भारत सरकार
जल संसाधन, नदी विकास व गंगा संरक्षण मंत्रालय
केंद्रीय भूमिजल बोर्ड

GOVERNMETNT OF INDIA
MINISTRY OF WATER RESOURCES, RD & GR
CENTRAL GROUND WATER BOARD

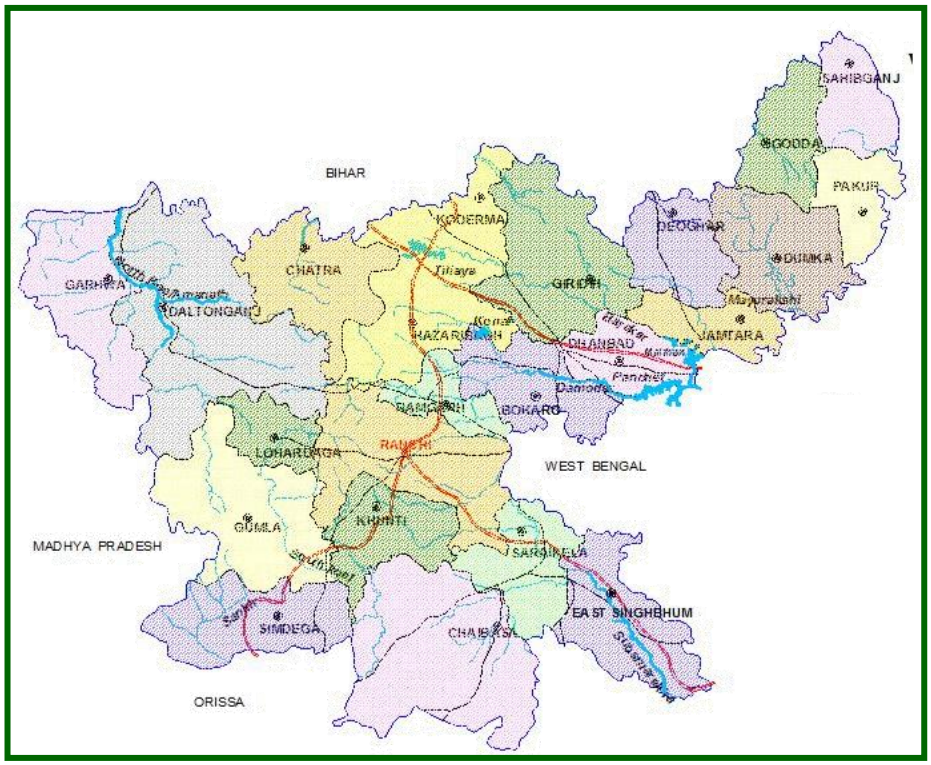
वार्षिक भूजल पुस्तिका

झारखण्ड

(2015 - 2016)

GROUND WATER YEAR BOOK
JHARKHAND

(2015 - 2016)



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MID-EASTERN REGION, PATNA
STATE UNIT OFFICE, RANCHI

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भारत सरकार

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GROUND WATER YEAR BOOK
JHARKHAND
(2015 - 2016)

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GROUND WATER YEAR BOOK
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(2015-2016)

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FOREWORD

To understand the groundwater situations in diverse hydrogeological environments, changes in various facets of ground water, like variation in water level and water quality to be monitored. A regular monitoring of ground water regime through a network of observation wells i.e. Ground water Monitoring Well (GWMW) is being carried out by Central Ground Water Board, MER Patna for the state of Jharkhand. Initially the task was taken up with the help of a few GWMW but gradually the numbers of stations were increased, which now totals 521 GWMW (as on March 2016) which represents all 24 districts and almost all blocks of the state.

This is an attempt to make a presentation in the form of a report for Jharkhand State where the scenarios of water levels for the year 2015-2016 has been produced. The comparisons with decadal mean, seasonal & annual fluctuation, chemical quality of ground water, different maps along with data have been, incorporated.

Periodic water level measurements were taken 4 times in a year in 2015-2016, (i.e. in the months of May'15, August'15 and November `15 and January `16). Water samples from the GWMW were collected during the month of May-2015 to study the changes in hydrochemical regime.

The scientific officers and technical personnel of the state unit office and the Mid Eastern Regional office, systematically collected field data from the GWMW as required for monitoring purposes and collected water samples during the premonsoon period which were latter analysed in the monitoring and chemical cells of this region.

The assignment of compiling and analyzing data, its retrieval, evaluation, preparation of suitable maps and their reproduction in the form of present report has been carried out by T.B.N.Singh, Scientist-D, Senior Hydrogeologist.The maps has been prepared and data has been compiled by Shri S.S.purty,Sc-B.The works related to chemical analysis of ground water was performed by Sri Suresh Kumar , ACH and Ms.Supriya Singh requires special mention.

It is sincerely hoped that the appended write up, maps and basic information in this report would be very useful to the concerned beneficiaries.

(A.K.Agrawal)
Regional Director

ABSTRACT

In Jharkhand state ground water levels of 333 Ground Water Monitoring Wells (GWMW) were monitored four times in the year 2015 - 2016 as a part of regime monitoring of phreatic aquifer in different hydrogeological and agro-climatic zones. The water level monitoring was carried out in the months of May'15, August'15, November'15, and January'16, and ground water samples were collected in pre-monsoon period (May 2015) for chemical analysis. In the state the phreatic aquifer consists of weathered mantle, saprolite zone, and fractures in hard rocks underneath. Over 78% area of the state is underlain by rocks of Chotanagpur Gneissic Complex (CGGC) suit. Hence, most of the GWMW represented water level in weathered CGGC. A few GWMW represented water level of phreatic aquifer of Gondwana Super Group and Tertiary Formation.

The observed water level data had been grouped into four categories viz. 0 -2m, 2-5m, 5-10m and >10m. Thematic maps depicting ground water levels measured in different periods have been prepared. The water levels have been further analysed to study its change with respect to measurement of pre-monsoon period of the same year, previous year water level data of corresponding period, and decadal mean water level data of the corresponding period. The fluctuations have been shown under rise and fall categories. In each category there are three groups viz. 0-2 m, 2-4 m and >4 m. Thematic maps had been prepared for each category.

The depth to water level data of all the Ground Water Monitoring Wells collected during the four measurements are also presented along with the general well information. The water samples collected during May 2015 measurements were chemically analysed and the data generated has been presented in the tabular form, while iso-cloride and iso-conductance were presented in the form of maps in this report.

During 2015-16 the water level in the State ranges between 0.1 to 18.73 mbgl. The minimum and the maximum depth to water levels during premonsoon have been recorded as 0.5 m bgl at Dhanbad district and 18.73 m bgl at E.Singhbhum and in general the water level throughout the State varies in the range of 5 – 10 m bgl. During postmonsoon the minimum and the maximum depth to water levels have been recorded as 0.39 m bgl at Amrapara, Pakur district and 12.28 m bgl at Kajri, Palamu district and in general the water level throughout the State varies in the range of 2 – 5 m bgl.

The annual fluctuation of water level between May 2015 and November 2015 , the major part of the state shows general rise in water level in the range between 0-2 m bgl (47.6%) and fall (31.2%). The fluctuation of water level of May 2015 with respect to decadal mean water level of May indicate the fall (51.7%) as well as rise (32%) in water level in the range of 0 – 2 m. The fluctuation of water level of November 2015 with respect to decadal mean water level of November indicate the fall (44.3%) as well as rise (45%) in water level in the range of 0 – 2 m. However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

The pH of ground water ranged between 6.79 and 8.96. The water was mildly alkaline in nature in most of the wells. The Electrical Conductivity (EC) varies between 8.7 microS/cm(Gandey, Giridih) and 3705(Daru, Hazaribagh dist) microS/cm. Spatially in major part of the state EC rested in the range of 61-500 micro S/cm. In majority of the samples the concentration of chloride in ground water is within the desirable limit for drinking water of 250 mg/l.

To study the water level behavior in the urban areas water level measurements at Dhanbad, Hazaribagh and Jamshedpur urban area are being carried out through outsourcing, the water level data is incorporated in this year book.

GROUND WATER YEAR BOOK OF JHARKHAND

2015 – 2016

JHARKHAND AT A GLANCE

Geographical Area (sq. km.)	79714
Population (Census 2011)	3,29,66,238
Population density	413
Male Population(Million)	16.93
Female Population(Million)	16.03
Decadal Growth (2001-2011)	22.3%
Literacy Rate	67.63%
Sex ratio	947 females to 1000 males
No. of Districts	24
No. of Blocks	260
Normal Annual Rainfall (mm)	1251.2
Net sown area (in Thousand hectare)-2011	2238.1
Area under forest (in Thousand hectare) -2011	2332.55
Barren and uncultivated area (in Thousand hectare)-2011	573.09
Cultivable waste land (in Thousand hectare)-2011	274.46
Cropping intensity(%)-2011	114 %
Annual Replenishable Ground Water Resource in BCM (2013)	6.56
Net ground water availability in BCM (20113	5.99
Annual Ground Water Draft For Domestic & Industrial use in BCM	0.50
Gross annual ground water draft in BCM(2013)	1.35
Stage of ground water development ((based on GEC '97 methodology) in % (2013)	22.42
Number of over-exploited blocks (As on March-2013)	4
Number of critical blocks (As on March-2013)	2
Number of semi critical blocks (As on March-2013)	10
Number of Safe block (As on March-2013)	244
Ground Water Quality	In general chemical Constituents are within permissible limit except fluoride Contamination in Palamu, Garhwa, Koderma, Pakur Districts and Arsenic contamination in Sahebganj district

GROUND WATER YEAR BOOK OF JHARKHAND

2015 – 2016

1.0 INTRODUCTION:

Jharkhand state, was created on 15th November 2000, consists of districts falling on Chotanagpur Plateau of erstwhile Bihar on the birthday of legendary tribal freedom fighter Birsa Munda. Presently it consists of 24 districts and 210 administrative blocks. The capital of the state is located at Ranchi. The state spreads over 79714 sq km, between Latitude 21º 55′ 00″ and 25º 15′ 00″ and Longitude 83º 15′ 00″ and 87º 55 ′ 00″. The state is bounded by Bihar in the north and by West Bengal in the east. The other two sides, west and south, are bounded by Chhattisgarh and Orissa states respectively **(Fig.1).**

The population of the state as per 2011 census is 03.30 crore. The population density is 414 person/km^2. The urban population is 79.12 million and the rural population is 250.54 million. The tribal population constitutes about 28% of total population. The state is moderately urbanized with Ranchi as its capital city. Nearly 24% of total population of the state lives in urban areas. Important urban centers are in the state are Jamshedpur, Dhanbad, Hazaribagh, Daltonganj, Dumka and Deoghar.

To acquire a detailed knowledge vis-a-vis scenario of ground water level with respect to behaviour, availability and quality, Ground Water monitoring is essential in time and space. Thus, the data so collected during monitoring gives an important input for ground water management. Periodical monitoring of ground water regime covering different geomorphic, hydrogeological units is an effort to get information on the behaviour of ground water levels and chemical quality of formation water through representative sampling. Monitoring of ground water regime includes:

(a) monitoring of ground water levels
(b) monitoring of ground water quality and
(c) temperature of ground water.

Monitoring is being carried out by establishing suitable *Ground Water Monitoring Well* (GWMW) based on Geomorphology, Geology, Hydrogeology and status of ground water resource of the area with a view to observe the trend of water level and change of chemical quality with time and space. It is also very useful to estimate the dynamic ground water resources and to demarcate the water logged as well as drought prone areas.

2.0 BACKGROUND:

The Central Ground Water Board, State Unit office, Ranchi, is at present monitoring 487 GWMW (Ground water monitoring wells) to delineate the behavior of

ground water level with time and space covering 24 districts in the State of Jharkhand (**Plate – I)** four times a year, viz January (from 1st to 10th), May (from 20th to 30th), August (from 20th to 30th) and November (from 1st to 10th). The locations of GWMW are shown in **Plate – II**. Water Level Monitoring through outsourcing in Jamshedpur(15 wells), Dhanbad(15 wells) , Hazaribagh(12 wells) urban areas has been started since November 2011. At present it is being carried out monthly.

The district-wise status of GWMW in Jharkhand during the period from May '2015 to January '2016 is given in **Table 1**. The district-wise water level data of GWMW for the period May 2015; August 2015; November 2015 and January 2016 are given in **Annexure- I.**The Trend of ground water level data (March 2006- January 2015) is presented in **Annexure-II.** The results of chemical analysis of water samples collected during May 2015 is also discussed and analytical data is given in **Annexure – III**. The water level data of urban areas for the period 2015-2016 are given in **Annexure- IV.**

3.0 GEOLOGY AND HYDROGEOLOGY:

The generalized geological succession of Jharkhand state is given **Table 1** - Generalized geological succession of Jharkhand state.

Age	***Formation***	***Broad Lithology***
Quaternary	Alluvial deposits	Sand, clay, silt and occasional gravels.
Tertiary	Dhalbhumgarh Formation	Boulder, pebbly grits, sand, and mottled clay
L-Cretaceous - U-Jurassic	Rajmahal Trap	Basalt flows with inter-trappean sedimentary beds
Cretaceous- Carboniferous	Gondwana Supergroup	Sandstone, shale, clay conglomerate and coal beds.
L-Cambrian- Proterozoic	Vindhyan Supergroup	Sandstone, quartzite, shale, limestone etc.
Proterozoic	Younger Granite, Granophyre and Soda Granite. Chhotanagpur Granite Gneissic Complex. Kolhan Group, Singhbhum Group, Gangpur Group. Mahakosal Group. Volcano-Sedimentary Sequence. Iron Ore Group. Singhbhum Granite.	Granites, granite gneiss, schists, phyllites, dolomites, basic lavas, amphibolites, gabbro anorthosite
Archean	Older Metamorphics Gneiss, Older Metamorphic Tonalite Gneiss	Gneiss, amphibolites schists, arenites

Granite - gneiss, schist, phyllite, and other rocks belonging to CGGC

It covers nearly 85 % of the geographical area of the state. The phreatic aquifer in this formation consists of weathered mantle and underlying secondary porosities like fractures, joints and fissures. In general, the thickness of weathered zone varies between 10 and 25 m, however in localized patches it is > 35 m. The weathered zone is

the main repository of ground water. Exploratory wells of CGWB reveal that the fractures underlying the weathered zones form the potential phreatic aquifer. The fracture zones (generally beyond 100 m depth) are exploited particularly in urban areas. In general 2-5 sets of fractures have been encountered within 150 m bgl. In a few wells, fractures have been encountered beyond 150 m depth. The ground water occurs under semi-confined to confined condition in the fractures situated at a deeper level. In this formation discharge from negligible to 30 lps has been recorded from the bore wells.

Vindhyan Supergroup

The rocks of this group are exposed in Palamu and Garhwa districts over a limited aerial extent, in the south of the river Son. The sandstones are hard and compact. The ground water occurs within the secondary porosities like fractures and joints. The fractured sandstone has good ground water potential in comparison to the shale. The ground water occurs under unconfined condition in weathered zone. The yield potential of sandstone is poorer than granite gneiss.

Volcanic Rocks

The volcanic rocks occur mainly in the northeastern part of the state in Sahebganj, Pakur and Godda districts, and in southeastern part of the state in East & West Singhbhum, and Saraikela districts. The Rajmahal trap is a series of flows horizontally disposed. In an individual flow, the lower part is massive and the upper part is vesicular. In some cases, vesicles are filled with secondary material. Partially filled interconnected vesicles form the potential aquifers. Thin inter-trappean beds are also observed between the flows. The ground water occurs under unconfined conditions in upper vesicular flows, which are exposed generally at the ground level. In the vesicular layers disposed at deeper levels the ground water occurs under semi-confined to confined condition.

Gondwana Supergroup

The Gondwana Super Group ranging in age from Upper Carboniferous to Cretaceous is considered as semi-consolidated formation. Ground water occurs within inter-granular space as well as within the secondary porosities like fractures and joints. Rocks of this unit are exposed as patches in the districts of Hazaribagh, Dhanbad, Giridih, Bokaro, Ranchi, Dumka, Jamtara, Latehar, Godda and Garhwa districts. The sandstones form repository of ground water. The exploratory drilling of CGWB and other agencies indicate that ground water occur in semi-confined to confined condition in aquifers situated at deeper level, and under unconfined condition at shallow level. At few places, the piezometric head rises above the ground level to give rise to auto flow condition.

Laterites and Tertiary Sediments.

The Dhalbhumgarh Formation of Tertiary age occur in Chakulia- Bahragora-Dhalbhumgarh tract of East Singhbhum district. Exploration to a depth of 120 m indicates presence of 2 to 4 sedimentary layers.
These sedimentary layers are repository of ground water, which occurs under unconfined condition in aquifers disposed at shallow level and under confined to semi-confined condition in aquifers situated at deeper levels.

Younger Alluvium

The Younger Alluvium deposits are confined mainly to the bordering area of the state and occur in patches in the districts of Godda, Sahebganj and Pakur in the northeast and in Latehar, Palamu, Deoghar and Garhwa districts. In the bordering areas alluvial patches is extension of the Gangetic Plain. There is a patch of alluvial deposit in Ranchi district also. The ground water occurs under unconfined condition in aquifer disposed at shallow level. The depth of dug wells ranges between 10 –15 m in general while the depth of shallow tube well ranges between 20 - 30 m. The hydrogeological map & Geological map of Jharkhand is given in Plate III & IV.

4.0 SCENARIO OF DEPTH TO WATER LEVELS IN JHARKHAND DURING 2015 – 2016:

MAY, 2015

Water levels during May 2015 were monitored from 333 wells (out of 417 existing wells). The district-wise status of distribution of Ground Water Monitoring Wells with different ranges of depth to water level is presented in ***Table-2***

The minimum and the maximum depth to water levels have been recorded as 1.20 m bgl and 16.50 m bgl in Dhanbad and Garhwa district respectively. In general the water level throughout the State varies in the range of 5 – 10 m bgl and has been observed in the 175 wells (67.3%) out of 20 analysed wells. Secondly, water level >10 m bgl has been observed in the 31 wells (12%). The water level in the range of 2– 5 m bgl has been observed in the 18.5% of the wells. The water level below 2 m has been observed only in 6 wells, out of which 3 wells located in E Singhbhum and rest 3 well in Ranchi, Gumla and Dhanbad district.

As depicted in **Plate V**, the entire state shows water level varying between 5 and 10 m bgl except few patches where water level is more than 10 m bgl. Including few patches in the State, an area covering the parts of Gumla, Simdega and W Singhbhum has shown water level less than 2 m bgl.

AUGUST, 2015

Water levels during August, 2015 were monitored from 307 Dug wells. The district-wise status of distribution of Ground Water Monitoring Wells with different ranges of depth to water level is presented in **Table 3.**

The minimum and the maximum depth to water levels have been recorded as 0.1 m bgl in Ranchi district and 21.18 m bgl in Gumla district. In general the water level throughout the State varies in the range of 2 – 5 (58%) m bgl from 178 analysed wells. Secondly, the water level in the range of 5 – 10 m bgl has been observed in the 18 % of the wells. Water level >10 m bgl has been observed only in the 4 wells (1.3%) one each in Chatra, Devghar Bokaro, and E Singhbhum district.

As depicted in **Plate VI,** major part of the State shows water level varying 2 - 5 mbgl. Water level above 5 mbgl is observed mainly in northern and north western part of the state whereas the water level less than 2 m bg has been observed in eastern and western part.

NOVEMBER, 2015

A total of 290 GWMW has been monitored during post-monsoon period in November 2015, five groupings were made based on the range of water level data viz. 0-2, 2-5, 5-10, 10-20 and 20-40 m bgl. The district-wise status of distribution of network hydrograph stations with different ranges of depth to water level is presented *in **Table 4.***

Minimum and the maximum depth to water levels have been recorded as 0.50 m bgl and 12.65 m bgl in Dumka and Bokaro district respectively. In about 50% of GWMW, water level rests in range of 5-10 m bgl which covers almost entire Jharkhand state. The water level in the range of 2-5 m bgl has been observed in the 123 wells (44%) which occur in localised areas of south-eastern parts of the state. Ground water level of 0 – 2 m bgl depth range has been observed only in 9 wells at different locations. Only 7 wells have shown water level more than 10 m bgl**. (Plate VII).**

JANUARY, 2015

To study the water levels of recession period data were collected during January, 2016 from 292 wells. The district-wise status of distribution of network hydrograph stations with different ranges of depth to water level is presented *in **Table 5.***

The minimum and the maximum depth to water levels in the State have been recorded as 0.97 m bgl and 19.25 m bgl in E Singhbhum. The water level in general varies between 2 and 5 mbgl as the water level in the range of 5 – 10 m bgl has been observed in the 71% (206 wells) of the wells analysed an covered almost entire State. Few patches of water level range from 10 to 20 m bgl has been observed. About 12% of the wells analysed has shown water level in the range of 2-5 m bgl occurred in the

localised areas. The water level below 2 m has been observed in 3 wells located in E Singhbhum district. **Plate VIII**

5.0 SCENARIO OF ANNUAL FLUCTUATIONS IN JHARKHAND DURING 2014-15 to 2015-16:

The annual fluctuation in water levels for the periods of (1) May 2014 and May 2015, (2) August 2014 and August 2015, (3) November 2014 and November 2015 and (4) January 2015 and January 2016 have been analysed to study the net status of ground water conditions during the previous and current year.

MAY 2014 AND MAY 2015

The annual fluctuation in water level between May '2014 and May '2015 indicates the net status of ground water condition during the previous year and current summer measurement and the same is presented in **Plate IX**. The district wise statement of frequency of distribution of ground water monitoring wells falling in different ranges of water level fluctuation is presented in ***Table-6***.

The major part of the state shows general fall in water level in the range between 0-2 m bgl (54.5%) and rise (27%). Total 126 wells out of 231 analysed wells, comes under 0-2 m falling zone category, on the other hand 62 wells show rise within 2 m, which may indicate that the regional fluctuation of the state(82%) is mainly restricted within 2 m. The next higher magnitude of fluctuation is of 2 -4 m bgl fall in water level in the state (7.4%) is observed in some part of the state.

Overall the entire State is covers under falling zone category (126 wells out of 231 analysed well), which may indicate the slightly less rainfall (2014) and ground water level decline during the analysed period.

AUGUST 2014 AND AUGUST 2015

The annual fluctuation in water level between Aug '2014 and Aug '2015 indicates the net status of ground water condition during the previous year and current monsoon measurement and the same is presented in **Plate X**. The district wise statement of frequency of distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in **Table 7.**

A general fall in water level (44%) has been found in major part of the State whereas rise in water level recorded in 34% wells within 2 m. About 8% wells ranges between 2 – 4 m rise and 7.3 % wells have shown fall out of 205 analysed well. Out of 205 analyzed wells fall in water level is recorded in 137 wells within 2 mbgl.

Overall the entire State is covers under the category of within 2 m fluctuation (44% fall and 34% rise) which may be due to less rainfall in respect to during previous year.

NOVEMBER 2014 AND NOVEMBER 2015

The Annual fluctuation in water level between November 2014 and November 2015 indicates the net status of ground water conditions during the previous and current post-monsoon year and the same is presented in **Plate XI**. The district-wise statement of distribution of network hydrograph stations in different ranges of water level fluctuation is presented in ***Table 8.***

The comparison of fluctuation in water level between November 2014 and November 2015 shows fall in 52.4% GWMW as well as rise in 23% GWMW of the total 252 analysed wells during the period. The major part of the state shows a general fall in water level within 2.00 m. Out of 177 wells showing fall, 2 – 4 m and > 4 m fall has been observed in the 39 wells and 6 wells respectively. Only 29% well analysed has shown rise in water level. of the total analysed wells out of which 14 wells have shown fall within 2-4 m and only one well have shown higher magnitude of annual fluctuation >4m during the period.

JANUARY 2015 AND JANUARY 2016

The annual fluctuation in water level between January '2015 and January '2016 indicates the net status of ground water condition during the previous year and current measurement and the same is presented in **Plate XII**. The district wise statement of frequency of distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in ***Table 9.***

The major part of the state shows general fall (52.6%) in water level in the range between 0-2 m bgl as well as rise (18.5%). Total 162 wells out of 216 of the analysed well comes under 0-2 m falling zone category, on the other hand 40 wells show fall within 2 m, which may indicate that the regional fluctuation (83%) of the state is mainly restricted within 2 m. The rise in water level above 2 m bgl has been observed in isolated patches of the State.

6.0 SCENARIO OF SEASONAL FLUCTUATIONS IN JHARKHAND DURING THE GROUND WATER YEAR 2015 – 2016:

An attempt has been made to compare the pre-monsoon water levels of May, 2015 with water levels of August 2015 and November 2015and January 2016 to delineate the impact of rainfall as well as ground water development on ground water regime in the state during the above period.

MAY 2015 AND AUGUST 2015

The fluctuation in water level between May 2015 and August 2015 indicates the change in water level from pre-monsoon measurement to monsoon measurement and the same is presented in **Plate XIII**. Fluctuation in water level map for May 2015 and August 2015 has been prepared from 234 analyzed wells. The district wise statement

of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in ***Table 10.***

During this period the entire state of Jharkhand shows a general rise in water level, which is mainly due to recharging of ground water on onset of monsoon from June 2015. However 8 wells shows fall in water level which may be mainly due to temporal withdrawal of ground water and less rainfall in those areas.

MAY 2015 AND NOVEMBER 2015

The seasonal fluctuation in water level between May 2015 and November 2015 indicates the change in water level from pre-monsoon measurement to post-monsoon measurement and the same is presented in **Plate XIV**. The district-wise statement of distribution of network hydrograph stations in different ranges of water level fluctuation is presented in ***Table 11.***

Fluctuation in water level for November 2015 compared with May 2015 shows rise in water level (88%) for the entire state of Jharkhand. Out of 210 wells analysed, in the tune of 0.20 - 2.00 m (35%), 2.00 - 4.00 m (39%) and above 4 m (14%) during the period, which is a normal phenomenon due to recharge of ground water, as a result of onset of monsoon and rapid recharge due to moderate to steep slope in undulating tracts. A fall in water level is recorded in 24 wells out of 210 wells of the state which is mainly due to temporal withdrawal of ground water in those areas.

MAY 2015 AND JANUARY 2016

The fluctuation in water level between May 2015 and January 2016 indicates the change in water level from pre-monsoon measurement to January measurement and the same is presented in **Plate XV**

XV. Fluctuation in water level maps for May 2013 and January 2014 have been retrieved from 209 analyzed wells. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of wa**ter level fluctuation is presented in *Table 12.***

During the period the entire state of Jharkhand shows a general rise in water level in the range of 0.00 to 2.00 m(53%) and 2.00 to 4.00 m (14%) and > 4 mbgl (8%) which is mainly due to recharge on ground water for onset monsoon from June 2015 and rainfall during November & December 2015. However 45 wells of the state shows fall in water level, out of which 6 wells one each in shows fall above 4 m bgl, which may be due to temporal withdrawal of ground water at that area.

7.0 SCENARIO OF DECADAL WATER LEVEL FLUCTUATIONS WITH THE GROUND WATER YEAR 2015 – 2016:

DECADAL MEAN AND MAY 2015

Water level fluctuation map **(Plate XVI)** has been prepared by comparing the water level data (142 wells) for May Mean (2005-2014) with the depth to water level data May 2015. The district wise statement of frequency distribution of ground water monitoring wells falling in different ranges of water level fluctuation is presented in ***Table 13.***

The fall (47%) as well as rise (35%) in water level in the range of 0 – 2 m shows variation in almost the entire state. However the higher magnitude (>4m) of fall also recorded in 8 wells in 7 districts which may be due to temporal higher withdrawal of ground water on that area.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

DECADAL MEAN AND AUGUST 2015

Water level fluctuation map ***(Plate XVII)*** has been prepared by comparing the water level data (149 wells) for August Mean (2005-2014) with the depth to water level data August 2015. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in ***Table 14.***

The rise (43%) as well and fall (34.5%) in water level in the range of 0 – 2 m shows variation almost in the entire state. Fluctuation in water level in the range of 2 – 4 m bgl is recorded in 16% wells and for > 4 m in 11% through entire state.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well. Fall > 2 mbgl may be due to irregularities of rainfall during last 3 to 4 years.

DECADAL MEAN AND NOVEMBER 2015

The fluctuation map of water level between November Mean and November 2015 **(Plate XVIII)** has been prepared on the basis of available Mean water level data of November for last 10 years (2004-2014) with the present water level data for Jharkhand. The district-wise statement of distribution of network hydrograph stations in different ranges of water level fluctuation is presented in ***Table 15.***

The entire state shows rise as well as fall in water level below 2 m observed more than 77% of the wells analysed. Fall in water below 2 m has been recorded in more than 34.5 % of the area and rise in 42.7% of the wells.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

DECADAL MEAN AND JANUARY 2016

Water level fluctuation map **(PlateXIX)** has been prepared by comparing the water level data (140 wells) for January Mean (2006-2015) with the depth to water level data January 2016. The district wise statement of frequency distribution of network hydrograph stations falling in different ranges of water level fluctuation is presented in ***Table 16.***

The fall (52.7 %) in water level in the range of 0 – 2 m has been observed in almost entire state, except few localised area where rise has been observed up to 2 m. Out of 237 wells analysed only 22% wells have shown rise in water level. About 16 % wells have shown rise up to 2 m.

However, overall regional fluctuation of water level in the entire state is mainly restricted within 2 m only which is normal phenomenon and no abnormal rise or fall in water level is observed except in few localized well.

8.0 TREND OF GROUND WATER LEVEL

Trend of ground water level map (Plate XX) has been prepared by comparing the water level trend data (170 wells) for the period of (2006 – 2015). The Trend of ground water level data is presented **in Annexure-II*.***

The observation shows the rising trend of ground water level in 68 and fall in 102 wells. The trend of ground water level of the entire state (65.86%) is mainly restricted within 0.6 m only which is normal phenomenon and no abnormal rise or fall in water level is observed in the well of the state.

9.0 HYDROCHEMESTRY:

The chemical quality of groundwater is dependent on the source of water and on the course over which it flow. Ground water carries a higher mineral content than surface water due to the slow circulation and longer period of contact with the formation. Depending on the dissolved salts, the quality of ground water in Jharkhand has been depicted with the help of Iso-Conductance and Iso-Chloride map in Plate XXI and XXII. In order to assess the chemical quality of ground water of phreatic aquifers of Jharkhand state ground water samples have been analysed for major 15 parameters viz. EC, pH, HCO_3, CO_3, Cl, TH, Ca, Mg, K, Na, F, SiO_2, PO_4 and NO_3. The chemical analysis data of ground water samples collected(259) during the period May 2015 from Ground Water Monitoring wells are given in Annexure III.

Ground water samples throughout the state found to be slightly alkaline in nature as the pH mostly varies between 6.7 – 8.54. The quality of ground water in most of part of the state is potable with low mineral contents having electrical conductance varying from 320 (recorded at Bengabad, Giridih) to 3321 (at Daru, Hazaribagh) µS/cm at 25^0c. The samples found to be suitable for drinking and irrigation purposes. Only 4 samples are having electrical conductivity greater than 2000 µS/cm, which can be treated as brackish water. Spatially in major part of the state EC rested in the range of 400-1000 µS/cm. In most of the samples the concentration of chloride is within the desirable limit of drinking water (250 mg/l). Concentration of chloride in ground water >250 mg/l is recorded in small patches in Bokaro,Giridih, Koderma, Dhanbad, and Hazaribagh districts.

Thus it is observed that the quality of ground water in shallow aquifers in the entire state is suitable for drinking, irrigation and industrial purposes except in arsenic & fluoride infested areas.

PLATE I

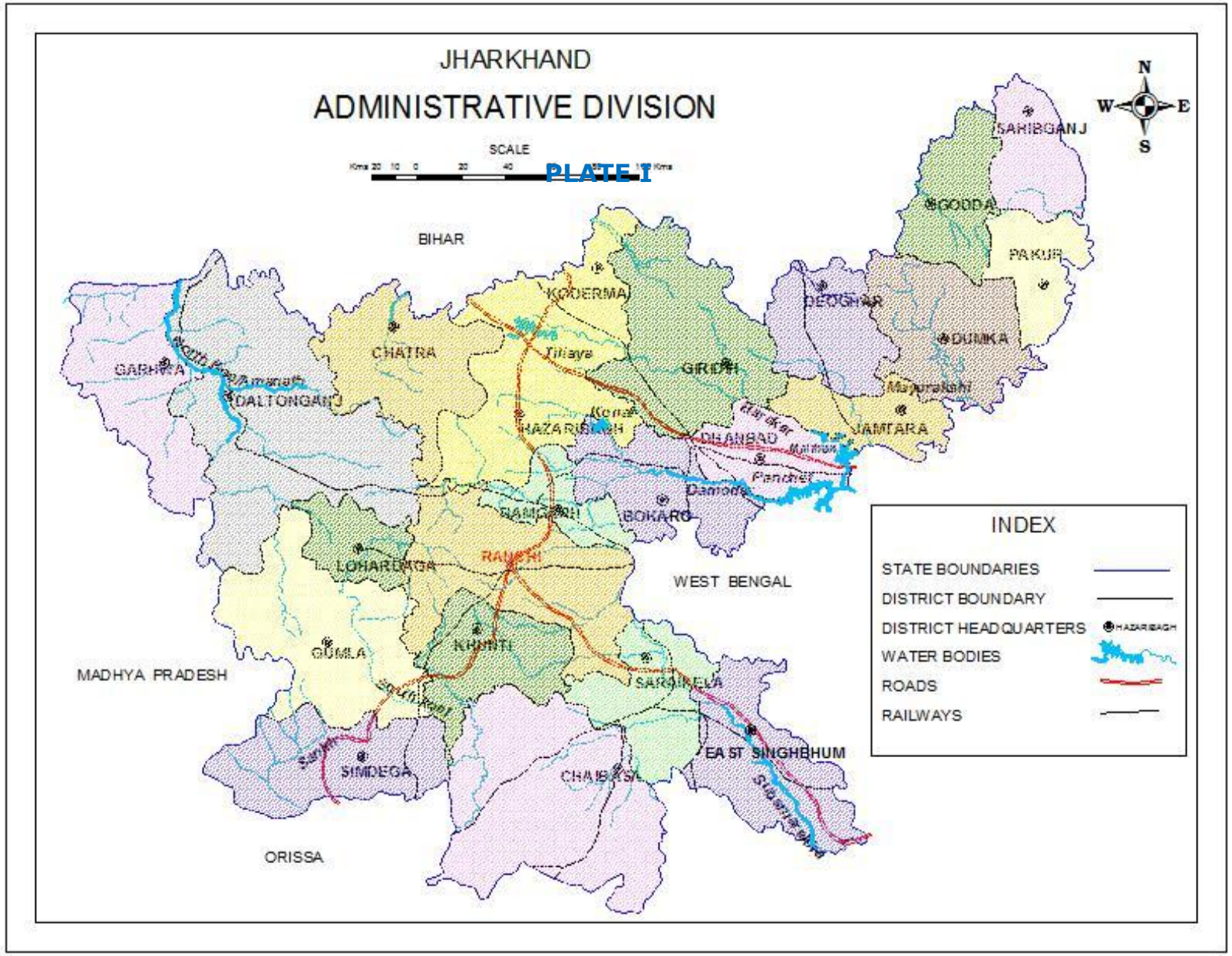

JHARKHAND
ADMINISTRATIVE DIVISION
SCALE
PLATE I
N
W
E
S
BIHAR
SAHIBGANJ
GODDA
PAKUR
KODERMA
DEOGHAR
DUMKA
CHATRA
GARHWA
DALTONGANJ
GIRIDH
HAZARIBAGH
DHANBAD
JAMTARA
BOKARO
RAMGARH
RANCHI
LOHARDAGA
WEST BENGAL
GUMLA
KHUNTI
SARAIKELA
MADHYA PRADESH
SIMDEGA
CHAIBASA
EAST SINGHBHUM
ORISSA
INDEX
STATE BOUNDARIES
DISTRICT BOUNDARY
DISTRICT HEADQUARTERS
HAZARIBAGH
WATER BODIES
ROADS
RAILWAYS

PLATE II

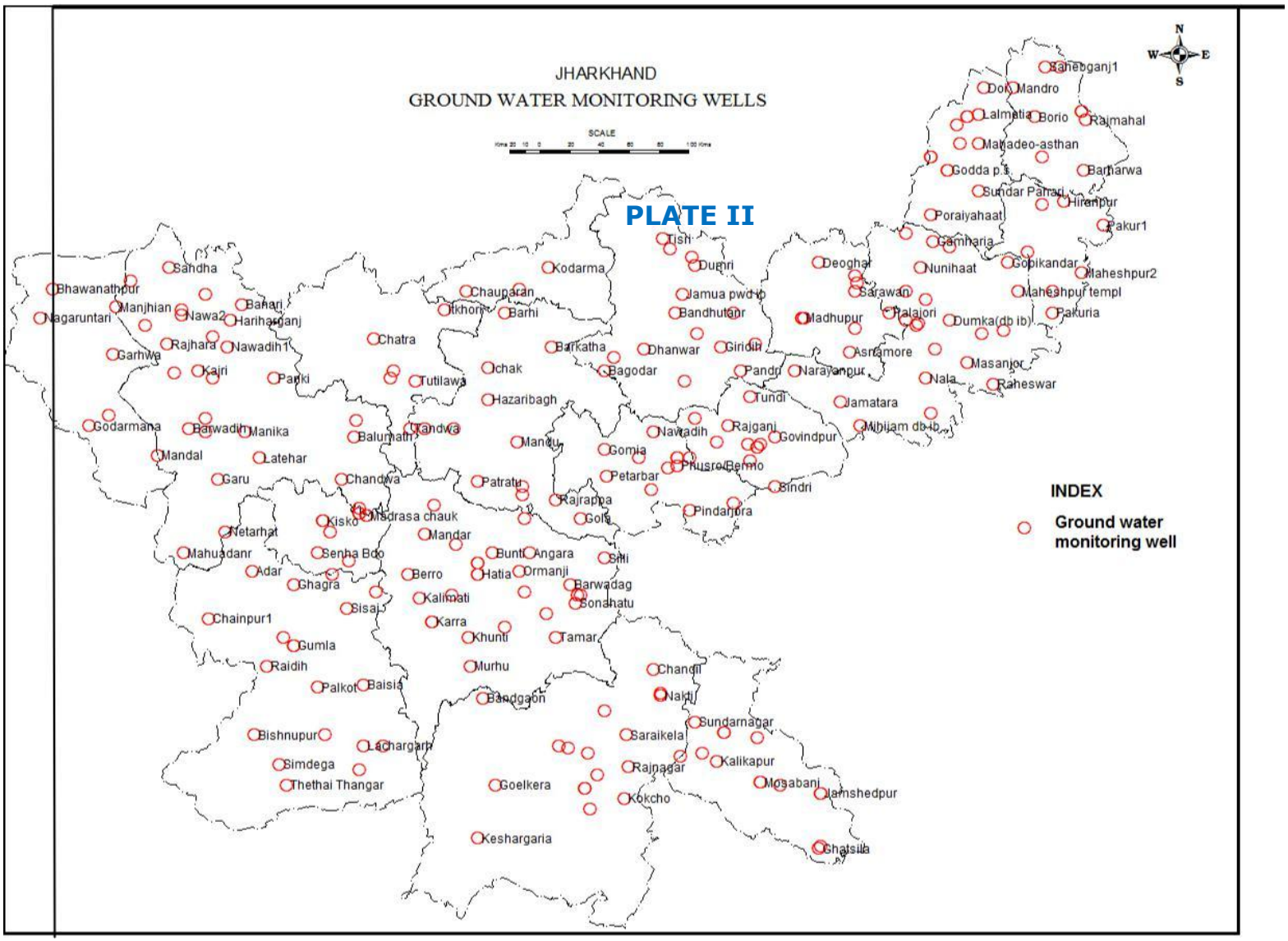
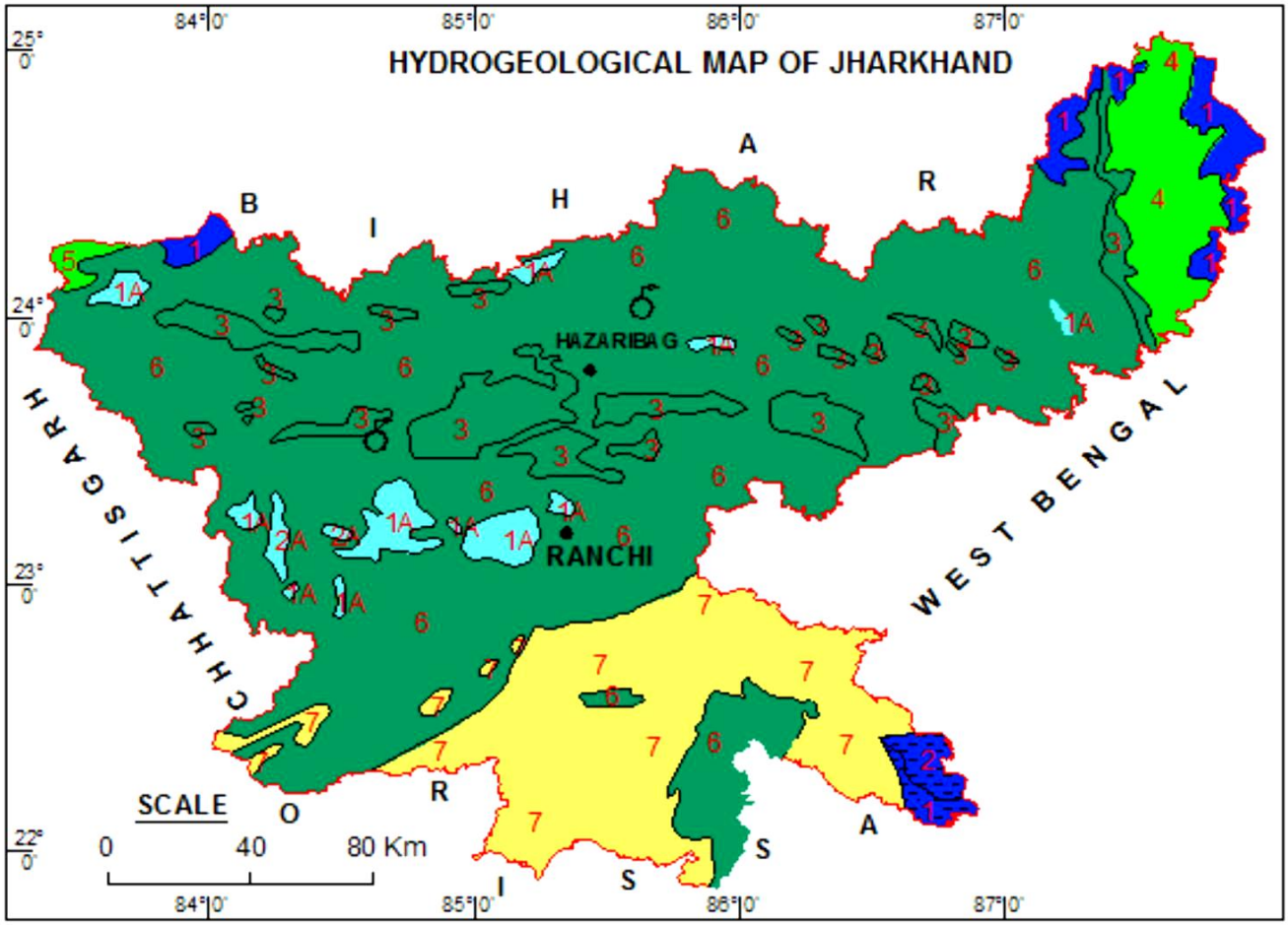

JHARKHAND
GROUND WATER MONITORING WELLS
SCALE
PLATE II
N
W
E
S
INDEX
Ground water monitoring well
Sahebganj1
Dok Mandro
Lalmatia
Borio
Rajmahal
Mahadeo-asthan
Godda p.s
Barharwa
Sundar Pahari
Hiranpur
Poraiyahaat
Pakur1
Gamharia
Gopikandar
Maheshpur2
Maheshpur templ
Pakuria
Dumka(db ib)
Nunihaat
Deoghar
Sarawan
Jalajori
Madhupur
Asnamore
Masanjor
Nala
Raneswar
Jamua pwd ib
Bandhutanr
Giridih
Dhanwar
Pandri
Narayanpur
Tundi
Jamatara
Mihijam db ib
Govindpur
Rajgani
Navadih
Pkusro/Bermo
Sindri
Pindarjora
Tisri
Dumri
Kodarma
Chauparan
Ikhori
Barhi
Barkatha
Bagodar
Chak
Hazaribagh
Tutilawa
Chatra
Tandwa
Balumath
Mandu
Gomia
Petarbar
Patratu
Rajrappa
Golf
Chandwa
Garu
Latehar
Mandal
Godarmana
Barwadih
Manika
Sandha
Bhawanathpur
Manjhian
Nawa2
Bahari
Harihanganj
Nagaruntari
Rajhara
Nawadih1
Garhwa
Kairi
Panki
Kisko
Misdrasa chauk
Netarhat
Mandar
Mahuadanr
Senha Boo
Adar
Ghagra
Berro
Bunti
Angara
Hatia
Ormanji
Barwadag
Sonahatu
Silli
Kalimati
Sisai
Karra
Khunti
Tamar
Chainpur1
Gumla
Raidih
Murhu
Palkot
Baisia
Bandgaon
Chandil
Nakti
Sundarnagar
Saraikela
Kalikapur
Rajnagar
Mosabani
Jamshedpur
Kokcho
Goelkera
Bishnupur
Lachargarh
Simdega
Thethai Thangar
Keshargaria
Ghatsila

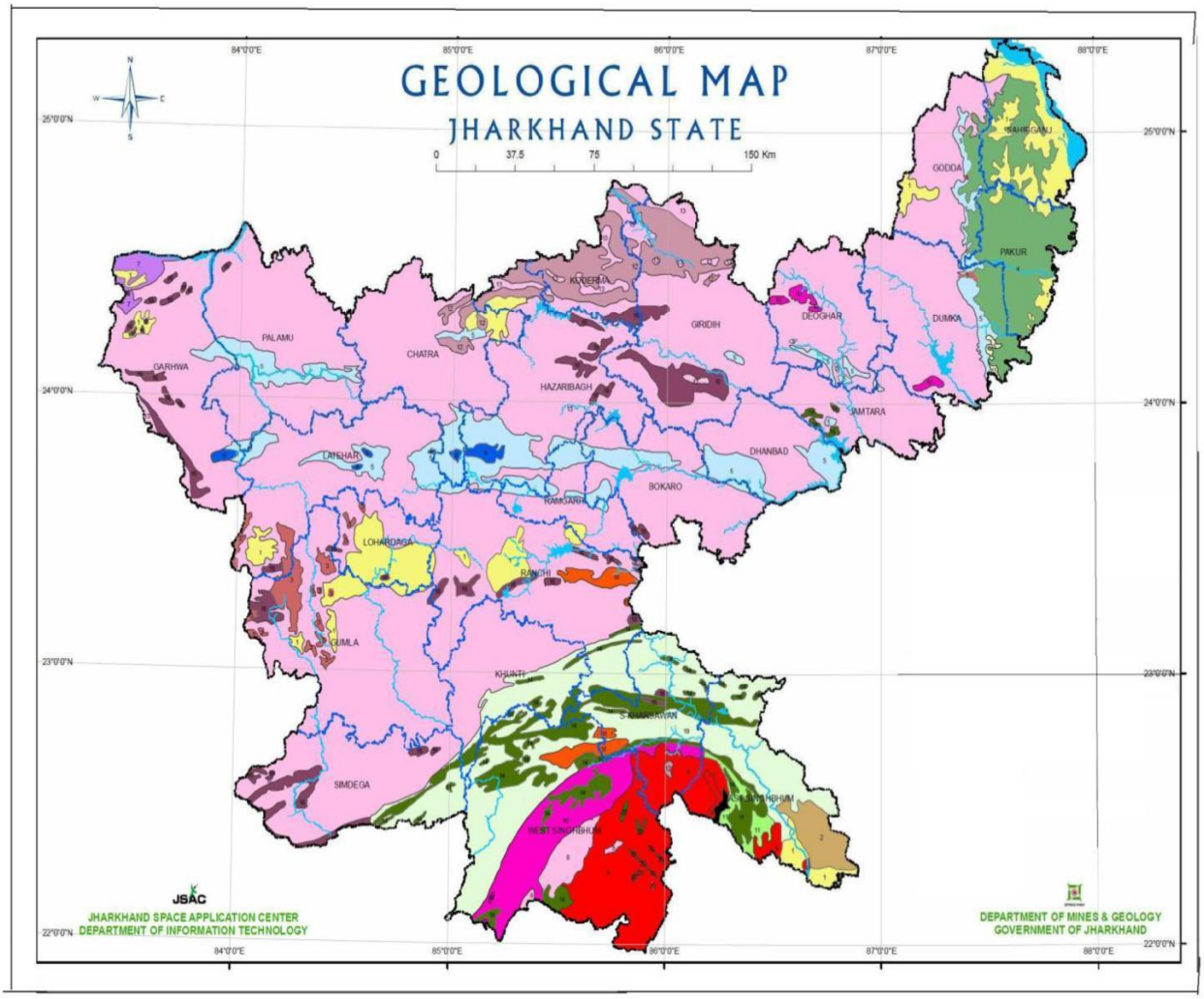
PLATE III



FISSURED & SEMI-CONSOLIDATED FORMATIONS

UNITS	AGE GROUP	FORMATION	COLOUR	LITHOLOGY	GROUN WATER POTENTIAL
1	QUATERNARY	ALLUVIUM		CLAY, SILT, GRAVEL, PEBBLES & CALC	>40 m³/hr
1A	QUATERNARY	ALLUVIUM		CLAY, SILT & SAND	1-10 m³/hr
2	PLEISTOCENE TERTIARY	LATERITES		LATERITES & LITHOMARGE	1-10 m³/hr
2A	PLEISTOCENE TERTIARY	TERTIARY		SAND, SILT, CLAY, PABLE & GRAVEL	10-40 m³/hr
3	CARBONIFEROUS E CRETACEOUS	GONDWANA		CLAY, SILT, GRIT, SANDSTONE & SHALE	1->25 m³/hr
4	L JURASSIC E CRETACEOUS	RAJMAHAL BASALT		BASALT FLOWS WITH INTERTRAPPEANS	1-25 m³/hr
5	PROTEROZOIC E CAMBRIAN	VINDHYAN		QUARTZITE, LIMESTONE, SANDSTONE, DOLOMITE & SHALE	1-25 m³/hr
6	PROTEROZOIC ARCHEAN	CHHOTNAGPUR GNEISSC COMPLEX		GNEISSES & GRANITES	1->25 m³/hr
7	PROTEROZOIC ARCHEAN	VOLCANO-SEDIMENTARY		SCHISTS, PHYLLITES, BASIC & ACIDIC INTRUSIVES	1-15 m³/hr

PLATE IV



INDEX

1, Alluvium, Soil/Boulder Conglomerate, Older Alluvium & Laterite
2, Tertiary Gravels
3, Laterite
4, Rajmahal Trap/Intertrappean Beds/Trap Dykes
5, Lower Gondwana System/Carbonaceous Shale/Sandstone/Coal Seams
6, Upper Godwana System/Sandstone/Red Clay
7, Lower Vindhyan System/Limestone/Shale
8, Kolhan Series/Limestone/Sandstone/Quartzite
9, Singhbhum Granite
10, BHQ/BHJ/Metavolcanics/Metasedimentary
11, Dhanjori Quartzite and Conglomerate
12, Micaschist, Phyllite, Quartzite/Metamorphic of Chhotanagpur
13, Chhotanagpur Gneiss & Granophyre
14, Dhanjori Lava/Dalma Lava/ Basic rocks
15, Sandstone, Shale (Dubrajpur Formation)
16, Basic & Ultrabasic
17, Gabbro -Anorthosite
18, Granite
19, Volcanogenic Meta-sediments and Metasedimentary rocks
20, Newer Dolerite
River/Water Body
District Boundary
State Boundary

PLATE V

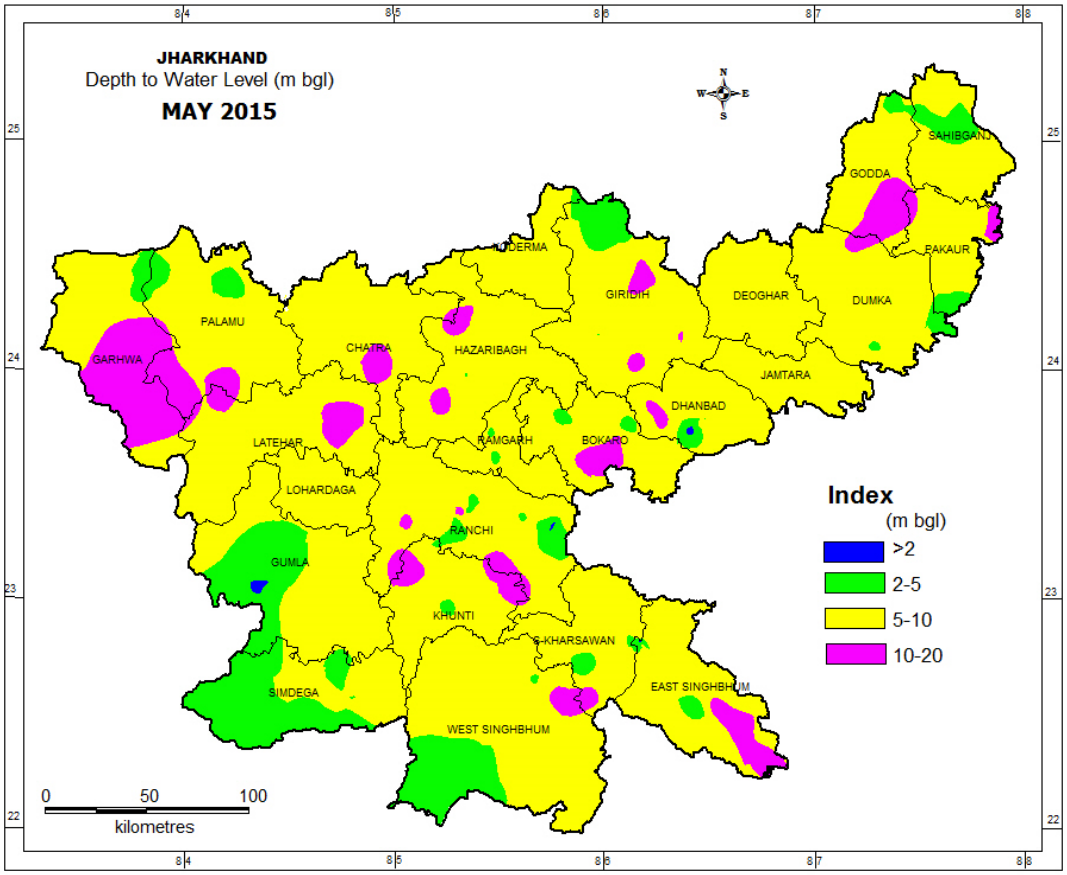


PLATE VI

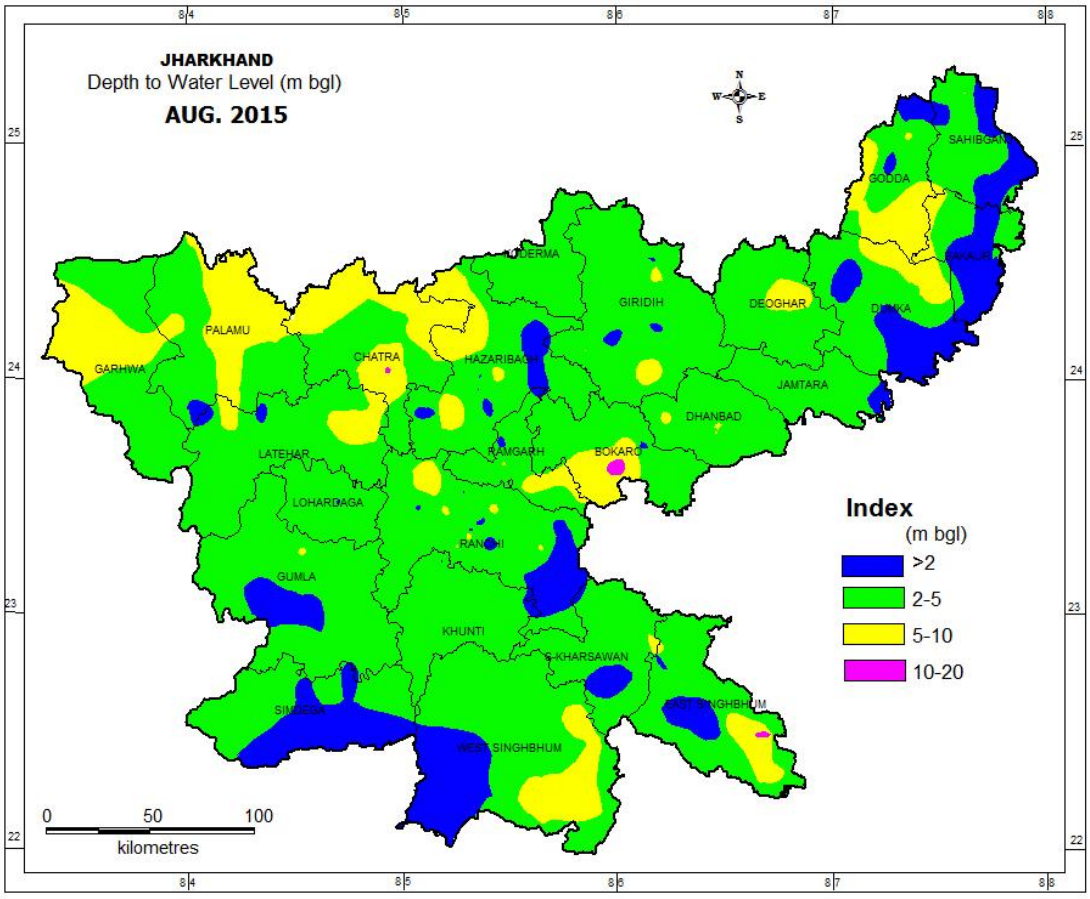


PLATE VII

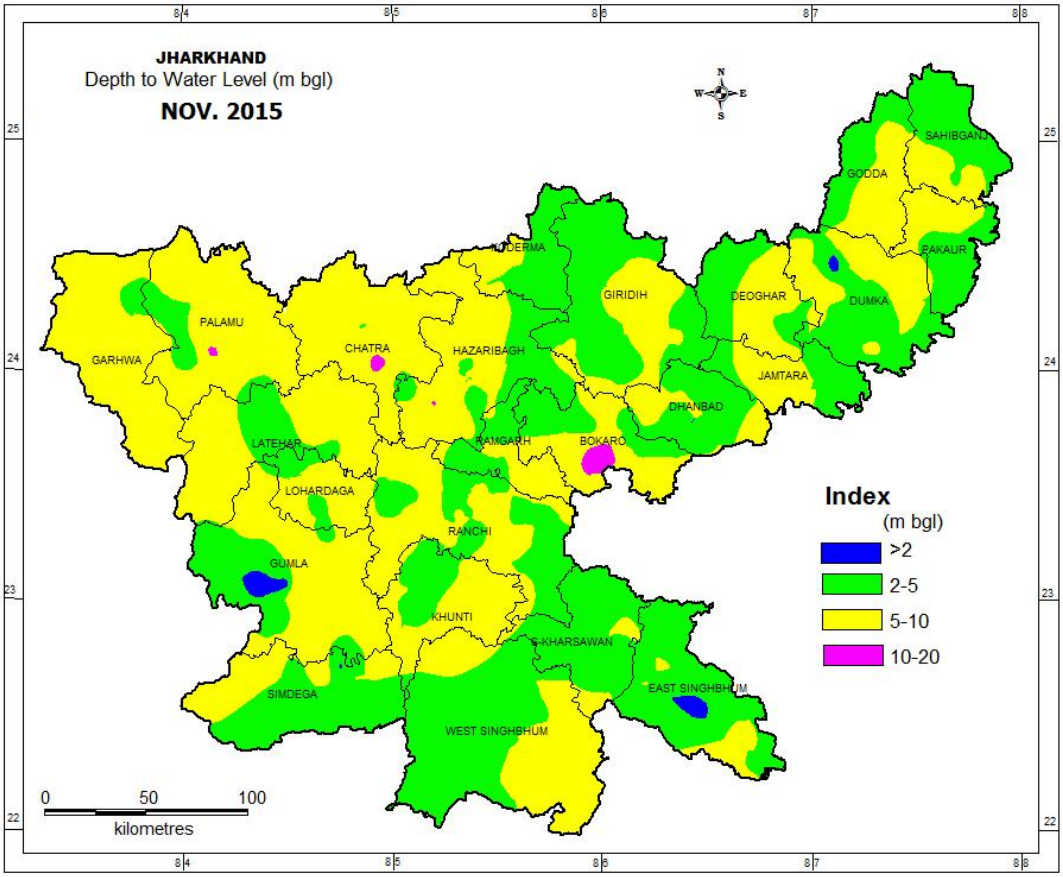


PLATE VIII

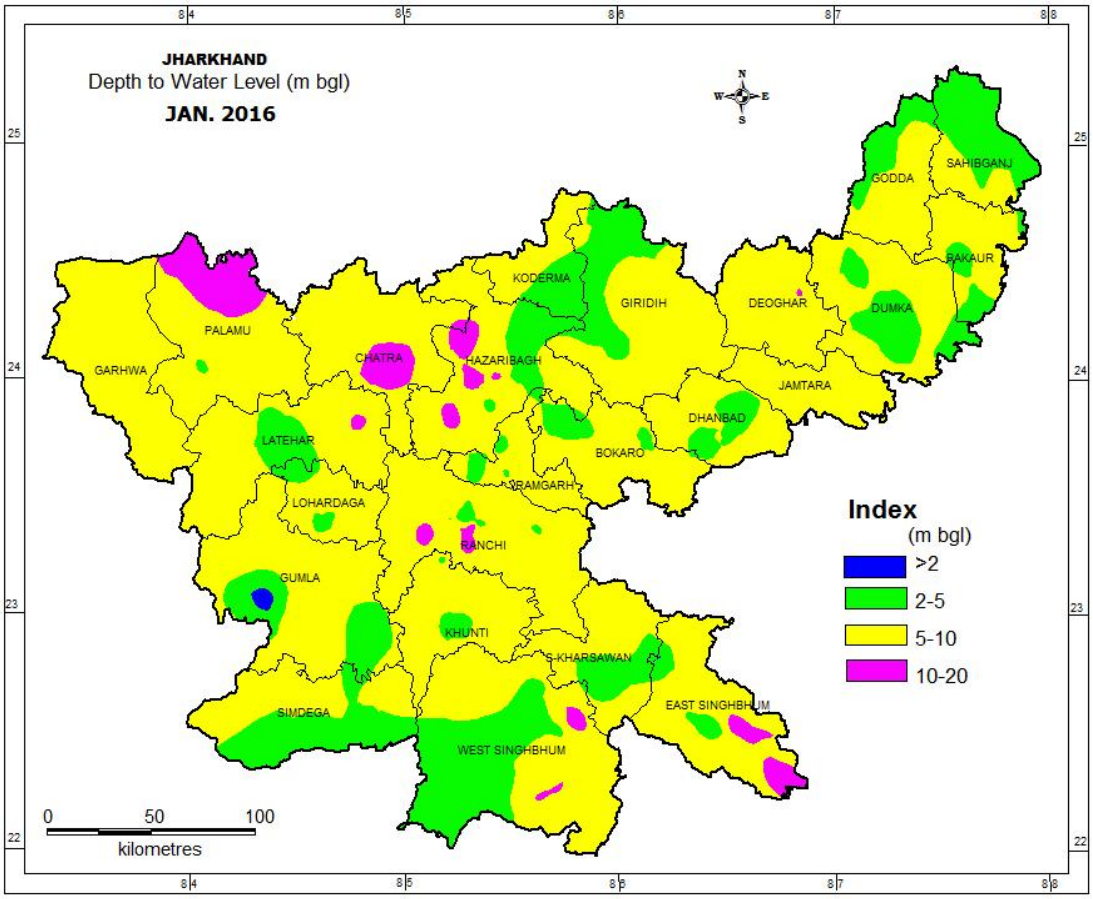


PLATE IX

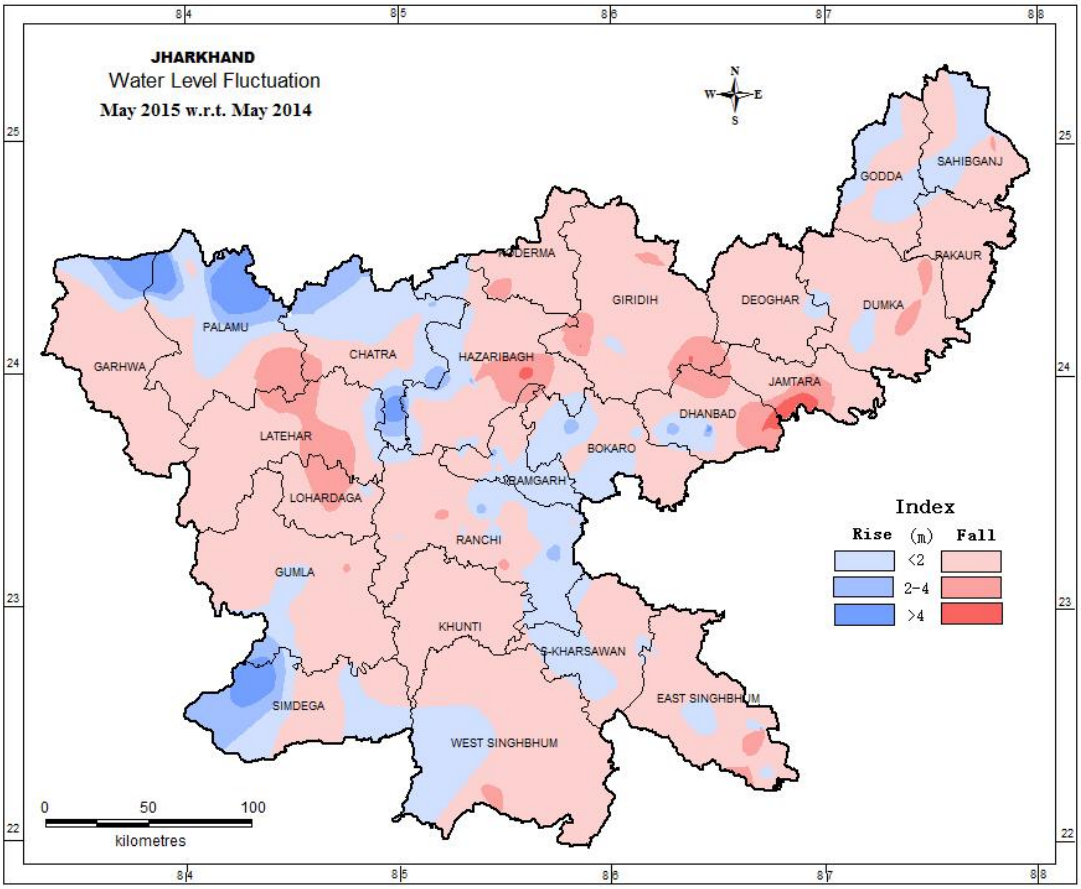


PLATE X

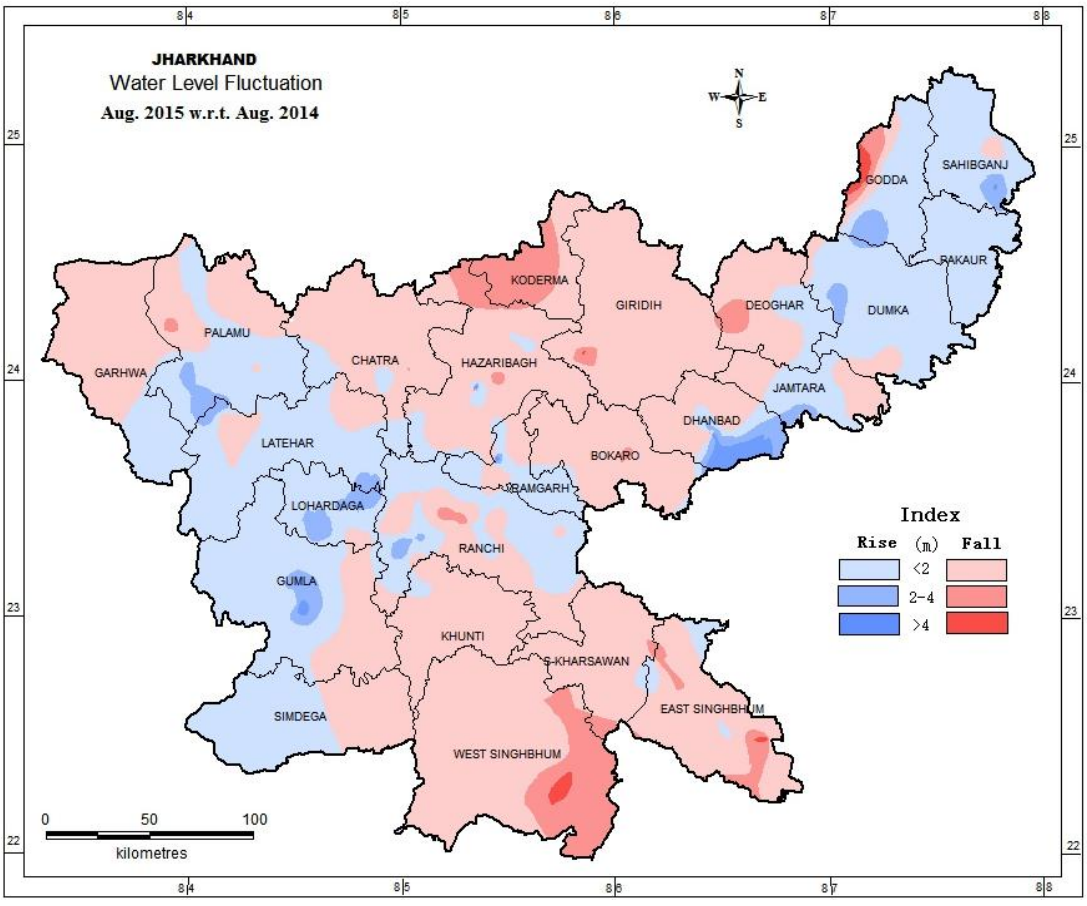


PLATE XI

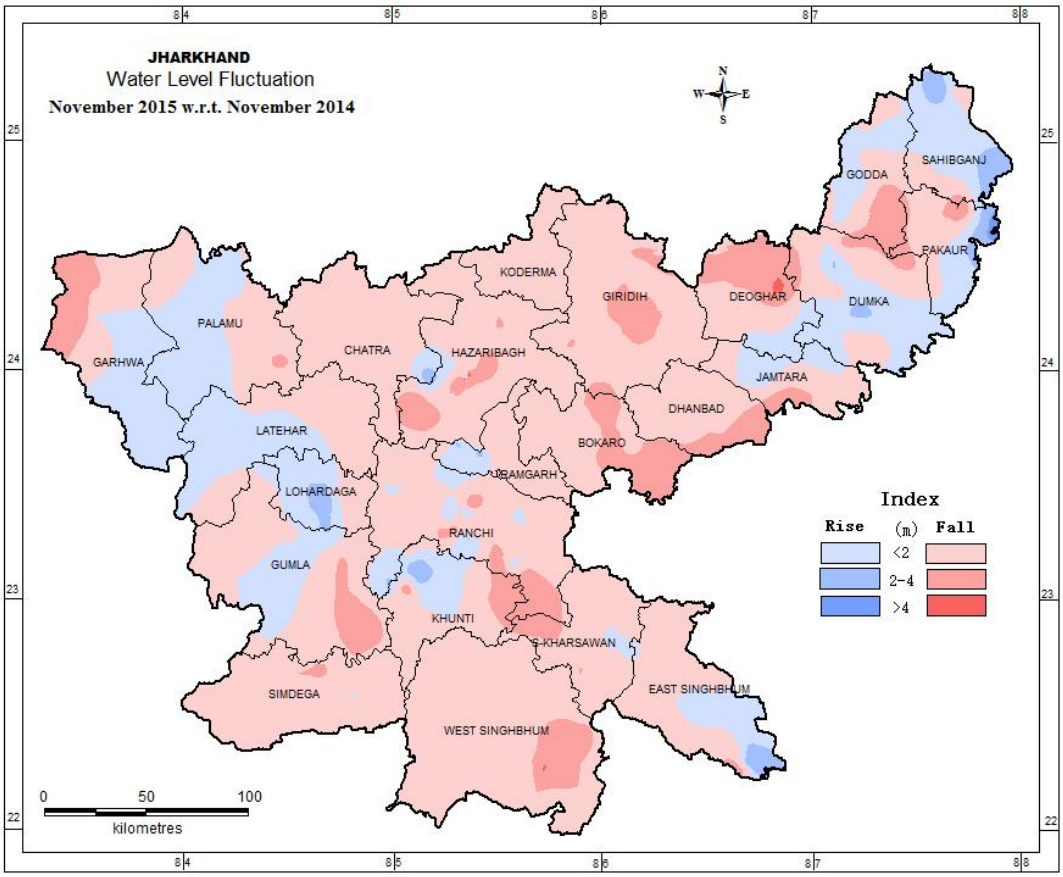


PLATE XII

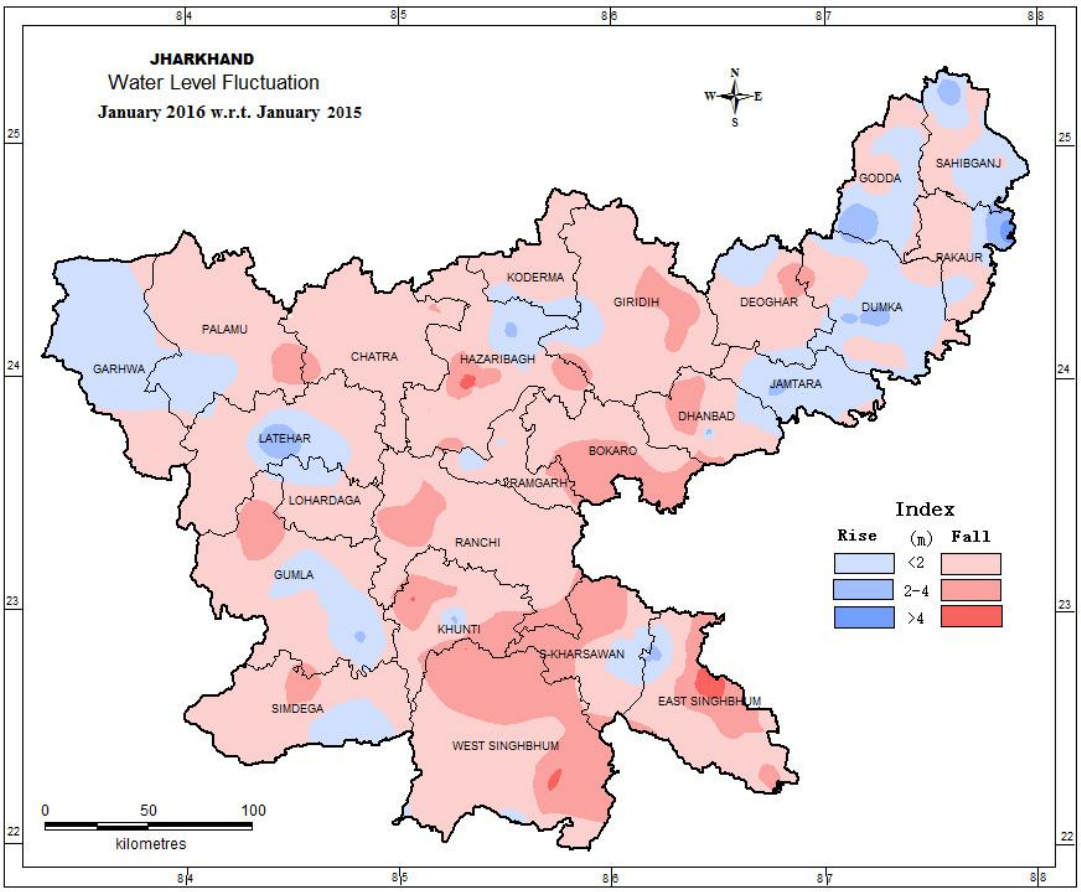


PLATE XIII

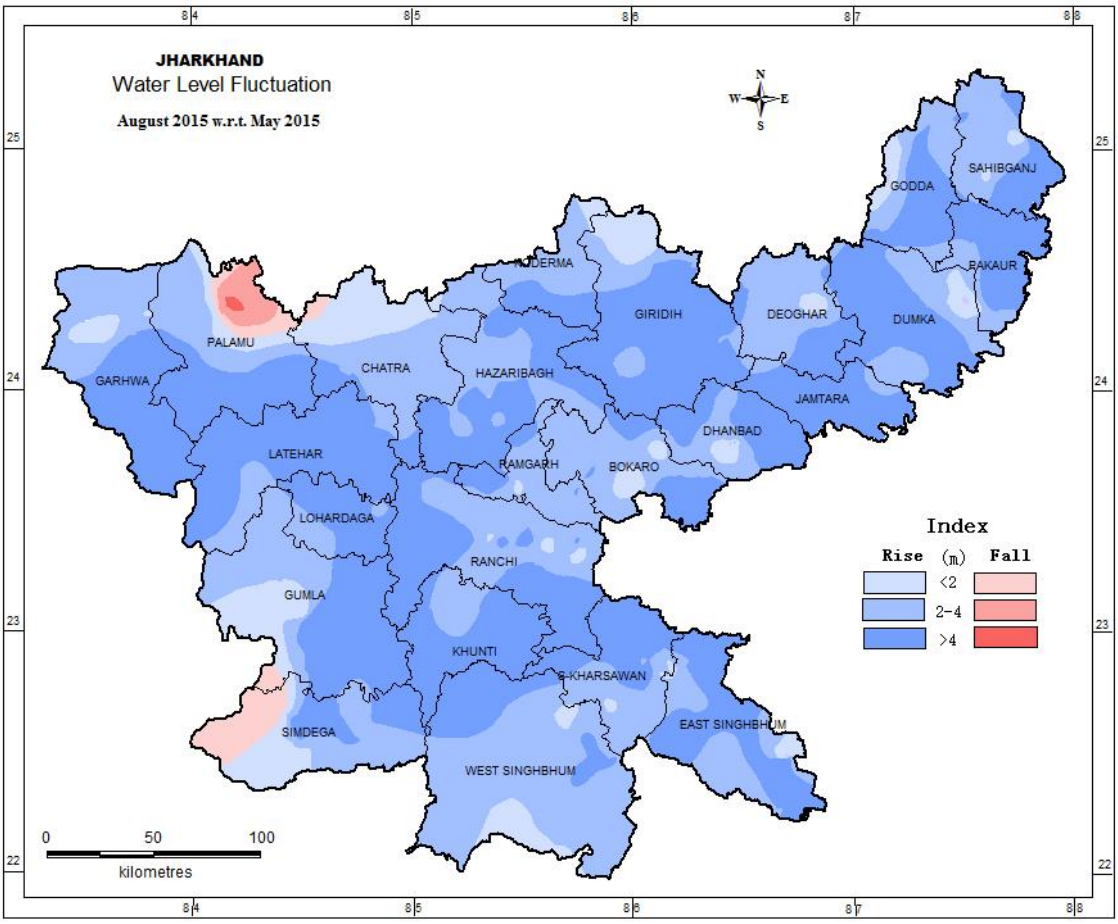


PLATE XIV

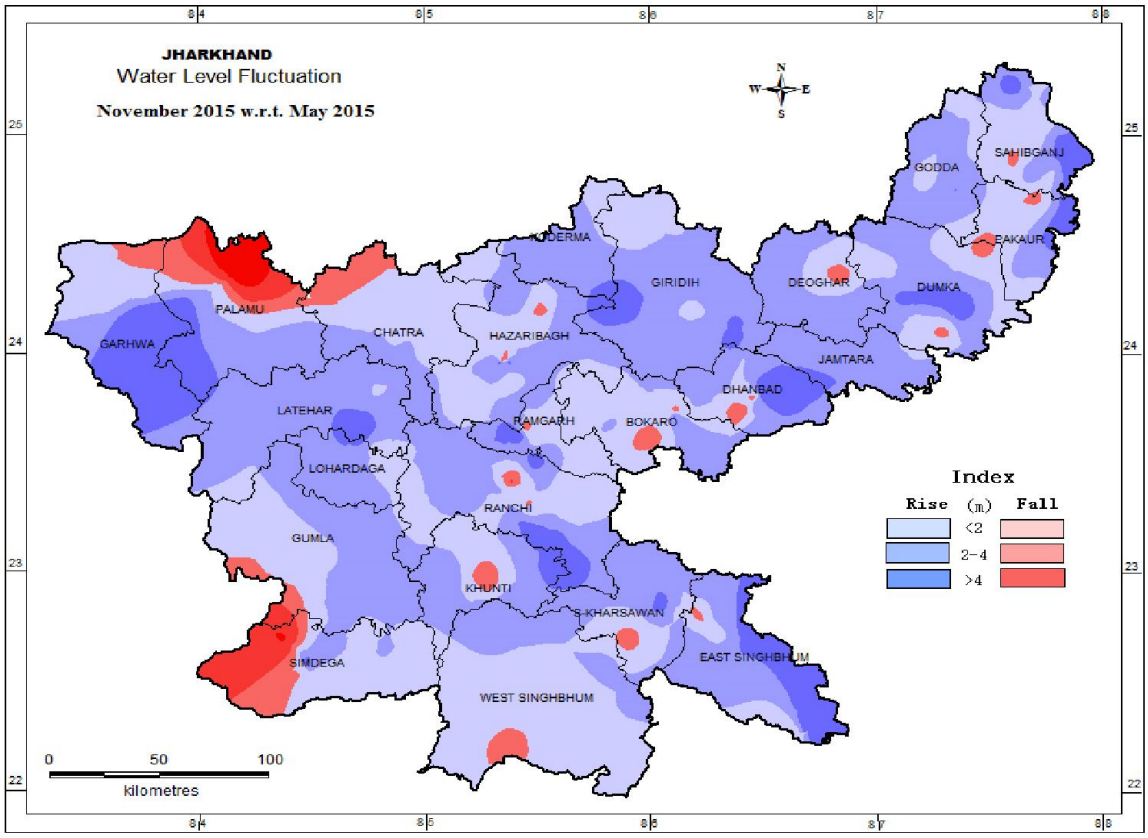
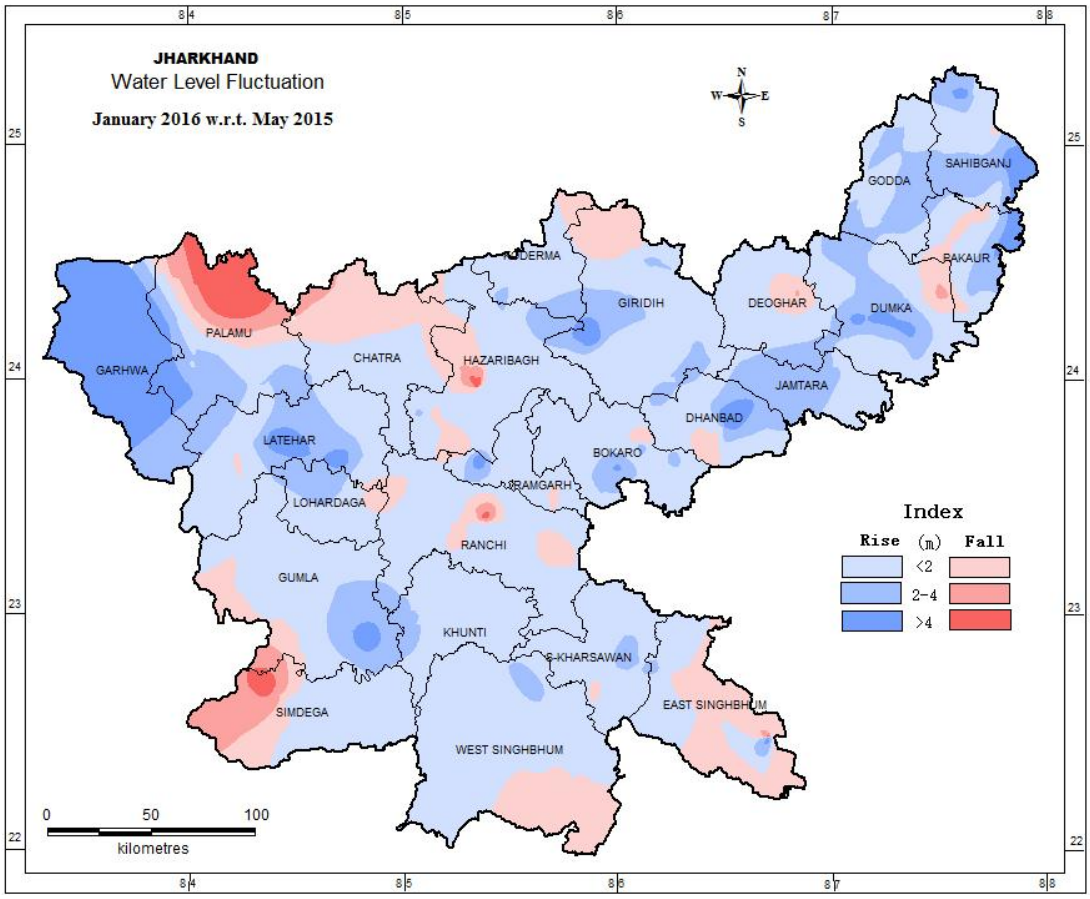
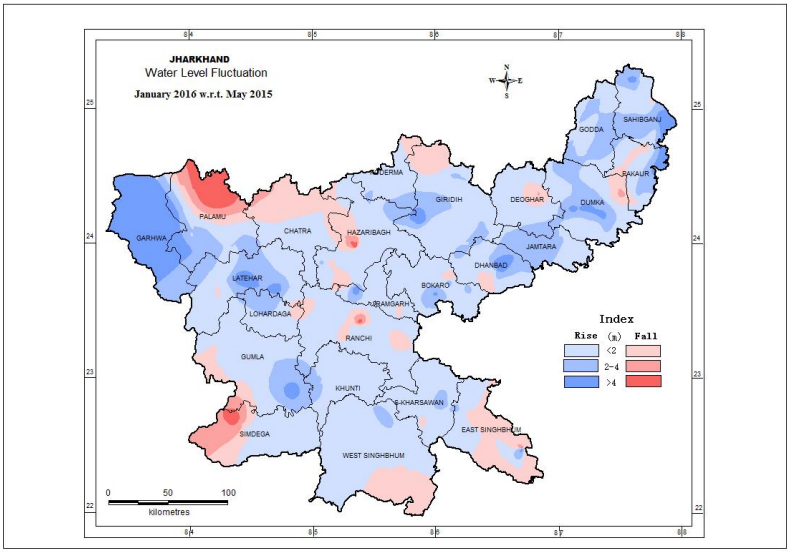


PLATE XV


JHARKHAND
Water Level Fluctuation
January 2016 w.r.t. May 2015
N
W
E
S
GODDA
SAHIBGANJ
PAKAUR
GIRIDIH
DEOGHAR
DUMKA
PALAMU
CHATRA
HAZARIBAGH
GARHWA
JAMTARA
DHANBAD
LATEHAR
BOKARO
RAMGARH
LOHARDAGA
RANCHI
GUMLA
KHUNTI
SERAIKELA-KHARSAWAN
SIMDEGA
EAST SINGHBHUM
WEST SINGHBHUM
Index
Rise (m) Fall
<2
2-4
>4
0
50
100
kilometres


JHARKHAND
Water Level Fluctuation
January 2016 w.r.t. May 2015
Index
Rise (m) Fall
<2
2-4
>4
0
50
100
kilometres

SIMDEGA
WEST SINGHBHUM
EAST SINGHBHUM
0
50
100
kilometres

PLATE XVII

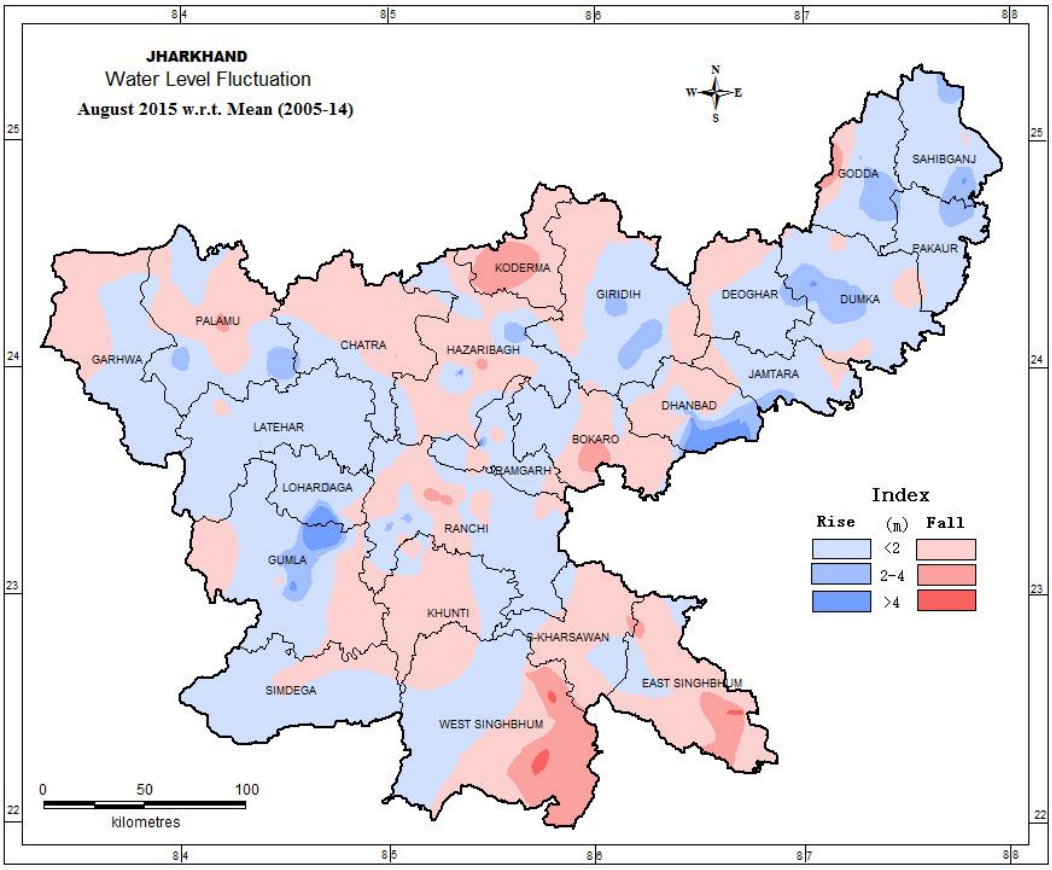


PLATE XVIII

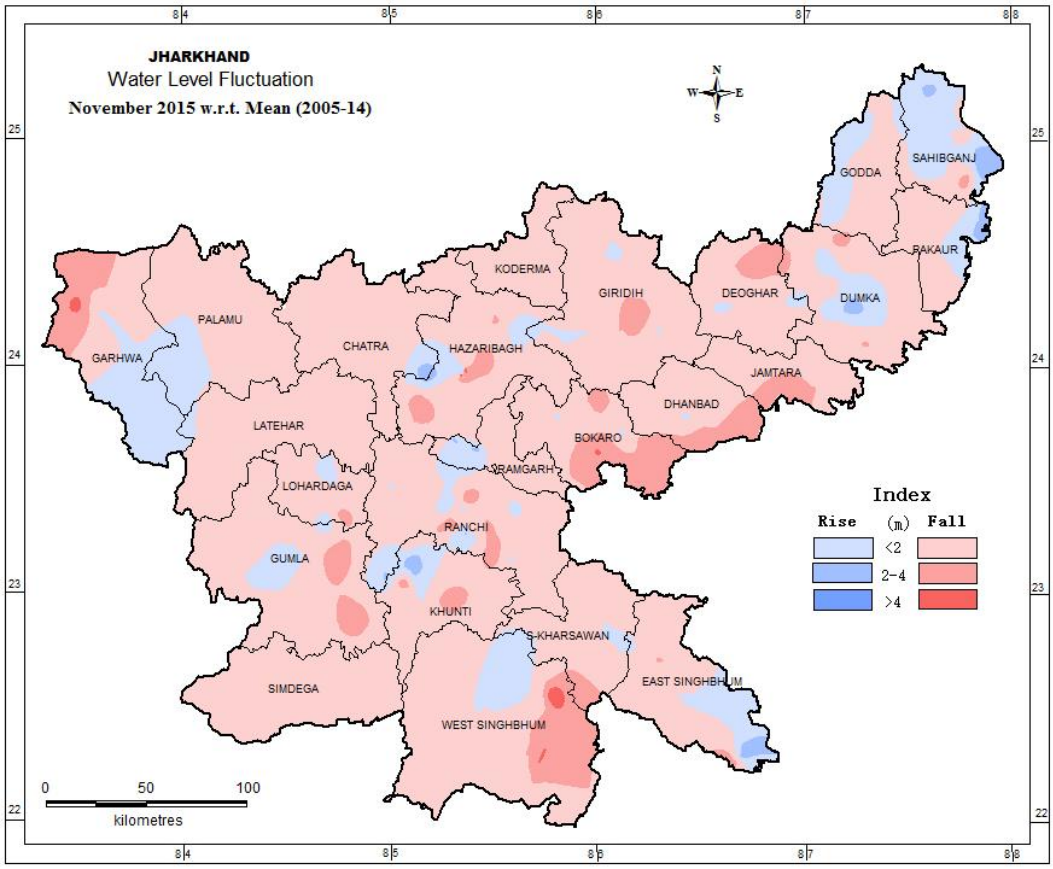


PLATE XIX

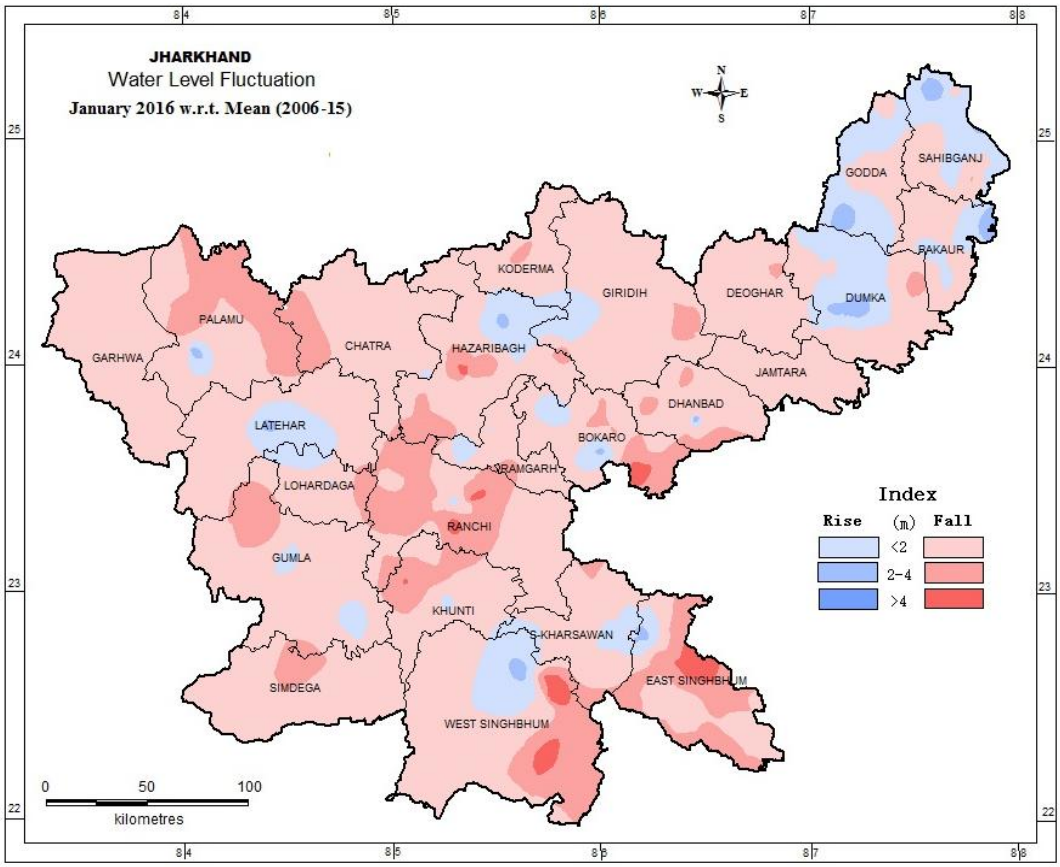


PLATE XX

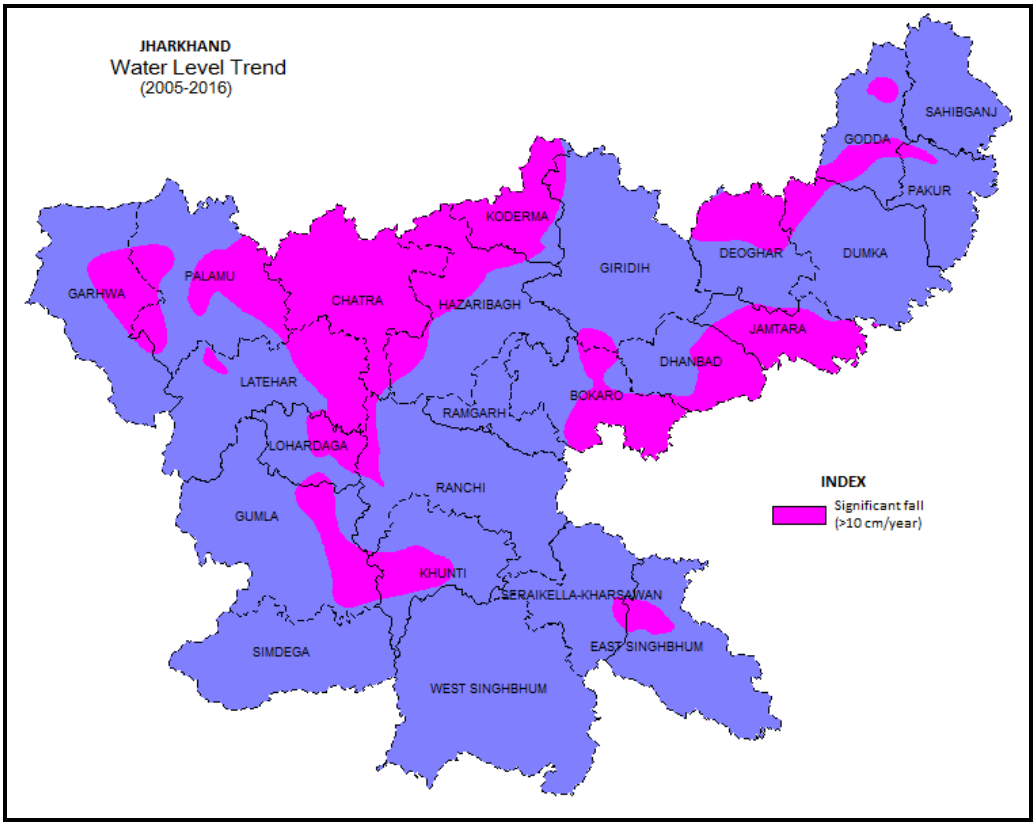


PLATE XXI

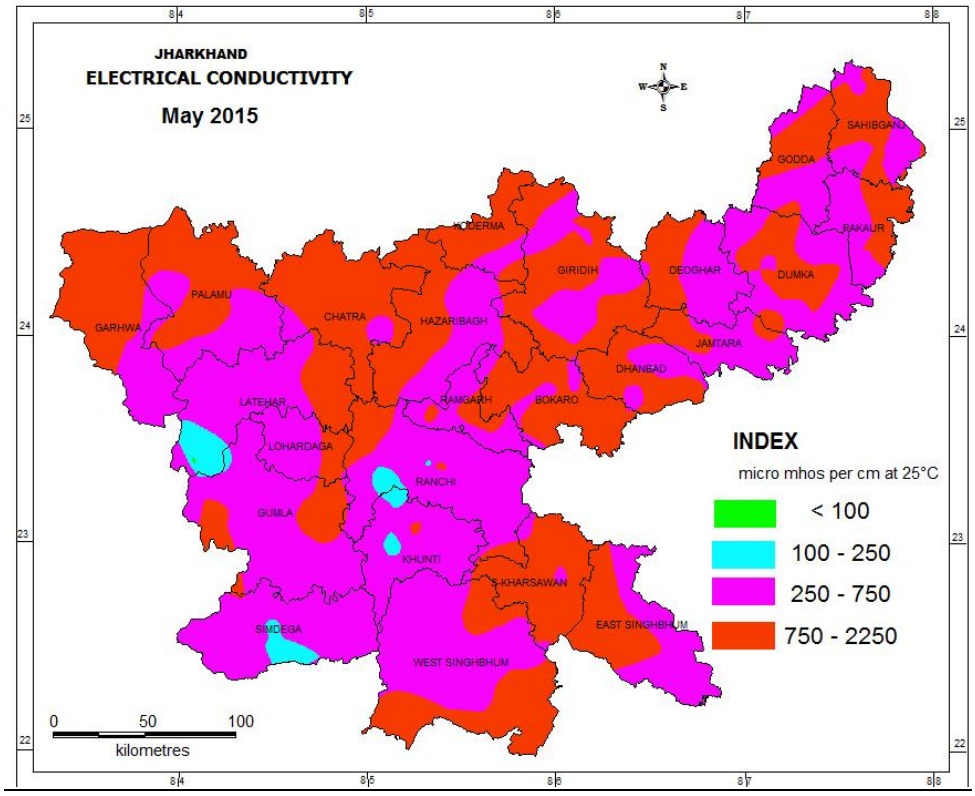


PLATE XXII

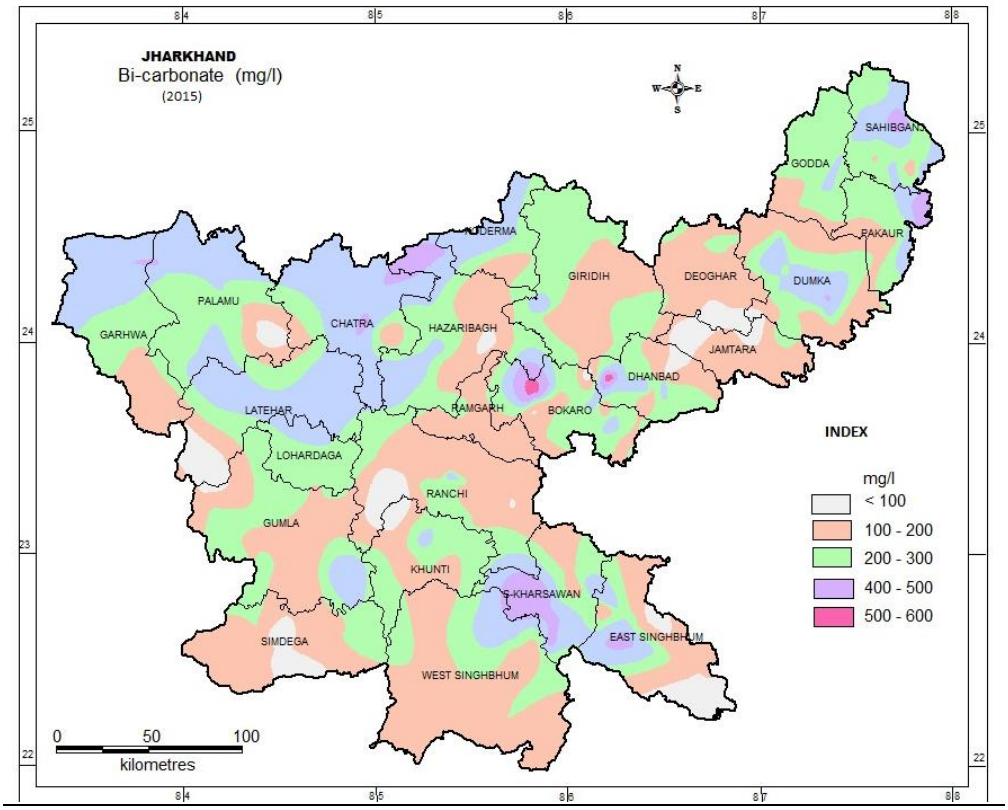


Table - 1

DISTRICT-WISE STATUS OF NHNS FOR THE STATE OF JHARKHAND FOR 2015 – 2016

Sl. No.	District	No. of GWMW as on March 31.03.2015			No. of GWMW abandoned during the year			No. of GWMW established during the year			No. of GWMW as on 31.03. 2016		
		DW	PZ	Total	DW	PZ	Total	DW	P Z	Total	DW	PZ	Total
1	Bokaro	11		11	0		0	9		9	20		20
2	Chatra	8		8	0		0	2		2	10		10
3	Deoghar	7		7	0		0	4		4	11		11
4	Dhanbad	24		24	0		0	0		0	24		24
5	Dumka	16		16	0		0	0		0	16		16
6	Garhwa	7		7	0		0	3		3	10		10
7	Giridih	17		17	0		0	0		0	17		17
8	Godda	12		12	0		0	5		5	17		17
9	Gumla	25		25	0		0	0		0	25		25
10	Hazaribag	33		33	0		0	0		0	33		33
11	Jamtara	5		5	0		0	5		5	10		10
12	Khunti	33		33	0		0	0		0	33		33
13	Kodarma	7		7	0		0	0		0	7		7
14	Latehar	9		9	0		0	2		2	11		11
15	Lohardaga	7		7	0		0	4		4	11		11
16	Pakaur	9		9	0		0	3		3	12		12
17	Palamu	18		18	0		0	0		0	18		18
18	W Singhbhum	18		18	0		0	5		5	23		23
19	E Singbhum	28		28	0		0	4		4	32		32
20	Ramgarh	14		14	0		0	0	4	4	14	4	18
21	Ranchi	65	11	76	0		0	0		0	65	11	76
22	Sahebganj	13		13			0	6		6	19		19
23	Saraikela-Kharswan	9		9	1		1	5		5	14		14
24	Simdega	10	1	11			0	0		0	10	1	11
	Total	**405**	**12**	**417**	**1**		**1**	**61**		**61**	**462**	**16**	**478**

Table 2: *Distric wise categorisation of depth to water level - May 2015*

Sl No.	District	No. of wells analysed	Depth to water level (m bgl)		No./Percentage of wells Showing Depth to Water Level in the Range of									
					0 to 2		2 to 5		5 to 10		10 to 20		20 to 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%
1	Bokaro	12	2.75	11.60	0	0.0	2	16.7	8	66.7	2	17	0	0
2	Chatra	7	6.35	13.65	0	0.0	0	0.0	6	85.7	1	14	0	0
3	Deoghar	7	6.88	8.10	0	0.0	0	0.0	7	100.0	0	0	0	0
4	Dhanbad	22	1.20	11.30	1	4.5	3	13.6	15	68.2	3	14	0	0
5	Dumka	17	4.72	10.15	0	0.0	1	5.9	15	88.2	1	6	0	0
6	Garhwa	4	4.30	16.50	0	0.0	1	25.0	2	50.0	1	25	0	0
7	Giridih	17	3.91	10.72	0	0.0	2	11.8	11	64.7	4	24	0	0
8	Godda	8	4.41	12.35	0	0.0	1	12.5	6	75.0	1	13	0	0
9	Gumla	17	1.65	9.29	1	5.9	6	35.3	10	58.8	0	0	0	0
10	Hazaribag	28	3.23	11.80	0	0.0	4	14.3	22	78.6	2	7	0	0
11	Kodarma	2	8.00	8.10	0	0.0	0	0.0	2	100.0	0	0	0	0
12	Lohardaga	5	5.70	8.66	0	0.0	0	0.0	5	100.0	0	0	0	0
13	Pakaur	5	3.25	10.60	0	0.0	1	20.0	3	60.0	1	20	0	0
14	Palamu	16	3.84	13.00	0	0.0	2	12.5	11	68.8	3	19	0	0
15	W Singhbhum	18	2.50	13.50	0	0.0	4	22.2	11	61.1	3	17	0	0
16	E Singhbhum	25	1.45	13.80	3	12.0	8	32.0	10	40.0	4	16	0	0
17	Ranchi	40	1.52	12.85	1	2.5	10	25.0	24	60.0	5	13	0	0
18	Sahibganj	10	2.68	9.37	0	0.0	3	30.0	7	70.0	0	0	0	0
	Total	**260**	**1.20**	**16.50**	**6**	**2.3**	**48**	**18.5**	**175**	**67.3**	**31**	**12**	**0**	**0**

Table 3: *Districwise categorisation of depth to water level - August 2015*

Sl No.	District	No. of wells analysed	Depth to water level (m bgl)		No./Percentage of wells Showing Depth to Water Level in the Range of									
					0 to 2		2 to 5		5 to 10		10 to 20		20 to 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%
1	Bokaro	14	1.24	11.38	1	7.1	10	71.4	2	14.3	1	7.1	0	0
2	Chatra	8	3.63	10.55	0	0.0	4	50.0	3	37.5	1	12.5	0	0
3	Deoghar	7	3.03	7.73	0	0.0	6	85.7	1	14.3	0	0.0	0	0
4	Dhanbad	18	1.87	10.47	1	5.6	10	55.6	6	33.3	1	5.6	0	0
5	Dumka	19	0.91	6.85	7	36.8	9	47.4	3	15.8	0	0.0	0	0
6	Garhwa	6	2.38	6.90	0	0.0	3	50.0	3	50.0	0	0.0	0	0
7	Giridih	17	1.79	5.95	3	17.6	11	64.7	3	17.6	0	0.0	0	0
8	Godda	10	1.00	6.85	3	30.0	3	30.0	4	40.0	0	0.0	0	0
9	Gumla	23	0.50	5.19	10	43.5	12	52.2	1	4.3	0	0.0	0	0
10	Hazaribag	41	1.25	8.70	10	24.4	26	63.4	5	12.2	0	0.0	0	0
11	Kodarma	5	2.60	5.45	0	0.0	3	60.0	2	40.0	0	0.0	0	0
12	Lohardaga	10	1.62	4.59	1	10.0	9	90.0	0	0.0	0	0.0	0	0
13	Pakaur	6	0.52	4.30	4	66.7	2	33.3	0	0.0	0	0.0	0	0
14	Palamu	22	1.27	9.25	2	9.1	13	59.1	7	31.8	0	0.0	0	0
15	W. Singhbhum	20	1.00	9.05	3	15.0	13	65.0	4	20.0	0	0.0	0	0
16	E. Singhbhum	23	0.75	15.60	7	30.4	11	47.8	4	17.4	1	4.3	0	0
17	Ranchi	47	0.85	6.55	11	23.4	30	63.8	6	12.8	0	0.0	0	0
18	Sahibganj	11	0.20	5.08	7	63.6	3	27.3	1	9.1	0	0.0	0	0
	Total	**307**	**0.20**	**15.60**	**70**	**22.8**	**178**	**58.0**	**55**	**17.9**	**4**	**1.3**	**0**	**0**

Table 4: *Districwise categorisation of depth to water level - November 2015*

Sl No.	District	No. of wells analysed	Depth to water level (m bgl)		No./Percentage of wells Showing Depth to Water Level in the Range of									
					0 to 2		2 to 5		5 to 10		10 to 20		20 to 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%
1	Bokaro	12	2.01	12.65	0	0	6	50	5	42	1	8.3	0	0
2	Chatra	8	4.92	11.59	0	0	1	13	6	75	1	13	0	0
3	Deoghar	7	4.25	9.22	0	0	4	57	3	43	0	0	0	0
4	Dhanbad	10	1.73	12.25	1	10	5	50	3	30	1	10	0	0
5	Dumka	20	0.50	8.89	1	5	10	50	9	45	0	0	0	0
6	Garhwa	6	3.69	10.20	0	0	1	17	4	67	1	17	0	0
7	Giridih	16	2.45	7.14	0	0	7	44	9	56	0	0	0	0
8	Godda	10	2.98	8.31	0	0	7	70	3	30	0	0	0	0
9	Gumla	24	0.55	6.95	3	13	8	33	13	54	0	0	0	0
10	Hazaribag	40	2.20	10.35	0	0	17	43	22	55	1	2.5	0	0
11	Kodarma	4	3.95	5.50	0	0	3	75	1	25	0	0	0	0
12	Lohardaga	9	4.60	8.00	0	0	1	11	8	89	0	0	0	0
13	Pakaur	6	2.46	8.41	0	0	4	67	2	33	0	0	0	0
14	Palamu	14	3.24	11.02	0	0	5	36	7	50	2	14	0	0
15	W. Singhbhum	15	2.70	9.55	0	0	6	40	9	60	0	0	0	0
16	E. Singhbhum	16	1.25	7.61	3	19	7	44	6	38	0	0	0	0
17	Ranchi	49	2.00	9.75	1	2	22	45	26	53	0	0	0	0
18	Sahibganj	11	2.61	7.71	0	0	9	82	2	18	0	0	0	0
	Total	**277**	**0.50**	**12.65**	**9**	**3**	**123**	**44**	**138**	**50**	**7**	**2.5**	**0**	**0**

Table 5: *Districwise categorisation of depth to water level - January 2016*

Sl No.	District	No. of wells analysed	Depth to water level (m bgl)		No./Percentage of wells Showing Depth to Water Level in the Range of									
					0 to 2		2 to 5		5 to 10		10 to 20		20 to 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%
1	Bokaro	10	4.41	12.65	0	0	3	30	3	0	4	40.0	0	0
2	Chatra	8	7.07	12.59	0	0	0	0	5	1	3	37.5	0	0
3	Deoghar	7	7.80	13.01	0	0	0	0	6	1	1	14.3	0	0
4	Dhanbad	19	2.51	16.10	0	0	7	37	10	1	2	10.5	0	0
5	Dumka	18	2.67	11.05	0	0	2	11	13	1	3	16.7	0	0
6	Garhwa	7	5.57	9.71	0	0	0	0	7	1	0	0.0	0	0
7	Giridih	17	8.20	14.30	0	0	0	0	9	1	8	47.1	0	0
8	Godda	9	4.85	12.17	0	0	1	11	7	1	1	11.1	0	0
9	Gumla	23	2.05	11.87	0	0	4	17	17	1	2	8.7	0	0
10	Hazaribag	38	4.46	13.27	0	0	2	5	32	1	4	10.5	0	0
11	Kodarma	6	5.22	8.96	0	0	0	0	6	1	0	0.0	0	0
12	Lohardaga	7	5.60	10.00	0	0	0	0	7	1	0	0.0	0	0
13	Pakaur	11	4.87	12.41	0	0	2	18	8	1	1	9.1	0	0
14	Palamu	25	4.40	11.70	0	0	1	4	20	1	4	16.0	0	0
15	W. Singhbhum	20	2.25	13.50	0	0	2	10	12	1	6	30.0	0	0
16	E. Singhbhum	27	0.97	19.25	3	11.1	6	22	14	1	4	14.8	0	0
17	Ranchi	31	2.84	11.80	0	0	3	10	23	1	5	16.1	0	0
18	Sahibganj	9	2.84	12.00	0	0	1	11	7	1	1	11.1	0	0
19	**Total**	**292**	**0.97**	**19.25**	**3**	**1**	**34**	**12**	**206**	**71**	**49**	**16.8**	**0**	**0**

Table 6: *District wise categorisation of fluctuation in water level and frequency distribution between May 2014 – May 2015*

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of wells	
							Rise						Fall							
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	9	0.25	2.5	0.27	1.6	2	22	1	11	0	0	6	67	0	0	0	0	3	6
2	Chatra	7	0.43	6.53	0.26	0.7	1	14	2	29	1	14	3	43	0	0	0	0	4	3
3	Deoghar	7	1.6	1.6	0.31	1.63	1	14	0	0	0	0	6	86	0	0	0	0	1	6
4	Dhanbad	20	0.1	7.6	0.2	1.7	8	40	1	5	3	15	8	40	0	0	0	0	12	8
5	Dumka	16	0.11	1.19	0.04	5.97	2	13	0	0	0	0	11	69	2	13	1	6	2	14
6	Garhwa	3	-	-	1.15	1.49	0	0	0	0	0	0	2	67	0	0	0	0	0	2
7	Giridih	17	0.1	0.2	0.34	4.2	2	12	0	0	0	0	9	53	3	18	2	12	2	14
8	Godda	7	0.16	1.07	0.63	1.43	5	71	0	0	0	0	2	29	0	0	0	0	5	2
9	Gumla	14	0.2	5.27	0.09	2.1	3	21	0	0	1	7	9	64	1	7	0	0	4	10
10	Hazaribag	23	0.15	4.17	0.03	4.4	4	17	2	9	1	4	13	57	1	4	2	9	7	16
11	Kodarma	2	-	-	1	3.2	0	0	0	0	0	0	1	50	1	50	0	0	0	2
12	Lohardaga	4	0.46	0.46	1.13	3.08	1	25	0	0	0	0	2	50	1	25	0	0	1	3
13	Pakaur	3	-	-	0.74	1.48	0	0	0	0	0	0	3	100	0	0	0	0	0	3
14	Palamu	13	0.02	9.56	0.75	3.57	2	15	0	0	2	15	7	54	2	15	0	0	4	9
15	W. Singhbhum	18	0.61	1.08	0.07	2.4	3	17	0	0	0	0	14	78	1	6	0	0	3	15
16	E. Singhbhum	24	0.1	3.23	0.3	4.1	11	46	1	4	0	0	9	38	1	4	1	4	12	11
17	Ranchi	34	0.01	3.53	0.03	2.37	12	35	2	6	0	0	17	50	3	9	0	0	14	20
18	Sahibganj	10	0.11	1.91	0.11	2.73	5	50	0	0	0	0	4	40	1	10	0	0	5	5
	Total	**231**	**0.01**	**9.56**	**0.03**	**5.97**	**62**	**27**	**9**	**4**	**8**	**3.5**	**126**	**55**	**17**	**7**	**6**	**2.6**	**79**	**149**

Table7: *District wise categorisation of fluctuation in water level and frequency distribution between August 2014 – August 2015*

SN	District	No. Of Wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
							Rise						Fall							
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	12	-	-	0.14	2.26	0	0	0	0	0	0	11	92	1	8	0	0	0	12
2	Chatra	8	0.53	0.53	0.04	2.05	1	13	0	0	0	0	6	75	1	13	0	0	1	7
3	Deoghar	7	1	1.41	0.17	2.83	2	29	0	0	0	0	4	57	1	14	0	0	2	5
4	Dhanbad	18	1.73	7.54	0.28	2.48	2	11	4	22	4	22	7	39	1	6	0	0	10	8
5	Dumka	16	0.25	2.99	0.61	0.88	10	63	3	19	0	0	3	19	0	0	0	0	13	3
6	Garhwa	6	0.02	0.02	0.15	1.3	1	17	0	0	0	0	5	83	0	0	0	0	1	5
7	Giridih	13	-	-	0.04	4.39	0	0	0	0	0	0	12	92	0	0	1	8	0	13
8	Godda	8	0.7	3.7	0.95	5.5	5	63	1	13	0	0	1	13	0	0	1	13	6	2
9	Gumla	14	0.04	4.96	0.09	1.15	9	64	1	7	1	7	3	21	0	0	0	0	11	3
10	Hazaribag	38	0.1	7.76	0.07	2.5	13	34	2	5	3	8	16	42	2	5	0	0	18	18
11	Kodarma	1	-	-	3.24	3.24	0	0	0	0	0	0	0	0	1	100	0	0	0	1
12	Lohardaga	9	1.18	3.99	0.33	0.45	2	22	5	56	0	0	2	22	0	0	0	0	7	2
13	Pakaur	4	0.11	1.38	-	-	4	100	0	0	0	0	0	0	0	0	0	0	4	0
14	Palamu	21	0.23	3.02	0.04	2.36	8	38	3	14	0	0	9	43	1	5	0	0	11	10
15	W. Singhbhum	18	-	-	0.07	4.75	0	0	0	0	0	0	13	72	4	22	1	6	0	18
16	E. Singhbhum	21	0.3	1.75	0.1	6.67	5	24	0	0	0	0	9	43	4	19	1	5	5	14
17	Ranchi	35	0.02	3.98	0.13	2.73	18	51	2	6	0	0	12	34	3	9	0	0	20	15
18	Sahibganj	10	0.33	4.26	1.93	1.93	8	80	0	0	1	10	1	10	0	0	0	0	9	1
	Total	**259**	**0.02**	**7.76**	**0.04**	**6.67**	**88**	**34**	**21**	**8**	**9**	**4**	**114**	**44**	**19**	**7**	**4**	**2**	**118**	**137**

Table 8: *District wise categorisation of fluctuation in water level and frequency distribution between November 2014 – November 2015*

SN	District	No. Of Wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of wells	
							Rise						Fall							
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	12	0.14	0.14	0.07	4	1	8	0	0	0	0	7	58	4	33	0	0	1	11
2	Chatra	5	-	-	0.54	2.08	0	0	0	0	0	0	4	80	1	20	0	0	0	5
3	Deoghar	6	0.7	0.7	0.93	3.83	1	17	0	0	0	0	3	50	2	33	0	0	1	5
4	Dhanbad	16	0.1	4.02	0.18	3.48	1	6	0	0	1	6	10	63	4	25	0	0	2	14
5	Dumka	12	0.04	2.7	0.1	1.01	3	25	3	25	0	0	6	50	0	0	0	0	6	6
6	Garhwa	2	0.06	0.29	-	-	2	100	0	0	0	0	0	0	0	0	0	0	2	0
7	Giridih	14	0.09	1.61	0.09	3.87	2	14	0	0	0	0	7	50	5	36	0	0	2	12
8	Godda	10	0.04	3.97	0.4	1.85	5	50	1	10	0	0	4	40	0	0	0	0	6	4
9	Gumla	21	0.45	2.31	0.03	3.65	3	14	1	5	0	0	15	71	2	10	0	0	4	17
10	Hazaribag	30	0.07	2.35	0.05	6.65	3	10	1	3	0	0	15	50	8	27	2	6.7	4	25
11	Kodarma	2	0.75	0.75	1.75	1.75	1	50	0	0	0	0	1	50	0	0	0	0	1	1
12	Lohardaga	9	0.55	0.55	0.07	1.85	1	11	0	0	0	0	8	89	0	0	0	0	1	8
13	Pakaur	5	0.43	4.63	0.36	1.53	1	20	0	0	1	20	3	60	0	0	0	0	2	3
14	Palamu	15	0.22	3.43	0.58	2.62	5	33	1	7	0	0	8	53	1	7	0	0	6	9
15	W. Singhbhum	13	0.55	1.5	0.47	4.48	2	15	0	0	0	0	5	39	4	31	2	15.4	2	11
16	E. Singhbhum	17	0.15	5.35	0.79	4.9	4	24	1	6	1	6	7	41	3	18	1	5.9	6	11
17	Ranchi	17	2.54	2.54	0.3	4.15	0	0	1	6	0	0	11	65	4	24	1	5.9	1	16
18	Sahibganj	10	0.03	3.51	0.17	1.08	5	50	1	10	0	0	4	40	0	0	0	0	6	4
	Total	**216**	**0.03**	**5.35**	**0.03**	**6.65**	**40**	**19**	**10**	**5**	**3**	**1**	**118**	**55**	**38**	**18**	**6**	**2.8**	**53**	**162**

Table 9: *District wise categorisation of fluctuation in water level and frequency distribution between January 2015 – January 2016*

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of wells	
							Rise						Fall							
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	12	0.14	0.14	0.07	4	1	8	0	0	0	0	7	58	4	33	0	0	1	11
2	Chatra	5	-	-	0.54	2.08	0	0	0	0	0	0	4	80	1	20	0	0	0	5
3	Deoghar	6	0.7	0.7	0.93	3.83	1	17	0	0	0	0	3	50	2	33	0	0	1	5
4	Dhanbad	16	0.1	4.02	0.18	3.48	1	6	0	0	1	6	10	63	4	25	0	0	2	14
5	Dumka	12	0.04	2.7	0.1	1.01	3	25	3	25	0	0	6	50	0	0	0	0	6	6
6	Garhwa	2	0.06	0.29	-	-	2	100	0	0	0	0	0	0	0	0	0	0	2	0
7	Giridih	14	0.09	1.61	0.09	3.87	2	14	0	0	0	0	7	50	5	36	0	0	2	12
8	Godda	10	0.04	3.97	0.4	1.85	5	50	1	10	0	0	4	40	0	0	0	0	6	4
9	Gumla	21	0.45	2.31	0.03	3.65	3	14	1	5	0	0	15	71	2	10	0	0	4	17
10	Hazaribag	30	0.07	2.35	0.05	6.65	3	10	1	3	0	0	15	50	8	27	2	7	4	25
11	Kodarma	2	0.75	0.75	1.75	1.75	1	50	0	0	0	0	1	50	0	0	0	0	1	1
12	Lohardaga	9	0.55	0.55	0.07	1.85	1	11	0	0	0	0	8	89	0	0	0	0	1	8
13	Pakaur	5	0.43	4.63	0.36	1.53	1	20	0	0	1	20	3	60	0	0	0	0	2	3
14	Palamu	15	0.22	3.43	0.58	2.62	5	33	1	7	0	0	8	53	1	7	0	0	6	9
15	W. Singhbhum	13	0.55	1.5	0.47	4.48	2	15	0	0	0	0	5	39	4	31	2	15	2	11
16	E. Singhbhum	17	0.15	5.35	0.79	4.9	4	24	1	6	1	6	7	41	3	18	1	6	6	11
17	Ranchi	17	2.54	2.54	0.3	4.15	0	0	1	6	0	0	11	65	4	24	1	6	1	16
18	Sahibganj	10	0.03	3.51	0.17	1.08	5	50	1	10	0	0	4	40	0	0	0	0	6	4
	Total	**216**	**0.03**	**5.35**	**0.03**	**6.65**	**40**	**19**	**10**	**5**	**3**	**1**	**118**	**55**	**38**	**18**	**6**	**3**	**53**	**162**

Table 10: *District wise categorisation of fluctuation in water level and frequency distribution between May 2015 w.r.t. August 2015*

SN	District	No. Of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of Wells	
							Rise						Fall							
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	*Max*	*Min*	*Max*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*	No.	No.
1	Bokaro	11	0.22	6.41	-	-	2	18	5	46	4	36	0	0	0	0	0	0	11	0
2	Chatra	7	2.05	3.74	-	-	0	0	7	100	0	0	0	0	0	0	0	0	7	0
3	Deoghar	7	0.37	4.5	-	-	1	14	4	57	2	29	0	0	0	0	0	0	7	0
4	Dhanbad	18	1.06	5.45	0.51	4.47	5	28	6	33	5	28	1	6	0	0	1	6	16	2
5	Dumka	17	1.81	7.74	0.4	0.4	1	6	4	24	11	65	1	6	0	0	0	0	16	1
6	Garhwa	4	0.95	10.76	-	-	2	50	1	25	1	25	0	0	0	0	0	0	4	0
7	Giridih	17	1.37	7.31	-	-	1	6	3	18	13	77	0	0	0	0	0	0	17	0
8	Godda	8	2.68	6.32	0.4	0.4	0	0	3	38	4	50	1	13	0	0	0	0	7	1
9	Gumla	16	0.75	7.04	1.95	1.95	4	25	2	13	9	56	1	6	0	0	0	0	15	1
10	Hazaribag	27	1.03	7.4	-	-	2	7	12	44	13	48	0	0	0	0	0	0	27	0
11	Kodarma	1	4.26	4.26	-	-	0	0	0	0	1	100	0	0	0	0	0	0	1	0
12	Lohardaga	5	3.28	5.96	-	-	0	0	2	40	3	60	0	0	0	0	0	0	5	0
13	Pakaur	5	2.53	7.7	-	-	0	0	1	20	4	80	0	0	0	0	0	0	5	0
14	Palamu	15	2.73	8.63	4.79	4.79	0	0	4	27	10	67	0	0	0	0	1	7	14	1
15	W. Singhbhum	17	0.6	7.75	-	-	4	24	6	35	7	41	0	0	0	0	0	0	17	0
16	E. Singhbhum	22	0.2	8.1	1.8	2.44	6	27	7	32	7	32	1	5	1	5	0	0	20	2
17	Ranchi	27	0.5	9.05	-	-	3	11	12	44	12	44	0	0	0	0	0	0	27	0
18	Sahibganj	10	1.41	7.58	-	-	2	20	2	20	6	60	0	0	0	0	0	0	10	0
	Total	**234**	**0.2**	**10.76**	**0.4**	**4.79**	**33**	**14**	**81**	**35**	**112**	**48**	**5**	**2**	**1**	**0**	**2**	**1**	**226**	**8**

Table 11: District wise Water Level Fluctuation -May 2015 w.r.t. November 2015

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. OF wells	
							Rise						Fall							
			Rise		Fall		0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	11	1.05	4.42	0.38	1.05	4	36	4	36	1	9	2	18	0	0	0	0	9	2
2	Chatra	7	0.82	2.29	-	-	5	71	2	29	0	0	0	0	0	0	0	0	7	0
3	Deoghar	7	0.56	3.08	1.12	1.12	1	14	5	71	0	0	1	14	0	0	0	0	6	1
4	Dhanbad	10	0.98	6.3	1.5	6.25	4	40	3	30	1	10	1	10	0	0	1	10	8	2
5	Dumka	16	1.38	5.33	0.51	0.52	3	19	8	50	3	19	2	13	0	0	0	0	14	2
6	Garhwa	4	0.61	9.21	-	-	2	50	0	0	1	25	0	0	0	0	0	0	3	0
7	Giridih	16	0.78	6.18	-	-	2	13	11	69	3	19	0	0	0	0	0	0	16	0
8	Godda	8	0.96	4.06	-	-	3	38	3	38	2	25	0	0	0	0	0	0	8	0
9	Gumla	17	0.22	4.7	4.2	4.2	9	53	5	29	2	12	0	0	0	0	1	6	16	1
10	Hazaribag	26	0.85	5.9	0.7	2	11	42	7	27	4	15	4	15	0	0	0	0	22	4
11	Kodarma	2	2.6	3.05	-	-	0	0	2	100	0	0	0	0	0	0	0	0	2	0
12	Lohardaga	4	0.2	2.9	-	-	2	50	2	50	0	0	0	0	0	0	0	0	4	0
13	Pakaur	5	0.27	6.34	0.8	0.8	2	40	1	20	1	20	1	20	0	0	0	0	4	1
14	Palamu	11	1.6	5.68	5.1	5.1	2	18	6	55	2	18	0	0	0	0	1	9	10	1
15	W. Singhbhum	13	1.03	5	0.03	0.78	4	31	5	39	1	8	3	23	0	0	0	0	10	3
16	E. Singhbhum	13	0.3	9.6	0.3	1.05	4	31	4	31	3	23	2	15	0	0	0	0	11	2
17	Ranchi	30	0.7	5.25	0.29	2.4	13	43	10	33	4	13	2	7	1	3	0	0	27	3
18	Sahibganj	10	1.66	5.6	0.06	0.26	3	30	3	30	2	20	2	20	0	0	0	0	8	2
	Total	**210**	**0.2**	**9.6**	**0**	**6.25**	**74**	**35**	**81**	**39**	**30**	**14**	**20**	**10**	**1**	**1**	**3**	**1**	**185**	**24**

Table 12: District wise Water Level Fluctuation - May 2015 w.r.t. January 2016

SN	District	No. Of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of Wells	
			Rise		Fall		Rise						Fall							
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	12	0.15	4.3	0.9	0.9	8	67	2	17	1	8	1	8	0	0	0	0	11	1
2	Chatra	5	0.43	1.15	0.08	0.18	3	60	0	0	0	0	2	40	0	0	0	0	3	2
3	Deoghar	7	0.3	1.36	0.07	2.22	5	71	0	0	0	0	1	14	1	14	0	0	5	2
4	Dhanbad	19	0.05	5.85	0.2	8.2	11	58	3	16	1	5	3	16	0	0	1	5	15	4
5	Dumka	14	0.07	4.68	0.55	2.78	4	29	5	36	3	21	1	7	1	7	0	0	12	2
6	Garhwa	1	7.9	7.9	-	-	0	0	0	0	1	100	0	0	0	0	0	0	1	0
7	Giridih	16	0.19	5.36	0.04	0.72	8	50	5	31	1	6	2	13	0	0	0	0	14	2
8	Godda	8	0.31	3.71	1.15	1.15	5	63	2	25	0	0	1	13	0	0	0	0	7	1
9	Gumla	15	0.45	4.65	0.1	4.7	12	80	0	0	1	7	1	7	0	0	1	7	13	2
10	Hazaribag	27	0.23	5.75	0.05	10.15	15	56	2	7	1	4	6	22	1	4	1	4	18	8
11	Kodarma	2	0.7	2.2	-	-	1	50	1	50	0	0	0	0	0	0	0	0	2	0
12	Lohardaga	5	1.06	1.75	0.35	0.4	3	60	0	0	0	0	2	40	0	0	0	0	3	2
13	Pakaur	5	2.44	5.63	0.05	0.96	0	0	1	20	1	20	2	40	0	0	0	0	2	2
14	Palamu	11	0.58	4.8	0.2	6.23	4	36	3	27	2	18	1	9	0	0	1	9	9	2
15	W. Singhbhum	11	0.1	4.1	0.03	0.3	6	55	1	9	1	9	3	27	0	0	0	0	8	3
16	E. Singhbhum	17	0.04	5.55	0.05	5.14	5	29	1	6	2	12	7	41	0	0	1	6	8	8
17	Ranchi	17	0.05	1.8	0.57	4.9	14	82	0	0	0	0	2	12	0	0	1	6	14	3
18	Sahibganj	9	0.8	5.12	0.44	0.44	3	33	3	33	2	22	1	11	0	0	0	0	8	1
	Total	**201**	**0.04**	**7.90**	**0.03**	**10.15**	**107**	**53**	**29**	**14**	**17**	**8**	**36**	**18**	**3**	**1**	**6**	**3**	**153**	**45**

Table 13: District wise Water Level Fluctuation - May 2015 w.r.t. Decadal Mean (mean 2005-14)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall							
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	9	0.07	5.09	0.1	1.6	2	22	1	11	1	11	5	56	0	0	0	0	4	5
2	Chatra	7	0.43	3.15	0.26	0.97	1	14	3	43	0	0	3	43	0	0	0	0	4	3
3	Deoghar	7	0.45	2.42	0.23	0.92	3	43	1	14	0	0	3	43	0	0	0	0	4	3
4	Dhanbad	21	0.1	7.6	0.13	5.6	8	38	1	4.8	3	14	8	38	0	0	1	5	12	9
5	Dumka	17	0.02	2.15	0.18	5.97	4	24	1	5.9	0	0	11	65	0	0	1	6	5	12
6	Garhwa	4	-	-	0.17	7.11	0	0	0	0	0	0	3	75	0	0	1	25	0	4
7	Giridih	17	0.2	3.55	0.04	2.71	3	18	1	5.9	0	0	10	59	3	18	0	0	4	13
8	Godda	8	0.22	0.89	0.13	0.88	3	38	0	0	0	0	5	63	0	0	0	0	3	5
9	Gumla	17	0.01	6.1	0.05	1.25	6	35	0	0	1	6	10	59	0	0	0	0	7	10
10	Hazaribag	23	0.15	4.17	0.03	4.4	8	35	2	8.7	1	4	9	39	1	4	2	9	11	12
11	Kodarma	2	-	-	1	3.2	0	0	0	0	0	0	1	50	1	50	0	0	0	2
12	Lohardaga	4	1.05	1.05	0.38	1.15	1	25	0	0	0	0	3	75	0	0	0	0	1	3
13	Pakaur	5	0.17	2.4	0.06	0.06	3	60	1	20	0	0	1	20	0	0	0	0	4	1
14	Palamu	16	0.35	7.01	0.06	4.66	3	19	0	0	2	13	9	56	1	6	1	6	5	11
15	W. Singhbhum	18	0.09	1.69	0.17	5.8	7	39	0	0	0	0	9	50	1	6	1	6	7	11
16	E. Singhbhum	24	0.1	4.51	0.3	4.1	14	58	1	4.2	1	4	5	21	1	4	1	4	16	7
17	Ranchi	37	0.01	2.83	0.14	2.37	15	41	3	8.1	0	0	16	43	3	8	0	0	18	19
18	Sahibganj	10	0.33	5.83	0.11	1.49	5	50	0	0	1	10	4	40	0	0	0	0	6	4
	Total	**246**	**0.01**	**7.60**	**0.03**	**7.11**	**86**	**35**	**15**	**6**	**10**	**4**	**115**	**47**	**11**	**4**	**8**	**3**	**111**	**134**

Table 14: District wise Water Level Fluctuation - August 2015 w.r.t. Decadal Mean (mean 2005-14)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall							
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	12	0.41	1.41	0.14	3.56	4	33	0	0	0	0	7	58	1	8	0	0	4	8
2	Chatra	8	0.23	1.73	0.44	2.05	2	25	0	0	0	0	5	63	1	13	0	0	2	6
3	Deoghar	7	0.26	2.66	0.94	0.94	5	71	1	14	0	0	1	14	0	0	0	0	6	1
4	Dhanbad	18	0.7	7.54	0.16	1.97	3	17	4	22	4	22	7	39	0	0	0	0	11	7
5	Dumka	18	0.34	4.25	0.04	1.83	8	44	4	22	1	6	5	28	0	0	0	0	13	5
6	Garhwa	6	0.46	1.43	0.15	1.3	3	50	0	0	0	0	3	50	0	0	0	0	3	3
7	Giridih	17	0.03	3.26	0.18	1.57	8	47	3	18	0	0	6	35	0	0	0	0	11	6
8	Godda	9	0.61	2.79	3.21	3.21	6	67	2	22	0	0	0	0	1	11	0	0	8	1
9	Gumla	19	0.04	21.18	0.1	1.17	9	47	1	5	2	11	7	37	0	0	0	0	12	7
10	Hazaribag	38	0.04	7.76	0.07	2.5	13	34	4	11	3	8	14	37	2	5	0	0	20	16
11	Kodarma	2	0.85	0.85	3.24	3.24	1	50	0	0	0	0	0	0	1	50	0	0	1	1
12	Lohardaga	9	0.89	3.04	0.06	0.37	5	56	2	22	0	0	2	22	0	0	0	0	7	2
13	Pakaur	6	0.39	2.66	-	-	5	83	1	17	0	0	0	0	0	0	0	0	6	0
14	Palamu	22	0.1	2.66	0.09	2.4	12	55	2	9	0	0	6	27	2	9	0	0	14	8
15	W. Singhbhum	20	0.57	1.33	0.06	4.75	2	10	0	0	0	0	12	60	4	20	2	10	2	18
16	E. Singhbhum	22	0.38	1.75	0.15	5.76	6	27	0	0	0	0	9	41	4	18	1	5	6	14
17	Ranchi	37	0.01	2.42	0.13	2.73	20	54	2	5	0	0	12	32	3	8	0	0	22	15
18	Sahibganj	11	0.38	4.26	0.27	0.27	8	73	1	9	1	9	1	9	0	0	0	0	10	1
	Total	**281**	**0.01**	**21.18**	**0.04**	**5.76**	**120**	**43**	**27**	**10**	**11**	**4**	**97**	**35**	**19**	**7**	**3**	**1**	**158**	**119**

Table 15: District wise Water Level Fluctuation - November 2015 w.r.t. Mean (mean 2005-14)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall							
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	12	0.07	0.79	0.34	4.16	2	17	0	0	0	0	6	50	3	25	1	8	2	10
2	Chatra	8	3.03	3.03	0.32	1.72	0	0	1	13	0	0	7	88	0	0	0	0	1	7
3	Deoghar	6	0.08	0.66	0.8	3.2	3	50	0	0	0	0	2	33	1	17	0	0	3	3
4	Dhanbad	10	1.53	1.53	0.25	2.22	1	10	0	0	0	0	8	80	1	10	0	0	1	9
5	Dumka	18	0.62	2.78	0.18	3.43	3	17	1	6	0	0	11	61	3	17	0	0	4	14
6	Garhwa	6	0.13	1.06	0.15	4.38	2	33	0	0	0	0	2	33	1	17	1	17	2	4
7	Giridih	16	0.15	0.77	0.02	3.28	3	19	0	0	0	0	12	75	1	6	0	0	3	13
8	Godda	10	0.21	1.32	0.12	1.42	5	50	0	0	0	0	5	50	0	0	0	0	5	5
9	Gumla	24	0.3	1.78	0.2	2.89	4	17	0	0	0	0	18	75	2	8	0	0	4	20
10	Hazaribag	35	0.1	3.45	0.17	8.04	3	9	3	9	0	0	18	51	8	23	3	9	6	29
11	Kodarma	2	-	-	1.1	1.85	0	0	0	0	0	0	2	100	0	0	0	0	0	2
12	Lohardaga	8	0.95	0.95	0.23	2.52	1	13	0	0	0	0	6	75	1	13	0	0	1	7
13	Pakaur	6	2.45	2.45	0.07	1.8	0	0	1	17	0	0	5	83	0	0	0	0	1	5
14	Palamu	14	1.9	1.9	0.26	1.86	1	7	0	0	0	0	13	93	0	0	0	0	1	13
15	W. Singhbhum	15	0.18	1.4	0.27	5.12	2	13	0	0	0	0	9	60	2	13	2	13	2	13
16	E. Singhbhum	15	0.18	2.83	0.22	2.41	5	33	1	7	0	0	7	47	2	13	0	0	6	9
17	Ranchi	44	0.05	3.6	0.1	4.4	10	23	3	7	0	0	24	55	6	14	1	2	13	31
18	Sahibganj	11	0	3	0.08	2.76	5	45	2	18	0	0	3	27	1	9	0	0	7	4
	Total	**260**	**0.05**	**3.60**	**0.02**	**8.04**	**50**	**19**	**12**	**5**	**0**	**0**	**158**	**61**	**32**	**12**	**8**	**3**	**62**	**198**

Table 16: District wise Water Level Fluctuation - January 2016 w.r.t. Mean (mean 2006-15)

SN	District	No. of wells analysed	Range in Fluctuation (m)				No. of Wells/Percentage Showing Fluctuation												Total No. of well	
			Rise		Fall		Rise						Fall							
							0 to 2		2 to 4		>4		0 to 2		2 to 4		>4		Rise	Fall
			Min	Max	Min	Max	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	No.
1	Bokaro	13	0.14	2.4	0.75	4.56	2	15	1	8	0	0	4	31	5	38	1	7.7	3	10
2	Chatra	5	0.2	0.2	1.19	1.85	1	20	0	0	0	0	4	80	0	0	0	0.0	1	4
3	Deoghar	7	-	-	0.14	2.37	0	0	0	0	0	0	6	86	1	14	0	0.0	0	7
4	Dhanbad	17	0.1	4.02	0.19	3.68	2	12	0	0	1	6	9	53	5	29	0	0.0	3	14
5	Dumka	15	0.05	3.21	0.1	3.19	5	33	2	13	0	0	7	47	1	7	0	0.0	7	8
6	Garhwa	2	-	-	1.61	1.85	0	0	0	0	0	0	2	100	0	0	0	0.0	0	2
7	Giridih	16	0.68	1.32	0.01	3.31	2	13	0	0	0	0	10	63	4	25	0	0.0	2	14
8	Godda	10	0.07	3.01	0.12	1.96	5	50	1	10	0	0	4	40	0	0	0	0.0	6	4
9	Gumla	22	0.53	0.74	0.04	3.8	2	9	0	0	0	0	16	73	4	18	0	0.0	2	20
10	Hazaribag	32	0.2	2.35	0.15	6.65	3	9	1	3	0	0	17	53	9	28	1	3.1	4	27
11	Kodarma	2	-	-	0.33	2.08	0	0	0	0	0	0	1	50	1	50	0	0.0	0	2
12	Lohardaga	9	0.55	0.55	0.07	2.25	1	11	0	0	0	0	7	78	1	11	0	0.0	1	8
13	Pakaur	7	0.24	2.9	0.14	1.75	2	29	1	14	0	0	4	57	0	0	0	0.0	3	4
14	Palamu	15	0.05	3.29	0.34	2.86	1	7	2	13	0	0	9	60	3	20	0	0.0	3	12
15	W. Singhbhum	14	0.84	2.6	0.52	6.86	1	7	1	7	0	0	7	50	2	14	3	21.4	2	12
16	E. Singhbhum	19	0.15	5.35	0.79	5.47	4	21	1	5	1	5	6	32	5	26	2	10.5	6	13
17	Ranchi	22	0	0.71	0.3	4.67	3	14	0	0	0	0	9	41	7	32	3	13.6	3	19
18	Sahibganj	10	0.48	3.02	0.22	2.14	4	40	2	20	0	0	3	30	1	10	0	0.0	6	4
	Total	**237**	**0.00**	**5.35**	**0.01**	**6.86**	**38**	**16**	**12**	**5**	**2**	**1**	**125**	**53**	**49**	**21**	**10**	**4.2**	**52**	**184**

WATER LEVEL DATA OF NETWORK STATIONS MEASURED BY CENTRAL GROUND WATER BOARD, STATE UNIT OFFICE, RANCHI

District	Location	May-15	Aug. 2015	Nov. 2015	Jan. 2016
Bokaro	Chandrpura	2.75	2.26	3.13	3.65
	Phusro_Bermo		1.24	2.01	3.95
	Baramasia		4.09		6.55
	Chandankiyari	8.4	2.54	5.45	7.2
	Laghla		2.07		6.05
	Bijulia	8.06	4.57		5.6
	Pachaura Sersadih	8.37		3.95	4.88
	Pindarjora new	8.9	2.49	5.73	8.7
	Pupunki	6.25	3.13	4.43	5.45
	Gomia	4.6	2.17	3.55	4
	Chas	11.6	11.38	12.65	7.3
	Jaina More	10.25	7.21	8.7	10.1
	Nawadih	8.31	3.47	6.26	7.17
	Petarbar	9.37	5.28	7.14	9.1
	Tenughat	6.13	2.89	4.27	5.85
Chatra	Chatra				
	Chatra1	6.35	4	4.92	
	Itkhori1	7.7	5.65	6.88	7.88
	Pitij	7.8	5.5	6.85	7.88
	Bagra	13.65	10.55	11.59	12.5
	Birhu	7.95	4.38	6.32	7.52
	Simaria	12.72	6.5	9.05	
	Tutilawa1	7.7	4.31	6.55	
	Tandwa	7.37	3.63	5.08	6.93
Deoghar	Deoghar new	6.88	3.89	4.65	6.58
	Ghormara	7.91	4.12	7.35	7.98
	Jasidih	7.96	4.68	5.67	6.95
	Madhupur1	7.1	4.55	4.25	6.17
	Palajori	7.76	3.27	4.68	6.4
	Sarath	7.53	3.03	4.89	6.55
	Sarawan	8.1	7.73	9.22	10.32
Dhanbad	Baghmaranew	6	10.47	12.25	14.2
	Katras1	11.3			
	Mahuda	10.92	5.47	6.95	9.85
	Rajganj	7.58	3.56	5.08	6.5
	Balajee mandir	9.6	7.98		9.8
	Basudeopur Cisf Camp	7.4	5.58		6.83
	Bhuli A Block	10.3	8.03		6.45
	Chiragora Hirapur	7.65	3.02		6.65
	Dbl Buglow	6.35	2.9		5.72
	Dhanbad New	6.49	2.9	4.56	5.75
	Matkuria	4.8	2.96		3.9
	Nirsa ecl l.qtr	2.94	3.45	1.73	2.18
	Panderpalli	8.1	6.54		5.68
	Pkroy College	5.8	1.87		4.35
	Purandih Jorapokhar	6.35	5.29		6.68
	Sindri Goushala More	5.4		4.42	
	Sunil Talkies	4.1			
	Govindpur	9.1	4.1	2.7	3.15
	Bagha_Jharia	1.2		2.7	2.75
	Jharia		1.76		
	Sindri Gosalmore	6.2	3.12		6.15
	Topchanchi	8.78	3.46	5.1	6.66
	Tundi	6.5	3	4.6	5.9
Dumka	Dumka(db ib)	6.95	1.83	2.1	2.45
	Masanjor	4.72	1.84	4.23	4.65
	Gopikandar	8.37	6.56	8.89	8.92

	Maheshpur templ	6.45	6.85		9.23
	Chapodia		1.72	2.58	2.63
	Chikania	8.78	2.45	3.85	4.1
	Jama1	9.01	2.95	6.61	6.84
	Kathikund	8.15	3.13	5.61	5.31
	Parapalashi			4.53	5.31
	Jamatara	9.3	2.87	5.62	5.78
	Mihijam db ib				
	Mihijam New	9.97	2.23	6.1	
	Jarmundi db.ib	8.13	0.91	6.39	6.45
	Kundahit	6.69	2.01	4.21	
	Masalia	6.07	2.39	4.69	5.2
	Nala	6.3	2.99	4.42	
	Gamharia	10.15	6.33	7.84	8.1
	Nunihaat		1	0.5	2.1
	Raneswar	6.93	1.47	4.34	5.36
	Hansdiha pwdib	8.2	2.8	4.91	5.2
	Patabari	8.82	1.45	3.49	4.21
	Sikaripara			5.74	5.89
Garhwa	Bhawanathpur	7.7	4.65	7.7	
	Garhwa	16.5	5.74	7.29	8.6
	Manjhian	4.3	2.38	3.69	
	Godarmana			5.67	
	Ranka	8.8	3.45	6.22	7.36
	Nagaruntari		6.9	10.2	
	Ramna1	7.35	6.4	6.37	
Giridih	Bagodar	7.92	3.38	5.38	7.73
	Birini	9.35	5.18	5.89	6.6
	Dhanwar	4.9	1.79	2.45	4.25
	Saraiya new	9.48	2.17	3.3	4.12
	Bengabad	8.84	2.62	5.03	7.45
	Dewri	7.7	1.83	4.02	5.03
	Dumri	10.72	5.62	7.14	9.1
	Gande				8.16
	Gandey1	10.6	3.31	5.95	
	Maheshmunda1	6.61	2.76	3.37	6.06
	Pandri	9.42	3.53	4.51	5.91
	Dhanidih	7.92	1.82	6.3	6.75
	Giridih	7.66	3.32	5.26	7.7
	Bandhutanr	9.55	2.3	6.66	7.1
	Jamua pwd ib	10.4	4.49	7.03	9.45
	Chirki (pirtanr)	10.55	5.95		
	Khijri	6.56	2.77	3.27	4.82
	Tisri	3.91	2.54	3.13	4.63
Godda	Lalmatia	8.95	5.35	6.51	7.21
	Godda1	5.46	1.45	5.63	6.23
	Jainipaharpur	6.57	1.95	5.32	5.46
	Maheshpur1	8.05			
	Maheshpur2	6.45	6.85	3.8	4.56
	Bara borijore			2.98	3.26
	Mahagama1	8.83	3.24	4.77	5.12
	Doi	4.41	1.05	3.31	4.1
	Pathargama	6.13	1	4.1	4.5
	Chamudih		4.37		
	Poraiyahaat		5.4	4.72	5.23
	Sundar Pahari	12.35	6.03	8.31	8.97
Gumla	Bano	6.6		5.1	6
	Adar	Dry	3.65	5.35	7.95
	Chainpur1	4.9	3	4.5	5
	Ghagra	Dry	5.19	6.65	7.4
	Anjam gram	2.25	1.5	1.3	2.3
	Gumla1	8.34	1.3	6.85	7.6

	Kharke	Dry	3.62	5.14	6.3
	Biru	5.5	1.25	4.15	4.95
	Jaldega	4.95	1.3	3.35	4.1
	Tengratuku	7.2	1.45	4.35	6.75
	Baisia	8.2	3	5.55	3.55
	Kolebira	10.6	4	6.95	8.8
	Lachargarh	7.7	3.5	5.1	6.45
	Puthritoli	3.05	0.7	1.75	2.55
	Baghma		1.9	5.1	6.15
	Palkot	9.29	3.29	6.45	7.55
	Kasir	1.65	0.5	0.55	0.6
	Raidih	7.3	1.95	4.1	5.1
	Bishnupur	2.15	4.1	6.35	6.85
	Simdega	8.85	2.25	4.15	6.85
	Nagfeni	8.14	3.1	6.05	7.05
	Sisai	8.8	2.9	6	
	Thethai Thangar	2.72	0.92	2.5	2.2
	Bharno bdo		2.72	5.15	6
Hazaribagh	Barhi	9.6	4.85	5.8	7.8
	Padma	11.1	7.3	11.8	11.8
	Barkagaon	11.8	8.7	10.35	11.5
	Urimari	7.6	1.95	5.6	8.65
	Barkatha	6.1	1.25	3.25	
	Sakrej	6.1	2.4	6.8	4.2
	Tatijharia	5.5	1.75	3.4	4.7
	Dari	8.4	2.45	5.45	7
	Chitarpur	7.6		5.9	7.25
	Gola	8.6	4.65	7.75	8.7
	Amritnagar	3.23	2.2	4.3	13.38
	Battom Bazar		1.4	2.95	4.35
	College More	3.7	3.05	6.25	7.75
	Daru	7.7	1.85	3.5	4.95
	Habib nagar	7.58	3.2	5.75	7.35
	Hatyari	5	1.5	3.6	4.2
	Hazaribagh	10	2.6	5.75	10.6
	Hirabagh		4.45	8.3	9.1
	Kanhari Road		4.35	7.4	9.2
	Korrah Chowk	7.4	3.3	8.45	10.4
	Kud Ashram		3	9.5	12.18
	Masipiri		3.4	5.55	6.65
	Meru(Silwar)	11.7	5.7	9	11.05
	Old Bus Stand		3.4	6.25	8.1
	Simra Rest House		2.5	3.5	4.5
	Sindur	9.05	2.05	4.6	7.05
	Ichak more	7.4	4.45	6.05	6.5
	Bhurkunda	8.2	3.65	4.38	4.5
	Garrikalan	6.9	1.5	5.5	7.5
	Keradari	8.2	1.4	3.35	5.7
	Barkachumba	6.2	3.3	4.15	5.05
	Kanjgi	5.3	2.6	7.3	5.3
	Kuju	6.5	3.25	4.62	5.55
	Mandu	7.7	2.6	5.25	6.55
	Sirka	9.5	4.75	4.85	8.2
	Thakur Gora	3.8	1.3	2.2	2.65
	Barwatola				
	Saunda(Budhbazar)	10.4	2.85	3.1	3.25
	Sayal	5.9	2.13	3.5	4.7
	Barkakhana	4.15	2.45	3.15	4.2
	Barlong		3.8		7.7
	Kaitha		1.6	4.8	4.65
	Kusumbha		5.6	5.3	8.4
	Ramgarh2	8.8			

	Ramgarh2A		5.4	6.4	7
Kodarma	Chandwara	8.4	3.74	4.95	5.8
	Chauparan		5.45		
	Chauparan1		5.45		
	Jainagar	5.4		5.4	4.5
	Domchanch	7.7	3.95	3.95	3.9
	Jhumri Tilaiya	7.6	2.5	4.2	5.1
	Kanobigha	7	2.6	4.6	5.6
	Kodarma	8.1	2.3	5.5	7.4
Lohardaga	Bhandara		4.59	8	7.85
	Hinjla	6.4	3.12	6.2	6.8
	Kuru1	8.66	2.7	6.65	7.65
	Rudh1	8.3	3.15	7.8	8.65
	Barwatoli Chowk		2.68	4.6	4.55
	Hesal		2.62	5.75	7.05
	Irgaon		2.95	6.35	8.25
	Lohardaga(Patra Toli)	dry	1.62	5.1	5.75
	Lohardaga(pwdib	8.45	2.85	5.55	6.7
	Senha Bdo	5.7	2.01		4.15
Pakur	Amrapara		0.8	2.46	3.12
	Hiranpur	5.91	1.14	6.71	6.87
	Litipara	8.9	4.3	8.41	8.95
	Maheshpur2				7.15
	Pakur1	10.6	2.9	4.26	4.97
	Pakuria	3.25	0.72	2.98	3.25
	Salgapara	7.09	0.52	4.16	4.65
Palamu	Balumath	11.8	7.75	10.05	11.05
	Barjatu	8.35	4.2	6.22	7.77
	Barwadih	9.9	1.27		6.78
	Betla	13	7.02		
	Satbarwa		6.73	7.4	8.48
	Bishrampur		3.07	4.49	
	Rajhara		4.8		8.3
	Baraw	7.45	2.1		5.74
	Mandal		2.41	4.01	
	Chandwa	10.09	3.74	4.41	5.61
	Chhatarpur	4.46	9.25	9.56	10.69
	Hariharganj				
	Kanda	6.78	4.05	5.18	
	Daltenganj	7.65	3.3	4.14	4.03
	Garu	7.7	3.82	5.53	7.9
	Haidernagar		4.14		
	Japla	3.84			
	Sandha	6.68	3.75		
	Latehar	7.34	3.15	4.19	2.54
	Lesliganj		6.08	7.03	7.73
	Mahuadanr	10.1	2.12		9.15
	Netarhat				3.22
	Manika	5.75	1.6	3.24	4.84
	Panki	9.44	2.85	5.57	7.15
	Sagalim		2.78		7.98
	Kajri		10.56	11.02	
	Patan		7.24		
West Singhbhum	Kandra	7.65	3.75		
	Kereikela	10.1	2.35	5.1	6
	Bandgaon	8.69	4.11	5.73	7.1
	Bandgaonnew				5.9
	Chaibasa	13.5	9.05	9.55	13
	Chakradharpur	6.7	3.6	4.75	4.5
	Chandil	7.2	2.75	3.8	6.68
	Hata_Tirin	5			
	Rajnagar	11.72			

	Jagannathpur	10	7.2	8.39	10.3
	Jaitgarh	6.5	4.7	5.4	6.53
	Hat Gamhariya		5.92	7.9	10.2
	Hesadih	7.6	7.2	2.7	7.23
	Kharsawan	6.49	3.64		
	Khuntpani		3.15	5.25	9.22
	Pandrasalai	4.3	3.55		
	Keshargaria	4.6	1		
	Jamdih	7.8	2.4	4.1	6.53
	Nimdih_Jamdih				
	Barajamda		2.1		2.8
	Noamundi	2.5	1.9	2.7	
	Saraikela	2.74	1.04	3.52	2.9
	Kokcho	9.25	5.2	6.74	9.15
	Hesadih	5.09	2.54	4.06	4.7
East Singhbhum	Baharagora	13.6	5.5	4	14.3
	Ghatsila	7.2	3.15	5.15	7.75
	Hana Bautia	8.75	4.85	7.61	
	Chakulia	13.8	15.6		18.94
	Jamshedpur			3.8	11
	Kalapathar	13	6.7	7.05	8
	Pithajudi	5.2	4		6
	Dhalbhumgarh	11.55	6.2		11.1
	Galudih	8.7	2.4	3.77	9.35
	Amar J Sch Mango	5.1			
	Bagun Nagar	7.9	3.95		5.25
	Baridih	3.9	0.75	4.95	1.9
	Burmamines Thana	2			2.05
	Deen Bandhu Shiv Mandir	1.45	3.89		
	Garhabasha Jua	2	1.15	1.7	2
	Golmuri	2.3	2.1	2.6	2.19
	Jugsalai Thana Jua	3	1.6		2.96
	Paridih	9.3	8.55		9.3
	Rankini Madir Jua	3.2	1.05		
	Shitla Mandir Sackchi	4.3	3.08	2.2	
	Shiv Mandir Barmamines			1.49	
	Shree Maria Mandir	3.25			
	Sundarnagar				
	Sundarnagar1	9.1	4.2	7.55	
	Telco Zone	3.9	1		1.58
	Mosabani	4.6	0.65	2.05	3.83
	Kalikapur	6.1	1.1	2.25	5.14
	Potka		2.15	5.1	8.2
	Ramgarh1	6.5	3.35	5.25	7.97
Ranchi	Angara1	9.25	3.05	6.85	8.6
	Gondlipokhar	6.5	3.3	5.3	6.45
	Jonha	4.88	3.45	3.95	4.75
	Berro	9.25	3.28	8.2	
	Chachgura	11.13	3.25	7.25	7.05
	Itki NAM		3.32	8.5	12.05
	Bundu	9.85	1.75	4.9	8.1
	Karapurti	5.68			
	Taimara	12.04	3.75	7.25	
	Burmoo	9.95	6.45	7.75	9.85
	Bijupara Tangar		4.02	3.2	5.5
	Sonsbazar	6.8	2.18	4.8	
	Bit More	4.3	2.05	6.7	9.2
	Harmu	12.85		9.75	12.05
	Kanke1		3.95	2	2.3
	Morhabadi		4.63		
	Pithoria	5.24	1.95		
	Bala		2.23	5.5	

	Bingaon		3.85	5.85	7.5
	Gobidpur			5.4	
	Jaltanda		3.05	5.85	6.3
	Kakriya		2.15	5.95	7.75
	Kalimati	Dry	4.95	5.9	6.5
	Karra1	11.25			
	Lodma	4.98	1.94	3.4	
	Lodma1	4.98			4.7
	Masmano		2.15	3	
	Nawatoli		3.45	4.25	
	Pokta		2.15	5.35	
	Putkaltoli		2.01	5.1	6.55
	Dumardagga		3.8	3.85	
	Khunti	8.4			8.25
	Bishakhatanga		3.55	3.65	6.9
	Mandar	6.5	1.8	3.55	
	Murhu	3.84		5.5	2.85
	AG Office		6.55		
	Bidge Frord Sch		4.4	5.6	
	Bunti	2.75	1.1	2.05	2.1
	Hatia1		4.3	8.2	11
		6.5	6.55	4.3	3.25
	Lalganj	7.3	2.55	5.55	6.75
	Lowadih	7.2	4.4	5.4	
	Namkom Bz Chowk	3.82		3.1	
	Ormanji	5.01	2.4	5.3	
	Rampur		1.05	3.25	
	Ranchi	4.04			
	Ranchi1	4.55	2.31	3.6	
	Sani Mandir		1.3		
	Siramtoli			6.35	
	Sithipokhartoli		5.1	6.9	
	Chutupalu	9		3.85	7.2
	Hombai		6	6.7	
	Ukrid		2.68	4.4	
	Bajra	8.25	3.85	4.45	10.05
	Hurhuri		5.23	6.15	8
	Kantitanr	5.71			4.8
	Kita	5.45	1.35	3.9	5.35
	Patrahatu	1.52	1.02		
	Silli	6.6	3.08	5.8	
	Barwadag	5.33	2.75	4.6	5.9
	Seringathu	2.87			
	Sonahatu1	6.18	0.85	3.95	
	Tatilsilwai EEF		5.29	6.5	
	Rangamati	6.85	3.05	4.5	
	Tamar	10.6	1.55	5.35	
	Dorma	6.6		4.3	
	Dorma1			5.6	
	Torpa	9			
Sahibganj	Barhait	6.35	4.55	6.61	6.95
	Barharwa	9.37	1.79	7.71	7.89
	Borio		3.14	4.17	4.65
	Mandro	4.38	0.2	2.61	3.34
	Sahebganj1	8.45	5.08	3.51	3.64
	Sakrigali	5	0.91	3.1	4.2
	Ranga	8.05	1	4.39	4.69
	Ghat Selumpur	6.8	1.75	3.85	3.97
	Rajmahal	6.78	3.6	3.1	3.56
	Taljhari				
	Taljhari1	2.68	1.27	2.74	3.12
	Udvababutala	8.77	1.62	3.17	3.65

Water Level Trend (2006 – 2015)

		Trend of water level from 2006 to 2015							
Location	**Pre Monsoon**			**Post Monsoon**			**Annual**		
	Data Points	**Rise**	**Fall**	**Data Points**	**Rise**	**Fall**	**Data Points**	**Rise**	**Fall**
		m/year			**m/year**			**m/year**	
Chas	10		0.0482	9		0.5249	37		0.2558
Petarbar	10	0.07		9		0.0581	37	0.0275	
Jaina More	9		0.0395	8		0.2126	36		0.1583
Tenughat	8	0.0021		9		0.1295	37		0.0739
Chandrapura	6	0.9168		7		0.0639	30	0.0997	
Mahuda	7	0.0451		7		0.2186	28		0.0502
Gomia	10	0.4591		9		0.0795	38	0.2168	
Nawadih	4			7		0.1003	26		0.1848
Bagra	9		0.2639	8		0.419	36		0.4041
Simaria	9		0.3149	7	0.0438		34		0.0787
Chatra	6		0.6911	5			22		
Itkhori	7		0.4998	5			24		0.6056
Sarath	10	0.0384		9		0.0556	39	0.0042	
Jasidih	10	0.1431		9		0.0811	39	0.0282	
Madhupur1	9	0.0284		9		0.0136	33	0.037	
Palajori	10	0.0167		9		0.047	38		0.0242
Sarawan	10	0.1351		9		0.0297	38		0.164
Ghormara	10		0.0796	8		0.1885	37		0.1135
Deoghar	7		0.2513	6		0.4075	26		0.293
Tundi	8		0.0156	9		0.1936	37		0.0636
Sindri	7		0.0553	6		0.1937	25		0.2247
Jharia	7	0.0475		6		0.1343	24		0.0002
Nirsa ecl l.qtr	10	0.2243		9	0.1506		39	0.0975	
Govindpur	11		0.4384	9		0.0354	39		0.1794
Rajganj	10	0.0319		9		0.0416	39	0.018	
Topchanchi	9		0	9		0.1214	38		0.0618
Raneswar	10		0.1483	8		0.1606	37		0.0897
Nala	10		0.1444	8		0.1863	36		0.0877
Masanjor	10	0.0186		9		0.1632	38		0.0244
Masalia	9		0.0116	8		0.0773	35	0.0169	
Patabari	10		0.0648	7		0.0414	35		0.0148
Sikaripara	7		0.1777	8		0.378	29		0.2247
Chikania	8		0.1003	8		0.0195	35	0.0567	
Kathikund	10		0.1068	9		0.2557	39		0.1124
Dumka(db ib)	10	0.2898		9	0.2264		37	0.2563	
Jama1	10		0.154	9		0.0936	38		0.0783
Jarmundi db.ib	10		0.0612	9		0.1234	38		0.0786
Maheshpur templ	6	0.2323		3			21		
Nunihaat	6		0.0409	9		0.0171	34	0.0097	
Gopikandar	10	0.2216		9		0.0375	39	0.018	
Hansdiha pwdib	9		0.2472	9		0.0497	35		0.124
Mihijam db ib	7		0.2918	6		0.6637	23		
Kundahit	8		0.1911	7		0.1689	30		0.1678
Jamatara	10		0.1767	9		0.245	39		0.1631
Garhwa	9		1.0828	5			30		0.3223
Nagaruntari	7	0.5167		7		0.4562	30	0.0057	

Bhawanathpur	7		0.097	5			25		0.0378
Pandri	9		0.1395	7		0.1013	33		0.1325
Bagodar	8	0.0239		9		0.0427	37		0.0297
Birini	8	0.2628		7	0.1938		30	0.215	
Dhanwar	10	0.1435		9	0.0063		37	0.0846	
Giridih	10	0.4677		9		0.1237	38	0.1009	
Dhanidih	9		0.1448	9		0.2751	37		0.0896
Bengabad	10		0.0498	9		0.1127	38		0.0412
Bandhutanr	8		0.0596	8		0.1917	33	0.0604	
Jamua pwd ib	10		0.1845	9		0.1972	39		0.1586
Dumri	10	0.3341		8		0.1267	38	0.0513	
Maheshpur2	7		0.1245	3			24		0.018
Pathargama	9		0.0862	9		0.0797	38		0.0441
Bara borijore	6		0.0703	8	0.0366		25		0.0152
Mahagama1	9		0.162	9		0.2309	36		0.2331
Lalmatia	9		0.1711	9		0.2115	37		0.1352
Doi	7	0.0428		8		0.0265	34	0.0975	
Poraiyahaat	8		0.0768	7		0.0966	31		0.1199
Sundar Pahari	9		0.1987	6		0.1626	29		0.1028
Godda1	9	0.009		9		0.2863	38		0.0904
Thethai Thangar	9	0.1051		9	0.0085		36	0.0211	
Jaldega	10		0.11	9		0.1072	37		0.1224
Simdega	9		0.1661	9	0.0055		37		0.0073
Lachargarh	9	0.0067		8	0.0363		35	0.0001	
Bano	7	0.1408		8		0.0003	31		0.0532
Bishnupur	10	0.3226		9		0.2078	36	0.0627	
Kolebira	7	0.1185		9		0.0645	35		0.0359
Palkot	10		0.006	9		0.1294	39	0.04	
Baisia	10		0.2786	8		0.2512	37		0.1362
Raidih	8	0.1037		8		0.1559	36	0.0063	
Gumla1	6	0.0225		6		0.1617	24	0.0264	
Anjam gram	8		0.0806	6		0.0897	27		0.0841
Chainpur1	8	0.0006		7		0.1967	31		0.0734
Sisai	9		0.0135	9		0.2359	37		0.1229
Bharno bdo	9	0.2585		9	0.0275		37	0.0832	
Ghagra	9		0.07	9		0.1754	38		0.0573
Nagfeni	10	0.0831		9		0.0292	39		0.3928
Hazaribagh	10		0.1577	8		0.1462	37		0.0685
Ichak	4			6		0.4928	21		
Barkatha	9	0.1023		8		0.0783	34	0.0561	
Barhi	10		0.2643	9		0.1867	39		0.2468
Gola	10	0.0898		8		0.1007	38		0.0601
Barkakhana	9	0.2201		8		0.0182	35	0.0332	
Mandu	8	0.0776		9		0.0465	37	0.0334	
Chauparan	7		0.3404	4			22		
Bhandara	8	0.3259		9		0.43	35		0.0469
Senha Bdo	10	0.1283		7	0.1524		37	0.0655	
Lohardaga(pwdib	8	0.0098		9		0.334	37		0.1331
Hinjla	10		0.2489	9		0.5173	38		0.3481
Kuru1	10		0.0302	9		0.3323	39		0.1061
Pakuria	7	0.0817		9		0.2141	35	0.0235	
Salgapara	7	0.0074		8		0.1974	34		0.1324
Maheshpur2	6		0.006	7		0.1299	33		0.0844

Amrapara	7		0.1579	9		0.0873	35	0.0392	
Pakur1	8		0.1789	9		0.041	36		0.1044
Litipara	9	0.0401		9		0.2068	38		0.103
Hiranpur	9	0.1242		9	0.0557		38	0.1328	
Lesliganj	6	0.7775		7	0.0427		29	0.1026	
Daltenganj	9	0.1026		8		0.0261	37	0.0699	
Kajri	8	0.1316		8		0.5352	33		0.199
Rajhara	7		0.1502	8	0.0478		33	0.0074	
Patan	7		0.0503	5			23		
Bishrampur	6		0.3873	9		0.1888	34		0.2113
Hariharganj	6		0.4464	7		0.3372	29		0.2686
Kanda	8		0.0604	8		0.1689	34		0.0641
Chhatarpur	10	0.4723		9		0.2715	39		0.0042
Japla	6	0.4498		4			22		
Sandha	7	0.2547		7		0.1613	27	0.0392	
Chandwa	10	0.0386		9		0.1219	38		0.099
Latehar	9	0.0555		8		0.2128	36		0.0571
Balumath	9		0.1223	9		0.3821	37		0.14
Satbarwa	8		0.0795	9		0.2039	36		0.138
Manika	10	0.1241		9		0.042	39	0.0376	
Barwadih	8		0.2122	5			25	0.0226	
Barjatu	8		0.1573	9		0.2451	35		0.1999
Betla	6		0.1815	6		0.2492	28		0.1044
Keshargaria	7	0.0561		6	0.4098		24	0.1426	
Jhinkpani	7	0.0165		8		0.1319	30	0.037	
Kokcho	10		0.0093	10		0.2157	39		0.0361
Hesadih	10	0.1843		9	0.0328		39	0.0817	
Chaibasa	9		1.3324	10		0.887	39		1.0844
Rajnagar	8		0.0548	6	0.026		27	0.0764	
Hata_Tirin	8		0.1374	8	0.1213		31	0.0792	
Pandrasalai	9		0.0214	9	0.12		37		0.015
Chakradharpur	9	0.3019		9	0.6338		37	0.4826	
Saraikela	9		0.0541	10	0.0396		38	0.0477	
Kharsawan	9	0.1953		7	0.167		34	0.1448	
Bandgaon	10	0.0314		10		0.0425	40	0.0005	
Kereikela	10	0.0496		10	0.1809		39	0.0562	
Kandra	10		0.0492	9		0.0662	37		0.0642
Chandil	10	0.4852		10		0.0068	40	0.1989	
Ghatsila	9	0.0032		10		0.0039	39	0.0075	
Baharagora	9		0.0334	10	0.3362		38	0.0641	
Jamshedpur	7	1.261		6	0.5519		25	0.5592	
Chakulia	9	0.2785		9	0.2816		38	0.2266	
Dhalbhumgarh	10		0.0275	9		0.0254	39		0.0482
Mosabani1	8	0.1162		7		0.122	30	0.0875	
Kalikapur	10	0.1654		9	0.1418		39	0.1977	
Potka	9	0.0165		10	0.0517		38	0.1204	
Galudih	10	0.2297		10		0.0805	40	0.0031	
Ramgarh1	8		0.2497	10		0.2149	37		0.2409
Sundarnagar	8		0.2477	7		0.2607	29		0.3133
Silli	10	0.064		9		0.1383	38		0.0001
Bunti	10		0.0042	9		0.0504	38	0.0027	
Angara	6		0.2106	6		0.3109	23		
Mandar	10	0.0243		9		0.1444	38		0.0005

Chutupalu	9		0.046	8		0.1453	36		0.1857
Murhu	10		0.0205	9		0.466	38		0.2532
Khunti	8	0.5835		7		0.0603	30	0.1585	
Tamar	10		0.1442	10	0.2084		39	0.1552	
Karra1	9		0.0167	8		0.165	34		0.0434
Bundu	9		0.1515	8		0.1561	37		0.0914
Kalimati	7		0.2225	9		0.1577	36		0.08
Lodma	9	0.25		7		0.0185	33	0.1294	
Barwadag	10	0.0588		9		0.1541	38	0.0085	
Berro	10	0.0639		9		0.2217	38		0.1011
Hatia1	9		0.5741	9		0.4816	37		0.2389
Ormanji	10		0.1198	9		0.2579	38		0.0967
Ranchi1	9		0.0539	9		0.1611	34		0.0509
Rajmahal	10	0.2615		7		0.1318	34	0.0568	
Borio	8	0.0107		9		0.0533	35		0.0504
Taljhari1	10	0.6474		8		0.0454	34	0.2636	
Sahebganj1	10		0.0783	9	0.0139		36	0.0245	
Sakrigali	9		0.0402	6		0.0613	29	0.0039	

ANNEXURE-III

CHEMICAL ANALYSIS RESULTS OF MAJOR CHEMICAL PARAMETERS OF GROUND WATER SAMPLES OF HNS WELLS DURING MAY 2015 IN JHARKHAND STATE

SN	District	Location	pH	EC µs/cm@25°C	TDS	TH	Ca^{2+}	Mg^{2+}	Na^{+}	K^{+}	CO_3^{2-}	HCO^{3-}	Cl^{-}	NO^{3-}	SO_4^{2-}	F^{-}	PO_4^{3-}	SiO_2
							mg/l											
1	Bokaro	Gomia	8	1136	738.4	395	68	55	94	2.3	nd	525	89	14	52	0.54	nd	28
2	Bokaro	Chas	7.56	1885	1225.25	721	204	51	88	2.3	nd	220	294	169	199	0.3	nd	48
3	Bokaro	Pindrajora	7.48	1400	910	490	190	3.648	90	11	nil	244	234.3	26	120	0.17	7	60
4	Bokaro	Bermo	7.54	1880	1222	500	88	68.096	200	1.3	nil	476	276.9	1.4	110	0.67	nd	39
5	Bokaro	Peterbar	7.61	690	448.5	260	96	4.864	38	0.6	nil	97.6	120.7	62	33	0.84	nd	68
6	Bokaro	Chandrapura	7.57	600	390	230	64	17.024	30	1.4	nil	231.8	42.6	0.8	31	2.63	nd	55
7	Bokaro	Chandankiyari	7.75	800	520	220	68	12.16	80	2.8	nil	195.2	85.2	50	66	0.55	nd	74
8	Bokaro	Jainamore	7.79	845	549.25	330	96	21.888	40	2.4	nil	231.8	78.1	36	79	0.44	nd	64
9	Bokaro	Tenughat	7.39	630	409.5	230	48	26.752	35	4.5	nil	183	49.7	10	68	0.91	nd	52
10	Bokaro	Nawadih	7.82	1044	678.6	410	144	12.16	50	2	nil	244	99.4	65	107	0.47	nd	59
11	Bokaro	Pupunki	7.73	780	507	320	96	19.456	30	2.5	nil	97.6	78.1	125	84	0.69	nd	71
12	Bokaro	Panchaura	7.56	1570	1020.5	620	140	65.664	74	2.6	nil	280.6	163.3	200	130	0.35	nd	77
13	Bokaro	Bijulia	7.71	1390	903.5	450	92	53.504	108	6.6	nil	305	205.9	77	69	0.71	nd	52
14	Bokaro	Balidih	7.6	815	529.75	260	88	9.728	66	2	nil	219.6	99.4	7.4	65	2.05	nd	59
15	Bokaro	Tiyara	7.96	840	546	330	96	21.888	35	1.4	nil	231.8	120.7	19	40	0.63	nd	62
16	Bokaro	Radha Gaon	7.51	2175	1413.75	860	200	87.552	93	3.1	nil	280.6	291.1	316	183	0.31	nd	63
17	Giridih	Bagodar	7.67	1005	653.25	390	56	60.8	50	1.9	nil	256.2	106.5	45	85	0.94	nd	66
18	Giridih	Giridih	7.84	870	565.5	270	68	24.32	68	11	nil	256.2	106.5	25	41	0.58	0.7	34
19	Giridih	Tisri	8.05	640	416	220	60	17.024	45	0.5	nil	256.2	35.5	25	20	3	nd	61
20	Giridih	Dhanwar	7.87	400	260	150	44	9.728	20	3.2	nil	109.8	49.7	23	14	0.52	nd	44
21	Giridih	Jamua	7.28	2170	1410.5	890	268	53.504	82	4	nil	183	482.8	170	97	0.56	nd	60
22	Giridih	Birni	7.86	790	513.5	300	92	17.024	40	1.3	nil	207.4	124.25	26	22	0.48	nd	46
23	Giridih	Pandri	7.56	960	624	360	124	12.16	50	1.5	nil	244	85.2	130	46	0.65	nd	50
24	Giridih	Deuri	7.9	575	373.75	190	60	9.728	42	1.7	nil	231.8	42.6	13	11	0.75	nd	49
25	Giridih	Jamua	7.68	1030	669.5	330	112	12.16	80	2.2	nil	146.4	198.8	50	48	0.81	nd	64

26	Giridih	Dumri	8.14	570	370.5	220	44	26.752	25	2.5	nil	146.4	42.6	55	40	0.47	nd	53
27	Giridih	Bengabad	7.63	320	208	70	16	7.296	35	1.9	nil	109.8	35.5	2.1	9.5	0.34	nd	40
28	Giridih	Chirki	8.13	670	435.5	220	48	24.32	49	2.4	nil	170.8	71	42	46	0.28	nd	40
29	Giridih	Bandhatanr	7.75	1000	650	300	96	14.592	88	1.4	nil	158.6	184.6	48	48	0.4	nd	56
30	Giridih	Dhaniadih	7.62	680	442	200	72	4.864	60	1.3	nil	122	71	70	65	0.89	nd	60
31	Giridih	Saraiya	7.34	1440	936	470	132	34.048	97	2.7	nil	329.4	248.5	38	55	0.19	nd	58
32	Giridih	Mahesh Munda	7.56	1040	676	290	96	12.16	99	1.3	nil	73.2	134.9	210	82	0.37	nd	67
33	Giridih	Gandey	7.51	440	286	110	40	2.432	44	0.5	nil	97.6	49.7	35	21	0.7	nd	66
34	Dhanbad	Jharia	7.86	450	292.5	130	44	4.864	33	6.8	nil	158.6	28.4	3.5	41	0.71	nd	16
35	Dhanbad	Tundi	7.79	800	520	270	84	14.592	49	1.3	nil	170.8	92.3	63	61	0.22	nd	43
36	Dhanbad	Nirsa	7.89	1170	760.5	350	100	24.32	91	24	nil	231.8	156.2	16	140	0.13	nd	16
37	Dhanbad	Topchanchi	8.02	1970	1280.5	720	148	85.12	101	2.8	nil	244	269.8	260	175	0.5	nd	52
38	Dhanbad	Mahunda	7.82	1090	708.5	350	76	38.912	82	3	nil	366	71	40	78	0.67	nd	21
39	Dhanbad	Gobindpur	7.62	1350	877.5	420	120	29.184	102	3	nil	353.8	142	81	106	1.01	nd	64
40	Dhanbad	Rajganj	8.06	1800	1170	610	124	72.96	110	3.9	nil	536.8	241.4	6.8	95	0.6	0.8	44
41	Dhanbad	Katras	7.96	1130	734.5	400	100	36.48	70	1.5	nil	305	127.8	1.2	99	0.6	nd	51
42	Dhanbad	Sindri	7.63	920	598	330	80	31.616	55	2.7	nil	268.4	71	1.7	111	0.64	nd	37
43	Dhanbad	Dhanbad	7.75	1190	773.5	450	108	43.776	60	5.3	nil	366	120.7	0.5	95	0.39	nd	36
44	Dhanbad	Baghmara	7.83	630	409.5	270.216	56.112	31.616	20	0.77	nil	158.626	70.92	30	70	0.91	nd	65
45	Jamtara	Mihijam	7.84	632	410.8	260.208	56.112	29.184	27	2.1	nil	146.424	63.828	47	77	0.99	nd	60
46	Jamtara	Kundahit	7.91	261	169.65	80.064	24.048	4.864	26	2.8	nil	122.02	14.184	1.4	14	0.79	nd	30
47	Jamtara	Jamtara	7.62	829	538.85	330.264	80.16	31.616	32	3.3	nil	195.232	113.472	40	50	7.23	nd	42
48	Jamtara	Nala	8.03	1369	889.85	350.28	92.184	29.184	162	4.8	nil	292.848	234.036	31	78	8.03	nd	58
49	Jamtara	Fatehpur	7.86	763	495.95	250.2	64.128	21.888	51	2.5	nil	109.818	106.38	95	40	8.09	nd	66
50	Deogarh	Madhupur	7.93	1300	845	350.28	92.184	29.184	140	1.4	nil	231.838	205.668	140	74	7.47	nd	51
51	Deogarh	Jasidih	8.04	840	546	190.152	64.128	7.296	112	1.8	nil	134.222	120.564	120	55	0.96	nd	41
52	Deogarh	Sarath	8.04	516	335.4	220.176	44.088	26.752	19	1.8	nil	183.03	42.552	22	23	7.39	nd	50
53	Deogarh	Sarawan	7.99	350	227.5	110.088	24.048	12.16	30	1.7	nil	134.222	14.184	18.5	10	8.26	nd	58
54	Deogarh	Asna More	7.81	405	263.25	140.112	36.072	12.16	31	1.3	nil	61.01	56.736	50.6	22	8.26	nd	66
55	Deogarh	Deogarh	7.85	775	503.75	250.2	60.12	24.32	65	1.1	nil	195.232	78.012	100	46	0.98	nd	42

56	Deogarh	Palajori	7.9	742	482.3	300.24	56.112	38.912	41	2.8	nil	170.828	113.472	53.6	29	0.97	nd	50
57	Deogarh	Ghormara	7.96	665	432.25	230.184	44.088	29.184	44	2.2	nil	170.828	70.92	53	39	5.92	nd	67
58	Dhanbad	Gahira	7.77	239	155.35	70.056	16.032	7.296	24	2.1	nil	97.616	14.184	2	6	8.82	nd	50
59	Jamtara	Narayanpur	7.92	298	193.7	80.064	24.048	4.864	25	0.77	nil	73.212	21.276	8.9	16	8.68	nd	65
60	Jamtara	Fatehpur	7.14	196	127.4	70.056	12.024	9.728	13	0.88	nil	36.606	14.184	22.7	6.2	7.61	nd	53
61	Deogarh	Dumrthar	8.04	480	312	130.104	36.072	9.728	51	2.4	nil	268.444	7.092	0.27	3.6	7.85	nd	50
62	Deogarh	Devipur	7.95	327	212.55	140.112	36.072	12.16	15	0.52	nil	122.02	21.276	23	13	7.22	nd	71
63	Giridih	Mohanpur	7.37	880	572	240	72	14.592	86	1.4	nil	61	134.9	116	82	0.1	nd	73
64	Giridih	Bharwabad	7.85	1840	1196	670	188	48.64	94	5	nil	219.6	390.5	122	75	0.55	nd	36
65	Bokaro	Bhanath	7.7	1320	858	410	76	53.504	111	4.3	nil	390.4	149.1	16	105	2.15	nd	62
66	Bokaro	Marafari	7.72	855	555.75	270	76	19.456	70	1.9	nil	280.6	78.1	2.3	65	2.35	nd	62
67	Chatra	Itkhori	7.88	520	338	185	44	18	19	14.8	0	189	46	7.3	5	0.71	0	6.7
68	Chatra	Itkhori	8.15	720	468	260	56	29	51	9.4	0	354	53	13.3	16	0.36	0	7.9
69	Chatra	Chatra	7.6	1865	1212.25	655	62	120	101	32.2	0	756	121	22.7	81	0.52	1.1	3.2
70	Chatra	Simariya	7.97	557	362.05	195	36	25	26	15.6	0	159	67	22.7	22	0.35	0	9.1
71	Chatra	Simariya	7.72	1325	861.25	540	88	77	37	23.4	0	537	96	23	67	0.53	0.7	8.2
72	Chatra	Simariya	8.03	536	348.4	180	44	17	26	12.9	0	73	74	22.9	68	0.52	0	6.3
73	Chatra	Tundwa	8.34	767	498.55	290	48	41	54	23.9	18	384	53	0.7	31	1.09	0	2.2
74	Chatra	Simariya	7.88	1473	957.45	505	38	98	79	23.7	0	604	110	23.1	7	0.49	0	3.4
75	Latehar	Balumath	8.21	906	588.9	405	32	78	26	11.8	0	336	96	22.9	45	0.43	0	11.1
76	Latehar	Balumath	8.07	868	564.2	375	66	50	19	12.3	0	372	39	22.8	56	0.45	0	3.1
77	Latehar	Chandwa	8.37	682	443.3	320	28	60	29	12.4	0	250	103	2.8	49	0.44	0	2.1
78	Latehar	Latehar	8.2	504	327.6	215	18	41	26	10.1	0	177	74	22.6	27	0.35	0	7.3
79	Latehar	Manika	7.83	1222	794.3	505	34	101	42	23.2	0	445	103	21.9	75	0.53	0	3.4
80	Latehar	Satbarwa	8	640	416	355	48	56	21	18.4	0	287	110	7.9	36	0.51	0	6.6
81	Latehar	Satbarwa	8.18	623	404.95	370	42	64	17	11.3	0	360	43	8.8	67	0.64	0	9.1
82	latehar	Barwadih	8.03	817	531.05	275	54	34	45	23.2	0	287	67	2.2	73	0.58	0	6.8
83	Plamu	Barwadih	8.33	491	319.15	145	34	14	20	10.1	12	67	74	0.6	13	0.73	0	9.1
84	latehar	Garu	8.27	438	284.7	155	18	26	15	11.6	0	79	74	8.5	21	1	0	7.3
85	latehar	Mahuadanr	8.11	136	88.4	35	6	5	5	13	0	37	11	1.1	12	0.29	0	5.9

86	Plamu	Mahuadanr	8.18	59.5	38.675	20	2	4	2	10.8	0	12	14	4.7	4	0.15	0	8.3
87	Plamu	Lesliganj	8.3	791	514.15	220	62	16	58	19.2	0	299	53	21.6	21	0.68	0	9.7
88	Plamu	Panki	8.34	577	375.05	215	18	41	34	15.4	6	281	39	5.4	10	1.1	0	2.3
89	Palamu	Panki	8.39	336	218.4	160	22	25	5	15.6	15	67	64	12.4	10	0.53	0	13.1
90	Plamu	Patan	8.08	639	415.35	270	34	44	12	9.3	0	153	96	22.2	26	0.76	0	2.8
91	Palamu	Patan	7.62	1433	931.45	515	54	91	96	0	0	537	145	1	84	1.2	0	6.3
92	Plamu	Bishrampur	8.32	590	383.5	265	42	38	11	0.2	12	165	74	9.1	11	0.78	0	3.9
93	Plamu	Daltenganj	7.88	1717	1116.05	775	78	139	20	10.3	0	653	145	3.8	72	1.01	0	2.9
94	Palamu	Chainpur	8.36	1014	659.1	355	28	68	81	1	18	342	110	22	35	1.28	0	9.9
95	Palamu	Bhandaria	8.1	770	500.5	185	66	5	74	11.1	0	268	89	3.6	20	1.17	0	7.9
96	Garhwa	Ranka	8.29	719	467.35	295	74	26	25	1.2	0	189	124	0.2	34	1.19	0	6.5
97	Garhwa	Garhwa	8.28	781	507.65	285	64	30	42	10.3	0	250	89	18	35	1.12	0	16.1
98	Garhwa	Ramna	8.18	954	620.1	345	26	67	62	10.9	0	390	74	21.7	53	1.2	0	11.1
99	Garhwa	Nagar Utari	8.32	871	566.15	150	22	23	100	59.1	9	262	121	0.1	37	0.19	0	3.4
100	Garhwa	Bhawnathpur	8.01	1147	745.55	540	18	119	10	13.1	0	372	145	22	60	1.25	0	9.1
101	Garhwa	Manjhian	8.2	785	510.25	235	52	25	56	34.1	0	238	121	5.6	21	0.41	0	13.7
102	Palamu	Bishrampur	8.1	641	416.65	175	42	17	65	15.1	0	256	50	14.8	34	0.82	0	0.8
103	Palamu	Bishrampur	8.06	780	507	160	48	10	66	32.1	0	244	67	4.7	55	0.92	0	4.6
104	Palamu	Patan	8.3	578	375.7	135	36	11	56	20.9	18	201	50	0.1	12	1.1	0	10
105	Plamu	Chattarpur	8.09	629	408.85	200	14	40	38	13.1	0	262	39	6.6	23	0.53	0	3.9
106	Palamu	Chattarpur	8.26	710	461.5	295	10	65	16	12.9	0	232	103	15.2	9	1.2	0	8.9
107	Palamu	Chattarpur	8.38	865	562.25	270	28	48	54	14.3	30	311	64	7.4	8	1.14	0	7.6
108	Palamu	Hussainabad	8.44	928	603.2	300	62	35	65	13.4	18	336	96	2.9	9	1.37	0	5.5
109	Plamu	Haider Nagar	8.08	1038	674.7	355	60	49	66	19.8	0	421	89	20.9	43	0.87	0	13.1
110	Ramgarh	Ramgarh	8.16	1014	659.1	220	68	12.15	118	3.1	0	227.55	216	25	44	1.29	ND	28
111	Ramgarh	Mandu	7.75	621	403.65	180	60	7.29	63	2.2	0	195	71	57	2	0.69	0.02	22
112	Ramgarh	Patratu	8.11	511	332.15	145	56	4.86	55	1.5	0	92	110	30	1	1.52	ND	47
113	Ramgarh	Gola	7.65	417	271.05	100	38	1	53	3	0	79	74	28	0	1.67	ND	48
114	Ramgarh	Barkakana	7.65	1135	737.75	450	120	36	53	2.7	0	332	184	14	6	1.39	ND	28
115	Ramgarh	Chitarpur	7.1	700	455	300	66	32.8	36	3.1	0	276.75	49.6	11	21	0.18	ND	24

116	Ramgarh	Bhukunda	7.74	794	516.1	260	72	19	57	4.2	0	159	113	60	28	1.06	ND	31
117	Ramgarh	Kuju	7.55	758	492.7	275	104	3.64	39	1.6	0	226	106	47	0	0.68	0.11	32
118	Ramgarh	Sirka	7.12	1128	733.2	325	90	24.3	103	25	0	233.7	216.24	25	29	0.27	ND	25
119	Ramgarh	Saunda	7.13	522	339.3	170	50	10.93	41.38	2.25	0	202.95	56.72	2	7	1.07	ND	21
120	Ramgarh	Sayal	7.15	626	406.9	165	54	7.29	59.55	1.12	0	233.67	63.8	10	11	0.15	ND	21
121	Ramgarh	Urimari	7.29	445	289.25	160	54	1.34	28.31	1.34	0	202.95	38.99	7	4	0.14	ND	18
122	Ramgarh	Barka chumba	8.21	498	323.7	135	52	7.29	43.67	0.48	0	104.55	64	55	51	0.41	ND	17.53
123	Ramgarh	Thakur Gora	7.15	730	474.5	335	82	31.59	48	1.16	0	319.8	49.6	16	24	0.18	ND	24
124	Ramgarh	PTPS BAJAR	8.2	466	302.9	200	30	30.37	25	1.52	0	209.1	46.09	11	4	0.53	ND	20
125	Ramgarh	Mrubandha	7.81	799	519.35	260	72	19	66	4.2	0	172.2	113	61	26	1.06	ND	31
126	Koderma	Koderma	7.27	416	270.4	150	28	19	21	3.31	0	116.85	60	14	24	0.46	ND	44
127	Koderma	chandwara	7.53	994	646.1	210	46	23.08	154.8	0.41	0	282.9	145.35	13	30	0.17	ND	24
128	Koderma	Jhumritilaiya	8.3	1315	854.75	220	68	81.5	98	2.63	0	246	251.34	41	65	1.06	ND	24.81
129	Koderma	Domchanch	8.56	465	302.25	175	26	26.73	21	4	9	79.95	67.36	37	13.03	0.22	ND	16
130	Koderma	Jainagar	8.22	650	422.5	230	32	36.45	51	3	0	164.7	95.72	38	0	0.98	ND	36
131	Koderma	Patahaldiha	7.72	833	541.45	330	50	49.81	59	2.82	0	325.95	67.35	31	10	0.15	ND	16
132	Koderma	Kanobigha	8.14	325	211.25	140	24	19.44	14.48	3	0	122	31.91	10	0	0.31	ND	11
133	Hazaribagh	Barhi	7.96	1235	802.75	550	100	72.9	60	2.2	Nil	116.85	287.14	43	24	0.5	nd	24
134	Hazaribagh	Hazaribagh	8	1202	781.3	405	72	54.68	65	4	Nil	307.5	177	41	48.66	0.18	nd	15
135	Hazaribagh	Chowparan	7.52	2120	1378	615	96	91.13	220	7.52	Nil	405.9	428.94	39.59	0	0.47	nd	21
136	Hazaribagh	Barakatha	7.88	321	208.65	120	20	17.01	23	3	Nil	123	35.45	11.41	0	0.3	nd	13
137	Hazaribagh	Ichak more	8.12	662	430.3	230	32	36.45	60	3	Nil	166.05	95.72	44	14	1.48	nd	35
138	Hazaribagh	Barkagan	7.52	847	550.55	320	60	41.31	52	1.88	Nil	307.5	67.35	33	9.27	0.2	nd	17
139	Hazaribagh	Keredari	7.72	955	620.75	310	24	48.6	78	4	Nil	412.05	99.26	6	0	1.25	nd	12
140	Hazaribagh	Garrikalan	8.1	1010	656.5	295	36	47	74	15	Nil	350.55	145.34	8	5.1	0.21	nd	12
141	Hazaribagh	Meru(Silwar)	8.68	450	292.5	185	50	14.58	27	4	9	86.1	63.81	38	13.03	0.28	nd	18
142	Hazaribagh	Daru	7.72	3321	2158.65	820	120	126.36	448	12	Nil	313.65	811.8	36.83	53	0.77	nd	20
143	Hazaribagh	Padma	8.2	443	287.95	195	24	20.66	24	1	4	190.65	46.09	11	4	0.52	nd	14
144	Hazaribagh	Hatyari	8.2	475	308.75	235	20	44.95	11	2	Nil	122	35.45	49.52	28	1.14	nd	11
145	Hazaribagh	Sakrej	8.2	310	201.5	120	20	17.01	16.07	3.65	Nil	122	31.91	14	0	0.33	nd	15

146	Hazaribagh	Tatiharia	8.28	375	243.75	155	22	24.3	22.4	2	Nil	92	35.45	34	21	1.26	nd	11
147	Hazaribagh	Darj	8.43	650	422.5	125	40	6.075	72	14	21	233.7	56.7	8.17	21	1.24	nd	24
148	Hazaribagh	Barakatha	8.25	317	206.05	120	20	17.01	13	4	Nil	123	35.45	14	0	0.36	nd	13
149	Simdega	Simdega1	7.9	210	136.5	80	20	7.29	15	1.2	0	61.5	24.45	8.4	6	0.02	nd	33
150	Simdega	Bano	7.54	598	388.7	180	60	7.29	45	3.2	0	282.9	39.55	5.2	2	0.01	nd	38
151	Simdega	Thethaiangar	7.28	220	143	70	24	2.4	21	1.4	0	92.25	24.55	3.5	7	0.22	nd	22
152	Simdega	Lachraghar	7.83	635	412.75	235	60	19.44	37	1.8	0	178.35	88.62	10	24	0.04	nd	30
153	Simdega	Tengrakuttu	8.22	335	217.75	110	18	16	28	0.9	0	116	35.45	11	18	0.24	nd	31
154	Simdega	Biru	7.55	538	349.7	200	40	24.3	26	15	0	184.5	77.99	7	2	0.26	nd	28
155	Simdega	Puthritoli	8.26	210	136.5	90	20	9.72	10.36	0	0	73.8	3.45	33	4	0.88	nd	4
156	Simdega	koleberia	7.72	605	393.25	160	20	27	58	5.3	0	141	77.99	18	38	0	nd	31
157	E. Singhbhum	Bhargora	8.44	400	260	155	42	12.15	22.3	0	8	79.95	70.9	2	2	1.32	nd	10
158	E. Singhbhum	Chakulia	7.51	314	204.1	130	38	9.72	15	1.1	0	79.95	35.45	24	18	0.18	nd	12
159	E. Singhbhum	Ghatsila	8.17	850	552.5	310	84	24	41	16	0	301.35	95.71	6	0	0.55	nd	22
160	E. Singhbhum	Dalbhumgarh	7.46	135	87.75	50	16	2.43	9.4	2.4	0	61.5	7	8	0	0.01	nd	12
161	E. Singhbhum	sakshi	7.2	1420	923	490	140	34	88	12	0	375.15	135	66	154	0.48	nd	21
162	E. Singhbhum	Potka	8.55	1039	675.35	420	100	41.31	51	1.6	33	354	71	1	35	0.65	nd	34
163	E. Singhbhum	SUNDARNAGAR	8.41	862	560.3	350	80	38.88	28	3.2	15	123	163	15	34	0.22	nd	37
164	E. Singhbhum	Ramgarh	8.52	1052	683.8	500	52	65.61	30	11	42	293	84.98	6	106	0.11	nd	33
165	E. Singhbhum	Kalikapur	7.12	1866	1212.9	540	150	40	155	24	0	430	350	18	0	0.98	nd	27
166	E. Singhbhum	Hata/tirin	8.66	1208	785.2	410	140	14.58	75	25	36	307.5	162.45	11	0	0.44	0.22	33
167	Saraikela & Kharsawan	Chandil	8.48	815	529.75	330	90	25.51	44	3.2	36	184.5	124.55	6	0	0.15	nd	18
168	Saraikela & Kharsawan	Rajnagar	8.22	940	611	400	104	34	33	1.6	0	412	67	33	9	0.33	nd	48
169	Saraikela & Kharsawan	Saraikela	8.22	937	609.05	400	104	34	41	1.8	0	412	67	28	9	0.25	nd	48
170	Saraikela & Kharsawan	Keshargaria	8.12	608	395.2	230	52	24	36	2.7	0	172.2	74.45	25	0	0.14	nd	18
171	E. Singhbhum	Andharia	7.74	422	274.3	180	60	7.29	16	12	0	147.6	34.45	17	21	0.11	nd	24
172	E. Singhbhum	Lohasoli	8.24	685	445.25	245	50	27.94	60	4.6	0	202.95	84.89	16	28	0.64	nd	11
173	E. Singhbhum	Galudih	8.28	477	310.05	205	50	19.44	33	8.65	0	86.1	81.45	36	11	0.78	nd	14
174	Saraikela & Kharsawan	Jamdih	8.48	585	380.25	220	60	17	44	3.8	24	183	67	17	0	0.22	nd	22

175	E. Singhbhum	Pithajudi	8.16	321	208.65	90	20	9.72	33	11	0	135.3	24.81	21	0	0	nd	15
176	Saraikela & Kharsawan	Kharsawan	8.22	1233	801.45	310	60	38.88	98	35	0	479.7	109.45	22	24	0.47	nd	26
177	W. Singhbhum	Chakradharpur	7.83	928	603.2	350	74	40.09	56	1.1	0	356.7	95.55	24	15	0.24	nd	40
178	W. Singhbhum	Chaibasa	7.6	1000	650	245	68	18.22	110	44	0	492	95.45	2	0	0.72	nd	52
179	W. Singhbhum	Jhinkpani	7.95	724	470.6	220	36	31	31	52	0	153	145.55	10	0	0.33	nd	28
180	W. Singhbhum	Khuntpani	8.22	932	605.8	400	104	34	35	1.8	0	399.75	67	42	9	0.39	nd	47
181	W. Singhbhum	Kereikala	8.23	698	453.7	285	70	26.73	36	18	0	159	99.16	22	48	0.42	nd	40
182	W. Singhbhum	Bandgaon.	8.21	1482	963.3	375	80	42.52	158	17	0	129.15	390.5	55	44	0.72	nd	27
183	W. Singhbhum	Kokcho	7.77	601	390.65	220	52	23	28	5.6	0	207	74.45	1	0	0.55	nd	45
184	W. Singhbhum	Pandrasalai	7.85	872	566.8	275	72	23	62	7.7	0	369	67	5	0	0.14	nd	25
185	W. Singhbhum	Hesadih	8.14	384	249.6	160	40	14.58	14	11	0	147.6	24.45	12	16	0.11	nd	24
186	W. Singhbhum	Noamundi	8.24	682	443.3	245	50	29.16	53	4.6	0	184.5	77.99	15	28	0.66	nd	12
187	W. Singhbhum	Bangaon	8.54	460	299	195	46	19.44	18	10.54	15	159.9	35.45	8.03	14	0.64	nd	15
188	W. Singhbhum	Jaganathpur	8.66	562	365.3	130	32	12.15	60	3.53	18	116.85	96	7	4	1.15	nd	11
189	W. Singhbhum	Jagnathpur	8.48	569	369.85	210	48	21.87	33	0	18	123	67.26	36	14	1.22	nd	25
190	W. Singhbhum	Hatgamaria	8.05	1050	682.5	270	60	29.16	102	1.88	0	209.1	212.95	38	32	0.78	nd	18
191	Ranchi	Jonha	6.95	404	262.6	165	40	15.79	26.05	6.54	0	196.8	14.18	0.14	3.51	0.5	ND	23.6
192	Ranchi	Kita	7.18	414	269.1	190	50	15.79	10	4.36	0	140	68	0.1	18	0.44	ND	19.35
193	Ranchi	Sonahatu	7.24	365	237.25	145	36.87	13.44	14.06	3.89	0	180	34	0.59	5.82	0.08	ND	5.69
194	Ranchi	Taimara	7.12	336	218.4	125	40	6.075	10.55	7.76	0	200	11	0	4	0.23	ND	13.24
195	Ranchi	Lodma	6.7	175	113.75	70	20	4.86	21	2	0	100	23	1	3	0	nd	2
196	Ranchi	Karra	7.28	291	189.15	230	80	7.29	12	2	0	100	77	1	11	0	nd	16
197	Ranchi	Dorma	7.33	217	141.05	110	30	8.5	10	3	0	180	23	0	7	0.92	nd	5
198	Ranchi	Seringhatu	7.82	705	458.25	235	66	17.01	44	4	0	92.25	127.62	36.78	85	0	ND	19.06
199	Ranchi	Murhu	7.15	492	319.8	480	180	7.29	15	9	0	220	52	1	30	0.86	nd	20
200	Ranchi	Khunti	7.61	786	510.9	490	140.48	34.02	17.65	7.62	0	320	181.5	0.09	60.81	0.67	nd	18
201	Ranchi	Mandar	7.77	678	440.7	250	79.93	12.15	13.44	9	0	140	141.8	0.34	55.34	0.06	ND	5.31
202	Ranchi	Sons Bazar	7.35	1307	849.55	325	84	27.94	125	24	0	252.15	205.61	51.64	75	0.07	ND	10.03
203	Lohardaga	Senha bdo	7.28	440	286	275	90	12.15	10.13	3.65	0	280	53.88	0.44	1.21	0.25	nd	7

204	Ranchi	Chachgura	7.36	180	117	60	20	3.24	18.95	1.32	0	40	34.03	0.77	0.12	0.01	ND	4.05
205	Gumla	Sisai	7.45	1020	663	230	76	9.7	114	15	0	159	184	147	0	0.01	ND	8.33
206	Gumla	Nagfeni	7.66	535	347.75	150	58	1.2	50	36	0	177	64	21	0	0.22	ND	22.85
207	Gumla	Raidih	8.26	532	345.8	150	40	12	41	18	0	214	50	2.9	32	0.19	ND	25
208	Gumla	Chainpur	7.28	800	520	260	76	17	52	12	0	165	114	88	22	0.14	ND	14.59
209	Gumla	Kasir	7.6	550	357.5	200	40	24	37	3.1	0	189	57	26	25	0.22	ND	35
210	Gumla	Baghma	6.98	480	312	150	40	12	46	8.3	0	122	64	34	33	0.1	ND	20
211	Gumla	Bishunpur	7.29	745	484.25	240	90	3.645	53	2	0	207	141	75	0	0.14	ND	18.11
212	Ranchi	Chutupalu	7.12	378	245.7	215	80	3.65	31	7	0	180	108	0	65	1	nd	11
213	Ranchi	BIT more	7.8	368	239.2	115	35.27	6.72	33.54	9	0	100	60	0.06	8	0.11	ND	5.02
214	Ranchi	Lalganj	7.77	920	598	260	66	23.08	71.17	5.6	0	375.15	77.58	12.49	22	0.13	ND	8.19
215	Ranchi	Harmu	7.12	220	143	65	24.04	1.21	19.15	5.96	0	100	19.85	0.14	7.76	1.28	ND	12.33
216	Ranchi	Ranchi	7.35	538	349.7	230	79.55	7.29	10	1.88	0	240	59.55	0.13	17.35	0.05	ND	6.21
217	Gumla	Gumla	7.32	631	410.15	245	78	23	16	6.44	0	360	14	0.18	34	0.7	ND	12.04
218	Dumka	kahikund	7.54	598	388.7	175	56	8.5	58	6.5	0	209.1	53.17	25	7	0.18	nil	16
219	Dumka	dumka	7.88	1085	705.25	370	50	59.53	98	1.4	0	356.7	134.71	7.4	32	0.77	nil	28
220	Dumka	hasidih	7.41	297	193.05	100	16	12.15	30	3.8	0	104.55	28	18	4	0.15	nil	21
221	Dumka	masanjor	7.77	301	195.65	100	20	12.15	22	0.8	0	146	3.54	48	3	0.24	nil	20
222		jarmundi	8.14	868	564.2	320	76	31	71	0.4	0	342	120	36	0	0.38	nil	28
223		jama	8.16	605	393.25	235	36	34	44	1.3	0	293	50	15	0	0.26	nil	13
224	Dumka	raneswar	8.21	370	240.5	150	50	6.075	25	0.6	0	146	35	0	5	0.27	nil	36
225	Dumka	masalia	7.77	660	429	160	24	24	66	1.3	0	207	92	20	0	0.55	nil	10
226	Dumka	patabadi	8.01	1138	739.7	430	52	72	55	3.9	0	403	120	30	22	0.68	nil	33
227	Dumka	Nonihat	7.6	1052	683.8	300	64	34	80	7.5	0	350.55	120	20	9.6	0.23	nil	62
228	Dumka	gamharia	7.67	1014	659.1	300	90	18.22	71	8	0	104	262	72	5	0.45	nil	30
229	Dumka	Chikania	7.44	615	399.75	160	24	24	51	13	0	305	24	2	0	0.18	nil	41
230	Dumka	Gopikandar	7.74	337	219.05	120	20	17	23	11	0	178	21	3	0	0.35	nil	15
231	Dumka	Barapalasi	7.66	1420	923	350	60	48	116	54	0	317	284	11	38	0.34	nil	46
232	Goadda	doi	7.66	1420	923	350	60	45	120	66	0	317	284	16	38	0.33	nil	44
233	Goadda	maheshpur	7.24	349	226.85	65	16	6	49	1.4	0	147.6	28	3	0	0.8	nil	18

234	Goadda	patharagama	7.66	1044	678.6	240	52	26	93	43	0	305	170	15	0	0	0.08	32
235	Goadda	lalmatia	8.08	649	421.85	215	28	35	42	18	0	274	64	9	0	1.43	nil	44
236	Goadda	sundarpahari	7.44	625	406.25	160	24	24	51	12	0	305	24	2	0	0.17	nil	40
237	Goadda	poria hat	7.6	1064	691.6	300	64	34	80	7.9	0	350.55	120	31	9.6	0.24	nil	52
238	GODDA	boarojore	7.32	567	368.55	150	24	22	37	25	0	293	21	8	0	0.11	nil	30
239	GODDA	Chamudih	8.17	711	462.15	230	36	34	44	2.1	0	295.2	50	15	0	0.23	nil	13
240	Sahebganj	Sahebganj	7.3	536	348.4	180	32	24	30	16	0	250	42	2	0	0.44	nil	19
241	Sahebganj	rajmahal	7.31	650	422.5	215	20	40	32	11	0	295.2	50	0.93	0	0.21	nil	20
242	Sahebganj	Talijhari	8.25	1118	726.7	305	84	23	88	32	0	461.25	113	3	24	0.32	nil	34
243	Sahebganj	Berhait	7.94	424	275.6	175	32	23	14	1.6	0	195	28	4.4	0	0.22	nil	22
244	Sahebganj	Barharwa	7.34	308	200.2	95	30	4.8	26	3.1	0	134	21	30	0	0.29	nil	17
245	Sahebganj	borio	7.93	1255	815.75	210	44	24	143	58	0	356.7	220	0	0.48	0.15	0.36	23
246	Sahebganj	mandra	7.06	1236	803.4	330	72	36	94	52	0	282.9	255	12	0.78	0.44	nil	12
247	Sahebganj	sakrigali	8.23	997	648.05	240	64	19	69	65	0	305	149	2.5	19	0.19	nil	42
248	Sahebganj	ranga	8.2	966	627.9	275	80	18	87	7.8	0	317	135	1	0	1.56	nil	24
249	Sahebganj	Udvababutala	8.04	637	414.05	235	30	38.88	28	7.8	0	281	50	8	0	nil	nil	14
250	Sahebganj	Hajipur Bihta	7.8	486	315.9	195	29	30.37	17	2.4	0	282.9	7.09	15.94	9.63	0	nil	12
251	Sahebganj	Dihari	8.57	626	406.9	235	16	47.38	25.5	3.1	21	202.95	74.49	33.6	10.81	0	0.22	13
252	Pakur	maheshpu	7.12	349	226.85	70	20	4.86	44	1.4	0	147.6	28	1.58	0	0.8	nil	17
253	Dumka	amarpara	8.06	362	235.3	160	12	31	7	1	0	172.2	28	0	0	0.22	nil	18
254	Dumka	litipara	7.75	1488	967.2	415	116	30	96	54	0	305	312	0	19	nil	nil	49
255	Pakur	PAKUR	7.98	992	644.8	135	38	9.6	100	78	0	461	92	12	0	0.24	nil	24
256	Pakur	Salgapara	8.18	320	208	110.088	24.048	12.16	30	1.7	0	134.222	14.184	18.5	10	1.26	nd	55
257	Pakur	hiranpur	7.64	348	226.2	120	20	17	33	1.2	0	184.5	21	0.68	0	0.18	nil	17
258	Pakur	Torai	7.81	405	263.25	140.112	36.072	12.16	31	1.3	0	61.01	56.736	50.6	22	1.11	nd	55
259	Pakur	Sahargram	7.94	775	503.75	250.2	60.12	24.32	65	1.1	0	195.232	78.012	100	46	0.98	nd	37

ANNEXURE IV

The water level data of urban areas for the period 2015-2016

MONTHLY WATER LEVELS (2015-16) IN DHANBAD DISTRICT

	Dhanbad Urban area											
Sl	Location	26.01.2015	25.02.2015	20.03.2015	24.04.2015	25.05.2015	22.07.2015	26.08.2015	21.09.2015	26.10.2015		
1	D.B.I.Bunglow (Dhanbad)	4.2	4.1	4.5	6.35	6.1	6.1	3.05	3.65	3.4		
2	Panderpalli	6.4	6.2	6.7	8.1	7.4	7.65	6.2	6.45	6.3		
3	Bhuli A Block (Dhanbad)	6.5	8.5	8.9	10.3	10.6	9.8	7.5	8.1	7.8		
4	Balajee Mandir (Katras)	9.35	9.2	9.3	9.6	8.8	8.4	7.2	7.05	8.15		
5	Basdeopur CISF Camp	6.64	6.9	7.1	7.4	7.15	6.1	5.4	5.3	5.85		
6	Godhar Basti	7.2	7.8	8.1	8.6	8.2	6.7	5.8	6.4	6.2		
7	Matkuria	3.45	3.4	4.4	4.8	4.1	2.95	2.4	2.75	2.85		
8	Dhansar M.R.S	3.3	3.8	4.7	11.1	8.8	6.45	3.4	3.2	3.35		
9	Purnadih Jorapokhar	10.7	10.5	10.6	6.35	9.7	8.8	5.1	5.4	5.48		
10	Sunil Talkies Bhaga(Lodna)	3.1	3.2	3.5	4.1	4.8	4.7	3.5	2.5	2.3		
11	Kandra Mandal Basti	7.05	7.25	8.1	8.2	7.8	6.5	5.15	5.6	5.4		
12	Sindri Gousala More	3.9	4.1	4.6	5.4	5.4	4.8	3.1	3.1	3.28		
13	Dhaiya I.S.M	3.5	3.8	4.1	4.7	4.1	3.1	2.3	2.86	2.78		
14	P.K.Roy College Campus	4	4.2	5.2	5.8	6.2	3.6	2.4	2.75	2.86		
15	Chiragora Hirapur	6.75	6.9	7.1	7.65	8.6	7.4	5.8	5.85	6.13		

sl	Place	26.01.2015	25.02.2015	20.03.2015	24.04.2015	25.05.2015	24/06/2015	22/07/2015	26/08/2015	21/09/2015	26/10/15	
1	Rankini Mandir,Kadma	4.3	3.7	3.3	3.8	3.6	3.9	0.9	1.85	2.8	3.1	
2	Jamshedpur Blood Bank,Bistupur	2.2	2.3	2.2	2.4	2.2	2.3	0.8	0.9	2.4	2.4	
3	Jugsalai Thana	3.9	3.7	3.2	2.5	2.7	2.4	0.5	0.9	2.4	2.4	
4	Sundernagar	9.1	10.5	11.2	12.6	11.3	12.3	7.7	3.5	4.8	5.1	
5	Burmanmines - Shiv Mandir	3.9	3.6	3.7	3.8	4	4.1	2	2	2.8	3	
6	Burmanmines Thana	2.2	2.2	2	2.2	2	2	2.2	0.7	2.6	2	
7	Garhabasa	1.2	1.6	1.8	1.7	2.2	1.6	1.1	1.2	2.1	1.4	
8	Golmuri	1.4	2.4	2.3	2.7	3.2	3.2	2.6	2	3.2	2.8	
9	Shree Maria Mandir,Golmuri	3	3.1	3.2	3.3	3.1	3.3	4.1	2.7	2.8	2.9	
10	Shree Deen Bandhu Shiv Mandir,Telco	1.5	1.5	1.5	1.5	1.4	2.4	3.8	1.4	1.4	1.5	
11	Telco - Zone No.11	3.1	4	4.4	4.6	4.8	4.9	3.5	2.9	3.3	3.5	
12	Baridih	5	5.2	5.2	5.3	5.3	5.6	3.7	2.8	4.2	4.4	
13	Bagun Nagar,Baridih	7.6	6.4	5.6	5.6	6.2	6.3	6.3	2.1	3.2	3.35	
14	Shitla Mandir,Sakchi	3.1	3.6	3.5	3.6	4.2	4.3	3.1	2.8	3.3	4.8	
15	Amar Jyoti School,Mango	6	6.7	6.8	4.25	7.1	6.6	4.1	4.1	4.8	3.2	
		Water level(mbgl)Ranchi										
SL.No.	**Location**	26.01.2015	25.02.2015	20.03.2015	24.04.2015	25.05.2015	24/06/2015	25/07/2015	25/08/2015			
1	Daily Market(Near Thana)	12.5	13.43	16.7	16.8	16.6	16.4	13.4	5.9			
2	Chutiya (Sani Mandir)	2	2.15	2.65	3.1	3.05	2.8	0.62	0.65			

3	Lowadih	5.15	5.8	6.15	6.7	7.2	6.95	4.25	3.4	
4	Mahilong Forest Nurssery	6.13	6.54	7.1	7.7	8.1	8.6	7.9	6.45	
5	Gondli Pokhar	4.55	4.82	6.15	6.55	6.5	6.95	1.65	1.45	
6	Tati Silway(E.F.)	5.94	6.64	7.04	7.94	7.84	7.34	3.29	3.79	
7	Tungri Tola (Ranchi - 15K.M.)	9.16	10.13	10.95	11.6	12	12.5	11.9	8.6	
8	Hombai B.I.T. Mesra (Ranchi-10K.M.)	7.24	7.85	8.45	8.95	9.1	9.4	6.2	4.3	
9	Hillview	3.34	3.38	3.49	3.54	3.49	3.14	2.54	2.84	
10	Vivakand Ashram (Morhabadi)	5.23	6.98	7.63	7.68	7.38	6.28	2.48	2.23	
11	Hochar	4.35	4.25	4.65	5.45	5.65	5.9	3.15	2.45	
12	Bukru	6.6	6.96	7.4	7.8	8.25	9.4	7.8	6	
13	Kanke Choak	4.23	4.45	4.9	5.75	6.2	6.55	5.15	3.55	
14	Sukurhutu	4.33	5.18	6.53		9	9.1	3.28	1.68	
15	I.T.I. Bajra	4.65	4.9	6.5	7.9	8.25	9.15	2.75	2.9	
16	Lodnapiri	4.6	3.82	4.35	5.6	4.95	5.35	3.45	3	
17	Pindarcom	5.9	6.4	6.85	7.5	7.8	8.05	3.2	2.55	
18	Kharsidag	5.2	5.55	5.9	6.5	6.55	6.85	3.72	3.6	
19	Kachnar Toli	7.25	8.79	9.4	11.45	11.05	9.55	2.45	2.45	
20	Mani Tola (Doranda)	3.2	2.97	3.55	3.65	3.3	3	1.3	1.55	
21	Hanuman Mandir (Near AG.Office)	8.25	8.25	8.95	9.4	9.95	9.65	4.6	2.35	
22	Bridge Ford School	5.68	6.08	6.7	7.35	7.05	5.4	2.4	2.2	
SL.No.	**Deeper Aquifers(Ranchi urban area)**									
1	Jamchuwan (Tata Road)	8.63	8.36	8.53	9.6	8.52	9.8	7.44		

2	NIFT (Hatia)	14.93	19.62	15.88	19.22	19.6	17.9	9.3	
	Dhurwa (Near Dame Site)								
3	HEC Sector II	9.4	8.38	9.64	9.3	9.82	8.63	8.27	
4	Airodram	9.8	9.91	12.65	13	14.5	12.7	6.87	
5	J.V.M. Shaymli (Doranda)-pZ-I	17.56	21.68	17.39	16.25	17.55	18.86	19.05	
6	J.V.M. Shaymli (Doranda)-pZ-II	24.03	23.97	29.78	29.7	27.8	24.1	18.4	
8	HHC, Harmu	16.59	17.74	21.65	26.41	30.71	36.41	15.39	
9	Ranchi College Ranchi	4.13	4.4	3.74	4.11	4.04	4.31	2.99	
10	PHED tank, kanke block chowk						12.36	11.56	
11	Kanke School (High School)	24.46	17.3	23.79	22.38	18.89	18.54	18.94	
12	Bukru	6.31	6.37	3.87	7.46	7.85	7.2	5.81	
13	Baridih School, Ormanjhi	3.8	3.61		4.26	5.01	5.63	3.59	
14	Mlitary Farm Namkum	20	13.18	25.45	24.3	19.04	24	13.95	
15	Forest Nursary	8.65	8.17	10.33	8.51	10.75	9.85	8.02	
Water level measurement,Hazaribagh									
1	Amritnagar			13.86	9.73	10.31	10.91	11.43	
2	Korrah Chowk	9.89	9.89	10.8	6.83	7.63	8.68	9.21	
3	College More	8.01	8.13	9.4	4.15	5.15	5.65	6.22	
4	Simra Rest House	4.83	5.19	6.45	1.16	8.10	2.08	2.4	
5	Sindur			9.24	4.79	5.61	6.24	6.73	
6	Masipiri			10.65	7.5	7.80	7.9	8.25	
7	Habib Nagar	10.2	9.62	12.7	6	7.80	8.45	8.97	
8	Battom Bazar	4.83	4.52	10.23	3.57	4.02	3.92	3.39	

9	Infront of Kud Ashram			12.18	4.1	5.46	8.68	7.98	
10	Kanhari Road	9.8	9.81	10.08	6.32	8.00	7.8	8.28	
11	Hirabag	9.73	10.25	10.25	6.73	7.28	7.73	7.87	
12	Old Bus Stand	11.03	10.66	13.4	7	8.60	9.62	10.44	