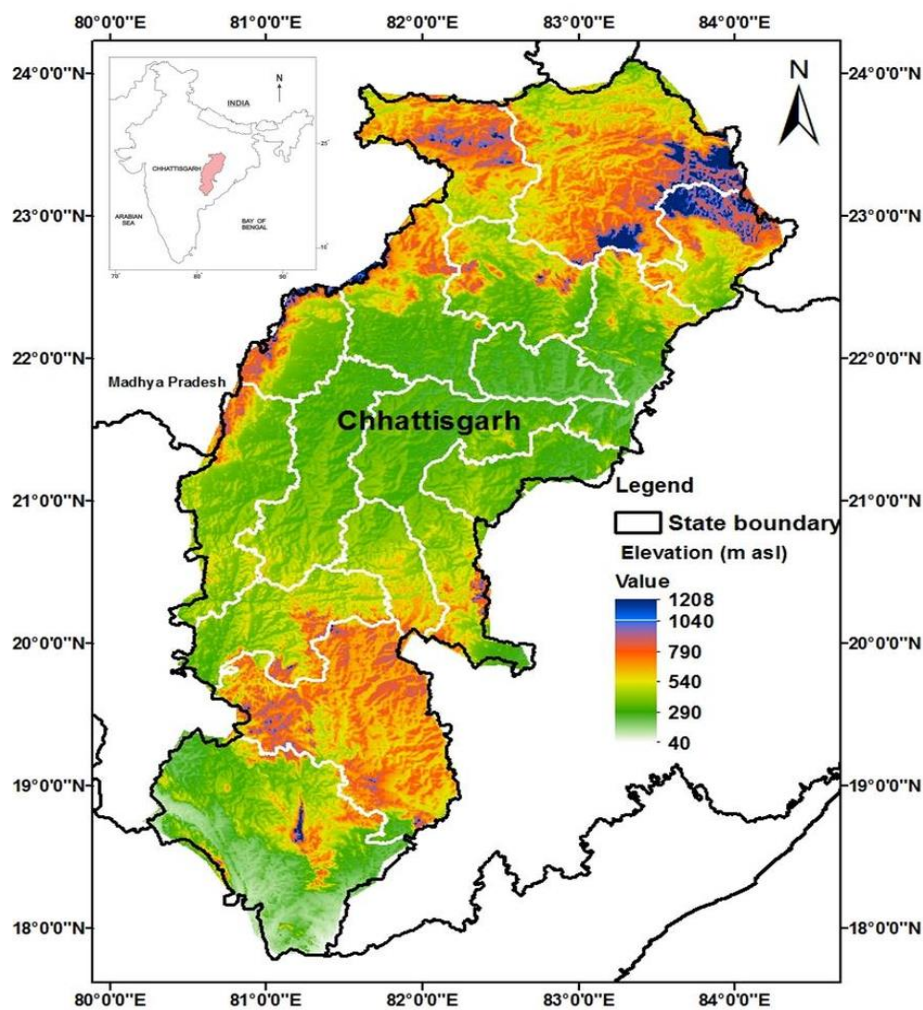




**GOVERNMENT OF INDIA
MINISTRY OF WATER RESOURCES RIVER DEVELOPMENT AND
GANGA REJUVENATION
CENTRAL GROUND WATER BOARD**

**GROUND WATER YEAR BOOK OF
CHHATTISGARH 2017-18**



**North Central Chhattisgarh Region
Raipur
October 2018**

FOREWORD

Central Ground Water Board, North Central Chhattisgarh Region, Raipur monitors the water levels in the State four times a year through a network of 1499 number of observation wells (both dug wells and piezometers). Water quality is also assessed once in a year. The generated data from these observation wells are compiled, analysed and presented in the form of reports from time to time and circulated to various Central and State Government Departments. The present report embodies data and information collected during monitoring in the year 2017-18.

The report has been compiled and prepared by Smt. Prachi Gupta, Scientist 'B' under the supervision of Shri M M Sonkusare, Scientist 'D' under the guidance of Shri A. K Biswal, Head of the Office. I appreciate the efforts put by the officers in bringing out this report. The water level data and sample collection were done by the officers of CGWB, NCCR Raipur. I am sure this report will be of immense use to all the stakeholders of groundwater in the State.

(A K Biswal)
Head of the Office,
CGWB, NCCR, Raipur

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1. INTRODUCTION

The State of Chhattisgarh lies between North Latitude 17°47' to 24°06' and East Longitude 80°14' to 84°24' (**Fig. 1.1**). Central Ground Water Board, North Central Chhattisgarh Region, Raipur is carrying out ground water regime monitoring in the State. The State covers a geographical area of 1,37,360 sq. km. Nearly 65.90 % of the total area is covered by tribal and hence it is said as tribal dominated State. The ground water regime is monitored through a network of observation dug wells and piezometers. Dug wells represent the shallow phreatic aquifer system whereas piezometers represent the shallow un-confined as well as deeper semi-confined aquifer system. The network of observation stations forms a part of All India Network Hydrograph Stations, which is being monitored by various Regional offices of the department, located at different parts of the country.

As on March 2018, a network of 1257 observation wells (both dug wells and purpose-built piezometers) are monitored four times a year. The monitoring includes measurement of ground water level and quality. The purpose is to observe the behavior of ground water and their levels in different hydro geological environments in order to estimate the ground water resource from time to time and to know the water quality changes.

The monitoring database on water levels and chemical parameters helps to simulate models of forecasting, planning and management of ground water resources. The behavior of the ground water level and quality during the period from May 2017 to January 2018 is presented in this report with the idea that it will enable the user agencies to plan the development strategy for optimum utilization of ground water resources in the state.

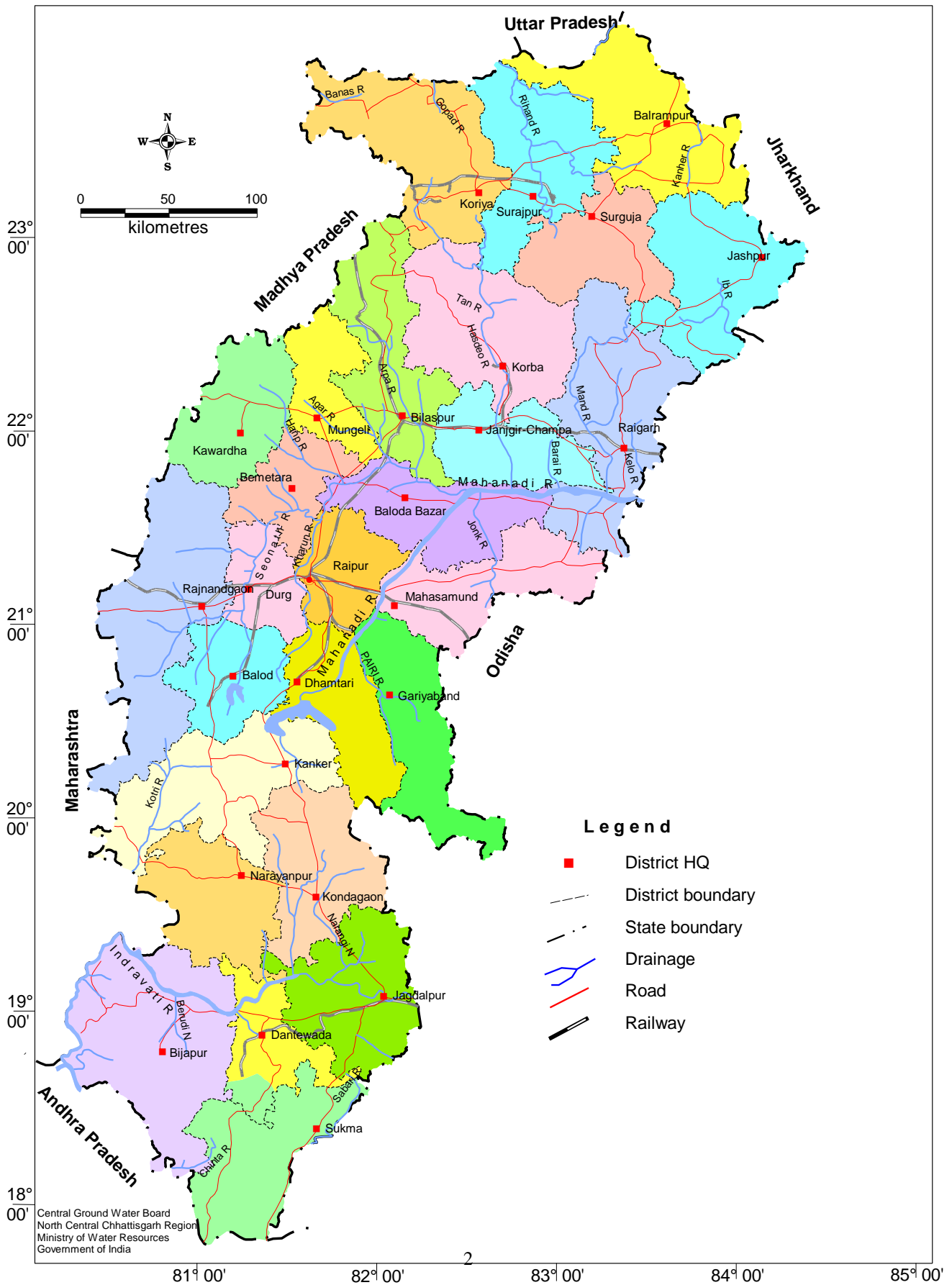


Fig 1.1 Administrative divisions of Chhattisgarh State

2. GEOMORPHOLOGY

2.1 Physiography

Physiographically, Chhattisgarh can be divided into three distinct units i.e.

- i) Bastar plateau region on the southern part,
- ii) Chhattisgarh Plain region on the central part and
- iii) Northern hilly region on the northern parts of the State.

The Bastar Plateau Region

It covers Bastar, Kondagaon, Narayanpur, Kanker, Bijapur, Sukma and Dantewada districts lying on the southern parts of the State. Except Indravati River plains, most of the area is covered by evergreen dense reserve forests and hilly tracts. The major landforms are high-level plateaus, structural hills and valleys and pediments and pediplains. The altitude varies from 400 to 600 m amsl. In the plains of Indravati River covering central parts, and along the Shabri River, covering southeastern parts the altitude varies from 250 to 300 m amsl.

The Chhattisgarh Plain

It is spread over the central part of the State and covers parts of Bilaspur, Mungeli, Janjgir-Champa, Mahasamund, Dhamtari, Raipur, Balodabazar, Gariyaband Durg, Balod, Bemetara, Rajnandgaon and Kawardha districts. It forms the structural plains on Proterozoic rocks and matures Pediplain with remnants of few isolated hills and ridges in between flood plains of numerous tributaries of Mahanadi River system. It is characterized by a gently undulating and flat terrain. The overall altitude varies from 750 m amsl on northwestern parts of the area to 284 m amsl on southeastern parts.

Northern Hilly Region

It covers from north to the north central part of the area and occupies parts of Sarguja, Balrampur, Surajpur Koriya, Korba, Bilaspur, Jashpur and Raigarh districts. It is a part of Maikal and Hazaribagh hill ranges of central India. It represents structural plains of Gondwana rocks, pediment/pediplains, structural and denudational plateaus, structural and denudational hills and valleys. It supports north flowing tributaries of Son River and south flowing Hasdeo

and other tributaries of Mahanadi River. The Narmada, an important west-flowing River of central India, originates from Amarkantak in the central part of this physiographic unit.

The highest point in the State is 1197 m amsl at Tulisi Dongri range in Dantewada district and the lowest point is 50 m amsl at Konta in Dantewada district.

2.2 Drainage

The major Rivers flowing in Chhattisgarh State are given in **Table 2.1**. The Mahanadi River and its tributaries Seonath, Hasdeo, Mand and Arpa drain part of Raipur, Durg, Rajnandgaon, Bilaspur, Raigarh and Surguja districts. The Indravati River is a tributary to Godavari River and drains the districts of Kanker, Bastar and Dantewada. Most of the Rivers are perennial in nature. In general, the drainage patterns are dendritic, parallel, angular and radial types. Son is the tributary of Ganga River and drains part of Sarguja and Koriya districts. **Fig. 2.1** shows the physiography and drainage pattern existing in the area.

S.No.	Major Rivers	Tributaries	Districts
1.	Ganga 18407 Sq.Km.	Son	Surguja, Koriya, Jashpur and Bilaspur
2.	Mahanadi 75858 Sq.Km.	Ib, Hasdeo, Seonath, Tel, Mand	Raipur, Mahasamund, Dhamtari and parts of Durg, Rajnandgaon, Kawardha, Korba, Kanker, Bastar, Surguja, Ramgarh and Bilaspur.
3.	Godavari 38694 Sq.Km.	Indravati, Sabari Wain ganga	Parts of Durg, Bastar, Rajnandgaon, Kanker and Dantewada
4.	Narmada 744 sq.Km.	Narmada	Parts of Rajnandgaon, Bilaspur, and Kawardha
5.	Bramhani 1394 sq.Km.	Sankh	Part of Jashpur

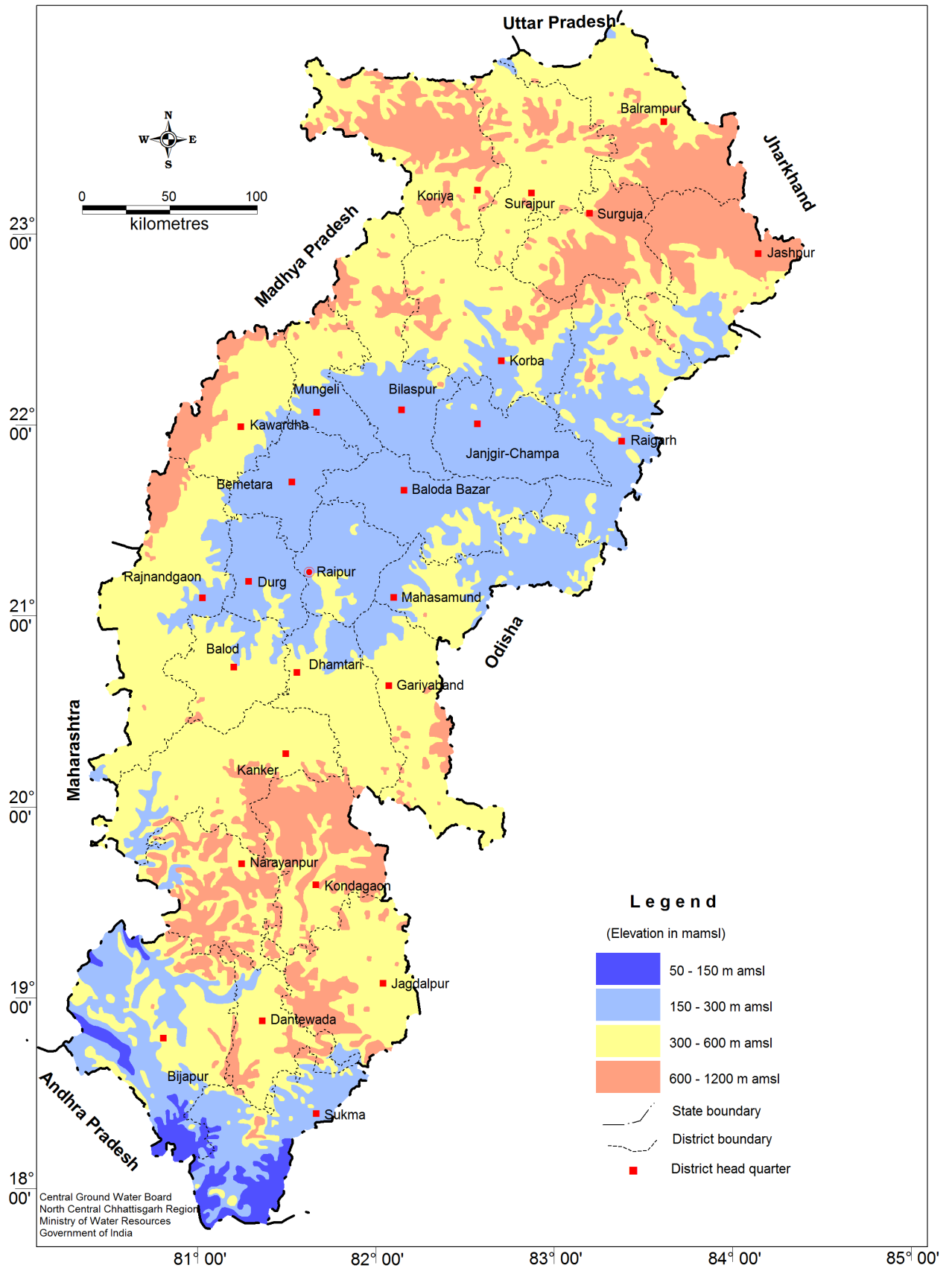


Fig 2.1 Physiography of Chhattisgarh State

3. CLIMATE AND RAINFALL

3.1 Rainfall

The region is endowed with sub-tropical monsoon climate with three distinct seasons i.e. summer, monsoon, and winter. The southwest monsoon starts from June and continues till middle of September. Winter season spreads from October to February. Summer season extends from March to middle of June. Rainfall is the major source of ground water recharge in the area and receives maximum (85%) rainfall during the southwest monsoon season. The winter rainfall is meager (10 - 15%). The Indian Meteorological Department (IMD), various State Government departments; Agricultural Universities etc. are maintaining number of rain gauge stations which comes to more than 200 in the State.

Table 3.1 shows the annual rainfall in mm district wise for Chhattisgarh for the last five years.

Sl. No.	District	Year					Average
		2014	2015	2016	2017	2018	
1	Balod	-	-	1527.4	1425	1246.5	1399.63
2	Baloda bazar	-	-	855.2	690.9	1043.4	863.17
3	Bastar	1476.6	1538.5	1821.6	1583.1	1460.1	1575.98
4	Bemetara	-	-	1147.4	1162.7	1427.3	1245.80
5	Bijapur	1696.5	1675.1	1693.8	1241.3	2126.6	1686.66
6	Bilashpur	1348.2	1056.8	1126.9	944.9	941.6	1083.68
7	Dantewara	1440.2	1548.8	1470.7	1315.1	1322.1	1419.38
8	Dhamtari	1289.2	974.6	1165.2	1181.8	1268	1175.76
9	Durg	1379.7	1008.7	1180.2	845	1163.7	1115.46
10	Gariyaband	-	-	1085.9	1017	1211.3	1104.73
11	Jangir	1169.7	955.7	1320.1	985.9	935.7	1073.42
12	Jashpur	786.2	1016.5	1139.8	1250.6	1075.9	1053.80
13	Kabirdham	1289.1	827.3	894.8	1448.2	871.6	1066.20
14	Kanker	1364.4	1165	1819.2	1145	1384.9	1375.70
15	Khondagaon	-	-	1655.3	1288	1271.4	1404.90
16	Korba	1304	1085.3	1314.8	1203.6	1054.8	1192.50
17	Koriya	1511.4	811.9	1229.3	752.4	946.8	1050.36
18	Mahasamund	1519.8	1228.3	1212.6	951.1	1091.3	1200.62
19	Mungeli	-	-	894.5	790.7	915.8	867.00
20	Narayanpur	1529.6	1430.3	1793.6	1048.7	1422.3	1444.90
21	Raigarh	1227.8	2244.4	1252.4	1020.6	1093.2	1367.68
22	Raipur	1233.2	921.4	1198.4	867.4	1405.4	1125.16
23	Rajnandgaon	1119	850.8	1104.2	799.4	933.2	961.32

24	Sukma	-	-	1459	1779.8	1781.4	1673.40
25	Surajpur	-	-	704.9	1108.3	1195.3	1002.83
26	Surguja	840	989.8	1507.5	1453.6	1230.5	1204.28
Chhattisgarh							1220.55
<i>Source: India Meteorological Department (IMD)</i>							

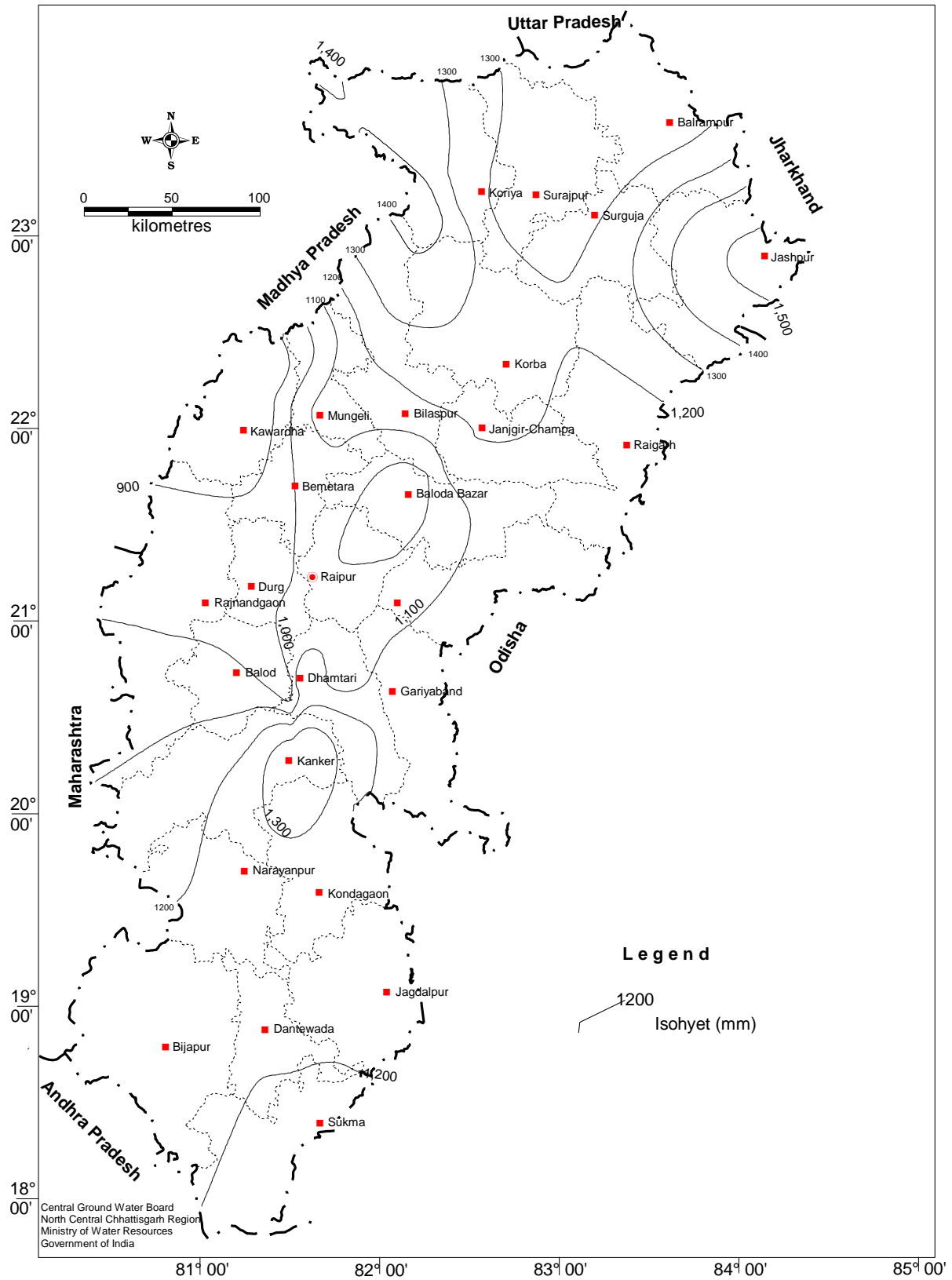


Fig 3.1 Rainfall Map of Chhattisgarh state

3.2 Temperature

The State experiences sub-tropical climate characterized by extreme summer and moderate winter. The summer extends from March to mid-June and May is the hottest month. The mean daily maximum temperature during the month of May goes up to 46°C. The winter season lasts till end of February. January is the coldest month with the mean daily maximum temperature at 30°C and the mean daily minimum temperature at 10.2°C. In Raipur area, the average temperature varies from 13°C during winter to 46°C in summer. However, in the plateau areas on the northern part, the variation was from 10°C in winters to 39°C in summers.

4. SOIL AND LANDUSE

4.1 Soil

The soils in the upper reaches of the drainage are shallow, young and are eroding in nature. Changes in soil properties indicate the drainage conditions, transport of eroded material and redeposition of soil constituents. Down the slope, the soil depth, water holding capacity, ion exchange capacity, and preponderance of calcium and magnesium increases. The color changes from red to dark brown. The texture also changes from sandy loam to clayey, and sticky to very sticky. The various soil types existing in the State and their suitability for various crops is enumerated in **Table 4.1** and fig 4.1.

Table 4.1: Distributions of Soils and suitability of crops in Chhattisgarh State

Type of soil	Parent Rock	Distribution (Districts/tehsils)	Suitable Crops
Red-yellow soil (Matasi)	Gondwana, Chhattisgarh Supergroup	Surguja, Koriya, Jashpur, Raigarh, Korba, Bilaspur Kawardha, Durg, Raipur, Dhamtari and Mahasamund districts	Paddy
Red-sandy soil	Archaean Granite	Bastar, Dantewada, Kanker, Durg, Rajnandgaon and Dhamtari districts	Kodo-Kutki, Jawar, Maize, Potato Coarse grains etc
Red-domat soil	Archaean Granite	Dantewara and Konta tehsils	Paddy
Laterite soil	Mixed	Bagicha, Samri, Sitapur, Ambikapur, Kawardha, Chhui-Khaddan, Saja, Bemetera and Jagdalpur tehsils	Potato, Jawar, Kuddo-Kutti, Oilseeds, Pulses etc.
Black soil	Mixed	Mungeli, Ariya, Raipur, Rajim, Mahasamund, Kurud and Kawardha tehsils	Paddy, Wheat, Cotton, Gram, Sugarcane and Rabi crops

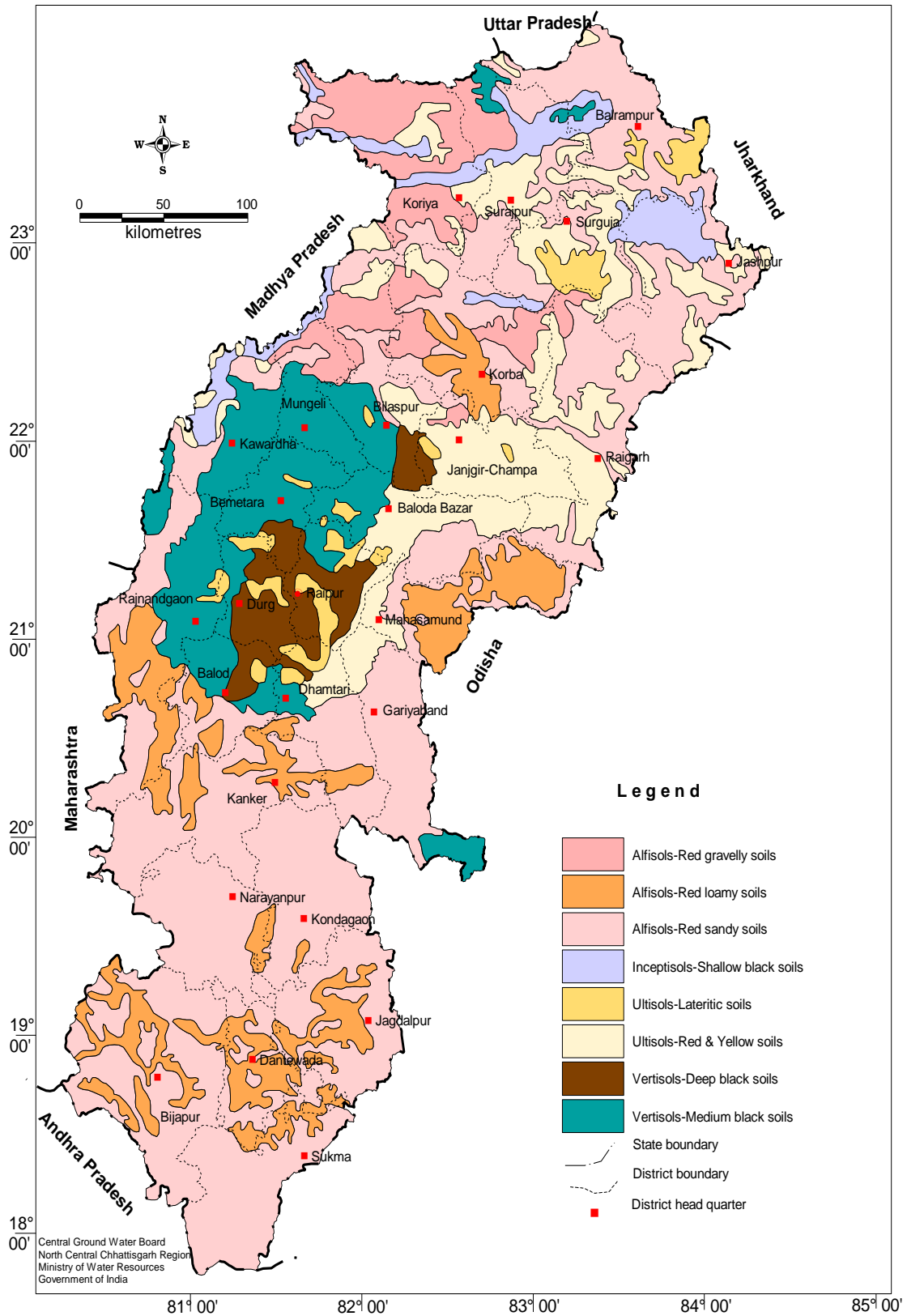


Fig 4.1 Distribution of soil in the State

4.2 Land use

The land use pattern is an important index of the human, social, cultural, and economic developments. As per the available statistics (Department of Statistics, Govt. of Chhattisgarh), 6352413 Ha. (46 %) of the total area in the State is covered by forests. The forests include protected forests, reserved forests, revenue forests and others. Nearly 85.14 % of Narayanpur district (638801 Ha) is covered and area wise Narayanpur district has the maximum forest cover (638801 Ha). Bemetara district has the lowest forest cover in terms of percentage of the total area (0.015 %, 40 Ha) and also area wise Bemetara has the lowest forest cover (40Ha). The net sown area for Chhattisgarh is just 33.87% (4671469Ha). The double cropped area is 1019386 Ha.

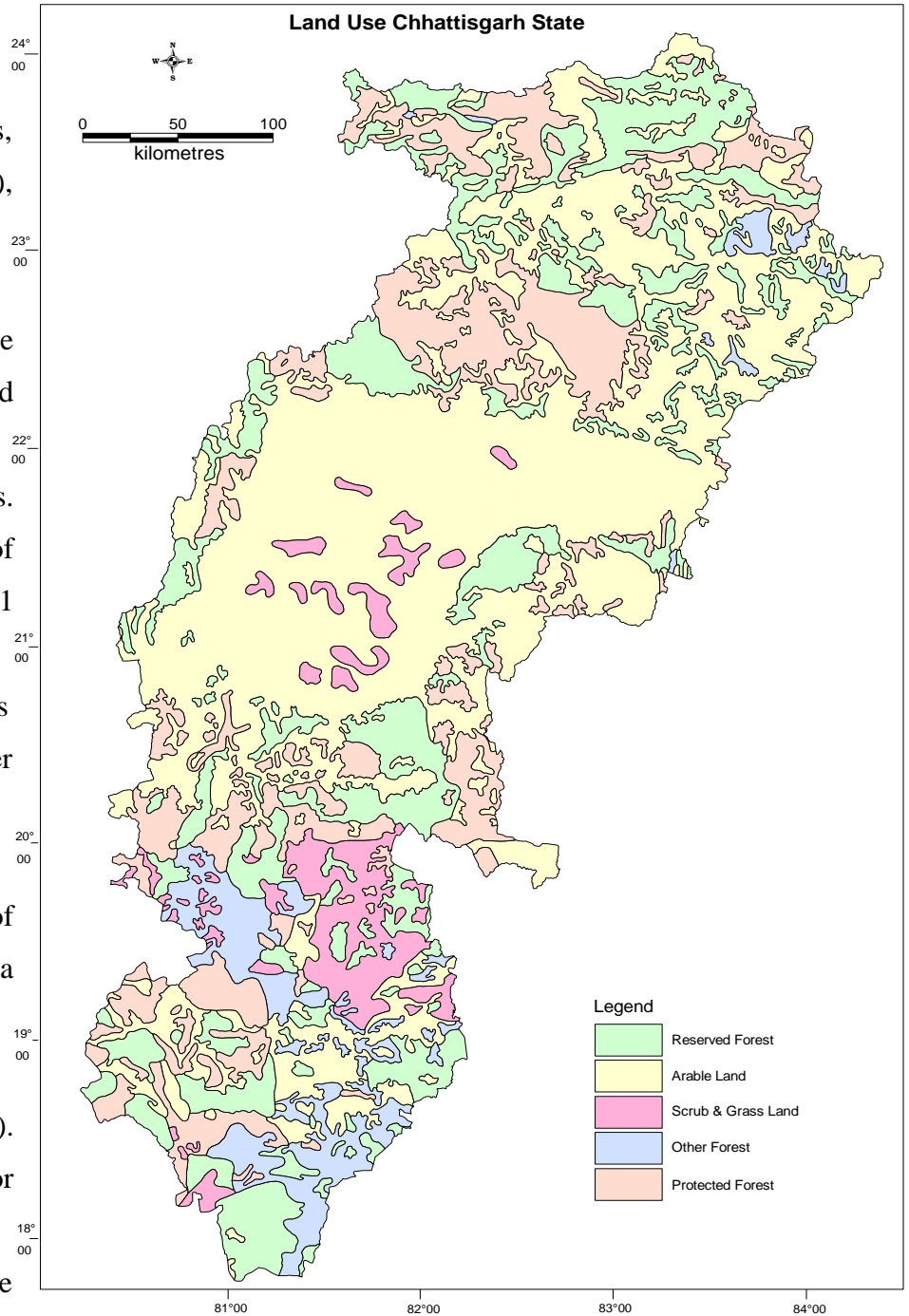


Fig 4.2 Landuse map of the State

Nearly 37 % of the net sown area has irrigation facilities. Land use map is presented in fig 4.2.

5. HYDROGEOLOGICAL CONDITIONS

The occurrence and movement of ground water is related to the existing geology of the area. The State is underlain by various rock types belonging to different geological ages, from Azoic to Quaternary. The major litho-units are shown in **Fig. 5.1** and the general geological succession is given in **Table 5.1**.

Nearly 58 % of the State is covered by Crystalline and metamorphic rocks; around 27 % of the area is covered by Chhattisgarh Group of rocks. The semi-consolidated Gondwana Supergroup of rocks covers 13 % of the area and the remaining 2 % by Daccan trap, Lameta, Laterite and River Alluvium.

The Archaean crystalline rocks comprise of granites and gneisses form the major litho-unit in the area. The ground water occurs under unconfined to semi-confined conditions. All the districts except Janjgir- Champa are covered by crystalline. The weathered formation and the fractures form the main repository for ground water in these rocks. The second important litho-unit in the area is the Proterozoic arenaceous–argillaceous- calcareous rocks of Chhattisgarh, Indravati, Khariyar and Sukma Groups. The weathered formation, caverns, fractures and formation contacts form the potential ground water zones. The karstified argillo –calcareous rocks are much more productive than compact –silicified arenaceous sediments. The gypsum karsts are more intense than calcareous karsts in the Chhattisgarh basin. The overall karstification in Indravati basin is much higher than in the Chhattisgarh basin. Karsts, though few and far in between are the best repository for ground water. These rocks cover the districts of Bastar, Narayanpur, Kondagaon, Dantewada, Bijapur, Sukma, Kanker, Raipur, Dhamtari, Mahasamund, Durg, Rajnandgaon, Kawardha, Bilaspur, Mungeli, Janjgir- Champa, Korba and Raigarh.

The rocks belonging to Gondwana Supergroup are the third major litho-unit in the area. The sandstone shows primary and occasional secondary porosity. They form thick and extensive unconfined to confined aquifers extending to a depth of 300 mbgl. At some places free flow conditions are existing and at places the temperature goes up to 50⁰C. The Gondwana formations are covering the districts of Raigarh, Korba, Koriya and Surguja and are exhibiting confined conditions.

Table 5.1: Geological Succession for Chhattisgarh State

Age	Formation	Lithology
Quaternary	Recent to sub recent	Alluvium – clay, silt, sand pebble, gravel, laterite ferruginous concretions
Cenozoic	Deccan traps	Traps with or without intertrappean sediments
Cenozoic, Mesozoic, upper Paleozoic	Gondwana Super group	Sandstone, shale, conglomerate, quartzite, silt – stone, clay stone.
Proterozoic	Chhattisgarh Super group Chilipi, Kotri, Dongargarh, Iron Ore Super group	Limestone and shale Arkose, conglomerate, sandstone, silt stone, shale Schist, phyllite, slate, gneiss, marble, BHQ.
Azoic	Basement crystalline Basement crystalline	Charnockite, Khondalite, granulite, gneisses and meta sediments Granites, gneisses and associated basic and ultra-basic intrusive

The unconsolidated formation of Quaternary age comprise of alluvium, clay, silt and laterite form as a thin and extensive unconfined aquifer in several isolated patches along major River courses. The thickness extending up to a depth of 30 mbgl along Mahanadi, Arpa, Hasdeo, Seonath, Kharun, Mand, Kelo Rivers.

From the hydrogeological point of view, all rock types existing in the State can broadly be divided into three groups as i) the consolidated formations, ii) the semi consolidated formations and iii) the unconsolidated formations. The hydrogeological map of the state is presented in **Fig. 5.2**.

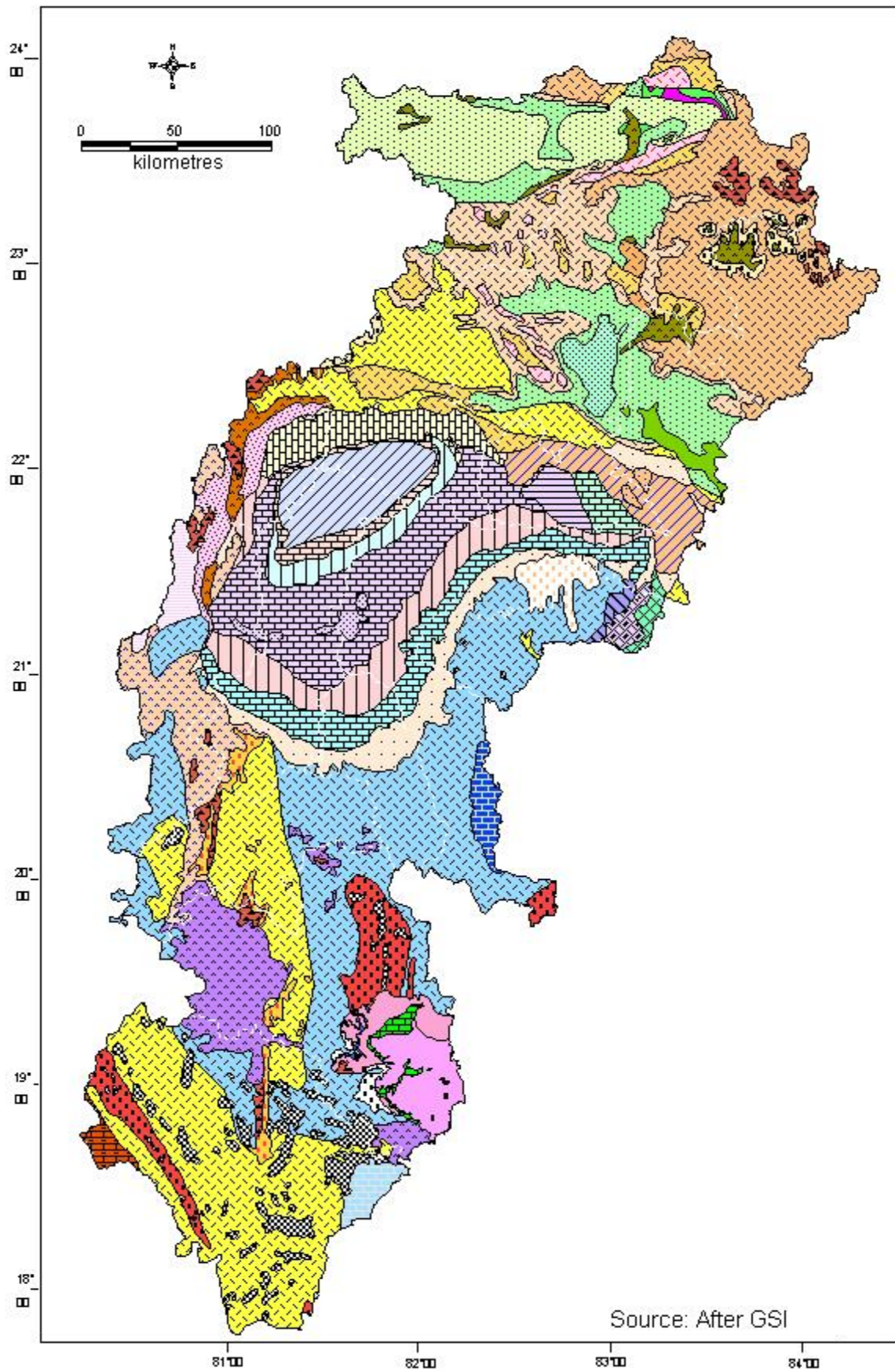



















































Fig. 5.1: Geological map of Chhattisgarh State

Geology Legend			
	Laterites		Kanger Limestone
	Deccan Trap		Cherakur Shale
	Lameta Group		Cherakur Sandstone
	Mahadeva Formation		Tirathgarh Sandstone
	Jabalpur, Parsora, Tiki Formation		Nawagarh Group
	Panchet Formation		Sabri Group
	Kamthi Formation		Pakhal Group
	Barakar Formation		Saraipali Formation
	Raniganj Formation		Chhuipali Formation
	Talchir Formation		Rehalikhol Formation
	Maniari Formation		Chilpi Group
	Hirri Formation		Khairagarh Group
	Saradih Formation		Abujhmar Group
	Tarenga Formation		Bijli Rhyolite
	Chandi Sandstone		Pitepani Volcanics
	Chandi Limestone		Dongargarh Granite
	Bamnidihi Formation		Granite of Bilas-Raig-Sug
	Pandaria Formation		Sonakhan Group
	Gunderdehi Formation		Unclassified Metamorphics_BRA
	Charmuria Formation		Bailadila Group
	Raigarh Formation (Sandstone)		Chhotanagpur Gneissic Rocks
	Raigarh Formation		Bastar Gneisses
	Chandrapur Group		Bengpal Group
	Machkot Dolomite		Charnokite- Khondalite Group
	Jagdarpur Formation		

5.1 Consolidated Formations

The consolidated formations include the crystalline and the metamorphosed sedimentary formations belonging to Proterozoic age. They are mainly granites, granite gneisses, schistose rocks, charnockites, quartzites, calcsilicate rocks, shales, phyllites and limestones. These rocks are devoid of primary porosity. The ground water occurs in the secondary porosity resulting from fracturing, jointing and weathering. These hard rock aquifers exhibit considerable variations laterally as well as depth wise. The weathered formation is composed of loose regolith with secondary intergranular porosity, which facilitates free circulation of ground water. Also, the fractures at depth form potential repository of ground

water. In general, the average thickness of weathered formation varies from 15 to 20 m. The ground water occurs under water table conditions. The water bearing fracture zones are generally occurring within a depth of 100m, but deeper potential fractures are also encountered in some of the boreholes.

Deccan Trap basalts are typical hard rock formations. The lava flows are generally 10 to 20 m thick. The top of each flow comprises of 25 to 40 % vesicular/fragmentary basalt. The vesicles are generally filled with secondary minerals like calcite and zeolite. The characteristic red bole beds form the marker horizons and occur as inter- trappean beds between successive flows. Deccan Traps with primary vesicular structure and secondary fractures and joints are moderately productive from ground water point of view. The ground water occurs under both unconfined to semi confined conditions. The Deccan Trap basalts are occurring at few places.

5.2 Semi-consolidated formations

The semi-consolidated formations include Gondwana Supergroup of sedimentary rocks and ranging in age from Upper Carboniferous to Cretaceous. This group includes sandstone, shale, siltstone and conglomerate beds. These formations are generally highly compact and possess less intergranular porosity. The coarse to medium grained, weathered, fractured and friable sandstone forms good aquifer. The ground water occurs under water table conditions in the near surface aquifers and under confined conditions in the deeper aquifers. The depth of weathering in Gondwana Group of rocks generally extends to a depth of 15 m.

5.3 Unconsolidated formations

The unconsolidated formations include alluvium and laterite. Alluvium occurs as discontinues patches along the River courses where the thickness is limited. The sand and gravel layers act as a good repository for ground water. The ground water occurs under unconfined conditions. The laterites occur as cap rocks on basalts or granites. The laterites are vesicular, essentially ferruginous and form good repository of ground water.

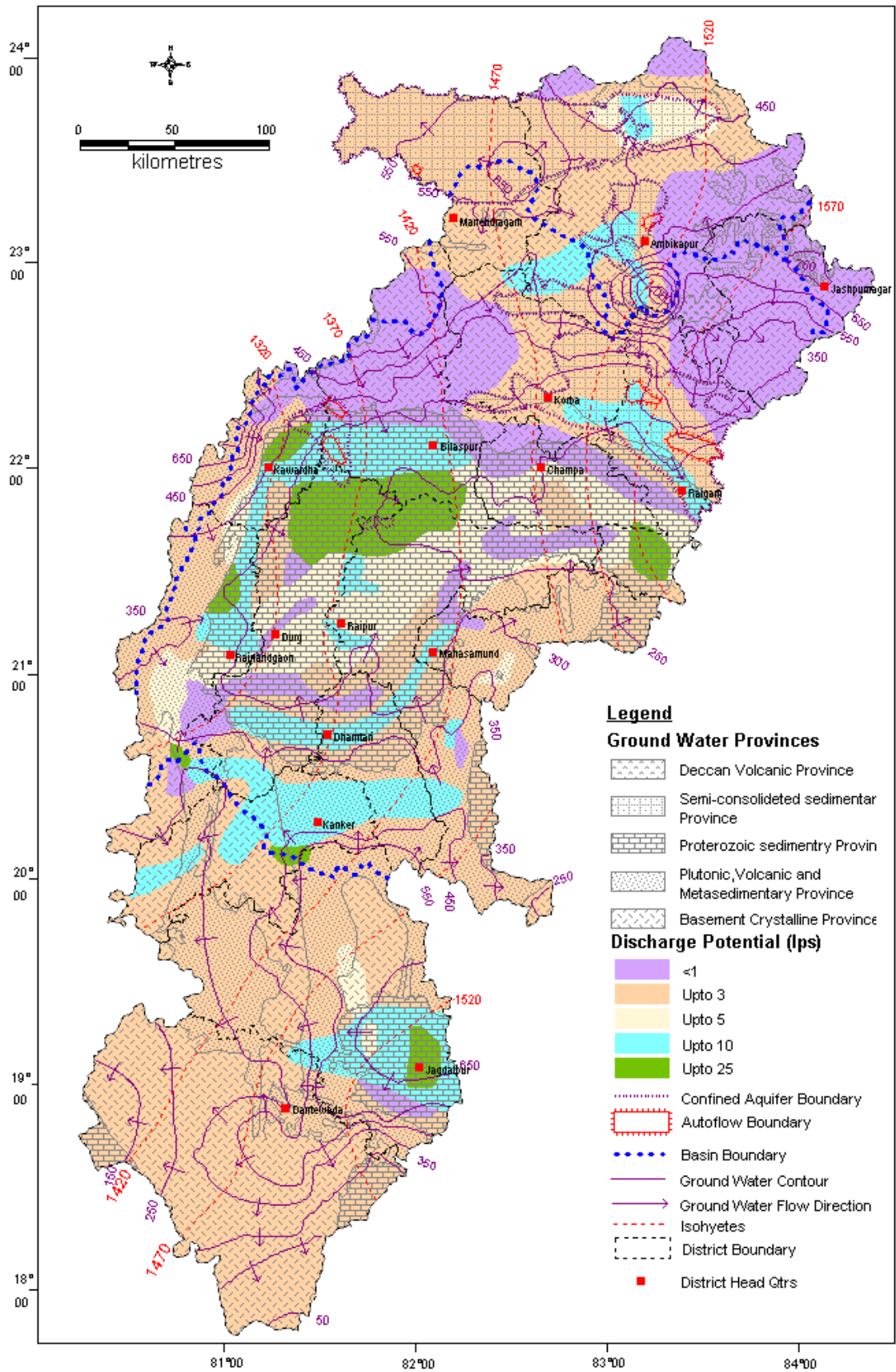


Fig. 5.2: Hydrogeological map of Chhattisgarh State

6. GROUND WATER REGIME MONITORING

Ground water level is not static. It is always under the influence of time-dependent recharge and discharge factors. As a result, the water level in the aquifer system fluctuates and the range depends on the period of influence. The recharge is due to many factors such as rainfall, seepage from reservoirs, lakes, ponds, rivers and irrigation, etc. The discharge includes ground water withdrawal through manual and pumping systems, natural seepage to rivers and sea, evaporation from shallow water table and transpiration through vegetation.

The Central Ground Water Board is monitoring the ground water regime through the length and breadth of the country since the year 1969 through a network of Hydrograph Stations (NHS). The density of observation wells is increased from year to year. As on 31st March 2018, a total of 1257 number of observation wells, which included both dug wells (1017) and piezometers (240) were established in Chhattisgarh for monitoring purposes. Location of the NHS wells is shown in **Fig. 6.1**. The details of NHS are given in Annexure-I.

The hydrograph network stations (NHS) are established permanently and are monitored during every set of measurements. The existing network provides information on ground water regime with fair degree of accuracy. The NHS wells are monitored four times in a year during the following months. They are;

May - 21st to 31st of the month - represents water level of Pre-monsoon period.

August - 21st to 31st of the month - represents peak monsoon water level

November - 1st to 10th of the month- represents water level of Post-monsoon period.

January - 1st to 10th of the month- represents the recession stage of water level

Water samples were collected from each network station during the month of May 2017 (Pre-monsoon) to assess the chemical quality of ground water.

6.1 Distribution of Hydrograph Network Stations (NHS)

a) **District-wise-** The total number of hydrograph network stations (NHS) in the State are 1257. Out of these 1017 are dug wells tapping the shallow aquifer and 240 are piezometers tapping both shallow and deeper aquifers. District-wise distribution of the hydrograph network stations is given in **Table 6.1** and is also shown in **Fig. 6.1**.

Table 6.1 District-wise distribution of the hydrograph network stations

Sl No	Name of the District	Total No. of Ground Water Monitoring Wells (As on 31, March 2017)			Total No. of Ground Water Monitoring Wells Established up to March 2018)			Total No. of Ground Water Monitoring Wells (As on March 2018)		
		DW	PZ	Total	DW	PZ	Total	DW	PZ	Total
1	Bastar	48	11	59	5	0	5	53	11	64
2	Bilaspur	81	11	92	8	0	8	89	11	100
3	Dhamtari	36	10	46	7	0	7	43	10	53
4	Durg	76	33	109	10	0	10	86	33	119
5	Janjgir-Champa	50	11	61	1	0	1	51	11	62
6	Jashpur	68	11	79	5	0	5	73	11	84
7	Kanker	25	4	29	8	0	8	33	4	37
8	Kawardha	19	9	28	0	0	0	19	9	28
9	Korba	73	29	102	6	0	6	79	29	108
10	Koriya	45	6	51	7	0	7	52	6	58
11	Mahasamund	28	20	48	3	0	3	31	20	51
12	Raigarh	114	19	133	11	0	11	125	19	144
13	Raipur	116	36	152	5	0	5	121	36	157
14	Rajnandgaon	72	9	81	10	0	9	82	9	91
15	Surguja	79	21	100	1	0	1	80	21	101
	Total	930	240	1170	87	0	86	1017	240	1257

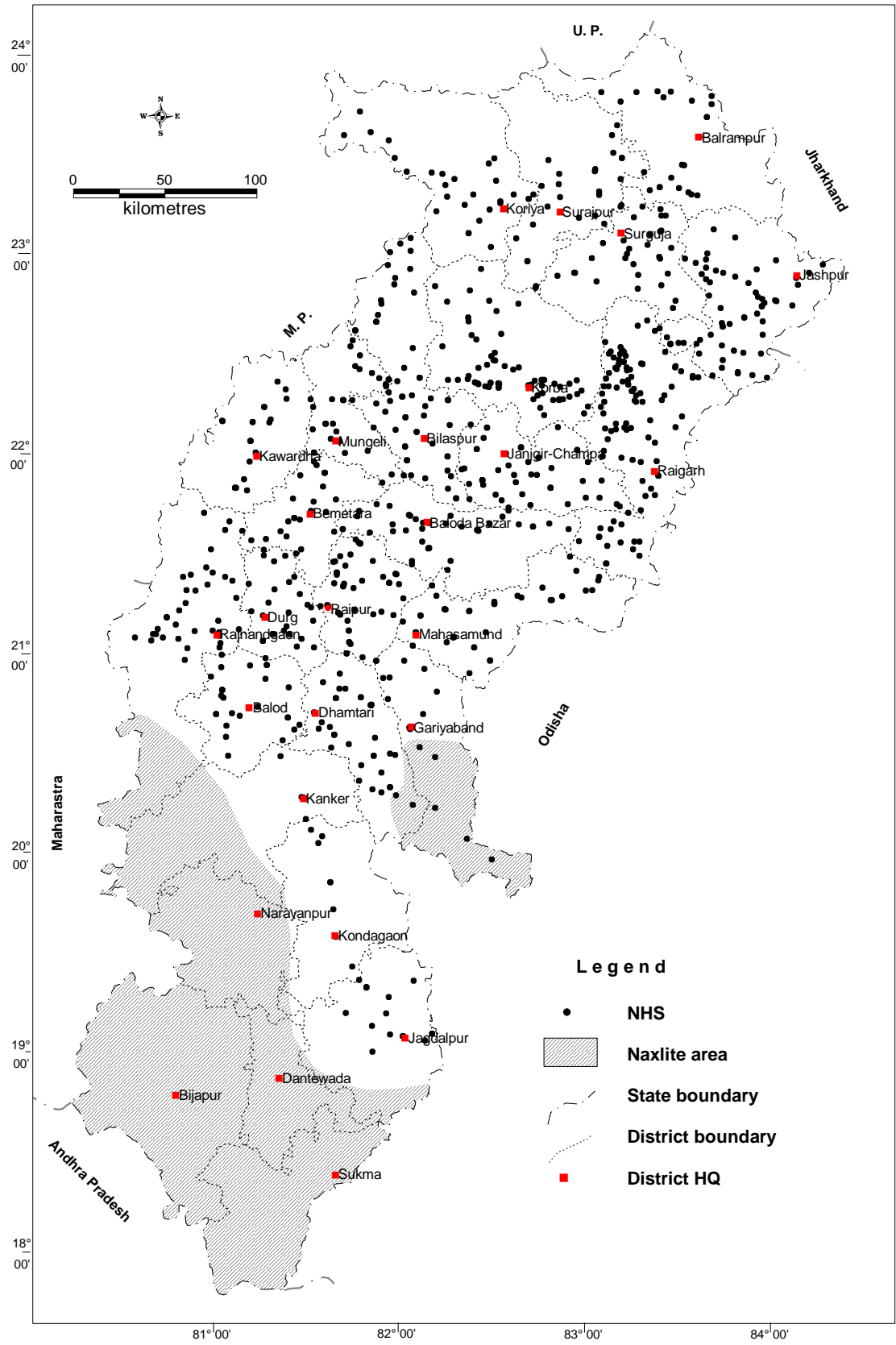


Fig 6.1 Location of NHS monitoring stations, Chhattisgarh State

7. ANALYSIS OF WATER LEVELS

The ground water levels observed over a period provides valuable information on the behavior of the ground water regime, which is constantly subjected to changes due to recharge and discharge phenomena. A balance between these two factors is resulting in the decline or rise in the ground water storage. When the recharge exceeds discharge there will be a rise in the ground water storage and vice versa. The decline in water level may be due to increase in draft (for different purposes) or decrease in precipitation (less recharge to ground water). On the other hand, a rise in water level may be due to an increase in rainfall and/or due to changes in irrigation practices.

The dug wells are tapping the phreatic aquifer which is mostly limited to a depth of 15 m. The depth of piezometers which are tapping both the phreatic and deeper aquifers varies from 18 to 90 m. Hence the water level recorded in the piezometers may not be the same as that of dug wells for a particular period though both the structures are in the same place. In this report the water level data collected from the dug wells is presented. The water level in some of the wells on the southern part of the State could not be measured due to various reasons. Hence those areas are left blank while preparing different maps.

The NHS (dug wells) water level data collected four times during the year 2017-18 was analyzed and for every set of measurements, write up and maps were prepared and are presented here under various paragraphs. The NHS (dug well) water level data is given in **Annexure-II**. The purpose of water level data analysis is;

- i) Four measurements of depth to water level gives an overall idea regarding the ground water level in the state during the year of measurement.
- ii) The fluctuation in comparison to the same month in the previous year gives an idea about the change in the ground water level for a particular period with respect to that of the level during the same month in the previous year. This gives an idea about the change in the amount of draft and rainfall between the two years.
- iii) The water level fluctuation during the pre-monsoon period in comparison to last year gives an idea about the seasonal fluctuation, which ultimately reflects the change in dynamic ground water resources.

- iv) The water level fluctuation during a particular month of measurement with reference to the decadal mean for the same months gives an idea of the behavior of the ground water level on long-term basis.

7.1 Depth to Water Level

7.1.1 May 2017

In general, the depth to water level range up to 5 mbgl is observed in approximately 21.13% of the wells and depth to water level range up to 10 mbgl is observed in 76.18 % of the wells in the state. Deeper water levels ranging between 10 and 20 mbgl occur only in 19.87% of the observation wells and mostly in all part of state. Deeper water levels ranging between 20 and 30 mbgl occur only in 3.47% of the observation wells and mostly in all part of Korba, Raipur, Mahasamund and Kawardha district. The deepest water level of 43.7 m bgl was monitored in Chandkhuri (d) observation well (piezometer) of Bilaspur district.

12 numbers of wells (approximately 1.89% of the monitored wells) in the state are showing water levels between 0-2 m bgl in almost all the districts of Chhattisgarh State except Bilaspur, Jashpur, Kanker, kawardha, Korba, Rajnandgaon, Dhamtari, Dantewara and Surguja. Water levels in the range of 2-5 m bgl are recorded in about 122 of the observation wells monitored. The highest percentages of wells in this range are in Raipur (32.31%), Janjgir-Champa (40%), Durg (29.51%) & Dhamtari (25%) districts. Nearly 55.04% of observation wells are exhibiting water level in the range of 5-10 mbgl in most of the districts of the state. The district wise frequency distribution of different ranges of depth to water level is furnished in **Annexure-I and II**. District wise distribution of percentage of observation wells at different ranges of depth to water level as observed in May '2017 are given in **Table 7.1** and represented on a map and appended as **Fig 7.1**.

Table 7.1 District wise distribution of percentage of observation wells at different ranges of depth to water level in May' 2017

District	No. of wells analysed	Depth to water table(mbgl)		No./Percentage of wells showing Depth to water table(mbgl) in the range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	> 40.0
BASTAR	25	3.25	14.97	0	2 8.00%	16 64.00%	7 28.00%	0	0
BILASPUR	79	0.78	43.7	1 1.27%	13 16.46%	41 51.90%	19 24.05%	3 3.80%	2 2.53%
DANTEWADA	2	8.91	9	0	0	2 100.00%	0	0	0
DHAMTARI	20	2.15	20.67	0	5 25.00%	11 55.00%	3 15.00%	1 5.00%	0
DURG	61	1.6	41.9	1 1.64%	18 29.51%	26 42.62%	11 18.03%	4 6.56%	1 1.64%
JANJGIR-CHAMPA	40	1.4	15.4	5 12.50%	16 40.00%	15 37.50%	4 10.00%	0	0
JASHPUR	52	2.61	24.02	0	7 13.46%	33 63.46%	10 19.23%	2 3.85%	0
KANKER	13	5.4	12.76	0	0	10 76.92%	3 23.08%	0	0
KAWARDHA	20	4.85	26.3	0	1 5.00%	12 60.00%	3 15.00%	4 20.00%	0
KORBA	42	2.68	14.47	0	5 11.90%	28 66.67%	9 21.43%	0	0
KORIYA	32	1.3	12.9	3 9.38%	7 21.88%	15 46.88%	7 21.88%	0	0
MAHASAMUND	18	3.6	21.56	0	3 16.67%	8 44.44%	6 33.33%	1 5.56%	0
RAIGARH	59	1.77	37	1 1.69%	7 11.86%	39 66.10%	9 15.25%	3 5.08%	0
RAIPUR	65	2	24.45	1 1.54%	21 32.31%	32 49.23%	9 13.85%	2 3.08%	0
RAJNANDGAON	42	2.98	15.2	0	9 21.43%	23 54.76%	10 23.81%	0	0
SARGUJA	64	2.53	25.8	0	8 12.50%	38 59.38%	16 25.00%	2 3.13%	0
Total	634	0.78	43.7	12	122	349	126	22	3

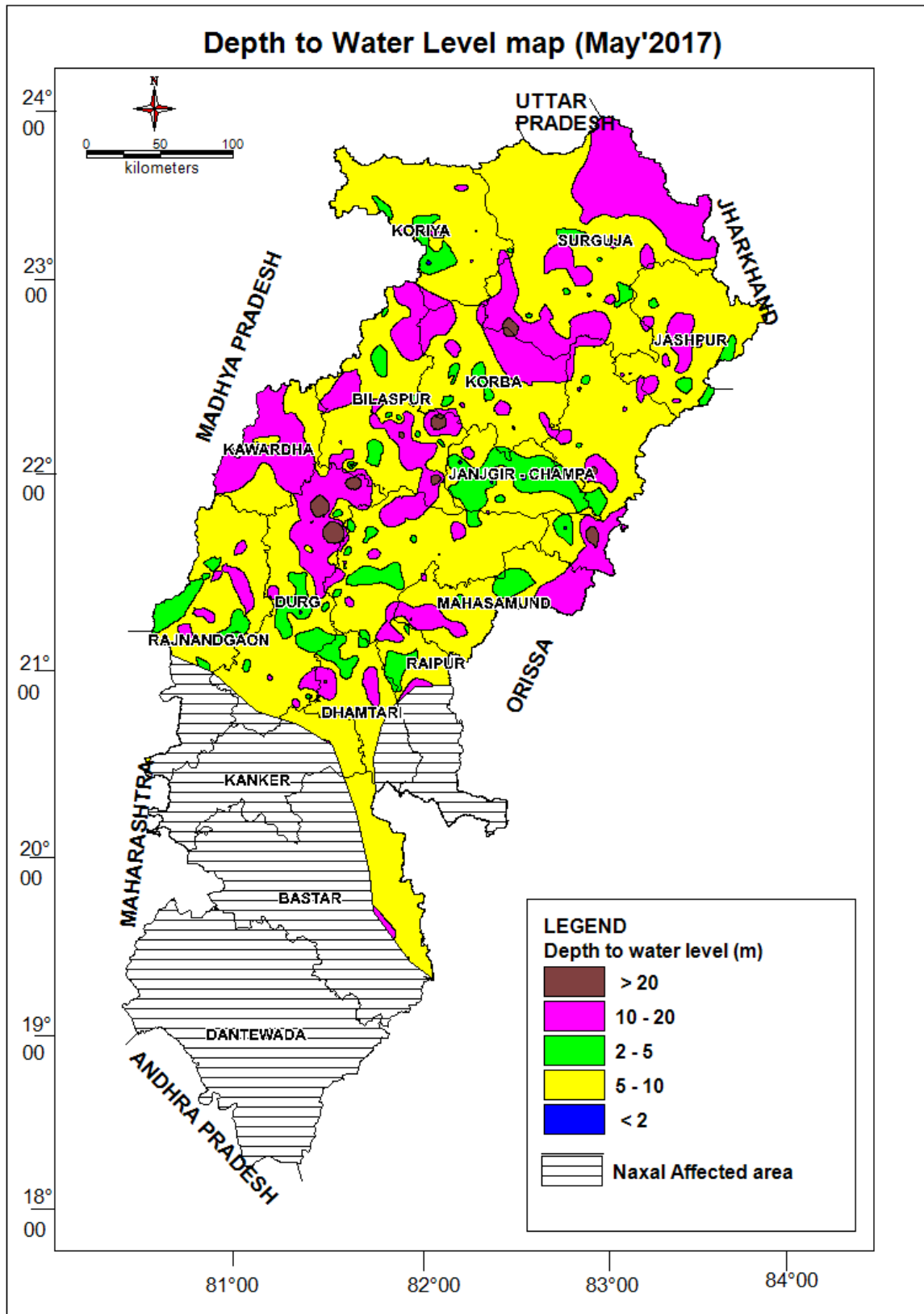


Fig 7.1 Depth to Water Level Map May' 2017

7.1.2 August 2017

In general, the depth to water level range up to 5 mbgl is observed in approximately 81.76% of the wells and depth to water level range up to 10 mbgl is observed in approximately 96.29% of the wells in the state. Deeper water levels ranging between 10 and 20 mbgl occur only in 3.41% of the observation wells and mostly in parts of Bilaspur, Durg, Kawardha, Jashpur and Raigarh districts. The deepest water level of 26.41 mbgl was monitored in Ranka observation well (Shallow piezometer) of Durg district.

223 numbers of wells (approximately 31.76% of the monitored wells) in the state are showing water levels between 0-2 m bgl in almost all the districts of Chhattisgarh State. Water levels in the range of 2-5 m bgl are recorded in about 351 of the observation wells monitored (approximately 50%). The highest percentages of wells in this range are in Surguja (55.22%), Koriya (61.11%), Dantewada (66.67%), Jaspur (61.90%), Kanker (55.56%), Korba (73.33%) & Jangir-Champa (51.22%) districts. Nearly 14.52% of observation wells are exhibiting water level in the range of 5-10 mbgl in most of the districts of the state. The district wise frequency distributions of different ranges of depth to water level are furnished in **Annexure-I and II**. District wise distribution of percentage of observation wells at different ranges of depth to water level as observed in August'2015 are given in **Table 7.2** and represented on a map and appended as **Fig 7.2**.

Table 7.2 District wise distribution of percentage of observation wells at different ranges of depth to water level in August' 2017

District	No. of wells analysed	Depth to water table(mbgl)		No./Percentage of wells showing Depth to water table(mbgl) in the range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	> 40.0
BASTAR	28	0.95	5.52	14 50.00%	13 46.43%	1 3.57%	0	0	0
BILASPUR	82	0.73	15.9	27 32.93%	39 47.56%	13 15.85%	3 3.66%	0	0
DANTEWADA	3	1.54	3	1 33.33%	2 66.67%	0	0	0	0
DHAMTARI	28	0.78	20	12 42.86%	13 46.43%	2 7.14%	1 3.57%	0	0
DURG	65	0.61	26.41	24 36.92%	28 43.08%	5 7.69%	6 9.23%	2 3.08%	0
JANJGIR-CHAMPA	41	0.8	9.15	18 43.90%	21 51.22%	2 4.88%	0	0	0
JASHPUR	63	0.4	9.45	16 25.40%	39 61.90%	8 12.70%	0	0	0
KANKER	18	0.65	8.4	4 22.22%	10 55.56%	4 22.22%	0	0	0
KAWARDHA	17	1.81	18.31	1 5.88%	6 35.29%	7 41.18%	3 17.65%	0	0
KORBA	45	0.86	14.2	6 13.33%	33 73.33%	4 8.89%	2 4.44%	0	0
KORIYA	36	0.81	18.2	7 19.44%	22 61.11%	5 13.89%	2 5.56%	0	0
MAHASAMUND	28	1.15	7.61	12 42.86%	11 39.29%	5 17.86%	0	0	0
RAIGARH	75	0.2	12	20 26.67%	36 48.00%	15 20.00%	4 5.33%	0	0
RAIPUR	72	0.42	8.5	44 61.11%	27 37.50%	1 1.39%	0	0	0
RAJNANDGAON	34	1.02	11.3	5 14.71%	14 41.18%	14 41.18%	1 2.94%	0	0
SARGUJA	67	1.06	14.59	12 17.91%	37 55.22%	16 23.88%	2 2.99%	0	0
Total	702	0.2	26.41	223	351	102	24	2	0

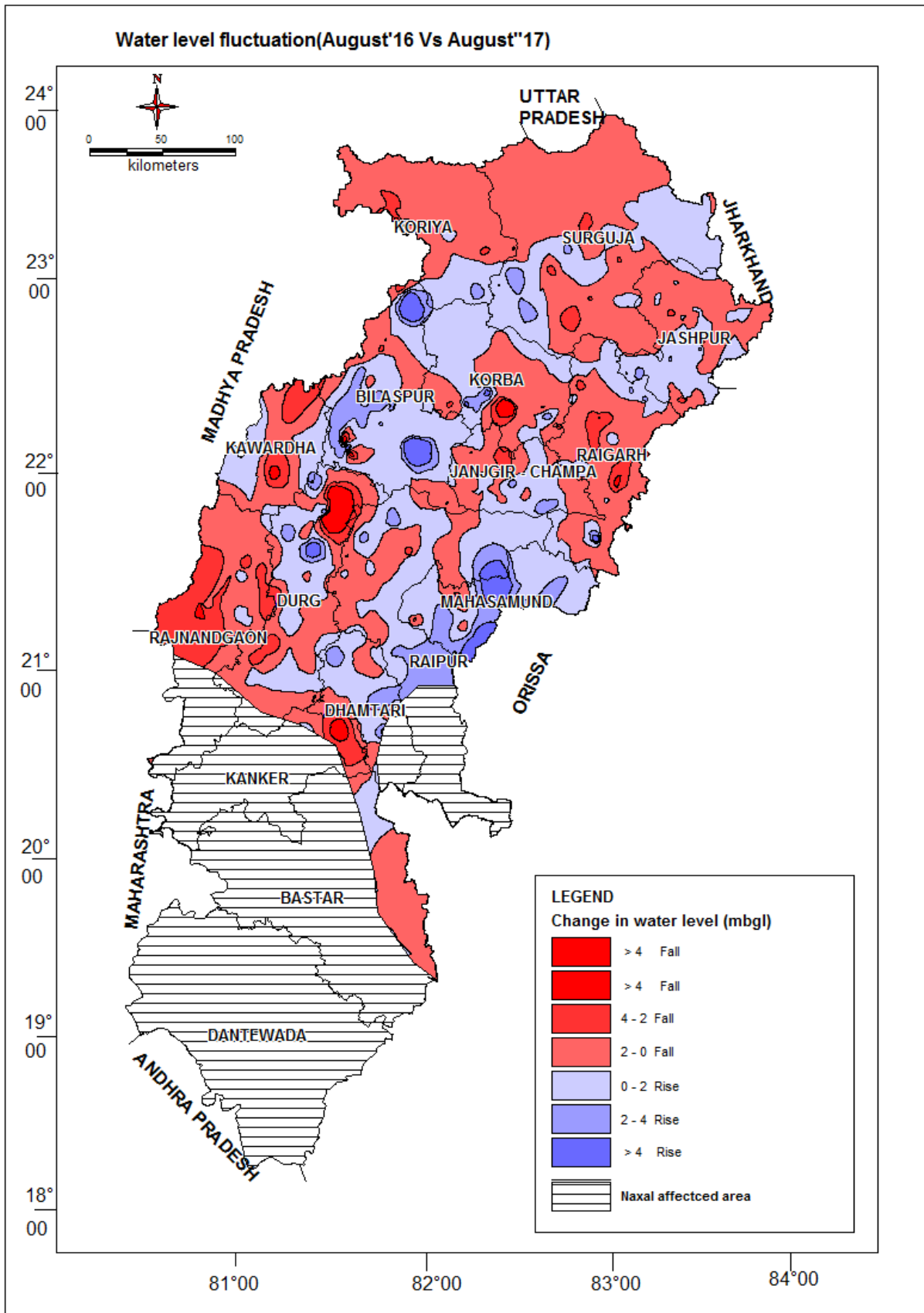


Fig 7.2 Depth to Water Level Map (August'2017)

7.1.3 November 2017

In general, the depth to water level range up to 5 mbgl is observed in approximately 67.79% of the wells and depth to water level range up to 10 mbgl is observed in approximately 94.63% of the wells in the state. Deeper water levels ranging between 10 and 20 mbgl occur only in 4.51% of the observation wells and mostly in parts of Bilaspur, Korba, Koriya, Kawardha, Mahasamund, Durg and Surguja districts. The deepest water level of 36.66 m bgl was monitored in Magarlod S observation well (Deep piezometer) of Dhamtari district.

72 numbers of wells (approximately 10.16% of the monitored wells) in the state are showing water levels between 0-2 m bgl in almost all the districts of Chhattisgarh State. Water levels in the range of 2-5 m bgl are recorded in about 408 (57.62%) of the observation wells monitored. The highest percentages of wells in this range are in Bastar (85.00%), Bilaspur (55.43%), Jangir-Champa (60.47%), Kanker (88.89%), Korba (71.74%), Dhamtari (60.0), Raipur (71.64%), Koriya (53.66%), Mahasamund (50.0%) and Bilaspur (55.43%) districts. Nearly 26.83% of observation wells are exhibiting water level in the range of 5-10 mbgl in most of the districts of the state. District wise distribution of percentage of observation wells at different ranges of depth to water level as observed in November '2015 are given in **Table 7.3** and represented on a map and appended as **Fig 7.3**.

Table 7.3 District wise distribution of percentage of observation wells at different ranges of depth to water level in November' 2017

District	No. of wells analysed	Depth to water table(mbgl)		No./Percentage of wells showing Depth to water table(mbgl) in the range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	> 40.0
BASTAR	20	1.1	4.8	3 15.00%	17 85.00%	0	0	0	0
BILASPUR	92	1.19	18.41	6 6.52%	51 55.43%	28 30.43%	7 7.61%	0	0
DHAMTARI	30	1.12	36.66	4 13.33%	18 60.00%	5 16.67%	1 3.33%	2 6.67%	0
DURG	73	1.21	35.8	10 13.70%	42 57.53%	14 19.18%	3 4.11%	4 5.48%	0
JANJGIR-CHAMPA	43	1.1	10.17	8 18.60%	26 60.47%	8 18.60%	1 2.33%	0	0
JASHPUR	62	0.65	17.8	3 4.84%	35 56.45%	23 37.10%	1 1.61%	0	0
KANKER	9	2	4.6	1 11.11%	8 88.89%	0	0	0	0
KAWARDHA	18	1.65	19.29	1 5.56%	8 44.44%	6 33.33%	3 16.67%	0	0
KORBA	46	1.76	13.4	1 2.17%	33 71.74%	10 21.74%	2 4.35%	0	0
KORIYA	41	0.8	11.7	6 14.63%	22 53.66%	11 26.83%	2 4.88%	0	0
MAHASAMUND	24	1.35	10.07	3 12.50%	12 50.00%	8 33.33%	1 4.17%	0	0
RAIGARH	76	0.85	14	8 10.53%	39 51.32%	26 34.21%	3 3.95%	0	0
RAIPUR	67	1.36	7.66	11 16.42%	48 71.64%	8 11.94%	0	0	0
RAJNANDGAON	39	1.5	10.4	4 10.26%	16 41.03%	18 46.15%	1 2.56%	0	0
SARGUJA	68	1.7	14.45	3 4.41%	33 48.53%	25 36.76%	7 10.29%	0	0
Total	708	0.65	36.66	72	408	190	32	6	0

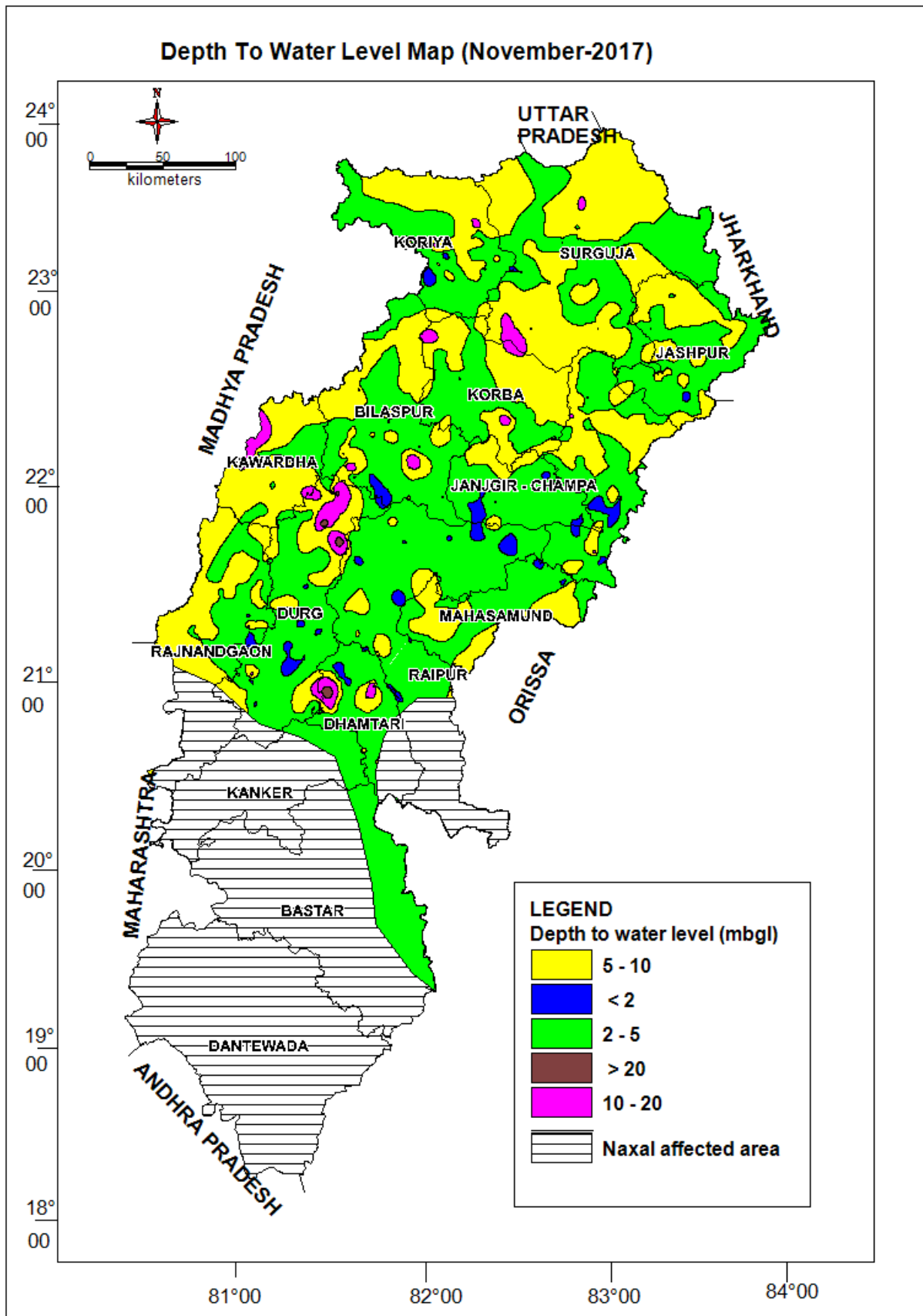


Fig.7.3 Depth to Water Level Map (November'2017)

7.1.4 January 2018

In general, the depth to water level range up to 5 mbgl is observed in approximately 40.75% of the wells and depth to water level range up to 10 mbgl is observed in approximately 89.73% of the wells in the state. Deeper water levels ranging between 10 and 20 mbgl occur only in 8.09% of the observation wells and mostly in parts of Bilaspur, Kawardha, Janjgir- Champa, Mahasamund, Rajnandgaon and Surguja districts. The deepest water level of 36.66 m bgl was monitored in Magarlod S observation well (Deep piezometer) of Dhamtari district.

17 numbers of wells (approximately 2.45% of the monitored wells) in the state are showing water levels between 0-2 m bgl in almost all the districts of Chhattisgarh State. Water levels in the range of 2-5 m bgl are recorded in about 265 (38.29%) of the observation wells monitored. The highest percentages of wells in this range are in Bastar (42.31), Dhamtari (56.67), Durg (50.0), Jaspur (41.07), Mahasamund (45.83), Raipur (58.21) districts. Nearly 48.98% of observation wells are exhibiting water level in the range of 5-10 mbgl in most of the districts of the state. District wise frequency distributions of different ranges of depth to water level are furnished in **Annexure-I and II**. The district wise frequency distributions of different ranges of depth to water level are furnished in **Table 7.4**. Different ranges of depth to water table as observed in January 2016 are represented on a map and appended as **Fig 7.4**

Table 7.4 District wise distribution of percentage of observation wells at different ranges of depth to water level in Jan' 2018									
District	No. of wells analysed	Depth to water table(mbgl)		No./Percentage of wells showing Depth to water table(mbgl) in the range of					
		Min	Max	0.0 - 2.0	2.0 - 5.0	5.0 - 10.0	10.0 - 20.0	20.0 - 40.0	> 40.0
BASTAR	26	0.42	11.24	1 3.85%	11 42.31%	13 50.00%	1 3.85%	0	0
BILASPUR	88	1.15	21.7	4 4.55%	31 35.23%	42 47.73%	8 9.09%	3 3.41%	0
DANTEWADA	1	7.23	7.23	0	0	1 100.00%	0	0	0
DHAMTARI	30	1.39	36.66	1 3.33%	17 56.67%	9 30.00%	1 3.33%	2 6.67%	0
DURG	68	1.35	32.45	1 1.47%	34 50.00%	24 35.29%	4 5.88%	5 7.35%	0
JANJGIR-CHAMPA	38	1.4	15.7	2 5.26%	15 39.47%	16 42.11%	5 13.16%	0	0
JASHPUR	56	2.1	16.8	0	23 41.07%	31 55.36%	2 3.57%	0	0
KANKER	24	3.01	13.5	0	5 20.83%	18 75.00%	1 4.17%	0	0
KAWARDHA	19	2.95	26.15	0	5 26.32%	9 47.37%	2 10.53%	3 15.79%	0
KORBA	43	1.7	14.47	2 4.65%	17 39.53%	21 48.84%	3 6.98%	0	0
KORIYA	38	1.5	12.15	2 5.26%	12 31.58%	22 57.89%	2 5.26%	0	0
MAHASAMUND	24	1.9	11.44	1 4.17%	11 45.83%	9 37.50%	3 12.50%	0	0
RAIGARH	71	2.3	31.6	0	27 38.03%	40 56.34%	2 2.82%	2 2.82%	0
RAIPUR	67	1.84	15.4	2 2.99%	39 58.21%	24 35.82%	2 2.99%	0	0
RAJNANDGAON	44	1.98	15.2	1 2.27%	9 20.45%	24 54.55%	10 22.73%	0	0
SARGUJA	55	3.41	18.71	0	9 16.36%	36 65.45%	10 18.18%	0	0
Total	692	0.42	36.66	17	265	339	56	15	0

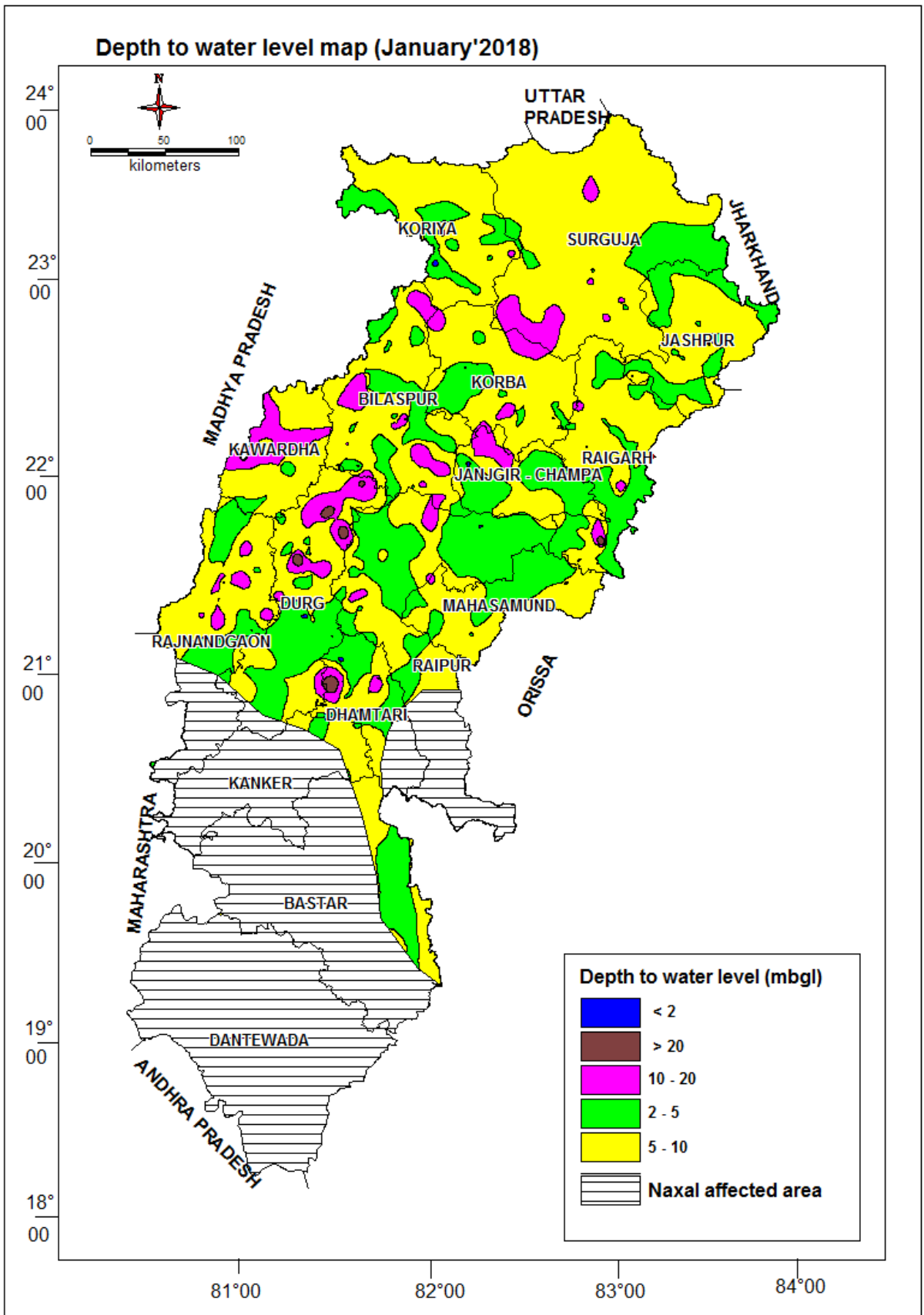


Fig. 7.4 Depth to Water Level Map (January'2018)

7.2 Water Level Fluctuation

7.2.1 May 2016 Vs May 2017

When compared to water level in May 2016, nearly 54.85% of the observation wells are showing rise in water level in May' 2017. Rise of water level in the range of 0-2 m is observed in 38.81 % of the wells distributed in almost all the districts. Rise of water level in the range of 2-4 m is observed in 9.5 % of the wells distributed in almost all the districts except Bastar, Bilashpur, Dhamtari, Durg, Kawardha and Korba districts. Rise of water level by more than 4 m is also observed in 6.53 % of the monitored wells except Bastar, Durg, Kanker, Kawardha, Korba, Surguja and Raipur district. Fall of water level is recorded in nearly 38.81% of the monitored wells. Fall of water level in the range of 0-2 m, 2-4 m and more than 4 m are observed in 27.32%, 5.94% and 5.54% of the monitored wells, respectively in the State.

The district wise frequency for different fluctuation ranges is presented in **Table 7.5**. Different ranges of fluctuation in May 2017 as compared to May 2016 are represented on a map and appended as **Fig 7.5, Table 7.5**

Table 7.5 District wise frequency for different fluctuation ranges between May 2016 Vs May 2017

District Name	No. of wells	Rise of Fluctuation(m)				No .of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	17	0.6	6.1	0.12	6.89	4 23.53%	0	1 5.88%	8 47.06	2 11.76%	2 11.76%	5	12
BILASPUR	60	0.08	11.9	0.02	6.45	22 36.67%	3 5.00%	1 1.67%	22 36.67%	3 5.00%	3 5.00%	26	28
DHAMTARI	17	0.04	11.6	0.05	1.65	9 52.94%	0	2 11.76%	5 29.41%	0	0	11	5
DURG	47	0.03	11.91	0.02	28.4	19 40.43%	3 6.38%	2 4.26%	9 19.15%	6 12.77%	4 8.51%	24	19
JANJGIR-CHAMP	36	0.26	9.63	0.11	5.18	17 47.22%	4 11.11%	7 19.44%	3 8.33%	2 5.56%	1 2.78%	28	6
JASHPUR	48	0.1	6.08	0.04	10.81	16 33.33%	6 12.50%	6 12.50%	9 18.75%	3 6.25%	6 12.50%	28	18
KANKER	2	0.41	0.71	-	-	2 100.00%	0	0	0	0	0	2	0
KAWARDHA	17	0.08	2.4	0.18	3.34	4 23.53%	1 5.88%	0	8 47.06%	3 17.65%	0	5	11
KORBA	41	0.1	3.62	0.05	4.1	19 46.34%	2 4.88%	0	14 34.15%	1 2.44%	1 2.44%	21	16
KORIYA	18	0.1	10.41	0.1	2.45	8 44.44%	3 16.67%	2 11.11%	3 16.67%	1 5.56%	0	13	4
MAHASAMUND	14	0.36	5.78	0.08	1.62	4 28.57%	3 21.43%	1 7.14%	6 42.86%	0	0	8	6
RAIGARH	51	0.01	8.39	0.02	12	14 27.45%	7 13.73%	4 7.84%	10 19.61%	4 7.84%	5 9.80%	25	19
RAIPUR	54	0.05	10.04	0.06	13.27	24 44.44%	8 14.81%	2 3.70%	13 24.07%	2 3.70%	3 5.50%	34	18
RAJNANDGAON	35	0.05	8.02	0.25	1.88	18 51.43%	2 5.71%	3 8.57%	10 28.57%	0	0	23	10
SARGUJA	48	0.02	4.67	0.05	10.7	16 33.33%	6 12.50%	2 4.17%	18 37.50%	3 6.25%	3 6.25%	24	24
Total	505	0.6	0.71	0	28.4	196	48	33	138	30	28	277	196

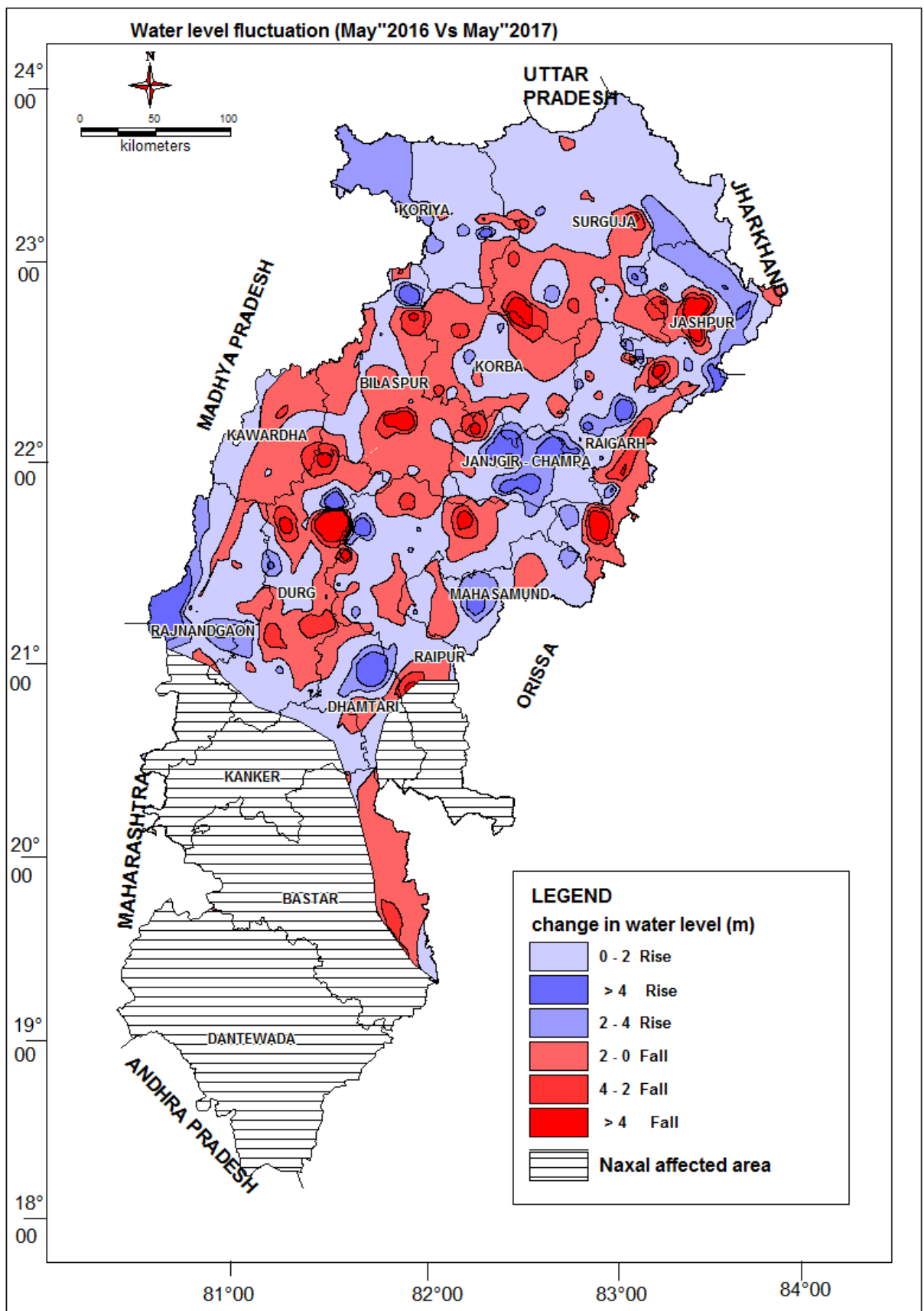


Fig. 7.5 Water Level Fluctuation (May'2016 Vs May'2017)

7.2.2 August 2016 Vs August 2017

When compared to water level in August 2016, nearly 48.28% of the observation wells are showing rise in water level in August' 2017. Rise of water level in the range of 0-2 m is observed in 38.33 % of the wells distributed in almost all the districts except Kanker district. Rise of water level in the range of 2-4 m is observed in 7.4 % of the wells monitored mostly in Bilaspur, Dhamtari, Jangir-Champa, Mahasamund, Raipur and Surguja districts. Rise of water level by more than 4 m is observed in 2.53% of the monitored wells in Bastar, Bilaspur, Dhamtari, Korba, and Mahasamund districts. Fall of water level is recorded in nearly 50.27 % of the monitored wells. Fall of water level in the range of 0-2 m, 2-4 m and more than 4 m are observed in 39.42%, 8.13% and 2.71% of the monitored wells, respectively in the State.

The district wise frequency for different fluctuation ranges is presented in **table 7.6**. Different ranges of fluctuation in Aug 2017 as compared to Aug 2016 are represented on a map and appended as **fig 7.6**.

7.2.3 November 2016 Vs November 2017

When compared to water level in November 2016, nearly 45.97% of the observation wells are showing rise in water level in November' 2017. Rise of water level in the range of 0-2 m is observed in 36.63 % of the wells distributed in almost all the districts. Rise of water level in the range of 2-4 m is observed in 7.50 % of the wells monitored mostly in Bastar, Bilashpur, Durg, Jangir-Champa, Kawardha and Korba districts. Rise of water level by more than 4 m fall is observed in 1.83 % of the monitored wells. Fall of water level is recorded in nearly 51.28% of the monitored wells. Fall of water level in the range of 0-2 m, 2-4 m and more than 4 m are observed in 41.75%, 7.32% and 2.19% of the monitored wells, respectively in the State.

The district wise frequency for different fluctuation ranges is presented in **Table 7.7**. Different ranges of fluctuation in Nov' 2017 as compared to Nov' 2016 are represented on a map and appended as **Fig. 7.7**.

7.2.4 January 2017 Vs January 2018

When compared to water level in January 2017, nearly 44.23% of the observation wells are showing rise in water level in January' 2018. Rise of water level in the range of 0-2 m is observed in 36.18 % of the wells distributed in almost all the districts except Kanker and Dhamtari district. Rise of water level in the range of 2-4 m is observed in 5.41 % of the wells monitored mostly in Bastar, Dhamtari, Kanker, Rajnandgaon and Durg districts. Rise of water level by more than 4 m fall is observed in 2.62 % of the monitored wells. Fall of water level is

recorded in nearly 52.97% of the monitored wells. Fall of water level in the range of 0-2 m, 2-4 m and more than 4 m are observed in 40.73%, 7.51% and 4.72% of the monitored wells, respectively in the State.

The district wise frequency for different fluctuation ranges is presented in **Table 7.8**. Different ranges of fluctuation in January 2018 as compared to January 2017 are represented on a map and appended as **Fig 7.8**

District Name	No. of wells	Rise of Fluctuation(m)				No. of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	19	0.07	4.52	0.12	1.78	10 52.63%	0	1 5.26%	8 42.11%	0	0	11	8
BILASPUR	63	0.01	25.15	0.04	12.78	32 50.79%	10 15.87%	4 6.35%	13 20.63%	2 3.17%	2 3.17%	46	17
DHAMTARI	21	0.06	5.04	0.2	2.33	9 42.86%	3 14.29%	1 4.76%	7 33.33%	1 4.76%	0	13	8
DURG	51	0.02	6.82	0.01	10.28	18 35.29%	3 5.88%	1 1.96%	22 43.14%	4 7.84%	2 3.92%	22	28
JANJGIR-CHAMPA	39	0.11	2.8	0.04	3.97	14 35.90%	3 7.69%	0	16 41.03%	5 12.82%	0	17	21
JASHPUR	56	0.05	3.9	0.05	4.32	29 51.79%	3 5.36%	0	21 37.50%	2 3.57%	1 1.79%	32	24
KANKER	6	0.57	0.89	0.08	5.79	2 33.33%	0	0	2 33.33%	1 16.67%	1 16.67%	2	4
KAWARDHA	9	0.06	1.72	1.03	5.23	3 33.33%	0	0	3 33.33%	1 11.11%	2 22.22%	3	6
KORBA	41	0.15	5.63	0.03	10.41	18 43.90%	2 4.88%	2 4.88%	15 36.59%	3 7.32%	1 2.44%	22	19
KORIYA	27	0.15	2.64	0.06	5.24	4 14.81%	1 3.70%	0	17 62.96%	3 11.11%	1 3.70%	5	21
MAHASAMUND	22	0.12	7.78	0.36	4.25	11 50.00%	2 9.09%	3 13.64%	3 13.64%	1 4.55%	1 4.55%	16	5
RAIGARH	65	0.04	7	0.05	9.58	20 30.77%	2 3.08%	1 1.54%	33 50.77%	3 4.62%	2 3.08%	23	38
RAIPUR	58	0.05	4.23	0.02	2.69	23 39.66%	6 10.34%	1 1.72%	25 43.10%	3 5.17%	0	30	28
RAJNANDGAON	25	0.22	1.41	0.04	6.57	4 16.00%	0	0	9 36.00%	10 40.00%	2 8.00%	4	21
SARGUJA	51	0.03	3.05	0.04	2.97	15 29.41%	6 11.76%	0	24 47.06%	6 11.76%	0	21	30
Total	553	0.57	0.89	0.01	12.78	212	41	14	218	45	15	267	278

Table 7.7 District wise frequency for different fluctuation ranges between Nov 2016 Vs Nov 2017

District Name	No. of wells	Rise of Fluctuation(m)				No. of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	13	0.11	2.4	0.53	0.89	7 53.85%	1 7.69%	0	5 38.46%	0	0	8	5
BILASPUR	60	0.09	10.39	0.06	4.21	25 41.67%	7 11.67%	4 6.67%	17 28.33%	5 8.33%	2 3.33%	36	24
DHAMTARI	23	0.32	4.34	0.25	10.54	7 30.43%	1 4.35%	1 4.35%	11 47.83%	2 8.70%	1 4.35%	9	14
DURG	50	0.05	7.77	0.01	20.35	21 42.00%	5 10.00%	2 4.00%	14 28.00%	1 2.00%	4 8.00%	28	19
JANJGIR-CHAMPA	41	0.05	6.29	0.06	3.26	17 41.46%	9 21.95%	1 2.44%	12 29.27%	1 2.44%	0	27	13
JASHPUR	53	0.05	1.65	0.05	3.2	20 37.74%	0	0	24 45.28%	3 5.66%	0	20	27
KANKER	4	0.71	0.71	0.7	1.23	1 25.00%	0	0	3 75.00%	0	0	1	3
KAWARDHA	13	0.16	2.6	0.1	2.73	5 38.46%	2 15.38%	0	3 23.08%	3 23.08%	0	7	6
KORBA	43	0.08	3.79	0.05	3.42	16 37.21%	6 13.95%	0	18 41.86%	3 6.98%	0	22	21
KORIYA	25	0.01	7.29	0.1	3.3	8 32.00%	1 4.00%	1 4.00%	13 52.00%	2 8.00%	0	10	15
MAHASAMUND	21	0.12	3.11	0.28	3.41	5 23.81%	1 4.76%	0	12 57.14%	3 14.29%	0	6	15
RAIGARH	65	0.05	18.3	0.05	4.9	21 32.31%	1 1.54%	1 1.54%	35 53.85%	1 1.54%	1 1.54%	23	37
RAIPUR	55	0.02	1.25	0.01	3.99	13 23.64%	0	0	35 63.64%	7 12.73%	0	13	42
RAJNANDGAON	29	0.09	1.78	0.07	6.75	10 34.48%	0	0	9 31.03%	7 24.14%	3 10.34%	10	19
SARGUJA	51	0.04	3.85	0.13	4.45	24 47.06%	7 13.73%	0	17 33.33%	2 3.92%	1 1.96%	31	20
Total	546	0.71	0.71	0.01	20.35	200	41	10	228	40	12	251	280

Table 7.8 District wise frequency for different fluctuation ranges between Jan 2016 Vs Nov 2017

District Name	No. of wells	Rise of Fluctuation(m)				No. of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	20	0.19	7.09	0.25	1.72	8 40.00%	3 15.00%	1 5.00%	8 40.00%	0	0	12	8
BILASPUR	72	0.02	42.85	0.02	9.32	24 33.33%	2 2.78%	5 6.94%	32 44.44%	3 4.17%	4 5.56%	31	39
DHAMTARI	26	0.03	4.01	0.58	24.66	7 26.92%	2 7.69%	1 3.85%	10 38.46%	3 11.54%	2 7.69%	10	15
DURG	51	0.1	7.95	0.05	24.42	21 41.18%	8 15.69%	5 9.80%	8 15.69%	5 9.80%	4 7.84%	34	17
JANJGIR- CHAMPA	35	0.04	6.95	0.04	3.7	14 40.00%	3 8.57%	2 5.71%	12 34.29%	2 5.71%	0	19	14
JASHPUR	47	0.15	2.65	0.02	5.2	17 36.17%	1 2.13%	0	20 42.55%	4 8.51%	3 6.38%	18	27
KANKER	13	0.2	2.7	0.02	6.52	3 23.08%	1 7.69%	0	8 61.54%	0	1 7.69%	4	9
KAWARDHA	18	0.65	2.19	0.68	8.94	7 38.89%	1 5.56%	0	4 22.22%	3 16.67%	2 11.11%	8	9
KORBA	39	0.02	1.14	0.05	1.13	20 51.28%	0	0	16 41.03%	0	0	20	16
KORIYA	29	0.08	2.99	0.09	4.21	11 37.93%	1 3.45%	0	13 44.83%	2 6.90%	1 3.45%	12	16
MAHASAMUND	21	0.18	2.65	0.03	8.87	9 42.86%	1 4.76%	0	6 28.57%	3 14.29%	1 4.76%	10	10
RAIGARH	62	0.05	3.9	0.05	7.8	21 33.87%	3 4.84%	0	29 46.77%	5 8.06%	2 3.23%	24	36
RAIPUR	61	0.03	5.62	0.06	10.83	20 32.79%	2 3.28%	1 1.64%	30 49.18%	7 11.48%	1 1.64%	23	38
RAJNANDGAON	32	0.07	3.59	1.05	6.63	15 46.88%	3 9.38%	0	9 28.13%	2 6.25%	3 9.38%	18	14
SARGUJA	46	0.07	1.55	0.13	5.69	10 21.74%	0	0	28 60.87%	4 8.70%	3 6.52%	10	35
Total	572	0.65	1.14	0.02	24.66	207	31	15	233	43	27	253	303

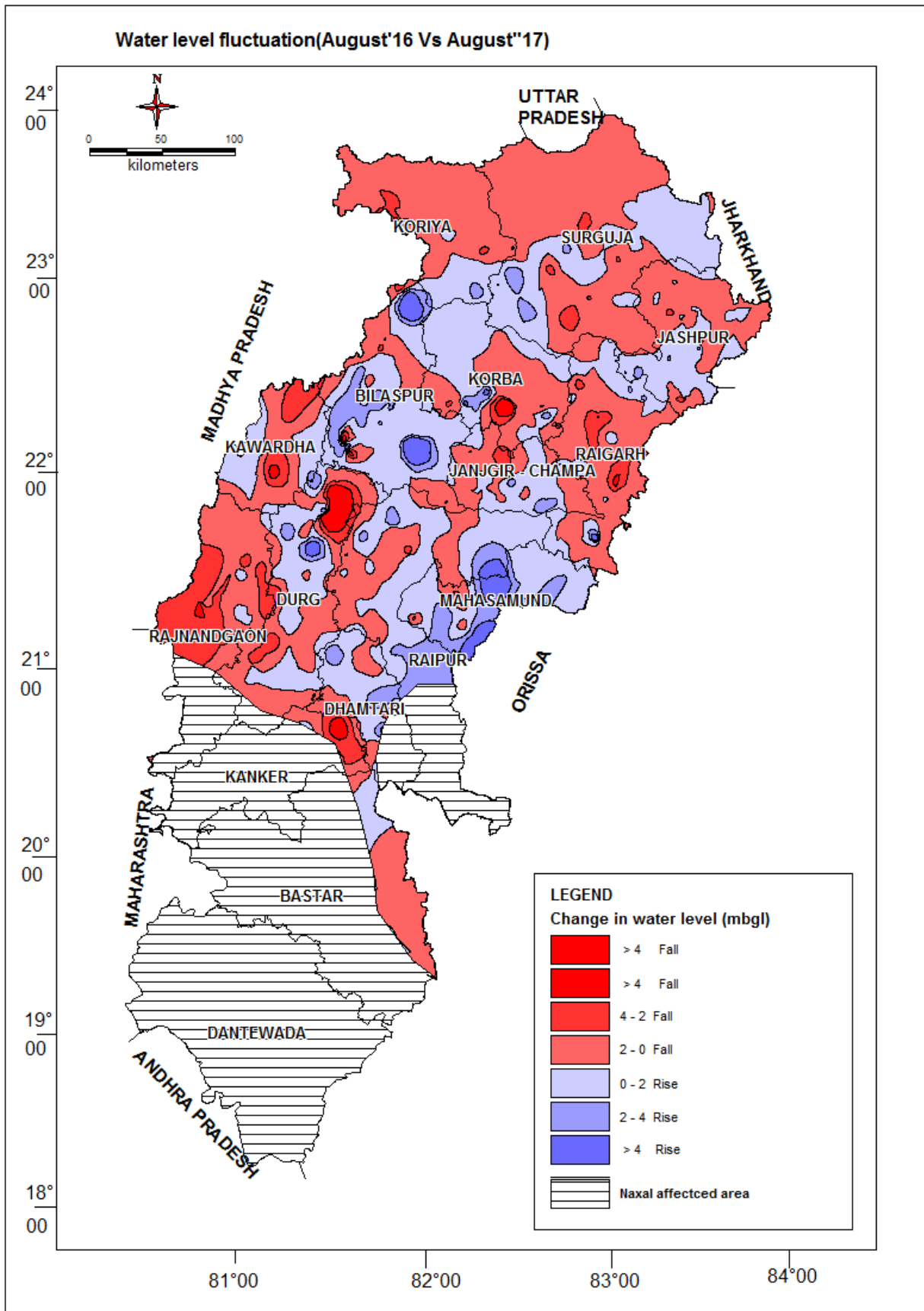


Fig.7.6 Water Level Fluctuation (August' 2016 Vs August'2017)

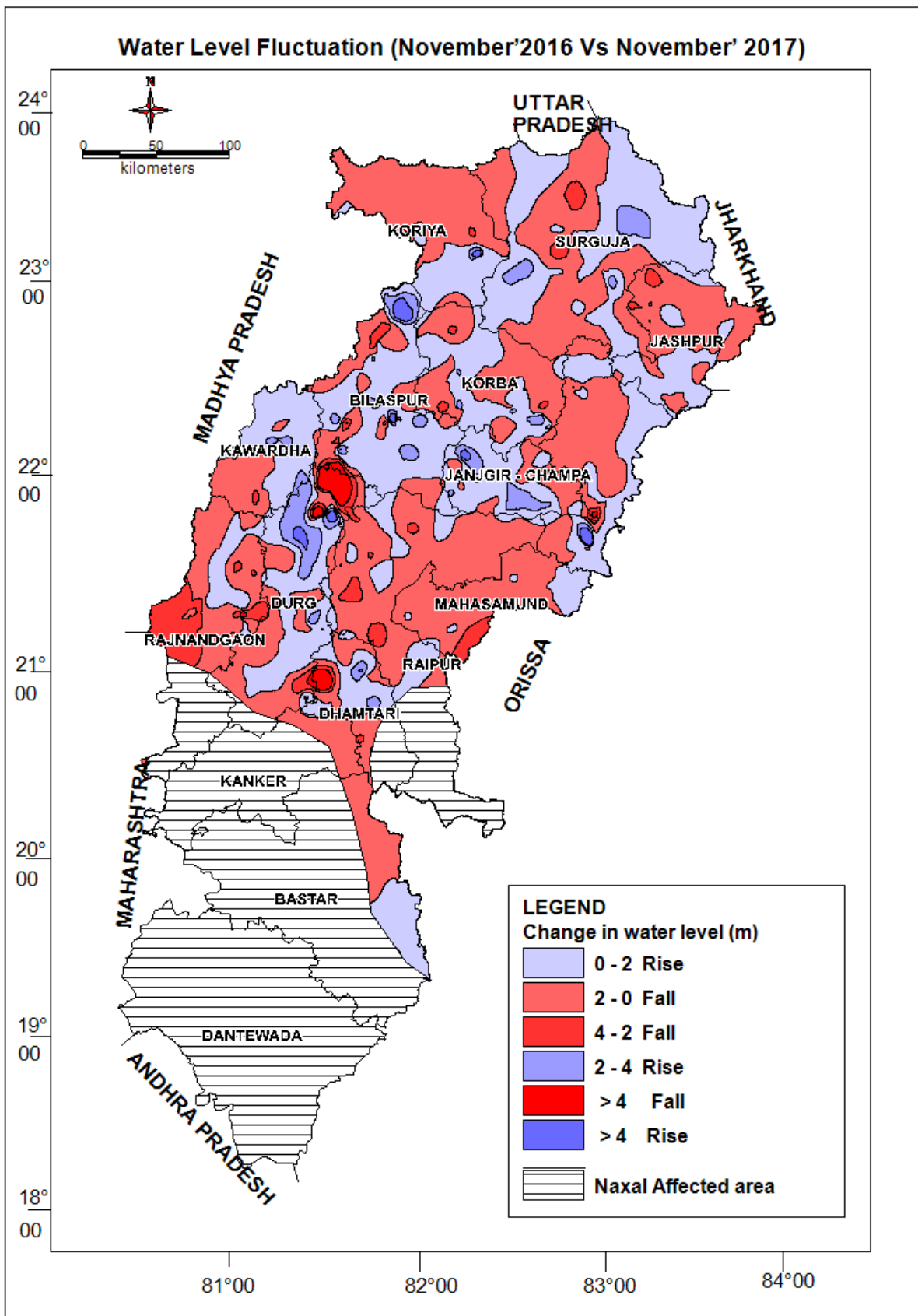


Fig. 7.7 Water Level Fluctuation (November'2016 Vs November' 2017)

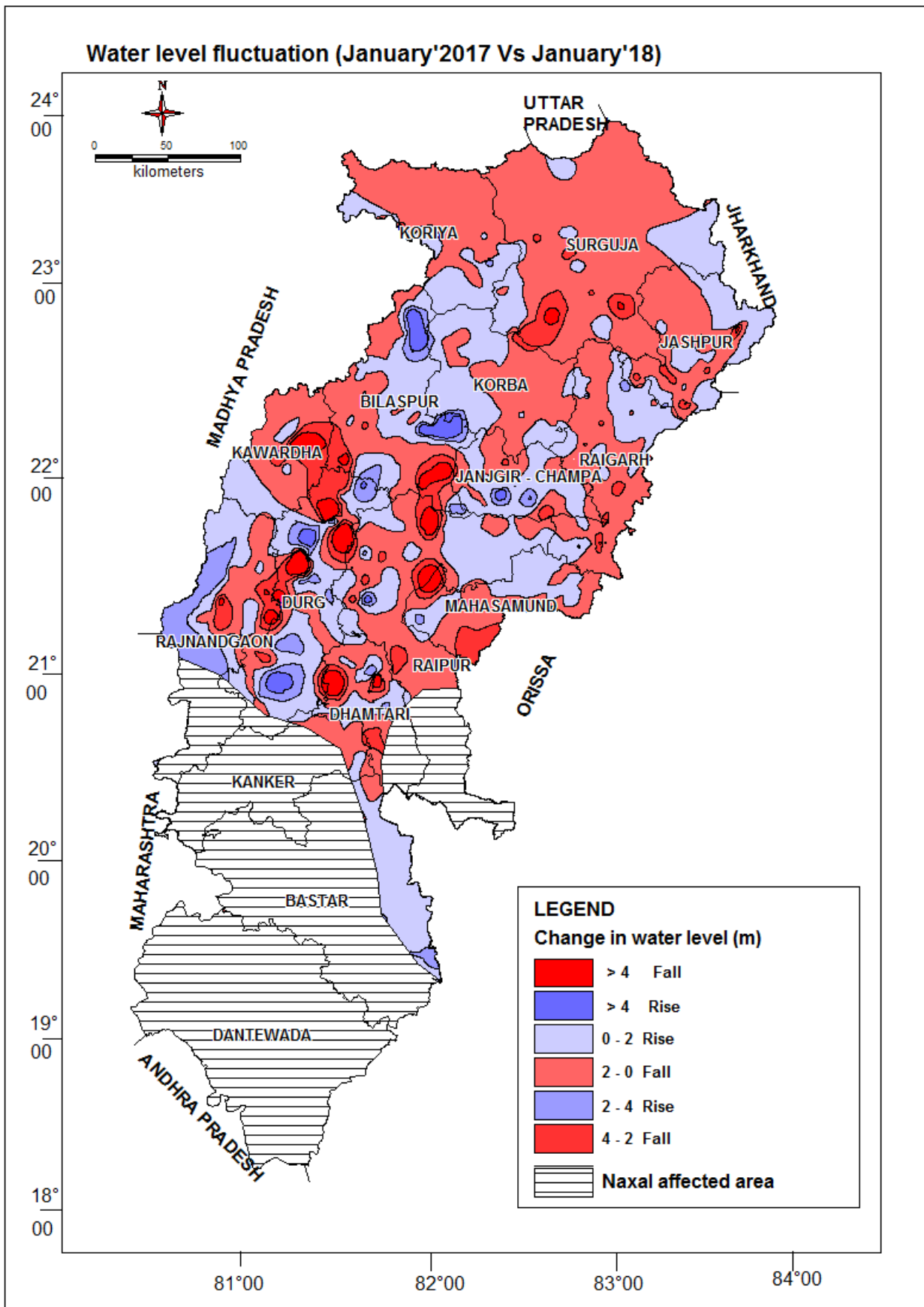


Fig. 7.8 Water Level Fluctuation (January'2017 Vs January' 2018)

7.3 Water Level Fluctuation with Reference to Premonsoon Water Level

7.3.1 May 2017 Vs August 2017

There is mostly a rise in water levels in August' 2017 when compared with the water levels of May 2017. About 95% of the monitored wells exhibits rise in the water level. Out of this, about 17% of the monitored wells exhibits rise of water level in the range of 0-2 m covering parts of almost all the districts except Kanker, Mahasamund, Surguja and Bastar district. In 28 % of the monitored wells, the water levels show rise in the range of 2-4 m covering parts of all the districts monitored while the remaining 50 % of the observation wells also show rise of more than 4 m covering parts of all the districts monitored. Fall of water level as compared to May'17 is observed in about 5% of the observation wells monitored. Most of the wells exhibit falls in the range of 0-2m. The district wise frequency for different fluctuation ranges is presented in **Table 7.9**. Fluctuation of water level (May' 2017 Vs Aug' 2017) is represented on a map appended as **fig 7.9**.

7.3.2 May 2017 Vs November 2017

There is mostly a rise in water level in November 2017 when compared to water level in May 2017. About 89.17 % of the monitored wells exhibit rise in the water level. Out of this, about 26.0% of the monitored wells exhibit rise in the water level in the range of 0-2 m in parts of all the districts except Kanker district. In 29.14 % of the monitored wells the water levels show rise in the range of 2-4 m in most of the districts while the remaining 34.04% of the observation wells show rise of more than 4 m mostly in Bilaspur, Dhamtari, Bastar, Kawardha, Mahasamund, Raipur, Durg etc. Fall of water level as compared to May'17 is observed in about 10.47% of the observation wells monitored. Most of the wells exhibit falls in the range of 0-2m.

The district wise distribution of different fluctuation ranges is presented in Table 7.10 and is also shown in Fig. 7.10.

7.3.3 May 2017 Vs January 2018

The water levels in nearly 76.12% of the observation wells were showing a rise for the month of January 2018 in comparison to that of the water levels measured during the month of May 2017. The rise in water levels in the range of 0 to 2 m was observed in nearly 35% of the observation wells and in 25.67% of the observation wells it was in the range of 2 to 4 m. The rise of more than 4 m was recorded in 15.43% of wells. The fall in water levels was recorded in 21.36 % of the observation wells in Dhamtari, Janjgir Champa, Koriya and Bilaspur, districts.

The district wise distribution of different fluctuation ranges is presented in **Table 7.11** and is also shown in **Fig. 7.11**.

District Name	No. of wells	Rise of Fluctuation				No. of Wells/Percentage showing Fluctuation						Total No of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	24	1.62	11.99	-	-	1 4.17%	3 12.50%	20 83.33%	0	0	0	24	0
BILASPUR	66	0.1	27.76	0.02	1.25	10 15.15%	18 27.27%	34 51.52%	4 6.06%	0	0	62	4
DANTEWA DA	2	6	6.63	-	-	0	0	2 100.00%	0	0	0	2	0
DHAMTARI	18	0.67	8.96	-	-	4 22.22%	3 16.67%	11 61.11%	0	0	0	18	0
DURG	54	0.18	19.18	0.25	5.83	6 11.11%	14 25.93%	29 53.70%	3 5.56%	1 1.85%	1 1.8%	49	5
JANJGIR-CHAMPA	38	0.15	10.55	0.05	2.6	11 28.95%	13 34.21%	11 28.95%	2 5.26%	1 2.63%	0	35	3
JASHPUR	51	0.17	19.27	3.12	3.12	7 13.73%	20 39.22%	23 45.10%	0	1 1.96%	0	50	1
KANKER	13	0.38	8.97	-	-	1 7.69%	3 23.08%	9 69.23%	0	0	0	13	0
KAWARDHA	17	0.82	10.54	1.56	1.56	6 35.29%	2 11.76%	8 47.06%	1 5.88%	0	0	16	1
KORBA	37	0.27	9.59	1.45	1.45	7 18.92%	12 32.43%	17 45.95%	1 2.70%	0	0	36	1
KORIYA	28	0.85	9.45	0.2	11.46	6 21.43%	7 25.00%	10 35.71%	4 14.29%	0	1 3.5%	23	5
MAHASAMUND	18	1.43	15.3	-	-	1 5.56%	5 27.78%	12 66.67%	0	0	0	18	0
RAIGARH	57	0.05	25.9	0.06	2.04	10 17.54%	20 35.09%	23 40.35%	3 5.26%	1 1.75%	0	53	4
RAIPUR	56	0.36	20.09	-	-	9 16.07%	14 25.00%	33 58.93%	0	0	0	56	0
RAJNANDGAON	34	0.06	10.44	1.01	1.09	13 38.24%	10 29.41%	8 23.53%	3 8.82%	0	0	31	3
SARGUJA	58	0.14	13.75	0.28	0.28	5 8.62%	15 25.86%	37 63.79%	1 1.72%	0	0	57	1
Total	571	6	6.63	0	11.46	97	159	287	22	4	2	543	28

Table 7.10 District Wise - Fluctuation and Frequency Distribution from Different Ranges from One Period to Other May 2017 Vs Nov 2017

District Name	No .of wells	Rise of Fluctuation(m)				No. of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	17	0.15	11.27	-	-	3 17.65%	2 11.76%	12 70.59%	0	0	0	17	0
BILASPUR	76	0.01	33.67	0.01	2.07	14 18.42%	17 22.37%	33 43.42%	10 13.16%	1 1.32%	0	64	11
DHAMTARI	19	0.89	7.9	4.61	4.61	7 36.84%	2 10.53%	9 47.37%	0	0	1 5.26%	18	1
DURG	55	0.15	16.72	0.05	8.16	14 25.45%	13 23.64%	20 36.36%	5 9.09%	0	3 5.45%	47	8
JANJGIR- CHAMPA	39	0.17	10.29	0.09	4.06	13 33.33%	10 25.64%	7 17.95%	7 17.95%	1 2.56%	1 2.56%	30	9
JASHPUR	50	0.02	11.27	0.79	2.38	20 40.00%	10 20.00%	15 30.00%	3 6.00%	2 4.00%	0	45	5
KANKER	4	3	8.16	-	-	0	3 75.00%	1 25.00%	0	0	0	4	0
KAWARDHA	18	0.98	8.86	-	-	5 27.78%	7 38.89%	6 33.33%	0	0	0	18	0
KORBA	40	0.3	9.03	0.93	2.82	6 15.00%	20 50.00%	11 27.50%	2 5.00%	1 2.50%	0	37	3
KORIYA	31	0.1	10.04	0.46	1	12 38.71%	9 29.03%	7 22.58%	2 6.45%	0	0	28	2
MAHASAMUND	17	0.83	9.11	3.98	3.98	2 11.76%	6 35.29%	8 47.06%	0	1 5.88%	0	16	1
RAIGARH	59	0.25	25.9	0.3	4.16	15 25.42%	20 33.90%	17 28.81%	5 8.47%	1 1.69%	1 1.69%	52	7
RAIPUR	52	0.11	19.6	0.03	0.98	12 23.08%	16 30.77%	21 40.38%	3 5.77%	0	0	49	3
RAJNANDGAON	37	0.05	9.94	0.15	2.15	13 35.14%	6 16.22%	11 29.73%	6 16.22%	1 2.70%	0	30	7
SARGUJA	59	0.02	11.35	0.65	1.22	13 22.03%	26 44.07%	17 28.81%	3 5.08%	0	0	56	3
Total	573	3	7.9	0	8.16	149	167	195	46	8	6	511	60

Table 7.11 District Wise - Fluctuation and Frequency Distribution from Different Ranges from One Period to Other May 2017 Vs Jan 2018

District Name	No .of wells	Rise of Fluctuation(m)				No. of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise		Fall		Rise			Fall			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	22	0.25	10.5	1.88	1.88	7 31.82%	6 27.27%	8 36.36%	1 4.55%	0	0	21	1
BILASPUR	73	0.05	41.65	0.1	4.98	26 35.62%	17 23.29%	14 19.18%	8 10.96%	3 4.11%	1 1.37%	57	12
DHAMTARI	19	0.04	6.39	0.21	7.46	4 21.05%	5 26.32%	5 26.32%	4 21.05%	0	0 5.26%	14	5
DURG	52	0.02	17.71	0.39	5.96	19 36.54%	12 23.08%	9 17.31%	9 17.31%	1 1.92%	1 1.92%	40	11
JANJGIR-CHAMPA	33	0.23	4.85	0.03	8.63	12 36.36%	4 12.12%	1 3.03%	12 36.36%	1 3.03%	2 6.06%	17	15
JASHPUR	48	0.36	11.85	0.12	3.68	16 33.33%	10 20.83%	9 18.75%	8 16.67%	3 6.25%	0	35	11
KANKER	13	0.89	6.87	5.14	5.14	4 30.77%	6 46.15%	2 15.38%	0	0	1 7.69%	12	1
KAWARDHA	19	0.25	6.8	0.08	6.35	8 42.11%	3 15.79%	2 10.53%	3 15.79%	1 5.26%	1 5.26%	13	5
KORBA	37	0.5	4.1	0.55	1.22	15 40.54%	18 48.65%	1 2.70%	2 5.41%	0	0	34	2
KORIYA	29	0.15	4.12	0.04	3.16	8 27.59%	7 24.14%	2 6.90%	10 34.48%	2 6.90%	0	17	12
MAHASAMUND	18	0.69	13.32	0.76	4.69	4 22.22%	7 38.89%	5 27.78%	1 5.56%	0	1 5.56%	16	2
RAIGARH	55	0.52	11.86	0.19	4.04	14 25.45%	18 32.73%	9 16.36%	9 16.36%	4 7.27%	1 1.82%	41	14
RAIPUR	53	0.18	18.32	0.09	3.52	15 28.30%	16 30.19%	12 22.64%	8 15.09%	2 3.77%	0	43	10
RAJNANDGAON	40	0.35	7.01	0.3	6.18	16 40.00%	4 10.00%	2 5.00%	9 22.50%	4 10.00%	1 2.50%	22	14
SARGUJA	46	0.08	8.61	0.83	2.3	27 58.70%	10 21.74%	5 10.87%	2 4.35%	2 4.32%	0	42	4
Total	557	0.89	4.1	0.03	8.63	195	143	86	86	23	10	424	119

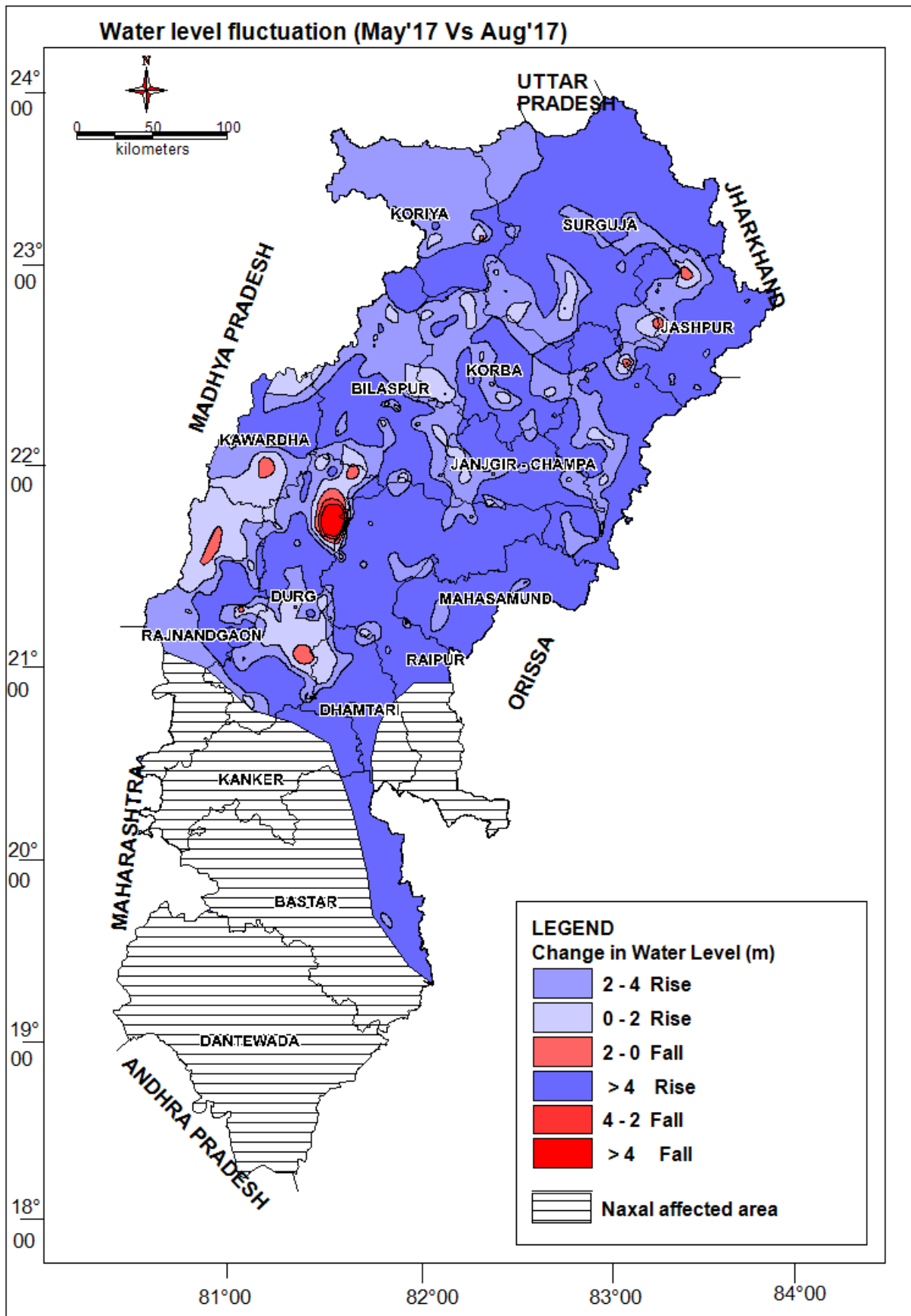


Fig.7.9Water Level Fluctuation (May'2017 Vs August' 2017)

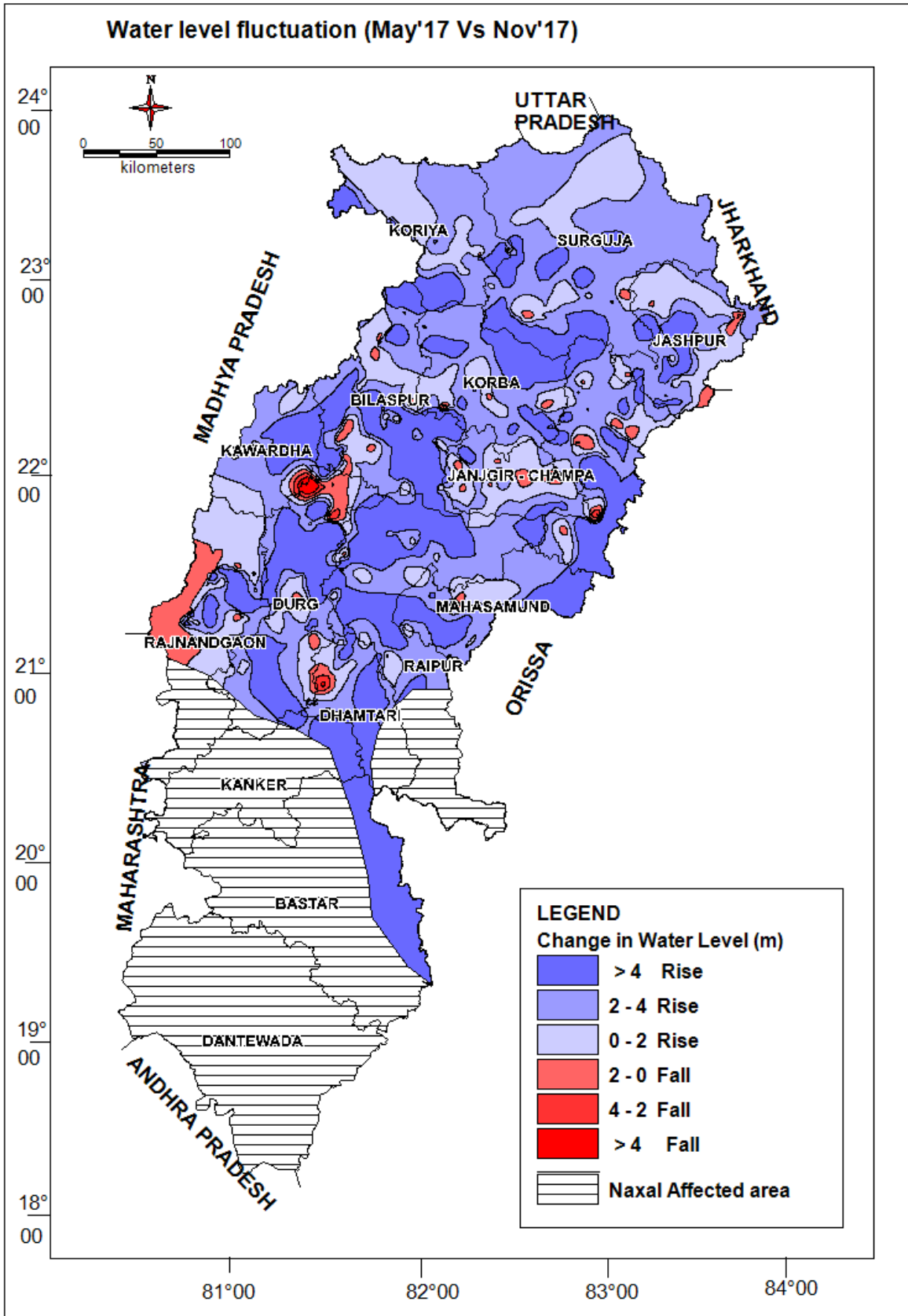


Fig. 7.10 Water Level Fluctuation (May'2017 Vs November' 2017)

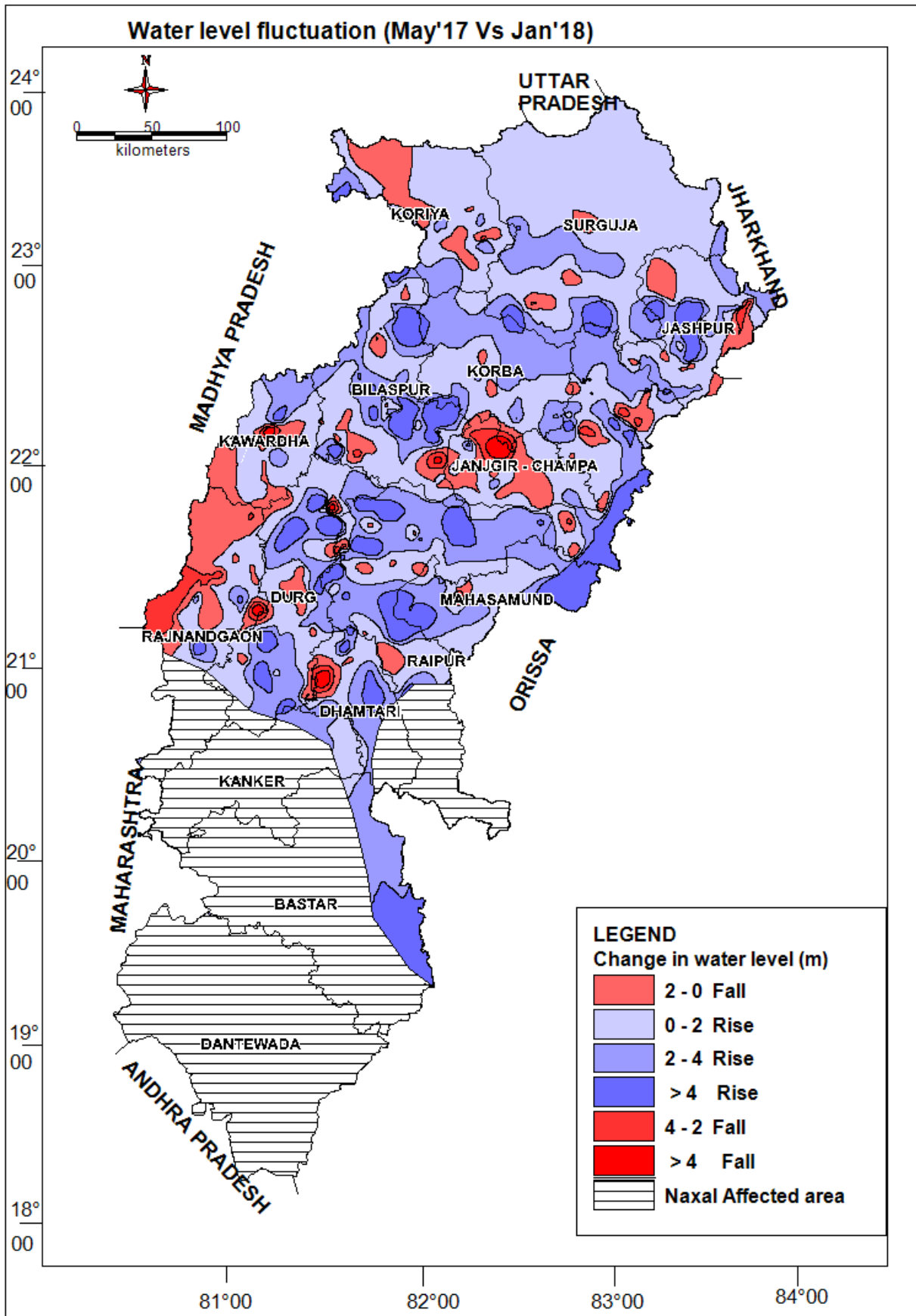


Fig. 7.11 Water Level Fluctuation (May'2017 Vs January' 2018)

7.4 Water Level Fluctuation with Reference to Decadal Mean

7.4.1 Mean of May (May 2007 to May 2016) Vs May 2017

When compared to the decadal mean water level (May' 2007 to May '2016), 61.66% of observation wells are showing a fall in water level in May'2017. Out of the wells monitored, 44.69% of the wells are showing a fall upto 2 m, 9.89% between 2 to 4 meters and 7.06% of the monitored wells are showing a fall in water level of more than 4 m. Fall of water level as compared to the decadal mean by more than 4m is observed in Bastar, Bilaspur, Jaspur, Kanker, Kawrdha, Durg, Raigarh and Mahasamund districts. Nearly 37.98% of monitored wells are showing a rise in the water level, mostly in the range of 0-2 meter (27.03%). About 6.18% of the monitored wells are showing a rise in the range of 2-4 meter whereas 4.77% of the monitored wells are showing a rise of more than 4 m.

Water level fluctuations during May 2017 with respect to the decadal mean (May 2007 to May 2016) are shown in **Fig 7.12**.

7.4.2 Mean of August (Aug 2007 to August 2016) Vs August 2017

When compared to the decadal mean water level (August 2007 to August 2017), 74.46% of observation wells are showing a fall in water level in August 2017. Out of the wells monitored, 56.13% of the wells are showing a fall upto 2 m, 14.89% between 2 to 4 meters and 3.43% of the monitored wells are showing a fall in water level of more than 4 m. Fall of water level as compared to the decadal mean by more than 4m is observed in Bilashpur, Durg, Dhamtari, Kawardha, Rajnandgaon and Raigarh districts. Nearly 25.53% of monitored wells are showing a rise in the water level, mostly in the range of 0-2 meter (19.63%). About 4.09% of the monitored wells are showing a rise in the range of 2-4 meter whereas 1.8% of the monitored wells are showing a rise of more than 4 m.

The district wise categorization of decadal change in water level is presented in **Table 7.13**. The decadal range of fluctuation has been shown in the **Fig 7.13**

7.4.3 Mean of November (Nov 2007 to November 2016) Vs November 2017

When compared to the decadal mean water level (November'2007 to November'2017), 64.13% of observation wells are showing a fall in water level in November'2018. Out of the wells monitored, 850.08% of the wells are showing a fall upto 2 m, 11.57% between 2 to 4 meters and 2.47% of the monitored wells are showing a fall in water level of more than 4 m. Fall of water level as compared to the decadal mean by more than 4m is observed in Bilashpur, Durg, Korba, Dhamtari, Rajnandgaon districts. Nearly 35.86% of monitored wells are showing

a rise in the water level, mostly in the range of 0-2 meter (30.57%). About 3.80% of the monitored wells are showing a rise in the range of 2-4 meter whereas 1.48% of the monitored wells are showing a rise of more than 4 m. The district wise categorization of decadal change in water level is presented in **Table 7.14**. The decadal range of fluctuation has been shown in the **Fig 7.14**.

7.4.4 Mean of January (January 2008 to January 2017) Vs January 2018

When compared to the decadal mean water level (January' 2008 to January'2017), 66.39% of observation wells are showing a fall in water level in January'2018. Out of the wells monitored, 50.57% of the wells are showing a fall upto 2 m, 10.11% between 2 to 4 meters and 5.70% of the monitored wells are showing a fall in water level of more than 4 m. Fall of water level as compared to the decadal mean by more than 4m is observed in Bilaspur, Dantewara, Dhamtari, Durg, Kanker, Kawardha and Rajnandgaon districts. Nearly 33.27% of monitored wells are showing a rise in the water level, mostly in the range of 0-2 meter (26.26%). About 4.89% of the monitored wells are showing a rise in the range of 2-4 meter whereas 2.12% of the monitored wells are showing a rise of more than 4 m.

Water level fluctuation during January 2018 with respect to the decadal mean (January 2008 to January 2017) are shown in **Fig 7.15**.

Table 7.12 District wise categorization of decadal change in water level (May' 2007- 2016 Vs May' 2017)

District Name	No. of wells	Rise of Fluctuation(m)				No. of Wells/Percentage showing Fluctuation						Total No. of wells	
		Rise(m)		Fall(m)		Rise(m)			Fall(m)			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	21	0.26	1.03	0.7	5.5	4 19.05%	0	0	9 42.86%	7 33.33%	1 4.76%	4	17
BILASPUR	64	0.11	9.12	0.08	25.11	15 23.44%	1 1.56%	2 3.13%	32 50.00%	6 9.38%	8 12.50%	18	46
DANTEWADA	1	-	-	0.81	0.81	0	0	0	1 100.00%	0	0	0	1
DHAMTARI	17	0.24	8.89	0.15	2.8	4 23.53%	0	1 5.88%	10 58.82%	2 11.76%	0	5	12
DURG	57	0.3	18.68	0.05	22.08	13 22.81%	3 5.26%	5 8.77%	23 40.35%	7 12.28%	6 10.53%	21	36
JANJGIR-CHAMPA	40	0.1	10.75	0.13	4.34	18 45.00%	5 12.50%	7 17.50%	7 17.50%	2 5.00%	1 2.50%	30	10
JASHPUR	49	0.02	4.91	0.01	11.95	18 36.73%	2 4.08%	2 4.08%	16 32.65%	5 10.20%	6 12.24%	22	27
KANKER	10	2.36	3.7	0.13	5.26	0	3 30.00%	0	3 30.00%	3 30.00%	1 10.00%	3	7
KAWARDHA	19	0.05	5.8	0.23	6.18	2 10.53%	1 5.26%	1 5.26%	12 63.16%	1 5.26%	2 10.53%	4	15
KORBA	42	0.08	4.38	0.16	3.79	8 19.05%	0	2 4.76%	27 64.29%	5 11.90%	0	10	32
KORIYA	26	0.07	4.05	0.05	2.74	9 34.62%	2 7.69%	1 3.85%	12 46.15%	1 3.85%	0	12	13
MAHASAMUND	17	0.02	1.8	0.52	7.16	6 35.29%	0	0	8 47.06%	1 5.88%	2 11.76%	6	11
RAIGARH	53	0.19	5.48	0.1	9.93	8 15.09%	8 15.09%	1 1.89%	26 49.06%	4 7.55%	6 11.32%	17	36
RAIPUR	60	0.05	4.67	0.08	10.78	20 33.33%	4 6.67%	1 1.67%	22 36.67%	8 13.33%	4 6.67%	25	34
RAJNANDGAON	37	0.09	4.82	0.03	4.98	14 37.84%	1 2.70%	1 2.70%	18 48.65%	2 5.41%	1 2.70%	16	21
SARGUJA	53	0.01	4.67	0.15	11.89	14 26.42%	5 9.43%	3 5.66%	27 50.94%	2 3.77%	2 3.77%	22	31
Total	566	1.03	2.36	0.01	25.11	153	35	27	253	56	40	215	349

Table 7.13 District wise categorization of decadal change in water level (Aug' 2007- 2016 Vs Aug' 2017)

District Name	No.of wells	Rise of Fluctuation(m)				No.of Wells/Percentage showing Fluctuation						Total No.of wells	
		Rise(m)		Fall(m)		Rise(m)			Fall(m)			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	25	0.12	3.82	0.03	2.15	9 36.00%	1 4.00%	0	14 56.00%	1 4.00%	0	10	15
BILASPUR	69	0.05	7.47	0.01	4.59	14 20.29%	6 8.70%	5 7.25%	36 52.17%	7 10.14%	1 1.45%	25	44
DANTEWADA	1	-	-	1.66	1.66	0	0	0	1 100.00%	0	0	0	1
DHAMTARI	23	0.35	2.05	0.07	4.3	3 13.04%	2 8.70%	0	13 56.52%	4 17.39%	1 4.35%	5	18
DURG	57	0.03	9.46	0.03	13.73	11 19.30%	3 5.26%	1 1.75%	25 43.86%	10 17.54%	7 12.28%	15	42
JANJGIR-CHAMPA	41	0.14	2.06	0.05	3.19	4 9.76%	1 2.44%	0	30 73.17%	6 14.63%	0	5	36
JASHPUR	57	0.06	5.37	0.02	2.52	14 24.56%	1 1.75%	2 3.51%	36 63.16%	4 7.02%	0	17	40
KANKER	12	0.49	3.3	0.23	6.63	2 16.67%	1 8.33%	0	4 33.33%	4 33.33%	1 8.33%	3	9
KAWARDHA	16	0.21	1.65	0.28	6.45	4 25.00%	0	0	3 18.75%	7 43.75%	2 12.50%	4	12
KORBA	43	0.08	2.52	0.01	4.92	7 16.28%	4 9.30%	0	23 53.49%	8 18.60%	1 2.33%	11	32
KORIYA	28	0.03	1.12	0.16	12.08	5 17.86%	0	0	19 67.86%	3 10.71%	1 3.57%	5	23
MAHASAMUND	25	0.06	2.81	0.1	2.9	6 24.00%	3 12.00%	0	13 52.00%	3 12.00%	0	9	16
RAIGARH	65	0.02	4.93	0.16	5.56	13 20.00%	1 1.54%	1 1.54%	36 55.38%	12 18.46%	2 3.08%	15	50
RAIPUR	66	0.13	1.89	0	3.37	11 16.67%	0	0	46 69.70%	9 13.64%	0	11	55
RAJNANDGAON	29	0.12	0.12	0.08	7.57	1 3.45%	0	0	13 44.83%	10 34.48%	5 17.24%	1	28
SARGUJA	54	0.06	6.9	0.08	2.81	16 29.63%	2 3.70%	2 3.70%	31 57.41%	3 5.56%	0	20	34
Total	611	0.12	0.49	0	13.73	120	25	11	343	91	21	156	455

Table 7.14 District wise categorization of decadal change in water level (Nov' 2007- 2016 Vs Nov' 2017)

District Name	No.of wells	Rise of Fluctuation(m)				No.of Wells/Percentage showing Fluctuation						Total No.of wells	
		Rise(m)		Fall(m)		Rise(m)			Fall(m)			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	16	0.11	1.91	0.23	1.84	10 62.50%	0	0	6 37.50%	0	0	10	6
BILASPUR	74	0	9.19	0.02	4.93	19 25.68%	6 8.11%	4 5.41%	29 39.19%	14 18.92%	2 2.70%	29	45
DHAMTARI	25	0.03	3.13	0.9	28.53	9 36.00%	3 12.00%	0	7 28.00%	3 12.00%	3 12.00%	12	13
DURG	59	0.11	11.46	0	23.57	16 27.12%	3 5.08%	2 3.39%	24 40.68%	8 13.56%	6 10.17%	21	38
JANJGIR-CHAMPA	43	0.05	2.46	0.06	3.82	18 41.86%	1 2.33%	0	20 46.51%	4 9.30%	0	19	24
JASHPUR	56	0.03	1.47	0.03	4.3	15 26.79%	0	0	39 69.64%	1 1.79%	1 1.79%	15	41
KANKER	5	0.22	5.51	0.66	0.66	2 40.00%	1 20.00%	1 20.00%	1 20.00%	0	0	4	1
KAWARDHA	17	0.4	1.65	0.83	3.71	6 35.29%	0	0	7 41.18%	4 25.53%	0	6	11
KORBA	44	0.07	2.84	0.02	4.54	13 29.55%	2 4.55%	0	22 50.00%	6 13.64%	1 2.27%	15	29
KORIYA	29	0.11	4.51	0.11	2.14	10 34.48%	2 6.90%	1 3.45%	14 48.28%	2 6.90%	0	13	16
MAHASAMUND	22	0.03	1.9	0.21	3.96	8 36.36%	0	0	12 54.55%	2 9.09%	0	8	14
RAIGARH	66	0.01	7.27	0.01	4.57	19 28.79%	1 1.52%	1 1.52%	41 62.12%	3 4.55%	1 1.52%	21	45
RAIPUR	62	0.17	1.67	0.05	3.26	16 25.81%	0	0	39 62.90%	7 11.29%	0	16	46
RAJNANDGAON	34	0.16	1.06	0.01	4.02	7 20.59%	0	0	13 38.24%	13 38.24%	1 2.94%	7	27
SARGUJA	53	0.02	3.06	0	3.24	17 32.08%	4 7.55%	0	29 54.72%	3 5.66%	0	21	32
Total	605	1.06	0.4	0	28.53	185	23	9	303	70	15	217	388

Table 7.15 District wise categorization of decadal change in water level (Jan' 2008- 2017 Vs Nov' 2018)

District Name	No.of wells	Rise of Fluctuation(m)				No.of Wells/Percentage showing Fluctuation						Total No.of wells	
		Rise(m)		Fall(m)		Rise(m)			Fall(m)			Rise	Fall
		Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4		
BASTAR	23	0.09	3.71	0.14	2.23	7 30.43%	4 17.39%	0	11 47.83%	1 4.35%	0	11	12
BILASPUR	76	0.07	22.57	0	9.32	13 17.11%	1 1.32%	6 7.89%	42 55.26%	5 6.58%	9 11.84%	20	56
DANTEWADA	1	-	-	4.97	4.97	0	0	0	0	0	1 100.00%	0	1
DHAMTARI	28	0.03	4.53	0.01	24.98	9 32.14%	3 10.71%	1 3.57%	10 35.71%	2 7.14%	3 10.71%	13	15
DURG	55	0.01	11.39	0.14	21.08	20 36.36%	1 1.82%	3 5.45%	21 38.18%	5 9.09%	5 9.09%	24	31
JANJGIR- CHAMPA	38	0	3.67	0.18	4.02	14 36.84%	1 2.63%	0	16 42.11%	6 15.79%	1 2.63%	15	23
JASHPUR	51	0.01	2.02	0.04	3.86	16 31.37%	1 1.96%	0	28 54.90%	6 11.76%	0	17	34
KANKER	16	0.16	3.41	0.11	4.28	2 12.50%	2 12.50%	0	10 62.50%	1 6.25%	1 6.25%	4	12
KAWARDHA	18	0.78	0.78	0.06	9.62	1 5.56%	0	0	11 61.11%	4 22.22%	2 11.11%	1	17
KORBA	40	0.12	2.02	0	3.34	10 25.00%	2 5.00%	0	23 57.50%	4 10.00%	0	12	27
KORIYA	30	0.09	1.63	0.07	2.73	11 36.67%	0	0	17 56.67%	2 6.67%	0	11	19
MAHASAMUND	23	0.08	5.61	0.04	3	7 30.43%	2 8.70%	2 8.70%	8 34.78%	4 17.39%	0	11	12
RAIGARH	63	0.01	3.35	0.02	6.16	19 30.16%	2 3.17%	0	33 52.38%	6 9.52%	2 3.17%	21	41
RAIPUR	65	0.03	5.94	0.02	9.29	14 21.54%	5 7.69%	1 1.54%	37 56.92%	6 9.23%	2 3.08%	20	45
RAJNANDGAON	39	0.01	2.86	0.14	9.1	7 17.95%	2 5.13%	0	17 43.59%	7 17.95%	6 15.38%	9	30
SARGUJA	47	0.08	3.43	0.06	6.43	11 23.40%	4 8.51%	0	26 55.32%	3 6.38%	3 6.38%	15	32
Total	613	0.78	0.78	0	24.98	161	30	13	310	62	35	204	407

Fig. 7.12 Water Level Fluctuation, Decadal Mean (May'2007 - 2016) Vs May'2017

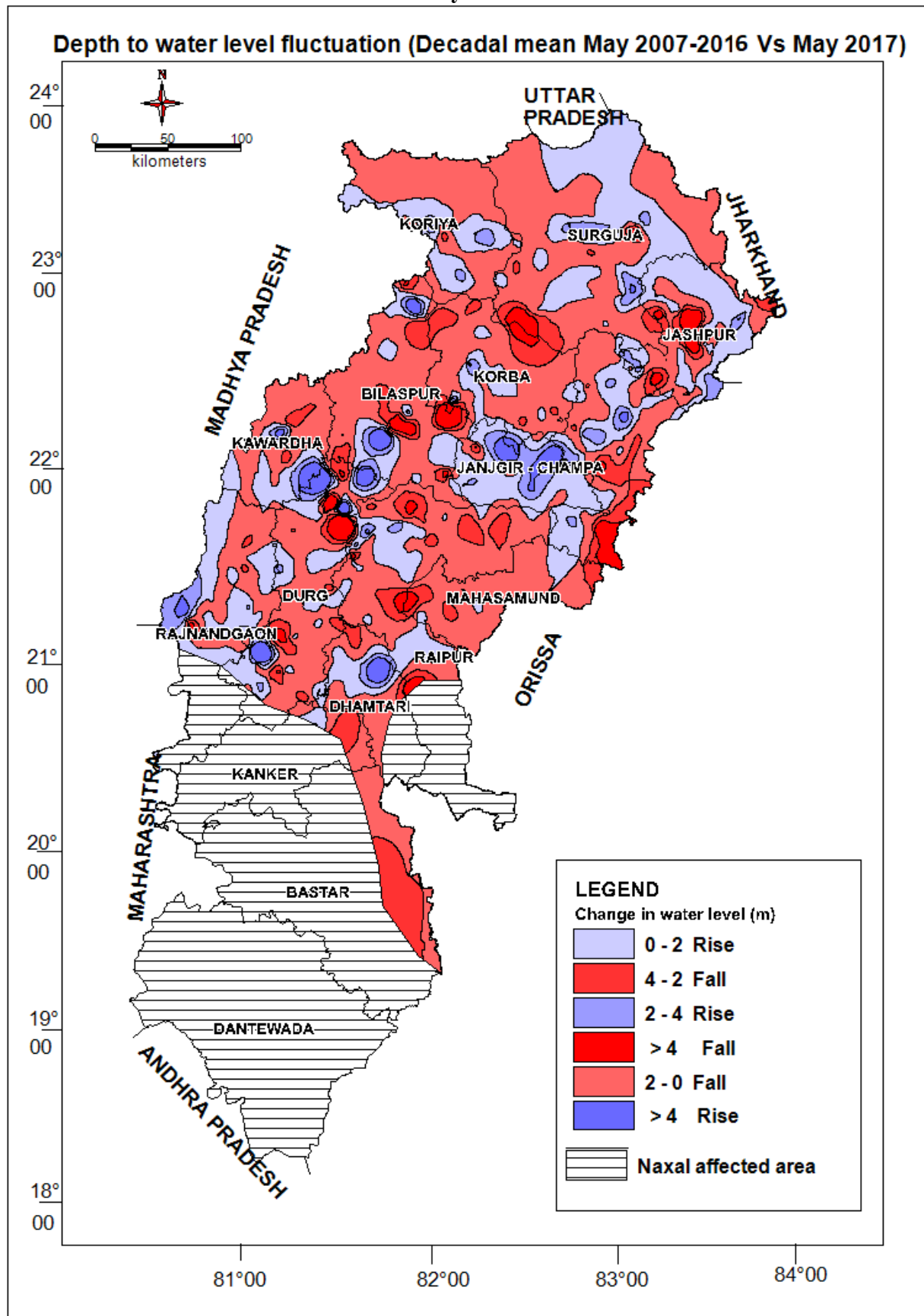


Fig.7.13 Water Level Fluctuation, Decadal mean (August'2007-2016) Vs Aug'2017

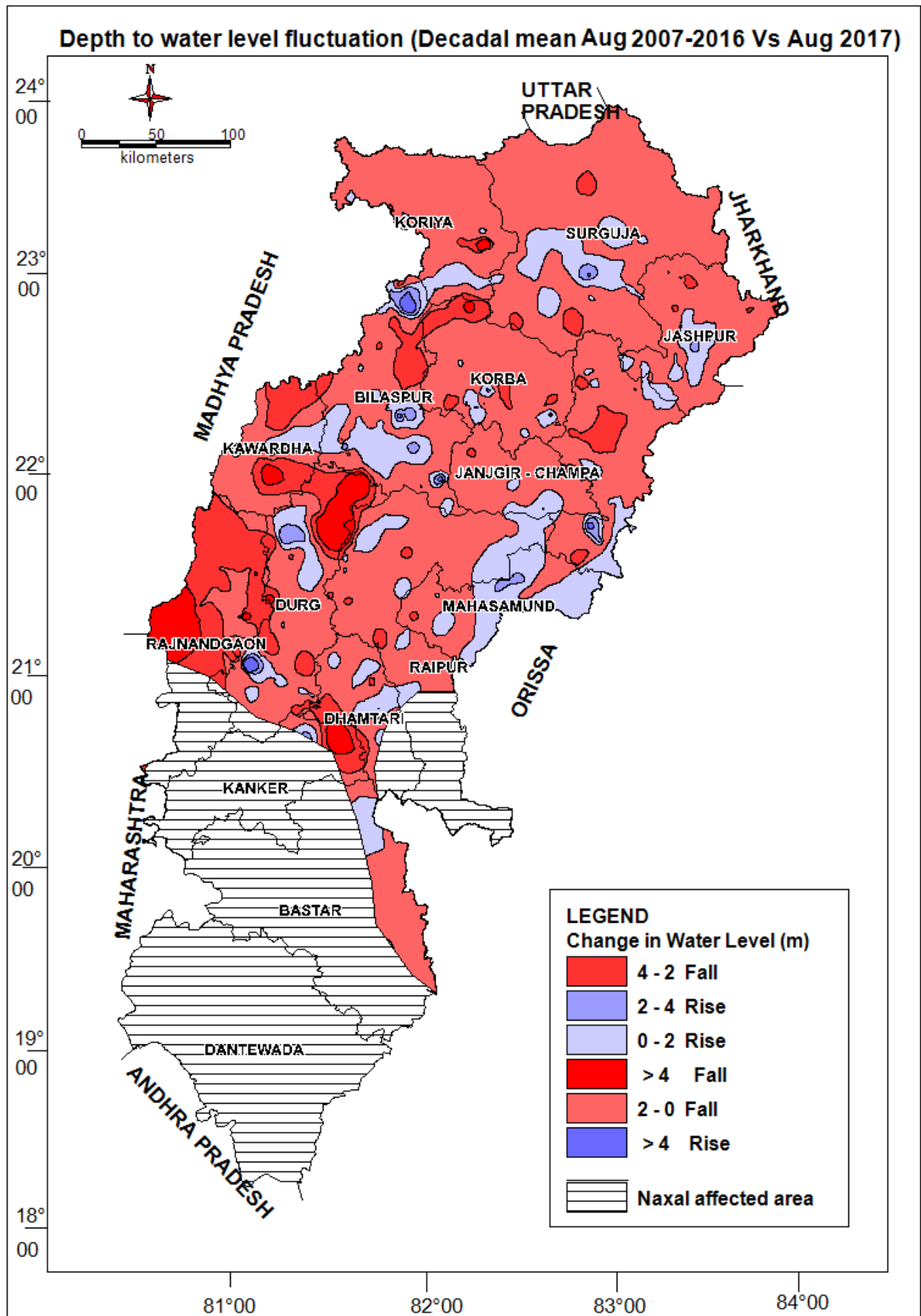


Fig 7.14 Depth to water level fluctuation (Decadal mean Nov 2007-2016 Vs Nov 2017)

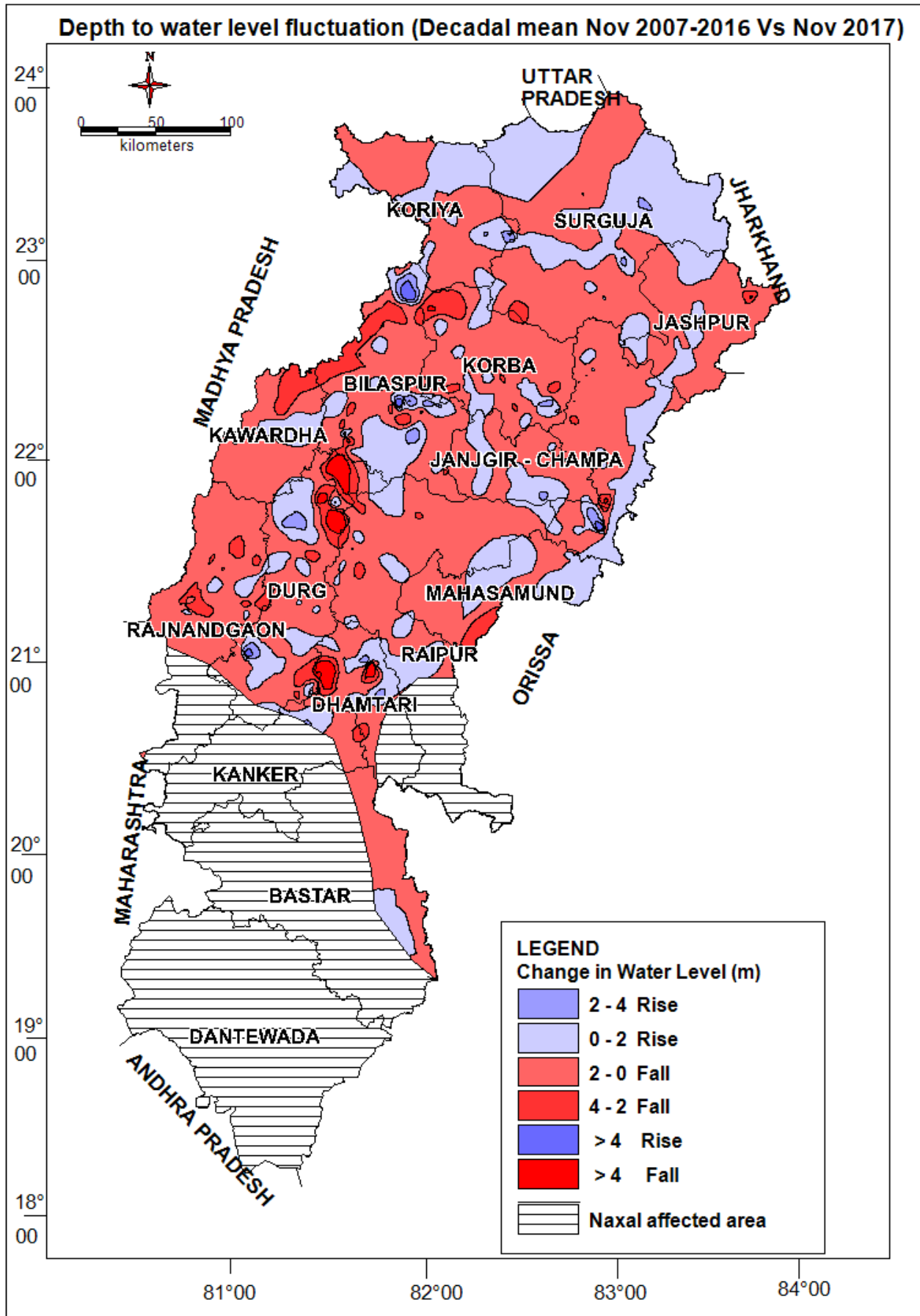
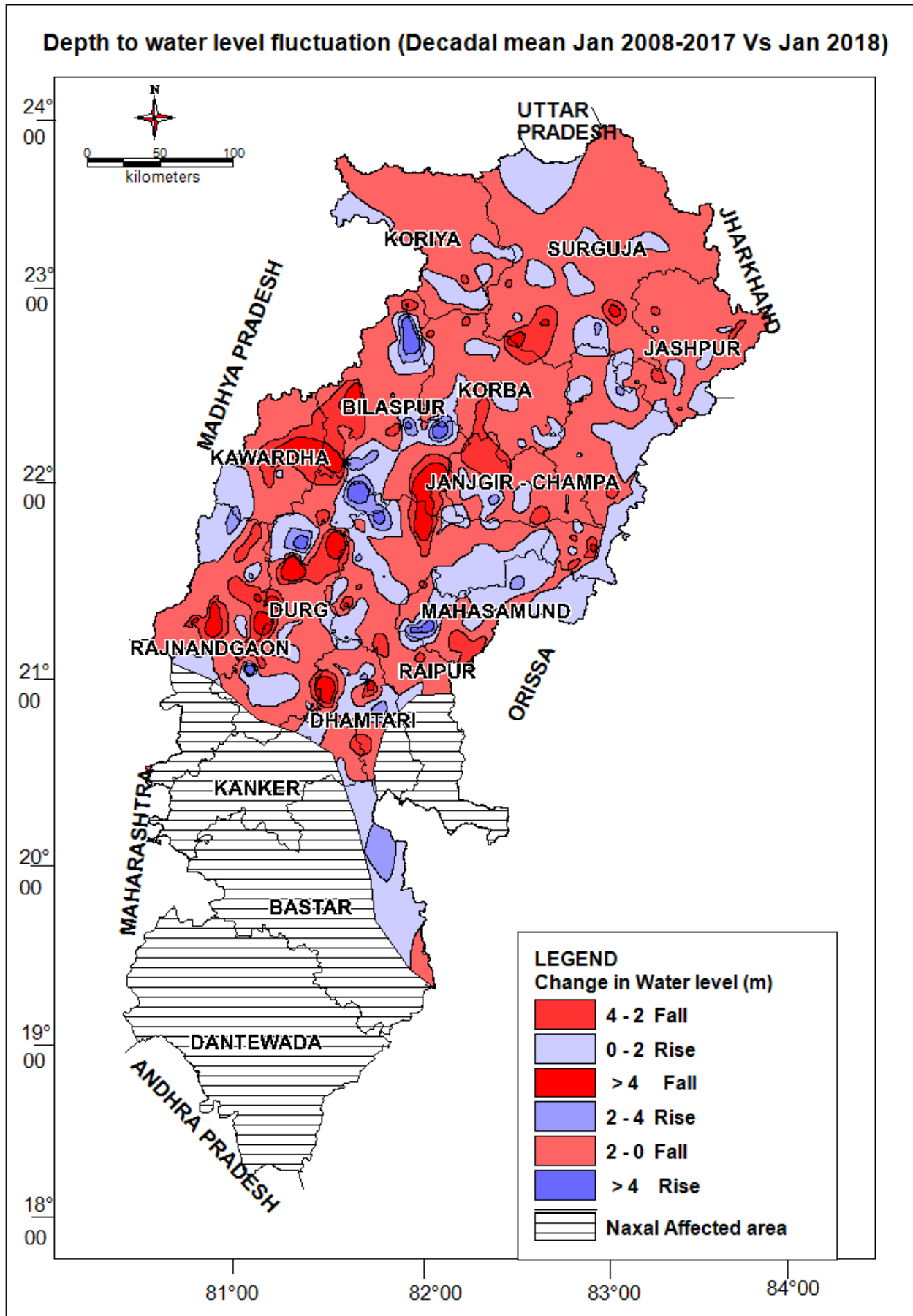


Fig 7.15 Depth to water level fluctuation (Decadal mean Jan 2008-2017 Vs Jan 2018)



7.5 Long Term Water Level Trend (2008-2017)

The long-term water level trend (2008-2017) of the phreatic aquifer was plotted for both the pre and post monsoon periods. For the premonsoon period, the major part of Chhattisgarh shows water level trend between -10 to +10 cm/yr which can be categorized as safe but many parts of Jashpur, Surguja, Korba, Janjgir- Champa, Kawardha, Rajnandgaon show significant falling trend of more than 20 cm/yr which is a cause of concern.

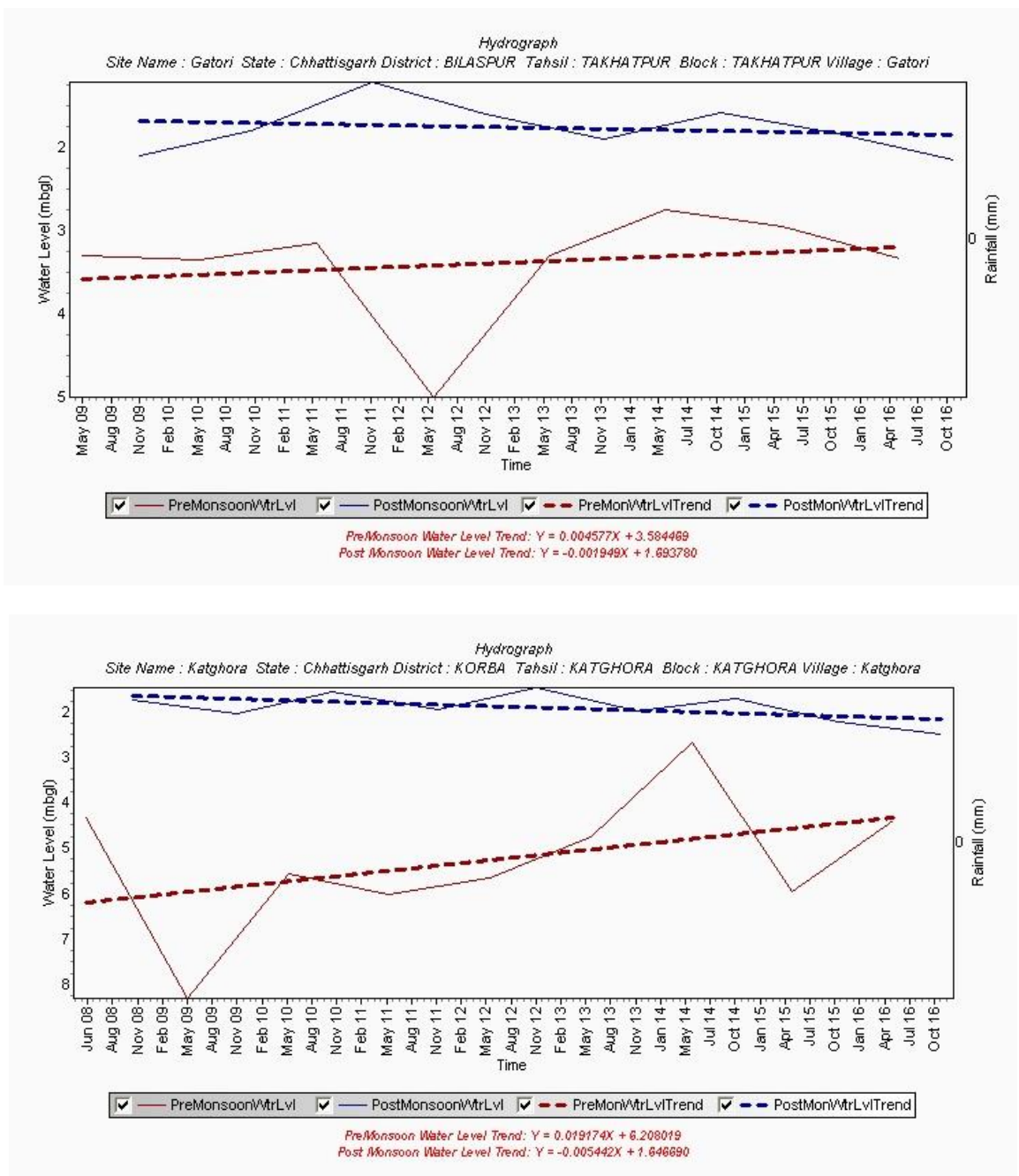


Fig 7.16 & 7.17 National Hydrograph station of Gatori village, Bilashpur district and Katghora village of Korba District of Chhattisgarh state respectively

The post monsoon decadal water level trend map of the phreatic aquifer presents a more alarming picture. (Fig 7.16 & 7.17) It shows large tracts of Surguja, Koriya, Jashpur, Kawardha, Rajnandgaon etc with significant decline in water level of more than 20 cm/yr. during the last 10 years. This long-term trend is also depicted from the individual hydrographs of network stations. Some representative hydrographs are given above.

8. GROUNDWATER QUALITY MONITORING

8.1 Factors controlling ground water quality

The factors contributing to the ground water quality are the chemical composition of the rainwater, the soil types and the mineralogy of the rock formations. The geochemical processes in the soil zone and in the underlying unsaturated and saturated zones, temperature, pressure, duration of contact of the percolating water and the surrounding media, and other associated factors determine the chemical composition of the ground water. Pollution from near surface sources arising out of the human activities like industrial wastes disposal, use of fertilizers, pesticides also influence the ground water quality.

Climate and precipitation: The temperature and precipitation influence weathering, climate, vegetation, soil types and the composition of the water draining the area. The rainwater containing SiO_2 , CO_2 , O_2 picks up organic acids after reaching the earth's surface and reacts with the minerals, which get dissolved. In humid temperate climate the bicarbonates are predominant and are rather high in arid climate. The wet and dry climate promotes release of considerable soluble inorganic matter through weathering. Very cold climate inhibits weathering and restrict solute concentration in water.

Soil forming process: The geochemical reactions involved in the soil forming processes also dictate the chemical composition of the ground water. In soils dissolution of CO_2 and the H^+ , HCO_3^- , CO_3^{2-} ions in percolation water control pH of water and thereby increasing its capacity to react with rocks and minerals.

Geological factors: The mineral constituents in rock influence the geochemical evolution of water passing through the rock. The mineralogical sources of major ions are listed in **Table 8.1**.

Table 8.1: Mineralogical Sources of Major Chemical Constituents

Chemical constituents	Source Minerals
Silica	Feldspars, Feldspathoids, Amphiboles, Pyroxenes, Mica.
Iron	Pyroxenes, Amphiboles, Mica, Pyrites, Chalcopyrite, Magnetite and Haematite.
Mn	Common Mn. bearing minerals in metamorphic & sedimentary rocks as oxides, hydroxides, carbonates, silicates.
Ca	Plagioclase, Pyroxene, Amphibole, among igneous and metamorphic rocks. Limestone, dolomite, gypsum among sedimentary rocks.
Mg	Dunites, Pyroxenites, Amphibolites, Basalt, Talc, Tremolite Schists, Dolomite.
Na	Sodium salts in soils, sea water ingress, ground water, also due to base exchange reactions with clays.
K	Orthoclase, Microcline, Nepheline, Lucite, Biotite in igneous and metamorphic rocks, Evaporites in sedimentary rocks.
HCO ₃ & CO ₃	Dissolved CO ₂ in rains, water charged with CO ₂ dissolves carbonate minerals, in solid rocks to give bicarbonate.
SO ₄	Sulphides of heavy metals igneous and metamorphic rocks. Gypsum and hydrite in sedimentary rocks.
Cl	Atmospheric sources and sea water contamination.

Human activities: The untreated industrial effluents discharged through nearby streams and unlined drains may percolate underground and reaches the aquifers on the downstream side thereby affecting the quality of ground water. The migration of the pollutant to the saturated zone is considerable in sandy strata. The urban areas in India also generate substantial quantity of wastewater and find its way into the natural water courses causing contamination of surface and ground water. The solid waste dumped in low-lying areas becomes a potential source of ground water pollution.

Organic and inorganic fertilizers, pesticides, insecticides and other chemicals used in the agricultural fields are often leached to the ground water. Nitrate, potassium and phosphate are the common fertilizer used in agriculture land and are the potential pollutants in the ground water. The major contaminants associated with the waste disposal practices are summarized in **Table 8.2.**

Table 8.2: Contaminants Associated with the Waste Disposal Practices

<u>Source</u>	<u>Possible contaminants</u>
<u>Landfills:</u>	
Municipal	Heavy metals, chlorides, sodium, calcium
Industrial	Wide variety of inorganic and organic constituents.
Hazardous waste disposal sites	Wide variety of inorganic (particularly heavy metals) and organic compounds (pesticides, priority pollutants, etc).
Liquid waste storage ponds (Lagoons, leaching ponds, compounds reaching basins)	Heavy metals, Solvents, inorganic, Compounds
Subsurface sewage disposal systems	Organic compounds (degreasers, solvents), nitrogen compounds, sulphates, sodium, microbiological contaminants.
Deep-well waste injection.	Variety of inorganic and/or organic compounds.
Agricultural activities.	Fertilizers, herbicides, pesticides.
Land application (sludge, wastewater)	Heavy metals, inorganic compounds, organic compounds.
Urban runoff infiltration.	Inorganic compounds, heavy metals, petroleum products.
Decaying activities.	Chlorides, sodium, calcium radioactivity.
Radioactive wastes.	Radioactive wastes and radionuclides.

8.2 Hydrochemical quality evolution

As ground water moves along the flow paths in the saturated zone, it is enriched with total dissolved solids and with major ions. The shallow zone is characterized by active ground water flushing through relatively well-leached rocks has HCO_3^- as the dominant anion and is low in total dissolved solids. The intermediate zone has less active ground water circulation, and higher total dissolved solids while sulphate is normally the dominant anion in this zone. The lower zone with very little ground water flushing has high Cl^- concentration and high total dissolved solids. The HCO_3^- content in ground water is normally derived from soil zone CO_2 and from dissolution of calcite and dolomite. There are several soluble sedimentary minerals that release SO_4^- or Cl^- upon dissolution. The process of evolution from stage to stage is controlled by the availability of minerals along the ground water flow paths. In some ground water flow system, the water does not evolve past the HCO_3^- stage or past the SO_4^- .

The notable in this regard is the increase in HCO_3^- and decrease in SO_4^- that can occur as a result of biochemical SO_4^- reduction. Large variations in major cations occur in ground water flow systems because of cation exchange process.

8.3 Ground water quality sampling

The purpose of ground water quality sampling is varied viz. evaluation of regional water quality, detection and assessment of the extent of the contaminant release. In this context the important attributes are location and number of monitoring wells for ground water sampling. The information from the ground water sampling network is related to the number of stations to be sampled and the frequency of sampling. Due to slow rate of ground water movement, the ground water quality does not change rapidly. Similarly, in contrast to unconfined aquifers, the quality change in confined aquifer is rather slow.

Sample location: The factors that influence sampling location are site geology, hydrology, source characteristic, contaminant characteristic and size of the area under investigation. The degree and details of temporal and spatial variations, which also characterize sub-surface hydrogeochemical conditions, are also considered. The existing wells may be used to gather information on the regional ground water quality and ambient trends. Disused wells are not selected for water sampling. Hydrogeological information on ground water flow paths and gradients will initially guide the sampling network. The vertical control of sampling location is another important factor for sampling the ground water.

Sampling frequency: More the water quality varies, the more samples will be required to obtain reliable estimate of statistical parameters used to describe its behavior. Variance should determine sampling frequency. The commonly used statistical parameter for water quality variable in selecting sampling frequencies is the “mean”. The approach is to select a sampling frequency, which yields an estimate of the “mean” within a prescribed degree of accuracy (confidence limits). The “population mean” of random variable will lie within a certain interval (the confidence interval) around the “sample mean”. The confidence limit on the mean quantitatively relates sampling frequency to the variation in water quality.

The simplest case of sampling frequency design would be to select the sampling frequency, which results in the desired confidence intervals width about the annual mean for a specified water quality variable at a specified station.

In case of single station and multiple variable separate sampling frequencies for each water quality variable may be computed and then all such values averaged to decide the designed frequency.

In general, changes in the ground water quality take place much slower than the surface water quality. Experience shows that the changes in ground water quality usually can be described satisfactorily by seasonal or annual sampling schedules. Studies corroborate that the quality of the ground water outside the influence of the polluting sources, hardly shows any short-term changes. Hence, the current annual sampling schedule in the month of May serves the purpose of regional background monitoring and for study of long-term quality changes.

8.4 Results and Discussion

The chemical quality of ground water was determined from 763 water samples collected from the phreatic aquifer randomly distributed throughout Chhattisgarh. The samples were collected in pure cleaned polythene containers after rinsing with the water samples and were stored in cool place. These samples were collected during the month of May 2016 in the premonsoon period, when the concentrations of ions were maximum. The water samples were analyzed for the major ions viz. pH, EC, CO₃, HCO₃, Cl, Ca, Mg, TH, TA, Na, K, SO₄, NO₃ and F. The TDS, Total alkalinity were calculated by the obtained conductivity value and carbonate, bi carbonate ion concentration. The chemical analysis data are given in Annexure III. From the annexure it may be seen that the chemical quality of the ground water is suitable for drinking, domestic, industrial and agriculture uses in most of the places whereas in few places instinct of contamination is observed that is due to local phenomena.

The chemical analysis shows that the ground water is neutral to low alkaline in nature. The pH value was determined with direct reading pH meter. The determination of pH is an important factor because the solubility of CO₂ and the concentration of the various carbonate species depend on the pH value. The pH value is in between 6.45 and 8.84. The electrical conductivity of water is also expressed as inverse of the electrical resistance across one cm cube of water. It is related to the TDS because it is a function of concentration of all ionic solutes. The EC is temperature dependent and all the readings are related to the equivalent reading at 25° C. The EC values for the groundwater in Chhattisgarh varied between 68 and 3840 micro-Siemens/cm at 25° C. In around 90.82% of the water samples (693 samples), the EC values are found less than 1000 micro-Siemens/cm at 25° C (i.e. 650 mg/l TDS) and is within the prescribed BIS limit for drinking purposes. In 7.7% water samples, the EC values are found in between 1000 and 2000 micro-Siemens/cm at 25° C. Exceptionally higher EC values are observed at Sitalkunda (3840 micro-siemens/cm at 25° C) observation well in Bilaspur district Distribution of EC in the State is presented as contour map in Fig 8.1.

Calcium (Ca^{+2}) was the predominant ion in the ground water of the state and in certain regions Magnesium (Mg^{+2}) was high. As per the BIS guidelines the acceptable and permissible limits for Ca in drinking water are 75 mg/l and 200 mg/l, respectively. The concentration of Ca in about 87.81% (670 samples) of the samples was within the acceptable limits (< 75 mg/l) and in only around 11% (85 samples) the concentration was greater than the acceptable and within the permissible limits (75 – 200 mg/l). At nine locations where high Ca concentration was found >200 mg/l. Highest value of Ca was found in Durg, Bemetara and Raigarh district. The maximum calcium concentration 360 mg/l was observed at Bemetara-d village of Bemetra district.

Similarly, the acceptable limit for Mg in drinking water is 30 mg/l and permissible limit is 100 mg/l. The undesirable affect outside the acceptable limit include encrustation in water supply structure and adverse effects on domestic uses. The concentration of Mg in about 99.4% (758 samples) of the samples was within the permissible limit and in the remaining samples (5 samples) the concentration was greater than the permissible limit. A very high concentration of Mg was found in Sitalkunda (170.4 mg/l) of Bilaspur district.

The Ca and Mg when combined with HCO_3 , SO_4 and other ions contribute to the hardness in the water. As per the BIS guidelines the acceptable and permissible limits for the hardness as CaCO_3 are 200 and 600 mg/l, respectively. In about 98% (748 samples) of the ground water samples, hardness was within the permissible limit and in 2% (15 samples) of the samples; the hardness was greater than the permissible limit thereby indicating that the ground water is soft or moderately hard in nature. The high hardness value was found in Bemetara observation well (1175 mg/l) at Durg district.

The sodium concentration varies from 0.2 mg/l to 484.5 mg/l and Potassium concentration varies from <0.1 mg/l to 130 mg/l.

The chloride (Cl^-) concentration in the ground water was within the BIS prescribed limits for drinking purposes. Acceptable and maximum permissible limit (IS 10500: 2012) in drinking water are 250 and 1000 mg/l respectively. In almost all of the analysed samples, Cl concentrations were observed within permissible limit. The minimum chloride concentration 3.6 mg/l was recorded at Khadadaha of Dhamtari district. Highest chloride concentration 781 mg/l was recorded at Tamaimar village of Raigarh district. The distribution of chloride in the State is shown in Fig. 8.2.

Higher content of Sulphate (SO_4^{-2}) in drinking water causes gastrointestinal irritation. The SO_4 concentration in the State was found between <0.1 mg/l and 1154.76mg/l. As per the

BIS guidelines the acceptable and permissible limits for SO_4 in drinking water are 200mg/l and 400 mg/l, respectively. The Sulphate concentration in 98.43% of the water samples was within the permissible limits. In 12 water samples, the SO_4 concentrations were beyond the permissible limits. The highest concentration was found in Bitkuli (1154.76 mg/l) of Bemetara district. The villages where the high concentration of sulphate is due to the dissolution of gypsum veins present within shale formation. The distribution of Sulphate is shown in Fig. 8.3.

The acceptable and maximum permissible limit (IS 10500: 2012) of total alkalinity in drinking water are 200 and 600 mg/l respectively. In the study area the total alkalinity in the ground water was observed within the permissible limits in almost all the water samples. The highest carbonate concentration (12 mg/l) was observed at Kumhari of Durg district. The bicarbonate concentration was observed in between 12.2 and 610 mg/l. A high concentration of Bicarbonate was observed at Salhebara (610 mg/l) of Rajnandgaon district.

Very high value of fluoride in ground water causes mottling of teeth and fluorosis. High values also cause dental carries and teeth decay. In 89.26% (677 samples) of samples the fluoride concentration was observed < 1.0 mg/l. In 8.12% water samples (62 samples) the fluoride concentration was observed within the acceptable range (1-1.5 mg/l) recommended by BIS and only in 4.5 % (35 samples) of samples the fluoride concentration was more than the prescribed limits (>1.5 mg/l). The maximum fluoride concentration was recorded at Salkhiya (5.1 mg/l) in Raigarh district. The distribution of fluoride is shown in Fig. 8.3.

Fig.8.1 EC Distribution map of Chhattisgarh state

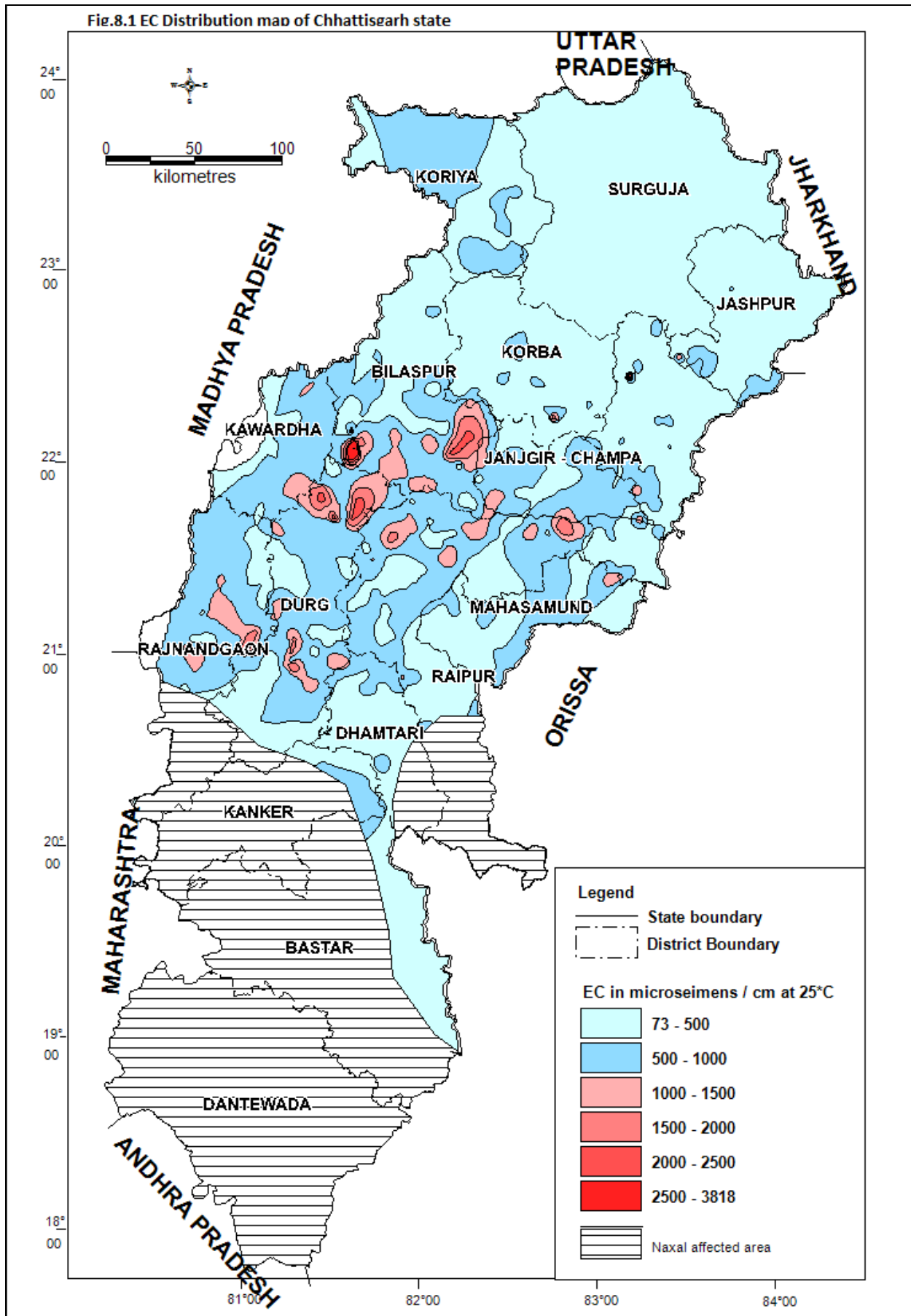


Fig-8.2 Chlorite distribution map of Chhattisgarh state

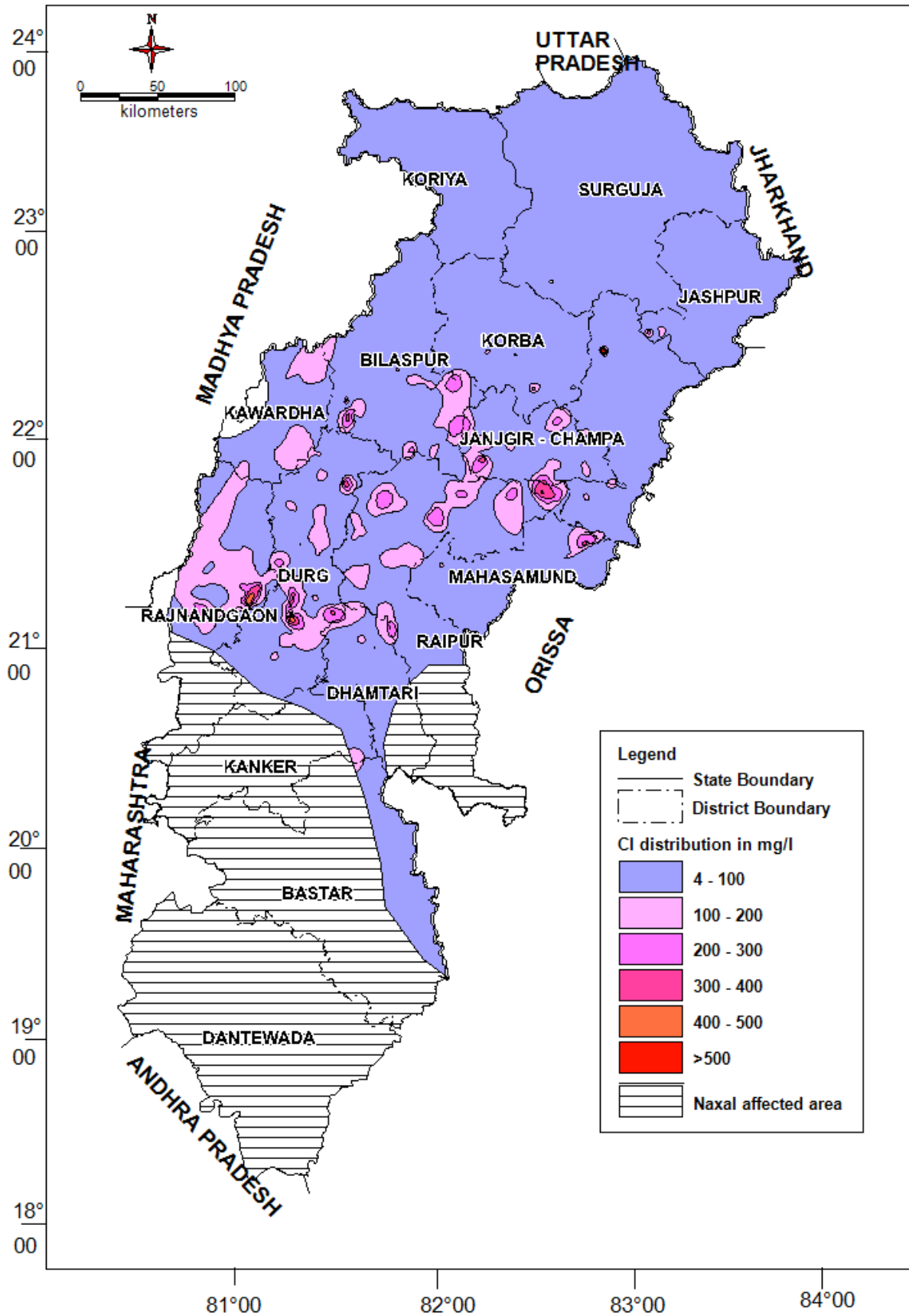
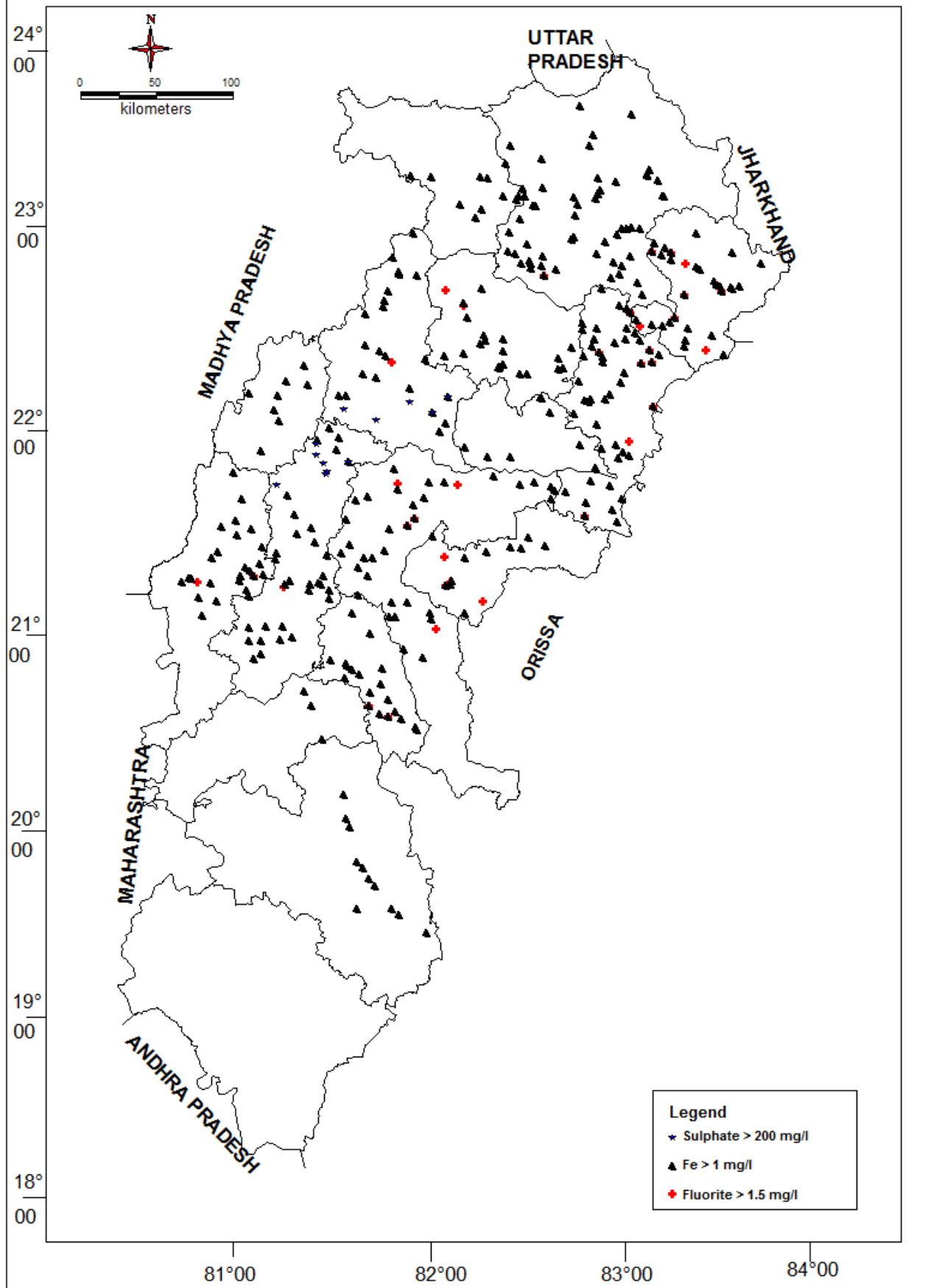


Fig-8.3 Fluorite,NO₃ & SO₄ distribution map of Chhattisgarh State



Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
1	Arjunda	17.25	Mahanadi	Shale
2	Armarikalan	8.18	Mahanadi	Limestone/Dolomite
3	Baklitola	8	Mahanadi	Quartzite
4	Balod	11.65	Mahanadi	Compact Sandstone
5	Balod Gahan	7.1	Mahanadi	Compact Sandstone
6	Batera	5.43	Mahanadi	Compact Sandstone
7	Bharnabhat	15.22	Mahanadi	Limestone Cavernous
8	Danitola	7.8	Mahanadi	Quartzite
9	Delli Rajhara	3.55	Mahanadi	Conglomerate/Metasedimentary
10	Dondi	13.75	Mahanadi	Gneiss/Amphibolite/Granulite
11	Gunderdehi	10.3	Mahanadi	Shale
12	Gunderdehi 1	48.66	Mahanadi	Shale
13	Gurur	12.17	Mahanadi	Compact Sandstone
14	Gurur-s	24.28	Mahanadi	Compact Sandstone
15	Jagtara	12.45	Mahanadi	Compact Sandstone
16	Kodiya	13.3	Mahanadi	Limestone Cavernous
17	Kusumkasa	9.3	Mahanadi	Acidic Rocks
18	Lohara	7.5	Mahanadi	Granite Gneiss
19	Markatola	10.27	Mahanadi	Compact Sandstone
20	Nahalda	7.75	Mahanadi	Shale
21	Paplatola	8.7	Mahanadi	Quartzite
22	Sambalpur	25.5	Mahanadi	Not Available
23	Sambalpur Pz I	151.9	Mahanadi	Maniyari shale
24	Sambalpur Pz li	63	Mahanadi	Maniyari shale
25	Sambalpur2	42.49	Mahanadi	Not Available
26	Sikosa	6.14	Mahanadi	Limestone/Dolomite
27	Umradah	12.5	Mahanadi	Shale with Limestone/Sandstone Band/Lens
28	Aouri	9.8	Mahanadi	Compact Sandstone
29	Arjuni	10.8	Mahanadi	Not Available
30	Arjuni S	50	Mahanadi	Shale with Limestone/Sandstone Band/Lens
31	Baloda bazar	15.4	Mahanadi	Shale
32	Baloda bazar1	67.15	Mahanadi	Limestone Cavernous
33	Bhatgaon	9.05	Mahanadi	Not Available
34	Bhattapara-S	28	Mahanadi	Limestone/Dolomite
35	Biladi	18	Mahanadi	Limestone
36	Bilaigarh	5.35	Mahanadi	Limestone/Dolomite
37	Bilaigarh S	50	Mahanadi	Limestone/Dolomite
38	Chanderi	9.8	Mahanadi	Limestone Cavernous

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
39	Chandi	7	Mahanadi	Not Available
40	Chicholi	15.5	Mahanadi	Limestone Cavernous
41	Darchura	10.7	Mahanadi	Shell Limestone/Limestone
42	Dhamarkhera	11.36	Mahanadi	Limestone/Dolomite
43	Haswa	14.83	Mahanadi	Limestone/Dolomite
44	Kasdol	9.27	Mahanadi	Limestone/Dolomite
45	Kasdol-d	75	Mahanadi	Limestone/Dolomite
46	Kasdol-s PZ	33.5	Mahanadi	Limestone/Dolomite
47	Khapri	13.5	Mahanadi	Not Available
48	Kharora	12.1	Mahanadi	Limestone/Dolomite
49	Lahaud	10.9	Mahanadi	Shale
50	Lahaud S	50	Mahanadi	Shale with Limestone/Sandstone Band/Lens
51	Lawan	9.69	Mahanadi	Limestone/Dolomite
52	Mahasamund-s PZ	36.5	Mahanadi	Shale
53	Mudhipar	6.9	Mahanadi	Limestone Cavernous
54	Pandan Bhata	10.45	Mahanadi	Limestone
55	Panderbhata S	50	Mahanadi	Shale with Limestone/Sandstone Band/Lens
56	Raita Satna Ni Para	10	Mahanadi	Limestone
57	Risda	12	Mahanadi	Limestone
58	Saragaon	7.2	Mahanadi	Limestone/Dolomite
59	Sarsiwa	10.14	Mahanadi	Granite/Granodiorite
60	Sel	9.3	Mahanadi	Limestone
61	Simga	10.43	Mahanadi	Shale
62	Simga-s	30.93	Mahanadi	Shale
63	Suhela	13.5	Mahanadi	Limestone Cavernous
64	Tarenga	17.11	Mahanadi	Shale
65	Tarpongi	8.25	Mahanadi	Limestone/Dolomite
66	Tatibandh MVM	13.1	Mahanadi	Limestone
67	Tilda	10.9	Mahanadi	Not Available
68	Tilda Purani Basti	15.53	Mahanadi	Limestone
69	Tilda S	50	Mahanadi	Shale with Limestone/Sandstone Band/Lens
70	Tundei	10.45	Mahanadi	Limestone
71	Urela	11.6	Mahanadi	Conglomerate/Metasedimentary
72	Alkadih	3	Mahanadi	Granite Gneiss
73	Amdih	7.8	Mahanadi	Granite Gneiss
74	Aragahi	11.2	Lower Ganges	Granite/Granodiorite
75	Bachwar	8	Lower Ganges	Gneiss/Amphibolite/Granulite
76	Bagra	8.35	Mahanadi	Sandstone
77	Balrampur	18	Lower Ganges	Granite/Granodiorite
78	Balrampur D	50	Lower Ganges	Granite Gneiss

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
79	Balrampur S	32.55	Lower Ganges	Granite Gneiss
80	Basin	7.5	Mahanadi	Granite Gneiss
81	Bhadori	6.75	Lower Ganges	Shale With Limestone/Sandstone Band/Lens
82	Bulga	11	Lower Ganges	Compact Sandstone
83	Chandora	7.01	Lower Ganges	Compact Sandstone
84	Dhamni	11.7	Lower Ganges	Gneiss/Amphibolite/Granulite
85	Dhaurpur	9	Lower Ganges	Gneiss/Amphibolite/Granulite
86	Dhaurpur S	50	Lower Ganges	Granite Gneiss
87	Gonda	16.47	Lower Ganges	Compact Sandstone
88	Jagannathpur	8.35	Lower Ganges	Sandstone
89	Karmdiha	10.17	Lower Ganges	Gneiss/Amphibolite/Granulite
90	Kurji	9.15	Mahanadi	Sandstone
91	Lamgaon	6.7	Lower Ganges	Shale With Limestone/Sandstone Band/Lens
92	Lundra	10	Lower Ganges	Gneiss/Amphibolite/Granulite
93	Lundra S	50	Lower Ganges	Granite Gneiss
94	Mahavirganj	8.6	Lower Ganges	Granite/Granodiorite
95	Mahewa	9.85	Lower Ganges	Compact Sandstone
96	Makanpur	12.2	Lower Ganges	Sandstone
97	Nawdih	10.5	Mahanadi	Limestone
98	Pasta	12	Lower Ganges	Granite/Granodiorite
99	Pasta S	50	Lower Ganges	Granite Gneiss
100	Pratappur	12	Lower Ganges	Granite/Granodiorite
101	Pratappur - 1	12	Lower Ganges	Granite/Granodiorite
102	Rajpur	14.56	Lower Ganges	Compact Sandstone
103	Rajpur1	30.9	Lower Ganges	Schist/Talc
104	Ramanujganj	12.8	Lower Ganges	Gneiss/Amphibolite/Granulite
105	Reonti	13.05	Lower Ganges	Sandstone
106	Sargaon	9.4	Mahanadi	Granite Gneiss
107	Shankargarh S	50	Lower Ganges	Granite Gneiss
108	Songara	15	Lower Ganges	Compact Sandstone
109	Songara1	31	Lower Ganges	Compact Sandstone
110	Tattapani	12.9	Lower Ganges	Compact Sandstone
111	Tattapani1	30.52	Lower Ganges	Granite Gneiss
112	Veria	11	Mahanadi	Sandstone With Shale/Coal Partings
113	Wadrafanagar	14	Lower Ganges	Compact Sandstone
114	Bare arapur	20	Godavari	Gneiss/Amphibolite/Granulite
115	Bastar	14	Godavari	Limestone/Dolomite
116	Bhanpuri	6.55	Godavari	Limestone/Dolomite
117	Bhanpuri-d	42.53	Godavari	Limestone/Dolomite
118	Bhanpuri-s	30.92	Godavari	Limestone/Dolomite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
119	Chhapanbhanpuri	9.4	Godavari	Limestone/Dolomite
120	Chitrakot	9.9	Godavari	Compact Sandstone
121	Jagdapur	11	Godavari	Limestone/Dolomite
122	Jagdapur.1	8.17	Godavari	Not Available
123	Jagdapur-s PZ	28.07	Godavari	Alluvium
124	Karpawand	8.5	Godavari	Limestone/Dolomite
125	Kumharwand	9.5	Godavari	Limestone/Dolomite
126	Markel	9.86	Godavari	Shale
127	Nagarnar1	9.3	Godavari	Shaly Limestone
128	Neganar	12.58	Godavari	Limestone/Dolomite
129	Sonarpal	9.75	Godavari	Compact Sandstone
130	Andhiyarkhor	12.02	Mahanadi	Compact Sandstone
131	Ashoga	10.95	Mahanadi	Limestone/Dolomite
132	Bemetara New	16.78	Mahanadi	Shale
133	Bemetera-s	39.83	Mahanadi	Shale
134	Berla	7.4	Mahanadi	Limestone/Dolomite
135	Bitkuli	8.8	Mahanadi	Shale
136	Dadhi 1	12	Mahanadi	Shale
137	Deorbija	9.63	Mahanadi	Limestone/Dolomite
138	Ganiya	5.55	Mahanadi	Shale
139	Gatapar	9.5	Mahanadi	Limestone/Dolomite
140	Jamgaon	9.5	Mahanadi	Limestone/Dolomite
141	Kathiya	16.1	Mahanadi	Shale With Sandstone Partings
142	Kedwa	6.6	Mahanadi	Limestone/Dolomite
143	Khati	8.23	Mahanadi	Shale
144	Khurmuri	14	Mahanadi	Shale
145	Medasar	10.7	Mahanadi	Quartzite
146	Nawagarh1	8.5	Mahanadi	Shale
147	Nawagarh-d	75.62	Mahanadi	Shale
148	Nawagarh-s	30.5	Mahanadi	Shale
149	Ninwa	11.32	Mahanadi	Shale
150	Parpoda	14	Mahanadi	Limestone/Dolomite
151	Saja Pz Ii	51.3	Mahanadi	Maniyari shale
152	Saja Pzi	151.9	Mahanadi	Maniyari shale
153	Semariya	151.3	Mahanadi	Maniyari shale
154	bakarkuda	0	Mahanadi	Limestone
155	Bansajhal	8.33	Mahanadi	Compact Sandstone
156	Bansajhal1 PZ	37.22	Mahanadi	Schist/Talc
157	Bartoli	9.45	Mahanadi	Limestone
158	Belgahana	11	Mahanadi	Phyllite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
159	Beltara	9.65	Mahanadi	Compact Sandstone
160	Bilaspur	15.5	Mahanadi	Limestone/Dolomite
161	Bilha	13.7	Mahanadi	Limestone/Dolomite
162	Chakrabhata-d PZ	54.8	Mahanadi	Limestone/Dolomite
163	Chandkhuri (d)	74.4	Mahanadi	Not Available
164	Chandkhuri (s)	50	Mahanadi	Not Available
165	Chilhati	10.2	Mahanadi	Limestone/Dolomite
166	chilhati	50	Mahanadi	Limestone
167	Dagauri	11.38	Mahanadi	Not Available
168	Danikundi	20	Lower Ganges	Granite/Granodiorite
169	Dhanpur	10.8	Lower Ganges	Granite/Granodiorite
170	Ganiyari	50	Mahanadi	Not Available
171	Ganiyari.2	11.4	Mahanadi	Shale
172	Gatori	6.45	Mahanadi	Limestone/Dolomite
173	Gaurela	8.79	Lower Ganges	Granite/Granodiorite
174	Hemu Nagar	7.92	Mahanadi	Limestone/Dolomite
175	Hirri	11.15	Mahanadi	Limestone/Dolomite
176	Jhingatpur	9.1	Mahanadi	Phyllite
177	Jogipur	12.1	Mahanadi	Quartzite
178	Kargikhurud	13.1	Mahanadi	Shale With Limestone/Sandstone Band/Lens
179	Kenda	10.9	Mahanadi	Phyllite
180	Keonchi	10.56	Mahanadi	Granite/Granodiorite
181	Keonchi (D)	100	Mahanadi	Not Available
182	Keonchi (s)	50	Mahanadi	Not Available
183	Khamharia1	17	Mahanadi	Shale
184	Khamharia2	10.9	Mahanadi	Quartzite
185	Kota PZ	31.07	Mahanadi	Shale
186	Kota(kargi)	19.82	Mahanadi	Limestone/Dolomite
187	Kotmi.1	17.75	Mahanadi	Granite/Granodiorite
188	Madanpur	15.1	Mahanadi	Shale With Limestone/Sandstone Band/Lens
189	Malhar	7.85	Mahanadi	Limestone/Dolomite
190	Marwahi	14.12	Lower Ganges	Compact Sandstone
191	Masturi	12	Mahanadi	Shale
192	Masturi1	10.95	Mahanadi	Shale
193	Neora	12.6	Mahanadi	Limestone Cavernous
194	Nimdha	8.5	Lower Ganges	Granite Gneiss
195	Panchpedi	10.4	Mahanadi	Limestone/Dolomite
196	Patera	6.8	Mahanadi	Granite Gneiss
197	Pendra Road	50	Lower Ganges	Not Available
198	Piparkhuti	7	Mahanadi	Granite/Granodiorite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
199	Piperkhutnew	6.8	Mahanadi	Granite Gneiss
200	Ranka Pz I	149.2	Mahanadi	Maniyari shale
201	Ranka Pz li	51.6	Mahanadi	Maniyari shale
202	Ratanpur	10.78	Mahanadi	Shale
203	Rupandand	4.8	Mahanadi	Granite Gneiss
204	Saraipalli	11.3	Mahanadi	Granite/Granodiorite
205	Seoni	11.6	Lower Ganges	Granite/Granodiorite
206	Sewra	8.8	Lower Ganges	Granite Gneiss
207	Shivtarai New	10.5	Mahanadi	Granite Gneiss
208	Sipat	50	Mahanadi	Shaly Limestone
209	Takhatpur.1	10	Mahanadi	Sandy Shale
210	Tendumuda	13.2	Lower Ganges	Sandstone
211	Tenduwa	11.1	Mahanadi	Granite/Granodiorite
212	Tikthi	12	Lower Ganges	Compact Sandstone
213	Udaypur	7.8	Mahanadi	Shale With Limestone/Sandstone Band/Lens
214	Arsi-kanhar	12	Mahanadi	Granite/Granodiorite
215	Banraud - I	7	Mahanadi	Compact Sandstone
216	Banraud D	81	Mahanadi	Quartzite
217	Banraud S	50	Mahanadi	Quartzite
218	Banspani	12.54	Mahanadi	Granite/Granodiorite
219	Bhoyana	8.7	Mahanadi	Limestone Cavernous
220	Birgudi	11	Mahanadi	Granite/Granodiorite
221	Budepara	7.6	Mahanadi	Sandstone
222	Chataud S	50	Mahanadi	Compact Sandstone
223	Chhati	10.65	Mahanadi	Limestone/Dolomite
224	Chhati S	50	Mahanadi	Limestone Cavernous
225	Dhamtari1 PZ	51.75	Mahanadi	Limestone Cavernous
226	Dorgardula	11.21	Mahanadi	Granite/Granodiorite
227	Dugli	7.8	Mahanadi	Granite/Granodiorite
228	Dugli - I	7.7	Mahanadi	Granite/Granodiorite
229	Gangrel S	50	Mahanadi	Granite Gneiss
230	Gattasilli	9.1	Mahanadi	Not Available
231	Jabarra	6.1	Mahanadi	Not Available
232	Keregaon	8	Mahanadi	Granite/Granodiorite
233	Kondapar	10.6	Mahanadi	Shale
234	Kosmarra	8.2	Mahanadi	Not Available
235	Kurud S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
236	Kurud.1	9.4	Mahanadi	Limestone Cavernous
237	Magarlod	12	Mahanadi	Compact Sandstone
238	Magarlod D	61	Mahanadi	Shaly Limestone

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
239	Magarlod S	36.66	Mahanadi	Shaly Limestone
240	Marod	10.66	Mahanadi	Laterite
241	Mega	11	Mahanadi	Limestone
242	Murrumsilli S	50	Mahanadi	Granite Gneiss
243	Nagari PZ	36.58	Mahanadi	Granite/Granodiorite
244	Nagri	7.25	Mahanadi	Granite/Granodiorite
245	Nagri-1	10.05	Mahanadi	Granite/Granodiorite
246	Sankra	11.5	Mahanadi	Granite/Granodiorite
247	Seadei	7.6	Mahanadi	Sandstone
248	Sihawa	7.12	Mahanadi	Granite/Granodiorite
249	Singhpur	10.68	Mahanadi	Compact Sandstone
250	Ahiwara	10.55	Mahanadi	Limestone/Dolomite
251	Anda	7.12	Mahanadi	Shale
252	Anda-I	9	Mahanadi	Shale
253	Bhailai	8.2	Mahanadi	Limestone/Dolomite
254	Charoda	7.05	Mahanadi	Limestone/Dolomite
255	Dargaon	8.65	Mahanadi	Limestone/Dolomite
256	Dhamdha-s	30.55	Mahanadi	Limestone Cavernous
257	Durg	10.23	Mahanadi	Limestone/Dolomite
258	Funda	9.44	Mahanadi	Limestone/Dolomite
259	Ganiyari	13.1	Mahanadi	Limestone/Dolomite
260	Girhola	20.5	Mahanadi	Shale
261	Jeora Sirsa	9.8	Mahanadi	Limestone/Dolomite
262	Kachundur	8.9	Mahanadi	Shale With Limestone/Sandstone Band/Lens
263	Kandraka	8.6	Mahanadi	Limestone
264	Kumhari	30.46	Mahanadi	Limestone/Dolomite
265	Litai	14	Mahanadi	Limestone/Dolomite
266	Marra	11.2	Mahanadi	Limestone/Dolomite
267	Motipur	9.83	Mahanadi	Limestone/Dolomite
268	Paoowara	9.45	Mahanadi	Limestone Cavernous
269	Patan	14.4	Mahanadi	Shale
270	Pawa Pz	149.2	Mahanadi	Maniyari shale
271	Pendri	9.3	Mahanadi	Limestone
272	Powara	7.4	Mahanadi	Limestone Cavernous
273	Ravelidih	9.3	Mahanadi	Limestone/Dolomite
274	Selud1	10	Mahanadi	Limestone/Dolomite
275	Selud2	27.03	Mahanadi	Limestone/Dolomite
276	Tarkori	9.05	Mahanadi	Shale With Limestone/Sandstone Band/Lens
277	Utai-Adarshnagar	6	Mahanadi	Shale With Limestone/Sandstone Band/Lens
278	Bindra nawagarh	8.75	Mahanadi	Granite/Granodiorite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
279	Chhura	11.25	Mahanadi	Granite/Granodiorite
280	Gariabandh-s	75.62	Mahanadi	Granite/Granodiorite
281	Gariyaband	10.55	Mahanadi	Granite/Granodiorite
282	Gariyaband -1	10.75	Mahanadi	Granite/Granodiorite
283	Gohrapadar - 1	7.35	Mahanadi	Granite/Granodiorite
284	Indagaon	8.1	Mahanadi	Granite/Granodiorite
285	Jalkhamar	9.35	Mahanadi	Granite/Granodiorite
286	Jhariabara	10.6	Mahanadi	Granite Gneiss
287	Joba	6.52	Mahanadi	Granite/Granodiorite
288	Panduka	10.77	Mahanadi	Compact Sandstone
289	Adbhar	8.3	Mahanadi	Shale
290	Akaltara	13.76	Mahanadi	Limestone/Dolomite
291	Akaltara S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
292	Baloda -r	14.83	Mahanadi	Limestone/Dolomite
293	Baloda S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
294	Bamhani	15.4	Mahanadi	Gneiss/Amphibolite/Granulite
295	Bamnidihi	10	Mahanadi	Shale
296	Baradwar D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
297	Baradwar S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
298	Budena	13.1	Mahanadi	Granite Gneiss
299	Champa	12.3	Mahanadi	Limestone/Dolomite
300	Champa-d PZ	65.5	Mahanadi	Shaly Limestone
301	Champa-s PZ	41.87	Mahanadi	Shaly Limestone
302	Chandrapur1	23.32	Mahanadi	Alluvium
303	Dabra	9.87	Mahanadi	Compact Sandstone
304	Damau	7.92	Mahanadi	Sandstone
305	Dhardei	11.48	Mahanadi	Shale
306	Dhurkot Nhs	12.8	Mahanadi	Shale With Limestone/Sandstone Band/Lens
307	Dongakahrod	13.9	Mahanadi	Limestone/Dolomite
308	Ghoghari	8.52	Mahanadi	Shale
309	Hasoud	9.54	Mahanadi	Shale
310	Jaijaipur	12.13	Mahanadi	Shale
311	Jaijaipur D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
312	Jaijaipur S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
313	Janjgir	19.95	Mahanadi	Shale
314	Janjgir S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
315	Jewara	12.14	Mahanadi	Limestone
316	Jhulan Pakariya	11.8	Mahanadi	Limestone/Dolomite
317	Kera	8.73	Mahanadi	Shale
318	Khartal	10.72	Mahanadi	Limestone/Dolomite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
319	Konargarh	6.36	Mahanadi	Shale
320	Latesara	10.52	Mahanadi	Shale
321	Loharsi	10.2	Mahanadi	Granite Gneiss
322	Malkhroda	15.37	Mahanadi	Shale
323	Mulmula	10	Mahanadi	Limestone Cavernous
324	Pamgarh	18.33	Mahanadi	Shale
325	Pamgarh D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
326	Pamgarh S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
327	Sakti	20.81	Mahanadi	Shale
328	Sakti S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
329	Saliabhata	13.1	Mahanadi	Granite Gneiss
330	Sapos	10.5	Mahanadi	Granite Gneiss
331	Saragaon2	13.12	Mahanadi	Shale
332	Sasaha	6.9	Mahanadi	Shale
333	Semra	15.4	Mahanadi	Limestone/Dolomite
334	Seorinarayan	11.4	Mahanadi	Alluvium
335	Seorinarayan1 PZ	30.15	Mahanadi	Alluvium
336	Somthi	10.9	Mahanadi	Shale With Limestone/Sandstone Band/Lens
337	Sukda	7.4	Mahanadi	Compact Sandstone
338	Thathari	11.3	Mahanadi	Shale
339	Amatolli	5.2	Mahanadi	Granite/Granodiorite
340	Bagbahar S	50	Mahanadi	Granite Gneiss
341	Bagicha	6.82	Mahanadi	Gneiss/Amphibolite/Granulite
342	Bagicha PZ	41.63	Mahanadi	Gneiss/Amphibolite/Granulite
343	Balachhappar	12.25	Mahanadi to Ganges Water Resources Region	Granite Gneiss
344	Bandarchuwa	10.75	Mahanadi	Granite/Granodiorite
345	Banderchua S	50	Mahanadi	Granite Gneiss
346	Bangaon	8.24	Mahanadi	Granite/Granodiorite
347	Bangaon B	50	Mahanadi	Granite Gneiss
348	Bataikela	8.87	Mahanadi	Gneiss/Amphibolite/Granulite
349	Bewrapali	8	Mahanadi	Not Available
350	Bildagi	8.5	Mahanadi	Granite Gneiss
351	Binjapur	7.5	Mahanadi	Granite/Granodiorite
352	Bthighara	12.1	Mahanadi	Granite Gneiss
353	Chhaptoli	7.5	Mahanadi	Not Available
354	Dhodidand	6.6	Mahanadi	Granite/Granodiorite
355	Farsabhar	4.65	Mahanadi	Not Available

Details of National Hydrograph Stations
Annexure-I

SN	Location	Depth of well	Basin	Geology
356	Farsakanhi	8.44	Mahanadi	Granite/Granodiorite
357	Ghatmunda	9.4	Mahanadi	Granite/Granodiorite
358	Jakba	10	Mahanadi to Ganges Water Resources Region	Granite Gneiss
359	Jashpurnagar	10.35	do	Granite/Granodiorite
360	Kachhor	9.8	Mahanadi	Granite Gneiss
361	Kandaibahar	6.1	Mahanadi	Granite Gneiss
362	Kandora	10.5	Mahanadi	Granite Gneiss
363	Kansabel	12.3	Mahanadi	Granite/Granodiorite
364	Kasawel S	50	Mahanadi	Granite Gneiss
365	Kersai	7.98	Mahanadi	Granite/Granodiorite
366	Khutsera	7.45	Mahanadi	Not Available
367	Kotba	6.85	Mahanadi	Granite/Granodiorite
368	Kunjara	7.8	Mahanadi	Granite/Granodiorite
369	Kunkuri S	50	Mahanadi	Granite Gneiss
370	Kunkuri I	7.4	Mahanadi	Granite/Granodiorite
371	Lavakera	9.25	Mahanadi	Gneiss/Amphibolite/Granulite
372	Lavakera I	41.5	Mahanadi	Gneiss/Amphibolite/Granulite
373	Ludeg	6.99	Mahanadi	Gneiss/Amphibolite/Granulite
374	Maini	8.5	Mahanadi	Granite/Granodiorite
375	Mauhadih	9.1		Gneiss/Amphibolite/Granulite
376	Muskuti	7.99	Mahanadi	Granite/Granodiorite
377	Narayanbaheli	8.25	Mahanadi	Granite Gneiss
378	Narayanpur S	50	Mahanadi	Granite Gneiss
379	Nawaguda	9.6	Mahanadi	Granite Gneiss
380	Palidih	10.5	Mahanadi	Granite Gneiss
381	Pathalgaon	14.23	Mahanadi	Granite/Granodiorite
382	Pathalgaon S	50	Mahanadi	Granite Gneiss
383	Pathalgaon I PZ	26.93	Mahanadi	Gneiss/Amphibolite/Granulite
384	Patratoli	7.8	Mahanadi	Granite Gneiss
385	Peta	7.73	Mahanadi	Granite Gneiss
386	Phooldih	6	Lower Ganges	Granite Gneiss
387	Raikera	7	Mahanadi	Granite/Granodiorite
388	Raikera(Kunkuri)	7.75	Lower Ganges	Granite Gneiss
389	Raoni	5.65	Mahanadi	Granite Gneiss
390	Rupsera	7.79	Mahanadi to Ganges Water Resources Region	Granite/Granodiorite

Details of National Hydrograph Stations
Annexure-I

SN	Location	Depth of well	Basin	Geology
391	Sanna	14.8	Lower Ganges	Granite Gneiss
392	Saraipani	8.3	Mahanadi	Granite/Granodiorite
393	Sarhapani	9.8	Lower Ganges	Gneiss/Amphibolite/Granulite
394	Sarkardih	9.93	Mahanadi to Ganges Water Resources Region	Granite/Granodiorite
395	Sonquari	16	Mahanadi	Granite Gneiss
396	Srishringa	6.9	Mahanadi	Granite/Granodiorite
397	Surangpani New	8.4	Mahanadi	Granite/Granodiorite
398	Tapkara	11	Mahanadi	Granite/Granodiorite
399	Tapkara S	50	Mahanadi	Granite Gneiss
400	Charama2	8.82	Mahanadi	Granite/Granodiorite
401	Govindpur	7.15	Mahanadi	Gneiss/Amphibolite/Granulite
402	Kanker	14	Mahanadi	Gneiss/Amphibolite/Granulite
403	Kanker1 PZ	30.56	Mahanadi	Granite/Granodiorite
404	Kulgaon	9.9	Mahanadi	Gneiss/Amphibolite/Granulite
405	Bharamdeo D	100	Mahanadi	Shale
406	Bharamdeo S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
407	Bodla	14.5	Mahanadi	Limestone/Dolomite
408	Bodla1 PZ	27.73	Mahanadi	Schist/Talc
409	Chilpi	9.85	Narmada	Schist/Talc
410	Danganiya	10.3	Mahanadi	Limestone/Dolomite
411	Dhandgaon	12.4	Mahanadi	Limestone
412	Kapada	10	Mahanadi	Limestone/Dolomite
413	Kawardha S	50	Mahanadi	Shale
414	Kawardha1	11	Mahanadi	Limestone/Dolomite
415	Khadoula	8.75	Mahanadi	Shale
416	Kharoda Kalan	9.2	Mahanadi	Limestone/Dolomite
417	Kui	9.75	Mahanadi	Granite/Granodiorite
418	Lohara-d PZ	52	Mahanadi	Shale
419	Lohara-s PZ	24.56	Mahanadi	Shale
420	Munmuna	9.8	Mahanadi	Phyllite
421	Rajnanwagaon	5.52	Mahanadi	Schist/Talc
422	Sagona S	27.9	Mahanadi	Granite Gneiss
423	Sahaspur lohara	6.39	Mahanadi	Limestone/Dolomite
424	Sahaspur Lohara.1	11.15	Mahanadi	Not Available
425	Sarai Patera S	16	Mahanadi	Granite Gneiss

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
426	Saroda Dadar S	50	Mahanadi	Granite Gneiss
427	Singhari D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
428	Singhari S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
429	Uria Khurud	9	Mahanadi	Shale With Limestone/Sandstone Band/Lens
430	Batrail	9.07	Godavari	Gneiss/Amphibolite/Granulite
431	Ghodagaon	9.6	Godavari	Compact Sandstone
432	Joba	8	Godavari	Compact Sandstone
433	Keskal	9	Mahanadi	Gneiss/Amphibolite/Granulite
434	Kondagon New	12.1	Godavari	Granite/Granodiorite
435	Lanjora	11	Godavari	Granite/Granodiorite
436	Murwandl	10	Godavari	Granite Gneiss
437	Pharasgaon	9.9	Godavari	Granite/Granodiorite
438	Pharasgaonl PZ	27.4	Godavari	Schist/Talc
439	Andhiarkhor Pz I	51.3	Mahanadi	Maniyari shale
440	Banbandha	5.36	Mahanadi	Compact Sandstone
441	Bandhakhar	6.82	Mahanadi	Sandstone
442	Batati Junction	11.27	Mahanadi	Sandstone
443	Bhilai Nagar Pz li	92	Mahanadi	Sandstone With Shale/Coal Partings
444	Chaitama	15	Mahanadi	Compact Sandstone
445	Champa Mode	7.5	Mahanadi	Sandstone
446	Charmar	9.4	Mahanadi	Sandstone
447	Churi	12.8	Mahanadi	Granite Gneiss
448	Dhegurdi Manzipara	9.4	Mahanadi	Sandstone
449	Dhourabhata	8.37	Mahanadi	Sandstone
450	Dumardih New	8.86	Mahanadi	Sandstone
451	Gopalpur	12.71	Mahanadi	Granite/Granodiorite
452	Jamchuwa	9.5	Mahanadi	Sandstone
453	Jatgan	11.4	Mahanadi	Granite/Granodiorite
454	Jhabar	8.35	Mahanadi	Sandstone With Shale/Coal Partings
455	Jhingatpur	10.3	Mahanadi	Sandstone
456	Jogipali	10.4	Mahanadi	Sandstone
457	Kartala	10.95	Mahanadi	Compact Sandstone
458	Katghora	11.65	Mahanadi	Compact Sandstone
459	Khodri	4.8	Mahanadi	Granite Gneiss
460	Korba	14.47	Mahanadi	Compact Sandstone
461	Korba Home Gaurd Pz li	37.48	Mahanadi	Compact Sandstone
462	Korba-S	193	Mahanadi	Sandstone With Shale/Coal Partings
463	Korkoma Junction	8.15	Mahanadi	Sandstone
464	Kotmer Upper	8.2	Mahanadi	Sandstone

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
465	Kurtha	8.9	Mahanadi	Shale With Limestone/Sandstone Band/Lens
466	Lenga	9.98	Mahanadi	Granite Gneiss
467	Madai	8.73	Mahanadi	Compact Sandstone
468	Morga	14	Mahanadi	Compact Sandstone
469	Nagai	11.77	Mahanadi	Compact Sandstone
470	Naktikhar	10.27	Mahanadi	Sandstone With Shale/Coal Partings
471	Naraibodh	7.5	Mahanadi	Sandstone
472	Nawapara	7.3	Mahanadi	Sandstone
473	Nonbirra	10.5	Mahanadi	Sandstone
474	Nonbirra	8.2	Mahanadi	Sandstone
475	Nonbirra New	13.2	Mahanadi	Granite Gneiss
476	Numera	12.17	Mahanadi	Sandstone With Shale/Coal Partings
477	Nunera Pz I	142.25	Mahanadi	Sandstone With Shale/Coal Partings
478	Nunera Pz II	70.41	Mahanadi	Sandstone With Shale/Coal Partings
479	Pali	10.25	Mahanadi	Compact Sandstone
480	Pasan	13.88	Mahanadi	Granite/Granodiorite
481	Pasarkhet	7.6	Mahanadi	Sandstone
482	Pondi	115	Mahanadi	Sandstone With Shale/Coal Partings
483	Ponri	12.98	Mahanadi	Granite/Granodiorite
484	Rajkamma	72.53	Mahanadi	Sandstone With Shale/Coal Partings
485	Ralia Pz Ii	6.95	Mahanadi	Sandstone
486	Ralia Pz Iii	12.1	Mahanadi	Granite Gneiss
487	Rampur	150	Mahanadi	Sandstone With Shale/Coal Partings
488	Ramtarai Pz I	105	Mahanadi	Sandstone With Shale/Coal Partings
489	Ramtarai Pz Ii	6.98	Mahanadi	Sandstone
490	Ramtarai Pz Iii	78	Mahanadi	Sandstone With Shale/Coal Partings
491	Rewa	150	Mahanadi	Sandstone With Shale/Coal Partings
492	Rishdi	50.82	Mahanadi	Sandstone With Shale/Coal Partings
493	Sakdukala	11.1	Mahanadi	Granite Gneiss
494	Salihabhata	7.29	Mahanadi	Sandstone
495	Sindhiya	8.61	Mahanadi	Sandstone
496	Sirki Pz I	7.7	Mahanadi	Compact Sandstone
497	Sirki Pz Ii	9.32	Mahanadi	Sandstone
498	Sutarra	161	Mahanadi	Sandstone With Shale/Coal Partings
499	Sutera	85	Mahanadi	Sandstone With Shale/Coal Partings
500	Tikeja	11.68	Mahanadi	Sandstone
501	Tiwarta Pz I	9.3	Mahanadi	Sandstone With Shale/Coal Partings
502	Tiwarta Pz Ii	10.6	Mahanadi	Granite Gneiss
503	Tuman	15.55	Mahanadi	Granite/Granodiorite
504	Tuman	11.5	Mahanadi	Granite Gneiss

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
505	Urga.1	7.05	Mahanadi	Gneiss/Amphibolite/Granulite
506	Baharsi.1	5.52	Lower Ganges	Compact Sandstone
507	Baikunthpur	7	Mahanadi	Compact Sandstone
508	Baikunthpur-s	24.67	Mahanadi	Compact Sandstone
509	Banjaridad S	50	Mahanadi	Sandstone
510	Belbehra	7.28	Mahanadi	Compact Sandstone
511	Biharpur	15.3	Mahanadi	Sandstone
512	Bikrampur	6.4	Mahanadi	Sandstone With Shale/Coal Partings
513	Chutki	5.4	Lower Ganges	Compact Sandstone
514	Garundol	11	Mahanadi	Sandstone With Shale/Coal Partings
515	Girjapur	3	Mahanadi	Sandstone
516	Jamgahana	6.5	Mahanadi	Sandstone
517	Janakpur	10	Lower Ganges	Compact Sandstone
518	Kelhari	11.52	Lower Ganges	Compact Sandstone
519	Khadgaon	13.2	Mahanadi	Compact Sandstone
520	Khadgaon - 1	11.6	Mahanadi	Compact Sandstone
521	Khatgori	15.74	Mahanadi	Compact Sandstone
522	Kiwarpur	9.35	Lower Ganges	Shale With Limestone/Sandstone Band/Lens
523	Manendragarh	10.48	Mahanadi	Compact Sandstone
524	Mansukha	12	Mahanadi	Shale
525	Pendri	8.36	Mahanadi	Compact Sandstone
526	Pouri	11.8	Mahanadi	Shale With Limestone/Sandstone Band/Lens
527	Ranai	13.06	Lower Ganges	Compact Sandstone
528	Ranai 1	14	Lower Ganges	Compact Sandstone
529	Sarbhoka	8.89	Mahanadi	Compact Sandstone
530	Sonhat	7	Mahanadi	Compact Sandstone
531	Tarabahara	8.83	Lower Ganges	Compact Sandstone
532	Tilokhan	10	Lower Ganges	Compact Sandstone
533	Ujjiyarpur 1	10.36	Mahanadi	Compact Sandstone
534	Awaradawri S	50	Mahanadi	Granite Gneiss
535	Bag bahera	11.26	Mahanadi	Granite/Granodiorite
536	Bagbahara S	50	Mahanadi	Granite Gneiss
537	Balidih	9.75	Mahanadi	Granite Gneiss
538	Barbaspur	8.55	Mahanadi	Granite Gneiss
539	Basna	11.65	Mahanadi	Granite Gneiss
540	Basna S	50	Mahanadi	Granite Gneiss
541	Belsunda	14.85	Mahanadi	Shell Limestone/Limestone
542	Jagdishpur	10.76	Mahanadi	Granite/Granodiorite
543	Jhalap	9.35	Mahanadi	Granite/Granodiorite
544	Jhalap S	32.8	Mahanadi	Granite Gneiss

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
545	Jogideepa D	64.4	Mahanadi	Granite Gneiss
546	Jogideepa S	50	Mahanadi	Granite Gneiss
547	Jogidipa	10.65	Mahanadi	Granite Gneiss
548	Keshwa S	50	Mahanadi	Compact Sandstone
549	Khallari	5.35	Mahanadi	Not Available
550	Mahasamund Contractual S	50	Mahanadi	Compact Sandstone
551	Mahasamund.	14.32	Mahanadi	Compact Sandstone
552	Mahasamund.1	14.32	Mahanadi	Compact Sandstone
553	Mandalpur	6.6	Mahanadi	Quartzite
554	Marban	8.4	Mahanadi	Sandstone
555	Palsipani - 1	10.05	Mahanadi	Granite/Granodiorite
556	Patsenduri	9.59	Mahanadi	Compact Sandstone
557	Phusera	12.1	Mahanadi	Limestone/Dolomite
558	Pithora	11.4	Mahanadi	Granite/Granodiorite
559	Pithora - 1	12.85	Mahanadi	Granite/Granodiorite
560	Pithora PZ	27.43	Mahanadi	Granite/Granodiorite
561	Sagrapali	8.5	Mahanadi	Compact Sandstone
562	Sakra S	50	Mahanadi	Granite Gneiss
563	Saraipali	12.48	Mahanadi	Compact Sandstone
564	Saraipalli-S PZ	30.58	Mahanadi	Shale
565	Sirpur	13.15	Mahanadi	Limestone/Dolomite
566	Sirpur1 PZ	60	Mahanadi	Limestone/Dolomite
567	Suarmar	13.95	Mahanadi	Granite/Granodiorite
568	Suarmar1 PZ	42.94	Mahanadi	Granite/Granodiorite
569	Tendukonda	12.98	Mahanadi	Granite/Granodiorite
570	Tumgaon	11.31	Mahanadi	Compact Sandstone
571	Tumgaon S	50	Mahanadi	Granite Gneiss
572	Achanakmar1	10.3	Mahanadi	Phyllite
573	Amadob	9.15	Mahanadi	Sandy Shale
574	Amerikhapa	8.44	Mahanadi	Sandstone With Shale/Coal Partings
575	Attaria	11.5	Mahanadi	Granite Gneiss
576	Baitalpur	14.99	Mahanadi	Limestone/Dolomite
577	Barighat	13.08	Mahanadi	Compact Sandstone
578	Bindabal	13.5	Mahanadi	Granite Gneiss
579	Chattan	9.2	Mahanadi	Granite Gneiss
580	Chhaparwa	16.87	Mahanadi	Granite/Granodiorite
581	Chirhula	16	Mahanadi	Limestone/Dolomite
582	Darhi Pz I	57.5	Mahanadi	Maniyari shale
583	Darhi Pz Ii	121.8	Mahanadi	Maniyari shale

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
584	Deori	9.3	Mahanadi	Limestone/Dolomite
585	Godkhami	9.2	Mahanadi	Shale With Limestone/Sandstone Band/Lens
586	Kanteli.1	11.2	Mahanadi	Shale
587	Karesara Pz I	149.2	Mahanadi	Maniyari shale
588	Karesara Pz Ii	57.7	Mahanadi	Maniyari shale
589	Lamni	16	Mahanadi	Granite/Granodiorite
590	lormi	16.3	Mahanadi	Shale
591	Lormi (d)	70	Mahanadi	Not Available
592	Lormi l	4.95	Mahanadi	Shale
593	Mungeli	13.5	Mahanadi	Limestone/Dolomite
594	Mungeli(d)	100	Mahanadi	Not Available
595	Mungeli(s)	50	Mahanadi	Not Available
596	Pali	9.2	Mahanadi	Shale With Limestone/Sandstone Band/Lens
597	Patharia (chorbhatti)	15.4	Mahanadi	Shale
598	Saragaon1	7	Mahanadi	Shale
599	Setganga	6.2	Mahanadi	Limestone/Dolomite
600	Sitalkunda	9.4	Mahanadi	Limestone/Dolomite
601	Tilaidabra	10.8	Mahanadi	Granite Gneiss
602	Chhal	7.9	Mahanadi	Granite Gneiss
603	Amapali	10.5	Mahanadi	Granite Gneiss
604	Amlipur Amlitikra	5.7	Mahanadi	Sandstone
605	Auranar	13.9	Mahanadi	Sandstone
606	Bakaruma	11.25	Mahanadi	Granite/Granodiorite
607	Bamsjer	7.8	Mahanadi	Sandstone
608	Baramkela	15.5	Mahanadi	Limestone/Dolomite
609	Baramkela S	37	Mahanadi	Shale With Limestone/Sandstone Band/Lens
610	Barpali	11.48	Mahanadi	Compact Sandstone
611	Bartapali	11.4	Mahanadi	Sandstone
612	Bataupali	9	Mahanadi	Compact Sandstone
613	Bayasi	7.5	Mahanadi	Granite Gneiss
614	Behramar	8.6	Mahanadi	Gneiss/Amphibolite/Granulite
615	Bhangari	11.5	Mahanadi	Not Available
616	Bhupdeopur S	50	Mahanadi	Compact Sandstone
617	Bijapara	10.4	Mahanadi	Sandstone
618	Bojia	9.2	Mahanadi	Sandstone
619	Bonda	10	Mahanadi	Limestone/Dolomite
620	Boro	10.5	Mahanadi	Sandstone
621	Chaple	10.36	Mahanadi	Limestone/Dolomite
622	Chaple S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
623	Charmar	9.8	Mahanadi	Gneiss/Amphibolite/Granulite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
624	Chimtapani	14.15	Mahanadi	Compact Sandstone
625	Chunkunidad	11.8	Mahanadi	Sandstone
626	Damdarha	9.85	Mahanadi	Compact Sandstone
627	Deridih	9.5	Mahanadi	Gneiss/Amphibolite/Granulite
628	Derpani	4.8	Mahanadi	Granite Gneiss
629	Dharamjaigarh PZ	29.91	Mahanadi	Compact Sandstone
630	Dharan Pz Ii	56	Mahanadi	Sandstone With Shale/Coal Partings
631	Dharmajaigarh	12.55	Mahanadi	Compact Sandstone
632	Dharmajaigarh	12.55	Mahanadi	Compact Sandstone
633	Dongabhona	7.5	Mahanadi	Gneiss/Amphibolite/Granulite
634	Duliamuda	9.4	Mahanadi	Gneiss/Amphibolite/Granulite
635	Dumarpali	9.3	Mahanadi	Granite Gneiss
636	Durgapur	9.7	Mahanadi	Sandstone
637	Edu	7.56	Mahanadi	Compact Sandstone
638	Farkanara	11.25	Mahanadi	Sandstone
639	Gare Nhs	10	Mahanadi	Sandstone With Shale/Coal Partings
640	Gersa	12.5	Mahanadi	Gneiss/Amphibolite/Granulite
641	Gharghoda	13.38	Mahanadi	Compact Sandstone
642	Golabuda	10.2	Mahanadi	Granite/Granodiorite
643	Hati	9.56	Mahanadi	Compact Sandstone
644	Hirri 1	9.72	Mahanadi	Limestone/Dolomite
645	Kanakbira	11	Mahanadi	Granite/Granodiorite
646	Kandadand	10.4	Mahanadi	Sandstone
647	Kapu	9.75	Mahanadi	Granite/Granodiorite
648	Kedar S	50	Mahanadi	Limestone Cavernous
649	Keradiah	3.95	Mahanadi	Sandstone
650	Kerajhar	12.36	Mahanadi	Compact Sandstone
651	Kerigarhi	11.5	Mahanadi	Sandstone
652	Khadgaon 1	13.5	Mahanadi	Laterite
653	Kharasia S	50	Mahanadi	Compact Sandstone
654	Kharsia	17.63	Mahanadi	Compact Sandstone
655	Kondatalai S	50	Mahanadi	Compact Sandstone
656	Kotra	9.46	Mahanadi	Limestone/Dolomite
657	Kurekela	14.55	Mahanadi	Compact Sandstone
658	Lailunga 1	11.22	Mahanadi	Granite/Granodiorite
659	Lailunga 2	46.62	Mahanadi	Granite/Granodiorite
660	Lakha. 1	8.55	Mahanadi	Not Available
661	Lakshmipur	4.4	Mahanadi	Sandstone
662	Laripani	10.35	Mahanadi	Compact Sandstone
663	Lendra S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
664	Lipti	7.5	Mahanadi	Granite Gneiss
665	Malda B	9.27	Mahanadi	Granite/Granodiorite
666	Milupara-Sidarpara	13.8	Mahanadi	Gneiss/Amphibolite/Granulite
667	Mumund	6.2	Mahanadi	Granite Gneiss
668	Nawadih	8.2	Mahanadi	Gneiss/Amphibolite/Granulite
669	Nawagaon	6.5	Mahanadi	Gneiss/Amphibolite/Granulite
670	Nawapara Pz	48.79	Mahanadi	Sandstone With Shale/Coal Partings
671	Ongana	8.4	Mahanadi	Gneiss/Amphibolite/Granulite
672	Pakargaon	5.8	Mahanadi	Granite/Granodiorite
673	Pandripani	12.3	Mahanadi	Gneiss/Amphibolite/Granulite
674	Phuthamuda	7.3	Mahanadi	Gneiss/Amphibolite/Granulite
675	Pindri	7.97	Mahanadi	Granite/Granodiorite
676	Porda Pz	30	Mahanadi	Sandstone With Shale/Coal Partings
677	Potiya	9.5	Mahanadi	Gneiss/Amphibolite/Granulite
678	Pusalda	11.8	Mahanadi	Gneiss/Amphibolite/Granulite
679	Raigarh	17.66	Mahanadi	Compact Sandstone
680	Raiharg S	50	Mahanadi	Compact Sandstone
681	Rajpur.1	8.6	Mahanadi	Not Available
682	Rajpur2	8.16	Mahanadi	Gneiss/Amphibolite/Granulite
683	Ramnagar	5.6	Mahanadi	Gneiss/Amphibolite/Granulite
684	Rera	8.5	Mahanadi	Granite Gneiss
685	Salkhiya	7.8	Mahanadi	Granite/Granodiorite
686	Samaruma	6.67	Mahanadi	Sandstone
687	Saraipali	13.2	Mahanadi	Gneiss/Amphibolite/Granulite
688	Sarangarh	12.62	Mahanadi	Compact Sandstone
689	Sarangarh S	50	Mahanadi	Limestone Cavernous
690	Sarangarh1	34.21	Mahanadi	Compact Sandstone
691	Sarial	12	Mahanadi	Limestone/Dolomite
692	Shahpur Colony	12	Mahanadi	Sandstone
693	Sirsinga Temple	8.2	Mahanadi	Granite/Granodiorite
694	Sisinga	13.6	Mahanadi	Compact Sandstone
695	Sithra New	11.5	Mahanadi	Sandstone
696	Sukwasuava	8.4	Mahanadi	Granite/Granodiorite
697	Tadola	6.8	Mahanadi	Shale with Limestone/Sandstone Band/Lens
698	Taraimal1.1	8	Mahanadi	Compact Sandstone
699	Taraimar	10.4	Mahanadi	Gneiss/Amphibolite/Granulite
700	Tendumar	6.8	Mahanadi	Gneiss/Amphibolite/Granulite
701	Tetla	13.17	Mahanadi	Compact Sandstone
702	Abhanpur	19.9	Mahanadi	Shale
703	Abhanpur D	100	Mahanadi	Shale with Limestone/Sandstone Band/Lens

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
704	Abhanpur S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
705	Amapara NHS	8	Mahanadi	Limestone
706	Amera	8	Mahanadi	Shale With Sandstone Partings
707	Amethi	6.4	Mahanadi	Limestone Cavernous
708	Arang	9.15	Mahanadi	Limestone/Dolomite
709	Arang S	50	Mahanadi	Limestone Cavernous
710	Bajrangpur	12.45	Mahanadi	Shale
711	Bohardih Pzi	149.2	Mahanadi	Maniyari shale
712	Bohardih Pzii	51.6	Mahanadi	Maniyari shale
713	Bothi Pzi	100.3	Mahanadi	Maniyari shale
714	Bothi Pzii	39.4	Mahanadi	Maniyari shale
715	Charauda	7.8	Mahanadi	Limestone
716	Devpuri	14.04	Mahanadi	Limestone/Dolomite
717	Devri	11.5	Mahanadi	Limestone Cavernous
718	Dharsiwa	13	Mahanadi	Limestone/Dolomite
719	Dharsiwa S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
720	Dumartarai	11.2	Mahanadi	Limestone
721	Fingeshwar- I	10.5	Mahanadi	Limestone/Dolomite
722	Kanekera	3.9	Mahanadi	Compact Sandstone
723	Kanki	7.25	Mahanadi	Sandy Shale
724	Kanki D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
725	Kanki S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
726	Kusrangi	7.85	Mahanadi	Sandy Shale
727	Manabasti	12.2	Mahanadi	Limestone/Dolomite
728	Mandhar	7.2	Mahanadi	Limestone
729	Mandhar D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
730	Mandhar S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
731	Mandirhasud	14.5	Mahanadi	Limestone/Dolomite
732	Palari	11.5	Mahanadi	Shale
733	Palari D	100	Mahanadi	Shale With Limestone/Sandstone Band/Lens
734	Palari S	50	Mahanadi	Shale With Limestone/Sandstone Band/Lens
735	Raipur	16.87	Mahanadi	Limestone/Dolomite
736	Raipur (IGKV)-S	122.08	Mahanadi	Limestone/Dolomite
737	Rajim	10.95	Mahanadi	Shale
738	Rajim-s PZ	27.38	Mahanadi	Shale
739	Ranisagar	7.85	Mahanadi	Not Available
740	Rsu Raipur	10.4	Mahanadi	Limestone
741	Sakara	21.55	Mahanadi	Limestone
742	Sandi	10.9	Mahanadi	Shale
743	Sandi l	30.8	Mahanadi	Shale

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
744	Semariya	11.15	Mahanadi	Limestone
745	Sursabandha	8.16	Mahanadi	Alluvium
746	Umaria station	8.84	Mahanadi	Shale
747	Badaitola	14.3	Mahanadi	Sandstone
748	Baigatola	8.3	Mahanadi	Granite/Granodiorite
749	Birampurkala	7.9	Mahanadi	Limestone
750	Chinohola	11.7	Mahanadi	Granite Gneiss
751	Chirchari	12.02	Mahanadi	Granite/Granodiorite
752	Chuikhadan	12	Mahanadi	Phyllite
753	Dhaba	13	Mahanadi	Limestone Cavernous
754	Dhaneli	9	Mahanadi	Limestone
755	Dhara	9.3	Mahanadi	Granite/Granodiorite
756	Diwanbhedi	9.8	Mahanadi	Granite Gneiss
757	Dongargaon.1	10.52	Mahanadi	Granite/Granodiorite
758	Dongargarh	11.4	Mahanadi	Granite/Granodiorite
759	Dongargarh-d PZ	51.59	Mahanadi	Granite/Granodiorite
760	Dongargarh-sPZ	30.44	Mahanadi	Granite/Granodiorite
761	Gandaipandaria	10.05	Mahanadi	Limestone/Dolomite
762	Govindpur	8	Mahanadi	Granite/Granodiorite
763	Khairagarh	8	Mahanadi	Compact Sandstone
764	Lal bhadurnagar	12.02	Mahanadi	Granite/Granodiorite
765	Madrakuhi	7.2	Mahanadi	Limestone
766	Mohgaon	13	Mahanadi	Compact Sandstone
767	Mutpar	10	Mahanadi	Granite Gneiss
768	Narmada	9.65	Mahanadi	Limestone
769	Rajnandgaon	11.8	Mahanadi	Shale
770	Rajnandgaon-S PZ	30.46	Mahanadi	Shale
771	Ramatola	13.5	Mahanadi	Granite/Granodiorite
772	Rampur	7.4	Mahanadi	Shaly Sandstone
773	Rangkathera	10.81	Mahanadi	Shale
774	Ranitarai	10.1	Mahanadi	Shale With Limestone/Sandstone Band/Lens
775	Ravagahan	9.1	Mahanadi	Shale With Limestone/Sandstone Band/Lens
776	Reevagaon	10.75	Mahanadi	Granite/Granodiorite
777	Sahaspur Dalli	16	Mahanadi	Shale With Sandstone Partings
778	Salgapat	10.18	Mahanadi	Rhyolite
779	Salhe Bara	12.45	Mahanadi	Compact Sandstone
780	Saloni	12.25	Mahanadi	Shale
781	Singhola	6.5	Mahanadi	Limestone/Dolomite
782	Somni	13.88	Mahanadi	Shale
783	Talai	15	Mahanadi	Limestone/Dolomite

Details of National Hydrograph Stations

Annexure-I

SN	Location	Depth of well	Basin	Geology
784	Tappa	12.71	Mahanadi	Gneiss/Amphibolite/Granulite
785	Uraidabritola	12.05	Mahanadi	Shale With Limestone/Sandstone Band/Lens
786	Ajabnagar	6	Lower Ganges	Compact Sandstone
787	Badsara	10.3	Lower Ganges	Sandy Shale
788	Bhaiyathan	31.01	Lower Ganges	Gneiss/Amphibolite/Granulite
789	Deonagar	8.3	Lower Ganges	Compact Sandstone
790	Ganeshpur	14.06	Mahanadi	Compact Sandstone
791	Jaynagar	10.28	Lower Ganges	Compact Sandstone
792	Jhasi	10.2	Lower Ganges	Compact Sandstone
793	Kalyanpur	9.5	Mahanadi	Gneiss/Amphibolite/Granulite
794	Kanakpur	9.7	Mahanadi	Sandstone With Shale/Coal Partings
795	Latori	11.08	Lower Ganges	Compact Sandstone
796	Odigi	8	Lower Ganges	Shale With Limestone/Sandstone Band/Lens
797	Premnagar	13.65	Mahanadi	Compact Sandstone
798	Premnagar D	50	Mahanadi	Granite Gneiss
799	Ramanuj nagar	12.05	Mahanadi	Compact Sandstone
800	Sirsi	8.5	Lower Ganges	Quartzite
801	Surajpur	10	Lower Ganges	Compact Sandstone
802	Tara	15.44	Mahanadi	Compact Sandstone
803	Tara I	37.04	Mahanadi	Compact Sandstone
804	Ambikapur	11.14	Lower Ganges	Compact Sandstone
805	Ambikapur-D	49.1	Lower Ganges	Compact Sandstone
806	Ambikapur-s	30.94	Lower Ganges	Compact Sandstone
807	Baghima	6	Lower Ganges	Compact Sandstone
808	Bandana	9.43	Mahanadi	Granite/Granodiorite
809	Batauli	10	Mahanadi	Granite/Granodiorite
810	Batauli S	50	Mahanadi	Granite Gneiss
811	Chatakpur	5.7	Mahanadi	Sandstone
812	Dandgaon	7.71	Mahanadi	Compact Sandstone
813	Darima	8.35	Lower Ganges	Sandstone with Shale/Coal Partings
814	Ghorghadi	8	Mahanadi	Granite Gneiss
815	Kakalo	9.55	Mahanadi	Sandstone
816	Kamleswarpur	21.27	Mahanadi	Basalt
817	Kunni	9.7	Lower Ganges	Granite/Granodiorite
818	Laxmanpur	14	Lower Ganges	Compact Sandstone
819	Mangari	10.4	Mahanadi	Granite/Granodiorite
820	Nagadand	20	Mahanadi	Granite Gneiss
821	Nawapara	9.1	Lower Ganges	Gneiss/Amphibolite/Granulite
822	Parsa	10	Lower Ganges	Shale with Limestone/Sandstone Band/Lens
823	Pratapgarh	11.3	Mahanadi	Granite/Granodiorite

Details of National Hydrograph Stations**Annexure-I**

SN	Location	Depth of well	Basin	Geology
824	Rajpari	7	Mahanadi	Sandstone
825	Sitapur-s	30.94	Mahanadi	Compact Sandstone
826	Udaipur	14.58	Lower Ganges	Compact Sandstone
827	Udaipur Dhah	10.6	Lower Ganges	Compact Sandstone
828	Udaipur-s	30.99	Lower Ganges	Compact Sandstone

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
DISTRICT-BASTAR					
1	Amravati	-	2.86	-	-
2	Bare arapur	13.1	1.85	3.3	4.14
3	Bastar	12.58	1.7	2.9	6.9
4	Batrail	7	3.26	1.9	5.12
5	Belgaon	-	2.13	3.6	-
6	Bhanpuri	6.51	2.09	3.7	4.46
7	Bhanpuri-d	12.55	1.57	3.2	5.14
8	Bhanpuri-s	14.97	2.98	-	4.47
9	Chhapanbhanpuri	9.16	0.95	3.9	3.84
10	Chimpawad	8.5	2.4	2.1	-
11	Chitrakot	8.1	2.1	1.1	7.1
12	Dewargaon	9.1	1.04	2.4	6.1
13	Farsaguda		1.09	2.8	2.25
14	Ghodagaon	6.7	1.75	3.8	6.21
15	Jagdapur	8.91	1.7	3.3	4.81
16	Joba	7.48	1.28	4.4	5.47
17	Junawahi	5.11	1.58	-	4.41
18	Kilepal	10.02	-	-	7.55
19	Korgaon	-	-	3.1	5.27
20	Kumharwand	3.25	1.1	4.8	5.13
21	Lanjora	10.52	2.45	-	6.81
22	Makri	8.03	2.91	-	4.41
23	Mardum	-	1.5	3.1	4.87
24	Markel	9.26	2.11	1.4	5.14
25	Murwand1	3.35	1.73	-	3.1
26	Nagarnar1	8.31	3.11	-	-
27	Palanar	-	-	3.5	0.42
28	Pharasmaon	7.1	1.25	-	5.46
29	Pharasmaon1 PZ	13.18	5.52	-	11.24
30	Sonarpal	9.75	3.1	2.8	4.37
31	Visrampur	8.19	2.27	-	-
DISTRICT-BILASPUR					
32	Achanakmar1	9.9	0.89	2.12	5.5
33	Adbhar	11	4.6	5.1	9.8
34	Amadob	5.68	1.81	2.37	-
35	Amerikhapa	6.7	-	3.39	5.6
36	Attaria	7.76	1.32	1.86	4.6
37	Baitalpur	4.94	0.73	1.19	3.6
38	bakarkuda	29.31	1.55	4.36	-
39	Bansajhal	2.9	2.26	3.16	2.45
40	Bansajhal1 PZ	4.04	2.23	6.11	3.6
41	Barcha	4.45	-	2.84	4.8
42	Barighat	11.4	3.84	5.21	7.7

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
43	Bartoli	-	3.1	3.81	9.45
44	Belgahana	7.41	4.93	5.13	5.2
45	Beltara	5.9	1.5	2.27	3.2
46	Bilaspur	7.15	4.08		7.1
47	Bilaspur Lalkhadan	-	-	5.46	-
48	Bilha	10.4	3.35	4.26	7.63
49	Bindabal	9.55	4	4.49	6.4
50	Bohardi	8	1	2.11	8
51	Chakrabhata-d PZ	29.36	11.15	14.03	21.7
52	Chandargarhi	5.48	1.85	3.11	8.4
53	Chandkhuri (d)	43.7	-	18.41	21
54	Chandkhuri (s)	42.8	-	9.13	1.15
55	Chatarkhar	13.5	-	5.41	5.25
56	Chattan	8.93	-	6.18	8.75
57	Chhapparwa	-	-	-	16.87
58	Chhapparwa	9.1	9	9	4.12
59	Chilhati	-	2.1	3.34	1.5
60	chilhati	-	3	4.52	8.1
61	Chirhula	0.78	0.8	1.57	1.5
62	Dagauri	5.17	4.55	5.16	4.75
63	Danikundi	8.1	5.15	6.22	8.7
64	Deori	9	3.35	3.84	8.7
65	Dhanpur	8.46	7.2	5.17	6.12
66	Dharhar	8.4	-	4.41	7
67	Ganiyari	22	1.92	3.3	2.7
68	Ganiyari.2	-	2.15	4.36	1.8
69	Gatori	3.68	1.63	1.86	2.75
70	Gaurela	6.57	1.3	1.91	4.45
71	Godkhami	8.8	2.18	2.87	7.25
72	Hirri	7.81	1.55	6.76	6.5
73	Jaroundha	11.9	8.55	3.19	12
74	Jhapal	-	4.25	10.1	4.25
75	Jhingatpur	8	1.73	5.23	5.4
76	Jogipur	12	3.16	2.86	4.6
77	Kahronda	-	3.35	4.15	-
78	Kanteli.1	11	9.45	10.41	10.48
79	Kargikhurud	13	1.79	6.81	9.6
80	Kenda	8.65	6.5	7.04	7.7
81	Keonchi	7.35	3.75	5.19	5.2
82	Keonchi (D)	-	5.55	8.19	6.27
83	Keonchi (s)	9.26	7.1	6.84	5.6
84	Khaira New	5.7	-	4.82	4.25
85	Khamharia1	6.65	1.95	2.66	5.15

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
86	Konchua	5.2	1.45	3.15	3.6
87	Kota PZ	-	1.85	3.71	21
88	Kota(kargi)	3.3	1.2	3.31	2.5
89	Kotmi.1	17.75	-	-	3.36
90	Lamni	16	8.95	10.18	16
91	Lormi (d)	8.25	5.25	6.16	-
92	Lormi1	4.725	-	9.41	4.95
93	Madanpur	-	1.2	-	4.82
94	Malhar	5.5	3.46	3.92	5
95	Marwahi	14.12	2.35	5.11	14.12
96	Masturi	7.02	-	3.24	12
97	Masturi1	-	2	2.46	-
98	Matiyari	11	1.85	3.64	3.9
99	Mungeli	-	-	-	6.36
100	Mungeli(d)	16.34	14.5	18.12	-
101	Mungeli(s)	-	15.9	16.56	-
102	Nawadih	10.5	-	8.16	7.8
103	Neora	9.36	2.5	4.14	-
104	Nimdha	4.2	1.35	2.37	3
105	Pali	-	4.2	5.31	5.9
106	Panchpedi	10.4	3.35	4.19	10.4
107	Patera	2.4	1.42	2.15	2.95
108	Patharia (chorbhatti)	4.69	1.15	1.48	3.31
109	Pendra Road	7.75	5.15	8.19	6.04
110	Piparkhuti	-	2.9	2.31	6
111	Rajpur	5.6	6.85	7.2	5.75
112	Ratanpur	9.75	3.7	2.28	5.9
113	Rupandand	2.57	3.65	3.31	4.75
114	Saraipalli	10.1	2.25	5.61	7.95
115	Saudhakhurd	5.66	-	3.66	2.65
116	Sauti	-	2.87	-	15
117	Seoni	8.12	3.4	4.12	-
118	Sewra	8.8	8.5	8.8	8.1
119	Shivtarai New	7.87	2.98	4.32	6.3
120	Shripara	9.8	3.26	4.11	5.6
121	Sipat	3.19	2.35	3.41	3.6
122	Sitalkunda	6.48	1.75	2.1	9.4
123	Takhatpur	3.7	4	4.19	3.25
124	Takhatpur.1	-	2.75	3.5	3.24
125	Tendumuda	10.92	3.85	4.11	4.8
126	Tenduwa	11.1	1.5	2.79	5.95
127	Tikthi	12	4.45	4.19	7.35
128	Tilaidabra	6.02	3.75	4.48	3.7

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
129	Udaypur	-	2.6	3.36	7.8
DISTRICT-DANTEWADA					
130	Bade tumnar	8.91	2.28	-	-
131	Barsoor	-	1.54	-	-
132	Dantewada I	-	-	-	7.23
133	Geedam	9	3	-	-
DISTRICT-DHAMTARI					
134	Banraud - I	6.66	1	1.59	2.43
135	Banraud D	6.85	3.37	5.88	7.82
136	Banraud S	-	3.52	5.71	7.37
137	Banspani	-	4.15	5.07	7.24
138	Birgudi	-	3.26	4.52	6.17
139	Chhati	2.42	-	1.52	2.38
140	Dandesara	4.1	0.78	1.47	3.88
141	Darba	4.1	1.4	2.62	3.42
142	Dhamtari I PZ	20.67	20	25.28	28.13
143	Dorgardula	8.34	1.41	2.53	4.59
144	Dugli	7.71	1.52	2.61	4.19
145	Gadadih	-	1.78	2.58	3.94
146	Gangrel S	13.55	9.36	12.26	15.18
147	Gatapar	-	1.56	2.37	3.24
148	Jabarra	6	-	-	-
149	Keregaon	6.73	2.08	3.17	4.72
150	Kondapar	9.56	1.38	2.2	3.87
151	Kosmarra	2.15	0.81	1.12	1.39
152	Kumhada	8	2.67	3.97	4.89
153	Kurud. I	3.66	2.06	2.77	4.17
154	Magarlod	-	2.12	4.11	6.12
155	Magarlod D	12.5	6.27	6.23	8.19
156	Magarlod S	-	-	36.66	36.66
157	Marod	9.91	1.12	2.59	3.52
158	Mega	-	2.29	3.1	4.92
159	Nagari PZ	5.2	3.33	4.18	5.41
160	Nagri	6.96	1.63	2.07	3.13
161	Sankra	-	2.2	3.42	5.23
162	Seadei	-	2.12	3.52	4.72
163	Sihawa	-	5	7.12	7.12
164	Singhpur	10.68	1.72	2.78	4.29
DISTRICT-DURG					
165	Ahiwara	3.32	1.21	1.73	4.35
166	Anda	3.75	1.71	2.9	2.7
167	Andhiyarkhor	12.1	11.92	12.15	11.95
168	Arjunda	9.9	4.89	4.1	2.8
169	Armarikalan		4.67	3.14	4.75

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
170	Ashoga	8.28	2.97	2.81	-
171	Baklitola	6.85	2.45	3.19	4.55
172	Balod	10.5	2.14	2.85	3.2
173	Balod Gahan	-	1.25	2.4	-
174	Batera	5	1.21	1.75	3.15
175	Beeja	-	-	-	11.8
176	Bemetara New	9.57	12.68	7.5	8.15
177	Bemetera-s	37.68	18.5	24.5	27.05
178	Bhailai	3.64	2.29	4.4	5.7
179	Bharnabhat	7.3	3.99	4.31	6.7
180	Bitkuli	7.3	-	8.8	4.95
181	Bohardih Pzi	6.1	-	-	-
182	Dadhi	-	1.65	3.91	-
183	Darbarmukhli	2.17	1.96	3.47	2.7
184	Dargaon		2.71	3.19	4.25
185	Darhi Pz I	13.58	19.41	21.74	-
186	Darhi Pz Ii	13.12	-	-	-
187	Delli Rajhara	-	2.09	2.86	3.55
188	Dhamdha-s	-	7.16	4.03	30.55
189	Dondi	10	-	-	-
190	Durg	3.58	1.14	2.09	2.5
191	Funda	6.7	1.11	1.8	4.05
192	Ganiyari	13.1	6.48	6.11	12.25
193	Gatapar	8.55	6.53	5.85	7.15
194	Girhola	16.7	1.87	6.27	14.2
195	Gunderdehi	6.4	-	1.9	3.35
196	Gurur	4.45	2.25	2.2	4.84
197	Gurur-s	16.51	4.98	14	8.93
198	Jagtara	3.8	3.47	3.4	5.16
199	Jamgaon	9.5	1.56	2.56	-
200	Jeora Sirsa	7.6	2.55	7.26	8.05
201	Jewari	8.33	3.24	3.95	9.15
202	Jhafra	-	-	2	-
202	Jhalam	-	7.11	-	-
203	Kachundur	3.9	0.61	1.21	2.32
204	Karanja Bhilai	-	-	-	5
205	Kharra	-	-	4.63	6.7
206	Khati	-	2.84	3.45	-
207	Khurmuri	2.09	-	6.23	8.05
208	Kodiya	9.52	3.08	7.91	9.5
209	Kumhari	12.21	2.31	3.16	6.75
210	Kumhli	-	-	2.75	4.05
211	Kusumkasa	5.55	0.99	1.8	4.58
212	Litia	9.37	0.9	2.43	7.4

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
213	Lohara	2.85	0.91	1.81	2.5
214	Machod	-	-	2.87	4.1
215	Markatola	10.27	4.41	4.8	6.19
216	Marra	7.06	1.83	2.1	3.85
217	Mohrenga		4.61	2.59	4.95
218	Motipur	4.54	1.78	2.43	2.55
219	Mudkhusra New	9.95	4.04	3.62	6.8
220	Nawagarh Matapara	-	-	4.11	5.7
221	Nawagarh1	8.5	4.37	8.35	8.5
222	Nawagarh-d	31.59	17.1	35.8	-
223	Nawagarh-s	19.3	16.07	-	-
224	Nikum		2.06	3.16	2.41
225	Ninwa	9.86	7.84	8.13	7.55
226	Paoowara	-	-	-	5.2
227	Parpoda	12.51	4.62	6.42	4.95
228	Patan	5.96	1.74	2.56	2.8
229	Pendri	7.9	2.58	2.9	3.15
230	Piparia	-	4.87	5	4.2
231	Powara	5.95	1.69	2.45	-
232	Ranka Pz I	41.9	26.41	25.18	24.19
233	Ranka Pz Ii	35.7	-	-	32.45
234	Ravelidih	3.86	1.56	2.23	2.85
235	Sambalpur	4.21	4.94	4	6.1
236	Sambalpur Pz I	23.89	24.7	-	21.55
237	Sambalpur2	-	-	18.23	-
238	Sankra	-	-	5.87	3.7
239	Selud1	3.59	1.36	2.41	4.45
240	Selud2	5	2.84	5.62	6.25
241	Sikosa	5	0.71	1.4	2.05
242	Tarkori	9.4	2.58	3.11	7.95
243	Teligundra	-	-	-	5.05
244	Umradah	6.71	1.46	2.33	5.1
245	Utai-Adarshnagar	1.6	1.85	1.25	1.35
246	Vinayakpur New	3.67	1.89	2.74	2.35
DISTRICT-JANJGIR - CHAMPA					
247	Adbhar	2.36	-	3.57	-
248	Akaltara	1.55	1.4	2.12	1.6
249	Akaltara S	1.63	1.25	3.36	1.4
250	Baloda -r	13.28	3.35	4.18	10.8
251	Baloda S	4.96	4	7.23	12.1
252	Bamhani	15.4	4.85	5.11	10.55
253	Bamnidihi	-	2.5	2.94	5.4
254	Baradwar D	5.98	3.45	5.81	-

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
255	Budena	1.42	1.25	2.13	3
256	Champa	2.67	2.72	2.93	11.3
257	Champa-d PZ	-	5.9	9.61	15.7
258	Champa-s PZ	-	4.6	5.9	-
259	Chandrapur I	10.44	-	-	9.8
260	Dabra	6.73	1.75	2.1	3.7
261	Damau	6.9	4.25	5.95	5.3
262	Dhardei	3.57	1.2	1.27	3.6
263	Dhurkot Nhs	5.02	1.6	1.97	3.9
264	Dongakahrod	2.4	1.4	1.81	2.7
265	Ghoghari	7.27	1.85	2.91	-
266	Hasoud	7.56	2.5	2.91	9.54
277	Jaijaipur	4.58	3.25	3.89	5.4
278	Jaijaipur S	6.1	3.75	4.1	6.22
279	Janjgir	4.42	2.2	2.63	7.24
280	Janjgir S	-	-	-	2.64
281	Jewara	3.53	2.85	3.02	5.4
282	Jhulan Pakariya	4.65	1.45	1.86	4.35
283	Kera	6.8	2.5	3.17	5.5
284	Khartal	4.12	2	3.28	5.6
284	Konargarh	6.36	1.25	1.98	6.36
286	Latesara	4.52	1.6	1.98	-
287	Loharsi	3.88	1.1	1.48	2.8
288	Mulmula	6.5	1.4	2.91	5.4
289	Pamgarh	1.4	4	5.46	2.6
290	Pamgarh D	4.21	2.2	4.3	-
291	Pamgarh S	6.72	2.15	3.87	-
292	Sakti	5.44	1.2	2.1	3.95
293	Sakti S	2.28	0.8	1.1	-
294	Saliabhata	-	-	3.21	5.4
295	Saragaon2	2.5	3	2.16	3.2
296	Sasaha	6.5	3.25	3.84	4.1
297	Semra	6.8	4.2	5.1	3
298	Seorinarayan	10.5	9.15	10.17	9.7
299	Seorinarayan1 PZ	-	-	-	5.81
300	Somthi	9.36	4.1	4.52	8.7
301	Sukda	3.2	2	2.91	2.4
302	Thathari	1.7	1.1	2.77	2.7
DISTRICT-JASHPUR					
303	Amatolli	5	1.3	2	3.9
304	Bagbahar S	-	2.4	4.75	6.45
305	Bagh Bahar	7.5	2	2.2	7.5
306	Bagicha	2.61	2.4	3.4	4.45
307	Bagicha PZ	11.34	3	4.55	4.3

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
308	Bahora	-	1.4	4.3	-
309	Balachhappar	5.62	2.45	7.7	9.3
310	Bandarchuwa	10.75	2.9	4.5	5.92
311	Banderchua S	20.37	1.1	-	8.52
312	Bangaon	5.12	3.2	5.1	6.98
313	Bangaon	7.29	4.1	5.5	8.24
314	Bangaon B	14.33	3.3	4.6	6.7
315	Bataikela	8.87	3.45	6.2	7.1
316	Bewrapali	5.95	4.6	5.2	5.95
317	Binjapur	5.65	1.8	3.7	4.05
318	Chhapartoli	-	1.8	3.6	6.45
319	Dhodidand	5.39	2.2	3.7	4.56
320	Farsabahr	3.42	0.4	0.65	2.1
321	Farsakanhi	6.88	4	6	7
322	Fathepur	-	2.9	4.2	-
323	Garibandh	-	-	-	3.2
324	Ghatmunda	6.25	3.6	5.3	7.45
325	Jakba	6.07	5.9	8.45	8.86
326	Jashpurnagar	7.92	2.65	4.5	5.2
327	Jharmunda	-	1.2	4.05	-
328	Kachhor	9.8	1.55	3.2	6.6
329	Kandaibahar	5.44	2.6	3.6	3.15
330	Kandora	6.72	2.6	6.3	3.3
331	Kansabel	10.95	6	8.4	7.84
332	Kasawel S	14.16	6.45	3.55	9.7
333	Kersai	5.29	2.1	2.8	3.58
334	Khutera	-	-	2.95	3.7
335	Khutsera	5.74	1.5	3.6	4.1
336	Kotba	5.42	2.4	4.8	4.8
337	Kunjara	6.13	3.25	17.8	4.95
338	Kunkuri S	24.02	5.7	3.95	16.8
339	Kunkuri l	5.71	2.4	5.7	4.85
340	Lavakera	4.62	3.45	6	5.15
341	Lavakera l	11.32	3.35	3.8	8.15
342	Loro Bagicha	4.72	2.7	2.75	6.85
343	Ludeg	6.64	1.7	5.7	3.75
344	Maini	6.73	1.25	5.15	6.02
345	Mauhadih	7.95	3.4	3.9	6.55
346	Muskuti	7.99	2.75	4.6	4.3
347	Narayanbaheli	5.49	3.05	4.1	4.73
348	Narayanpur S	15.37	2.9	3.65	4.62
349	Nawaguda	-	1	5.9	3.73
350	Palidih	4.38	7.5	9.35	5.92
351	Pathalgaon	10.94	9.45	3.9	10.55

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
352	Patratoli	-	1.95	6.1	5.63
353	Peta	7.25	4.7	1.9	6.32
354	Phooldih	-	1.35	4.9	2.8
355	Raikera	7	3.4	4.15	-
356	Raikera(Kunkuri)	9.5	2.3	4.4	5.6
357	Raoni	5	3.4	3.75	-
358	Rupsera	7.79	2.05	9.2	4.1
359	Sanna	-	9.2	6.15	-
360	Saraipani	-	5.45	5.08	6.8
361	Sarkardih	5.74	3.4	5.6	-
362	Shabdmunda	13	4.7	7.5	6.66
363	Sonquari	-	4.55	3.85	-
364	Srishringa	5.12	2.6	2.5	5.34
365	Surangpani New	7.2	1.7	4.2	2.45
366	Tangargaon	-	2.9	5.5	-
367	Tapkara	6.04	2.9	-	5.68
368	Tapkara S	16.26		-	-
DISTRICT-KANKER					
369	Badal		4.9	-	5.62
370	Banupartappur	9.58	4.16	-	7.63
371	Bardebhata Kanker	9.1	6.5	-	6.13
372	Bhanbera	10.16	3.71	-	6.15
373	Bodeli New	12.5	3.53	-	5.63
374	Chandeli	-	-	2.05	3.54
375	Devri	7.56	2.41	-	6.31
376	Dodhara Pahar	-	6.5	-	4.76
377	Dudhawa	6.3	4.28	-	5.41
378	Ghotia			-	7.16
379	Govindpur	6.74	1.36	2.8	4.15
380	Hinganjhar-Kumharpura	-	-	4.1	5.46
381	Kachhe	8	4.06	-	5.12
382	Kanker1 PZ	12.76	4.76	4.6	9.12
383	Korar	8.36	2.9	-	13.5
384	Kulgaon		1.55	2.8	5.31
385	Lakhanpuri	5.5	1.28	2	3.12
386	Mainpur	-	-	-	5.3
387	Markatola1	-	5.36	2.6	5.11
388	Murpar	-	-	-	5.14
389	Narharpur	8.78	8.4	-	7.02
390	Serkheda	-	-	4	5.76
391	Surhi	-	4.2	-	5.41
392	Tarasgaon	5.4	0.65	2.4	3.01

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
DISTRICT-KAWARDHA					
393	Banjari	4.85	3.67	3.42	4.45
394	Bharamdeo D	22.74	12.2	15.1	26.15
395	Bharamdeo S	22.15	-	-	20.45
396	Bodla	8.15	4.92	4.55	14.5
397	Chilpi	8.4	2.62	5.1	7.95
398	Danganiya	7.95	9.51	4.42	8.05
399	Kapada	10	-	-	10
400	Kawardha S	26.3	16.67	17.44	
401	Kawardha I	6.75	5.21	1.65	2.95
402	Kharoda Kalan	10.5	1.81	2.39	12
403	Kui	8.17	6.65	7.19	5.45
404	Lohara-d PZ	6.55	5.73	4.69	5.75
405	Lohara-s PZ	6.4	5.21	4.48	4.65
406	Munmuna	9.1	4.37	5.11	6.75
407	Rajnanwagaon	5.52	3.62	3.13	4.1
408	Sahaspur Lohara. I	6.08	3.93	4.28	4.15
409	Saroda Dadar S	22.6	18.31	19.29	22.35
410	Singhari D	14.97	5.47	6.31	9.75
411	Singhari S	16.15	6.41	7.49	9.35
412	Uria Khurud	8.92		6.84	9
DISTRICT-KORBA					
413	Banbandha	5.2	2.58	3.24	2.4
414	Bandhakhar	6.82	3.62	4.19	
415	Batati Junction	9.4	5.7	6.81	8.2
416	Chaitama	6.5	1.43	2.55	4.7
417	Champa Mode	5.8	1.2	3.34	3.3
418	Charmar	-	4.5		4.1
419	Churi	2.68	2.2	3.61	3.9
420	Dhaurabhata New	-	2.8	2.27	7
421	Dhegurdi h Manzipara	9.3	-	3.16	8.15
422	Dhourabhata	8.37	-	-	-
423	Dumardih New	6.65	-	3.32	5.4
424	Gopalpur	8.09	4.5	4.91	4.9
425	Jamchuwa	-	4.2	4.83	9.5
426	Jatgan	11.4	4.9	5.45	8.5
427	Jhabar	-	4.85	5.37	-
428	Jogipali	10.4	-	5.58	7.24
429	Kartala	12.79	3.2	3.76	10.45
430	Katghora	3.4	2	2.69	2.9
431	Khodri	3	1.3	1.76	1.7
432	Korba	14.47	14.2	13.4	14.47

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
433	Korba New	-	-	-	4.35
434	Kurtha	9.4	8.89	-	8.17
435	Lenga	9.09	3.5	4.14	6.75
436	Madai	8.15	3.3	4.6	6.05
437	Morga	11.54	7.95	7.23	8.74
438	Nagai	11.44	6.3	6.86	8.9
439	Naktikhar	7.22	3.5	4.4	4.9
440	Naraibodh	7.5	2.5	4.15	-
441	Nawapara	5.9	3.61	2.14	3.6
442	Nonbirra	-	2.1	2.56	5.2
443	Nonbirra	6.5	2.68	3.22	-
444	Nonbirra New	-	4.75	3.17	-
445	Numera	12.17	3.45	4.81	9.6
446	Pali	2.75	4.2	5.57	2
447	Pasan	13.88	10.85	11.97	11.5
448	Pasarkhet	5.24	4.25	6.21	4.4
449	Pondi	4.3	2.7	4	4.85
450	Ponri	6.8	2.9	3.46	4.72
451	Purena		3.65	5.38	5.64
452	Rajkamma	5.52	0.86	2.53	4.1
453	Ramtarai Pz I	-	1.2	-	-
454	Rewa	9.4	4.5	6.84	6.7
455	Rishdi	6.7	2.3	3.47	4.9
456	Sakdukala	7.4	2.45	2.96	6
457	Salihabhata	6.87	2.6	3.29	5.4
458	Sindhiya	6.65	-	4.52	-
459	Sutarra	8.52	3	4.18	5.6
460	Tikeja	10.6	2.15	4.84	6.5
461	Tuman	6.48	3.45	4.08	4.5
462	Tuman	6.3	2.9	3.61	5.06
463	Urga.1	7.05	3	4.51	4.5
DISTRICT-KORIYA					
464	Baharsi.1	5	2.23	3.55	4.18
465	Baikunth Pur New	-	2.39	1.6	4.4
466	Baikunthpur	7	2.41	2.8	2.9
467	Baikunthpur-s	6.74	18.2	7.2	9.9
468	Banjaridad S	5.02	-	3.9	6.84
469	Belbehra	-	4.85	5.15	6.95
470	Bhainswar	4.7	1.99	2.8	4.29
471	Biharpur	12.85	11.28	11.7	12.15
472	Bikrampur	5.8	3.09	4.7	6.1
473	Chharchha Basti	4.25	0.98	0.8	1.98
474	Chirmiri	-	7.7	6.37	7.34

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
475	Chutki	5	3.96	4.45	5.04
476	Dondki	5.8	2.31	5	5.9
477	Dumaria	-	1.46	1.5	6.27
478	Garundol	11	7.74	7.2	8.19
479	Ghugra	10.25	4.97	7.3	8.25
480	Girjapur	1.8	0.95	2.8	-
481	Jamgahana	4.98	2.35	2.15	6.5
482	Janakpur	5.2	4.19	5.2	5.94
483	Jilda	-	-	2.43	4.38
484	Kelhari	11.52	4.36	6.6	7.84
485	Khadgaon	-	3.02	-	-
486	Khadgaon - 1	8.15	-	2.16	-
487	Khadgawan	8	-	2.25	4.4
488	Khatgori	5.3	0.81	2.5	2.71
489	Kiwarpur	8.65	2.18	1.13	4.53
490	Manendragarh	1.65	2.18	6.77	1.5
491	Mansukha	10.3	5.72	11.4	8.49
492	Mendrakala	-	-	6	5.13
493	Mohra	-	3.81	4.58	5.4
494	Patrapali	-	3.46	3.9	6.15
495	Pendri	8.15	2.42	4.8	5.54
496	Pouri	-	3.46	6.5	5.63
497	Ramgarh	10.25	-	2.86	
498	Ranai	12.9	3.45	3.03	11.92
499	Rojhi	3.7	4.51	2.7	4.45
500	Sarbhoka	4.15	2.57	1.45	5.38
501	Sonhat	5.8	1.48	2.6	4
502	Tarabahara	1.3	3.17	1.2	3.94
503	Tengri	6.7	1	2.9	4.08
504	Tilokhan	7.85	6.43	2.9	7.89
505	Ujiyarpur1	6.35	6.55	5.75	7.41
DISTRICT-MAHASAMUND					
506	Awaradawri S	15.95	5.48	10.07	11.44
507	Bag bahera	10.9	3.36	4.04	8.78
508	Balidih	-	1.72	3.42	4.36
509	Barbaspur	-	1.54	3.62	
510	Basna	4.45	1.27	2.43	2.87
511	Belsunda	11.38	1.5	3	4.12
512	Deori(bhagat)	-	1.77	-	-
513	Hadabundh	-	-	-	3.05
514	Jagdishpur	-	1.67	3.27	3.92
515	Jhalap	7.1	3.75	4.69	5.84
516	Jhalap S	-	7.52	-	-
517	Jogideepa D	9.72	4.12	6.49	7.66

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
518	Jogideepa S	-	4.26	6.26	7.21
519	Jogidipa	9.06	2.19	4.65	5.42
520	Khallari	4.95	1.17	1.84	2.27
521	Lakhanpur	3.6	2.17	7.58	8.29
522	Mahasamund.1	12.6	5.53	7.63	8.87
523	Mahasamund-s PZ	21.56	6.26	-	8.24
524	Marban	-	1.51	1.81	3.92
525	Moulimuda	-	2.21	3.14	4.52
526	Patsenduri	5.13	1.15	1.35	1.9
527	Saraipali	5.8	1.42	3.54	4.29
528	Saraipalli-S PZ	16.3	4.82	7.19	10.22
529	Sirpur1 PZ	10.4	7.61	9.57	11.16
530	Suarmar	9.53	1.81	7.7	8.84
531	Suarmar1 PZ	-	4.08	-	-
532	Tendukonda	7.2	1.29	2.61	3.24
533	Tumgaon	8.6	2.12	3.78	4.55
534	Tumgaon S		3.26	-	-
DISTRICT-RAIGARH					
535	Amapali	8.29	4.6	5.1	6.2
536	Amlidih	7.06	3.85	6	7.4
537	Araimuda	-	1.8	2.35	-
538	Auranar	5.46	7.5	7.9	9.5
539	Bakaruma	7.64	7.7	7.3	5.1
540	Bamsjer	-	0.7	1.65	3.98
541	BangrusianNew	8.19	4.45	4.7	4.85
542	Baramkela	10.33	1.45	2.5	6.01
543	Baramkela S	37	11.1	11.1	31.6
544	Barpali	-	6	6.75	7.4
545	Bartapali	-	4.1	6.1	8.05
546	Bataupali	4.42	2.5	3	3.4
547	Bayasi	7.5	2.8	4.6	6.2
548	Bhalumar	6.65	2.7	3.45	5.1
549	Bhangari	5.77	7.6	7.2	7.8
550	Bhupdeopur S	23.61	5	5.4	-
551	Bojia	4.29	2.75	3.4	4.8
552	Bonda	2.24	1.1	6.4	4.04
553	Boro	11.2	5.6	6.45	8
554	Chaple	6.52	1.2	2.4	4.86
555	Chaple S	13.16	1.25	4.3	-
556	Chimtapani	5.76	4.7	7.35	9.35
557	Chukimar	-	-	-	8.85
558	Damdarha	-	9.85	9.1	9.85
559	Derpani	5.8	1.8	2	3.6

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
560	Dharamjaigarh PZ	5.56	1.1	3.6	4.8
561	Dharmajaigarh	7.07	3.8	4.6	8.4
562	Duliamuda	6.75	6.2	6.5	8.2
563	Dumarpali	8.52	4.7	5	4.8
564	Durgapur	9.7	6.9	6.8	6.4
565	Edu	7.9	4.8	5.5	6.25
566	Farkanara	6.16	3.1	4.6	6.35
567	Futhamura	-	-	3.75	5.2
568	Gare Nhs	9.75	2.5	3.95	4.5
569	Gersa	6.82	4.5	5	6.2
570	Gharghoda	-	5.45	4.95	5.96
571	Golabuda	6.72	4.9	5.35	5.94
572	Gosaidih	-	2.7	3.4	4.86
573	Hati	9.56	3.7	4.45	6.7
574	Hirri I		2.15	3.35	7.15
575	Kanakbira	9.31	6.7	8.2	11.2
576	Kandadand		2.1	3	5.75
577	Kapu	8.04	2.4	4.35	5.45
578	Kargipali Kargidipa	-	9	7.9	7.8
579	Kerajhar	-	1.45	3	4.2
580	Khadgaon I	-	10.35	11.1	13.4
581	Kharasia S	-	11	8.25	9
582	Kharsia	-	1.8	1.8	3.24
583	Koknara	8.4	1.65	2.75	3.34
584	Kotra	4.63	1.2	1.45	3.14
585	Kurekela	14.55	8.85	8.75	8.6
586	Kushal Nagar	-	3.1	-	-
587	Lailunga I	7.1	3.4	5.8	7.72
588	Lailunga 2	12.37	1.3	3.75	6.85
589	Lakshmipur	4	3.95	4.3	-
590	Laripani	10.35	3.3	5.3	8
591	Lendra S	15.36	1.2	1.9	3.5
592	Lipti	6.41	2.5	3.25	4.14
593	Malda B	9.27	3.1	4.6	6.7
594	Milupara	7.32	4.5	8.45	9.9
595	Mumund	5.55	2.1	3.4	4.1
596	Pakargaon	5.22	0.2	2.5	4.7
597	Pindri	5.84	0.9	1.55	2.8
598	Pordahi	-	1.2	-	-
599	Raigarh	4.3	2.75	3.4	3.6
600	Raiharg S	27.7	12	14	24.8
601	Rajpur. I	7.24	1.75	3.3	3.67

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
602	Rera	1.77	2.15	2.7	4.37
603	Salkhiya	7.5	3.65	4.3	5.1
604	Samaruma	6.28	5.15	5.3	-
605	Sambalpuri New	6	-	2.05	3.67
606	Sarial	-	2.35	2.8	2.8
607	Shahpur Colony	10.52	6.7	6.65	7.68
608	Sisinga	7.96	3	4.35	6
609	Tadola	6.49	0.4	0.85	2.3
610	Taraimal	-	8.5	-	-
611	Taraimal 1.1	6.41	4	4.35	5.37
612	Taraimar	10.4	-	8.65	5.15
613	Tetla	2.37	1.5	1.85	2.92
DISTRICT-RAIPUR					
614	Abhanpur	6.25	-	-	-
615	Abhanpur D	9.41	3.06	5.81	7.9
616	Abhanpur S	8.42	2.84	4.74	6.74
617	Amera	3.84	1.18	2.67	4.39
618	Amethi	-	1.74	3.18	5.6
619	Aouri	6.6	-	4.37	5.23
620	Arjuni	9.38	1.08	3.44	5.72
621	Arjuni S	19.41	-	-	-
622	Bajrangpur	2.22	1.05	1.81	2.41
623	Baloda bazar	-	1.34	-	15.4
624	Bhatgaon	6.8	1.03	2.64	3.23
625	Bhattapara-S	-	3.62	5.51	7.23
626	Biladi	7.96	1.22	-	4.91
627	Bilaigarh	5.35	0.89	1.56	2.28
628	Bilaigarh S	7.57	-	-	-
629	Chanderi	9	0.86	1.36	2.12
630	Chandi	5.79	0.91	1.84	3.09
631	Charauda	3.18	1.68	2.22	3
632	Chhura	6.05	1.52	2.67	5.28
633	Chicholi	11.66	0.97	3.98	5.24
634	Darchura	10.46	1.46	2.89	3.92
635	Devpuri	-	4.2	6.45	14.04
636	Devri	4.41	3.16	4.64	6.32
637	Dhabadih	-	1.74	-	4.89
638	Dhamarkhera	-	2.62	4.92	-
639	Dharsiwa	12.5	2.13	3.67	5.22
640	Dhawalpur	-	3.16	4.64	-
641	Dumartarai	10.66	3.4	3.98	6.3
642	Fingeshwar	11.65	1.08	2.64	4.21
643	Gariabandh-s	24.45	4.37	-	-
644	Gariyaband	9.2	1.62	2.39	3.92

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
645	Gariyaband-d	-	-	6.38	8.53
646	Gotiadih	6.75	2.16	2.74	4
647	Haswa	-	1.21	2.43	3.29
648	Kanekera	2	1.22	1.89	-
649	Kanki	3.96	1.41	-	4.12
650	Kanki D	-	2.56	-	-
651	Kanki S	4.56	-	4.9	-
652	Kasdol	6.9	1.64	3.6	4.02
653	Kasdol-d	23.2	3.11	-	4.88
654	Kasdol-s PZ	6.52	-	3.82	-
655	Khapri	12.06	2.16	2.56	5.04
656	Kharora	-	2.73	2.76	4.39
657	Lahaud	7.55	1.29	1.83	4.44
658	Lawan	-	1.31	1.89	3.49
659	Malgaon	3.96	1.28	4.3	2.95
660	Manabasti		2.5	1.81	4.76
661	Mandhar	5.84	2.05	3.24	4.97
662	Mandhar S	2.06	-	-	-
663	Mandirhasud	-	3.14	7.13	8.88
664	Mudhipar	4.87	1.72	3.42	4.38
665	Mundagaon	3.78	1.14	-	-
666	Palari	9.73	1.27	4.07	5.48
667	Pandan Bhata	6.23	1.61	3.42	5.13
668	Panderbhata S	6.3	3.87	6.33	9.82
669	Panduka	3.7	1.58	2.39	4.78
670	Piperhatta	-	1.67	3.62	4.97
671	Pond	3.68	1.06	1.87	3.22
672	Raipur	2.85	1.32	2.49	2.94
673	Raita Satna Ni Para	8.68	2.63	4.13	5.87
674	Rajim	10.5	8.5	7.66	9.92
675	Ranisagar	4.19	0.42	1.43	1.98
676	Ravi Shankar University Raipur	7.89	4.14	4.02	4.55
677	Risda	8.89	1.23	4.9	6.12
678	Sakara	13.04	2.32	4.02	5.12
679	Sandi	6.46	1.61	4.04	5.63
680	Sandi 1	7.6	3.63	2.68	4.26
681	Saragaon	2.84	1.13	2.34	3.71
682	Sarkada	5	1.08	2.27	3.62
683	Sarsiwa	9.1	2.27	4.12	4.89
684	Sel	2.68	0.96	1.44	1.84
685	Semariya	-	2.41	5.38	7.04
686	Simga	3.36	-	2.82	2.7

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
687	Suhela	7.04	1.74	3.47	4.83
688	Sursabandha	6.63	1.39	2.32	-
689	Tarenga	-	2.13	3.52	4.67
690	Tarpongi	2.11	1.75	3.09	4.82
691	Tatibandh MVM	8.91	4.9	4.28	5.53
692	Tilda	4.36	-	-	-
693	Tundei	6.65	1.29	-	-
694	Udela	3.41	1.06		3.96
695	Umaria station	8.5	1.65	3.07	4.97
DISTRICT-RAJNANDGAON					
696	Badaitola	13.55	3.11	4.51	12.35
697	Baigatola	3.2	4.29	4.15	5.05
698	Bandha Bazar	4	-	-	2.35
699	Chhuria	15	-	-	-
700	Chinohola	9.45	-	4.51	7.65
701	Chirchari	4	-	6.15	6.9
702	Chuikhadan	12	-	-	12
703	Devkatta	-	-	-	8.15
704	Dhaneli	6.8	7.81	7.3	7.4
705	Dhara	7.3	4.61	4	6.95
706	Dongargaon.1	3.92	3.78	3.3	3.55
707	Dongargarh	10.05	4.4	4.6	7.05
708	Dongargarh-d PZ	9.73	4.21	7.24	7.1
709	Dongargarh-sPZ	9.63	5.32	8.3	6.75
710	Gandaipandaria	7.67	7.24	7.62	10.05
711	Gidhwah	8.5	8	6.96	8.5
712	Govindpur	7.62	6.47	6.89	6.35
713	Jantar	-	-	-	8.6
714	Joratarai	7	4.96	2.42	6.15
715	Kalyanpur	4.9	4.61	5.05	5.5
716	Khairagarh	8	7.27	7.87	7.25
717	Khursipar	15.2	6.87	7.31	15.2
718	Kokpur-I	5.3	-	-	4.75
719	Kumarda.1	9.16	-	-	2.15
720	Lal bhadurnagar	8.63	5.96	4.25	7.35
721	Madrakuhi	5.35	3.17	4	4.15
722	Mohgaon	-	-	3.69	2.15
723	Narmada	5.08	3.18	3.61	6.35
724	Rajnandgaon	3.22	1.21	2.19	2.15
725	Rajnandgaon-S PZ	10.25	11.3	10.4	7.35
726	Ramatola	13.5	9.81	7.94	13.5
727	Rampur	4.58	1.38	1.5	
728	Rangkathera	5.25	5.19	5.59	5.55

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
729	Ranitarai	5.44	1.02	1.55	5.75
730	Ravagahan	3.3	1.41	4.31	2.35
731	Reevagaon	8.17	4.82	2.47	10.05
732	Sahaspur Dalli	-	-	3.8	4.35
733	Salgapat	7.3	6.51	6.79	10.18
734	Salhe Bara	10.5	6.68	5.95	9.05
735	Saloni	6	4.12	3.26	6.45
736	Singhola	2.98	1.37	1.67	1.98
737	Somni	7.7	4.68	5.62	13.88
738	Talagaon	8.85	7.75	8.19	12.25
739	Talai	11.66	3.55	1.72	6.95
740	Tappa	10.85	5.81	5.34	12.71
741	Uraidabritola	9.37	-	8	7.75
DISTRICT-SURGUJA					
742	Alkadih	8	1.87	-	-
743	Ambikapur	7.8	2.3	5.04	6.48
744	Ambikapur-D	21.65	9.07	12.3	14.95
745	Ambikapur-s	16.9	9.27	11	13.43
746	Amdih	6.54	3.36	4.3	-
747	Bachwar	-	3.95	-	-
748	Badsara	10	2.65	4.8	5.65
749	Baghima	4.65	1.11	2.2	-
750	Balrampur D	15.5	-	-	-
751	Bandana	9.08	5.32	6.4	7.84
752	Basin	2.53	-	1.8	-
753	Batauli	4.22	-	-	-
754	Batauli Kunkurikala	-	1.17	2.15	4.3
755	Batauli S	12.25	4.35	8.15	11.24
756	Bhaiyathan	9.8	5.48	6.4	9.32
757	Bulga	7.66	1.35	4.04	5
758	Chandora	6.55	1.85	4.4	5.84
759	Chatakpur	5.37	2.5	3.05	5.29
760	Dalbahara	5.8	1.08	1.7	3.41
761	Dandgaon	3.8	2.35	4.85	6.1
762	Darima	7.48	3.47	5.1	6.81
763	Dawankera	-	1.85	4.6	6
764	Deonagar	6.45	1.8	1.95	3.9
765	Dhaurpur	7.75	2.16	4.15	-
766	Dhaurpur S	-	1.15	-	-
767	Ganeshpur	6.4	3.48	4.4	6.24
768	Ghorghadi	2.83	3.11	4.05	
769	Gonda	6.5	3.15	4.72	6.12

Depth to water level of National Hydrograph Stations

Annexure- II

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
770	Jagannathpur	2.95	2.81	2.22	5.09
771	Jajga	8.5	7.43	8.2	7.81
772	Jaynagar	10.28	6.18	4.95	7.74
773	Kakalo	8.38	1.44	-	7.9
774	Kalyanpur	8	2.35	4.86	6.25
775	Kamleswarpur	16.15	3.11	6.03	7.54
776	Kanakpur	-	3.74	5.48	8.25
777	Karajwar	8.25	4.07	6.8	7.81
778	Kunni	8.75	6.27	6.25	7.69
779	Lundra	5.15	3.1	2.3	-
780	Madanpur	-	-	4.25	5
781	Mahewa	7.53	-	4.46	5.61
782	Makanpur	8.43	2.2	4.55	-
783	Nagadand	16.4	2.65	10.25	11.7
784	Narayanpur		4.52	4	6.18
785	Nawapara	7.68	2.11	4.03	5.9
786	Odigi	5.9	-	4.24	5.4
787	Pachira	7.2	2.15	3.5	4.84
788	Parsa	9.05	4.11	5.22	-
789	Pasta	-	3.41	-	-
790	Pasta S	7.3	4.25	4.6	-
791	Podi	5.25	2.01	3.2	4.5
792	Pratapgarh		5.47	4.82	6.86
793	Pratappur	10.95	5.47	7.6	9.1
794	Premnagar	-	9.4	8.95	10.15
795	Premnagar D	17.42	10.29	12.5	15.6
796	Rajpari	4.45	1.06	2.84	-
797	Rajpur	10.4	1.81	5.35	-
798	Rajpur I	11.98	2.28	5.1	-
799	Ramanuj nagar	12.05	4.65	6.05	8.95
800	Reonti	11.4	7.62	10.75	11.2
801	Samouli	6.38	2.77	4.45	5.1
802	Sargaon	7.45	2.95	-	-
803	Sargawan	-	-	4.25	4.84
804	Sedam	8.82	7.55	6.6	8.14
805	Shankargarh S	12.6	-	9.7	-
806	Singhitana	9.8	5.8	7.7	8.59
807	Sirsi	8.38	3.55	5.2	7
808	Sitapur New	9.35	4.21	5.3	6.91
809	Songara	12.7	5.6	8.2	9.54
810	Sumerpur	6.7	4.2	5.04	6.3
811	Surajpur	7.7	3.42	4.3	4.94
812	Tara	-	-	-	15.44
813	Tara I	25.8	14.59	14.45	18.71

Depth to water level of National Hydrograph Stations**Annexure- II**

Sl No.	Location	DTW May 2017	DTW August 2017	DTW November 2017	DTW January 2018
814	Udaipur	8.55	3.52	9.2	-
815	Udaipur Dhah	4.42	2.51	4.4	5.39
816	Udaipur-s	14.95	9.46	10.3	15.78
817	Wadrafnagar	10.28	7.84	8.8	9.71

Water quality data for National Hydrograph Monitoring Stations 2016-17

Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
1	Balod	Gunderdehi	Chichalgondi	81.258	20.954	8.21	1188	210	32	31.2	161.5	4.3	255	0	311	188.2	70.0	0.3	21.5	0.3	0.221
2	Balod	Durg	Danganiya	81.287	21.012	7.83	1579	615	148	58.8	60.4	1	100	0	122	323.1	156.6	0.1	21.7	0.1	0.091
3	Balod	Sanjari Balod	Gujara	81.132	20.668	8.3	514	210	40	26.4	32.8	0.2	215	3	256	53.3	11.0	0.6	25.0	0.1	0.554
4	Balod	Gunderdehi	Kalangpur	81.338	21.906	7.98	1081	355	126	9.6	43.5	0.5	140	0	171	181.1	62.1	0.2	42.7	0.6	0.214
5	Balodabazar	Balodabazar	Kharghata	81.630	21.251	7.59	412	135	36	10.8	33.6	1.8	105	0	128	56.8	30.3	0.8	37.6	0.0	0.046
6	Balodabazar	Bhatapara	Kedar	81.966	21.800	7.39	481	170	60	4.8	24.8	1.7	105	0	128	49.7	54.9	0.6	8.9	0.0	0.123
7	Balodabazar	Balodabazar	Pahangaon	82.208	21.640	7.51	403	150	52	4.8	17.9	1.7	75	0	92	28.4	90.6	0.7	7.2	0.0	0.123
8	Balodabazar	Simga	Udela	81.850	21.608	7.48	1595	365	90	33.6	101	130	150	0	183	269.8	41.3	0.7	30.3	0.0	0.000
9	Bastar	Keshkal	Murwand	81.533	20.121	8.3	333	150	30	18	15.8	0.4	170	6	195	14.2	7.5	0.8	13.2	0.1	0.296
10	Bastar	Keshkal	Keskal	81.594	20.089	8	821	300	56	38.4	43.6	0.8	190	0	232	131.4	36.0	1.2	24.3	0.1	0.148
11	Bastar	Keshkal	Batrail	81.581	20.057	8.3	386	100	34	3.6	37.9	2.3	115	6	128	49.7	12.8	1.0	11.8	0.1	0.132
12	Bastar	Baderajpur	Pharasaon	81.638	19.858	8.1	335	115	36	6	14.3	2.8	75	0	92	49.7	2.7	0.8	32.7	0.2	0.345
13	Bastar	Pharasaon	Lanjora	81.654	19.721	7.8	1157	435	102	43.2	27.3	2.9	180	0	220	241.4	22.3	0.1	30.9	0.2	1.020
14	Bastar	Pharasaon	Jaitpuri	81.676	19.674	8.3	337	110	30	8.4	13.7	10.7	95	6	104	35.5	5.1	0.0	2.7	0.2	1.497
15	Bastar	Kondagaon	Chikalphuti	81.665	19.577	8.1	225	70	24	2.4	10.8	5.8	60	0	73	17.8	3.5	0.0	11.8	0.1	0.099
16	Bastar	Kondagaon	Dahikonga	81.723	19.472	8.2	531	220	70	10.8	14.4	0.4	110	0	134	78.1	10.4	0.0	22.3	0.2	1.447
17	Bastar	Kondagaon	Joba	81.756	19.436	8.5	308	120	34	8.4	19.2	0.6	140	9	153	21.3	1.5	1.4	3.6	0.2	0.609
18	Bastar	Jagdapur	Kumharwand	81.958	19.096	8.2	271	120	46	1.2	4.1	1.5	115	0	140	14.2	7.3	0.0	0.0	0.3	0.164
19	Bastar	Tokapal	Chhapan Bhanpuri	81.861	19.138	8.1	253	110	34	6	6.6	0.6	105	0	128	17.8	3.8	0.1	0.0	0.1	0.049
20	Bastar	Londigura	Chitrakot	81.719	19.203	8.5	272	125	32	10.8	8.6	1.7	135	6	153	14.2	1.2	0.0	8.2	0.1	0.510
21	Bastar	Charama	Usari Beda	81.775	19.163	7.9	390	170	62	3.6	3.9	1.3	175	0	214	14.2	1.4	0.0	6.8	0.1	0.115
22	Bastar	Jagdapur	Jagdapur	82.028	19.086	8	459	125	32	10.8	44	1.2	70	0	85	71.0	1.9	0.0	3.5	0.1	0.066
23	Bastar	Jagdapur	Markel	82.147	19.064	8.6	330	140	40	9.6	4.5	1.2	130	6	146	21.3	2.5	0.0	7.7	0.1	0.510
24	Bastar	Jagdapur	Kudalgaon	81.979	19.170	8.2	331	155	22	24	3.4	0.9	155	0	189	14.2	1.7	0.0	3.6	0.1	0.395
25	Bastar	Jagdapur	Bastar	81.936	19.201	8.1	390	160	54	6	10.3	0.7	135	0	165	46.2	1.6	0.0	0.0	0.1	0.954
26	Bastar	Bastar	Sonarpal	81.892	19.260	8	317	120	42	3.6	11.9	3.1	130	0	159	21.3	3.5	0.0	0.0	0.1	0.082
27	Bastar	Bastar	Bhanpuri	81.832	19.331	8	310	140	46	6	3.6	0.9	130	0	159	21.3	2.3	0.0	0.0	0.1	0.609
28	Bastar	Kondagaon	Ghorigaon	81.795	19.375	8.1	412	175	46	14.4	10.4	0.7	140	0	171	46.2	2.1	0.0	7.3	0.1	0.888

Water quality data for National Hydrograph Monitoring Stations 2016-17

Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
29	Bemetara	Bemetara	Baba Mohtara	81.589	21.715	8.11	703	335	92	25.2	23.9	2.6	120	0	146	39.1	209.9	0.0	16.1	0.1	0.000
30	Bemetara	Bemetara	Bahera	81.483	21.763	7.88	1407	625	142	64.8	47.2	2.7	110	0	134	188.2	323.5	0.2	17.9	0.1	0.000
31	Bemetara	Bemetara	Baiji	81.515	21.762	7.82	1363	665	182	50.4	30	2.6	100	0	122	95.9	403.9	0.4	21.8	0.1	0.000
32	Bemetara	Bela	Bijabhat	81.553	21.659	8.03	724	305	66	33.6	20	11.5	160	0	195	81.7	42.8	0.1	18.6	0.3	0.000
33	Bemetara	Bemetara	Chilphi	81.467	21.876	7.91	1730	680	156	69.6	110	14.5	140	0	171	113.6	620.9	0.5	22.1	0.3	0.017
34	Bemetara	Bemetara	Dunra	81.485	21.690	8.2	737	280	52	36	46.5	1.4	215	0	262	24.9	35.6	0.2	13.2	0.3	0.000
35	Bemetara	Saja	Jata	81.305	21.668	8.17	520	240	40	33.6	9.4	0.8	170	0	207	28.4	69.5	0.5	14.3	0.3	0.000
36	Bemetara	Bemetara	Khilora	81.530	21.683	8.11	637	275	54	33.6	21.4	1.1	175	0	214	99.4	34.3	0.7	15.4	0.2	0.017
37	Bemetara	Saja	Ninwa	81.464	21.682	8.04	806	295	62	33.6	40.1	19.6	180	0	220	24.9	120.7	0.3	14.1	0.2	0.000
38	Bemetara	Berla	Parpoda	81.211	21.589	8.19	383	140	40	9.6	30.2	0.8	115	0	140	71.0	11.3	0.2	14.1	0.3	0.000
40	Bemetara	Berla	Sondh	81.437	21.539	8.18	506	190	54	13.2	23.2	10	90	0	110	110.1	29.3	0.5	13.6	0.3	0.017
41	Bemetara	saja	Suwartala	81.241	21.667	7.9	968	430	100	43.2	22.8	0.8	110	0	134	63.9	277.2	0.2	33.0	0.4	0.214
42	Bemetara	Bemetara	Bemetara	81.531	21.704	7.92	2470	1145	336	73.2	58.7	2.2	95	0	116	46.2	993.0	0.9	8.5	0.2	0.135
43	Bemetara	Bemetara	Pendri	81.622	21.709	7.86	2020	825	202	76.8	77.1	3.6	115	0	140	351.5	200.6	0.4	7.3	0.3	0.241
44	Bilaspur	Lormi	Achanakmar	81.860	22.408	8.19	359	125	32	10.8	24.2	3.1	130	3	153	28.4	13.9	0.3	45.7	0.1	4.326
45	Bilaspur	Bilha	Amerikapa (Tala)	82.032	21.895	8.26	1428	575	88	85.2	45.3	6.17	190	0	232	227.2	175.2	0.3	5.4	0.1	0.034
46	Bilaspur	Lormi	Attaria	81.757	22.570	8.21	632	150	42	10.8	82.11	7.7	150	6	171	60.4	19.5	0.4	44.3	0.7	0.000
47	Bilaspur	Patharya	Baitalpur	81.917	21.858	8.27	910	335	58	45.6	55.1	1.5	150	0	183	32.0	252.3	0.4	2.7	0.4	0.013
48	Bilaspur	Kota	Banabel	82.108	22.468	8.25	789	250	42	34.8	48.7	3.2	225	0	275	92.3	33.9	0.4	18.6	0.5	0.000
49	Bilaspur	Kota	Bansajhal	82.117	22.383	8.26	350	70	20	4.8	55.4	4.4	135	0	165	24.9	10.6	0.3	11.3	1.0	0.120
50	Bilaspur	Lormi	Barighat	81.900	22.381	8.27	376	140	36	12	20.5	0.9	165	0	201	10.7	6.5	0.3	47.5	0.5	0.721
51	Bilaspur	Bilha	Bartoli	82.148	21.880	8.24	838	290	40	45.6	42.5	1.3	175	0	214	106.5	49.9	0.0	7.0	0.2	0.034
52	Bilaspur	Kota	Belgahana	82.033	22.433	8.27	536	150	36	14.4	36.38	22.5	180	0	220	46.2	25.2	0.1	31.9	0.2	0.034
53	Bilaspur	Takhatpur	Beltara	82.268	22.272	8.25	1393	480	114	46.8	67.8	1	215	0	262	241.4	72.6	0.5	30.4	0.1	0.077
54	Bilaspur	Bilha	Bilaspur (Hemunagar)	82.186	22.053	8.11	2090	620	204	26.4	256.9	1.4	80	0	98	142.0	816.5	0.3	4.3	0.2	0.979
55	Bilaspur	Bilha	Bilha	82.086	21.959	8.29	640	235	38	33.6	36.3	0.2	190	0	232	35.5	85.0	0.3	3.7	0.3	0.034
56	Bilaspur	Masturi	Binauri	82.267	21.860	8.28	586	195	42	21.6	46.5	6.5	200	0	244	21.3	56.3	0.4	11.1	0.5	0.000
57	Bilaspur	Lormi	Bindabal	81.795	22.427	8.24	548	220	40	28.8	25.9	1.6	155	0	189	35.5	37.2	0.5	28.8	0.3	0.206

Water quality data for National Hydrograph Monitoring Stations 2016-17

Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
58	Bilaspur	Bilha	Bitkuli	82.050	21.946	8.21	843	370	74	44.4	28	3.3	120	0	146	60.4	190.8	0.2	3.3	0.2	0.056
59	Bilaspur	Masturi	Bothidih	82.243	21.991	8.27	188	55	16	3.6	15.4	2.6	55	0	67	14.2	7.1	0.1	38.8	0.8	0.000
60	Bilaspur	Bilha	Chakarbhata	82.125	22.001	8.28	647	275	62	28.8	20.5	1.8	170	0	207	63.9	40.8	0.1	10.9	0.6	0.034
61	Bilaspur	Marwahi	Chchgohana	82.037	23.020	7.45	327	90	24	7.2	33	1.3	100	0	122	10.7	7.2	0.1	57.7	0.2	0.099
62	Bilaspur	Lormi	Chhparwa	81.771	22.442	8.08	1039	460	122	37.2	20.7	1	155	0	189	28.4	53.7	0.4	80.0	0.2	0.957
63	Bilaspur	Mungeli	Chhatan	81.611	22.152	7.65	433	190	46	18	12.6	1.4	125	0	153	28.4	8.0	0.2	15.8	0.1	0.313
64	Bilaspur	Masturi	Chilhati	82.314	21.779	7.4	417	170	24	26.4	59.5	7.1	160	0	195	10.7	15.6	0.3	2.5	0.1	0.000
65	Bilaspur	Patharya	Chirhula	81.716	22.009	8.27	849	370	94	32.4	24.5	1	155	0	189	21.3	100.9	0.2	4.1	0.5	0.185
66	Bilaspur	Bilha	Dagauri	82.071	21.894	7.45	1150	515	124	49.2	17.2	1.4	100	0	122	21.3	302.8	0.0	1.9	0.6	0.013
67	Bilaspur	Takhatpur	Ganiyari	82.048	22.194	7.24	395	85	30	2.4	44.4	1.3	100	0	122	53.3	11.0	0.2	75.5	2.2	7.567
68	Bilaspur	Mungeli	Daukapa	81.828	22.089	7.51	720	145	16	25.2	85	24.5	235	0	287	28.4	79.1	0.2	6.6	0.5	0.013
69	Bilaspur	Mungeli	Deori	81.671	22.115	8.44	1878	800	152	100.8	24.4	1.5	410	6	488	220.1	81.7	0.3	34.9	0.6	0.013
70	Bilaspur	Marwahi	Dhanpur	81.986	22.883	7.34	323	45	10	4.8	56.5	1.9	75	0	92	35.5	20.1	1.4	59.4	0.6	0.013
71	Bilaspur	Marwahi	Danikundi	82.067	22.929	7.21	431	110	24	12	47	1	150	0	183	21.3	22.1	0.3	34.5	0.2	0.000
72	Bilaspur	Takhatpur	Gatori	82.139	22.194	7.3	206	45	14	2.4	26	1.5	45	0	55	24.9	11.1	0.0	9.6	0.1	0.013
73	Bilaspur	Gaurela (pendrarod) - 2	Gaurela	81.911	22.754	7.54	226	90	28	4.8	9.3	0.7	70	0	85	24.9	10.2	0.2	51.2	0.5	0.399
74	Bilaspur	Gaurela (pendrarod) - 3	Ghansipur (sainik camp)	82.138	22.359	8.28	603	275	58	31.2	10	2.7	130	0	159	71.0	28.5	0.1	37.2	0.2	15.830
75	Bilaspur	Lormi	Godkhami	81.646	22.276	7.61	414	170	38	18	14.6	0.5	190	0	232	10.7	5.8	0.2	22.5	0.3	0.077
76	Bilaspur	Bilha	Hirri	82.050	21.971	7.9	662	270	46	37.2	24.5	0.6	160	0	195	49.7	73.6	0.4	18.4	0.1	0.077
77	Bilaspur	Kota	Jhingatpur	81.997	22.367	8.27	544	225	74	9.6	18.1	1.4	30	0	37	49.7	23.3	0.4	37.4	0.2	0.077
78	Bilaspur	Mungeli	Kanteli.1	81.650	22.153	8.27	478	160	28	21.6	25.2	2.9	140	0	171	42.6	16.5	0.4	16.6	0.2	0.770
79	Bilaspur	Kota	Kenda	82.081	22.532	8.48	308	115	34	7.2	21	1.2	125	6	140	21.3	8.8	0.3	46.9	0.2	0.099
80	Bilaspur	Gaurela (pendrarod) - 1	Keonchi	81.771	22.621	8.65	328	100	28	7.2	31.6	1	130	6	146	17.8	8.8	0.1	33.5	0.2	0.421
81	Bilaspur	Takhatpur	Khamharia.1	81.988	22.122	8.15	539	205	48	20.4	18.4	0.8	130	0	159	10.7	90.8	1.0	13.9	0.5	0.120
82	Bilaspur	Masturi	koni	82.238	21.982	8.43	402	120	14	20.4	31.6	1.4	110	6	122	46.2	20.0	0.2	13.7	1.0	0.142
83	Bilaspur	Kota	Kota(kargi)	82.025	22.289	8.2	623	220	50	22.8	25.9	1.1	95	0	116	110.1	41.1	0.2	9.0	1.2	0.120
84	Bilaspur	Marwahi	Kotmi.1	82.088	22.811	7.6	526	175	54	9.6	30.6	2.1	100	0	122	88.8	13.8	0.0	110.9	1.0	0.142

Water quality data for National Hydrograph Monitoring Stations 2016-17

Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
85	Bilaspur	Marwahi	Kudwahi	81.980	22.865	8	347	125	34	9.6	23.2	2.9	100	0	122	49.7	4.7	0.0	57.9	0.8	0.485
86	Bilaspur	Lormi	Lamni	81.746	22.542	8	348	135	38	9.6	13.6	3.3	105	0	128	28.4	9.9	0.0	53.1	0.8	0.270
87	Bilaspur	Lormi	Lormi	81.707	22.271	8.2	545	180	34	22.8	44.8	1	225	0	275	39.1	16.1	0.0	39.2	0.7	0.142
88	Bilaspur	Takhatpur	Madanpur	82.147	22.241	7.8	750	285	82	19.2	28.8	1.5	150	0	183	110.1	38.1	0.0	39.6	0.8	0.185
89	Bilaspur	Masturi	Malhar	82.286	21.891	8	782	255	58	26.4	33.5	33	210	0	256	88.8	48.4	0.0	61.2	1.1	0.206
90	Bilaspur	Marwahi	Marwahi	82.069	23.020	8.1	167	60	20	2.4	11.8	2.2	60	0	73	21.3	2.5	0.0	90.1	1.9	0.270
91	Bilaspur	Masturi	Masturi	82.268	21.991	7.8	1395	420	96	43.2	121.5	4	145	0	177	273.4	117.4	0.0	36.5	0.8	1.021
92	Bilaspur	Bilha	Narmada khapri	82.143	22.081	8	924	360	76	40.8	51.5	1.7	130	0	159	21.3	293.0	0.2	51.2	0.7	0.000
93	Bilaspur	Kota	Nawapara	82.122	22.429	8.25	533	225	26	38.4	24.5	7.2	195	0	238	32.0	22.1	0.1	76.7	1.8	0.110
94	Bilaspur	Takhatpur	Neora	81.932	22.213	8.2	392	170	32	21.6	11.1	1.3	165	0	201	17.8	3.8	0.1	31.9	1.0	0.000
95	Bilaspur	Marwahi	Nimdha	81.945	22.947	8.1	318	100	10	18	24.9	1.9	80	0	98	42.6	15.1	0.8	91.6	1.0	4.790
96	Bilaspur	Lormi	Pali (Lormi)	81.835	22.258	8.2	491	180	34	22.8	28.1	0.8	160	0	195	46.2	17.1	0.2	35.5	0.8	0.741
97	Bilaspur	Masturi	Panchpedi	82.270	21.828	8.2	411	170	28	24	17	1.4	170	0	207	17.8	11.7	0.4	31.7	0.9	0.015
98	Bilaspur	Lormi	Patera	81.932	22.309	8.2	497	145	36	13.2	32.8	11.7	120	0	146	56.8	27.5	0.1	19.8	0.9	0.150
99	Bilaspur	Patharya	Patharia (Chorbhatti)	81.839	22.017	7.9	1176	500	136	38.4	58.9	2.3	90	0	110	49.7	467.9	0.0	45.5	1.5	0.000
100	Bilaspur	Takhatpur	Pendari	82.046	22.114	8	1353	610	208	21.6	24.8	2.3	50	0	61	32.0	559.0	0.1	32.3	1.5	0.000
101	Bilaspur	Gaurela (pendrarod) - 1	Piperkhuti	81.883	22.664	8.3	387	125	40	6	26.2	1.3	100	3	116	42.6	20.6	0.9	55.1	1.2	3.033
102	Bilaspur	Kota	Ratanpur	82.178	22.281	8	611	250	64	21.6	23.2	0.6	180	0	220	71.0	24.2	1.1	65.1	1.7	0.000
103	Bilaspur	Gaurela (pendrarod) - 1	Rupandand	81.893	22.698	8.4	406	40	12	2.4	80.6	0.8	165	6	189	21.3	9.7	0.1	37.6	2.1	1.467
104	Bilaspur	Kota	Saraipalli	81.936	22.342	7.9	963	355	98	26.4	41.2	1.4	135	0	165	159.8	33.6	1.7	68.1	2.5	0.150
105	Bilaspur	Marwahi	Seoni	81.958	23.013	8.2	264	80	26	3.6	23.2	0.6	100	0	122	17.8	10.5	1.1	68.7	1.3	0.015
106	Bilaspur	Marwahi	Sewra	81.981	22.852	8.1	495	185	70	2.4	21.23	0.8	105	0	128	63.9	27.5	0.1	83.6	2.1	1.180
107	Bilaspur	Marwahi	Shekhwa	82.089	22.842	8.1	134	35	10	2.4	13.7	1.2	50	0	61	14.2	1.0	0.1	116.8	1.1	1.027
108	Bilaspur	Kota	Shivtarai	81.934	22.349	8.1	609	230	40	31.2	36.5	0.5	205	0	250	63.9	8.4	0.2	69.6	1.6	0.034
109	Bilaspur	Takhatpur	Sipat	82.279	22.146	7.9	2060	600	192	28.8	202.5	6.3	70	0	85	138.5	743.4	0.0	30.4	1.7	0.760
110	Bilaspur	Mungeli	Sitalkunda	81.640	22.078	8.1	3840	890	72	170.4	484.5	2.3	395	0	482	330.2	1024.5	0.4	32.3	1.3	0.000
111	Bilaspur	Takhatpur	Takhatpur.1	81.869	22.133	7.9	1185	455	126	33.6	65.3	1.6	170	0	207	17.8	383.0	0.0	45.7	2.0	0.000
112	Bilaspur	Kota	Tenduwa	81.883	22.254	8	457	195	46	19.2	16	0.7	175	0	214	24.9	18.2	0.1	34.5	1.1	0.159

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
113	Bilaspur	Marwahi	Tikthi	82.069	23.084	8.2	164	70	26	1.2	6.9	0.7	60	0	73	14.2	3.4	0.1	63.4	1.7	4.771
114	Bilaspur	Lormi	Tilaidabra	81.795	22.496	8.15	501	220	56	19.2	21.9	2.4	195	0	238	32.0	14.1	0.3	101.4	0.5	0.130
115	Bilaspur	Takhatpur	Udaypur	81.754	22.273	8.1	363	135	42	7.2	18.4	0.5	145	0	177	24.9	10.8	0.5	48.4	0.2	0.454
117	Bilaspur/Mungeli	Lormi	Chandli	81.645	22.217	7.85	447	205	46	21.6	7.2	0.8	140	0	171	28.4	10.8	0.0	21.1	0.8	0.335
118	Dhamtari	Sihawa (Nagri)	Arsi-kanhar	82.079	20.246	7.46	349	125	42	4.8	21	1	95	0	116	42.6	8.5	1.0	60.3	0.1	7.100
119	Dhamtari	Magarload	Banraud	81.658	20.596	6.68	102	45	12	3.6	2.8	1.3	25	0	31	17.75	6.8	0.4	7.1	0.1	2.000
120	Dhamtari	Sihawa (Nagri)	Banspani	81.792	20.367	7.62	482	120	26	13.2	46.3	7.9	185	0	226	21.3	2.3	3.4	40.8	0.1	1.200
121	Dhamtari	Magarload	Baspara(Kukrel)	81.651	20.613	7.24	288	90	22	8.4	18.7	7.7	65	0	79	49.7	11.3	0.4	12.4	0.1	1.100
122	Dhamtari	Kurud	Bhatagaon	81.700	20.878	7.4	409	135	44	6	18.5	13.5	120	0	146	56.8	6.1	0.5	13.5	0.1	0.046
123	Dhamtari	Sihawa (Nagri)	Birgudi	81.863	20.322	7.5	335	125	40	6	8.6	14	75	0	92	46.15	0.2	1.0	63.7	0.1	15.200
124	Dhamtari	Magarload	Budaraon	81.905	20.723	7.41	342	110	34	6	26.3	2.9	105	0	128	49.7	0.2	0.8	7.8	0.1	0.230
125	Dhamtari	Dhamtari	Chhati	81.667	20.779	7.56	390	155	44	10.8	18.6	1.1	150	0	183	35.5	10.3	0.7	13.3	0.1	0.200
126	Dhamtari	Sihawa (Nagri)	Dorgardula	81.911	20.406	7.73	351	125	46	2.4	21	0.9	105	0	128	42.6	11.4	1.2	59.0	0.1	2.200
127	Dhamtari	Sihawa (Nagri)	Dugli	81.871	20.492	7.58	366	125	42	4.8	25	1.8	115	0	140	35.5	3.3	1.3	55.9	1.0	1.570
128	Dhamtari	Dhamtari	Gangrel	81.558	20.635	7.41	157	80	18	8.4	7.3	1.6	70	0	85	10.65	14.4	0.7	7.1	0.1	0.700
129	Dhamtari	Sihawa (Nagri)	Gattasilli	81.803	20.444	7.48	615	185	56	10.8	47.2	8	165	0	201	78.1	12.4	0.9	34.3	0.2	0.700
130	Dhamtari	Sihawa (Nagri)	Jabarra	81.986	20.496	7.59	366	130	40	7.2	24.4	1.8	125	0	153	31.95	0.2	0.8	54.5	0.1	0.200
131	Dhamtari	Rajim	Kaskera	82.144	20.926	7.56	474	185	50	14.4	22.4	1.5	130	0	159	63.9	12.0	0.7	58.1	0.1	0.100
132	Dhamtari	Sihawa (Nagri)	Keregaon	81.738	20.549	7.65	141	50	16	2.4	8	2.5	50	0	61	14.2	4.6	0.3	25.1	0.1	8.900
133	Dhamtari	Dhamtari	Khadadaha	81.693	20.573	7.67	348	100	30	6	34.2	7	165	0	201	3.55	0.0	0.6	40.2	0.0	1.570
134	Dhamtari	Kurud	Kondapar	81.725	21.004	7.51	717	220	48	24	51.9	4.3	130	0	159	117.15	11.5	0.3	21.4	0.1	0.700
135	Dhamtari	Kurud	Kosmarra	81.599	20.860	7.45	397	140	44	7.2	24.7	1.7	85	0	104	42.6	4.5	0.5	6.2	0.1	0.140
136	Dhamtari	Kurud	Kurud	81.719	20.828	7.8	941	250	70	18	61.6	72	215	0	262	131.35	0.2	0.6	17.3	0.5	0.140
137	Dhamtari	Magarload	Magarload	81.858	20.747	7.23	247	70	24	2.4	22.2	4	40	0	49	39.05	0.2	0.3	11.1	0.1	0.000
138	Dhamtari	Kurud	Marod	81.689	20.903	7.7	488	150	30	18	31.7	2.2	95	0	116	92.3	0.2	0.8	19.1	0.1	7.600
139	Dhamtari	Sihawa (Nagri)	Mechka (Sondur)	82.087	20.234	7.75	355	115	40	3.6	20.5	1	100	0	122	42.6	0.2	0.7	56.1	0.1	3.600
140	Dhamtari	Kurud	Mega	81.801	20.783	7.62	225	95	30	4.8	9.2	1.8	95	0	116	3.55	22.9	0.9	16.0	0.0	0.440
141	Dhamtari	Rajim	Mudagaon	82.170	20.899	7.64	286	125	34	9.6	7	0.8	120	0	146	3.55	23.3	0.0	41.9	0.1	0.650

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S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
142	Dhamtari	Magarload	Mulgaon	81.906	20.678	7.26	145	45	14	2.4	6.1	6.4	40	0	49	21.3	3.6	0.7	9.1	0.0	0.046
143	Dhamtari	Sihawa (Nagri)	Nagri	81.958	20.333	7.42	945	275	78	19.2	72.9	6.9	90	0	110	195.25	3.4	0.2	40.5	0.2	0.500
144	Dhamtari	Dharsinwa	Sankra	81.990	20.293	7.42	946	270	76	19.2	72.1	7	95	0	116	198.8	0.2	0.3	40.0	0.1	0.410
145	Dhamtari	Dhamtari	Seadei	81.635	20.636	7.52	456	130	36	9.6	37.2	2.4	120	0	146	56.8	0.0	0.0	2.6	0.0	0.230
146	Dhamtari	Sihawa (Nagri)	Sihawa	81.913	20.308	7.71	356	105	24	10.8	37.1	1.4	140	0	171	28.4	14.1	1.8	36.2	0.0	10.200
147	Dhamtari	Magarload	Singhpur	81.878	20.582	7.25	213	85	24	6	2.9	6.9	30	0	37	24.85	2.9	0.2	25.6	0.1	4.300
148	Dhamtari	Dhamtari	Dhamtari	81.550	20.708	7.61	362	95	26	7.2	32.3	7.8	95	0	116	31.95	22.1	0.9	17.6	0.0	0.070
149	Dhamtari	Murrumsilli	Sihawa	81.643	20.531	7.63	311	85	28	3.6	31.3	5.6	120	0	146	7.1	26.4	0.8	32.2	0.0	0.500
150	Durg	Basin	Gurur	81.431	20.981	7.8	503	200	52	16.8	14.4	1.4	135	0	165	74.6	15.5	0.4	0.0	0.1	0.000
151	Durg	Durg	Kuliya	81.453	20.671	8.2	492	180	56	9.6	26	4.5	165	0	201	42.6	31.2	0.0	8.3	0.1	0.000
153	Durg	Balod	Jagtara	81.128	20.740	8.1	427	180	54	10.8	18	2.5	125	0	153	46.2	39.8	0.1	0.0	0.1	0.855
155	Durg	Dhamdha	Ahiwara	81.417	21.361	7.9	561	190	64	7.2	29.2	2	105	0	128	85.2	15.4	0.1	16.1	0.2	0.000
156	Durg	Durg	Anda	81.275	21.067	7.9	853	285	76	22.8	47.6	4.1	110	0	134	145.6	55.3	0.3	25.3	0.2	2.126
157	Durg	Bemetara	Andhiyarkhor	81.598	21.838	8.2	673	200	40	24	70.6	1.2	230	0	281	28.4	95.0	0.6	29.7	0.2	0.905
158	Durg	Gunderdehi	Arjunda	81.206	20.943	8.1	397	140	40	9.6	31.4	0.4	155	0	189	21.3	10.5	0.3	39.6	0.1	0.110
159	Durg	Gurur	Armari kalan	81.401	20.833	7.9	1079	315	92	20.4	47.9	34	170	0	207	170.4	56.3	0.2	49.7	0.1	0.000
160	Durg	Bemetara	Ashoga	81.550	21.964	8.2	397	180	54	10.8	15.8	0.2	190	0	232	17.8	4.3	0.5	22.9	0.2	0.535
161	Durg	Sanjari Balod	Balod	81.200	20.729	8	853	285	38	45.6	55	3.1	205	0	250	117.2	59.6	0.9	38.4	0.2	0.000
162	Durg	Dondi Lohara	Batera	81.064	20.781	8	214	80	22	6	10.7	4.1	55	0	67	21.3	8.9	0.1	51.4	0.2	0.017
163	Durg	Dondi Lohara	Bhalukonha	81.053	20.744	8.3	375	160	30	20.4	22.6	2.3	180	3	214	10.7	13.2	0.5	71.5	0.2	16.125
164	Durg	Durg	Bhilai	81.414	21.207	8.2	564	175	50	12	43.3	3.2	85	0	104	74.6	30.9	0.1	22.0	0.1	0.000
165	Durg	Durg	Binayakpur	81.267	21.056	8.3	496	105	22	12	70	1.2	205	3	244	21.3	15.7	1.6	34.0	0.2	0.000
166	Durg	Bemetara	Bitkuli	81.668	21.775	7.8	2190	1040	288	76.8	76	2.2	105	0	128	17.8	1154.8	0.5	27.7	0.2	2.385
167	Durg	Saja	Bortara	81.222	21.642	7.8	1270	480	108	50.4	81	2.7	120	0	146	46.2	481.9	0.1	13.1	0.2	0.000
168	Durg	Bemetara	Dadhi	81.475	21.896	8.1	629	230	44	28.8	41.4	1	150	0	183	42.6	134.5	0.1	26.0	0.2	1.664
169	Durg	Dhamdha	Dargaon	81.394	21.492	8	849	330	72	36	47.2	2.1	150	0	183	28.4	257.0	0.2	12.7	0.2	0.000
170	Durg	Sanjari Balod	Delli Rajhara	81.078	20.586	8.27	248	110	24	12	13.2	3.3	85	0	104	21.3	13.6	0.1	27.4	0.2	0.184
171	Durg	Patan	Dewada	81.497	21.070	8.33	346	155	50	7.2	8.6	2.1	140	0	171	28.4	11.3	0.2	25.9	0.2	0.461

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172	Durg	Dhamda	Dhaba	81.497	21.279	8.2	536	185	62	7.2	31.5	3.1	155	0	189	56.8	29.4	0.3	34.7	0.1	0.000
173	Durg	Patan	Funda	81.483	21.076	8.17	408	165	58	4.8	17.1	0.2	110	0	134	49.7	20.1	0.1	22.8	0.2	0.942
174	Durg	Durg	Ganiyari	81.214	21.215	7.92	1121	405	120	25.2	42.8	7.3	95	0	116	170.4	68.8	0.1	25.9	0.2	2.496
175	Durg	Dhamdha	Girola	81.438	21.392	7.98	961	395	142	9.6	10.7	1.3	115	0	140	149.1	9.6	0.1	34.7	0.1	0.702
176	Durg	Gunderdehi	Gunderdehi	81.296	20.944	7.94	1947	535	118	57.6	128.5	1.5	135	0	165	461.5	53.8	0.6	24.8	0.2	0.000
177	Durg	Saja	Jamgaon	81.292	21.575	8.12	720	260	78	15.6	30.2	11.5	120	0	146	113.6	45.6	0.1	25.9	0.2	1.997
178	Durg	Durg	Janjgiri	81.309	21.085	7.85	1710	585	164	42	84.8	16	90	0	110	330.2	108.6	0.0	24.8	0.3	0.831
179	Durg	Berla	Jeora	81.623	21.639	8.2	925	225	56	20.4	58.5	44	175	0	214	99.4	126.4	0.0	27.4	0.2	0.073
180	Durg	Durg	Jeora-sirsa	81.306	21.256	8.09	514	205	66	9.6	14.1	0.3	115	0	140	71.0	25.3	0.1	28.6	0.2	0.276
181	Durg	Durg	Kachandur	81.297	20.979	8.16	639	160	48	9.6	62.3	11	205	0	250	63.9	31.0	0.3	25.3	0.2	0.000
182	Durg	Patan	Kashi	81.497	21.036	8.31	529	175	56	8.4	26.8	23	180	3	214	53.3	32.1	0.2	35.1	0.2	0.000
183	Durg	Dhamdha	Kodiya	81.354	21.359	8.18	252	125	40	6	5.1	0.3	140	0	171	3.6	3.9	0.1	35.2	0.2	1.331
184	Durg	Sanjari Balod	Kusumkasa	81.081	20.642	8.41	395	145	34	14.4	26.1	1.5	190	6	220	14.2	6.0	0.5	49.2	0.3	1.220
185	Durg	Doundi Lohara	Lohara	81.051	20.793	8.25	547	210	44	24	29.7	3.8	170	0	207	60.4	24.3	0.4	32.0	0.2	0.036
186	Durg	Patan	Marra	81.458	21.038	8.09	526	215	52	20.4	28	0.5	145	0	177	74.6	16.9	0.5	24.0	0.2	0.000
187	Durg	Patan	Motipur	81.546	21.167	8.06	798	200	62	10.8	35.2	53	165	0	201	92.3	63.8	0.1	37.9	0.2	0.110
188	Durg	Durg	Nagpura	81.226	21.249	7.84	1230	430	114	34.8	41.8	17	130	0	159	227.2	71.2	0.8	19.9	0.2	2.848
189	Durg	Saja	Parpoda	81.401	21.588	8.15	613	235	52	25.2	41.9	2.3	230	0	281	53.3	14.6	0.4	15.4	0.3	0.165
190	Durg	Durg	Powara	81.332	21.100	7.83	1044	375	122	16.8	50.5	12	115	0	140	181.1	66.2	0.1	19.2	0.3	0.091
191	Durg	Dhamdha	Ravelidih	81.338	21.325	8.06	523	215	70	9.6	17.8	1.3	70	0	85	78.1	7.3	0.0	13.1	0.2	0.276
192	Durg	Bemetara	Sagona	81.466	21.813	7.81	2120	1075	242	112.8	60.9	2.7	110	0	134	24.9	896.4	0.3	24.0	0.3	0.017
193	Durg	Durg	Selud	81.419	21.100	8.18	309	150	48	7.2	10.6	0.3	145	0	177	21.3	9.9	0.2	14.6	0.2	0.165
194	Durg	Gunderdehi	Sikosa	81.289	20.876	7.97	634	205	64	10.8	43.6	4.5	135	0	165	92.3	26.7	0.4	35.0	0.2	0.054
195	Durg	Patan	Tarra	81.511	21.118	8.13	457	195	56	13.2	19	1.6	135	0	165	46.2	17.6	0.1	16.3	0.2	2.163
196	Durg	Sanjari Balod	Umaradah	81.247	20.736	8.05	587	195	50	16.8	46.3	2.4	150	0	183	71.0	47.5	0.8	22.9	0.3	0.000
197	Durg	Durg	Utai(Adarshnagar)	81.389	21.117	8.05	447	200	64	9.6	13.1	0.3	140	0	171	53.3	19.8	0.3	18.2	0.2	0.000
198	Durg	Patan	Zhit	81.567	21.129	8.09	454	175	46	14.4	25.9	9.6	165	0	201	42.6	13.0	0.1	22.2	0.3	0.000
199	Durg	Dhamda	Murmunda	81.463	21.309	8.08	582	130	36	9.6	46.4	48	85	0	104	103.0	8.9	0.1	12.2	0.2	1.022

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200	Durg	Ahirwara	Arasnara	81.345	21.310	8.18	462	155	56	3.6	39.8	5	140	0	171	46.2	10.8	0.1	18.1	0.3	0.122
201	Durg	Patan	Kharra	81.547	20.981	7.97	1397	470	150	22.8	35	0.5	105	0	128	308.9	63.0	0.3	14.5	0.3	1.459
202	Durg	Bemetara	Bemetara-d	81.533	21.717	7.89	2040	1175	360	66	83	6.3	95	0	116	53.3	1006.7	0.5	3.6	0.2	0.135
203	Durg	Gunderdehi	Bhatagaon	81.293	20.841	8.16	690	200	70	6	36.7	2.1	140	0	171	106.5	22.4	0.4	1.4	0.4	0.254
204	Durg	Patan	Bohardih	81.435	21.067	8.11	755	280	68	26.4	46.9	1.9	125	0	153	134.9	24.2	0.4	4.2	0.3	0.744
205	Durg	Dhamdha	Dhamda-D	81.335	21.465	8.32	320	145	36	13.2	29.6	0.5	165	3	195	17.8	5.9	0.1	0.1	0.3	0.373
206	Durg	Dondi Lohara	Koba(Pz-I)	81.161	20.824	8.14	463	210	50	20.4	8.1	0.9	175	0	214	35.5	21.8	0.1	2.2	0.1	1.935
207	Durg	Patan	Kumhari	81.533	21.233	8.84	911	370	78	42	36.1	1.2	225	12	250	81.7	114.1	0.9	10.1	0.1	0.797
208	Durg	Bemetara	Nawagarh-d	81.608	21.908	8.24	850	115	22	14.4	167	1.9	170	0	207	39.1	208.5	0.3	5.2	0.1	0.320
209	Durg	Sanjari Balod	Padkibhat	81.247	20.751	8.2	402	85	32	1.2	65.2	1.5	135	0	165	42.6	16.2	0.3	3.1	0.2	3.100
210	Durg	Gurur	Perpar	81.475	20.744	8.14	503	170	52	9.6	27.6	1	150	0	183	56.8	20.4	0.1	3.4	0.1	0.228
211	Durg	Gurur	Pipercherri	81.321	20.761	8.48	754	285	50	38.4	30.8	4.2	210	6	244	92.3	28.2	0.7	9.8	0.1	1.128
212	Durg	Dondi Lohara	Sambalpur	81.057	20.821	8.4	384	25	8	1.2	79	3.5	175	6	201	10.7	4.9	0.4	0.1	0.3	17.290
213	Durg	Gunderdehi	Sankri	81.259	20.823	8.12	767	255	64	22.8	27.9	0.7	120	0	146	131.4	29.1	0.2	0.1	0.1	0.360
214	Durg	Patan	Patan	81.550	21.033	8.23	526	145	50	4.8	55.3	1.3	110	0	134	60.4	22.5	0.2	5.3	0.1	1.009
215	Raipur	Arang	Umaria station	81.867	21.200	7.76	646	255	78	14.4	18.4	1	225	0	275	28.4	39.5	0.7	26.7	0.0	0.258
216	Janjgir-Champa	Dabhra	Chandrapur	83.238	21.708	7.54	1156	325	68	37.2	90	32	185	0	226	149.1	84.9	0.5	20.6	0.1	0.038
217	Janjgir-Champa	Malkharoda	Adbhar	82.083	21.659	8.21	569	105	28	8.4	90	1.8	155	0	189	21.3	90.3	0.5	46.3	0.3	0.000
218	Janjgir-Champa	Akaltara	Akaltara	82.422	22.026	8.1	619	160	42	13.2	44.7	26.2	155	0	189	60.4	38.3	0.1	33.1	0.3	0.000
219	Janjgir-Champa	Shakti	Asunda	82.912	22.052	7.8	1023	370	118	18	54.5	2.4	85	0	104	223.7	55.2	0.1	51.4	0.3	0.340
220	Janjgir-Champa	Baloda	Baloda	82.478	22.133	8.1	440	165	52	8.4	26.9	0.5	160	0	195	32.0	17.5	0.3	69.8	0.4	0.034
221	Janjgir-Champa	Akaltara	Bamhani	82.448	22.084	8.2	454	165	56	6	26.9	0.4	170	0	207	28.4	17.4	0.3	71.0	0.4	0.000
222	Janjgir-Champa	Bamhndih	Bamhanidihi	82.724	21.919	8.1	202	75	16	8.4	10.6	0.9	55	0	67	21.3	13.4	0.0	55.9	0.4	0.000
223	Janjgir-Champa	Nawagarh	Budena	82.623	21.897	8.2	849	195	48	18	64.9	61	195	0	238	113.6	53.6	0.3	56.7	0.4	0.000

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S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
224	Janjgir-Champa	Bamhnidih	Champa	82.661	22.035	8.2	394	150	46	8.4	20.9	1	130	0	159	32.0	16.1	0.1	59.8	0.5	0.000
225	Janjgir-Champa	Dabhra	Dabra	83.083	21.783	8.1	817	345	54	50.4	24.7	3.6	215	0	262	110.1	31.7	0.2	40.6	0.3	0.000
226	Janjgir-Champa	Shakti	Damau	82.859	22.136	8.26	225	100	22	10.8	5.7	2.3	100	0	122	7.1	0.8	0.3	27.6	0.1	9.620
227	Janjgir-Champa	Nawagarh	Dhardei	82.525	21.797	8.1	605	185	42	19.2	53	1.4	135	0	165	88.8	38.9	0.2	40.0	0.3	0.550
228	Janjgir-Champa	Pamgarh	Dongakahrod	82.458	21.847	7.8	1501	405	134	16.8	136.5	35.5	100	0	122	344.4	116.5	0.0	59.6	0.5	0.000
229	Janjgir-Champa	Malkharoda	Ghoghari	83.010	21.783	8.2	672	210	34	30	57.4	1.4	200	0	244	67.5	41.5	0.1	44.1	0.5	0.000
230	Janjgir-Champa	Jaijaipur	Hasoud	82.913	21.751	8.2	739	225	38	31.2	57.4	1.4	215	0	262	63.9	42.7	0.1	41.6	0.4	0.000
231	Janjgir-Champa	Jaijaipur	Jaijaipur	82.821	21.833	8.1	595	230	42	30	21.3	0.7	205	0	250	42.6	16.7	0.1	35.1	0.4	0.000
232	Janjgir-Champa	Akaltara	Jairamnagar	82.340	22.033	7.8	1336	375	112	22.8	139.8	4.2	105	0	128	276.9	82.8	0.0	36.5	0.3	0.000
233	Janjgir-Champa	Nawagarh	Janjgir	82.580	22.013	7.65	647	45	10	4.8	128.1	2.3	250	0	305	42.6	20.7	0.5	34.1	0.4	0.000
234	Janjgir-Champa	Pamgarh	Jewara	82.383	21.853	8.1	950	335	78	33.6	42.8	25.5	235	0	287	131.4	58.8	0.1	39.2	0.4	0.416
235	Janjgir-Champa	Pamgarh	Jhulanpakariya	82.443	21.921	8.2	1001	205	38	26.4	130	13.4	165	0	201	149.1	123.9	0.0	32.7	0.4	0.000
236	Janjgir-Champa	Nawagarh	Kera	82.711	21.746	8	716	240	62	20.4	46.6	10.2	205	0	250	63.9	42.3	0.0	49.4	0.6	0.000
237	Janjgir-Champa	Nawagarh	Khartal	82.667	21.800	7.9	486	145	42	9.6	25.6	22	140	0	171	60.4	17.2	0.0	28.4	0.3	1.486
238	Janjgir-Champa	Akaltara	Konargarh	82.342	21.925	7.41	271	120	40	4.8	8.7	0.6	105	0	128	17.8	7.5	0.1	27.2	0.3	0.000
239	Janjgir-Champa	Malkharoda	Lachhmanbhata	83.072	21.825	7.54	679	280	46	39.6	24	3.5	140	0	171	113.6	30.6	0.0	37.6	0.1	0.000
240	Janjgir-Champa	Dabhra	Latesara	83.192	21.739	8.2	400	165	44	13.2	18.8	0.8	155	0	189	28.4	10.7	0.3	44.3	0.5	0.626

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S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
241	Janjgir-Champa	Nawagarh	Loharsi	82.557	21.771	8.1	752	165	48	10.8	46.8	66	270	0	329	60.4	22.1	0.1	56.3	0.6	0.000
242	Janjgir-Champa	Pamgarh	Meubhata	82.465	21.863	8.3	613	200	44	21.6	41.9	8.5	100	6	110	92.3	16.5	0.0	31.9	0.4	0.550
243	Janjgir-Champa	Pamgarh	Mulmula	82.403	21.930	8.2	998	205	36	27.6	127	5	170	0	207	149.1	111.5	0.0	38.8	0.4	0.000
244	Janjgir-Champa	Pamgarh	Pamgarh	82.453	21.871	8	535	220	42	27.6	20.3	0.7	205	0	250	35.5	16.8	0.2	42.9	0.5	0.000
245	Janjgir-Champa	Shakti	Sakti	82.963	22.021	8.1	606	195	50	16.8	40.1	8.2	155	0	189	92.3	17.1	0.2	31.0	0.2	0.000
246	Janjgir-Champa	Shakti	Saliabhata	82.848	22.137	7.45	626	40	12	2.4	123.5	3.6	225	0	275	53.3	28.3	0.6	38.4	0.4	11.210
247	Janjgir-Champa	Bamhmidih	Saragaon	82.754	21.983	8.01	234	95	16	13.2	7.7	2.7	105	0	128	7.1	3.2	0.4	27.6	0.4	0.000
248	Janjgir-Champa	Pamgarh	Sasaha	82.384	21.776	8	1100	290	50	39.6	112	14	230	0	281	195.3	36.0	0.7	55.3	0.7	0.000
249	Janjgir-Champa	Nawagarh	Semra	82.633	21.861	8.18	416	130	30	13.2	37.3	0.6	145	0	177	35.5	14.6	0.2	46.7	0.1	0.000
250	Janjgir-Champa	Nawagarh	Seorinarayan	82.594	21.733	8.24	482	145	44	8.4	27.5	23	130	0	159	60.4	19.8	0.1	28.2	0.4	0.000
251	Janjgir-Champa	Janjgir	shukli	82.611	21.863	7.93	745	235	66	16.8	59.2	12.7	205	0	250	74.6	54.2	0.1	58.1	0.6	0.000
252	Janjgir-Champa	Bamhmidih	Sonthi	82.697	21.976	7.58	633	70	12	9.6	118.5	2.4	260	0	317	39.1	23.3	0.7	40.6	0.5	0.000
253	Janjgir-Champa	Malkharoda	Sukda	83.094	21.869	8.21	497	140	32	14.4	40.3	1.1	180	0	220	21.3	21.2	0.4	52.4	0.7	0.626
254	Janjgir-Champa	Shakti	Thathari	82.825	21.932	8.18	301	115	34	7.2	18	0.3	125	0	153	14.2	6.5	0.7	69.4	0.7	0.244
255	Janjgir-Champa	Jaijaipur	Odekara	82.855	21.813	8.03	827	335	54	48	26	1.4	185	0	226	124.3	36.7	0.1	42.9	0.6	0.000
256	Janjgir-Champa	Pamgarh	vyasnagar	82.313	21.957	8.19	981	195	36	25.2	134	5.3	240	0	293	142.0	42.7	0.3	38.0	0.5	0.000
257	Janjgir-Champa	Bamhmidih	Baradwar-d	82.754	21.983	8.12	367	160	42	13.2	9.1	2.1	130	0	159	32.0	5.8	0.0	22.7	0.0	0.000
258	Jashpur	Pathalgaon	Amatolli	83.744	22.471	8.06	290	95	32	3.6	24.3	0.3	110	0	134	21.3	8.5	0.5	38.7	0.2	1.105
259	Jashpur	Farsabahar	Amdiha	83.955	22.466	8.19	369	135	48	3.6	24.5	0.9	150	0	183	24.9	6.8	0.2	38.7	0.2	0.000
260	Jashpur	Dharmajaiagarh	Amgaon	83.211	22.398	8.14	366	75	22	4.8	63.4	1.7	180	0	220	14.2	2.3	5.0	45.2	0.2	0.860
261	Jashpur	Pathalgaon	Bagh Bahar	83.756	22.540	8.3	357	115	34	7.2	24.4	2.6	130	3	153	28.4	11.3	0.4	55.9	0.2	7.158
262	Jashpur	Bagicha	Bagicha	83.654	22.976	8.36	230	90	20	9.6	9.3	0.9	85	6	92	17.8	6.1	0.2	23.4	0.1	0.212

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S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
263	Jashpur	Bagicha	Bahora	83.784	23.102	8.18	113	40	14	1.2	6.5	1	45	0	55	7.1	0.2	0.1	34.1	0.2	0.000
264	Jashpur	Jashpur	Balachhappar	84.148	22.849	8.04	89	45	12	3.6	4.1	1.5	35	0	43	10.7	0.2	0.1	7.4	0.1	0.056
265	Jashpur	Kunkuri	Bandarchuwa	83.858	22.686	8.29	402	135	50	2.4	19.16	1.8	145	0	177	28.4	10.3	0.2	46.2	0.3	0.000
266	Jashpur	Pathalgaon	Bangaon	83.679	22.600	8.34	313	115	38	4.8	18	1	110	6	122	21.3	11.4	2.8	35.9	0.2	0.681
267	Jashpur	Kasavel	Bataikela	83.733	22.733	8.14	241	90	30	3.6	11.4	1.4	95	0	116	17.8	3.3	1.8	44.6	0.3	0.614
268	Jashpur	Kasavel	Bewrapali	83.748	22.908	8.49	513	165	36	18	46.08	3.1	215	6	250	21.3	14.4	4.0	34.2	0.1	0.234
269	Jashpur	Duldula	Binjapur	84.033	22.767	8.34	262	80	22	6	12.61	23.8	80	3	92	32.0	12.4	0.3	17.0	0.2	1.999
270	Jashpur	Kunkuri	Chhapartoli	83.922	22.809	8.1	176	65	24	1.2	9.1	1.4	50	0	61	10.7	0.2	0.3	39.1	0.2	0.927
271	Jashpur	Jashpur	Chiraidand	84.075	22.778	8.06	251	80	28	2.4	13.1	11.5	70	0	85	32.0	12.0	0.3	18.1	0.3	2.110
272	Jashpur	Kunkuri	Dhodidand	83.956	22.778	8.07	189	70	22	3.6	9.6	2.1	50	0	61	17.8	4.6	0.3	8.1	0.2	1.351
273	Jashpur	Kasavel	Dokra	83.869	22.621	8.51	367	120	30	10.8	18.8	0.8	140	3	165	21.3	0.0	0.5	44.8	0.3	0.000
274	Jashpur	Bagicha	Durgapara	83.550	23.030	8.37	310	120	40	4.8	17.6	1	105	3	122	28.4	11.5	1.2	34.6	0.2	1.306
275	Jashpur	Farsabahar	Farsabahar	83.855	22.509	8.28	208	75	22	4.8	14.5	2.8	75	0	92	24.9	4.5	0.1	21.7	0.2	0.167
276	Jashpur	Kunkuri	Farsakanhi	83.896	22.704	8.46	335	120	38	6	18.9	0.8	160	6	183	10.7	0.2	0.5	45.5	0.3	0.000
277	Jashpur	Kunkuri	Ghatmunda	83.933	22.788	8.45	375	100	26	8.4	32.7	1.2	160	9	177	14.2	0.2	3.8	45.2	0.3	0.346
278	Jashpur	Jashpur	Jakba	84.207	22.909	7.86	261	65	14	7.2	11.4	24	40	0	49	39.1	0.2	0.0	25.0	0.2	2.937
279	Jashpur	Jashpur	Jashpurnagar	84.139	22.883	7.96	105	35	12	1.2	3.9	1.5	30	0	37	10.7	0.2	0.0	80.9	0.4	0.000
280	Jashpur	Farsabahar	Jharmunda	83.868	22.416	8.44	709	170	40	16.8	81	1.3	220	6	256	63.9	22.9	3.9	35.8	0.3	0.145
281	Jashpur	Pathalgaon	Kachhar	83.535	22.558	8.21	647	190	62	8.4	39.4	18	95	0	116	134.9	23.3	0.0	19.3	0.3	1.217
282	Jashpur	Farsabahar	Kandaibahar	83.904	22.496	8.42	242	100	36	2.4	11.2	1.4	95	6	104	17.8	3.6	0.2	42.0	0.4	0.592
283	Jashpur	Kunkuri	Kandora	83.968	22.756	8.38	213	75	8	13.2	9.3	5.7	85	3	98	14.2	3.4	2.9	15.1	0.3	3.205
284	Jashpur	Bagicha	Kanpoda	83.832	22.880	8.42	118	45	6	7.2	6	0.5	25	6	18	24.9	0.2	0.0	6.9	0.3	0.659
285	Jashpur	Kasavel	Kansabel	83.741	22.640	8.52	377	125	38	7.2	21.4	0.7	155	6	177	14.2	0.0	0.5	43.6	0.4	0.000
286	Jashpur	Duldula	Kersai	83.958	22.600	8.41	425	140	48	4.8	34.5	1.4	145	6	165	39.1	14.1	0.3	44.6	0.6	0.000
287	Jashpur	Farsabahar	Khutsera	83.826	22.413	8.53	323	105	40	1.2	25.7	2.6	75	6	79	42.6	2.9	0.2	49.9	0.4	0.123
288	Jashpur	Bagicha	Kondapara	83.752	23.143	8.33	116	45	10	4.8	4.83	1	30	6	24	10.7	6.9	0.1	31.5	0.4	0.000
289	Jashpur	Pathalgaon	Kotba	83.740	22.433	8.36	306	90	24	7.2	25.9	2.6	105	9	110	32.0	1.1	0.2	46.6	0.4	2.423
290	Jashpur	Duldula	Kunjara	83.958	22.665	8.39	423	135	42	7.2	33.6	1.3	145	6	165	35.5	13.6	0.3	42.4	0.6	0.000
291	Jashpur	Kunkuri	Kunkuri I	83.954	22.742	8.55	273	85	20	8.4	19	0.7	50	6	49	21.3	1.0	0.4	43.7	0.5	0.000

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292	Jashpur	Farsabahar	Lavakera	83.982	22.385	8.34	631	180	58	8.4	60	1.8	145	3	171	88.8	21.7	0.5	61.7	0.6	0.726
293	Jashpur	Pathalgaon	Ludeg	83.604	22.554	8.27	714	265	72	20.4	30.4	2.4	85	0	104	24.9	33.4	0.1	29.4	0.4	0.368
294	Jashpur	Bagicha	Maini	83.540	22.981	8.42	311	115	34	7.2	17.4	1	105	6	116	21.3	10.3	2.5	38.5	0.4	1.262
295	Jashpur	Kasavel	Muskuti	83.675	22.863	8.33	208	75	22	4.8	12.5	2.8	75	3	85	17.8	5.3	0.1	18.2	0.4	0.190
296	Jashpur	Kasavel	Narayanbahali	83.781	22.653	8.27	210	65	22	2.4	15	2.8	60	0	73	28.4	4.1	0.1	29.3	0.4	0.078
297	Jashpur	Kunkuri	Narayanpur	83.904	22.853	8.34	357	125	40	6	18.3	4.2	100	3	116	7.1	3.7	0.1	33.7	0.5	0.000
298	Jashpur	Pathalgaon	Nawaguda	83.444	22.586	8.2	164	50	18	1.2	13.2	2.6	65	0	79	10.7	0.7	0.3	38.3	0.5	0.368
299	Jashpur	Pathalgaon	Palidih	83.507	22.558	8.33	376	140	36	12	22.6	2.6	150	3	177	21.3	8.9	0.1	64.8	0.5	0.000
300	Jashpur	Bagicha	Pandripani	83.706	22.922	8.35	295	130	34	10.8	10.04	1.5	105	6	116	24.9	3.0	0.4	15.7	0.4	0.000
301	Jashpur	Pathalgaon	Pathalgaon	83.463	22.555	8.16	1372	540	132	50.4	45.7	4.6	75	0	92	266.3	8.2	1.8	38.1	0.4	0.190
302	Jashpur	Jashpur	Patratoli	84.117	22.744	8.27	75	20	4	2.4	10.3	0.6	40	0	49	3.6	0.7	0.2	55.5	0.6	0.000
303	Jashpur	Bagicha	Peta	83.598	22.959	8.04	287	105	30	7.2	14.8	3.4	100	0	122	24.9	6.4	0.8	14.2	0.5	0.726
304	Jashpur	Kasavel	Phoordih	83.631	22.903	8.22	207	65	14	7.2	14.7	2.8	70	0	85	21.3	1.5	0.0	19.0	0.5	0.033
305	Jashpur	Bagicha	Raikera	83.654	22.935	8.14	189	65	24	1.2	9.8	2.2	50	0	61	21.3	3.4	0.1	6.4	0.6	0.614
306	Jashpur	Kunkuri	Raikera(Kunkuri)	84.025	22.771	8.3	212	60	16	4.8	19	5.7	85	3	98	14.2	0.9	0.4	17.6	0.6	3.540
307	Jashpur	Bagicha	Raoni	83.661	23.007	8.21	114	35	10	2.4	11.2	0	40	0	49	10.7	0.7	0.0	44.0	0.9	0.000
308	Jashpur	Jashpur	Rupsera	84.282	22.950	8.06	81	25	4	3.6	7.36	0.6	30	0	37	7.1	0.7	1.0	59.6	1.6	0.000
309	Jashpur	Bagicha	Sanna	83.811	23.086	8.2	198	85	22	7.2	7.1	2.6	85	0	104	14.2	0.7	0.7	41.0	0.6	0.837
310	Jashpur	Kasavel	Saraipani	83.669	22.794	8.23	212	75	16	8.4	14.6	2.8	65	0	79	21.3	3.3	0.1	18.8	0.6	0.078
311	Jashpur	Kansabel	Saraitola	83.651	22.571	8.39	528	160	44	12	44.3	7.9	215	6	250	35.5	2.8	0.5	40.3	1.3	0.592
312	Jashpur	Manora	Sarkardih	84.031	22.972	8.45	158	65	20	3.6	7	2.6	65	3	73	7.1	0.7	0.1	38.4	0.6	0.793
313	Jashpur	Farsabahar	Sirshringa	83.804	22.519	8.29	209	65	22	2.4	14.5	2.7	55	0	67	35.5	3.4	0.3	22.0	0.6	0.078
314	Jashpur	Bagicha	Sonquari	83.696	23.126	8.24	117	40	14	1.2	6.5	1	40	0	49	14.2	0.7	0.2	32.3	0.7	0.000
315	Jashpur	Pathalgaon	Surangpani New	83.688	22.411	8.37	380	145	42	9.6	22.8	2.5	155	3	183	21.3	8.9	0.4	67.7	0.7	0.011
316	Jashpur	Kasavel	Tangargaon	83.732	22.610	8.3	181	65	16	6	11.8	2.1	70	3	79	14.2	0.7	0.4	25.4	0.6	0.078
317	Jashpur	Farsabahar	Tapkara	83.950	22.504	8.39	380	130	48	2.4	25.1	1.4	160	6	183	21.3	4.0	0.2	41.2	0.2	0.000
318	Jashpur	Bagicha	Bagicha	83.654	22.976	7.64	331	80	24	4.8	36.8	2.7	140	0	171	14.2	2.8	4.8	22.0	0.1	0.479
319	Jashpur	Kunkuri	Banderchuha	83.858	22.686	7.54	410	165	54	7.2	20	1.8	155	0	189	32.0	5.9	0.6	39.6	0.1	0.000

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S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
320	Jashpur	Kasavel	Bangaon D	83.811	22.891	7.48	501	150	50	6	44.3	1.7	115	0	140	63.9	19.5	0.5	40.3	0.1	0.600
321	Jashpur	Kasavel	Kasabel D	83.743	22.640	7.48	376	145	52	3.6	18.4	1.7	90	0	110	49.7	7.1	0.5	44.5	0.1	0.000
322	Jashpur	Kunkuri	Kunkuri	83.954	22.742	7.47	601	220	82	3.6	37.8	1.9	115	0	140	85.2	9.9	1.0	45.5	0.1	0.000
323	Jashpur	Farsabahar	Lavakera	83.825	22.404	7.51	632	180	64	4.8	63	1.7	140	0	171	88.8	17.1	0.8	46.7	0.1	0.200
324	Kanker	Charama	Machandur	81.368	20.530	8.1	386	145	34	14.4	24.5	1.5	165	0	201	32.0	7.3	0.5	17.2	0.1	0.016
325	Kanker	Charama	Ratesara (Sadak para)	81.392	20.453	8.3	302	100	32	4.8	24.7	0.7	130	6	146	14.2	6.7	0.8	27.5	0.2	6.776
326	Kanker	Charama	Tegara	81.441	20.371	7.9	683	225	74	9.6	41.2	0.8	120	0	146	85.2	44.5	0.4	4.8	0.1	0.378
327	Kanker	Kanker	Govindpur	81.483	20.283	8.3	500	165	62	2.4	40.2	0.6	190	12	207	49.7	13.6	0.7	0.9	0.1	0.066
328	Kanker	Kanker	Kanker	81.496	20.279	7.9	964	215	64	13.2	101.2	1.1	130	0	159	181.1	62.8	1.2	1.0	0.2	0.033
329	Kanker	Kanker	Kulgaon	81.507	20.175	8.2	404	155	38	14.4	20.6	0.5	170	0	207	24.9	11.4	1.0	7.8	0.2	0.987
330	Kanker	Charama	Lakhanpur	81.426	20.394	8.2	640	270	76	19.2	16.3	1.2	210	0	256	49.7	44.5	0.1	20.7	0.1	0.132
331	Kawardha	Bodala	Mahrampur	81.178	21.948	8.08	811	265	56	30	49.4	20.5	185	0	226	92.3	46.3	0.3	12.7	0.6	0.188
332	Kawardha	Sahaspur lohara	BijaBairangi	81.166	21.742	8.17	999	310	40	50.4	84.4	2.5	275	0	336	60.4	37.1	0.2	24.3	0.2	0.017
333	Kawardha	Sahaspur lohara	Biroda	81.132	21.767	8.38	338	115	30	9.6	26.8	0.8	150	3	177	17.8	6.9	0.2	22.5	0.2	0.239
334	Kawardha	Bolda	Chilpi	81.058	22.167	8.38	139	40	12	2.4	11.9	0.7	40	3	43	17.8	3.8	0.5	2.9	0.1	14.885
335	Kawardha	Kawardha	Danganiya	81.204	21.964	8.25	555	220	40	28.8	30.4	0.8	220	0	268	21.3	13.9	0.4	21.0	0.3	0.000
336	Kawardha	Kawardha	Kawardha	81.238	22.007	8.37	719	160	28	21.6	94.8	1.5	255	6	299	74.6	36.4	0.2	17.6	0.3	0.942
337	Kawardha	Pandariya	Kui	81.353	22.364	8.08	1016	355	70	43.2	52.3	3.1	190	0	232	134.9	68.0	0.4	26.1	0.3	0.073
338	Kawardha	Kawardha	Mudiyapara	81.233	22.150	8.33	612	180	36	21.6	51.3	1.5	195	3	232	63.9	24.9	0.1	30.3	0.4	0.443
339	Kawardha	Pandariya	Munmuna	81.397	22.326	8.07	803	265	76	18	47.4	0.4	105	0	128	152.7	25.5	0.2	41.3	0.5	1.756
340	Kawardha	Kawardha	Rajnanwagaon	81.208	22.068	8.39	423	100	20	12	51.6	0.4	195	3	232	14.2	8.0	0.1	22.4	0.3	0.000
341	Kawardha	Kawardha	Rengakharkhurd	81.220	22.052	8.26	569	185	46	16.8	41.6	1.3	145	0	177	60.4	30.0	0.1	26.7	0.4	0.000
342	Kawardha	Sahaspur lohara	Sahaspur lohara.1	81.129	21.833	8.32	721	165	26	24	82.3	2.5	220	3	262	81.7	18.1	0.1	21.2	0.3	0.424
343	Kawardha	Pandaria	Pandaria	81.418	22.217	8.18	585	200	34	27.6	38.9	1	180	0	220	60.4	17.0	0.2	6.5	0.2	0.400
344	Kawardha		Saroda dadar	81.208	22.068	8.53	372	140	36	12	36.1	0.9	185	6	214	7.1	4.6	0.1	36.1	1.5	0.413
345	Kawardha	Bodla	Singhari-d	81.283	22.237	8.44	352	140	38	10.8	14	1.8	170	3	201	10.7	4.6	0.3	4.6	0.1	0.797
346	Korba	Pali	Banbandha	82.381	22.392	7.8	260	115	30	9.6	9.2	1.8	115	0	140	14.2	2.2	0.1	84.8	0.8	0.435
347	Korba	Kartala	Batati Junction	82.924	22.354	7.95	155	50	18	1.2	7.6	6.8	50	0	61	17.8	1.4	0.0	50.0	0.6	0.000
348	Korba	Korba	Bhaisma (Anjoripali)	82.767	22.278	8.4	574	205	44	22.8	34.3	4.7	165	6	189	60.4	29.6	0.2	118.7	1.0	0.703

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S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
349	Korba	Katghora	Chaitama	82.433	22.433	8.24	464	140	34	13.2	41	1.4	85	0	104	39.1	33.0	1.0	101.8	1.0	0.072
350	Korba	Kartala	Champa mode	82.992	22.313	8.14	209	90	30	3.6	4.2	4.1	90	0	110	7.1	2.6	0.2	37.8	0.5	8.019
351	Korba	Katghora	Chhuri	82.619	22.476	8.19	132	40	8	4.8	12	1	25	0	31	10.7	11.6	0.1	50.8	0.7	8.893
352	Korba	Korba	Dhegurdih manzipara	82.837	22.353	8.24	135	45	12	3.6	2.9	8.4	30	0	37	14.2	8.4	0.0	49.6	0.3	0.053
353	Korba	Pali	Dhourabhata	82.369	22.370	8.1	227	90	20	9.6	7	6.6	85	0	104	17.8	1.9	0.1	50.2	0.7	0.034
354	Korba	Korba	Dumardih	82.792	22.375	8.17	183	60	16	4.8	10.5	8.2	30	0	37	35.5	0.8	0.0	38.0	0.6	0.034
355	Korba	Katghora	Gopalpur	82.650	22.435	8.18	733	220	70	10.8	66.3	5.2	170	0	207	103.0	42.1	0.1	52.6	1.3	0.000
356	KORBA	Pali	Hardibazar	82.548	22.306	8.22	172	55	12	6	12	5.3	20	0	24	24.9	16.4	0.0	63.6	0.8	0.000
357	Korba	Pondi	Jatga	82.377	22.685	7.51	441	105	34	4.8	53.3	1	145	0	177	35.5	20.1	1.3	73.4	0.8	0.397
358	Korba	Katghora	Jhingatpur	82.538	22.330	7.56	137	45	10	4.8	4	11.1	40	0	49	14.2	0.8	0.0	60.0	0.8	0.053
359	Korba	Kartala	Kartala	82.963	22.303	7.98	597	245	50	28.8	20.9	5.6	110	0	134	81.7	26.1	0.1	45.1	0.7	2.861
360	Korba	Katghora	Katghora	82.521	22.508	8.23	224	85	28	3.6	11	3.1	90	0	110	10.7	5.2	0.3	41.8	0.7	0.053
361	Korba	Pondi	Khodri	82.396	22.597	8.13	128	15	4	1.2	19	2.1	20	0	24	7.1	29.1	0.3	90.3	1.5	4.638
362	Korba	Korba	Korkoma junction	82.875	22.345	7.6	156	50	16	2.4	7.9	7	50	0	61	17.8	2.7	0.0	11.7	0.0	0.130
363	Korba	Kartala	Kotmer Upper	82.915	22.286	8.2	251	65	14	7.2	12.3	20.5	85	0	104	24.9	11.1	0.0	9.8	0.1	0.187
364	Korba	Pondi	Lenga	82.264	22.759	8.16	326	115	30	9.6	27.6	0.8	135	0	165	17.8	2.5	2.1	3.9	0.1	0.000
365	Korba	Pondi	Nagai	82.381	22.667	7.56	438	95	26	7.2	54.9	1	135	0	165	35.5	20.5	1.6	18.6	0.1	0.000
366	Korba	Korba	Naktikhar	82.771	22.343	8.2	186	40	6	6	17.8	8.9	10	0	12	39.1	2.5	0.0	16.6	0.0	0.187
367	Korba	Katghora	Naraibodh	82.622	22.331	8.1	124	40	12	2.4	3.6	10	30	0	37	14.2	1.4	0.0	19.0	0.1	2.154
368	Korba	Pali	Nonbirra	82.462	22.337	8	174	60	16	4.8	8.1	9.3	55	0	67	17.8	3.1	0.0	13.7	0.0	0.200
369	Korba	Kartala	Nonbirra-4	82.860	22.270	8.1	172	65	16	6	5	8.9	45	0	55	21.3	8.6	0.0	4.8	0.1	0.104
370	Korba	Pali	Nunera	82.430	22.356	7.9	363	130	42	6	14.8	8.7	100	0	122	39.1	12.2	0.0	20.0	0.1	0.161
371	Korba	Pali	Pali	82.322	22.372	7.89	658	175	30	24	69.5	1.2	200	0	244	60.4	33.0	0.4	9.0	0.1	0.161
372	Korba	Pondi	Pasan	82.200	22.842	7.64	332	110	34	6	26.9	0.8	140	0	171	14.2	2.9	1.2	37.4	0.1	0.000
373	Korba	Korba	Pasarkhet	82.960	22.363	8.21	142	45	12	3.6	7	6.7	40	0	49	21.3	1.5	0.0	4.5	0.1	0.571
374	Korba	Pali	Ponri	82.262	22.377	8.21	423	140	32	14.4	27.9	10	160	0	195	24.9	17.5	0.2	6.4	0.0	1.275
375	Korba	Katghora	Rajkamma	82.478	22.448	8.2	749	260	64	24	42.9	1.7	145	0	177	110.1	61.9	0.7	36.1	0.1	1.295
376	Korba	Pondi	Rawa	82.387	22.630	8	125	35	10	2.4	10.3	2.3	30	0	37	7.1	19.0	0.0	29.8	0.3	0.239

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377	Korba	Korba	Rishdi	82.764	22.367	7.9	175	55	12	6	10.5	8.1	30	0	37	35.5	2.0	0.0	14.1	0.0	0.000
378	Korba	Kartala	Salihabhata	82.835	22.271	7.84	510	180	32	24	32.1	4.7	105	0	128	85.2	28.4	0.2	42.9	0.1	0.200
379	Korba	Katghora	Sindhiya	82.502	22.497	8.2	222	70	20	4.8	17.8	2	95	0	116	7.1	5.8	0.1	4.3	0.0	2.820
380	Korba	Katghora	Suttara	82.513	22.471	7.8	524	180	46	15.6	32.9	6.3	50	0	61	88.8	17.3	0.0	9.4	0.1	1.021
381	Korba	Kartala	Tilkeja	82.763	22.234	7.7	1697	700	142	82.8	61.5	7.1	180	0	220	223.7	104.6	0.3	36.5	0.1	0.180
382	Korba	Pondi	Tuman	82.421	22.575	8.2	205	70	18	6	15.8	1.2	90	0	110	7.1	3.2	0.0	25.1	0.1	0.063
383	Korba	Kartala	Tuman	82.785	22.197	8.12	177	65	20	3.6	11.3	1.3	65	0	79	14.2	7.9	0.0	27.2	0.1	0.082
384	Korba	Korba	Urga.1	82.728	22.275	7.89	572	215	50	21.6	32.7	4.7	165	0	201	67.5	28.4	0.2	65.9	0.1	1.060
385	Korba	Korba	Korba	82.700	22.346	8.1	131	55	12	6	5.7	2.2	40	0	49	10.7	8.5	0.1	4.1	0.0	0.000
386	Korba	Katghora	Sirki I	82.544	22.353	8.1	126	50	12	4.8	3	4.3	45	0	55	10.7	1.5	0.0	6.4	0.1	0.000
387	Korba	Katghora	Tiwarta I	82.498	22.358	8	168	75	22	4.8	3.3	4.3	70	0	85	7.1	1.7	0.0	6.6	0.1	0.000
388	Korba	Pondi	Madai	82.529	22.717	8.2	253	50	12	4.8	28.3	9	35	0	43	46.2	5.1	0.0	22.6	0.11	0.043
389	Korba	Pondi	Kurtha	82.446	22.928	8.12	342	125	40	6	20.2	6.3	135	0	165	21.3	11.0	0.2	14.9	0.11	0.219
390	Korba	Pondi	Nawapara(Chotia)	82.490	22.769	8.29	388	110	32	7.2	36.6	4.7	120	0	146	35.5	20.6	1.1	26.6	0.09	0.356
391	Korba	Pondi	Morga	82.660	22.754	8.22	256	50	14	3.6	26.8	11.8	35	0	43	46.2	4.6	0.0	19.2	0.10	0.082
392	Korba	Pondi	Pondi	82.557	22.595	8.24	883	300	74	27.6	56.2	4.6	220	0	268	85.2	61.5	0.2	37.1	2.41	0.122
393	Korba	Pondi	Lamna	82.598	22.317	8.28	478	130	26	15.6	47.5	1.3	140	0	171	49.7	31.2	0.5	17.9	0.09	0.473
394	Korba	Pondi	Bahanpath	82.598	22.317	8.26	126	35	8	3.6	4.2	11.1	35	0	43	10.7	1.1	0.0	61.6	0.7	7.503
395	Korba	Korba	Barpali (Junadhi))	82.726	22.206	8.21	82	30	8	2.4	2.9	4.4	25	0	31	10.7	1.4	0.2	31.7	0.4	0.000
396	Korba	Korba	Basin	83.045	22.429	8.2	80	45	8	6	2.9	4.3	30	0	37	14.2	1.2	0.2	30.8	0.4	0.875
397	Korba	Katghora	Gajra	82.618	22.405	7.95	345	135	36	10.8	14.4	2.9	45	0	55	60.4	19.9	0.0	72.2	0.8	2.747
398	Korba	Kartala	Kudmura	83.079	22.319	8.1	432	125	20	18	27.4	26.5	100	0	122	56.8	21.6	0.0	5.2	0.0	0.000
399	Korba	Katghora	Lakhanpur	82.533	22.457	8.3	268	70	24	2.4	22.3	9.6	35	6	31	49.7	5.8	0.0	3.3	0.0	0.000
400	Korba	Katghora	Mudiyandar	82.595	22.308	8.2	119	40	10	3.6	3.7	10	15	0	18	14.2	0.8	0.0	22.9	0.1	2.555
401	Korba	Kartala	Sendripali	82.902	22.233	8.1	122	35	8	3.6	3.5	10	30	0	37	17.8	0.9	0.0	24.1	0.1	0.000
402	Koriya	Manendragarh	Tarabahara	82.181	23.411	8.02	711	300	96	14.4	22.7	0.3	120	0	146	28.4	87.4	0.0	40.2	0.10	1.37
403	Koriya	Baikunthpur	Khatgori	82.526	23.371	8.14	344	150	42	10.8	13.9	0.7	145	0	177	17.8	7.6	0.1	38.5	0.09	0.082
404	Koriya	Manendragarh	Pendri	82.256	23.349	8.21	224	90	30	3.6	9.7	1.8	55	0	67	14.2	35.6	0.2	12.3	0.09	0.2

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405	Koriya	Khadgawan	Banjaridand	82.450	23.173	8.35	237	95	18	12	11.1	1.6	110	3	128	10.7	2.4	0.1	26.1	0.10	1.275
406	Koriya	Sonhat	Bikrampur	82.483	23.453	8.14	230	90	20	9.6	13.9	0.8	95	0	116	17.8	7.9	0.1	38.4	0.09	0.122
407	Koriya	Manendragarh	Sarbhoka	82.358	23.250	8.26	274	105	26	9.6	10.9	1.9	125	0	153	10.7	2.9	0.0	25.0	0.09	1.392
408	Koriya	Baikunthpur	Baikunthpur	82.550	23.258	8.02	225	85	26	4.8	10	1.7	60	0	73	10.7	34.2	0.1	11.1	0.09	0.2
409	Koriya	Manendragarh	Belbehra	82.265	23.291	8.23	481	120	32	9.6	51.9	1.9	175	0	214	21.3	21.1	0.5	26.7	0.09	0.122
410	Koriya	Baikunthpur	Khodri	82.483	23.410	8.5	781	95	22	9.6	121	5.4	230	9	262	74.6	42.2	0.7	14.9	0.10	1.001
411	Koriya	Khadgawan	Pouri	82.499	23.039	8.23	707	195	34	26.4	67.8	4.9	140	0	171	92.3	53.6	0.3	38.7	0.11	0.297
412	Koriya	Manendragarh	Manendragarh	82.206	23.217	8.25	468	100	14	15.6	53.7	1.9	150	0	183	39.1	20.8	0.8	27.1	0.09	0.102
413	Koriya	Baikunthpur	Ranai	82.703	23.281	8.4	249	130	26	15.6	36.4	0.6	135	3	159	39.1	15.3	0.4	22.2	0.11	0.767
414	Koriya	Manendragarh	Nagpur	82.319	23.282	8.36	480	115	30	9.6	53.2	1.9	170	3	201	24.9	21.3	0.8	26.7	0.08	0.122
415	Koriya	Baikunthpur	Ghugra	82.524	23.404	8.07	886	105	36	3.6	135	5.4	245	0	299	85.2	43.3	0.7	14.9	0.11	1.001
416	Koriya	Khadgaon	Khadgaon	82.379	23.108	8.25	675	165	50	9.6	64.5	4.9	140	0	171	60.4	52.7	0.1	41.7	0.08	0.278
417	Koriya	Manendragarh	Piparia	82.251	23.269	8.28	371	70	18	6	51.8	1.9	135	0	165	24.9	21.7	0.6	26.5	0.09	0.141
418	Koriya	Baikunthpur	Girjapur	82.717	23.301	8.41	435	130	30	13.2	35.5	0.6	130	3	153	46.2	16.5	0.4	22.6	0.10	0.825
419	Koriya	Manendragarh	Garundol	82.302	23.378	8.22	221	90	28	4.8	9.8	1.8	65	0	79	14.2	36.5	0.2	35.8	0.10	0.102
420	Koriya	Baikunthpur	Jamgahana	82.623	23.301	8.2	316	135	32	13.2	13.4	0.5	115	0	140	24.9	14.1	0.3	44.5	0.09	2.78
421	Koriya	Manendragarh	Podi(chirmiri)	82.363	23.229	8.24	219	100	26	8.4	10.4	1.4	110	0	134	14.2	2.4	0.1	23.8	0.09	0.043
422	Koriya	Manendragarh	Kelhari	82.049	23.415	8.02	671	280	82	18	21	0.4	90	0	110	63.9	85.5	0.0	37.0	0.12	1.06
423	Koriya	Baikunthpur	Mansukha	82.492	23.225	7.1	704	260	90	8.4	21.2	0.4	105	0	128	63.9	84.5	0.0	35.5	0.11	0.982
424	Mahasamund	Saraipali	Badesara	83.090	21.392	7.42	1513	435	104	42	101.5	58.5	160	0	195	262.7	54.3	0.7	23.8	0.1	0.000
425	Mahasamund	Saraipali	Patsenduri	83.075	21.369	7.5	1129	370	94	32.4	93.5	2.8	90	0	110	330.2	30.6	0.4	13.4	0.1	0.000
426	Mahasamund	Bagbahara	Bagbahara	82.408	21.033	7.46	473	160	36	16.8	32	0.7	110	0	134	60.35	6.9	1.2	49.8	0.0	0.000
427	Mahasamund	Mahasamund	Baldidih	82.642	21.292	7.41	533	200	44	21.6	29.4	2.4	130	0	159	85.2	1.1	0.7	60.6	0.0	0.023
428	Mahasamund	Basna	Barbaspun	82.882	21.291	7.64	367	145	24	20.4	18.4	0.8	140	0	171	28.4	13.6	0.9	39.9	0.0	0.710
429	Mahasamund	Basna	Basna	82.826	21.269	7.67	591	240	38	34.8	15.1	0.6	95	0	116	99.4	1.0	0.9	45.8	0.0	0.100
430	Mahasamund	Mahasamund	Belsunda	82.027	21.163	7.12	279	100	34	3.6	8.3	1	35	0	43	42.6	21.7	0.5	22.2	0.0	0.160
431	Mahasamund	Bagbahara	Bhimkhoj	82.296	21.068	7.7	219	70	20	4.8	17.5	0.6	70	0	85	7.1	33.4	1.1	66.4	0.0	11.300
432	Mahasamund	Pithora	Deori	82.729	21.274	7.59	636	270	46	37.2	14.7	0.6	125	0	153	92.3	10.3	0.7	45.2	0.0	0.620

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433	Mahasamund	Bagbahara	Hadabundh	82.218	21.093	7.15	184	60	14	6	11.6	1.7	45	0	55	28.4	5.3	0.7	58.6	0.0	0.046
434	Mahasamund	Pithora	Jagdishpur	82.775	21.333	7.61	623	265	44	37.2	14.8	0.6	125	0	153	92.3	4.1	0.7	46.8	0.0	1.400
435	Mahasamund	Mahasamund	Jalki	82.212	21.243	7.62	722	210	56	16.8	38.3	23.5	135	0	165	106.5	3.7	0.7	50.9	0.0	0.115
436	Mahasamund	Mahasamund	Jhalap	82.383	21.216	7.65	607	210	64	12	30.8	1.9	140	0	171	67.45	0.7	1.2	65.3	0.0	1.300
437	Mahasamund	Mahasamund	Jhalkhamhariya	82.145	21.077	7.26	450	165	52	8.4	23.3	1.2	60	0	73	60.35	8.9	0.7	86.7	0.0	0.023
438	Mahasamund	Mahasamund	Jogidipa	82.260	21.223	7.54	290	110	32	7.2	17.1	0.9	125	0	153	14.2	3.0	1.5	64.6	0.0	0.000
439	Mahasamund	Bagbahara	Khallari	82.297	21.083	7.53	395	155	40	13.2	21.8	1.5	165	0	201	21.3	8.2	3.2	56.5	0.0	0.070
440	Mahasamund	Mahasamund	Mahasamund.1	82.096	21.108	7.19	278	115	42	2.4	8.4	1.1	35	0	43	42.6	0.7	0.5	20.4	0.0	0.200
441	Mahasamund	Arang	Nawagaon	82.236	21.099	6.67	170	65	16	6	5.9	6.5	20	0	24	42.6	6.4	0.5	6.6	0.0	0.100
442	Mahasamund	Bagbahara	Palsipani	82.383	20.904	7.53	234	95	28	6	9.5	0.4	80	0	98	28.4	1.5	1.2	58.0	0.0	0.330
443	Mahasamund	Basna	Saraipali	83.008	21.317	7.58	616	200	60	12	48	1.2	155	0	189	106.5	3.4	1.2	15.8	0.0	0.099
444	Mahasamund	Bagbahara	Suarmar	82.496	20.969	7.63	758	215	70	9.6	68.5	8.1	220	0	268	56.8	0.9	1.9	48.1	0.0	0.144
445	Mahasamund	Kasdol	Temri	82.411	21.576	7.57	455	150	46	8.4	34.2	1.8	120	0	146	56.8	0.7	0.9	34.6	0.0	0.070
446	Mahasamund	Bagbahara	Tendukonda	82.471	21.108	7.52	237	100	30	6	9.7	0.4	80	0	98	28.4	0.7	1.2	58.7	0.0	0.260
447	Mahasamund	Mahasamund	Tumgaon	82.121	21.192	7.14	191	80	26	3.6	6	1.4	50	0	61	28.4	0.7	0.6	18.8	0.0	0.095
448	Mahasamund	Bilaigarh	Tundri	82.643	21.649	7.6	1144	260	48	33.6	123.5	2.1	170	0	207	227.2	3.3	1.2	19.7	0.0	0.070
449	Mahasamund	Bagbahara	Awaradabri	82.301	21.085	7.75	433	175	64	3.6	9.9	4.5	105	0	128	63.9	3.5	0.6	19.9	0.0	3.970
450	Mahasamund	Bagbahara	Keshwa (Chinronda)	82.263	21.059	7.75	259	85	24	6	21.8	0.3	105	0	128	21.3	10.9	3.2	47.7	0.0	12.200
451	Mahasamund	Pithora	Sankra	82.662	21.284	7.54	626	265	48	34.8	15	0.6	155	0	189	28.4	39.1	0.8	38.9	0.0	7.600
452	Mahasamund	Mahasamund	Sirpur	82.183	21.343	7.71	413	165	58	4.8	14.8	4	55	0	67	7.1	127.7	0.6	13.7	0.0	0.152
453	Mahasamund	Mahasamund	Pithora	82.517	21.251	7.4	313	105	38	2.4	22.2	1	85	0	104	39.05	24.2	1.3	63.0	0.0	0.760
454	Mungeli	Mungeli	Fulwari	81.626	22.167	8.3	1985	490	26	102	232.5	1.3	430	6	512	262.7	145.4	0.4	73.2	0.2	0.000
455	Mungeli	Mungeli	Mungeli	81.673	22.081	7.9	1344	490	84	67.2	81.5	2.4	175	0	214	74.6	367.9	0.0	21.3	0.1	0.000
456	Raigarh	Dharmajaigarh	Amapali	83.234	22.371	7.04	81	30	10	1.2	2.3	2	30	0	37	7.1	0.1	0.4	20.4	0.1	1.061
457	Raigarh	Dharmajaigarh	Auranar	83.163	22.152	6.7	168	65	16	6	4	8.6	25	0	31	17.8	0.0	0.4	7.8	0.1	0.167
458	Raigarh	Pusaur	Aurda	83.398	21.808	7.48	427	185	50	14.4	12.3	0.4	95	0	116	67.5	13.4	0.6	13.2	0.1	1.820
459	Raigarh	Baramkela	Bade Nawapara	83.355	21.557	7.61	213	100	32	4.8	1.6	2.7	85	0	104	10.7	0.0	0.4	14.1	0.2	0.502
460	Raigarh	Dharmajaigarh	Bakaruma	83.436	22.513	7.2	169	60	20	2.4	12.9	2.7	70	0	85	17.8	0.0	1.3	39.3	0.6	0.927

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461	Raigarh	Dharmajaigarh	Bansjer	83.217	22.489	7.6	568	150	32	16.8	58.4	2.4	200	0	244	46.2	13.8	1.0	36.7	0.1	0.100
462	Raigarh	Sarai Lengha Baram	Baramkela	83.263	21.525	7.54	461	225	42	28.8	7.5	2.5	195	0	238	21.3	3.3	0.9	17.2	0.1	0.000
463	Raigarh	Tmanar	Barkaspali	83.410	22.159	7.68	446	150	24	21.6	19.6	23	170	0	207	39.1	0.0	0.7	7.3	0.1	0.190
464	Raigarh	Dharmajaigarh	Barpali	83.267	22.328	7.22	149	60	16	4.8	4.3	4.1	45	0	55	21.3	0.0	0.4	20.8	0.1	0.056
465	Raigarh	Dharmajaigarh	Bartapali	83.177	22.340	6.85	222	75	16	8.4	7.6	10.1	25	0	31	32.0	0.0	0.3	21.5	0.1	0.000
466	Raigarh	Sarangarh	Bataupali	83.134	21.536	7.64	414	130	32	12	19.2	27.5	170	0	207	21.3	9.1	0.7	7.9	0.1	1.574
467	Raigarh	Dharmajaigarh	Bayasi	83.167	22.435	7.62	436	140	30	15.6	19.4	27.5	135	0	165	21.3	7.6	0.7	7.8	0.1	1.842
468	Raigarh	Gharghoda	Bhangari	83.251	22.133	7.54	434	165	42	14.4	19.2	9.2	100	0	122	60.4	4.8	0.7	18.9	0.1	0.502
469	Raigarh	Dharmajaigarh	Bojja	83.163	22.128	7.04	340	135	30	14.4	14.95	8.9	95	0	116	60.4	4.3	0.7	18.7	0.1	0.525
470	Raigarh	Pusaur	Bonda	83.304	21.719	7.48	382	185	38	21.6	3.3	0.2	155	0	189	14.2	12.0	0.5	6.3	0.1	0.100
471	Raigarh	Dharmajaigarh	Boro	83.112	22.563	7.23	203	45	10	4.8	9.6	27.5	40	0	49	35.5	0.0	0.4	0.6	0.1	2.401
472	Raigarh	Kharsia	Chaple	83.200	21.983	7.61	522	70	18	6	89.7	1.4	160	0	195	63.9	5.7	0.7	20.0	0.2	0.000
473	Raigarh	Dharmajaigarh	Charkhapara	83.383	22.540	7.49	425	160	46	10.8	26.3	0.8	105	0	128	49.7	11.3	0.8	51.0	0.1	0.324
474	Raigarh	Dharmajaigarh	Chhal	83.121	22.123	7.59	410	145	32	15.6	26.3	0.8	140	0	171	42.6	0.0	0.6	8.0	0.1	0.949
475	Raigarh	Sarangarh	Chhind	83.003	21.596	7.66	244	110	28	9.6	1.9	2.9	105	0	128	7.1	0.0	0.5	12.5	0.1	0.636
476	Raigarh	Gharghoda	Chintapani	83.417	22.272	7.6	462	140	28	16.8	24.2	23	125	0	153	63.9	19.5	0.5	7.4	0.1	0.000
477	Raigarh	Daranjaigarh	Choranga	83.463	22.466	7.29	232	50	14	3.6	28.4	3.3	65	0	79	17.8	0.0	1.3	35.1	0.1	0.837
478	Raigarh	Sarangarh	Damdarha	83.117	21.454	7.66	506	140	32	14.4	43.5	6.3	145	0	177	39.1	7.1	1.4	42.0	0.1	0.000
479	Raigarh	Dharmajaigarh	Derpani	83.287	22.644	7.56	339	130	28	14.4	14.95	6.2	20	0	24	78.1	0.4	0.4	11.0	0.1	0.190
480	Raigarh	Tamnar	Devgarh	83.396	22.131	7.59	425	135	32	13.2	28.9	1.8	85	0	104	74.6	1.3	0.5	13.5	0.1	0.000
481	Raigarh	Dharmajaigarh	Dharmajaigarh	83.213	22.464	7.67	454	125	38	7.2	36.4	19	95	0	116	67.5	15.3	0.5	10.3	0.1	0.000
482	Raigarh	Dharmajaigarh	Duliamuda	83.139	22.415	6.96	182	55	12	6	7.2	17.5	25	0	31	32.0	0.0	0.4	18.0	0.1	0.000
483	Raigarh	Gharghoda	Dumarpali	83.279	22.295	7.19	135	55	12	6	4.3	4.1	40	0	49	17.8	0.0	0.4	18.2	0.1	0.078
484	Raigarh	Dharmajaigarh	Durgapur	83.160	22.481	7	106	35	10	2.4	4	5.6	35	0	43	14.2	0.0	0.5	15.3	0.1	0.000
485	Raigarh	Dharmajaigarh	Edu	83.127	22.076	6.92	93	35	6	4.8	5	6.4	25	0	31	17.8	0.0	0.6	18.1	0.1	0.000
486	Raigarh	Kharsia	Farkanara	83.106	22.018	7.59	456	170	38	18	20.3	11	100	0	122	49.7	8.2	0.6	10.5	0.1	0.000
487	Raigarh	Tamnar	Gare	83.489	22.136	7.48	472	100	22	10.8	52.2	18	100	0	122	71.0	6.1	0.6	3.4	0.1	0.000
488	Raigarh	Dharmajaigarh	Gersa	83.235	22.343	7.78	480	150	36	14.4	13.2	42.5	120	0	146	71.0	8.6	0.6	3.5	0.1	3.138

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489	Raigarh	Gharghoda	Gharghoda	83.354	22.171	7.57	397	140	28	16.8	10.5	25.5	170	0	207	17.8	0.0	0.9	7.3	0.1	0.000
490	Raigarh	Kharsia	Gidha	83.123	21.961	7.6	467	180	36	21.6	24.8	1.1	160	0	195	35.5	23.2	0.9	17.0	0.1	0.000
491	Raigarh	Dharmajaigarh	Golabuda	83.404	22.631	7.32	183	60	20	2.4	12.7	2.6	75	0	92	10.7	0.0	1.5	34.3	0.1	0.726
492	Raigarh	Dharmajaigarh	Hati	83.096	22.304	7.06	180	50	14	3.6	11.3	10.3	15	0	18	32.0	0.0	0.4	17.2	0.1	0.000
493	Raigarh	Sarangarh	Hirri	83.111	21.643	7.56	331	125	30	12	17.8	0.7	125	0	153	24.9	3.5	1.1	12.2	0.1	0.000
494	Raigarh	Dharmajaigarh	Jabga	83.106	22.532	7.36	119	45	16	1.2	5	1.1	45	0	55	10.7	0.0	0.7	13.1	0.1	15.250
495	Raigarh	Raigarh	Jamgaon	83.552	21.869	7.19	159	55	14	4.8	7.6	3.5	40	0	49	24.9	0.0	0.4	5.7	0.1	0.000
496	Raigarh	Lailunga	Jegarpur	83.539	22.348	7.62	360	65	18	4.8	57.7	1.7	170	0	207	17.8	0.0	3.6	35.4	0.1	0.710
497	Raigarh	Sarai Lengha Baram	Jhikipali	83.324	21.426	7.63	220	110	28	9.6	3.2	2.8	110	0	134	7.1	0.0	0.6	10.3	0.1	0.660
498	Raigarh	Sarangarh	Kanakbira	83.122	21.460	7.73	487	140	32	14.4	44	3.1	210	0	256	21.3	4.0	4.7	23.0	0.1	1.250
499	Raigarh	Dharmajaigarh	Kandadand	83.195	22.537	7.83	368	110	32	7.2	37	0.4	140	0	171	28.4	0.0	1.3	15.9	0.1	1.020
500	Raigarh	Dharmajaigarh	Kapu	83.338	22.671	7.1	604	170	38	18	44.3	6.1	25	0	31	81.7	0.0	0.4	7.1	0.1	0.620
501	Raigarh	Dharmajaigarh	Karigashi	83.143	22.515	7.05	100	40	10	3.6	4	5.7	35	0	43	14.2	0.0	0.5	10.8	0.1	0.000
502	Raigarh	Dharmajaigarh	KarraMara	83.374	22.474	7.16	421	155	42	12	25.3	0.8	115	0	140	49.7	7.7	0.9	44.1	0.1	0.563
503	Raigarh	Dharamjaigarh	Katangdih	83.280	22.155	7.44	82	25	8	1.2	3.8	4.3	25	0	31	10.7	0.0	0.4	9.1	0.1	19.290
504	Raigarh	Sarangarh	Kedar	82.936	21.609	7.4	242	110	28	9.6	3.2	2.7	105	0	128	10.7	0.0	0.5	7.5	0.1	0.750
505	Raigarh	Raigarh	Kerajhar	83.304	21.961	7.61	571	120	22	15.6	39	57	185	0	226	56.8	0.2	0.6	4.8	0.1	0.206
506	Raigarh	Dharmajaigarh	Khadgaon	83.117	22.379	7.67	411	130	28	14.4	18.2	29	160	0	195	28.4	3.2	0.7	3.3	0.1	1.840
507	Raigarh	Dharmajaigarh	Khanhar	83.252	22.580	7.67	458	150	42	10.8	36.8	0.3	150	0	183	46.2	1.1	0.6	12.0	0.1	0.164
508	Raigarh	Kharsia	Kharsia	83.099	21.989	7.47	774	210	66	10.8	72.2	2.2	100	0	122	134.9	38.7	0.6	6.4	0.1	0.038
509	Raigarh	Pusaur	Kondatarai	83.358	21.826	7.53	435	185	56	10.8	12.3	0.6	90	0	110	67.5	7.0	0.6	6.2	0.1	1.592
510	Raigarh	Raigarh	Kotarliya	83.461	21.890	7.67	385	145	38	12	22.4	0.5	105	0	128	42.6	0.2	0.7	27.4	0.1	0.000
511	Raigarh	Raigarh	Kotra	83.313	21.867	7.71	743	205	52	18	77.6	1.6	110	0	134	28.4	107.7	0.1	14.0	0.1	2.685
512	Raigarh	Gharghoda	Kotrimal	83.398	22.232	7.62	545	190	34	25.2	22.9	22	130	0	159	67.5	18.0	0.5	3.6	0.1	0.059
513	Raigarh	Dharmajaigarh	Kurekela	83.104	22.204	7.64	406	125	28	13.2	17.9	23.5	155	0	189	35.5	0.0	0.8	2.7	0.1	0.038
514	Raigarh	Gharghoda	Kurmibhuna	83.367	22.280	6.78	151	55	14	4.8	6.2	4.6	50	0	61	14.2	0.0	0.5	25.4	0.1	1.004
515	Raigarh	Lailunga	Lailunga	83.583	22.383	7.24	760	270	92	9.6	42.2	1.8	100	0	122	113.6	32.8	0.4	39.2	0.1	4.260
516	Raigarh	Raigarh	Lakha	83.385	21.965	7.08	78	25	6	2.4	5.3	0.5	15	0	18	14.2	0.0	0.3	7.6	0.1	0.100
517	Raigarh	Dharmajaigarh	Lakshampur	83.214	22.510	7.54	565	130	24	16.8	64.1	2.2	195	0	238	46.2	13.8	0.9	39.5	0.1	0.059

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
518	Raigarh	Lailunga	Laripani	83.471	22.338	7.38	358	50	12	4.8	57.4	1.5	135	0	165	17.8	0.1	4.4	40.2	0.1	0.311
519	Raigarh	Sarai Lengha Baram	Lendhra	83.294	21.493	6.45	426	185	48	15.6	11.3	0.6	105	0	128	60.4	10.9	0.6	12.2	0.1	0.857
520	Raigarh	Dharmajaigarh	Lipti	83.380	22.651	7.25	126	35	12	1.2	10.6	3.1	40	0	49	17.8	0.0	0.6	4.5	0.1	1.256
521	Raigarh	Shakti	Mahuadih	82.611	21.863	7.56	111	35	12	1.2	12.3	0.8	45	0	55	10.7	0.0	0.8	32.5	0.1	0.794
522	Raigarh	Sarai Lengha Baram	Mahuapali	83.278	21.632	7.61	376	180	30	25.2	2.4	0.3	145	0	177	14.2	10.5	0.4	10.0	0.1	11.900
523	Raigarh	Kunkuri	Matasi	83.902	22.855	7.2	166	55	18	2.4	12	0.9	65	0	79	14.2	0.0	0.5	32.5	0.1	0.248
524	Raigarh		Milupara	82.611	21.863	7.11	142	55	18	2.4	4.8	2.6	60	0	73	7.1	0.0	0.4	18.6	0.1	0.000
525	Raigarh	Dharmajaigarh	Munund	83.089	22.237	7.12	128	40	12	2.4	6.6	5.9	40	0	49	7.1	0.0	0.4	13.7	0.1	0.731
526	Raigarh	Pusaur	Nawrangpur	83.230	21.850	7.5	1049	380	90	37.2	70	2.7	120	0	146	28.4	135.5	0.4	17.8	0.1	0.311
527	Raigarh	Sarangarh	Pindri	83.158	21.664	7.46	133	55	16	3.6	2.1	4.6	55	0	67	10.7	1.1	0.5	17.3	0.1	0.311
528	Raigarh	Raigarh	Raigarh	83.397	21.892	7.27	232	95	16	13.2	5.5	4.9	70	0	85	10.7	29.9	0.9	2.5	0.1	0.038
529	Raigarh	Lailunga	Rajpur	83.487	22.435	7.32	161	50	16	2.4	12.2	2.3	55	0	67	17.8	0.0	1.3	36.9	0.1	0.000
530	Raigarh	Sarangarh	Reda	83.088	21.630	7.41	593	220	70	10.8	26.8	5.1	130	0	159	117.2	4.2	0.6	14.5	0.1	0.000
531	Raigarh	Pusaur	Rengelpali	83.476	21.763	7.43	372	150	46	8.4	15	0.7	145	0	177	28.4	0.0	0.5	11.6	0.1	0.080
532	Raigarh	Kasavel	Sahidaur (Jam Dhora)	83.813	22.892	7.39	374	145	52	3.6	14.8	0.7	145	0	177	32.0	0.0	0.6	11.7	0.1	0.164
533	Raigarh	Lailunga	Salkhiya	83.521	22.415	7.64	355	75	16	8.4	56.5	1.5	160	0	195	17.8	0.0	5.1	37.8	0.1	1.004
534	Raigarh	Gharghoda	Samarumi	83.346	22.084	6.89	70	30	4	4.8	1.4	0.5	25	0	31	7.1	0.0	0.5	15.0	0.1	0.143
535	Raigarh	Sarangarh	Sariya	83.360	21.639	7.4	752	330	104	16.8	19.2	5.3	90	0	110	28.4	108.0	0.5	20.4	0.1	0.000
536	Raigarh	Pusaur	Semra	83.253	21.765	7.62	318	155	26	21.6	2.4	0.3	125	0	153	14.2	10.3	0.5	7.2	0.1	0.101
537	Raigarh	Dharmajaigarh	Shahpur	83.182	22.477	7.12	105	40	10	3.6	1.9	6.3	30	0	37	14.2	0.0	0.4	14.7	0.1	0.836
538	Raigarh	Dharmajaigarh	Sirsinga	83.307	22.456	7.51	453	125	38	7.2	35.3	15	100	0	122	63.9	6.0	0.4	9.4	0.1	14.490
539	Raigarh	Pusaur	Surajgarh	83.385	21.693	7.6	319	160	32	19.2	2.2	0.3	100	0	122	35.5	6.5	0.5	7.2	0.1	0.100
540	Raigarh	Pusaur	Tadola	83.381	21.796	7.56	454	210	36	28.8	6	2.1	190	0	232	14.2	0.5	1.0	12.6	0.1	0.000
541	Raigarh	Tamnar	Tamnar	83.443	22.092	7.47	306	110	30	8.4	15.2	4.3	100	0	122	39.1	0.0	0.5	22.1	0.1	0.017
542	Raigarh		Taraimal.1	83.379	22.058	7.1	143	40	8	4.8	13.6	1.5	25	0	31	21.3	0.0	0.4	54.4	0.1	0.088
543	Raigarh	Dharmajaigarh	Taraimar	83.183	22.451	7.39	2950	810	216	64.8	261	39	80	0	98	781.0	80.2	0.5	21.4	0.1	0.170
544	Raigarh	Gharghoda	Teram (New)	83.344	22.223	7.38	311	110	24	12	16.2	7.6	135	0	165	10.7	5.1	0.8	8.4	0.1	0.038
545	Raigarh	Pusaur	Tetla	83.329	21.792	7.36	733	330	104	16.8	14.9	3.1	90	0	110	21.3	128.4	0.5	21.2	0.1	0.647
546	Raigarh	Dharmajaigarh	Ududa	83.120	22.494	6.97	109	40	10	3.6	1.4	6.6	30	0	37	14.2	0.0	0.4	14.2	0.1	0.038
547	Raigarh	Kharsia	Ulda	83.060	22.051	7.53	467	190	58	10.8	2.5	30	105	0	128	49.7	11.9	0.3	7.9	0.1	1.647
548	Raigarh	Tamnar	Amaghat	83.413	22.081	7.7	546	230	54	22.8	18.3	3.1	90	0	110	78.1	25.9	0.6	15.1	0.1	0.000

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549	Raigarh	Raigarh	Bhupdevpur	83.252	21.973	7.55	462	180	36	21.6	27.2	1.1	110	0	134	63.9	28.2	0.7	16.2	0.1	0.000
550	Raigarh	Kharsia	Chaple	83.200	21.983	7.65	719	165	40	15.6	95.5	0.9	180	0	220	110.1	4.3	0.7	18.0	0.1	0.600
551	Raigarh	Tamnar	Dauranbhatta	83.542	22.092	7.59	325	95	26	7.2	13.8	31	120	0	146	28.4	0.0	1.6	7.1	0.1	1.190
552	Raigarh	Sarangarh	Kedar	82.980	21.570	7.16	104	35	8	3.6	2.9	7.6	20	0	24	14.2	0.0	0.3	15.8	0.1	0.164
553	Raigarh	Kharsia	Kharsia-d	83.099	21.989	7.41	778	285	98	9.6	45.1	1.9	105	0	128	113.6	32.3	0.4	34.0	0.1	0.059
554	Raigarh	Dharmajaigarh	Khedapali I	83.130	22.096	7.71	556	160	12	31.2	52.2	7.9	260	0	317	7.1	10.7	0.7	6.0	0.1	0.000
555	Raigarh	Lailunga	Lailunga	83.583	22.392	7.21	142	65	14	7.2	2.6	4.2	40	0	49	21.3	0.0	0.5	15.0	0.1	0.000
556	Raigarh	Dharmajaigarh	Nwapara -I	83.145	22.117	7.47	902	310	84	24	62.8	1.4	80	0	98	85.2	103.0	0.4	16.2	0.1	0.800
557	Raigarh	Gharghoda	Porda I	83.279	22.263	7.21	196	70	16	7.2	7.5	2	10	0	12	56.8	0.0	0.4	5.5	0.1	0.269
558	Raigarh	Raigarh	Raigarh-d	83.397	21.892	7.63	361	45	8	6	62.8	1.5	160	0	195	17.8	0.0	2.6	33.6	0.1	0.017
559	Raigarh	Tamnar	Taraimal-1	83.379	22.058	7.63	215	110	30	8.4	0.2	2.6	100	0	122	7.1	0.0	0.4	9.6	0.1	0.000
560	Raigarh	Gharghoda	Teram-I	83.348	22.225	7.46	871	270	72	21.6	76	1.4	100	0	122	156.2	48.7	0.5	10.8	0.1	0.731
561	Raipur	Abhanpur	Abhanpur	81.746	21.050	7.65	681	230	56	21.6	50.6	2.1	140	0	171	81.65	2.8	0.5	13.3	0.0	0.046
562	Raipur	Balodabazar	Amera	82.131	21.563	7.71	478	160	34	18	33.5	1.5	120	0	146	74.55	0.7	0.8	15.8	0.0	3.300
563	Raipur	Kasdol	Aouri	82.267	21.421	7.78	435	180	28	26.4	15.8	2	150	0	183	46.15	3.4	0.7	18.9	0.0	0.023
564	Raipur	Arang	Arang	81.975	21.194	7.71	552	115	22	14.4	72.4	0.8	200	0	244	46.15	0.7	1.0	23.5	0.0	0.046
565	Raipur	Balodabazar	Arjuni	82.065	21.692	7.5	493	205	48	20.4	18.2	1.8	80	0	98	71	8.9	0.6	11.7	0.0	0.046
566	Raipur	Abhanpur	Bajrangpur	81.811	20.983	7.89	783	255	96	3.6	46.9	4	255	0	311	95.85	0.7	0.6	15.4	0.0	0.095
567	Raipur	Balodabazar	Baloda bazar	82.167	21.656	7.81	514	195	20	34.8	27	1.2	235	0	287	21.3	4.0	0.7	16.6	0.0	3.990
568	Raipur	Chhura	Baruka	82.011	20.693	7.67	257	95	24	8.4	13.5	0.9	120	0	146	10.65	0.1	0.8	59.9	0.0	3.450
569	Raipur	Arang	Bhaisa	82.028	21.406	7.75	733	70	16	7.2	127	7.9	275	0	336	31.95	58.6	1.9	20.2	0.0	14.600
570	Raipur	Bilaigarh	Bhatgaon	82.812	21.654	7.38	1814	715	220	39.6	67.5	2	70	0	85	404.7	10.2	0.5	13.1	0.0	12.500
571	Raipur	Arang	Bhatia	82.035	21.423	7.46	397	135	44	6	25.7	1.8	80	0	98	42.6	57.3	0.7	7.6	0.0	0.115
572	Raipur	Tilda	Bhumiya	81.710	21.550	7.59	333	140	36	12	8.8	2	115	0	140	31.95	10.8	0.6	9.6	0.0	0.994
573	Raipur	Tilda	Biladi	81.783	21.573	7.56	834	315	64	37.2	42.4	0.9	115	0	140	127.8	19.1	0.5	14.6	0.0	0.850
574	Raipur	Bilaigarh	Bilaigarh	82.725	21.638	7.65	461	195	76	1.2	6.7	0.3	195	0	238	17.75	9.3	0.8	9.1	0.0	0.420
575	Raipur	Simga	Bishrampur	81.813	23.185	7.59	249	100	24	9.6	8.2	0.9	90	0	110	14.2	4.8	0.5	25.3	0.0	0.000
576	Raipur	Balodabazar	Bitkuli	82.231	21.946	7.47	611	210	62	13.2	35.9	1.1	105	0	128	99.4	47.3	0.7	15.0	0.0	0.850
577	Raipur	Tilda	Chanderi	81.747	21.498	7.52	1014	335	88	27.6	73.6	13	200	0	244	53.25	54.5	0.6	14.1	0.0	0.070
578	Raipur	Balodabazar	Chandi	82.043	21.619	7.52	258	110	42	1.2	4.1	1	110	0	134	10.65	3.2	0.5	6.0	0.0	0.270
579	Raipur	Rajim	Chhura	82.208	20.813	7.15	264	75	22	4.8	20.9	1.2	45	0	55	46.15	8.9	0.5	32.0	0.0	0.230
580	Raipur	Tilda	Chicholi	81.865	21.466	7.51	256	115	38	4.8	6.3	0.9	100	0	122	14.2	0.1	0.4	16.9	0.0	0.060
581	Raipur	Dharsinwa	Chrauda	81.672	21.408	7.73	1057	290	102	8.4	67	37	200	0	244	134.9	78.9	1.3	25.5	0.0	0.253

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583	Raipur	Simga	Darchura	81.790	21.715	7.54	751	290	72	26.4	25.5	4.3	100	0	122	88.75	73.0	0.5	13.5	0.0	0.250
584	Raipur	Dharsinwa	Devpuri	81.678	21.208	7.47	726	210	68	9.6	58	2.8	95	0	116	124.25	46.6	0.5	9.9	0.0	0.070
585	Raipur	Rajim	Devri	81.956	20.883	7.79	622	250	80	12	38	7.1	310	0	378	28.4	2.8	0.6	19.5	0.0	0.900
586	Raipur	Darsinwa	Devri	81.683	21.467	7.49	710	285	72	25.2	23	1.7	85	0	104	113.6	52.1	0.6	12.4	0.0	0.023
587	Raipur	Palari	Devsundri	82.068	21.522	7.75	575	100	18	13.2	68.5	4.1	200	0	244	28.4	31.9	1.2	17.5	0.0	19.100
588	Raipur	Dharsinwa	Dumartarai	81.690	21.198	7.54	841	265	84	13.2	62.7	1.9	75	0	92	191.7	25.9	0.5	8.8	0.0	0.230
589	Raipur	Rajim	Fingeshwar	82.033	20.967	7.61	304	110	28	9.6	18.4	1.5	115	0	140	28.4	0.2	0.6	21.5	0.0	0.990
590	Raipur	Chhura	Gariaband	82.067	20.625	7.52	777	245	76	13.2	50.4	2.4	160	0	195	92.3	29.1	0.6	27.0	0.0	0.000
591	Raipur	Abhanpur	Ghatapara	81.766	21.000	7.53	679	215	62	14.4	51.4	2	180	0	220	92.3	31.0	0.7	12.1	0.0	0.138
592	Raipur	Kasdol	Haswa	82.561	21.688	7.52	369	155	58	2.4	5.9	1.1	100	0	122	46.15	0.1	0.5	12.0	0.0	0.760
593	Raipur	Rajim	Kanekera	82.079	21.042	7.81	337	85	24	6	39.9	1.4	120	0	146	21.3	25.3	0.6	12.7	0.0	0.023
594	Raipur	Arang	Kanki	81.992	21.402	7.49	384	140	44	7.2	18.9	1.1	140	0	171	28.4	10.0	0.7	12.1	0.0	0.023
595	Raipur	Kasdol	Kasdol	82.433	21.617	7.55	597	145	52	3.6	55.2	2.9	135	0	165	85.2	16.3	0.7	10.9	0.0	0.027
596	Raipur	Chhura	Kaseru	82.123	20.648	7.69	247	85	26	4.8	15	0.7	80	0	98	21.3	0.1	0.8	47.6	0.0	2.760
597	Raipur	Rajim	Kashi Bahara	82.187	20.864	7.52	355	115	30	9.6	26	1.5	100	0	122	35.5	7.6	0.8	45.7	0.0	0.000
598	Raipur	Arang	Kusrangi	82.006	21.349	7.5	684	220	46	25.2	48.7	1.4	125	0	153	124.25	24.3	0.9	19.9	0.0	0.092
599	Raipur	Simga	Khapri	81.971	21.650	8.02	1120	20	4	2.4	253.5	1.7	365	0	445	56.8	143.7	1.5	13.2	0.0	0.023
600	Raipur	Chhura	Kharkhara	82.203	20.756	7.56	413	140	40	9.6	32.6	3.4	130	0	159	56.8	10.8	1.1	32.7	0.0	0.070
601	Raipur	Tilda	Kharora	81.921	21.388	7.58	377	155	56	3.6	9.1	0.6	125	0	153	39.05	10.9	0.7	18.3	0.0	1.550
602	Raipur	Rajim	Koma	81.937	20.965	7.59	374	135	34	12	21.6	1.2	110	0	134	56.8	6.0	0.7	25.0	0.0	0.440
603	Raipur	Abhanpur	Kurra	81.783	21.113	7.64	325	120	30	10.8	17.7	7.4	115	0	140	35.5	9.8	0.5	14.4	0.0	0.355
604	Raipur	Balodabazar	Lahoud	82.258	21.654	7.61	1060	260	68	21.6	105	2.9	270	0	329	184.6	1.2	0.9	18.4	0.0	0.920
605	Raipur	Balodabazar	Lawan	82.342	21.639	7.6	1195	240	58	22.8	157	3.2	105	0	128	205.9	125.0	1.9	16.4	0.0	0.138
606	Raipur	Dharsinwa	Manabasti	81.729	21.167	7.48	632	260	74	18	25.8	1	90	0	110	131.35	30.7	0.6	19.2	0.0	3.950
607	Raipur	Basna	Mandalpur	82.923	21.488	7.45	429	130	32	12	33.3	6.7	10	0	12	74.55	24.1	0.5	12.5	0.0	0.023
608	Raipur	Dharsinwa	Mandhar	81.710	21.353	7.49	305	105	34	4.8	19	2.1	120	0	146	10.65	26.1	1.4	35.3	0.0	0.092
609	Raipur	Dharsinwa	Mandirhasud	81.767	21.221	7.58	721	175	48	13.2	52	31	160	0	195	106.5	15.9	0.5	5.7	0.0	18.300
610	Raipur	Bilaigarh	Marban Gatadih	82.917	21.560	7.62	517	210	36	28.8	17.6	0.9	155	0	189	60.35	14.8	0.6	13.9	0.0	0.300
611	Raipur	Kasdol	Mudhipar	82.283	21.467	7.59	466	145	42	9.6	34.5	1.8	165	0	201	28.4	25.0	0.8	34.7	0.0	0.046
612	Raipur	Arang	Narra	81.889	21.264	7.45	762	295	68	30	19.1	0.7	95	0	116	156.2	19.3	0.9	25.0	0.0	1.340
613	Raipur	Palari	Palari	82.163	21.529	7.72	1350	495	130	40.8	57.5	2.4	215	0	262	298.2	31.6	1.0	16.5	0.0	0.077
614	Raipur	Tilda	Pandan Bhata	81.652	21.443	7.64	367	170	42	15.6	7.5	1.5	160	0	195	21.3	3.7	0.6	13.2	0.0	0.555
615	Raipur	Rajim	Panduka	81.946	20.775	7.65	204	85	30	2.4	6.6	1.5	70	0	85	24.85	0.7	0.5	6.5	0.0	0.115

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
616	Raipur	Rajim	Parsa Khurd	82.176	20.866	7.64	384	120	26	13.2	30.1	0.6	140	0	171	35.5	4.4	1.0	46.1	0.0	0.716
617	Raipur	Dharsinwa	Raipur	81.621	21.244	7.46	283	105	34	4.8	15.7	1.7	85	0	104	31.95	15.4	0.8	10.7	0.0	0.333
618	Raipur	Tilda	Raita (Satna ni para)	81.717	21.443	7.45	784	270	70	22.8	27.2	24	140	0	171	127.8	38.3	0.5	19.1	0.0	0.207
619	Raipur	Rajim	Rajim	81.883	20.967	7.53	858	235	60	20.4	61.5	31	135	0	165	170.4	45.0	0.6	42.4	0.0	0.046
620	Raipur	Arang	Ranisagar	82.028	21.278	7.63	859	250	50	30	72	3.7	180	0	220	142	25.4	0.6	12.7	0.0	0.170
621	Raipur	Dharsinwa	Ravishankar University	81.589	21.240	7.53	576	175	44	15.6	42.6	1	95	0	116	88.75	59.9	0.6	17.7	0.0	0.046
622	Raipur	Balodabazar	Risda	82.133	21.625	7.56	460	125	36	8.4	42.1	1.5	125	0	153	67.45	16.3	0.5	7.6	0.0	0.180
623	Raipur	Pithora	Sakara	81.657	21.354	7.63	581	145	38	12	66.2	4.5	180	0	220	49.7	40.7	0.8	17.8	0.0	0.243
624	Raipur	Palari	Sandi	82.075	21.450	7.84	698	70	12	9.6	125	12	275	0	336	31.95	40.3	1.8	19.2	0.0	17.700
625	Raipur	Tilda	Saragaon	81.807	21.367	7.33	289	100	24	9.6	22.9	1.1	110	0	134	28.4	3.3	0.5	50.3	0.0	0.117
626	Raipur	Bilaigarh	Sarsiwa	82.917	21.625	7.49	1157	345	108	18	73.9	6.2	75	0	92	266.25	57.4	0.4	15.8	0.0	2.660
627	Raipur	Kasdol	Sel	82.492	21.652	7.4	403	160	52	7.2	18.1	1.7	80	0	98	28.4	90.6	0.8	8.2	0.0	0.099
628	Raipur	Dharsinwa	Semoriya	81.762	21.330	7.32	572	230	78	8.4	24.9	2	155	0	189	60.35	61.4	0.7	10.1	0.0	0.046
629	Raipur	Simga	Simga	81.704	21.625	7.58	754	275	60	30	48	2	105	0	128	31.95	191.6	0.5	14.7	0.0	0.046
630	Raipur	Simga	Suhela	81.974	21.616	7.46	824	250	84	9.6	37.6	17	105	0	128	113.6	93.7	0.5	15.1	0.0	0.437
631	Raipur	Rajim	Sursabandha	81.921	20.881	7.41	1014	325	102	16.8	55.7	0.7	80	0	98	237.85	50.7	0.6	20.3	0.0	3.790
632	Raipur	Bhatapara	Tarenga	81.886	21.750	7.69	684	255	40	37.2	38.6	6.5	110	0	134	67.45	144.0	0.7	15.9	0.0	0.046
633	Raipur	Tilda	Tarpongi	81.689	21.491	7.4	949	345	100	22.8	43.7	7.7	85	0	104	191.7	112.9	0.6	10.2	0.0	0.270
634	Raipur	Simga	Tatibandh MVM	81.791	21.715	7.39	276	100	34	3.6	15.5	1.6	70	0	85	21.3	33.9	0.9	8.8	0.0	0.046
635	Raipur	Tilda	Tilda (Purani Basti)	81.798	21.555	7.54	808	295	58	36	39	0.8	110	0	134	142	29.4	0.5	14.6	0.0	0.000
636	Raipur	Dharsiwa	RGNGWTRI, CGWB	81.679	21.298	7.68	320	110	34	6	32.6	0.4	160	0	195	21.3	0.1	0.8	14.0	0.0	2.150
637	Raipur	Bhattapara	Bhattapara-d	81.950	21.733	7.59	1017	410	80	50.4	23	5.5	160	0	195	99.4	170.3	0.6	23.1	0.0	0.500
638	Raipur	Mahasamund	Khamhariya	82.183	21.343	7.42	598	210	60	14.4	27.9	1.5	90	0	110	102.95	46.9	1.1	14.4	0.0	0.430
639	Raipur	Arang	Nawagaon	81.814	21.217	7.62	276	115	28	10.8	14.9	0.7	125	0	153	14.2	0.1	0.5	16.5	0.0	0.473
640	Raipur	Chhura	Sorid	82.208	20.811	7.65	453	145	44	8.4	36.7	1	190	0	232	24.85	10.8	1.8	48.1	0.0	0.070
641	Rajnandgaon	Rajnandgaon	Anjora	81.214	21.154	8.09	816	230	68	14.4	58.7	17	145	0	177	120.7	52.5	0.0	10.3	0.3	0.000
642	Rajnandgaon	Khairagarh	Badaitola	80.979	21.348	8.07	720	265	76	18	32	4.2	125	0	153	95.9	27.3	0.2	12.2	0.2	2.367
643	Rajnandgaon	Rajnandgaon	Baghera	81.124	21.186	8.14	578	205	60	13.2	24.8	1.5	105	0	128	99.4	29.8	0.0	11.0	0.3	4.846
644	Rajnandgaon	Khairagarh	Baigatola	80.846	21.388	8.07	775	250	78	13.2	43.1	2.3	100	0	122	142.0	42.7	0.1	16.9	0.5	0.000

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
645	Rajnandgaon	Ambagarh Chowki	Bandhabazar	80.742	20.833	8.28	671	210	58	15.6	39.6	9.9	155	0	189	81.7	23.8	0.4	25.4	0.8	0.239
646	Rajnandgaon	Rajnandgaon	Bhaistara (Bhatapara)	81.030	21.318	8.15	838	270	64	26.4	60.5	0.3	110	0	134	110.1	41.0	0.1	57.1	1.3	0.073
647	Rajnandgaon	Dongargarh	Bharritola	80.724	21.199	8.06	1444	330	80	31.2	127.5	39	270	0	329	248.5	90.2	0.5	28.0	1.1	0.000
648	Rajnandgaon	Chhuikadhan	Bhorampur	81.013	21.557	8.44	583	160	32	19.2	78.8	0.4	280	6	329	35.5	16.3	0.6	25.4	0.9	1.300
649	Rajnandgaon	Patan	Bodal	81.428	21.032	8.26	457	185	50	14.4	16.9	0.3	125	0	153	49.7	11.0	0.4	14.5	0.5	1.220
650	Rajnandgaon	Rajnandgaon	Bori	81.059	21.142	8	1108	245	68	18	95.5	4.3	135	0	165	198.8	61.3	0.0	14.0	0.5	0.611
651	Rajnandgaon	Rajnandgaon	Dewada	81.197	21.146	8.19	406	185	46	16.8	21.1	0.5	140	0	171	39.1	19.4	0.2	17.3	0.4	0.108
652	Rajnandgaon	Khairagarh	Dhaneli	81.007	21.409	8.17	789	270	56	31.2	56	10.5	225	0	275	95.9	43.6	0.6	21.4	0.5	0.095
653	Rajnandgaon	Dongargarh	Dhara	80.859	21.255	8.27	1204	460	44	84	81	13	350	0	427	134.9	51.2	1.0	39.0	1.0	1.975
654	Rajnandgaon	Dongargaon	Dongargaon.1	80.857	20.971	8.22	725	235	84	6	50.4	0.6	85	0	104	103.0	32.4	0.8	49.0	1.0	8.369
655	Rajnandgaon	Dongargarh	Dongargarh	80.760	21.185	8.09	942	260	74	18	86.4	13	140	0	171	156.2	48.7	0.1	22.9	0.8	0.042
656	Rajnandgaon	Dongargarh	Ghortalab	80.527	21.120	8.01	829	255	76	15.6	66.2	1.6	130	0	159	95.9	46.7	0.5	19.5	0.7	0.135
657	Rajnandgaon	Dongargarh	Govindpur	80.702	21.100	7.99	1063	335	94	24	73.5	0.5	170	0	207	181.1	28.3	0.8	32.2	0.6	0.320
658	Rajnandgaon	Khairagarh	Jalbanda	81.154	21.365	8.15	425	170	56	7.2	16	1.1	110	0	134	39.1	5.8	0.2	8.6	0.6	0.175
659	Rajnandgaon	Dongargarh	kalkosa	80.793	21.215	8.46	384	160	50	8.4	17.6	0.1	150	6	171	28.4	9.7	0.1	40.8	0.7	0.201
660	Rajnandgaon	Khairagarh	Khairagarh	80.971	21.433	8.27	518	190	52	14.4	30.8	0.9	175	0	214	35.5	14.2	0.1	15.9	0.6	1.776
661	Rajnandgaon	Dongargaon	Kokpur I	80.746	20.992	7.88	1414	535	130	50.4	59.4	0.7	125	0	153	245.0	87.0	0.8	50.1	0.5	2.399
662	Rajnandgaon	Dongargaon	Kumarda.1	80.769	20.891	8.06	874	330	72	36	52.3	0.8	175	0	214	124.3	101.3	0.5	56.0	0.3	1.075
663	Rajnandgaon	Dongargarh	Lal bhadurnagar	80.686	21.100	8.35	201	75	18	7.2	14.4	0.1	65	3	73	21.3	6.8	0.4	46.7	0.4	0.678
664	Rajnandgaon	Khairagarh	Madrakuhi	81.072	21.387	8.13	352	165	40	15.6	11.9	0.5	130	0	159	32.0	3.8	0.3	23.4	0.1	1.300
665	Rajnandgaon	Chhuikadhan	Mohgaon	80.959	21.707	7.96	881	410	88	45.6	12.3	0.8	145	0	177	117.2	61.0	0.2	15.8	0.2	0.320
666	Rajnandgaon	Chhuikadhan	Narmada	81.072	21.622	8.24	345	155	30	19.2	19.5	0.4	145	0	177	28.4	4.5	0.3	20.8	0.1	0.148
667	Rajnandgaon	Rajnandgaon	Nawagaon	81.150	21.169	7.92	980	350	80	36	45.9	3.3	110	0	134	159.8	56.9	0.4	21.6	0.1	2.451
668	Rajnandgaon	Khairagarh	Rangkathera	81.113	21.367	8.21	517	185	52	13.2	31.2	0.7	145	0	177	60.4	7.6	0.1	15.3	0.2	0.228
669	Rajnandgaon	Dongargarh	Ranitalab	80.640	21.083	8.43	820	205	54	16.8	93.6	1.2	170	6	195	113.6	53.6	0.9	49.5	0.1	0.717
670	Rajnandgaon	Rajnandgaon	Ranitarai	81.054	20.998	8.26	576	245	62	21.6	21.8	0.7	190	0	232	53.3	17.2	0.4	17.6	0.1	2.107
671	Rajnandgaon	Rajnandgaon	Reevadih	80.994	21.086	8.23	717	225	36	32.4	59.6	2.2	155	0	189	124.3	57.1	0.6	23.3	0.1	0.333
672	Rajnandgaon	Dongargarh	Reevagaon	80.826	21.220	8.06	1042	350	64	45.6	60.9	0.4	170	0	207	191.7	40.9	0.3	41.6	0.8	0.558

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673	Rajnandgaon	Rajnandgaon	Revagahan	81.006	21.118	7.82	1382	555	150	43.2	44.8	0.6	145	0	177	230.8	70.0	0.6	17.9	0.1	0.426
674	Rajnandgaon	Khairagarh	Salhebara	80.888	21.398	8.63	1118	165	12	32.4	190.5	0.3	515	9	610	17.8	10.7	1.1	46.2	0.3	0.479
675	Rajnandgaon	Rajnandgaon	Saloni	81.133	21.282	8.21	345	175	38	19.2	10.9	0.7	120	0	146	39.1	3.9	0.2	17.0	0.2	2.306
676	Rajnandgaon	Rajnandgaon	Singhola	81.042	21.033	7.74	2150	890	122	140.4	102.5	1.8	105	0	128	497.0	96.4	0.3	21.8	0.6	0.373
677	Rajnandgaon	Rajnandgaon	Somni	81.147	21.124	8.16	606	170	40	16.8	43	8.8	135	0	165	81.7	25.0	0.3	21.6	0.5	3.047
678	Rajnandgaon	Rajnandgaon	Sundara	81.087	21.113	8.06	1675	310	64	36	198	3.7	130	0	159	372.8	66.9	1.8	14.8	0.2	1.353
679	Rajnandgaon	Rajnandgaon	Talai	81.036	21.167	7.95	959	370	78	42	40.3	1.7	120	0	146	124.3	45.3	0.3	22.3	0.2	12.125
680	Rajnandgaon	Dongargarh	Tappa	80.821	21.076	8.58	407	165	24	25.2	40.2	1.7	160	9	177	46.2	5.8	0.7	22.0	0.1	0.784
681	Rajnandgaon	Rajnandgaon	Uperwah	81.140	21.245	8.31	490	210	36	28.8	7.8	0.5	170	3	201	46.2	14.7	0.4	20.0	0.3	0.108
682	Rajnandgaon	Dongargarh	Uraidabritola	80.738	21.082	8.35	420	150	24	21.6	24.1	1.3	165	6	189	32.0	9.2	1.7	36.7	0.5	0.161
683	Rajnandgaon		Bharritola	80.736	21.204	8.33	450	140	46	6	47.3	1.9	145	3	171	42.6	21.9	0.9	63.0	0.8	0.135
684	Rajnandgaon	Chhuriya	Ambagarh Chowki	80.742	20.775	8.29	453	215	32	32.4	4.8	0.5	175	0	214	39.1	18.7	0.2	23.8	0.2	Leakage
685	Rajnandgaon	Chhuikadhan	Gandai	81.109	21.664	8.2	502	155	44	10.8	29.8	1	130	0	159	63.9	17.3	0.2	4.9	0.3	0.161
686	Surajpur	Premnagar	Shivnagar	82.788	22.882	8.52	275	85	28	3.6	22.6	1	115	6	128	17.8	3.9	0.9	11.5	0.11	3.19
687	Surajpur	Premnagar	Abhaypur	82.735	22.910	8.28	279	110	26	10.8	8.5	0.9	105	0	128	17.8	2.4	0.1	56.4	0.10	0.669
688	Surajpur	Surajpur	Krishnapur (kalwa)	82.823	23.244	8.55	313	85	16	10.8	35.4	1.8	135	3	159	14.2	17.3	0.8	24.0	0.10	1.979
689	Surajpur	Pratappur	Dwarikanagar	83.189	23.285	8.21	174	65	18	4.8	12	1.5	75	0	92	7.1	6.0	0.3	48.1	0.09	1.158
690	Surajpur	Pratappur	Bhediya	83.157	23.585	8.2	409	135	44	6	31	4.7	185	0	226	10.7	21.6	1.1	44.8	0.09	2.194
691	Surajpur	Ramanujnagar	Jagatpur Podipara	82.660	23.094	8.21	478	160	54	6	25.1	0.8	125	0	153	56.8	17.5	0.2	44.5	0.11	5.4
692	Surguja	Rajpur	Rajpur	83.404	23.338	8.28	304	130	28	14.4	11.7	1.2	80	0	98	21.3	15.0	0.2	65.3	0.12	0.102
693	Surguja	Rajpur	Nawapara	83.404	22.952	8.23	171	65	18	4.8	17.5	1.6	80	0	98	10.7	2.8	0.8	75.2	0.12	1.431
694	Surguja	Ambikapur	Sargaosa	83.264	23.307	8.14	332	150	26	20.4	11.5	1.1	80	0	98	56.8	14.2	0.1	56.8	0.11	0.082
695	Surguja	Shankargarh	Katkalo	83.556	23.063	8.15	447	165	38	16.8	29.2	0.9	130	0	159	56.8	16.4	0.3	36.1	0.12	0.102
696	Surguja	Ambikapur	Bhaiyathan	83.207	23.404	8.12	221	75	20	6	19.5	0.7	65	0	79	24.9	4.1	1.2	60.7	0.11	1.295
697	Surguja	Bhaiyathan	Badsara	82.867	23.344	8.53	291	115	28	10.8	14.3	0.3	115	9	122	17.8	13.3	0.3	48.4	0.09	2.996
698	Surguja	Surajpur	Fulkona	82.771	23.025	8.56	479	175	50	12	26.5	0.7	150	6	171	49.7	16.2	0.2	43.9	0.09	9.95
699	Surguja	Premnagar	Balrampur	82.667	23.590	8.24	290	90	26	6	19.6	1.3	60	0	73	14.2	13.8	0.1	29.6	0.10	4.012
700	Surguja	Balrampur	Darima	83.617	23.003	8.04	114	35	10	2.4	9.7	1	25	0	31	24.9	1.4	0.3	44.0	0.10	1.021

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
701	Surguja	Ambikapur	Sitapur	83.230	22.769	8.01	194	70	22	3.6	13.2	0.8	65	0	79	10.7	4.3	0.3	51.7	0.11	0.532
702	Surguja	Sitapur	Baghima	83.492	23.242	8.35	314	140	32	14.4	8.3	1.4	120	3	140	17.8	11.9	0.2	70.0	0.09	0.258
703	Surguja	Ambikapur	Jagannathpur	83.314	23.379	8.2	173	65	18	4.8	11.8	1.5	70	0	85	17.8	5.2	0.2	50.5	0.11	0.669
704	Surguja	Pratappur	Mangari	83.195	22.906	8.47	141	55	14	4.8	5.8	1.9	55	6	55	10.7	2.7	0.1	34.6	0.09	0.239
705	Surguja	Batauli	Sontarai (Sitapur)	83.450	22.803	8.19	293	125	20	18	13.3	0.8	90	6	98	21.3	4.4	0.3	48.5	0.09	0.63
706	Surguja	Sitapur	Kanakpur	83.482	23.187	8.46	337	130	44	4.8	13	2.6	95	6	104	39.1	14.9	0.1	23.8	0.10	0.082
707	Surguja	Surajpur	Hanumangarh	83.056	23.063	8.11	474	180	48	14.4	25.3	0.8	130	0	159	60.4	16.7	0.1	40.6	0.10	6.378
708	Surguja	Premnagar	Lakhanpur	82.648	22.983	8.09	85	35	8	3.6	2.3	3.7	30	0	37	10.7	1.4	0.0	26.6	0.09	0.513
709	Surguja	Lakhanpur	Lamgaon	83.040	23.049	8.13	459	200	48	19.2	7.5	5.8	140	0	171	39.1	23.1	0.3	29.5	0.13	1.588
710	Surguja	Lundra	Bandana	83.340	22.847	8.11	364	105	28	8.4	36.9	2.5	155	0	189	14.2	3.6	1.2	41.3	0.11	0.434
711	Surguja	Batauli	Wadrafnagar	83.414	23.767	8.1	435	145	40	10.8	30.1	4.9	175	0	214	14.2	15.8	1.0	45.9	0.11	2.429
712	Surguja	Wadrafnagar	Parasrampur	83.196	23.083	8.21	342	125	38	7.2	22.6	1.4	125	0	153	24.9	8.1	0.5	33.9	0.11	0.161
713	Surguja	Ramanujnagar	Udaipur	82.794	22.908	8.17	78	30	6	3.6	2.3	3.8	20	0	24	14.2	1.4	0.0	26.0	0.09	0.473
714	Surguja	Udeypur	Janardanpur(OW)	82.950	22.875	8.26	281	120	40	4.8	8.5	0.9	110	0	134	24.9	2.0	0.0	37.0	0.10	0.649
715	Surguja	Premnagar	Songara	82.751	23.300	8.2	83	40	12	2.4	2	2.3	35	0	43	7.1	3.2	0.1	22.5	0.12	9.1
716	Surguja	Pratappur	Kaliyanpur	83.079	23.247	8.24	170	70	16	7.2	12.2	1.5	75	0	92	10.7	4.7	0.2	49.2	0.11	1.021
717	Surguja	Surajpur	Chatakpur	83.200	22.969	8.19	172	55	18	2.4	16.8	1.6	75	0	92	14.2	3.1	0.7	67.6	0.10	1.49
718	Surguja	Ambikapur	Bhadar	83.222	23.333	8.32	221	100	22	10.8	5.9	1.1	75	3	85	17.8	6.6	0.1	36.5	0.11	2.194
719	Surguja	Rajpur	Makanpur	83.509	23.413	8.16	208	70	18	6	14.5	0.6	55	0	67	24.9	2.3	0.1	45.3	0.12	0.337
720	Surguja	Rajpur	Ganeshpur	83.323	23.081	8.48	467	175	46	14.4	26.1	0.8	150	6	171	53.3	16.0	0.2	39.7	0.12	7.414
721	Surguja	Ramanujnagar	Pratappur	82.635	23.483	8.18	253	90	28	4.8	13	1	60	0	73	28.4	7.5	0.1	37.0	0.14	1.158
722	Surguja	Pratappur	Karji	83.203	23.314	8.43	229	110	24	12	5.9	1.1	95	3	110	10.7	8.2	0.1	34.0	0.10	1.998
723	Surguja	Rajpur	Dandgaon	83.352	22.895	8.26	396	165	54	7.2	5.4	3.2	140	0	171	32.0	13.4	0.3	35.9	0.11	1.92
724	Surguja	Udeypur	Chandora	82.857	23.511	8.21	256	85	26	4.8	12.2	1.2	55	0	67	28.4	8.2	0.1	10.4	0.12	1.119
725	Surguja	Pratappur	Parsa	83.157	23.188	8.28	360	145	44	8.4	8.4	1.4	130	0	159	24.9	11.7	0.2	51.3	0.09	0.258
726	Surguja	Ambikapur	Bachwar	83.268	23.301	8.11	305	120	32	9.6	11.1	1.1	90	0	110	21.3	14.2	0.1	16.5	0.09	0.18
727	Surguja	Shankargarh	Alkadih	83.576	23.391	8.03	277	95	26	7.2	18.5	1.3	55	0	67	32.0	13.9	0.0	10.4	0.14	1.607
728	Surguja	Rajpur	Dandgaon (koltapara)	83.460	23.110	8.21	256	85	28	3.6	22.8	1	120	0	146	7.1	3.9	1.0	36.4	0.10	0.532

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
729	Surguja	Lundra	Darhora	83.383	23.110	8.07	222	65	22	2.4	18.4	0.6	70	0	85	24.9	4.5	1.1	38.4	0.13	1.392
730	Surguja	Lakhanpur	Kunni	83.067	23.185	8.11	88	35	10	2.4	2.5	3.5	30	0	37	10.7	1.3	0.0	25.0	0.09	0.415
731	Surguja	Surajpur	Jaynagar	82.972	23.353	8.48	338	130	42	6	13.3	2.5	50	6	49	39.1	14.8	0.1	22.6	0.11	0.063
732	Surguja	Surajpur	Sirsi	82.863	22.950	8.11	221	60	20	2.4	19	0.7	70	0	85	17.8	5.3	1.0	57.7	0.11	1.353
733	Surguja	Lakhanpur	Amgachi	83.008	23.429	8.26	354	150	38	13.2	8.4	1.3	120	0	146	32.0	12.0	0.3	9.7	0.08	0.278
734	Surguja	Pratappur	Gonda	83.058	23.289	8.21	85	35	12	1.2	2	2.1	30	0	37	7.1	2.5	0.1	20.3	0.11	5.205
735	Surguja	Surajpur	Jhasi	82.871	22.842	8.02	221	65	16	6	19.1	0.7	65	0	79	3.6	5.3	1.7	58.0	0.12	1.392
736	Surguja	Premnagar	Tara	82.742	23.340	8.28	277	110	12	19.2	8.8	0.9	65	0	79	53.3	1.2	0.4	36.8	0.11	0.649
737	Surguja	Rajpur	Ghorghadi	83.461	23.100	8.18	306	125	14	21.6	11.4	1.1	85	0	104	42.6	14.2	0.4	50.9	0.11	0.102
738	Surguja	Lundra	Bulga	83.354	23.108	8.38	390	175	18	31.2	5.5	3.1	110	3	128	60.4	13.8	0.3	33.4	0.11	0.493
739	Surguja	Ambikapur	Ambikapur	83.200	23.150	8.29	402	125	38	7.2	28.5	1	105	0	128	56.8	16.4	0.3	32.7	0.09	0.063
740	Surguja	Ramanujnagar	Ramanuj nagar	82.725	23.165	8.55	473	180	34	22.8	26.9	0.8	125	6	140	74.6	16.0	0.2	38.4	0.11	5.537
741	Surguja	Ambikapur	Rajpurikhurd	83.247	23.039	8.59	340	145	14	26.4	12.2	0.4	115	6	128	42.6	10.3	0.3	43.6	0.10	0.317
742	Surguja	Mainpat	Amgaon	83.299	22.919	8.29	173	50	4	9.6	17.2	1.6	65	0	79	17.8	3.4	0.8	67.3	0.12	1.412
743	Surguja	Sitapur	Pratapgarh	83.476	22.733	8.12	195	70	10	10.8	13.8	0.8	70	0	85	21.3	5.3	0.4	46.5	0.11	0.317
744	Surguja	Rajpur	Basin	83.505	23.421	8.12	283	90	18	10.8	19.27	1.3	60	0	73	21.3	13.3	0.1	27.0	0.09	2.116
745	Surguja	Shankargarh	Kusmi	83.609	23.296	8.29	234	110	10	20.4	6.1	1.1	85	0	104	32.0	6.0	0.1	35.3	0.10	1.862
746	Surguja	Premnagar	Premnagar	82.696	22.967	8.29	278	115	12	20.4	9	0.9	80	0	98	39.1	1.9	0.1	36.1	0.09	0.61
747	Surguja	Udaipur	Dandgaon	82.857	22.895	8.27	202	75	18	7.2	10.2	1.1	90	0	110	10.7	1.9	0.1	43.8	0.11	0.513
748	Surguja	Surajpur	Biharpur	82.921	23.272	8.31	222	85	28	3.6	10.5	1.9	40	3	43	17.8	34.4	0.2	10.8	0.09	0.141
749	Surguja	Surajpur	Majeera	82.951	23.148	8.2	274	85	20	8.4	20	2.6	125	0	153	7.1	3.9	0.3	22.2	0.11	0.063
750	Surguja	Wadrafnagar	Mahewa	83.092	23.814	8.24	399	115	32	8.4	30	4.7	160	0	195	14.2	16.6	0.9	44.2	0.09	2.389
751	Surguja	Premnagar	Salkha(OW)	82.787	22.924	8.2	288	105	30	7.2	8.7	0.9	100	0	122	21.3	1.6	0.1	36.8	0.09	0.571
752	Surguja	Lundra	Sisila	83.385	23.032	8.24	126	50	14	3.6	5.7	1.8	50	0	61	10.7	2.7	0.2	30.4	0.12	0.18
753	Surguja	Shankargarh	Shankargarh	83.606	23.296	8.2	230	110	32	7.2	5.6	1.2	90	0	110	21.3	6.1	0.3	34.9	0.10	2.174
754	Surguja	Balrampur	Pasta	83.525	23.450	8.11	285	90	28	4.8	18.4	1.3	55	0	67	39.1	14.4	0.1	25.9	0.09	1.979
755	Surguja	Surajpur	Surajpur	82.873	23.212	8.2	261	90	24	7.2	19.3	2.5	130	0	159	10.7	2.6	0.4	22.2	0.11	0.063
757	Surguja	Lakhanpur	Udaipur Dhah	83.100	23.058	7.99	396	125	38	7.2	26.9	0.9	115	0	140	42.6	18.2	0.3	30.9	0.14	0.063

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Annexure III

S. No.	District	Block	Location	long	Lat	pH	EC	TH	Ca	Mg	Na	K	TA	CO3	HCO3	Cl	SO4	F	SiO2	PO4	Fe
758	Surguja	Lundra	Lundra	83.408	23.117	8.43	453	190	46	18	7.6	5.3	140	3	165	39.1	25.2	0.3	27.6	0.09	1.568
759	Surguja	Surajpur	Deonagar	82.803	23.240	8.46	297	85	28	3.6	32.9	1.7	135	6	153	17.8	12.3	0.5	24.0	0.09	1.842
761	Surguja	Pratappur	Reonti	83.176	23.648	8.14	411	145	46	7.2	29.5	4.3	190	0	232	14.2	16.7	0.9	44.3	0.12	2.174
762	Surguja	Mainpat	Kamleswarpur	83.288	22.829	8.29	213	95	28	6	9.6	1	95	0	116	17.8	1.9	0.1	41.8	0.11	0.473