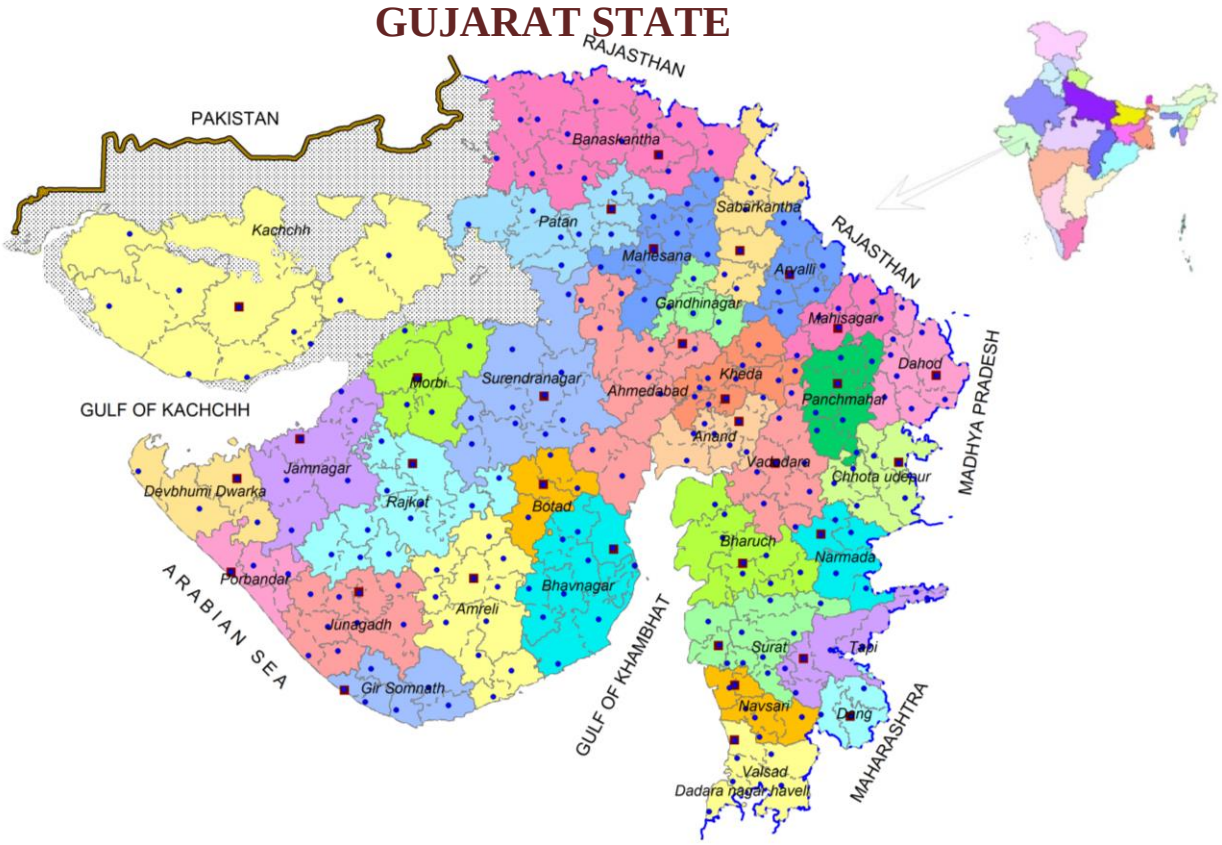
CENTRAL GROUND WATER BOARD

MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENEATION

GOVERNMENT OF INDIA

GROUNDWATER YEAR BOOK – 2018 - 19

GUJARAT STATE



REGIONAL OFFICE DATA CENTRE
CENTRAL GROUND WATER BOARD
WEST CENTRAL REGION
AHMEDABAD

May - 2020

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Compiled by

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FOREWORD

Central Ground Water Board, West Central Region, has been issuing Ground Water Year Book annually for Gujarat state by compiling the hydrogeological, hydrochemical and groundwater level data collected from the Groundwater Monitoring Wells established by the Board in Gujarat State. Monitoring of groundwater level and chemical quality furnish valuable information on the ground water regime characteristics of the different hydrogeological units moreover, analysis of these valuable data collected from existing observation wells during May, August, November and January in each ground water year (June to May) indicate the pattern of ground water movement, changes in recharge-discharge relationship, behavior of water level and qualitative & quantitative changes of ground water regime in time and space. It also helps in identifying and delineating areas prone to decline of water table and piezometric surface due to large scale withdrawal of ground water for industrial, agricultural and urban water supply requirement. Further water logging prone areas can also be identified with historical water level data analysis. This year book contains the data and analysis of ground water regime monitoring for the year 2018-19.

The behavior of groundwater levels as analyzed from the existing Groundwater Monitoring Wells data and the chemical quality of groundwater is discussed in details in this report along with the thematic maps depicting the ground water scenario for different periods of measurements. The depth to water level, water level fluctuations, water table and water quality maps have been prepared and presented in this report along with detailed discussion on each map.

The scientific officers of the Regional office have systematically collected field data from the Groundwater Monitoring Network Wells four times during the viz., May, August, November and January and the analysis of same has been presented in this report along with changes in different seasons and long term changes in water level. The water samples were collected during May 2018 were analysed in the Regional Chemical Laboratory of West Central Region Ahmedabad to bring out chemical characteristic of groundwater. As a special drive to monitor presence of arsenic in ground water, the concentration of arsenic has been measured and produced in the report.

I hope the report would be extermly useful to various agencies engaged in groundwater development and management for fruitful planning in time and space.

(Sourabh Gupta)
Regional Director (I/C)

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GROUNDWATER YEAR BOOK (2018-19)
GUJARAT STATE

EXECUTIVE SUMMARY

- Central Ground Water Board has set up a network of 1251 Groundwater Monitoring Wells including 389 piezometers. Initially the monitoring commenced with the establishment of 82 observation wells spread uniformly over the entire state, in the year 1969 and since then number of stations were added regularly so as to get proper hydrological information of different hydrogeological and geo-morphological units.

- The density of groundwater monitoring wells is 157 Sq Km/well in Gujarat.

- The average decadal rainfall varies from about 2277 mm in Valsad to about 489 mm in Kachchh.

- Gujarat is one of the frequent drought prone states of India. Several consecutive droughts have been experienced during last 20 years, 1986-88 was the longest and the most severe drought period experienced in the past.

- The average rainfall for 2018 is 882 mm, which is 28 percent less than the decadal average.

- Groundwater levels are being monitored four times in a year, and representative water samples for quality (inorganic constituents) are collected during pre-monsoon (May) period.

- 68% of the wells have depth to water levels in the range of 5 to 20 mbgl (meter below ground level) during pre-monsoon 2018. The water levels were deeper in Amreli, Banaskantha, Gandhinagar, Mahesana, Patan and Sabarkantha districts.

- Deeper water levels were observed mainly in the over exploited and Critical talukas are in some parts of North Gujarat and Saurashtra area.

- The shallow water levels of less than 5 mbgl were observed along the coast, Rann of Kachchh and in parts of The Dangs, Surat and Bharuch districts.

- The long term ground water scenario in comparison to pre monsoon 2018 indicates that 60% well shows fall where as in post monsoon it oserved in 46% of wells.

- Deep confined aquifers exist in north Gujarat and they are grouped into, first confined aquifer ranging in depth from 78 to 162 mbgl and second confined aquifer ranging in depth from 154 to 274 mbgl.

- In parts of Mahesana and Gandhinagar districts, depth to piezometric surface during pre monsoon is more than 40m bmsl in the first confined aquifer and it is more than 120 mbmsl in second confined aquifer noticed in and around Mahesana and Patan districts.

- In general ground water quality is good in hard rock areas occupying eastern hilly part of the state, central part of Kachchh and Saurashtra plateau. In soft rock and unconsolidated formations ground water quality is variable.

- The quality of ground water deteriorates in discharge area. Quality of ground water is inferior along the coast, the Rann and in the low-lying saline tract between Saurashtra and main land Gujarat.

- The deterioration in ground water quality in the coastal areas is mainly due to over drawals causing seawater ingress which needs to be arrested.

- In Mahi Right Bank Canal and Ukai – Kakrapar canal command areas, water logging has surfaced and needs to be addressed suitably by adopting appropriate conjunctive use strategies.

- Alarming declines in groundwater levels of Central Gujarat plains and in select areas of Saurashtra and Kachchh warrant immediate attention for taking-up of recharge schemes to arrest further declines and augment the groundwater resources. The artificial recharge of groundwater especially in North Gujarat, Kachchh and in major part of Saurashtra is a necessity.

- Pointed attention of the administrators and policy makers is drawn towards adoption of artificial recharge, public awareness and other appropriate measures for ensuring adequate groundwater availability and sustainability.

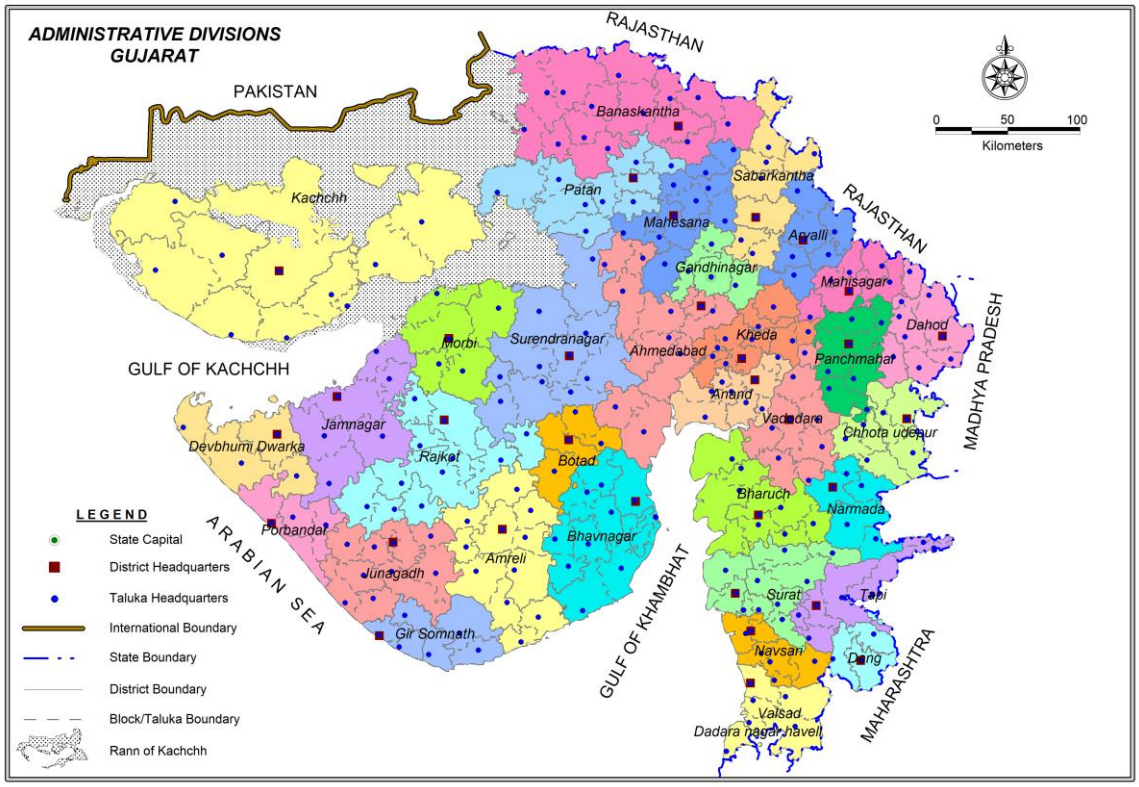
GROUNDWATER YEAR BOOK, 2018-19, GUJARAT STATE

1.0 INTRODUCTION

The West Central Region of Central Ground Water Board has jurisdiction over the State of Gujarat (1,96,024 Sq. Km.) and Union Territory (UT) of Daman & Diu (112 Sq. Km.) covering an area of 1,96,136 sq km. The Gujarat State is situated between North latitudes 20° 06' 00" to 24° 42' 00" and East longitudes 68° 10' 00" to 74° 28' 00" (**Fig**. **1**). Gujarat has nearly 1600 km long coastline, which is the longest as compared to any other state in the country. It is extending from Lakhpat in north to Daman in south. The State has common boundaries with the states of Rajasthan, Madhya Pradesh and Maharashtra and shares international border with Pakistan in northwest. UT of Daman & Diu has an area of 106 sq. km. Diu is an Island just south of Saurashtra coast and Daman is situated west of Vapi in the south.

There are 18,225 villages and 348 towns in Gujarat including 16 towns with more than 1,00,000 population. The total population is 60,383,628 of which 31,482,282 are males and 28,901,349 are females (2011 census). Out of the total population, the population of the Scheduled Caste is 4,074,447 and that of the Scheduled tribe is 8,917,174. The total population of U.T. of Daman & Diu is 243,247 of which 150,301 are males and 92,976 are females (2011 Census).

Map showing administrative divisions of Gujarat State Fig 01

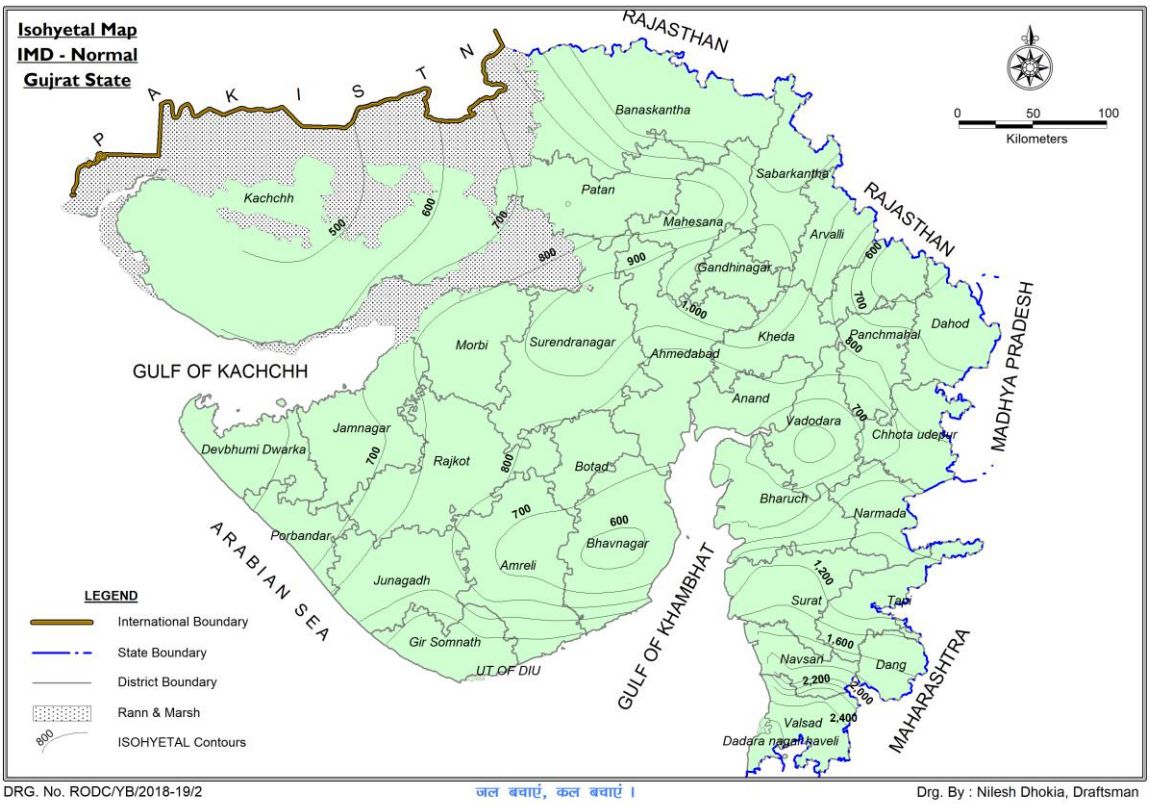


The tribal areas are located all along the interstate boundary, extending from Banaskantha district in the north to The Dangs district in the south. The tribal belt has a total geographical area of 29,560 Sq. Km. and is shown in **Fig. 1**.

The diverse physiographic, climatic, topographic and geologic conditions have given rise to diversified ground water situations in different parts of the state. Occurrence and movement of groundwater is controlled by rock formations of varied composition and structure and range in age from Archean to Recent. Similarly, the landform varies from the hilly tract to the uplands of Kachchh and Saurashtra, the alluvial plains extend from Banaskantha in the north to Valsad in the south, the low lying coastal tract surrounding the Kachchh and Saurashtra uplands and the marshy to saline tracts of the Rann of Kachchh and little Rann of Kachchh. The topography and rainfall virtually control the runoff and ground water recharge.

Droughts are frequent in north Gujarat, Saurashtra and Kachchh regions due to poor and erratic rainfall. The climate varies from humid in the south through sub-humid in the central part to semi-arid and arid in the northern and western parts. The state receives rainfall mainly during southwest monsoon period. The normal rainfall shows an erratic rainfall pattern during 2018 which shows high rainfall 2277 mm in extreme south (Valsad) to 489 mm in Kachchh district. The distribution of normal rainfall in the state is depicted in **Fig. 2.**

Map showing distribution of IMD normal rainfall Fig 02



During 2018 Gujarat received 28% less rainfall than the average rainfall (Annexure I). Eight districts including UT of Daman had received average rainfall - 9% as compared to decadal average annual rainfall (2008-2017). Ahmedabad,

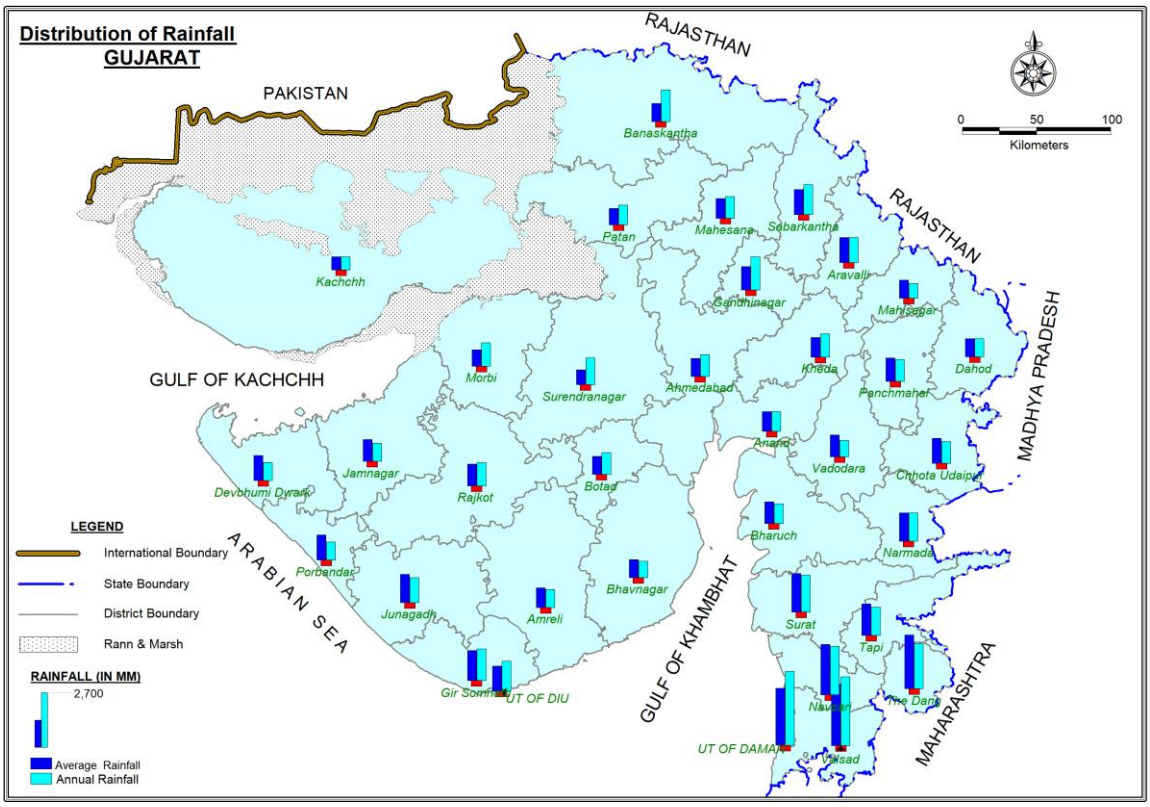
Banaskantha, Bhavnagar, Botad, Dwarka, Gandhinagar, Jamnagar, Kachchh, Mahesana, Patan, Morbi, Porbandar, Rajkot, Sabarkantha, Surendranagar received rainfall below normal 30%. While three districts such as Anand, Gir Somnath, Navsari, The Dangs has received morethan 20% annual rainfall as compared to decadal average annual rainfall (2008-2017). Annual rainfall during 2018, Average decadal annual rainfall (2008-2017) and its departure from average decadal annual rainfall in the Gujarat state is presented in **Table 1** and map representing distribution of rainfall district wise in bars is presented as **Fig. 3**.

Table - 1

District wise Average Annual Rainfall in the Gujarat state

Sl.No	District	Rainfall 2018	Average Rainfall in mm (2008 to 2017)	Departure % (Year 2018)
1	Ahmedabad	286	652	-56.13
2	Amreli	503	683	-26.34
3	Anand	827	712	16.12
4	Aravalli	695	835	-16.78
5	Banaskantha	215	708	-69.69
6	Bharuch	736	739	-0.42
7	Bhavnagar	418	611	-31.67
8	Botad	379	641	-40.84
9	Chhota Udaipur	779	859	-9.31
10	Dahod	572	615	-7.02
11	Dwarka	246	855	-71.27
12	Gandhinagar	327	847	-61.46
13	Gir Somnath	1254	1037	20.94
14	Jamnagar	342	728	-53.09
15	Junagadh	830	1001	-17.11
16	Kachchh	131	489	-73.23
17	Kheda	635	704	-9.77
18	Mahesana	293	670	-56.21
19	Mahisagar	600	629	-4.73
20	Morbi	228	631	-63.86
21	Narmada	685	975	-29.74
22	Navsari	1986	1692	17.34
23	Panchmahal	788	815	-3.30
24	Patan	187	607	-69.21
25	Porbandar	418	858	-51.33
26	Rajkot	370	740	-50.06
27	Sabarkantha	509	854	-40.45
28	Surat	1285	1352	-4.91
29	Surendranagar	238	571	-58.35
30	Tapi	1132	1090	3.87
31	The Dang	2190	1869	17.16
32	Vadodara	539	744	-27.63
33	Valsad	2302	2277	1.09
	STATE	**695**	**882**	**-28**

Distribution of rainfall in Gujarat state and UT of Daman & Diu Fig 03



Central Ground Water Board, as a part of its national programme, has established a network of observation wells in the state of Gujarat for periodic monitoring of groundwater levels and to study its quality variation in time and space. 1251 groundwater monitoring wells including 386 piezometers (Pz) are presently being monitored in the state of Gujarat. The distributions of monitoring wells in different districts are given in **Table 2**.

Two distinct hydro-geological units are identified in Gujarat viz., hard rocks and soft rocks. The distributions of monitoring wells in different hydro-geological units are given in **Table 3**.

Large rivers like Narmada, Mahi, Tapi, and Sabarmati flow through the state and form their own basins. Other minor rivers have been grouped together to form river basins. In all, eight river basins have been identified by the All India Soil Survey & Land Use Department as listed below:

1. Sabarmati river basin.
2. Mahi river basin.
3. Narmada river basin.
4. Tapti river basin.
5. Luni and other drainage in the Great Rann of Kachchh
6. Draining in to Gulf of Kachchh
7. Southern Kathiawar
8. Sharavati to Tapti

The sub basins of these major river basins and the distribution of ground water monitoring wells in these different river basins are given in Annexure I. Map showing Hydrograph stations monitored during the year and their distribution in different basin and the district is presented as **Fig. 4**.

Distribution of GWMNS in the districts and major river basins **Fig 04**

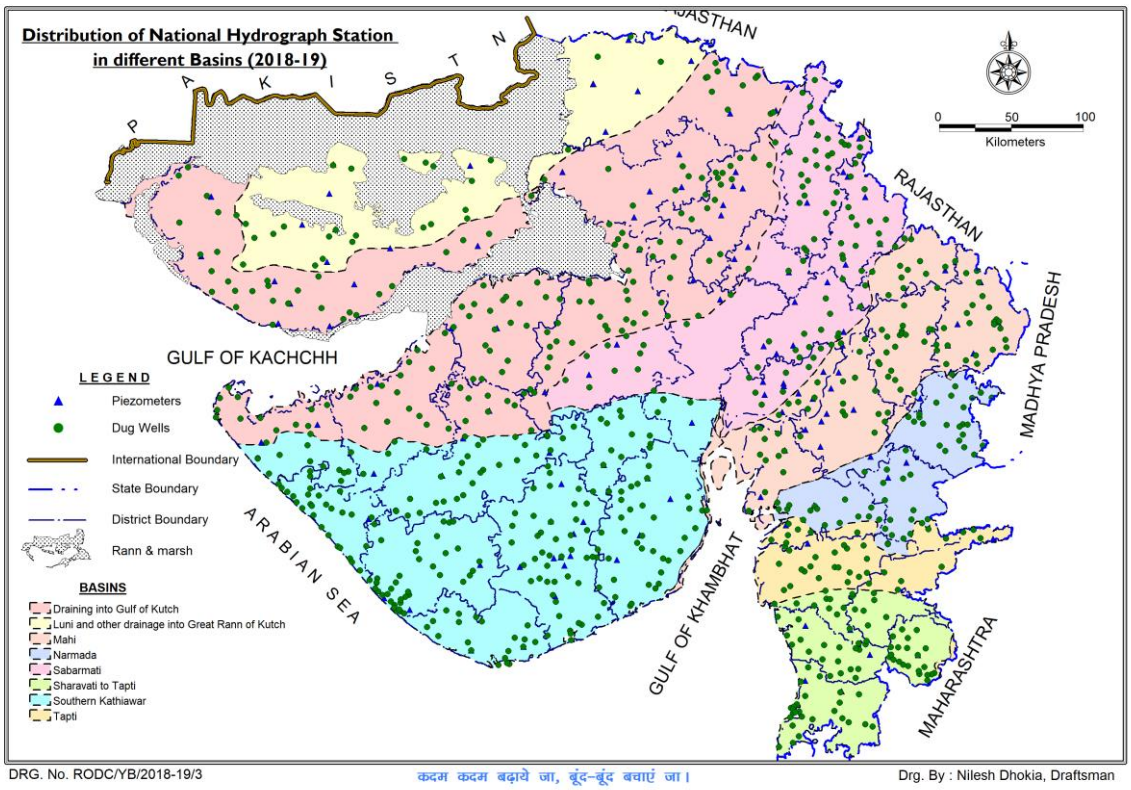


Table-02 DISTRICT WISE DISTRIBUTION OF OF GROUND WATER MONITORING WELLS MONITORED DURING 2018-19

Sl. No.	District	As on rest of the field season 2018-19			NHS Well As on March 2019			Monitored During MAY-2018			Monitored During AUGUST- 2018			Monitored During November - 2018			Monitored During January - 2019		
		DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total
1	Ahmedabad	17	54	71	17	28	45	15	20	35	14	18	32	14	9	23	16	12	28
2	Amreli	47	16	63	48	14	62	45	9	54	37	8	45	31	10	41	47	12	59
3	Anand	21	15	36	15	14	29	15	14	29	15	15	30	11	10	21	15	10	25
4	Banaskantha	20	52	72	15	30	45	14	40	54	13	39	52	25	34	59	14	34	48
5	Bharuch	38	6	44	34	6	40	34	6	40	37	6	43	31	2	33	28	3	31
6	Bhavnagar	43	12	55	43	9	52	39	4	43	40	5	45	34	3	37	39	2	41
7	Dohad	26	6	32	25	6	31	23	6	29	21	6	27	25	5	30	24	6	30
8	Gandhinagar	3	30	33	2	24	26	2	31	33	2	26	28	2	26	28	2	25	27
9	Jamnagar	52	7	59	47	5	52	46	5	51	37	4	41	41	4	45	47	5	52
10	Junagadh	61	15	76	57	11	68	54	3	57	38	3	41	61	15	76	55	9	64
11	Kachchh	51	19	70	52	14	66	48	12	60	52	14	66	46	11	57	43	8	51
12	Kheda	15	13	28	15	13	28	15	12	27	13	10	23	6	13	19	13	12	25
13	Mahesana	17	44	61	16	32	48	18	39	57	16	39	55	16	40	56	14	29	43
14	Narmada	21	6	27	18	6	24	17	6	23	20	6	26	15	5	20	17	6	23
15	Navsari	23	2	25	20	2	22	19	2	21	19	2	21	20	2	22	16	1	17
16	Panchmahals	41	9	50	32	7	39	29	7	36	31	5	36	31	4	35	32	6	38
17	Patan	15	23	38	10	16	26	9	18	27	8	20	28	10	15	25	7	8	15
18	Porbandar	29	3	32	29	3	32	29	3	32	25	3	28	26	3	29	30	3	33
19	Rajkot	54	7	61	54	6	60	40	6	46	37	6	43	45	7	52	47	5	52
20	Sabarkantha	48	12	60	46	12	58	47	11	58	38	9	47	44	11	55	43	12	55
21	Surat	69	6	75	51	4	55	50	4	54	50	4	54	63	5	68	50	4	54
22	Surendranagar	46	9	55	47	4	51	24	4	28	33	4	37	33	7	40	48	5	53
23	The Dangs	30	2	32	24	1	25	21	1	22	24	1	25	29	1	30	22	1	23
24	Vadodara	47	19	66	38	21	59	33	20	53	38	21	59	32	14	46	29	21	50
25	Valsad	28	2	30	19	2	21	19	2	21	16	2	18	24	1	25	16	2	18
State Total		862	389	1251	774	290	1064	705	285	990	674	276	950	715	257	972	714	241	955

Table-03_DISTRIBUTION OF GROUND WATER MONITORING WELLS IN DIFFERENT HYDROGEOLOGICAL UNITS								
S.No	**DISTRICT**	**Hard Rock**		**Soft Rock**		**Total**		
		DW	**PZ**	**DW**	**PZ**	**DW**	**PZ**	**Total**
1	Ahmedabad	4	0	13	54	17	54	71
2	Amreli	38	12	9	4	47	16	63
3	Anand	1	0	20	15	21	15	36
4	Banaskantha	7	1	13	51	20	52	72
5	Bharuch	12	3	26	3	38	6	44
6	Bhavnagar	34	9	9	3	43	12	55
7	Dohad	26	6	0	0	26	6	32
8	Gandhinagar	0	0	3	30	3	30	33
9	Jamnagar	28	7	24	0	52	7	59
10	Junagadh	39	15	22	0	61	15	76
11	Kachchh	9	3	42	16	51	19	70
12	Kheda	3	3	12	10	15	13	28
13	Mahesana	0	0	17	44	17	44	61
14	Narmada	19	6	2	0	21	6	27
15	Navasari	12	1	11	1	23	2	25
16	Panchmahals	34	9	7	0	41	9	50
17	Patan	0	0	15	23	15	23	38
18	Porbandar	18	1	11	2	29	3	32
19	Rajkot	38	4	16	3	54	7	61
20	Sabarkantha	38	5	10	7	48	12	60
21	Surat	42	3	27	3	69	6	75
22	Surendranagar	14	1	32	8	46	9	55
23	The dangs	30	2	0	0	30	2	32
24	Vadodara	25	10	22	9	47	19	66
25	Valsad	24	2	4	0	28	2	30
	Gujarat TOTAL	**495**	**103**	**367**	**286**	**862**	**389**	**1251**

2.0 HYDROGEOLOGY

The high relief areas in the eastern and north-eastern parts of the state occupied by the Deccan Traps and the Archeans respectively have steep topographic gradients resulting in high run-off, and therefore, provide little scope for groundwater recharge. The groundwater potential in this terrain is limited. The large alluvial tract extending from Banaskantha district in the north to Surat and Valsad districts in the south constitutes the largest and most potential groundwater reservoir in the state. The aquifers are extensive, thick, hydraulically connected and are moderate to high yielding. To the west of this alluvial tract, especially around the discharge areas, characteristic artesian free flow conditions are observed. Almost the entire Saurashtra and Kachchh regions are occupied by a variety of hard and fissured formations which include basalt and consolidated sedimentary formations with semi-consolidated sediments along the low-lying coastal areas. The compact and fissured nature of rocks gives rise to discontinuous aquifers with moderate yield potential. The friable semi-consolidated sandstone forms an aquifer with moderate yield potential. The coastal and deltaic areas in the state form a narrow linear strip and are underlain by Tertiary sediments and Alluvium. Though highly potential aquifers occur in these areas, salinity is a constraint for groundwater development. Groundwater withdrawal requires to be strictly regulated so that it does not exceed the annual recharge and also that it does not disturb the hydro-chemical balance leading to seawater ingress. The quality of groundwater in both hard rock and alluvial terrain is, by and large suitable except, in the coastal areas, estuarine tract and the Rann where the degree of mineralisation in ground water is rather high and salinity is common. Salinity in groundwater is also noticed in the arid and semi-arid tract. The different conditions of groundwater occurrence in the state have led to divergent groundwater situations in the areas occupied by different geological formations (**Fig. 5**). The formation-wise hydrogeological characteristics in the state of Gujarat has been broadly summarised in the **Table 4.**

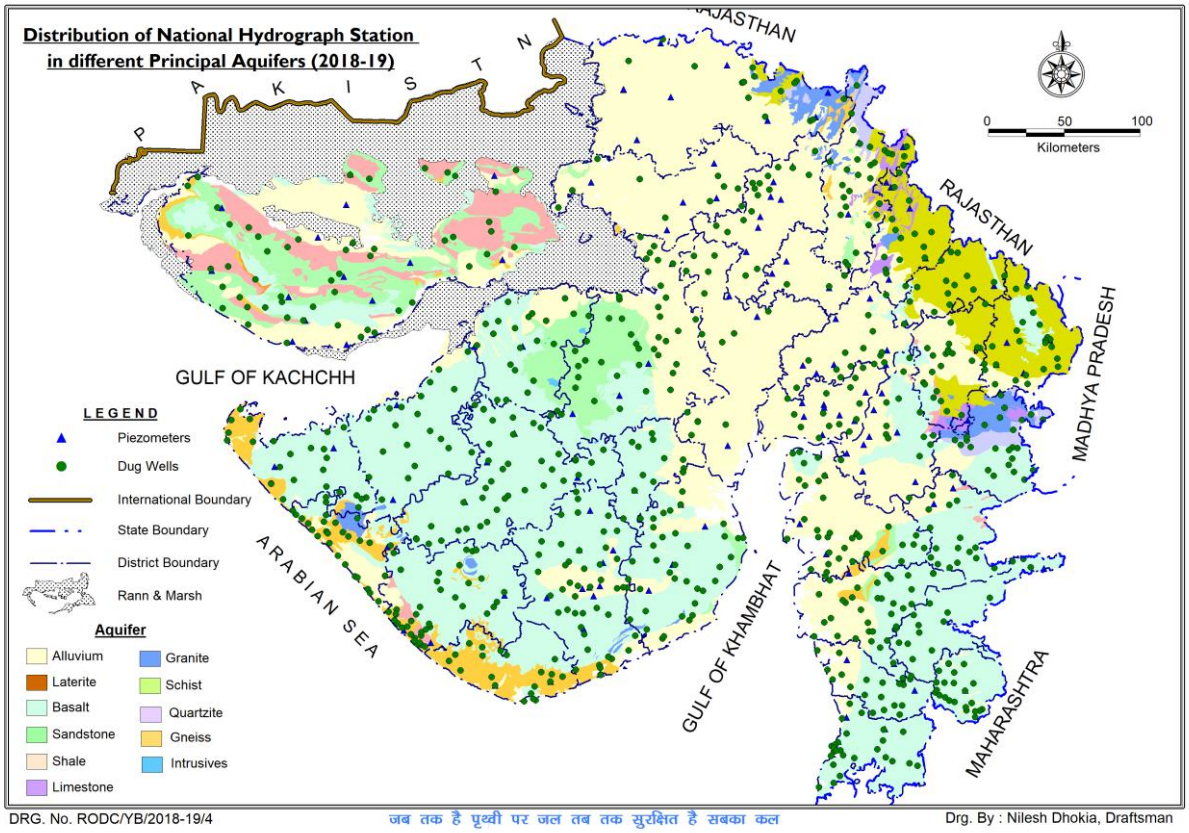
Table 4. Distribution of hydrogeological formations in Gujarat and their Potential

Age	Rock Formation	Distribution	Hydrogeological Characteristics
Porous Formation			
Quaternary to upper Tertiary	Impure limestones, limestones, sandstones, conglomerates, pebble beds, silt stones, sands, pebbles, gravels etc.	Ahmedabad, Amreli, Banaskantha, Bhavnagar, Bharuch, Kachchh, Kheda, Jamnagar, Junagadh, Rajkot, Mahesana, Surendranagar and Valsad Districts	Unconfined shallow aquifer, leaky confined/ confined and deeper aquifer. Large to moderate yield prospects:10 to 40 lps, Storativity: 1.6x10E-4 to 7.3x 10E-4, Hydraulic Conductivity: 5 to 20m/day, Transmissivity: 50 to 2000m2/day
Mesozoic	Sandstones, Shales,	Kachchh, Surendranagar, Sabarkantha and Vadodara	Discontinuous aquifers with limited thickness of 50 to 300

	Limestones and Grits	districts	meters. Limited yield prospects <15 lps, Hydraulic Conductivity: 2 to 10m/day, Transmissivity: 50 to 1000m2/day
Fissured formation			
Mesozoic to Palaeozoic	Basalt with intertrappean clays	Uplands of saurashtra, Kachchh Region, scattered patches in Panchmahals, Sabarkantha and Vadodara districts, Continuous belt in eastern part of Bharuch, Surat and Valsad districts	Ground water occurrence restricted to weathered and fractured zones, limited to 200m, moderate yield prospects: 5 to 15 lps
Archaean and Pre-Cambrian	Granites, Gneiss, Marbles, Schists, Phyllites and Slates	Banaskantha, Sabarkantha, Panchmahals, vadodara and Kheda districts.	Ground water occurrence restricted to weathered and fractured zones having secondary porosity, limited yield prospects of 2 to 5 lps.

Map showing major hydrogeological units and distribution of Ground Water Monitoring Network Stations.

Fig 05



2.1 Achaean and Proterozoic Formation

Rocks of Archaean and Proterozoic age occupy the north-eastern and eastern parts of the state and cover extensive areas in parts of Vadodara, Kheda, Panchmahals, Sabarkantha, Mahesana and Banaskantha districts. These rocks, which include gneiss, schist, phyllite, quartzite and metamorphosed igneous intrusives do not form good aquifers due to their poor porosity and permeability. Dug wells, dug-cum-bore wells and bore wells are feasible only in favourable sites where sufficient weathered mantle and/or fractures and joints occur. The wells tapping these aquifers have maximum depth of 30 to 40 mbgl beyond which groundwater occurrence is not common. The yield of wells in these rocks varies from a few cubic meters to 100 cubic meters per day at minimal drawdown.

2.2 Mesozoic Formation

Jurassic and Cretaceous formations include Pachchham, Chari, Katrol and Bhuj Series in Kachchh, Dhrangadhra and Wadhwan sandstones in northeastern part of Saurashtra, Bagh beds along the Narmada River and Himmatnagar sandstones in Sabarkantha district. Pachchham and Chari Series are predominantly calcareous while Wadhwan sandstones and Bagh beds include some limestone. The rest are arenaceous and consist of inter-bedded sandstone and shale sequences. The most important and productive aquifer among these formations occurs in the Bhuj Series consisting of predominantly friable, soft, medium to coarse grained sandstone occurring at depths of few meters to as much as 300 meters. Tube wells constructed up to 200 mbgl in this formation yield 70 to 170 m^3/hour for drawdown of about 10m. The salinity distribution in groundwater in Upper Bhuj aquifers is generally uniform with low concentration of dissolved solids in the upland and non-irrigated areas. Salinity gradually increases towards area of intensive irrigation and discharge area.

The Dhrangadhra sandstones comprise of about 400 m thick, fine to coarse grained sandstones inter-bedded occasionally with carbonaceous shale. Tubewells tapping about 100 m of aquifer thickness in this formation within a depth of 212 mbgl yield limited to moderate discharge of the order 14 to 80 m^3/hour. Basic sills of 30 to 50 m thickness are found intruded in the Lower Dhrangadhra formation in the northern part of Surendranagar and Rajkot districts at Gala, Sathapur and Chuli villages. Normally, the sills mark the lower limit of fresh groundwater occurrence. In the northern part of Rajkot district and eastern part of Jamnagar districts, these sandstones have been encountered at depths of 200 – 250 mbgl below Traps, in semi- confined conditions.

The Himmatnagar sandstones are exposed in a narrow belt between Eklara and Ranasan villages in Sabarkantha district. They also occur below the traps near Dhansura (23° 24’: 75° 15’) at depths of 60 to 100 mbgl. Patches of these sandstones occur under the alluvial cover near Sanseli (22° 42’; 75° 25’), Madhwas (23° 24’; 73° 27’) and Gugalpur (22° 15’: 73° 28’) and on the northern bank of Goma River. Although these sandstones are generally fine grained, hard and compact, coarse friable sandstones are observed at places near Kapadvanj. These

sandstones, when saturated to moderate depths, form potential aquifers. Tubewells tapping these aquifers yield up to 50 m^3/hour.

2.3 Deccan Trap

These are essentially basaltic lava flows with a general horizontal to near horizontal disposition over a very wide area. From groundwater potential point of view, these rocks constitute moderately promising aquifers. The jointed and fractured basalts hold and transmit water in moderate quantities. The thickness of traps ranges from 100 to 150 m in Kachchh to more than 1000 m in Cambay basin.

The yields in dug wells tapping the basalts vary from insignificant quantities to 30m^3/day. Higher yields have been observed at hydrogeologically favourable locations. The yield of the dug wells can be enhanced considerably by lateral and/or vertical borings. The discharge of tube wells is reported to decline at places due to presence of unsaturated porous zones at depth. The quality of groundwater in traps is generally potable.

2.4 Tertiary Formation

These rocks are exposed between Narmada and Tapi rivers in parts of Bharuch and Surat districts. They also occur in the coastal tracts of Saurashtra and Kachchh.

Gaj beds belonging to Miocene occur all along the Saurashtra coast. These consist of limestone, clay and grit mostly gypsiferous with thin sand layers. Drilling at Okha (22°28': 69°16') and Veraval (20°54': 70°25') has shown that locally, the Gaj beds extend beyond 300 m depth and the deeper zones yield meagre quantities of saline groundwater.

The quality of groundwater in Gaj beds along Saurashtra coast is slightly inferior on account of intercalated clay bands and inherent salinity of Gaj beds, which were deposited under marine conditions. However, the quality of ground water in the upper Gaj limestone is better. The chloride content in groundwater ranges from 100 to 200 mg/l between Veraval, Sil (21° 11': 70° 03') and around Porbandar.

Dwarka beds, comprising of gypsiferous and calcareous red colour clays and sandy limestone are about 150 m thick. Groundwater in the Dwarka beds is of poor quality with chloride content ranging from 500 to 700 mg/l. Yield of dug wells are of the order of 37 m^3/day and tube wells yield about 22 m^3/day for a drawdown of about 4 m. In the Kachchh region, the sandstones of Manchhar series form good aquifers. Tubewells, ranging in depth from 116 to 169 mbgl, yield between 68 to 136 m^3/hour and the chloride content ranges between 96 and 612 mg/l. However, the Tertiary rocks, in general, do not form promising aquifers for groundwater development because of the inferior quality of groundwater. In southern Gujarat (Narmada-Tapti area), the tertiary rocks comprises of sandstone, shale and limestone intercalated with gravel which locally exceed 100 m in thickness. Ground water in these rocks is mostly brackish to saline and yields are in shallow tube wells.

2.5 Quaternary Formation

The Quaternary formations include milliolite limestone, alluvium and aeolian deposits. The milliolite limestone is of limited thickness and its occurrence is

confined to the coastal tract of Saurashtra. The alluvial and aeolian deposits extend as one continuous plain, from north to south and also as valley-fills in the hard rock terrain.

Highly cavernous milliolite limestone is locally a very productive aquifer. Dug wells tapping these limestones are capable of yielding up to 200 m^3/day. These are the repositories of potable groundwater in an otherwise saline coastal belt of Saurashtra. Quaternary sediments occupy an area of about 86,680 sq km. Their thickness in the Cambay Basin is estimated to be of the order of 500 m. However, towards north in the districts of Mahesana Banaskantha and Sabarkantha, the thickness reduces to less than 50 m near the hilly tract. In general, the thickness of the alluvium in north Gujarat ranges from 40 to 500 m. In the southern Gujarat plains, the alluvium mostly overlies the basalts and the tertiary sediments. Its thickness ranges from a few meters near the rock outcrops to over 75 m in the lower reaches. The Quaternary sediments vary in character and composition. In the Cambay basin, these are predominantly composed of clay, silt and sand with "kankar". The proportion of gravels, pebbles and boulders, etc., increases towards the hilly tracts. Such areas, forming the piedmont terrain, extend for 10 to 20 km from the hills into the plains.

A number of abandoned river channels and valley fills occur in the rocky areas. These are of great significance for the development of ground water in an otherwise less promising terrain.

Groundwater in the alluvium occurs under unconfined conditions at shallow depths. In deeper horizons, it occurs under semi-confined to confined and artesian conditions. Detailed study in Mahesana, Banaskantha, Rajkot, Surendranagar, Kheda, Sabarkantha, Kachchh and Ahmedabad districts has revealed that multiple aquifers exist in major part of the alluvial plains of Gujarat up to a depth of 500 m.

These aquifers have their areas of recharge in the piedmont terrain and the hilly areas towards the east and northeast. Most of the aquifers coalesce into one phreatic aquifer in the recharge area but are identified as separate aquifers occurring under artesian conditions in the central part of the basin and in the discharge areas towards west and southwest. In parts of Mahesana and Banaskantha districts, the quaternary sediments is up to 600 m thick, comprising of 10 to 125 m thick younger alluvial deposits (Pleistocene to Recent) and 100 to 475 m thick older alluvial deposits (Pliocene to Pleistocene). The entire alluvial sequence has been divided into five major aquifers viz., A (up to 125m) or phreatic aquifer and B, C, D and E (between 125 and 600 m depth) or confined aquifers.

Due to over-exploitation, the water levels in the phreatic aquifer have declined alarmingly rendering them almost dry. Presently, first and second confined aquifers are the most exploited. The decline of water level in these aquifers is more than 40 m since 1961at most of the area. The yield of tube wells tapping users confined aquifer vary from 20 to 40 lps.

3.0 GROUND WATER SCENARIO

Systematic and regular monitoring of groundwater levels brings out the changes taking place in the groundwater regime. The maps so generated are of immense help for regional groundwater flow modelling which serves as a groundwater management tool to provide the necessary advance information to the user agencies to prepare contingency plans in case of unfavourable groundwater recharge situation. The data also has immense utility in deciding the legal issues arising out of conflicting interests of groundwater users.

The monitoring of ground water levels has been carried out at groundwater monitoring wells four times in a year simultaneously throughout the State during the following periods.

a) May - 20th to 30th (water level of pre-monsoon period).
b) August - 20th to 30th (peak monsoon water level).
c) November - 1st to 10th (water levels of post-monsoon period).
d) January - 1st to 10th (the recession stage of water level).

Water level data of the ground water monitoring wells collected during the year 2018 – 2019 has been utilized to prepare various maps showing depth to water level and fluctuation of water level. Depth to water level maps are useful in dealing with problems of water logging and artificial recharge, where the relative position of water level with reference to the ground surface is of critical importance. Water level fluctuation maps (rise or fall) are indispensable for estimation of change in storage in the aquifer.

For the purpose of presentation, Gujarat state has been divided into three regions, namely, (a) the Kachchh region comprising Kachchh district, (b) the Saurashtra region comprising Amreli, Bhavnagar, Junagadh, Jamnagar, Porbander Rajkot and Surendranagar districts, and (c) the mainland Gujarat. The mainland Gujarat has been further subdivided into two regions, namely, North Gujarat comprising , Ahmedabad, Anand, Dahod, Banaskantha, Gandhinagar, Kheda, Mahesana, Panchmahals, Patan and Sabarkantha districts, and South Gujarat comprising Bharuch, Narmda, Navsari, Surat, The Dangs Vadodara and Valsad districts. The Union Territory of Daman & Diu has been described separately. The water level data of these open wells and piezometers are presented in the Annexure IIA and IIB.

The data is analysed for each set of measurement, and report prepared which include following maps to understand the groundwater regime in the state.

1. Depth to water level
2. Seasonal fluctuation - water level fluctuation in comparison to pre-monsoon.
3. Annul fluctuation - water level fluctuation in comparison to same month in the previous year.
4. Decadal fluctuation - water level fluctuation in the month of measurement with reference to the decadal average for the same month.

3.1 Depth to Water Level (Unconfined Aquifer)

A graphical analysis was done to understand the water level behaviours of the ground water monitoring wells in the different categories of the water levels during every monitoring period and the same is depicted in **Fig. 6 (a,b,c,d)**.

Fig 6 a

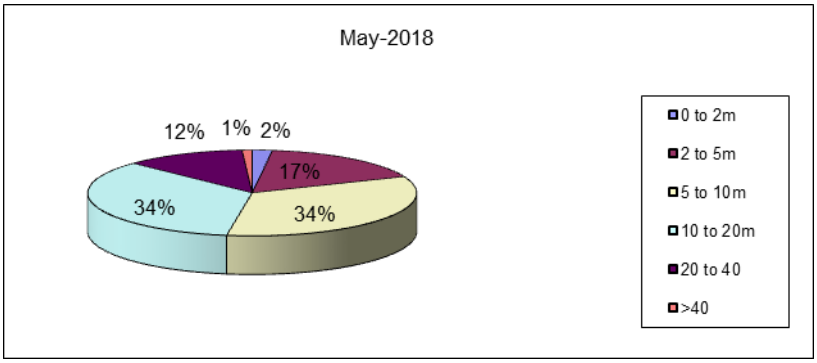


Fig 6 b

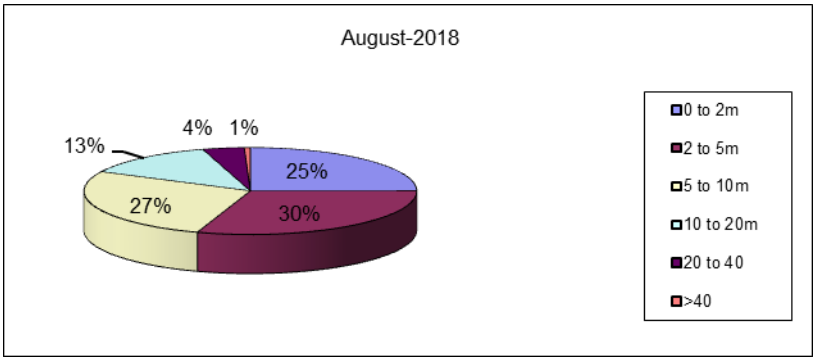


Fig 6 c

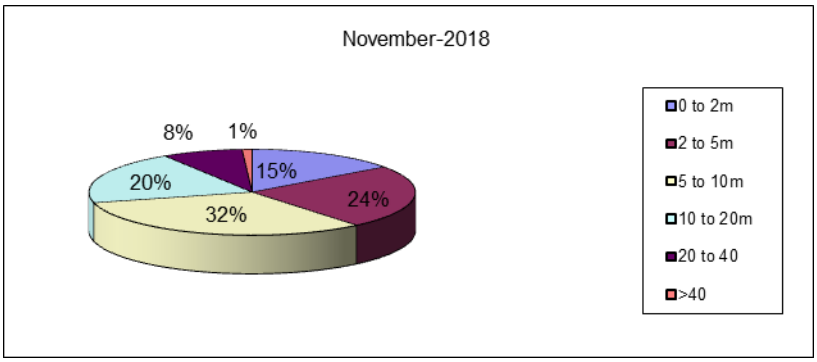
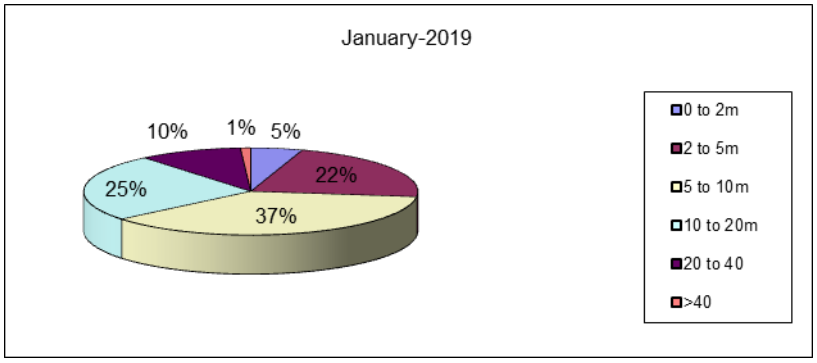


Fig 6 d



3.1.1 Depth to Water Level May 2018

During May 2018, in the pursuance of Fig no. 7 reveals that 68% of monitoring stations (table- 5) of the state falls in the water levels ranges 5 - 20m bgl. Water levels of 20 to 40 mbgl are observed in 12% of stations in the Gujarat state. Deeper water level more than 40m bgl are observed in parts of Banaskantha, Mahesana, Gandhinagar and Sabarkantha districts. The shallowest water level recoreded is 0.54 m bgl at Haboi village in Kachchh district. The deepest water level recorded is 62.19 m bgl at Deesa in Banaskantha district.

In North Gujarat, about 68% of the monitoring stations falls in the water level range of 5 - 20 m bgl. Shallow water levels (lesser than 5 mbgl) are observed in 19% of the stations in Ahmedabad, Anand, Patan, Panchmahal, districts. Deeper water levels ranges 20 to 40 mbgl are experienced in major parts of Banaskantha, Mahesana districts and adjoining area of Ahmedabad, Kheda, Anand,Panchmahals and Sabarkantha districts. The deepest water level recorded is 62.19m bgl at Deesa in Banaskantha district where as shallowest water level of 0.95m bgl has been recorded at Shekhupura in Kheda district.

In South Gujarat, more than 68% of the stations has recorded water level between 5 - 20 mbgl where as 26% range less than 5m bgl. Deeper water levels of more than 20 m bgl is mainly observed in parts of Vadodara and Narmada districts. The deepest water level of 38.90m bgl is recorded at Navsari in Navsari district whereas the shallowest water level of 1.29m bgl has been recorded at Khota Amba in Narmada district.

In Saurashtra region, about 67% of the monitoring stations shows water levels 5 - 20 mbgl. Water levels of 20 to 40 m are found as isolated patches scattered all over the region. The shallowest water level, 1.10m bgl, has been recorded at Victor village in Amreli district and the deepest water level of 47.75m bgl recorded at Morjhar in Amreli district.

In Kachchh region 78% of the monitoring stations, the water level is between 5 - 20 mbgl. Western part of the area shows water level rages 2 to 5 m bgl. The water levels more than 20m occur as isolated patches scattered in the central and eastern part of the Kachchh district. The deepest water level of 47.97m bgl is recorded at Madhapar and the shallowest water level of 0.54m bgl has been recorded at Haboi.

3.1.2 Depth to Water Level August 2018

During August 2018, the depth to water level of unconfined aquifer range from 0.02 to 54.60m bgl (**Fig 8)**. Details of depth to water level in different range, from 0-2 m, 2 to 5 m, 5 to 10 m, 10 to 20m, 20 to 40 m and more than 40 mbgl are presented in table – 6. The perusal of the depth to water level reveals that 55% of the monitoring stations fall in the ranges of 0 to 5 mbgl whereas 5 to 20 mbgl water level are observed in 40% of the stations in Gujarat state. Water levels of 20 to 40

mbgl are observed in Mahesana, Gandhinagar, Kheda, Banaskantha, Sabarkantha, Kachchh, Amreli, Bhavnagar, Narmada, Porbandar and Vadodara districts in isolated patches. Deeper water levels more than 40m bgl are observed in most part of Banaskantha, Mahesana, Sabarkantha and Gandhinagar districts of North Gujarat and Amreli in Saurashtra area as isolated patch. The shallowest water level 0.02 has been recorded at Chikhli in The Dangs district. The deepest water level recorded is 54.60 m bgl at Deesa in Banaskantha district.

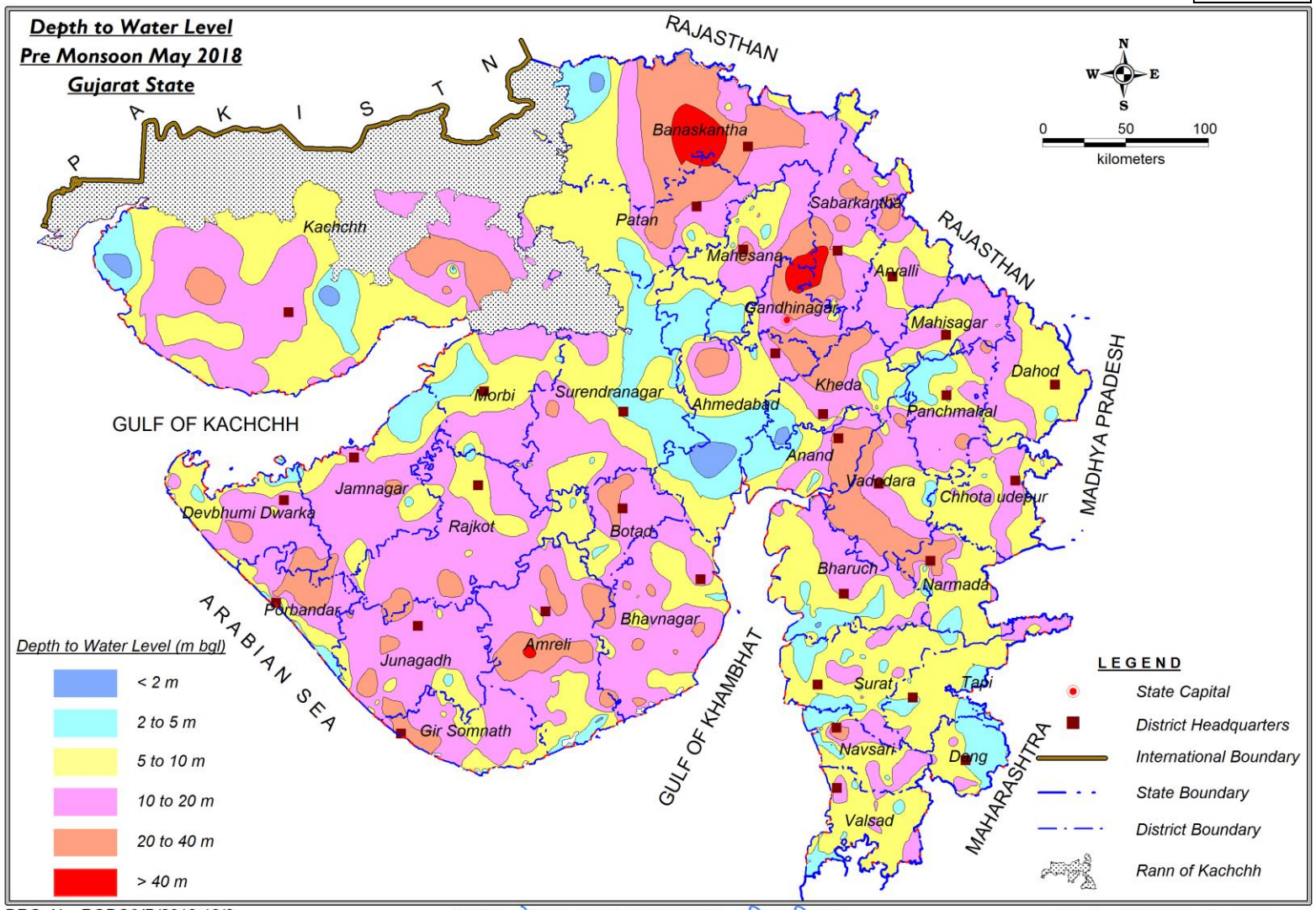
In North Gujarat, about 92% of the monitoring stations fall within the water level of 20 mbgl. Shallow water levels (lesser than 5 m bgl) are observed in the area near the Gulf of Cambay and the area along the little Rann of Kachchh and in eastern part of north Gujarat region falling in Panchmahals, Dohad and Sabarkantha districts. Deeper water levels ranges from 20 to 40 mbgl in major part of Banaskantha, adjoining area of Ahmedabad and Kheda districts, adjoining area of Gandhinagar Mahesana and Sabarkantha districts. The deepest water level of 54.60m bgl is recorded at Deesa in Banaskantha district whereas the shallowest water level 0.05m bgl has been recorded at Petlad in Anand district.

In South Gujarat, 99% of the monitoring stations have recorded water level below 20m bgl of which 82% alone has the water level in the range of 0 – 5m bgl. Deeper water levels of 20 to 40 m bgl are mainly observed as isolated patch in parts of Vadodara & Narmada district. The deepest water level of 30.26m bgl is recorded at Rajpipla in Narmada district whereas the shallowest water level of 0.02m bgl at Chikhli in The Dangs district.

In Saurashtra region, about 96% of the monitoring stations shows water levels in less than 20m bgl and water levels of 20 to 40 m are found as isolated patch in Amreli, Bhavnagar and Porbandar districts. The shallowest water level, 0.05m bgl has been recorded at Ghanshaymgadh of Surendranagar district and the deepest water level of 46.33m bgl recorded at Morjhar in Amreli district.

In Kachchh region, in about 87% of the monitoring stations, the water level ranges less than 20m bgl. In central and east part of the area, isolated patches of water level ranges between 20 to 40 mbgl are found. The deepest water level of 34.10m bgl is recorded at Kotada and the shallowest water level of 0.30m bgl has been recorded at Lilpur.

Fig- 7

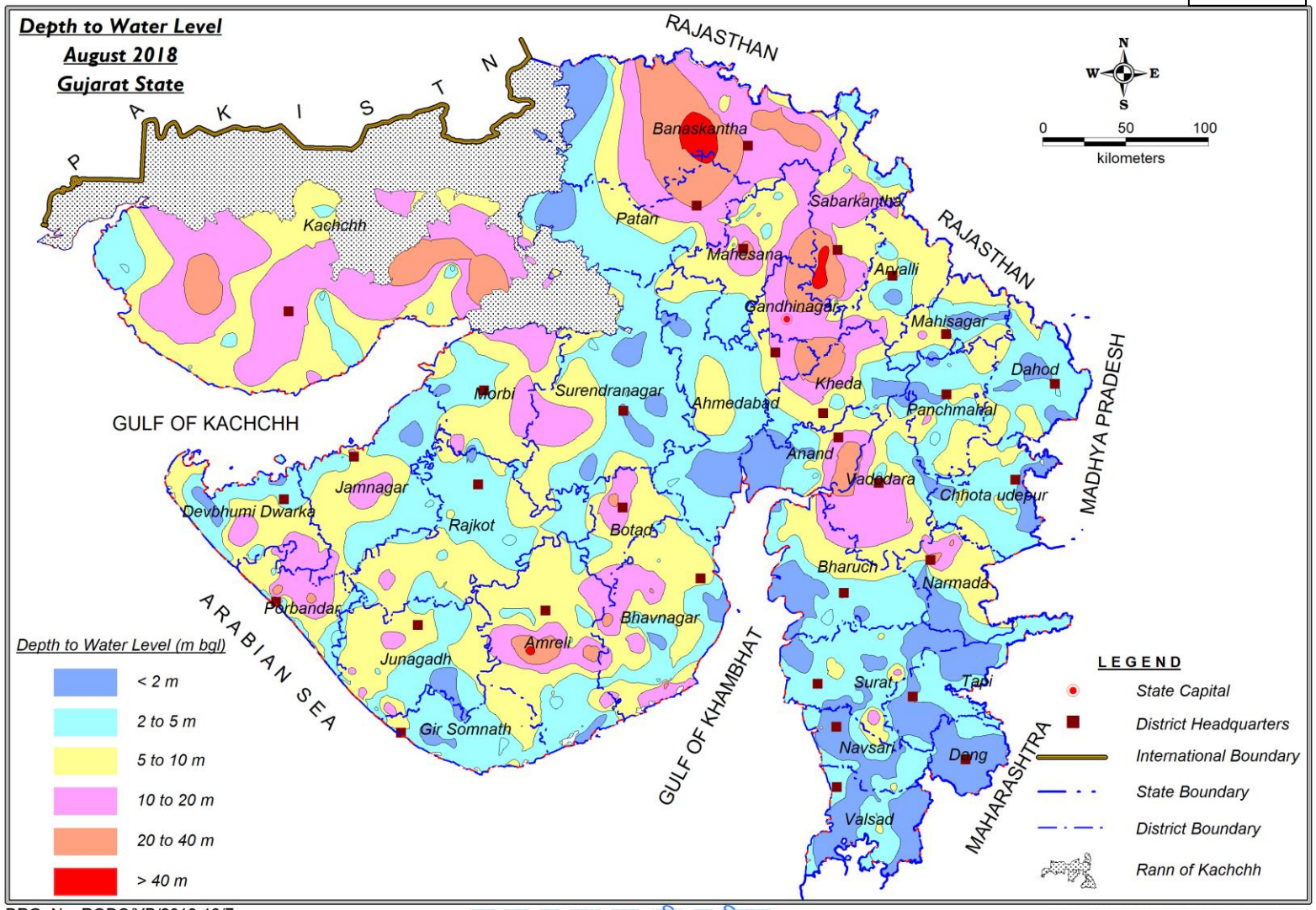


DRG. No. RODC/YB/2018-19/6

आपका योगदान सफल बनाएगा जल शक्ति अभियान

Drg. By : Nilesh Dhokia, Draftsman

Fig- 8



DRG. No. RODC/YB/2018-19/7 जन–जन का साथ जल शक्ति का विकास Drg. By : Nilesh Dhokia, Draftsman

Table-5

WELL WISE CATEGORISATION OF DEPTH TO WATER LEVEL - MAY 2018

Sl.No.	District	No. of Wells Analysed	DTWL in mbgl		No of well in different Ranges					
			Min	Max	0 to 2 (m)	2 to 5(m)	5 to 10(m)	10 to 20(m)	20 to 40(m)	>40(m)
1	Ahmedabad	13	1.60	23.70	1	8	1	2	1	0
					4.76%	42.86%	28.57%	19.05%	4.76%	0.00%
2	Anand	15	1.87	31.85	1	4	2	3	5	0
					6.67%	26.67%	13.33%	20.00%	33.33%	0.00%
3	Banaskantha	20	1.24	62.19	1	0	5	8	5	1
					5.00%	0.00%	25.00%	40.00%	25.00%	5.00%
4	Dohad	28	1.70	15.52	1	2	16	9	0	0
					3.57%	7.14%	57.14%	32.14%	0.00%	0.00%
5	Gandhinagar	5	13.11	53.06	0	0	0	3	1	1
					0.00%	0.00%	0.00%	60.00%	20.00%	20.00%
6	Kheda	19	0.95	36.30	1	4	9	3	2	0
					5.26%	21.05%	47.37%	15.79%	10.53%	0.00%
7	Mahesana	25	2.23	29.45	0	8	9	7	1	0
					0.00%	32.00%	36.00%	28.00%	4.00%	0.00%
8	Panchmahals	33	2.00	23.30	1	4	11	15	2	0
					3.03%	12.12%	33.33%	45.45%	6.06%	0.00%
9	Patan	9	2.23	30.35	0	3	2	3	1	0
					0.00%	33.33%	22.22%	33.33%	11.11%	0.00%
10	Sabarkantha	50	3.91	44.10	0	2	14	25	8	1
					0.00%	4.00%	28.00%	50.00%	16.00%	2.00%
North Gujarat		**217**	**0.95**	**62.19**	**6**	**35**	**69**	**78**	**26**	**3**
					2.76%	**16.13%**	**31.80%**	**35.94%**	**11.98%**	**1.38%**
11	Bharuch	29	1.40	14.45	1	8	15	5	0	0
					3.45%	27.59%	51.72%	17.24%	0.00%	0.00%
12	Narmada	23	1.29	34.14	2	4	10	2	5	0
					8.70%	17.39%	43.48%	8.70%	21.74%	0.00%
13	Navsari	22	1.80	38.90	1	5	10	5	1	0
					4.55%	22.73%	45.45%	22.73%	4.55%	0.00%
14	Surat	49	2.59	19.81	0	17	18	14	0	0
					0.00%	34.69%	36.73%	28.57%	0.00%	0.00%
15	The dangs	23	2.05	13.15	0	6	13	4	0	0
					0.00%	26.09%	56.52%	17.39%	0.00%	0.00%
16	Vadodara	42	2.15	32.17	0	5	15	17	5	0
					0.00%	11.90%	35.71%	40.48%	11.90%	0.00%
17	Valsad	20	3.47	23.59	0	5	10	4	1	0
					0.00%	25.00%	50.00%	20.00%	5.00%	0.00%
South Gujarat		**208**	**1.29**	**38.90**	**4**	**50**	**91**	**51**	**12**	**0**
					1.92%	**24.04%**	**43.75%**	**24.52%**	**5.77%**	**0.00%**
18	Amreli	45	1.10	47.75	1	2	14	15	12	1
					2.22%	4.44%	31.11%	33.33%	26.67%	2.22%
19	Bhavnagar	38	3.14	24.60	0	4	9	15	10	0
					0.00%	10.53%	23.68%	39.47%	26.32%	0.00%
20	Jamnagar	41	2.84	24.22	0	9	11	14	7	0
					0.00%	21.95%	26.83%	34.15%	17.07%	0.00%
21	Junagadh	54	3.15	38.35	0	2	13	31	8	0
					0.00%	3.70%	24.07%	57.41%	14.81%	0.00%
22	Porbandar	29	2.55	34.20	0	7	7	8	7	0
					0.00%	24.14%	24.14%	27.59%	24.14%	0.00%
23	Rajkot	43	2.84	32.00	0	5	13	21	4	0
					0.00%	11.63%	30.23%	48.84%	9.30%	0.00%
24	Surendranagar	34	2.06	22.30	0	14	13	6	1	0
					0.00%	41.18%	38.24%	17.65%	2.94%	0.00%
Saurashtra		**284**	**1.10**	**47.75**	**1**	**43**	**80**	**110**	**49**	**1**
					0.35%	**15.14%**	**28.17%**	**38.73%**	**17.25%**	**0.35%**
25	**Kachchh**	**51**	**0.54**	**38.40**	**3**	**2**	**16**	**24**	**6**	**0**
					5.88%	**3.92%**	**31.37%**	**47.06%**	**11.76%**	**0.00%**
Grand Total		**760**	**0.54**	**62.19**	**14**	**130**	**256**	**263**	**93**	**4**
					1.8%	**17.1%**	**33.7%**	**34.6%**	**12.2%**	**0.5%**

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Table-6

WELL WISE CATEGORISATION OF DEPTH TO WATER LEVEL - AUGUST 2018

Sl.No.	District	No. of Wells Analysed	DTWL in mbgl		No of well in different Ranges					
			Min	Max	0 to 2 (m)	2 to 5(m)	5 to 10(m)	10 to 20(m)	20 to 40(m)	>40(m)
1	Ahmedabad	18	0.47	15.53	4 22.22%	7 38.89%	5 27.78%	2 11.11%	0 0.00%	0 0.00%
2	Anand	14	0.05	28.62	4 28.57%	3 21.43%	3 21.43%	1 7.14%	3 21.43%	0 0.00%
3	Banaskantha	17	0.45	54.60	1 5.88%	0 0.00%	4 23.53%	6 35.29%	5 29.41%	1 5.88%
4	Dohad	29	0.10	9.30	12 41.38%	9 31.03%	8 27.59%	0 0.00%	0 0.00%	0 0.00%
5	Gandhinagar	3	10.04	11.62	0 0.00%	0 0.00%	0 0.00%	3 100.00%	0 0.00%	0 0.00%
6	Kheda	16	0.60	37.20	4 25.00%	4 25.00%	6 37.50%	1 6.25%	1 6.25%	0 0.00%
7	Mahesana	24	2.85	29.05	0 0.00%	10 41.67%	9 37.50%	4 16.67%	1 4.17%	0 0.00%
8	Panchmahals	33	0.10	11.40	8 24.24%	10 30.30%	13 39.39%	2 6.06%	0 0.00%	0 0.00%
9	Patan	8	1.00	21.08	2 25.00%	1 12.50%	1 12.50%	3 37.50%	1 12.50%	0 0.00%
10	Sabarkantha	44	0.20	43.50	3 6.82%	8 18.18%	17 38.64%	12 27.27%	2 4.55%	2 4.55%
North Gujarat		**206**	**0.05**	**54.60**	**38 18.45%**	**52 25.24%**	**66 32.04%**	**34 16.50%**	**13 6.31%**	**3 1.46%**
11	Bharuch	28	0.14	7.29	9 32.14%	11 39.29%	8 28.57%	0 0.00%	0 0.00%	0 0.00%
12	Narmada	17	0.36	30.26	8 47.06%	3 17.65%	3 17.65%	1 5.88%	2 11.76%	0 0.00%
13	Navsari	18	0.64	6.13	12 66.67%	4 22.22%	2 11.11%	0 0.00%	0 0.00%	0 0.00%
14	Surat	50	0.51	15.57	25 50.00%	18 36.00%	5 10.00%	2 4.00%	0 0.00%	0 0.00%
15	The dangs	23	0.02	2.94	21 91.30%	2 8.70%	0 0.00%	0 0.00%	0 0.00%	0 0.00%
16	Vadodara	27	0.15	19.48	9 33.33%	10 37.04%	6 22.22%	2 7.41%	0 0.00%	0 0.00%
17	Valsad	17	0.54	6.39	9 52.94%	6 35.29%	2 11.76%	0 0.00%	0 0.00%	0 0.00%
South Gujarat		**180**	**0.02**	**30.26**	**93 51.67%**	**54 30.00%**	**26 14.44%**	**5 2.78%**	**2 1.11%**	**0 0.00%**
18	Amreli	42	0.20	46.33	4 9.52%	12 28.57%	14 33.33%	6 14.29%	5 11.90%	1 2.38%
19	Bhavnagar	42	0.21	27.36	9 21.43%	10 23.81%	11 26.19%	8 19.05%	4 9.52%	0 0.00%
20	Jamnagar	44	0.42	19.30	8 18.18%	16 36.36%	13 29.55%	7 15.91%	0 0.00%	0 0.00%
21	Junagadh	57	0.31	16.40	7 12.28%	30 52.63%	12 21.05%	8 14.04%	0 0.00%	0 0.00%
22	Porbandar	30	0.55	27.83	3 10.00%	7 23.33%	11 36.67%	7 23.33%	2 6.67%	0 0.00%
23	Rajkot	44	0.30	13.77	3 6.82%	17 38.64%	21 47.73%	3 6.82%	0 0.00%	0 0.00%
24	Surendranagar	35	0.05	15.05	10 28.57%	13 37.14%	8 22.86%	4 11.43%	0 0.00%	0 0.00%
Saurashtra		**294**	**0.05**	**46.33**	**44 14.97%**	**105 35.71%**	**90 30.61%**	**43 14.63%**	**11 3.74%**	**1 0.34%**
25	**Kachchh**	**39**	**0.30**	**34.10**	**3 7.69%**	**7 17.95%**	**9 23.08%**	**15 38.46%**	**5 12.82%**	**0 0.00%**
Grand Total		**719**	**0.02**	**54.60**	**178 24.76%**	**218 30.32%**	**191 26.56%**	**97 13.49%**	**31 4.31%**	**4 0.56%**

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3.1.3 Depth to Water Level November 2018

The depth to water level of unconfined aquifer ranges from near ground level to 60.41m bgl (Deesa in Banaskantha district) during November 2018 **(Fig 9 and table no 7)**. The perusal of the water level reveals that 91% of the total well analysed has water level less than 20m bgl, in Gujarat state. Water levels of 20 to 40m bgl are observed in Ahmedabad, Anand, Banaskantha, Gandhinagar, Kheda, Mahesana, Sabarkantha, Narmada, Vadodara, Amreli, Bhavnagar, Junagarh, Jamnagar, Porbandar and Kachchh districts in isolated patches. The shallowest water level recorded is 0.10m bgl at Dhanol in Panchmhal district.

In North Gujarat, about 91% of the total well analysed falls with in the water level range of 20 mbgl. Shallow water levels (lesser than 5 mbgl) are observed in the area near the Gulf of Cambay and the area along the little Rann of Kachchh and in eastern part of north Gujarat region such as in Panchmahals, Dohad and Sabarkantha district. Deeper water levels ranges 20 to 40 mbgl are experienced in major part Banaskantha, the adjoining area of Mahesana, Sabarkantha and Gandhinagar districts. The deepest water level of 60.41m bgl at Deesa in Banaskantha district whereas shallowest water level of 0.10m bgl has been recorded at Dhanol in Panchmahal district.

In South Gujarat, more than 96% of the total well has recorded water level within 20 mbgl and out of which 68% alone has the water level in the range of 5m bgl. Deeper water levels of 20 – 40 mbgl are mainly observed in isolated patch in parts of Vadodara and Narmada districts. The deepest water level of 30.58m bgl is recorded at Rajpipla in Narmada district whereas the shallowest water level of 0.10 mbgl has been recorded at Ghubita in The Dangs disrtict.

In Saurashtra region, about 89% of the total well shows water levels less than 20 mbgl and water levels of 20 to 40 mbgl are sporadically disbursed as isolated patches in Amreli, Bhavnagar, Porbandar and Botad district. The shallowest water level recorded is 0.29 mbgl at Bhavardi in Amreli district and the deepest water level of 40.05m bgl recorded at Morajhar in Amreli district.

In Kachchh region, in about 85% of the total well analysed, the water level ranges within 20 mbgl in major part of the district. Central and east part of the area shows water level ranges 20 to 40 mbgl, which cover about 15% of total well in Kachchh region and occur as isolated patches. The deepest water level of 38.10m bgl is recorded at Kotada and the shallowest water level of 0.30m bgl has been recorded at Haboi.

3.1.4 Depth to Water Level January 2019

A perusal of **Fig 10** and **Table 8** revels that the depth to water level of unconfined aquifer ranges from 0.35m bgl at Pipli in Surendranagar district to 56.74m bgl at Deesa in Banaskantha district during January 2019. Details of depth

to water level in different range, i.e. from 0-2 m, 2 to 5 m, 5 to 10 m, 10 to 20m, 20 to 40 m and more than 40 mbgl is presented in table – 8. The perusal of the Depth To Water map reveals that about 28% of the total well analysed falls in the water level range of 0 to 5m bgl where as water level of 5 to 20 mbgl is observed in 62% of Gujarat state. Water levels of 20 to 40 mbgl are observed in Anand, Banaskantha, Kheda, Gandhinagar, Sabarkantha, Narmada, Vadodara and in Saurastra and Kachchh region as isolated patches. The deepest water level more than 40 mbgl is recorded in Amreli, Banaskantha, Gandhinagar and Sabarkantha, districts.

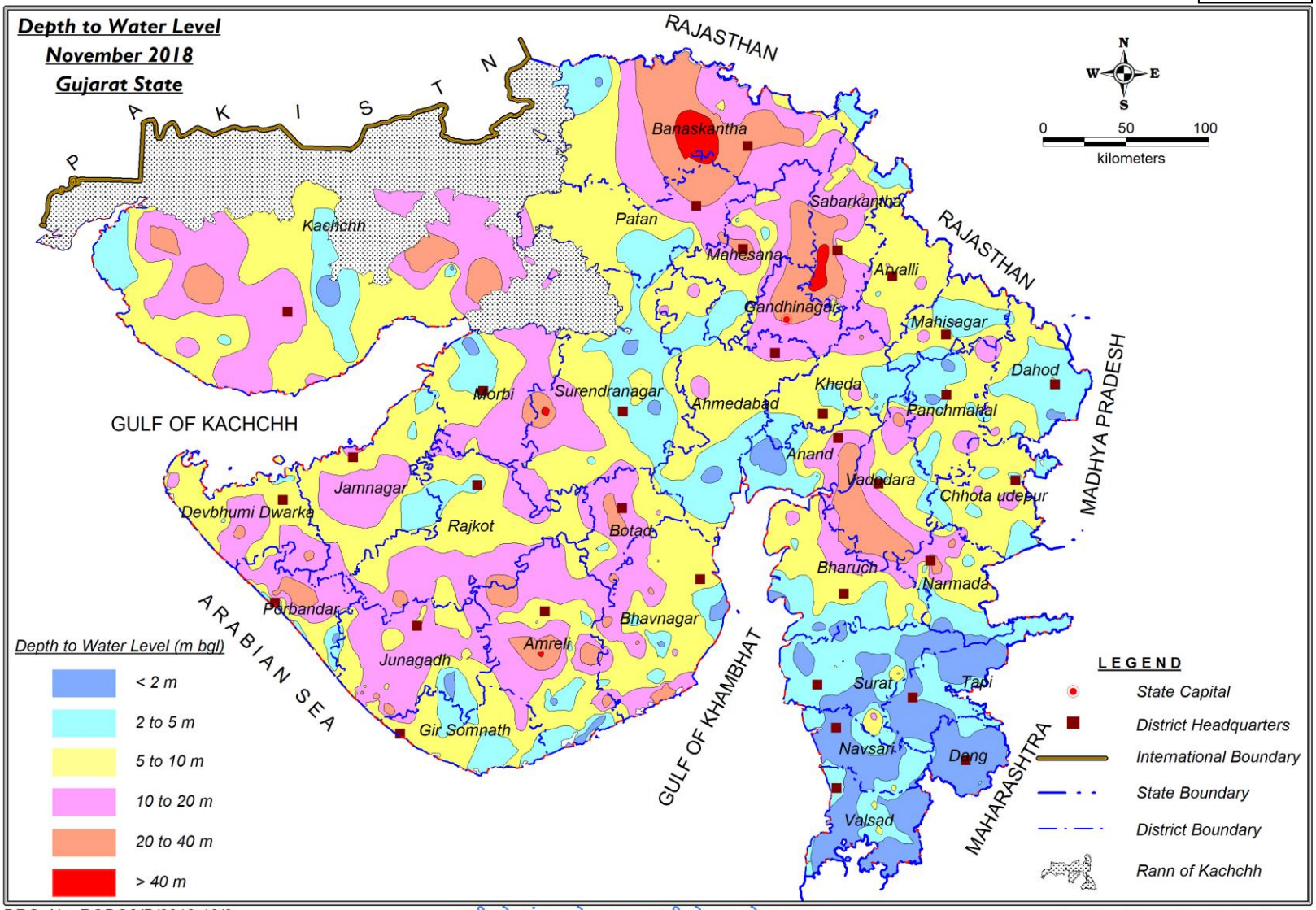
In North Gujarat, about 89% of the total well analysed falls with in the water level range of 20 mbgl and out of which alone 65% represent the water level range of 0 – 10m bgl. Shallow water levels (lesser than 5 mbgl) are observed in the area near the Gulf of Cambay and the area along the little Rann of Kachchh and in eastern part of north Gujarat region such as in Panchmahals, Dohad and Sabarkantha district. Deeper water levels ranges 20 to 40 mbgl are experienced in major part of Banaskantha district, the adjoining area of Kheda and Gandhinagar and Gandhinagar, Mahesana, Sabarkantha. The deepest water level of 56.74m bgl at Deesa in Banaskantha district whereas shallowest water level of 0.55m bgl has been recorded at Varamkheda in Dohad district.

In South Gujarat, about 88% of the total wells has recorded water level less than 10 mbgl and out of which 40% alone has the water level in the range of 0-5m bgl. Deeper water levels of 20 to 40m bgl mainly observed in isolated patch in major parts of Vadodara and Narmada district. The deepest water level of 32.62m bgl is recorded at Sankheda in Vadodara district whereas the shallowest water level of 0.80m bgl has been recorded at Malegaon in The Dangs district.

In Saurashtra region, about 86% of the total well shows water levels less than 20m bgl and water levels of 20 to 40 mbgl are sporadically disbursed in isolated patches scattered in all areas of Saurashtra region. The shallowest water level, 0.35m bgl, has been recorded at Pipli of Surendranagar district. The deepest water level of 50.58m bgl recorded at Morjhar in Amreli district.

In Kachchh region, more than 88% of the total well analysed, the water level ranges in less than 20 mbgl in major part of the district. In central part of Kachchh, the water level ranges 20 to 40 m bgl in isolated patches. The deepest water level of 38.75m bgl is recorded at Kotada and the shallowest water level of 0.49m bgl at Haboi.

Fig- 9

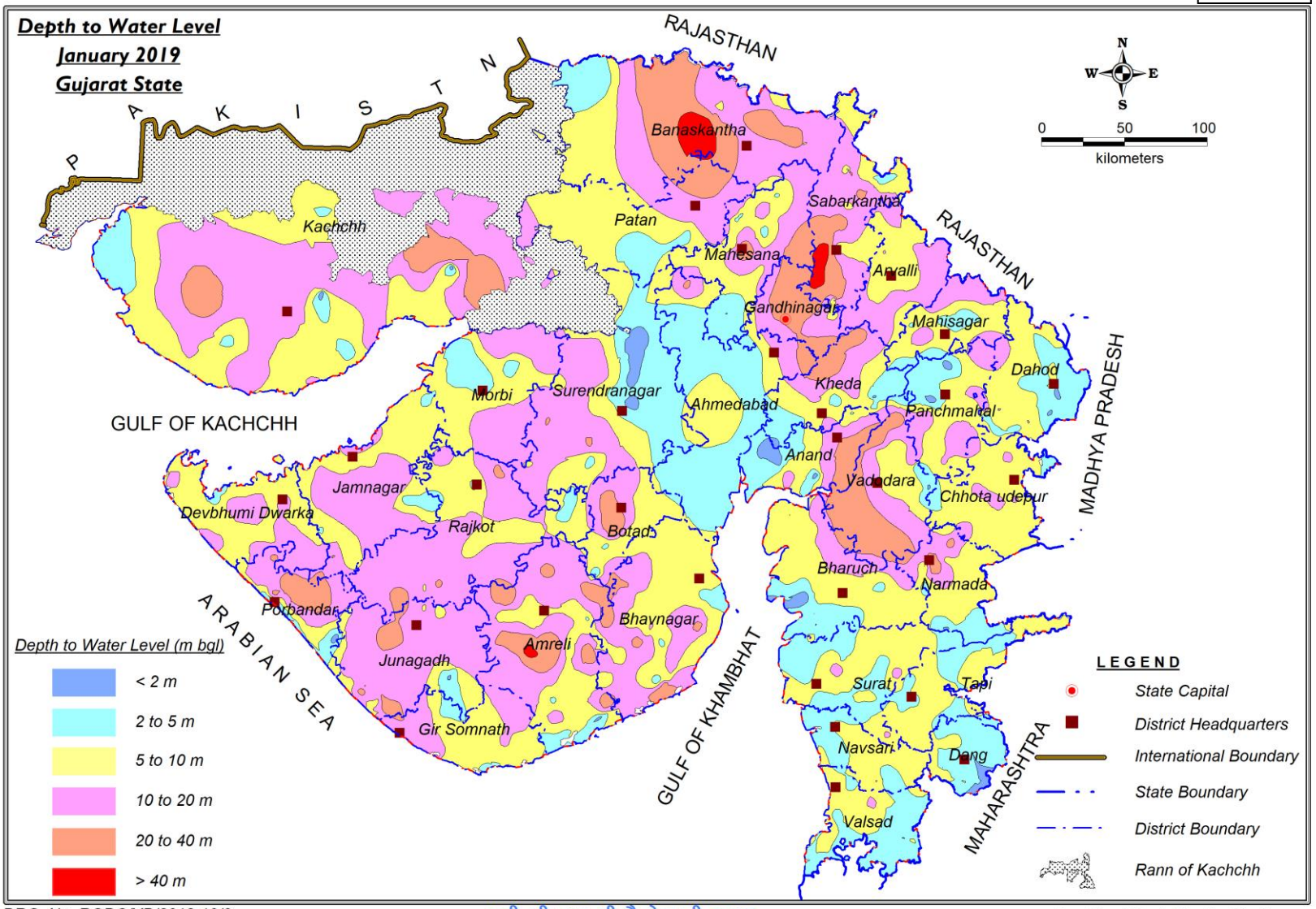


DRG. No. RODC/YB/2018-19/8

अभी से संचय होगा जल तभी बेहतर होगा कल

Drg. By : Nilesh Dhokia, Draftsman

Fig- 10



DRG. No. RODC/YB/2018-19/9

पानी की रक्षा भी है देश की सुरक्षा

Drg. By : Nilesh Dhokia, Draftsman

Table-7

WELL WISE CATEGORISATION OF DEPTH TO WATER LEVEL - NOVEMBER 2018

Sl.No.	District	No. of Wells Analysed	DTWL in mbgl		No of well in different Ranges					
			Min	Max	0 to 2 (m)	2 to 5(m)	5 to 10(m)	10 to 20(m)	20 to 40(m)	>40(m)
1	Ahmedabad	18	1.49	16.28	1 5.56%	5 27.78%	5 27.78%	7 38.89%	0 0.00%	0 0.00%
2	Anand	14	0.76	26.76	3 21.43%	3 21.43%	3 21.43%	3 21.43%	2 14.29%	0 0.00%
3	Banaskantha	16	1.70	60.41	1 6.25%	0 0.00%	5 31.25%	4 25.00%	5 31.25%	1 6.25%
4	Dohad	29	1.40	11.35	4 13.79%	15 51.72%	8 27.59%	2 6.90%	0 0.00%	0 0.00%
5	Gandhinagar	4	13.70	34.64	0 0.00%	0 0.00%	0 0.00%	3 75.00%	1 25.00%	0 0.00%
6	Kheda	15	1.20	20.75	2 13.33%	6 40.00%	5 33.33%	1 6.67%	1 6.67%	0 0.00%
7	Mahesana	20	2.65	29.96	0 0.00%	5 25.00%	9 45.00%	4 20.00%	2 10.00%	0 0.00%
8	Panchmahals	32	0.10	14.20	4 12.50%	12 37.50%	11 34.38%	5 15.63%	0 0.00%	0 0.00%
9	Patan	8	2.22	21.95	0 0.00%	3 37.50%	0 0.00%	4 50.00%	1 12.50%	0 0.00%
10	Sabarkantha	47	2.50	44.15	0 0.00%	7 14.89%	20 42.55%	14 29.79%	4 8.51%	2 4.26%
North Gujarat		**203**	**0.10**	**60.41**	**15 7.39%**	**56 27.59%**	**66 32.51%**	**47 23.15%**	**16 7.88%**	**3 1.48%**
11	Bharuch	32	1.10	11.89	3 9.38%	11 34.38%	17 53.13%	1 3.13%	0 0.00%	0 0.00%
12	Narmada	23	0.80	30.58	4 17.39%	8 34.78%	4 17.39%	4 17.39%	3 13.04%	0 0.00%
13	Navsari	20	0.50	5.84	15 75.00%	4 20.00%	1 5.00%	0 0.00%	0 0.00%	0 0.00%
14	Surat	48	0.38	11.94	29 60.42%	15 31.25%	2 4.17%	2 4.17%	0 0.00%	0 0.00%
15	The dangs	23	0.10	5.15	20 86.96%	2 8.70%	1 4.35%	0 0.00%	0 0.00%	0 0.00%
16	Vadodara	39	1.79	30.17	3 7.69%	8 20.51%	17 43.59%	6 15.38%	5 12.82%	0 0.00%
17	Valsad	20	0.34	6.23	12 60.00%	6 30.00%	2 10.00%	0 0.00%	0 0.00%	0 0.00%
South Gujarat		**205**	**0.10**	**30.58**	**86 41.95%**	**54 26.34%**	**44 21.46%**	**13 6.34%**	**8 3.90%**	**0 0.00%**
18	Amreli	50	0.29	40.05	3 6.00%	10 20.00%	14 28.00%	12 24.00%	9 18.00%	2 4.00%
19	Bhavnagar	40	1.24	28.88	3 7.50%	10 25.00%	14 35.00%	5 12.50%	8 20.00%	0 0.00%
20	Jamnagar	44	2.22	23.07	0 0.00%	9 20.45%	22 50.00%	11 25.00%	2 4.55%	0 0.00%
21	Junagadh	60	0.85	25.37	2 3.33%	10 16.67%	30 50.00%	15 25.00%	3 5.00%	0 0.00%
22	Porbandar	30	0.95	30.50	1 3.33%	6 20.00%	7 23.33%	11 36.67%	5 16.67%	0 0.00%
23	Rajkot	41	0.75	24.22	1 2.44%	6 14.63%	20 48.78%	13 31.71%	1 2.44%	0 0.00%
24	Surendranagar	36	0.31	20.55	3 8.33%	12 33.33%	10 27.78%	9 25.00%	1 2.78%	1 2.78%
Saurashtra		**301**	**0.29**	**40.05**	**13 4.32%**	**63 20.93%**	**117 38.87%**	**76 25.25%**	**29 9.63%**	**3 1.00%**
25	**Kachchh**	**48**	**0.30**	**38.10**	**2 4.17%**	**5 10.42%**	**16 33.33%**	**18 37.50%**	**7 14.58%**	**0 0.00%**
Grand Total		**757**	**0.10**	**60.41**	**116 15.32%**	**178 23.51%**	**243 32.10%**	**154 20.34%**	**60 7.93%**	**6 0.79%**

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Table-8

WELL WISE CATEGORISATION OF DEPTH TO WATER LEVEL - JANUARY 2019

Sl.No.	District	No. of Wells Analysed	DTWL in mbgl		No of well in different Ranges					
			Min	Max	0 to 2 (m)	2 to 5(m)	5 to 10(m)	10 to 20(m)	20 to 40(m)	>40(m)
1	Ahmedabad	18	2.06	22.31	0 0.00%	11 61.11%	4 22.22%	2 11.11%	1 5.56%	0 0.00%
2	Anand	17	0.94	28.17	3 17.65%	3 17.65%	5 29.41%	3 17.65%	3 17.65%	0 0.00%
3	Banaskantha	16	2.00	56.74	1 6.25%	0 0.00%	4 25.00%	5 31.25%	5 31.25%	1 6.25%
4	Dohad	30	0.55	11.73	3 10.00%	10 33.33%	14 46.67%	3 10.00%	0 0.00%	0 0.00%
5	Gandhinagar	4	14.12	35.14	0 0.00%	0 0.00%	0 0.00%	3 75.00%	1 25.00%	0 0.00%
6	Kheda	15	1.00	33.82	2 13.33%	5 33.33%	4 26.67%	2 13.33%	2 13.33%	0 0.00%
7	Mahesana	22	1.95	29.61	1 4.55%	7 31.82%	9 40.91%	4 18.18%	1 4.55%	0 0.00%
8	Panchmahals	32	0.91	19.30	3 9.38%	7 21.88%	13 40.63%	9 28.13%	0 0.00%	0 0.00%
9	Patan	7	3.05	18.32	0 0.00%	3 42.86%	0 0.00%	4 57.14%	0 0.00%	0 0.00%
10	Sabarkantha	43	3.27	46.50	0 0.00%	4 9.30%	16 37.21%	15 34.88%	6 13.95%	2 4.65%
North Gujarat		**204**	**0.55**	**56.74**	**13 6.37%**	**50 24.51%**	**69 33.82%**	**50 24.51%**	**19 9.31%**	**3 1.47%**
11	Bharuch	34	1.06	9.89	3 8.82%	10 29.41%	21 61.76%	0 0.00%	0 0.00%	0 0.00%
12	Narmada	20	1.53	31.48	1 5.00%	5 25.00%	7 35.00%	4 20.00%	3 15.00%	0 0.00%
13	Navsari	18	2.65	10.20	0 0.00%	7 38.89%	10 55.56%	1 5.56%	0 0.00%	0 0.00%
14	Surat	45	2.24	13.10	0 0.00%	19 42.22%	23 51.11%	3 6.67%	0 0.00%	0 0.00%
15	The dangs	22	0.80	9.10	6 27.27%	10 45.45%	6 27.27%	0 0.00%	0 0.00%	0 0.00%
16	Vadodara	34	1.72	32.62	1 2.94%	5 14.71%	17 50.00%	5 14.71%	6 17.65%	0 0.00%
17	Valsad	17	1.90	13.60	1 **5.88%**	7 **41.18%**	8 **47.06%**	1 **5.88%**	0 **0.00%**	0 **0.00%**
South Gujarat		**190**	**0.80**	**32.62**	**12 6.32%**	**63 33.16%**	**92 48.42%**	**14 7.37%**	**9 4.74%**	**0 0.00%**
18	Amreli	51	1.05	50.58	1 1.96%	7 13.73%	17 33.33%	13 25.49%	11 21.57%	2 3.92%
19	Bhavnagar	42	1.32	35.80	1 2.38%	6 14.29%	14 33.33%	11 26.19%	10 23.81%	0 0.00%
20	Jamnagar	45	2.76	20.40	0 0.00%	7 15.56%	20 44.44%	17 37.78%	1 2.22%	0 0.00%
21	Junagadh	57	1.84	31.34	1 1.75%	4 7.02%	23 40.35%	25 43.86%	4 7.02%	0 0.00%
22	Porbandar	31	0.94	31.41	2 6.45%	6 19.35%	6 19.35%	10 32.26%	7 22.58%	0 0.00%
23	Rajkot	39	3.12	25.58	0 0.00%	8 20.51%	13 33.33%	14 35.90%	4 10.26%	0 0.00%
24	Surendranagar	37	0.35	22.05	7 18.92%	9 24.32%	10 27.03%	9 24.32%	2 5.41%	0 0.00%
Saurashtra		**302**	**0.35**	**50.58**	**12 3.97%**	**47 15.56%**	**103 34.11%**	**99 32.78%**	**39 12.91%**	**2 0.66%**
25	**Kachchh**	**41**	**0.49**	**38.75**	**2 4.88%**	**5 12.20%**	**10 24.39%**	**19 46.34%**	**5 12.20%**	**0 0.00%**
Grand Total		**737**	**0.35**	**56.74**	**39 5.29%**	**165 22.39%**	**274 37.18%**	**182 24.69%**	**72 9.77%**	**5 0.68%**

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3.2 Seasonal Water Level Fluctuation

To study the effect of monsoon on the groundwater regime and subsequent utilisation of groundwater for various needs like agriculture, irrigation, Domestic etc., changes in depth to water levels with respect to May data are studied. The change in groundwater in the region over different periods is presented in Fig. 11(a,b,c) and a summary of each observation is discussed below.

SEASONAL FLUCTUATION OF WATER LEVEL DURING 2018-2019

Figure 11 a

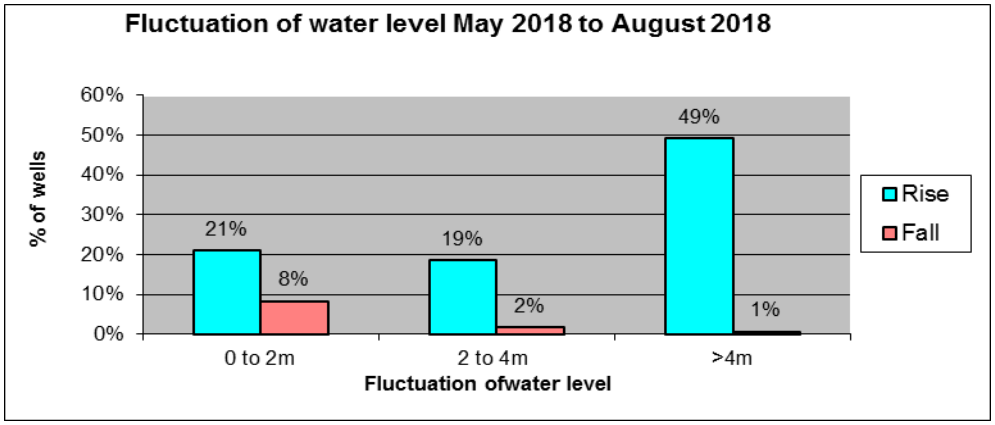


Figure 11 b

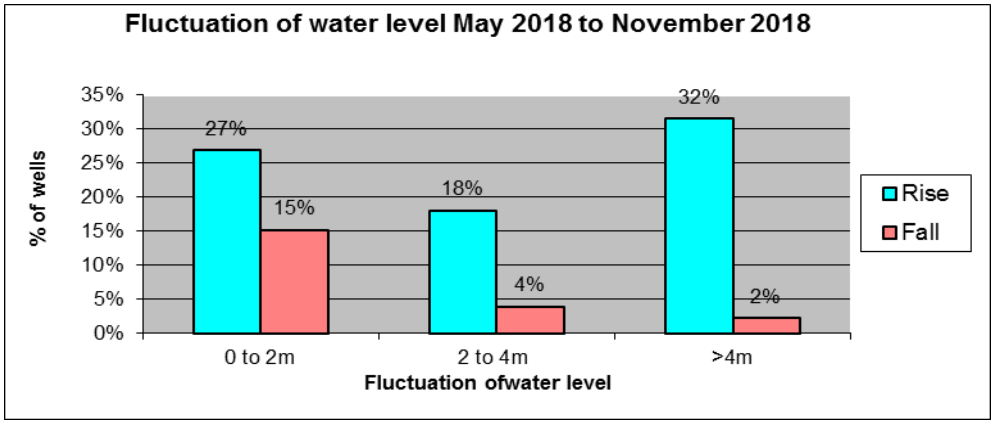
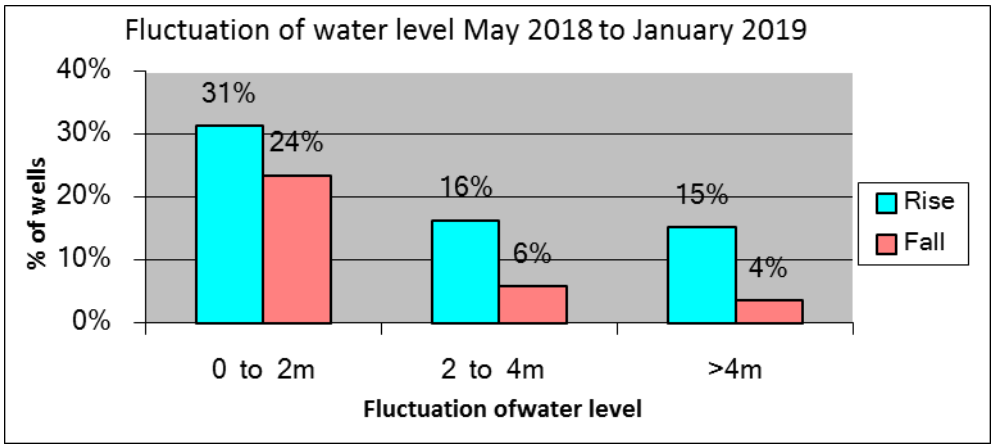


Figure 11 c



3.2.1 May 2018 to August 2018

A perusal of **Fig 12** (Fig to be changed) and **Table 9** reveals that more than 89% of the total wells in Gujarat state shows a rise in water level. Rise in water level are observed in the range of 0 to 2m in 21% of wells, 2 to 4m in 19% of well and morethan 4m in 49% of wells monitored in the state of Gujarat. Fall in water level is mainly observed in parts of Saurashtra region, Kachchh region and in north Gujarat in small isolated patches scattered in the area. Fall is mainly in the range of 0 to 2 m and recorded in 8% of wells in the state. The maximum rise of 27.50m is recorded in Rajkot district whereas the maximum decline of 7.9m is recorded in Patan district.

About 83% of the total wells observed rise of water level in the North Gujarat and most of which (42% wells) is in the range more than 4m of fluctuation of water level. Fall of 0 – 2 m range is observed in 12% of wells in Ahmedabad, Banaskantha and Sabarkantha districts in isolated patches.

In South Gujarat region, 97% of total wells shows rise in water level and in the range more than 4m in 56% of wells in the region. Rise of water level in 0 to 2 and 2 to 4m experience in about 41% of wells in the region. Fall in water level is observed maximum in the range of 0 – 2 m in 2% of wells in the South Gujarat area.

About 92% of total well in the Saurashtra region has experienced rise of water level and in the range of 0 – 2 m experienced in about 18% of wells. Rise of water level more than 4 m is predominantly found in 55% of of wells in Saurashtra area. Fall of 0 to 2m is observed in 7% of wells.

In Kachchh region, 59% of the total wells shows rise in water level. Fall of 0-2m is observed in 27% of the wells.

3.2.2 May 2018 to November 2018

The seasonal water level fluctuation shows rise in 77% of the total wells monitored in the Gujarat state area during the Pre and Post Monsoon of 2018. Fall in water level is observed mainly in Kachchh, Saurashtra and central part of Gujarat as isolated patches due to low rainfall and local phenomena. In the state, the maximum rise of 24.65m is recorded in Rajkot district whereas the maximum decline of 14.25m is observed at Kunkavav in Amreli district. (Fig 13 and Table 10).

In North Gujarat region, 77% of the total well analysed shows rise in water level. Maximum rise observed 24.65m at Takatuka in Sabarkantha (Arvalli) district. Out of the total well analysed, maximum rise (39%) is observed in the category of more than 4m.Few isolated patches of fall observed in Saurashtra, Kachchh, Valsad and Anand districts.

In South Gujarat, in total 93% of the well in the area have recorded rise and maximum (69%) is 2-4m and morethan 4m. The maximum rise observed 20.34m at

Fig- 12

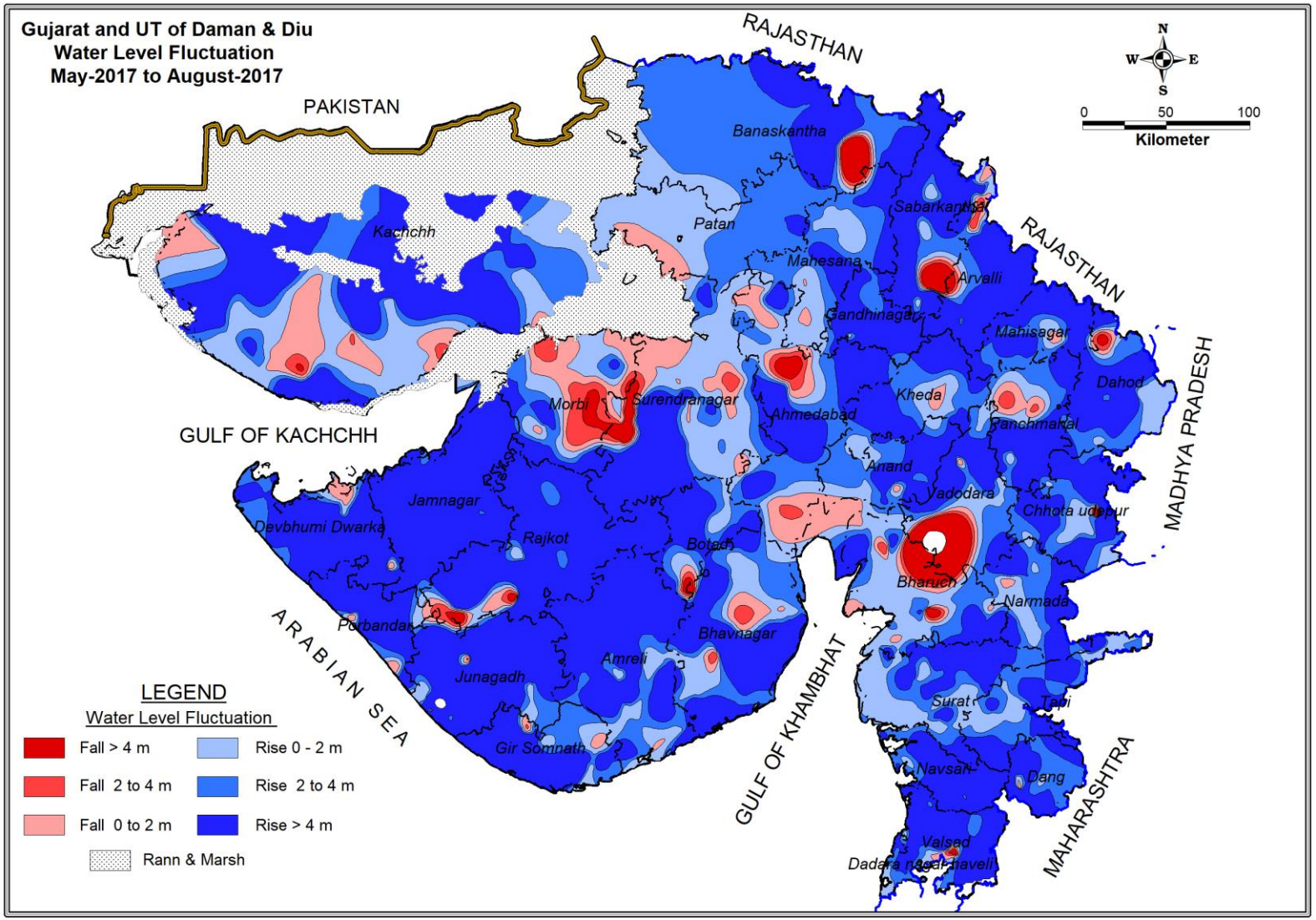
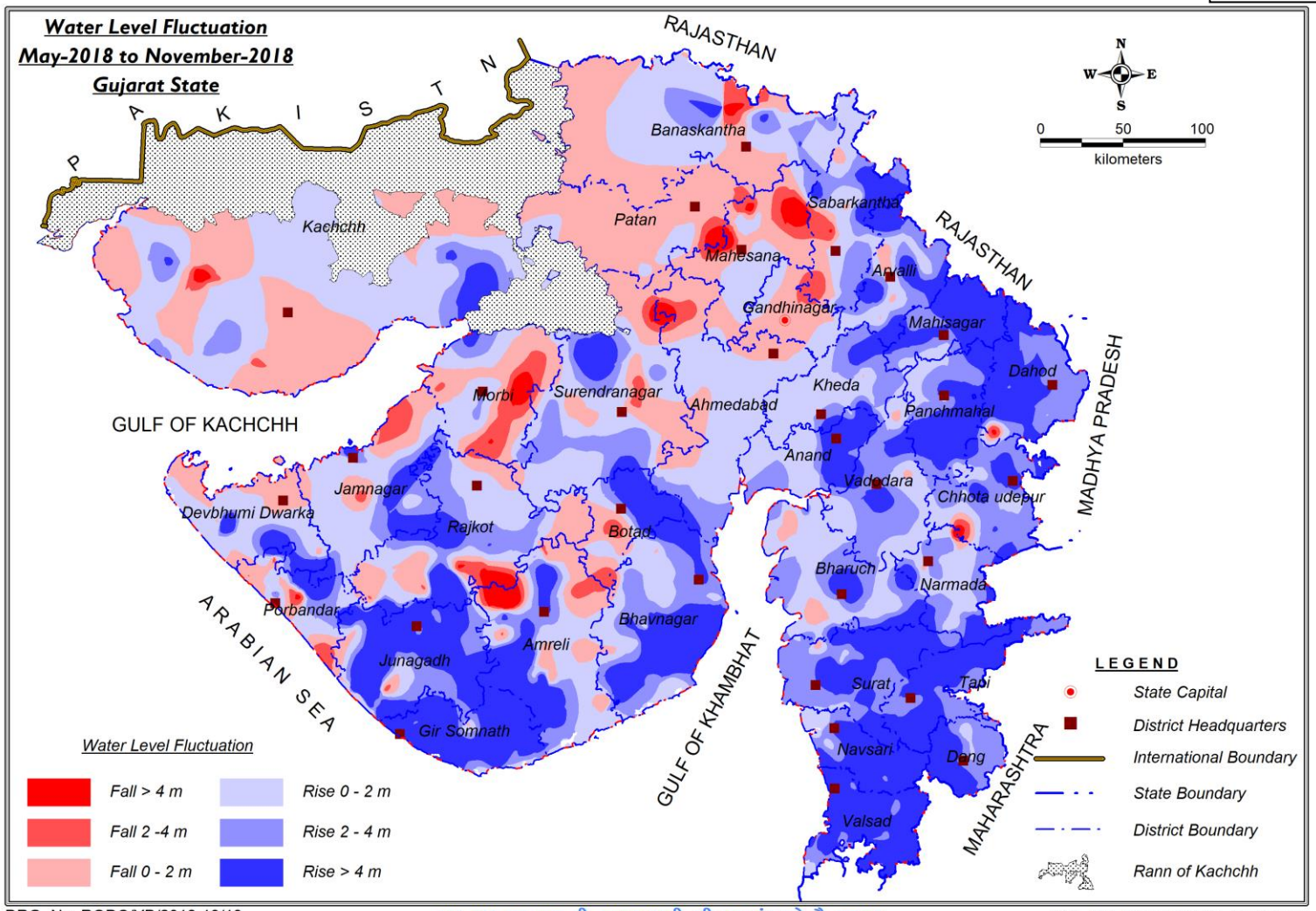

Gujarat and UT of Daman & Diu
Water Level Fluctuation
May-2017 to August-2017
PAKISTAN
RAJASTHAN
RAJASTHAN
MADHYA PRADESH
MAHARASHTRA
GULF OF KACHCHH
GULF OF KHAMBHAT
ARABIAN SEA
N
W
E
S
0
50
100
Kilometer
Banaskantha
Patan
Kachchh
Mahesana
Sabarkantha
Arvalli
Gandhinagar
Mahisagar
Dahod
Kheda
Panchmahal
Ahmedabad
Morbi
Surendranagar
Anand
Vadodara
Chhota udaipur
Jamnagar
Devbhumi Dwarka
Rajkot
Botad
Bharuch
Narmada
Porbandar
Bhavnagar
Amreli
Junagadh
Surat
Tapi
Gir Somnath
Navsari
Dang
Valsad
Dadara nagar-haveli
LEGEND
Water Level Fluctuation
Fall > 4 m
Fall 2 to 4 m
Fall 0 to 2 m
Rann & Marsh
Rise 0 - 2 m
Rise 2 to 4 m
Rise > 4 m

Fig- 13



DRG. No. RODC/YB/2018-19/13

हम सब का एक ही सपना पानी की हर बूंद को है बचाना

Drg. By : Nilesh Dhokia, Draftsman

Table -9

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN MAY 2018 TO AUGUST 2018

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	14	0.42	8.17	0.3	0.96	4	1	2	4	0	0	7	4
							28.57%	7.14%	14.29%	28.57%	0.00%	0.00%		
2	Anand	12	0.73	18.66	1.54	1.54	5	0	6	1	0	0	11	1
							41.67%	0.00%	50.00%	8.33%	0.00%	0.00%		
3	Banaskantha	15	0.64	8.61	0.2	0.29	4	2	6	3	0	0	12	3
							26.67%	13.33%	40.00%	20.00%	0.00%	0.00%		
4	Dohad	27	0.6	13.7	3.32	3.32	2	6	18	0	1	0	26	1
							7.41%	22.22%	66.67%	0.00%	3.70%	0.00%		
5	Gandhinagar	3	2.42	3.07	-	-	0	3	0	0	0	0	3	0
							0.00%	100.00%	0.00%	0.00%	0.00%	0.00%		
6	Kheda	15	0.70	7.30	0.9	0.9	4	4	6	1	0	0	14	1
							26.67%	26.67%	40.00%	6.67%	0.00%	0.00%		
7	Mahesana	23	0.02	5.51	0.13	1.65	11	0	1	11	0	0	12	11
							47.83%	0.00%	4.35%	47.83%	0.00%	0.00%		
8	Panchmahals	29	1.0	14.80	-	-	7	5	17	0	0	0	29	0
							24.14%	17.24%	58.62%	0.00%	0.00%	0.00%		
9	Patan	6	0.5	5.93	0.18	7.9	2	0	1	1	1	1	3	3
							33.33%	0.00%	16.67%	16.67%	16.67%	16.67%		
10	Sabarkantha	42	0.01	21.65	0.04	6.27	10	7	21	2	1	1	38	4
							23.81%	16.67%	50.00%	4.76%	2.38%	2.38%		
North Gujarat		**186**	**0.01**	**21.65**	**0.04**	**7.9**	**49**	**28**	**78**	**23**	**3**	**2**	**155**	**28**
							26.34%	15.05%	41.94%	12.37%	1.61%	1.08%		
11	Bharuch	25	0.41	11.61	1.05	2.21	7	7	9	1	1	0	23	2
							28.00%	28.00%	36.00%	4.00%	4.00%	0.00%		
12	Narmada	16	0.16	10.05	0.82	2	4	5	5	2	0	0	14	2
							25.00%	31.25%	31.25%	12.50%	0.00%	0.00%		
13	Navsari	18	1.16	15.49	-	-	3	1	14	0	0	0	18	0
							16.67%	5.56%	77.78%	0.00%	0.00%	0.00%		
14	Surat	45	0.76	11.82	-	-	10	13	22	0	0	0	45	0
							22.22%	28.89%	48.89%	0.00%	0.00%	0.00%		
15	The dangs	22	1.18	12.64	-	-	4	1	17	0	0	0	22	0
							18.18%	4.55%	77.27%	0.00%	0.00%	0.00%		
16	Vadodara	23	0.71	14.00	6.26	6.26	2	4	16	0	0	1	22	1
							8.70%	17.39%	69.57%	0.00%	0.00%	4.35%		
17	Valsad	16	1.11	19.73	-	-	1	6	9	0	0	0	16	0
							6.25%	37.50%	56.25%	0.00%	0.00%	0.00%		
South Gujarat		**165**	**0.16**	**19.73**	**0.82**	**6.26**	**31**	**37**	**92**	**3**	**1**	**1**	**160**	**5**
							18.79%	22.42%	55.76%	1.82%	0.61%	0.61%		
18	Amreli	37	0.37	16.66	-	-	8	9	20	0	0	0	37	0
							21.62%	24.32%	54.05%	0.00%	0.00%	0.00%		
19	Bhavnagar	35	0.27	19.18	-	-	6	8	21	0	0	0	35	0
							17.14%	22.86%	60.00%	0.00%	0.00%	0.00%		
20	Jamnagar	37	0.02	17.9	0.15	0.5	6	8	19	4	0	0	33	4
							16.22%	21.62%	51.35%	10.81%	0.00%	0.00%		
21	Junagadh	45	0.01	26.65	-	-	4	3	38	0	0	0	45	0
							8.89%	6.67%	84.44%	0.00%	0.00%	0.00%		
22	Porbandar	28	0.29	21.15	0.25	2.75	9	4	10	3	2	0	23	5
							32.14%	14.29%	35.71%	10.71%	7.14%	0.00%		
23	Rajkot	34	0.22	27.50	0.11	0.76	4	8	19	3	0	0	31	3
							11.76%	23.53%	55.88%	8.82%	0.00%	0.00%		
24	Surendranagar	28	0.32	14.53	0.08	4.94	6	6	8	6	1	1	20	8
							21.43%	21.43%	28.57%	21.43%	3.57%	3.57%		
Saurashtra		**244**	**0.01**	**27.50**	**0.08**	**4.94**	**43**	**46**	**135**	**16**	**3**	**1**	**224**	**20**
							17.62%	18.85%	55.33%	6.56%	1.23%	0.41%		
25	**Kachchh**	**37**	**0.02**	**6.9**	0.04	3.67	**10**	**6**	**6**	**10**	**4**	**0**	**22**	**14**
							27.03%	16.22%	16.22%	27.03%	10.81%	0.00%		
Grand Total		**632**	**0.01**	**27.50**	**0.04**	**7.9**	**133**	**117**	**311**	**52**	**11**	**4**	**561**	**67**
							21.04%	18.51%	49.21%	8.23%	1.74%	0.63%		

RODC, CGWB - WCR, Ahmedabad

Table -10

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN MAY 2018 TO NOVEMBER 2018

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	10	0.11	7.65	0.14	7.07	3	0	2	2	1	1	5	4
							30.00%	0.00%	20.00%	20.00%	10.00%	10.00%		
2	Anand	13	0.03	17.00	-	-	7	2	4	0	0	0	13	0
							53.85%	15.38%	30.77%	0.00%	0.00%	0.00%		
3	Banaskantha	15	0.06	6.87	0.08	6.62	5	2	3	4	0	1	10	5
							33.33%	13.33%	20.00%	26.67%	0.00%	6.67%		
4	Dohad	27	0.1	11.6	5.32	5.32	4	10	12	0	0	1	26	1
							14.81%	37.04%	44.44%	0.00%	0.00%	3.70%		
5	Gandhinagar	3	-	-	0.08	0.84	0	0	0	3	0	0	0	3
							0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
6	Kheda	14	1.05	5.40	0.1	0.1	6	6	1	1	0	0	13	1
							42.86%	42.86%	7.14%	7.14%	0.00%	0.00%		
7	Mahesana	19	0.25	2.00	0.18	7.32	8	0	0	8	1	2	8	11
							42.11%	0.00%	0.00%	42.11%	5.26%	10.53%		
8	Panchmahals	28	0.91	10.5	0.1	0.1	6	3	18	1	0	0	27	1
							21.43%	10.71%	64.29%	3.57%	0.00%	0.00%		
9	Patan	7	0.1	1.35	0.47	12.55	3	0	0	2	1	1	3	4
							42.86%	0.00%	0.00%	28.57%	14.29%	14.29%		
10	Sabarkantha	44	0.05	24.65	0.05	4.2	13	6	15	8	1	1	34	10
							29.55%	13.64%	34.09%	18.18%	2.27%	2.27%		
North Gujarat		**180**	**0.03**	**24.65**	**0.05**	**12.55**	**55**	**29**	**55**	**29**	**4**	**7**	**139**	**40**
							30.56%	16.11%	30.56%	16.11%	2.22%	3.89%		
11	Bharuch	27	0.1	7.75	0.23	1.91	13	5	4	4	0	0	22	4
							48.15%	18.52%	14.81%	14.81%	0.00%	0.00%		
12	Narmada	22	0.07	8.09	0.67	6.82	11	3	6	1	0	1	20	2
							50.00%	13.64%	27.27%	4.55%	0.00%	4.55%		
13	Navsari	20	1.03	15.85	-	-	3	3	14	0	0	0	20	0
							15.00%	15.00%	70.00%	0.00%	0.00%	0.00%		
14	Surat	44	1.47	15.31	1.2	1.2	4	17	22	1	0	0	43	1
							9.09%	38.64%	50.00%	2.27%	0.00%	0.00%		
15	The dangs	22	1.64	12.70	-	-	3	3	15	0	0	0	21	0
							13.64%	13.64%	68.18%	0.00%	0.00%	0.00%		
16	Vadodara	32	0.27	7.40	0.52	0.65	9	11	8	2	0	0	28	2
							28.13%	34.38%	25.00%	6.25%	0.00%	0.00%		
17	Valsad	19	1.55	20.34	-	-	1	5	13	0	0	0	19	0
							5.26%	26.32%	68.42%	0.00%	0.00%	0.00%		
South Gujarat		**186**	**0.07**	**20.34**	**0.23**	**6.82**	**44**	**47**	**82**	**8**	**0**	**1**	**173**	**9**
							23.66%	25.27%	44.09%	4.30%	0.00%	0.54%		
18	Amreli	42	0.04	14.64	0.36	14.25	14	5	11	7	4	1	30	12
							33.33%	11.90%	26.19%	16.67%	9.52%	2.38%		
19	Bhavnagar	33	0.07	14.01	0.16	3.55	9	7	14	1	2	0	30	3
							27.27%	21.21%	42.42%	3.03%	6.06%	0.00%		
20	Jamnagar	38	0.14	16.17	0.12	3.82	16	2	5	12	3	0	23	15
							42.11%	5.26%	13.16%	31.58%	7.89%	0.00%		
21	Junagadh	50	0.43	23.91	0.12	3.09	2	15	28	4	1	0	45	5
							4.00%	30.00%	56.00%	8.00%	2.00%	0.00%		
22	Porbandar	28	0.08	18.59	0.15	5.19	10	2	3	6	6	1	15	13
							35.71%	7.14%	10.71%	21.43%	21.43%	3.57%		
23	Rajkot	32	0.04	7.10	0.34	5.93	11	5	7	4	2	3	23	9
							34.38%	15.63%	21.88%	12.50%	6.25%	9.38%		
24	Surendranagar	30	0.24	12.95	0.04	7.00	6	5	2	13	3	1	13	17
							20.00%	16.67%	6.67%	43.33%	10.00%	3.33%		
Saurashtra		**253**	**0.04**	**23.91**	**0.04**	**14.25**	**68**	**41**	**70**	**47**	**21**	**6**	**179**	**74**
							26.88%	16.21%	27.67%	18.58%	8.30%	2.37%		
25	**Kachchh**	**46**	**0.06**	**6.35**	**0.01**	**6.95**	**12**	**3**	**3**	**17**	**1**	**1**	**18**	**19**
							26.09%	6.52%	6.52%	36.96%	2.17%	2.17%		
Grand Total		**665**	**0.03**	**24.65**	**0.01**	**14.25**	**179**	**120**	**210**	**101**	**26**	**15**	**509**	**142**
							26.92%	18.05%	31.58%	15.19%	3.91%	2.26%		

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Valsad in Valsad district. The fall is only in 5% of total well and maximum (4%) categorised in the range of 0 – 2 m.

Over all 71% of total well analysed show rise in water level in the entire Saurashtra. Fall is mainly in the range of 0 – 2 m and is found in isolated patches and cover 19% of the total area of region. The maximum rise observed 24.25m at Goraj in Junagadh district.

In Kachchh 77% of the total well analysed recorded rise in water level. The fall is mostly in the range of 0 – 2 m recorded in about 15% of the total well. Rise is observed in all parts of the region and mostly in the range of 0-2 m.

3.2.3 May 2018 to January 2019

A perusal of **Fig 14** and **Table 11** reveals that about 63% of the total well in the Gujarat state area have recorded rise in water level between May 2018 and January 2019. Fall in water level is observed mainly in Kachchh, Saurashtra and in central north part of Gujarat distributed sporadically all over Gujarat state. In the state, the maximum rise of 23.62m is at Goraj in Junagdh district whereas the maximum decline of 14.33m is observed at Vallabhipur in Bhavnagar district.

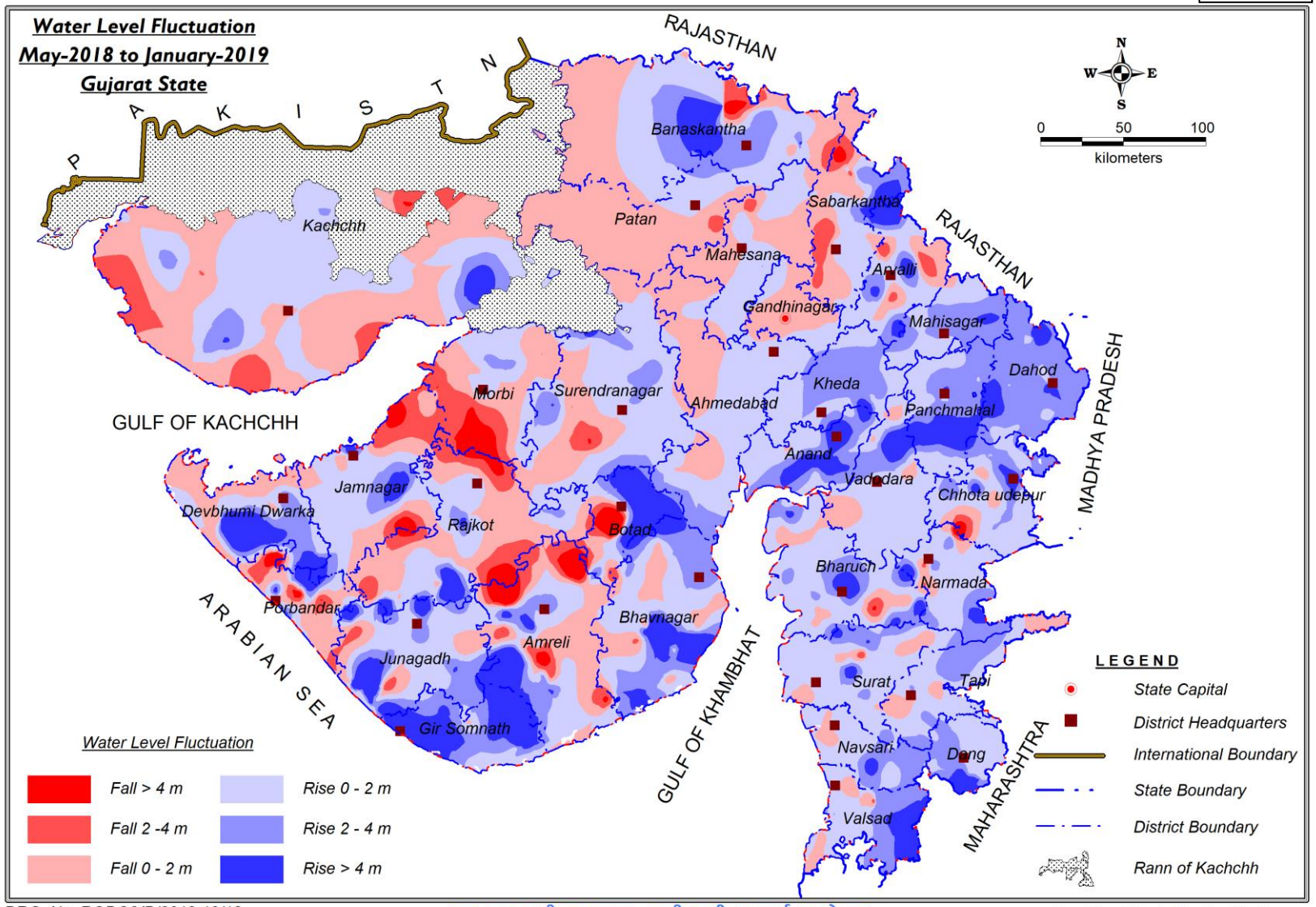
In North Gujarat region, water level rises mainly observed in 62% of the total well analysed and maximum rises (48%) are in 0 to 4m. Fall of water level observed in all districts of the north Gujarat stae distributed in central and west central and east central part.

The 76% of the total well in the area of south Gujarat have recorded rise and maximum (61%) in the range of 0 to 4 m of rise in the region. The fall is only 22% of total well and maximum (19%) in the range of 0 – 2 m.

Over all 59% of total well analysed are shown rise in water level in the entire Saurashtra region. About 41% of areas have shown rise of water level between 2 to 4m and 18% shows more than 4m and are found in all the districts of Saurashtra region. Fall of water level is observed in all over the region with fall less than 2m is observed in 24% of the well in the region.

In Kachchh, 38% of the total well analysed recorded rise in water level. The fall is mostly in the range of 0 – 2 m and is observed in 38% of the total well. The total Fall of water level has been observed in 53% of the total well in the region.

Fig- 14



DRG. No. RODC/YB/2018-19/12

एक बात कभी न भूलना, पानी कभी न व्यर्थ न ढोलना

Drg. By : Nilesh Dhokia, Draftsman

Table -11

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN MAY 2018 TO JANUARY 2019

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	11	0.13	6.01	0.03	1.06	2	0	2	7	0	0	4	7
							18.18%	0.00%	18.18%	63.64%	0.00%	0.00%		
2	Anand	15	0.72	11.44	0.02	0.31	6	1	6	2	0	0	13	2
							40.00%	6.67%	40.00%	13.33%	0.00%	0.00%		
3	Banaskantha	15	2.93	6.54	0.02	7.32	0	3	3	7	0	1	6	8
							0.00%	20.00%	20.00%	46.67%	0.00%	6.67%		
4	Dohad	28	0.30	7.08	-	-	9	12	7	0	0	0	28	0
							32.14%	42.86%	25.00%	0.00%	0.00%	0.00%		
5	Gandhinagar	3	-	-	0.2	1.79	0	0	0	3	0	0	0	3
							0.00%	0.00%	0.00%	100.00%	0.00%	0.00%		
6	Kheda	14	0.52	2.88	-	-	10	4	0	0	0	0	14	0
							71.43%	28.57%	0.00%	0.00%	0.00%	0.00%		
7	Mahesana	20	0.04	2.00	0.16	4.02	7	2	0	10	0	1	9	11
							35.00%	10.00%	0.00%	50.00%	0.00%	5.00%		
8	Panchmahals	28	0.46	7.16	-	-	7	6	1	3	0	0	27	0
							25.00%	21.43%	3.57%	10.71%	0.00%	0.00%		
9	Patan	6	0.46	0.46	0.28	2.69	1	0	0	4	1	0	1	5
							16.67%	0.00%	0.00%	66.67%	16.67%	0.00%		
10	Sabarkantha	41	0.05	15.53	0.07	5.4	14	3	7	9	7	1	24	17
							34.15%	7.32%	17.07%	21.95%	17.07%	2.44%		
North Gujarat		**181**	**0.04**	**15.53**	**0.02**	**7.32**	**56**	**31**	**26**	**45**	**8**	**3**	**126**	**53**
							30.94%	17.13%	14.36%	24.86%	4.42%	1.66%		
11	Bharuch	28	0.31	7.35	0.18	4.51	12	4	4	7	0	1	20	8
							42.86%	14.29%	14.29%	25.00%	0.00%	3.57%		
12	Narmada	19	0.03	6.59	0.01	6.84	6	5	2	2	2	1	13	5
							31.58%	26.32%	10.53%	10.53%	10.53%	5.26%		
13	Navsari	17	0.24	6.07	0.04	1.00	7	6	1	3	0	0	14	3
							41.18%	35.29%	5.88%	17.65%	0.00%	0.00%		
14	Surat	39	0.03	6.64	0.2	3.9	16	7	4	10	1	0	27	11
							41.03%	17.95%	10.26%	25.64%	2.56%	0.00%		
15	The dangs	21	0.05	9.7	-	-	9	5	7	0	0	0	21	0
							42.86%	23.81%	33.33%	0.00%	0.00%	0.00%		
16	Vadodara	31	0.14	10.83	0.45	1.21	12	7	5	6	0	0	24	6
							38.71%	22.58%	16.13%	19.35%	0.00%	0.00%		
17	Valsad	16	0.26	6.9	0.22	3.25	5	4	2	4	1	0	11	5
							31.25%	25.00%	12.50%	25.00%	6.25%	0.00%		
South Gujarat		**171**	**0.03**	**10.83**	**0.01**	**6.84**	**67**	**38**	**25**	**32**	**4**	**2**	**130**	**38**
							39.18%	22.22%	14.62%	18.71%	2.34%	1.17%		
18	Amreli	43	0.05	10.78	0.2	10.79	11	6	5	9	6	5	22	20
							25.58%	13.95%	11.63%	20.93%	13.95%	11.63%		
19	Bhavnagar	35	0.15	10.31	0.28	14.33	7	6	10	5	3	1	23	9
							20.00%	17.14%	28.57%	14.29%	8.57%	2.86%		
20	Jamnagar	38	0.05	15.11	0.13	6.12	10	4	6	12	3	3	20	18
							26.32%	10.53%	15.79%	31.58%	7.89%	7.89%		
21	Junagadh	48	0.18	23.62	0.41	3.8	15	9	17	5	2	0	41	7
							31.25%	18.75%	35.42%	10.42%	4.17%	0.00%		
22	Porbandar	29	0.06	15.28	0.05	11.93	7	0	4	11	4	3	11	18
							24.14%	0.00%	13.79%	37.93%	13.79%	10.34%		
23	Rajkot	36	0.05	15.75	0.1	7.53	9	4	3	13	1	5	16	19
							25.00%	11.11%	8.33%	36.11%	2.78%	13.89%		
24	Surendranagar	33	0.25	5.2	0.12	4.30	13	6	2	7	2	1	21	10
							39.39%	18.18%	6.06%	21.21%	6.06%	3.03%		
Saurashtra		**262**	**0.05**	**23.62**	**0.05**	**14.33**	**72**	**35**	**47**	**62**	**21**	**18**	**154**	**101**
							27.48%	13.36%	17.94%	23.66%	8.02%	6.87%		
25	**Kachchh**	**40**	**0.04**	**5.96**	**0.01**	**4.22**	**10**	**3**	**2**	**15**	**5**	**1**	**15**	**21**
							25.00%	7.50%	5.00%	37.50%	12.50%	2.50%		
Grand Total		**654**	**0.03**	**23.62**	**0.01**	**14.33**	**205**	**107**	**100**	**154**	**38**	**24**	**425**	**213**
							31.35%	16.36%	15.29%	23.55%	5.81%	3.67%		

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3.3 Annual Water Level Fluctuation

Annual Fluctuation in the water levels of the ground water monitoring wells during different monitoring periods were analysed graphically and depicted in **Fig. 15 (a,b,c & d)**.

Fig : 15 a

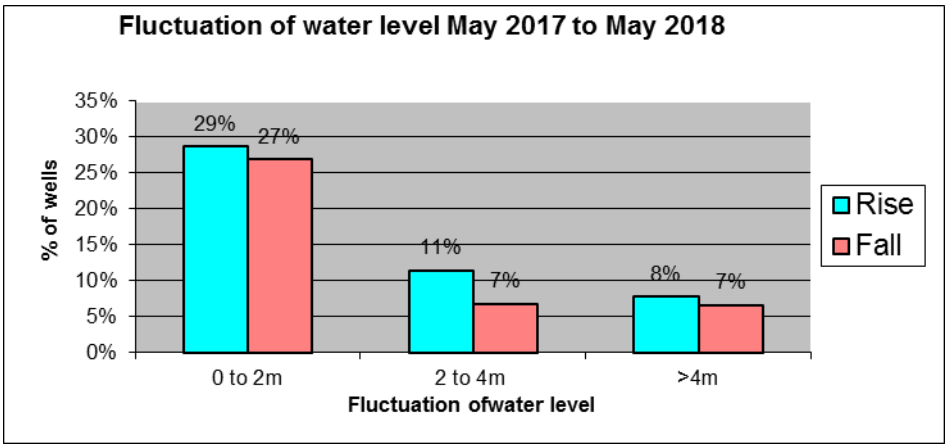


Fig : 15b

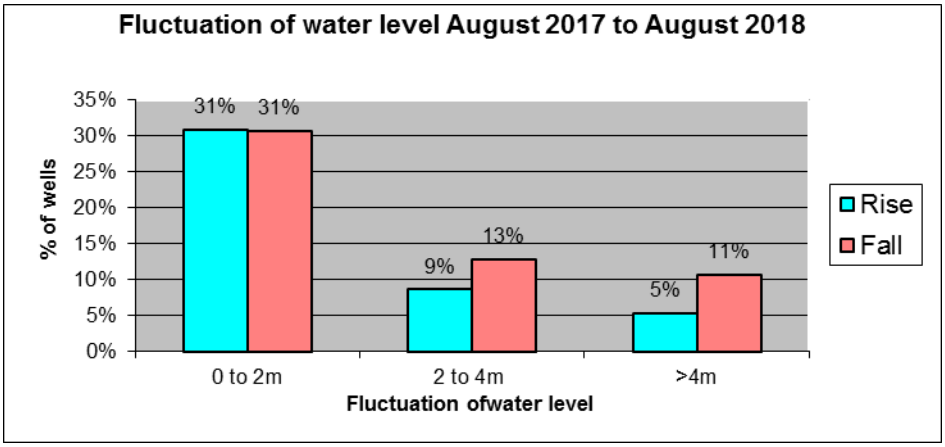


Fig: 15c

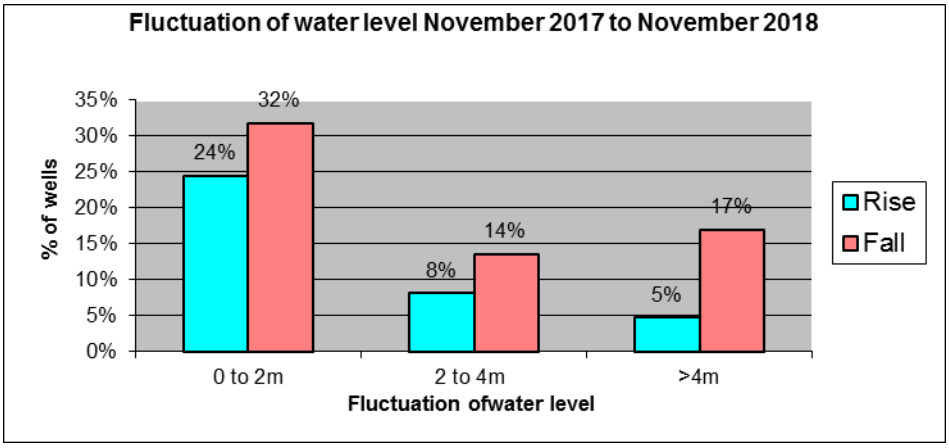
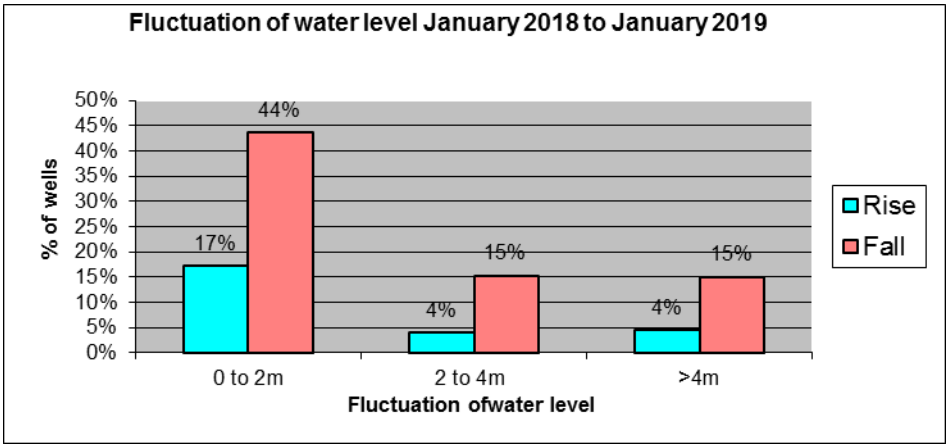


Fig : 15d



3.3.1 May 2017 to May 2018

A perusal of **Fig 16** and **Table 12** reveals that 48% of the total monitoring stations of state shows a rise in water level. Rise of 0-2 m is observed in about 29% of total well of the state. More than 4m rise in 8% of total well. Fall in water level is observed mainly in Kachchh, Saurashtra, Central and south part of Gujarat. Fall is mainly in the range of 0-2 m and covers about 27% of total well of the state. The maximum rise of 17.45m is recorded in Amreli district, whereas the maximum decline of 22.79m is recorded in Rajkot district.

About 34% of the total wells observed fall of water level in the North Gujarat and most of which (21% of wells) is in the range of 0 to 2m. Fall of more than 4 m is mostly seen in the central part of region in Mahesana, Patan district. Rise of water level mostly observed in 60% of total well in North Gujarat, in Banaskantha, Sabarkantha and Gandhinagar district, mostly shows a rise in water level.

South Gujarat region shows fall in water level in the range of 0 to 2 m and covers an area by 44% of well in the region. Rise in water level is observed in the range of 0 to 2 m in 29% of well. Rise and fall of more than 4 m has observed at few locations.

About 54% of total well in Saurashtra region has experienced rise where as 39% shows fall. In 0 to 2m range, 21% of well shows rise where as only 19% shows fall. Fall of more than 4m is predominantly found in Amreli, Jamnagar, Junagarh, Rajkot, Surendranagar and Bhavnagar and covers an area by 11% of the well in Saurashtra region.

In Kachchh region, 21% of total well is experienced rise in water level where as 62% shows fall. Fall mostly ranges in 0 to 2m in an area of 53%. All over the Kachchh region shows fall with only wells in few patches of rise in the ranges of 0 to 2 m.

3.3.2 August 2017 to August 2018

A perusal of **Fig 17** and **Table 13** reveals that 45% of total monitoring well in the Gujarat state shows a rise in water level. Rise in water level with in range of 0 – 2 m is observed in about 31% of well. Fall in the range of 0 – 2 m experienced by by 31% of well of the state. Fall of more than 2 m & 4m is found in North and Central Gujarat & Saurashtra region. The maximum rise of 12.35m is recorded in Junagadh district whereas the maximum decline of 14.69m is recorded in Bhavnagar district.

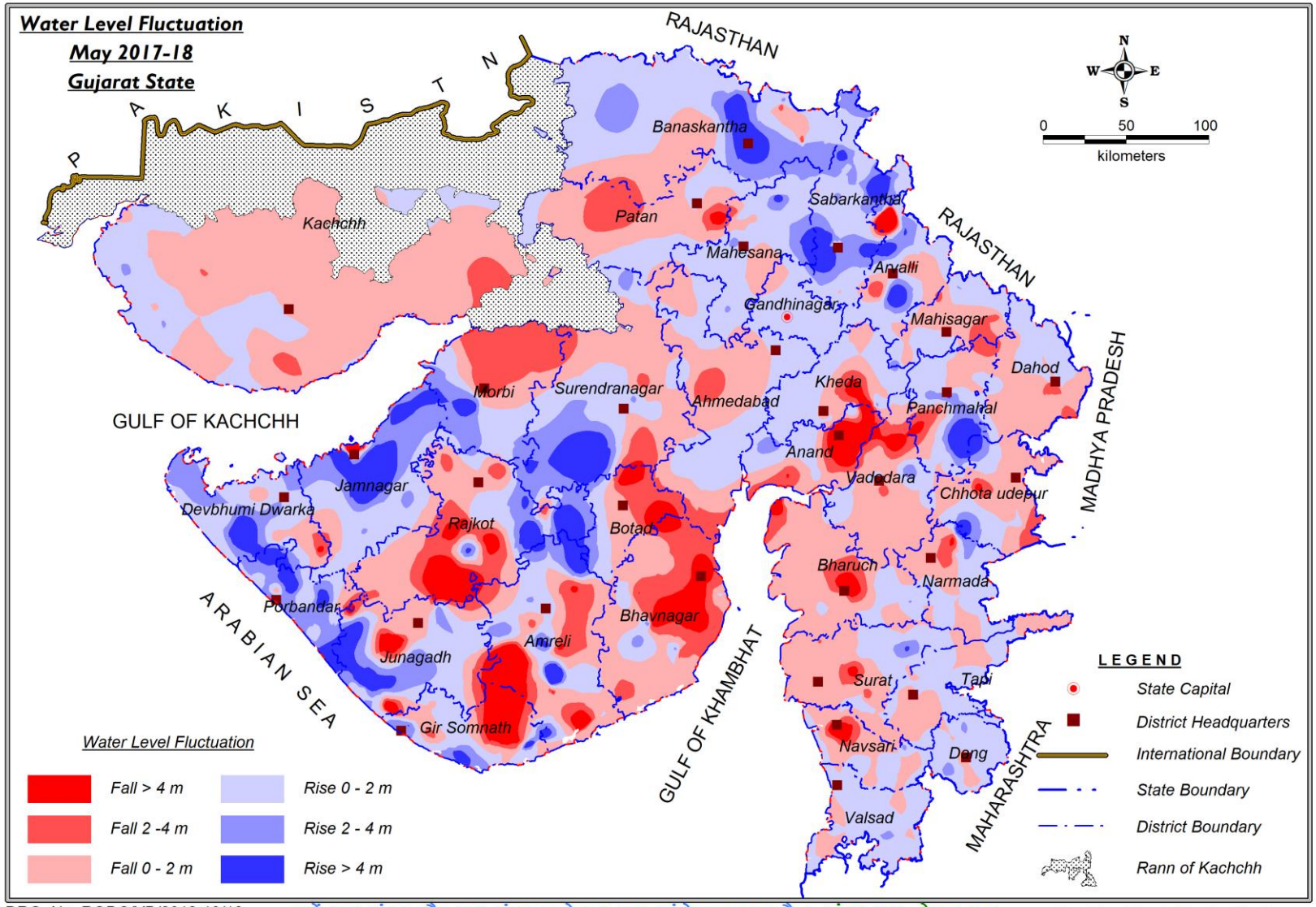
About 45% of the total well shows rise of water level in the North Gujarat and most of which (33% of well) is in the range of 0 to 2m of fluctuation of water level. Rise of more than 4m is mostly seen in 4% of well in the region mostly in adjoining area of Arvalli and Sabarkantha, Gandhinagar districts. Fall of 0 to 4 m range is observed in 54% of well of the region. Fall of water level observed in the adjoining area of Banaskantha, Patan, Mahesana and Sabarkantha, Kheda, Dahod districts.

In South Gujarat region, 68% of the total well shows rise in water level and out of which, 53% are in the range of 0 to 2m in the region. Similarly, 31% of total well shows fall in water level and a maximum of 28% of well are in the range of 0 to 2 m.

About 71% of the total well in the Saurashtra region experienced Fall of water level and out of which, 39% of well are in the range of 0 -2 m. Rise of water level experienced in 29% of wells where 15% range less than 2m of the total number of wells analysed.

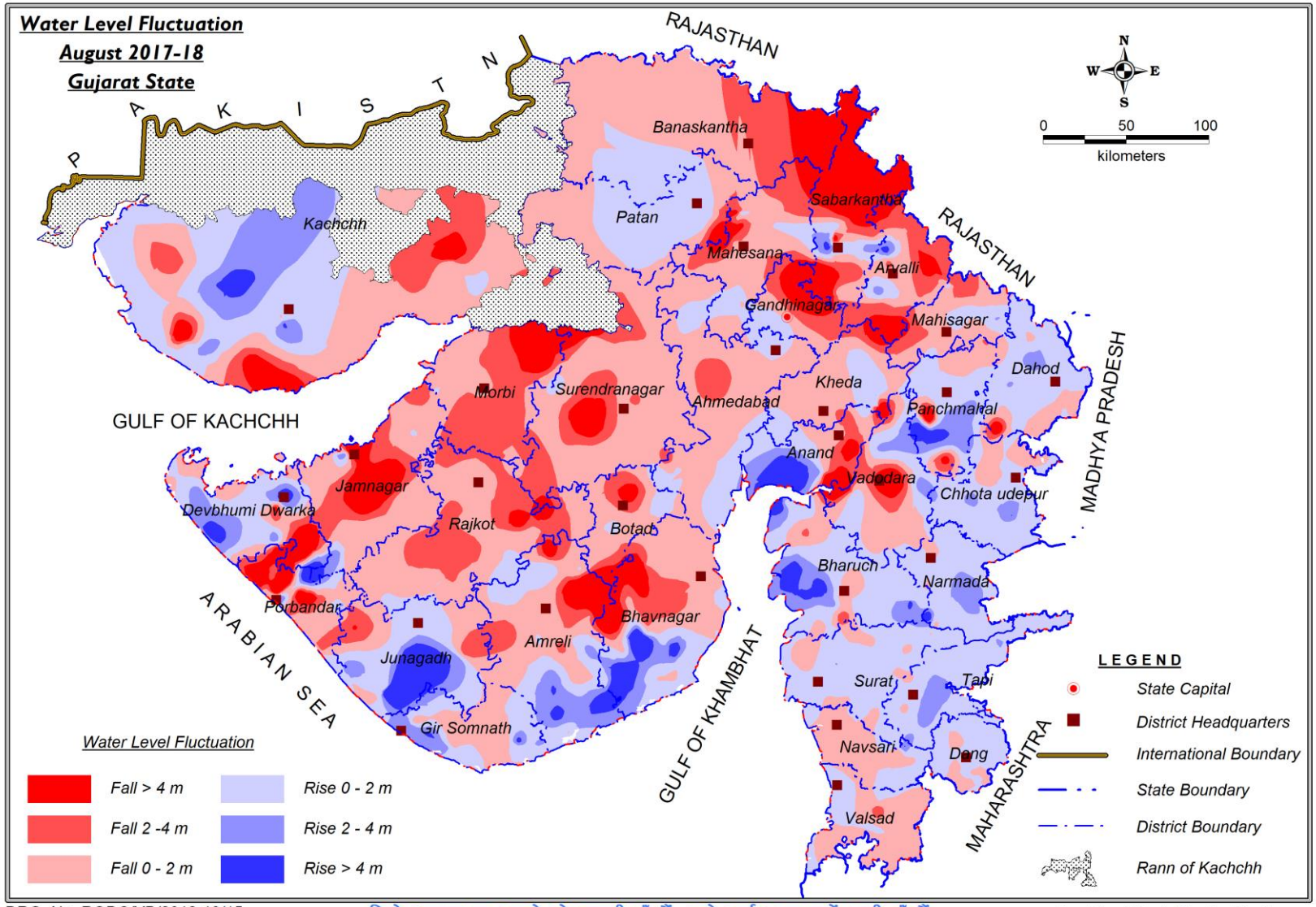
In Kachchh region, 56% of the total well in the area is experienced by a fall in water level where as 41% shows rise. Water level in range of less than 2m, about 25% of well shows rise while 22% shows fall. Fall in water level observed in west central part of the Kachchh.

Fig- 16



DRG. No. RODC/YB/2018-19/10 हमें जल संचय और जल संरक्षण को एक जन आंदोलन बनाना है । संचय जल, बेहतर कल Drg. By : Nilesh Dhokia, Draftsman

Fig- 17



DRG. No. RODC/YB/2018-19/15

जिसे अबतक ना समझे वो कहानी हूँ मैं, मुझे बर्बाद मत करों पानी हूँ मैं

Drg. By : Nilesh Dhokia, Draftsman

Table - 12

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN MAY 2017 TO MAY 2018

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	12	0.24	1.65	0.46	6.52	5	0	0	4	2	1	5	7
							41.67%	0.00%	0.00%	33.33%	16.67%	8.33%		
2	Anand	14	0.1	2.68	0.46	12.34	6	1	0	2	2	3	7	7
							42.86%	7.14%	0.00%	14.29%	14.29%	21.43%		
3	Banaskantha	19	0.31	6.38	1.5	4.8	9	4	3	1	1	1	16	3
							47.37%	21.05%	15.79%	5.26%	5.26%	5.26%		
4	Dohad	27	0.1	2.9	0.15	3.25	6	2	0	12	3	0	8	15
							22.22%	7.41%	0.00%	44.44%	11.11%	0.00%		
5	Gandhinagar	5	0.24	1.24	-	-	5	0	0	0	0	0	5	0
							100.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
6	Kheda	18	0.1	3.3	0.15	5.9	8	2	0	6	0	1	10	7
							44.44%	11.11%	0.00%	33.33%	0.00%	5.56%		
7	Mahesana	24	0.23	5.52	0.8	2.5	15	3	1	3	1	0	19	4
							62.50%	12.50%	4.17%	12.50%	4.17%	0.00%		
8	Panchmahals	31	0.05	11	0.16	4.8	7	4	2	8	4	3	13	15
							22.58%	12.90%	6.45%	25.81%	12.90%	9.68%		
9	Patan	8	0.23	0.52	0.2	6.1	5	0	0	1	1	1	5	3
							62.50%	0.00%	0.00%	12.50%	12.50%	12.50%		
10	Sabarkantha	46	0.09	12.1	0.15	24	17	9	8	5	1	2	34	8
							36.96%	19.57%	17.39%	10.87%	2.17%	4.35%		
North Gujarat		**204**	**0.05**	**12.1**	**0.15**	**24**	**83**	**25**	**14**	**42**	**15**	**12**	**122**	**69**
							40.69%	12.25%	6.86%	20.59%	7.35%	5.88%		
11	Bharuch	28	0.07	2.21	0.1	7.21	4	1	0	16	0	2	5	18
							14.29%	3.57%	0.00%	57.14%	0.00%	7.14%		
12	Narmada	21	0.26	6.55	0.22	5.06	6	1	1	5	1	1	8	7
							28.57%	4.76%	4.76%	23.81%	4.76%	4.76%		
13	Navsari	22	0.06	3.52	0.15	9.08	5	2	0	8	0	1	7	9
							22.73%	9.09%	0.00%	36.36%	0.00%	4.55%		
14	Surat	47	0.07	4.45	0.09	5.48	13	0	1	15	2	1	14	18
							27.66%	0.00%	2.13%	31.91%	4.26%	2.13%		
15	The dangs	21	0.01	3.15	0.05	1.36	9	2	0	8	0	0	11	8
							42.86%	9.52%	0.00%	38.10%	0.00%	0.00%		
16	Vadodara	36	0.02	4.11	0.06	5.6	10	0	1	15	2	3	11	20
							27.78%	0.00%	2.78%	41.67%	5.56%	8.33%		
17	Valsad	20	0.06	2.9	0.03	0.7	9	1	0	6	0	0	10	6
							45.00%	5.00%	0.00%	30.00%	0.00%	0.00%		
South Gujarat		**195**	**0.01**	**6.55**	**0.03**	**9.08**	**56**	**7**	**3**	**73**	**5**	**8**	**66**	**86**
							28.72%	3.59%	1.54%	37.44%	2.56%	4.10%		
18	Amreli	42	0.1	17.45	0.18	14.01	9	2	6	14	4	6	17	24
							21.43%	4.76%	14.29%	33.33%	9.52%	14.29%		
19	Bhavnagar	35	0.14	3.01	0.14	6.4	4	3	0	12	3	7	7	22
							11.43%	8.57%	0.00%	34.29%	8.57%	20.00%		
20	Jamnagar	40	0.3	15.38	0.62	13.8	8	14	9	4	0	2	31	6
							20.00%	35.00%	22.50%	10.00%	0.00%	5.00%		
21	Junagadh	49	0.05	9.25	0.01	16.3	14	6	7	8	4	6	27	18
							28.57%	12.24%	14.29%	16.33%	8.16%	12.24%		
22	Porbandar	26	0.15	7.87	1.55	1.94	5	9	7	2	0	0	21	2
							19.23%	34.62%	26.92%	7.69%	0.00%	0.00%		
23	Rajkot	31	0.2	10.63	0.09	22.79	5	4	5	4	9	4	14	17
							16.13%	12.90%	16.13%	12.90%	29.03%	12.90%		
24	Surendranagar	22	0.07	11.3	0.61	6.5	7	6	3	2	3	1	16	6
							31.82%	27.27%	13.64%	9.09%	13.64%	4.55%		
Saurashtra		**245**	**0.05**	**17.45**	**0.01**	**22.79**	**52**	**44**	**37**	**46**	**23**	**26**	**133**	**95**
							21.22%	17.96%	15.10%	18.78%	9.39%	10.61%		
25	**Kachchh**	**47**	**0.2**	**2.25**	**0.04**	**3.5**	**7**	**3**	**0**	**25**	**4**	**0**	**10**	**29**
							14.89%	6.38%	0.00%	53.19%	8.51%	0.00%		
Grand Total		**691**	**0.01**	**17.45**	**0.01**	**24**	**198**	**79**	**54**	**186**	**47**	**46**	**331**	**279**
							28.65%	11.43%	7.81%	26.92%	6.80%	6.66%		

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Table -13

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN AUGUST 2017 TO AUGUST 2018

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	14	0.06	1.68	0.38	6.13	5	0	0	5	2	1	5	8
							35.71%	0.00%	0.00%	35.71%	14.29%	7.14%		
2	Anand	12	0.16	10.04	0.23	6.57	3	2	1	1	3	2	6	6
							25.00%	16.67%	8.33%	8.33%	25.00%	16.67%		
3	Banaskantha	14	0.37	8.05	0.8	5.71	5	2	1	2	2	2	8	6
							35.71%	14.29%	7.14%	14.29%	14.29%	14.29%		
4	Dohad	25	0.1	2.9	0.23	6.45	17	2	0	3	1	1	19	5
							68.00%	8.00%	0.00%	12.00%	4.00%	4.00%		
5	Gandhinagar	1	1.63	1.63	-	-	1	0	0	0	0	0	1	0
							100.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
6	Kheda	13	0.1	2.15	0.45	7.9	5	1	0	6	0	1	6	7
							38.46%	7.69%	0.00%	46.15%	0.00%	7.69%		
7	Mahesana	22	0.16	6.01	0.07	5.39	3	1	1	12	3	2	5	17
							13.64%	4.55%	4.55%	54.55%	13.64%	9.09%		
8	Panchmahals	32	0.3	6.05	0.12	9.8	13	5	2	7	3	2	20	12
							40.63%	15.63%	6.25%	21.88%	9.38%	6.25%		
9	Patan	4	1.6	1.6	0.85	9.8	1	0	0	1	0	2	1	3
							25.00%	0.00%	0.00%	25.00%	0.00%	50.00%		
10	Sabarkantha	38	0.5	5.2	0.05	13.55	4	2	2	7	10	13	8	30
							10.53%	5.26%	5.26%	18.42%	26.32%	34.21%		
North Gujarat		**175**	**0.06**	**10.04**	**0.05**	**13.55**	**57**	**15**	**7**	**44**	**24**	**26**	**79**	**94**
							32.57%	8.57%	4.00%	25.14%	13.71%	14.86%		
11	Bharuch	24	0.58	6.6	0.21	4.11	9	3	6	4	1	1	18	6
							37.50%	12.50%	25.00%	16.67%	4.17%	4.17%		
12	Narmada	15	0.18	5.55	0.22	1.06	8	2	1	4	0	0	11	4
							53.33%	13.33%	6.67%	26.67%	0.00%	0.00%		
13	Navsari	16	0.05	4.13	0.07	1.27	5	1	1	9	0	0	7	9
							31.25%	6.25%	6.25%	56.25%	0.00%	0.00%		
14	Surat	41	0.07	2.84	0.03	0.72	27	4	0	10	0	0	31	10
							65.85%	9.76%	0.00%	24.39%	0.00%	0.00%		
15	The dangs	21	0.03	1.49	0.05	0.52	15	0	0	6	0	0	15	6
							71.43%	0.00%	0.00%	28.57%	0.00%	0.00%		
16	Vadodara	20	0.12	4.15	0.05	8.26	11	4	1	2	1	1	16	4
							55.00%	20.00%	5.00%	10.00%	5.00%	5.00%		
17	Valsad	14	0.02	1.01	0.09	3.58	5	0	0	7	1	0	5	8
							35.71%	0.00%	0.00%	50.00%	7.14%	0.00%		
South Gujarat		**151**	**0.02**	**6.60**	**0.03**	**8.26**	**80**	**14**	**9**	**42**	**3**	**2**	**103**	**47**
							52.98%	9.27%	5.96%	27.81%	1.99%	1.32%		
18	Amreli	34	0.14	6.13	0.06	13.6	7	4	3	14	3	3	14	20
							20.59%	11.76%	8.82%	41.18%	8.82%	8.82%		
19	Bhavnagar	32	0.31	10.63	0.1	14.69	5	1	3	15	3	5	9	23
							15.63%	3.13%	9.38%	46.88%	9.38%	15.63%		
20	Jamnagar	33	0.21	6.5	0.07	10.7	4	5	2	13	4	5	11	22
							12.12%	15.15%	6.06%	39.39%	12.12%	15.15%		
21	Junagadh	34	0.05	12.35	0.13	4.16	11	5	4	11	2	1	20	14
							32.35%	14.71%	11.76%	32.35%	5.88%	2.94%		
22	Porbandar	26	0.35	10	0.04	10.93	1	3	1	6	6	9	5	21
							3.85%	11.54%	3.85%	23.08%	23.08%	34.62%		
23	Rajkot	31	0.02	0.17	0.16	5.92	3	0	0	12	14	2	3	28
							9.68%	0.00%	0.00%	38.71%	45.16%	6.45%		
24	Surendranagar	28	0.88	1.6	0.01	10.68	2	0	0	13	10	3	2	26
							7.14%	0.00%	0.00%	46.43%	35.71%	10.71%		
Saurashtra		**218**	**0.02**	**12.35**	**0.01**	**14.69**	**33**	**18**	**13**	**84**	**42**	**28**	**64**	**154**
							15.14%	8.26%	5.96%	38.53%	19.27%	12.84%		
25	**Kachchh**	**32**	**0.5**	**5.1**	**0.1**	**14.6**	**8**	**3**	**2**	**7**	**5**	**6**	13	18
							25.00%	9.38%	6.25%	21.88%	15.63%	18.75%		
Grand Total		**576**	**0.02**	**12.35**	**0.01**	**14.69**	**178**	**50**	**31**	**177**	**74**	**62**	**259**	**313**
							30.90%	8.68%	5.38%	30.73%	12.85%	10.76%		

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3.3.3. November 2017 to November 2018

A perusal of **Fig 18** and **Table 14** reveals that 37% of total monitoring wells shows a rise and 62% shows fall in water level of the Gujarat state. Fall in water level within the range of 0 to 2m is observed in about 32%, 2 – 4 m in 14% and more than 4 m in 17% of the total well in the state. Rise in the water level is in the range of less than 2m and is about 24% of the total well. The maximum rise of 8.41m is recorded in Valsad district where as the maximum decline of 19.98m is recorded in Porbandar district.

About 38% of the total well shows rise of water level in the North Gujarat and most of which (35%) shows fluctuation in the range of 0 to 4m of water level. Fall of more than 4m is mostly seen in Sabarkantha, Banaskantha and Mahesana in the north east. Fall of 0 – 4 m range is observed in 46% of the total well found mainly in the north central part of the north Gujarat region.

In South Gujarat region, 60% of total well analyzed shows rise in water level and in the range of 0 – 2m represents 32% of well in the region. Rise of water level in 0 to 2m mainly observed in central part of south region mainly in Surat, Valsad, Navsari and Dangs district. Rise in water level is observed maximum in the range of 0 – 2 m in 32% of the total well analyzed.

About 78% of total well in Saurashtra region has experienced fall in water level and fall in the range of more than 4m represents about 28% of the total well analysed found in north part of Saurashtra region in Dwarka, Jamnagar, Rajkot, Surendranagar districts. Rise in water level found in 22% of total well in west part of the Saurashtra in Junagadh, Amreli, Girsomnath districts.

In Kachchh region, 79% of the total well analysed shows fall in water level and 39% shows fall in the range of 0 – 2m. Fall of morethan 4m is observed in 18% of total well in the east and east central part of Kachchh district. The rise observed in 21% of total well in west central part.

Fig- 18

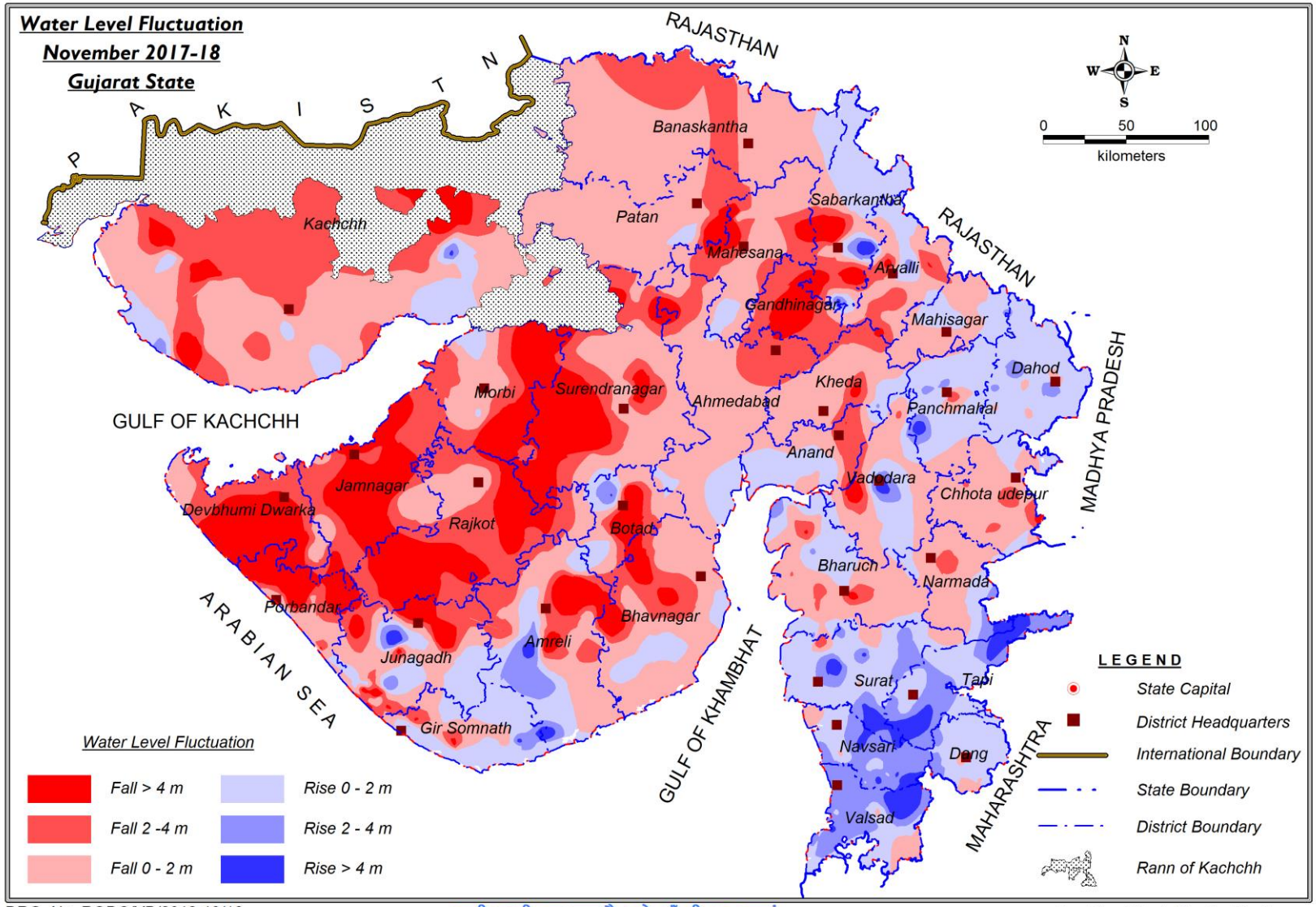

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Table -14

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN NOVEMBER 2017 TO NOVEMBER 2018

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	13	0.18	0.48	0.06	7.48	2	0	0	7	1	2	2	10
							15.38%	0.00%	0.00%	53.85%	7.69%	15.38%		
2	Anand	9	0.62	1.91	0.22	4.06	3	0	0	4	1	1	3	6
							33.33%	0.00%	0.00%	44.44%	11.11%	11.11%		
3	Banaskantha	15	2.53	7.53	0.1	7.35	0	1	1	7	3	3	2	13
							0.00%	6.67%	6.67%	46.67%	20.00%	20.00%		
4	Dohad	24	0.1	4.35	0.1	0.75	14	4	1	5	0	0	19	5
							58.33%	16.67%	4.17%	20.83%	0.00%	0.00%		
5	Gandhinagar	3	-	-	3.83	5.2	0	0	0	0	2	1	0	3
							0.00%	0.0%	0.00%	0.00%	66.67%	33.33%		
6	Kheda	11	0.02	2.32	0.06	5.11	2	1	0	6	1	1	3	8
							18.18%	9.09%	0.00%	54.55%	9.09%	9.09%		
7	Mahesana	19	0.28	1.01	0.03	11.4	2	0	0	7	7	3	2	17
							10.53%	0.00%	0.00%	36.84%	36.84%	15.79%		
8	Panchmahals	26	0.05	5.78	0.12	4.15	15	2	1	6	0	1	18	7
							57.69%	7.69%	3.85%	23.08%	0.00%	3.85%		
9	Patan	7	1.76	1.76	0.39	14.55	1	0	0	5	0	1	1	6
							14.29%	0.00%	0.00%	71.43%	0.00%	14.29%		
10	Sabarkantha	42	0.15	7.6	0.05	16.3	10	2	3	12	3	12	15	27
							23.81%	4.76%	7.14%	28.57%	7.14%	28.57%		
North Gujarat		**169**	**0.02**	**7.60**	**0.03**	**16.3**	**49**	**10**	**6**	**59**	**18**	**25**	**65**	**102**
							28.99%	5.92%	3.55%	34.91%	10.65%	14.79%		
11	Bharuch	24	0.04	3.48	0.05	5.85	4	3	0	12	3	2	7	17
							16.67%	12.50%	0.00%	50.00%	12.50%	8.33%		
12	Narmada	16	0.49	0.49	0.08	3.9	1	0	0	14	1	0	1	15
							6.25%	0.00%	0.00%	87.50%	6.25%	0.00%		
13	Navsari	18	0.7	4.43	0.32	1.51	6	6	4	2	0	0	16	2
							33.33%	33.33%	22.22%	11.11%	0.00%	0.00%		
14	Surat	43	0.18	6.5	0.01	4.04	17	11	10	4	0	1	38	5
							39.53%	25.58%	23.26%	9.30%	0.00%	2.33%		
15	The dangs	23	0.2	3.88	0.35	3.1	17	2	0	3	1	0	19	4
							73.91%	8.70%	0.00%	13.04%	4.35%	0.00%		
16	Vadodara	32	0.11	6.21	0.05	7	7	1	1	17	3	3	9	23
							21.88%	3.13%	3.13%	53.13%	9.38%	9.38%		
17	Valsad	18	0.57	8.41	0.2	1	3	10	2	3	0	0	15	3
							16.67%	55.56%	11.11%	16.67%	0.00%	0.00%		
South Gujarat		**174**	**0.04**	**8.41**	**0.01**	**7.00**	**55**	**33**	**17**	**55**	**8**	**6**	**105**	**69**
							31.61%	18.97%	9.77%	31.61%	4.60%	3.45%		
18	Amreli	31	0.11	6.25	0.11	13.37	7	3	2	10	6	3	12	19
							22.58%	9.68%	6.45%	32.26%	19.35%	9.68%		
19	Bhavnagar	28	0.28	4.16	0.01	11.6	7	0	1	12	4	4	8	20
							25.00%	0.00%	3.57%	42.86%	14.29%	14.29%		
20	Jamnagar	35	0.13	0.13	0.01	15.16	1	0	0	10	10	14	1	34
							2.86%	0.00%	0.00%	28.57%	28.57%	40.00%		
21	Junagadh	49	0.04	6.9	0.11	8.65	18	3	2	9	7	10	23	26
							36.73%	6.12%	4.08%	18.37%	14.29%	20.41%		
22	Porbandar	26	0.09	0.49	0.17	19.98	3	0	0	8	3	12	3	23
							11.54%	0.00%	0.00%	30.77%	11.54%	46.15%		
23	Rajkot	32	0.09	1.26	0.07	12	3	0	0	5	14	10	3	29
							9.38%	0.00%	0.00%	15.63%	43.75%	31.25%		
24	Surendranagar	31	0.09	0.09	0.23	10.01	1	0	0	12	5	13	1	30
							3.23%	0.00%	0.00%	38.71%	16.13%	41.94%		
Saurashtra		**232**	**0.04**	**6.90**	**0.01**	**19.98**	**40**	**6**	**5**	**66**	**49**	**66**	**51**	**181**
							17.24%	2.59%	2.16%	28.45%	21.12%	28.45%		
25	**Kachchh**	**38**	**0.01**	**4.61**	**0.14**	**12.48**	**6**	**1**	**1**	**15**	**8**	**7**	8	30
							15.79%	2.63%	2.63%	39.47%	21.05%	18.42%		
Grand Total		**613**	**0.01**	**8.41**	**0.01**	**19.98**	**150**	**50**	**29**	**195**	**83**	**104**	**229**	**382**
							24.47%	8.16%	4.73%	31.81%	13.54%	16.97%		

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3.3.4 January 2018 to January 2019

A perusal of **Fig 19** and **Table 15** reveals that out of total monitoring wells, 74% shows a fall where as 26% shows rise in water level of the Gujarat state. Fall in water level mainly within range of 0 – 2m is observed in about 44% of the total well in the state. Fall in water level is mainly observed in Kachchh, sourashtra, northern and southern part of Gujarat state. Rise mainly observed in the range of 0 – 2 m covers about 17% of the total well in state. The maximum rise of 18.39m is recorded in Junagadh district whereas the maximum decline of 27.27m is recorded in Bhavnagar district.

About 68% of the total well shows fall of water level in the North Gujarat and most of which (45%) shows fall in the range of 0 to 2m. Fall of more than 4 m is mostly seen in the parts of Banaskantha, Gandhinagar, Sabarkantha and Ahmedabad districts in 10% of total well analysed in the region. Rise of 0 – 2 m range is observed in 21% of the total well observed in the area of Panchmahal, Dahod, Sabarkantha districts in eastern part of north Gujarat region.

In South Gujarat region, 81% of total well analysed shows fall in water level and 56% represents in the range of 0 – 2 m of total well in the region. Fall of water level observed in the range of 2 to 4m and more than 4m in isolated patches distributed sporadically in south Gujarat region. Rise in water level observed in the range of 0 – 2m in 15% of the total 18% of total well analysed lying mainly in east of Tapi and Bhruch districts in the South Gujarat region.

About 73% of the Saurashtra region has experienced fall in water level and in the range of 0 – 2m observed in 35% of the total well analysed. Fall of water level in 25% of well observed more than 4m is predominantly found in Jamnagar, Junagadh, Porbandar, Rajkot and Surendranagar district all over the region. Rise in water level also found in 27% of total well distributed in parts of region scattered sporadically mainly in Botad, Surendranagar and Junagarh districts.

In Kachchh region, fall in water level experienced in 78% of total well equally distributed in the region for monitoring. Fall of water level mainly ranges in 0 – 2 m is observed in 50% of total well distributed in all parts of the district. 28% shows fall more than 2m.

Fig- 19

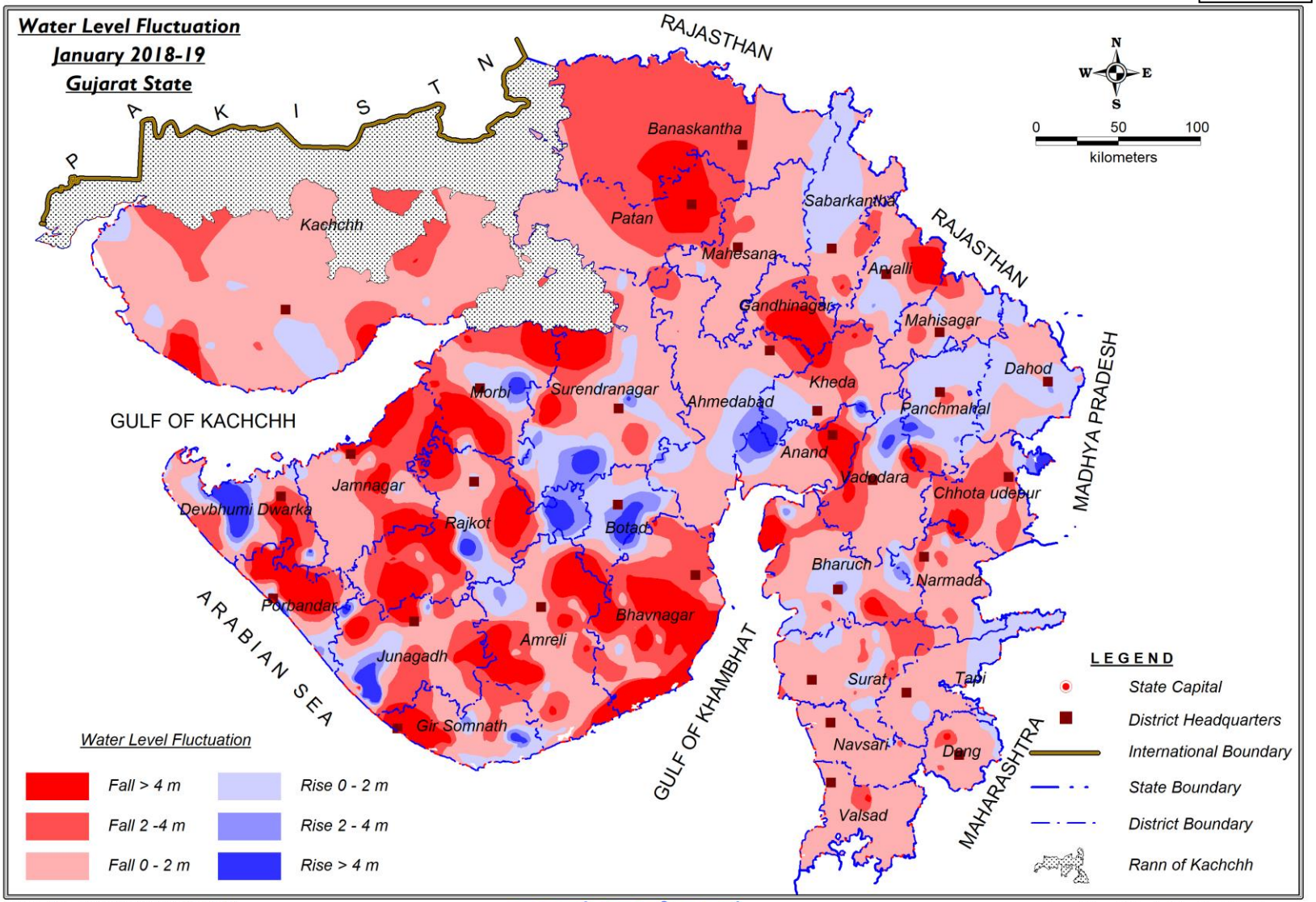

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Table -15

CATEGORISATION OF CHANGES IN WATER LEVEL BETWEEN JANUARY 2018 TO JANUARY 2019

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	17	0.33	5.0	0.11	3.7	2	1	1	11	2	0	4	13
							11.76%	5.88%	5.88%	64.71%	11.76%	0.00%		
2	Anand	14	6.39	7.37	0.13	9.73	0	0	2	6	3	3	2	12
							0.00%	0.00%	14.29%	42.86%	21.43%	21.43%		
3	Banaskantha	13	0.25	10.4	0.38	9.24	3	1	2	4	2	1	6	7
							23.08%	7.69%	15.38%	30.77%	15.38%	7.69%		
4	Dohad	29	0.13	2.8	0.12	1.99	10	4	0	14	0	0	14	14
							34.48%	13.79%	0.00%	48.28%	0.00%	0.00%		
5	Gandhinagar	3	-	-	1.9	5.76	0	0	0	1	0	2	0	3
							0.00%	0.00%	0.00%	33.33%	0.00%	66.67%		
6	Kheda	15	0.05	1.2	0.1	4.92	2	0	0	10	1	2	2	13
							13.33%	0.00%	0.00%	66.67%	6.67%	13.33%		
7	Mahesana	19	0.32	3.28	0.01	4.07	1	1	0	11	5	1	2	17
							5.26%	5.26%	0.00%	57.89%	26.32%	5.26%		
8	Panchmahals	31	0.06	4.91	0.02	3.92	13	3	1	10	4	0	17	14
							41.94%	9.68%	3.23%	32.26%	12.90%	0.00%		
9	Patan	4	-	-	0.49	5.87	0	0	0	2	1	1	0	4
							0.00%	0.00%	0.00%	50.00%	25.00%	25.00%		
10	Sabarkantha	39	0.13	4.6	0.06	14.64	8	1	1	13	7	9	10	29
							20.51%	2.56%	2.56%	33.33%	17.95%	23.08%		
North Gujarat		**184**	**0.05**	**10.4**	**0.01**	**14.64**	**39**	**11**	**7**	**82**	**25**	**19**	**57**	**126**
							21.20%	5.98%	3.80%	44.57%	13.59%	10.33%		
11	Bharuch	28	0.55	3.24	0.05	6.95	4	2	0	15	5	2	6	22
							14.29%	7.14%	0.00%	53.57%	17.86%	7.14%		
12	Narmada	18	1.19	3.89	0.12	7.41	2	1	0	7	7	1	3	15
							11.11%	5.56%	0.00%	38.89%	38.89%	5.56%		
13	Navsari	12	-	-	0.01	2.27	0	0	0	11	1	0	0	12
							0.00%	0.00%	0.00%	91.67%	8.33%	0.00%		
14	Surat	36	0.03	1.77	0.08	4.28	12	0	0	17	5	1	12	23
							33.33%	0.00%	0.00%	47.22%	13.89%	2.78%		
15	The dangs	21	0.1	0.34	0.11	5.16	2	0	0	16	2	1	2	19
							9.52%	0.00%	0.00%	76.19%	9.52%	4.76%		
16	Vadodara	29	0.28	5.28	0.08	8.8	4	0	2	9	12	2	6	23
							13.79%	0.00%	6.90%	31.03%	41.38%	6.90%		
17	Valsad	14	-	-	0.08	5.28	0	0	0	13	0	1	0	14
							0.00%	0.00%	0.00%	92.86%	0.00%	7.14%		
South Gujarat		**158**	**0.03**	**5.28**	**0.01**	**8.80**	**24**	**3**	**2**	**88**	**32**	**8**	**29**	**128**
							15.19%	1.90%	1.27%	55.70%	20.25%	5.06%		
18	Amreli	46	0.22	2.36	0.03	10	9	1	0	21	5	9	10	35
							19.57%	2.17%	0.00%	45.65%	10.87%	19.57%		
19	Bhavnagar	30	7.14	7.14	0.03	27.27	0	0	1	8	11	10	1	29
							0.00%	0.00%	3.33%	26.67%	36.67%	33.33%		
20	Jamnagar	40	0.25	14.53	0.17	9.69	5	1	4	14	7	9	10	30
							12.50%	2.50%	10.00%	35.00%	17.50%	22.50%		
21	Junagadh	46	0.34	18.39	0.01	8.88	7	2	7	16	6	8	16	30
							15.22%	4.35%	15.22%	34.78%	13.04%	17.39%		
22	Porbandar	28	0.1	5.63	0.1	16.71	6	2	2	6	3	9	10	18
							21.43%	7.14%	7.14%	21.43%	10.71%	32.14%		
23	Rajkot	33	0.61	10.39	0.81	12.28	5	2	2	10	1	13	9	24
							15.15%	6.06%	6.06%	30.30%	3.03%	39.39%		
24	Surendranagar	36	0.02	7.09	0.02	11.16	7	3	3	15	2	6	13	23
							19.44%	8.33%	8.33%	41.67%	5.56%	16.67%		
Saurashtra		**259**	**0.02**	**18.39**	**0.01**	**27.27**	**39**	**11**	**19**	**90**	**35**	**64**	**69**	**189**
							15.06%	4.25%	7.34%	34.75%	13.51%	24.71%		
25	**Kachchh**	**32**	**0.16**	**1.53**	**0.05**	**12.87**	**7**	**0**	**0**	**16**	**5**	**4**	**7**	**25**
							21.88%	0.00%	0.00%	50.00%	15.63%	12.50%		
Grand Total		**633**	**0.02**	**18.39**	**0.01**	**27.27**	**109**	**25**	**28**	**276**	**97**	**95**	**162**	**468**
							17.22%	3.95%	4.42%	43.60%	15.32%	15.01%		

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3.4 Long Term Ground Water Scenario

Long-term behaviour of water levels was studied by analysing the data for decadal average water levels and fluctuation of present year water level with respect to decadal average water levels. Maps showing variation in water level scenario over the decadal average for premonsoon and postmonsoon from 2009-18, and comparison of May, August, November 2018 against decadal average of 2008-17 and January 2019 against decadal average of 2009-18 have been prepared to evaluate the long term changes in the groundwater regime.

3.4.1 Decadal Average Depth to Water Level

Maps showing depth to water level scenario over the decade 2009-18 have been prepared to evaluate the long term changes in the groundwater regime. Average depth to water level data is given in Annexure IV and distribution of the same is discussed below.

3.4.1.1 Pre-monsoon Water Levels (2009-18)

Decadal average water level map for the period May 2009 to May 2018 (**Fig. 20**) reveals that the decadal average water level in Gujarat is generally 0.90 to 58.96m bgl. Isolated pockets of Shallow water levels of less than 2 m are observed in one or two places in the state. Depth to water level more than 40 m also observed as isolated patches in Banaskantha and adjoining areas of Gandhinagar, Sabarkantha and Mahesana district of north Gujarat region. The maximum depth of water level observed 58.96m bgl at Deesa Pz II while minimum water level is 0.90m bgl at Lilpur in Kachchh.

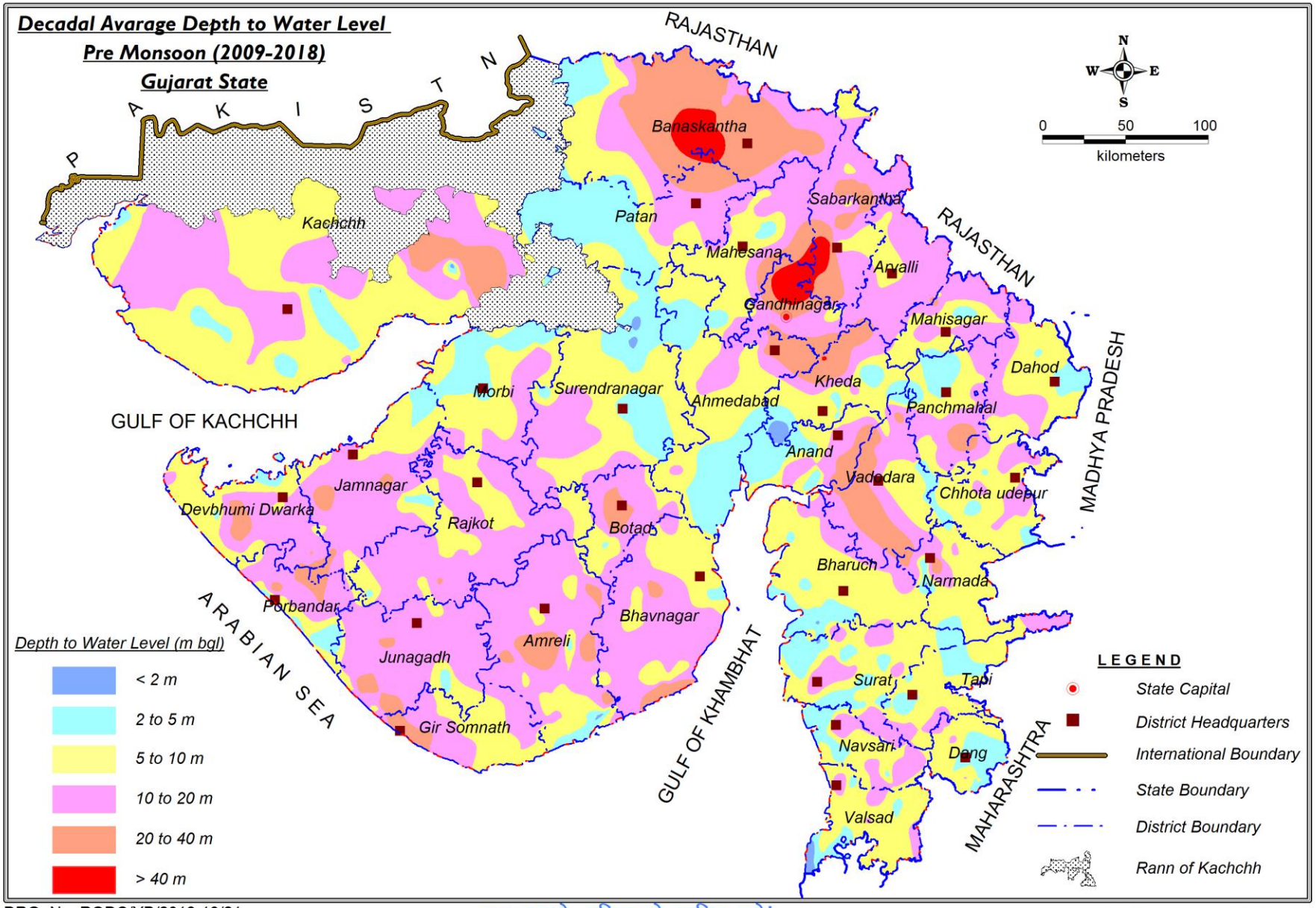
The Decadal average water levels in North Gujarat generally range from lessthan 2 to morethan 40m bgl. Water level morethan 40m are observed in isolated pockets in Banaskantha, Mahesana, Sabarkantha and Gandhinagar districts.

In South Gujarat, average water level is less than 2m bgl to 40.95m bgl. Deep water levels of 20 to 40m are observed in central part of Vadodara district which extending towards Narmada and Bharuch district and an isolated patch in Narmada district. Water level of less than 5 mbgl is found along the coast and in parts of Bharuch, The Dangs, Valsad and Surat districts.

In Saurashtra the average water level is vary from less than 2m to 38.32m with isolated pockets of 20 – 40m are found as in Amreli, Bhavnagar, Junagadh, Jamnagar and Porbandar districts of Saurashtra region except Surendranagar district.

In Kachchh district, range of the average water level is found from less than 2m to 29.36m. Deeper water levels of 20 – 40m are observed in east part of Kachchh while all other area vary with in 5 to 20m bgl.

Fig- 20



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3.4.1.2 Post-monsoon Water Levels (2009-18)

Decadal average water level map for the period November 2009 to November 2018 (**Fig. 21**) and Annexure IV reveals that in major part of Gujarat state, the decadal average water level is mostly in the range of lessthan 2 m to morethan 40m bgl. Deep water levels of moré than 20m are observed mainly in Banaskantha, Mahsana and Sabarkantha districts of North Gujarat, Amreli district in Saurashtra, Vadodara district in South and Kachchh districts. Shallow water levels less than 2 m are observed in south Gujarat, along the little Rann and the parts connecting to the Gulf of Cambay and in scattered pockets in Saurashtra, Kachchh and North Gujarat. The deepest water observed 57.99m bgl at Deesa Pz II and shallowest is 0.19 at Pipli in Surendranagar district.

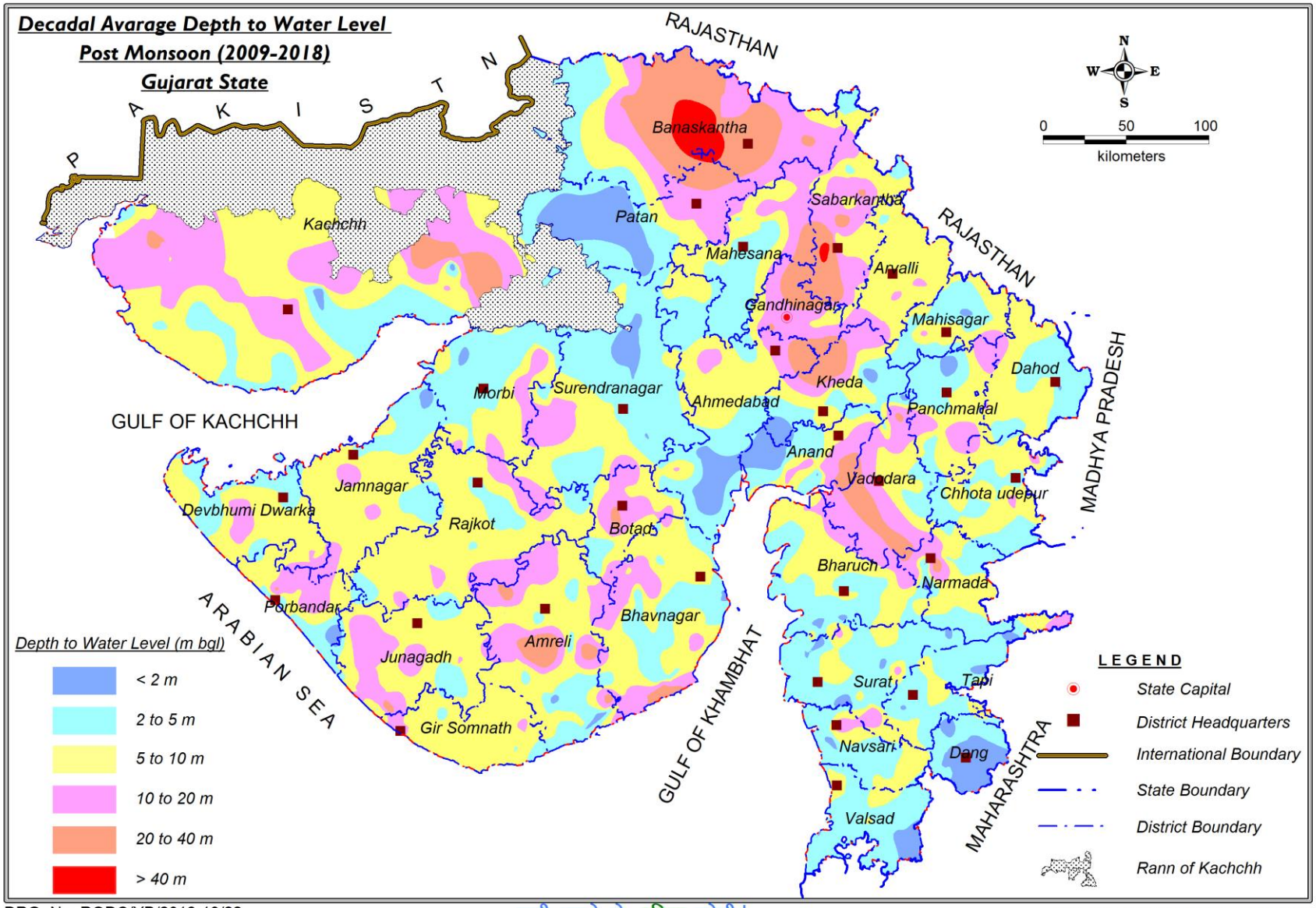
In North Gujarat, the water levels during post monsoon period are generally less than 20 mbgl. Deeper water levels of more than 20 mbgl are predominant in the district of Ahmedabad, Mahesana, Kheda, Banaskantha, Gandhinagar and Sabarkantha. Area along the little Rann and a portion connecting Gulf of Cambay and the little Rann has recorded water levels of less than 2 mbgl. Shallow water levels of less than 5m bgl are observed in major parts of Panchmahals, some parts of Dohad, Kheda and Anand districts.

In South Gujarat, water levels are generally shallower in contrast to North Gujarat areas. The water levels are generally less than 10 mbgl. Deep water levels of more than 10 mbgl are observed in central part of Navsari district. Deeper Water level more than 20m bgl are observed mostly in Vadodara and Narmada districts. Shallow water levels of less than 5 m are recorded along the coast, The Dangs and Surat district. Water level lessthan 2m are also recorded in Surat and The Dangs district.

In Saurashtra Region, water levels are in the range of 2m to 20 mbgl in general. Water levels of more than 20 m are observed in small isolated pockets in Amreli and Bhavnagar districts. Shallow water levels of less than 2m are recorded in isolated pockets along the coastal parts and the parts connecting Gulf of Cambay with little Rann of the Saurashtra Region.

In Kachchh district, the average water level is generally vary from 2 to 20m except few pockets of morethan 20m in the eastern part and central parts. In western parts, along cost line, water levels less than 10m bgl is observed.

Fig- 21



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Drg. By : Nilesh Dhokia, Draftsman

3.4.1 Decadal Variations

Long-term behaviour of water levels was studied by analysing fluctuation of present year water level with respect to decadal average water levels. Variation in water level scenario over the decade 2008-17 for May, August, November and 2009-18 for January have been prepared to evaluate the long term changes in the groundwater regime.

Fig. 22 (a, b, c & d) illustrates a comparison of the changes of the water levels during different seasons with their respective decadal averages.

Fig : 22 a

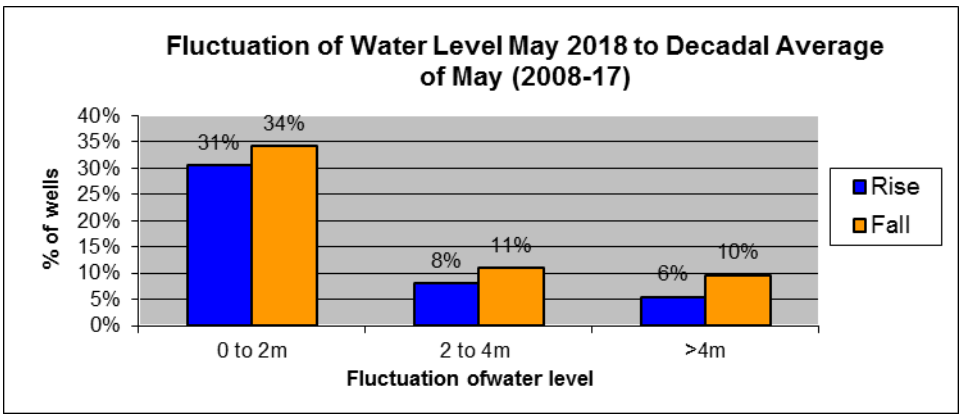


Fig : 22 b

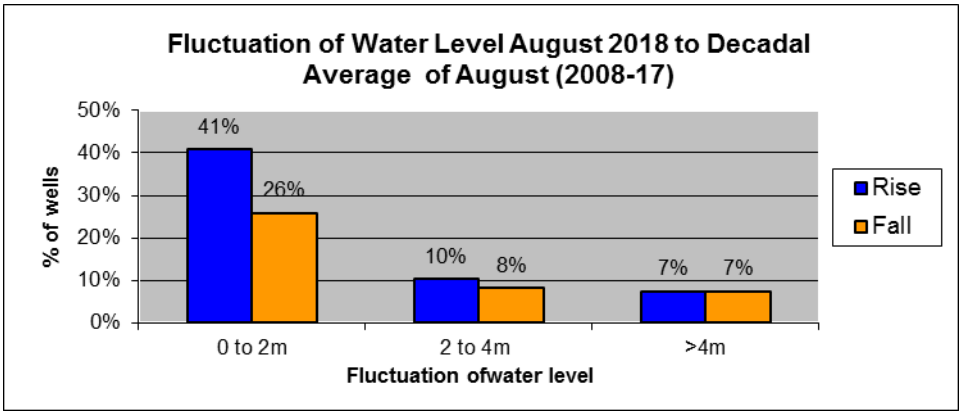


Fig : 22 c

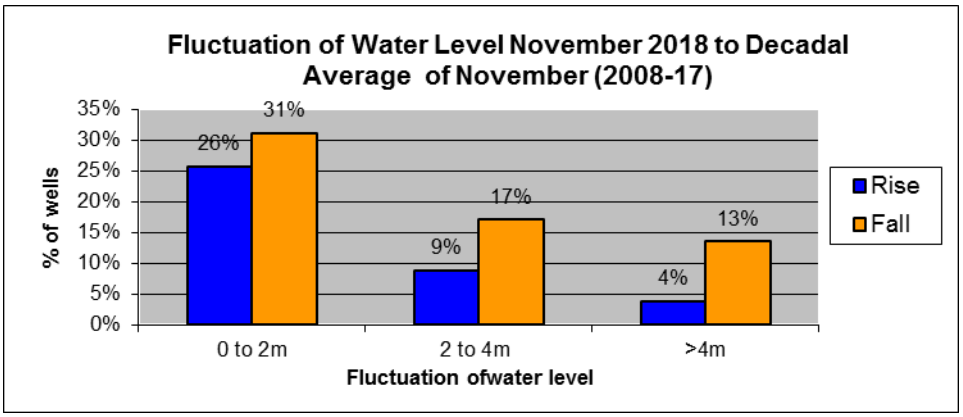
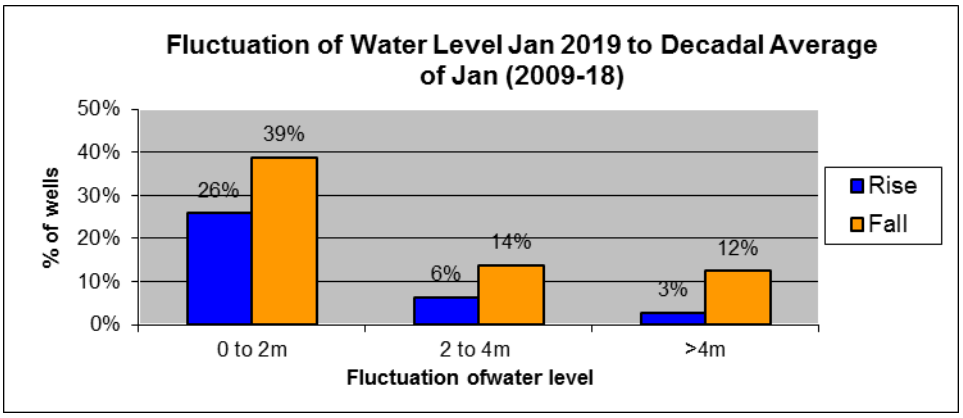


Fig : 22 d



3.4.2.1 Decadal average of May (2008-2017) to May 2018

A comparison of the water level of the May 2018 with the average water level of the May for last one decade (2008 - 2017) reveals that there is a fall of 55% of the wells monitored. Rise and fall is mostly in the range of 0 to 2m. Fall of more than 4m is observed in most of the districts of Saurashtra region, in Kachchh, Banaskantha, Sabarkantha, Mahesana, Anand, Panchmahal districts in north Gujarat. The maximum rise of 9.75m is recorded at Deesa Pz II of Banaskantha district whereas the maximum fall of 24.27m is recorded at Bhiloda in Sabarkantha district.

In North Gujarat 56% of wells show Rise and mostly are in range of 0 to 2 m (36% of wells) in entire North Gujarat. The Fall of water level is mostly less than 2 m and in about 30% of the total wells analyzed.

In south Gujarat, the major part has experienced fall (60% of wells analyzed). The fall is mainly (45% of wells) in the range of 0 -2 m. About 32% of wells recorded rise of decadal fluctuation of water level in the range of 0 to 2 m.

In Saurashtra region about 56% of wells observed fall in water level and out of which 27% wells shows fall in the range of 0 to 2m. Fall more than 4 m observed in 16% of the well analysed. Rise of water level are less than 2 m in 28% in whole region.

In Kachchh, 75% of the wells have recorded fall in water level of the district. Fall is mostly (47% of wells) in the range of 0 – 2m, where as rise of 0 – 2m is recorded in 18% of wells.

Fig- 23

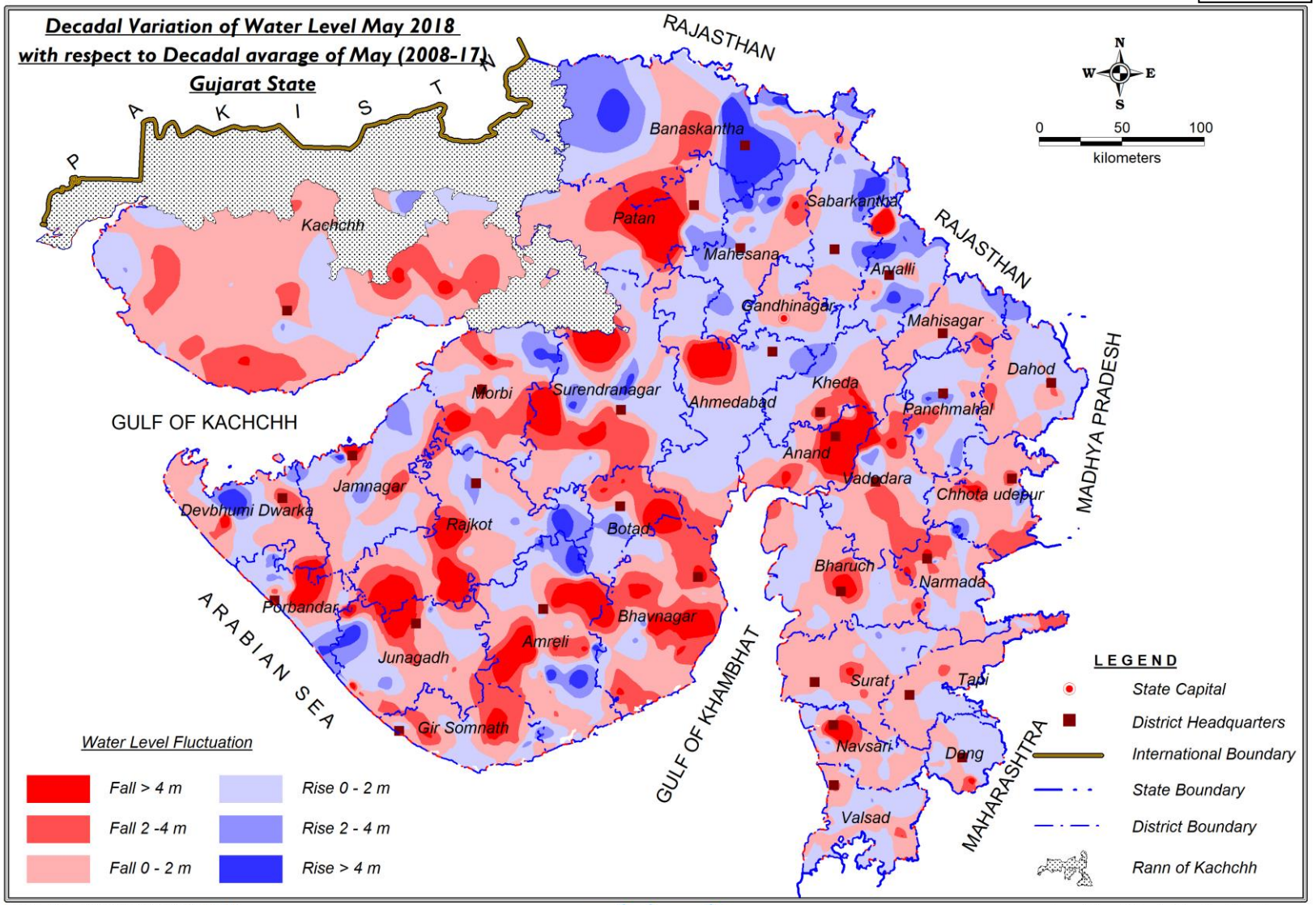


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Table-16

WELL WISE CATEGORISATION OF CHANGES IN WATER LEVEL DURING MAY 2018 WITH RESPECT TO DECADAL AVERAGE OF MAY (2008 TO 2017)

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	13	0.3	2.21	0.46	4.14	7 53.85%	1 7.69%	0 0.00%	3 23.08%	1 7.69%	1 7.69%	8	5
2	Anand	15	0.06	0.85	0.18	18.5	5 33.33%	0 0.00%	0 0.00%	3 20.00%	1 6.67%	6	5	10
3	Banaskantha	20	0.07	9.75	0.24	3.78	4 20.00%	3 15.00%	5 25.00%	6 30.00%	2 10.00%	0 0.00%	12	8
4	Dohad	28	0.08	3.62	0.29	3.28	10 35.71%	4 14.29%	0 0.00%	10 35.71%	4 14.29%	0 0.00%	14	14
5	Gandhinagar	5	0.8	1.08	0.4	0.86	2 40.00%	0 0.00%	0 0.00%	3 60.00%	0 0.00%	0 0.00%	2	3
6	Kheda	19		3.99	0.07	4.46	6 31.58%	1 5.26%	0 0.00%	10 52.63%	1 5.26%	1 5.26%	7	12
7	Mahesana	25	0.31	7.69	1.38	4.62	13 52.00%	6 24.00%	2 8.00%	3 12.00%	0 0.00%	1 4.00%	21	4
8	Panchmahals	33	0.15	6.68	0.11	3.77	9 27.27%	1 3.03%	5 15.15%	12 36.36%	6 18.18%	0 0.00%	15	18
9	Patan	9	0.38	3.54	0.4	22.05	2 22.22%	2 22.22%	0 0.00%	3 33.33%	1 11.11%	1 11.11%	4	5
10	Sabarkantha	49	0.03	7.82	0.03	24.27	20 40.82%	7 14.29%	7 14.29%	11 22.45%	3 6.12%	1 2.04%	34	15
	North Gujarat	**216**	**0.03**	**9.75**	**0.03**	**24.27**	**78** 36.11%	**25** 11.57%	**19** 8.80%	**64** 29.63%	**19** 8.80%	**11** 5.09%	**122**	**94**
11	Bharuch	29	0.14	2.05	0.06	7.23	10 34.48%	1 3.45%	0 0.00%	14 48.28%	1 3.45%	2 6.90%	11	17
12	Narmada	23	0.18	5.37	-	4.75	6 26.09%	1 4.35%	2 8.70%	9 39.13%	2 8.70%	3 13.04%	9	14
13	Navsari	22	-	2.6	0.01	13.11	8 5.00%	1 1.00%	0 0.00%	11 13.00%	1 1.00%	1 1.00%	9	13
14	Surat	49	0.04	2.31	-	5.04	15 30.61%	2 4.08%	0 0.00%	24 48.98%	4 8.16%	1 2.04%	17	29
15	The dangs	23	0.11	1.66	0.09	7.53	10 43.48%	0 0.00%	0 0.00%	11 47.83%	1 4.35%	1 4.35%	10	13
16	Vadodara	42	0.18	4.08	-	9.08	10 23.81%	2 4.76%	1 2.38%	15 35.71%	8 19.05%	4 9.52%	13	27
17	Valsad	20	0.24	2.65	0.02	4.18	7 35.00%	1 5.00%	0 0.00%	9 45.00%	1 5.00%	1 5.00%	8	11
	South Gujarat	**208**	**0.04**	**5.37**	**0.01**	**13.11**	**66** 31.73%	**8** 3.85%	**3** 1.44%	**93** 44.71%	**18** 8.65%	**13** 6.25%	**77**	**124**
18	Amreli	45	0.08	7.19	0.11	12.41	14 31.11%	0 0.00%	6 13.33%	12 26.67%	5 11.11%	7 15.56%	20	24
19	Bhavnagar	38	0.01	4.35	0.06	8.37	6 15.79%	3 7.89%	1 2.63%	11 28.95%	7 18.42%	10 26.32%	10	28
20	Jamnagar	41	0.25	8.73	0.03	10.17	13 31.71%	5 12.20%	2 4.88%	14 34.15%	2 4.88%	5 12.20%	20	21
21	Junagadh	54	0.18	5.51	0.02	9	9 16.67%	6 11.11%	2 3.70%	21 38.89%	10 18.52%	6 11.11%	17	37
22	Porbandar	29	0.23	4.58	1.18	11.2	15 51.72%	4 13.79%	3 10.34%	2 6.90%	1 3.45%	4 13.79%	22	7
23	Rajkot	43	0.04	6.56	0.32	16.22	12 27.91%	3 6.98%	1 2.33%	10 23.26%	9 20.93%	8 18.60%	16	27
24	Surendranagar	34	0.08	5.04	0.25	11.15	10 29.41%	4 11.76%	5 14.71%	8 23.53%	2 5.88%	5 14.71%	19	15
	Saurashtra	**284**	**0.01**	**8.73**	**0.02**	**16.22**	**79** 27.82%	**25** 8.80%	**20** 7.04%	**78** 27.46%	**36** 12.68%	**45** 15.85%	**124**	**159**
25	**Kachchh**	**51**	**0.08**	**3.37**	**0.18**	**5.8**	9 17.65%	3 5.88%	0 0.00%	24 47.06%	10 19.61%	4 7.84%	12	38
	Grand Total	**759**	**0.01**	**9.75**	**0.01**	**24.27**	**232** 30.57%	**61** 8.04%	**42** 5.53%	**259** 34.12%	**83** 10.94%	**73** 9.62%	**335**	**415**

3.4.2.2 Decadal average of August (2008 to 2017) to August 2018

A comparison of the water level of the August 2018 with the average water level of the August for last one decade (2008-2017) **Fig 24** & **Table 17** reveals that there is a rise in 59% of well analysed. Rise is mostly in the range of 0 to 2 m (41% of Total well). The rise of more than 2m observed mostly in Saurashtra and north Gujarat region. The maximum rise of 15.22m is recorded in Dhrangdhra of Surendranagar district whereas the maximum decline of 16.27m is recorded in Morjhar of Amreli district.

In North Gujarat, 53% of wells have shown rise and mostly in range of 0 to 2m (38% of wells) & 2 - 4m (11% of well). Fall of water level is located in the adjoining area of Mahesana, Gandhinagar and Sabarkantha districts of North Gujarat.

South Gujarat has experienced fall in 23% of wells analysed whereas 77% shows rise. In the range of 0 to 2 m, 17% of well shows fall while 60% of wells shows rise. Morethan 4m of fall in water shows in Valsad in south region.

In Saurashtra region, 54% of total well shows rise in water level where as 46% shows fall. Fall of water level in more than 4m is observed in 9% of the wells in Junagadh, Amreli, Bhavnagar, Porbandar districts. The rise in water level is mostly in central part of Saurashtra of Bhavnagar, Amreli, Junagarh and Surendranagar districts but fall in water level covers the west and south part of Saurashtra area.

In Kachchh, 68% of the wells analysed have recorded fall in water level in the district. Fall is mostly (45% of wells) in the range of 2 to >4 m. Rise is observed in 24% wells in the district ain the range of 0 – 2 m.

Fig- 24

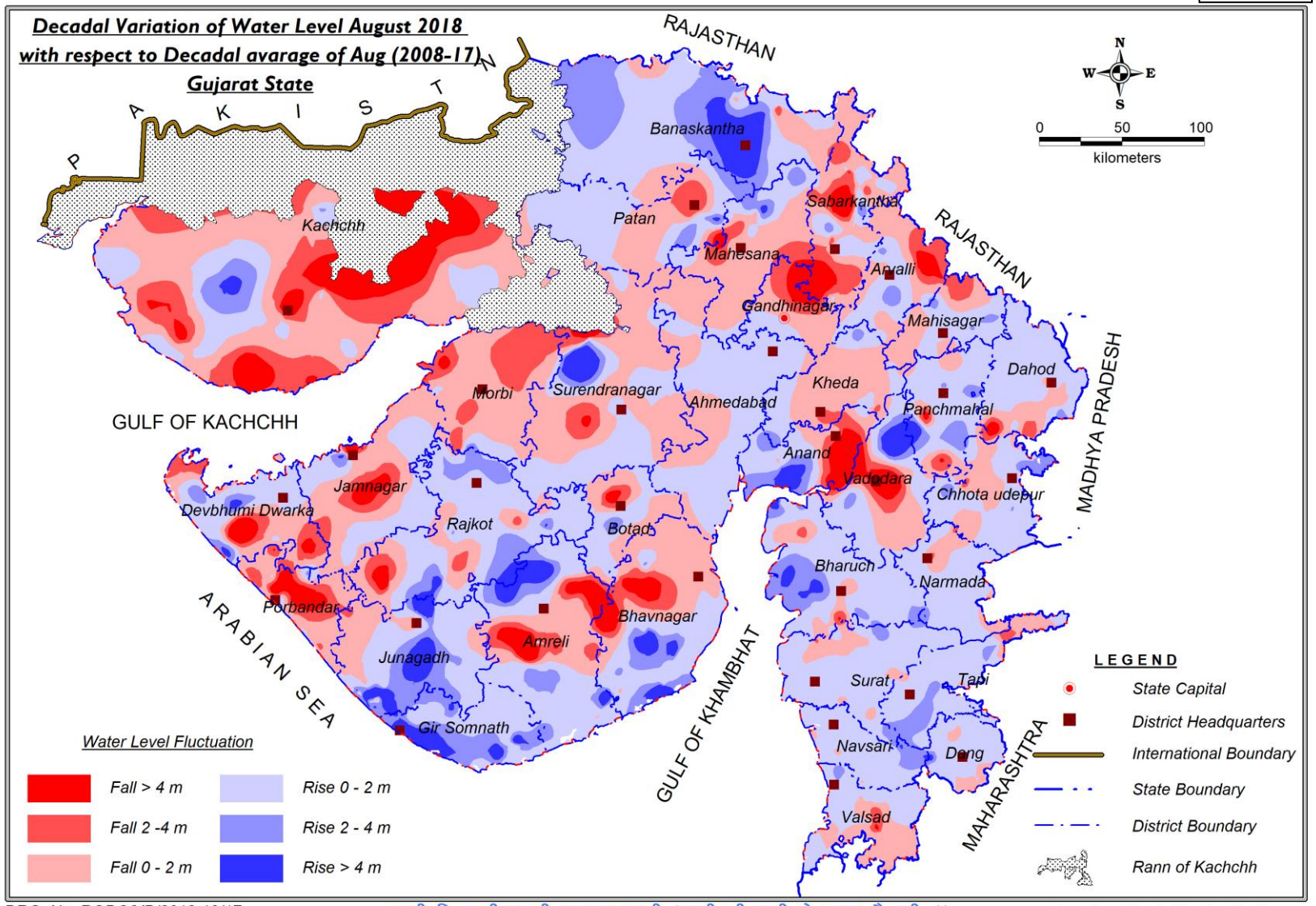

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Table-17

WELL WISE CATEGORISATION OF CHANGES IN WATER LEVEL DURING AUGUST 2018 WITH RESPECT TO DECADAL AVERAGE OF AUGUST (2008 To 2017)

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	18	0.12	1.72	0.31	3.2	10 55.56%	0 0.00%	0 0.00%	7 38.89%	1 5.56%	0 0.00%	10	8
2	Anand	14	1.32	8.37	0.43	13.89	2 14.29%	3 21.43%	1 7.14%	3 21.43%	2 14.29%	3 21.43%	6	8
3	Banaskantha	17	0.25	9.78	0.46	3.68	5 29.41%	4 23.53%	4 23.53%	3 17.65%	1 5.88%	0 0.00%	13	4
4	Dohad	29	0.01	2.44	0.01	7.06	19 65.52%	2 6.90%	0 0.00%	6 20.69%	1 3.45%	1 3.45%	21	8
5	Gandhinagar	3	0.57	0.7	0.75	0.75	2 66.67%	0 0.00%	0 0.00%	1 33.33%	0 0.00%	0 0.00%	2	1
6	Kheda	16	0.14	2.75	0.01	2.7	3 18.75%	1 6.25%	0 0.00%	10 62.50%	2 12.50%	0 0.00%	4	12
7	Mahesana	24	0.17	5.29	0.01	3.75	5 20.83%	2 8.33%	1 4.17%	14 58.33%	2 8.33%	0 0.00%	8	16
8	Panchmahals	33	0.02	5.55	0.18	5.57	18 54.55%	6 18.18%	1 3.03%	5 15.15%	1 3.03%	2 6.06%	25	8
9	Patan	8	0.86	5.06	0.71	6.73	2 25.00%	1 12.50%	1 12.50%	2 25.00%	0 0.00%	2 25.00%	4	4
10	Sabarkantha	44	0.04	4.5	0.06	11.36	12 27.27%	4 9.09%	1 2.27%	16 36.36%	7 15.91%	4 9.09%	17	27
	North Gujarat	**206**	**0.01**	**9.78**	**0.01**	**13.89**	**78** 37.86%	**23** 11.17%	**9** 4.37%	**67** 32.52%	**17** 8.25%	**12** 5.83%	**110**	**96**
11	Bharuch	28	0.2	5.54	0.41	4.56	13 46.43%	4 14.29%	4 14.29%	5 17.86%	1 3.57%	1 3.57%	21	7
12	Narmada	16	0.08	4.24	0.01	3.28	11 68.75%	0 0.00%	1 6.25%	2 12.50%	2 12.50%	0 0.00%	12	4
13	Navsari	18	0.19	4.91	0.06	0.22	12 66.67%	2 11.11%	1 5.56%	3 16.67%	0 0.00%	0 0.00%	15	3
14	Surat	50	0.02	2.74	0.07	3.32	29 58.00%	10 20.00%	0 0.00%	9 18.00%	2 4.00%	0 0.00%	39	11
15	The dangs	23	0.01	6.18	0.02	0.33	16 69.57%	0 0.00%	1 4.35%	6 26.09%	0 0.00%	0 0.00%	17	6
16	Vadodara	26	0.02	7.96	0.58	8.32	16 61.54%	5 19.23%	1 3.85%	2 7.69%	1 3.85%	1 3.85%	22	4
17	Valsad	17	0.05	2.69	0.01	4.95	9 52.94%	2 11.76%	0 0.00%	4 23.53%	1 5.88%	1 5.88%	11	6
	South Gujarat	**178**	**0.01**	**7.96**	**0.01**	**8.32**	**106** 59.55%	**23** 12.92%	**8** 4.49%	**31** 17.42%	**7** 3.93%	**3** 1.69%	**137**	**41**
18	Amreli	42	0.11	7.2	0.05	16.27	15 35.71%	5 11.90%	3 7.14%	10 23.81%	4 9.52%	5 11.90%	23	19
19	Bhavnagar	42	0.00	9.76	0.08	11.9	17 40.48%	3 7.14%	5 11.90%	10 23.81%	2 4.76%	5 11.90%	25	17
20	Jamnagar	43	0.17	5.45	0.2	11.98	17 39.53%	2 4.65%	3 6.98%	11 25.58%	4 9.30%	6 13.95%	22	21
21	Junagadh	57	0.07	11.53	0.02	2.96	19 33.33%	8 14.04%	20 35.09%	8 14.04%	2 3.51%	0 0.00%	47	10
22	Porbandar	30	0.02	2.58	0.04	8.64	6 20.00%	1 3.33%	0 0.00%	9 30.00%	7 23.33%	7 23.33%	7	23
23	Rajkot	44	0.05	6.05	0.06	8.17	12 27.27%	6 13.64%	3 6.82%	15 34.09%	6 13.64%	2 4.55%	21	23
24	Surendranagar	34	0.06	15.22	0.01	6.4	13 38.24%	0 0.00%	1 2.94%	15 44.12%	3 8.82%	2 5.88%	14	20
	Saurashtra	**292**	**0.00**	**15.22**	**0.01**	**16.27**	**99** 33.90%	**25** 8.56%	**35** 11.99%	**78** 26.71%	**28** 9.59%	**27** 9.25%	**159**	**133**
25	**Kachchh**	**38**	**0.31**	**4.84**	**0.11**	**6.46**	9 23.68%	2 5.26%	1 2.63%	9 23.68%	6 15.79%	11 28.95%	12	26
	Grand Total	**714**	**0.00**	**15.22**	**0.01**	**16.27**	**292** 40.90%	**73** 10.22%	**53** 7.42%	**185** 25.91%	**58** 8.12%	**53** 7.42%	**418**	**296**

3.4.2.3 Decadal average of November(2008-2017) to November 2018

A comparison of the water level of the November 2018 with the average water level of the November for last one decade (2008-2017) **Fig 25** & **Table 18** reveals that there is a fall in water level in the state (62% of total well analysed). Rise and fall is mostly in the range of 0 to 2m. Fall of more than 2m is observed mostly in Saurashtra and Kachchh region, also Anand, central north Gujarat and Vadodara, Narmada districts in south Gujarat region. The maximum rise of 6.73m is recorded in Palanpur of Banaskantha district whereas the maximum fall of 40.84m is recorded in Muli of Surendranagar district.

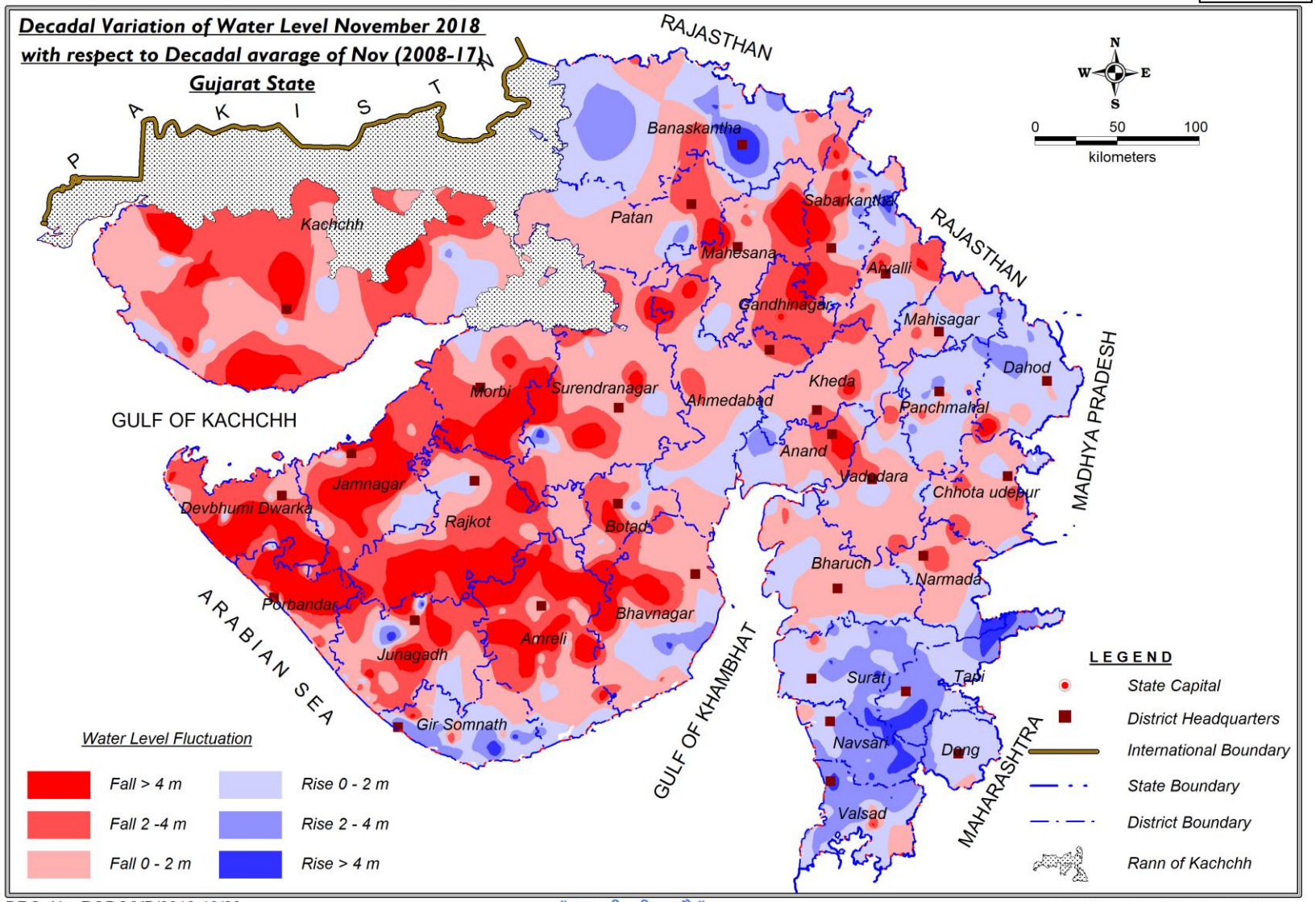
In North Gujarat 56% of wells are shown fall and mostly well are in range of 0 to 2 m (32% of wells) in entire North Gujarat. The Rise of water level found in 44% of the wells of which 33% of wells were found in the range of 0 to 2m.

In South Gujarat, 61% of total well analysed show rise where as 39% shows fall. In the range of 0 to 2 m, 35% shows rise and 31% shows fall scattered in whole South Gujarat region.

In Saurashtra region about 78% of wells analysed show fall in water level and out of which 54% wells in the range of 0 to 4m. Rise of water level are experienced in 22% of the well and 16% are in the 0 to 2m.

In Kachchh, 81% of the total wells analysed are recorded fall in water level in the district. Fall is mostly (58% of wells) in the range of 0 – 4 m. Fall in morethan 4m is observed in 23% of the wells analysed in distributed all over the Kachchh region.

Fig- 25



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Drg. By : Nilesh Dhokia, Draftsman

Table-18

WELL WISE CATEGORISATION OF CHANGES IN WATER LEVEL DURING NOVEMBER 2018 WITH RESPECT TO DECADAL AVERAGE OF NOVEMBER (2008 To 2017)

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	18	0.3	3.05	0.14	7.87	3 16.67%	1 5.56%	0 0.00%	8 44.44%	4 22.22%	2 11.11%	4	14
2	Anand	14	0.09	3.5	0.05	6.6	3 21.43%	2 14.29%	0 0.00%	5 35.71%	3 21.43%	1 7.14%	5	9
3	Banaskantha	16	0.64	6.73	0.13	2.91	3 18.75%	2 12.50%	3 18.75%	5 31.25%	3 18.75%	0 0.00%	8	8
4	Dohad	29	0.02	3.83	0.05	8.19	17 58.62%	4 13.79%	0 0.00%	6 20.69%	1 3.45%	1 3.45%	21	8
5	Gandhinagar	3	-	-	2.57	3.39	0 0.00%	0 0.00%	0 0.00%	0 0.00%	3 100.00%	0 0.00%	0	3
6	Kheda	15	0.05	0.46	0.08	5.6	4 26.67%	0 0.00%	0 0.00%	7 46.67%	3 20.00%	1 6.67%	4	11
7	Mahesana	20	0.22	0.9	0.02	12.34	6 30.00%	0 0.00%	0 0.00%	9 45.00%	4 20.00%	1 5.00%	6	14
8	Panchmahals	32	0.23	2.94	0.26	3.17	18 56.25%	4 12.50%	0 0.00%	8 25.00%	2 6.25%	0 0.00%	22	10
9	Patan	8	3.43	3.43	0.72	11.59	0 0.00%	1 12.50%	0 0.00%	3 37.50%	2 25.00%	2 25.00%	1	7
10	Sabarkantha	47	0.1	5.89	0.06	6.85	13 27.66%	4 8.51%	1 2.13%	14 29.79%	8 17.02%	7 14.89%	18	29
	North Gujarat	**202**	**0.02**	**6.73**	**0.02**	**12.34**	**67** 33.17%	**18** 8.91%	**4** 1.98%	**65** 32.18%	**33** 16.34%	**15** 7.43%	**89**	**113**
11	Bharuch	32	0.2	2.43	0.02	2.55	7 21.88%	1 3.13%	0 0.00%	23 71.88%	1 3.13%	0 0.00%	8	24
12	Narmada	23	0.04	5.18	0.03	4.53	5 21.74%	0 0.00%	1 4.35%	13 56.52%	3 13.04%	1 4.35%	6	17
13	Navsari	20	0.17	5.21	0.8	0.8	6 30.00%	8 40.00%	5 25.00%	1 5.00%	0 0.00%	0 0.00%	19	1
14	Surat	48	0.25	5.47	3.38	3.38	21 43.75%	16 33.33%	10 20.83%	0 0.00%	1 2.08%	0 0.00%	47	1
15	The dangs	23	0.21	4.03	0.21	3.21	16 69.57%	2 8.70%	1 4.35%	3 13.04%	1 4.35%	0 0.00%	19	4
16	Vadodara	39	0.07	1.74	0.1	4.26	11 11.00%	0 3.00%	0 1.00%	20 16.00%	7 4.00%	1 1.00%	11	28
17	Valsad	20	0.69	6.69	0.83	4.71	5 25.00%	9 45.00%	2 10.000%	3 15.00%	0 0.00%	1 5.00%	16	4
	South Gujarat	**205**	**0.04**	**6.69**	**0.02**	**4.71**	**71** 34.63%	**36** 17.56%	**19** 9.27%	**63** 30.73%	**13** 6.34%	**3** 1.46%	**126**	**79**
18	Amreli	50	0.33	2.74	0.02	13.88	9 18.00%	1 2.00%	0 0.00%	19 38.00%	6 12.00%	15 30.00%	10	40
19	Bhavnagar	40	0.01	4.93	0.09	11.99	10 25.00%	2 5.00%	1 2.50%	14 35.00%	7 17.50%	6 15.00%	13	27
20	Jamnagar	44	0.07	1.72	0.41	12.6	8 18.18%	0 0.00%	0 0.00%	8 18.18%	14 31.82%	14 31.82%	8	36
21	Junagadh	60	0.01	6.22	0.13	7.55	16 26.67%	6 10.00%	4 6.67%	13 21.67%	14 23.33%	7 11.67%	26	34
22	Porbandar	30	0.58	2.93	0.21	24.42	1 3.33%	1 3.33%	0 0.00%	11 36.67%	3 10.00%	14 46.67%	2	28
23	Rajkot	41	1.39	1.72	0.24	15.63	2 4.88%	0 0.00%	0 0.00%	11 26.83%	18 43.90%	10 24.39%	2	39
24	Surendranagar	36	0.01	5.28	0.02	40.84	3 8.33%	1 2.78%	1 2.78%	18 50.00%	6 16.67%	7 19.44%	5	31
	Saurashtra	**301**	**0.01**	**6.22**	**0.02**	**40.84**	**49** 16.28%	**11** 3.65%	**6** 1.99%	**94** 31.23%	**68** 22.59%	**73** 24.25%	**66**	**235**
25	**Kachchh**	**48**	**0.05**	**3.04**	**0.35**	**16.09**	**7** 14.58%	**2** 4.17%	**0** 0.00%	**13** 27.08%	**15** 31.25%	**11** 22.92%	9	39
	Grand Total	**756**	**0.01**	**6.73**	**0.02**	**40.84**	**194** 25.66%	**67** 8.86%	**29** 3.84%	**235** 31.08%	**129** 17.06%	**102** 13.49%	**290**	**466**

RODC, WCR, Ahmedabad

3.4.2.4 Decadal average of January(2009-2018) to January 2019

A comparison of the water level of the January 2019 with the average water level of the January for last one decade (2009-2018) **Fig 26** & **Table 19** reveals that there is a fall in water level in the state (65% of total well analysed). Rise and fall is mostly in the range of 0 to 2m. Fall of more than 4m is observed mostly in Saurashtra and Kachchh region and occur as isolated patches scattered in North Gujarat region. The maximum rise of 16.62m is recorded at Mangrol in Junagadh district whereas the maximum fall of 21.84m is recorded at Morjhar in Amreli district.

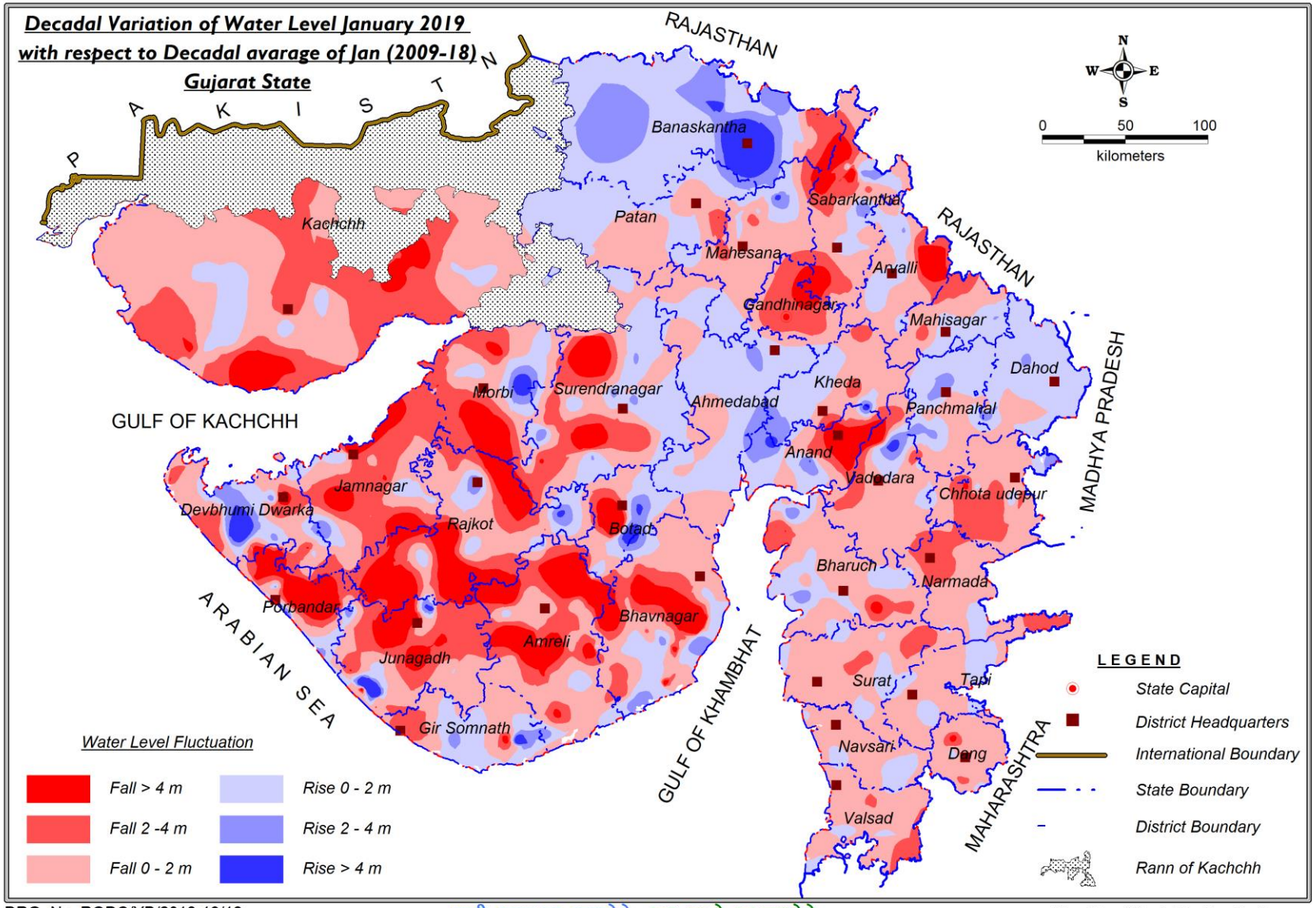
In North Gujarat 51% of wells are shown fall with mostly well are in range of 0 to 2 m (37% of wells), 48% of total well shows fall with 35% in the range of 0 – 2m. In a patch from Gandhinagar, Mahesana and Sabarkantha district shows fall in water level and in isolated patches in Anand, Kheda districts.

In south Gujarat, 74% of total well analysed shows fall whereas 26% shows rise for this decadal variation. The rise and fall mainly in the range of 0 to 2 m (24% rise & 57% fall).

In Saurashtra region, about 66% of wells observed fall in water level and out of which 44% wells shows rise in the range of 0 to 4m. Fall of water level more than 4m are experienced in 22% of the total well in region distributed all over the region. Rise of the water level in the region 34% of which 22% in 0 to 2m range and distributed sporadically in the Saurashtra region.

In Kachchh, 80% of the total wells analysed are recorded fall in water level in the district. Fall is mostly (66% of wells) in the range of 0 – 4 m. Fall mainly observed in the range of >4m in south central part of Kachchh and has 15% of total wells.

Fig- 26



DRG. No. RODC/YB/2018-19/18

पानी अगर ना बचाओगे खुद प्यासे रह जाओगे

Drg. By : Nilesh Dhokia, Draftsman

Table-19

WELL WISE CATEGORISATION OF CHANGES IN WATER LEVEL DURING JANUARY 2019 WITH RESPECT TO DECADAL AVERAGE OF JANUARY (2009 To 2018)

Sr. No.	District Name	No of well analysed	Range of Fluctuation (m)				No. of Wells Showing Fluctuation						Total No. of Wells	
			Rise		Fall		Rise			Fall				
			Min	Max	Min	Max	0 to 2	2 to 4	>4	0 to 2	2 to 4	>4	Rise	Fall
1	Ahmedabad	17	0.3	4.76	0.15	1.81	7 41.18%	1 5.88%	1 5.88%	8 47.06%	0 0.00%	0 0.00%	9	8
2	Anand	17	0.09	5.9	0.17	10.03	2 11.76%	1 5.88%	3 17.65%	5 29.41%	3 17.65%	3 17.65%	6	11
3	Banaskantha	16	0.08	12.17	0.17	4.11	6 37.50%	3 18.75%	2 12.50%	3 18.75%	1 6.25%	1 6.25%	11	5
4	Dohad	30	0.01	3.51	0.07	1.51	21 70.00%	3 10.00%	0 0.00%	6 20.00%	0 0.00%	0 0.00%	24	6
5	Gandhinagar	3	-	-	2.79	3.34	0 0.00%	0 0.00%	0 0.00%	0 0.00%	3 100.00%	0 0.00%	0	3
6	Kheda	15	0.02	1.46	0.03	3.26	4 26.67%	0 0.00%	0 0.00%	9 60.00%	2 13.33%	0 0.00%	4	11
7	Mahesana	22	0.08	5.18	0.01	3.53	7 31.82%	1 4.55%	1 4.55%	11 50.00%	2 9.09%	0 0.00%	9	13
8	Panchmahals	32	0.49	3.33	0.03	3.15	12 37.50%	6 18.75%	0 0.00%	10 31.25%	3 9.38%	0 0.00%	18	13
9	Patan	7	1.31	1.31	0.08	4.09	1 14.29%	0 0.00%	0 0.00%	5 71.43%	0 0.00%	1 14.29%	1	6
10	Sabarkantha	43	0.05	3.97	0.03	8.78	11 25.58%	4 9.30%	0 0.00%	18 41.86%	4 9.30%	6 13.95%	15	28
	North Gujarat	**202**	**0.01**	**12.17**	**0.01**	**10.03**	**71** 35.15%	**19** 9.41%	**7** 3.47%	**75** 37.13%	**18** 8.91%	**11** 5.45%	**97**	**104**
11	Bharuch	34	0.11	4.06	0.04	5.34	10 29.41%	1 2.94%	1 2.94%	19 55.88%	1 2.94%	2 5.88%	12	22
12	Narmada	20	0.23	1.1	0.28	3.99	3 15.00%	0 0.00%	0 0.00%	9 45.00%	8 40.00%	0 0.00%	3	17
13	Navsari	17	0.1	1.22	0.16	1.5	5 29.41%	0 0.00%	0 0.00%	12 70.59%	0 0.00%	0 0.00%	5	12
14	Surat	45	0.14	1.27	0.01	3.58	9 20.00%	0 0.00%	0 0.00%	30 66.67%	6 13.33%	0 0.00%	9	36
15	The dangs	22	0.04	0.54	0.05	5.02	5 22.73%	0 0.00%	0 0.00%	15 68.18%	1 4.55%	1 4.55%	5	17
16	Vadodara	34	0.02	5.6	0.01	10.52	8 23.53%	1 2.94%	1 2.94%	13 38.24%	7 20.59%	4 11.76%	10	24
17	Valsad	16	0.07	0.60	0.08	4	5 31.25%	0 0.00%	0 0.00%	9 56.25%	2 12.50%	0 0.00%	5	11
	South Gujarat	**188**	**0.02**	**5.60**	**0.01**	**10.52**	**45** 23.94%	**2** 1.06%	**2** 1.06%	**107** 56.91%	**25** 13.30%	**7** 3.72%	**49**	**139**
18	Amreli	51	0.08	3.75	0.01	21.84	8 15.69%	2 3.92%	0 0.00%	19 37.25%	8 15.69%	14 27.45%	10	41
19	Bhavnagar	42	0.03	6.51	0.33	13.12	9 21.43%	4 9.52%	1 2.38%	14 33.33%	7 16.67%	7 16.67%	14	28
20	Jamnagar	45	0.07	8.94	0.01	7.82	8 17.78%	6 13.33%	1 2.22%	12 26.67%	6 13.33%	12 26.67%	15	30
21	Junagadh	57	0.1	16.62	0.05	6.81	14 24.56%	5 8.77%	6 10.53%	16 28.07%	9 15.79%	7 12.28%	25	32
22	Porbandar	31	0.02	4.28	0.03	20.66	6 19.35%	3 9.68%	1 3.23%	8 25.81%	4 12.90%	9 29.03%	10	21
23	Rajkot	39	0.03	4.64	0.38	15.1	7 17.95%	1 2.56%	1 2.56%	10 25.64%	7 17.95%	13 33.33%	9	30
24	Surendranagar	37	0.05	6.26	0.05	9.79	13 35.14%	5 13.51%	1 2.70%	9 24.32%	4 10.81%	5 13.51%	19	18
	Saurashtra	**302**	**0.02**	**16.62**	**0.01**	**21.84**	**65** 21.52%	**26** 8.61%	**11** 3.64%	**88** 29.14%	**45** 14.90%	**67** 22.19%	**102**	**200**
25	**Kachchh**	**41**	**0.24**	**1.81**	**0.25**	**6.24**	8 19.51%	0 0.00%	0 0.00%	14 34.15%	13 31.71%	6 14.63%	8	33
	Grand Total	**733**	**0.01**	**16.62**	**0.01**	**21.84**	**189** 25.78%	**47** 6.41%	**20** 2.73%	**284** 38.74%	**101** 13.78%	**91** 12.41%	**256**	**476**

3.5 Water Table Scenario

A detailed discussion of water table scenario during different monitoring periods is described below.

3.5.1 May 2018 (Water Table in May 2018)

The water table map for pre-monsoon period (Fig. 27) reveals that the water table in different parts of the state ranges between 29m bmsl and 590.85m amsl (Annexure III). The water table mostly follows the topography of the area. Water table is highest along the eastern hilly tract of the eastern side and gradually reduces towards west/south west. Ground water flow direction is westward and southwest in north Gujarat and it turns to west in south Gujarat. Flow directions in Kachchh and Saurashtra are divergent in all directions from the centre of the regions where the height of the water table is 100m amsl, thus making groundwater mound in the central parts of both the Regions. The elevation of the water table is more than 400m amsl in the Banaskantha in north, Valsad and The Dangs in south, part of the main land Gujarat. Water table below mean sea level is observed in coastal Kachchh, Bhavnagar, Jamnagar, Junagadh, Porbandar and Rajkot districts in Saurashtra, Bharuch, Navsari, Surat, Vadodara and Valsad districts in south Gujarat.

3.6 Piezometric Configuration

Northern part of the north Gujarat is underlain by the unconsolidated alluvial deposits of post Miocene age and semi consolidated Mesozoic and Tertiary sediments. These sedimentary formations form the most prolific multi-aquifer system comprising several confined aquifers. Confined aquifers in this area are grouped into, first confined aquifer ranging in depth from 78 to 162 mbgl and second confined aquifer ranging in depth from 154 to 274 mbgl. These aquifers extend from the foothill of the Aravallis in the northeast to the little Rann of Kachchh in the west. The aerial extent of this multi-aquifer system is shown in the maps by dotted line**.** The data of the depth to water level in confined aquifer is given in Annexure IIB.

3.6.1 First Confined Aquifer – May 2018

In the alluvial area, 21 piezometers tapping the first confined aquifers were monitored and analysed during May 2018. Based on the water levels measured, an Isopiestic map was prepared (**Fig 28)**. A perusal of the map shows that in general depth to piezometric surface declines from east to west. A trough of more than 10 m bmsl is found in Patan and Mahesana districts. Another trough of morethan 40m bmsl is found in the adjoining area of Ahmedabad and Gandhinagar districts. The elevation of piezometric head varies from 40m bmsl at Adalaj of Gandhinagar district to 68m amsl at Deesa in Banaskantha district.

3.6.2 Second Confined Aquifer – May 2018

In the alluvial area, 28 piezometers tapping the second confined aquifers were monitored and analysed during May 2018. Based on the water levels measured, an Isopiestic map was prepared **Fig 29**. A perusal of the map shows that, a trough of more than 80m bmsl is found in adjoining area of Banaskantha, Patan and

Fig 27

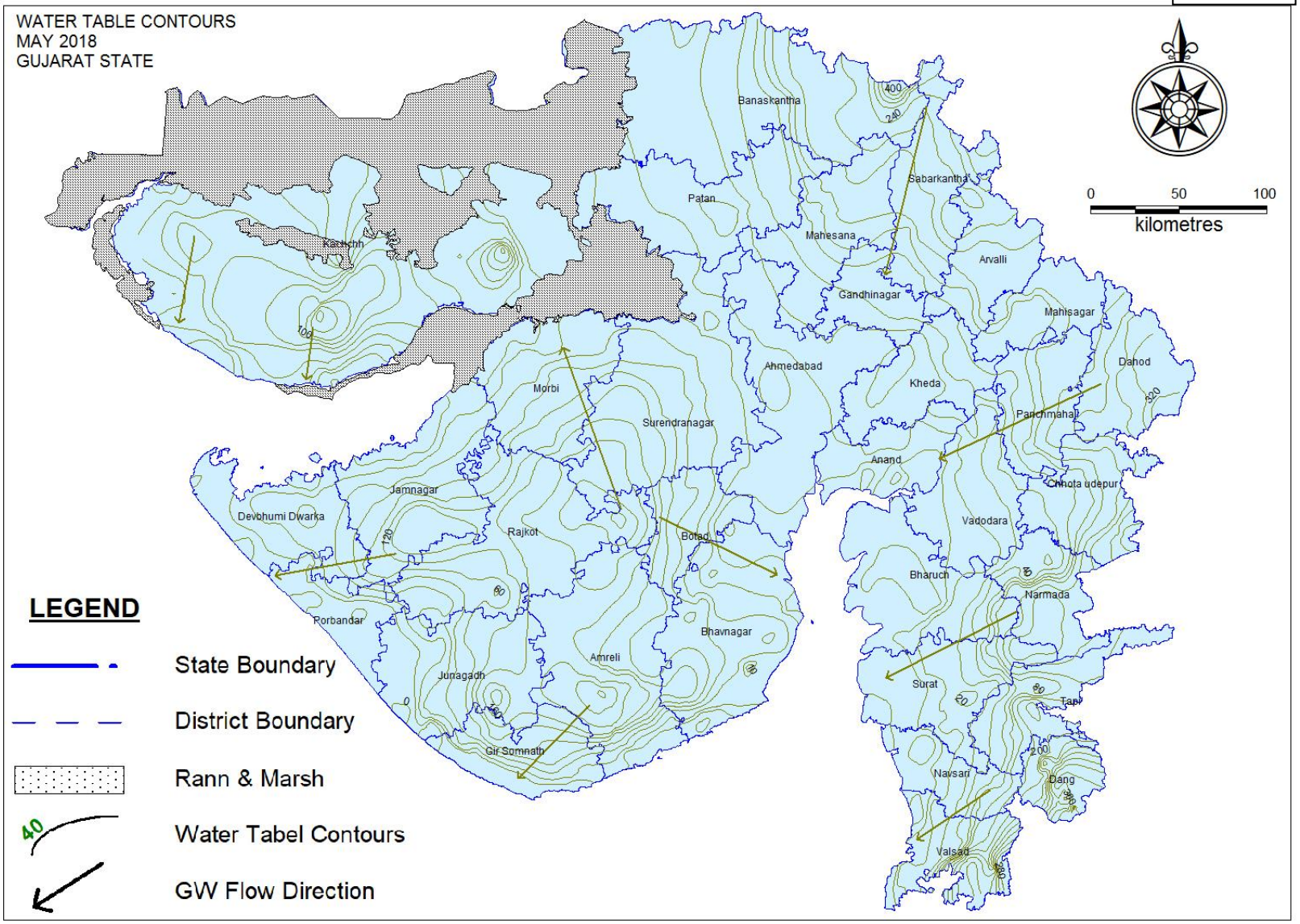
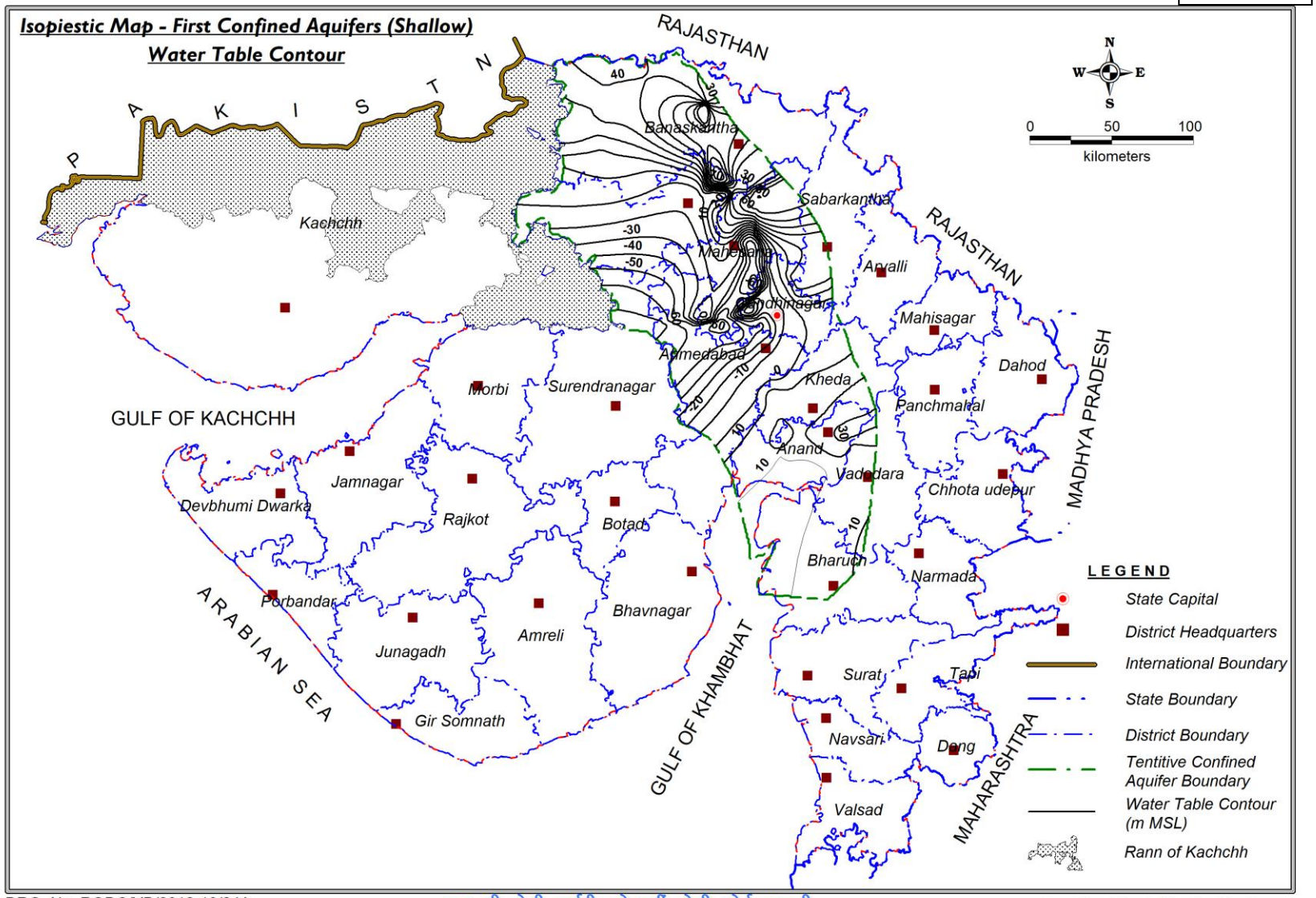

WATER TABLE CONTOURS
MAY 2018
GUJARAT STATE
0 50 100
kilometres
Banaskantha
Sabarkantha
Patan
Mahesana
Kachchh
Arvalli
Gandhinagar
Mahisagar
Ahmedabad
Dahod
Kheda
Morbi
Panchmahal
Surendranagar
Anand
Chhota udepur
Jamnagar
Devbhumi Dwarka
Vadodara
Rajkot
Botad
Bharuch
Narmada
Porbandar
Bhavnagar
Amreli
Junagadh
Surat
Tapi
Gir Somnath
Navsari
Dang
Valsad
LEGEND
State Boundary
District Boundary
Rann & Marsh
Water Tabel Contours
GW Flow Direction

Fig 28

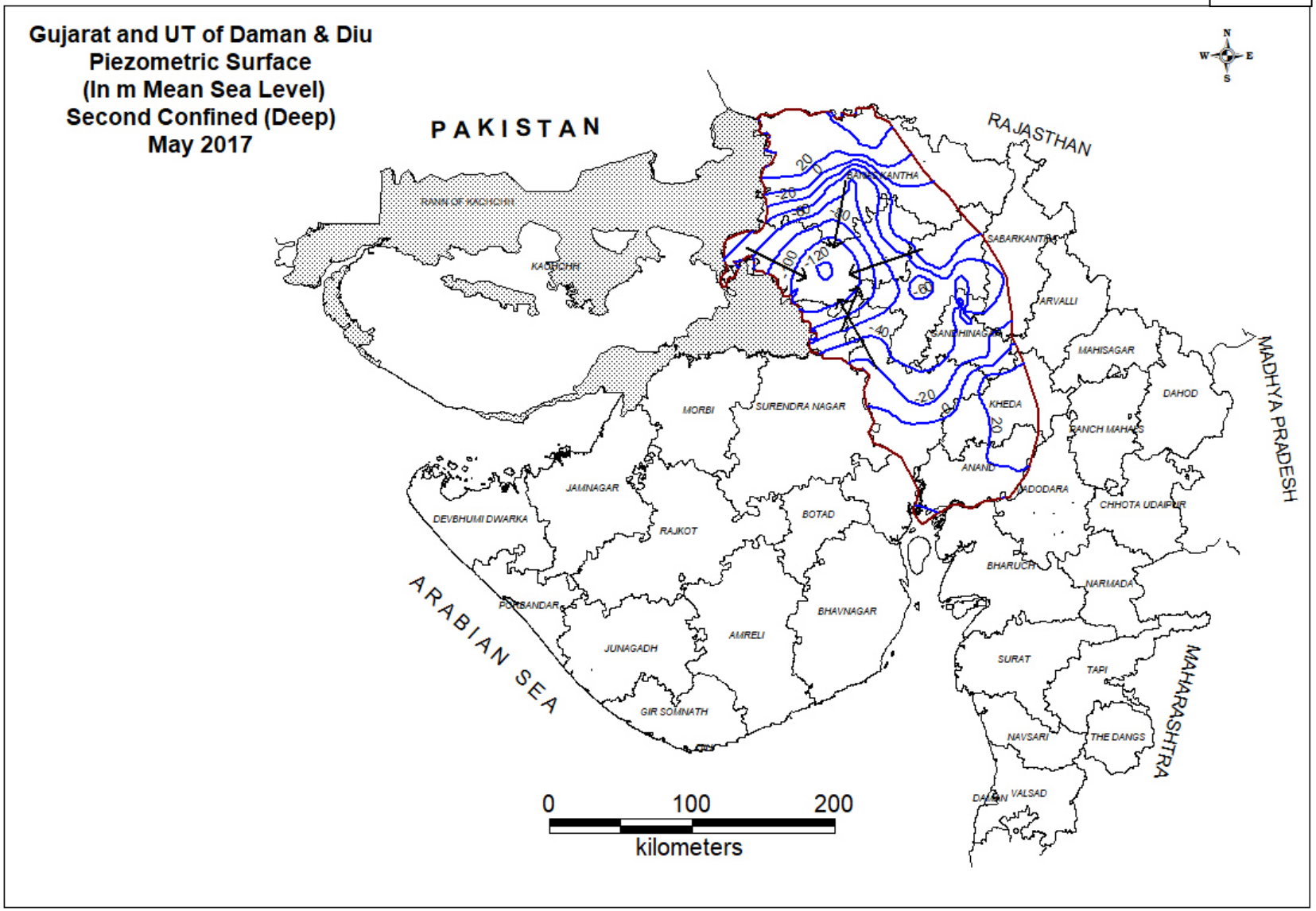


DRG. No. RODC/YB/2018-19/24A

जल की होगी बर्बादी, तो नहीं होगी कोई आबादी

Drg. By : Nilesh Dhokia, Draftsman

Fig 29


Gujarat and UT of Daman & Diu
Piezometric Surface
(In m Mean Sea Level)
Second Confined (Deep)
May 2017
PAKISTAN
RAJASTHAN
MADHYA PRADESH
MAHARASHTRA
ARABIAN SEA
RANN OF KACHCHH
KACHCHH
BANASKANTHA
SABARKANTHA
ARVALLI
GANDHINAGAR
MAHISAGAR
DAHOD
MORBI
SURENDRA NAGAR
KHEDA
PANCH MAHALS
ANAND
VADODARA
CHHOTA UDAIPUR
JAMNAGAR
DEVBHUMI DWARKA
RAJKOT
BOTAD
BHARUCH
NARMADA
PORBANDAR
BHAVNAGAR
AMRELI
JUNAGADH
SURAT
TAPI
GIR SOMNATH
NAVSARI
THE DANGS
DAMAN
VALSAD
20
0
-20
-40
-60
-80
-100
-120
0
100
200
kilometers

Mahesana. The elevation of piezometric head ranges from 44.27m amsl at Dhanera in Banaskantha to 122.40m bmsl at Jangral in Patan district.

4. HYDROCHEMISTRY

Hydrochemistry is an interdisciplinary science that deals with the chemistry of water in the natural environment. The classical use of chemical characteristics in hydrochemistry is to provide information about the regional distribution of water qualities. At the same time, hydrochemistry has a potential use for tracing the origin and history of water. The hydrochemistry can also be of immense help in yielding information about the environment through which water has circulated. Hydrochemistry can be helpful in knowing about residence time, flow path and aquifer characteristics, as the chemical reactions are time and space dependent.

The diverse physiographic, climatic, topographic and geologic conditions have given rise to diversified groundwater situations in different parts of Gujarat State. Physiographically, Gujarat State is categorized as the Mainland, Saurashtra and Kachchh. The groundwater quality of Gujarat is variable and complex as its quality is influenced by local geology, coastal salinity, inherent salinity, and contamination and heavy withdrawal of groundwater. Gujarat has the longest coastline in the country with several creeks, as a result, during tides sea water invades inland through these creeks which in turn has impact on groundwater quality along it's coasts. High chemical concentrations mostly occur in coastal regions due to seawater intrusion brought by upconing or reversal in hydraulic gradient.

4.1 Groundwater Quality Monitoring

A systematic plan for conducting water quality monitoring is called Monitoring Programme, which includes monitoring network design, preliminary survey, resource estimation, sampling, analysis, data management & reporting. Monitoring of groundwater quality is an effort to obtain information on chemical quality through representative sampling in different hydro geological units. Groundwater is commonly tapped from phreatic aquifers through dug wells in a major part of the state and through springs and hand pumps in hilly areas.

Central Ground Water Board (WCR), Ahmedabad has monitored a total number of 518 water samples collected during May 2018, for basic parameters determining pH, EC, TDS, CO3, HCO3, Cl, NO3, SO4, F, Ca, Mg, TH, Alkalinity, Na, K and SAR, involving use of instruments such as pH meter, EC meter, flame photometer, UV/ Visible Spectrophotometer and titrimetric methods. Further 518 water samples were collected for heavy metal analysis from the all locations of NHNS. The samples for heavy metal analysis was collected in 250ml Polypropylene (Tarson make) sample bottles and treated with hydrochloric acid to make the final concentration of acid 0.01 N. The Iron analysis was conducted us by Atomic Absorption spectrophotometer.

4.2 Ground water quality scenario in the state

From the analytical results it has been observed that majority of water samples collected from observation wells of CGWB in a major part of the state fall under desirable or permissible category and hence are suitable for drinking purposes. However, a small percentage of well waters are found to have concentrations of some constituents beyond the permissible limits. Such waters are not fit for human consumption and are likely harmful to health on continuous use. Based on the results it is found that groundwater in the state is mostly of calcium bicarbonate type when the Electrical conductivity is below 750uS/cm.

There are mixed cation and mixed anions type groundwater in the state when the electrical conductance is between 750 and 3200 uS/cm and waters with electrical conductance more than 3200 uS/cm are of sodium chloride type.

A total number of 518 water samples collected and analyzed for different chemical parameters from National Hydrograph Network Monitoring Station Samples for basic parameters and for Iron analysis spread over 33 districts of Gujarat. The overall results of hydro chemical analysis are attached in **Annexure V**. District wise maximum range distribution of different pollution parameters observed during analysis is summarized in the attached **Table 20.**

Major quality findings are described as under: -

4.2.1 The Electrical conductivity

Electrical conductivity or Total dissolved solids or Salinity is the saltiness or dissolved salt contents of a water body. Different substances dissolve in water giving it taste and odour. In fact, human beings have developed senses, which are able to evaluate the potability of water. Electrical conductivity represents total number of cations and anions present in groundwater, indicating ionic mobility of different ions, total dissolved solids and saline nature of water. In general water having EC < 1500 uS/cm, is considered as fresh water, EC 1500 – 15000uS/cm, is considered as Brackish water and > 15000uS/cm is considered as saline water. In general in most parts of the state the EC value is found to be very high i.e. 3200uS/cm to 15000uS/cm and more. It was observed that out of 518 water samples 78 samples show EC value more than 3200 uS/cm, which indicates the gravity of salinity problem in the area. The map showing of electrical conductivity in state is represented in **Fig 32**.

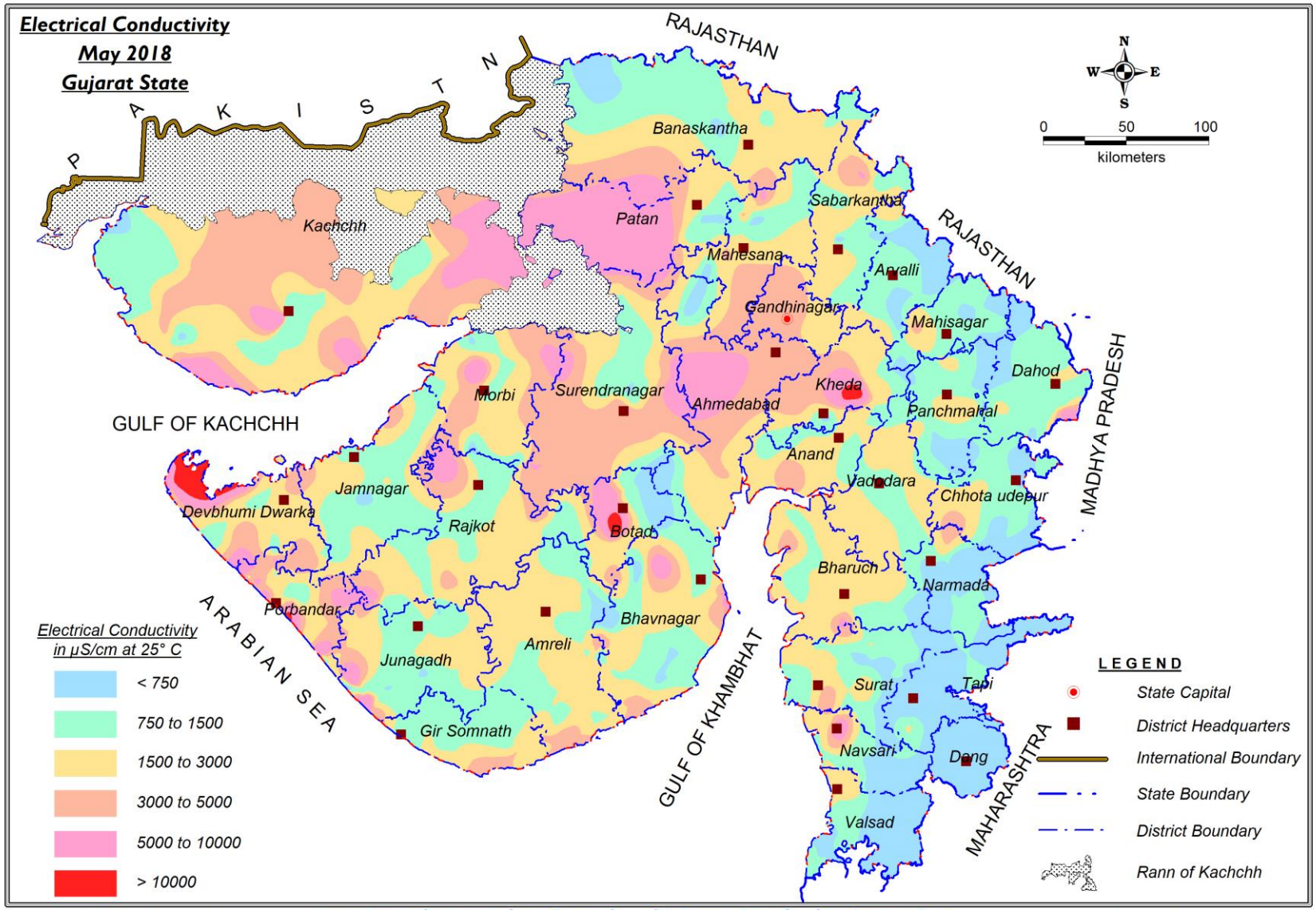
A close observation of the **Annexure-V** reveals High **EC Values** > 3200 uS/cm have been found in 78 number of samples out of 518 total number of samples analyzed indicating saline nature of water in most part of the state. Salinity problem in Northwestern parts of the state to the extent of EC having > 10000 uS/cm, showing brackish water problem at Tatam 13700 in Bhavnagar, Samarasar 26580 in Jamnagar, 12469 in Kheda, Oddar 11040 in Porbandar. Location with more than 3200 uS/cm of EC values are Kumarkhan 6170, Viramgam 4840 in Ahmedabad, Bherai 4898, Fifad 4880, Kadiyalli 5451 in Amreli, Kansari 4919 in Anand, Panoli 5530, Tankari 3465 in Bharuch, Ghogha 5722, Jalia 3579, Mahuva 3349, Tardhera 6571, Vallabhipur 7124 in Bhavnagar,

Table 20

QUALITY INDEX OF NATIONAL HYDROGRAPH MONITORING STATIONS OF GUJARAT MAY 2018

District	No of Samples	EC in uS/cm			Cl in mg/l			NO3 in mg/l			F in mg/l		
		Max	**Min**	**No of samples with EC >3200 uS/cm**	**Max**	**Min**	**No of samples >1000 mg/l**	**Max**	**Min**	**No of samples >45 mg/l**	**Max**	**Min**	**No of samples >1.5 mg/l**
Ahmedabad	8	6170	576	2	1241	43	1	68	4	3	1.18	0.67	0
Amreli	37	5451	724	3	1518	50	2	161	5	15	1.56	0.34	3
Anand	6	4919	1021	1	1156	106	1	100	29	3	1.38	0.62	0
Banaskantha	14	3012	606	0	624	44	0	115	19	10	2.08	0.12	3
Bharuch	20	5530	715	2	1454	64	1	88	6	4	1.54	0.26	1
Bhavnagar	23	13700	207	6	3057	36	3	320	3	8	2.92	0.39	2
Dohad	19	5920	569	1	2237	42	2	500	10	8	3.00	0.30	9
Gandhinagar	2	4719	2179	1	326	57	0	54	16	1	1.61	0.52	1
Jamnagar	31	26580	620	8	7347	92	5	320	5	17	1.17	0.16	0
Junagadh	41	9890	578	5	3128	50	5	110	1	14	1.39	0.00	0
Kachchh	34	9368	620	13	3018	107	7	125	1	7	4.20	0.25	7
Kheda	10	12460	636	3	4325	21	1	130	5	1	1.55	0.30	3
Mahesana	14	5467	565	2	762	33	0	165	2	2	2.46	0.01	2
Narmada	13	3666	444	1	837	35	0	200	6	2	0.98	0.02	0
Navsari	13	6900	505	2	1882	28	1	130	0	1	1.00	0.22	0
Panchmahal	27	2521	411	0	638	35	0	145	5	12	2.20	0.76	6
Patan	7	9988	630	2	3408	50	2	190	9	3	2.96	0.20	2
Porbandar	22	11040	470	9	3589	43	8	180	6	7	1.60	0.22	1
Rajkot	34	8100	584	6	2642	50	4	180	3	18	8.60	0.30	4
Sabarkantha	37	5350	410	2	1666	50	2	245	4	25	3.00	0.36	7
Surat	33	3776	334	1	1072	21	1	180	1	5	2.00	0.10	1
Surendranagar	23	6062	457	8	1418	64	7	310	7	12	5.25	0.37	5
The dangs	19	1030	298	0	178	14	0	50	0	1	0.55	0.10	0
Vadodara	17	2394	470	0	362	7	0	195	2	6	1.46	0.30	0
Valsad	14	2044	300	0	440	14	0	66	0	1	1.04	0.02	0
Grand Total	**518**	**23380**	**269**	**78**	**8652**	**14**	**53**	**1600**	**0**	**186**	**11.2**	**0**	**57**

Fig- 30



DRG. No. RODC/YB/2018-19/27

जल संरक्षण के माध्यम से पानी बचाओ, क्योंकि जल जीवन है और संरक्षण भविष्य.

Drg. By : Nilesh Dhokia, Draftsman

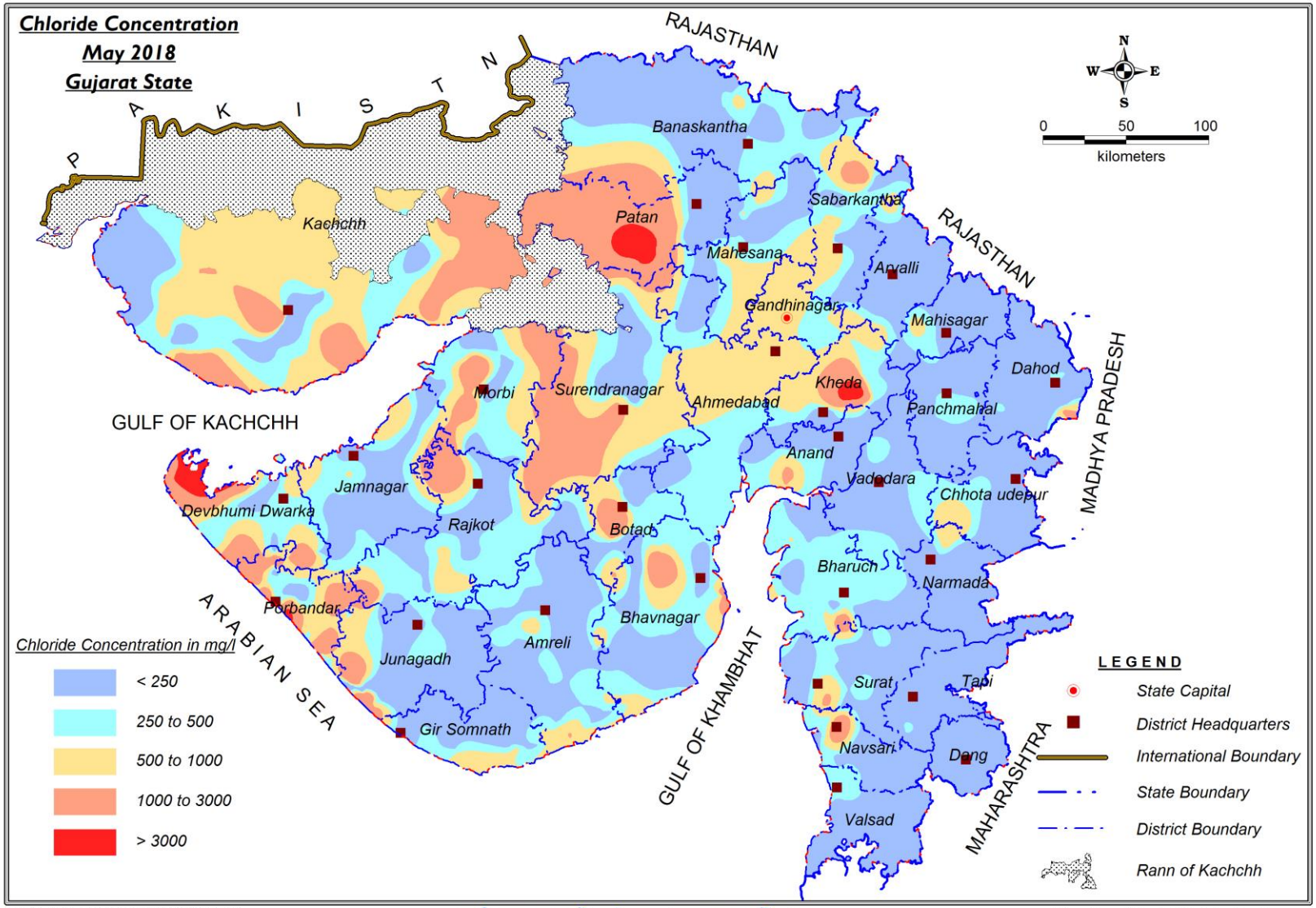
Serthapara 4718 in Gandhinagar, Bedanpur 3380, Dwarka 4062, Kajuda 3925, Kalyanpur 6452, Mojap 8760, Mota Kalawad 4352, Varvada 8010 in Jamnagar, Arena 9890, Bamanwara 9200, Khambalia 4350, Shardagam 9610, Sil Bandar 7822 in Junagadh, Bambhdai 6916, Deshalpur 5172, Devisar 3973, Khavda 3810, Kotada 3256, Kothara 3558, Lilpur 5744, Lodai 4335, Samkhiari 4053, Shinaya 6490, Sukhpur 9368, Tera 3862, Ugardi 3623 in Kachchh, Bar 3255, Kheda 3775 in Kheda, Maguna 3502, Rampura 5467 in Mahesana, Namaria 3666 in Narmada, Abrama 3489, Navsari 6900 in Navsari, Moti Chander 9988, Piprala 6012 in Patan, Balej 7828, Bhavpura 7371, Kandorana 4380, Kuchhadi 5870, Kutiyana 5510, Mojiwana 5450, Palkhada 5870, Ratadi 4463 in Porbandar, Amarnagar 8100, Ganod 6000, Jetpur Pithad 3607, Kamlapur 3570, Lajai 4914, Movaiya 6320 in Rajkot, Khedbrahma 4314, Silwad 5350 in Sabarkantha, Sachin town 3776 in Surat, Halvad 5109, Moti Maldi 5020, Muli 4010, Nava Raisangpur 4320, Shiyani 4182, Sudamda 4777, Sukhpar 6062, Surendranagar 4131 in Surendranagar districts having EC in the range of 3200 uS/cm- 10000uS/cm. In most other parts of the state water is almost fresh with respect to EC and salinity found with in 3200 uS/cm.

4.2.2 Chloride

Chloride is present in all natural waters being highly soluble and moves freely through soil and rock. In groundwater Chloride content is mostly below 250 mg/l except in cases where inland salinity is prevalent and in coastal areas. BIS have recommended a desirable limit of 250mg/l of chloride in drinking water; this concentration limit can be extended to 1000 mg/l of chloride in cases where no alternative source of water with desired concentration is available. The map showing distribution of Chloride in the state is represented in **Fig 33**.

A close observation of the **Annexure-V**, High **Chloride** > 1000mg/L have been found in 53 numbers of samples out of 518 total numbers of samples analyzed indicating saline nature of water in most part of the state. The maximum chloride value is observed in scattered way in western parts of the state to the extent of Chloride having >5000 mg/l, showing high salinity problem at Samarasar 7347 mg/l in Jamnagar district. Chloride values ranging between 1000 – 5000 mg/l have been found in Viramgam 1241 in Ahmedabad, Bherai 1269, Kadiyali 1518 in Amreli, Kansari 1156 in Anand, Panoli 1454 in Bharuch, Ghogha 1420, Jalia 1022, Tatam 3057, Vallabhipur 2237 in Bhavnagar, Gobara 1064 in Dohad, Kalyanpur 1709, Mojap 1922, Mota Kalawad 1319, Varwada 2319 in Jamnagar, Arena 2915, Bamanwara 3128, Khambalia 1355, Shardagam 3074, Sil Bandar 2628 in Junagadh, Bambhdai 2130, Deshalpur 1278, Lilpur 1349, Samkhiari 1093, Shinaya 2201, Sukhpur 3018, Ugardi 1008 in kachchh, Alina 4325 in Kheda, Navsari 1882 in Navsari, Moti Chander 3408, Piprala 1527 in Patan, Balej 2500, Bhavpura 2667, Kandorana 1319, Kuchhadi 1571, Kutiyana 1585, Mojiwana 1553, Oddar 3589, Palkhada 1355 in Porbandar, Amarnagar 2642, Ganod 1525, Lajai 1383, Movaiya 1950 in Rajkot, Khedbrahma 1383, Silwad 1666 in Sabarkantha, Sachin town 1072 in Surat, Halvad 1312, Moti Moldi 1418, Muli 1028,

Fig- 31



DRG. No. RODC/YB/2018-19/26

वर्षा जल का करें संरक्षण, भूजल का करें रक्षण

Drg. By : Nilesh Dhokia, Draftsman

Raisangpur 1170, Sudamda 1170, Sukhpur 1418, Surendranagar 1064 in Surendranagar districts identified as chloride problems area. In most of the other places chloride problem is not eminent.

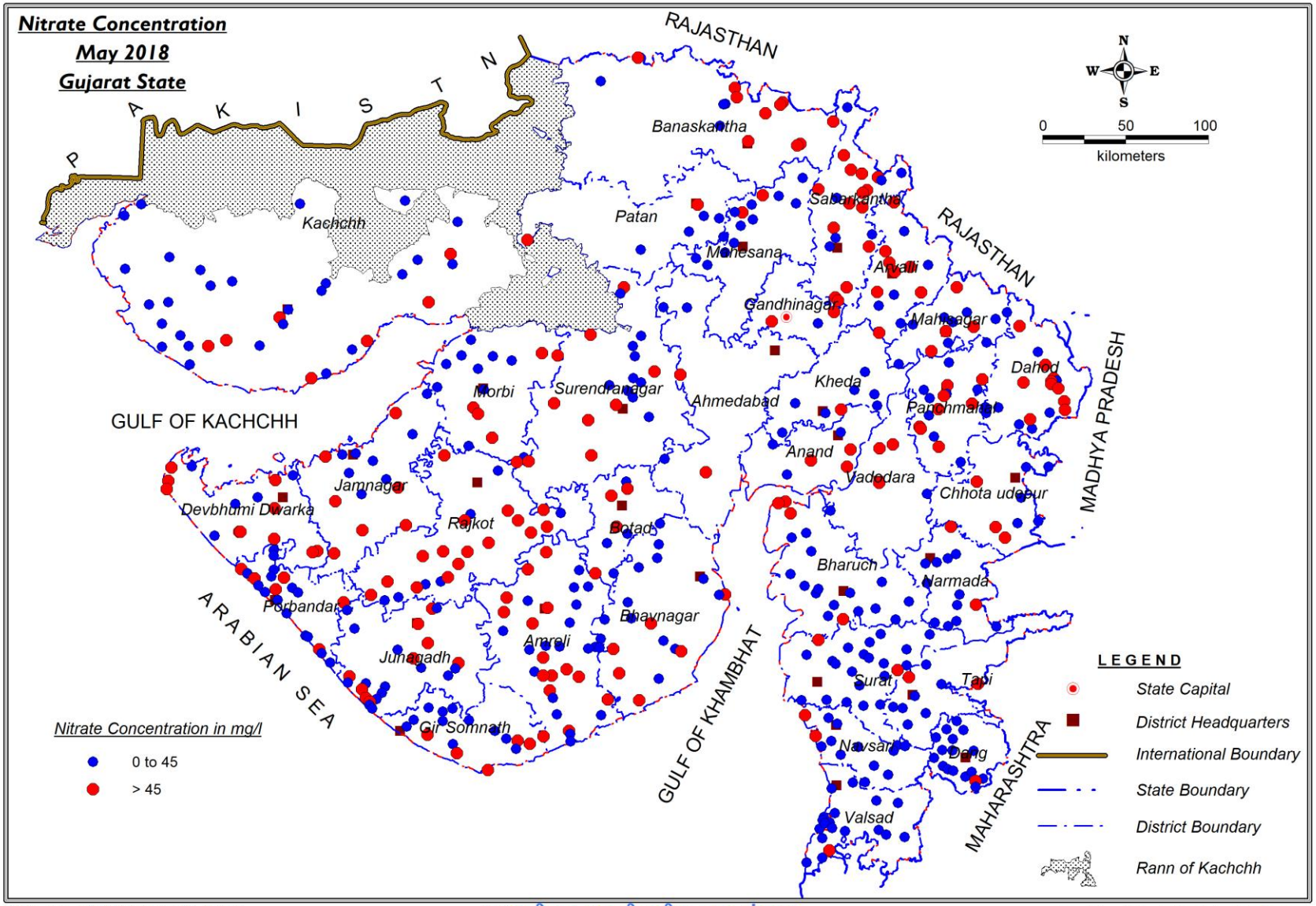
4.2.3 Nitrate

Nitrate is a naturally occurring compound that is formed in the soil when nitrogen and oxygen combine. The primary source of all nitrates is atmospheric nitrogen gas. This is converted into organic nitrogen by some plants by a process called nitrogen fixation. Dissolved nitrogen in the form of nitrate is the most common contaminant of groundwater. Nitrate in groundwater generally originates from non point sources such as leaching of chemical fertilizers and animal manure, groundwater pollution from septic and sewage discharges etc. It is difficult to identify the natural and man-made sources of nitrogen contamination of ground water. Some chemical and microbiological processes such as nitrification and denitrification also influence the nitrate concentration in ground water. The map showing distribution of nitrate in the state is represented in **Fig 34**.

As per the BIS standard for drinking water the maximum desirable limit of nitrate concentration in groundwater is 45 mg/l .Though nitrate is considered relatively non-toxic, a high nitrate concentration in drinking water is an environmental health concern arising from increased risks of methaemoglobinemia particularly to infants. Adults can tolerate little higher concentration.

Nitrate value have been found in the range of 1 to 500 mg/l where **high Nitrate** > 45mg/L, (**Annexure V**) have been found in 186 number of samples out of 518 total number of samples analyzed indicating high nitrate pollution due to use of nitrogen containing fertilizer, domestic and agriculture waste and man made anthropogenic activities. The maximum nitrate value is observed in scattered way in all parts of the state having >100 mg/l, showing high nitrate problem at Goradka 161, Mandal 132, Nageshri 155, Timbi 150, Vankiya 152 in Amreli, Dharmaj 100 in Anand, Amirgadh 115, Palanpur 105, Ratanpur 115 in Banaskantha, Ghogha 320, Shantinagar 120, Talaja 100, Tatam 145 in Bhavnagar, Dahod urban 225, Garbara 500 in Dohad, Serthapara 320 in Gandhinagar, Bed 170, Bedanpur 100, Dwarka 100, Haripur 150, Mojap 130, Seth Vadala 105, Toda 120 in Jamnagar, Chokli 105, Junagadh 110, Prempara 100 in Junagadh, Mau Moti 100, Samakhiari 125, Sukhpur 120 in Kachchh, Alindra 130 in Kheda, Unjha 165 in Mahesana, Namaria 200 in Narmada, Dandi 130 in Navsari, Ranipura 145 in Panchmahal, Piprala 190 in Patan, Bakharla 120, Kandorana 100, Kutiyana 136, Palkhada 180 in Porbandar, Halenda 130, Jasapur 100, Kamalapur 130, Lajai 150, Movaiya 180, Sindhavadar 130, Viranagar 115, Virpur 245 in Rajkot, Boral 125, Boriya 155, Choriwad 205, Gadada 110, Kesharpura 225, Mathasuliya 180, Revas 225, Seenawad 135, Silwad 110, Vaktapur 115, Kesarpur (Idar) 130 in Sabarkantha, Wadali 180 in Surat, Bamanbor 115, Dhama 180, Halvad 130, Kukavati 120, Moti Moldi

Fig- 32

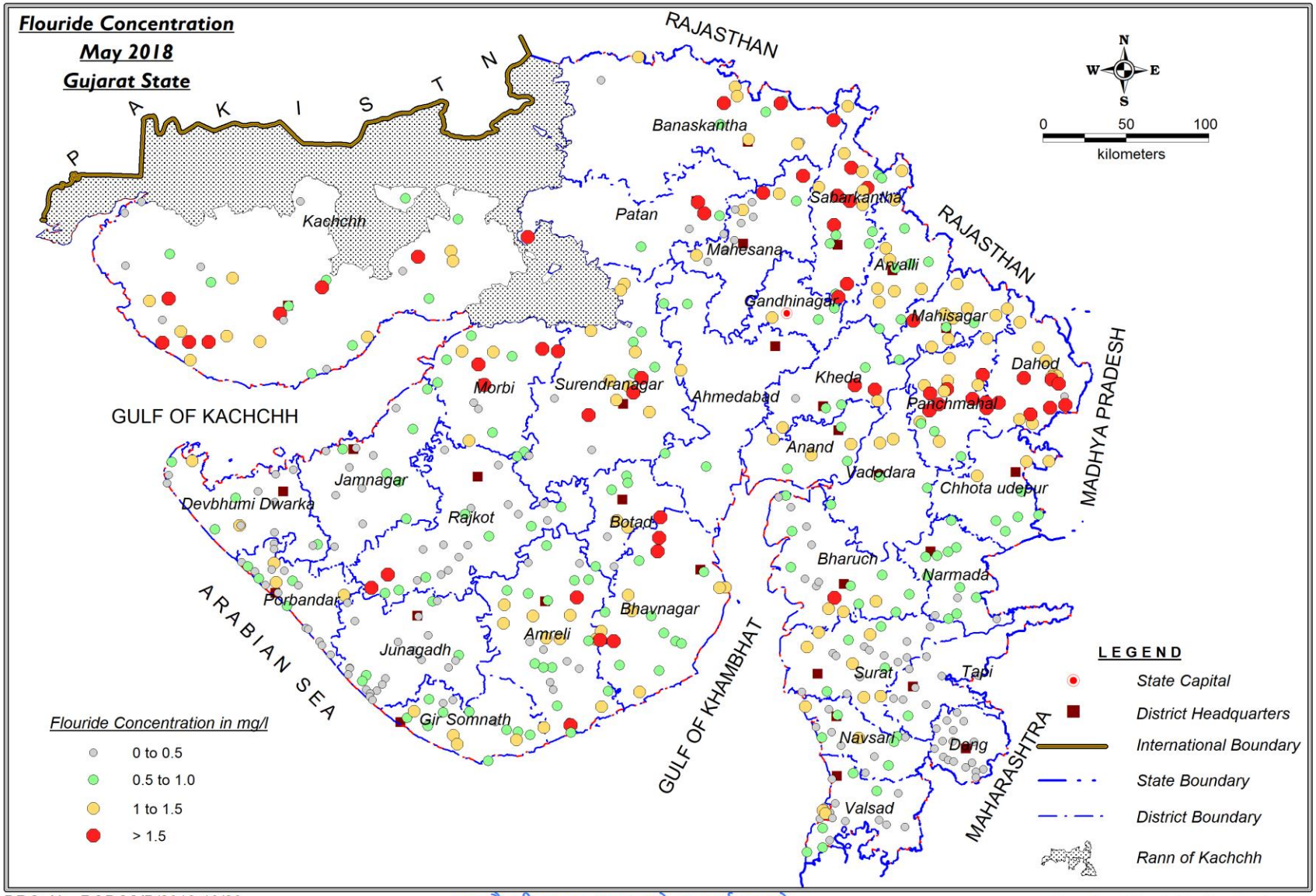


DRG. No. RODC/YB/2018-19/29

खुशहाली का एक ही प्रतीक, जल संरक्षण

Drg. By : Nilesh Dhokia, Draftsman

Fig- 33



DRG. No. RODC/YB/2018-19/28

जल है जीवन का अमृत इसे न व्यर्थ बहाओ

Drg. By : Nilesh Dhokia, Draftsman

130, Raisangpur 135, Sukhpur 310 in Surendranagar, Rendha 195 in Vadodara districts.

In addition to above critically nitrate affected locations, 124 water samples at different locations have been found to contain nitrate in the range of 45mg/l - 100mg/l representing of nitrate content. Other places having nitrate < 45 mg/l is no problem with respect to nitrate pollution.

4.2.4 Fluoride

Fluorine is a fairly common element but it does not occur in the elemental state in nature because of its high reactivity. Fluorine is the most electronegative and reactive of all elements that occur naturally within many type of rocks. It exists in the form of fluorides in a number of minerals of which fluorspar, cryolite, fluorite & fluorapatite are the most common.

Most of the fluoride found in groundwater is naturally occurring from the breakdown of rocks and soils or weathering and deposition of atmospheric particles. Most of the fluorides are sparingly soluble and are present in groundwater in small amount. The type of rocks, climatic conditions, nature of hydro geological strata and time of contact between rock and the circulating groundwater affect the occurrence of fluoride in natural water. Presence of other ions particularly bicarbonate and calcium ions also affects the concentration of fluoride in groundwater. The map showing distribution of Fluoride in the state is represented in **Fig 35**.

It is well known that small amount of fluoride (>1.0 mg/l) have proven to be beneficial in reducing tooth decay. Community water supplies commonly are treated with sodium fluoride or fluorosilicates to maintain fluoride level ranging from 0.8 to 1.2 mg/l to reduce the incidences of dental carries. However, high concentrations (>1.5mg/l) have resulted in staining of tooth enamel while higher levels of fluoride (> 5.0 mg/l) further creates the critical problems such as stiffness of bones. BIS has recommended an upper desirable limit of 1.0 mg/l of fluoride concentration in drinking water, which can be extended to 1.5 mg/l in case no alternative source of drinking water is available. Water having fluoride concentration more than 1.5mg/l is not suitable for drinking purposes.

High Fluoride >1.5mg/l, (**Annexure V**) which is mainly attributed due to geogenic conditions ranged from 0 to 8.6 mg/l, have been observed in 57 water samples out of 518 water samples analyzed. Fluoride values to the extent of more than 1.5 mg/l found at Luvariya 1.56, Hipavadli 1.53, Kadiyali 1.53 in Amreli, Ganapipli 2.08, Kidotar 1.78, Meda 1.80 in Banaskantha, Sajod 1.54 in Bharuch, Ayodhyapuram 2.90, Panvi 2.92, Vallabhipur 2.9 in Bhavnagar, Ambakatch 2.0, Badpa 2.88, Dadhela 1.59, Dahod urban 1.52, Devgadh Baria 2.0, Dhanpur 2.0, Garbara 1.51, Khandania 3.0, Varamkheda 1.61 in Dohad, Haboi 1.53, Kotadi 2.9, Kotaya 2.2, Kuda 1.8, Sukhpur 1.9, Suthri 3.0, Tera 4.2 in Kachchh, Alina 1.55, Bar 1.5, Muliyad 1.55 in Kheda, Rampura 2.24, Timba 2.46, Dhanol 1.69, Godhra urban 1.69, Khadki Vadiya 1.65, Natapur 1.61, Ranipura

2.2, Vejalpur 1.57 in Panchmahal, Patan 2.6, Piprala 2.96, Shankhari 1.6 in Patan, Amarnagar 8.6, Ganod 2.38, Morvi 2.5, Upleta 4.5 in Rajkot, Gadha 1.76, Harsol 1.5, Idar 2.82, Kesharpura 3.0, Khedbrahma 1.5, Sabalwad 2.4, Umedpura 1.5, Dhramali 2.0 in Sabarkantha, Dedadra 4.55, Halvad 2.32, Lahtar 1.96, Muli 4.4, Sukhpar 5.25 in Surendranagar districts have been observed high prominence of fluoride problem in these areas.

4.2.5 Heavy Metal Analysis

Iron

Iron is a common constituent in soil and groundwater. It is present in water either as soluble ferrous iron or the insoluble ferric iron. Water containing ferrous iron is clear and colorless because the iron is completely dissolved. When exposed to air the water turns cloudy due to oxidation of ferrous iron into reddish brown ferric oxide.

The concentration of iron in natural water is controlled by both physico-chemical and microbiological factors. It is contributed in ground water mainly from weathering of ferruginous minerals of igneous rocks such as hematite, magnetite and sulphide ores of sedimentary and metamorphic rocks. The permissible iron concentration in groundwater is less than 1.0mg/l as per the BIS Standard for drinking water. The map showing distribution of Iron in the state is represented in **Fig 36**.

A total number of 518 water samples from selected Groundwater monitoring wells were collected separately for iron analysis after filtration and hydrochloric acid treatment (Annexure_V). Iron values ranges from 0 to as high as 6. 0 ppm. Out of these samples 88 numbers of samples have been found to contain Fe value > 0.3 ppm (Table 21). Of which 15 samples shows morethan 1.0 ppm. Iron value at different places found morethan 1.0ppm are Amran 6.0 ppm, Balwa 2.0ppm, Bedanpur 2.30ppm, Moti Matli 3.1ppm of Jamnagar distict, Khergam 1.9ppm of Navsari, Mojiwana 2.0ppm of Porbandar, Dadia 1.3ppm, Jadan 1.08ppm, Lajai 1.2ppm of Rajkot, Juna Umarpada 2.0ppm, Karanjvel 2.56ppm, Moti Chher 1.2ppm in Surat, Rajsitapur 1.42ppm in Surendranagar, Chikhli 1.89ppm, Malegaon 4.99ppm in The Dangs districts are observed locations with high magnitude of iron problem. Further 73 water samples having iron value between 0.3 - 1.0ppm. Rest of the samples may be treated as totally safe with regard to iron pollution.

Chromium

Chromium values ranges from 0 to as high as 0.3405 ppm. Out of 518 samples, 20 numbers of samples have been found to contain Cr value > 0.05 ppm (Table 21) which shows morethan desirable limit as BIS 2012 standard. Chromium value at different places found morethan 0.05ppm are Kumarkhan 0.05ppm in Ahmedabad, Dharmaj 0.057ppm in Anand, Ayodhyapuram 0.34ppm, Khijadiya 0.11 in Bhavnagar, Bedanpur 0.05ppm, Samarasar 0.11ppm in Jamnagar, Arena 0.05ppm, Bamanwara 0.05ppm in Junagadh, Bhadreswar 0.05ppm, Khavda 0.05ppm, Kotada 0.05ppm, Kothara

0.05ppm, Lodai 0.05ppm, Luni 0.05ppm, Samakhiari 0.05ppm in Kachchh, Alina 0.06ppm, Muliyad 0.08ppm in Kheda, Pavagadh 0.05ppm, Shehra 0.069ppm in Panchmahal, Moti Moldi 0.05ppm in Surendranagar districts are observd locations with high magnitude of chromium. Rest of the samples may be treated safe.

Copper

Copper values ranges from 0 to as high as 0.1446 ppm. Out of 518 samples, 4 numbers of samples have been found to contain Cu value > 0.05 ppm (Table 21) which shows morethan desirable limit as BIS 2012 standard. Copper value at different places found morethan 0.05ppm are Ayodhyapuram 0.1446ppm, Khijadiya 0.0891 in Bhavnagar, Dhanpur 0.0943ppm in Dohad, Amran 0.0544 in Jamnagar districts are observd locations with high magnitude of copper. Rest of the samples may be treated safe.

Manganese

Manganese values ranges from 0 to as high as 23.50 ppm. Out of 518 samples, 29 numbers of samples have been found to contain Mn value > 0.3 ppm (Table 21) which shows morethan desirable limit as BIS 2012 standard. Manganese value at different places found morethan 0.3ppm are Kadiyali 0.79ppm, Kerala 0.748ppm, Virpur 0.85ppm in Amreli, Nirnavi 0.52ppm, Simodra 1.15ppm in Bharuch, Sajnasar 0.615ppm in Bhavnagar, Balwa 3.2ppm in Jamnagar, Kansari 0.745ppm, Saradiya 0.31ppm, Talala 23.5ppm in Junagadh, Bhadreswar 0.334ppm, Kharoi 0.446ppm, Shinaya 0.5345ppm in Kachchh, Alina 0.319ppm, Bar 1.467ppm in Kheda, Asjol 0.42ppm, Unad 0.376ppm, Jankh 0.641ppm in Narmada, Kaliyari 0.759ppm in Navsari, Jokha 1.99ppm in Panchmahal, Mocha 0.578ppm in Porbandar, Dungri 0.8265ppm, Karanjvel 0.7365ppm, Mota 1.45ppm, Sachin town 0.9505ppm in Surat, Dedadra 0.401ppm, Jhinjuwada 0.40ppm, Shiyani 0.33ppm in Surendranagar, Tithal 1.0ppm in Valsad districts are observd locations with high magnitude of Manganese. Rest of the samples may be treated safe.

Zinc

Zinc values ranges from 0 to as high as 0.466 ppm. Out of 518 samples, all samples have been found to contain Zn value lessthan 5 ppm (Table 21) which is the desirable limit as BIS 2012 standard. Hence all the samples may be treated safe.

Fig- 34

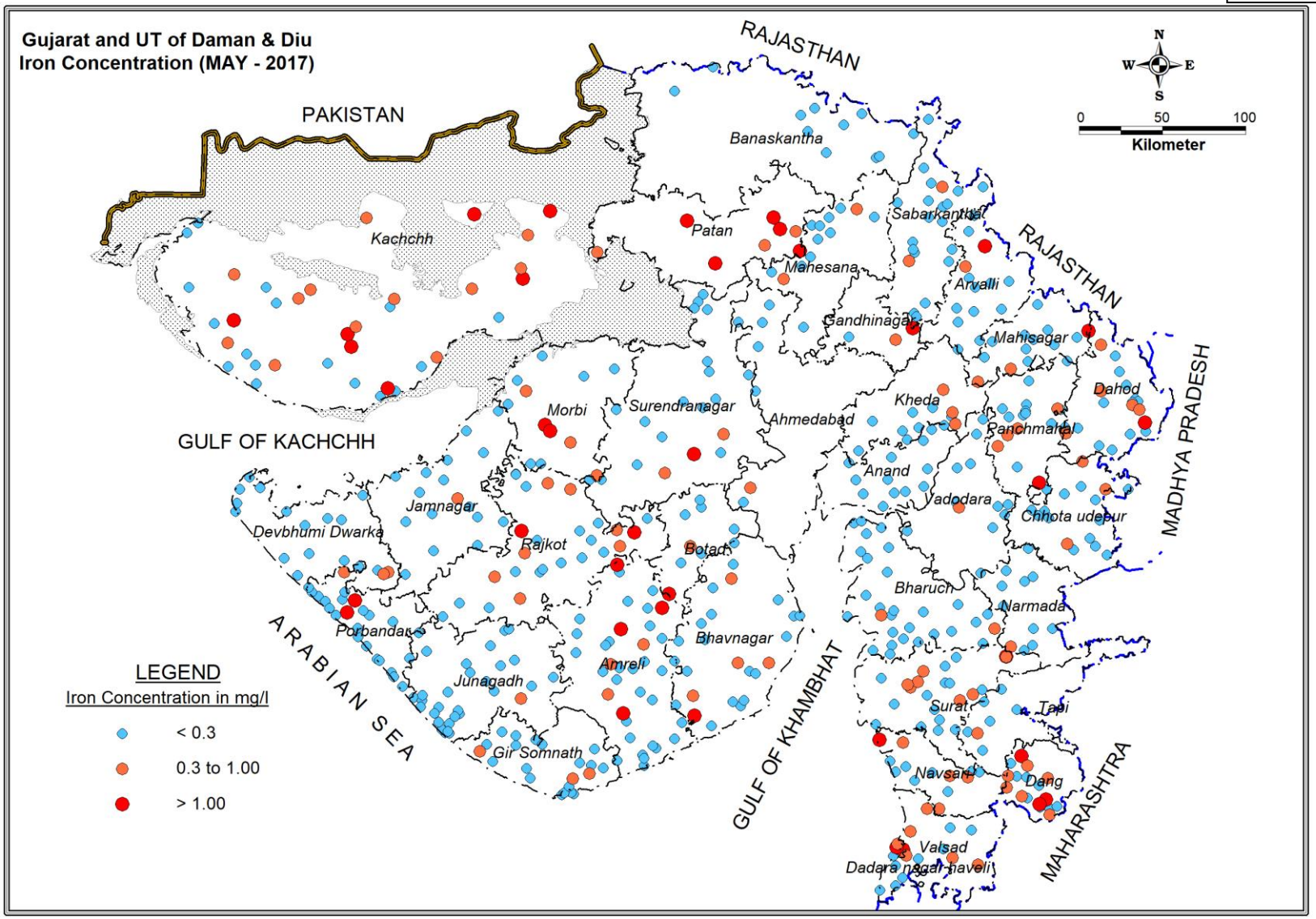

Gujarat and UT of Daman & Diu
Iron Concentration (MAY - 2017)
PAKISTAN
RAJASTHAN
RAJASTHAN
MADHYA PRADESH
MAHARASHTRA
GULF OF KACHCHH
GULF OF KHAMBHAT
ARABIAN SEA
N
W
E
S
0
50
100
Kilometer
Banaskantha
Patan
Sabarkantha
Mahesana
Arvalli
Gandhinagar
Mahisagar
Kachchh
Morbi
Surendranagar
Ahmedabad
Kheda
Dahod
Panchmahal
Anand
Vadodara
Chhota udepur
Jamnagar
Devbhumi Dwarka
Rajkot
Botad
Bharuch
Narmada
Porbandar
Bhavnagar
Amreli
Junagadh
Surat
Tapi
Gir Somnath
Navsari
Dang
Valsad
Dadara nagar haveli
LEGEND
Iron Concentration in mg/l
< 0.3
0.3 to 1.00
> 1.00

Table 21

Quality Index of Heavy metals in Gujarat state during May 2018

District	Count of Location	Cr in ppm		No of samples >0.05	Fe in ppm		No of samples >0.3	Mn in ppm		No of samples >0.3	Cu in ppm		No of samples >0.05	Zn in ppm	
		Max	Min		Max	Min		Max	Min		Max	Min		Max	Min
Ahmedabad	8	0.0498	0	1	0.1527	0.0382	0	0.1528	0.0081	0	0.0063	0	0	0.0248	0.006
Amreli	38	0.0391	0	0	0.3874	0	1	0.85	0.0017	3	0.0182	0.0021	0	0.2299	0.0051
Anand	6	0.0575	0	1	0.3745	0.0285	2	0.2159	0.0151	0	0.0152	0.0035	0	0.1034	0.0009
Banaskantha	14	0.0314	0	0	0.3164	0.0541	1	0.2205	0.0012	0	0.0081	0	0	0.0335	0.0003
Bharuch	19	0.0368	0	0	0.3241	0.029	2	1.156	0.0099	2	0.0099	0.0014	0	0.1054	0
Bhavnagar	24	0.3405	0	2	0.9827	0	4	0.615	0	1	0.1446	0	2	0.0495	0.0056
Dahod	19	0.0489	0	0	0.3563	0	2	0.2384	0.0021	0	0.0943	0.0012	1	0.4212	0
Gandhinagar	2	0.0406	0.0188	0	0.2982	0.0923	1	0.1525	0.0069	0	0.0181	0	0	0.2861	0.0122
Jamnagar	31	0.1093	0.0001	2	6	0.0418	5	3.2	0.0105	1	0.0544	0.0018	0	0.3584	0
Junagadh	41	0.0594	0	2	0.6447	0.0066	2	23.5	0.0017	3	0.0242	0.0006	1	0.4662	0
Kachchh	34	0.0524	0	7	0.87	0.0744	9	0.5345	0.0154	3	0.0124	0	0	0.0325	0.0069
Kheda	10	0.0819	0	2	0.1972	0.0185	0	1.467	0	2	0.0208	0.0021	0	0.0413	0.0002
Mehsana	14	0.0179	0	0	0.7098	0.0286	1	0.4216	0	2	0.0035	0	0	0.07	0.0013
Narmada	13	0.0323	0	0	0.253	0	0	0.641	0	1	0.0144	0.0001	0	0.1829	0
Navsari	12	0.0231	0	0	1.9	0.092	2	0.7595	0.0123	1	0.0002	0	0	0.0476	0
Panchmahals	27	0.0698	0	2	0.2541	0	0	1.99	0.0013	1	0.028	0.0015	0	0.1207	0
Patan	7	0.024	0	0	0.2033	0.0398	0	0.1953	0.0133	0	0.0131	0	0	0.0253	0.0007
Porbandar	22	0.0437	0	0	2	0.0171	1	0.578	0.0065	1	0.0128	0.0011	0	0.0576	0
Rajkot	34	0.0447	0	0	1.3758	0.0174	10	0.2648	0.0026	0	0.015	0	0	0.0296	0
Sabarkantha	38	0.027	0	0	0.4133	0	5	0.2755	0.0012	0	0.011	0.0011	0	0.0539	0
Surat	33	0.0068	0	0	2.564	0.0778	15	1.45	0.0015	4	0	0	0	0.2504	0
Surendranagar	23	0.0532	0	1	1.42	0.0304	10	0.4012	0.0059	3	0.0063	0	0	0.0484	-0.0026
The dangs	19	0	0	0	4.992	0.0016	6	0.171	0.003	0	0.0018	0	0	0.043	0
Vadodara	17	0	0	0	0.4663	0	1	0.1847	0	0	0.0006	0	0	0.0523	0
Valsad	13	0	0	0	0.4478	0.018	8	1	0	1	0	0	0	0.1604	0
Grand Total	518	0.3405	0	20	6	0	88	23.5	0	29	0.1446	0	4	0.4662	-0.0026

Annexure - I

DISTRIBUTION OF GROUND WATER MONITORING WELLS IN THE MAJOR RIVER BASIN

DISTRICT_NAME	BASIN_NAME	SUB_BASIN_NAME	Total
Ahmedabad	Draining into Gulf of Kutch	Rupen	17
	Draining into Gulf of Kutch Total		17
	Luni and other drainage into Great Rann of Kutch	Mostly Great Rann Of Kutch	1
	Luni and other drainage into Great Rann of Kutch Total		1
	Sabarmati	Lb Of Sabarmati Upto Hathmati	22
		Rb Of Sabarmati And Upper Part Beyond Hathmati	21
	Sabarmati Total		43
	Southern Kathiawar	Draining Into Gulf Of Khambat	10
	Southern Kathiawar Total		10
Ahmedabad Total			71
Amreli	Southern Kathiawar	Draining Into Gulf Of Khambat	58
		Rivers draining into Arabian Sea (Western part)	5
	Southern Kathiawar Total		63
Amreli Total			21
Anand	Mahi	Upto Kadana Dam	21
	Mahi Total		18
	Sabarmati	Lb Of Sabarmati Upto Hathmati	15
	Sabarmati Total		15
Anand Total			36
Banaskantha	Draining into Gulf of Kutch	Rupen	32
	Draining into Gulf of Kutch Total		32
	Luni and other drainage into Great Rann of Kutch	Mainly Luni	8
		Mostly Great Rann Of Kutch	32
	Luni and other drainage into Great Rann of Kutch Total		40
	Sabarmati	Lb Of Sabarmati Upto Hathmati	1
		Rb Of Sabarmati And Upper Part Beyond Hathmati	1
	Sabarmati Total		2
Banaskantha Total			74
Bharuch	Mahi	Upto Kadana Dam	13
	Mahi Total		13
	Narmada	Confluence With Sea To Navgam Dam	20
	Narmada Total		20
	Tapti	Sea Confluence To Ukai	11
	Tapti Total		11
Bharuch Total			44
Bhavnagar	Mahi	Upto Kadana Dam	1
	Mahi Total		1
	Southern Kathiawar	Draining Into Gulf Of Khambat	54
		Rivers draining into Arabian Sea (Western part)	1
	Southern Kathiawar Total		54
Bhavnagar Total			55
Dohad	Mahi	Kadana Dam To Jakham Confluence	16
		Upto Kadana Dam	16
	Mahi Total		32
Dohad Total			32
Gandhinagar	Draining into Gulf of Kutch	Rupen	10
	Draining into Gulf of Kutch Total		10
	Sabarmati	Lb Of Sabarmati Upto Hathmati	9
		Rb Of Sabarmati And Upper Part Beyond Hathmati	14
	Sabarmati Total		23
Gandhinagar Total			33
Jamnagar	Draining into Gulf of Kutch	North Flowing Drainage Of Jamnagar	42
	Draining into Gulf of Kutch Total		42
	Southern Kathiawar	Rivers draining into Arabian Sea (Western part)	17
	Southern Kathiawar Total		17
Jamnagar Total			59
Junagadh	Southern Kathiawar	Draining Into Gulf Of Khambat	9
		Rivers draining into Arabian Sea (Western part)	67
	Southern Kathiawar Total		76
Junagadh Total			76
Kachchh	Draining into Gulf of Kutch	South Flowing Drainage Mostly Bhuj Area	41
	Draining into Gulf of Kutch Total		41
	Luni and other drainage into Great Rann of Kutch	Mostly Great Rann Of Kutch	29
	Luni and other drainage into Great Rann of Kutch Total		29
Kachchh Total			70
Kheda	Mahi	Kadana Dam To Jakham Confluence	1
		Upto Kadana Dam	5
	Mahi Total		6
	Sabarmati	Lb Of Sabarmati Upto Hathmati	22
	Sabarmati Total		22
Kheda Total			28
Mahesana	Draining into Gulf of Kutch	Ruper	53
	Draining into Gulf of Kutch Total		53
	Sabarmati	Lb Of Sabarmati Upto Hathmati	2
		Rb Of Sabarmati And Upper Part Beyond Hathmati	6
	Sabarmati Total		8

DISTRICT_NAME	BASIN_NAME	SUB_BASIN_NAME	Total
Mahesana Total			61
Narmada	Narmada	Confluence With Sea To Navgam Dam	22
	Narmada Total		22
	Tapti	Rb Ukai Dam To Purna Confluence	5
	Tapti Total		5
Narmada Total			27
Navsari	Sharavati to Tapti	Savitri To Tapti	25
	Sharavati to Tapti Total		25
Navsari Total			25
Panchmahals	Mahi	Kadana Dam To Jakham Confluence	3
		Upto Kadana Dam	35
	Mahi Total		39
	Narmada	Confluence With Sea To Navgam Dam	3
	Narmada Total		3
	Sabarmati	Lb Of Sabarmati Upto Hathmati	5
	Sabarmati Total		5
	Sharavati to Tapti	Savitri To Tapti	3
	Sharavati to Tapti Total		3
Panchmahals Total			50
Patan	Draining into Gulf of Kutch	Rupen	26
		South Flowing Drainage Mostly Bhuj Area	4
	Draining into Gulf of Kutch Total		30
	Luni and other drainage into Great Rann of Kutch	Mainly Luni	2
		Mostly Great Rann Of Kutch	3
	Luni and other drainage into Great Rann of Kutch Total		5
	Sabarmati	Lb Of Sabarmati Upto Hathmati	3
	Sabarmati Total		3
Patan Total			38
Porbandar	Southern Kathiawar	Rivers draining into Arabian Sea (Western part)	32
	Southern Kathiawar Total		32
Porbandar Total			32
Rajkot	Draining into Gulf of Kutch	North Flowing Drainage Of Jamnagar	30
	Draining into Gulf of Kutch Total		31
	Southern Kathiawar	Draining Into Gulf Of Khambat	4
		Rivers draining into Arabian Sea (Western part)	26
	Southern Kathiawar Total		30
Rajkot Total			61
Sabarkantha	Sabarmati	Lb Of Sabarmati Upto Hathmati	47
		Rb Of Sabarmati And Upper Part Beyond Hathmati	13
	Sabarmati Total		60
Sabarkantha Total			60
Surat	Narmada	Confluence With Sea To Navgam Dam	5
	Narmada Total		5
	Sharavati to Tapti	Savitri To Tapti	30
	Sharavati to Tapti Total		30
	Tapti	Lb Ukai Dam To Purna Confluence	4
		Sea Confluence To Ukai	36
	Tapti Total		40
Surat Total			75
Surendranagar	Draining into Gulf of Kutch	North Flowing Drainage Of Jamnagar	24
		Ruper	14
	Draining into Gulf of Kutch Total		38
	Sabarmati	Rb Of Sabarmati And Upper Part Beyond Hathmati	17
	Sabarmati Total		17
Surendranagar Total			55
The dangs	Sharavati to Tapti	Savitri To Tapti	33
	Sharavati to Tapti Total		33
The dangs Total			33
Vadodara	Mahi	Upto Kadana Dam	30
	Mahi Total		30
	Narmada	Confluence With Sea To Navgam Dam	36
	Narmada Total		36
Vadodara Total			66
Valsad	Sharavati to Tapti	Savitri To Tapti	30
	Sharavati to Tapti Total		30
Valsad Total			30
Grand Total			1212

Annexure_IIA

WATER LEVELS OF THE NATIONAL HYDROGRAPH STATIONS IN GUJARAT 2018-19

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
1	Ahmedabad	Bagodara_Pz_I	22.642	72.214	Pz			8.72	9.89
2	Ahmedabad	Bagodara_Pz_II	22.642	72.214	Pz		6.8	7.29	7.62
3	Ahmedabad	Barvala	22.15	71.892	DW		9.72	10.48	8.23
4	Ahmedabad	Bopal_Pz_I	23.039	72.458	Pz	36.37	21.98	29.77	
5	Ahmedabad	Bopal_Pz_II	23.039	72.458	Pz	33.11			28.25
6	Ahmedabad	Bopal_Pz_III	23.039	72.458	Pz	3.8			3.4
7	Ahmedabad	Dalod	23.367	71.967	DW	7.14	8.1	7.28	8.2
8	Ahmedabad	Devalia	22.378	71.986	DW			16.28	
9	Ahmedabad	Dhandhuka1	22.375	71.986	DW	3.75	2.99	3.39	3.87
10	Ahmedabad	Endla	23.272	72.058	DW	2.21	3.03	5.09	2.08
11	Ahmedabad	Fedra	22.462	72.158	Pz		1.14		
12	Ahmedabad	Gamph	22.358	72.167	DW	1.6	1.18	1.49	2.06
13	Ahmedabad	Ghuma	23.033	72.446	Pz	4.21	3.4		
14	Ahmedabad	Hansalpur_Pz-I	23.089	72.017	Pz	27.05	24.7	29.42	37.7
15	Ahmedabad	Hansalpur_Pz-II	23.089	72.017	Pz			25.43	25.66
16	Ahmedabad	Hansalpur_Pz-III	23.089	72.017	Pz	4.45	4.75	4.3	4.48
17	Ahmedabad	Jhanjharwa_Pz_II	23.415	72.058	Pz				22.31
18	Ahmedabad	Jholapur_Pz_I	22.988	72.204	Pz	79.3	68.3		98.05
19	Ahmedabad	Koth I	22.631	72.297	DW	9.95			
20	Ahmedabad	Kumarkhan	22.9	72.017	DW	3.8	4.48		4.23
21	Ahmedabad	Kundal	22.901	72.224	DW		5.48	8.32	
22	Ahmedabad	Kundali	22.269	71.7	DW	18.1	10.78	10.9	11.29
23	Ahmedabad	Mandal2	23.275	71.917	DW	3.93	2.07	11	4.38
24	Ahmedabad	Pachcham_Pz	22.232	72.179	Pz				2.2
25	Ahmedabad	Rajpada	22.308	71.692	DW	23.7	15.53	16.05	17.26
26	Ahmedabad	Salangpor	22.158	71.771	DW		6.12	8.47	8.8
27	Ahmedabad	Sanand I	23.003	72.374	Pz	76		80.01	69.7
28	Ahmedabad	Sanand II	23.003	72.374	Pz	18.22	15.7	18.52	19.55
29	Ahmedabad	Sola(HC)_Pz_I	23.081	72.514	Pz	76.75	52.45	69.5	68.37
30	Ahmedabad	Tagadi1	22.296	71.947	DW		1.61	2.95	3.95
31	Ahmedabad	Ughraj1	23.367	72.1	DW			11.28	
32	Ahmedabad	Upardhal1	22.85	72.146	DW	11.9		11.9	
33	Ahmedabad	Vagad(Repl)_Pz	22.36	71.868	Pz		3.96	4.74	4.9
34	Ahmedabad	Vastrapur(lake)_Pz_I	23.038	72.53	Pz	97.7		85.51	90.63
35	Ahmedabad	Vatwa Pz-II	22.953	72.616	Pz		29.79	47.34	47.85
36	Ahmedabad	Vatwa Pz-III	22.954	72.616	Pz	30.85	22.19	27.21	28.48
37	Ahmedabad	Viramgam2	23.142	72.033	DW	3.18	0.47	3.46	3.52
38	Amreli	Amreli	21.608	71.225	DW	11.94	4.96	7.94	9.91
39	Amreli	Amreli_Pz	21.613	71.225	Pz	13.27	6.15	8.28	9.5
40	Amreli	Amritvel_Pz	21.397	71.358	Pz			2.53	4.41
41	Amreli	Ankadia mota	21.646	71.108	DW	10.05	5.1	9.33	7.73
42	Amreli	Babra_Pz	21.847	71.296	Pz	13.5	5.42	7.37	10.35
43	Amreli	Badhda	21.266	71.339	DW	9.46		8.04	8.5
44	Amreli	Bagasara	21.479	70.963	DW	17.1	16.67	19.43	21.2
45	Amreli	Bhavardi1	21.108	71.258	DW	5.4	0.2	0.29	3.4
46	Amreli	Bherai	20.868	71.363	DW	3.18	1.61	3.14	2.73
47	Amreli	Bhuva	21.433	71.364	DW		3.98	4.22	4.51
48	Amreli	Chalala	21.417	71.167	DW	27.98	25.83	26.54	26.58
49	Amreli	Charkhadia_Pz	21.388	71.292	Pz	26.47	23.97	25.58	26.29
50	Amreli	Charkhadia1	21.392	71.296	DW	22.1	19.75	21.75	22.5
51	Amreli	Chavand	21.817	71.413	DW	5.36	4.48	6.44	15.5
52	Amreli	Devaliya	21.821	71.108	DW				13.75
53	Amreli	Dharangani	21.333	71.2	DW	29.81		31.49	36.65
54	Amreli	Dhari	21.338	71.042	DW			12.42	14.53
55	Amreli	Dhari_Pz	21.326	71.018	Pz	26.63	10.47	11.99	15.85
56	Amreli	Dhrai Balmukand	21.834	71.217	DW	22.3	5.64	15.06	22.3

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
57	Amreli	Fifad	21.436	71.54	DW	6.06	5.6	5.82	6.43
58	Amreli	Gopalpura Vanda Pz	21.375	71.492	Pz		28.86	33.27	33.05
59	Amreli	Goradka	21.225	71.411	DW	6.01	3.25	4.5	6.21
60	Amreli	Govadka	21.542	71.158	DW	6.65		4.6	5.89
61	Amreli	Haripur_Pz_I	21.61	71.443	Pz		6.63	7.99	14.87
62	Amreli	Hipavadli	21.379	71.615	DW	9.11		9.47	9.82
63	Amreli	Ingorala	21.233	71.2	DW	17.99	8.03	10.24	15.27
64	Amreli	Ishwaria	21.633	71.267	DW	28.45			
65	Amreli	Jafrabad	20.867	71.363	DW	2.15		0.62	5.11
66	Amreli	Jesar_Pz	21.371	71.67	Pz		5.19	6.17	7.08
67	Amreli	Kadiyali	20.908	71.36	DW	6.41	0.97	2.93	5.6
68	Amreli	Kerala	21.397	71.217	DW	37.8	35.09	38.85	40.51
69	Amreli	Khamba	21.15	71.239	DW	11.46	2.98	3.31	7.19
70	Amreli	Khamba_Pz	21.142	71.254	Pz	15.77	6.59	7.51	10.03
71	Amreli	Kotadapitha	21.958	71.204	DW	8.19		10.93	10.21
72	Amreli	Kunkavav	21.663	70.983	DW	16.2	7.19	30.45	26.99
73	Amreli	Lathi	21.721	71.383	DW	13.95	9.13	16.3	12.68
74	Amreli	Liliya_Pz_I	21.535	71.379	Pz	10.03	4.04	6.1	8.92
75	Amreli	Lotpur	20.963	71.433	DW	7.05	5.1	5.75	6.3
76	Amreli	Luvariya	21.625	71.396	DW		4.77	5.5	7.68
77	Amreli	Mandal	21.1	71.583	DW	27.83	17.68	29.67	32.6
78	Amreli	Manila Pz	21.433	71.167	Pz	20.75	19.61	19.7	21.49
79	Amreli	Morjhar	21.376	71.119	DW	47.75	46.33	40.05	50.58
80	Amreli	Nageshri	20.925	71.354	DW	5.1	2.38	2.58	3.67
81	Amreli	Nesdi_Pz	21.381	71.246	Pz			72.85	
82	Amreli	Piyava	21.383	71.467	DW	32.72	26.1	33.7	
83	Amreli	Punjapadar	21.525	71.358	DW	10.85	7.16	10.05	11.45
84	Amreli	Sanaria	21.558	71.468	DW		2.43	2.98	4.54
85	Amreli	Savarkundla	21.336	71.318	Pz	89.15			
86	Amreli	Tajpur	21.725	71.467	DW	26.2	16.2		26.65
87	Amreli	Timbi2	20.896	71.204	DW	6.02	2.46	3.5	3.75
88	Amreli	Trakuda	21.017	71.281	DW	12.85	3	7.2	12.75
89	Amreli	Untvad	21.917	71.217	DW	14.1	8.19	16.23	16.16
90	Amreli	Vaghania juna	21.583	70.967	DW	10.8	3.76	5.8	5.04
91	Amreli	Vanda	21.39	71.508	DW	8.06			9.03
92	Amreli	Vankiya	21.521	71.136	DW	14.16	4.9	8.53	7.9
93	Amreli	Vankiya1	21.233	71.25	DW	8.95	5.4	10.14	11.66
94	Amreli	Vavdi Pz	21.358	71.192	Pz			42.8	
95	Amreli	Victor	21.013	71.542	DW	1.1	0.73	0.4	1.05
96	Amreli	Virpur	21.254	71.15	DW	16.9	6.69	15.59	17.13
97	Anand	Adas_DW	22.479	73.03	DW	30.02	28.62	26.27	28.17
98	Anand	Anand	22.575	72.972	DW	28.13	9.47	11.13	18.17
99	Anand	Anklav_Pz_I	22.376	72.997	Pz	28.73		25.74	26.73
100	Anand	Anklav_Pz_II	22.376	72.997	Pz	27.4		25.8	26.77
101	Anand	Anklav2	22.383	73.008	DW	31.85	27.66	24.71	27.48
102	Anand	Bandhani	22.542	72.817	DW	6.15	4.38	5.41	6.17
103	Anand	Bhadran	22.356	72.897	DW	20.6	16.38	14.77	15.33
104	Anand	Boriyani	22.632	73.004	DW		6.15	6.91	8.41
105	Anand	Borsad I	22.41	72.901	DW	20.29	14.88	18.53	17.97
106	Anand	Borsad_Pz_II	22.41	72.901	Pz	17.33	14.39	14.48	14.52
107	Anand	Dali	22.275	72.767	DW	4.77		3.09	3.19
108	Anand	Davalpura_Pz	22.458	72.803	Pz		0.05		5.26
109	Anand	Dharmaj	22.421	72.794	DW	14.21	7.05	12.68	7.68
110	Anand	Ghora	22.692	73.054	DW	5.5		3.74	4.78
111	Anand	Hariyan_Pz	22.404	72.672	Pz			4.18	4.74
112	Anand	Kansari1	22.342	72.65	DW	18.06	2.66		12.6
113	Anand	Kathana_Pz_I	22.294	72.79	Pz		18	12.52	15
114	Anand	Laxmipura	22.417	72.608	DW	2.95	1.41	0.76	1.18
115	Anand	Navapura	22.313	72.963	DW	27.02	28.56		24.82

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
116	Anand	Parvata	22.714	73.127	DW	17.87	2.55	5.83	6.43
117	Anand	Petlad_Pz_I	22.475	72.8	Pz	15.3	12.07	13.34	13.48
118	Anand	Petlad_Pz_II	22.475	72.8	Pz	23.7	13.24	13.34	13.68
119	Anand	Ras	22.346	72.833	DW	1.87	1.14	1.71	0.94
120	Anand	Sarsa_Pz_I	22.544	73.071	Pz			18.64	
121	Anand	Tarapur Pz-I	22.486	72.661	Pz	2.68		2.75	2.97
122	Anand	Tarapur Pz-II	22.486	72.661	Pz	2.96		2.93	3.27
123	Anand	Tol	22.511	72.567	DW	2.3	0.44	1.08	1.31
124	Anand	Walmi_ I	22.511	72.982	Pz	23.78	22.09	22.24	22.51
125	Anand	Walmi_ II	22.508	72.982	Pz	22.72	21.75	22.82	22.93
126	Banaskantha	Ambaji_Pz	24.336	72.847	Pz	12.31		10.31	12.49
127	Banaskantha	Amirgadh	24.406	72.642	DW	7.46	7.75	8.6	8.03
128	Banaskantha	Balodhar_Pz-I	24.231	71.912	Pz	163.17	147.85	183.7	166.65
129	Banaskantha	Bhabhar iii	24.06	71.596	Pz	32.3	32.77	30.98	30.97
130	Banaskantha	Bharol1	24.529	71.542	DW	1.24	0.45	1.7	2
131	Banaskantha	Biyok_Pz-I	24.272	71.654	Pz	35.01			
132	Banaskantha	Biyok_Pz-II	24.272	71.655	Pz	35.01	31.57	30.6	31.18
133	Banaskantha	Danta	24.189	72.765	DW	9.2		8.3	9.2
134	Banaskantha	Dantiwada	24.189	72.761	DW	39.23	34.45	33.46	33.81
135	Banaskantha		24.278	72.261	DW		22.45	22.6	23.12
136	Banaskantha	Deesa Pzi	24.257	72.188	Pz	75.3	69.51		
137	Banaskantha	Deesa Pzii	24.257	72.188	Pz	62.19	54.6	60.41	56.74
138	Banaskantha	Dhanera Pz- II	24.503	72.186	Pz	73.5			
139	Banaskantha	Dhanera Pz-I	24.506	72.029	Pz	95.77	88.58	89.6	99.25
140	Banaskantha	Ganapipli	24.297	72.947	DW	11.97	7.5	9.44	12
141	Banaskantha	Gangodra	24.436	72.365	DW	17.8	16.13		
142	Banaskantha	Iqbalgarh	24.346	72.538	DW	30.51	21.9	25.7	26.7
143	Banaskantha	Jalotra Pz-I	24.141	72.585	Pz	19.53	16.31		
144	Banaskantha	Jalotra Pz-II	24.141	72.585	Pz		16.04		
145	Banaskantha	Jhat	24.488	72.353	DW	14.63	12.45		
146	Banaskantha	Khoda	24.658	71.767	DW	21.66	21.92	21.8	21.68
147	Banaskantha	Kidotar	24.394	72.628	DW	20.34	20.54		
148	Banaskantha	Lakhani i	24.314	71.818	Pz	85.94		105.21	85.29
149	Banaskantha	Mahi_Pz	24.029	72.381	Pz	160.04	136.58	153.76	156.65
150	Banaskantha	Meda	24.397	72.285	DW	12	5.25	5.13	5.46
151	Banaskantha	Miyal iii	24.636	71.753	Pz	19.47			
152	Banaskantha	Mohabbat gadh	24.167	72.728	DW	19.44	18.8	19.25	20.1
153	Banaskantha	Naroli Pzi	24.616	71.639	Pz	7.49	6.55	5.95	5.97
154	Banaskantha	Naroli Pzii	24.616	71.639	Pz	7.3	5.2	5.08	4.91
155	Banaskantha	Naroli Pziii	24.616	71.639	Pz	7.51	5.43		
156	Banaskantha	Palanpur_Pz	24.172	72.45	Pz	36.38	35.32	36.62	36.72
157	Banaskantha	Palanpur2	24.194	72.433	DW	20.77	18.85	20.85	16.95
158	Banaskantha	Rah Pz-III	24.496	71.836	Pz	42.45		48.75	43.72
159	Banaskantha	Rah_Pz I	24.496	71.836	Pz	53.34			55.73
160	Banaskantha	Rah_Pz II	24.496	71.836	Pz	50.06		51.45	50.27
161	Banaskantha	Rasna(Repl)_Pz_I	24.218	72.248	Pz	80.21	74.59		
162	Banaskantha	Ratanpur2	24.175	72.746	DW	18.83	14.33	14.84	15.9
163	Banaskantha	Rupal_Pz_I	24.025	72.502	Pz	32.51			
164	Banaskantha	Sodapur	24.401	72.296	DW	6.21		12.83	13.53
165	Banaskantha	Takarwada Pz-I	24.108	72.331	Pz		138.62	181.02	181.17
166	Banaskantha	Tharad Pzi	24.385	71.619	Pz	8.98		9.04	9.19
167	Banaskantha	Tharad Pzii	24.385	71.619	Pz	8.96		8.85	9
168	Banaskantha	Tharad Pziii	24.385	71.619	Pz	8.88		8.82	9.05
169	Banaskantha	Vav ii	24.361	71.511	Pz	23.8		23.6	23.44
170	Banaskantha	Vav i	24.358	71.508	Pz	28.8		33.76	34.45
171	Banaskantha	Vinchivadi PZ-I	24.586	71.933	Pz	60.68		65.7	65.54
172	Banaskantha	Vinchivadi Pz-II	24.586	71.933	Pz	60.39			
173	Bharuch	Arethi	21.613	73.435	DW	14.45	2.84	6.7	7.1
174	Bharuch	Bharuch	21.7	73.004	DW	13.35	4.09	5.74	6.47

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
175	Bharuch	Bharuch I	21.708	73	Pz	6.92	2.9	5.28	5.68
176	Bharuch	Bharuch Ii	21.708	73	Pz			5.04	5.59
177	Bharuch	Bhensli	21.725	72.75	DW	3.4	0.49	2.51	3.08
178	Bharuch	Chhindra	22.127	72.67	DW	9.98	5.87	11.89	4.94
179	Bharuch	Dahegam	22.185	72.597	DW	10.71	1.25	6.87	7.01
180	Bharuch	Hansot	21.583	72.808	DW	5.43	1.68		5.01
181	Bharuch	Ilav	21.45	72.8	DW	8.19	4.37	3.85	6.3
182	Bharuch	Jambusar	22.053	72.806	DW			7.82	8.17
183	Bharuch	Jetpur1	21.492	72.708	DW	3.82		2.38	2.96
184	Bharuch	Jokhla	21.596	73.169	DW	2.67		2.47	7.18
185	Bharuch	Juna borbhata	21.675	72.975	DW	8.5	5.1	6.06	6.25
186	Bharuch	Kadodara	21.763	72.639	Pz	8.27	7.29	8.37	8.57
187	Bharuch	Kalak1	22.019	72.763	DW	7.3	6.06	6.75	7.48
188	Bharuch	Kaswa	21.683	72.817	DW	8.8	2.3		5.35
189	Bharuch	Kavi	22.194	72.639	DW	7.97	6.05	6.61	7.66
190	Bharuch	Kondh	21.581	73.068	DW	4.85	1.1	3.12	3.88
191	Bharuch	Luhara	21.675	72.558	DW		0.14	1.1	1.73
192	Bharuch	Mahegam1	21.683	72.758	DW		0.51		1.06
193	Bharuch	Modoliya	21.633	73.296	DW	8.87	3.48	8.87	
194	Bharuch	Mokhdi	21.533	73.288	DW	11.26		5.5	6.53
195	Bharuch	Motwan	21.556	72.888	DW	2.5	1.07	2.73	2.83
196	Bharuch	Mulad	21.683	73.019	DW			6.17	6.81
197	Bharuch	Navetha	21.708	72.831	DW	7.16	0.2	6.1	6.15
198	Bharuch	Netrang(Rep)_Pz	21.642	73.367	Pz		2.65	6.6	8.41
199	Bharuch	Netrang1	21.633	73.367	DW	6.75	2.55	3.77	7.81
200	Bharuch	Nirnavi	21.792	72.668	DW	9.06	0.2	5.36	6.62
201	Bharuch	Panoli	21.538	72.975	DW	2.9	5.11	1.85	2.48
202	Bharuch	Raymal	21.521	72.821	DW	1.4	2.45	1.3	1.91
203	Bharuch	Roja tankaria	21.917	72.792	DW	8.27	6.77	7.43	7.96
204	Bharuch	Sahol	21.473	72.81	DW			2.53	4.96
205	Bharuch	Sajod	21.617	72.924	DW	5.2	2.09	4.28	4.72
206	Bharuch	Sarod	22.158	72.758	DW	10.74	7.29	8.36	8.81
207	Bharuch	Simodra	21.742	73.208	DW	4.85		3.6	4.22
208	Bharuch	Sindhav	22.027	72.636	DW	7.85	6.1	8.95	8.98
209	Bharuch	Tankari	21.992	72.675	DW	5.24	3.66	4.17	5.61
210	Bharuch	Utraj	21.592	72.825	DW	3.73	3.32	5.62	4.76
211	Bhavnagar	Ambala	21.711	71.842	DW	23.4	21.25	22	
212	Bhavnagar	Ayodhayapuram	21.96	71.886	DW	8.47	8.2	8.4	9.25
213	Bhavnagar	Bhavnagar1	21.767	72.15	DW	11.4	5.85	7.12	7.4
214	Bhavnagar	Bhudel	21.692	72.158	DW	4.82	1.55	2.7	3.58
215	Bhavnagar	Bhumbhali	21.679	72.244	DW	3.14	2.25	2.51	3.42
216	Bhavnagar	Bhutia	21.747	71.7	DW	22.3	17.75	18.48	21.14
217	Bhavnagar	Bora	21.191	71.929	DW		27.36	28.88	29.82
218	Bhavnagar	Chowk Pz	21.429	71.764	Pz	22.75	18.93	21.7	25.14
219	Bhavnagar	Datha	21.221	71.95	DW	5.89	1.82	5.04	6.71
220	Bhavnagar	Dhasa	21.8	71.508	DW	5.94			1.32
221	Bhavnagar	Dudhala	21.138	71.658	DW	17.84	9.04	9.82	13.86
222	Bhavnagar	Gadhada1	21.968	71.582	DW	8.67	8.32	8.5	9.39
223	Bhavnagar	Gadhada2	21.967	71.579	DW	4.77	4.1	3.88	4.39
224	Bhavnagar	Gariyadhar	21.543	71.565	DW	24.6	24	23.52	24.45
225	Bhavnagar	Ghogha1	21.683	72.279	DW	4.06	1.04	1.65	
226	Bhavnagar	Jalia	21.8	71.617	DW	17.98	12.8	21.25	21.71
227	Bhavnagar	Kardej	21.752	72.031	DW	27.02	25.55	25.52	26.8
228	Bhavnagar	Khijadiya	21.638	71.7	DW	13.59	10.79	11.5	12.58
229	Bhavnagar	Kundheli	21.379	71.981	DW	21.2	8.48	11.85	20.14
230	Bhavnagar	Longadi	21.214	71.883	DW	5.95	1.72	3.23	3.27
231	Bhavnagar	Mahuva1	21.096	71.767	DW	21.56			16.46
232	Bhavnagar	Malvav_Pz	21.161	71.908	Pz		18.85	24.57	28.33
233	Bhavnagar	Motivadal	21.197	71.55	DW		2.66	3.22	5.19

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
234	Bhavnagar	Ningala	22.018	71.7	DW	11.9	8.31		4.93
235	Bhavnagar	Palitana1	21.525	71.824	DW	6.62	4.75	6.78	8.78
236	Bhavnagar	Palitana2	21.522	71.839	DW	20.14	4.12	7.54	10.54
237	Bhavnagar	Paliyad2	22.256	71.564	DW	23.61	4.43		
238	Bhavnagar	Panchpipla	21.55	71.721	DW	7.32	0.65	2.57	5.52
239	Bhavnagar	Panvi1	22.075	71.892	DW	16.5	3.96	7	8.56
240	Bhavnagar	Pasvi	21.292	71.967	DW	16.46	5.16	8	13.34
241	Bhavnagar	Piparla	21.636	71.919	DW	8.3	6.13	7.08	8.3
242	Bhavnagar	Porbada	21.8	71.7	DW	14.83	10.77	12.11	12.37
243	Bhavnagar	Sajnasar	21.425	71.913	DW	13.12	0.9	1.35	3.14
244	Bhavnagar	Sandhida	21.688	71.758	DW	9.6	6.5	6.1	9.6
245	Bhavnagar	Satanes	21.442	71.838	DW	16.57	0.21	2.56	11.64
246	Bhavnagar	Shantinagar	21.246	71.65	DW	14.04	4.15	6.5	11.74
247	Bhavnagar	Talaja2	21.367	72.017	DW	16.26	5.31	6.65	10.52
248	Bhavnagar	Tansa	21.508	72.125	DW	22.04	5.75	8.3	23
249	Bhavnagar	Tardhera	22.229	71.604	DW		24.52	21.48	22.58
250	Bhavnagar	Tatam	22.058	71.633	DW	21.47	11.57	25.02	35.8
251	Bhavnagar	Timbi2	21.832	71.766	DW		11.04	12.73	13.49
252	Bhavnagar	Trapaj	21.425	72.096	DW	18.44		7.34	8.13
253	Bhavnagar	Umrala	21.847	71.808	DW	14.02	8		14.02
254	Bhavnagar	Vadal	21.477	71.806	DW	13.5	1.97	3.7	7.7
255	Bhavnagar	Vallabhipur1	21.883	71.878	DW		4.53	4.95	5.45
256	Bhavnagar	Vallbhipur	21.883	71.875	DW	5.4	4.86	4.7	6.35
257	Bhavnagar	Vavdi	21.568	72.198	DW		1.1	1.24	6.1
258	Bhavnagar	Wadia Pz	21.778	71.933	Pz	72.8			
259	Dohad	Ambakatch	22.667	74.22	DW	3.3	0.85	1.4	1.74
260	Dohad	Bapda	22.67	73.842	DW	8.4	1.65	2.7	4.15
261	Dohad	Dabhava	22.583	73.904	DW	5.78	9.1	11.1	4.3
262	Dohad	Dadhela	22.838	74.067	DW	7.35	2.05	2.55	4.37
263	Dohad	Dahod	22.84	74.263	DW	1.7	1.1	1.6	1.4
264	Dohad	Dahod2	22.825	74.233	DW	10.12	4.77	4.92	5.28
265	Dohad	Devgadh Baria	22.7	73.914	DW	13.5	5.85	7.75	6.09
266	Dohad	Devgadh bariya	22.7	73.917	DW	15	5.63	7.05	10.29
267	Dohad	Dhanpur	22.633	74.104	DW	13.85			10.29
268	Dohad	Dohad_Urban1	22.858	74.249	DW	7.55	2.3	5.95	5.29
269	Dohad	Dohad_Urban2	22.845	74.267	DW	7.93	3.45	4.95	5.32
270	Dohad	Dohad_Urban3	22.84	74.234	DW	5.12	2.07	2.52	4.42
271	Dohad	Fatepura(Karodia)	23.254	74.029	DW		5.2	7.6	9.75
272	Dohad	Garbara	22.681	74.313	DW	5.95	1.75	2	3.53
273	Dohad	Jhalod	23.093	74.147	DW	9	5.1	5.25	4.58
274	Dohad	Jhalod1	23.092	74.133	DW	7.1	4.4	4.6	5.78
275	Dohad	Kanjetha	22.581	74.114	DW	11.01	9.3	6.45	8.06
276	Dohad	Khandania	22.704	73.838	DW		8.7	11.35	11.73
277	Dohad	Limbdi2	23.004	74.158	DW	3.96	1.9	2.1	2.38
278	Dohad	Limkheda	22.831	73.986	DW	8.25	1.3	4.4	6.34
279	Dohad	Mirakhedi	22.933	74.2	DW	6.8	0.8	2.25	4.92
280	Dohad	Panchwada	22.729	74.308	DW	6.77	4.7	4.5	2.87
281	Dohad	Pipero	22.647	74.09	DW	12.61	7.15	7.55	9.78
282	Dohad	Salaya1	22.808	73.892	DW	15.52	1.82	3.92	7.84
283	Dohad	Sarsava	23.228	73.977	DW	10.1	0.1	1.6	7.28
284	Dohad	Sukhsar	23.15	74.05	DW	10.25	4.8	6.05	7.37
285	Dohad	Thada	22.949	74.089	DW	8.7	0.3	4.7	6.07
286	Dohad	Tokarba	22.604	74.038	DW	6.02	1.95	3.15	4.17
287	Dohad	Varamkheda	22.8	74.275	DW	5.29	0.6	2.45	0.55
288	Dohad	Wadia	22.9	74.05	DW	8.34	2.64	2.34	5.29
289	Gandhinagar	Adalaj_Pz_I	23.175	72.558	Pz	100.63		103.5	104.42
290	Gandhinagar	Adalaj_Pz_II	23.175	72.558	Pz	78.98		87.79	86.47
291	Gandhinagar	Adalaj_Pz_III	23.175	72.558	Pz	23.31			
292	Gandhinagar	Amrapur Pzi	23.374	72.705	Pz	116.56			

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
293	Gandhinagar	Amrapur Pzii	23.374	72.705	Pz	85.33			
294	Gandhinagar	Charada Pz -II	23.482	72.652	Pz	101.54	95.75	100.55	100.3
295	Gandhinagar	Charada_Pz_I	23.482	72.652	Pz	190.36	177.67	185.94	191.35
296	Gandhinagar	Chiloda_Pz_II	23.227	72.739	Pz	111.05	103.25		
297	Gandhinagar	Dahegam I	23.171	72.842	Pz	73.91			
298	Gandhinagar	Kalol(Nest)_Pz_I	23.258	72.472	Pz	64.82			
299	Gandhinagar	Kalol(Nest)_Pz_II	23.258	72.472	Pz	123.89			129.11
300	Gandhinagar	Kalol(Nest)_Pz_III	23.258	72.472	Pz	73.79		141.02	
301	Gandhinagar	Kalol(Rep)_Pz_II	23.243	72.485	Pz	54.34			
302	Gandhinagar	Kalol_Pz_IV	23.243	72.485	Pz			53.3	54.6
303	Gandhinagar	Kasturinagar(IFFCO)	23.19	72.553	Pz	13.11	10.04	13.7	14.9
304	Gandhinagar	Lodra	23.464	72.72	Pz	53.06			
305	Gandhinagar	Mansa	23.423	72.665	Pz	119.41	108.09	119.18	120.41
306	Gandhinagar	Nardipur i	23.332	72.567	Pz		88.91	97.07	96.77
307	Gandhinagar	Paliya	23.179	72.842	DW	13.92	11.5	14	14.12
308	Gandhinagar	Pethapur_Pz-I	23.267	72.673	Pz	110.59	103.07	106.53	110.45
309	Gandhinagar	Pethapur_Pz-II	23.267	72.673	Pz	79.79	74.52	77.64	80.14
310	Gandhinagar	Pethapur_Pz-III	23.267	72.673	Pz			34.64	35.14
311	Gandhinagar	Sardhav Pz -I	23.297	72.574	Pz	117.5	114.95	118.54	144.43
312	Gandhinagar	Sardhav Pz-II	23.297	72.574	Pz				138.31
313	Gandhinagar	Serthapara1	23.194	72.567	DW	14.46	11.62	15.3	15.34
314	Jamnagar	Amaliya Chokri	22.24	69.125	DW	3.94	1		
315	Jamnagar	Ambardi	21.916	69.858	DW	11.31	9.86	12.01	10.68
316	Jamnagar	Amran_Pz	22.822	70.546	Pz	2.84	0.42	3.79	3.95
317	Jamnagar	Amran1	22.829	70.563	DW	3.13	1.11	5.95	7.41
318	Jamnagar	Aramda	22.433	69.042	DW	5.9	6.05	6.22	6.4
319	Jamnagar	Balwa	21.904	69.958	DW	22.72	11.92	18.9	20.4
320	Jamnagar	Bed1	22.438	69.9	DW	7.89	4.82	6.33	6.61
321	Jamnagar	Bedanpur	22.683	70.317	DW	3.5	4	7.32	8.62
322	Jamnagar	Bhanvad	21.928	69.796	DW		14.3		15.59
323	Jamnagar	Bhatia	22.092	69.301	DW	20.21	2.31	4.04	5.1
324	Jamnagar	Bhatiya	22.094	69.267	DW	5.68	1.26	5.8	5.98
325	Jamnagar	Bhogat1	21.992	69.246	DW	10.75	3.05	9.53	10.88
326	Jamnagar	Changa	22.35	70.042	DW	18.21			
327	Jamnagar	Dhrol2	22.567	70.417	DW	3.01	0.7	4.42	5.17
328	Jamnagar	Dudhai2	22.792	70.504	DW	3.37	3.35	4.03	4.64
329	Jamnagar	Dwarka	22.246	68.958	DW	8.48	8.04	7.72	7.83
330	Jamnagar	Gordhanpur	22.45	70.001	DW	6.22	1.78	6.08	7.37
331	Jamnagar	Haripur2	22.271	70.333	DW	24.22		12.56	13.8
332	Jamnagar	Jambuda	22.525	70.204	DW	7.19	2.64	9.18	9.94
333	Jamnagar	Jamjodhpur	21.906	70.031	DW	6.9	3.45	6.63	6.69
334	Jamnagar	Jamnagar1	22.471	70.05	DW	20.95	11.82	13.16	13.94
335	Jamnagar	Jamnagar2	22.458	70.079	DW	11.34	6.15	7.8	8.92
336	Jamnagar	Juvanpur	22.171	69.367	DW	15.1	6.65	13.91	14.77
337	Jamnagar	Kajuda	22.333	69.708	DW	4.03	2.23	4.83	6.12
338	Jamnagar	Kalawad	22.217	70.383	DW	3.33	2.77	2.85	2.99
339	Jamnagar	Kalyanpur2	22.017	69.392	DW	23.5	19.3	23.07	8.5
340	Jamnagar	Khambhaliya	22.21	69.646	DW	14.2	3.01		10.76
341	Jamnagar	Khirsara	21.979	69.6	DW	15.19	5.29	7.38	9.68
342	Jamnagar	Kuvadia	22.201	69.583	DW		6.41	7.93	8.61
343	Jamnagar	Lalpur1	22.192	69.961	DW	14.1	8.03	13.51	13.93
344	Jamnagar	Lambha 1	21.899	69.324	DW		3.92		
345	Jamnagar	Manapur	22.019	69.884	DW		7.8		
346	Jamnagar	Mojap	22.367	68.983	DW	8.84	9.04	9.15	9.2
347	Jamnagar	Mota kalawad	21.908	69.829	DW	24.07	18.89	22.52	19.65
348	Jamnagar	Motagop	22.038	69.875	DW			5.81	4.31
349	Jamnagar	Moti khavdi	22.388	69.867	DW			9.94	10.46
350	Jamnagar	Moti matli	22.317	70.264	DW	20.15	11.89	19.16	17.32
351	Jamnagar	Nikava	22.192	70.533	DW		1.83	2.22	2.76

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
352	Jamnagar	Pindara1	22.247	69.258	DW		3.26	6.23	3.37
353	Jamnagar	Raval	21.93	69.492	DW		2.85	5.57	10.61
354	Jamnagar	Salaya	22.306	69.604	DW	3.57	1.54	4.65	4.83
355	Jamnagar	Samrasar1	22.375	69.104	DW	5.83	5.7	7.11	6.67
356	Jamnagar	Seth vadala	22.033	70.125	DW	10.6	2.75	9.21	10.87
357	Jamnagar	Sumana	22.108	70.167	DW	13.95		12.07	12.08
358	Jamnagar	Toda	22.063	70.383	DW	11.4	3.05	4.56	17.52
359	Jamnagar	Vad panchasara	22.233	70.117	DW	13.25	13.52	15.91	
360	Jamnagar	Vadtara	22.208	69.5	DW	12	4.7	11.81	11.95
361	Jamnagar	Varwada	22.292	68.967	DW	15.4		14.86	16.55
362	Jamnagar	Vijarkha	22.417	70.183	DW	10	5.9	8.13	8.88
363	Jamnagar	Vinjhalpur	22.15	69.6	DW	8.93	6.08	9.27	9.66
364	Junagadh	Ajotha	20.902	70.518	DW	23.97	0.31		13.27
365	Junagadh	Alwani	21.231	70.638	DW	3.15		0.85	1.84
366	Junagadh	Amervel Nes	21.009	70.726	DW	5.8	0.85	2.23	4.28
367	Junagadh	Anandpur	21.41	70.518	DW	19.88	4.81	11.16	
368	Junagadh	Ankolvadi	21.047	70.658	DW	11.95			
369	Junagadh	Ankolvadi 1	21.047	70.665	DW		2.05		
370	Junagadh	Arena	21.081	70.176	DW	12.18	3.88	5.74	6.49
371	Junagadh	Bamanwara	21.221	70.056	DW	11.16	6.53	7.58	11.57
372	Junagadh	Bantva	21.488	70.083	DW	14.33	10.01	14.82	17.17
373	Junagadh	Bhatsimroli	21.224	70.183	DW			16.64	19.16
374	Junagadh	Bhim Deval	20.978	70.609	DW	11.85	3.46	4.86	7.14
375	Junagadh	Bilkha	21.439	70.6	DW		4.64	15.42	15.76
376	Junagadh	Budhecha	21.096	70.217	DW	8.01	4.03	5.99	6.6
377	Junagadh	Chokli	21.602	70.542	DW	20.2	5.62	16.23	17.01
378	Junagadh	Dhokadva	20.958	71.071	DW		10.1	10.76	11.12
379	Junagadh	Gadu	21.054	70.279	Pz	38.35	14.95	25.37	31.34
380	Junagadh	Galodar	21.147	70.275	DW		3.06		
381	Junagadh	Gangda_Pz	20.858	71.167	Pz	9.83	2.49	2.78	5.51
382	Junagadh	Girgadhada	20.925	70.917	DW	13.66	2.32	4.85	8.37
383	Junagadh	Goraj1	21.183	70.154	DW	33.05	6.4	9.14	9.43
384	Junagadh	Govindpura2	20.946	70.396	DW	24.95	5.23	6.36	17.38
385	Junagadh	Jambur[madhapar	21.029	70.608	DW	9.06	2.64	2.83	3.98
386	Junagadh	Jamvala	20.985	70.769	DW				5.92
387	Junagadh	Jamvala1	20.983	70.763	DW	4.75	4.74	5.27	5.41
388	Junagadh	Jargla Jargali	20.881	70.984	DW	15.61	1.59	3.9	11.86
389	Junagadh	Junagadh	21.509	70.462	DW	14.15	10.2	11.58	11.25
390	Junagadh	Junagadh1	21.517	70.458	DW	14.42	7.85	8.21	13.24
391	Junagadh	Juthal	21.167	70.267	DW	6.36	5.23	9.45	10.16
392	Junagadh	Kalej	21.249	70.058	DW		10.98		16.77
393	Junagadh	Kanek	21.031	70.242	DW	16.42	3.65	7.98	10.13
394	Junagadh	Kansari	20.87	71.051	DW	17.5	4.75	5.92	5.18
395	Junagadh	Kasia Naka Check Post	21.27	70.681	DW	7.25	1.23	1.79	2.28
396	Junagadh	Kesariya1	20.796	70.942	DW	14.65	1.95	3.15	
397	Junagadh	Kewarda	21.267	70.208	DW		4.8	11.79	11.83
398	Junagadh	Khambalia1	21.044	70.192	DW	9.08	4.09	8.65	8.88
399	Junagadh	Khokharda	21.421	70.317	DW	25.3	11.35	8.28	25.12
400	Junagadh	Khorada1	21.064	70.174	DW	9.18	3.11	8.29	8.96
401	Junagadh	Khoras ahir	21.371	70.339	DW	14.63		12.44	12.75
402	Junagadh	Kodinar	20.8	70.692	DW	11.31		5.1	7.8
403	Junagadh	Kodinar1	20.8	70.692	DW	11.62	4.93	6.33	9.21
404	Junagadh	Kukaswada	21.054	70.208	DW		1.08	8.78	10.89
405	Junagadh	Lohej	21.167	70.067	DW	16	7.18	9.52	9.44
406	Junagadh	Maktupur1	21.143	70.096	DW		7.93	8.11	
407	Junagadh	Mandawad	21.358	70.746	DW	13.06	5.55	9.19	14.51
408	Junagadh	Mangrol	21.125	70.108	DW	17.4	15.47	18.46	17
409	Junagadh	Mangrol1	21.131	70.119	DW	17.66			
410	Junagadh	Manketara	21.15	70.129	DW	32.25	16.4	22.04	29

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
411	Junagadh	Mendarda	21.325	70.44	DW		2.39	17.16	
412	Junagadh	Mendarda1	21.325	70.433	DW	19.05	3.36	16.71	18.21
413	Junagadh	Moraj	20.983	70.436	DW	13.15	2.4	9.52	
414	Junagadh	Patla	21.604	70.569	DW	8.7	2.51	5.36	8.36
415	Junagadh	Prachi_Pz	20.922	70.613	Pz		3.13	4.28	
416	Junagadh	Prasli	20.851	70.669	DW	17.47	1.23	8.2	8.42
417	Junagadh	Prempara	21.3	70.7	DW	19.61	9.4	9.72	16.88
418	Junagadh	Sametar	20.854	71.121	DW	13.4	5.84	6.62	7.94
419	Junagadh	Saradiya	21.589	70.038	DW	22.38	5	6.81	7.96
420	Junagadh	Sepa	21.117	70.219	DW		4.45	23.81	17.51
421	Junagadh	Seriakhan	21.133	70.249	DW	19.69	4.34	17.04	20.73
422	Junagadh	Shardagram	21.104	70.153	DW		4.18	10.45	11.06
423	Junagadh	Sil	21.186	70.046	DW	5.34	4.64	5.46	6.29
424	Junagadh	Sil bandar	21.224	70.056	DW	7.17	3.72	4.11	5.4
425	Junagadh	Talala_Pz	21.064	70.538	Pz	11.87		6.89	9.37
426	Junagadh	Talala1	21.051	70.525	DW	12.84		7.12	10.67
427	Junagadh	Una1	20.825	71.044	DW	10	5.42	6.21	8.22
428	Junagadh	Una2	20.825	71.042	DW	6.38	2.18	3.13	4.83
429	Junagadh	Vadal	21.609	70.502	DW	18.4	3.79	8.61	9.14
430	Junagadh	Vanthali ii	21.471	70.328	DW	17.36			
431	Junagadh	Visavadar	21.339	70.749	DW	15.58		10.08	14.61
432	Kachchh	Amarpura	23.839	70.415	DW		3		
433	Kachchh	Asambia mota_Pz	22.968	69.451	Pz	9.25	12.35	12.75	12.77
434	Kachchh	Asambia mota1	22.968	69.438	DW	16.45		16.45	
435	Kachchh	Balasar	23.844	70.669	DW	7.9		8.66	8.2
436	Kachchh	Bambhdai	22.939	69.083	DW	7.05	4.9	6.1	7.32
437	Kachchh	Bhadreshwar	22.9	69.9	DW	9.7	9.7	9.87	9.58
438	Kachchh	Bherandiala	23.661	69.707	Pz	81.2			
439	Kachchh	Bhuj (Circuit House)	23.25	69.667	DW	17.77	19.77	19.47	17.81
440	Kachchh	Chandranagar	23.45	69.4	DW	8.67		8.67	
441	Kachchh	Dayapar	23.631	68.9	DW			34.4	
442	Kachchh	Dayapar1	23.633	68.871	DW			23	
443	Kachchh	Deshalpur rapar	23.747	70.679	DW	13.65	14.6	15	14.82
444	Kachchh	Devisar	23.403	69.329	DW	13	7.6	11.6	11.15
445	Kachchh	Dholavira	23.883	70.217	DW	11.63	11.1	11.63	11.63
446	Kachchh	Dhori	23.438	69.751	DW	16.6			
447	Kachchh	Dhori1	23.433	69.754	DW	16.03	12.43		16.03
448	Kachchh	Dunai	23.05	69.5	DW	12.06	11.91	12	12.36
449	Kachchh	Gagodar	23.417	70.8	DW	33	26.1	26.65	27.04
450	Kachchh	Gandhidham1	23.083	70.142	DW	7.93	7.45	8.15	10.75
451	Kachchh	Haboi	23.358	69.867	DW	0.54	0.34	0.3	0.49
452	Kachchh	Kakarwa	23.475	70.404	DW	17.45		17.45	17.45
453	Kachchh	Karagoga	22.942	69.663	DW	6.69		6.69	6.65
454	Kachchh	Kharai_1	23.463	68.686	DW	1.05	1.8	3	3.83
455	Kachchh	Kharoi	23.454	70.35	DW	10.1		9.75	9.38
456	Kachchh	Khavada	23.839	69.731	DW	7.94	6.19	7.59	7.7
457	Kachchh	Khavda	23.844	69.732	DW	4.2	5.55	7.85	7.11
458	Kachchh	Kotada	23.377	69.199	DW	38.4	34.1	38.1	38.75
459	Kachchh	Kotadi	23.042	69.192	DW	11.02	7.92	8.47	8.07
460	Kachchh	Kotaya	23.042	69.075	DW	13.2	8.6	13.88	14.23
461	Kachchh	Kothara	23.162	68.912	DW	5.57		6.92	7.6
462	Kachchh	Kuda	23.534	70.44	DW	29.6	28.9	29.61	29.61
463	Kachchh	Kumbhariya	23.341	70.724	DW	8.55			
464	Kachchh	Lakhpat	23.823	68.775	DW	7.38	11.05	8.11	8.51
465	Kachchh	Lilpur	23.511	70.65	DW	0.6	0.3	0.65	0.64
466	Kachchh	Lodai	23.4	69.892	DW		17.2		16.62
467	Kachchh	Lohariya	23.093	69.884	DW		57.55		
468	Kachchh	Luni	22.873	69.812	DW	10.6	10.5	10.94	10.52
469	Kachchh	Madhapar	23.232	69.697	DW	47.97	66.57	53.37	51.52

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
470	Kachchh	Mandvi	22.842	69.371	DW	29.3	31.65	32.11	32.3
471	Kachchh	Mata no madh	23.533	68.95	DW	13.82	8.62	9.3	10.9
472	Kachchh	Mathak1	22.997	70.025	DW	11.65			
473	Kachchh	Mau Moti_1	23.076	69.299	DW	7.45	2.9	4.1	3.2
474	Kachchh	Mothala	23.208	69.125	DW	5.73		5.73	
475	Kachchh	Moti cher	23.758	68.675	DW	4.37	4.41	4.2	4.23
476	Kachchh	Mundra	22.828	69.721	DW	7.3	7.6	7.3	7.95
477	Kachchh	Naliya	23.256	68.84	DW	12.05		11.55	
478	Kachchh	Naliya (Bus S)	23.267	68.833	DW	13.04	13.59	11.09	
479	Kachchh	Nirona	23.465	69.525	DW	18.75	18.4	18.68	19
480	Kachchh	Rapar2	23.567	70.638	DW	27.56	27.06	22.36	26.91
481	Kachchh	Ratanpur Khadir1	23.861	70.363	DW	14.1	17	15.4	18.32
482	Kachchh	Rawapar	23.517	69.075	DW	14.7		14.7	14.7
483	Kachchh	Rudramata	23.392	69.708	DW	11.4		11.4	
484	Kachchh	Samkhiari	23.3	70.508	DW	7.05	4.7	5.63	7.83
485	Kachchh	Sedat	23.171	69.638	DW	10.77	10.75	11.25	10.61
486	Kachchh	Shinaya	23.033	70.054	DW	2.3	2.5	3.6	3.85
487	Kachchh	Shivlakha	23.375	70.624	DW	22.32			
488	Kachchh	Sukhpar	23.208	69.617	DW	14.1	14.7	14.6	15.55
489	Kachchh	Suthri	23.034	68.915	DW	10.6	7.3	8.1	
490	Kachchh	Tera	23.283	68.947	DW	13.27	13.37	13.5	13.55
491	Kachchh	Tunga	23.818	69.855	DW	6.1	3.7	4.1	3.86
492	Kachchh	Ugardi	23.463	69.138	DW	28.85	29	35.8	31.15
493	Kachchh	Vinjhan1	23.1	69.025	DW	9.15	11.95	9.96	10.28
494	Kheda	Alina	22.808	73.058	DW	14.4	9	13.35	12.17
495	Kheda	Balasinor	22.958	73.336	DW	4.75	3.5	3.55	3.84
496	Kheda	Balasinor1	22.95	73.325	DW	7.7	2.6	3.95	
497	Kheda	Bar	23.168	73.411	DW	5.79		3.14	3.93
498	Kheda	Boriyavi	22.636	72.909	DW	8.9			
499	Kheda	Dakor	22.763	73.169	DW	7.38	4.9	6.2	6.03
500	Kheda	Kalesar	22.721	73.192	DW	3.4	0.6	1.45	1.76
501	Kheda	Kapadvanj	23.004	73.092	DW	14.32	7.52	8.92	11.44
502	Kheda	Kheda	22.738	72.704	DW	5.95			
503	Kheda	Ladvel	22.908	73.121	DW	2.9	2	3	
504	Kheda	Mahudha	22.783	72.942	DW		3.05	2.95	3.22
505	Kheda	Muliyad	22.783	73.177	DW	2.8	0.6	1.2	1
506	Kheda	Nadiad Pz-I	22.711	72.867	Pz	21.1	20.9	19.4	19.51
507	Kheda	Nadiad Pz-II	22.711	72.867	Pz			9.11	
508	Kheda	Nadiad2	22.683	72.883	DW	11.5	7.25	8.8	9.7
509	Kheda	Nes_Pz	22.708	73.203	Pz	9.52	8.82		9
510	Kheda	Sarkhej _ I	22.986	72.881	Pz	25.35	25.8		24.8
511	Kheda	Sarkhej _ II	22.986	72.881	Pz	31.95	31.65		30.08
512	Kheda	Sarkhej _ Pz-III	22.986	72.881	Pz	36.3	37.2		33.82
513	Kheda	Shekhupura	22.575	72.625	DW	0.95			
514	Kheda	Thasra	22.794	73.211	DW	5.95	1.75	2.35	3.3
515	Kheda	Vaso	22.661	72.754	DW	6.75	5.4	5.05	4.75
516	Kheda	Virpur_Pz	23.193	73.485	Pz	9.55	5.6	6.25	7.94
517	Kheda	Vyas vasna	23.106	73.104	DW	24.25	16.95	20.75	23
518	Mahesana	Asjol	23.508	72.183	DW	6.12	6.1	6.7	6.7
519	Mahesana	Bhandupara	23.725	72.383	DW	10.41	11.7	10	8.33
520	Mahesana	Budasan	23.288	72.375	DW	4.29	3.24	3.05	3.75
521	Mahesana	Daran_Pz-I	23.206	72.28	Pz	102.68	97.41	103.55	102.98
522	Mahesana	Daran_Pz-II	23.206	72.28	Pz	43.94	41.78	44.01	44.15
523	Mahesana	Daran_Pz-III	23.206	72.28	Pz	2.62	2.85		
524	Mahesana	Dharpura	23.546	72.113	DW	7.05	7.31	7.65	7.45
525	Mahesana	Dosaj	23.842	72.45	DW	4.49	4.11	10.33	8.51
526	Mahesana	Jaska(Sy_4")Pz_II	23.824	72.535	Pz		8.44	15.15	15.43
527	Mahesana	Jaska(Sy_8")Pz_I	23.824	72.535	Pz	14.96	46.78		
528	Mahesana	Jotana Pzi	23.474	72.288	Pz	119.46		141.46	146.88

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
529	Mahesana	Jotana Pzii	23.474	72.288	Pz	14.3			
530	Mahesana	Jotana Pziii	23.467	72.297	Pz	18.42		16.54	16.71
531	Mahesana	Kalyanpur	23.127	72.193	DW	4.62	4.8	4.24	4.94
532	Mahesana	Karalli (i)	23.804	72.486	Pz	145.31		132.47	132.3
533	Mahesana	Karalli (iii)	23.804	72.486	Pz	10.34	10.7	10.09	10.3
534	Mahesana	Karalli II	23.804	72.486	Pz	45.04	44.65	32.9	39.24
535	Mahesana	Kheralu (deep)	23.898	72.611	Pz	46.58	44.62	44.91	47.31
536	Mahesana	Kheralu(shallow	23.898	72.611	Pz	5.15	4		4.35
537	Mahesana	Kheralu1	23.888	72.613	DW	6.4		9.14	5.05
538	Mahesana	Maguna	23.578	72.289	DW	8.05	8.93	9.13	9.45
539	Mahesana	Mau	23.51	72.519	DW	10.37	9.33	8.37	8.33
540	Mahesana	Mehsana v	23.598	72.399	Pz	29.45	29.05	29.96	29.61
541	Mahesana	Mehsana I	23.598	72.399	Pz	156.27	148.51	153.85	
542	Mahesana	Mehsana II	23.598	72.399	Pz	156.57	149.57	153.4	152.94
543	Mahesana	Mehsana III	23.598	72.399	Pz	101.68	98.76	109.57	102.12
544	Mahesana	Mewad	23.533	72.383	DW	7.71	10.45	15.55	15.75
545	Mahesana	Modhera II	23.717	72.467	Pz	55.15	54.7		
546	Mahesana	Modhera iii	23.717	72.467	Pz	7.42	6.88		
547	Mahesana	Motipura_Pz_I	23.534	72.604	Pz	175	154.35	166.13	165.89
548	Mahesana	Motipura_Pz_II	23.534	72.604	Pz	61		74.53	77.68
549	Mahesana	Motipura_Pz_III	23.534	72.604	Pz		75.9		
550	Mahesana	Padhadya	23.523	72.533	DW				12.52
551	Mahesana	Panchot	23.629	72.342	DW	3.67	3.8		4.92
552	Mahesana	Rampura1	23.892	72.517	DW	7.77	6.81	7.95	8.23
553	Mahesana	Sihi	23.8	72.35	DW	10.9	11.28	12.23	11.56
554	Mahesana	Suraj	23.39	72.307	DW	27.96		27	28.25
555	Mahesana	Tarabh	23.758	72.458	DW	9.61	8.05	9.3	9.83
556	Mahesana	Thol Pz -IV	23.131	72.376	Pz		109.43		
557	Mahesana	Thol_I	23.131	72.376	Pz	69.16	69.11		
558	Mahesana	Timba_1	23.987	72.759	DW	14.56	13.8		
559	Mahesana	Unad1	23.846	72.717	DW	15.4	9.89	22.72	
560	Mahesana	Unawa	23.767	72.363	DW	3.8	4.05	3.55	3.76
561	Mahesana	Unjha	23.798	72.394	DW	5.77	3.77	5.31	4.39
562	Mahesana	Vidaj	23.247	72.3	DW	2.23	3.88	2.65	1.95
563	Mahesana	Visnagar iv	23.7	72.533	Pz	2.56	2.91	2.81	3.1
564	Narmada	Agar(Rep)_Pz	22.031	73.657	Pz	5.42	7.42	12.24	12.26
565	Narmada	Almadi	21.609	73.511	DW	7.35	0.5	2.97	6.56
566	Narmada	Amayar	21.547	73.767	DW	9.25		3.25	3.96
567	Narmada	Baman Phalia_Pz	21.798	73.379	Pz	23.5		15.41	16.91
568	Narmada	Chikada	21.521	73.646	DW	5.45	1.7	4.67	5.45
569	Narmada	Chuli	21.555	73.476	DW	12.23	2.18	6.71	8.59
570	Narmada	Garudeshwar	21.892	73.65	DW	11.3	9.13	10.96	11.27
571	Narmada	Hirapura	21.868	73.6	DW	7.6		6.94	7.61
572	Narmada	Jankh	21.492	73.597	DW	1.67	1.51	1.06	1.53
573	Narmada	Kanbi pitha	21.521	73.646	DW	2.45	1.6	1.47	
574	Narmada	Kewadia_Pz	21.883	73.701	Pz	5.63		4.4	5.51
575	Narmada	Khaidipada	21.514	73.519	DW	5.3	0.36	0.8	2.21
576	Narmada	Khota amba	21.733	73.475	DW	1.29	0.86	1.22	3.5
577	Narmada	Namaria	22.044	73.622	DW	4.9	2.81	4.21	5.61
578	Narmada	Nani singlot	21.669	73.667	DW	9.8	4.66	8.05	9.02
579	Narmada	Rajpipla	21.875	73.5	Pz	32.97	30.26	30.58	31.48
580	Narmada	Ralda	21.61	73.653	DW	4.62	0.8	2.83	
581	Narmada	Rasela	21.925	73.492	DW		11.5	16.32	17.43
582	Narmada	Rasulpura_Pz	21.967	73.625	Pz	27.4	22.02	23.46	23.71
583	Narmada	Ringani	21.842	73.467	DW	2.2	1.06	2.87	4.86
584	Narmada	Selemba 1	21.61	73.763	DW	6.45	7.27	5.77	
585	Narmada	Sunderpura	21.847	73.536	DW	27.44			
586	Narmada	Sunderpura_Pz	21.839	73.535	Pz	34.14		30.21	30.72
587	Narmada	Umran	21.488	73.883	DW	7.7		2.62	4.21

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
588	Navsari	Abrama	20.863	72.9	DW	1.8	0.64	0.5	2.8
589	Navsari	Anklas	20.619	73.267	DW	11	6.13	5.84	
590	Navsari	Chadav	20.831	73.334	DW	9.68	1.17	0.82	6.8
591	Navsari	Chinam	20.992	72.886	DW	3.58		1.9	3.73
592	Navsari	Dandi	20.892	72.808	DW	3.66	1.91	1.6	3.7
593	Navsari	Duvada	20.829	73.058	DW	7.14	1.52	1.35	6.9
594	Navsari	Hond	20.739	73.046	DW	8.4	2.11	1.67	6.7
595	Navsari	Kaliyari	20.725	73.15	DW	12.17	1.32	1.16	6.1
596	Navsari	Kantasvel	20.797	73.292	DW	8.2	1.62	1.3	
597	Navsari	Khergam	20.633	73.096	DW	8.6	1.55	1.33	5.5
598	Navsari	Manav Khadak	20.674	73.233	DW	3.26	1.41	1.03	2.7
599	Navsari	Moti Valzar	20.805	73.267	DW	7.12	0.96	0.7	4.85
600	Navsari	Navsari	20.95	72.933	DW	38.9			
601	Navsari	Navsari 1	20.958	72.935	DW	6.02	1.04	0.99	5.57
602	Navsari	Onjal	20.833	72.842	DW	6.2	2.03	1.63	5.55
603	Navsari	Onjal1	20.833	72.842	DW				5.5
604	Navsari	Panikhadak	20.649	73.167	DW	13.5	2.95	2.37	10.2
605	Navsari	Pipalkhed	20.675	73.283	DW	17.45	1.96	1.6	
606	Navsari	Rankuva	20.813	73.158	DW	7.48			5.4
607	Navsari	Sari_khurd	20.788	72.954	DW	4.55	1.84	1.47	2.65
608	Navsari	Ubhrat	21.008	72.746	DW	4.29		3.26	3.25
609	Navsari	Unai	20.85	73.342	DW	9.56	3.3	2.84	
610	Navsari	Vansda	20.764	73.363	DW	11.8	5.01	4.57	8.45
611	Panchmahals	Bavaliya	23.325	73.569	DW	10.46	5.59		
612	Panchmahals	Bavaliya_Pz	23.307	73.555	Pz		2.52	4.15	16.9
613	Panchmahals	Chhabanpur	22.828	73.613	DW	10.28	4.65	5.3	6.37
614	Panchmahals	Dhanol	22.759	73.507	DW	2	1	0.1	0.91
615	Panchmahals	Gadhar	23.15	73.775	DW		2.93	3.1	5.95
616	Panchmahals	Godhra_UR1	22.793	73.607	DW	10.33	2.83	3.58	3.83
617	Panchmahals	Godhra_UR2	22.769	73.591	DW	6.45			
618	Panchmahals	Godhra_UR3	22.78	73.607	DW	2.68	0.88	1.38	1.63
619	Panchmahals	Godhra2	22.771	73.633	DW		6.04	6.49	7.84
620	Panchmahals	Jambughoda	22.369	73.725	DW	7.15	5.6	7.25	6.66
621	Panchmahals	Javan	22.401	73.685	DW	5.76		4.85	5.3
622	Panchmahals	Jokha	23.062	73.62	DW	6.88	5.51	5.63	6.42
623	Panchmahals	Kalol_UR1	22.6	73.443	DW	18.4	9.9	11.55	12.29
624	Panchmahals	Kalol_UR2	22.59	73.451	DW	14.04			
625	Panchmahals	Kantha	23.178	73.652	DW	5.95	0.1	1.9	2.7
626	Panchmahals	Khadki_Vadiya	22.662	73.5	DW	17.7	11.4	13.6	15.11
627	Panchmahals	Khanpur	23.37	73.677	DW	10.5	9.37		
628	Panchmahals	Kothamba	23.019	73.519	DW	3.5	1.6	2.4	2.57
629	Panchmahals	Limbadia peti	23.204	73.6	DW	6.2	2.02	2.4	2.62
630	Panchmahals	Lunawada	23.129	73.608	DW	11.41	7.54	6.83	8.43
631	Panchmahals	Malekpur1	23.231	73.736	DW		1.45	2.05	2.9
632	Panchmahals	Morwa (Hadaf) Pz-I	22.918	73.844	Pz	13.2			
633	Panchmahals	Natapur	22.857	73.821	DW	8.58	4.72	6	6.64
634	Panchmahals	Palla Rajgarh Pz	22.523	73.701	Pz	23.3	8.5	12.8	17.15
635	Panchmahals	Pandarvada	23.375	73.633	DW	15.56	5.58	7.01	15.56
636	Panchmahals	Pavagadh	22.488	73.556	DW	9.86	3.36	5.06	7.24
637	Panchmahals	Ranipura	22.725	73.758	DW	9.43	3.63	4.2	6.65
638	Panchmahals	Santrampur	23.171	73.908	DW	9.65	5.9	5.35	7.2
639	Panchmahals	Santrampur1	23.192	73.908	DW	11.8	2.1	3.9	6.24
640	Panchmahals	Santroad1	22.803	73.793	DW	15.8	6.1	9.2	13.44
641	Panchmahals	Shehra	22.954	73.625	DW	3.06	1.9	1.05	1.26
642	Panchmahals	Shivrajpur	22.425	73.592	DW	12.5	9	7.45	10.73
643	Panchmahals	Suliyat	23.062	73.851	DW	22.38	8.5	14.2	19.3
644	Panchmahals	Tarkanda	22.546	73.529	DW	13.3	0.35	3	6.14
645	Panchmahals	Tuwa	22.804	73.471	DW	4.5	1.7	2.55	2.68
646	Panchmahals	Ucharpi Pz	23.119	73.472	Pz	18.5	11.3	12.95	16.52

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
647	Panchmahals	Vejalpur	22.696	73.558	DW	8.7	3.1	4.65	4.98
648	Patan	Baspa (Repl) i	23.73	71.68	Pz	130.15			
649	Patan	Baspa (Repl) ii	23.73	71.68	Pz	74.4			
650	Patan	Bhutia vasna i	23.917	72.1	Pz	21.91	22.25	21.55	21.6
651	Patan	Biliya(Temple)_Pz_I	23.888	72.399	Pz	73.1	77.1	74.7	73.94
652	Patan	Biliya(Temple)_Pz_II	23.888	72.399	Pz	46.9	53.5	48	47.35
653	Patan	Chanasma i	23.711	72.115	Pz	79.01	69.51		
654	Patan	Dharmoda	23.697	72.069	DW	3.57	2.12	2.22	4.14
655	Patan	Dhinoj1	23.663	72.279	DW	9.4	17.3	21.95	
656	Patan	Harij II	23.686	71.897	Pz	199.45			
657	Patan	Harij iii	23.686	71.897	Pz	30.35			
658	Patan	Jangral Pzi	23.695	71.694	Pz	147.5	146.5	149.8	149.15
659	Patan	Jangral Pzii	23.706	71.675	Pz	132.4	127.4		
660	Patan	Kakosi Pz-I	24.002	72.306	Pz	143.8			
661	Patan	Kakosi Pz-II	24.002	72.306	Pz	38.46		82.3	
662	Patan	Lanwa Pz-I	23.687	72.249	Pz	128.35	146.7		
663	Patan	Matarwadi I	23.868	72.147	Pz			99.12	
664	Patan	Matarwadi II	23.868	72.147	Pz	105.65	101.35		107.8
665	Patan	Moti chander	23.594	71.781	DW	2.23		2.7	3.35
666	Patan	Patan2	23.842	72.124	DW	17.78	21.08	19.48	17.32
667	Patan	Piprala_1	23.655	71.086	DW	10.47	10.65	10.25	10.75
668	Patan	Radhanpur2	23.825	71.614	DW	5.1			
669	Patan	Sander	23.767	72.254	DW	15.63	9.7	17.85	18.32
670	Patan	Sankheshwar	23.522	71.791	DW	2.49	1.99	2.39	3.05
671	Patan	Santhalpur	23.758	71.175	DW		1		
672	Patan	Shankhari	23.779	72.163	DW		12.51	19.71	15.64
673	Patan	Sidhada	23.806	71.299	DW		2.3		
674	Porbandar	Adityana	21.709	69.711	DW	22.37	17.55	24.9	26.28
675	Porbandar	Adwana2	21.917	69.6	DW	14.92	12.77	5.95	14.52
676	Porbandar	Babda	21.77	69.588	DW	12.6	5.47	11.7	13.62
677	Porbandar	Bakharla	21.765	69.661	DW	20.76	16.79	21.65	21.87
678	Porbandar	Balej	21.371	69.875	DW	3.28	5.85	7.21	4.97
679	Porbandar	Bhavpura	21.81	69.408	DW	8.13	8.51	8.82	7.71
680	Porbandar	Bhod	21.659	69.821	DW	29.24	23.63	25.47	27.24
681	Porbandar	Degam	21.71	69.606	DW	19.35		18.06	14.82
682	Porbandar	Hanumangadh1	21.793	69.803	DW	34.2	13.05	15.61	18.92
683	Porbandar	Kadegi	21.451	69.983	DW		0.55	0.95	0.94
684	Porbandar	Kandorna	21.648	69.883	DW	22.8	16.58	19.19	27.01
685	Porbandar	Khambodar	21.808	69.601	DW	11.53	3.99	10.48	11.62
686	Porbandar	Kolikhada	21.7	69.614	DW	33.02	27.83	28.68	27.71
687	Porbandar	Kuchhadi	21.683	69.55	DW	2.87	2.19	2.79	2.81
688	Porbandar	Kutiyana_Pz	21.622	69.997	Pz	13.4	4.75	11.46	14.58
689	Porbandar	Kutiyana1	21.631	70.017	DW	12.18	4.62	11.34	11.8
690	Porbandar	Miyani	21.833	69.389	DW	6.83	7.08		7.54
691	Porbandar	Mocha	21.348	69.889	DW	2.55	5.3	6.47	3.81
692	Porbandar	Mojiwana	21.886	69.6	DW	10.78	9.05	13.67	22.71
693	Porbandar	Navibandar	21.446	69.792	DW	4.42	3.23	3.59	4.01
694	Porbandar	Oddar	21.567	69.681	DW	6.11	5.64	6.26	1.85
695	Porbandar	Palkhada1	21.758	69.488	DW	11.83	9.78	12.4	15.53
696	Porbandar	Pata	21.297	69.942	DW	2.68	3.7	4.87	5.14
697	Porbandar	Porbandar	21.645	69.643	Pz	5.12	1.2	4.03	6.1
698	Porbandar	Porbandar1	21.642	69.625	DW	3.93	1.94	3.72	3.98
699	Porbandar	Ranavav2	21.683	69.746	DW	25.31	13.4	30.5	31.41
700	Porbandar	Ratadi	21.72	69.512	DW	6.67	6.38	7.71	8.44
701	Porbandar	Ratia	21.438	69.806	DW	6.83	5.9	7.21	7.01
702	Porbandar	Simar	21.947	69.686	DW		13.89	16.61	14.71
703	Porbandar	Tukda	21.516	69.729	DW	3.14	2.25	2.85	2.98
704	Porbandar	Visavada Mul Dwarka	21.786	69.446	DW	8.58	8	10.62	10.68
705	Rajkot	Amar nagar	22.933	70.808	DW	2.84	2.95	3.35	3.12

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
706	Rajkot	Bhada jodiya	21.663	70.342	DW	25.4		24.22	25.58
707	Rajkot	Bhadla	22.183	71.092	DW	18.15	6.4	17.1	18.6
708	Rajkot	Bhalgam	22.442	71.083	DW	14.52	5.94	10.42	12.53
709	Rajkot	Chhatar	22.504	70.754	DW	3.1	0.3	5.62	8.6
710	Rajkot	Chordi	21.917	70.749	DW	9.35	6.5	9.16	8.5
711	Rajkot	Dadia	22.092	70.733	DW	16.52	3.97		10.97
712	Rajkot	Dhoraji	21.746	70.286	DW		10.35	17.78	
713	Rajkot	Ganod	21.675	70.179	DW	6.35	3.65	4.98	6.3
714	Rajkot	Gogavadar	21.967	70.875	DW	12.45	4.23	8.34	
715	Rajkot	Hadmadiya	21.978	70.623	DW		7.34	7.14	
716	Rajkot	Hadmatia	22.683	70.808	DW	11.05		8.73	
717	Rajkot	Halenda	22.092	71.05	DW	6.85	5.99	5.66	8.18
718	Rajkot	Jamkandorna	21.897	70.492	DW	13.09	11.1	11.7	13.6
719	Rajkot	Jamwali	21.933	70.767	DW			7.09	
720	Rajkot	Jasapur	21.892	70.483	DW	11.95	6.57	13.82	9.98
721	Rajkot	Jasdan	22.044	71.214	DW	9.3	6.25	8.57	9.79
722	Rajkot	Jasdan2	22.058	71.221	DW	9.87	3.45		10.24
723	Rajkot	Jetpur	21.756	70.619	DW	32	4.5	7.75	16.25
724	Rajkot	Jetpur Pithad	23.022	70.918	DW	14.58			13.98
725	Rajkot	Jetpur pithad.	21.775	70.633	DW		7.61		
726	Rajkot	Kalithad1	22.019	70.66	DW	15.6	2.7	7.95	15.6
727	Rajkot	Kalyanpur2	22.658	70.733	DW	13.24			
728	Rajkot	Kamlapur	22.146	71.2	DW		7.6	16.4	
729	Rajkot	Kamlapur1	22.152	71.2	DW	12.7	6.7	10.32	10.58
730	Rajkot	Khamta	22.475	70.55	DW	16.15		10.7	
731	Rajkot	Lajai	22.717	70.779	DW	5.47	5.7		9.6
732	Rajkot	Lalavadar	22.133	71.304	DW	6.31	3.88	6.65	3.91
733	Rajkot	Lodhika	22.133	70.632	DW	14.17		10.84	15.8
734	Rajkot	Lodhika1	22.142	70.642	DW		5.4	6.65	
735	Rajkot	Macchukunda	23.001	70.896	DW	11.6			7.99
736	Rajkot	Malia	23.092	70.763	DW	5.2		0.75	4.45
737	Rajkot	Modpar1	22.9	70.667	DW	2.86	2.5	4.12	3.22
738	Rajkot	Morbi	22.825	70.858	DW	4.1	3	3.55	6.63
739	Rajkot	Morvi	22.817	70.842	DW	6.4	2.45	4.12	3.88
740	Rajkot	Mota Dadwa	21.998	70.994	DW		1.16	9.56	9.83
741	Rajkot	Mota dhansura	22.958	70.617	DW	9	8.65	8.87	
742	Rajkot	Motagundala	21.735	70.501	DW	10.65	1.97	12.97	9.45
743	Rajkot	Movaiya	22.45	70.608	DW	12.5	5.3	9.82	15
744	Rajkot	Neknam	22.504	70.696	DW		13.77	17.65	
745	Rajkot	Nichi mandal	22.858	70.95	DW	5.45	6.21	5.41	5.6
746	Rajkot	Padadhari1	22.447	70.608	DW		6.05	6.52	7.45
747	Rajkot	Patanvav	21.644	70.261	DW	21.9	6.12	10.02	13.84
748	Rajkot	Pedhla	21.751	70.592	DW	21.95	5.87		22.8
749	Rajkot	Rajkot	22.306	70.808	DW	5.15		3.85	
750	Rajkot	Rajkot1	22.3	70.8	DW	5.62	3.07	4.13	4.07
751	Rajkot	Ranpur1	22.367	70.929	DW	16.9	5.2		21.6
752	Rajkot	Ribda	22.125	70.767	DW	10.45	2.53	8.87	10.55
753	Rajkot	Sarvad	23.006	70.707	DW	2.85	2.63		3.24
754	Rajkot	Sindhavadar	22.55	70.892	DW	13.71	9	17.95	18.25
755	Rajkot	Targhari	22.383	70.667	DW		2.32		8.82
756	Rajkot	Umrali	21.919	70.604	DW	12.85	4.08		14.1
757	Rajkot	Upleta1	21.749	70.275	DW		12.96	7.68	
758	Rajkot	Upleta3	21.67	70.183	DW	14.01		19.94	21.54
759	Rajkot	Vinchhia	22.208	71.379	DW	4.55	2.35		3.68
760	Rajkot	Viranagar	22.025	71.125	DW	10.83	4.38	7.45	
761	Rajkot	Virpur1	21.85	70.696	DW	13.13	8.53	17.98	13.86
762	Sabarkantha	Alwakampa	23.275	73.208	DW	11.1	4.3	10.25	11.05
763	Sabarkantha	Anwarpura Pz	23.406	72.846	Pz	39.92	43.32	43.5	42.13
764	Sabarkantha	Atarsumba	23.986	73.208	DW				4.44

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
765	Sabarkantha	Atarsumba_2	23.986	73.212	DW	9.1	1.65	2.5	
766	Sabarkantha	Bayad_Pz	23.217	73.229	Pz	10.56	10.55	10.7	11.16
767	Sabarkantha	Bhadreshwar	23.746	72.979	DW	26.2		25.5	25.95
768	Sabarkantha	Bhiloda_Pz	23.767	73.25	Pz	30.35			
769	Sabarkantha	Boral	23.125	73.208	DW	18.3	11.95	13.8	
770	Sabarkantha	Boriya	23.243	72.941	DW	7.28	7.32	7.5	7.67
771	Sabarkantha	Chandap_DW	23.923	72.853	DW	17.3	11.5	10.9	17.22
772	Sabarkantha	Chandap_Pz	23.932	72.857	Pz	14.55	8.1	10.05	15.91
773	Sabarkantha	Choriwad	23.9	73.119	DW	21.71	21.34	21.21	23.15
774	Sabarkantha	Derol Pz-II	23.599	72.903	Pz	44.1	43.5	44.15	46.5
775	Sabarkantha	Dhansura1	23.35	73.2	DW	12.1	2.5	4.45	6.97
776	Sabarkantha	Gadada	23.575	73.253	DW	6.55	2.45	8.05	10.13
777	Sabarkantha	Gadha	23.708	72.942	DW	17.8	9.5	22	21.3
778	Sabarkantha	Hamirpur	23.408	73.458	DW	16.4		11.45	
779	Sabarkantha	Harsol1	23.378	73.017	DW	16.75	12.1	13.75	17.47
780	Sabarkantha	Himmatnagar_Pz	23.608	72.971	Pz	8.67	6.35	7.35	7.17
781	Sabarkantha	Idar	23.842	73.038	DW	9.03	15.3	9.3	7.44
782	Sabarkantha	Jhaloti	23.95	73.338	DW	11.5	5.2	5.15	5.85
783	Sabarkantha	Karanpur	23.333	73.3	DW	8.65	0.2	9.1	11.45
784	Sabarkantha	Kesharpura	23.915	73.145	DW	20.37	18.08	16.1	20.15
785	Sabarkantha	Kesharpura_Mayal	23.322	72.949	DW	3.91	3.03	3.28	3.98
786	Sabarkantha	Khedbrahma_Pz	24.036	73.044	Pz	4.25	1.45	2.5	3.27
787	Sabarkantha	Khedbramha_1	24.029	73.05	DW	18.8	10.3	15.65	21.88
788	Sabarkantha	Kherwada	23.969	73.234	DW	7.5	3.05	3.5	4.13
789	Sabarkantha	Kuski_Pz	23.639	73.369	Pz	23.75	7.12	6.4	19.7
790	Sabarkantha	Malpur_1	23.345	73.464	DW		6.5	8.1	
791	Sabarkantha	Malpur_Pz	23.342	73.468	Pz	12.5	8.75	9.3	10.78
792	Sabarkantha	Mathasuliya	23.603	73.154	DW	8.83	6.38	5.73	7.42
793	Sabarkantha	Matoda	24.111	73.008	DW	14.55	10.3	15.25	19.95
794	Sabarkantha	Medasana	23.512	73.274	DW	8.45	6.65	10.3	7.88
795	Sabarkantha	Meghraj_1	23.496	73.508	DW	8.15	9.1	8	12.03
796	Sabarkantha	Modasa	23.463	73.308	DW	6.28	5.53	5.48	5.84
797	Sabarkantha	Poshina2	24.375	73.033	DW	5.6	4.65	4.25	6.69
798	Sabarkantha	Punasan	23.669	73.174	DW	6.91	6.15	5.65	7.43
799	Sabarkantha	Ramgarh	23.605	72.919	DW	11.08			
800	Sabarkantha	Ratanpur	24.208	72.999	DW	17.1			
801	Sabarkantha	Revas	23.821	73.117	DW	16.9	11.08	10.4	12.68
802	Sabarkantha	Sabalwad	23.874	72.963	DW	12.68		11.9	12.1
803	Sabarkantha	Sathamba	23.175	73.338	DW	15.45	5.9	6.5	9.37
804	Sabarkantha	Seenawad	23.486	73.399	DW	13.8	3.75	5.7	6.54
805	Sabarkantha	Shamlaji	23.686	73.367	DW	10.15	9.05	8.35	9.3
806	Sabarkantha	Silwad	24.008	73.117	DW	10.9	6.05	5.6	7.02
807	Sabarkantha	Takatuka_1	23.851	73.305	DW	32.9	11.25	8.25	17.37
808	Sabarkantha	Umadpura	23.304	72.964	DW	13	6.08	8.85	12.64
809	Sabarkantha	Varvada	23.442	73.057	DW		16.1	15.55	15.46
810	Sabarkantha	Vejpur_Pz	23.797	73.221	Pz	17.35	9.4	5.5	9.5
811	Sabarkantha	Vijaynagar	24.008	73.354	DW	7.5	3.5	4	5.03
812	Sabarkantha	Vijaynagar_Pz	24.007	73.333	Pz	13.25			
813	Sabarkantha	Virpur (Himmat)	23.654	72.958	DW			8.3	
814	Sabarkantha	Virpur_1(Himmat)	23.652	72.954	DW	14.55	10.65		
815	Sabarkantha	Wadali	23.933	73.033	DW	29.4			
816	Sabarkantha	Waliampura Pz	23.351	72.971	Pz	38.9	38.25	38.85	39.48
817	Surat	Aarda Boratha	21.488	74.115	DW	7.5	4.49	3.93	8
818	Surat	Allu	21.063	73.192	DW	4.24	2.29	1.93	4.45
819	Surat	Bardoli	21.115	73.1	DW	8.75	1.52	1.45	6.05
820	Surat	Bedchit	20.95	73.351	DW	10.3	1.1	0.93	9.3
821	Surat	Bhatkol	21.38	73.004	DW	4.65	3.48	3	3.85
822	Surat	Bhurvel (ukai)	21.225	73.579	DW	7	1.28	1.07	4.3
823	Surat	Chapawadi	21.151	73.394	DW	7.7	1.18	0.92	5.2

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
824	Surat	Chavada	21.475	73.595	DW	4.3	1.35	1.22	2.5
825	Surat	Digas	21.248	73.026	DW	15.64	3.82	3.16	9
826	Surat	Dungri	21.408	73.133	DW	10.85	3.96	3.11	6.55
827	Surat	Gandhinagar	21.164	73.696	DW		2.63	2.32	4.61
828	Surat	Gangadhra	21.119	73.075	DW	10.85	4.89		8.25
829	Surat	Gangtha	21.525	74	DW	19.81		4.5	
830	Surat	Jesingpura[sg]	21.171	73.554	DW	7.15	3.96	3.36	8.2
831	Surat	Jhankhavav	21.45	73.329	DW	7.4	2.01	1.64	
832	Surat	Jhankhvav	21.467	72.953	DW	9.9	3.18	1.3	4.3
833	Surat	Juna umarpada	21.458	73.492	DW	5.96			
834	Surat	Juna Umarpada2	21.449	73.487	DW	5.7	0.78	0.68	6.7
835	Surat	Kadod 1	21.221	73.219	DW	5.65	4.34	3.43	
836	Surat	Karanjvel	21.013	73.458	DW	8.05	0.51	0.38	5.8
837	Surat	Kasal	21.322	73.127	DW	8.9	1.23	1.07	8.4
838	Surat	Kathor	21.292	72.929	DW	13.45	7.24	5.16	13
839	Surat	Katradevi	21.415	73.428	DW	6.4			
840	Surat	Kelkui	21.042	73.323	DW	2.96	0.82	0.65	4.7
841	Surat	Khedwada (Ashram Fali	21.281	73.465	DW		3.81	3.47	6.4
842	Surat	Kherwa	21.419	73.96	DW		4.51		3.7
843	Surat	Madhi 1	21.134	73.249	DW				4.6
844	Surat	Mahuva2	21.021	73.146	DW	17.75	15.57	11.94	
845	Surat	Malda	21.367	73.35	DW	6.15	1.55	1.23	7.1
846	Surat	Mandvi2	21.254	73.296	DW	13.77	12.66	10.52	13.1
847	Surat	Mota	21.17	73.069	DW	4.2	1.45	1.22	3.8
848	Surat	Moti Sarkui	21.279	73.35	DW	8.8	1.58	1.41	6.85
849	Surat	Motichher	21.213	73.362	DW	4.4	1.2	0.88	3.5
850	Surat	Navi pardi	21.322	72.971	DW	3.38	2.03	1.91	4.78
851	Surat	Nizar1	21.477	74.191	DW	13.5			
852	Surat	Nogama	21.291	73.214	DW	3.29	1.02	0.66	2.24
853	Surat	Olpad2	21.342	72.758	DW	3.52	1.28	1.05	2.7
854	Surat	Palsana	21.078	72.992	DW	2.59	1.34	1.01	2.59
855	Surat	Paneshwar	21.454	73.198	DW	11.86	5.29	4.61	9.8
856	Surat	Puna	20.924	73.233	DW	13.5	5.27	4.34	10.85
857	Surat	Puna1	20.929	73.229	DW	10.2	2.31	1.94	8.6
858	Surat	Sachin town	21.092	72.875	DW	3.6	1.83	1.48	3.5
859	Surat	Sarbhon	21.058	73.092	DW	2.63	1.01	0.64	2.6
860	Surat	Sayan	21.306	72.911	DW		5.74	4.72	7.7
861	Surat	Sultanabad	21.092	72.725	DW	5.83	3.49	3.49	6.31
862	Surat	Tawali	21.376	73.902	DW	8.46	1.49		
863	Surat	Ten-bardoli	21.117	73.1	DW	10.8	1.62	1.16	6.5
864	Surat	Tokarwa 1	21.31	73.851	DW	8.1	0.71	0.61	
865	Surat	Uchchhal	21.172	73.769	DW		7.12	6.22	8.3
866	Surat	Ushker	21.341	73.098	DW	4.3	1.69	1.16	8.2
867	Surat	Vadade-Khurd	21.252	73.817	DW	3.2	0.92	0.56	
868	Surat	Vaheval	20.837	73.288	DW	10.22	0.67	0.43	8.35
869	Surat	Valod	21.05	73.267	DW	4.85	1.41	1.35	5.7
870	Surat	Vyara1	21.108	73.396	DW	4.25	2.39	2.13	4.5
871	Surat	Wadoli	21.425	72.829	DW	3.09	2.33	4.29	2.65
872	Surendranagar	Anindra	22.81	71.706	DW	3.81	1.78	3.19	2.86
873	Surendranagar	Bajana	23.117	71.783	DW	2.18	1.86	2.3	1.24
874	Surendranagar	Bamanbor	22.417	71.042	DW	9.5	4.13	10.2	11.23
875	Surendranagar	Chotila1	22.425	71.182	Pz	10.4	5.7	8.46	11.61
876	Surendranagar	Dasada	23.32	71.824	DW	5.3			5.05
877	Surendranagar	Dedadra	22.775	71.733	DW	3.35	3.6	5.55	0.93
878	Surendranagar	Dhama	23.385	71.679	DW	6.52	4.5	7.56	6.83
879	Surendranagar	Dhandhalpur	22.379	71.35	DW		2.46		
880	Surendranagar	Dhandhalpur 1	22.381	71.351	DW		1.46		
881	Surendranagar	Dheduki 1	22.501	71.322	DW		9.4	9.65	
882	Surendranagar	Dhrangadhra 2	22.993	71.498	DW			7.94	

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
883	Surendranagar	Gamda	22.898	71.557	DW				11.48
884	Surendranagar	Ghansyam Gadh	23.107	71.484	DW	15.2	0.67	2.25	15.2
885	Surendranagar	Halvad2	23.021	71.188	DW	10.59	13.23	13.06	12.61
886	Surendranagar	Jhinjhuwada	23.35	71.658	DW	6.6	5.21	8.33	7.05
887	Surendranagar	Juna Devaliya 1	22.979	71.009	DW	5.61	5.1	6.46	3.08
888	Surendranagar	Kherwa	23.004	71.746	DW	2.06	1.69	3.05	0.89
889	Surendranagar	Kukavati	23.123	71.48	DW	12.1	7.5	8.25	6.9
890	Surendranagar	Lakhtar	22.858	71.783	DW	6.39	4.08	10.1	3.7
891	Surendranagar	Latuda	22.813	71.608	DW	2.2			1.92
892	Surendranagar	Limbdi1	22.567	71.813	DW	9.2	0.8	2.97	9.2
893	Surendranagar	Limbdi-Pz	22.572	71.808	Pz	2.6		1.92	2.11
894	Surendranagar	Mathak	22.84	71.058	DW	6.2	11.14	13.2	6.82
895	Surendranagar	Modhvana	22.881	71.736	DW	2.84			0.35
896	Surendranagar	Moti Moladi	22.421	71.11	DW	9.7	5.1	9.46	8.64
897	Surendranagar	Muli	22.65	71.467	DW	9.8	10.8	10.42	11.3
898	Surendranagar	Nava Raisngpur	22.742	71.262	DW	22.3		19.16	18.15
899	Surendranagar	Olak	22.919	71.863	DW	7.37	3.53	4.6	4.35
900	Surendranagar	Pipli	23.06	71.734	DW	2.55	0.75	0.55	0.35
901	Surendranagar	Rajsitapur	22.842	71.592	DW	7.51	4	4.97	5.87
902	Surendranagar	Ranipet	22.708	71.217	DW			50.01	
903	Surendranagar	Ratanpur1	22.858	71.271	DW		4.95		9.1
904	Surendranagar	Sarla	22.733	71.367	DW	10.05		11.45	12.08
905	Surendranagar	Sayala	22.533	71.483	Pz	17.75	5.8	14.57	22.05
906	Surendranagar	Shiyani	22.667	71.829	DW	3.82	3.9	4.75	2.88
907	Surendranagar	Soldi	22.994	71.416	DW		5.4		
908	Surendranagar	Sudamda	22.454	71.485	DW	4.09	1	4.13	3.44
909	Surendranagar	Sukhpar1	23.008	71.283	DW	4.1	4.53	5.3	
910	Surendranagar	Surendranagar	22.724	71.671	Pz	3.2	1.7	2.82	2.5
911	Surendranagar	Surendranagar2	22.717	71.608	DW	7.95	3.05		7.18
912	Surendranagar	Tarnetar	22.642	71.217	DW		15.05	20.55	20.55
913	Surendranagar	Tavi 1	22.72	71.852	DW		0.05	0.31	
914	Surendranagar	Than	22.579	71.2	DW			13.13	13.58
915	Surendranagar	Vanala	22.433	71.921	DW	2.9	3.95	4.24	1.8
916	Surendranagar	Visawadi	23.342	71.733	DW	4.23	4.47	4.43	4.35
917	The dangs	Aherdi	20.692	73.617	DW		1.42	1.22	3.75
918	The dangs	Ahwa_Pz	20.759	73.686	Pz	3.1	1.92	1.46	2.3
919	The dangs	Ahwa1	20.758	73.683	DW	4.8	0.71	1.45	2
920	The dangs	Bari Pada	20.64	73.691	DW	13.15	0.51	0.45	5.2
921	The dangs	Bori Gaotha 1	20.811	73.503	DW	9.45	2.72	2.4	6
922	The dangs	Chikhli	20.658	73.688	DW	9.75	0.02	-0.18	3
923	The dangs	Chinchnogaotha	20.808	73.553	DW	6.91	1.12	0.8	4.71
924	The dangs	Chinchpada	20.638	73.775	DW	7.3	0.55	0.41	2.8
925	The dangs	Dhumkal	20.646	73.792	DW	3.2	1.31	1.06	1.5
926	The dangs	Gadad	20.638	73.775	DW	5.15		5.15	
927	The dangs	Ghubita	20.8	73.738	DW	2.05	0.45	0.1	2
928	The dangs	Jakana	20.633	73.746	DW	11.65	1.58	1.31	1.95
929	The dangs	Jamalpada	20.732	73.521	DW	7.05	1.28	0.92	5.8
930	The dangs	Kalibel	20.921	73.581	DW	3.05	0.78	0.33	2.9
931	The dangs	Mahal	20.917	73.679	DW	4.3	2.94	2.52	3.7
932	The dangs	Malegaon	20.6	73.746	DW	5.83	0.21	0.97	0.8
933	The dangs	Nadak khadi	20.804	73.613	DW	5.87	0.69	0.5	2.85
934	The dangs	Nana pada	20.7	73.583	DW	7.73	1.26	0.96	5.78
935	The dangs	Sakarpatal	20.719	73.557	DW	5.95	0.86	0.6	1.9
936	The dangs	Sodmal	20.867	73.617	DW	12.4	1.59	1.28	9.1
937	The dangs	Subir	20.922	73.581	DW	7.5	0.84	0.46	2.1
938	The dangs	Umberpada	20.683	73.725	DW	5.53	0.72	0.42	3.95
939	The dangs	Vaghai	20.764	73.504	DW	12.1	0.71		
940	The dangs	Vazat Amba	20.878	73.518	DW	6.78	0.91	1.7	5.1
941	Vadodara	Alladpur	22.25	73.717	DW	10.43	6.4	10.16	

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
942	Vadodara	Amreshwar	22.228	73.483	DW	3.35		1.96	2.16
943	Vadodara	Asala	22.383	73.933	DW	12.5	4.88	5.24	8.06
944	Vadodara	Asar	22.204	74.011	DW	17.2		17.2	11.51
945	Vadodara	Baladgam	22.138	74.008	DW	13	5.53		
946	Vadodara	Bhindol	22.2	73.9	DW	9.56	5.27		10.75
947	Vadodara	Bodeli	22.271	73.717	DW	7.28	3.58	5.02	6.2
948	Vadodara	Chavaria	22.188	73.988	DW	12.3		12.3	9.71
949	Vadodara	Chella Karamsiya Pz	22.397	73.432	Pz		1.22	1.88	2.02
950	Vadodara	Chhaliyar	22.667	73.317	DW	23.9		24.55	25.06
951	Vadodara	Chhota udepur	22.308	74.017	DW	10.2	2.26	3.71	4.11
952	Vadodara	Chitral PZ_II	22.182	72.946	Pz	24.96		24.36	26.03
953	Vadodara	Chitral Pz-I	22.182	72.946	Pz	24.48	27.63	24.32	23.98
954	Vadodara	Devat (thadgam)	22.1	73.983	DW	11.7	4.8	8.04	8.94
955	Vadodara	Ferkuva	22.367	74.208	DW	7.9	0.15	2.99	4.15
956	Vadodara	Ghamodi	22.367	74.075	DW	9.09	1.43	6.25	7.87
957	Vadodara	Ghayaj ii	22.233	73.054	Pz		19.48	25	25.93
958	Vadodara	Govindpura	22.211	73.741	DW	7.85	2.2	5.49	6.92
959	Vadodara	Handod1	22.074	73.046	DW	29.8			
960	Vadodara	Handod2	22.074	73.046	DW			30.17	30.62
961	Vadodara	Jojh	22.442	73.963	DW	13.42	6.95	8.97	11.34
962	Vadodara	Juna samalya	22.504	73.283	DW	16.65	2.65	11.17	5.82
963	Vadodara	Kaprali	21.979	73.942	DW	10.53			
964	Vadodara	Karamasiya	22.421	73.419	DW	13.2			13.2
965	Vadodara	Kevadi	22.517	73.942	DW	7.5	3.23	4.82	5.75
966	Vadodara	Kosindra Pz-I	22.147	73.756	Pz			3.47	
967	Vadodara	Makni	22.225	73.679	DW		8.65		
968	Vadodara	Masor	22.142	72.908	DW			12.25	
969	Vadodara	Moti chikhali	22.011	74.083	DW	6.4		3.23	
970	Vadodara	Panwad	22.2	74.042	DW	10.25	0.8	8.73	9.71
971	Vadodara	Patiyapura	22.275	73.442	DW	8.07	3.64	6.6	7.16
972	Vadodara	Pavi	22.342	73.833	DW	4.42	3.71	3.72	5.63
973	Vadodara	Pitha	22.254	73.642	DW	10.51	1.36	6.74	7.44
974	Vadodara	Rasulpur	22.6	73.233	DW	5			
975	Vadodara	Raypura i	22.282	73.09	Pz	17.4		28.84	29.41
976	Vadodara	Saidal	22.283	73.503	DW	2.76	0.57		1.72
977	Vadodara	Saidivasana	22.058	74.017	DW	5.5	1.85	3.43	5.12
978	Vadodara	Sankarda	22.439	73.122	Pz	32.04	33.88	28.2	45.7
979	Vadodara	Sankarda1	22.439	73.122	Pz	29.16			
980	Vadodara	Sankheda	22.539	73.175	Pz	32.17			32.62
981	Vadodara	Segwa chouki ii	22.008	73.383	Pz			39.33	40.89
982	Vadodara	Segwa chowki I	22.008	73.383	Pz	29.05	28.76	38	39.52
983	Vadodara	Sengpur	22.038	73.888	DW	11.1	4.25	6.99	8.97
984	Vadodara	Sinor	21.913	73.342	DW	26.05		24.66	25.12
985	Vadodara	Suskal	22.292	73.779	DW	8.13			
986	Vadodara	Tundav	22.483	73.203	DW	10.9	8.7	8.66	8.73
987	Vadodara	Vadodara I	22.305	73.272	Pz	13.74	19.89	16.12	16.27
988	Vadodara	Vadodara Ii	22.305	73.272	Pz	7.5	13.76	5.47	6.28
989	Vadodara	Vadodara_Kevada Bag	22.293	73.198	DW	8.98		7	
990	Vadodara	Vadodara_ONGC	22.269	73.213	DW	16.14		9.29	
991	Vadodara	Vadodara_Sama	22.343	73.201	DW		0.6	3.28	
992	Vadodara	Vadshala Pzi	22.163	73.169	Pz	23.9	28.3		22.75
993	Vadodara	Vadtalav Pz	22.259	73.784	Pz	19		11.6	12.83
994	Vadodara	Vagudan	22.067	74.142	DW			6.93	
995	Vadodara	Vega	22.159	73.413	DW	7.28		5.13	
996	Vadodara	Vejpur2	22.747	73.356	DW	2.15	0.6	1.79	2.01
997	Vadodara	Waghach	22.071	73.85	DW	9.95			
998	Vadodara	Waghodia Pz	22.364	73.377	Pz	6.43		6.95	7.51
999	Valsad	Awadha	20.517	73.288	DW	3.81	0.57	0.34	
1000	Valsad	Chavshala	20.328	73.326	DW	8.8		2.4	1.9

Sl.No	District	Well Name	Latt_Y	Long_X	Well_Type	May_2018	Aug_2018	Nov_2018	Jan_2019
1001	Valsad	Dahli (bhilad)	20.258	72.883	DW	5.4	0.97	0.71	5.09
1002	Valsad	Dharampur 3	20.531	73.163	DW	10.35		6.23	13.6
1003	Valsad	Dharampur1	20.536	73.171	DW	9.84	1.85	1.52	7.6
1004	Valsad	Dungri	20.689	72.949	DW	10	2.86	2.39	
1005	Valsad	Fali	20.313	73.376	DW	12.2		2	6.6
1006	Valsad	Huda	20.291	73.409	DW				2.4
1007	Valsad	Kanadu	20.325	72.842	DW	6.6	1.42	1.27	7.3
1008	Valsad	Kaparda	20.342	73.217	DW	5.35	2.18	1.88	2.95
1009	Valsad	Karwad	20.363	72.975	DW	4.62	1.24	1.15	3.5
1010	Valsad	Lakadmal	20.467	73.158	DW	9.9	5.06	4.53	6.1
1011	Valsad	Mandwa	20.367	73.175	DW	10.95	6.39	6.12	
1012	Valsad	Muli1	20.633	73.025	DW	3.6	0.97	0.42	4.3
1013	Valsad	Nanaponda	20.414	73.121	DW	10.25	2.18	1.93	8.5
1014	Valsad	Tithal	20.6	72.9	DW	7.96	4.28	3.85	7.7
1015	Valsad	Tumb	20.217	72.842	DW	3.47	1.45	1.26	3.7
1016	Valsad	Udwada	20.464	72.918	DW	6.59	0.54	0.43	4.55
1017	Valsad	Umargaon	20.192	72.75	DW	3.78	2.67	2.23	4
1018	Valsad	Valsad1	20.606	72.928	DW	23.59	3.86	3.25	
1019	Valsad	Vapi Balitha	20.38	72.904	DW	9.55	1.88	1.48	8.7

WATER LEVELS OF THE NATIONAL HYDROGRAPH STATIONS IN GUJARAT 2018-19 (CONFINED)

DISTRICT	SITE_NAME	AQUIFER_TY	Long_X	Latt_Y	Elevation GL	May_2018 in m bgl	WT_Elevation m MSL
Anand	Tarapur Pz-I	Con_Aq_I	72.6611	22.4861	22.65	2.68	19.97
Banaskantha	Bhabhar iii	Con_Aq_I	71.5961	24.0597	35.88	32.30	3.58
Banaskantha	Deesa Pzi	Con_Aq_I	72.1875	24.2567	144.08	75.30	68.78
Banaskantha	Naroli Pzi	Con_Aq_I	71.6386	24.6164	53.50	7.49	46.01
Banaskantha	Naroli Pzii	Con_Aq_I	71.6386	24.6164	54.65	7.30	47.35
Banaskantha	Rasna(Repl)_Pz_I	Con_Aq_I	72.2481	24.2181	147.30	80.21	67.09
Banaskantha	Tharad Pzii	Con_Aq_I	71.6194	24.3850	42.47	8.96	33.51
Banaskantha	Vav ii	Con_Aq_I	71.5111	24.3611	54.31	23.80	30.51
Banaskantha	Vinchivadi PZ-I	Con_Aq_I	71.9333	24.5861	99.51	60.68	38.83
Gandhinagar	Adalaj_Pz_I	Con_Aq_I	72.5583	23.1750	60.47	100.63	-40.16
Gandhinagar	Amrapur Pzii	Con_Aq_I	72.7050	23.3736	95.09	85.33	9.76
Gandhinagar	Charada Pz -II	Con_Aq_I	72.6517	23.4817	110.77	101.54	9.23
Gandhinagar	Dahegam I	Con_Aq_I	72.8417	23.1708	73.35	73.91	-0.56
Gandhinagar	Kalol(Rep)_Pz_II	Con_Aq_I	72.4850	23.2433	70.91	54.34	16.57
Kheda	Nadiad Pz-I	Con_Aq_I	72.8667	22.7111	37.10	21.10	16.00
Mahesana	Mehsana III	Con_Aq_I	72.3986	23.5975	89.92	101.68	-11.76
Patan	Biliya(Temple)_Pz_I	Con_Aq_I	72.3986	23.8883	130.10	73.10	57.00
Vadodara	Raypura i	Con_Aq_I	73.0903	22.2819	31.88	17.40	14.48
Vadodara	Sankarda	Con_Aq_I	73.1222	22.4389	42.81	32.04	10.77
Vadodara	Segwa chowki I	Con_Aq_I	73.3833	22.0083	33.96	29.05	4.91
Vadodara	Vadodara I	Con_Aq_I	73.2717	22.3047	33.22	13.74	19.48
Ahmedabad	Hansalpur_Pz-I	Con_Aq_II	72.0167	23.0889	9.89	27.05	-17.16
Ahmedabad	Sanand I	Con_Aq_II	72.3736	23.0033	40.70	76.00	-35.30
Anand	Anklav_Pz_I	Con_Aq_II	72.9972	22.3764	36.64	28.73	7.91
Anand	Petlad_Pz_I	Con_Aq_II	72.8000	22.4750	33.86	15.30	18.56
Anand	Walmi_ I	Con_Aq_II	72.9819	22.5111	49.65	23.78	25.87
Banaskantha	Balodhar_Pz-I	Con_Aq_II	71.9122	24.2306	102.60	163.17	-60.57
Banaskantha	Dhanera Pz-I	Con_Aq_II	72.0292	24.5061	140.04	95.77	44.27
Banaskantha	Lakhani i	Con_Aq_II	71.8181	24.3139	85.43	85.94	-0.51
Banaskantha	Mahi_Pz	Con_Aq_II	72.3808	24.0286	156.42	160.04	-3.62
Banaskantha	Tharad Pzi	Con_Aq_II	71.6194	24.3850	42.32	8.98	33.34
Banaskantha	Vav i	Con_Aq_II	71.5083	24.3583	56.01	28.80	27.21
Gandhinagar	Amrapur Pzi	Con_Aq_II	72.7050	23.3736	97.74	116.56	-18.82
Gandhinagar	Charada_Pz_I	Con_Aq_II	72.6517	23.4817	105.76	190.36	-84.60
Gandhinagar	Mansa	Con_Aq_II	72.6650	23.4231	104.83	119.41	-14.58
Gandhinagar	Pethapur_Pz-I	Con_Aq_II	72.6731	23.2672	79.58	110.59	-31.01
Gandhinagar	Sardhav Pz -I	Con_Aq_II	72.5739	23.2972	81.04	117.50	-36.46
Kheda	Sarkhej _ I	Con_Aq_II	72.8806	22.9861	53.00	25.35	27.65
Mahesana	Daran_Pz-I	Con_Aq_II	72.2797	23.2064	49.23	102.68	-53.45
Mahesana	Jotana Pzi	Con_Aq_II	72.2878	23.4739	61.11	119.46	-58.35
Mahesana	Karalli (i)	Con_Aq_II	72.4861	23.8042	145.10	145.31	-0.21
Mahesana	Mehsana I	Con_Aq_II	72.3986	23.5975	91.98	156.27	-64.29
Mahesana	Mehsana II	Con_Aq_II	72.3986	23.5975	92.02	156.57	-64.55
Mahesana	Motipura_Pz_I	Con_Aq_II	72.6042	23.5339	123.49	175.00	-51.51
Patan	Jangral Pzi	Con_Aq_II	71.6939	23.6947	25.10	147.50	-122.40
Patan	Jangral Pzii	Con_Aq_II	71.6750	23.7056	21.02	132.40	-111.38
Patan	Kakosi Pz-I	Con_Aq_II	72.3058	24.0017	141.60	143.80	-2.20
Patan	Lanwa Pz-I	Con_Aq_II	72.2486	23.6867	74.85	128.35	-53.50
Vadodara	Chitral Pz-I	Con_Aq_II	72.9458	22.1819	21.83	24.48	-2.65

Groundwater Table of Gujarat state during May 2018

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Ahmedabad	Bopal_Pz_III	23.0386	72.4578	3.8	44.1	40.3
Ahmedabad	Dalod	23.3667	71.9667	7.14	31	23.86
Ahmedabad	Dhandhuka1	22.375	71.9861	3.75	22.7	18.95
Ahmedabad	Endla	23.2722	72.0583	2.21	34.3	32.09
Ahmedabad	Gamph	22.3583	72.1667	1.6	16	14.4
Ahmedabad	Ghuma	23.0333	72.4458	4.21	44	39.79
Ahmedabad	Hansalpur_Pz-III	23.0889	72.0167	4.45	23.7	19.25
Ahmedabad	Kumarkhan	22.9	72.0167	3.8	17	13.2
Ahmedabad	Kundali	22.2694	71.7	18.1	80.3	62.2
Ahmedabad	Mandal2	23.275	71.9167	3.93	25	21.07
Ahmedabad	Rajpada	22.3083	71.6917	23.7	81	57.3
Ahmedabad	Upardhal1	22.85	72.1458	11.9	20	8.1
Ahmedabad	Viramgam2	23.1417	72.0333	3.18	29	25.82
Amreli	Amreli	21.6083	71.225	11.94	127	115.06
Amreli	Amreli_Pz	21.6125	71.225	13.27	128	114.73
Amreli	Ankadia mota	21.6458	71.1083	10.05	153	142.95
Amreli	Badhda	21.2658	71.3389	9.46	175.7	166.24
Amreli	Bagasara	21.4792	70.9625	17.1	152	134.9
Amreli	Bhavardi1	21.1083	71.2583	5.4	191	185.6
Amreli	Bherai	20.8681	71.3625	3.18	8.3	5.12
Amreli	Chalala	21.4167	71.1667	27.98	135	107.02
Amreli	Charkhadia_Pz	21.3875	71.2917	26.47	112	85.53
Amreli	Charkhadia1	21.3917	71.2958	22.1	112	89.9
Amreli	Chavand	21.8167	71.4125	5.36	116	110.64
Amreli	Dharangani	21.3333	71.2	29.81	167	137.19
Amreli	Dhari_Pz	21.3264	71.0181	26.63	211	184.37
Amreli	Goradka	21.225	71.4111	6.01	134.3	128.29
Amreli	Govadka	21.5417	71.1583	6.65	113	106.35
Amreli	Ingorala	21.2333	71.2	17.99	267	249.01
Amreli	Jafrabad	20.8667	71.3625	2.15	17	14.85
Amreli	Kerala	21.3972	71.2167	37.8	127.3	89.5
Amreli	Khamba	21.15	71.2389	11.46	219.7	208.24
Amreli	Khamba_Pz	21.1417	71.2542	15.77	202	186.23
Amreli	Kotadapitha	21.9583	71.2042	8.19	202	193.81
Amreli	Kunkavav	21.6625	70.9833	16.2	173	156.8
Amreli	Lathi	21.7208	71.3833	13.95	121	107.05
Amreli	Lotpur	20.9625	71.4333	7.05	17	9.95
Amreli	Mandal	21.1	71.5833	27.83	46	18.17
Amreli	Manila Pz	21.4333	71.1667	20.75	129	108.25
Amreli	Morjhar	21.3761	71.1186	47.75	171	123.25
Amreli	Nageshri	20.925	71.3542	5.1	11	5.9
Amreli	Piyava	21.3833	71.4667	32.72	98	65.28
Amreli	Punjapadar	21.525	71.3583	10.85	91	80.15
Amreli	Tajpur	21.725	71.4667	26.2	114	87.8
Amreli	Timbi2	20.8958	71.2042	6.02	35	28.98
Amreli	Trakuda	21.0167	71.2806	12.85	81.3	68.45
Amreli	Untvad	21.9167	71.2167	14.1	192	177.9
Amreli	Vaghania juna	21.5833	70.9667	10.8	152	141.2
Amreli	Vankiya	21.5208	71.1361	14.16	120.3	106.14
Amreli	Vankiya1	21.2333	71.25	8.95	233	224.05
Amreli	Victor	21.0125	71.5417	1.1	7	5.9
Amreli	Virpur	21.2542	71.15	16.9	242	225.1
Anand	Anand	22.575	72.9722	28.13	42.3	14.17
Anand	Anklav2	22.3833	73.0083	31.85	37	5.15
Anand	Bandhani	22.5417	72.8167	6.15	34	27.85
Anand	Bhadran	22.3556	72.8972	20.6	28.1	7.5
Anand	Dali	22.275	72.7667	4.77	24	19.23

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Anand	Dharmaj	22.4208	72.7944	14.21	23.7	9.49
Anand	Ghora	22.6917	73.0542	5.5	52	46.5
Anand	Kansari1	22.3417	72.65	18.06	14	-4.06
Anand	Laxmipura	22.4167	72.6083	2.95	16	13.05
Anand	Navapura	22.3125	72.9625	27.02	31	3.98
Anand	Ras	22.3458	72.8333	1.87	24	22.13
Anand	Tarapur Pz-II	22.4861	72.6611	2.96	25.1	22.14
Banaskantha	Ambaji_Pz	24.3361	72.8472	12.31	454.3	441.99
Banaskantha	Amirgadh	24.4056	72.6417	7.46	227.3	219.84
Banaskantha	Bharol1	24.5292	71.5417	1.24	34	32.76
Banaskantha	Danta	24.1889	72.7653	9.2	279.6	270.4
Banaskantha	Dantiwada	24.1889	72.7606	39.23	271.8	232.57
Banaskantha	Deesa Pzii	24.2567	72.1875	62.2	143	80.8
Banaskantha	Ganapipli	24.2972	72.9472	11.97	259.2	247.23
Banaskantha	Gangodra	24.4361	72.3653	17.8	196.6	178.8
Banaskantha	Iqbalgarh	24.3458	72.5375	30.51	210	179.49
Banaskantha	Jhat	24.4875	72.3528	14.63	193.7	179.07
Banaskantha	Khoda	24.6583	71.7667	21.66	61	39.34
Banaskantha	Kidotar	24.3944	72.6278	20.34	222.3	201.96
Banaskantha	Meda	24.3972	72.2847	12	173.8	161.8
Banaskantha	Mohabbat gadh	24.1667	72.7278	19.44	252.3	232.86
Banaskantha	Naroli Pziii	24.6164	71.6386	7.51	50.3	42.79
Banaskantha	Palanpur2	24.1944	72.4333	20.77	217	196.23
Banaskantha	Ratanpur2	24.175	72.7458	18.83	262	243.17
Banaskantha	Sodapur	24.4014	72.2958	6.21	173.3	167.09
Banaskantha	Tharad Pziii	24.385	71.6194	8.88	46.3	37.42
Bharuch	Arethi	21.6125	73.4353	14.45	158.3	143.85
Bharuch	Bharuch	21.7	73.0042	13.35	6	-7.35
Bharuch	Bhensli	21.725	72.75	3.4	8	4.6
Bharuch	Dahegam	22.1847	72.5972	10.71	11.6	0.89
Bharuch	Hansot	21.5833	72.8083	5.43	14	8.57
Bharuch	Ilav	21.45	72.8	8.19	13	4.81
Bharuch	Jetpur1	21.4917	72.7083	3.82	8	4.18
Bharuch	Juna borbhata	21.675	72.975	8.5	4	-4.5
Bharuch	Kaswa	21.6833	72.8167	8.8	11	2.2
Bharuch	Kavi	22.1936	72.6394	7.97	15.9	7.93
Bharuch	Kondh	21.5806	73.0681	4.85	35.1	30.25
Bharuch	Modoliya	21.6333	73.2958	8.87	81	72.13
Bharuch	Mokhdi	21.5333	73.2875	11.26	78	66.74
Bharuch	Motwan	21.5556	72.8875	2.5	12.3	9.8
Bharuch	Navetha	21.7078	72.8306	7.16	9.4	2.24
Bharuch	Netrang1	21.6333	73.3667	6.75	128	121.25
Bharuch	Nirnavi	21.7917	72.6681	9.06	8.7	-0.36
Bharuch	Panoli	21.5375	72.975	2.9	26	23.1
Bharuch	Raymal	21.5208	72.8208	1.4	13	11.6
Bharuch	Roja tankaria	21.9167	72.7917	8.27	7	-1.27
Bharuch	Sajod	21.6167	72.9236	5.2	10	4.8
Bharuch	Sarod	22.1583	72.7583	10.74	19	8.26
Bharuch	Simodra	21.7417	73.2083	4.85	35	30.15
Bharuch	Tankari	21.9917	72.675	5.24	6	0.76
Bharuch	Utraj	21.5917	72.825	3.73	6	2.27
Bhavnagar	Ambala	21.7111	71.8417	23.4	55	31.6
Bhavnagar	Bhavnagar1	21.7667	72.15	11.4	25	13.6
Bhavnagar	Bhudel	21.6917	72.1583	4.82	33	28.18
Bhavnagar	Bhumbhali	21.6794	72.2442	3.14	7.7	4.56
Bhavnagar	Bhutia	21.7472	71.7	22.3	59	36.7
Bhavnagar	Datha	21.2208	71.95	5.89	31	25.11
Bhavnagar	Dhasa	21.8	71.5083	5.94	90	84.06
Bhavnagar	Dudhala	21.1375	71.6583	17.84	53	35.16

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Bhavnagar	Gadhada2	21.9667	71.5792	4.77	83	78.23
Bhavnagar	Gariyadhar	21.5431	71.5653	24.6	97.6	73
Bhavnagar	Ghogha1	21.6833	72.2792	4.06	12	7.94
Bhavnagar	Jalia	21.8	71.6167	17.98	70	52.02
Bhavnagar	Khijadiya	21.6375	71.7	13.59	95	81.41
Bhavnagar	Longadi	21.2139	71.8833	5.95	38.3	32.35
Bhavnagar	Mahuva1	21.0958	71.7667	21.56	21	-0.56
Bhavnagar	Ningala	22.0181	71.7	11.9	56.3	44.4
Bhavnagar	Palitana1	21.525	71.8236	6.62	67.7	61.08
Bhavnagar	Palitana2	21.5222	71.8389	20.14	58.2	38.06
Bhavnagar	Paliyad2	22.2556	71.5639	23.61	109.4	85.79
Bhavnagar	Panchpipla	21.55	71.7208	7.32	82	74.68
Bhavnagar	Panvi1	22.075	71.8917	16.5	16	-0.5
Bhavnagar	Pasvi	21.2917	71.9667	16.46	51	34.54
Bhavnagar	Porbada	21.8	71.7	14.83	45	30.17
Bhavnagar	Sajnasar	21.425	71.9125	13.12	66	52.88
Bhavnagar	Sandhida	21.6875	71.7583	9.6	84	74.4
Bhavnagar	Satanes	21.4417	71.8375	16.57	85	68.43
Bhavnagar	Shantinagar	21.2458	71.65	14.04	123	108.96
Bhavnagar	Talaja2	21.3667	72.0167	16.26	21	4.74
Bhavnagar	Tansa	21.5083	72.125	22.04	84	61.96
Bhavnagar	Tatam	22.0583	71.6333	21.47	79	57.53
Bhavnagar	Trapaj	21.425	72.0958	18.44	54	35.56
Bhavnagar	Umrala	21.8472	71.8083	14.02	23.3	9.28
Bhavnagar	Vallbhipur	21.8833	71.875	5.4	16	10.6
Dohad	Dabhava	22.5833	73.9042	5.78	240	234.22
Dohad	Dadhela	22.8375	74.0667	7.35	262	254.65
Dohad	Dahod	22.8403	74.2625	1.7	305	303.3
Dohad	Dahod2	22.825	74.2333	10.12	310	299.88
Dohad	Devgadh Baria	22.7	73.9139	13.5	200.7	187.2
Dohad	Devgadh bariya	22.7	73.9167	15	207	192
Dohad	Dhanpur	22.6333	74.1042	13.85	258	244.15
Dohad	Garbara	22.6806	74.3125	5.95	353.7	347.75
Dohad	Jhalod	23.0931	74.1472	9	269.7	260.7
Dohad	Jhalod1	23.0917	74.1333	7.1	273	265.9
Dohad	Kanjetha	22.5806	74.1139	11.01	253.2	242.19
Dohad	Limbdi2	23.0042	74.1583	3.96	277	273.04
Dohad	Limkheda	22.8306	73.9861	8.25	205	196.75
Dohad	Mirakhedi	22.9333	74.2	6.8	323	316.2
Dohad	Panchwada	22.7292	74.3083	6.77	327	320.23
Dohad	Pipero	22.6472	74.0903	12.61	244.1	231.49
Dohad	Salaya1	22.8083	73.8917	15.52	200	184.48
Dohad	Sukhsar	23.15	74.05	10.25	196	185.75
Dohad	Tokarba	22.6042	74.0375	6.02	232	225.98
Dohad	Varamkheda	22.8	74.275	5.29	298	292.71
Dohad	Wadia	22.9	74.05	8.34	229	220.66
Gandhinagar	Adalaj_Pz_III	23.175	72.5583	23.31	64	40.69
Gandhinagar	Kasturinagar(IFFCO)	23.1903	72.5528	13.11	74	60.89
Gandhinagar	Paliya	23.1792	72.8417	13.92	78	64.08
Gandhinagar	Serthapara1	23.1944	72.5667	14.46	66.7	52.24
Jamnagar	Ambardi	21.9164	69.8581	11.31	82.3	70.99
Jamnagar	Amran_Pz	22.8222	70.5458	2.84	13	10.16
Jamnagar	Amran1	22.8292	70.5625	3.13	12	8.87
Jamnagar	Aramda	22.4333	69.0417	5.9	7	1.1
Jamnagar	Balwa	21.9042	69.9583	22.72	116	93.28
Jamnagar	Bed1	22.4375	69.9	7.89	16	8.11
Jamnagar	Bedanpur	22.6833	70.3167	3.5	13	9.5
Jamnagar	Bhatia	22.0917	69.3014	20.21	36.3	16.09
Jamnagar	Bhatiya	22.0944	69.2667	5.68	20.3	14.62

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Jamnagar	Bhogat1	21.9917	69.2458	10.75	9	-1.75
Jamnagar	Changa	22.35	70.0417	18.21	41	22.79
Jamnagar	Dhrol2	22.5667	70.4167	3.01	32	28.99
Jamnagar	Dudhai2	22.7917	70.5042	3.37	14	10.63
Jamnagar	Dwarka	22.2458	68.9583	8.48	12	3.52
Jamnagar	Gordhanpur	22.45	70.0014	6.22	13.7	7.48
Jamnagar	Haripur2	22.2708	70.3333	24.22	86	61.78
Jamnagar	Jambuda	22.525	70.2042	7.19	8	0.81
Jamnagar	Jamjodhpur	21.9056	70.0306	6.9	101	94.1
Jamnagar	Jamnagar1	22.4708	70.05	20.95	22	1.05
Jamnagar	Jamnagar2	22.4583	70.0792	11.34	16	4.66
Jamnagar	Juvanpur	22.1708	69.3667	15.1	44	28.9
Jamnagar	Kajuda	22.3333	69.7083	4.03	22	17.97
Jamnagar	Kalawad	22.2167	70.3833	3.33	88	84.67
Jamnagar	Kalyanpur2	22.0167	69.3917	23.5	38	14.5
Jamnagar	Khambhaliya	22.2097	69.6458	14.2	38.3	24.1
Jamnagar	Khirsara	21.9792	69.6	15.19	38	22.81
Jamnagar	Lalpur1	22.1917	69.9611	14.1	74.7	60.6
Jamnagar	Mojap	22.3667	68.9833	8.84	10	1.16
Jamnagar	Mota kalawad	21.9083	69.8292	24.07	69	44.93
Jamnagar	Moti matli	22.3167	70.2639	20.15	75.3	55.15
Jamnagar	Salaya	22.3056	69.6042	3.57	7.7	4.13
Jamnagar	Samrasar1	22.375	69.1042	5.83	9	3.17
Jamnagar	Seth vadala	22.0333	70.125	10.6	149	138.4
Jamnagar	Sumana	22.1083	70.1667	13.95	164	150.05
Jamnagar	Toda	22.0625	70.3833	11.4	147	135.6
Jamnagar	Vad panchasara	22.2333	70.1167	13.25	96	82.75
Jamnagar	Vadtara	22.2083	69.5	12	43	31
Jamnagar	Varwada	22.2917	68.9667	15.4	14	-1.4
Jamnagar	Vijarkha	22.4167	70.1833	10	29	19
Jamnagar	Vinjhalpur	22.15	69.6	8.93	61	52.07
Junagadh	Ajotha	20.9019	70.5181	23.97	29.2	5.23
Junagadh	Alwani	21.2306	70.6375	3.15	216	212.85
Junagadh	Arena	21.0806	70.1764	12.18	11.6	-0.58
Junagadh	Bamanwara	21.2208	70.0556	11.16	12.3	1.14
Junagadh	Bantva	21.4875	70.0833	14.33	22	7.67
Junagadh	Budhecha	21.0958	70.2167	8.01	24	15.99
Junagadh	Gadu	21.0542	70.2792	38.35	31	-7.35
Junagadh	Gangda_Pz	20.8583	71.1667	9.83	22	12.17
Junagadh	Girgadhada	20.925	70.9167	13.66	84	70.34
Junagadh	Goraj1	21.1833	70.1542	33.05	37	3.95
Junagadh	Govindpura2	20.9458	70.3958	24.95	27	2.05
Junagadh	Jambur[madhapar	21.0292	70.6083	9.06	113	103.94
Junagadh	Jamvala1	20.9833	70.7625	4.75	97	92.25
Junagadh	Junagadh	21.5094	70.4622	14.15	100.3	86.15
Junagadh	Junagadh1	21.5167	70.4583	14.42	90	75.58
Junagadh	Juthal	21.1667	70.2667	6.36	62	55.64
Junagadh	Kanek	21.0306	70.2417	16.42	13.3	-3.12
Junagadh	Khambalia1	21.0444	70.1917	9.08	11	1.92
Junagadh	Khokharda	21.4208	70.3167	25.3	37	11.7
Junagadh	Khorada1	21.0639	70.1736	9.18	11.3	2.12
Junagadh	Khoras ahir	21.3708	70.3389	14.63	47	32.37
Junagadh	Kodinar	20.8	70.6917	11.31	15	3.69
Junagadh	Kodinar1	20.8	70.6917	11.62	15	3.38
Junagadh	Lohej	21.1667	70.0667	16	15	-1
Junagadh	Mandawad	21.3583	70.7458	13.06	131	117.94
Junagadh	Mangrol	21.125	70.1083	17.4	14	-3.4
Junagadh	Mangrol1	21.1306	70.1194	17.66	18.6	0.94
Junagadh	Manketara	21.15	70.1292	32.25	26	-6.25

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Junagadh	Mendarda1	21.325	70.4333	19.05	86	66.95
Junagadh	Moraj	20.9833	70.4361	13.15	55.7	42.55
Junagadh	Patla	21.6042	70.5692	8.7	106	97.3
Junagadh	Prempara	21.3	70.7	19.61	146	126.39
Junagadh	Sametar	20.8542	71.1208	13.4	31	17.6
Junagadh	Seriakhan	21.1333	70.2486	19.69	47.7	28.01
Junagadh	Sil	21.1856	70.0464	5.34	11.1	5.76
Junagadh	Sil bandar	21.2236	70.0556	7.17	13.2	6.03
Junagadh	Talala_Pz	21.0639	70.5383	11.87	94.3	82.43
Junagadh	Talala1	21.0514	70.525	12.84	87.3	74.46
Junagadh	Una1	20.825	71.0444	10	30	20
Junagadh	Una2	20.825	71.0417	6.38	31	24.62
Junagadh	Vanthali ii	21.4708	70.3278	17.36	32.7	15.34
Junagadh	Visavadar	21.3389	70.7486	15.58	135	119.42
Kachchh	Asambia mota_Pz	22.9681	69.4514	9.25	67.8	58.55
Kachchh	Asambia mota1	22.9681	69.4375	16.45	61	44.55
Kachchh	Bambhdai	22.9389	69.0828	7.05	7.7	0.65
Kachchh	Bhadreshwar	22.9	69.9	9.7	10	0.3
Kachchh	Bhuj (Circuit House)	23.25	69.6667	17.77	105	87.23
Kachchh	Chandranagar	23.45	69.4	8.67	61	52.33
Kachchh	Deshalpur rapar	23.7472	70.6792	13.65	13.7	0.05
Kachchh	Devisar	23.4028	69.3292	13	82.7	69.7
Kachchh	Dholavira	23.8833	70.2167	11.63	24	12.37
Kachchh	Dhori	23.4375	69.7511	16.6	12.7	-3.9
Kachchh	Dhori1	23.4333	69.7542	16.03	15	-1.03
Kachchh	Dunai	23.05	69.5	12.06	108	95.94
Kachchh	Gagodar	23.4167	70.8	33	43	10
Kachchh	Haboi	23.3583	69.8667	0.54	112	111.46
Kachchh	Kakarwa	23.475	70.4042	17.45	58	40.55
Kachchh	Karagoga	22.9417	69.6625	6.69	51	44.31
Kachchh	Kharoi	23.4542	70.35	10.1	39	28.9
Kachchh	Khavada	23.8389	69.7306	7.94	16.8	8.86
Kachchh	Kotadi	23.0417	69.1917	11.02	77	65.98
Kachchh	Kotaya	23.0417	69.075	13.2	35	21.8
Kachchh	Kothara	23.1619	68.9119	5.57	30.7	25.13
Kachchh	Kuda	23.5344	70.4403	29.6	58.9	29.3
Kachchh	Kumbhariya	23.3411	70.7236	8.55	31.4	22.85
Kachchh	Lakhpat	23.8231	68.775	7.38	14.3	6.92
Kachchh	Lilpur	23.5111	70.65	0.6	123.3	122.7
Kachchh	Luni	22.8733	69.8117	10.6	13	2.4
Kachchh	Mata no madh	23.5333	68.95	13.82	91	77.18
Kachchh	Mathak1	22.9972	70.025	11.65	28.3	16.65
Kachchh	Mothala	23.2083	69.125	5.73	83	77.27
Kachchh	Moti cher	23.7583	68.675	4.37	16	11.63
Kachchh	Mundra	22.8278	69.7208	7.3	7	-0.3
Kachchh	Naliya	23.2558	68.84	12.05	24	11.95
Kachchh	Naliya (Bus S)	23.2667	68.8333	13.04	21	7.96
Kachchh	Rapar2	23.5667	70.6375	27.56	63	35.44
Kachchh	Ratanpur Khadir1	23.8608	70.3631	14.1	37	22.9
Kachchh	Rawapar	23.5167	69.075	14.7	71	56.3
Kachchh	Rudramata	23.3917	69.7083	11.4	41	29.6
Kachchh	Samkhiari	23.3	70.5083	7.05	42	34.95
Kachchh	Sedat	23.1714	69.6375	10.77	221	210.23
Kachchh	Shinaya	23.0333	70.0542	2.3	40	37.7
Kachchh	Shivlakha	23.375	70.6236	22.32	97.3	74.98
Kachchh	Sukhpar	23.2083	69.6167	14.1	120	105.9
Kachchh	Tera	23.2833	68.9472	13.27	46.3	33.03
Kachchh	Vinjhan1	23.1	69.025	9.15	47	37.85
Kheda	Alina	22.8083	73.0583	14.4	49	34.6

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Kheda	Balasinor	22.9583	73.3361	4.75	92	87.25
Kheda	Balasinor1	22.95	73.325	7.7	92	84.3
Kheda	Bar	23.1681	73.4111	5.79	147.3	141.51
Kheda	Dakor	22.7625	73.1694	7.38	60.3	52.92
Kheda	Kalesar	22.7208	73.1917	3.4	59	55.6
Kheda	Kapadvanj	23.0042	73.0917	14.32	73	58.68
Kheda	Kheda	22.7375	72.7042	5.95	25	19.05
Kheda	Ladvel	22.9083	73.1208	2.9	69	66.1
Kheda	Nadiad2	22.6833	72.8833	11.5	38	26.5
Kheda	Nes_Pz	22.7083	73.2028	9.52	61.7	52.18
Kheda	Sarkhej _ Pz-III	22.9861	72.8806	36.3	54.2	17.9
Kheda	Shekhupura	22.575	72.625	0.95	24	23.05
Kheda	Thasra	22.7944	73.2111	5.95	63.8	57.85
Kheda	Vaso	22.6611	72.7542	6.75	32	25.25
Kheda	Virpur_Pz	23.1931	73.4853	9.55	103.6	94.05
Kheda	Vyas vasna	23.1056	73.1042	24.25	86	61.75
Mahesana	Asjol	23.5083	72.1833	6.12	56	49.88
Mahesana	Bhandupara	23.725	72.3833	10.41	101	90.59
Mahesana	Budasan	23.2875	72.375	4.29	62	57.71
Mahesana	Daran_Pz-III	23.2064	72.2797	2.62	49.3	46.68
Mahesana	Dharpura	23.5458	72.1125	7.05	51	43.95
Mahesana	Dosaj	23.8417	72.45	4.49	131	126.51
Mahesana	Kalyanpur	23.1269	72.1931	4.62	34.3	29.68
Mahesana	Karalli (iii)	23.8042	72.4861	10.34	132.3	121.96
Mahesana	Kheralu(shallow	23.8978	72.6106	5.15	176.2	171.05
Mahesana	Kheralu1	23.8875	72.6125	6.4	174	167.6
Mahesana	Maguna	23.5778	72.2889	8.05	72.6	64.55
Mahesana	Modhera iii	23.7167	72.4667	7.42	117	109.58
Mahesana	Panchot	23.6292	72.3417	3.67	82	78.33
Mahesana	Rampura1	23.8917	72.5167	7.77	160	152.23
Mahesana	Sihi	23.8	72.35	10.9	111	100.1
Mahesana	Tarabh	23.7583	72.4583	9.61	122	112.39
Mahesana	Unad1	23.8458	72.7167	15.4	170	154.6
Mahesana	Unawa	23.7667	72.3625	3.8	110	106.2
Mahesana	Vidaj	23.2472	72.3	2.23	56.7	54.47
Mahesana	Visnagar iv	23.7	72.5333	2.56	125	122.44
Narmada	Agar(Rep)_Pz	22.0311	73.6567	5.42	60	54.58
Narmada	Amayar	21.5472	73.7667	9.25	193.3	184.05
Narmada	Baman Phalia_Pz	21.7983	73.3792	23.5	90	66.5
Narmada	Chikada	21.5208	73.6458	5.45	239	233.55
Narmada	Garudeshwar	21.8917	73.65	11.3	42	30.7
Narmada	Hirapura	21.8681	73.6	7.6	65	57.4
Narmada	Kanbi pitha	21.5208	73.6458	2.45	239	236.55
Narmada	Kewadia_Pz	21.8828	73.7006	5.63	60.9	55.27
Narmada	Khota amba	21.7333	73.475	1.29	155	153.71
Narmada	Namaria	22.0444	73.6222	4.9	62.1	57.2
Narmada	Nani singlot	21.6694	73.6667	9.8	242.3	232.5
Narmada	Ringani	21.8417	73.4667	2.2	73	70.8
Narmada	Sunderpura_Pz	21.8389	73.5347	34.14	69	34.86
Navsari	Abrama	20.8625	72.9	1.8	4	2.2
Navsari	Anklas	20.6194	73.2667	11	116	105
Navsari	Chadav	20.8311	73.3344	9.68	73.7	64.02
Navsari	Chinam	20.9917	72.8861	3.58	7.7	4.12
Navsari	Dandi	20.8917	72.8083	3.66	4	0.34
Navsari	Duvada	20.8286	73.0575	7.14	23	15.86
Navsari	Hond	20.7389	73.0458	8.4	20.7	12.3
Navsari	Kaliyari	20.725	73.15	12.17	47	34.83
Navsari	Kantasvel	20.7972	73.2917	8.2	69	60.8
Navsari	Khergam	20.6333	73.0958	8.6	41	32.4

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Navsari	Manav Khadak	20.6742	73.2333	3.26	81	77.74
Navsari	Moti Valzar	20.805	73.2667	7.12	72	64.88
Navsari	Navsari	20.95	72.9333	45	16	-29
Navsari	Navsari 1	20.9581	72.935	6.02	7	0.98
Navsari	Onjal	20.8333	72.8417	6.2	11	4.8
Navsari	Panikhadak	20.6492	73.1669	13.5	62.3	48.8
Navsari	Pipalkhed	20.675	73.2833	17.45	134	116.55
Navsari	Rankuva	20.8125	73.1583	7.48	38	30.52
Navsari	Sari_khurd	20.7875	72.9542	4.55	5	0.45
Navsari	Ubhrat	21.0083	72.7458	4.29	3	-1.29
Navsari	Unai	20.85	73.3417	9.56	80	70.44
Navsari	Vansda	20.7644	73.3631	11.8	108.9	97.1
Panchmahals	Bavaliya	23.325	73.5694	10.46	157.3	146.84
Panchmahals	Jambughoda	22.3694	73.725	7.15	107	99.85
Panchmahals	Kothamba	23.0194	73.5194	3.5	92.1	88.6
Panchmahals	Limbadia peti	23.2042	73.6	6.2	91	84.8
Panchmahals	Lunawada	23.1292	73.6083	11.41	103	91.59
Panchmahals	Morwa (Hadaf) Pz-I	22.9181	73.8444	13.2	147.6	134.4
Panchmahals	Natapur	22.8572	73.8206	8.58	153.9	145.32
Panchmahals	Palla Rajgarh Pz	22.5228	73.7008	23.3	191.7	168.4
Panchmahals	Pandarvada	23.375	73.6333	15.56	158	142.44
Panchmahals	Pavagadh	22.4875	73.5556	9.86	127	117.14
Panchmahals	Ranipura	22.725	73.7583	9.43	174	164.57
Panchmahals	Santrampur	23.1708	73.9083	9.65	136	126.35
Panchmahals	Santrampur1	23.1917	73.9083	11.8	144	132.2
Panchmahals	Shehra	22.9542	73.625	3.06	126	122.94
Panchmahals	Shivrajpur	22.425	73.5917	12.5	100	87.5
Panchmahals	Suliyat	23.0622	73.8508	22.38	148.3	125.92
Panchmahals	Tarkanda	22.5458	73.5292	13.3	103	89.7
Panchmahals	Tuwa	22.8042	73.4708	4.5	82	77.5
Panchmahals	Ucharpi Pz	23.1192	73.4717	18.5	104	85.5
Panchmahals	Vejalpur	22.6958	73.5583	8.7	105	96.3
Patan	Dharmoda	23.6972	72.0694	3.57	60.2	56.63
Patan	Dhinoj1	23.6625	72.2792	9.4	80	70.6
Patan	Harij iii	23.6864	71.8972	30.35	43.7	13.35
Patan	Moti chander	23.5944	71.7806	2.23	27.3	25.07
Patan	Patan2	23.8417	72.1236	17.78	80.7	62.92
Patan	Radhanpur2	23.825	71.6139	5.1	27	21.9
Patan	Sander	23.7667	72.2542	15.63	89	73.37
Patan	Sankheshwar	23.5219	71.7908	2.49	25.7	23.21
Porbandar	Adwana2	21.9167	69.6	14.92	20	5.08
Porbandar	Bhavpura	21.8097	69.4083	8.13	10	1.87
Porbandar	Degam	21.7103	69.6056	19.35	18.6	-0.75
Porbandar	Hanumangadh1	21.7931	69.8028	34.2	72.7	38.5
Porbandar	Kandorna	21.6478	69.8833	22.8	22	-0.8
Porbandar	Khambodar	21.8083	69.6014	11.53	22	10.47
Porbandar	Kolikhada	21.6997	69.6142	33.02	19	-14.02
Porbandar	Kuchhadi	21.6833	69.55	2.87	0	-2.87
Porbandar	Kutiyana_Pz	21.6222	69.9972	13.4	10.7	-2.7
Porbandar	Kutiyana1	21.6306	70.0167	12.18	21	8.82
Porbandar	Miyani	21.8333	69.3889	6.83	10	3.17
Porbandar	Mojiwana	21.8858	69.6003	10.78	21	10.22
Porbandar	Navibandar	21.4458	69.7917	4.42	9	4.58
Porbandar	Oddar	21.5667	69.6806	6.11	9.3	3.19
Porbandar	Palkhada1	21.7583	69.4875	11.83	13	1.17
Porbandar	Pata	21.2972	69.9417	2.68	5.3	2.62
Porbandar	Porbandar	21.645	69.6425	5.12	7	1.88
Porbandar	Porbandar1	21.6417	69.625	3.93	8	4.07
Porbandar	Ranavav2	21.6833	69.7458	25.31	30	4.69

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Porbandar	Ratadi	21.7203	69.5119	6.67	6.1	-0.57
Porbandar	Tukda	21.5161	69.7286	3.14	6.9	3.76
Rajkot	Amar nagar	22.9333	70.8083	2.84	33	30.16
Rajkot	Bhada jodiya	21.6625	70.3417	25.4	61	35.6
Rajkot	Bhadla	22.1833	71.0917	18.15	230	211.85
Rajkot	Bhalgam	22.4417	71.0833	14.52	180	165.48
Rajkot	Chhatar	22.5042	70.7542	3.1	97	93.9
Rajkot	Chordi	21.9167	70.7486	9.35	127.3	117.95
Rajkot	Dadia	22.0917	70.7333	16.52	153	136.48
Rajkot	Ganod	21.675	70.1792	6.35	31	24.65
Rajkot	Gogavadar	21.9667	70.875	12.45	155	142.55
Rajkot	Hadmatia	22.6833	70.8083	11.05	80	68.95
Rajkot	Halenda	22.0917	71.05	6.85	212	205.15
Rajkot	Jasapur	21.8917	70.4833	11.95	99	87.05
Rajkot	Jasdan	22.0444	71.2139	9.3	200.6	191.3
Rajkot	Jasdan2	22.0583	71.2208	9.87	205	195.13
Rajkot	Jetpur	21.7561	70.6194	32	89.6	57.6
Rajkot	Kalithad1	22.0194	70.6603	15.6	126.8	111.2
Rajkot	Kalyanpur2	22.6583	70.7333	13.24	63	49.76
Rajkot	Khamta	22.475	70.55	16.15	73	56.85
Rajkot	Lajai	22.7167	70.7792	5.47	62	56.53
Rajkot	Lalavadar	22.1333	71.3042	6.31	255	248.69
Rajkot	Macchukunda	23.0014	70.8958	11.6	26.3	14.7
Rajkot	Malia	23.0917	70.7625	5.2	6	0.8
Rajkot	Modpar1	22.9	70.6667	2.86	24	21.14
Rajkot	Morvi	22.8167	70.8417	6.4	47	40.6
Rajkot	Mota dhansura	22.9583	70.6167	9	9	0
Rajkot	Motagundala	21.7347	70.5014	10.65	81.4	70.75
Rajkot	Movaiya	22.45	70.6083	12.5	70	57.5
Rajkot	Nichi mandal	22.8583	70.95	5.45	72	66.55
Rajkot	Patanvav	21.6444	70.2611	21.9	81.7	59.8
Rajkot	Pedhla	21.7514	70.5917	21.95	97.7	75.75
Rajkot	Rajkot	22.3056	70.8083	5.15	118.3	113.15
Rajkot	Rajkot1	22.3	70.8	5.62	133	127.38
Rajkot	Ranpur1	22.3667	70.9292	16.9	164	147.1
Rajkot	Ribda	22.125	70.7667	10.45	173	162.55
Rajkot	Sarvad	23.0064	70.7069	2.85	18	15.15
Rajkot	Sindhavadar	22.55	70.8917	13.71	104	90.29
Rajkot	Umrali	21.9194	70.6042	12.85	101.3	88.45
Rajkot	Vinchhia	22.2083	71.3792	4.55	171	166.45
Rajkot	Viranagar	22.025	71.125	10.83	181	170.17
Rajkot	Virpur1	21.85	70.6958	13.13	114	100.87
Sabarkantha	Alwakampa	23.2747	73.2083	11.1	104	92.9
Sabarkantha	Anwarpura Pz	23.4056	72.8456	39.92	113.1	73.18
Sabarkantha	Bayad_Pz	23.2167	73.2292	10.56	104	93.44
Sabarkantha	Bhadreshwar	23.7458	72.9792	26.2	167	140.8
Sabarkantha	Bhiloda_Pz	23.7667	73.25	30.35	210	179.65
Sabarkantha	Boral	23.125	73.2083	18.3	104	85.7
Sabarkantha	Boriya	23.2428	72.9408	7.28	80.7	73.42
Sabarkantha	Chandap_Pz	23.9319	72.8569	14.55	163.7	149.15
Sabarkantha	Choriwad	23.9	73.1194	21.71	218.7	196.99
Sabarkantha	Derol Pz-II	23.5994	72.9025	44.1	142.7	98.6
Sabarkantha	Dhansura1	23.35	73.2	12.1	131	118.9
Sabarkantha	Gadha	23.7083	72.9417	17.8	166	148.2
Sabarkantha	Hamirpur	23.4083	73.4583	16.4	148	131.6
Sabarkantha	Harsol1	23.3778	73.0167	16.75	116.7	99.95
Sabarkantha	Himmatnagar_Pz	23.6083	72.9708	8.67	137	128.33
Sabarkantha	Idar	23.8417	73.0375	9.03	200	190.97
Sabarkantha	Jhaloti	23.95	73.3375	11.5	317	305.5

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Sabarkantha	Karanpur	23.3333	73.3	8.65	134	125.35
Sabarkantha	Khedbrahma_Pz	24.0361	73.0444	4.25	200	195.75
Sabarkantha	Malpur_Pz	23.3417	73.4681	12.5	150	137.5
Sabarkantha	Matoda	24.1111	73.0083	14.55	208	193.45
Sabarkantha	Modasa	23.4625	73.3083	6.28	147	140.72
Sabarkantha	Poshina2	24.375	73.0333	5.6	286	280.4
Sabarkantha	Punasan	23.6694	73.1736	6.91	239.1	232.19
Sabarkantha	Ratanpur	24.2083	72.9986	17.1	215	197.9
Sabarkantha	Revas	23.8208	73.1167	16.9	199	182.1
Sabarkantha	Sathamba	23.175	73.3375	15.45	148	132.55
Sabarkantha	Seenawad	23.4864	73.3986	13.8	163.1	149.3
Sabarkantha	Shamlaji	23.6861	73.3667	10.15	218.3	208.15
Sabarkantha	Silwad	24.0083	73.1167	10.9	224	213.1
Sabarkantha	Vejpur_Pz	23.7972	73.2208	17.35	216	198.65
Sabarkantha	Vijaynagar	24.0083	73.3542	7.5	356	348.5
Sabarkantha	Vijaynagar_Pz	24.0069	73.3333	13.25	350.7	337.45
Sabarkantha	Wadali	23.9333	73.0333	29.4	217	187.6
Sabarkantha	Waliampura Pz	23.3511	72.9708	38.9	109	70.1
Surat	Allu	21.0625	73.1917	4.24	42	37.76
Surat	Bardoli	21.1153	73.1	8.75	34.3	25.55
Surat	Bedchit	20.95	73.3514	10.3	73.7	63.4
Surat	Bhatkol	21.3803	73.0042	4.65	27	22.35
Surat	Bhurvel (ukai)	21.225	73.5792	7	85	78
Surat	Chapawadi	21.1514	73.3936	7.7	85.1	77.4
Surat	Chavada	21.4747	73.595	4.3	222.7	218.4
Surat	Digas	21.2483	73.0256	15.64	27	11.36
Surat	Dungri	21.4083	73.1333	10.85	48	37.15
Surat	Gangadhra	21.1186	73.0753	10.85	28.1	17.25
Surat	Jesingpura[sg]	21.1708	73.5542	7.15	215	207.85
Surat	Jhankhavav	21.45	73.3292	7.4	116	108.6
Surat	Jhankhvav	21.4667	72.9528	9.9	30.7	20.8
Surat	Juna umarpada	21.4583	73.4917	5.96	236	230.04
Surat	Kadod 1	21.2214	73.2189	5.65	22.1	16.45
Surat	Karanjvel	21.0128	73.4581	8.05	111.7	103.65
Surat	Kasal	21.3222	73.1269	8.9	38.2	29.3
Surat	Kathor	21.2917	72.9292	13.45	21	7.55
Surat	Kelkui	21.0419	73.3233	2.96	63	60.04
Surat	Mahuva2	21.0208	73.1458	17.75	32	14.25
Surat	Malda	21.3667	73.35	6.15	88	81.85
Surat	Mandvi2	21.2542	73.2958	13.77	41	27.23
Surat	Mota	21.1703	73.0686	4.2	26.8	22.6
Surat	Moti Sarkui	21.2792	73.3497	8.8	43.3	34.5
Surat	Motichher	21.2125	73.3622	4.4	57.3	52.9
Surat	Navi pardi	21.3222	72.9708	3.38	23.3	19.92
Surat	Nizar1	21.4772	74.1906	13.5	119.9	106.4
Surat	Nogama	21.2908	73.2144	3.29	51.3	48.01
Surat	Olpad2	21.3417	72.7583	3.52	9	5.48
Surat	Palsana	21.0778	72.9917	2.59	16.7	14.11
Surat	Paneshwar	21.4542	73.1983	11.86	56	44.14
Surat	Puna	20.9236	73.2333	13.5	50.7	37.2
Surat	Puna1	20.9292	73.2292	10.2	53	42.8
Surat	Sachin town	21.0917	72.875	3.6	11	7.4
Surat	Sarbhon	21.0583	73.0917	2.63	27	24.37
Surat	Sultanabad	21.0917	72.725	5.83	2	-3.83
Surat	Tawali	21.3761	73.9017	8.46	132	123.54
Surat	Ten-bardoli	21.1167	73.1	10.8	34	23.2
Surat	Tokarwa 1	21.31	73.8511	8.1	152.7	144.6
Surat	Ushker	21.3406	73.0978	4.3	34.1	29.8
Surat	Vadade-Khurd	21.2517	73.8169	3.2	111.7	108.5

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Surat	Vaheval	20.8372	73.2878	10.22	68	57.78
Surat	Valod	21.05	73.2667	4.85	54	49.15
Surat	Vyara1	21.1083	73.3958	4.25	81	76.75
Surat	Wadoli	21.425	72.8292	3.09	10	6.91
Surendranagar	Bajana	23.1167	71.7833	2.18	10	7.82
Surendranagar	Bamanbor	22.4167	71.0417	9.5	194	184.5
Surendranagar	Chotila1	22.425	71.1817	10.4	197	186.6
Surendranagar	Dasada	23.32	71.8242	5.3	27	21.7
Surendranagar	Dedadra	22.775	71.7333	3.35	51	47.65
Surendranagar	Halvad2	23.0208	71.1875	10.59	45	34.41
Surendranagar	Jhinjhuwada	23.35	71.6583	6.6	18	11.4
Surendranagar	Kherwa	23.0042	71.7458	2.06	39	36.94
Surendranagar	Lakhtar	22.8583	71.7833	6.39	42	35.61
Surendranagar	Limbdi1	22.5667	71.8125	9.2	51	41.8
Surendranagar	Limbdi-Pz	22.5722	71.8083	2.6	48	45.4
Surendranagar	Moti Moladi	22.4208	71.1103	9.7	194.7	185
Surendranagar	Muli	22.65	71.4667	9.8	110	100.2
Surendranagar	Pipli	23.06	71.7342	2.55	26	23.45
Surendranagar	Rajsitapur	22.8417	71.5917	7.51	72	64.49
Surendranagar	Sarla	22.7333	71.3667	10.05	118	107.95
Surendranagar	Sayala	22.5333	71.4833	17.75	122	104.25
Surendranagar	Shiyani	22.6667	71.8292	3.82	36	32.18
Surendranagar	Sudamda	22.4542	71.485	4.09	114	109.91
Surendranagar	Sukhpar1	23.0083	71.2833	4.1	56	51.9
Surendranagar	Surendranagar	22.7236	71.6708	3.2	66	62.8
Surendranagar	Surendranagar2	22.7167	71.6083	7.95	75	67.05
Surendranagar	Vanala	22.4333	71.9208	2.9	28	25.1
Surendranagar	Visawadi	23.3417	71.7333	4.23	29	24.77
The dangs	Ahwa_Pz	20.7589	73.6861	3.1	470.7	467.6
The dangs	Ahwa1	20.7583	73.6833	4.8	464	459.2
The dangs	Bari Pada	20.64	73.6914	13.15	440.7	427.55
The dangs	Chikhli	20.6583	73.6875	9.75	397	387.25
The dangs	Chinchnogaotha	20.8083	73.5528	6.91	172	165.09
The dangs	Chinchpada	20.6375	73.775	7.3	596	588.7
The dangs	Dhumkal	20.6458	73.7917	3.2	484	480.8
The dangs	Gadad	20.6375	73.775	5.15	596	590.85
The dangs	Ghubita	20.8	73.7375	2.05	462	459.95
The dangs	Jakana	20.6333	73.7458	11.65	458	446.35
The dangs	Kalibel	20.9208	73.5806	3.05	173	169.95
The dangs	Mahal	20.9167	73.6792	4.3	212	207.7
The dangs	Malegaon	20.6	73.7458	5.83	553	547.17
The dangs	Nadak khadi	20.8042	73.6125	5.87	207	201.13
The dangs	Nana pada	20.7	73.5833	7.73	236	228.27
The dangs	Sodmal	20.8667	73.6167	12.4	342	329.6
The dangs	Subir	20.9222	73.5806	7.5	170.8	163.3
The dangs	Umberpada	20.6833	73.725	5.53	361	355.47
Vadodara	Alladpur	22.25	73.7167	10.43	83	72.57
Vadodara	Amreshwar	22.2278	73.4833	3.35	51	47.65
Vadodara	Asala	22.3833	73.9333	12.5	136	123.5
Vadodara	Baladgam	22.1375	74.0083	13	160	147
Vadodara	Bhindol	22.2	73.9	9.56	109	99.44
Vadodara	Bodeli	22.2708	73.7167	7.28	87	79.72
Vadodara	Chavaria	22.1875	73.9875	12.3	151	138.7
Vadodara	Chhaliyar	22.6667	73.3167	23.9	50	26.1
Vadodara	Chhota udepur	22.3083	74.0167	10.2	151	140.8
Vadodara	Devat (thadgam)	22.1	73.9833	11.7	159	147.3
Vadodara	Ferkuva	22.3667	74.2083	7.9	241	233.1
Vadodara	Ghamodi	22.3667	74.075	9.09	174	164.91
Vadodara	Govindpura	22.2111	73.7414	7.85	78.8	70.95

DISTRICT_NAME	SITE_NAME	Latt_Y	Long_X	May_2018	Elevation_GL	WT_May_18
Vadodara	Jojh	22.4417	73.9625	13.42	164	150.58
Vadodara	Juna samalya	22.5042	73.2833	16.65	55	38.35
Vadodara	Kaprali	21.9792	73.9417	10.53	229	218.47
Vadodara	Karamasiya	22.4208	73.4194	13.2	75	61.8
Vadodara	Kevadi	22.5167	73.9417	7.5	198	190.5
Vadodara	Moti chikhali	22.0111	74.0833	6.4	296.7	290.3
Vadodara	Panwad	22.2	74.0417	10.25	174	163.75
Vadodara	Patiyapura	22.275	73.4417	8.07	60	51.93
Vadodara	Pavi	22.3417	73.8333	4.42	102	97.58
Vadodara	Pitha	22.2542	73.6417	10.51	71	60.49
Vadodara	Rasulpur	22.6	73.2333	5	52	47
Vadodara	Saidal	22.2833	73.5028	2.76	65.7	62.94
Vadodara	Saidivasana	22.0583	74.0167	5.5	218	212.5
Vadodara	Sankarda1	22.4389	73.1222	29.16	39.9	10.74
Vadodara	Sankheda	22.5389	73.175	32.17	51.3	19.13
Vadodara	Sengpur	22.0375	73.8875	11.1	162	150.9
Vadodara	Sinor	21.9125	73.3417	26.05	40	13.95
Vadodara	Tundav	22.4833	73.2028	10.9	44.7	33.8
Vadodara	Vadodara Ii	22.3047	73.2717	7.5	36.3	28.8
Vadodara	Vadtalav Pz	22.2586	73.7839	19	97	78
Vadodara	Vega	22.1594	73.4125	7.28	46	38.72
Vadodara	Vejpur2	22.7472	73.3556	2.15	70.8	68.65
Vadodara	Waghach	22.0708	73.85	9.95	111	101.05
Vadodara	Waghodia Pz	22.3639	73.3769	6.43	66.3	59.87
Valsad	Awadha	20.5167	73.2875	3.81	157	153.19
Valsad	Chavshala	20.3283	73.3258	8.8	242	233.2
Valsad	Dahli (bhilad)	20.2583	72.8833	5.4	42	36.6
Valsad	Dharampur 3	20.5308	73.1625	10.35	70	59.65
Valsad	Dharampur1	20.5364	73.1706	9.84	78.6	68.76
Valsad	Fali	20.3131	73.3761	12.2	500.6	488.4
Valsad	Kanadu	20.325	72.8417	6.6	43	36.4
Valsad	Kaparda	20.3417	73.2167	5.35	337	331.65
Valsad	Karwad	20.3625	72.975	4.62	25	20.38
Valsad	Lakadmal	20.4667	73.1583	9.9	69	59.1
Valsad	Muli1	20.6333	73.025	3.6	32	28.4
Valsad	Nanaponda	20.4139	73.1208	10.25	63.3	53.05
Valsad	Tithal	20.6	72.9	7.96	6	-1.96
Valsad	Tumb	20.2167	72.8417	3.47	20	16.53
Valsad	Udwada	20.4636	72.9181	6.59	20	13.41
Valsad	Umargaon	20.1917	72.75	3.78	10	6.22
Valsad	Valsad1	20.6056	72.9278	23.59	17.3	-6.29
Valsad	Vapi Balitha	20.3803	72.9044	9.55	25.9	16.35

Annexure IV

MEAN DECADAL WATER LEVELS OF THE NATIONAL HYDROGRAPH STATIONS IN GUJARAT STATE (PHERATIC) 2009-18					
DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Ahmedabad	Bagodara_Pz_II	22.6417	72.2139	6.75	5.70
Ahmedabad	Barvala	22.1500	71.8917	9.67	8.93
Ahmedabad	Bopal_Pz_III	23.0386	72.4578	5.45	
Ahmedabad	Dalod	23.3667	71.9667	6.66	5.86
Ahmedabad	Devalia	22.3778	71.9861	18.71	17.47
Ahmedabad	Dhandhuka1	22.3750	71.9861	4.23	3.16
Ahmedabad	Endla	23.2722	72.0583	3.47	2.50
Ahmedabad	Fedra	22.4622	72.1583		1.51
Ahmedabad	Gamph	22.3583	72.1667	3.13	1.78
Ahmedabad	Ghuma	23.0333	72.4458	5.50	3.43
Ahmedabad	Ghuma_Pz_II	23.0339	72.4497	6.21	3.96
Ahmedabad	Hansalpur_Pz-III	23.0889	72.0167	4.05	3.14
Ahmedabad	Jholapur_Pz_III	22.9875	72.2042		12.37
Ahmedabad	Kumarkhan	22.9000	72.0167	5.28	4.44
Ahmedabad	Kundal	22.9014	72.2236	11.18	7.89
Ahmedabad	Kundali	22.2694	71.7000	16.61	8.03
Ahmedabad	Mandal2	23.2750	71.9167	4.78	4.03
Ahmedabad	Pachcham_Pz	22.2322	72.1789	2.80	1.32
Ahmedabad	Rajpada	22.3083	71.6917	20.01	15.21
Ahmedabad	Salangpor	22.1583	71.7708	19.86	11.90
Ahmedabad	Sola_Pz_III	23.0806	72.5186	12.44	10.30
Ahmedabad	Tagadi1	22.2958	71.9472	7.45	3.49
Ahmedabad	Ughraj1	23.3667	72.1000	7.97	6.57
Ahmedabad	Upardhal1	22.8500	72.1458	10.85	9.39
Ahmedabad	Vagad(Repl)_Pz	22.3603	71.8681	7.55	5.60
Ahmedabad	Vastrapur_lake_II(2)	23.0383	72.5297	21.22	
Ahmedabad	Viramgam2	23.1417	72.0333	3.48	2.05
Ahmedabad	Visalpur_Pz-II	22.9186	72.4878	8.83	6.12
Amreli	Amreli	21.6083	71.2250	12.52	6.43
Amreli	Amreli_Pz	21.6125	71.2250	14.42	8.08
Amreli	Amritvel_Pz	21.3972	71.3583	3.10	3.07
Amreli	Ankadia mota	21.6458	71.1083	10.74	7.95
Amreli	Badhda	21.2658	71.3389	10.05	7.63
Amreli	Bagasara	21.4792	70.9625	17.19	13.68
Amreli	Bhavardi1	21.1083	71.2583	5.70	0.91
Amreli	Bherai	20.8681	71.3625	3.13	2.55
Amreli	Bhuva	21.4328	71.3639	4.68	3.96
Amreli	Chalala	21.4167	71.1667	29.03	26.84
Amreli	Charkhadia_Pz	21.3875	71.2917	21.67	20.45
Amreli	Charkhadia1	21.3917	71.2958	18.75	17.52
Amreli	Chavand	21.8167	71.4125	10.42	5.92
Amreli	Devaliya	21.8208	71.1083	13.48	11.49
Amreli	Dharangani	21.3333	71.2000	29.95	30.68
Amreli	Dhari	21.3375	71.0417	13.12	10.13
Amreli	Dhari_Pz	21.3264	71.0181	21.13	10.34
Amreli	Dhrai Balmukand	21.8342	71.2172		11.67
Amreli	Fifad	21.4361	71.5403		4.93
Amreli	Gopalpura Vanda Pz	21.3750	71.4917	26.31	
Amreli	Goradka	21.2250	71.4111	11.45	4.22
Amreli	Govadka	21.5417	71.1583	6.28	3.15
Amreli	Hipavadli	21.3789	71.6147		8.46
Amreli	Ingorala	21.2333	71.2000	16.20	9.60
Amreli	Jafrabad	20.8667	71.3625	2.31	1.84
Amreli	Jira	21.2375	71.0917	9.65	4.60
Amreli	Kerala	21.3972	71.2167	37.45	33.18
Amreli	Khamba	21.1500	71.2389	10.00	4.81
Amreli	Khamba_Pz	21.1417	71.2542	13.33	8.49
Amreli	Kotadapitha	21.9583	71.2042	14.49	
Amreli	Kunkavav	21.6625	70.9833	17.65	21.79
Amreli	Lathi	21.7208	71.3833	8.70	3.86
Amreli	Lotpur	20.9625	71.4333	5.67	5.18

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Amreli	Luvariya	21.6250	71.3958	10.59	5.19
Amreli	Mandal	21.1000	71.5833	28.53	25.65
Amreli	Manila Pz	21.4333	71.1667	19.29	
Amreli	Morjhar	21.3761	71.1186	38.32	33.23
Amreli	Nageshri	20.9250	71.3542	5.66	2.84
Amreli	Piyava	21.3833	71.4667	28.50	25.50
Amreli	Punjapadar	21.5250	71.3583	11.80	5.80
Amreli	Salena	21.3861	71.5333	14.14	
Amreli	Tajpur	21.7250	71.4667	21.13	10.15
Amreli	Timbi2	20.8958	71.2042	8.82	5.96
Amreli	Trakuda	21.0167	71.2806	10.74	5.86
Amreli	Untvad	21.9167	71.2167	15.07	12.02
Amreli	Vaghania juna	21.5833	70.9667	11.16	4.93
Amreli	Vankiya	21.5208	71.1361	11.13	6.17
Amreli	Vankiya1	21.2333	71.2500	15.83	6.79
Amreli	Victor	21.0125	71.5417	1.47	0.69
Amreli	Virpur	21.2542	71.1500	18.29	
Anand	Anand	22.5750	72.9722	11.79	8.00
Anand	Anklav2	22.3833	73.0083	24.64	23.56
Anand	Bandhani	22.5417	72.8167	5.24	3.95
Anand	Bhadran	22.3556	72.8972	17.04	15.11
Anand	Dali	22.2750	72.7667	4.62	3.17
Anand	Davalpura_Pz	22.4583	72.8028	3.77	1.60
Anand	Dharmaj	22.4208	72.7944	12.66	11.23
Anand	Ghora	22.6917	73.0542	6.17	3.70
Anand	Kansari1	22.3417	72.6500	13.79	10.72
Anand	Laxmipura	22.4167	72.6083	3.18	1.20
Anand	Navapura	22.3125	72.9625	25.68	22.09
Anand	Ras	22.3458	72.8333	2.41	1.80
Anand	Tarapur Pz-II	22.4861	72.6611	3.80	2.34
Banaskantha	Ambaji_Pz	24.3361	72.8472	12.05	7.49
Banaskantha	Amirgadh	24.4056	72.6417	11.43	11.35
Banaskantha	Asodar	24.4167	71.8167	29.32	29.32
Banaskantha	Bharol1	24.5292	71.5417	3.65	3.29
Banaskantha	Danta	24.1889	72.7653	10.52	8.20
Banaskantha	Dantiwada	24.2775	72.2614	29.39	26.36
Banaskantha	Dantiwada	24.1889	72.7606	36.32	34.36
Banaskantha	Deesa Pzii	24.2567	72.1875	58.96	57.99
Banaskantha	Ganapipli	24.2972	72.9472	11.52	8.54
Banaskantha	Gangodra	24.4361	72.3653	21.86	14.51
Banaskantha	Iqbalgarh	24.3458	72.5375	30.10	26.82
Banaskantha	Jhat	24.4875	72.3528	15.86	13.76
Banaskantha	Jorapura	24.3797	72.2897	20.66	14.81
Banaskantha	Khoda	24.6583	71.7667	22.00	19.75
Banaskantha	Kidotar	24.3944	72.6278	19.68	17.71
Banaskantha	Kuchwada	24.4667	72.2528	24.08	23.26
Banaskantha	Manglore	24.5139	71.6972	9.25	9.46
Banaskantha	Meda	24.3972	72.2847	11.76	8.89
Banaskantha	Mohabbat gadh	24.1667	72.7278	22.84	18.40
Banaskantha	Naroli Pziii	24.6164	71.6386	10.10	8.49
Banaskantha	Palanpur2	24.1944	72.4333	30.21	27.11
Banaskantha	Ratanpur2	24.1750	72.7458	17.59	14.60
Banaskantha	Sankad	24.4972	71.9750		36.00
Banaskantha	Sodapur	24.4014	72.2958	15.22	12.50
Banaskantha	Tharad Pziii	24.3850	71.6194	14.01	12.19
Banaskantha	Vadgamda	24.4083	71.6917	28.75	28.35
Bharuch	Arethi	21.6125	73.4353	9.87	6.13
Bharuch	Bharuch	21.7000	73.0042	6.80	4.06
Bharuch	Bhensli	21.7250	72.7500	3.31	2.24
Bharuch	Dahegam	22.1847	72.5972	7.75	8.38
Bharuch	Hansot	21.5833	72.8083	4.67	3.29
Bharuch	Ilav	21.4500	72.8000	7.40	6.26
Bharuch	Jambusar	22.0528	72.8056	6.73	7.50
Bharuch	Jambusar2	22.0500	72.8000	7.90	4.50
Bharuch	Jetpur1	21.4917	72.7083	3.62	2.13

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Bharuch	Juna borbhata	21.6750	72.9750	7.10	5.57
Bharuch	Kaswa	21.6833	72.8167	7.35	5.13
Bharuch	Kavachiya	21.5292	73.3542	6.38	3.72
Bharuch	Kavi	22.1936	72.6394	7.13	6.22
Bharuch	Kondh	21.5806	73.0681	5.02	3.13
Bharuch	Luhara	21.6750	72.5583	3.92	2.57
Bharuch	Mahegam1	21.6833	72.7583	6.02	3.95
Bharuch	Modoliya	21.6333	73.2958	8.87	8.02
Bharuch	Mokhdi	21.5333	73.2875	9.60	5.53
Bharuch	Motwan	21.5556	72.8875	2.63	2.17
Bharuch	Mulad	21.6833	73.0194	7.90	5.65
Bharuch	Navetha	21.7078	72.8306	6.77	5.52
Bharuch	Netrang(Rep)_Pz	21.6417	73.3667	9.48	6.24
Bharuch	Netrang1	21.6333	73.3667	7.16	3.24
Bharuch	Nirnavi	21.7917	72.6681	9.70	6.48
Bharuch	Panoli	21.5375	72.9750	2.61	1.74
Bharuch	Raymal	21.5208	72.8208	1.85	1.50
Bharuch	Roja tankaria	21.9167	72.7917	9.03	8.06
Bharuch	Sajod	21.6167	72.9236	4.06	3.53
Bharuch	Sarod	22.1583	72.7583	11.83	10.15
Bharuch	Simodra	21.7417	73.2083	6.76	4.30
Bharuch	Tankari	21.9917	72.6750	4.84	3.19
Bharuch	Utraj	21.5917	72.8250	5.02	4.20
Bhavnagar	Ambala	21.7111	71.8417	21.45	17.09
Bhavnagar	Ayodhayapuram	21.9603	71.8864		7.48
Bhavnagar	Bhavnagar1	21.7667	72.1500	7.53	5.80
Bhavnagar	Bhudel	21.6917	72.1583	5.13	3.06
Bhavnagar	Bhumbhali	21.6794	72.2442	2.96	2.36
Bhavnagar	Bhutia	21.7472	71.7000	18.93	15.19
Bhavnagar	Datha	21.2208	71.9500	5.03	4.06
Bhavnagar	Dhasa	21.8000	71.5083	5.94	2.87
Bhavnagar	Dudhala	21.1375	71.6583	14.13	7.78
Bhavnagar	Gadhada2	21.9667	71.5792	4.81	4.09
Bhavnagar	Gariyadhar	21.5431	71.5653	19.86	13.45
Bhavnagar	Ghogha1	21.6833	72.2792	4.16	1.68
Bhavnagar	Jalia	21.8000	71.6167	18.64	15.29
Bhavnagar	Khijadiya	21.6375	71.7000	12.07	10.01
Bhavnagar	Longadi	21.2139	71.8833	5.37	3.51
Bhavnagar	Lonjdhara	22.0972	71.8972	26.51	18.70
Bhavnagar	Mahuva1	21.0958	71.7667	19.60	18.98
Bhavnagar	Malvav_Pz	21.1606	71.9083	29.82	24.28
Bhavnagar	Motivadal	21.1972	71.5500	8.22	3.30
Bhavnagar	Ningala	22.0181	71.7000	14.12	8.46
Bhavnagar	Palitana1	21.5250	71.8236	9.95	6.44
Bhavnagar	Palitana2	21.5222	71.8389	12.98	6.38
Bhavnagar	Paliyad	22.2556	71.5583	19.32	9.20
Bhavnagar	Paliyad2	22.2556	71.5639	19.85	6.11
Bhavnagar	Panchpipla	21.5500	71.7208	6.98	2.41
Bhavnagar	Panvi1	22.0750	71.8917	9.87	4.42
Bhavnagar	Pasvi	21.2917	71.9667	16.12	9.30
Bhavnagar	Piparla	21.6364	71.9189		3.12
Bhavnagar	Porbada	21.8000	71.7000	12.97	9.51
Bhavnagar	Sajnasar	21.4250	71.9125	10.24	3.82
Bhavnagar	Sandhida	21.6875	71.7583	5.27	2.82
Bhavnagar	Satanes	21.4417	71.8375	16.07	4.49
Bhavnagar	Shantinagar	21.2458	71.6500	12.18	5.81
Bhavnagar	Talaja2	21.3667	72.0167	11.29	7.41
Bhavnagar	Tansa	21.5083	72.1250	14.86	8.46
Bhavnagar	Tardhera	22.2292	71.6042	21.58	19.36
Bhavnagar	Tatam	22.0583	71.6333	26.22	21.47
Bhavnagar	Timbi2	21.8317	71.7661	12.77	11.22
Bhavnagar	Trapaj	21.4250	72.0958	15.72	10.83
Bhavnagar	Umrala	21.8472	71.8083	13.40	10.94
Bhavnagar	Vadal	21.4769	71.8061		3.54
Bhavnagar	Vallabhipur1	21.8833	71.8778	5.96	4.80

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Bhavnagar	Vallbhipur	21.8833	71.8750	5.68	4.31
Bhavnagar	Vavdi	21.5681	72.1981		2.70
Dohad	Dabhava	22.5833	73.9042	5.63	3.80
Dohad	Dadhela	22.8375	74.0667	8.52	4.27
Dohad	Dahod	22.8403	74.2625	3.96	2.57
Dohad	Dahod2	22.8250	74.2333	8.80	6.06
Dohad	Devgadh Baria	22.7000	73.9139	11.64	7.61
Dohad	Devgadh bariya	22.7000	73.9167	13.64	7.78
Dohad	Dhanpur	22.6333	74.1042	13.20	8.11
Dohad	Fatepura(Karodia)	23.2542	74.0292	12.94	8.39
Dohad	Garbara	22.6806	74.3125	7.89	3.55
Dohad	Jhalod	23.0931	74.1472	9.92	6.92
Dohad	Jhalod1	23.0917	74.1333	8.96	5.47
Dohad	Kanjetha	22.5806	74.1139	10.35	6.38
Dohad	Khandania	22.7042	73.8375	12.96	10.37
Dohad	Limbdi2	23.0042	74.1583	4.61	2.54
Dohad	Limkheda	22.8306	73.9861	8.51	5.39
Dohad	Mirakhedi	22.9333	74.2000	6.77	3.47
Dohad	Panchwada	22.7292	74.3083	6.24	4.49
Dohad	Pipero	22.6472	74.0903	12.85	6.61
Dohad	Salaya1	22.8083	73.8917	12.90	5.67
Dohad	Sukhsar	23.1500	74.0500	9.77	7.15
Dohad	Tokarba	22.6042	74.0375	6.13	3.46
Dohad	Varamkheda	22.8000	74.2750	2.29	1.71
Dohad	Wadia	22.9000	74.0500	7.96	4.83
Gandhinagar	Adalaj_Pz_III	23.1750	72.5583	23.98	23.77
Gandhinagar	Amrapur Pziii	23.3736	72.7050	55.47	
Gandhinagar	Dahegam II	23.1708	72.8417	9.34	7.02
Gandhinagar	Kasturinagar(IFFCO)	23.1903	72.5528	12.86	11.44
Gandhinagar	Paliya	23.1792	72.8417	13.37	11.28
Gandhinagar	Serthapara1	23.1944	72.5667	13.85	12.27
Jamnagar	Ambardi	21.9164	69.8581	11.28	7.05
Jamnagar	Amran_Pz	22.8222	70.5458	4.54	2.31
Jamnagar	Amran1	22.8292	70.5625	5.23	2.63
Jamnagar	Aramda	22.4333	69.0417	5.48	4.70
Jamnagar	Balwa	21.9042	69.9583	21.43	14.42
Jamnagar	Bed1	22.4375	69.9000	8.95	5.51
Jamnagar	Bedanpur	22.6833	70.3167	6.40	4.39
Jamnagar	Bhadthar	22.0792	69.5792	15.10	7.73
Jamnagar	Bhanvad	21.9278	69.7958	14.05	7.52
Jamnagar	Bhatia	22.0917	69.3014	13.73	5.65
Jamnagar	Bhatiya	22.0944	69.2667	4.48	2.26
Jamnagar	Bhogat1	21.9917	69.2458	9.17	5.12
Jamnagar	Changa	22.3500	70.0417	16.27	11.87
Jamnagar	Dhrol2	22.5667	70.4167	5.09	2.94
Jamnagar	Drafa	21.9583	70.0750	15.20	7.00
Jamnagar	Dudhai2	22.7917	70.5042	4.02	1.73
Jamnagar	Dwarka	22.2458	68.9583	8.04	7.79
Jamnagar	Gordhanpur	22.4500	70.0014	12.83	7.40
Jamnagar	Haripur2	22.2708	70.3333	19.18	7.08
Jamnagar	Haryana	22.6083	70.2625	8.62	6.29
Jamnagar	Jambuda	22.5250	70.2042	7.93	4.16
Jamnagar	Jamjodhpur	21.9056	70.0306	7.24	5.16
Jamnagar	Jamnagar1	22.4708	70.0500	11.98	5.00
Jamnagar	Jamnagar2	22.4583	70.0792	7.37	4.38
Jamnagar	Juvanpur	22.1708	69.3667	22.93	11.62
Jamnagar	Kajuda	22.3333	69.7083	7.34	4.41
Jamnagar	Kalawad	22.2167	70.3833	4.25	3.10
Jamnagar	Kalyanpur2	22.0167	69.3917	24.08	12.37
Jamnagar	Khambhaliya	22.2097	69.6458	10.11	4.43
Jamnagar	Khirsara	21.9792	69.6000	13.92	5.35
Jamnagar	Kuvadia	22.2014	69.5833	15.31	8.70
Jamnagar	Lalpur	22.1917	69.9389	26.48	
Jamnagar	Lalpur1	22.1917	69.9611	13.48	7.65
Jamnagar	Modpar	21.8583	69.8083	17.40	9.88

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Jamnagar	Mojap	22.3667	68.9833	8.51	7.05
Jamnagar	Mota kalawad	21.9083	69.8292	23.59	16.34
Jamnagar	Motagop	22.0375	69.8750	9.52	6.50
Jamnagar	Moti khavdi	22.3875	69.8667	10.02	7.64
Jamnagar	Moti matli	22.3167	70.2639	20.90	8.70
Jamnagar	Nikava	22.1917	70.5333	4.51	2.64
Jamnagar	Pindara1	22.2472	69.2583	7.37	4.57
Jamnagar	Raval	21.9297	69.4919	7.66	3.49
Jamnagar	Salaya	22.3056	69.6042	2.95	2.69
Jamnagar	Samrasar1	22.3750	69.1042	5.33	3.83
Jamnagar	Seth vadala	22.0333	70.1250	11.36	5.12
Jamnagar	Sumana	22.1083	70.1667	12.76	10.62
Jamnagar	Toda	22.0625	70.3833	13.21	6.23
Jamnagar	Vad panchasara	22.2333	70.1167	16.85	8.83
Jamnagar	Vadtara	22.2083	69.5000	12.46	9.01
Jamnagar	Varwada	22.2917	68.9667	14.89	9.02
Jamnagar	Vijarkha	22.4167	70.1833	11.05	6.86
Jamnagar	Vinjhalpur	22.1500	69.6000	8.70	5.73
Junagadh	Ajotha	20.9019	70.5181	20.37	7.03
Junagadh	Alwani	21.2306	70.6375	3.42	2.26
Junagadh	Ankolvadi	21.0472	70.6583		6.25
Junagadh	Antroli	21.2361	70.0069	6.89	4.38
Junagadh	Arena	21.0806	70.1764	12.02	6.40
Junagadh	Bamanwara	21.2208	70.0556	10.49	5.50
Junagadh	Bantva	21.4875	70.0833	19.73	12.41
Junagadh	Bhatsimroli	21.2236	70.1833	22.30	11.58
Junagadh	Bilkha	21.4389	70.6000	13.52	8.37
Junagadh	Budhecha	21.0958	70.2167	7.70	4.58
Junagadh	Chorwad	21.0417	70.2167	6.93	4.25
Junagadh	Dhokadva	20.9583	71.0708	12.99	10.22
Junagadh	Gadu	21.0542	70.2792	35.15	22.78
Junagadh	Galodar	21.1472	70.2750	23.23	8.80
Junagadh	Gangda_Pz	20.8583	71.1667	8.61	4.45
Junagadh	Girgadhada	20.9250	70.9167	8.32	7.09
Junagadh	Goraj1	21.1833	70.1542	34.64	11.13
Junagadh	Govindpura2	20.9458	70.3958	26.91	10.10
Junagadh	Jambur[madhapar	21.0292	70.6083	8.74	3.62
Junagadh	Jamvala	20.9847	70.7694		4.64
Junagadh	Jamvala1	20.9833	70.7625	6.46	5.56
Junagadh	Junagadh	21.5094	70.4622	13.01	10.14
Junagadh	Junagadh1	21.5167	70.4583	11.33	6.46
Junagadh	Juthal	21.1667	70.2667	9.36	8.94
Junagadh	Kalej	21.2486	70.0583	14.08	9.85
Junagadh	Kanek	21.0306	70.2417	14.47	6.87
Junagadh	Kasia Naka Check Post	21.2703	70.6806		2.37
Junagadh	Kesariya1	20.7964	70.9419		8.33
Junagadh	Kewarda	21.2667	70.2083	15.44	9.99
Junagadh	Khambalia1	21.0444	70.1917	8.93	8.28
Junagadh	Khokharda	21.4208	70.3167	22.82	13.21
Junagadh	Khorada1	21.0639	70.1736	9.26	7.33
Junagadh	Khoras ahir	21.3708	70.3389	13.45	9.45
Junagadh	Kodinar	20.8000	70.6917	12.02	7.09
Junagadh	Kodinar1	20.8000	70.6917	13.70	9.20
Junagadh	Kukaswada	21.0542	70.2083	9.78	6.77
Junagadh	Lohej	21.1667	70.0667	9.79	8.92
Junagadh	Maktupur1	21.1431	70.0958	9.88	9.02
Junagadh	Mandawad	21.3583	70.7458	14.26	9.51
Junagadh	Mangrol	21.1250	70.1083	17.32	16.57
Junagadh	Mangrol1	21.1306	70.1194	13.67	12.41
Junagadh	Manketara	21.1500	70.1292	33.71	19.17
Junagadh	Mendarda	21.3250	70.4403	18.26	11.06
Junagadh	Mendarda1	21.3250	70.4333	17.15	11.07
Junagadh	Moraj	20.9833	70.4361	10.59	5.49
Junagadh	Patla	21.6042	70.5692	9.29	3.32
Junagadh	Prachi_Pz	20.9219	70.6133	18.35	6.81

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Junagadh	Prempara	21.3000	70.7000	19.80	10.46
Junagadh	Sametar	20.8542	71.1208	15.86	9.62
Junagadh	Sepa	21.1167	70.2194	26.21	21.42
Junagadh	Seriakhan	21.1333	70.2486	20.10	14.63
Junagadh	Shardagram	21.1042	70.1528	11.72	10.34
Junagadh	Sil	21.1856	70.0464	7.22	5.63
Junagadh	Sil bandar	21.2236	70.0556	9.35	5.92
Junagadh	Talala_Pz	21.0639	70.5383	11.34	6.46
Junagadh	Talala1	21.0514	70.5250	11.67	7.43
Junagadh	Una1	20.8250	71.0444	10.17	6.17
Junagadh	Una2	20.8250	71.0417	5.92	3.61
Junagadh	Vanthali ii	21.4708	70.3278	12.57	6.12
Junagadh	Veraval	20.9531	70.3389		12.11
Junagadh	Visavadar	21.3389	70.7486	15.80	9.64
Kachchh	Asambia mota_Pz	22.9681	69.4514	7.50	7.08
Kachchh	Asambia mota1	22.9681	69.4375	12.99	10.13
Kachchh	Bambhdai	22.9389	69.0828	5.78	
Kachchh	Bhadia mota	22.9833	69.3333	6.16	4.21
Kachchh	Bhadreshwar	22.9000	69.9000	8.13	6.96
Kachchh	Bhuj (Circuit House)	23.2500	69.6667	14.51	13.54
Kachchh	Chandranagar	23.4500	69.4000	7.49	6.11
Kachchh	Dayapar	23.6306	68.9000	17.84	20.39
Kachchh	Dayapar1	23.6333	68.8708		22.45
Kachchh	Deshalpur rapar	23.7472	70.6792	13.08	10.75
Kachchh	Devisar	23.4028	69.3292	12.59	11.57
Kachchh	Dholavira	23.8833	70.2167	10.48	8.57
Kachchh	Dhori	23.4375	69.7511	16.50	14.28
Kachchh	Dhori1	23.4333	69.7542	15.75	14.27
Kachchh	Dunai	23.0500	69.5000	10.45	9.10
Kachchh	Gagodar	23.4167	70.8000	29.36	26.90
Kachchh	Gandhidham2	23.0756	70.1514	6.55	
Kachchh	Haboi	23.3583	69.8667	1.90	0.77
Kachchh	Kakarwa	23.4750	70.4042	16.57	15.42
Kachchh	Karagoga	22.9417	69.6625	3.05	2.38
Kachchh	Kharoi	23.4542	70.3500	6.16	5.15
Kachchh	Khavada	23.8389	69.7306	6.17	5.31
Kachchh	Kotadi	23.0417	69.1917	9.36	8.57
Kachchh	Kotaya	23.0417	69.0750	9.68	8.24
Kachchh	Kothara	23.1619	68.9119	5.18	4.70
Kachchh	Kuda	23.5344	70.4403	26.20	24.09
Kachchh	Kumbhariya	23.3411	70.7236	7.67	7.02
Kachchh	Lakhpat	23.8231	68.7750	8.89	5.50
Kachchh	Lilpur	23.5111	70.6500	0.90	0.64
Kachchh	Lodai	23.4000	69.8917	14.46	13.96
Kachchh	Luni	22.8733	69.8117	9.11	7.64
Kachchh	Mandvi (Shitla Mata)	22.8333	69.3333	7.43	4.42
Kachchh	Mata no madh	23.5333	68.9500	10.84	9.90
Kachchh	Mathak1	22.9972	70.0250	10.37	9.70
Kachchh	Mokha	22.9500	69.8000		12.31
Kachchh	Mothala	23.2083	69.1250	4.12	3.18
Kachchh	Moti cher	23.7583	68.6750	4.07	3.73
Kachchh	Mundra	22.8278	69.7208	5.94	5.05
Kachchh	Naliya	23.2558	68.8400	9.76	9.03
Kachchh	Naliya (Bus S)	23.2667	68.8333	10.55	8.37
Kachchh	Rapar2	23.5667	70.6375	27.38	24.75
Kachchh	Ratanpur Khadir1	23.8608	70.3631	16.99	14.39
Kachchh	Ratanpur(maum.)	23.1083	69.2917	4.51	4.16
Kachchh	Rawapar	23.5167	69.0750	14.22	13.92
Kachchh	Rudramata	23.3917	69.7083	8.86	5.39
Kachchh	Samkhiari	23.3000	70.5083	7.56	4.17
Kachchh	Sedat	23.1714	69.6375	12.82	12.33
Kachchh	Shinaya	23.0333	70.0542	2.88	2.48
Kachchh	Shivlakha	23.3750	70.6236	17.23	10.27
Kachchh	Sukhpar	23.2083	69.6167	14.87	13.95
Kachchh	Tera	23.2833	68.9472	11.48	11.20

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Kachchh	Vinjhan1	23.1000	69.0250	8.72	6.53
Kheda	Alina	22.8083	73.0583	10.66	8.86
Kheda	Balasinor	22.9583	73.3361	4.27	2.88
Kheda	Balasinor1	22.9500	73.3250	7.73	4.02
Kheda	Bar	23.1681	73.4111	6.41	3.30
Kheda	Chaklashi	22.6542	72.9458	4.85	
Kheda	Dakor	22.7625	73.1694	7.32	5.58
Kheda	Juna vasadra	23.0833	73.3625	5.28	3.55
Kheda	Kalesar	22.7208	73.1917	4.71	1.93
Kheda	Kapadvanj	23.0042	73.0917	13.55	8.67
Kheda	Kheda	22.7375	72.7042	6.09	
Kheda	Ladvel	22.9083	73.1208	2.60	1.28
Kheda	Mahudha	22.7833	72.9417	4.44	2.88
Kheda	Nadiad2	22.6833	72.8833	9.05	6.60
Kheda	Nes_Pz	22.7083	73.2028	8.95	7.21
Kheda	Sarkhej _ Pz-III	22.9861	72.8806	40.20	36.16
Kheda	Shekhupura	22.5750	72.6250	1.25	0.92
Kheda	Thasra	22.7944	73.2111	5.34	2.41
Kheda	Vaso	22.6611	72.7542	6.73	4.22
Kheda	Virpur_Pz	23.1931	73.4853	9.23	4.94
Kheda	Vyas vasna	23.1056	73.1042	25.48	17.77
Mahesana	Asjol	23.5083	72.1833	8.06	4.57
Mahesana	Bhandupara	23.7250	72.3833	9.62	8.70
Mahesana	Budasan	23.2875	72.3750	5.67	2.64
Mahesana	Daran_Pz-III	23.2064	72.2797	3.09	2.09
Mahesana	Dharpura	23.5458	72.1125	8.61	7.35
Mahesana	Dosaj	23.8417	72.4500	9.48	8.02
Mahesana	Jaska(Sy_4")Pz_II	23.8236	72.5347	14.66	14.08
Mahesana	Kalyanpur	23.1269	72.1931	5.62	4.94
Mahesana	Karalli (iii)	23.8042	72.4861	11.27	10.89
Mahesana	Kheralu(shallow	23.8978	72.6106	7.47	5.72
Mahesana	Kheralu1	23.8875	72.6125	13.41	9.54
Mahesana	Maguna	23.5778	72.2889	8.85	6.15
Mahesana	Modhera iii	23.7167	72.4667	9.88	8.67
Mahesana	Panchot	23.6292	72.3417	6.82	4.47
Mahesana	Rampura1	23.8917	72.5167	9.22	8.09
Mahesana	Sihi	23.8000	72.3500	13.07	11.27
Mahesana	Tarabh	23.7583	72.4583	8.38	6.76
Mahesana	Thol Pz-IV	23.1306	72.3761	18.68	
Mahesana	Unad1	23.8458	72.7167	12.58	12.14
Mahesana	Unawa	23.7667	72.3625	4.87	3.78
Mahesana	Vidaj	23.2472	72.3000	5.21	3.10
Mahesana	Visnagar iv	23.7000	72.5333	3.04	2.36
Narmada	Agar(Rep)_Pz	22.0311	73.6567	10.04	8.09
Narmada	Amayar	21.5472	73.7667	8.33	4.33
Narmada	Baman Phalia_Pz	21.7983	73.3792	19.36	16.59
Narmada	Chikada	21.5208	73.6458	5.36	3.40
Narmada	Dediapada	21.6333	73.5833	7.93	6.38
Narmada	Garudeshwar	21.8917	73.6500	11.49	9.40
Narmada	Hirapura	21.8681	73.6000	5.61	4.40
Narmada	Kanbi pitha	21.5208	73.6458	3.47	1.61
Narmada	Kewadia_Pz	21.8828	73.7006	5.75	3.43
Narmada	Khota amba	21.7333	73.4750	1.93	1.26
Narmada	Namaria	22.0444	73.6222	4.53	3.22
Narmada	Nani singlot	21.6694	73.6667	9.79	6.97
Narmada	Rasela	21.9250	73.4917	13.90	14.92
Narmada	Ringani	21.8417	73.4667	2.00	1.85
Narmada	Selemba	21.6083	73.7583	8.86	7.35
Narmada	Sunderpura_Pz	21.8389	73.5347	30.54	27.77
Navsari	Abrama	20.8625	72.9000	3.90	1.31
Navsari	Anklas	20.6194	73.2667	10.18	7.99
Navsari	Chadav	20.8311	73.3344	10.77	5.16
Navsari	Chinam	20.9917	72.8861	3.11	2.03
Navsari	Dandi	20.8917	72.8083	3.87	2.46
Navsari	Duvada	20.8286	73.0575	5.42	

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Navsari	Hond	20.7389	73.0458	8.86	4.52
Navsari	Kaliyari	20.7250	73.1500	11.54	2.80
Navsari	Kantasvel	20.7972	73.2917	8.20	4.20
Navsari	Khergam	20.6333	73.0958	8.24	3.10
Navsari	Manav Khadak	20.6742	73.2333	4.14	3.03
Navsari	Moti Valzar	20.8050	73.2667	7.58	3.56
Navsari	Navsari	20.9500	72.9333	27.80	20.47
Navsari	Navsari 1	20.9581	72.9350	5.38	2.62
Navsari	Onjal	20.8333	72.8417	6.20	3.98
Navsari	Panikhadak	20.6492	73.1669	12.61	6.00
Navsari	Pipalkhed	20.6750	73.2833	16.62	5.68
Navsari	Rankuva	20.8125	73.1583	7.48	2.20
Navsari	Sari_khurd	20.7875	72.9542	4.04	2.17
Navsari	Ubhrat	21.0083	72.7458	4.66	2.57
Navsari	Unai	20.8500	73.3417	9.17	5.63
Navsari	Vansda	20.7644	73.3631	11.36	8.19
Panchmahals	Bavaliya	23.3250	73.5694	8.99	4.61
Panchmahals	Bavaliya_Pz	23.3067	73.5550	23.66	4.81
Panchmahals	Gadhar	23.1500	73.7750	12.63	3.96
Panchmahals	Godhra	22.7833	73.6097	4.06	2.77
Panchmahals	Godhra2	22.7708	73.6333	6.75	5.48
Panchmahals	Jambughoda	22.3694	73.7250	7.10	5.83
Panchmahals	Kothamba	23.0194	73.5194	4.68	2.68
Panchmahals	Limbadia peti	23.2042	73.6000	6.07	2.77
Panchmahals	Lunawada	23.1292	73.6083	10.04	7.69
Panchmahals	Malekpur1	23.2306	73.7361	3.13	1.77
Panchmahals	Morwa (Hadaf) Pz-I	22.9181	73.8444	13.32	10.60
Panchmahals	Natapur	22.8572	73.8206	8.75	6.42
Panchmahals	Palla Rajgarh Pz	22.5228	73.7008	25.20	13.41
Panchmahals	Pandarvada	23.3750	73.6333	15.41	4.99
Panchmahals	Pavagadh	22.4875	73.5556	10.13	5.85
Panchmahals	Ranipura	22.7250	73.7583	9.21	5.17
Panchmahals	Santrampur	23.1708	73.9083	9.54	5.35
Panchmahals	Santrampur1	23.1917	73.9083	9.93	5.11
Panchmahals	Santroad	22.8000	73.8125	13.65	9.35
Panchmahals	Shehra	22.9542	73.6250	3.99	1.51
Panchmahals	Shivrajpur	22.4250	73.5917	12.16	6.60
Panchmahals	Suliyat	23.0622	73.8508	19.62	16.29
Panchmahals	Tarkanda	22.5458	73.5292	12.62	4.43
Panchmahals	Tarvada	22.6056	73.5222	13.27	11.92
Panchmahals	Timbi2	22.5083	73.5083	6.88	3.78
Panchmahals	Tuwa	22.8042	73.4708	5.03	3.25
Panchmahals	Ucharpi Pz	23.1192	73.4717	17.06	10.63
Panchmahals	Vejalpur	22.6958	73.5583	6.59	4.34
Patan	Dharmoda	23.6972	72.0694	6.01	5.32
Patan	Dhinoj1	23.6625	72.2792	12.76	11.53
Patan	Harij iii	23.6864	71.8972	11.75	
Patan	Moti chander	23.5944	71.7806	2.62	1.69
Patan	Patan2	23.8417	72.1236	17.36	16.38
Patan	Radhanpur2	23.8250	71.6139	2.03	0.65
Patan	Sander	23.7667	72.2542	15.19	12.46
Patan	Sankheshwar	23.5219	71.7908	2.70	1.36
Patan	Santhalpur	23.7583	71.1750	2.27	1.91
Patan	Shankhari	23.7792	72.1625	17.39	17.28
Patan	Vauva(Repl)_Pz	23.7986	71.0903	4.32	
Porbandar	Adityana	21.7086	69.7108		14.21
Porbandar	Adwana2	21.9167	69.6000	13.37	8.66
Porbandar	Babda	21.7700	69.5881		6.32
Porbandar	Bakharla	21.7647	69.6611		12.91
Porbandar	Bhavpura	21.8097	69.4083	9.96	7.46
Porbandar	Bhod	21.6589	69.8211		18.52
Porbandar	Degam	21.7103	69.6056	18.37	
Porbandar	Hanumangadh1	21.7931	69.8028	25.51	15.11
Porbandar	Kadegi	21.4506	69.9833	2.67	0.66
Porbandar	Kandorna	21.6478	69.8833	20.30	12.38

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Porbandar	Khambodar	21.8083	69.6014	12.25	5.14
Porbandar	Kolikhada	21.6997	69.6142	29.55	20.70
Porbandar	Kuchhadi	21.6833	69.5500	3.11	2.37
Porbandar	Kutiyana_Pz	21.6222	69.9972	13.84	5.70
Porbandar	Kutiyana1	21.6306	70.0167	13.56	5.77
Porbandar	Miyani	21.8333	69.3889	7.56	6.92
Porbandar	Mojiwana	21.8858	69.6003	14.60	7.17
Porbandar	Navibandar	21.4458	69.7917	5.04	4.07
Porbandar	Oddar	21.5667	69.6806	6.60	5.98
Porbandar	Palkhada1	21.7583	69.4875	12.60	7.73
Porbandar	Pata	21.2972	69.9417	5.50	4.40
Porbandar	Porbandar	21.6450	69.6425	5.84	2.62
Porbandar	Porbandar1	21.6417	69.6250	4.40	3.52
Porbandar	Ranavav2	21.6833	69.7458	15.87	8.68
Porbandar	Ratadi	21.7203	69.5119	7.21	5.51
Porbandar	Simar	21.9469	69.6858	15.87	
Porbandar	Tukda	21.5161	69.7286	3.92	2.55
Porbandar	Visavada Mul Dwarka	21.7856	69.4464		7.99
Rajkot	Amar nagar	22.9333	70.8083	3.37	3.23
Rajkot	Bhada jodiya	21.6625	70.3417	18.37	10.81
Rajkot	Bhadla	22.1833	71.0917	18.38	12.70
Rajkot	Bhalgam	22.4417	71.0833	15.60	8.35
Rajkot	Chhatar	22.5042	70.7542	6.16	4.03
Rajkot	Chordi	21.9167	70.7486	10.43	7.27
Rajkot	Dadia	22.0917	70.7333	12.52	8.08
Rajkot	Dhoraji	21.7458	70.2858	17.71	11.18
Rajkot	Ganod	21.6750	70.1792	4.58	3.38
Rajkot	Gavridad	22.4000	70.7958	9.94	7.75
Rajkot	Gogavadar	21.9667	70.8750	10.98	6.04
Rajkot	Hadmatia	22.6833	70.8083	8.84	6.29
Rajkot	Halenda	22.0917	71.0500	9.44	3.18
Rajkot	Jamwali	21.9333	70.7667	6.86	4.27
Rajkot	Jasapur	21.8917	70.4833	13.07	9.78
Rajkot	Jasdan	22.0444	71.2139	8.98	6.25
Rajkot	Jasdan2	22.0583	71.2208	11.66	7.63
Rajkot	Jetpur	21.7561	70.6194	17.68	5.86
Rajkot	Jetpur pithad.	21.7750	70.6333	15.15	8.57
Rajkot	Kalithad1	22.0194	70.6603	8.59	
Rajkot	Kalyanpur2	22.6583	70.7333	7.55	4.32
Rajkot	Kamlapur	22.1458	71.2000	14.93	12.94
Rajkot	Khamta	22.4750	70.5500	13.75	7.89
Rajkot	Khirsara1	22.2417	70.6458	18.40	8.94
Rajkot	Lajai	22.7167	70.7792	6.68	3.91
Rajkot	Lalavadar	22.1333	71.3042	12.49	6.60
Rajkot	Lodhika1	22.1417	70.6417	9.81	5.84
Rajkot	Macchukunda	23.0014	70.8958	5.96	4.51
Rajkot	Malia	23.0917	70.7625	2.64	2.44
Rajkot	Modpar1	22.9000	70.6667	3.11	2.25
Rajkot	Morvi	22.8167	70.8417	3.70	2.27
Rajkot	Mota Dadwa	21.9983	70.9939	12.51	6.20
Rajkot	Mota dhansura	22.9583	70.6167	8.42	5.94
Rajkot	Motagundala	21.7347	70.5014	8.94	6.19
Rajkot	Movaiya	22.4500	70.6083	12.03	8.26
Rajkot	Neknam	22.5042	70.6958	16.09	11.41
Rajkot	Nichi mandal	22.8583	70.9500	6.30	4.56
Rajkot	Padadhari1	22.4472	70.6083	7.29	5.79
Rajkot	Patanvav	21.6444	70.2611	16.16	8.23
Rajkot	Pedhla	21.7514	70.5917	21.47	13.86
Rajkot	Rajkot	22.3056	70.8083	5.56	3.54
Rajkot	Rajkot1	22.3000	70.8000	8.56	5.05
Rajkot	Ranpur1	22.3667	70.9292	15.24	11.81
Rajkot	Ribda	22.1250	70.7667	12.05	7.10
Rajkot	Sardhar2	22.1417	70.9833	5.86	2.43
Rajkot	Sarvad	23.0064	70.7069	2.64	1.44
Rajkot	Sindhavadar	22.5500	70.8917	11.84	10.77

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Rajkot	Targhari	22.3833	70.6667	8.37	5.62
Rajkot	Umrali	21.9194	70.6042	9.52	5.98
Rajkot	Upleta1	21.7486	70.2750	7.47	4.88
Rajkot	Vinchhia	22.2083	71.3792	5.24	3.18
Rajkot	Viranagar	22.0250	71.1250	10.80	6.90
Rajkot	Virpur1	21.8500	70.6958	10.46	7.71
Rajkot	Wankaner-1	22.6208	70.9292	6.33	5.27
Sabarkantha	Alwakampa	23.2747	73.2083	13.70	8.22
Sabarkantha	Anwarpura Pz	23.4056	72.8456	38.66	38.55
Sabarkantha	Atarsumba	23.9861	73.2083	10.67	6.45
Sabarkantha	Bayad_Pz	23.2167	73.2292	10.26	9.47
Sabarkantha	Bhadreshwar	23.7458	72.9792	26.92	24.10
Sabarkantha	Bhiloda_Pz	23.7667	73.2500	9.03	3.52
Sabarkantha	Bhiloda2	23.7667	73.2722		4.95
Sabarkantha	Bibipur1	23.2528	73.2125	17.02	
Sabarkantha	Boral	23.1250	73.2083	18.49	12.41
Sabarkantha	Boriya	23.2428	72.9408	7.43	6.41
Sabarkantha	Chandap_Pz	23.9319	72.8569	14.52	9.53
Sabarkantha	Choriwad	23.9000	73.1194	26.37	20.95
Sabarkantha	Derol Pz-II	23.5994	72.9025	45.43	41.36
Sabarkantha	Dhansura1	23.3500	73.2000	10.28	5.29
Sabarkantha	Gadha	23.7083	72.9417	19.07	16.37
Sabarkantha	Hamirpur	23.4083	73.4583	16.36	10.97
Sabarkantha	Harsol1	23.3778	73.0167	15.84	10.41
Sabarkantha	Himmatnagar_Pz	23.6083	72.9708	9.19	8.08
Sabarkantha	Idar	23.8417	73.0375	8.83	5.10
Sabarkantha	Jhaloti	23.9500	73.3375	11.17	5.65
Sabarkantha	Karanpur	23.3333	73.3000	13.41	10.18
Sabarkantha	Khedbrahma_Pz	24.0361	73.0444	5.11	2.14
Sabarkantha	Malpur_Pz	23.3417	73.4681	15.60	8.09
Sabarkantha	Matoda	24.1111	73.0083	17.56	10.71
Sabarkantha	Modasa	23.4625	73.3083	7.49	6.35
Sabarkantha	Panvath/porvad	23.8972	73.3319	9.96	6.40
Sabarkantha	Poshina2	24.3750	73.0333	7.70	3.92
Sabarkantha	Punasan	23.6694	73.1736	7.35	5.82
Sabarkantha	Ratanpur	24.2083	72.9986	14.72	12.53
Sabarkantha	Revas	23.8208	73.1167	21.12	13.79
Sabarkantha	Sathamba	23.1750	73.3375	16.36	6.94
Sabarkantha	Seenawad	23.4864	73.3986	11.47	4.81
Sabarkantha	Shamlaji	23.6861	73.3667	13.61	9.79
Sabarkantha	Silwad	24.0083	73.1167	13.23	8.39
Sabarkantha	Varvada	23.4419	73.0567	14.67	12.56
Sabarkantha	Vejpur_Pz	23.7972	73.2208	18.14	5.94
Sabarkantha	Vijaynagar	24.0083	73.3542	9.78	2.34
Sabarkantha	Vijaynagar_Pz	24.0069	73.3333	12.95	5.21
Sabarkantha	Virpur (Himmat)	23.6542	72.9583	10.81	5.87
Sabarkantha	Virpur (Idar)	23.7833	72.9333	15.00	
Sabarkantha	Wadali	23.9333	73.0333	29.69	18.37
Sabarkantha	Waliampura Pz	23.3511	72.9708	37.30	36.91
Surat	Aarda Boratha	21.4875	74.1150		5.67
Surat	Allu	21.0625	73.1917	4.03	3.06
Surat	Bardoli	21.1153	73.1000	6.95	3.89
Surat	Bedchit	20.9500	73.3514	10.17	5.31
Surat	Bhatkol	21.3803	73.0042	4.16	3.21
Surat	Bhurvel (ukai)	21.2250	73.5792	4.88	2.53
Surat	Chapawadi	21.1514	73.3936	6.81	2.87
Surat	Chavada	21.4747	73.5950	3.76	1.95
Surat	Digas	21.2483	73.0256	11.44	5.02
Surat	Dungri	21.4083	73.1333	10.70	3.53
Surat	Gandhinagar	21.1642	73.6956	6.20	2.98
Surat	Gangadhra	21.1186	73.0753	9.93	8.09
Surat	Jesingpura[sg]	21.1708	73.5542	7.76	6.30
Surat	Jhankhavav	21.4500	73.3292	7.40	4.56
Surat	Jhankhvav	21.4667	72.9528	9.72	4.18
Surat	Juna umarpada	21.4583	73.4917	5.47	2.77

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Surat	Kadod 1	21.2214	73.2189	5.55	
Surat	Karanjvel	21.0128	73.4581	8.91	4.88
Surat	Kasal	21.3222	73.1269	7.55	3.71
Surat	Kathor	21.2917	72.9292	13.16	9.50
Surat	Kelkui	21.0419	73.3233	2.03	1.86
Surat	Khedwada (Ashram Falia)	21.2811	73.4653	7.39	5.50
Surat	Kherwa	21.4189	73.9597	5.84	1.13
Surat	Kosamba	21.4667	72.9528	19.89	18.30
Surat	Madhi	21.1417	73.2542	5.35	3.84
Surat	Madhi 1	21.1336	73.2486		4.57
Surat	Mahuva2	21.0208	73.1458	17.75	15.76
Surat	Malda	21.3667	73.3500	8.05	3.22
Surat	Mandvi2	21.2542	73.2958	13.85	11.39
Surat	Mota	21.1703	73.0686	3.22	2.28
Surat	Moti Sarkui	21.2792	73.3497	8.96	4.26
Surat	Motichher	21.2125	73.3622	4.34	2.71
Surat	Navi pardi	21.3222	72.9708	3.30	3.21
Surat	Nizar	21.4806	74.2000	15.28	12.86
Surat	Nizar1	21.4772	74.1906	11.13	8.90
Surat	Nogama	21.2908	73.2144	3.19	1.75
Surat	Olpad2	21.3417	72.7583	2.30	1.97
Surat	Palsana	21.0778	72.9917	2.65	1.56
Surat	Paneshwar	21.4542	73.1983	13.78	8.16
Surat	Puna	20.9236	73.2333	12.58	7.92
Surat	Puna1	20.9292	73.2292	9.99	5.82
Surat	Sachin town	21.0917	72.8750	3.79	2.23
Surat	Sarbhon	21.0583	73.0917	3.88	2.75
Surat	Sultanabad	21.0917	72.7250	5.92	4.70
Surat	Surat	21.1750	72.8056	15.19	
Surat	Tawali	21.3761	73.9017	7.72	5.04
Surat	Ten-bardoli	21.1167	73.1000	7.18	3.46
Surat	Tokarwa 1	21.3100	73.8511	8.10	4.37
Surat	Uchchhal	21.1719	73.7692	11.72	8.14
Surat	Ushker	21.3406	73.0978	5.35	4.63
Surat	Vadade-Khurd	21.2517	73.8169	3.15	1.01
Surat	Vaheval	20.8372	73.2878	11.15	
Surat	Valod	21.0500	73.2667	5.06	2.73
Surat	Vyara1	21.1083	73.3958	4.29	3.65
Surat	Wadoli	21.4250	72.8292	1.74	1.14
Surendranagar	Adriyana	23.4250	71.7083	3.06	3.50
Surendranagar	Bajana	23.1167	71.7833	2.33	2.44
Surendranagar	Bamanbor	22.4167	71.0417	10.12	7.23
Surendranagar	Chotila1	22.4250	71.1817	9.77	6.17
Surendranagar	Dasada	23.3200	71.8242	4.66	4.08
Surendranagar	Dasada1	23.3208	71.8292	2.57	2.07
Surendranagar	Dedadra	22.7750	71.7333	4.49	3.45
Surendranagar	Degam	23.1133	71.6628	3.21	
Surendranagar	Dhama	23.3853	71.6794		5.90
Surendranagar	Dhandhalpur 1	22.3814	71.3508	9.36	3.21
Surendranagar	Halvad2	23.0208	71.1875	14.24	12.34
Surendranagar	Jhinjhuwada	23.3500	71.6583	7.10	5.81
Surendranagar	Juna Devaliya 1	22.9794	71.0089		2.56
Surendranagar	Kharaghoda	23.1875	71.7500	1.74	1.65
Surendranagar	Kherwa	23.0042	71.7458	3.84	1.63
Surendranagar	Lakhtar	22.8583	71.7833	5.41	4.12
Surendranagar	Limbdi1	22.5667	71.8125	3.05	1.96
Surendranagar	Limbdi-Pz	22.5722	71.8083	2.77	1.93
Surendranagar	Mathak2	22.8417	71.0583	13.33	11.81
Surendranagar	Miani	23.1125	71.1292	2.44	2.23
Surendranagar	Modhvana	22.8814	71.7356		1.97
Surendranagar	Moti Moladi	22.4208	71.1103	10.82	7.99
Surendranagar	Muli	22.6500	71.4667	9.58	7.57
Surendranagar	Nava Raisngpur	22.7419	71.2617		11.12
Surendranagar	Olak	22.9186	71.8633		3.69
Surendranagar	Pipli	23.0600	71.7342	1.04	0.19

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Surendranagar	Rajsitapur	22.8417	71.5917	7.36	3.80
Surendranagar	Ratanpur1	22.8583	71.2708	7.90	6.02
Surendranagar	Sara	22.8000	71.1972	3.08	2.76
Surendranagar	Sarla	22.7333	71.3667	14.24	10.35
Surendranagar	Sayala	22.5333	71.4833	12.83	7.06
Surendranagar	Shiyani	22.6667	71.8292	4.54	3.58
Surendranagar	Sudamda	22.4542	71.4850	5.95	3.05
Surendranagar	Sukhpar1	23.0083	71.2833	8.03	3.98
Surendranagar	Surel	23.4792	71.6194	6.49	2.96
Surendranagar	Surendranagar	22.7236	71.6708	3.51	2.14
Surendranagar	Surendranagar2	22.7167	71.6083	5.81	5.25
Surendranagar	Tarnetar	22.6417	71.2167	17.78	15.66
Surendranagar	Vanala	22.4333	71.9208	4.00	2.98
Surendranagar	Visawadi	23.3417	71.7333	5.88	3.47
Surendranagar	Vitthalgarh	22.9875	71.9750	8.58	6.69
Surendranagar	Warod	22.5583	71.6542	7.31	5.91
The dangs	Aherdi	20.6917	73.6167	4.77	1.65
The dangs	Ahwa_Pz	20.7589	73.6861	3.70	2.45
The dangs	Ahwa1	20.7583	73.6833	4.33	1.22
The dangs	Bari Pada	20.6400	73.6914	11.54	0.63
The dangs	Bori Gaotha 1	20.8108	73.5031		4.56
The dangs	Chikhli	20.6583	73.6875	9.11	1.05
The dangs	Chinchnogaotha	20.8083	73.5528	7.54	2.11
The dangs	Chinchpada	20.6375	73.7750	6.08	1.15
The dangs	Dhumkal	20.6458	73.7917	4.30	1.23
The dangs	Gadad	20.6375	73.7750	5.06	2.15
The dangs	Ghubita	20.8000	73.7375	2.77	0.72
The dangs	Jakana	20.6333	73.7458	4.72	1.11
The dangs	Jamalpada	20.7317	73.5206		4.28
The dangs	Kalibel	20.9208	73.5806	3.25	1.00
The dangs	Mahal	20.9167	73.6792	5.81	3.09
The dangs	Malegaon	20.6000	73.7458	3.67	0.67
The dangs	Mheskatri	20.9453	73.5583	12.47	
The dangs	Nadak khadi	20.8042	73.6125	5.95	1.92
The dangs	Nana pada	20.7000	73.5833	7.81	2.47
The dangs	Sakarpatal	20.7194	73.5569		1.36
The dangs	Sodmal	20.8667	73.6167	11.18	2.14
The dangs	Subir	20.9222	73.5806	6.64	1.31
The dangs	Umberpada	20.6833	73.7250	5.75	1.50
The dangs	Vazat Amba	20.8783	73.5183		3.58
Vadodara	Alladpur	22.2500	73.7167	8.46	7.76
Vadodara	Amreshwar	22.2278	73.4833	4.46	2.97
Vadodara	Asala	22.3833	73.9333	11.58	6.40
Vadodara	Baladgam	22.1375	74.0083	13.00	9.85
Vadodara	Bhindol	22.2000	73.9000	9.05	4.96
Vadodara	Bodeli	22.2708	73.7167	3.47	1.79
Vadodara	Chavaria	22.1875	73.9875	12.30	11.70
Vadodara	Chella Karamsiya Pz	22.3967	73.4322	3.87	2.23
Vadodara	Chhaliyar	22.6667	73.3167	21.59	21.13
Vadodara	Chhota udepur	22.3083	74.0167	7.33	3.76
Vadodara	Chisadia	22.4000	74.1333	11.88	11.57
Vadodara	Chota udepur	22.3083	74.0167	8.50	
Vadodara	Devat (thadgam)	22.1000	73.9833	10.19	6.89
Vadodara	Ferkuva	22.3667	74.2083	7.60	4.14
Vadodara	Ghamodi	22.3667	74.0750	8.59	5.64
Vadodara	Ghayaj ii	22.2333	73.0542	26.48	23.63
Vadodara	Govindpura	22.2111	73.7414	6.50	4.12
Vadodara	Jojh	22.4417	73.9625	12.89	8.76
Vadodara	Juna samalya	22.5042	73.2833	12.50	11.27
Vadodara	Kaprali	21.9792	73.9417	7.93	2.86
Vadodara	Karamasiya	22.4208	73.4194	11.59	7.96
Vadodara	Kevadi	22.5167	73.9417	6.97	4.51
Vadodara	Kosindra Pz-I	22.1467	73.7556	3.02	3.02
Vadodara	Makni	22.2250	73.6792	9.51	8.59
Vadodara	Masor	22.1417	72.9083	13.53	12.28

DISTRICT	LOCATION	LAT_Y	LONG_X	PRE_MONSOON	POST_MONSOON
Vadodara	Moti chikhali	22.0111	74.0833	3.90	2.96
Vadodara	Panwad	22.2000	74.0417	14.57	5.99
Vadodara	Patiyapura	22.2750	73.4417	8.70	5.70
Vadodara	Pavi	22.3417	73.8333	4.68	3.76
Vadodara	Pitha	22.2542	73.6417	8.63	5.90
Vadodara	Rasulpur	22.6000	73.2333	5.27	4.36
Vadodara	Saidal	22.2833	73.5028	3.06	1.94
Vadodara	Saidivasana	22.0583	74.0167	6.23	3.03
Vadodara	Sankarda1	22.4389	73.1222	31.54	
Vadodara	Sankheda	22.5389	73.1750	24.51	19.93
Vadodara	Sengpur	22.0375	73.8875	10.35	5.93
Vadodara	Sinor	21.9125	73.3417	23.79	22.45
Vadodara	Suskal	22.2917	73.7792		4.62
Vadodara	Tokri	22.1472	74.0278	14.33	6.22
Vadodara	Tundav	22.4833	73.2028	13.44	9.37
Vadodara	Vadodara Ii	22.3047	73.2717	6.57	5.33
Vadodara	Vadtalav Pz	22.2586	73.7839	12.42	9.78
Vadodara	Vagudan	22.0667	74.1417	6.87	5.46
Vadodara	Vega	22.1594	73.4125	6.14	4.11
Vadodara	Vejpur2	22.7472	73.3556	2.52	1.90
Vadodara	Waghach	22.0708	73.8500	9.62	6.23
Vadodara	Waghodia Pz	22.3639	73.3769	7.02	
Vadodara	Wankaner2	22.5389	73.1750	40.95	
Valsad	Atul	20.5417	72.9667	8.47	
Valsad	Awadha	20.5167	73.2875	4.68	4.32
Valsad	Chavshala	20.3283	73.3258	5.32	1.57
Valsad	Dahli (bhilad)	20.2583	72.8833	4.67	2.44
Valsad	Dharampur 3	20.5308	73.1625	12.56	8.44
Valsad	Dharampur1	20.5364	73.1706	10.41	4.88
Valsad	Fali	20.3131	73.3761	11.86	1.20
Valsad	Kanadu	20.3250	72.8417	6.43	3.23
Valsad	Kaparda	20.3417	73.2167	6.17	2.18
Valsad	Karwad	20.3625	72.9750	4.59	3.28
Valsad	Lakadmal	20.4667	73.1583	8.25	3.74
Valsad	Mandwa	20.3667	73.1750	6.81	2.02
Valsad	Muli1	20.6333	73.0250	3.56	2.09
Valsad	Nanaponda	20.4139	73.1208	10.26	5.20
Valsad	Tithal	20.6000	72.9000	7.94	5.93
Valsad	Tumb	20.2167	72.8417	4.83	3.05
Valsad	Udwada	20.4636	72.9181	6.90	2.02
Valsad	Umargaon	20.1917	72.7500	0.00	3.55
Valsad	Valsad1	20.6056	72.9278	21.16	9.20
Valsad	Vapi Balitha	20.3803	72.9044	9.97	

Annexure V

WATER QUALITY DATA OF NATIONAL HYDROGRAPH NETWORK STATIONS OF GUJARAT MAY 2018

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W231620072033001	Ahmedabad	VIRAMGAM	Endla	May 2018	7.14	576	385.92	0	256	43	10	11	0.665	210	56	12	190	41	10.1	1.29
W222130072100001	Ahmedabad	DHANDHUKA	Gamph	May 2018	7.34	2877	1927.59	0	1013	319	68	65	0.712	830	156	22	480	386	75	7.66
W225400072010001	Ahmedabad	VIRAMGAM	Kumarkhan	May 2018	7.55	6170	4133.9	0	1501	667	68	560	1.182	1230	300	109	1200	820	37.3	10.29
W221610071420001	Ahmedabad	RANPUR	Kundali	May 2018	7.74	820	549.4	0	281	99	48	10	0.834	230	52	19	210	98	0.6	2.94
W231630071550001	Ahmedabad	MANDAL	Mandal2	May 2018	7.84	2892	1937.64	0	390	787	4	5	0.72	320	104	41	430	460	3.4	9.64
W221830071413001	Ahmedabad	RANPUR	Rajpada	May 2018	7.63	800	536	0	134	113	19	115	0.937	110	60	17	220	86	3.6	2.52
W230830072020001	Ahmedabad	VIRAMGAM	Viramgam2	May 2018	7.87	4840	3242.8	0	464	1241	6	255	0.903	380	140	158	1000	660	10.3	9.07
	Ahmedabad	BAVLA	Bavla	May 2018	7.19	2593	1737.31	0	421	454	10	280	0.94	345	80	10	240	474	2.1	13.30
W213630071133001	Amreli	AMRELI	Amreli	May 2018	7.44	1719	1151.73	0	622	206	80	15	0.602	510	156	36	540	142	9.1	2.66
W213845071063001	Amreli	AMRELI	Ankadia mota	May 2018	8.02	1765	1182.55	0	427	99	43	341	0.743	350	96	2	250	289	2.8	7.95
W211557071202001	Amreli	KUNDLA-SAVAR	Badhda	May 2018	7.57	1822	1220.74	0	488	206	46	177	0.342	400	156	58.37	630	128	0.8	2.22
W212845070574501	Amreli	BAGASARA	Bagasara	May 2018	8.01	2145	1437.15	0	256	298	24	409	1.06	210	56	46	330	349	2.8	8.35
W210630071153001	Amreli	KHAMBHA	Bhavardi1	May 2018	8.08	1590	1065.3	0	451	106	9	255	0.467	370	96	34.5	380	188	5.4	4.19
W205205071214501	Amreli	JAFRABAD	Bherai	May 2018	8.28	4898	3281.66	0	598	1269	8	150	0.661	490	108	211.6	1140	576	26	7.42
W212330071174501	Amreli	KUNDLA-SAVAR	Charkhadia1	May 2018	8.25	2790	1869.3	0	1318	177	32	35	1.486	1080	36	19	170	560	3.9	18.67
W214900071244501	Amreli	LATHI	Chavand	May 2018	8.01	880	589.6	0	256	50	9	140	0.486	210	48	36	270	77	0.2	2.04
W214915071063001	Amreli	BABRA	Devaliya	May 2018	7.91	2188	1465.96	0	232	348	70	341	0.445	190	124	58	550	248	0.8	4.60
W212000071120001	Amreli	DHARI	Dharangani	May 2018	7.88	1996	1337.32	0	317	340	96	162	0.408	260	136	17	410	266	0.5	5.71
W211330071244001	Amreli	KUNDLA-SAVAR	Goradka	May 2018	7.56	2180	1460.6	0	342	291	161	255	0.361	280	196	58.37	730	166	0.4	2.67
W211400071120001	Amreli	KHAMBHA	Ingorala	May 2018	8.02	1205	807	0	390	135	45	52	0.558	320	72	66	450	68	1.7	1.39
W205200071214501	Amreli	JAFRABAD	Jafrabad	May 2018	8.02	2542	1703.14	0	220	674	5	130	0.583	180	40	46.21	290	412	68	10.52
W212350071130001	Amreli	DHARI	Kerala	May 2018	7.96	2110	1413.7	0	757	248	41	48	1.342	620	68	7	200	388	6.8	11.93
W210900071142001	Amreli	KHAMBHA	Khamba	May 2018	8.11	955	639.85	0	329	85	90	15	0.401	270	96	34.05	380	44	0.4	0.98
W213945070590001	Amreli	KUNKAVAV-VADIA	Kunkavav	May 2018	7.84	2861	1916.87	0	256	482	92	448	0.599	210	188	63	730	321	1.4	5.17
W214315071230001	Amreli	LATHI	Lathi	May 2018	7.8	2228	1492.76	0	500	241	32	322	0.536	410	92	39	390	336	0.2	7.40
W213730071234501	Amreli	LATHI	Luvariya	May 2018	8.06	1630	1092.1	0	549	57	7	265	1.555	450	32	10	120	318	0.8	12.62
W210600071350001	Amreli	RAJULA	Mandal	May 2018	7.68	2693	1804.31	0	427	532	132	135	0.821	350	122	51.07	515	377	5	7.22
W212234071070701	Amreli	DHARI	Morjhar	May 2018	8.02	788	527.96	0	256	106	14	20	0.373	210	48	4	135	118	0.4	4.42
W205530071211501	Amreli	JAFRABAD	Nageshri	May 2018	7.86	3147	2108.49	0	598	511	155	235	0.373	490	196	80.26	820	343	15.4	5.21
W212300071280001	Amreli	KUNDLA-SAVAR	Piyava	May 2018	8.11	1465	981.55	0	573	92	40	95	0.658	470	60	29.18	270	210	0.4	5.56
W213130071213001	Amreli	LILIA	Punjapadar	May 2018	7.93	770	516	0	342	64	11	9.19	1.245	280	32	5	100	135	9.4	5.87
W212310071320001	Amreli	KUNDLA-SAVAR	Salena	May 2018	8.44	1200	804	24	488	57	26	60	1.498	440	52	29.18	250	161	3.1	4.43
W214330071280001	Amreli	LATHI	Tajpur	May 2018	8.1	724	485.08	0	207	64	14	85	0.755	170	64	12	210	69	2.6	2.07
W205345071121501	Amreli	JAFRABAD	Timbi2	May 2018	8.32	3120	2090.4	84	195	603	150	285	1.009	300	76	78	510	471	25	9.07
W210100071165001	Amreli	KHAMBHA	Trakuda	May 2018	7.97	976	653.92	0	195	170	37	57	0.749	160	80	4.864	220	120	1.1	3.52
W215500071130001	Amreli	BABRA	Untvad	May 2018	7.83	984	659.28	0	281	64	82	100	0.614	230	116	10	330	74	0.4	1.77
W213500070580001	Amreli	BAGASARA	Vaghania juna	May 2018	8.27	1780	1192.6	0	500	142	48	236	1.013	410	56	27	250	290	9	7.97
W213115071081001	Amreli	AMRELI	Vankiya	May 2018	8.02	2960	1983.2	0	500	603	49	175	1.307	410	28	32	200	590	0.3	18.14
W211400071150001	Amreli	KHAMBHA	Vankiya1	May 2018	7.47	2407	1612.69	0	512	383	152	115	0.542	420	180	89.98	820	166	16.6	2.52
W210045071323001	Amreli	RAJULA	Victor	May 2018	8.19	1272	852.24	0	476	149	12	25	1.464	390	40	7.296	130	222	12.2	8.47
W211515071090001	Amreli	DHARI	Virpur	May 2018	8.01	1201	804.67	0	232	92	36	240	0.555	190	80	51	410	81	11.7	1.74
W212610071322501	Amreli	Savar Kundla	Fifad	May 2018	8.31	4880	3269.6	90	525	709	43	789	1.414	580	44	62.02	365	955	0.8	21.73
W212244071365301	Amreli	Savar Kundla	Hipavadli	May 2018	8.37	2315	1551.05	72	842	99	86	135	1.53	810	40	24.81	202	440	0.9	13.46
W205430071213701	Amreli	Jafrabad	Kadiyali	May 2018	6.82	5451	3652.17	0	476	1518	8	175	1.527	390	282	114.3	1175	705	15	8.94
W212323071302701	Amreli	Savar Kundla	Vanda	May 2018	9.02	3185	2134	108	671	482	29	150	1.373	730	40	21.89	190	645	1.2	20.34
W222843073014901	Anand	ANAND	Adas_DW	May 2018	6.72	1045	700.15	0	366	106	86	5	1.06	300	60	58	390	60	1.9	1.32
W223430072582001	Anand	ANAND	Anand	May 2018	7.68	1690	1132	0	537	170	30	135	0.82	440	92	78	550	130	6.2	2.41
W222300073003001	Anand	ANKLAV	Anklav	May 2018	7.85	1190	797.3	0	415	135	50	25	0.66	370	52	58	370	102	1.8	2.31
W222515072474001	Anand	PETLAD	Dharmaj	May 2018	7.76	2360	1581.2	0	708	284	100	110	1.38	580	60	51	360	375	0.6	8.59
W222030072390001	Anand	CAMBAY	Kansari1	May 2018	8	4919	3295.73	0	378	1156	42	465	0.62	310	56	105	570	865	7.2	15.75
W223039072340001	Anand	Tarapur	Tol	May 2018	8.03	1021	684.07	0	281	177	19	20	1.08	230	60	32	280	98	13.8	2.55
W242420072383001	Banaskantha	AMIRGADH	Amirgadh	May 2018	8.14	3012	2018.04	0	403	581	115	237	0.8	330	18	193	850	300	2.75	4.47
W243145071323001	Banaskantha	THARAD	Bharol1	May 2018	8.1	606	406.02	0	244	44	33	57	0.12	200	55	27	250	31	35	0.85
W241830072193001	Banaskantha	DANTIWADA	Dantiwada1	May 2018	7.8	616	412.72	0	159	64	28	84	0.98	130	46	28	230	48	0.77	1.38
W241750072565001	Banaskantha	DANTA	Ganapipli	May 2018	8.06	1475	988.25	0	354	82	48	213	2.08	290	28	46	260	190	1.32	5.12
W242610072215501	Banaskantha	DANTIWADA	Gangodra	May 2018	7.81	2981	1997.27	0	195	624	85	371	1	160	92	161	900	280	5.74	4.06
W242045072321501	Banaskantha	AMIRGADH	Iqbalgarh	May 2018	8.24	1400	938	0	427	142	49	144	0.8	350	17	64	310	200	1.47	4.94
W242915072211001	Banaskantha	DANTIWADA	jhat	May 2018	8.18	1591	1065.97	0	244	244	75	123	1.1	200	37	36	240	230	2.88	6.45
W243930071460001	Banaskantha	THARAD	Khoda	May 2018	8.26	1180	790.6	0	329	114	65	33	1.3	270	18	15	110	190	3.31	7.88
W242340072374001	Banaskantha	AMIRGADH	Kidotar	May 2018	8.2	844	565.48	0	183	78	80	135	1.78	150	55	51	350	56	0.81	1.30
W242350072170501	Banaskantha	DEESA	Meda	May 2018	8.29	1127	755.09	0	305	98	27	121	1.8	250	18	20	130	190	2.55	7.25
W241000072434001	Banaskantha	DANTA	Mohabbat gadh	May 2018	7.55	1484	994.28	0	110	342	75	11	1.1	90	131	8	360	135	2.7	3.09
W241140072260001	Banaskantha	PALANPUR	Palanpur2	May 2018	8.57	1764	1181.88	48	73	255	105	326	1.04	140	37	79	420	235	0.83	4.99
W241030072444501	Banaskantha	DANTA	Ratanpur2	May 2018	7.74	1662	1113.54	0	268	191	115	187	0.4	220	110	28	390	180	2.19	3.96
W242405072174501	Banaskantha	DANTIWADA	Sodapur	May 2018	7.5	1756	1176.52	0	207	425	26	35	0.4	170	86	73	520	145	6.22	2.76

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W214330072450001	Bharuch	VAGRA	Bhensli	May 2018	7.97	1301	871.67	0	268	277	10	21	0.46	220	32	56	310	147	15.2	3.63
W220736072401101	Bharuch	Jambusar	Chhindra	May 2018	8.05	1145	767.15	0	281	177	68	36	0.44	230	72	51	390	48	62	1.06
W221105072355001	Bharuch	JAMBUSAR	Dahegam	May 2018	7.77	1780	1192.6	0	342	340	88	55	0.26	280	100	73	550	135	40	2.50
W213545073100901	Bharuch	Valia	Jokhla	May 2018	7.96	1050	703.5	0	342	121	18	62	1.28	280	68	27	280	110	1.9	2.86
W220107072454701	Bharuch	JAMBUSAR	Kalak_1	May 2018	8.36	1223	819.41	66	110	213	15	95	0.49	200	36	58	330	125	2.9	2.99
W214100072490001	Bharuch	BHARUCH	Kaswa	May 2018	8.09	2725	1825.75	0	500	411	23	335	0.49	410	40	114	570	343	32	6.25
W221137072382201	Bharuch	JAMBUSAR	Kavi	May 2018	8.39	1869	1252.23	84	232	191	70	265	0.66	330	36	39	250	125	310	3.44
W213450073040501	Bharuch	VALIA	Kondh	May 2018	8.24	800	536	0	232	106	6	58	0.85	190	36	27	200	91	3.3	2.80
W213200073171501	Bharuch	VALIA	Mokhdi	May 2018	7.85	820	549.4	0	207	64	43	110	0.6	170	68	39	330	35	0.6	0.84
W213320072531501	Bharuch	ANKLESVAR	Motwan	May 2018	8.16	2715	1819.05	0	244	567	21	333	1.08	200	48	102	540	373	12.2	6.98
W214100073011001	Bharuch	ANKLESVAR	Mulad	May 2018	7.98	2266	1518.22	0	390	440	24	155	0.72	320	56	73	440	310	2.4	6.43
W214228072495001	Bharuch	BHARUCH	Navetha	May 2018	7.82	2225	1490.75	0	366	450	11	158	0.38	300	128	97	720	145	42	2.35
W213800073220001	Bharuch	VALIA	Netrang	May 2018	8.36	715	479.05	42	146	78	32	10	0.77	190	84	24	310	12	0.4	0.30
W214730072400501	Bharuch	VAGRA	Nirnavi	May 2018	7.76	1106	741.02	0	439	92	20	45	0.59	360	76	39	350	85	20.5	1.98
W213215072583001	Bharuch	ANKLESVAR	Panoli	May 2018	7.52	5530	3705.1	0	451	1454	50	295	1.34	370	128	190	1100	777	3	10.19
W215500072473001	Bharuch	AMOD	Roja tankaria	May 2018	8.1	1341	898.47	0	256	298	6	41	0.48	210	52	49	330	141	14.6	3.37
W213700072552501	Bharuch	ANKLESVAR	Sajod	May 2018	8.29	1543	1033.81	33	659	184	16	61	1.54	595	32	19	160	353	3	12.13
W214430073123001	Bharuch	JHAGADIA	Simodra	May 2018	7.54	2367	1585.89	0	366	489	10	165	0.57	300	112	131	820	156	5.8	2.37
W215930072403001	Bharuch	JAMBUSAR	Tankari	May 2018	7.51	3465	2321.55	0	683	504	41	410	0.87	560	40	126	620	446	120	7.79
	Bharuch	Netrang	Juni Jamunia	May 2018	Leaked															
W215737071531101	Bhavnagar	Vallabhipur	Ayodhyapuram(Narayan dham)	May 2018	8.27	3172	2125.24	0	769	483	37	215	2.9	630	24	19	140	663	8.8	24.36
W214600072090001	Bhavnagar	BHAVNAGAR	Bhavnagar1	May 2018	8.01	1044	699.48	0	281	170	5	36	0.83	230	28	15	130	178	0.3	6.79
W214046072143901	Bhavnagar	BHAVNAGAR	Bhumbhali	May 2018	8.23	3169	2123.23	0	500	497	4	406	1.18	410	40	63	360	547	13.1	12.53
W214800071303001	Bhavnagar	GADHADA	Dhasa	May 2018	7.84	2438	1633.46	0	403	305	98	355	0.571	330	112	61	530	321	0.4	6.06
W215800071344501	Bhavnagar	GADHADA	Gadhada2	May 2018	7.59	1979	1326	0	586	170	10	235	0.392	480	108	44	450	242	1.2	4.96
W213235071335501	Bhavnagar	GARIADHAR	Gariyadhar	May 2018	7.93	207	138.69	0	207	419	30	168	0.98	170	108	80	600	170	5.1	3.02
W214053072163701	Bhavnagar	GHOGHA	Ghogha	May 2018	8.61	5722	3833.74	30	207	1420	320	244	1.08	220	80	219	1100	765	58.9	10.03
W214800071370001	Bhavnagar	UMRALA	Jalia	May 2018	7.95	3579	2397.93	0	37	1022	24	228	0.49	30	392	15	1040	326	2.8	4.40
W213815071420001	Bhavnagar	PALITANA	Khijadiya	May 2018	8.12	1123	752.41	0	281	128	31	110	1.26	230	16	15	100	210	2.6	9.13
W212246071585001	Bhavnagar	Talaja	Kundheli	May 2018	8.22	425	284.75	0	159	36	8	13	0.93	130	28	19	150	25	2.8	0.89
W211250071530001	Bhavnagar	MAHUVA	Longadi	May 2018	7.65	711	476.37	0	256	64	3	16	0.99	210	36	2	100	92	21.1	4.00
W210545071460001	Bhavnagar	MAHUVA	Mahuva1	May 2018	8.28	3349	2243.83	0	683	568	60	218	1.36	560	40	24	200	667	1.5	20.51
W220105071420001	Bhavnagar	GADHADA	Ningala	May 2018	8.44	1858	1244.86	60	390	135	10	301	1.317	420	52.6	17	200	340	1.6	10.45
W213120071502001	Bhavnagar	PALITANA	Palitana2	May 2018	7.95	1710	1145.7	0	85	412	48	127	0.64	70	112	54	500	152	1.3	2.96
W213300071431501	Bhavnagar	PALITANA	Panchpipla	May 2018	8.45	1451	972.17	30	220	249	4	120	1.05	230	32	66	350	169	1.6	3.93
W220430071533001	Bhavnagar	VALLABHIPUR	Panvi1	May 2018	8.27	622	416.74	0	622	497	13	174	2.92	510	24	34	200	561	4.5	17.25
W212530071544501	Bhavnagar	PALITANA	Sajnasar	May 2018	8.1	983	658.61	0	268	163	12	35	0.89	220	80	22	290	97	5.3	2.48
W211445071390001	Bhavnagar	MAHUVA	Shantinagar	May 2018	7.94	1449	970.83	0	171	263	120	92	0.6	140	80	32	330	175	2.8	4.19
W212200072010001	Bhavnagar	TALAJA	Talaja2	May 2018	8.29	1078	722.26	0	171	185	100	75	0.75	140	36	63	350	99	0.3	2.30
W221345071361501	Bhavnagar	BOTAD	Tardhera	May 2018	7.22	6571	4402.57	0	769	950	86	1200	0.868	630	212	319	1840	659	15	6.68
W220330071380001	Bhavnagar	GADHADA	Tatam	May 2018	7.62	13700	9179	0	1720	3057	145	1108	1.003	1410	496	754	4340	1175	75	7.75
W214954071455801	Bhavnagar	UMRALA	Timbi2	May 2018	8.06	413	276.71	0	134	50	5	29	0.81	110	32	17	150	31	2.7	1.10
W215300071523001	Bhavnagar	VALLABHIPUR	Vallbhipur	May 2018	8.28	7124	4773.08	0	549	2237	12	230	2.9	450	160	110	850	1404	1.2	20.94
W224000074131301	Dohad	Dhanpur	Ambakatch	May 2018	8.06	1291	864.97	0	573	135	17	14	2	470	40	70	390	141	5.6	3.10
W224012073503001	Dohad	DEVGAD BARIA	Badpa	May 2018	7.9	1020	683.4	0	342	156	17	18	2.88	280	16	22	130	190	0.9	7.25
W225015074040001	Dohad	LIMKHEDA	Dadhela	May 2018	7.71	767	513.89	0	207	85	45	94	1.59	170	64	29	280	69	5.1	1.79
W225127074145801	Dohad	DOHAD	Dahod Urban-1(gerage)	May 2018	8.27	1567	1049.89	0	354	206	60	176	1.28	290	128	31	450	170	7.5	3.48
W225041074160001	Dohad	DOHAD	Dahod Urban-2(Electricity)	May 2018	7.81	1607	1076.69	0	366	248	31	154	1.41	300	68	48	370	218	6	4.93
W225023074140201	Dohad	DOHAD	Dahod Urban-3(Forest)	May 2018	7.92	2347	1572.49	0	305	425	225	195	1.36	250	220	36	700	251	4.8	4.12
W224930074140001	Dohad	DOHAD	Dahod(Opp.Collector office)	May 2018	8.97	649	434.83	48	24	42	65	117	1.52	100	56	24	240	45	0.4	1.26
W224200073545001	Dohad	DEVGAD BARIA	Devgadh Baria	May 2018	7.5	1667	1116.89	0	512	262	35	11	2	420	88	38	380	211	24	4.71
W223800074061501	Dohad	DHANPUR	Dhanpur	May 2018	7.65	928	621.76	0	220	163	68	10	2	180	36	60	340	66	2.1	1.56
W224050074184501	Dohad	GARBADA	Garbara(Forest Comp.)	May 2018	7.91	5920	3966.4	0	464	1064	500	581	1.51	380	200	120	1000	880	25	12.10
W223450074065001	Dohad	DHANPUR	Kanjetha	May 2018	7.7	700	469	0	268	92	10	4	1.3	220	36	34	230	63	2.9	1.81
W224215073501501	Dohad	DEVGAD BARIA	Khandania	May 2018	7.69	569	381.23	0	256	78	19	3	3	210	32	12	130	100	1.3	3.81
W230015074093001	Dohad	JHALOD	Limbdi	May 2018	7.69	1138	762.46	0	220	177	10	153	1.32	180	76	34	330	126	6.6	3.02
W225600074120001	Dohad	JHALOD	Mirakhedi	May 2018	8.05	863	578.21	0	220	78	74	93	1.45	180	96	19	320	61	2.9	1.48
W224345074183001	Dohad	GARBADA	Panchwada	May 2018	8.28	1072	718.24	0	354	78	46	128	0.3	290	96	29	360	98	6	2.25
W231340073583701	Dohad	FATEPURA	Sarsava	May 2018	8.52	671	449.57	36	110	50	15	102	1.2	150	80	12	250	43	4.7	1.18
W230900074030001	Dohad	FATEPURA	Sukhsar	May 2018	8	706	473.02	0	195	57	56	64	1.35	160	64	14	220	63	1.5	1.85
W223615074021501	Dohad	DHANPUR	Tokarba	May 2018	7.71	951	637.17	0	305	149	11	2	1.45	250	40	38	260	100	3	2.70
W224800074163001	Dohad	DOHAD	Varamkheda	May 2018	7.81	858	574.86	0	244	57	54	125	1.61	200	88	26	330	60	1.8	1.44
W231045072503001	Gandhinagar	DEHGAM	Paliya	May 2018	8.79	2179	1459.93	96	220	326	16	228	0.52	340	51	108	580	220	2.3	3.97
W231140072340001	Gandhinagar	GANDHINAGAR	Serthapara1	May 2018	7.69	4718	3161.06	0	915	737	320	252	1	750	92	65	500	840	55	16.33
W215500069513001	Jamnagar	BHANVAD	Ambardi	May 2018	7.86	1500	1005	0	384	234	65	50	0.7	315	64	83	500	110	1.3	2.14
W224945070334501	Jamnagar	JODIYA	Amran1	May 2018	8.36	1262	845.54	48	256	142	5	126	0.88	290	24	34	200	194	2.6	5.96
W215415069573001	Jamnagar	JAMJODHPUR	Balwa	May 2018	8.12	1265	847.55	0	323	213	48	26	0.27	265	132	24	430	89	4.6	1.87
W222615069540002	Jamnagar	JAMNAGAR	Bed1	May 2018	7.66	2577	1726.59	0	311	482	170	205	0.16	255	220	134	1100	132	0.4	1.73

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W224100070190001	Jamnagar	JODIYA	Bedanpur	May 2018	7.71	3380	2264.6	0	244	957	100	55	0.39	200	280	169	1395	134	0.5	1.56
W215930069144502	Jamnagar	KALYANPUR	Bhogat1	May 2018	8.03	1050	703.5	0	73	305	13	24	0.73	60	24	27	170	157	4.3	5.24
W222100070023001	Jamnagar	JAMNAGAR	Changa	May 2018	8.03	2924	1959.08	0	439	511	43	330	0.17	360	242	143	1195	118	4.4	1.48
W223400070250001	Jamnagar	DHROL	Dhrol2	May 2018	8	895	599.65	0	214	167	16	25	0.61	175	48	41	290	70	3.7	1.79
W224730070301501	Jamnagar	JODIYA	Dudhai2	May 2018	8.34	750	502.5	24	171	92	8	52	0.55	180	40	5	120	115	1.8	4.56
W221445068573001	Jamnagar	OKHAMANDAL	Dwarka	May 2018	7.87	4062	2721.54	0	415	1000	100	195	0.41	340	160	159	1055	434	31	5.81
W222700070000501	Jamnagar	JAMNAGAR	Gordhanpur	May 2018	8.32	1020	683.4	18	262	160	7	25	0.57	245	24	39	220	130	1.7	3.81
W221615070200001	Jamnagar	KALAVAD	Haripur2	May 2018	7.83	1160	777.2	0	238	149	150	50	0.62	195	92	46	420	71	2.6	1.51
W222730070044501	Jamnagar	JAMNAGAR	Jamnagar2	May 2018	8.18	791	529.97	0	134	177	9	23	0.32	110	36	19	170	102	0.7	3.40
W221015069220001	Jamnagar	KALYANPUR	Juvanpur	May 2018	8.47	1750	1172.5	18	311	252	17	205	0.57	285	36	56	320	250	3.6	6.08
W222000069423001	Jamnagar	KHAMBHALIA	Kajuda	May 2018	7.9	3925	2629.75	0	927	716	14	162	0.38	760	180	173	1160	371	2.4	4.74
W220100069233001	Jamnagar	OKHAMANDAL	Kalyanpur	May 2018	8.03	1330	891	0	268	227	70	65	0.38	220	44	54	330	153	0.7	3.66
W220100069233001	Jamnagar	KALYANPUR	Kalyanpur2	May 2018	8.22	6452	4322.84	0	500	1709	65	345	1.17	410	220	176	1275	899	3.6	10.95
W215845069360001	Jamnagar	KALYANPUR	Khirsara	May 2018	7.93	1336	895.12	0	353	219	65	25	0.41	289	116	34	430	107	0.7	2.24
W221130069574001	Jamnagar	LALPUR	Lalpur1	May 2018	7.93	1250	837.5	0	244	220	80	50	0.31	200	84	32	340	130	0.6	3.07
W222200068590001	Jamnagar	OKHAMANDAL	Mojap	May 2018	7.97	8760	5869.2	0	293	1922	130	1250	0.9	240	160	169	1095	1368	224	17.97
W215430069494501	Jamnagar	BHANVAD	Mota kalawad	May 2018	8.02	4352	2915.84	0	134	1319	85	126	0.47	110	360	221	1810	165	2	1.69
W221900070155001	Jamnagar	KALAVAD	Moti matli	May 2018	8.02	1570	1051.9	0	287	220	37	201	0.68	235	56	95	530	120	1.5	2.27
W221820069361501	Jamnagar	KHAMBHALIA	Salaya	May 2018	6.67	1625	1088.75	0	433	191	72	122	0.46	355	28	107	510	132	8.9	2.54
W222230069061502	Jamnagar	OKHAMANDAL	Samrasar1	May 2018	7.6	26580	17808.6	0	342	7347	9	2490	1.12	280	840	434	3885	4300	15.2	29.99
W220200070073001	Jamnagar	JAMJODHPUR	Seth vadala	May 2018	7.87	1600	1072	0	390	252	105	41	0.22	320	72	95	570	105	0.4	1.91
W220345070230001	Jamnagar	KALAVAD	Toda	May 2018	8.02	870	582.9	0	214	110	120	5	0.54	175	52	36	280	70	1.3	1.82
W221400070070001	Jamnagar	LALPUR	Vad panchasara	May 2018	7.96	620	415.4	0	140	113	10	24	0.39	115	44	27	220	40	2.2	1.17
W221230069300001	Jamnagar	KHAMBHALIA	Vadtara	May 2018	8.01	1082	724.94	0	336	110	40	75	0.4	275	68	46	360	83	0.8	1.90
W221730068580001	Jamnagar	OKHAMANDAL	Varwada	May 2018	7.59	8010	5366.7	0	354	2319	65	343	0.23	290	280	288	1885	953	4.7	9.54
W222500070110001	Jamnagar	JAMNAGAR	Vijarkha	May 2018	8.05	870	582.9	0	140	177	5	65	0.39	115	20	61	300	62	0.5	1.56
W220900069360001	Jamnagar	KHAMBHALIA	Vinjhalpur	May 2018	7.55	2130	1427.1	0	354	376	80	175	0.39	290	140	112	810	116	1.7	1.77
W205320070281502	Junagadh	VERAVAL	Ajotha	May 2018	7.85	1540	1031.8	0	293	298	50	65	0.859	240	140	56	580	85	1.7	1.53
W211350070381501	Junagadh	TALALA	Alwani	May 2018	8.24	960	643.2	0	329	57	2	125	0.348	270	56	44	320	75	0.9	1.82
W210032070433301	Junagadh	Talala	Amervel Nes	May 2018	7.69	915	613.05	0	342	50	1	105	0.354	280	104	18	335	58	0.5	1.38
W212437070310501	Junagadh	JUNAGADH	Anandpur	May 2018	7.95	1752	1173.84	0	122	454	60	81	0.43	100	160	65	670	92	0.5	1.55
W210249070395301	Junagadh	TALALA	Ankolvadi	May 2018	7.57	975	653.25	0	317	92	21	77	0.486	260	108	19	350	63	1.2	1.46
W210450070103501	Junagadh	MANGROL	Arena	May 2018	7.6	9890	6626.3	0	250	2915	60	525	0.03	205	744	156	2505	1089	31	9.46
W211315070032001	Junagadh	MANGROL	Bamanwara	May 2018	7.49	9200	6164	0	110	3128	90	25	0.11	90	1080	293	3905	310	3.3	2.16
W212915070050001	Junagadh	MANAVADAR	Bantva	May 2018	8.08	2760	1849.2	0	439	621	27	115	0.45	360	40	7	130	572	4.8	21.81
W205839070363301	Junagadh	Talala	Bhim Deval	May 2018	7.79	1066	714.22	0	177	106	40	200	0.856	145	128	5	340	89	2.9	2.10
W210545070130001	Junagadh	MALIA	Budhecha	May 2018	7.84	1547	1036.49	0	244	358	39	35	0.39	200	62	20	240	240	4.4	6.74
W213607070323001	Junagadh	JUNAGADH	Chokli	May 2018	6.33	2010	1346.7	0	317	447	105	25	0.52	260	48	83	460	248	1.1	5.03
W204510070551001	Junagadh	UNA	Girgadhada	May 2018	7.86	793	531.31	0	305	71	44	10	0.382	250	92	15	290	49	0.6	1.25
W211100070091502	Junagadh	MANGROL	Goraj1	May 2018	8.48	850	569.5	18	207	128	39	15	0.89	200	20	19	130	135	3.1	5.15
W205645070234501	Junagadh	VERAVAL	Govindpura2	May 2018	8.2	760	509.2	0	159	71	16	135	0.79	130	96	2	250	61	2.1	1.68
W210145070363001	Junagadh	TALALA	Jambur[madhapar	May 2018	7.55	1089	729.63	0	342	78	9	140	0.395	280	96	36	390	70	0.9	1.54
W205900070454501	Junagadh	UNA	Jamvala1	May 2018	8.05	810	542.7	0	256	64	4	100	0.53	210	76	22	280	59	1	1.53
W205251070590301	Junagadh	Una	Jargla Jargali	May 2018	8.34	791	529.97	24	122	78	8	135	0.743	140	68	22	260	63	0.9	1.70
W213100070273001	Junagadh	JUNAGADH	Junagadh1	May 2018	7.65	1030	690.1	0	189	170	110	25	0.3	155	88	36	370	67	1.8	1.51
W211000070160001	Junagadh	MALIA	Juthal	May 2018	8.04	740	495.8	0	220	60	13	90	0.41	180	60	34	290	35	2.4	0.89
W211620070284701	Junagadh	MENDARDA	Kanedipur	May 2018	7.85	716	479.72	0	252	78	10	20	0	207	60	36	300	23	0.1	0.58
W205212071030401	Junagadh	Una	Kansari	May 2018	7.28	1990	1333.3	0	598	206	65	151	0.962	490	156	24	490	220	15.8	4.32
W211613070405001	Junagadh	Vasavadar	Kasia Naka Check Post	May 2018	8.14	750	502.5	0	244	78	10	54	0.426	200	60	24	250	58	0.1	1.59
W204747070563101	Junagadh	Una	Kesariyaji	May 2018	7.91	860	576.2	0	329	71	20	43	1.235	270	100	0	250	80	5.4	2.20
W210240070113001	Junagadh	MALIA	Khambalia1	May 2018	7.84	4350	2914.5	0	134	1355	26	135	0	110	330	89	1200	355	166	4.46
W210350070102501	Junagadh	MANGROL	Khorada1	May 2018	8.17	1350	904.5	0	342	227	10	60	0	280	88	24	320	140	36	3.40
W212215070202001	Junagadh	VANTHALI	Khoras ahir	May 2018	7.79	1470	984.9	0	439	219	37	35	0	30	152	48	580	70	1.7	1.26
W204800070413002	Junagadh	KODINAR	Kodinar1	May 2018	7.83	2488	1666.96	0	403	539	47	110	1.088	330	132	90	700	248	1.1	4.08
W210900070074501	Junagadh	MANGROL	Manketara	May 2018	8.11	1010	676.7	0	268	135	50	52	0.54	220	76	34	330	80	3.2	1.91
W211930070260001	Junagadh	MENDARDA	Mendarda1	May 2018	7.86	1420	951.4	0	220	269	50	105	0.07	180	80	89	570	63	1.6	1.15
W205900070261001	Junagadh	VERAVAL	Moraj	May 2018	7.8	1250	837.5	0	305	213	24	48	1.141	250	108	5	290	150	0.3	3.83
W213630070340001	Junagadh	BHESAN	Patla	May 2018	7.71	725	485.75	0	165	142	12	15	0.48	135	56	22	230	59	1.2	1.69
W205103070400901	Junagadh	Kodinar	Prasli	May 2018	8.18	878	588.26	0	256	121	22	40	1.392	210	60	17	220	97	7.4	2.84
W211800070420001	Junagadh	VISAVADAR	Prempara	May 2018	7.66	2475	1658.25	0	329	142	100	655	0.524	270	124	146	910	155	1	2.23
W205115071071501	Junagadh	UNA	Samter	May 2018	7.98	1890	1266.3	0	488	163	47	260	0.55	400	108	36	420	236	6.2	5.01
W213519070021501	Junagadh	VANTHALI	Saradiya	May 2018	8.12	1960	1313.2	0	342	447	25	48	0.47	280	64	63	420	260	2.4	5.52
W210800070145501	Junagadh	MANGROL	Seriakhan	May 2018	7.92	1180	790.6	0	281	99	43	177	0.46	230	84	48	410	82	2	1.76
W210615070091001	Junagadh	MANGROL	Shardagram	May 2018	7.63	9610	6438.7	0	244	3074	81	195	0.01	200	484	254	2255	1167	7.5	10.68
W211108070024701	Junagadh	MANGROL	Sil	May 2018	8.14	578	387.26	0	183	74	12	20	0.42	150	64	17.2	230	26	16	0.75
W211325070032001	Junagadh	MANGROL	Sil bandar	May 2018	7.78	7822	5240.74	0	195	2628	43	57	0.45	160	422	231	2005	875	33	8.50
W210305070313001	Junagadh	TALALA	Talala1	May 2018	7.53	1400	938	0	366	106	29	215	0.552	300	124	19	390	140	0.5	3.08
W204930071023001	Junagadh	UNA	Una2	May 2018	8.35	3022	2024.74	54	403	560	27	275	1.455	420	68	102	590	425	3.5	7.61

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W225620069045801	Kachchh	MANDVI	Bambhdai	May 2018	8.24	6916	4633.72	0	183	2130	2	280	1.1	150	500	36	1400	961	5.7	11.17
W225400069540001	Kachchh	MUNDRA	Bhadreshwar	May 2018	8.23	2625	1758.75	0	244	639	16	179	0.4	200	192	107	920	181	12.4	2.59
W231500069400002	Kachchh	BHUJ	Bhuj1	May 2018	8.28	811	543.37	0	171	121	14	91	0.7	140	100	10	290	60	11.5	1.53
W234450070404501	Kachchh	RAPAR	Deshalpur rapar	May 2018	8.01	5172	3465.24	0	146	1278	31	565	0.7	120	280	158	1350	557	35.7	6.59
W232410069194501	Kachchh	NAKHATRANA	Devisar	May 2018	8.17	3973	2661.91	0	232	994	4	332	1.15	190	104	122	760	553	13	8.72
W230300069300001	Kachchh	MANDVI	Dunai	May 2018	8.01	1144	766.48	0	281	156	7	115	1.15	230	60	51	360	102	2.6	2.34
W230500070083002	Kachchh	GANDHIDHAM	Gandhidham1	May 2018	8.44	2367	1585.89	54	329	497	60	65	1.2	360	136	58	580	280	30.6	5.05
W232130069520001	Kachchh	BHUJ	Haboi	May 2018	8.92	1201	804.67	30	122	199	8	153	1.53	150	56	39	300	140	9.9	3.51
W232747068410801	Kachchh	ABDASA	Kharai_1	May 2018	8.28	1084	726.28	0	122	170	12	160	0.45	100	60	34	290	106	19.5	2.71
W232715070210001	Kachchh	BHACHAU	Kharoi	May 2018	7.83	1290	864.3	0	183	256	1	141	0.28	150	72	68	460	94	5.4	1.91
W235020069435001	Kachchh	BHUJ	Khavada	May 2018	7.78	3810	2552.7	0	232	838	13	486	0.28	190	112	102	700	554	17.5	9.10
W232237069115701	Kachchh	NAKHATRANA	Kotada	May 2018	8.1	3256	2181.52	0	195	767	4	313	0.75	160	104	78	580	463	5.5	8.36
W230230069113001	Kachchh	MANDVI	Kotadi	May 2018	8.77	2234	1496.78	54	305	355	64	182	2.9	340	40	49	300	366	2	9.19
W230230069043001	Kachchh	ABDASA	Kotaya	May 2018	8.56	1835	1229.45	36	415	305	18	78	2.2	400	36	39	250	316	3.3	8.69
W230943068544301	Kachchh	ABDASA	Kothara	May 2018	8.05	3558	2383.86	0	110	852	10	387	0.25	90	128	63	580	524	39.1	9.46
W235240070483101	Kachchh	RAPAR	Kuda	May 2018	8.19	893	598.31	0	207	135	7	87	1.8	170	40	41	270	89	5.4	2.35
W234843068442001	Kachchh	LAKHPAT	Lakhpat1	May 2018	8.1	1571	1052.57	0	146	291	10	246	0.45	120	72	80	510	134	6.7	2.58
W233040070390001	Kachchh	RAPAR	Lilpur	May 2018	7.99	5744	3848.48	0	134	1349	20	752	1.15	110	320	207	1650	547	32	5.85
W232400069533001	Kachchh	BHUJ	Lodai	May 2018	7.88	4335	2904.45	0	268	852	5	646	0.75	220	112	209	1140	449	24	5.78
W225224069484201	Kachchh	Mundra	Luni	May 2018	8.42	2992	2004.64	42	281	724	46	66	0.5	300	128	68	600	387	17.6	6.87
W233200068570001	Kachchh	LAKHPAT	Mata no madh	May 2018	8.12	945	633.15	0	171	156	24	114	0.8	140	72	27	290	98	7	2.50
W230435069175501	Kachchh	MANDVI	Mau Moti_1	May 2018	8.02	1567	1049.89	0	256	256	100	100	1.1	210	32	67	350	190	5.4	4.42
W234530068403001	Kachchh	LAKHPAT	Moti cher	May 2018	8.18	669	448.23	0	159	128	4	11	0.25	130	48	32	250	36	13.7	0.99
W231600068500001	Kachchh	ABDASA	Naliya1	May 2018	8.4	1439	964.13	36	329	178	28	92	1	330	20	17	120	269	4.3	10.68
W233400070381502	Kachchh	RAPAR	Rapar2	May 2018	7.94	3021	2024.07	0	134	596	46	466	1	110	144	146	960	242	35.9	3.40
W235139070214701	Kachchh	BHACHAU	Ratanpur Khadir	May 2018	7.83	2254	1510.18	0	146	511	1	226	0.9	120	80	39	360	335	14.9	7.68
W231800070303001	Kachchh	BHACHAU	Samkhiari	May 2018	7.93	4053	2715.51	0	256	1093	125	121	0.7	210	96	132	780	561	17.6	8.73
W230825069382001	Kachchh	BHUJ	Sedat	May 2018	8.06	850	569.5	0	232	107	10	127	0.3	190	52	49	330	71	7.3	1.70
W230200070031501	Kachchh	GANDHIDHAM	Shinaya	May 2018	7.7	6490	4348.3	0	146	2201	4	44	0.7	120	280	24	800	1157	10.1	17.79
W231230069370001	Kachchh	BHUJ	Sukhpar	May 2018	7.7	9368	6276.56	0	146	3018	120	396	1.9	120	400	243	2000	1355	7.3	13.17
W230202068545501	Kachchh	ABDASA	Suthri	May 2018	8.55	1780	1192.6	18	220	320	4	44	3	210	20	17	120	278	4.4	11.03
W231700068565001	Kachchh	ABDASA	Tera	May 2018	8.86	3862	2587.54	36	317	938	24	199	4.2	320	32	29	200	781	9	24.01
W232747069081701	Kachchh	NAKHATRANA	Ugardi	May 2018	8.54	3623	2427.41	12	98	1008	15	241	0.45	100	104	68	620	545	6.3	9.52
W230600069013001	Kachchh	ABDASA	Vinjhan1	May 2018	8	620	415.4	0	207	57	5	40	1.05	170	40	19	180	55	9.4	1.78
W224830073033001	Kheda	MAHUDHA	Alina	May 2018	7.59	12460	8348.2	0	134	4325	8	203	1.55	110	540	341	2750	1730	33.5	14.34
W224203072583601	Kheda	NADIAD	Alindra	May 2018	7.95	2523	1690.41	0	268	567	130	180	0.64	220	200	48	700	287	9.3	4.72
W225700073193001	Kheda	BALASINOR	Balasinor1	May 2018	8.23	642	430.14	0	98	106	24	80	0.92	80	56	26	250	40	1.6	1.10
W231005073244001	Kheda	VIRPUR	Bar	May 2018	8.29	3255	2180.85	0	842	603	40	89	1.5	690	160	132	950	108	400	1.52
W224315073113001	Kheda	THASRA	Kalesar	May 2018	8.21	1344	900.48	0	464	78	13	202	1.13	380	40	72	400	145	0.8	3.15
W224415072421501	Kheda	KHEDA	Kheda	May 2018	8.63	3775	2529.25	168	305	603	18	451	0.3	530	160	60	650	415	260	7.08
W225430073071501	Kheda	KATHLAL	Ladvel	May 2018	8.29	1699	1138.33	0	378	312	11	72	0.77	310	84	58	450	180	11.7	3.69
W224659073103601	Kheda	Tharsa	Muliyad	May 2018	8.1	2521	1689.07	0	659	390	24	180	1.55	540	160	72	700	280	21	4.60
W224100072530001	Kheda	NADIAD	Nadiad2	May 2018	8.41	636	426.12	108	24	21	9	77	0.71	200	52	19	210	50	0.4	1.50
W223430072373001	Kheda	MATAR	Shekhupura	May 2018	8.2	909	609.03	0	390	71	2	37	1.02	320	44	62	370	43	14	0.97
W233030072110001	Mahesana	BECHARAJI	Asjol	May 2018	8.12	565	378.55	0	244	33	16	23	0.05	200	74	11	230	25	17.5	0.72
W234330072230001	Mahesana	VISNAGAR	Bhandupara	May 2018	8.29	1014	679.38	0	244	98	42	137	0.38	200	18	54	270	114	11	3.02
W233245072064501	Mahesana	BECHARAJI	Dharpura	May 2018	8.27	1940	1299.8	0	573	245	8	114	1.1	470	28	39	230	330	41.5	9.46
W235030072270001	Mahesana	UNJHA	Dosaj	May 2018	8.03	1997	1337.99	0	268	408	33	92	0.44	220	55	22	230	320	50	9.17
W235315072364501	Mahesana	KHERALU	Kheralu1	May 2018	7.96	1912	1281.04	0	415	326	29	124	1.23	340	18	95	440	240	1.05	4.97
W233440072172001	Mahesana	MAHESANA	Maguna	May 2018	8.02	3502	2346.34	0	708	730	32	199	0.41	580	90	277	1270	270	22.5	3.29
W233745072203001	Mahesana	MAHESANA	Panchot	May 2018	8.17	2052	1374.84	0	451	319	7	178	0.13	370	46	35	260	300	80	8.09
W235330072310001	Mahesana	KHERALU	Rampura1	May 2018	8.24	5467	3662.89	0	1318	762	72	543	2.24	1080	92	110	690	970	15.95	16.06
W234800072210001	Mahesana	UNJHA	Sihi	May 2018	8.28	946	633.82	0	366	72	27	62	0.01	300	28	48	270	101	38.5	2.67
W234530072273001	Mahesana	VISNAGAR	Tarabh	May 2018	7.91	665	445.55	0	256	54	4	80	0.15	210	65	28	280	43	10.3	1.12
W235914072453201	Mahesana	SATLASANA	Timba_1	May 2018	8.2	1234	826.78	0	378	113	6	144	2.46	310	32	65	350	82	76	1.91
W235045072430002	Mahesana	KHERALU	Unad1	May 2018	7.75	1168	782.56	0	390	113	8	29	0.64	320	65	28	280	110	3	2.86
W234752072234001	Mahesana	UNJHA	Unjha	May 2018	8.2	3151	2111.17	0	390	532	165	167	1.25	320	46	66	390	460	89	10.13
W231450072180001	Mahesana	KADI	Vidaj	May 2018	8.22	1872	1254.24	0	488	277	28	50	0.02	400	74	18	260	200	140	5.39
W215330073390001	Narmada	NANDOD	Garudeshwar	May 2018	6.22	525	351.75	0	171	71	20	8	0.57	140	48	24	220	17	3.6	0.50
W215205073360001	Narmada	NANDOD	Hirapura	May 2018	7.97	760	509.2	0	268	92	13	19	0.98	220	76	24	290	40	1.5	1.02
W212932073354901	Narmada	Dediapada	Jankh	May 2018	7.55	690	462.3	0	232	71	33	23	0.8	190	100	17	320	10	0.9	0.24
W213115073384502	Narmada	DEDIAPADA	Kanbi pitha	May 2018	7.56	930	623.1	0	256	156	28	15	0.55	210	76	66	460	2	0.1	0.04
W213050073311001	Narmada	Dediapada	Khaidipada	May 2018	7.78	444	297.48	0	134	71	14	4	0.48	110	60	15	210	3	0.1	0.09
W214400073283001	Narmada	NANDOD	Khota amba	May 2018	7.72	750	502.5	0	268	85	8	25	0.8	220	40	61	350	10	0.5	0.23
W220240073372001	Narmada	TILAKWADA	Namaria	May 2018	7.89	3666	2456.22	0	317	837	200	215	0.87	260	48	277	1260	260	2.4	3.18
W214010073400001	Narmada	DEDIAPADA	Nani singlot	May 2018	8.15	750	502.5	0	214	135	11	5	0.55	175	72	24	280	47	0.4	1.22
W213636073390901	Narmada	Dediapada	Ralda	May 2018	8.09	765	512.55	0	195	99	6	72	0.49	160	56	22	230	68	0.4	1.95
W215030073280001	Narmada	NANDOD	Ringani	May 2018	7.75	680	455.6	0	220	35	9	95	0.56	180	44	34	250	38	2	1.04

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W213636073454801	Narmada	Sagbara	Salemba 1	May 2018	7.75	830	556.1	0	183	92	46	92	0.77	150	96	32	370	21	0.3	0.47
W215050073321001	Narmada	NANDOD	Sunderpura	May 2018	8.33	630	422.1	42	49	78	16	75	0.55	110	60	34	290	10	0.6	0.26
W212917073525901	Narmada	Sagbara	Umaran	May 2018	7.97	622	416.74	0	195	28	12	92	0.35	160	84	19	290	7	0.1	0.18
W205145072540001	Navsari	JALALPORE	Abrama	May 2018	7.88	3489	2337.63	0	256	951	4	135	0.45	210	120	126	820	411	12.8	6.24
W204952073200401	Navsari	VANSDA	Chandav	May 2018	7.47	874	585.58	0	256	99	16	113	0.4	210	88	36	370	52	1.1	1.18
W205930072531001	Navsari	JALALPORE	Chinam	May 2018	8.19	2676	1792.92	0	512	469	21	130	0.37	420	64	58	400	240	310	5.22
W205330072483001	Navsari	JALALPORE	Dandi	May 2018	7.7	1332	892.44	0	366	142	130	4	0.22	300	72	36	330	130	47.1	3.11
W204943073032701	Navsari	GANDEVI	Duvada	May 2018	8.44	803	538.01	24	171	71	6	130	1	180	28	49	270	71	1.6	1.88
W204330073090001	Navsari	CHIKHLI	Kaliyari	May 2018	7.777	553	370.51	0	244	43	5	69	0.38	200	64	29	280	27	1.6	0.70
W203800073054501	Navsari	CHIKHLI	Khergam	May 2018	7.45	660	442.2	0	207	71	8	100	0.23	170	72	29	300	38	0.2	0.95
W204027073140001	Navsari	CHIKHLI	Manav Khadak	May 2018	7.72	505	338.35	0	171	50	5	92	0.85	140	52	22	220	43	0.5	1.26
W204818073160001	Navsari	VANSDA	Moti Valzar	May 2018	7.6	757	507.19	0	207	92	10	45	0.83	170	72	17	250	50	0.4	1.37
W204818073160001	Navsari	NAVSARI	Navsari 1	May 2018	7.33	6900	4623	0	293	1882	16	320	0.58	240	340	280	2000	587	7.4	5.71
W205000072503001	Navsari	JALALPORE	Onjal	May 2018	7.67	1449	970.83	0	183	298	7	317	0.5	150	136	22	430	222	5.2	4.65
W204715072571501	Navsari	GANDEVI	Sari_khurd	May 2018	8.3	1322	885.74	0	293	220	0	67	0.48	240	48	51	330	136	25.2	3.26
W210030072444501	Navsari	JALALPORE	Ubhrat	May 2018	6.97	1824	1222.08	0	390	391	60	8	1.03	320	68	12	220	330	24.2	9.67
W224940073364501	Panchmahal	GODHRA	Chhabanpur	May 2018	7.7	745	499.15	0	207	78	50	13	1.01	170	56	12	190	68	1.4	2.14
W224531073302401	Panchmahal	Kalol	Dhanol	May 2018	8.8	1482	992.94	84	122	191	15	158	1.69	240	16	26	150	250	14.5	8.87
W230900073463001	Panchmahal	SANTRAMPUR	Gadhar(Agricultural)	May 2018	7.63	783	524.61	0	171	85	50	18	0.8	140	44	19	190	61	1.2	1.92
W224734073362401	Panchmahal	GODHRA	Godhra UR_1(Temple Campus)	May 2018	7.66	1183	792.61	0	195	156	47	153	1.32	160	68	34	310	126	0.9	3.11
W224609073352801	Panchmahal	GODHRA	Godhra UR_2(School Camp)	May 2018	8.19	2521	1689.07	0	134	638	7	237	1.69	110	140	132	900	174	2.5	2.52
W222405073410601	Panchmahal	JAMBUGODHA	Javan	May 2018	8.23	411	275.37	0	122	35	7	70	0.97	100	40	22	190	19	5.7	0.60
W230343073371301	Panchmahal	LUNAWADA	Jokha	May 2018	7.85	1112	745.04	0	439	99	14	80	1.23	360	80	43	380	101	7.2	2.25
W223601073263601	Panchmahal	KALOL	Kalol UR_1(Nr School)	May 2018	8.12	1697	1136.99	0	427	227	80	130	1.34	350	52	101	550	151	0.4	2.80
W223523073270501	Panchmahal	KALOL	Kalol	May 2018	8.26	1489	997.63	0	464	184	50	82	0.89	380	108	67	550	102	6.4	1.89
W231042073390801	Panchmahal	LUNAWADA	Kantha	May 2018	7.87	817	547.39	0	244	85	13	110	1.31	200	60	19	230	101	1.2	2.90
W223944073300101	Panchmahal	GODHRA	Khadki Vadiya	May 2018	8.18	1297	868.99	0	464	99	10	168	1.65	380	44	66	370	156	1.5	3.53
W232212073403801	Panchmahal	KHANPUR	Khanpur	May 2018	8.28	791	529.97	0	195	85	47	76	1.01	160	76	24	290	51	1.1	1.30
W230110073311001	Panchmahal	LUNAWADA	Kothamba	May 2018	7.84	1474	987.58	0	207	291	66	47	1.3	170	52	41	300	180	2.4	4.52
W231215073360001	Panchmahal	LUNAWADA	Limbadia peti	May 2018	7.69	774	518.58	0	281	113	10	12	1.47	230	28	22	160	118	1.2	4.06
W230745073363002	Panchmahal	LUNAWADA	Lunawada	May 2018	8.52	1115	747.05	48	37	149	70	166	0.76	110	124	22	400	71	13.3	1.54
W231350073441001	Panchmahal	LUNAWADA	Malekpur1	May 2018	8.24	716	479.72	0	220	71	19	75	1.27	180	68	12	220	73	3.4	2.14
W224800073484501	Panchmahal	MORWA (HADAF)	Natapur	May 2018	8.27	583	390.61	0	134	71	45	72	1.61	110	32	26	190	63	1.9	1.99
W222915073332001	Panchmahal	HALOL	Pavagadh	May 2018	8.25	627	420.09	0	122	78	50	68	1.43	100	72	17	250	35	1.1	0.96
W224330073453001	Panchmahal	GHOGHAMBA	Ranipura	May 2018	7.68	1960	1313.2	0	415	369	145	6	2.2	340	40	106	540	210	4	3.93
W231130073543001	Panchmahal	SANTRAMPUR	Santrampur1	May 2018	8.05	886	593.62	0	195	134	21	51	1.04	160	64	31	291	61	0.8	1.55
W224812073473501	Panchmahal	MORWA (HADAF)	Santroad_1	May 2018	7.88	772	517.24	0	195	78	33	97	1.32	160	68	31	300	47	1.6	1.18
W225715073373001	Panchmahal	SHEHERA	Shehra	May 2018	8.01	1650	1105.5	0	451	198	13	121	1.13	370	48	41	290	183	80	4.67
W230344073510301	Panchmahal	MORWA (HADAF)	Suliyat	May 2018	8.29	652	436.84	0	183	71	26	45	1.38	150	68	10	210	52	4.6	1.56
W223245073314501	Panchmahal	HALOL	Tarkanda	May 2018	8.07	635	425.45	0	146	64	8	96	0.98	120	60	22	240	37	1.5	1.04
W224815073281501	Panchmahal	GODHRA	Tuwa	May 2018	7.93	790	529.3	0	281	71	5	62	1.04	230	72	14	240	75	11.7	2.10
W224145073333001	Panchmahal	KALOL	Vejalpur	May 2018	7.79	1732	1160.44	0	293	305	46	161	1.57	240	64	94	550	154	6.5	2.86
	Panchmahal	Jambughoda	Jambughoda	May 2018	8.29	935	626.45	0	244	78	64	65	1.19	200	68	17	240	89	0.9	2.50
W234130072041501	Patan	CHANASMA	Dharmoda1	May 2018	8.41	1105	740.35	30	198	50	14	267	0.38	212	40	29	220	163	32.2	4.78
W233945072164501	Patan	CHANASMA	Dhinoj1	May 2018	7.98	1579	1057.93	0	317	241	9	109	0.2	260	44	41	280	205	44.3	5.33
W233540071465001	Patan	SAMI	Moti chander	May 2018	7.96	9988	6691.96	0	183	3408	15	63	0.51	150	240	340	2000	1425	30.1	13.85
W235030072072501	Patan	PATAN	Patan2	May 2018	8.4	1930	1293.1	48	695	107	47	80	2.96	650	60	46	340	272	36.4	6.41
W233917071050901	Patan	SANTALPUR	Piprala	May 2018	8.56	6012	4028.04	36	415	1527	190	506	2.96	400	120	85	650	1205	1.7	20.55
W234600072151501	Patan	PATAN	Sander	May 2018	8.05	630	422.1	0	171	50	21	90	0.5	140	32	29	200	60	15	1.84
W234645072094501	Patan	PATAN	Shankhari	May 2018	8.4	665	445.55	18	146	43	8	160	1.6	150	28	22	160	105	10.8	3.61
W214231069423901	Porbandar	RANAVAV	Adityana	May 2018	8.01	775	519.25	0	128	149	41	35	0.6	105	60	22	240	66	1.6	1.85
W215500069360002	Porbandar	PORBANDAR	Adwana2	May 2018	8.11	1006	674.02	0	268	184	18	10	0.44	220	48	29	240	121	3.5	3.40
W214612069351701	Porbandar	PORBANDAR	Babda	May 2018	8.26	1759	1178.53	0	427	340	13	35	0.42	350	48	34	260	284	1.4	7.66
W214553069394001	Porbandar	PORBANDAR	Bakharla	May 2018	7.97	1830	1226.1	0	366	326	120	52	0.39	300	96	66	510	183	6.7	3.52
W212215069523001	Porbandar	PORBANDAR	Balej	May 2018	7.78	7828	5244.76	0	268	2500	78	101	0.24	220	342	181	1600	1011	84	10.99
W214835069243001	Porbandar	PORBANDAR	Bhavpura	May 2018	7.66	7371	4938.57	0	207	2667	85	655	0.25	170	580	281	2605	730	14.7	6.22
W213852069530001	Porbandar	RANAVAV	Kandorna	May 2018	7.69	4380	2934.6	0	220	1319	100	65	0.74	180	320	74	1105	495	3.5	6.47
W214830069360501	Porbandar	PORBANDAR	Khambodar	May 2018	8.17	1374	920.58	0	500	138	20	52	1.04	410	40	39	260	189	7.7	5.10
W214159069365101	Porbandar	PORBANDAR	Kolikhada village-2	May 2018	8.43	2081	1394.27	27	464	284	65	155	1.12	425	20	56	280	349	0.8	9.07
W214100069330001	Porbandar	PORBANDAR	Kuchhadi	May 2018	8.06	5870	3932.9	0	799	1571	22	35	0.4	655	220	88	910	882	81	12.71
W213750070010001	Porbandar	KUTIYANA	Kutiyana1	May 2018	7.86	5510	3691.7	0	329	1585	136	135	1.11	270	340	85	1200	711	6.6	8.92
W212054069532101	Porbandar	KUTIYANA	Mocha	May 2018	8	1306	875.02	0	317	248	13	30	0.4	260	108	29	390	110	17.8	2.42
W215309069360101	Porbandar	PORBANDAR	Mojiwana	May 2018	7.69	5450	3651.5	0	543	1553	25	48	0.35	445	340	233	1810	425	0.6	4.34
W212645069473001	Porbandar	PORBANDAR	Navibandar	May 2018	8.16	470	315	0	122	78	6	18	0.36	100	44	12	160	32	4.2	1.10
W213400069405001	Porbandar	PORBANDAR	Oddar	May 2018	7.91	11040	7396.8	0	244	3589	18	201	0.75	200	260	74	955	2053	60	28.88
W214530069291502	Porbandar	PORBANDAR	Palkhada1	May 2018	7.89	5870	3932.9	0	256	1355	180	642	0.22	210	280	235	1665	555	42	5.91
W211750069563001	Porbandar	PORBANDAR	Pata	May 2018	8.08	1570	1051.9	0	49	482	16	57	0.42	40	92	68	480	139	8.8	2.76
W213830069373001	Porbandar	PORBANDAR	Porbandar1	May 2018	8.32	1804	1208.68	21	354	355	20	60	0.43	325	32	24	180	311	36	10.08

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W214100069444503	Porbandar	RANAVAV	Ranavav2	May 2018	8.14	816	546.72	0	268	85	33	40	0.49	220	60	22	240	76	1.5	2.13
W214313069304301	Porbandar	PORBANDAR	Ratadi	May 2018	8.24	4463	2990.21	0	476	915	42	495	0.89	390	160	63	660	715	6.9	12.10
W212617069482201	Porbandar	PORBANDAR	Ratia	May 2018	7.9	3200	2144	0	268	787	20	238	0.22	220	200	133	1050	170	138	2.28
W214708069264701	Porbandar	PORBANDAR	Visavada	May 2018	8.07	2576	1725.92	0	250	996	16	5	0.97	205	120	136	860	301	93	4.46
W225600070483001	Rajkot	MORVI	Amar nagar	May 2018	7.76	8100	5427	0	439	2642	5	7	8.6	360	180	438	2250	820	2.3	7.52
W213945070203001	Rajkot	DHORAJI	Bhada jodiya	May 2018	8.03	1215	814.05	0	329	213	22	20	0.994	270	72	51	390	100	1.8	2.20
W222630071050001	Rajkot	WANKANER	Bhalgam	May 2018	7.56	1372	919.24	0	256	269	17	21	0.62	210	56	80	470	77	1.3	1.54
W223015070451501	Rajkot	TANKARA	Chhatar	May 2018	7.92	584	391.28	0	244	50	9	10	1.19	200	40	13	155	62	0.3	2.17
W215500070445501	Rajkot	GONDAL	Chordi	May 2018	7.6	970	649.9	0	207	177	60	9	0.39	170	88	34	360	53	0.3	1.21
W220530070440001	Rajkot	GONDAL	Dadia	May 2018	7.94	950	636.5	0	232	121	59	62	0.63	190	72	41	350	55	0.5	1.28
W214330070270001	Rajkot	DHORAJI	Dhoraji	May 2018	7.6	2000	1340	0	146	475	65	155	0.35	120	184	39	620	180	0.7	3.14
W214030070104501	Rajkot	UPLETA	Ganod	May 2018	7.69	6000	4020	0	317	1525	65	495	2.38	260	160	255	1450	700	0.5	7.99
W215800070523001	Rajkot	GONDAL	Gogavadar	May 2018	7.71	2232	1495.44	0	403	305	64	305	0.64	330	152	58	620	240	1.1	4.19
W224100070483001	Rajkot	TANKARA	Hadmatia	May 2018	7.47	2440	1634.8	0	183	482	62	341	0.42	150	176	78	760	220	1.1	3.47
W220530071030001	Rajkot	RAJKOT	Halenda	May 2018	7.63	2498	1673.66	0	390	454	130	175	0.43	320	104	119	750	222	3.5	3.52
W215330070290001	Rajkot	JAMKANDORNA	Jasapur	May 2018	7.71	1265	847.55	0	244	191	100	80	0.44	200	136	27	450	86	1	1.76
W220330071131501	Rajkot	JASDAN	Jasdan	May 2018	7.71	1124	753.08	0	220	191	70	55	0.32	180	120	19	380	83	1.3	1.85
W230119070550501	Rajkot	Morbi	Jetpur Pithad	May 2018	7.4	3607	2416.69	0	207	844	58	385	0.37	170	280	90	1070	340	1.5	4.52
W220907071115901	Rajkot	Jasdan	Kamlapur 1	May 2018	7.48	3570	2391.9	0	159	830	130	365	0.43	130	248	95	1010	360	1.3	4.93
W224300070464501	Rajkot	TANKARA	Lajai	May 2018	7.43	4914	3292.38	0	183	1383	150	225	0.48	150	360	214	1780	310	2.8	3.19
W220800071181501	Rajkot	JASDAN	Lalavadar	May 2018	7.76	762	510.54	0	244	85	22	41	0.49	200	88	15	280	46	0.8	1.20
W230005070534501	Rajkot	MORVI	Macchukunda	May 2018	8.21	1727	1157.09	0	232	340	29	162	1.34	190	130	74	630	114	7.6	1.97
W230530070454501	Rajkot	MALIYA	Malia	May 2018	7.77	692	463.64	0	244	64	5	52	0.63	200	40	27	210	58	9.7	1.74
W224900070503001	Rajkot	MORVI	Morvi	May 2018	7.76	1305	874.35	0	439	184	38	5	2.5	360	64	54.72	385	119	3.1	2.64
W225730070370001	Rajkot	MALIYA	Mota dhansura	May 2018	7.72	1824	1222.08	0	183	404	16	175	0.62	150	144	78	680	100	11.9	1.67
W214405070300501	Rajkot	JETPUR	Motagundala	May 2018	7.88	740	495.8	0	207	113	3	35	0.77	170	48	27	230	64	0.3	1.83
W222700070363001	Rajkot	PADDHARI	Movaiya	May 2018	7.31	6320	4234.4	0	134	1950	180	125	0.44	110	480	303	2445	330	0.6	2.90
W213840070154001	Rajkot	DHORAJI	Patanvav	May 2018	8.1	755	505.85	0	244	64	6	78	0.8	200	60	23	245	59	1.8	1.64
W214505070353001	Rajkot	JETPUR	Pedhla	May 2018	7.56	3050	2043.5	0	281	787	18	155	0.39	230	192	197	1290	110	1.9	1.33
W222200070554501	Rajkot	RAJKOT	Ranpur	May 2018	7.86	1160	777.2	0	195	227	43	55	0.44	160	72	61	430	70	0.5	1.47
W220730070460001	Rajkot	GONDAL	Ribda	May 2018	7.69	1040	696.8	0	293	121	36	84	0.3	240	88	43	395	61	0.4	1.33
W220830070590001	Rajkot	RAJKOT	Sardhar	May 2018	7.93	1756	1176.52	0	525	220	47	85	0.35	430	80	92	580	106	55.9	1.91
W225830070420001	Rajkot	MALIYA	Sarvad	May 2018	8.13	2400	1608	0	622	411	19	95	1	510	60	175	870	151	11.4	2.23
W223300070533001	Rajkot	WANKANER	Sindhavadar	May 2018	7.78	1861	1246.87	0	317	362	130	55	0.94	260	88	114	690	114	0.9	1.89
W215510070361501	Rajkot	JETPUR	Umrali	May 2018	7.77	2263	1516.21	0	98	553	60	210	0.41	80	100	156	890	103	1.1	1.50
W214455070163001	Rajkot	UPLETA	Upleta.	May 2018	8.05	2347	1572.49	0	573	355	75	138	4.5	470	32	185	840	153	0.7	2.30
W220130071073001	Rajkot	JASDAN	Viranagar	May 2018	7.99	2341	1568.47	0	427	418	115	135	0.91	350	80	178	930	114	0.7	1.63
W215100070414501	Rajkot	JETPUR	Virpur	May 2018	7.8	1835	1229.45	0	195	312	245	110	0.36	160	168	71	710	95	4	1.55
W231629073123001	Sabarkantha	Dhansura	Alwa Kampa	May 2018	8.28	808	541.36	0	256	99	34	47	1.09	210	116	2	300	60	0.9	1.51
W235909073124301	Sabarkantha	VIJAYNAGAR	Atarsumba_2	May 2018	7.59	921	617.07	0	207	135	54	35	0.8	170	68	22	260	85	2.2	2.29
W230730073123001	Sabarkantha	BAYAD	Boral	May 2018	7.82	2627	1760.09	0	342	638	125	128	0.95	280	180	168	1150	128	1	1.64
W231434072562701	Sabarkantha	Talod	Boriya	May 2018	7.31	2765	1852.55	0	220	674	155	98	0.58	180	160	108	850	240	1.4	3.58
W235524072511201	Sabarkantha	IDAR	Chandap_DW	May 2018	7.61	1353	906.51	0	159	255	65	38	1.1	130	116	31	420	78	5.2	1.65
W235400073071001	Sabarkantha	VADALI	Choriwad	May 2018	7.49	1924	1289.08	0	122	411	205	23	1.05	100	240	34	740	64	2	1.02
W232100073120001	Sabarkantha	DHANSURA	Dhansura	May 2018	7.78	1140	763.8	0	232	171	76	81	1.1	190	100	48	450	61	0.6	1.25
W233431073151101	Sabarkantha	MODASA	Gadada	May 2018	7.63	995	666.65	0	183	177	110	12	1.2	150	44	43	290	100	1.2	2.55
W234230072563001	Sabarkantha	HIMATNAGAR	Gadha1	May 2018	7.69	2535	1698.45	0	256	603	86	48	1.76	210	120	14	900	136	1.6	1.97
W232240073010001	Sabarkantha	TALOD	Harsol1	May 2018	7.97	1312	879.04	0	427	128	60	53	1.5	350	52	67	410	106	0.9	2.28
W235030073021501	Sabarkantha	IDAR	Idar	May 2018	8.13	1534	1027.78	0	366	262	65	32	2.82	300	88	48	420	160	4.8	3.39
W232000073180001	Sabarkantha	DHANSURA	Karanpur	May 2018	7.68	641	429.47	0	171	92	37	43	1.15	140	72	12	230	55	0.4	1.58
W235455073084301	Sabarkantha	Vadoli	Kesharpura	May 2018	8.19	1773	1187.91	0	354	248	225	41	3	290	48	91	500	173	0.3	3.36
W240145073030002	Sabarkantha	KHEDBRAHMA	Khedbramha_1	May 2018	7.6	4314	2890.38	0	134	1383	85	5	1.5	110	460	156	1800	167	4.4	1.71
W235810073140101	Sabarkantha	VIJAYNAGAR	Kherwada	May 2018	7.82	789	528.63	0	183	156	4	36	0.77	150	52	22	220	90	1.5	2.64
W232041073275201	Sabarkantha	MALPUR	Malpur_1	May 2018	7.6	751	503.17	0	159	71	88	84	1	130	76	29	310	38	0.3	0.94
W233609073091601	Sabarkantha	HIMATNAGAR	Mathasuliya	May 2018	7.61	1446	968.82	0	171	213	180	17	0.5	140	156	2	400	96	27	2.09
W240640073003001	Sabarkantha	KHEDBRAHMA	Matoda	May 2018	7.37	2920	1956.4	0	220	815	80	5	1.1	180	220	108	1000	192	17	2.64
W233043073162801	Sabarkantha	MODASA	Medasana	May 2018	7.65	1107	741.69	0	232	191	80	19	1.41	190	36	36	240	143	0.5	4.01
W232945073303002	Sabarkantha	MODASA	Megraj_1	May 2018	8.07	422	282.74	0	98	78	4	86	0.85	80	44	22	200	40	2.6	1.23
W232745073183001	Sabarkantha	MODASA	Modasa2	May 2018	7.58	975	653.25	0	159	191	75	37	0.65	130	56	34	280	103	2.5	2.68
W242230073020001	Sabarkantha	KHEDBRAHMA	Poshina2	May 2018	7.77	1385	927.95	0	427	213	26	17	1.37	350	32	58	320	173	4.6	4.20
W234010073102501	Sabarkantha	BHILODA	Punasan	May 2018	7.67	684	458.28	0	207	113	41	32	0.9	170	28	26	180	101	0.5	3.27
W233619072550901	Sabarkantha	HIMATNAGAR	Ramgarh	May 2018	8.1	2827	1894.09	0	342	780	13	7	0.94	280	180	96	850	260	18.4	3.88
W234915073070001	Sabarkantha	IDAR	Revas	May 2018	7.53	1670	1118.9	0	183	269	225	49	1.14	150	176	38	600	78	1.4	1.38
W235227072574701	Sabarkantha	IDAR	Sabalwad	May 2018	7.97	936	627.12	0	244	113	44	42	2.4	200	116	5	310	63	2.3	1.56
W231030073201501	Sabarkantha	BAYAD	Sathamba	May 2018	7.99	485	324.95	0	146	92	12	70	0.8	120	56	24	240	44	1.7	1.23
W232911073235501	Sabarkantha	MODASA	Seenawad	May 2018	7.45	1426	955.42	0	171	241	135	114	0.63	140	132	58	570	66	10.8	1.20
W234110073220001	Sabarkantha	BHILODA	Shamlaji	May 2018	7.88	534	357.78	0	146	71	4	111	0.65	120	76	12	240	47	1.1	1.32
W240030073070001	Sabarkantha	KHEDBRAHMA	Silwad	May 2018	7.45	5350	3584.5	0	317	1666	110	11	1.37	260	220	276	1700	480	10.2	5.06

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W235105073181801	Sabarkantha	BHILODA	Takatuka_1	May 2018	7.55	2520	1688.4	0	281	603	96	75	1.2	230	160	96	800	207	1.2	3.18
W231813072575201	Sabarkantha	Talod	Umedpura	May 2018	7.81	1252	838.84	0	342	177	65	5	1.5	280	60	55	380	99	0.3	2.21
W240030073211501	Sabarkantha	VIJAYNAGAR	Vijaynagar1	May 2018	8.07	978	655.26	0	268	191	7	26	1.1	220	36	34	230	137	4.2	3.93
W233906072571401	Sabarkantha	HIMATNAGAR	Virpur_1(Himmat)	May 2018	7.92	410	274.7	0	122	50	37	39	0.8	100	68	0	170	34	0.4	1.13
	Sabarkantha	Himmatnagar	Vaktapur	May 2018	7.68	3097	2074.99	0	207	851	115	72	1.15	170	180	156	1100	210	3.1	2.75
	Sabarkantha	Ider	Kesarpura(Ider)	May 2018	7.41	1324	887.08	0	195	220	130	94	0.8	160	164	31	540	64	1.9	1.20
	Sabarkantha	Ider	Dhramali	May 2018	7.85	2004	1342.68	0	342	333	54	175	2	280	64	62	420	261	1.4	5.54
W235600073020001	Surat	VADALI	Wadali	May 2018	7.35	1462	979.54	0	220	276	180	15	1.47	180	80	41	370	170	3.5	3.84
W210345073113001	Surat	BARDOLI	Allu	May 2018	8.29	600	402	0	183	50	13	121	1.2	150	40	36	250	51	0.2	1.40
W205700073210501	Surat	VYARA	Bedchit	May 2018	7.64	1556	1042.52	0	317	277	27	89	0.98	260	84	97	610	75	0.2	1.32
W212249073001501	Surat	Mangrol	Bhatkol	May 2018	8.45	758	507.86	18	37	114	5	152	0.75	60	40	34	240	68	1.4	1.91
W211454073013201	Surat	Kemraj	Digas	May 2018	8.28	923	618.41	0	268	57	39	96	1	220	20	46	240	90	1	2.53
W212430073080002	Surat	MANGROL	Dungri	May 2018	8.29	1509	1011.03	0	403	199	33	96	1.15	330	68	61	420	149	7.2	3.16
W211015073331501	Surat	SONGADH	Jesingpura[sg]	May 2018	7.87	573	383.91	0	293	36	3	42	0.23	240	44	36	260	36	1	0.97
W212730073293002	Surat	UMARPADA	Juna umarpada2	May 2018	8.08	389	260.63	0	134	36	4	62	0.27	110	40	45	160	32	0.9	1.10
W211317073130801	Surat	Bardoli	Kadod 1	May 2018	8.28	687	460.29	0	281	64	20	6	0.52	230	20	32	182	75	0.6	2.42
W210000073283001	Surat	VYARA	Karanjvel	May 2018	8.23	463	310.21	0	183	43	26	43	0.4	150	60	17	220	27	4.6	0.79
W211700073140001	Surat	MANDVI	Kasal	May 2018	8.01	716	479.72	0	159	107	26	51	0.22	130	48	39	280	36	1	0.94
W211730072554501	Surat	KAMREJ	Kathor	May 2018	8.19	1454	974.18	0	390	206	16	83	0.4	320	24	80	390	149	2.6	3.28
W210231073192401	Surat	Valod	Kelkui	May 2018	8.07	382	255.94	0	171	43	4	15	0.3	140	40	15	160	28	0.6	0.96
W211652073275501	Surat	Songarh	Kherwada	May 2018	7.81	532	356.44	0	210	57	17	22	0.45	172	52	22	220	33	0.1	0.97
W212200073210002	Surat	MANDVI	Malda	May 2018	8.45	1051	704.17	36	268	121	26	49	0.4	280	88	22	310	99	6.2	2.44
W211515073174501	Surat	MANDVI	Mandvi2	May 2018	8.2	839	562.13	0	159	107	85	56	0.47	130	36	44	270	65	0.4	1.72
W211013073040701	Surat	Bardoli	Mota	May 2018	8.29	2508	1680.36	0	439	497	16	139	0.1	360	72	117	660	261	1.9	4.42
W211245073214401	Surat	VYARA	Moti Chher	May 2018	8.13	600	402	0	134	57	53	61	0.3	110	84	2	220	36	0.5	1.06
W211645073205901	Surat	Mandavi	Moti Sarkui	May 2018	8.08	620	415.4	0	146	64	22	31	0.45	120	44	17	180	38	0.4	1.23
W211900073080001	Surat	MANDVI	Nogama	May 2018	8.1	551	369.17	0	171	64	39	21	0.45	140	40	22	190	44	0.1	1.39
W212030072453001	Surat	OLPAD	Olpad2	May 2018	8.71	1575	1055.25	24	342	192	25	62	1.38	320	24	22	150	238	62.7	8.45
W210440072593001	Surat	PALSANA	Palsana	May 2018	8.28	1022	684.74	0	354	92	15	40	0.3	290	32	17	150	150	18	5.32
W212715073115401	Surat	MANGROL	Paneshwar	May 2018	7.94	1442	966.14	0	110	334	6	140	0.8	90	104	22	350	170	2.3	3.95
W210530072523001	Surat	CHORASI	Sachin town	May 2018	7.81	3776	2529.92	0	232	1072	6	140	0.55	190	148	124	880	457	4.5	6.70
W210330073053001	Surat	BARDOLI	Sarbhon	May 2018	8.57	995	666.65	37	171	128	2	91	1.45	202	36	32	220	122	1.9	3.58
W210530072433001	Surat	CHORASI	Sultanabad	May 2018	8.57	840	562.8	24	110	114	24	86	0.3	130	32	39	240	75	24	2.10
W211820072543901	Surat	KAMREJ	Syan	May 2018	8.08	1735	1162.45	0	281	383	30	58	0.45	230	72	90	550	144	0.6	2.67
W211200072500005	Surat	UCHCHHAL	Uchchhal1	May 2018	8	784	525.28	0	244	99	55	5	0.4	200	48	41	290	47	0.4	1.20
W211850073093001	Surat	MANDVI	Ushker	May 2018	8.28	549	367.83	0	146	21	26	121	0.47	120	32	22	170	59	2.4	1.97
W205014073171601	Surat	Mahuva	Vaheval	May 2018	8.17	563	377.21	0	159	78	25	40	0.66	130	24	32	190	53	0.9	1.67
W210300073160001	Surat	VALOD	Valod	May 2018	8.2	440	294.8	0	146	43	19	44	0.24	120	32	19	160	38	0.3	1.31
W210630073234501	Surat	VYARA	Vyara1	May 2018	8.13	334	223.78	0	146	36	1	25	0.4	120	24	19	140	27	2.6	0.99
	Surat	Mandvi	Khata devi	May 2018	8.06	834	558.78	0	98	156	12	53	0.47	80	48	19	200	78	0.9	2.40
W224837071422101	Surendranagar	Wadhvan	Anindra	May 2018	7.81	700	469	0	171	64	7	111	1.27	140	80	17	270	35	5.4	0.93
W230700071470001	Surendranagar	DASADA	Bajana	May 2018	7.52	1083	725.61	0	220	170	8	105	0.62	180	78	40	360	80	5.7	1.83
W222500071023001	Surendranagar	CHOTILA	Bamanbor	May 2018	7.75	1362	912.54	0	354	184	115	38	0.63	290	152	41	550	59	2.2	1.09
W224630071440001	Surendranagar	WADHWAN	Dedadra	May 2018	8	1043	698.81	0	464	78	14	25	4.55	380	40	47	295	102	5	2.58
W232307071404601	Surendranagar	Dasada	Dhama	May 2018	7.65	2911	1950.37	0	329	489	180	335	1.16	270	60	229	1090	128	68.4	1.69
W230115071111501	Surendranagar	HALVAD	Halvad	May 2018	7.59	5109	3423.03	0	171	1312	130	440	2.32	140	320	122	1300	580	15.7	6.99
W232100071393001	Surendranagar	DASADA	Jhinjhuwada	May 2018	7.74	1313	879.71	0	342	184	35	85	1.019	280	80	64	465	81	14.1	1.63
W225846071003201	Surendranagar	Halvad	Juna Devliya 1	May 2018	8.06	1439	964.13	0	317	241	37	90	0.85	260	42	94	490	105	6.8	2.06
W230015071444501	Surendranagar	DASADA	Kherwa	May 2018	7.88	855	572.85	0	195	128	7	30	1	160	44	24	210	73	6.3	2.19
W230722071284701	Surendranagar	Dhangadhara	Kukavati	May 2018	7.51	2230	1494.1	0	244	532	120	65	1.09	200	60	168	840	129	2.8	1.94
W225130071470001	Surendranagar	LAKHTAR	Lakhtar	May 2018	7.61	910	609.7	0	256	121	8	65	1.96	210	42	44	285	73	9.6	1.88
W225253071440801	Surendranagar	Lakhtar	Modhvana	May 2018	7.62	753	504.51	0	183	92	78	16	0.92	150	6	51	225	65	8.7	1.88
W222515071063701	Surendranagar	Chotila	Moti Moladi	May 2018	7.47	5020	3363.4	0	220	1418	130	215	0.44	180	320	340	2200	150	0.9	1.39
W223900071280001	Surendranagar	MULI	Muli	May 2018	7.94	4010	2686.7	0	415	1028	70	151	4.4	340	240	24	700	600	0.9	9.86
W224431071154201	Surendranagar	Muli	Nava Raisangpur	May 2018	7.6	4320	2894.4	0	171	1170	135	260	0.42	140	288	117	1200	440	0.7	5.52
W225507071514801	Surendranagar	Lakhtar	Olak	May 2018	7.65	2348	1573.16	0	317	440	46	250	0.87	260	102	72	550	269	36.9	4.99
W230336071440301	Surendranagar	Dasada	Pipli	May 2018	7.84	1111	744.37	0	354	106	24	95	0.65	290	56	60	390	69	12.3	1.52
W225030071353001	Surendranagar	DHRANGADHRA	Rajsitapur	May 2018	8.01	965	646.55	0	342	106	23	35	1.12	280	34	47.42	280	91	4.2	2.36
W224000071494501	Surendranagar	LIMBDI	Shiyani	May 2018	7.66	4182	2801.94	0	134	887	16	655	1.19	110	180	97.28	850	550	10.6	8.20
W222715071290601	Surendranagar	Sayla	Sudamda	May 2018	7.35	4777	3200.59	0	183	1170	50	525	0.37	150	320	206	1650	341	2	3.65
W230030071170001	Surendranagar	HALVAD	Sukhpar	May 2018	7.84	6062	4061.54	0	403	1418	310	425	5.25	330	160	308	1670	621	1.1	6.61
W224300071363001	Surendranagar	WADHWAN	Surendranagar	May 2018	7.72	4131	2767.77	0	439	1064	90	135	1.21	360	120	121	800	588	2.2	9.04
W222600071551501	Surendranagar	CHUDA	Vanala	May 2018	7.77	457	306.19	0	183	43	11	10	0.55	150	24	19	140	38	4	1.40
W204130073370001	The dangs	The dangs	Aherdi	May 2018	8.21	352	235.84	0	134	43	10	63	0.23	110	44	22	200	21	0.4	0.65
W204839073301101	The dangs	The Dangs	Bori Goatha 1	May 2018	8.16	362	242.54	0	134	28	34	32	0.35	110	48	12	170	19	0.3	0.63
W203824073412901	The dangs	The Dang	Boripada	May 2018	8.02	301	201.67	0	146	21	4	65	0.4	120	48	12	170	24	0.4	0.80
W203930073411501	The dangs	The dangs	Chikhli	May 2018	8.14	316	211.72	0	159	21	4	27	0.35	130	40	10	140	24	0.4	0.88
W204830073331001	The dangs	The dangs	Chinchnogaotha	May 2018	7.93	499	334.33	0	207	43	41	62	0.24	170	76	17	260	32	0.7	0.86

Well No.	District	Taluka	Location	Date	pH	EC	TDS	CO3	HCO3	Cl	NO3	SO4	F	Alk	Ca	Mg	TH	Na	K	SAR
W203845073473001	The dangs	The dangs	Dhumkal	May 2018	8.07	298	199.66	0	207	14	5	36	0.3	170	48	15	180	24	0.3	0.78
W204800073441501	The dangs	The dangs	Ghubita	May 2018	8.1	377	252.59	0	159	21	11	61	0.24	130	52	15	190	20	0.7	0.63
W203800073444501	The dangs	The dangs	Jakana	May 2018	8.1	509	341.03	0	159	21	50	94	0.17	130	64	19	240	27	0.9	0.76
W205515073345001	The dangs	The dangs	Kalibel	May 2018	7.99	1030	690.1	0	293	178	15	60	0.1	240	56	71	430	64	19.2	1.34
W205500073404501	The dangs	The dangs	Mahal	May 2018	8.07	380	254.6	0	195	21	0	83	0.2	160	56	19	220	26	1.2	0.76
W203600073444501	The dangs	The dangs	Malegaon	May 2018	8.2	422	282.74	0	110	57	11	58	0.3	90	24	32	190	24	0.5	0.76
W204815073364501	The dangs	The dangs	Nadak khadi	May 2018	8.09	367	245.89	0	146	21	14	78	0.45	120	60	5	170	34	0.5	1.13
W204200073350001	The dangs	The dangs	Nana pada	May 2018	8.23	337	225.79	0	146	14	0	84	0.3	120	40	19	180	22	0.7	0.71
W204310073332501	The dangs	The dangs	Sakarpatal	May 2018	8.1	321	215.07	0	122	28	15	35	0.2	100	36	15	150	18	0.2	0.64
W205200073370001	The dangs	The dangs	Sodmal	May 2018	8.1	308	206.36	0	122	21	13	74	0.37	100	36	17	160	27	0.2	0.93
W205520073345001	The dangs	The dangs	Subir	May 2018	8.2	365	244.55	0	98	43	15	58	0.15	80	40	15	160	25	0.8	0.86
W204100073433001	The dangs	The dangs	Umberpada	May 2018	8.07	350	234.5	0	98	21	13	106	0.3	80	32	24	180	24	4	0.78
W205242073310601	The dangs	The dangs	Vazat Amba	May 2018	8.03	399	267.33	0	207	28	16	44	0.24	170	48	22	210	27	0.7	0.81
W204550073301601	The dangs	The Dang	Waghai	May 2018	8.3	384	257.28	0	98	28	2	120	0.3	80	28	27	180	31	2.2	1.00
W221340073290001	Vadodara	DABHOI	Amreshwar	May 2018	7.7	1714	1148.38	0	354	362	14	48	0.66	290	84	44	390	210	11.4	4.62
W221200073540001	Vadodara	JETPUR PAVI	Bhindol	May 2018	Leaked															
W222200074123001	Vadodara	CHHOTA UDAIPUR	Ferkuva	May 2018	7.1	1220	817.4	0	500	128	6	25	1.46	410	68	49	370	110	0.3	2.49
W222200074043001	Vadodara	CHHOTA UDAIPUR	Ghamodi	May 2018	7.56	470	314.9	0	183	43	10	15	1.2	150	28	23	165	31	0.8	1.05
W223015073170001	Vadodara	SAVLI	Juna samalya	May 2018	7.78	1762	1180.54	0	403	241	47	170	1.39	330	60	63	410	201	33.5	4.32
W215845073563001	Vadodara	NASVADI	Kaprali	May 2018	7.82	733	491.11	0	256	43	62	45	0.86	210	100	24	350	9	0.2	0.21
W221736073115401	Vadodara	Vadodara City	Kevada Bag	May 2018	8.23	1285	860.95	0	415	113	66	40	0.97	340	32	34	220	168	8.1	4.92
W220830072543001	Vadodara	PADRA	Masor	May 2018	8.27	2394	1603.98	15	940	213	8	90	0.65	795	32	44	260	430	1	11.59
W221200074023001	Vadodara	KAVANT	Panwad	May 2018	7.83	870	582.9	0	220	121	17	65	0.64	180	76	34	330	42	9.3	1.01
W220330074010001	Vadodara	KAVANT	Saidivasana	May 2018	7.65	920	616.4	0	329	78	9	68	0.91	270	84	29	330	60	0.4	1.44
W220215073531501	Vadodara	NASVADI	Sengpur	May 2018	7.66	600	402	0	207	64	45	32	0.68	170	68	29	290	18	1.9	0.46
W221730073464501	Vadodara	JETPUR PAVI	Suskal	May 2018	7.58	1570	1051.9	0	232	277	84	131	1.16	190	180	15	510	122	2.2	2.35
W222900073121001	Vadodara	SAVLI	Tundav	May 2018	7.93	1996	1337.32	0	342	326	92	162	1.11	280	80	75	510	180	63	3.47
W220400074083001	Vadodara	KAVANT	Vagudan	May 2018	8.3	610	408.7	18	49	99	4	85	0.81	70	40	2	110	87	0.7	3.61
W220934073244501	Vadodara	DABHOI	Vega	May 2018	Leaked															
	Vadodara	KAVANT	Rendha	May 2018	7.74	750	502.5	0	207	7	195	35	0.6	170	84	34	350	11	0.5	0.26
	Vadodara	KAVANT	Godhi simore	May 2018	7.52	1250	837.5	0	220	142	66	182	1.04	180	108	32	400	101	1.3	2.20
W203100073171501	Valsad	DHARAMPUR	Awadha	May 2018	7.96	423	283.41	0	207	14	6	60	0.2	170	44	19	190	31	0.3	0.98
W201942073193301	Valsad	KAPRADA	Chavshala	May 2018	7.96	300	201	0	171	21	3	33	0.19	140	44	2	120	40	1.4	1.59
W201530072530001	Valsad	UMBERGAON	Dahli (bhilad)	May 2018	7.95	715	479.05	0	232	85	45	78	0.3	190	60	39	310	55	0.5	1.36
W203151073094501	Valsad	DHARAMPUR	Dharampur 3	May 2018	7.6	640	428.8	0	146	78	4	86	0.52	120	60	19	230	44	0.7	1.26
W201930072503001	Valsad	UMBERGAON	Kanadu	May 2018	7.82	567	379.89	0	159	36	4	107	0.7	130	56	19	220	36	0.8	1.06
W202030073130001	Valsad	KAPRADA	Kaparda	May 2018	7.86	341	228.47	0	73	57	1	30	0.02	60	32	7	110	29	7.2	1.20
W202145072583001	Valsad	PARDI	Karwad	May 2018	7.72	933	625.11	0	232	85	2	118	0.3	190	72	29	300	63	14.6	1.58
W202200073103001	Valsad	KAPRADA	Mandwa	May 2018	8.12	398	266.66	0	134	36	14	73	0.05	110	40	22	190	27	0.8	0.85
W203800073013001	Valsad	VALSAD	Muli1	May 2018	8.24	2044	1369.48	0	195	440	13	135	0.53	160	56	63	400	249	3.7	5.41
W203600072540001	Valsad	VALSAD	Tithal	May 2018	7.8	1997	1337.99	0	427	320	8	181	0.32	350	88	65	490	236	33.1	0.00
W201300072503001	Valsad	UMBERGAON	Tumb	May 2018	7.9	778	521.26	0	244	85	6	69	0.85	200	52	34	270	60	0.8	1.59
W203036072554101	Valsad	PARDI	Udwada	May 2018	7.84	837	560.79	0	195	99	0	181	0.46	160	60	66	380	51	0.8	1.14
W201130072450001	Valsad	UMBERGAON	Umargaon	May 2018	8.15	945	633.15	0	110	213	31	7	0.65	90	56	32	270	73	6.8	1.93
W202249072541601	Valsad	PARDI	Vapi (Balitha)	May 2018	7.98	637	426.79	0	195	57	16	81	0.46	160	44	27	220	55	0.8	1.61
Max					9.02	26580	17808.6	168	1720	7347	500	2490	8.6	1410	1080	754	4340	4300	400	29.99
Min					6.22	207	138.69	0	24	7	0	2	0	30	6	0	100	2	0.1	0
Avg					7.95	2055.18	1376.97	4.77	298.17	425.41	47.12	140	0.90	251.25	102.01	65.32	522.35	232.59	13.21	4.25

NHS -2018
Heavy metal chemical data

Annexure V

HEAVY METAL WATER QUALITY DATA OF NATIONAL HYDROGRAPH NETWORK STATIONS OF GUJARAT MAY 2018

in ppm

S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
1	Ahmedabad	Bavla	Bavla	May-18	0.0342	0.0656	0.0456	0.0177	0.0032
2	Ahmedabad	Dhandhuka	Gamph	May-18	0.0287	0.1097	0.0474	0.0248	0.0032
3	Ahmedabad	Ranpur	Rajpada	May-18	0	0.1527	0.133	0.0123	0.0032
4	Ahmedabad	Ranpur	Kundali	May-18	0.0036	0.1108	0.051	0.0105	0.0021
5	Ahmedabad	Viramgam	Endla	May-18	0	0.0849	0.0253	0.0069	0
6	Ahmedabad	Viramgam	Kumarkhan	May-18	0.0498	0.0382	0.0081	0.006	0.0063
7	Ahmedabad	Mandal	Mandal2	May-18	0.011	0.1057	0.0752	0.0165	0
8	Ahmedabad	Viramgam	Viramgam	May-18	0.0167	0.0901	0.1528	0.0142	0
9	Amreli	lathi	Chavand	May-18	0.0072	0.0429	0.0063	0.0092	0.0021
10	Amreli	lathi	Tajpur	May-18	0	0	0.0038	0.0051	0.0021
11	Amreli	lathi	Lathi	May-18	0.013	0.0591	0.029	0.0163	0.0043
12	Amreli	Babra	Untvad	May-18	0.0056	0.1118	0.0752	0.0145	0.0043
13	Amreli	Babra	Devaliya	May-18	0.0175	0.0591	0.0241	0.0168	0.0043
14	Amreli	Amreli	Vankiya	May-18	0.0055	0.002	0.0019	0.0065	0.0021
15	Amreli	Amreli	Ankadia mota	May-18	0	0.0225	0.0079	0.0114	0.0032
16	Amreli	Kunkavav vadia	Kunkavav	May-18	0.0344	0.0903	0.0463	0.0195	0.0064
17	Amreli	bagasara	Vaghania juna	May-18	0.0057	0.0612	0.013	0.0096	0.0032
18	Amreli	bagasara	Bagasara	May-18	0.0105	0.0752	0.24	0.0154	0.0054
19	Amreli	Dhari	Morjhar	May-18	0	0.2604	0.0774	0.0163	0.0054
20	Amreli	Dhari	Dharangani	May-18	0.0074	0.0526	0.0204	0.0154	0.0043
21	Amreli	Dhari	Virpur	May-18	0	0.2206	0.85	0.0186	0.0043
22	Amreli	Khamba	Ingorala	May-18	0.0042	0.1398	0.109	0.0159	0.0043
23	Amreli	Dhari	Chalala	May-18	0.0391	0.0548	0.0461	0.0575	0.0064
24	Amreli	Dhari	Kerala	May-18	0.01	0.0849	0.748	0.0168	0.0054
25	Amreli	Kundla savar	Charkhadia1	May-18	0.008	0.002	0.0017	0.0101	0.0043
26	Amreli	Amreli	Amreli	May-18	0	0.1043	0.291	0.0199	0.0075
27	Amreli	lathi	Luvariya	May-18	0	0.029	0.005	0.0083	0.0032
28	Amreli	Lilia	Punjapadar	May-18	0	0.1172	0.0113	0.011	0.0043
29	Amreli	Jafrabad	Timbi2	May-18	0.009	0.0429	0.0869	0.0168	0.0075
30	Amreli	Jafrabad	Nageshri	May-18	0.0194	0.0612	0.041	0.0195	0.0096
31	Amreli	Jafrabad	Jafrabad	May-18	0.0106	0.1452	0.0368	0.0333	0.0118
32	Amreli	Jafrabad	Bherai	May-18	0.0361	0.0494	0.0324	0.0186	0.0107
33	Amreli	Rajula	Victor	May-18	0	0.1032	0.144	0.0199	0.0064
34	Amreli	Rajula	Mandal	May-18	0.0299	0.072	0.0223	0.0186	0.0096
35	Amreli	Khambha	Trakuda	May-18	0	0.0591	0.0201	0.0145	0.0064
36	Amreli	Khambha	Bhavardi1	May-18	0.0061	0.1194	0.2192	0.015	0.0075
37	Amreli	Khambha	Khambha	May-18	0	0.0365	0.0034	0.0298	0.0075
38	Amreli	Khambha	Vankiya1	May-18	0	0.2572	0.1697	0.0723	0.0171
39	Amreli	Kundla savar	Badhda	May-18	0.0276	0.0257	0.0078	0.0199	0.0086
40	Amreli	Kundla savar	Goradka	May-18	0.0132	0.0516	0.0131	0.0172	0.0086
41	Amreli	Kundla savar	Piyava	May-18	0.0103	0.2884	0.0154	0.0154	0.0064
42	Amreli	Kundla savar	Salena	May-18	0.0072	0.0569	0.0121	0.0154	0.0064
43	Amreli	Jafrabad	Kadiyali	May-18	0.0363	0.2109	0.79	0.0244	0.0096
44	Amreli	Savar Kundla	Vanda	May-18	0	0.0085	0.0038	0.0128	0.0075
45	Amreli	Savar Kundla	Hipavadli	May-18	0	0	0	0.0096	0.0054
46	Amreli	Savar Kundla	Fifad	May-18	0.0362	0.3874	0.0426	0.2299	0.0182
47	Anand	Anand	Adas_DW	May-18	0.043	0.053	0.015	0.001	0.004

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
48	Anand	Anand	Anand	May-18	0.012	0.029	0.147	0.103	0.015
49	Anand	Anklav	Anklav2	May-18	0.024	0.046	0.016	0.046	0.005
50	Anand	Petlad	Dharmaj	May-18	0.058	0.050	0.027	0.011	0.007
51	Anand	Cambay	Kansari1	May-18	0.030	0.375	0.059	0.013	0.010
52	Anand	Tarapur	Tol	May-18	0.000	0.321	0.216	0.006	0.005
53	Banaskantha		Palanpur 2	May-18	0.0053	0.0541	0.004	0.003	0
54	Banaskantha		Iqbalgad	May-18	0	0.1634	0.0012	0.0335	0
55	Banaskantha		Kidotar	May-18	0.0014	0.0796	0.0035	0.0023	0
56	Banaskantha		Amirgadh	May-18	0.0045	0.1087	0.0159	0.0039	0
57	Banaskantha		Ganapipli	May-18	0.0223	0.1579	0.0318	0.0049	0.0004
58	Banaskantha		Ratanpura	May-18	0.0161	0.0832	0.0108	0.0023	0
59	Banaskantha		Mohabbatgadh	May-18	0.0314	0.3164	0.0205	0.0039	0.0012
60	Banaskantha		Dantiwada DW	May-18	0.009	0.1725	0.0363	0.0003	0
61	Banaskantha		Sodapur	May-18	0.0106	0.0887	0.2205	0.0113	0
62	Banaskantha		Meda	May-18	0.0029	0.1288	0.0193	0.0053	0
63	Banaskantha		Gangudara	May-18	0.0155	0.1033	0.0369	0.0096	0.0081
64	Banaskantha		Jhat	May-18	0.0047	0.0723	0.0063	0.0013	0
65	Banaskantha		Khoda	May-18	0.0056	0.229	0.1853	0.0083	0
66	Banaskantha		Bhorol	May-18	0	0.0996	0.0612	0.0033	0
67	Bharuch	Vagra	Bhensli	May-18	0.000	0.113	0.044	0.050	0.006
68	Bharuch	Jambusar	Chhindra	May-18	0.000	0.078	0.143	0.001	0.004
69	Bharuch	Jambusar	Dahegam	May-18	0.030	0.048	0.287	0.001	0.010
70	Bharuch	Valia	Jokhla	May-18	0.000	0.085	0.081	0.000	0.010
71	Bharuch	Bharuch	Kaswa	May-18	0.000	0.324	0.084	0.105	0.008
72	Bharuch	Jambusar	Kavi	May-18	0.011	0.092	0.061	0.009	0.005
73	Bharuch	Valia	Kondh	May-18	0.000	0.055	0.044	0.000	0.001
74	Bharuch	Valia	Mokhdi	May-18	0.000	0.141	0.029	0.000	0.009
75	Bharuch	Ankleshvar	Motwan	May-18	0.021	0.048	0.034	0.000	0.008
76	Bharuch	Ankleshvar	Mulad	May-18	0.022	0.089	0.068	0.000	0.009
77	Bharuch	Bharuch	Navetha	May-18	0.025	0.052	0.182	0.000	0.008
78	Bharuch	VAGRA	Nirnavi	May-18	0.003	0.262	0.521	0.000	0.004
79	Bharuch	Ankleshvar	Panoli	May-18	0.037	0.029	0.100	0.005	0.009
80	Bharuch	AMOD	RojaTankaria	May-18	0.024	0.142	0.280	0.037	0.004
81	Bharuch	Ankleshvar	Sajod	May-18	0.000	0.041	0.023	0.000	0.004
82	Bharuch	JHAGADIA	Simodra	May-18	0.021	0.305	1.156	0.005	0.006
83	Bharuch	Jambusar	Tankari	May-18	0.026	0.066	0.138	0.033	0.009
84	Bharuch	Netrang	Netrang	May-18	0.000	0.062	0.115	0.000	0.003
85	Bharuch	Netrang	Juni Jamunia	May-18	0.000	0.031	0.010	0.000	0.007
86	Bhavnagar	Botad	Tardhera	May-18	0.0437	0.0268	0.145	0.0172	0.0054
87	Bhavnagar	Gadhada	Tatam	May-18	0.0381	0.0526	0.0583	0.0235	0.0086
88	Bhavnagar	Gadhada	Ningala	May-18	0.0065	0	0.0197	0.0056	0
89	Bhavnagar	Gadhada	Gadhada2	May-18	0.0125	0.0042	0.0057	0.0096	0.0043
90	Bhavnagar	Gadhada	Dhasa	May-18	0.0225	0.0699	0.0192	0.0141	0.0032
91	Bhavnagar	Bhavnagar	Bhavnagar	May-18	0.0132	0.0354	0.0012	0.015	0.0045
92	Bhavnagar	Bhavnagar	Bhubhali	May-18	0.0177	0.0505	0.1078	0.0235	0.0055
93	Bhavnagar	Talaja	Datha	May-18	0.0108	0.0526	0.1932	0.045	0.0031
94	Bhavnagar	Gariadhar	Gariadhar	May-18	0.0231	0.1829	0.1281	0.0231	0.0071
95	Bhavnagar	Ghogha	Ghogha	May-18	0.0228	0.0882	0.0504	0.0248	0.009
96	Bhavnagar	Umrala	Jalia	May-18	0.0188	0.0656	0.012	0.0266	0.0041
97	Bhavnagar	Palitana	Khijadiya	May-18	0.1119	0.9052	0.2668	0.0495	0.0891
98	Bhavnagar	Mahuva	Longadi	May-18	0.0098	0.0569	0.0161	0.0257	0.0068
99	Bhavnagar	Palitana	Mahuva1	May-18	0.0125	0.0365	0.0224	0.0208	0.004

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
100	Bhavnagar	Palitana	Palitana	May-18	0.0089	0.1183	0.0351	0.0414	0.0061
101	Bhavnagar	Palitana	Panchpipla	May-18	0.0054	0.1592	0.0324	0.0222	0.0041
102	Bhavnagar	Vallabhipur	Panvi1	May-18	0	0.0182	0.0007	0.0128	0.0021
103	Bhavnagar	Palitana	Sajnasar	May-18	0	0.1355	0.615	0.0284	0.0003
104	Bhavnagar	Mahuva	Shantinagar	May-18	0.0032	0.044	0.0164	0.0145	0.0016
105	Bhavnagar	Talaja	Talaja 2	May-18	0	0.0968	0.0064	0.0172	0.0006
106	Bhavnagar	Umrala	Timbi 2	May-18	0	0.2636	0.0168	0.0181	0.003
107	Bhavnagar	Vallabhipur	Vallabhipur	May-18	0	0.3788	0.1369	0.0231	0.0236
108	Bhavnagar	Vallabhipur	Ayodhyapuram	May-18	0.3405	0.9827	0	0.0414	0.1446
109	Bhavnagar	Talaja	Kundheli	May-18	0	0.7319	0.0345	0.0378	0.0095
110	Dahod	DEVGAD BARIA	Badpa	May-18	0.0000	0.1300	0.0441	0.0000	0.0020
111	Dahod	DEVGAD BARIA	Devgadh Baria	May-18	0.0000	0.0000	0.1765	0.0014	0.0032
112	Dahod	DEVGAD BARIA	Khaania	May-18	0.0000	0.0460	0.0067	0.0000	0.0016
113	Dahod	DHANPUR	Tokarba	May-18	0.0000	0.2825	0.2384	0.0020	0.0023
114	Dahod	DHANPUR	Kanjetha	May-18	0.0003	0.1185	0.0091	0.0004	0.0019
115	Dahod	DHANPUR	Dhanpur	May-18	0.0027	0.0000	0.1260	0.4212	0.0943
116	Dahod	Dhanpur	Ambakatch	May-18	0.0003	0.2164	0.1914	0.0045	0.0025
117	Dahod	GARBADA	Garbara	May-18	0.0179	0.1155	0.0552	0.0045	0.0076
118	Dahod	GARBADA	Panchwada	May-18	0.0323	0.1185	0.0062	0.0000	0.0023
119	Dahod	DOHAD	Varamkheda	May-18	0.0061	0.0848	0.0294	0.0000	0.0012
120	Dahod	DOHAD	Dahod Urban-1(Auto garage)	May-18	0.0000	0.0960	0.1042	0.0238	0.0038
121	Dahod	DOHAD	Dahod Urban-2(G.E.B. Compoud)	May-18	0.0003	0.0465	0.0042	0.0109	0.0028
122	Dahod	DOHAD	Dahod Urban(Forest Conoly)	May-18	0.0011	0.0369	0.0074	0.0203	0.0031
123	Dahod	DOHAD	Dahod(Opp Collectorate)	May-18	0.0224	0.3125	0.0079	0.0111	0.0026
124	Dahod	JHALOD	Mirakhedi	May-18	0.0489	0.1906	0.0270	0.0104	0.0031
125	Dahod	JHALOD	Limbdi	May-18	0.0000	0.3563	0.0590	0.0208	0.0037
126	Dahod	LIMKHEDA	Dadhela	May-18	0.0204	0.1000	0.0026	0.0150	0.0020
127	Dahod	FATEPURA	Sarsava	May-18	0.0000	0.1587	0.0978	0.0102	0.0020
128	Dahod	FATEPURA	Sukhsar	May-18	0.0291	0.0671	0.0021	0.0097	0.0018
129	Gandhinagar	Gandhinagar	Serthapara	May-18	0.0406	0.2982	0.1525	0.2861	0.0181
130	Gandhinagar	Gandhinagar	Palia	May-18	0.0188	0.0923	0.0069	0.0122	0
131	Jamnagar	Kalavad	Toda	May-18	0.0119	0.0821	0.0124	0.0048	0.0038
132	Jamnagar	Kalavad	Haripur2	May-18	0.0094	0.2645	0.0651	0.0187	0.0051
133	Jamnagar	Kalavad	Moti matli	May-18	0.0065	3.1	0.0404	0.0159	0.0052
134	Jamnagar	Jamnagar	Vijarkha	May-18	0.0036	0.1071	0.0108	0.0104	0.0025
135	Jamnagar	Jodiya	Bedanpur	May-18	0.0517	2.3	0.067	0.0345	0.0104
136	Jamnagar	Jodiya	Dudhai2	May-18	0.0074	0.246	0.0174	0.0254	0.0037
137	Jamnagar	Jodiya	Amran1	May-18	0.0069	6	0.1063	0.3584	0.0544
138	Jamnagar	Dhrol	Dhrol2	May-18	0.0045	0.2872	0.0322	0.0171	0.0042
139	Jamnagar	Jamnagar	Changa	May-18	0.0219	0.2459	0.2112	0.0457	0.0069
140	Jamnagar	Lalpur	Lalpur1	May-18	0.0151	0.1152	0.0973	0.1173	0.007
141	Jamnagar	Bhanvad	Ambardi	May-18	0.0169	0.0622	0.0248	0.0191	0.0045
142	Jamnagar	Jamjodhpur	Balwa	May-18	0.0135	2	3.2	0.0173	0.0047
143	Jamnagar	Jamjodhpur	Seth vadala	May-18	0.01	0.1175	0.0631	0.0085	0.004
144	Jamnagar	Lalpur	Vad panchasara	May-18	0.0003	0.1582	0.0458	0.0061	0.0029
145	Jamnagar	Jamnagar	Jamnagar2	May-18	0.0032	0.089	0.0513	0.0111	0.0051
146	Jamnagar	Jamnagar	Gordhanpur	May-18	0.0001	0.0598	0.0356	0	0.0029
147	Jamnagar	Jamnagar	Bed1	May-18	0.0346	0.1022	0.0471	0.0249	0.0104
148	Jamnagar	Khambhalia	Kajuda	May-18	0.0342	0.0582	0.2504	0.0274	0.0212
149	Jamnagar	Khambhalia	Salaya	May-18	0.0007	0.2838	0.0421	0.0016	0.004
150	Jamnagar	Khambhalia	Vinjhalpur	May-18	0.0131	0.0896	0.0411	0	0.0031

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
151	Jamnagar	Kalyanpur	Khirsara	May-18	0.0124	0.058	0.0279	0	0.0037
152	Jamnagar	Kalyanpur	Bhogat1	May-18	0.0006	0.2087	0.0105	0.0047	0.0019
153	Jamnagar	Okhamandal	Dwarka	May-18	0.0208	0.0826	0.0355	0	0.0052
154	Jamnagar	Okhamandal	Varwada	May-18	0.00343	0.2486	0.1131	0.0141	0.0088
155	Jamnagar	Okhamandal	Mojap	May-18	0.0257	0.0615	0.03621	0.0109	0.0093
156	Jamnagar	Okhamandal	Samrasar1	May-18	0.1093	0.2077	0.2756	0	0.0225
157	Jamnagar	Kalyanpur	Kalyanpur2	May-18	0.0323	0.3465	0.1127	0	0.0064
158	Jamnagar	Kalyanpur	Juvanpur	May-18	0.0069	0.1509	0.0105	0.00059	0.0032
159	Jamnagar	Khambhalia	Vadtara	May-18	0.0096	0.0608	0.204	0.0034	0.0023
160	Jamnagar	Okhamandal	Kalyanpur2	May-18	0.0099	0.12197	0.0194	0.0037	0.0023
161	Jamnagar	Bhanvad	Mota kalawad	May-18	0.006	0.0418	0.023	0.0041	0.0018
162	Junagadh	visavadar	Prempara	May-18	0.005	0.2066	0.1195	0.0365	0.0064
163	Junagadh	talala	Alwani	May-18	0.0013	0.495	0.074	0.0141	0.0054
164	Junagadh	Una	Una2	May-18	0.0183	0.015	0.0167	0.0181	0.0075
165	Junagadh	Una	Girgadhada	May-18	0	0.058	0.0164	0.0132	0.0064
166	Junagadh	Una	Jamvala1	May-18	0	0.0688	0.0055	0.011	0.0054
167	Junagadh	Talala	Ankolvadi	May-18	0	0.0537	0.004	0.0137	0.0064
168	Junagadh	Talala	Jambur(Madhapar)	May-18	0	0.072	0.0035	0.0257	0.0064
169	Junagadh	kodinar	Kodinar1	May-18	0.0134	0.0978	0.0172	0.0195	0.0096
170	Junagadh	Veraval	Ajotha	May-18	0.014	0.1086	0.0085	0.0145	0.0075
171	Junagadh	Veraval	Govindpura2	May-18	0	0.0591	0.0166	0.0105	0.0064
172	Junagadh	Veraval	Moraj	May-18	0.0036	0.0957	0.01	0.0195	0.0075
173	Junagadh	Talala	Talala1	May-18	0	0.1086	23.5	0.015	0.0054
174	Junagadh	Una	Samter	May-18	0	0.0806	0.0182	0.4662	0.0086
175	Junagadh	Junagadh	Chokli	May-18	0.0193	0.2141	0.0114	0.0063	0.0055
176	Junagadh	Bhesan	Patla	May-18	0.0026	0.0562	0.0154	0.026	0.003
177	Junagadh	Junagadh	Junagadh1	May-18	0.0161	0.064	0.0204	0.0315	0.0048
178	Junagadh	vanthali	Saradiya	May-18	0.0075	0.043	0.31	0.0029	0.0032
179	Junagadh	Manavadar	Bantva	May-18	0.0119	0.0544	0.0832	0.0065	0.0045
180	Junagadh	Mangrol	Bamanwara	May-18	0.059	0.133	0.0685	0.0171	0.0068
181	Junagadh	Mangrol	Sil	May-18	0	0.1433	0.0525	0.0044	0.0006
182	Junagadh	Mangrol	Sil bandar	May-18	0.0469	0.2539	0.0531	0.0117	0.0079
183	Junagadh	Mangrol	Manketara	May-18	0.0046	0.0943	0.0168	0.0021	0.0013
184	Junagadh	Mangrol	Goraj1	May-18	0	0.0629	0.0021	0.0008	0.0053
185	Junagadh	Malai	Juthal	May-18	0	0.0742	0.0176	0.0027	0.0027
186	Junagadh	Mangrol	Seriakhan	May-18	0.0089	0.091	0.1376	0.0045	0.0055
187	Junagadh	malia	Budhecha	May-18	0.0045	0.138	0.0423	0.0107	0.0066
188	Junagadh	Mangrol	Shardagram	May-18	0.0347	0.1237	0.0348	0.0119	0.0158
189	Junagadh	Mangrol	Arena	May-18	0.0594	0.2365	0.0611	0.0127	0.0242
190	Junagadh	Mangrol	Khorada1	May-18	0.0031	0.0169	0.04	0	0.0037
191	Junagadh	malia	Khambalia1	May-18	0.0174	0.139	0.0017	0	0.0091
192	Junagadh	vanthali	Khoras ahir	May-18	0.0093	0.1026	0.0053	0.0029	0.0068
193	Junagadh	mendrada	Kenedipur	May-18	0	0.0066	0.0076	0	0.0027
194	Junagadh	mendrada	Mendarda1	May-18	0	0.0491	0.0353	0	0.0038
195	Junagadh	junagarh	Anandpur	May-18	0.011	0.1287	0.0331	0.0031	0.0069
196	Junagadh	visavadar	Kasia Naka Check Post	May-18	0.001	0.0763	0.0525	0.011	0.0054
197	Junagadh	Una	Kesariyaji	May-18	0.0157	0.6447	0.1578	0.0186	0.0075
198	Junagadh	Una	Jargla Jargali	May-18	0.002	0.0871	0.0098	0.0132	0.0054
199	Junagadh	Talala	Amervel Nes	May-18	0	0.0591	0.0607	0.015	0.0064
200	Junagadh	Talala	Bhim Deval	May-18	0.0017	0.1065	0.0112	0.0208	0.0075
201	Junagadh	kodinar	Prasli	May-18	0	0.0612	0.0262	0.0177	0.0075
202	Junagadh	Una	Kansari	May-18	0.0128	0.1571	0.745	0.0168	0.0086

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
203	Kachchh	Mandvi	Bhambhdai	May-18	0.0287	0.1876	0.0281	0.0125	0.0048
204	Kachchh	Mundra	Bhadreshwar	May-18	0.0524	0.2379	0.334	0.0204	0.0026
205	Kachchh	Bhuj	Bhuj1	May-18	0.0444	0.2693	0.0737	0.0233	0
206	Kachchh	Rapar	Deshalpur Rapar	May-18	0.0448	0.3008	0.0393	0.0227	0.0041
207	Kachchh	Nakhatrana	Samkhiari	May-18	0.0524	0.3118	0.0403	0.0105	0
208	Kachchh	Mandvi	Sedat	May-18	0.0292	0.87	0.1419	0.0141	0
209	Kachchh	Gandhidham	Shinaya	May-18	0.0444	0.1608	0.5345	0.0161	0
210	Kachchh	Bhuj	Sukhpart	May-18	0.0365	0.1137	0.0181	0.0121	0
211	Kachchh	Abdasa	Kharai1	May-18	0.0365	0.3731	0.0467	0.0085	0
212	Kachchh	Bhachau	Kharoi	May-18	0.0444	0.2898	0.4467	0.0105	0
213	Kachchh	Bhuj	Khavada	May-18	0.0524	0.6546	0.0514	0.024	0.0048
214	Kachchh	Nakhtrana	Kotada	May-18	0.0524	0.3558	0.025	0.0125	0.0011
215	Kachchh	Mandvi	Kotadi	May-18	0.0444	0.2064	0.026	0.0095	0
216	Kachchh	Abdasa	Kotaya	May-18	0.0365	0.1986	0.0705	0.0085	0
217	Kachchh	Abdasa	Kothara	May-18	0.0524	0.1671	0.1641	0.0128	0
218	Kachchh	Rapar	Kuda	May-18	0.0365	0.1577	0.0202	0.0121	0
219	Kachchh	Lakhpat	Lakhpat1	May-18	0.0127	0.2395	0.0239	0.0121	0
220	Kachchh	Rapar	Lilpur	May-18	0.0348	0.2096	0.1451	0.0272	0.0079
221	Kachchh	Bhuj	Lodai	May-18	0.0524	0.219	0.1414	0.024	0.0063
222	Kachchh	Mundra	Luni	May-18	0.0524	0.2615	0.1774	0.0217	0.0011
223	Kachchh	Lakhpat	Mata no Madh	May-18	0.0444	0.5524	0.0308	0.0325	0
224	Kachchh	Mandvi	Mau Moti	May-18	0.0079	0.1325	0.017	0.0069	0
225	Kachchh	Lakhpat	Moticher	May-18	0.004	0.2222	0.0694	0.0098	0
226	Kachchh	Abdasa	Naliya1	May-18	0	0.1844	0.0181	0.0148	0
227	Kachchh	Rapar	Rapar 2	May-18	0.0365	0.7725	0.0461	0.0315	0.0033
228	Kachchh	Bhachau	Ratanpur Khadir	May-18	0.0078	0.1042	0.0467	0.0108	0
229	Kachchh	Bhachau	Samkhiari	May-18	0.0185	0.2756	0.0509	0.021	0.0011
230	Kachchh	Bhuj	Sedat	May-18	0	0.2363	0.0731	0.0266	0
231	Kachchh	Gandhidham	Shinaya	May-18	0.0308	0.1514	0.1578	0.0138	0.0033
232	Kachchh	Bhuj	Sukhpar	May-18	0.0473	0.2536	0.0319	0.0299	0.0124
233	Kachchh	Abdasa	Suthri	May-18	0.0021	0.4879	0.0223	0.0076	0
234	Kachchh	Abdasa	Tera	May-18	0.0103	0.1011	0.0165	0.0098	0.0003
235	Kachchh	Nakhatrana	Ugardi	May-18	0.0223	0.0744	0.016	0.0141	0
236	Kachchh	Abdasa	Vinjhan 1	May-18	0	0.12	0.0154	0.0144	0
237	Kheda	VIRPUR	Bar	May-18	0.0110	0.0986	1.4670	0.0039	0.0045
238	Kheda	KATHLAL	Ladvel	May-18	0.0455	0.1145	0.0211	0.0205	0.0050
239	Kheda	BALASINOR	Balasinor1	May-18	0.0044	0.0517	0.0022	0.0100	0.0047
240	Kheda	KAPADVANJ	Kapadvanj	May-18	0.0000	0.0392	0.0007	0.0056	0.0034
241	Kheda	Tharsa	Muliyad	May-18	0.0819	0.1972	0.2880	0.0082	0.0056
242	Kheda	MAHUDHA	Alina	May-18	0.0622	0.0939	0.3194	0.0413	0.0208
243	Kheda	NADIAD	Alira	May-18	0.0080	0.0476	0.0039	0.0142	0.0067
244	Kheda	NADIAD	Nadiad2	May-18	0.0000	0.0285	0.0000	0.0006	0.0021
245	Kheda	MATAR	Shekhupura	May-18	0.0000	0.0185	0.0235	0.0002	0.0029
246	Kheda	KHEDA	Kheda	May-18	0.0105	0.0372	0.0144	0.0176	0.0079
247	Mehsana		Bhandupara	May-18	0.0014	0.0851	0.0199	0.0063	0
248	Mehsana		Sihi	May-18	0	0.2636	0.0125	0.0089	0
249	Mehsana	Unjha	Unjha	May-18	0.0093	0.045	0.0193	0.0036	0
250	Mehsana		Timba	May-18	0	0.0286	0	0.0013	0
251	Mehsana	Kheralu	Kheralu	May-18	0.0104	0.1925	0.1173	0.0089	0.0035
252	Mehsana		Unad	May-18	0.0151	0.1251	0.3763	0.0159	0.0012
253	Mehsana		Rampura	May-18	0.0041	0.1124	0.0114	0.0109	0
254	Mehsana		Dosaj	May-18	0.0097	0.147	0.0573	0.0132	0

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
255	Mehsana		Dharpura	May-18	0.0007	0.147	0.1349	0.0225	0.0019
256	Mehsana		Asjol	May-18	0.0077	0.7098	0.4216	0.0083	0
257	Mehsana		Maguna	May-18	0.0179	0.2344	0.1015	0.0152	0
258	Mehsana		Panchot	May-18	0.0067	0.1197	0.0369	0.0059	0
259	Mehsana		Tarabh	May-18	0.0074	0.2035	0.0737	0.07	0
260	Mehsana		vidaj	May-18	0.0073	0.1306	0.2108	0.0099	0
261	Narmada	NANDOD	Garudeshwar	May-18	0.000	0.000	0.000	0.000	0.000
262	Narmada	NANDOD	Hirapura	May-18	0.000	0.051	0.030	0.000	0.002
263	Narmada	Dediapada	Jankh	May-18	0.000	0.135	0.641	0.000	0.003
264	Narmada	DEDIAPADA	Kanbi pitha	May-18	0.000	0.253	0.016	0.183	0.014
265	Narmada	Dediapada	Khaidipada	May-18	0.000	0.032	0.012	0.000	0.003
266	Narmada	NANDOD	Khota amba	May-18	0.000	0.020	0.006	0.000	0.003
267	Narmada	TILAKWADA	Namaria	May-18	0.000	0.061	0.079	0.000	0.005
268	Narmada	DEDIAPADA	Nani Singlot	May-18	0.032	0.034	0.041	0.000	0.006
269	Narmada	Dediapada	Ralda	May-18	0.000	0.014	0.004	0.069	0.002
270	Narmada	NANDOD	Ringani	May-18	0.000	0.071	0.008	0.008	0.004
271	Narmada	Sagbara	Salemba 1	May-18	0.000	0.050	0.023	0.000	0.002
272	Narmada	NANDOD	Sunderpura	May-18	0.000	0.205	0.017	0.000	0.006
273	Narmada	Sagbara	Umaran	May-18	0.000	0.001	0.005	0.000	0.000
274	Navsari	JALALPORE	Abrama	May-18	0.0200	0.2916	0.0219	0.0038	0.0000
275	Navsari	VANSDA	Chaav	May-18	0.0005	0.1154	0.0123	0.0000	0.0000
276	Navsari	JALALPORE	Chinam	May-18	0.0021	0.2370	0.0214	0.0198	0.0000
277	Navsari	JALALPORE	Dai	May-18	0.0000	0.2882	0.0633	0.0120	0.0000
278	Navsari	GAEVI	Duvada	May-18	0.0011	0.7700	0.1194	0.0182	0.0002
279	Navsari	CHIKHLI	Kaliyari	May-18	0.0000	0.2908	0.7595	0.0000	0.0000
280	Navsari	CHIKHLI	Khergam	May-18	0.0031	1.9000	0.0235	0.0146	0.0000
281	Navsari	CHIKHLI	Manav Khadak	May-18	0.0000	0.1543	0.1401	0.0074	0.0000
282	Navsari	VANSDA	Moti Valzar	May-18	0.0002	0.1270	0.0188	0.0156	0.0000
283	Navsari	NAVSARI	Navsari 1	May-18	0.0129	0.1509	0.1631	0.0048	0.0000
284	Navsari	JALALPORE	Onjal	May-18	0.0010	0.1729	0.1721	0.0052	0.0000
285	Navsari	JALALPORE	Ubhrat	May-18	0.0231	0.0920	0.2715	0.0476	0.0002
286	Panchmahals	LUNAWADA	Limbadia peti	May-18	0.0099	0.0457	0.0038	0.0003	0.0015
287	Panchmahals	LUNAWADA	Kothamba	May-18	0.0037	0.0705	0.0752	0.0000	0.0041
288	Panchmahals	GODHRA	Godhra(Agl Uni)	May-18	0.0000	0.0651	0.0401	0.0091	0.0021
289	Panchmahals	GHOGHAMBA	Ranipura	May-18	0.0052	0.0390	0.0383	0.0000	0.0042
290	Panchmahals	MORWA (HADAF)	Santroad_1	May-18	0.0282	0.0347	0.0110	0.0061	0.0015
291	Panchmahals	MORWA (HADAF)	Natapur	May-18	0.0127	0.0685	0.0035	0.0085	0.0037
292	Panchmahals	MORWA (HADAF)	Suliyat	May-18	0.0000	0.1622	0.0777	0.0074	0.0016
293	Panchmahals	SANTRAMPUR	Santrampur1	May-18	0.0349	0.0885	0.0106	0.0094	0.0020
294	Panchmahals	LUNAWADA	Kantha	May-18	0.0160	0.0504	0.0090	0.0080	0.0016
295	Panchmahals	LUNAWADA	Malekpur1	May-18	0.0207	0.0491	0.0013	0.0099	0.0017
296	Panchmahals	KHANPUR	Khanpur	May-18	0.0112	0.0411	0.0019	0.0070	0.0015
297	Panchmahals	LUNAWADA	Lunawada	May-18	0.0097	0.0359	0.0951	0.0076	0.0018
298	Panchmahals	LUNAWADA	Jokha	May-18	0.0323	0.1302	1.9900	0.0074	0.0015
299	Panchmahals	SHEHERA	Shehra	May-18	0.0698	0.0428	0.0538	0.0080	0.0026
300	Panchmahals	GODHRA	Chhabanpur	May-18	0.0077	0.0393	0.0054	0.0085	0.0017
301	Panchmahals	GODHRA	Godhra (Temple)	May-18	0.0061	0.0454	0.0080	0.0099	0.0033
302	Panchmahals	GODHRA	Godhra (School Campus)	May-18	0.0079	0.0420	0.2622	0.0117	0.0280
303	Panchmahals	GODHRA	Tuwa	May-18	0.0000	0.0388	0.0511	0.0207	0.0017
304	Panchmahals	Kalol	Dhanol	May-18	0.0000	0.0287	0.0017	0.0056	0.0016
305	Panchmahals	KALOL	Vejalpur	May-18	0.0067	0.0251	0.0142	0.0089	0.0023
306	Panchmahals	GODHRA	Khadki Vadiya	May-18	0.0378	0.0201	0.0186	0.0101	0.0017

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
307	Panchmahals	KALOL	Kalol UR_1(Nr. School)	May-18	0.0413	0.0526	0.0013	0.0090	0.0090
308	Panchmahals	KALOL	Kalol UR_2(Nr. Rl St.)	May-18	0.0016	0.0274	0.2309	0.0090	0.0040
309	Panchmahals	HALOL	Tarkaa	May-18	0.0000	0.0000	0.0503	0.0400	0.0049
310	Panchmahals	JAMBUGODHA	Javan	May-18	0.0000	0.2541	0.0118	0.1207	0.0046
311	Panchmahals	JAMBUGODHA	Jambugodha	May-18	0.0423	0.0803	0.0058	0.0154	0.0041
312	Panchmahals	HALOL	Pavagadh	May-18	0.0500	0.0673	0.0229	0.0197	0.0049
313	Patan	Chanasma	Dharmoda 1	May-18	0	0.1357	0.1953	0.0095	0
314	Patan	Chanasma	Dhinoj	May-18	0	0.0398	0.0133	0.0007	0
315	Patan	Sami	Motichander	May-18	0.024	0.2017	0.034	0.0253	0.0131
316	Patan	Patan	Patan 2	May-18	0.0052	0.1231	0.1631	0.0108	0
317	Patan	Santhalpur	Piprala	May-18	0.0203	0.1168	0.0197	0.0089	0.0003
318	Patan	Patan	Sander	May-18	0	0.2033	0.035	0.0121	0
319	Patan	Santhalpur	Sankhiani	May-18	0	0.1153	0.0139	0.0026	0
320	Porbandar	Porbandar	Mojiwana	May-18	0.042	2	0.0869	0.0057	0.0128
321	Porbandar	Porbandar	Kuchhadi	May-18	0.024	0.1953	0.0609	0	0.0079
322	Porbandar	Porbandar	Ratadi	May-18	0.0214	0.0924	0.0338	0	0.0063
323	Porbandar	Porbandar	Palkhada1	May-18	0.0437	0.0839	0.0421	0	0.0108
324	Porbandar	Porbandar	Visavada	May-18	0.0169	0.045	0.0186	0	0.0038
325	Porbandar	Porbandar	Bhavpura	May-18	0.0391	0.0962	0.0495	0	0.0107
326	Porbandar	Porbandar	Adwana2	May-18	0	0.2765	0.0286	0.0038	0.0036
327	Porbandar	Porbandar	Khambodar	May-18	0.0022	0.0171	0.0075	0	0.0018
328	Porbandar	Porbandar	Babda	May-18	0.0075	0.0389	0.0116	0.0576	0.0014
329	Porbandar	Porbandar	Kolikhada village-2	May-18	0.0043	0.0306	0.016	0.0171	0.002
330	Porbandar	Porbandar	Adityana	May-18	0.0036	0.0278	0.0066	0.0102	0.0012
331	Porbandar	Porbandar	Bakharla	May-18	0.0081	0.0476	0.0294	0.009	0.0022
332	Porbandar	Ranavav	Ranavav2	May-18	0.0054	0.0204	0.0065	0.0008	0.0014
333	Porbandar	Ranavav	Kandorna	May-18	0.0279	0.0543	0.0321	0.008	0.0063
334	Porbandar	Kutiyana	Kutiyana1	May-18	0.0257	0.0769	0.0506	0.0135	0.007
335	Porbandar	Porbandar	Oddar	May-18	0.029	0.0311	0.0414	0.0044	0.005
336	Porbandar	Porbandar	Porbandar1	May-18	0.0016	0.142	0.1485	0.0189	0.0063
337	Porbandar	Porbandar	Navibandar	May-18	0	0.1851	0.1488	0.0146	0.0077
338	Porbandar	Porbandar	Ratia	May-18	0.0114	0.0301	0.0269	0.0021	0.0024
339	Porbandar	Porbandar	Balej	May-18	0.04	0.0478	0.0507	0.0022	0.0057
340	Porbandar	Kutiyana	Mocha	May-18	0.0056	0.0607	0.578	0.003	0.0011
341	Porbandar	Porbandar	Pata	May-18	0.0077	0.134	0.0296	0.0017	0.0019
342	Rajkot	Morvi	Amar nagar	May-18	0.0447	0.1421	0.0453	0.0178	0.0055
343	Rajkot	Dhoraji	Bhada jodiya	May-18	0	0.1057	0.0686	0.0083	0
344	Rajkot	Wankaner	Bhalgam	May-18	0.0047	0.0771	0.0087	0.0083	0
345	Rajkot	Tankara	Chhatar	May-18	0	0.0538	0.0115	0	0
346	Rajkot	Gondal	Chordi	May-18	0.0034	0.0745	0.0081	0.004	0
347	Rajkot	Gondal	Dadia	May-18	0.0036	1.3758	0.2648	0.029	0.0087
348	Rajkot	Dhoraji	Dhoraji1	May-18	0.0227	0.2226	0.0148	0.0069	0
349	Rajkot	Upleta	Ganod	May-18	0	0.059	0.0098	0.0043	0
350	Rajkot	Gondal	Gogavadar	May-18	0.0247	0.1031	0.0209	0.0066	0
351	Rajkot	Tankara	Hadmatia	May-18	0.0264	0.0771	0.0098	0.0027	0
352	Rajkot	Rajkot	Halenda	May-18	0.0239	0.1369	0.0259	0.0086	0
353	Rajkot	Jamkandorn	Jasapur	May-18	0.0122	0.059	0.0863	0.003	0
354	Rajkot	Jasdan	Jasdan2	May-18	0.0178	1.0875	0.104	0.0224	0.004
355	Rajkot	JETPUR	Jetpur pithad.	May-18	0.0007	0.3109	0.0314	0.0296	0.0048
356	Rajkot	Jasdan	Kamlapur1	May-18	0.0416	0.0668	0.0115	0.0158	0.0032
357	Rajkot	Tankara	Lajai	May-18	0.0283	1.2797	0.0453	0.0145	0.015

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
358	Rajkot	Jasdan	Lalavadar	May-18	0	0.1291	0.0076	0.0053	0
359	Rajkot	Morvi	Macchukunda	May-18	0.0158	0.2122	0.022	0.0023	0
360	Rajkot	Malia	Malia	May-18	0.013	0.1992	0.0137	0	0
361	Rajkot	Morvi	Morvi	May-18	0.0061	0.7655	0.0342	0.0109	0
362	Rajkot	Malia	Mota dhansura	May-18	0.0118	0.5083	0.017	0.004	0
363	Rajkot	JETPUR	Motagundala	May-18	0	0.1343	0.0048	0.0013	0
364	Rajkot	Paddhari	Movaiya	May-18	0	0.3395	0.0713	0.0152	0.0032
365	Rajkot	Dhoraji	Patanvav	May-18	0	0.0226	0.0026	0.0079	0
366	Rajkot	JETPUR	Pedhla	May-18	0.0366	0.3317	0.0902	0.0165	0.0008
367	Rajkot	Rajkot	Ranpur1	May-18	0.0084	0.4901	0.0259	0.0191	0
368	Rajkot	Gondal	Ribda	May-18	0.0048	0.207	0.0198	0.0046	0
369	Rajkot	Rajkot	Sardhar2	May-18	0.012	0.2122	0.0713	0.0188	0
370	Rajkot	Malia	Sarvad	May-18	0.0041	0.4356	0.0586	0.005	0
371	Rajkot	Wankaner	Sindhavadar	May-18	0.0101	0.1291	0.0076	0.0036	0
372	Rajkot	JETPUR	Umrali	May-18	0.0117	0.0694	0.0109	0.005	0
373	Rajkot	Upleta	Upleta3	May-18	0	0.0174	0.0037	0	0
374	Rajkot	jasdan	Viranagar	May-18	0.0219	0.1681	0.012	0.0043	0
375	Rajkot	JETPUR	Virpur1	May-18	0.0109	0.1083	0.0148	0.003	0
376	Sabarkantha	Talod	Boriya	May-18	0.0270	0.1394	0.0625	0.0000	0.0110
377	Sabarkantha	Talod	Umedpura	May-18	0.0088	0.0784	0.0039	0.0000	0.0030
378	Sabarkantha	TALOD	Harsol1	May-18	0.0057	0.0583	0.0082	0.0000	0.0028
379	Sabarkantha	TALOD	Kesarpura(Mayal)	May-18	0.0086	0.0844	0.0146	0.0000	0.0038
380	Sabarkantha	HIMATNAGAR	Ramgarh	May-18	0.0171	0.3904	0.2755	0.0000	0.0056
381	Sabarkantha	HIMATNAGAR	Virpur_1(Himmat_nagar)	May-18	0.0056	0.2061	0.0197	0.0000	0.0027
382	Sabarkantha	HIMATNAGAR	Gadha1	May-18	0.0174	0.3755	0.0211	0.0000	0.0049
383	Sabarkantha		Vaketapur	May-18	0.0236	0.1924	0.0112	0.0539	0.0068
384	Sabarkantha		Dhramali	May-18	0.0167	0.3489	0.0167	0.0000	0.0051
385	Sabarkantha	IDAR	Sabalwad	May-18	0.0076	0.4039	0.0296	0.0000	0.0034
386	Sabarkantha	IDAR	Chaap_DW	May-18	0.0139	0.0807	0.0072	0.0000	0.0052
387	Sabarkantha	VADALI	Choriwad	May-18	0.0202	0.0972	0.0150	0.0000	0.0021
388	Sabarkantha	Vadoli	Kesharpura	May-18	0.0170	0.0566	0.0175	0.0000	0.0043
389	Sabarkantha	IDAR	Revas	May-18	0.0162	0.0702	0.0098	0.0000	0.0043
390	Sabarkantha	IDAR	Idar	May-18	0.0132	0.0000	0.0556	0.0000	0.0053
391	Sabarkantha		Mathasuliya	May-18	0.0156	0.1143	0.0367	0.0000	0.0066
392	Sabarkantha	BHILODA	Shamlaji	May-18	0.0000	0.0683	0.0045	0.0000	0.0011
393	Sabarkantha	MODASA	Seenawad	May-18	0.0119	0.0897	0.0820	0.0000	0.0047
394	Sabarkantha	MODASA	Megraj_1	May-18	0.0051	0.0863	0.0461	0.0000	0.0023
395	Sabarkantha	MALPUR	Malpur_1	May-18	0.0042	0.0839	0.0046	0.0000	0.0023
396	Sabarkantha	DHANSURA	Karanpur	May-18	0.0040	0.0487	0.0016	0.0000	0.0019
397	Sabarkantha	Dhansura	Alwa Kampa	May-18	0.0066	0.0627	0.0046	0.0000	0.0027
398	Sabarkantha	BAYAD	Sathamba	May-18	0.0000	0.0888	0.0054	0.0000	0.0034
399	Sabarkantha	BAYAD	Boral	May-18	0.0174	0.0349	0.0041	0.0000	0.0043
400	Sabarkantha	DHANSURA	Dhansura	May-18	0.0053	0.1561	0.0253	0.0000	0.0055
401	Sabarkantha	VADALI	Wadali	May-18	0.0067	0.0267	0.0023	0.0000	0.0033
402	Sabarkantha	KHEDBRAHMA	Matoda	May-18	0.0241	0.0793	0.0394	0.0000	0.0084

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
403	Sabarkantha	KHEDBRAHMA	Poshina2	May-18	0.0096	0.0917	0.1833	0.0000	0.0042
404	Sabarkantha	KHEDBRAHMA	Khedbramha_1	May-18	0.0223	0.1354	0.0318	0.0039	0.0086
405	Sabarkantha	KHEDBRAHMA	Silwad	May-18	0.0266	0.0859	0.0173	0.0032	0.0088
406	Sabarkantha	VIJAYNAGAR	Atarsumba_2	May-18	0.0031	0.0000	0.0131	0.0004	0.0040
407	Sabarkantha	VIJAYNAGAR	Kherwada	May-18	0.0004	0.4133	0.1375	0.0046	0.0038
408	Sabarkantha	VIJAYNAGAR	Vijaynagar1	May-18	0.0000	0.1884	0.0114	0.0000	0.0029
409	Sabarkantha	BHILODA	Takatuka_1	May-18	0.0144	0.1340	0.0143	0.0000	0.0051
410	Sabarkantha	BHILODA	Punasan	May-18	0.0016	0.0718	0.0066	0.0000	0.0038
411	Sabarkantha	MODASA	Gadada	May-18	0.0020	0.0577	0.0035	0.0000	0.0047
412	Sabarkantha	MODASA	Medasana	May-18	0.0053	0.0621	0.0012	0.0000	0.0023
413	Sabarkantha	MODASA	Modasa2	May-18	0.0000	0.0546	0.0134	0.0020	0.0033
414	Surat	BARDOLI	Allu	May-18	0.0000	0.4236	0.0059	0.0000	0.0000
415	Surat	VYARA	Bedchit	May-18	0.0010	0.4282	0.0217	0.0068	0.0000
416	Surat	Mangrol	Bhatkol	May-18	0.0000	0.7415	0.0016	0.0218	0.0000
417	Surat	Kemraj	Digas	May-18	0.0000	0.4257	0.0032	0.0391	0.0000
418	Surat	MANGROL	Dungri	May-18	0.0000	0.4084	0.8265	0.0156	0.0000
419	Surat	SONGADH	Jesingpura[sg]	May-18	0.0000	0.4668	0.0090	0.0469	0.0000
420	Surat	UMARPADA	Juna Umarpada2	May-18	0.0000	2.0030	0.1416	0.0065	0.0000
421	Surat	Bardoli	Kadod 1	May-18	0.0000	0.1946	0.0123	0.2504	0.0000
422	Surat	VYARA	Karanjvel	May-18	0.0000	2.5640	0.7365	0.0427	0.0000
423	Surat	MAVI	Kasal	May-18	0.0000	0.1863	0.1186	0.0136	0.0000
424	Surat	KAMREJ	Kathor	May-18	0.0002	0.4382	0.1213	0.2397	0.0000
425	Surat	Valod	Kelkui	May-18	0.0000	0.1237	0.0015	0.0045	0.0000
426	Surat	Songarh	Kherwada	May-18	0.0000	0.0995	0.0059	0.0224	0.0000
427	Surat	MAVI	Malda	May-18	0.0007	0.1943	0.0126	0.0182	0.0000
428	Surat	MAVI	Mavi2	May-18	0.0068	0.4427	0.0406	0.0502	0.0000
429	Surat	Bardoli	Mota	May-18	0.0000	0.1670	1.4500	0.0084	0.0000
430	Surat	VYARA	Moti Chher	May-18	0.0000	1.2340	0.0410	0.0365	0.0000
431	Surat	Maavi	Moti Sarkui	May-18	0.0000	0.1831	0.0325	0.0078	0.0000
432	Surat	MAVI	Nogama	May-18	0.0000	0.0778	0.0077	0.0000	0.0000
433	Surat	OLPAD	Olpad2	May-18	0.0000	0.2903	0.2403	0.0048	0.0000
434	Surat	PALSANA	Palsana	May-18	0.0000	0.0969	0.0135	0.0032	0.0000
435	Surat	MANGROL	Paneshwar	May-18	0.0000	0.1328	0.0146	0.0019	0.0000
436	Surat	CHORASI	Sachin Town	May-18	0.0030	0.3220	0.9505	0.0159	0.0000
437	Surat	BARDOLI	Sarbhon	May-18	0.0000	0.1370	0.0106	0.0061	0.0000
438	Surat	CHORASI	Sultanabad	May-18	0.0000	0.2637	0.0096	0.0012	0.0000
439	Surat	KAMREJ	Syan	May-18	0.0030	0.2416	0.0284	0.0130	0.0000
440	Surat	UCHCHHAL	Uchchhal1	May-18	0.0000	0.4111	0.0425	0.1601	0.0000
441	Surat	MAVI	Ushker	May-18	0.0000	0.1534	0.0119	0.0000	0.0000
442	Surat	Mahuva	Vaheval	May-18	0.0000	0.2777	0.0218	0.0123	0.0000
443	Surat	VALOD	Valod	May-18	0.0000	0.1362	0.0075	0.0081	0.0000
444	Surat	VYARA	Vyara1	May-18	0.0000	0.4317	0.0451	0.0175	0.0000
445	Surat	VADALI	Wadali	May-18	0.0018	0.2529	0.1813	0.0074	0.0000
446	Surat	MAVI	Khataradevi	May-18	0.0000	0.2976	0.0244	0.1213	0.0000
447	Surendranagar	Wadhvan	Anindra	May-18	0	0.1109	0.0087	0.0017	0
448	Surendranagar	Dasada	Bajana	May-18	0.0044	0.0304	0.0059	-0.0026	0
449	Surendranagar	Chotila	Bamanbor	May-18	0.0196	0.3135	0.0397	0.0158	0.0008

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
450	Surendranagar	Wadhvan	Dedadra	May-18	0	0.2979	0.4012	0.0017	0
451	Surendranagar	Dasada	Dhama	May-18	0.0166	0.0382	0.0081	0.0027	0
452	Surendranagar	Halvad	Halvad2	May-18	0.0429	0.5057	0.017	0.0484	0.0048
453	Surendranagar	Dasada	Jhinjhuwada	May-18	0	0.1317	0.4001	0.003	0
454	Surendranagar	Halvad	Juna Devaliya1	May-18	0	0.1005	0.0131	0.0066	0
455	Surendranagar	Dasada	Kherwa	May-18	0	0.1525	0.0203	0.0007	0
456	Surendranagar	Dhangadhara	Kukavati	May-18	0.0155	0.1421	0.0148	0.0066	0
457	Surendranagar	Lakhtar	Lakhtar	May-18	0.0046	0.1914	0.1007	0.0027	0
458	Surendranagar	Lakhtar	Modhvana	May-18	0.0022	0.3265	0.104	0.0007	0
459	Surendranagar	Chotila	Moti Moladi	May-18	0.0532	0.0745	0.0165	0.0046	0
460	Surendranagar	Muli	Muli	May-18	0.0212	0.1706	0.0165	0.0027	0
461	Surendranagar	Muli	Nava Raisngpur	May-18	0.0494	0.2901	0.0181	0.0092	0
462	Surendranagar	Lakhtar	Olak	May-18	0.0192	0.2564	0.0287	0.004	0
463	Surendranagar	Dasada	Pipli	May-18	0.0038	0.8512	0.2692	0.0056	0
464	Surendranagar	Dhrangadh	Rajsitapur	May-18	0.0064	1.42	0.0603	0.0063	0
465	Surendranagar	Limbdi	Shiyani	May-18	0.0455	0.3057	0.3302	0.0102	0
466	Surendranagar	Sayla	Sudamda	May-18	0.04	0.5732	0.0547	0.0194	0.0063
467	Surendranagar	Halvad	Sukhpar	May-18	0.0477	0.3213	0.0165	0.0109	0.0024
468	Surendranagar	Wadhvan	Surendranagar	May-18	0.0141	0.1239	0.1273	0.0073	0
469	Surendranagar	Chuda	Vanala	May-18	0.0093	0.7732	0.0331	0.0086	0
470	The dangs	The dangs	Aherdi	May-18	0.0000	0.3213	0.0425	0.0110	0.0000
471	The dangs	The Dangs	Bori Goatha 1	May-18	0.0000	0.2661	0.0192	0.0100	0.0000
472	The dangs	The Dang	Boripada	May-18	0.0000	0.0414	0.0030	0.0000	0.0000
473	The dangs	The dangs	Chikhli	May-18	0.0000	1.8950	0.1609	0.0058	0.0000
474	The dangs	The dangs	Chinchnogaotha	May-18	0.0000	0.0016	0.0152	0.0000	0.0000
475	The dangs	The dangs	Dhumkal	May-18	0.0000	0.1362	0.0045	0.0052	0.0000
476	The dangs	The dangs	Ghubita	May-18	0.0000	0.3078	0.0550	0.0117	0.0000
477	The dangs	The dangs	Jakana	May-18	0.0000	0.5248	0.1305	0.0081	0.0000
478	The dangs	The dangs	Kalibel	May-18	0.0000	0.1243	0.0698	0.0218	0.0000
479	The dangs	The dangs	Mahal	May-18	0.0000	0.2256	0.0518	0.0094	0.0000
480	The dangs	The dangs	Malegaon	May-18	0.0000	4.9920	0.1257	0.0430	0.0018
481	The dangs	The dangs	Nadak khadi	May-18	0.0000	0.0206	0.1188	0.0000	0.0000
482	The dangs	The dangs	Nana Pada	May-18	0.0000	0.1245	0.0037	0.0071	0.0000
483	The dangs	The dangs	Sakarpatal	May-18	0.0000	0.2029	0.0907	0.0068	0.0000
484	The dangs	The dangs	Sodmal	May-18	0.0000	0.1768	0.1183	0.0117	0.0000
485	The dangs	The dangs	Subir	May-18	0.0000	0.4135	0.0815	0.0025	0.0000
486	The dangs	The dangs	Umberpada	May-18	0.0000	0.1822	0.1710	0.0130	0.0000
487	The dangs	The dangs	Vazat Amba	May-18	0.0000	0.2862	0.0206	0.0153	0.0000
488	The dangs	The dangs	Waghai	May-18	0.0000	0.0335	0.0552	0.0123	0.0000
489	Vadodara	DABHOI	Amreshwar	May-18	0.000	0.001	0.001	0.000	0.000
490	Vadodara	JETPUR PAVI	Bhindol	May-18	0.000	0.003	0.107	0.000	0.000
491	Vadodara	CHHOTA UDAIPUR	Ferkuva	May-18	0.000	0.009	0.012	0.000	0.000
492	Vadodara	CHHOTA UDAIPUR	Ghamodi	May-18	0.000	0.000	0.000	0.000	0.000
493	Vadodara	SAVLI	Juna Samalya	May-18	0.000	0.040	0.048	0.000	0.000
494	Vadodara	Nasvadi	Kaprali	May-18	0.000	0.009	0.001	0.000	0.001
495	Vadodara	Vadodara City	Kevada Bag	May-18	0.000	0.018	0.000	0.000	0.000
496	Vadodara	PADRA	Masor	May-18	0.000	0.009	0.000	0.000	0.000
497	Vadodara	KAVANT	Panwad	May-18	0.000	0.000	0.000	0.004	0.000
498	Vadodara	KAVANT	Godhi Simore	May-18	0.000	0.466	0.185	0.015	0.000
499	Vadodara	KAVANT	Saidivasana	May-18	0.000	0.067	0.000	0.001	0.000
500	Vadodara	NASVADI	Sengpur	May-18	0.000	0.223	0.031	0.052	0.000
501	Vadodara	JETPUR PAVI	Suskal	May-18	0.000	0.067	0.000	0.000	0.001

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S.No	District	Taluka	Location	Date of Collection	Cr	Fe	Mn	Zn	Cu
502	Vadodara	SAVLI	Tundav	May-18	0.000	0.194	0.016	0.002	0.000
503	Vadodara	KAVANT	Vagudan	May-18	0.000	0.110	0.024	0.004	0.000
504	Vadodara	DABHOI	Vega	May-18	0.000	0.095	0.000	0.000	0.000
505	Vadodara	KAVANT	Rendha	May-18	0.000	0.002	0.000	0.000	0.000
506	Valsad	DHARAMPUR	Awadha	May-18	0.0000	0.0864	0.0684	0.0061	0.0000
507	Valsad	KAPRADA	Chavshala	May-18	0.0000	0.4478	0.0338	0.1604	0.0000
508	Valsad	UMBERGAON	Dahli (Bhilad)	May-18	0.0000	0.0180	0.0000	0.0000	0.0000
509	Valsad	DHARAMPUR	Dharampur 3	May-18	0.0000	0.3672	0.0112	0.0074	0.0000
510	Valsad	UMBERGAON	Kanadu	May-18	0.0000	0.3778	0.0284	0.0087	0.0000
511	Valsad	KAPRADA	Kaparda	May-18	0.0000	0.4293	0.0359	0.0048	0.0000
512	Valsad	PARDI	Karwasd	May-18	0.0000	0.1277	0.0100	0.0055	0.0000
513	Valsad	VALSAD	Muli1	May-18	0.0000	0.3712	0.0150	0.0192	0.0000
514	Valsad	VALSAD	Tithal	May-18	0.0000	0.3176	1.0000	0.0166	0.0000
515	Valsad	UMBERGAON	Tumb	May-18	0.0000	0.1785	0.1274	0.0084	0.0000
516	Valsad	PARDI	Udwada	May-18	0.0000	0.3856	0.0563	0.0299	0.0000
517	Valsad	UMBERGAON	Umargaon	May-18	0.0000	0.3140	0.0748	0.0198	0.0000
518	Valsad	PARDI	Vapi (Balitha)	May-18	0.0000	0.2521	0.0209	0.0084	0.0000
			Max		0.3405	6.00	23.5	0.4662	0.1446
			Min		0	0	0	-0.0026	0
			Avg		0.013	0.221867	0.1382	0.017338	0.00404