158	344	3.5	0.001	4.60	-15.70
787	Sagar	Malthon	Naktapur	7.75	750	0	317	66	4	13	0.34	53	287	59	34	40	0.9	0.015	1.03	-0.55
788	Sagar	Rahatgarh	Hurra	7.58	1390	0	245	96	302	43	0.56	36	431	105	41	120	1.7	0.018	2.51	-4.59
789	Sagar	Rahatgarh	Jaruakhera	7.58	1317	0	227	137	203	65	0.29	45	381	95	35	125	1.4	0.002	2.78	-3.90
790	Sagar	Rahatgarh	Naryawali	7.75	790	0	299	34	74	21	0.25	39	297	57	37	41	6.7	0.002	1.03	-1.04
791	Sagar	Rahatgarh	Rahatgarh	7.7	985	0	275	85	132	9	0.45	43	383	71	50	48	2.4	0.002	1.07	-3.14
792	Sagar	Rehli	Parsiya	7.89	615	0	209	29	78	12	0.32	28	203	50	19	43	3.1	0.003	1.31	-0.63
793	Sagar	Rehli	Rehli	7.87	1100	0	377	112	25	54	0.25	42	418	47	73	58	1.3	0.001	1.23	-2.19
794	Sagar	Sagar	Baroda	7.77	778	0	293	25	87	22	0.34	34	287	65	30	46	0.9	0.002	1.18	-0.94
795	Sagar	Sagar	Khajuria	7.66	1155	0	281	81	174	55	0.23	44	347	81	35	105	0.3	0.018	2.45	-2.32
796	Sagar	Sagar	Parsoria	7.48	1960	0	191	407	85	190	0.28	43	931	267	64	22	0.3	0.013	0.31	-15.48
797	Sagar	Sagar	Rehpura	8.01	460	0	209	17	5	34	0.65	53	214	55	19	5	2.8	0.002	0.15	-0.85
798	Sagar	Sagar	Sagar	7.78	656	0	287	35	20	21	0.56	34	255	61	25	31	0.9	0.021	0.84	-0.40
799	Sagar	Shahgarh	Hirapur	7.5	1312	0	197	164	78	224	0.76	42	490	133	39	70	10.2	0.002	1.37	-6.57

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC		
					( $\mu\text{S/cm}$ at 25°C)	mg/l																
800	Sagar	Shahgarh	Rurawan	8.04	405	0	221	10	3	4	0.87	38	194	57	12	3	0.2	0.03	0.09	-0.25		
801	Sagar	Shahgarh	Shahgarh	7.72	1366	0	293	162	103	121	0.24	43	490	118	47	86	2.3	0.023	1.69	-4.99		
802	Satna	Amarpatan	Amarpatan1	7.4	958	0	281	125	37	10	0.4	32	347	75	39	55	0.1	BDL	1.28	-2.32		
803	Satna	Amarpatan	Kakra	7.65	798	0	257	50	98	14	0.3	34	357	84	36	17	4.0	BDL	0.39	-2.93		
804	Satna	Amarpatan	Kemar	7.58	1360	0	335	152	102	42	0.7	51	556	151	43	55	0.2	BDL	1.01	-5.63		
805	Satna	Amarpatan	Mauhari Katra	7.63	1223	0	335	167	48	24	0.1	46	520	124	51	38	0.1	BDL	0.72	-4.92		
806	Satna	Amarpatan	Mukundpur	7.87	588	0	257	25	27	17	0.4	42	265	61	27	11	0.2	BDL	0.29	-1.09		
807	Satna	Maihar	Amdara	7.37	1406	0	227	245	95	48	0.1	38	653	149	69	18	1.3	BDL	0.31	-9.34		
808	Satna	Maihar	Bhadanpur	7.78	540	0	263	15	10	3	0.2	58	188	36	24	28	6.2	BDL	0.89	0.55		
809	Satna	Maihar	Jhukehi	7.72	895	0	257	130	32	6	0.4	39	378	102	30	21	11.4	BDL	0.47	-3.34		
810	Satna	Maihar	Jowa	7.68	667	0	263	40	22	25	0.4	37	291	82	21	15	1.2	BDL	0.38	-1.50		
811	Satna	Maihar	Kusendi	7.95	954	0	323	102	25	27	0.2	44	230	63	17	111	0.3	BDL	3.19	0.70		
812	Satna	Maihar	Maihar	7.85	1111	0	359	160	16	4	0.7	39	337	82	32	96	0.1	BDL	2.27	-0.85		
813	Satna	Maihar	Naraura	7.6	720	0	251	67	24	32	0.3	29	316	82	27	18	1.5	BDL	0.44	-2.21		
814	Satna	Maihar	Rivara	7.76	444	0	191	25	6	16	0.6	36	204	39	26	5	1.9	BDL	0.15	-0.94		
815	Satna	Maihar	Sabhaganj	7.49	522	0	179	65	5	14	0.3	32	204	43	24	22	2.9	BDL	0.67	-1.14		
816	Satna	Majhgawan	Babupur	7.72	478	0	233	15	8	5	0.1	46	153	38	14	32	2.2	BDL	1.12	0.75		
817	Satna	Majhgawan	Chitrakoot	7.76	1275	0	395	156	10	76	0.5	32	455	145	23	75	1.6	BDL	1.53	-2.64		
818	Satna	Majhgawan	Chowraha	7.66	575	0	251	15	35	15	0.1	35	257	83	12	14	1.5	BDL	0.38	-1.03		
819	Satna	Majhgawan	Jhali	7.92	925	0	401	67	15	3	0.6	26	306	98	15	66	1.4	BDL	1.64	0.45		
820	Satna	Majhgawan	Majhgawa	7.85	801	0	305	52	35	28	0.4	32	327	92	24	32	0.2	BDL	0.77	-1.53		
821	Satna	Majhgawan	Nakaila	7.74	506	0	191	22	42	19	0.7	32	235	61	20	7	1.2	BDL	0.20	-1.56		
822	Satna	Nagod	Barethia	7.75	711	0	293	54	15	20	0.7	34	287	63	31	28	3.1	BDL	0.72	-0.94		
823	Satna	Nagod	Dureha	7.86	711	0	287	61	15	8	0.6	36	257	53	30	39	2.6	BDL	1.06	-0.44		
824	Satna	Nagod	Jaso	7.94	620	0	276	40	7	4	0.6	34	209	55	17	39	1.6	BDL	1.17	0.34		
825	Satna	Nagod	Nagod	7.56	1415	0	383	160	84	42	0.5	35	622	163	52	36	0.3	BDL	0.63	-6.18		
826	Satna	Nagod	Pathraundha	7.8	781	0	281	70	16	27	0.4	42	250	61	24	52	10.0	BDL	1.43	-0.39		
827	Satna	Nagod	Singhpur	7.8	468	0	214	22	10	4	0.1	29	197	34	27	15	0.3	BDL	0.46	-0.42		
828	Satna	Ramnagar	Devra	7.73	624	0	299	20	10	7	0.7	29	248	61	23	21	2.5	BDL	0.58	-0.05		
829	Satna	Ramnagar	Gorsari	7.74	397	0	174	17	5	7	0.6	10	168	35	20	6	1.2	BDL	0.20	-0.51		
830	Satna	Ramnagar	Govindpur	7.47	397	0	162	17	18	3	0.4	22	179	31	25	6	1.1	BDL	0.20	-0.91		
831	Satna	Ramnagar	Ramnagar_Bamhnadi	8.12	488	0	197	17	15	26	0.5	54	204	63	11	9	1.8	BDL	0.27	-0.85		
832	Satna	Ramnagar	Sagauni New	7.92	312	0	144	17	2	6	0.1	39	107	14	17	22	0.6	BDL	0.92	0.21		
833	Satna	Rampur Baghelan	Birsinghpur	7.56	1242	0	299	194	12	81	0.3	46	535	97	71	28	2.5	BDL	0.53	-5.79		
834	Satna	Sohawal	Barakalan	7.45	1145	0	377	99	65	4	0.5	26	535	129	52	8	0.9	BDL	0.15	-4.52		
835	Satna	Sohawal	Chorhata	7.7	567	0	173	82	8	2	0.2	47	243	63	20	14	1.9	BDL	0.39	-2.01		
836	Satna	Sohawal	Jaitwara	7.67	985	0	294	125	5	72	0.5	35	321	71	35	77	2.5	BDL	1.87	-1.61		
837	Satna	Sohawal	Kotar1	7.55	1740	0	395	210	135	98	1	64	755	227	46	48	3.4	BDL	0.76	-8.63		
838	Satna	Sohawal	Kothi	7.87	854	0	449	25	10	5	0.2	42	357	102	25	28	5.0	BDL	0.64	0.21		
839	Satna	Sohawal	Rampur1	7.57	1502	0	377	205	85	42	0.5	48	658	178	52	36	1.7	BDL	0.61	-6.99		

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
840	Satna	Sohawal	Satna	7.61	1265	0	179	315	5	31	0.1	41	515	143	38	52	0.5	BDL	1.00	-7.37
841	Satna	Unchehara	Bhatanwara	7.56	1222	0	239	173	95	17	0.6	62	559	143	49	17	1.6	BDL	0.31	-7.27
842	Satna	Unchehara	Gobrao Kalan	7.42	1203	0	324	175	24	40	0.5	54	362	86	36	107	3.0	BDL	2.44	-1.93
843	Satna	Unchehara	Pahari	7.71	577	0	138	60	8	64	0.1	36	235	55	24	10	18.0	BDL	0.28	-2.44
844	Satna	Unchehara	Paras Maniya	7.91	378	0	84	40	19	39	0.1	38	143	43	9	16	1.2	BDL	0.58	-1.48
845	Satna	Unchehara	Pondipithourabd	7.61	1022	0	227	152	10	116	0.9	51	485	137	35	11	0.6	BDL	0.22	-5.97
846	Satna	Unchehara	Uchehara	7.62	754	0	286	78	14	3	0.4	45	354	63	48	8	0.1	BDL	0.18	-2.38
847	Sehore	Ashta	Ashta	7.66	2972	0	374	487	241	269	0.26	12	970	111	168	223	6.5	0.08	3.11	-13.27
848	Sehore	Ashta	Khachrod	7.69	1683	0	300	292	89	56	0.54	37	606	111	80	101	4.1	0.06	1.78	-7.20
849	Sehore	Budni	Bayan	7.88	749	0	233	57	14	66	0.17	33	258	46	34	49	0.8	0.07	1.33	-1.34
850	Sehore	Budni	Budhni	7.92	1008	0	386	92	20	12	0.46	30	288	30	52	95	0.4	0.08	2.43	0.57
851	Sehore	Budni	Malibayan	8.07	781	18	294	40	6	37	0.29	49	217	32	33	75	1.2	0.12	2.21	0.78
852	Sehore	Budni	Neelkachar	8.13	550	0	202	59	10	3	0.32	23	146	34	15	55	0.5	0.04	1.98	0.38
853	Sehore	Ichhawar	Amlaha	7.85	1183	0	337	134	50	46	0.64	36	399	57	63	85	0.6	0.07	1.85	-2.46
854	Sehore	Ichhawar	Ichhawar	7.59	1180	0	214	210	35	43	0.16	40	495	119	48	37	1.6	0.05	0.72	-6.38
855	Sehore	Ichhawar	Kankad Kheda	8.21	668	18	251	45	4	14	0.39	42	278	71	25	23	2.3	0.12	0.60	-1.14
856	Sehore	Ichhawar	Nadan	8.05	892	24	257	69	24	48	0.15	64	394	79	48	18	2.9	0.19	0.39	-3.26
857	Sehore	Nasrullaganj	Larkui New	8.34	814	30	312	22	12	52	1.23	60	177	28	26	103	0.5	0.09	3.37	2.09
858	Sehore	Nasrullaganj	Rala	7.76	1931	0	294	336	99	137	0.31	40	687	69	125	112	16.0	0.06	1.86	-8.92
859	Sehore	Sehore	Chandbar	8.21	1581	36	447	178	32	18	0.18	57	596	192	28	77	9.9	2.49	1.37	-3.99
860	Sehore	Sehore	Heerapur	8.38	1195	36	331	131	26	47	0.24	42	217	51	22	172	2.0	0.16	5.07	1.68
861	Sehore	Sehore	Jattakheda	7.94	906	0	312	59	47	59	0.28	46	374	105	27	33	1.9	0.14	0.74	-2.35
862	Sehore	Sehore	Sehore I	8.22	789	0	417	17	8	13	0.28	65	278	69	26	49	2.4	1.03	1.28	1.27
863	Seoni	Barghat	Ari	7.8	679	0	184	103	18	23	0.65	30	245	49	30	41	2.1	0.013	1.14	-1.89
864	Seoni	Barghat	Borghat	7.82	385	0	178	22	10	2	0.22	64	142	47	6	22	0.3	0.019	0.80	0.07
865	Seoni	Barghat	Dharamkuan	7.82	721	0	184	103	37	28	0.87	53	240	49	29	54	0.5	0.11	1.51	-1.79
866	Seoni	Barghat	Kauria	7.51	820	0	171	88	80	65	0.87	35	289	98	11	53	1.0	0.021	1.36	-2.97
867	Seoni	Chhapara	Chhapara	7.83	500	0	171	32	48	12	0.6	33	206	47	21	20	0.2	0.02	0.61	-1.31
868	Seoni	Chhapara	Ghunai	7.73	510	0	245	22	8	13	0.4	23	196	41	23	26	0.6	0.019	0.81	0.09
869	Seoni	Dhanaura	Dhanaura	8.06	655	0	294	42	6	15	0.12	53	284	67	29	16	1.2	0.1	0.41	-0.87
870	Seoni	Dhanaura	Khamaria	7.98	325	0	104	15	42	12	0.33	54	118	31	10	20	0.2	0.017	0.80	-0.65
871	Seoni	Dhanaura	Kudari	8.15	700	0	325	39	7	13	0.77	24	279	88	14	28	1.7	0.01	0.73	-0.27
872	Seoni	Dhanaura	Mehta	7.86	635	0	231	52	30	27	0.9	43	274	53	35	20	0.4	0.02	0.52	-1.71
873	Seoni	Ghansaur	Ghansor I	8.07	950	0	282	76	90	42	0.88	32	392	84	44	35	2.2	0.01	0.77	-3.22
874	Seoni	Ghansaur	Gorakhpur	7.68	765	0	190	49	115	38	0.77	43	319	84	26	28	1.0	0.02	0.68	-3.26
875	Seoni	Ghansaur	Kuropar	7.76	370	0	194	10	2	11	0.3	43	157	43	12	13	0.2	0.012	0.45	0.05
876	Seoni	Ghansaur	Masurbhanwari	7.62	670	0	255	45	24	37	0.78	55	260	65	24	33	0.3	0.012	0.89	-1.01
877	Seoni	Keolari	Banjali	8	490	0	147	47	50	4	0.13	43	137	41	8	48	0.3	0.013	1.78	-0.34
878	Seoni	Keolari	Dhangada	8.16	930	0	202	125	89	23	0.4	21	103	35	4	163	1.5	0.012	6.99	1.25
879	Seoni	Keolari	Keolari	7.96	760	0	318	42	12	53	0.46	43	289	90	15	40	0.6	0.01	1.02	-0.56

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
880	Seoni	Keolari	Pandiachhappara	7.8	760	0	207	89	32	47	0.6	32	152	31	18	100	1.2	0.02	3.53	0.35
881	Seoni	Keolari	Ugli	8.11	450	0	231	15	6	5	0.5	33	157	37	15	30	1.4	0.009	1.04	0.65
882	Seoni	Kurai	Khawasa	7.62	890	0	190	100	95	48	0.6	33	279	75	23	75	1.3	0.018	1.95	-2.48
883	Seoni	Kurai	Kurai New	7.76	560	0	286	17	2	23	0.45	55	206	51	19	34	0.5	0.016	1.03	0.56
884	Seoni	Kurai	Piparial	7.78	532	0	279	15	3	7	0.23	52	211	31	32	23	0.7	0.011	0.69	0.37
885	Seoni	Kurai	Rukhar	7.74	538	0	200	54	8	18	0.23	43	221	49	24	21	0.8	0.015	0.61	-1.13
886	Seoni	Kurai	Suktara	7.77	550	0	182	57	19	20	0.44	24	216	41	27	25	1.0	0.01	0.74	-1.33
887	Seoni	Lakhnadon	Banjari	8.12	535	0	196	34	45	8	0.32	55	230	61	19	16	0.6	0.012	0.46	-1.40
888	Seoni	Lakhnadon	Dargada	7.9	490	0	153	39	46	7	0.55	43	103	37	2	62	0.9	0.02	2.66	0.45
889	Seoni	Lakhnadon	Dhuma	7.75	560	0	227	49	10	12	0.67	35	235	43	31	19	1.1	0.013	0.54	-0.99
890	Seoni	Lakhnadon	Gaurabibi	7.89	440	0	202	24	8	7	0.5	53	186	31	26	13	0.7	0.013	0.41	-0.41
891	Seoni	Lakhnadon	Gharghatia	7.93	530	0	122	76	24	34	0.56	28	157	35	17	47	1.3	0.013	1.63	-1.13
892	Seoni	Lakhnadon	Lakhnadon I	8.01	315	0	109	12	37	8	0.76	30	123	35	8	14	0.4	0.01	0.55	-0.66
893	Seoni	Lakhnadon	Madai	8.18	645	0	200	35	80	14	0.23	56	83	14	12	105	0.6	0.14	5.00	1.62
894	Seoni	Lakhnadon	Makarjhir	7.67	1010	0	24	186	145	72	0.5	46	93	35	1	186	1.5	0.02	8.38	-1.46
895	Seoni	Lakhnadon	Nagan Deori	8.01	445	0	231	7	8	13	1	54	176	49	13	20	0.7	0.19	0.65	0.26
896	Seoni	Lakhnadon	Sahasna	8.01	305	0	115	17	20	6	0.43	47	123	31	11	12	0.2	0.01	0.47	-0.56
897	Seoni	Seoni	Amagarh	7.95	293	0	141	10	8	7	0.34	36	113	31	8	14	0.8	0.023	0.57	0.05
898	Seoni	Seoni	Bamandehi	7.85	275	0	141	7	4	6	0.22	55	118	31	10	8	0.4	0.013	0.32	-0.04
899	Seoni	Seoni	Bamhodi	8	412	0	208	22	2	2	0.43	45	162	55	6	20	0.3	0.02	0.68	0.18
900	Seoni	Seoni	Chunatola	7.93	555	0	227	39	18	12	0.23	26	172	51	11	45	1.0	0.019	1.49	0.28
901	Seoni	Seoni	Kaniwara	7.5	2160	0	159	512	125	90	0.34	45	686	222	32	177	4.5	0.011	2.94	-11.11
902	Seoni	Seoni	Nandora	7.79	285	0	128	15	6	7	0.43	32	88	18	11	24	0.2	0.012	1.11	0.33
903	Seoni	Seoni	Palari	8.15	718	0	316	40	10	37	0.56	43	289	65	31	31	0.5	0.016	0.79	-0.61
904	Seoni	Seoni	Pipardahi	7.95	450	0	200	25	12	10	0.34	45	172	49	12	24	0.3	0.012	0.80	-0.14
905	Seoni	Seoni	Rahiwara	7.98	460	0	225	15	17	3	0.5	33	176	37	20	24	0.6	0.02	0.79	0.16
906	Seoni	Seoni	Seoni I	7.84	785	0	194	99	55	34	0.5	34	118	31	10	125	0.5	0.015	5.01	0.83
907	Shahdol	Beohari	Beohari	7.8	723	0	244	100	7	4	0.7	35	268	65	26	39	0.9	BDL	1.04	-1.35
908	Shahdol	Beohari	Pasgari	7.69	402	0	197	3	9	8	0.3	12	187	67	5	3	1.9	BDL	0.10	-0.52
909	Shahdol	Burhar	Bhikhampur	7.86	442	0	173	32	14	1	0.1	36	172	34	21	17	0.8	BDL	0.56	-0.60
910	Shahdol	Ghoparu	Gohparu	7.73	676	0	256	68	15	4	0.1	39	298	81	23	12	1.2	BDL	0.30	-1.76
911	Shahdol	Jaysing Nagar	Amjhor	7.82	312	0	48	61	5	17	0.1	46	121	22	16	14	0.9	BDL	0.55	-1.64
912	Shahdol	Jaysing Nagar	Bansukli	7.97	145	0	24	29	2	3	0.1	12	40	4	7	11	2.0	BDL	0.75	-0.42
913	Shahdol	Jaysing Nagar	Jaisinghnagar I	7.65	358	0	131	36	9	3	0.1	29	106	18	15	30	1.1	BDL	1.27	0.03
914	Shahdol	Jaysing Nagar	Kanadi (Khurd)	7.76	256	0	77	15	5	34	0.1	27	86	4	18	18	0.1	BDL	0.84	-0.45
915	Shahdol	Jaysing Nagar	Karki	7.78	512	0	149	56	3	54	0.1	36	187	22	32	31	0.2	BDL	0.99	-1.30
916	Shahdol	Jaysing Nagar	Nipaniya	7.8	519	0	238	29	12	2	0.7	42	207	40	26	22	0.6	BDL	0.66	-0.24
917	Shahdol	Jaysing Nagar	Sanousi	7.79	617	0	244	31	21	24	0.30	22	253	61	25	18	8.8	BDL	0.49	-1.05
918	Shahdol	Jaysing Nagar	Sarsi	8.04	85	0	30	2	8	1	0.40	18	30	6	4	3	2.2	BDL	0.24	-0.12
919	Shahdol	Jaysing Nagar	Sidi	7.79	475	0	113	50	35	21	0.20	34	182	63	6	16	8.0	BDL	0.52	-1.78



Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
920	Shahdol	Jaysing Nagar	Tihki	8.01	310	0	149	3	14	1	0.20	15	141	46	6	3	1.9	BDL	0.11	-0.39
921	Shahdol	Jaysing Nagar	Umarkhohi	7.95	121	0	54	3	2	6	0.20	18	40	12	2	7	1.1	BDL	0.48	0.07
922	Shahdol	Sohagpur	Bahgarh	7.42	345	0	149	22	10	5	0.4	22	152	18	26	7	1.1	BDL	0.25	-0.59
923	Shahdol	Sohagpur	Burhar	7.67	384	0	89	46	22	23	0.1	36	136	22	20	22	1.1	BDL	0.82	-1.26
924	Shahdol	Sohagpur	Kanchanpur	7.66	587	0	286	15	8	5	0.5	34	207	42	25	37	0.1	BDL	1.12	0.55
925	Shahdol	Sohagpur	Marjad	7.87	598	0	238	53	5	3	0.2	39	192	34	26	42	0.5	BDL	1.32	0.07
926	Shahdol	Sohagpur	Shahdol	7.7	587	0	173	40	80	1	0.60	25	222	55	21	26	3.4	BDL	0.76	-1.61
927	Shahdol	Sohagpur	Singhpur I	7.78	898	0	203	100	118	1	1.00	42	298	57	38	57	11.6	BDL	1.44	-2.64
928	Shajapur	Kalapipal	Arandia	7.99	963	0	354	69	25	77	0.71	22	295	42	46	82	3.0	0.054	2.08	-0.10
929	Shajapur	Kalapipal	Kalapipal	7.98	1712	0	482	234	91	40	0.12	38	640	158	60	83	26.0	0.320	1.43	-4.90
930	Shajapur	Kalapipal	Nandni	7.88	605	0	275	17	13	46	0.46	29	230	46	28	31	1.9	0.050	0.89	-0.10
931	Shajapur	Moman Badodia	Salsalai	7.77	1103	0	201	141	121	57	0.00	36	415	88	47	55	2.0	0.049	1.17	-5.00
932	Shajapur	Shajapur	Choma	7.63	2641	0	24	854	78	2	1.77	30	245	88	6	487	4.0	0.044	13.53	-4.50
933	Shajapur	Shajapur	M.Barodia I	7.87	968	0	207	117	44	107	0.31	42	345	64	45	56	1.0	0.062	1.31	-3.50
934	Shajapur	Shajapur	Majhania	7.76	733	0	250	50	27	78	0.21	39	300	60	36	30	1.0	0.047	0.75	-1.90
935	Shajapur	Shajapur	Makshi New	8.10	1146	0	256	176	78	6	0.30	24	260	70	21	129	3.0	0.080	3.48	-1.00
936	Shajapur	Shajapur	Narayangaon	7.90	660	0	281	32	23	36	0.77	30	230	42	30	44	2.0	0.038	1.26	0.00
937	Shajapur	Shajapur	Panwadi	7.99	1588	0	360	238	84	81	0.52	34	430	52	73	160	4.0	0.053	3.35	-2.70
938	Shajapur	Shajapur	Shajapur	7.96	462	0	140	47	38	1	0.18	15	165	42	15	24	4.0	0.050	0.81	-1.00
939	Shajapur	Shajapur	Tilawad Govind	8.02	974	0	159	171	54	20	1.23	27	140	40	10	138	3.0	0.041	5.07	-0.20
940	Shajapur	Shujalpur	Akodia	7.98	681	0	311	42	8	9	0.34	8	240	70	16	30	20.0	1.270	0.84	0.30
941	Shajapur	Shujalpur	Shujalpur	8.19	944	0	348	72	40	54	0.18	24	330	102	18	64	2.0	0.167	1.53	-0.90
942	Sheopur	Karahal	Goras	7.87	525	0	220	43	19	3	0.21	52	200	60	12	28	1.2	BDL	0.86	-0.40
943	Sheopur	Karahal	Kalmi	7.54	1480	0	494	74	195	24	0.33	44	365	130	10	170	1.4	0.001	3.87	0.80
944	Sheopur	Karahal	Karahal	7.12	1190	0	183	82	203	144	0.33	39	315	94	19	127	2.1	BDL	3.11	-3.30
945	Sheopur	Karahal	Kunorh	7.13	1250	0	329	74	145	115	0.35	46	355	100	26	123	0.8	BDL	2.84	-1.70
946	Sheopur	Karahal	Nonpura	7.04	838	0	397	57	8	4	0.35	52	335	48	52	37	1.2	BDL	0.88	-0.20
947	Sheopur	Sheopur	Baroda New	7.34	1230	0	348	113	142	22	0.99	39	390	38	72	102	1.2	BDL	2.25	-2.10
948	Sheopur	Sheopur	Bhagwara	7.54	895	0	336	78	38	23	0.90	42	275	44	40	78	0.4	BDL	2.05	0.00
949	Sheopur	Sheopur	Doti	7.04	720	0	342	35	18	11	0.64	35	240	54	26	54	0.8	BDL	1.52	0.80
950	Sheopur	Sheopur	Pandola	7.65	3140	0	561	273	625	79	0.83	42	570	104	75	452	12.0	BDL	8.23	-2.20
951	Sheopur	Sheopur	Rajpura	7.12	1230	0	299	124	125	87	0.44	47	350	86	33	125	0.9	BDL	2.91	-2.10
952	Sheopur	Sheopur	Sheopur	7.85	1325	0	262	92	240	80	0.19	45	260	74	18	184	1.2	BDL	4.96	-0.90
953	Sheopur	Vijaypur	Dhobni	7.10	2940	0	262	560	435	7	0.52	37	535	102	68	427	2.9	BDL	8.03	-6.40
954	Sheopur	Vijaypur	Garhi I	7.75	1112	0	256	156	35	109	0.44	39	450	102	47	48	0.6	BDL	0.98	-4.80
955	Sheopur	Vijaypur	Ghaswani	7.69	990	0	207	60	190	51	0.40	45	285	74	24	96	0.5	BDL	2.47	-2.30
956	Sheopur	Vijaypur	Harkui	7.40	832	0	256	64	50	74	0.45	41	325	86	27	41	1.2	BDL	0.99	-2.30
957	Sheopur	Vijaypur	Panchoncolony	7.99	980	0	220	152	7	103	0.18	55	365	96	30	56	0.9	BDL	1.27	-3.70
958	Sheopur	Vijaypur	Pura	7.74	1200	0	299	82	32	250	0.40	38	435	136	23	75	0.6	BDL	1.56	-3.80
959	Sheopur	Vijaypur	Shyampur	7.43	1450	0	354	35	313	68	0.29	51	325	106	15	182	2.0	BDL	4.39	-0.70

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
960	Sheopur	Vijaypur	Vijaypurcolony	7.80	3950	0	421	879	335	39	0.71	39	640	76	109	613	1.2	0.004	10.54	-5.90
961	Shivpuri	Badarwas	Badarwas	7.35	1078	0	329	156	26	23	0.34	38	285	64	30	115	0.8	BDL	2.96	-0.30
962	Shivpuri	Badarwas	Ganeshkhera	7.09	1270	0	238	92	200	120	0.27	34	315	84	26	146	0.7	BDL	3.58	-2.40
963	Shivpuri	Badarwas	Khareh	7.68	350	0	134	18	30	7	0.12	37	165	42	15	4	0.2	BDL	0.14	-1.10
964	Shivpuri	Karera	Awas	7.21	680	0	262	35	35	44	0.98	44	325	72	35	6	0.4	BDL	0.14	-2.20
965	Shivpuri	Karera	Karera	7.45	615	0	232	32	10	75	0.89	33	285	66	29	10	0.2	BDL	0.26	-1.90
966	Shivpuri	Karera	Languri	7.75	860	0	281	32	98	62	0.82	46	280	64	29	68	0.8	BDL	1.77	-1.00
967	Shivpuri	Karera	Sarsod	7.21	1720	0	305	191	290	42	0.65	42	436	53	73	194	2.0	BDL	4.04	-3.71
968	Shivpuri	Karera	Sikandara	7.29	560	0	227	33	7	50	0.57	44	272	61	28	4	0.4	BDL	0.11	-1.72
969	Shivpuri	Karera	Sirsod Chouraha	7.38	2030	0	329	181	270	250	0.62	42	574	162	41	200	2.6	0.001	3.63	-6.09
970	Shivpuri	Karera	Toda Karea	7.23	1015	0	263	56	150	66	0.80	38	312	67	34	89	1.4	BDL	2.19	-1.92
971	Shivpuri	Khaniyadhana	Achhroni New	7.32	897	0	183	177	6	50	0.53	45	310	90	21	63	0.2	BDL	1.56	-3.20
972	Shivpuri	Khaniyadhana	Bamorkalan New	7.45	515	0	244	18	5	31	0.77	42	235	64	18	10	0.2	BDL	0.28	-0.70
973	Shivpuri	Khaniyadhana	Masoori	7.30	1120	0	214	82	160	121	0.21	34	345	80	35	97	1.2	BDL	2.27	-3.40
974	Shivpuri	Kolaras	Deherda Choraha	7.98	1120	0	604	21	24	4	0.45	33	105	26	10	208	0.9	0.001	8.83	7.80
975	Shivpuri	Kolaras	Manipura New	7.32	1050	0	336	53	85	73	0.41	38	315	64	38	85	0.6	BDL	2.08	-0.80
976	Shivpuri	Narwar	Behgwan	7.25	550	0	299	18	2	3	1.16	37	230	48	27	20	0.9	BDL	0.57	0.30
977	Shivpuri	Narwar	Mangroni	7.12	1000	0	256	121	45	83	0.53	44	415	84	50	38	0.4	BDL	0.81	-4.10
978	Shivpuri	Narwar	Narwar	7.14	1646	0	305	130	240	165	0.55	45	401	87	44	192	2.1	BDL	4.17	-3.02
979	Shivpuri	Pichhore	Bhonti	7.09	605	0	232	32	28	44	0.50	50	245	82	10	25	0.7	BDL	0.69	-1.10
980	Shivpuri	Pichhore	Dhola	7.35	1350	0	238	170	145	105	0.34	36	480	102	55	88	1.5	BDL	1.75	-5.70
981	Shivpuri	Pichhore	Pichhore	7.50	1880	0	293	148	302	200	0.33	34	465	129	35	216	2.2	0.002	4.35	-4.50
982	Shivpuri	Pichhore	Semri	7.53	470	0	114	48	40	31	0.43	39	168	32	22	29	0.3	BDL	0.97	-1.50
983	Shivpuri	Pohri	Ainpura	7.30	1318	0	384	35	255	25	0.63	47	270	48	36	177	0.6	BDL	4.68	0.90
984	Shivpuri	Pohri	Gobardhan	7.35	1100	0	317	78	145	28	0.68	40	325	54	46	102	0.8	BDL	2.46	-1.30
985	Shivpuri	Pohri	Pohari	7.42	1000	0	425	38	14	93	0.31	30	243	36	38	115	1.9	BDL	3.21	2.11
986	Shivpuri	Shivpuri	Bhagora	7.34	480	0	226	21	18	6	0.59	44	205	52	18	15	1.2	BDL	0.46	-0.40
987	Shivpuri	Shivpuri	Chorpura	7.35	640	0	238	57	30	11	0.43	37	285	82	19	15	0.4	BDL	0.39	-1.80
988	Shivpuri	Shivpuri	Patera	7.25	500	0	233	36	2	6	0.40	29	178	55	10	31	0.7	BDL	1.01	0.26
989	Shivpuri	Shivpuri	Satanwara	7.38	1480	0	443	135	170	2	0.08	52	302	71	29	200	2.4	BDL	5.00	1.21
990	Shivpuri	Shivpuri	Sirsod	7.30	680	0	317	20	35	14	0.84	38	238	51	27	45	0.9	BDL	1.27	0.44
991	Shivpuri	Shivpuri	Survaya	7.29	515	0	257	18	4	20	0.29	29	228	61	18	12	0.4	BDL	0.35	-0.34
992	Sidhi	Majhauri	Chhuhi	7.93	555	0	174	49	9	26	0.1	31	217	59	17	19	3.1	BDL	0.56	-1.48
993	Sidhi	Majhauri	Dhuan dol	7.87	416	0	207	15	6	5	0.50	12	162	38	16	18	1.7	BDL	0.62	0.16
994	Sidhi	Majhauri	Jogipahari	8.32	444	13	168	27	14	12	1.20	22	126	30	12	42	1.0	BDL	1.63	0.44
995	Sidhi	Majhauri	Mahua Gaon	7.81	543	0	194	27	10	42	0.20	41	217	69	11	15	2.4	BDL	0.44	-1.17
996	Sidhi	Majhauri	Majhauri	8.25	922	13	226	140	35	24	0.30	28	429	89	50	14	0.2	BDL	0.29	-4.67
997	Sidhi	Majhauri	Majhgawan	8.32	673	13	149	112	5	25	0.40	38	288	87	17	12	0.5	BDL	0.31	-3.11
998	Sidhi	Majhauri	Parsili	8.42	412	13	187	5	8	26	0.80	37	172	42	16	11	1.0	BDL	0.36	-0.15
999	Sidhi	Majhauri	Semariha	8.46	689	19	310	15	8	22	0.20	22	253	44	34	34	0.5	BDL	0.93	0.35

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
1000	Sidhi	Majhauri	Tamsar	8.28	1205	6	181	277	12	12	1.40	29	424	119	31	78	0.2	BDL	1.65	-5.41
1001	Sidhi	Majhauri	Tikri	7.99	308	0	97	12	8	26	1.20	31	81	20	7	22	0.7	BDL	1.06	-0.03
1002	Sidhi	Rampur Naikin	Baghwar	7.75	582	0	244	29	9	16	0.70	24	253	73	17	13	1.1	BDL	0.36	-1.05
1003	Sidhi	Rampur Naikin	Chouphal	8.39	478	19	181	11	21	8	0.20	27	187	38	22	14	1.0	BDL	0.45	-0.45
1004	Sidhi	Rampur Naikin	Chourhat	7.85	635	0	220	70	11	14	0.50	29	207	57	16	43	7.6	BDL	1.30	-0.54
1005	Sidhi	Rampur Naikin	Khamh	8.27	413	13	155	13	18	10	0.40	25	167	38	17	13	1.0	BDL	0.44	-0.58
1006	Sidhi	Rampur Naikin	Rampur2	8.36	528	13	213	10	18	42	0.45	32	167	46	12	42	0.2	BDL	1.41	0.37
1007	Sidhi	Sidhi	Badhaora	7.95	170	0	54	7	9	11	0.40	15	61	14	6	6	1.7	BDL	0.34	-0.33
1008	Sidhi	Sidhi	Baghwari	7.87	466	0	197	5	7	8	0.80	34	172	44	15	12	0.7	BDL	0.40	-0.21
1009	Sidhi	Sidhi	Barambaba	7.98	408	0	207	7	7	4	0.70	34	172	44	15	10	1.0	BDL	0.33	-0.05
1010	Sidhi	Sidhi	Chilheri Kalan	8.38	307	13	116	5	24	6	0.20	29	131	32	12	6	3.0	BDL	0.23	-0.51
1011	Sidhi	Sidhi	Hatwa	8.47	787	25	233	71	15	56	0.60	10	333	59	45	23	2.0	BDL	0.55	-2.43
1012	Sidhi	Sidhi	Jogikothar	7.91	562	0	233	28	22	8	0.50	14	157	42	12	51	1.7	BDL	1.77	0.68
1013	Sidhi	Sidhi	Kuchwahi	7.89	444	0	200	20	8	12	0.30	26	182	46	16	16	1.7	BDL	0.52	-0.35
1014	Sidhi	Sidhi	Patpara	8.29	478	6	233	10	12	12	0.90	36	157	34	17	35	0.8	BDL	1.22	0.79
1015	Sidhi	Sidhi	Sidhi	8.31	725	6	226	100	18	5	0.40	25	258	61	26	46	0.7	BDL	1.25	-1.34
1016	Sidhi	Sihawal	Amiliya1	7.62	455	0	185	17	25	5	0.50	22	177	42	17	18	0.7	BDL	0.59	-0.51
1017	Sidhi	Sihawal	Bahari	7.73	532	0	239	25	10	3	0.20	23	187	55	12	31	1.8	BDL	0.99	0.18
1018	Sidhi	Sihawal	Sihawal	7.89	488	0	174	22	35	4	0.70	26	177	53	11	25	0.6	BDL	0.82	-0.68
1019	Singrauli	Deosar	Bargawan	8.65	666	19	271	25	5	12	1.10	34	172	42	16	62	1.2	BDL	2.06	1.33
1020	Singrauli	Deosar	Betaha Dand	8.68	1152	38	465	82	14	5	0.80	12	268	28	48	122	22.0	BDL	3.24	2.91
1021	Singrauli	Deosar	Bharra	8.28	178	6	71	2	2	8	0.90	15	56	12	6	12	0.2	BDL	0.70	0.16
1022	Singrauli	Deosar	Chamari Dol	8.35	356	6	149	20	4	5	0.40	22	126	34	10	18	1.5	BDL	0.70	0.02
1023	Singrauli	Deosar	Deosar1	7.78	382	0	181	15	5	2	0.70	34	172	48	12	5	1.0	BDL	0.17	-0.47
1024	Singrauli	Deosar	Karthua	7.7	1455	0	226	355	20	2	0.40	44	394	87	43	138	15.0	BDL	3.02	-4.17
1025	Singrauli	Deosar	Kohara Khoh	7.87	368	0	129	25	12	15	0.30	46	121	32	10	24	0.8	BDL	0.95	-0.31
1026	Singrauli	Deosar	Papal Khera	8.12	366	0	129	7	35	12	0.20	44	116	30	10	25	0.1	BDL	1.01	-0.20
1027	Singrauli	Deosar	Parasi	8.09	465	0	207	25	5	10	0.30	40	167	40	16	25	0.5	BDL	0.84	0.06
1028	Singrauli	Deosar	Sarai	7.67	567	0	181	72	5	4	0.15	36	217	57	18	18	5.0	BDL	0.53	-1.38
1029	Singrauli	Waidhan	Chaura	8.42	598	13	220	47	12	4	0.30	24	121	28	12	62	22.0	BDL	2.45	1.39
1030	Singrauli	Waidhan	Jamgadi	7.45	112	0	39	5	5	4	0.10	35	30	4	5	8	0.2	BDL	0.63	0.03
1031	Singrauli	Waidhan	Jattha Tola	7.75	345	0	136	12	15	24	0.20	42	111	26	11	24	0.5	BDL	0.99	0.00
1032	Singrauli	Waidhan	Koyal Khunth	7.73	512	0	220	27	10	8	0.40	36	192	57	12	26	1.2	BDL	0.82	-0.24
1033	Singrauli	Waidhan	Mara	7.52	855	0	168	137	30	35	0.30	38	384	103	31	10	1.1	BDL	0.22	-4.92
1034	Singrauli	Waidhan	Parsauna	7.85	428	0	200	10	12	5	0.20	32	141	40	10	30	0.8	BDL	1.10	0.46
1035	Tikamgarh	Baldeogarh	Baldeogarh	7.98	850	0	359	67	15	20	0.54	41	332	100	20	42	2.3	0.021	1.00	-0.75
1036	Tikamgarh	Baldeogarh	Manikpur	7.73	530	0	287	17	3	2	0.68	37	250	69	19	7	0.2	0.002	0.19	-0.29
1037	Tikamgarh	Jatara	Jatara	7.8	753	0	245	27	34	120	2.2	36	230	53	24	66	1.0	0.025	1.89	-0.57
1038	Tikamgarh	Jatara	Palera	7.5	1939	0	233	297	243	124	2.02	51	495	131	41	216	0.4	0.021	4.22	-6.07
1039	Tikamgarh	Niwari	Niwari New	7.63	1110	0	275	85	165	43	1.03	39	362	94	31	85	6.7	0.013	1.94	-2.74

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					( $\mu$ S/cm at 25°C)															
1040	Tikamgarh	Niwari	Orchha	7.7	1235	0	317	60	111	190	0.5	45	429	78	57	84	2.0	0.001	1.76	-3.38
1041	Tikamgarh	Palera	Bamori	8.06	645	0	305	42	2	14	0.98	34	122	29	12	93	1.5	0.02	3.65	2.55
1042	Tikamgarh	Palera	Digaura	7.62	2140	0	263	237	414	98	1.21	43	413	100	40	300	1.4	0.003	6.42	-3.95
1043	Tikamgarh	Palera	Ladhaura	7.7	1738	0	365	177	265	43	0.45	45	321	67	37	250	2.1	0.003	6.06	-0.45
1044	Tikamgarh	Prithvipur	Birorakhet	7.67	1425	0	335	167	170	26	1.03	22	684	214	36	11	2.0	0.013	0.18	-8.18
1045	Tikamgarh	Prithvipur	Nengawan	7.8	1078	0	305	112	78	56	1.2	54	464	131	34	32	2.0	0.002	0.65	-4.29
1046	Tikamgarh	Prithvipur	Prithipur	7.87	873	0	245	65	85	65	1.06	39	296	69	30	64	0.9	0.001	1.62	-1.90
1047	Tikamgarh	Tikamgarh	Bawri	7.72	480	0	227	35	1	3	0.65	32	204	73	5	16	0.3	0.001	0.49	-0.36
1048	Tikamgarh	Tikamgarh	Majna	7.58	1825	0	144	245	280	178	0.4	451	561	141	51	158	5.3	0.001	2.90	-8.87
1049	Tikamgarh	Tikamgarh	Mawai	7.64	2060	0	179	387	254	87	0.94	34	556	133	55	215	3.0	0.001	3.96	-8.18
1050	Tikamgarh	Tikamgarh	Tikamgarh	7.45	1970	0	203	480	11	167	0.54	43	745	180	72	110	2.0	0.013	1.75	-11.57
1051	Ujjain	Badnagar	Chhoti Ghadsod	7.95	879	0	250	67	42	108	0.48	40	290	66	30	64	1.8	0.053	1.63	-1.70
1052	Ujjain	Badnagar	Kharotia	7.74	2216	0	311	431	88	178	0.29	51	880	124	139	100	1.0	0.054	1.47	-12.50
1053	Ujjain	Ghatia	Bachhukhera	8.10	1598	0	146	389	66	3	1.26	11	240	56	24	226	6.1	0.034	6.34	-2.40
1054	Ujjain	Ghatia	Nazarpur	8.05	957	0	226	163	42	16	1.52	46	200	50	18	123	3.6	0.249	3.78	-0.30
1055	Ujjain	Ghatia	Ruie	7.63	2767	0	122	762	160	34	0.07	34	770	240	41	275	1.9	0.070	4.31	-13.40
1056	Ujjain	Khacharod	Khachrod1	7.86	790	0	116	144	46	50	1.89	36	110	34	6	126	1.9	0.052	5.22	-0.30
1057	Ujjain	Khacharod	Unhel	7.55	2492	0	244	540	112	193	0.00	47	970	208	109	121	0.9	0.056	1.69	-15.40
1058	Ujjain	Mahidpur	Bajjnath	7.95	720	0	317	46	28	3	0.77	27	305	52	43	23	1.0	0.070	0.57	-0.90
1059	Ujjain	Mahidpur	Delchi Buzurg	6.98	2465	0	232	668	76	14	0.85	28	590	156	49	286	9.6	0.025	5.12	-8.00
1060	Ujjain	Mahidpur	Ghosla	7.87	2790	0	342	396	525	12	0.00	39	1060	272	92	150	7.5	0.311	2.00	-15.60
1061	Ujjain	Mahidpur	Khera Khajuria	7.92	655	0	238	35	33	59	1.02	38	260	98	4	30	0.6	0.056	0.81	-1.30
1062	Ujjain	Mahidpur	Mahidpurroad	7.62	3386	0	268	847	206	52	0.60	41	1090	208	139	265	3.9	0.053	3.49	-17.40
1063	Ujjain	Mahidpur	Mahidpurtown	7.65	1800	0	360	329	99	20	0.00	30	430	136	22	206	2.0	0.062	4.32	-2.70
1064	Ujjain	Mahidpur	Raghvi	8.20	1238	0	92	297	95	1	0.62	51	110	36	5	221	3.0	0.047	9.16	-0.70
1065	Ujjain	Tarana	Dablahardu	8.39	1482	54	500	116	62	49	0.23	28	505	8	118	100	0.8	0.044	1.93	-1.00
1066	Ujjain	Tarana	Kaiytha	7.83	3345	0	378	738	165	147	0.03	39	1250	108	238	178	3.0	0.039	2.19	-18.80
1067	Ujjain	Tarana	Khakri Sultan	8.35	1120	36	360	111	47	19	0.36	13	365	24	74	82	2.4	0.036	1.87	-0.80
1068	Ujjain	Tarana	Makdon	7.49	2754	0	61	827	97	0	0.95	28	540	120	58	356	4.0	0.039	6.66	-9.80
1069	Ujjain	Tarana	Rupakhedi	8.04	1010	0	390	50	36	95	0.72	30	255	34	41	114	1.0	0.047	3.10	1.30
1070	Ujjain	Tarana	Sumra Kheda	7.95	812	0	293	57	17	84	0.61	29	250	44	34	70	2.3	0.037	1.92	-0.20
1071	Ujjain	Tarana	Tarana	7.94	1065	0	189	196	75	0	0.09	39	255	64	23	116	2.0	0.088	3.16	-2.00
1072	Ujjain	Ujjain	Chakrawada Grid	7.89	1308	0	299	139	97	123	0.48	31	380	62	55	119	2.0	0.046	2.65	-2.70
1073	Ujjain	Ujjain	Dabla Rehwari	8.02	807	0	305	72	31	23	0.34	36	305	46	46	44	1.0	0.047	1.10	-1.10
1074	Ujjain	Ujjain	Hasampura	8.04	1292	0	238	186	144	23	0.16	34	370	102	28	115	5.0	0.502	2.60	-3.50
1075	Ujjain	Ujjain	Mohanpura	7.87	1069	0	98	218	130	0	1.52	35	130	32	12	181	1.0	0.056	6.90	-1.00
1076	Ujjain	Ujjain	Palkhanda	7.72	1716	0	268	324	85	49	0.34	33	390	100	34	192	1.0	0.070	4.23	-3.40
1077	Ujjain	Ujjain	Patpala	7.68	990	0	220	119	47	108	0.24	36	410	86	47	33	1.2	0.047	0.71	-4.60
1078	Ujjain	Ujjain	Ujjain Nagar Palika	8.05	2228	0	403	460	105	13	0.68	35	555	124	60	250	1.0	0.057	4.61	-4.50
1079	Ujjain	Ujjain	Vijayanj Mandi	8.14	1560	0	439	208	67	41	1.13	33	575	82	90	82	4.0	0.961	1.49	-4.30

Sl. No.	District	Block	Location	pH	EC	CO <sub>3</sub>	HCO <sub>3</sub>	Cl	SO <sub>4</sub>	NO <sub>3</sub>	F	SiO <sub>2</sub>	TH	Ca	Mg	Na	K	PO <sub>4</sub>	SAR	RSC
					(µS/cm at 25°C)															
1080	Umaria	Bandhavgarh	Manpura 1	7.78	189	0	39	25	12	4	0.10	34	71	12	10	5	2.5	BDL	0.26	-0.78
1081	Umaria	Bandhavgarh	Parasi	7.77	387	0	65	35	35	54	0.10	26	131	26	16	24	1.9	BDL	0.91	-1.57
1082	Umaria	Bandhavgarh	Tala	7.89	498	0	129	45	18	40	0.10	22	202	44	22	14	0.8	BDL	0.43	-1.92
1083	Umaria	Bandhavgarh	Umaria	7.84	1888	0	200	512	25	5	0.30	48	500	152	29	180	22.0	BDL	3.50	-6.72
1084	Umaria	Karkeli	Bichua	7.76	444	0	149	37	20	15	0.20	42	146	42	10	30	0.5	BDL	1.08	-0.49
1085	Umaria	Karkeli	Karkeli	7.85	525	0	239	20	15	8	0.60	25	157	32	18	42	0.1	BDL	1.46	0.79
1086	Umaria	Karkeli	Nigahari	7.94	588	0	200	27	22	55	0.10	18	258	61	26	10	3.3	BDL	0.27	-1.87
1087	Umaria	Karkeli	Nowrozabad	7.44	222	0	65	5	5	42	0.20	22	51	8	7	22	3.2	BDL	1.35	0.05
1088	Umaria	Manpur	Dhamokhar	7.72	465	0	162	25	20	35	0.10	12	197	55	15	13	0.2	BDL	0.40	-1.29
1089	Umaria	Manpur	Mahroi	7.94	499	0	252	12	10	5	0.20	32	207	38	27	16	0.8	BDL	0.48	-0.01
1090	Umaria	Manpur	Panpatha	8.1	298	0	103	25	2	22	0.10	24	101	14	16	18	1.1	BDL	0.78	-0.33
1091	Umaria	Pali	Amiliya	8.11	232	0	103	10	2	8	0.40	38	91	20	10	8	0.8	BDL	0.36	-0.12
1092	Umaria	Pali	Birsinghpur 1	7.96	625	0	155	70	5	48	0.10	22	278	65	28	5	0.2	BDL	0.13	-3.01
1093	Umaria	Pali	Ghunghutti	8.1	508	0	142	37	55	12	0.40	18	152	40	12	45	0.2	BDL	1.59	-0.70
1094	Vidisha	Basoda	Bagrodcrossing	8.21	813	0	417	25	8	12	0.37	47	202	61	12	87	7.2	0.54	2.66	2.79
1095	Vidisha	Basoda	Bareth	8.11	947	0	368	84	34	1	0.73	32	323	57	44	66	2.1	0.45	1.60	-0.44
1096	Vidisha	Basoda	Ganjbasoda 1	8.02	1229	0	380	190	6	12	0.56	33	131	14	23	218	0.5	0.03	8.27	3.60
1097	Vidisha	Basoda	Ghatera	7.87	968	0	312	74	21	108	0.19	80	338	85	31	54	17.0	0.37	1.28	-1.65
1098	Vidisha	Basoda	Malkapur	8.25	540	0	116	25	107	19	0.60	35	212	36	29	22	0.7	0.05	0.66	-2.33
1099	Vidisha	Basoda	Udaipur	8.21	1480	0	453	151	59	109	0.20	59	414	131	21	75	117.0	3.6	1.60	-0.85
1100	Vidisha	Gyaraspur	Atari Khejda	7.82	472	0	202	22	10	22	0.39	44	162	34	18	31	0.6	0.04	1.06	0.08
1101	Vidisha	Gyaraspur	Gyaraspur 1	7.61	1038	0	196	161	55	48	0.18	49	409	73	55	45	0.5	0.06	0.97	-4.97
1102	Vidisha	Kurwai	Kurwai 1	7.63	1344	0	221	215	78	99	0.43	26	414	65	61	111	1.2	0.03	2.37	-4.67
1103	Vidisha	Lateri	*Lateri 1	7.5	1081	0	147	213	60	49	0.59	38	414	93	44	51	1.0	0.04	1.09	-5.87
1104	Vidisha	Lateri	Anandpur	7.6	1018	0	178	158	43	81	0.50	37	354	91	31	67	1.1	0.06	1.55	-4.16
1105	Vidisha	Lateri	Islam Nagar	7.93	629	0	325	17	3	3	0.19	23	187	20	33	55	1.0	0.04	1.75	1.58
1106	Vidisha	Lateri	Tajpura	7.96	424	0	208	10	9	10	0.21	62	162	48	10	21	0.4	0.07	0.72	0.18
1107	Vidisha	Neteran	Mohanpura	7.67	572	0	208	37	7	45	0.39	47	212	53	20	31	0.4	0.04	0.93	-0.83
1108	Vidisha	Neteran	Nateran	7.98	1689	0	527	230	63	6	0.44	32	470	38	91	159	15.2	0.22	3.19	-0.76
1109	Vidisha	Neteran	Tinsiyai	7.54	754	0	233	64	24	68	0.27	52	298	63	34	34	1.3	0.06	0.86	-2.14
1110	Vidisha	Sironj	Deopur	8.01	577	0	263	32	6	3	0.37	30	197	36	26	39	1.0	0.04	1.21	0.38
1111	Vidisha	Sironj	Patharia	8.03	1384	0	67	235	127	162	0.19	61	631	129	75	22	1.3	0.05	0.38	-11.52
1112	Vidisha	Sironj	Sironj 1	7.62	1201	0	233	136	71	159	0.18	39	359	69	45	102	5.3	0.05	2.34	-3.36
1113	Vidisha	Vidisha	Bagri	7.75	643	0	270	52	15	2	0.63	16	187	26	29	59	3.1	0.06	1.88	0.68
1114	Vidisha	Vidisha	Bilari	7.47	1441	0	147	272	54	178	0.54	28	606	147	58	42	6.4	0.03	0.74	-9.71
1115	Vidisha	Vidisha	Hirnai	7.95	689	0	337	30	9	2	0.60	25	172	24	27	75	1.3	0.03	2.49	2.09
1116	Vidisha	Vidisha	Imaliya	7.61	1611	0	319	279	97	2	0.52	19	333	44	54	203	8.1	0.04	4.83	-1.45
1117	Vidisha	Vidisha	Salaiya	7.59	654	0	245	37	13	70	0.16	89	283	67	28	19	0.3	0.07	0.49	-1.64
1118	Vidisha	Vidisha	Vidisha	7.61	937	0	172	176	42	30	0.38	21	247	65	21	93	10.4	0.09	2.57	-2.14

**Central Ground Water Board**  
**North Central Region**  
**Ministry of Water Resources, River Development and Ganga Rejuvenation,**  
**Government of India**

**January 2018**