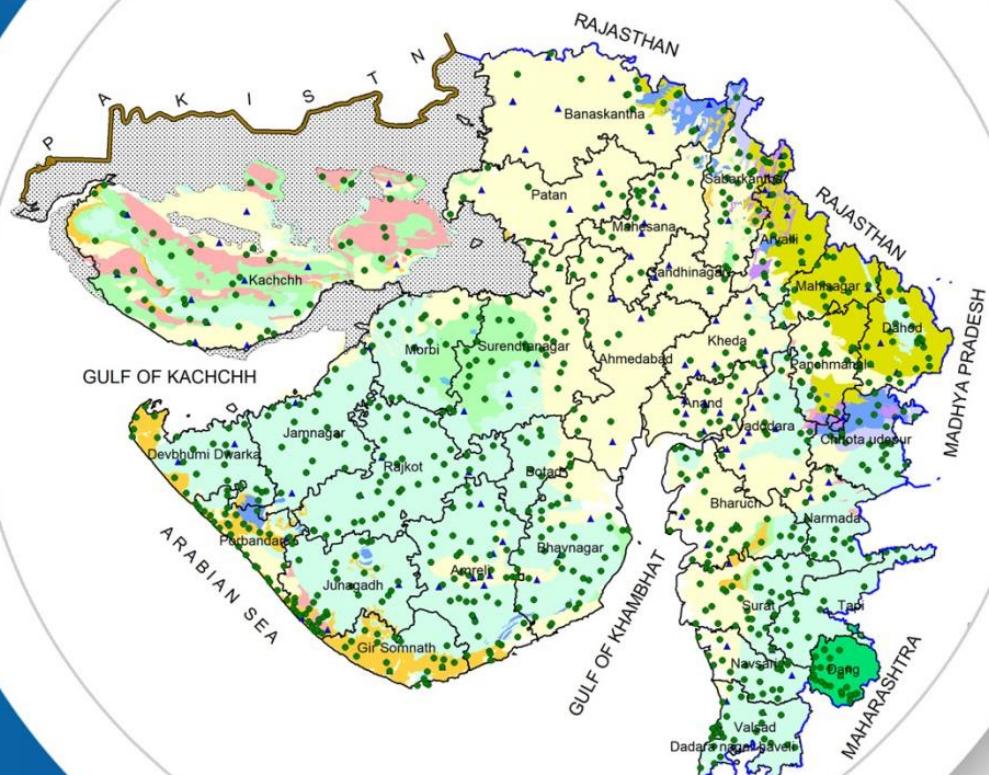




CENTRAL GROUND WATER BOARD

MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT
AND GANGA REJUVENEATION

GROUND WATER YEAR BOOK 2021-22
GUJARAT STATE



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



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GANGA REJUVENEATION
GOVERNMENT OF INDIA

GROUND WATER YEAR BOOK 2021-22
GUJARAT STATE

Compiled by

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

November 2022

FOREWORD

Central Ground Water Board, West Central Region, has been issuing Ground Water Year Book annually for Gujarat state by compiling the hydrogeological, hydro-chemical 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 groundwater 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 groundwater year (June to May) indicate the pattern of groundwater movement, changes in recharge-discharge relationship, behavior of water level and qualitative & quantitative changes of groundwater 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 groundwater 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 groundwater regime monitoring for the year 2021-22.

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 groundwater 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 2021 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 groundwater, the concentration of arsenic has been measured and produced in the report.

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

(G. Krishnamurthy)
Regional Director

Contents

Executive Summary	1
Introduction	3
Hydrogeology	9
Groundwater Scenario	13
Hydrochemistry	71

List of Annexures

Annexure I	Distribution of Groundwater monitoring wells in the Major river basin.
Annexure IIA	Water levels of the National Hydrograph Stations in Gujarat state, 2021-2022 (Phreatic)
Annexure IIB	Water levels of the National Hydrograph Stations in Gujarat state, 2021-2022 (Confined)
Annexure III	Groundwater Table of Gujarat state during May 2021 (Phreatic)
Annexure IV	Mean Decadal water levels of the National Hydrograph Stations in Gujarat state (Phreatic) 2012-2021
Annexure V	Water Quality Data of National Hydrograph Monitoring Stations of Gujarat state, May 2021

List of Tables

Table 1	District wise Average Annual Rainfall in the Gujarat state
Table 2	District wise distribution of Groundwater monitoring wells monitored during 2021-2022
Table 3	Distribution of hydrogeological formations in Gujarat and their Potential
Table 4	Wellwise categorisation of Depth to water level May 2021
Table 5	Wellwise categorisation of Depth to water level August 2021
Table 6	Wellwise categorisation of Depth to water level November 2021
Table 7	Wellwise categorisation of Depth to water level January 2022
Table 8	Categorisation of changes in water level between May 2021 to August 2021
Table 9	Categorisation of changes in water level between May 2021 to November 2021
Table 10	Categorisation of changes in water level between May 2021 to January 2022
Table 11	Categorisation of changes in water level between May 2020 to May 2021
Table 12	Categorisation of changes in water level between August 2020 to August 2021
Table 13	Categorisation of changes in water level between November 2020 to November 2021
Table 14	Categorisation of changes in water level between January 2021 to January 2022
Table 15	Well wise categorisation of changes in water level during May 2021 to decadal average of May 2011-2020
Table 16	Well wise categorisation of changes in water level during August 2021 to decadal average of August 2011-2020
Table 17	Well wise categorisation of changes in water level during November 2021 to decadal average of November 2011-2020
Table 18	Well wise categorisation of changes in water level during January 2022 to decadal average of January 2012-2021
Table 19	Quality index of National Hydrograph monitoring stations of Gujarat, May 2021

List of Figures

- Figure 1 Map showing administrative divisions of Gujarat State
Figure 2 Map showing distribution of IMD normal rainfall
Figure 3 Distribution of rainfall in Gujarat state
Figure 4 Distribution of GWMNS in the districts and major river basins
Figure 5 Major hydrogeological units and distribution of Groundwater Monitoring Network Stations
Figure 6 Distribution of depth to water levels
Figure 7 Depth to water level map of May 2021
Figure 8 Depth to water level map of August 2021
Figure 9 Depth to water level map of November 2021
Figure 10 Depth to water level map of January 2021
Figure 11 Distribution of seasonal fluctuation of water levels
Figure 12 Seasonal fluctuation of water level May 2021 to August 2021
Figure 13 Seasonal fluctuation of water level May 2021 to November 2021
Figure 14 Seasonal fluctuation of water level May 2021 to January 2022
Figure 15 Annual fluctuation of water level
Figure 16 Annual fluctuation of water level May 2020 to May 2021
Figure 17 Annual fluctuation of water level August 2020 to August 2021
Figure 18 Annual fluctuation of water level November 2020 to November 2021
Figure 19 Annual fluctuation of water level January 2021 to January 2022
Figure 20 Decadal average depth of water level during pre-monsoon (2012-2021)
Figure 21 Decadal average depth of water level during post-monsoon (2012-2021)
Figure 22 Fluctuation of seasonal water level to decadal average
Figure 23 Variation of water level of May 2021 to decadal average of May 2011-2020
Figure 24 Variation of water level of August 2021 to decadal average of August 2011-2020
Figure 25 Variation of water level of November 2021 to decadal average of November 2011-2020
Figure 26 Variation of water level of January 2022 to decadal average of January 2012-2021
Figure 27 Groundwater table contours of Gujarat May 2021
Figure 28 Depth to water level map of confined aquifer May 2021 in m bgl
Figure 29 Isopiestic map of second aquifer May 2021 in m MSL
Figure 30 Isocontor map of EC (May 2021)
Figure 31 Isocontor map of Chloride (May 2021)
Figure 32 Map of Nitrate concentration (May 2021)
Figure 33 Map of Flouride concentration (May 2021)
Figure 34 Map of Iron concentration (May 2021)

EXECUTIVE SUMMARY

- ◆ Central Ground Water Board has set up a network of 1064 Groundwater monitoring wells including 290 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 $157 \text{ km}^2/\text{well}$ in Gujarat.
- ◆ The annual rainfall varies from about 2406.3 mm in Valsad to about 493.8 mm in Banaskantha.
- ◆ 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 2021 is 873.3 mm, against the long term average of 913.2 mm.
- ◆ All district in north region and The Dangs, Tapi, Vadodara, Navsari districts in south region has received less rainfall than long term average rainfall. There is deficit rainfall in the month of August 2021.
- ◆ 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.
- ◆ About 86% of the wells have depth to water levels in the range of 5 to 20 m bgl (meter below ground level) during pre-monsoon 2021. The water levels were deeper in Amreli, Gandhinagar 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 m bgl were observed along the coast, Rann of Kachchh and in parts of The Dangs, Surat, Valsad and Bharuch districts.
- ◆ The long term groundwater scenario in comparison to pre monsoon 2021 indicates that 29% well shows fall where as in post monsoon it observed in 33% of wells.
- ◆ Deep confined aquifer exist in north Gujarat and it is ranging in depth from 78 to 274 m bgl.
- ◆ In parts of Mahesana and Gandhinagar districts, depth to piezometric surface during pre-monsoon is more than 40 m b msl in the first confined aquifer and it is more than

120 m b msl in second confined aquifer noticed in and around Mahesana and Patan districts.

- ◆ In general groundwater 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 groundwater quality is variable.
- ◆ The quality of groundwater deteriorates in discharge area. Quality of groundwater is inferior along the coast, the Rann and in the low-lying saline tract between Saurashtra and main land Gujarat.
- ◆ The deterioration in groundwater 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.

1 INTRODUCTION

The West Central Region of Central Ground Water Board has jurisdiction over the State of Gujarat ($1,96,024 \text{ km}^2$) and Union Territory (UT) of Daman & Diu (112 km^2) covering an area of $1,96,136 \text{ km}^2$. The Gujarat State is situated between North latitudes $20^\circ 06' 00''$ to $24^\circ 42' 00''$ and East longitudes $68^\circ 10' 00''$ to $74^\circ 28' 00''$ (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 km^2 . 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).

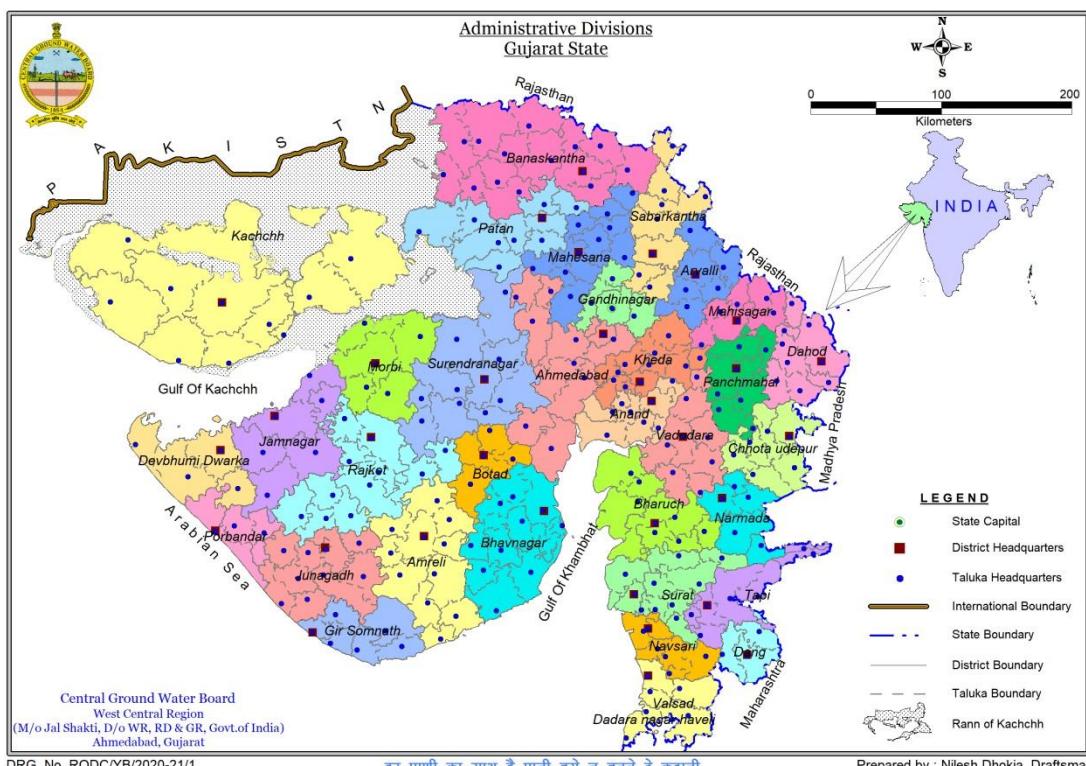


Fig. 1: Administrative divisions of Gujarat State

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 $29,560 \text{ km}^2$ and is shown in Fig. 1.

The diverse physiographic, climatic, topographic and geologic conditions have given rise to diversified groundwater 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 groundwater 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 2021 which shows high rainfall 2372 mm in south (The Dangs District) to 442.3 mm in Kachchh district. The distribution of normal rainfall in the state is depicted in **Fig. 2**.

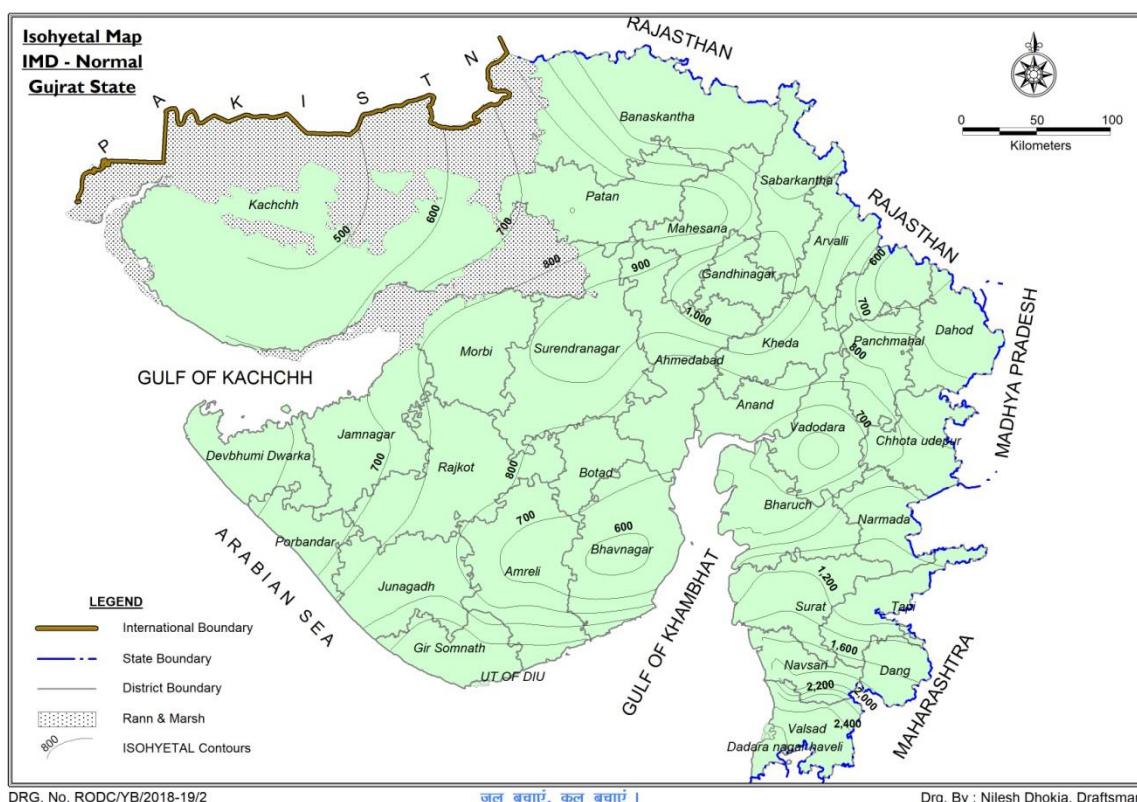


Fig. 2: Distribution of IMD normal rainfall

During 2021 Gujarat received -4.30% less rainfall than the average rainfall (Annexure I). About 55% of the area received less rainfall than annual average (1991-2020). Ahmedabad, Arvalli, Banaskantha, Dahod, Gandhinagar, Gir Somnath, Kheda, Mahesana, Mahisagar, Navsari, Panchmahal, Patan, Sabarkantha, Surendranagar, Tapi,

The Dangs and Vadodara districts received rainfall below normal. While remaining districts has received more annual rainfall as compared to long term average annual rainfall (1991-2020). Annual rainfall during 2021, Average rainfall and its departure from average annual rainfall in the Gujarat state is presented in Table 1 and map representing distribution of rainfall station wise in bars is presented as Fig. 3.

Table 1. District wise Average Annual Rainfall in the Gujarat state

Sl. No.	District	Rainfall 2021, mm	Average Rainfall, mm (1991 to 2020)	Departure % (Year 2021)
1	Ahmedabad	531.5	689.2	-22.88
2	Amreli	731.5	658.5	11.08
3	Anand	821.0	763.3	7.56
4	Arvalli	552.0	874.9	-36.91
5	Banaskantha	493.8	626.0	-21.13
6	Bharuch	815.2	736.2	10.73
7	Bhavnagar	648.7	600.0	8.12
8	Botad	623.0	596.0	4.53
9	Chhota Udepur	1087.5	1028.2	5.76
10	Dahod	558.2	726.8	-23.19
11	Devbhumi Dwarka	1015.0	704.7	44.03
12	Gandhinagar	553.3	765.5	-27.73
13	Gir Somnath	915.2	961.9	-4.86
14	Jamnagar	950.5	677.1	40.39
15	Junagadh	1217.0	928.7	31.04
16	Kachchh	511.3	442.3	15.60
17	Kheda	663.7	820.7	-19.13
18	Mahesana	599.6	723.6	-17.14
19	Mahisagar	531.7	732.6	-27.43
20	Morbi	541.4	542.3	-0.17
21	Narmada	1120.2	1058.7	5.81
22	Navsari	1798.3	1829.1	-1.68
23	Panchmahal	699.7	892.0	-21.55
24	Patan	508.1	593.4	-14.37
25	Porbandar	930.0	743.0	25.17
26	Rajkot	937.2	687.9	36.23
27	Sabarkantha	664.5	852.4	-22.04
28	Surat	1477.1	1436.2	2.85
29	Surendranagar	497.0	583.2	-14.78
30	Tapi	1007.7	1363.7	-26.10
31	The Dangs	1722.0	2372.0	-27.40
32	Vadodara	708.8	864.8	-18.05
33	Valsad	2406.3	2259.2	6.51
State		873.9	913.2	-4.30

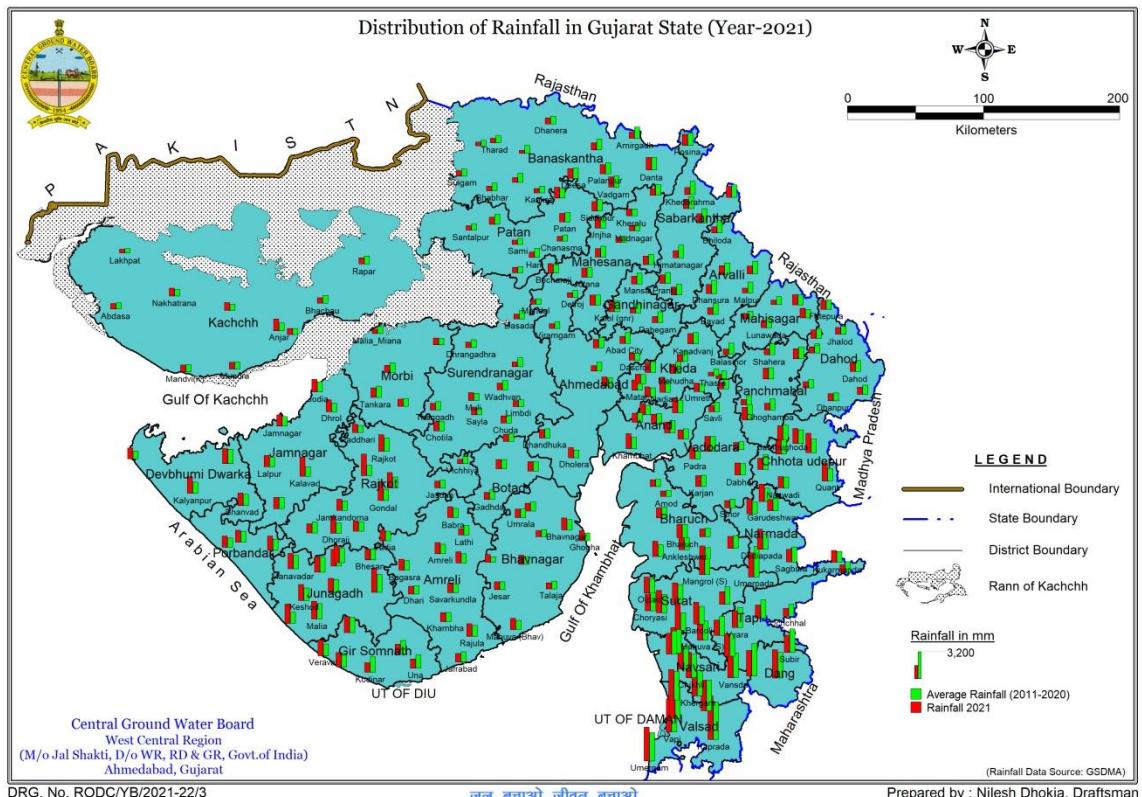


Fig. 3: Distribution of rainfall in Gujarat state

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. Total 990 groundwater monitoring wells including 264 piezometers (Pz) are presently being monitored in the state of Gujarat. The distributions of monitoring wells in different districts are given in Table 2.

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 groundwater 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.

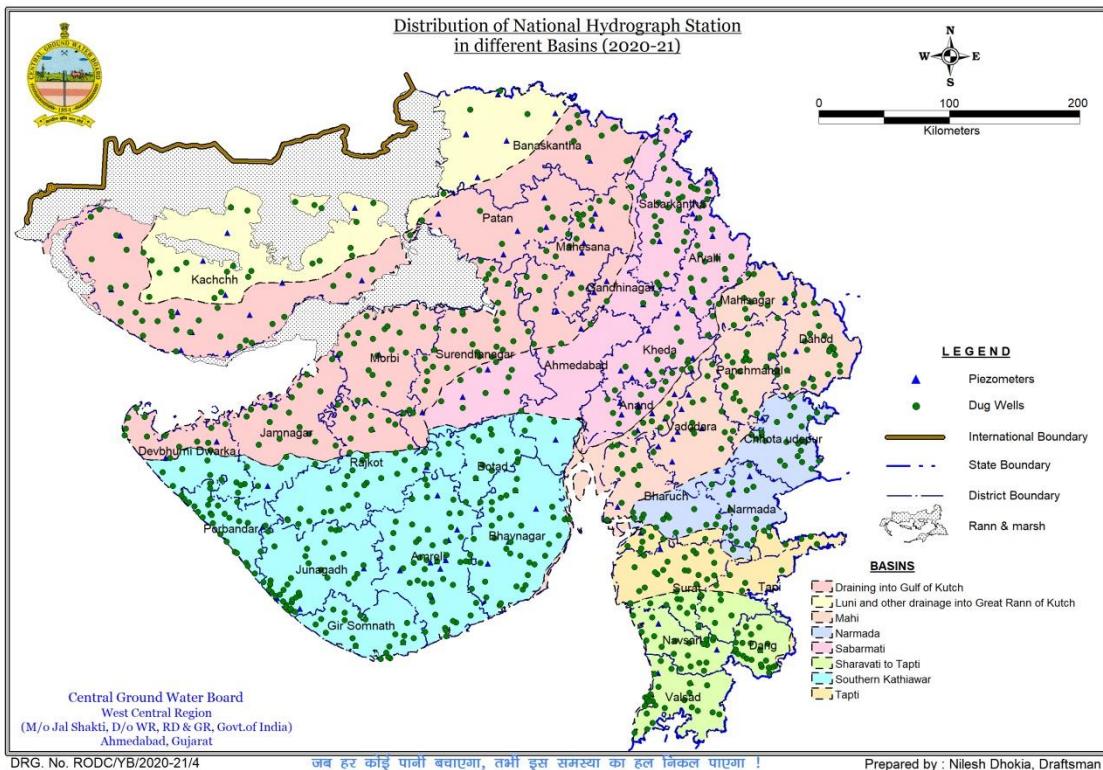


Fig. 4: Distribution of GWMNS in the districts and major river basins

Table 2. District wise distribution of groundwater monitoring wells monitored during 2021-22

Sl. No.	District	As on rest of the field season 2020-21			NHS Well As on March 2022			Monitored during May 2021			Monitored during August 2021			Monitored during November 2021			Monitored during January 2022		
		DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total
1	Ahmedabad	11	27	38	12	14	26	11	14	25	12	13	25	09	13	22	09	11	20
2	Amreli	48	14	62	42	10	52	31	10	41	34	10	44	38	11	49	37	11	48
3	Anand	15	14	29	14	13	27	11	10	21	12	11	23	13	11	24	12	10	22
4	Arvalli	14	07	21	17	04	21	16	04	20	13	02	15	14	03	17	15	02	17
5	Banaskantha	15	30	45	12	27	39	10	20	30	12	17	29	11	18	29	11	16	27
6	Bharuch	34	06	40	32	06	38	26	06	32	31	05	36	31	05	36	30	05	35
7	Bhavnagar	35	06	41	42	04	46	38	04	42	35	04	39	36	04	40	39	04	43
8	Botad	09	01	10	09	01	10	03	00	03	04	00	04	03	00	03	04	00	04
9	Chhota Udepur	20	06	26	22	04	26	10	03	13	22	02	24	21	02	23	18	03	21
10	Devbhumi Dwarka	20	01	21	23	02	25	19	02	21	21	02	23	22	02	24	20	02	22
11	Dahod	24	06	30	24	06	30	22	06	28	21	06	27	23	05	28	23	05	28
12	Gandhinagar	02	24	26	02	27	29	02	24	26	02	25	27	02	26	28	02	23	25
13	Gir Somnath	20	05	25	19	03	22	17	03	20	16	03	19	19	03	22	17	03	20
14	Jamnagar	42	05	47	22	03	25	16	02	18	11	02	13	21	02	23	19	02	21
15	Junagadh	30	05	35	39	04	43	25	04	29	35	04	39	27	03	30	33	03	36
16	Kachchh	52	14	66	49	16	65	34	16	50	42	12	54	41	13	54	39	12	51
17	Kheda	15	11	26	12	10	22	11	09	20	11	09	20	10	09	19	11	10	21
18	Mahesana	16	32	48	15	35	50	13	27	40	15	27	42	15	28	43	15	28	43
19	Mahisagar	10	05	15	13	05	18	13	05	18	12	04	16	12	03	15	12	03	15
20	Morbi	19	01	20	19	01	20	17	01	18	14	01	15	17	01	18	13	01	14
21	Narmada	18	06	24	17	06	23	11	06	17	16	06	22	17	06	23	13	05	18
22	Navsari	20	02	22	20	02	22	17	02	19	19	01	20	18	01	19	19	01	20
23	Panchmahals	32	04	36	21	04	25	21	03	24	19	04	23	20	03	23	20	03	23
24	Patan	10	16	26	09	14	23	07	12	19	05	09	14	05	07	12	07	10	17
25	Porbandar	29	02	31	30	03	33	21	03	24	28	02	30	28	03	31	28	03	31
26	Rajkot	54	05	59	30	05	35	26	04	30	24	03	27	27	04	31	25	04	29
27	Sabarkantha	26	10	36	27	10	37	24	07	31	22	07	29	23	07	30	24	07	31
28	Surat	36	03	39	32	03	35	29	03	32	26	03	29	27	03	30	27	03	30
29	Surendranagar	28	04	32	30	04	34	27	04	31	24	04	28	28	04	32	28	05	33
30	Tapi	15	01	16	15	01	16	11	01	12	11	01	12	11	01	12	09	01	10
31	The dangs	24	01	25	23	01	24	21	01	22	20	00	20	21	00	21	23	01	24
32	Vadodara	12	14	26	14	14	28	08	11	19	13	10	23	14	10	24	09	08	17
33	Valsad	19	02	21	19	02	21	17	01	18	17	01	18	16	01	17	18	01	19
Total		774	290	1064	726	264	990	585	228	813	619	210	829	640	212	852	629	206	835

2 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 groundwater 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 3.

Table 3. 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: 1.6×10^{-4} to 7.3×10^{-4} , Hydraulic Conductivity: 5 to 20m/day, Transmissivity: 50 to 2000m ² /day
Mesozoic	Sandstones, Shales, Limestones and Grits	Kachchh, Surendranagar, Sabarkantha and Vadodara districts	Discontinuous aquifers with limited thickness of 50 to 300 meters. Limited yield prospects <15 lps, Hydraulic Conductivity: 2 to

			10m/day, Transmissivity: 50 to 1000m ² /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	Groundwater 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.	Groundwater occurrence restricted to weathered and fractured zones having secondary porosity, limited yield prospects of 2 to 5 lps.

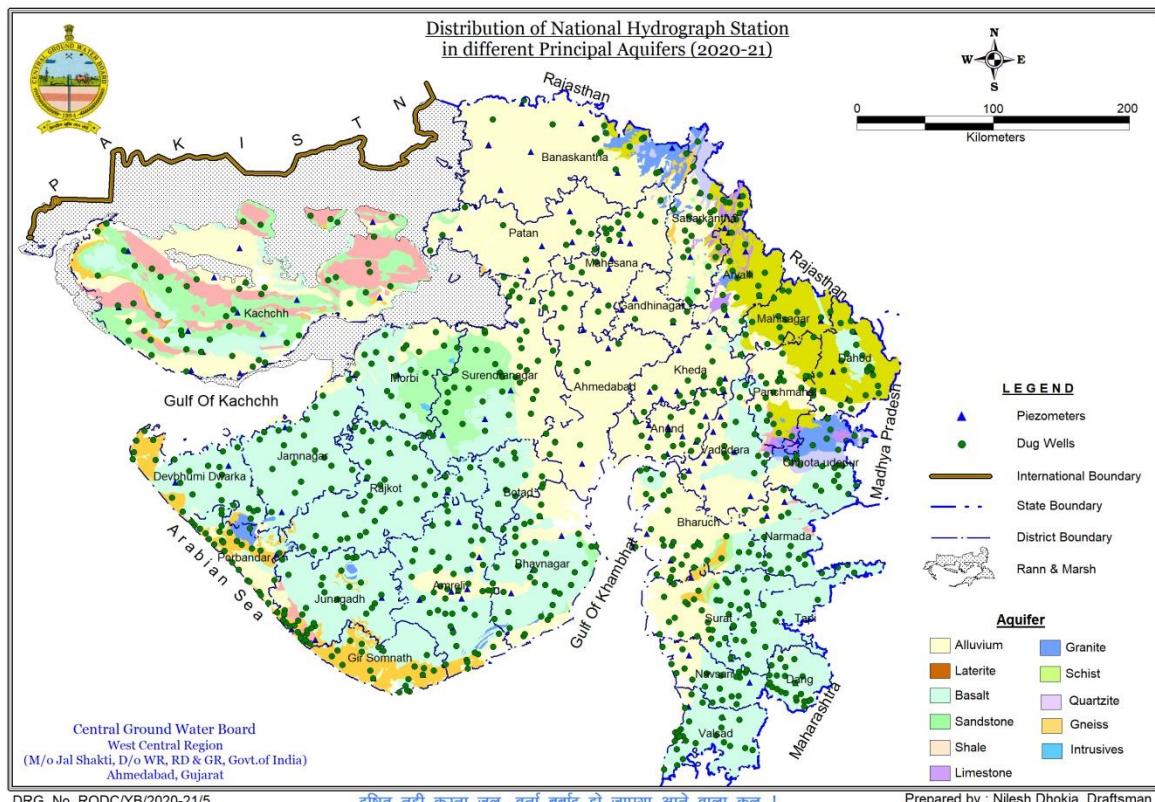


Fig. 5: Hydrogeological units and distribution of Groundwater Monitoring Network Stations.

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 Wadhwani 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 Wadhwani 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 m³/hour for drawdown of about 10 m. 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 m³/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 m³/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 30 m³/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 m³/day and tube wells yield about 22 m³/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 m bgl, yield between 68 to 136 m³/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. Groundwater 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 m³/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 km². 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 groundwater 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 125 m) 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 1961 at most of the area. The yield of tube wells tapping users confined aquifer vary from 20 to 40 lps.

3.0 GROUNDWATER 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 groundwater 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 (pre-monsoon)
- b) August - 20th to 30th (peak monsoon)
- c) November - 1st to 10th (post-monsoon)
- d) January - 1st to 10th (recession stage)

Water level data of the groundwater monitoring wells collected during the year 2021 - 2022 has been utilized to prepare various maps showing depth to water level and fluctuation of

water level. Depth to water level maps is 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, Botad, Devbhumi Dwarka, Gir Somnath, Jamnagar, Junagadh, Morbi, 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, Arvalli, Banaskantha, Dahod, Gandhinagar, Kheda, Mahesana, Mahisagar, Panchmahals, Patan and Sabarkantha districts; South Gujarat comprising Bharuch, Chhota Udepur, Narmada, Navsari, Surat, Tapi, The Dangs Vadodara and Valsad districts. The Union Territory of Daman and 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. Annual 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 groundwater 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).

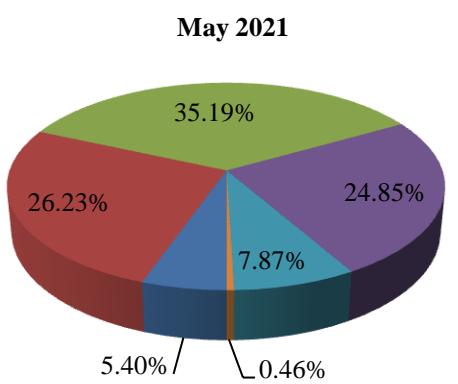


Fig 6 a

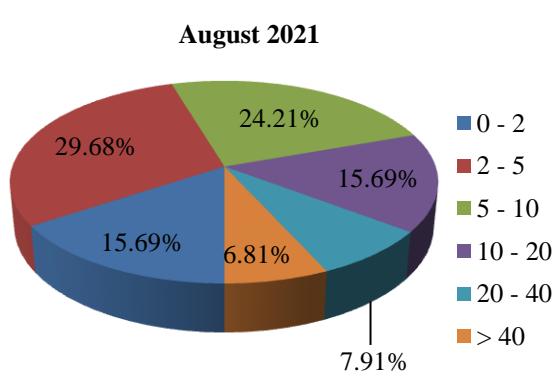


Fig 6 b

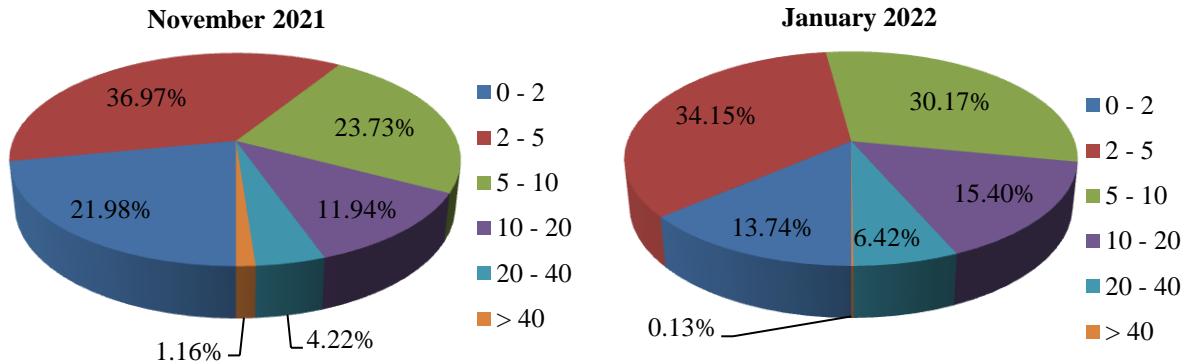


Fig 6 c

Fig 6 d

Fig. 6: Distribution of depth to water level

3.1.1 Depth to Water Level May 2021

During May 2021, in the pursuance of Fig. 7 reveals that 60.0% of the total wells of the state fall in the water level range of 5 to 20 m bgl. Water levels of 20 to 40 m bgl are observed in 7.9% wells of the Gujarat state. Deeper water level of more than 40 m bgl is observed in parts of Amreli, Gandhinagar and Sabarkantha districts (Table 4). The shallowest water levels recorded are 0.74 m bgl Ghogha village of Bhavnagar district. The deepest water level recorded is 52.26 m bgl at Lodra in Gandhinagar district for unconfined aquifer.

In North Gujarat, about 59% of the monitoring stations fall in the water level range of 5 to 20 m bgl. Shallow water levels (lesser than 5 m bgl) are observed in 26.0% of the stations in Ahmedabad, Anand, Dahod, Kheda, Mahesana, Mahisagar, Panchmahal, Patan and Sabarkantha districts. Deeper water levels ranges 20 to 40 m bgl are experienced in major parts of Anand, Banaskantha, Gandhinagar, Kheda and Sabarkantha districts; and adjoining area of Ahmedabad, Kheda, Panchmahals districts. The deepest water level recorded is 52.26 m bgl Lodra in Gandhinagar district where as shallowest water level of 1.30 m bgl has been recorded at Ladvel in Kheda district.

In South Gujarat, more than 63.5% of the stations has recorded water level between 5 to 20 mbgl where as 34% range less than 5 m bgl. Deeper water levels of more than 20 m bgl are mainly observed in parts of Narmada and Vadodara districts. The deepest water level of 29.52 m bgl is recorded at Sunderpura in Narmada district whereas the shallowest water level of 1.10 m bgl has been recorded at Raymal in Bharuch district.

In Saurashtra region, about 58% of the monitoring stations show water levels 5 to 20 mbgl. Water levels of 20 to 40 m are found as isolated patches scattered in Amreli, Bhavnagar, Gir Somnath, Junagadh and Porbandar districts. The shallowest water level, 0.74 m bgl, has been recorded at Ghogha village in Bhavnagar district and the deepest water level of 43.77 m bgl recorded at Morjhar in Amreli district.

In Kachchh region 62% of the monitoring stations, the water level is between 5 to 20 mbgl. Western part of the area shows water level rages 2 to 5 m bgl. The water levels more than 20 m occur as isolated patches scattered in the central-eastern part of the Kachchh district. The deepest water level of 30.54 m bgl is recorded at Kuda and the shallowest water level of 1.39 m bgl has been recorded at Haboi.

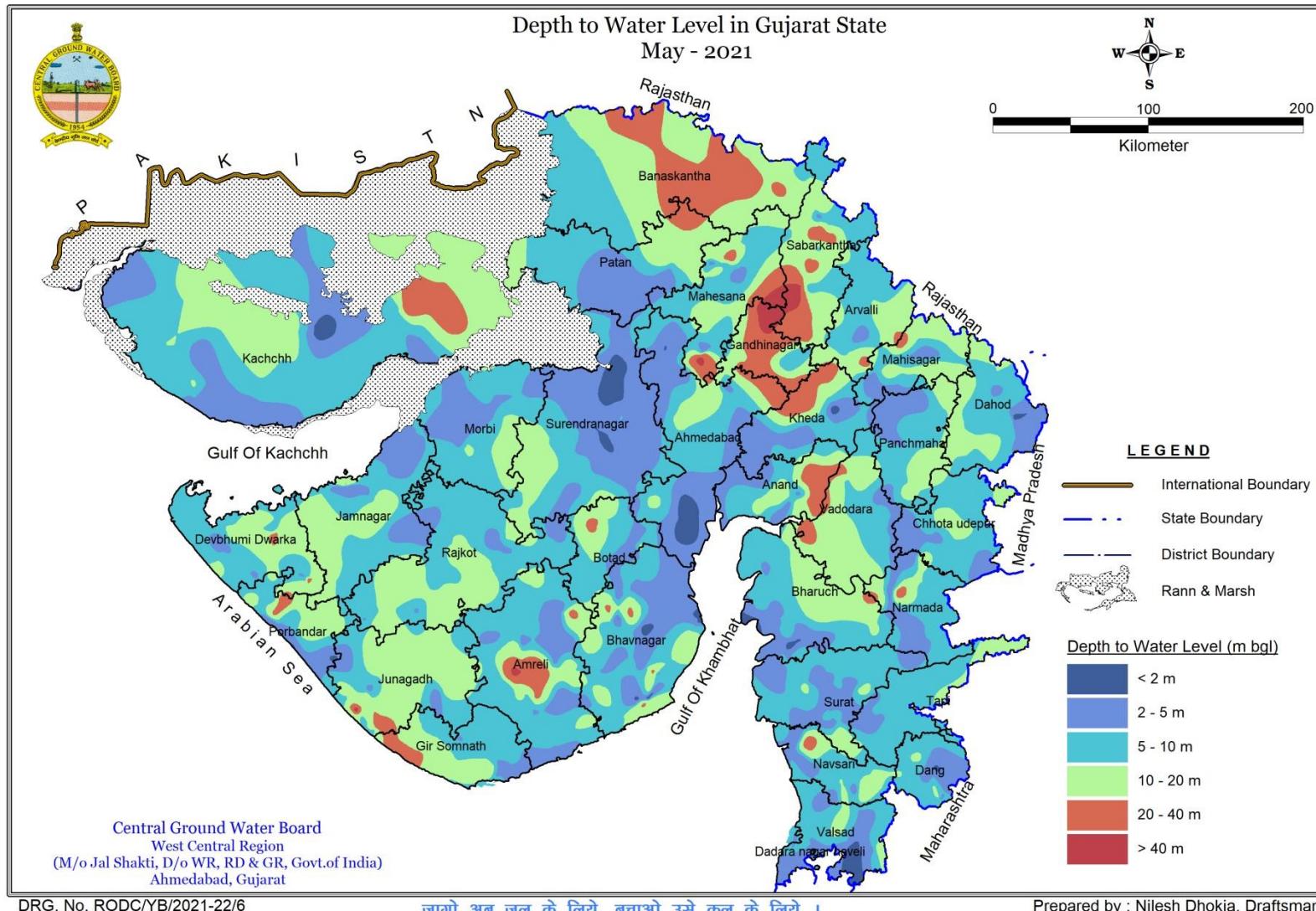


Fig.7: Depth to water level map of May 2021

Table 4. Wellwise categorisation of depth to water level May 2021

Sr. No.	District Name	No of well analysed	DTWL, mbgl		No. of wells in diffrent depth range					
			Min	Max	0 to 2	2 to 5	5 to 10	10 to 20	20 to 40	> 40
1	Ahmedabad	17	1.55	20.40	3 17.6%	7 41.2%	3 17.6%	3 17.6%	1 5.9%	0 0.0%
2	Anand	13	3.21	27.92	0 0.0%	5 38.5%	2 15.4%	4 30.8%	2 15.4%	0 0.0%
3	Arvalli	13	3.40	23.40	0 0.0%	1 7.7%	5 38.5%	6 46.2%	1 7.7%	0 0.0%
4	Banaskantha	14	8.02	33.86	0 0.0%	0 0.0%	4 28.6%	3 21.4%	7 50.0%	0 0.0%
5	Dahod	21	1.70	15.52	1 4.8%	4 19.0%	9 42.9%	7 33.3%	0 0.0%	0 0.0%
6	Gandhinagar	7	2.80	52.26	0 0.0%	1 14.3%	1 14.3%	1 14.3%	3 42.9%	1 14.3%
7	Kheda	13	1.30	36.93	2 15.4%	3 23.1%	4 30.8%	1 7.7%	3 23.1%	0 0.0%
8	Mahesana	20	3.04	16.57	0 0.0%	5 25.0%	7 35.0%	8 40.0%	0 0.0%	0 0.0%
9	Mahisagar	15	3.10	27.85	0 0.0%	5 33.3%	5 33.3%	4 26.7%	1 6.7%	0 0.0%
10	Panchmahals	14	2.30	20.10	0 0.0%	4 28.6%	6 42.9%	3 21.4%	1 7.1%	0 0.0%
11	Patan	7	2.38	17.78	1 14.3%	2 28.6%	0 0.0%	4 57.1%	0 0.0%	0 0.0%
12	Sabarkantha	23	3.65	48.30	0 0.0%	2 8.7%	9 39.1%	6 26.1%	5 21.7%	1 4.3%
	North Gujarat	177	1.30	52.26	7 4.0%	39 22.0%	55 31.1%	50 28.2%	24 13.6%	2 1.1%
13	Bharuch	30	1.10	17.30	3 10.0%	8 26.7%	17 56.7%	2 6.7%	0 0.0%	0 0.0%
14	Chhota Udepur	13	3.20	13.50	0 0.0%	2 15.4%	8 61.5%	3 23.1%	0 0.0%	0 0.0%
15	Narmada	15	2.09	29.52	0 0.0%	7 46.7%	3 20.0%	3 20.0%	2 13.3%	0 0.0%
16	Navsari	18	2.00	17.45	1 5.6%	5 27.8%	8 44.4%	4 22.2%	0 0.0%	0 0.0%
17	Surat	29	2.68	13.75	0 0.0%	12 41.4%	13 44.8%	4 13.8%	0 0.0%	0 0.0%
18	Tapi	13	2.50	12.55	0 0.0%	4 30.8%	6 46.2%	3 23.1%	0 0.0%	0 0.0%
19	The dangs	22	1.88	12.10	1 4.5%	4 18.2%	13 59.1%	4 18.2%	0 0.0%	0 0.0%
20	Vadodara	10	2.94	22.10	0 0.0%	2 20.0%	4 40.0%	2 20.0%	2 20.0%	0 0.0%
21	Valsad	17	1.65	12.85	1 5.9%	7 41.2%	6 35.3%	3 17.6%	0 0.0%	0 0.0%
	South Gujarat	167	1.10	29.52	6 3.6%	51 30.5%	78 46.7%	28 16.8%	4 16.8%	0 2.4%
22	Amreli	37	2.00	43.77	2 5.4%	11 29.7%	11 29.7%	7 18.9%	5 13.5%	1 2.7%
23	Bhavnagar	36	0.74	22.30	6 16.7%	12 33.3%	8 22.2%	6 16.7%	4 11.1%	0 0.0%
24	Botad	8	4.39	21.86	0 0.0%	2 25.0%	2 25.0%	3 37.5%	1 12.5%	0 0.0%
25	Devbhumi Dwarka	21	2.15	28.65	0 0.0%	5 23.8%	6 28.6%	8 38.1%	2 9.5%	0 0.0%
26	Gir Somnath	19	2.81	27.52	0 0.0%	3 15.8%	8 42.1%	6 31.6%	2 10.5%	0 0.0%
27	Jamnagar	16	2.00	20.53	1 6.3%	6 37.5%	5 31.3%	3 18.8%	1 6.3%	0 0.0%
28	Junagadh	29	3.15	37.00	0 0.0%	3 10.3%	7 24.1%	16 55.2%	3 10.3%	0 0.0%
29	Morbi	17	2.00	10.65	1 5.9%	8 47.1%	6 35.3%	2 11.8%	0 0.0%	0 0.0%
30	Porbandar	23	1.83	26.61	2 8.7%	5 21.7%	7 30.4%	7 30.4%	2 8.7%	0 0.0%
31	Rajkot	28	12.55	17.30	0 0.0%	5 17.9%	11 39.3%	12 42.9%	0 0.0%	0 0.0%
32	Surendranagar	31	1.54	16.70	8 25.8%	10 32.3%	10 32.3%	3 9.7%	0 0.0%	0 0.0%
	Saurashtra	265	0.74	43.77	20 7.5%	70 26.4%	81 30.6%	73 27.5%	20 7.5%	1 0.4%
33	Kachchh	34	1.39	30.54	2 5.9%	8 23.5%	11 32.4%	10 29.4%	3 8.8%	0 0.0%
	Kachchh	34	1.39	30.54	2 5.9%	8 23.5%	11 32.4%	10 29.4%	3 8.8%	0 0.0%
	Gujarat State	643	0.74	52.26	35 5.4%	168 26.1%	225 35.0%	161 25.0%	51 7.9%	3 0.5%

3.1.2 Depth to Water Level August 2021

During August 2021, the depth to water level of unconfined aquifer range from 0.03 to 39.20 m 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 20 m, 20 to 40 m and more than 40 m bgl are presented in table 5. The perusal of the depth to water level reveals that 49% of the monitoring stations fall in the ranges of 0 to 5 mbgl whereas 5 to 20 mbgl water levels are observed in 43% of the stations in Gujarat state. Water levels of 20 to 40 mbgl are observed in Ahmedabad, Anand, Amreli, Gandhinagar, Banaskantha, Sabarkantha, Kachchh, Bhavnagar, Narmada, Porbandar and Vadodara districts in isolated patches. Deeper water levels more than 40 m bgl are not observed in the Gujarat State during Agusut 2021. The shallowest water level 0.03 has been recorded at Muliayad, in Kheda district. The deepest water level recorded is 39.20 m bgl at Waliampura in Sabarkantha district.

In North Gujarat, about 84% of the monitoring stations fall within the water level of 20 m bgl. Shallow water levels (lesser than 5 m bgl) are observed in the northern and eastern part of north Gujarat region falling in Banaskantha, Panchmahals, Dohad, Mahisagar and Sabarkantha districts. Deeper water levels range from 20 to 40 mbgl in major part of Ahmedabad, Anand, Banaskantha, Gandhinagar, Kheda, Mahesana, Sabarkantha districts. The deepest water level of 39.20 m bgl is recorded at Waliampura in Sabarkantha district whereas the shallowest water level 0.03 m bgl has been recorded at Muliayad in Kheda district.

In South Gujarat, 94% of the monitoring stations have recorded water level below 20 m bgl of which 57% alone has the water level in the range of 0–5 m bgl. Deeper water levels of 20 to 40 m bgl are mainly observed as isolated patch in parts of Narmada and Vadodara district. The deepest water level of 34.70 m bgl is recorded at Segwa chowki in Vadodara district whereas the shallowest water level of 0.15 m bgl at Umberpada in The Dangs district.

In Saurashtra region, about 96% of the monitoring stations show water levels in less than 20 m bgl and water levels of 20 to 40 m are found as isolated patch in Amreli, Bhavnagar and Junagadh districts. The shallowest water level, 0.50 m bgl has been recorded at Vijarkha of Jamnagar district and the deepest water level of 36.40 m bgl recorded at Morjhar in Amreli district.

In Kachchh region, in about 90% of the monitoring stations, the water level ranges less than 20 m bgl. Isolated patches of water level ranges between 20 to 40 mbgl are found in central and eastern part of the area. The deepest water level of 33.00 m bgl is recorded at Gagodar and the shallowest water level of 0.29 m bgl has been recorded at Haboi.

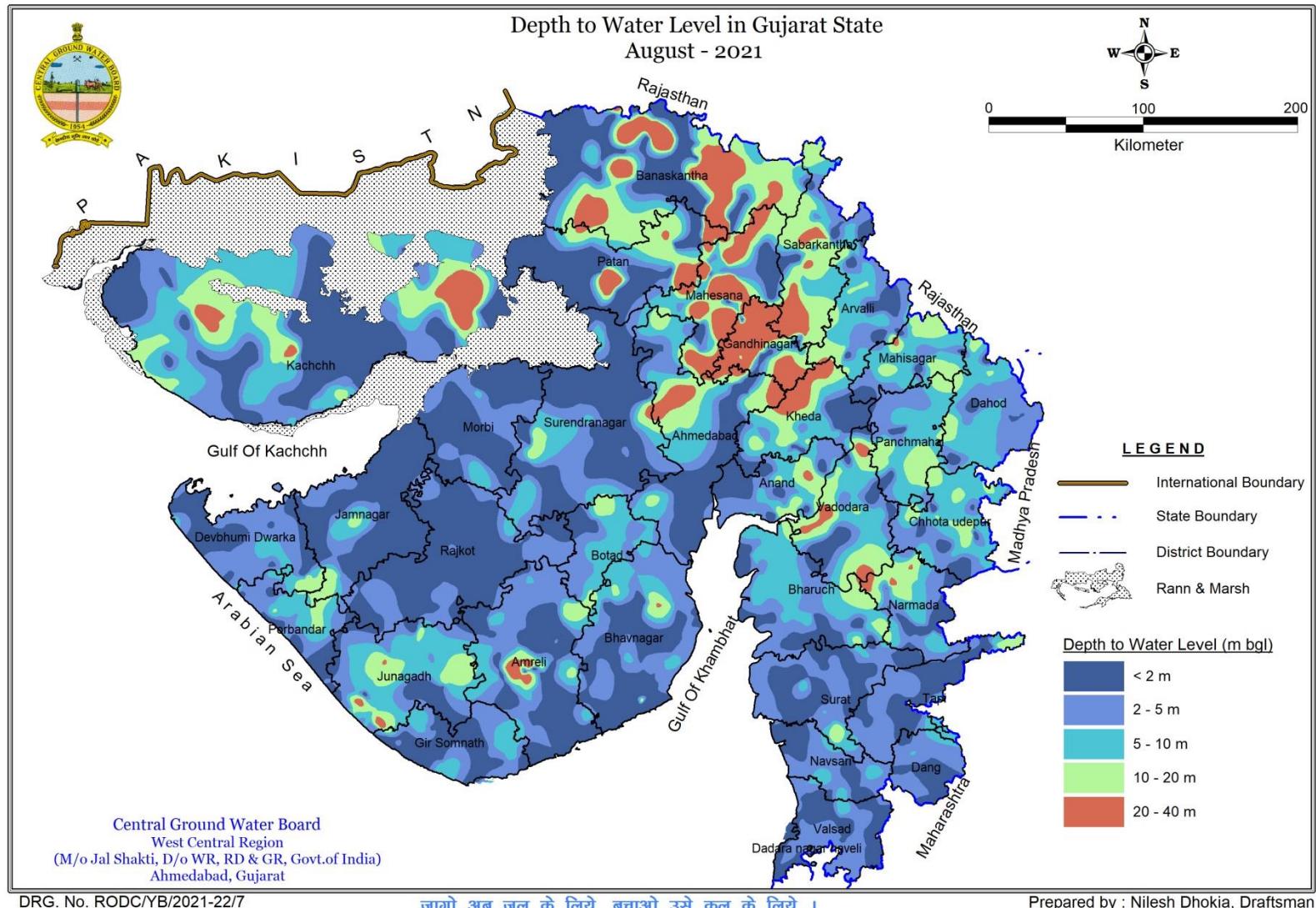


Fig. 8: Depth to water level map of August 2021

Table 5. Well wise categorisation of depth to water level August 2021

Sr. No.	District Name	No of well analysed	DTWL, mbgl		No. of wells in diffrent depth range					
			Min	Max	0 to 2	2 to 5	5 to 10	10 to 20	20 to 40	> 40
1	Ahmedabad	23	0.90	34.35	3 13.0%	6 26.1%	5 21.7%	4 17.4%	5 21.7%	0 0.0%
2	Anand	22	1.15	27.88	1 4.5%	9 40.9%	3 13.6%	6 27.3%	3 13.6%	0 0.0%
3	Arvalli	15	3.30	16.47	0 0.0%	1 6.7%	8 53.3%	6 40.0%	0 0.0%	0 0.0%
4	Banaskantha	22	6.16	33.99	0 0.0%	0 0.0%	6 27.3%	6 27.3%	10 45.5%	0 0.0%
5	Dahod	27	0.70	15.52	1 3.7%	10 37.0%	10 37.0%	6 22.2%	0 0.0%	0 0.0%
6	Gandhinagar	7	3.02	38.00	0 0.0%	1 14.3%	1 14.3%	1 14.3%	4 57.1%	0 0.0%
7	Kheda	20	0.03	37.80	4 20.0%	2 10.0%	7 35.0%	1 5.0%	6 30.0%	0 0.0%
8	Mahesana	26	2.10	27.72	0 0.0%	7 26.9%	7 26.9%	11 42.3%	1 3.8%	0 0.0%
9	Mahisagar	16	2.85	25.86	0 0.0%	3 18.8%	9 56.3%	3 18.8%	1 6.3%	0 0.0%
10	Panchmahals	23	0.88	18.10	2 8.7%	4 17.4%	10 43.5%	7 30.4%	0 0.0%	0 0.0%
11	Patan	8	1.23	23.15	2 25.0%	0 0.0%	1 12.5%	3 37.5%	2 25.0%	0 0.0%
12	Sabarkantha	27	2.00	39.20	1 3.7%	4 14.8%	7 25.9%	10 37.0%	5 18.5%	0 0.0%
	North Gujarat	236	0.03	39.20	14 5.9%	47 19.9%	74 31.4%	64 27.1%	37 15.7%	0 0.0%
13	Bharuch	36	0.25	14.45	5 13.9%	10 27.8%	18 50.0%	3 8.3%	0 0.0%	0 0.0%
14	Chhota Udepur	24	2.80	17.20	0 0.0%	4 16.7%	10 41.7%	10 41.7%	0 0.0%	0 0.0%
15	Narmada	22	0.90	31.05	4 18.2%	4 18.2%	5 22.7%	6 27.3%	3 13.6%	0 0.0%
16	Navsari	20	0.93	7.26	7 35.0%	9 45.0%	4 20.0%	0 0.0%	0 0.0%	0 0.0%
17	Surat	29	0.90	14.92	4 13.8%	20 69.0%	4 13.8%	1 3.4%	0 0.0%	0 0.0%
18	Tapi	12	1.70	14.85	1 8.3%	8 66.7%	0 0.0%	3 25.0%	0 0.0%	0 0.0%
19	The dangs	20	0.15	5.22	7 35.0%	12 60.0%	1 5.0%	0 0.0%	0 0.0%	0 0.0%
20	Vadodara	23	0.65	34.70	3 13.0%	2 8.7%	7 30.4%	2 8.7%	9 39.1%	0 0.0%
21	Valsad	18	0.35	9.75	6 33.3%	11 61.1%	1 5.6%	0 0.0%	0 0.0%	0 0.0%
	South Gujarat	204	0.15	34.70	37 18.1%	80 39.2%	50 24.5%	25 12.3%	12 5.9%	0 0.0%
22	Amreli	43	0.08	36.40	10 23.3%	16 37.2%	9 20.9%	3 7.0%	5 11.6%	0 0.0%
23	Bhavnagar	38	0.20	20.85	10 26.3%	16 42.1%	7 18.4%	4 10.5%	1 2.6%	0 0.0%
24	Botad	4	2.93	14.03	0 0.0%	1 25.0%	2 50.0%	1 25.0%	0 0.0%	0 0.0%
25	Devbhumi Dwarka	23	0.05	21.21	8 34.8%	10 43.5%	3 13.0%	1 4.3%	1 4.3%	0 0.0%
26	Gir Somnath	19	0.83	8.84	6 31.6%	7 36.8%	6 31.6%	0 0.0%	0 0.0%	0 0.0%
27	Jamnagar	13	0.50	20.04	3 23.1%	7 53.8%	1 7.7%	1 7.7%	1 7.7%	0 0.0%
28	Junagadh	39	0.70	24.91	5 12.8%	8 20.5%	12 30.8%	11 28.2%	3 7.7%	0 0.0%
29	Morbi	13	0.16	8.18	5 38.5%	5 38.5%	3 23.1%	0 0.0%	0 0.0%	0 0.0%
30	Porbandar	28	0.40	12.05	6 21.4%	11 39.3%	9 32.1%	2 7.1%	0 0.0%	0 0.0%
31	Rajkot	26	14.85	5.95	12 46.2%	11 42.3%	3 11.5%	0 0.0%	0 0.0%	0 0.0%
32	Surendranagar	25	0.14	16.20	7 28.0%	11 44.0%	5 20.0%	2 8.0%	0 0.0%	0 0.0%
	Saurashtra	271	0.05	36.40	72 26.6%	103 38.0%	60 22.1%	25 9.2%	11 4.1%	0 0.0%
33	Kachchh	51	0.29	33.00	5 9.8%	13 25.5%	13 25.5%	15 29.4%	5 9.8%	0 0.0%
	Kachchh	51	0.29	33.00	5 9.8%	13 25.5%	13 25.5%	15 29.4%	5 9.8%	0 0.0%
	Gujarat State	762	0.03	39.20	128 16.8%	243 31.9%	197 25.9%	129 16.9%	65 8.5%	0 0.0%

3.1.3 Depth to Water Level November 2021

The depth to water level of unconfined aquifer ranges from near ground level to 52.33 m bgl (Lodra, Gandhinagar district) during November 2021 (Fig 9 and Table 6). The perusal of the water level reveals that 95% of the total well analysed has water level less than 20 m bgl, in Gujarat state. Water levels of 20 to 40 m bgl are observed in Amreli, Anand, Banaskantha, Sabarkantha, Mahesana, Narmada, Kachchh and Junagadh districts. Water levels of morethan 40 m bgl are observed in Banaskantha, Gandhinagar and Mahesana district of Gujarat State. The shallowest water level recorded is 0.03 m bgl at Shekhupura in Kheda district.

In North Gujarat, about 87% 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 Arvalli, Panchmahals, Mahisagar, Dahod district. Deeper water levels ranges 20 to 40 mbgl are experienced in parts of Anand, Banaskantha, Gandhinagar, Keda, Mahesana and Sabarkantha districts. The deepest water level of 52.33 m bgl at Lodra in Gandhinagar district whereas shallowest water level of 0.03 m bgl has been recorded at Shekhupura in Kheda district.

In South Gujarat, more than 97% of the total well has recorded water level within 20 m bgl and out of which 67% alone has the water level in the range of 5 m bgl. Deeper water levels of 20 to 40 m bgl are mainly observed in in parts of Narmada and Vadodara district. The deepest water level of 30.38 m bgl is recorded at Sunderpura in Narmada district whereas the shallowest water level of 0.10 m bgl has been recorded at Dhumkal in The Dangs disrtict.

In Saurashtra region, about 99% 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 district. The shallowest water level recorded is 0.05 m bgl at Govadka in Amreli district and the deepest water level of 29.75 m bgl recorded at Kerala in Amreli district.

In Kachchh region, in about 93% of the total well analysed, the water level ranges within 20 m bgl in major part of the district. Central and east part of the area shows water level ranges 10 to 20 m bgl, which cover about 35% of total wells in Kachchh region and occur in isolated patches. The deepest water level of 33.00 m bgl is recorded at Gagodar and the shallowest water level of 0.39 m bgl has been recorded at Haboi.

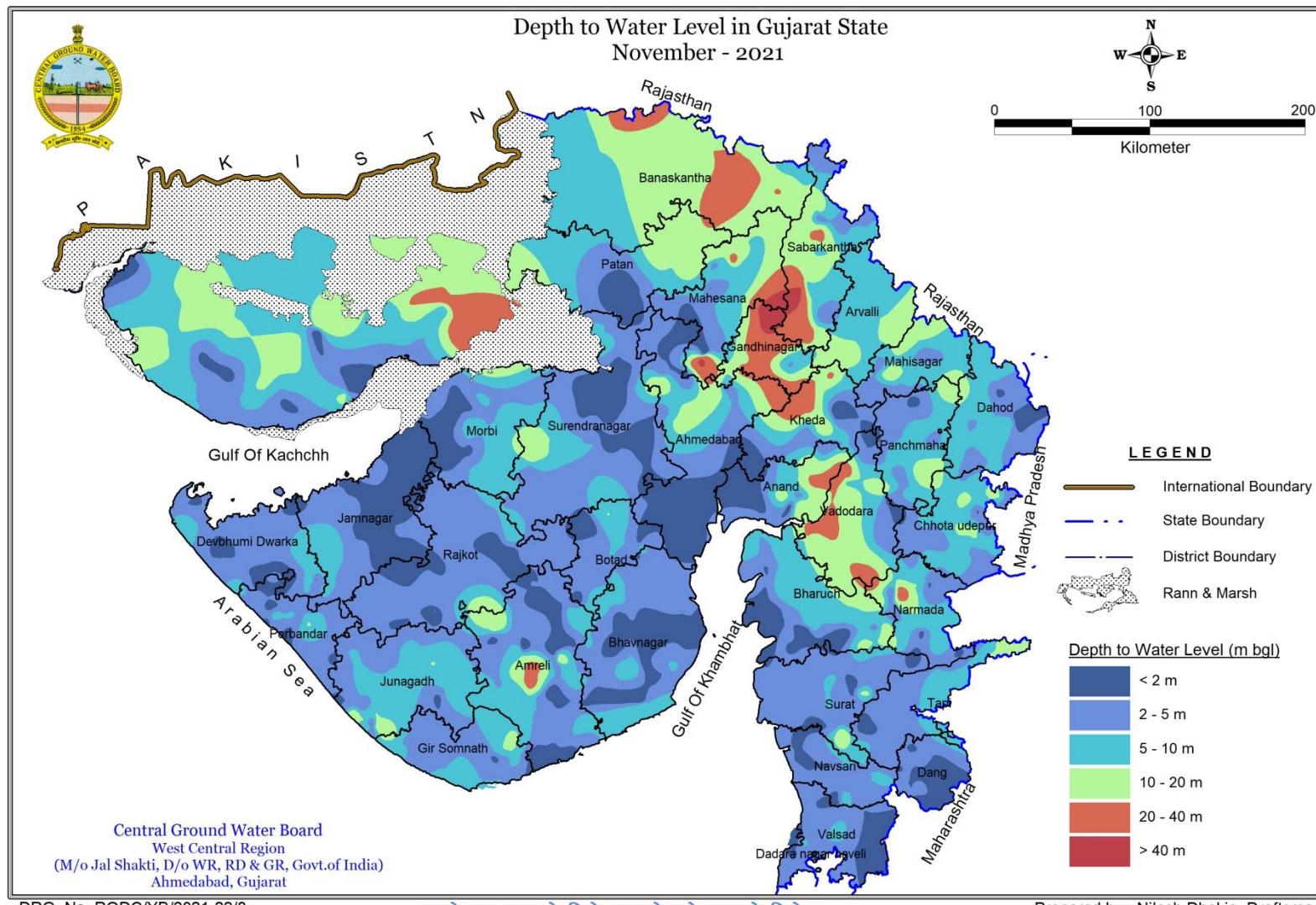


Fig. 9: Depth to water level map of November 2021

Table 6. Well wise categorisation of depth to water level November 2021

Sr. No.	District Name	No of well analysed	DTWL, mbgl		No. of wells in diffrent depth range					
			Min	Max	0 to 2	2 to 5	5 to 10	10 to 20	20 to 40	> 40
1	Ahmedabad	16	0.62	25.76	6 37.5%	6 37.5%	0 0.0%	3 18.8%	1 6.3%	0 0.0%
2	Anand	15	0.55	23.82	2 13.3%	6 40.0%	1 6.7%	4 26.7%	2 13.3%	0 0.0%
3	Arvalli	10	5.25	14.80	0 0.0%	0 0.0%	7 70.0%	3 30.0%	0 0.0%	0 0.0%
4	Banaskantha	15	7.14	33.10	0 0.0%	0 0.0%	5 33.3%	5 33.3%	5 33.3%	0 0.0%
5	Dohad	21	0.60	9.80	4 19.0%	5 23.8%	12 57.1%	0 0.0%	0 0.0%	0 0.0%
6	Gandhinagar	7	2.92	52.33	0 0.0%	1 14.3%	1 14.3%	1 14.3%	3 42.9%	1 14.3%
7	Kheda	12	0.03	35.24	3 25.0%	2 16.7%	3 25.0%	1 8.3%	3 25.0%	0 0.0%
8	Mahesana	22	0.53	47.80	3 13.6%	5 22.7%	4 18.2%	7 31.8%	0 0.0%	3 13.6%
9	Mahisagar	12	2.80	17.55	0 0.0%	4 33.3%	5 41.7%	3 25.0%	0 0.0%	0 0.0%
10	Panchmahals	13	1.70	13.90	1 7.7%	4 30.8%	6 46.2%	2 15.4%	0 0.0%	0 0.0%
11	Patan	6	0.11	17.21	2 33.3%	0 0.0%	2 33.3%	2 33.3%	0 0.0%	0 0.0%
12	Sabarkantha	24	1.80	44.29	1 4.2%	5 20.8%	8 33.3%	6 25.0%	3 12.5%	1 4.2%
North Gujarat		173	0.03	52.33	22 12.7%	38 22.0%	54 31.2%	37 21.4%	17 9.8%	5 2.9%
13	Bharuch	33	0.48	14.45	9 27.3%	11 33.3%	11 33.3%	2 6.1%	0 0.0%	0 0.0%
14	Chhota Udepur	23	1.80	12.50	2 8.7%	8 34.8%	7 30.4%	6 26.1%	0 0.0%	0 0.0%
15	Narmada	21	0.80	30.38	5 23.8%	4 19.0%	8 38.1%	3 14.3%	1 4.8%	0 0.0%
16	Navsari	18	0.70	6.90	4 22.2%	12 66.7%	2 11.1%	0 0.0%	0 0.0%	0 0.0%
17	Surat	27	1.14	14.95	3 11.1%	17 63.0%	5 18.5%	2 7.4%	0 0.0%	0 0.0%
18	Tapi	13	1.00	13.25	2 15.4%	8 61.5%	1 7.7%	2 15.4%	0 0.0%	0 0.0%
19	The dangs	21	0.10	4.80	12 57.1%	9 42.9%	0 0.0%	0 0.0%	0 0.0%	0 0.0%
20	Vadodara	16	0.48	25.90	3 18.8%	4 25.0%	3 18.8%	1 6.3%	5 31.3%	0 0.0%
21	Valsad	16	0.40	7.40	6 37.5%	7 43.8%	3 18.8%	0 0.0%	0 0.0%	0 0.0%
South Gujarat		188	0.10	30.38	46 24.5%	80 42.6%	40 21.3%	16 8.5%	6 3.2%	0 0.0%
22	Amreli	44	0.05	29.75	13 29.5%	13 29.5%	10 22.7%	5 11.4%	3 6.8%	0 0.0%
23	Bhavnagar	31	0.30	9.73	12 38.7%	12 38.7%	7 22.6%	0 0.0%	0 0.0%	0 0.0%
24	Botad	9	0.30	10.05	3 33.3%	3 33.3%	2 22.2%	1 11.1%	0 0.0%	0 0.0%
25	Devbhumi Dwarka	23	0.50	7.30	7 30.4%	13 56.5%	3 13.0%	0 0.0%	0 0.0%	0 0.0%
26	Gir Somnath	20	1.66	10.92	1 5.0%	14 70.0%	4 20.0%	1 5.0%	0 0.0%	0 0.0%
27	Jamnagar	20	0.60	9.52	9 45.0%	9 45.0%	2 10.0%	0 0.0%	0 0.0%	0 0.0%
28	Junagadh	30	0.68	18.20	4 13.3%	11 36.7%	10 33.3%	5 16.7%	0 0.0%	0 0.0%
29	Morbi	17	0.09	8.82	5 29.4%	7 41.2%	5 29.4%	0 0.0%	0 0.0%	0 0.0%
30	Porbandar	29	0.55	10.39	7 24.1%	15 51.7%	6 20.7%	1 3.4%	0 0.0%	0 0.0%
31	Rajkot	28	13.25	6.91	5 17.9%	19 67.9%	4 14.3%	0 0.0%	0 0.0%	0 0.0%
32	Surendranagar	30	0.54	18.18	9 30.0%	14 46.7%	5 16.7%	2 6.7%	0 0.0%	0 0.0%
Saurashtra		281	0.05	29.75	75 26.7%	130 46.3%	58 20.6%	15 5.3%	3 1.1%	0 0.0%
33	Kachchh	40	0.39	33.00	7 17.5%	6 15.0%	10 25.0%	14 35.0%	3 7.5%	0 0.0%
Kachchh		40	0.39	33.00	7 17.5%	6 15.0%	10 25.0%	14 35.0%	3 7.5%	0 0.0%
Gujarat State		682	0.03	52.33	150 22.0%	254 37.2%	162 23.8%	82 12.0%	29 4.3%	5 0.7%

3.1.4 Depth to Water Level January 2022

A perusal of Fig. 10 and Table 7 reveals that the depth to water level of unconfined aquifer ranges from 0.27 m bgl at Tagadi in Ahmedabad district to 51.53 m bgl at Lodra in Gandhinagar district during January 2022. Details of depth to water level in different range, i.e. from 0 to 2 m, 2 to 5 m, 5 to 10 m, 10 to 20 m, 20 to 40 m and more than 40 m bgl is presented in table 7. The perusal of the depth to water map reveals that about 48% of the total wells analysed falls in the water level range of 0 to 5 m bgl where as water level of 5 to 20 m bgl is observed in 45% of Gujarat state. Water levels of 20 to 40 m bgl are observed in Ahmedabad, Anand, Amreli, Anand, Banaskantha, Junagadh, Kheda, Gandhinagar, Sabarkantha, Narmada and Vadodara districts in isolated patches. The deepest water level more than 40 m bgl is recorded in Gandhinagar, Kachchh and Sabarkantha districts of Gujarat State.

In North Gujarat, about 85% of the total well analysed falls with in the water level range of 20 m bgl and out of which alone 58% represent the water level range of 0-10 m bgl. 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 such as in Panchmahals, Dahod and Mahisagar district. Deeper water levels ranges 20 to 40 mbgl are experienced in major part of Anand, Banaskantha, Gandhinagar, Kheda, Mahesana and Sabarkantha districts. The deepest water level of 51.53 m bgl at Lodra in Gandhinagar district whereas shallowest water level of 0.27 m bgl has been recorded at Tagadi in Ahmedabad district.

In South Gujarat, about 93% of the total wells has recorded water level less than 10 m bgl and out of which 67% alone has the water level in the range of 0-5 m bgl. Deeper water levels of 20 to 40 m bgl mainly observed in isolated patch in major parts of Narmada and Vadodara district. The deepest water level of 30.24 m bgl is recorded at Kanadu in Narmada district whereas the shallowest water level of 0.30 m bgl bgl has been recorded at Kanadu in Valsad district.

In Saurashtra region, about 98% of the total well shows water levels less than 20 m bgl and water levels of 20 to 40 mbgl are sporadically disbursed in isolated patches scattered in all areas of Amreli and Junagadh districts. The shallowest water level of 0.47 m bgl has been recorded at Piparla of Bhavanagar district. The deepest water level of 31.09 m bgl recorded at Kerala in Amreli district.

In Kachchh region, more than 84% 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 40.80 m bgl is recorded at Ugardi and the shallowest water level of 0.39 m bgl at Lilpur.

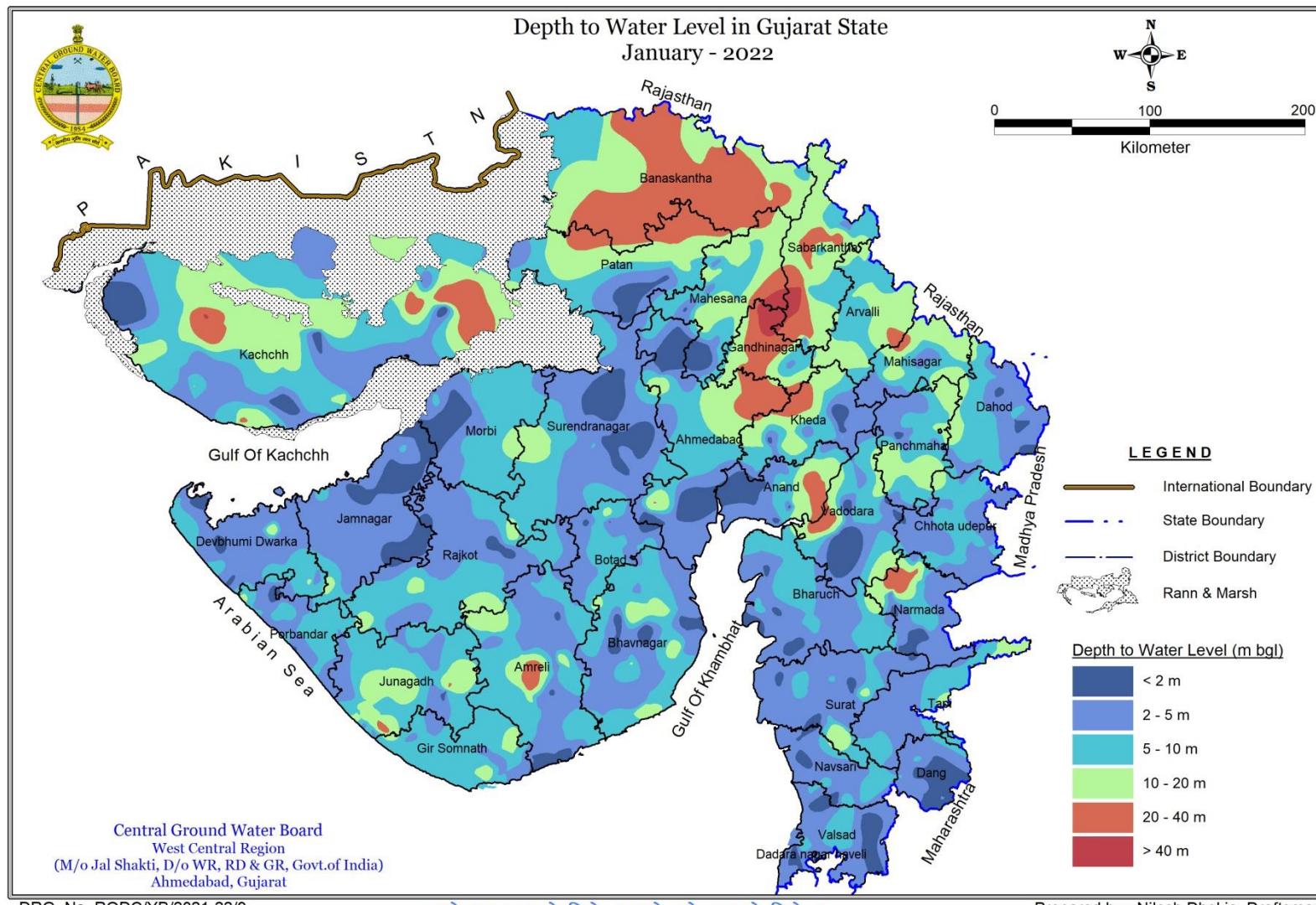


Fig. 10: Depth to water level map of January 2022

Table 7. Well wise categorisation of depth to water level January 2022

Sr. No.	District Name	No of well analysed	DTWL, mbgl		No. of wells in diffrent depth range					
			Min	Max	0 to 2	2 to 5	5 to 10	10 to 20	20 to 40	> 40
1	Ahmedabad	18	0.27	28.76	3 16.7%	7 38.9%	2 11.1%	2 11.1%	4 22.2%	0 0.0%
2	Anand	22	0.74	26.04	6 27.3%	6 27.3%	2 9.1%	4 18.2%	4 18.2%	0 0.0%
3	Arvalli	17	5.10	19.40	0 0.0%	0 0.0%	8 47.1%	9 52.9%	0 0.0%	0 0.0%
4	Banaskantha	21	7.55	39.93	0 0.0%	0 0.0%	6 28.6%	5 23.8%	10 47.6%	0 0.0%
5	Dahod	28	0.75	15.70	4 14.3%	7 25.0%	14 50.0%	3 10.7%	0 0.0%	0 0.0%
6	Gandhinagar	7	4.22	51.53	0 0.0%	2 28.6%	0 0.0%	1 14.3%	3 42.9%	1 14.3%
7	Kheda	21	0.70	33.58	4 19.0%	4 19.0%	7 33.3%	3 14.3%	3 14.3%	0 0.0%
8	Mahesana	26	1.70	26.95	1 3.8%	6 23.1%	7 26.9%	11 42.3%	1 3.8%	0 0.0%
9	Mahisagar	15	2.95	26.55	0 0.0%	4 26.7%	6 40.0%	4 26.7%	1 6.7%	0 0.0%
10	Panchmahals	23	1.00	18.19	2 8.7%	6 26.1%	7 30.4%	8 34.8%	0 0.0%	0 0.0%
11	Patan	10	0.59	20.50	3 30.0%	1 10.0%	2 20.0%	3 30.0%	1 10.0%	0 0.0%
12	Sabarkantha	31	2.55	45.00	0 0.0%	4 12.9%	7 22.6%	12 38.7%	7 22.6%	1 3.2%
	North Gujarat	239	0.27	51.53	23 9.6%	47 19.7%	68 28.5%	65 27.2%	34 14.2%	2 0.8%
13	Bharuch	34	0.38	8.50	4 11.8%	18 52.9%	12 35.3%	0 0.0%	0 0.0%	0 0.0%
14	Chhota Udepur	21	1.36	7.94	1 4.8%	12 57.1%	8 38.1%	0 0.0%	0 0.0%	0 0.0%
15	Narmada	18	0.52	30.24	4 22.2%	7 38.9%	4 22.2%	1 5.6%	2 11.1%	0 0.0%
16	Navsari	20	0.80	7.75	3 15.0%	12 60.0%	5 25.0%	0 0.0%	0 0.0%	0 0.0%
17	Surat	30	1.24	16.35	3 10.0%	16 53.3%	9 30.0%	2 6.7%	0 0.0%	0 0.0%
18	Tapi	10	1.95	12.55	1 10.0%	6 60.0%	1 10.0%	2 20.0%	0 0.0%	0 0.0%
19	The dangs	24	0.65	5.45	11 45.8%	11 45.8%	2 8.3%	0 0.0%	0 0.0%	0 0.0%
20	Vadodara	15	1.67	23.48	2 13.3%	4 26.7%	3 20.0%	4 26.7%	2 13.3%	0 0.0%
21	Valsad	19	0.30	8.00	5 26.3%	8 42.1%	6 31.6%	0 0.0%	0 0.0%	0 0.0%
	South Gujarat	191	0.30	30.24	34 17.8%	94 49.2%	50 26.2%	9 4.7%	4 2.1%	0 0.0%
22	Amreli	48	0.57	31.09	4 8.3%	19 39.6%	16 33.3%	5 10.4%	4 8.3%	0 0.0%
23	Bhavnagar	43	0.47	15.03	8 18.6%	17 39.5%	11 25.6%	7 16.3%	0 0.0%	0 0.0%
24	Botad	4	1.86	10.47	1 25.0%	1 25.0%	1 25.0%	1 25.0%	0 0.0%	0 0.0%
25	Devbhumi Dwarka	22	0.72	17.05	4 18.2%	12 54.5%	4 18.2%	2 9.1%	0 0.0%	0 0.0%
26	Gir Somnath	20	2.13	12.17	0 0.0%	8 40.0%	10 50.0%	2 10.0%	0 0.0%	0 0.0%
27	Jamnagar	21	0.84	11.90	8 38.1%	9 42.9%	3 14.3%	1 4.8%	0 0.0%	0 0.0%
28	Junagadh	36	1.40	23.91	3 8.3%	6 16.7%	16 44.4%	9 25.0%	2 5.6%	0 0.0%
29	Morbi	14	0.83	9.72	3 21.4%	3 21.4%	8 57.1%	0 0.0%	0 0.0%	0 0.0%
30	Porbandar	31	1.22	17.71	5 16.1%	9 29.0%	16 51.6%	1 3.2%	0 0.0%	0 0.0%
31	Rajkot	29	12.55	12.00	2 6.9%	11 37.9%	13 44.8%	3 10.3%	0 0.0%	0 0.0%
32	Surendranagar	32	1.01	19.45	8 25.0%	14 43.8%	8 25.0%	2 6.3%	0 0.0%	0 0.0%
	Saurashtra	300	0.47	31.09	46 15.3%	109 36.3%	106 35.3%	33 11.0%	6 2.0%	0 0.0%
33	Kachchh	48	0.39	40.80	4 8.3%	15 31.3%	9 18.8%	13 27.1%	6 12.5%	1 2.1%
	Kachchh	48	0.39	40.80	4 8.3%	15 31.3%	9 18.8%	13 27.1%	6 12.5%	1 2.1%
	Gujarat State	778	0.27	51.53	107 13.8%	265 34.1%	233 29.9%	120 15.4%	50 6.4%	3 0.4%

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 pre Monsoon (May) data are studied. The change in groundwater levels in the region over different periods is presented in Fig. 11(a, b and c) and a summary of each observation is discussed below.

Figure 11(a)

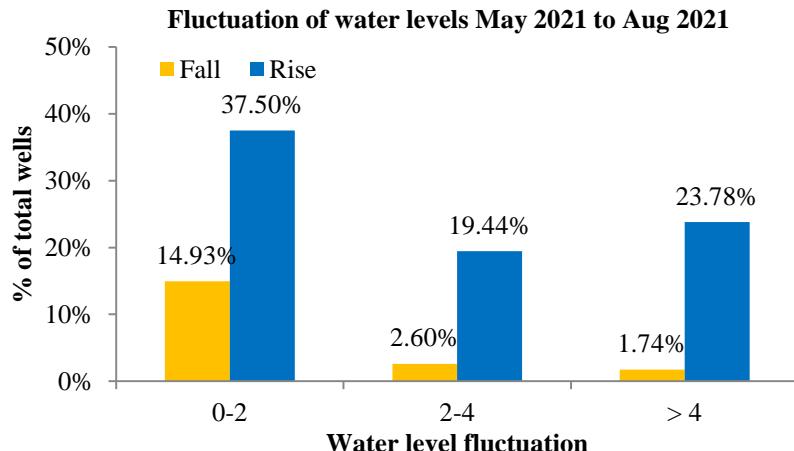


Figure 11(b)

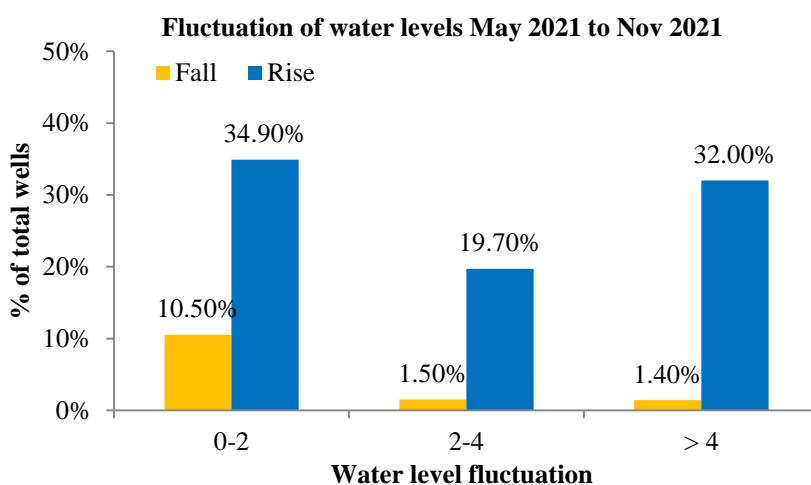


Figure 11(c)

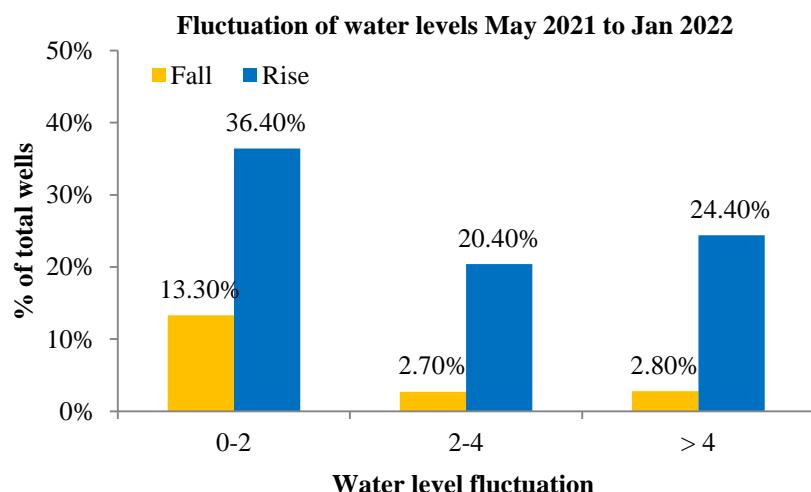


Fig. 11: Distribution of seasonal fluctuation of water levels

3.2.1 May 2021 to August 2021

A perusal of Fig. 12 and Table 8 reveals that more than 81% of the total wells in Gujarat state show a rise in water level. Rise in water level are observed in the range of 0 to 2 m in 38% of wells, 2 to 4 m in 19% of well and morethan 4 m in 24% of wells monitored in the state of Gujarat. Fall in water level is mainly observed in parts of Kachchh region and in north Gujarat region and Saurashtra region in small isolated patches scattered in the area. Fall is mainly in the range of 0 to 2 m and recorded in 15% of wells in the state. The maximum rise of 33.75 m is recorded at Manketara in Junagadh district whereas the maximum decline of 9.24 m is recorded at Timbi in Bhavnagar district.

About 90% of the total wells observed the rise of water level in North Gujarat and most of which (43% wells) is in the range more than 2 m of fluctuation of water level. Fall of 0 to 2 m range is observed in 32% of wells in Ahmedabad, Arvalli, Banaskantha, Kheda, Mahisagar, Panchmahals, Mahesana and Sabarkantha districts in isolated patches.

In South Gujarat region, 90% of total wells show the rise in water level and in the range more than 2 m in 41% of wells in the region. Rise of water level in 0 to 2 m and 2 to 4 m experience in about 49% of wells in the region. Fall in water level is observed maximum in the range of 0 to 2 m in 8% of wells in the South Gujarat area. There is no well shows fall of more the 4 m in the South Gujarat region.

About 92% of total well in the Saurashtra region has experienced rise of water level and in the range of 0 to 2 m experienced in about 31% of wells. Rise of water level more than 4 m is predominantly found in 37% of of wells in Saurashtra area. Fall of 0 to 2 as well as 2 to 4 m is observed in less than 7% of wells.

In Kachchh region, 60% of the total wells show the rise in water level. Fall of 0 to 2 m and more than 4 m is observed in 34% and 6% of the wells, respectively.

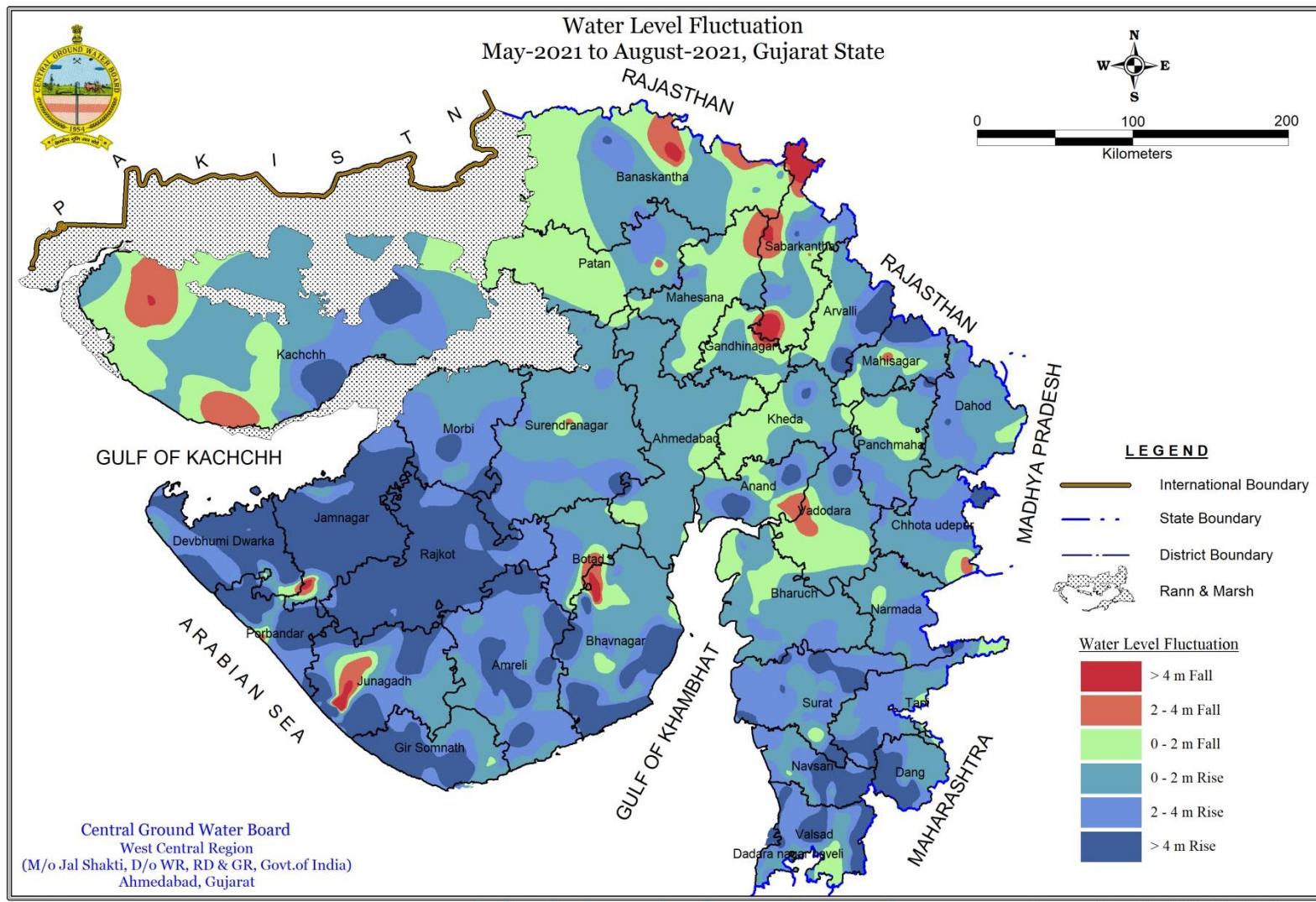


Fig. 12: Map showing seasonal fluctuation of water level May 2021 to August 2021

Table 8: Categorisation of changes in water level between May to August 2021

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in difrent depth range						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	0.02	1.2	0.2	0.61	10 76.9%	0 0.0%	0 0.0%	3 23.1%	0 0.0%	0 0.0%	10	3
2	Anand	11	0.10	6.7	1.34	3.1	6 54.5%	0 0.0%	2 18.2%	1 9.1%	2 18.2%	0 0.0%	8	3
3	Arvalli	9	0.10	15.75	0.11	0.85	3 33.3%	0 0.0%	2 22.2%	4 44.4%	0 0.0%	0 0.0%	5	4
4	Banaskantha	17	0.20	7.26	0.06	8.95	5 29.4%	0 0.0%	1 5.9%	8 47.1%	2 11.8%	1 5.9%	6	11
5	Dahod	19	0.23	4.13	0.5	0.5	11 57.9%	6 31.6%	1 5.3%	1 5.3%	0 0.0%	0 0.0%	18	1
6	Gandhinagar	6	0.06	0.87	0.05	0.22	4 66.7%	0 0.0%	0 0.0%	2 33.3%	0 0.0%	0 0.0%	4	2
7	Kheda	13	0.23	4.68	0.2	1.31	5 38.5%	1 7.7%	1 7.7%	6 46.2%	0 0.0%	0 0.0%	7	6
8	Mahesana	21	0.01	2.88	0.07	3.97	8 38.1%	1 4.8%	0 0.0%	11 52.4%	1 4.8%	0 0.0%	9	12
9	Mahisagar	13	0.25	8.2	0.15	2.82	7 53.8%	0 0.0%	1 7.7%	4 30.8%	1 7.7%	0 0.0%	8	5
10	Panchmahals	13	0.20	4.5	0.04	1.84	4 30.8%	4 30.8%	1 7.7%	4 30.8%	0 0.0%	0 0.0%	9	4
11	Patan	6	1.15	2.7	1.22	2.94	2 33.3%	2 33.3%	0 0.0%	1 16.7%	1 16.7%	0 0.0%	4	2
12	Sabarkantha	21	0.60	4.2	0.3	7.15	4 19.0%	5 23.8%	1 4.8%	7 33.3%	1 4.8%	3 14.3%	10	11
North Gujarat		162	0.01	15.75	0.04	8.95	69 42.6%	19 11.7%	10 6.2%	52 32.1%	8 4.9%	4 2.5%	98	64
13	Bharuch	26	0.05	4.9	0.25	1.48	15 57.7%	5 19.2%	1 3.8%	5 19.2%	0 0.0%	0 0.0%	21	5
14	Chhota Udepur	12	0.35	5.45	2.34	2.34	6 50.0%	4 33.3%	1 8.3%	0 0.0%	1 8.3%	0 0.0%	11	1
15	Narmada	13	0.15	3.60	2	2	7 53.8%	5 38.5%	0 0.0%	1 7.7%	0 0.0%	0 0.0%	12	1
16	Navsari	18	0.60	15.5	0.19	0.19	7 38.9%	3 16.7%	7 38.9%	1 5.6%	0 0.0%	0 0.0%	17	1
17	Surat	24	0.16	5.68	1.17	1.17	7 29.2%	8 33.3%	8 33.3%	1 4.2%	0 0.0%	0 0.0%	23	1
18	Tapi	13	0.58	5.16	0.28	2.3	5 38.5%	3 23.1%	3 23.1%	1 7.7%	1 7.7%	0 0.0%	11	2
19	The dangs	18	0.28	10.34	0	0	4 22.2%	3 16.7%	11 61.1%	0 0.0%	0 0.0%	0 0.0%	18	0
20	Vadodara	10	0.05	4.68	0.35	2.5	5 50.0%	1 10.0%	1 10.0%	2 20.0%	1 10.0%	0 0.0%	7	3
21	Valsad	17	0.86	10.87	0.65	0.65	6 35.3%	4 23.5%	6 35.3%	1 5.9%	0 0.0%	0 0.0%	16	1
South Gujarat		151	0.05	15.50	0.00	2.50	62 41.1%	36 23.8%	38 25.2%	12 7.9%	3 2.0%	0 0.0%	136	15
22	Amreli	35	0.60	17.75	0	0	13 37.1%	12 34.3%	10 28.6%	0 0.0%	0 0.0%	0 0.0%	35	0
23	Bhavnagar	31	0.22	17.56	0.1	9.24	11 35.5%	4 12.9%	8 25.8%	7 22.6%	0 0.0%	1 3.2%	23	8
24	Botad	7	0.79	3.91	3.62	3.62	4 57.1%	2 28.6%	0 0.0%	0 14.3%	1 0.0%	0 0.0%	6	1
25	Devbhumi Dwarka	19	1.20	21.6	1	1	2 10.5%	4 21.1%	12 63.2%	1 5.3%	0 0.0%	0 0.0%	18	1
26	Gir Somnath	18	0.71	25.1	0.68	0.68	6 33.3%	2 11.1%	9 50.0%	1 5.6%	0 0.0%	0 0.0%	17	1
27	Jamnagar	10	0.50	16.98	5.42	5.42	3 30.0%	2 20.0%	4 40.0%	0 0.0%	0 0.0%	1 10.0%	9	1
28	Junagadh	28	0.44	33.75	0.1	8.4	6 21.4%	5 17.9%	13 46.4%	1 3.6%	1 3.6%	2 7.1%	24	4
29	Morbi	13	1.24	10.13	0	0	7 53.8%	4 30.8%	2 15.4%	0 0.0%	0 0.0%	0 0.0%	13	0
30	Porbandar	21	0.11	19.85	0.1	2.4	2 9.5%	6 28.6%	11 52.4%	1 4.8%	1 4.8%	0 0.0%	19	2
31	Rajkot	23	1.05	15.57	0	0	2 8.7%	6 26.1%	15 65.2%	0 0.0%	0 0.0%	0 0.0%	23	0
32	Surendranagar	26	0.20	5.68	3.1	3.1	16 61.5%	7 26.9%	2 7.7%	0 0.0%	1 3.8%	0 0.0%	25	1
Saurashtra		231	0.11	33.75	0.00	9.24	72 31.2%	54 23.4%	86 37.2%	11 4.8%	4 1.7%	4 1.7%	212	19
33	Kachchh	32	0.04	12.14	0.02	6.85	13 40.6%	3 9.4%	3 9.4%	11 34.4%	0 0.0%	2 6.3%	19	13
Kachchh		32	0.04	12.14	0.02	6.85	13 40.6%	3 9.4%	3 9.4%	11 34.4%	0 0.0%	2 6.3%	19	13
Gujarat State		576	0.01	33.75	0.00	9.24	216 37.5%	112 19.4%	137 23.8%	86 14.9%	15 2.6%	10 1.7%	465	111

3.2.2 May 2021 to November 2021

The seasonal water level fluctuation shows rise in 87% of the total wells monitored in the Gujarat state area during the Pre and Post Monsoon of 2021. Fall in water level is observed mainly in Kachchh, Saurashtra and Central part of Gujarat in isolated patches. In the state, the maximum rise of 31.27 m is recorded at Morjhar in Amreli district whereas the maximum decline of 8.27 m is observed at Kunkavav in Amreli district. The seasonal water level fluctuations are shown in Fig. 13 and placed at Table 9.

In North Gujarat region, 82% of the total well analysed shows rise in water level. Maximum rise observed 15.14 m at Varvada in Sabarkantha district. Out of the total well analysed, maximum rise (46%) is observed in the category of 0 to 2 m. Few isolated patches of fall observed in Banaskantha, Mahisagar, Mahesana, Patan and Sasbarkantha districts.

In South Gujarat, about 90% of the well in the area have recorded the rise. The rise of 0 to 2 m and more than 4 m is observed in 36% and 30%, respectively. The maximum rise observed 15.30 m at Pipalkhed in Navsari district. The fall is in 10% of total well and maximum categorised in the range of 0 to 2 m.

Over all 90% of total well analysed shows the rise in water level in the entire Saurashtra. Fall is mainly in the range of 0 to 2 m and is found in isolated patches and cover 10% of the total area of region. The maximum rise observed 31.27 m at Morjhar in Amreli.

In Kachchh 60% of the total well analysed recorded rise in water level. The fall is mostly in the range of 0 to 2 m recorded in about 30% of the total wells. Rise is observed in central part of the region and mostly in the range of 0 to 2 m.

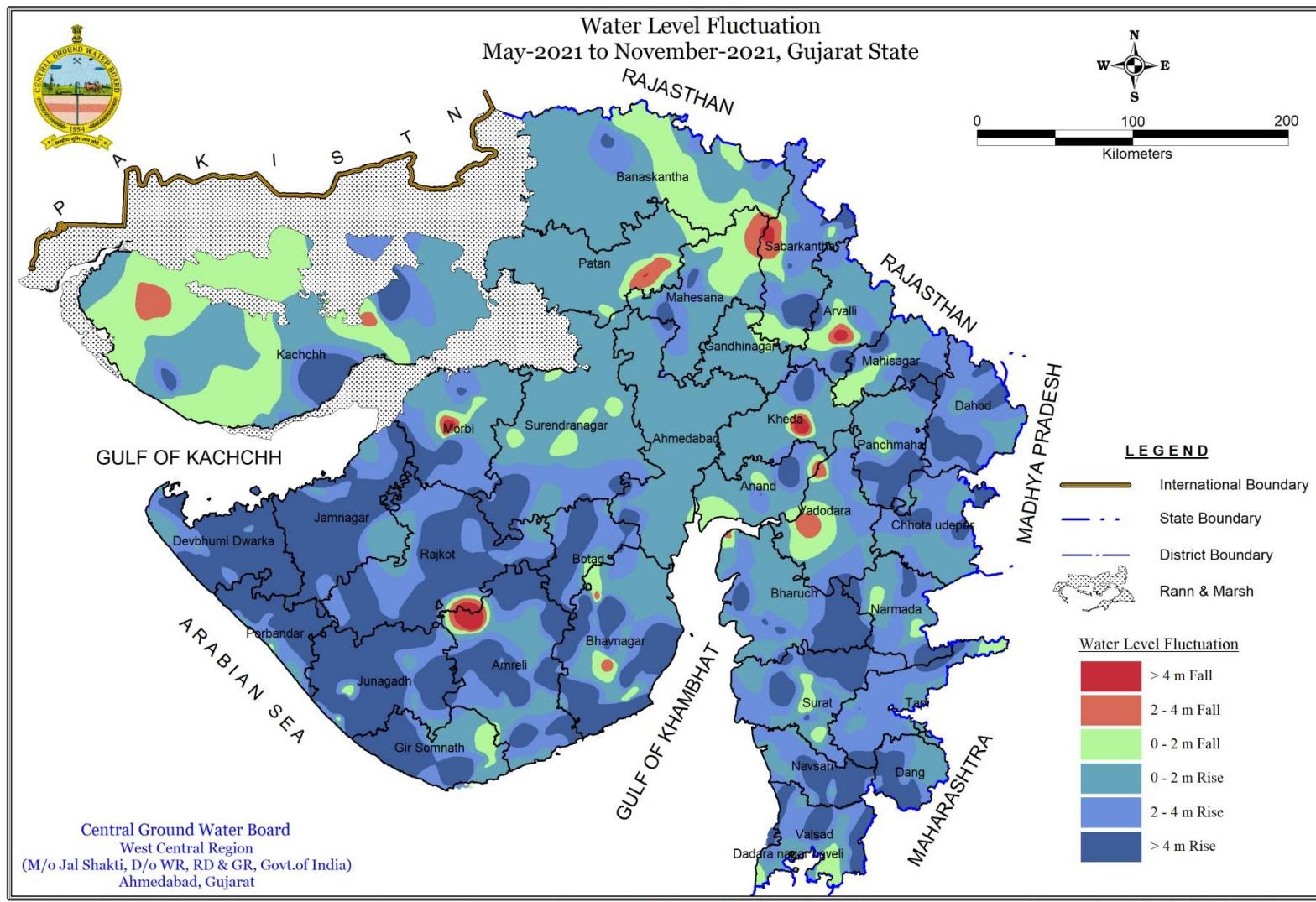


Fig. 13: Map showing seasonal fluctuation of water level May 2021 to November 2021

Table 9: Categorisation of changes in water level between May to November 2021

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in different depth range						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	0.16	6.36	0	0	12 92.3%	0 0.0%	1 7.7%	0 0.0%	0 0.0%	0 0.0%	13	0	
2	Anand	10	0.10	5.7	0.97	0.97	5 50.0%	2 20.0%	2 20.0%	1 10.0%	0 0.0%	0 0.0%	9	1	
3	Arvalli	9	0.35	14.85	0.55	5.15	2 22.2%	3 33.3%	1 11.1%	2 22.2%	0 0.0%	1 11.1%	6	3	
4	Banaskantha	16	0.18	7.51	0.51	1.36	7 43.8%	2 12.5%	2 12.5%	5 31.3%	0 0.0%	0 0.0%	11	5	
5	Dahod	19	1.05	9.15	0	0	6 31.6%	5 26.3%	8 42.1%	0 0.0%	0 0.0%	0 0.0%	19	0	
6	Gandhinagar	6	1.15	1.51	0.07	0.12	4 66.7%	0 0.0%	0 0.0%	2 33.3%	0 0.0%	0 0.0%	4	2	
7	Kheda	12	0.16	5.68	6.64	6.64	8 66.7%	1 8.3%	2 16.7%	0 0.0%	0 0.0%	1 8.3%	11	1	
8	Mahesana	22	0.10	5.17	0.44	5.51	13 59.1%	3 13.6%	3 13.6%	2 9.1%	0 0.0%	1 4.5%	19	3	
9	Mahisagar	11	0.15	10.3	0.35	1.53	3 27.3%	3 27.3%	2 18.2%	3 27.3%	0 0.0%	0 0.0%	8	3	
10	Panchmahals	12	0.20	6.55	1.08	1.08	4 33.3%	2 16.7%	5 41.7%	1 8.3%	0 0.0%	0 0.0%	11	1	
11	Patan	6	0.57	2	0.1	4.05	3 50.0%	0 0.0%	0 0.0%	1 16.7%	1 16.7%	1 16.7%	3	3	
12	Sabarkantha	22	0.50	15.14	0.35	4.4	5 22.7%	6 27.3%	5 22.7%	5 22.7%	0 0.0%	1 4.5%	16	6	
North Gujarat		158	0.10	15.14	0.00	6.64	72 45.6%	27 17.1%	31 19.6%	22 13.9%	1 13.9%	5 0.6%	130	28	
13	Bharuch	28	0.40	6.1	0.01	2.28	13 46.4%	6 21.4%	7 25.0%	1 3.6%	1 3.6%	0 0.0%	26	2	
14	Chhota Udepur	12	0.10	7.25	0	0	6 50.0%	2 16.7%	4 33.3%	0 0.0%	0 0.0%	0 0.0%	12	0	
15	Narmada	15	0.05	6.50	0	1	5 33.3%	4 26.7%	3 20.0%	3 20.0%	0 0.0%	0 0.0%	12	3	
16	Navsari	18	0.26	15.3	0.1	0.1	5 27.8%	4 22.2%	8 44.4%	1 5.6%	0 0.0%	0 0.0%	17	1	
17	Surat	25	0.15	7.21	1.2	1.8	9 36.0%	8 32.0%	5 20.0%	3 12.0%	0 0.0%	0 0.0%	22	3	
18	Tapi	13	0.30	5.62	0.7	0.86	4 30.8%	5 38.5%	2 15.4%	2 15.4%	0 0.0%	0 0.0%	11	2	
19	The dangs	19	1.33	9.95	0	0	4 21.1%	3 15.8%	12 63.2%	0 0.0%	0 0.0%	0 0.0%	19	0	
20	Vadodara	9	1.00	3.8	2.95	3.8	4 44.4%	3 33.3%	0 0.0%	0 0.0%	2 22.2%	0 0.0%	7	2	
21	Valsad	16	0.55	10.82	0.35	0.66	6 37.5%	2 12.5%	6 37.5%	2 12.5%	0 0.0%	0 0.0%	14	2	
South Gujarat		155	0.05	15.30	0.00	3.80	56 36.1%	37 23.9%	47 30.3%	12 7.7%	3 7.7%	0 1.9%	0 0.0%	140	15
22	Amreli	37	0.01	31.27	0.03	8.27	13 35.1%	8 21.6%	14 37.8%	1 2.7%	0 0.0%	1 2.7%	35	2	
23	Bhavnagar	32	0.14	20.17	0.1	3.52	11 34.4%	6 18.8%	10 31.3%	3 9.4%	2 6.3%	0 0.0%	27	5	
24	Botad	6	2.75	5.48	0.59	0.59	0 0.0%	1 16.7%	4 66.7%	1 16.7%	0 0.0%	0 0.0%	5	1	
25	Devbhumi Dwarka	20	0.20	22.6	0	0	4 20.0%	3 15.0%	13 65.0%	0 0.0%	0 0.0%	0 0.0%	20	0	
26	Gir Somnath	19	0.28	22.22	0.73	1.37	3 15.8%	5 26.3%	9 47.4%	2 10.5%	0 0.0%	0 0.0%	17	2	
27	Jamnagar	16	0.20	19.38	0	0	4 25.0%	5 31.3%	7 43.8%	0 0.0%	0 0.0%	0 0.0%	16	0	
28	Junagadh	25	0.55	18.8	0.2	3.5	3 12.0%	2 8.0%	16 64.0%	3 12.0%	1 4.0%	0 0.0%	21	4	
29	Morbi	16	0.50	9.25	0.12	5.65	7 43.8%	3 18.8%	3 18.8%	2 12.5%	0 0.0%	1 6.3%	13	3	
30	Porbandar	22	0.85	24.1	0.45	0.45	2 9.1%	5 22.7%	14 63.6%	1 4.5%	0 0.0%	0 0.0%	21	1	
31	Rajkot	26	0.50	15.1	0.12	0.12	2 7.7%	8 30.8%	15 57.7%	1 3.8%	0 0.0%	0 0.0%	25	1	
32	Surendranagar	28	0.06	6.93	0.06	1.59	18 64.3%	2 7.1%	3 10.7%	5 17.9%	0 0.0%	0 0.0%	23	5	
Saurashtra		247	0.01	31.27	0.00	8.27	67 27.1%	48 19.4%	108 43.7%	19 7.7%	3 1.2%	2 0.8%	223	24	
33	Kachchh	30	0.16	10.4	0.23	4.16	11 36.7%	4 13.3%	3 10.0%	9 30.0%	2 6.7%	1 3.3%	18	12	
Kachchh		30	0.16	10.40	0.23	4.16	11 36.7%	4 13.3%	3 10.0%	9 30.0%	2 6.7%	1 3.3%	18	12	
Gujarat State		590	0.01	31.27	0.00	8.27	206 34.9%	116 19.7%	189 32.0%	62 10.5%	9 1.5%	8 1.4%	511	79	

3.2.3 May 2021 to January 2022

A perusal of Fig 14 and Table 10 reveals that about 81% of the total well in the Gujarat state area have recorded the rise in water level between May 2021 and January 2022. Fall in water level is observed mainly in North, Saurashtra and Central region distributed sporadically all over Gujarat state. In the state, the maximum rise of 27.12 m is at Morjhar in Amreli district whereas the maximum decline of 12.20 m is observed at Kuvadia in Devbhumi Dwarka district.

In north Gujarat region, water level rises mainly observed in 75% of the total well analysed and maximum rises (45%) are in the range of 0 to 2 m. The fall of water level observed in all districts of the north Gujarat state except Anand and Dahod district distributed in central and west central and east central part.

The 92% of the total wells in the area of south Gujarat have recorded rise and maximum (35%) in the range of 0 to 2 m of rise in the region. The fall is 08% of total well and maximum (7%) in the range of 0 to 2 m.

Over all 82% of total well analysed are shown rise in water level in the entire Saurashtra region. About 31% of areas have shown rise of water level between 0 to 2 m and 34% shows more than 4 m and are found in all the districts of Saurashtra region. Fall of water level is observed in isolated patches all over the region. The fall less than 2 m is observed in 13% of the well in the region.

In Kachchh, 54% of the total well analysed recorded rise in water level. The fall is mostly in the range of 0 to 2 m and is observed in 43% of the total well. The total fall of water level has been observed in 46% of the total well in the region.

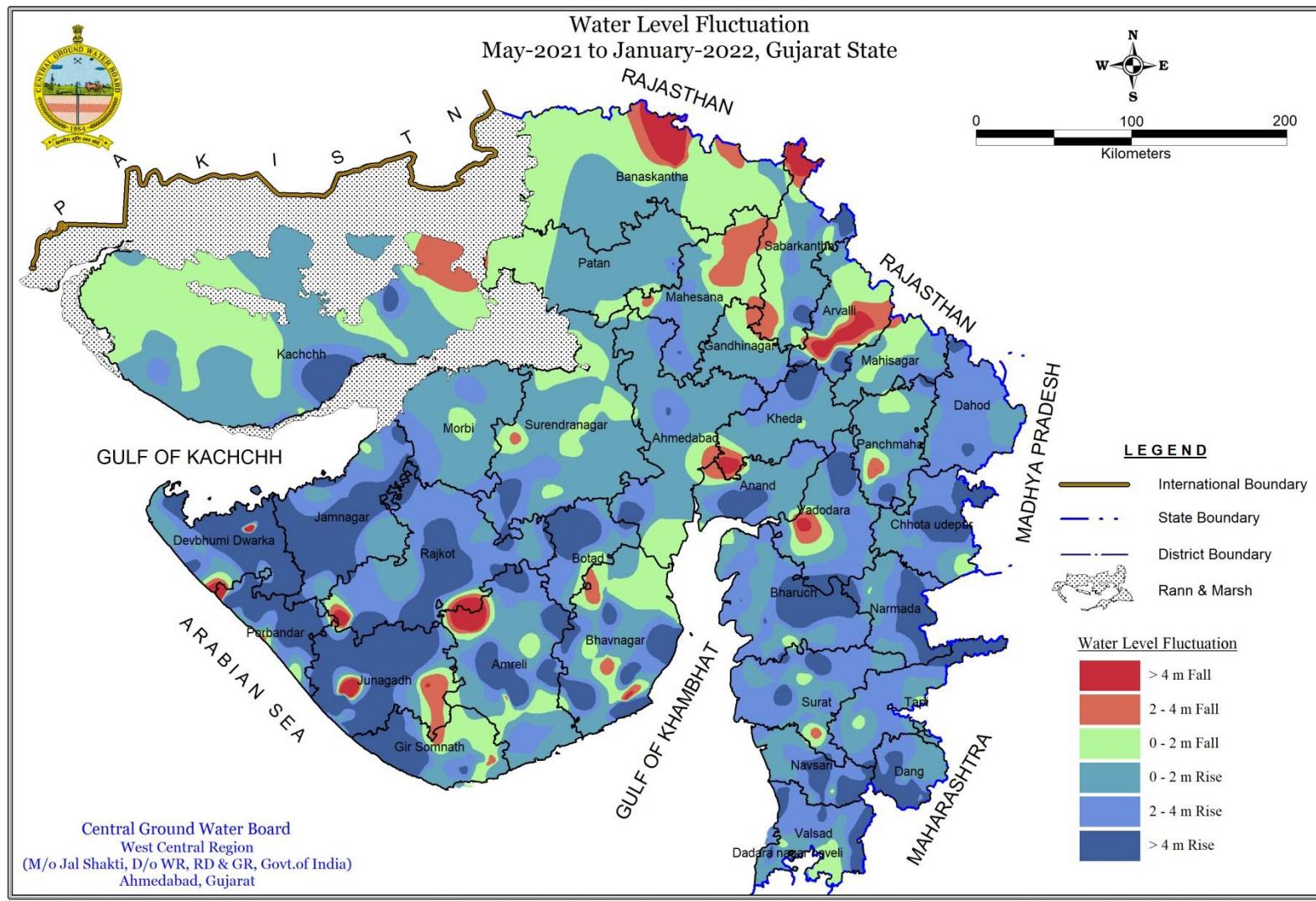


Fig. 14: Map showing seasonal fluctuation of water level May 2021 to January 2022

Table 10. Categorisation of changes in water level between May 2021 to January 2022

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in different depth range						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	0.27	7.15	0.05	0.72	10 71.4%	0 0.0%	2 14.3%	2 14.3%	0 0.0%	0 0.0%	12	2
2	Anand	11	0.07	9.55	0	0	6 54.5%	3 27.3%	2 18.2%	0 0.0%	0 0.0%	0 0.0%	11	0
3	Arvalli	10	0.03	12.95	0.4	7	4 40.0%	1 10.0%	1 10.0%	1 10.0%	0 0.0%	3 30.0%	6	4
4	Banaskantha	12	0.14	0.46	0.24	9.01	4 33.3%	0 0.0%	0 0.0%	5 41.7%	2 16.7%	1 8.3%	4	8
5	Dahod	19	0.24	5.6	0	0	5 26.3%	11 57.9%	3 15.8%	0 0.0%	0 0.0%	0 0.0%	19	0
6	Gandhinagar	5	0.07	3.12	1.42	1.42	3 60.0%	1 20.0%	0 0.0%	1 20.0%	0 0.0%	0 0.0%	4	1
7	Kheda	13	0.22	8.12	0.1	5.17	6 46.2%	3 23.1%	2 15.4%	1 7.7%	0 0.0%	1 7.7%	11	2
8	Mahesana	19	0.16	4.04	0.02	4.89	8 42.1%	2 10.5%	1 5.3%	5 26.3%	2 10.5%	1 5.3%	11	8
9	Mahisagar	12	0.15	3.25	0.1	2.8	5 41.7%	2 16.7%	0 0.0%	4 33.3%	1 8.3%	0 0.0%	7	5
10	Panchmahals	14	0.20	5.3	0.5	4.06	7 50.0%	3 21.4%	2 14.3%	1 7.1%	0 0.0%	1 7.1%	12	2
11	Patan	7	0.10	4.1	0.58	0.58	5 71.4%	0 0.0%	1 14.3%	1 14.3%	0 0.0%	0 0.0%	6	1
12	Sabarkantha	21	0.10	5.39	0.5	5.6	8 38.1%	5 23.8%	2 9.5%	3 14.3%	2 9.5%	1 4.8%	15	6
	North Gujarat	157	0.03	12.95	0.00	9.01	71 45.2%	31 19.7%	16 10.2%	24 15.3%	7 4.5%	8 5.1%	118	39
13	Bharuch	30	0.28	13.6	1.18	1.89	14 46.7%	9 30.0%	5 16.7%	2 6.7%	0 0.0%	0 0.0%	28	2
14	Chhota Udepur	13	1.13	8.03	0.76	0.76	3 23.1%	4 30.8%	5 38.5%	1 7.7%	0 0.0%	0 0.0%	12	1
15	Narmada	12	0.53	5.48	0	0	4 33.3%	3 25.0%	4 33.3%	1 8.3%	0 0.0%	0 0.0%	11	1
16	Navsari	18	0.06	10	0.6	0.6	7 38.9%	5 27.8%	5 27.8%	1 5.6%	0 0.0%	0 0.0%	17	1
17	Surat	25	0.16	6.21	1.01	2.6	10 40.0%	9 36.0%	4 16.0%	1 4.0%	1 4.0%	0 0.0%	23	2
18	Tapi	10	0.25	5.32	0.28	0.4	3 30.0%	4 40.0%	1 10.0%	2 20.0%	0 0.0%	0 0.0%	8	2
19	The dangs	22	0.45	10.05	0.65	0.65	4 18.2%	4 18.2%	13 59.1%	1 4.5%	0 0.0%	0 0.0%	21	1
20	Vadodara	8	0.49	9.82	5.08	5.08	3 37.5%	3 37.5%	1 12.5%	0 0.0%	0 0.0%	1 12.5%	7	1
21	Valsad	17	0.09	9.07	0.65	0.75	6 35.3%	4 23.5%	5 29.4%	2 11.8%	0 0.0%	0 0.0%	15	2
	South Gujarat	155	0.06	13.60	0.07	5.08	54 34.8%	45 29.0%	43 27.7%	11 7.1%	1 0.6%	1 0.6%	142	13
22	Amreli	35	0.11	27.12	0.24	10.65	13 37.1%	8 22.9%	8 22.9%	4 11.4%	1 2.9%	1 2.9%	29	6
23	Bhavnagar	33	0.32	18.37	0.12	4.81	10 30.3%	5 15.2%	6 18.2%	9 27.3%	2 6.1%	1 3.0%	21	12
24	Botad	8	1.36	14.36	1.91	1.91	1 12.5%	2 25.0%	4 50.0%	1 12.5%	0 0.0%	0 0.0%	7	1
25	Devbhumi Dwarka	19	0.08	22.95	12.2	12.2	6 31.6%	0 0.0%	12 63.2%	0 0.0%	0 0.0%	1 5.3%	18	1
26	Gir Somnath	18	0.89	20.52	0.98	3.28	5 27.8%	2 11.1%	7 38.9%	2 11.1%	2 11.1%	0 0.0%	14	4
27	Jamnagar	15	0.08	18.58	0.22	0.22	5 33.3%	5 33.3%	4 26.7%	1 6.7%	0 0.0%	0 0.0%	14	1
28	Junagadh	25	0.55	13.09	0.32	10.71	3 12.0%	3 12.0%	16 64.0%	1 4.0%	0 0.0%	2 8.0%	22	3
29	Morbi	12	0.18	3.48	1.26	1.26	8 66.7%	3 25.0%	0 0.0%	1 8.3%	0 0.0%	0 0.0%	11	1
30	Porbandar	22	0.03	20.3	1.25	8.55	5 22.7%	3 13.6%	11 50.0%	1 4.5%	1 4.5%	1 4.5%	19	3
31	Rajkot	23	0.31	11	7.07	7.07	5 21.7%	6 26.1%	11 47.8%	0 0.0%	0 0.0%	1 4.3%	22	1
32	Surendranagar	29	0.17	5.14	0.05	2.75	14 48.3%	3 10.3%	1 3.4%	10 34.5%	1 3.4%	0 0.0%	18	11
	Saurashtra	239	0.03	27.12	0.05	12.20	75 31.4%	40 16.7%	80 33.5%	30 12.6%	7 2.9%	7 2.9%	195	44
33	Kachchh	28	0.15	6.85	0.03	2.65	11 39.3%	2 7.1%	2 7.1%	12 42.9%	1 3.6%	0 0.0%	15	13
	Kachchh	28	0.15	6.85	0.03	2.65	11 39.3%	2 7.1%	2 7.1%	12 42.9%	1 3.6%	0 0.0%	15	13
	Gujarat State	579	0.03	27.12	0.00	12.20	211 36.4%	118 20.4%	141 24.4%	77 13.3%	16 2.8%	16 2.8%	470	109

3.3 Annual Water Level Fluctuation

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

Fig: 15 a

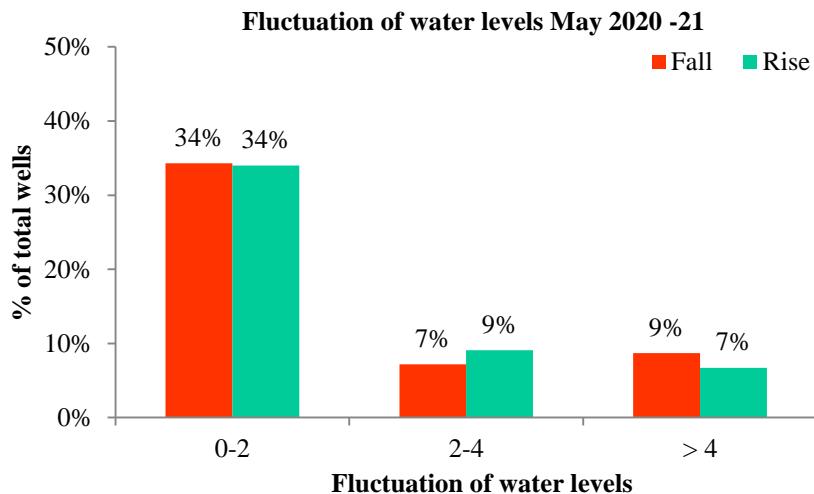


Fig: 15b

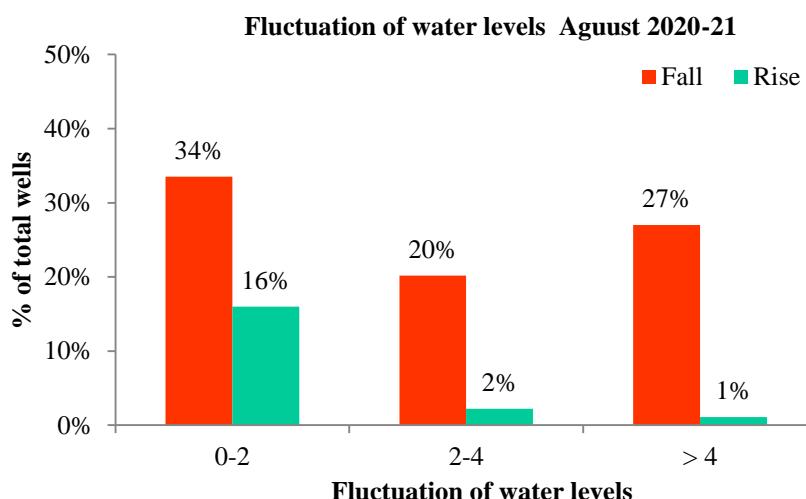


Fig: 15c

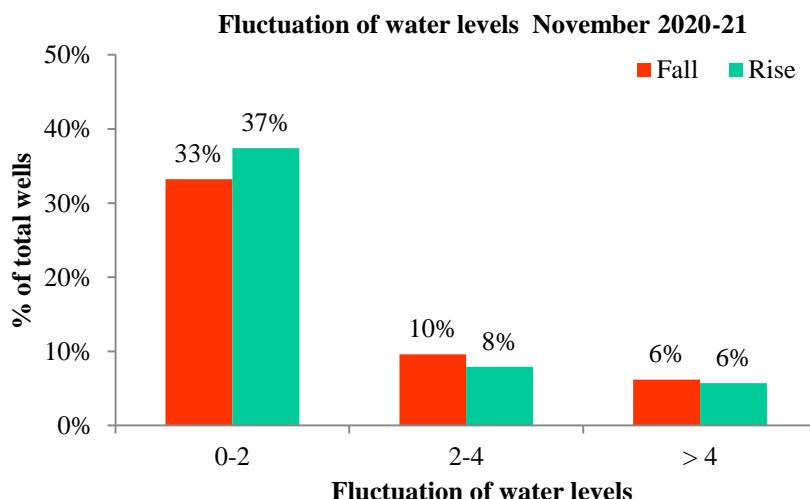


Fig: 15d

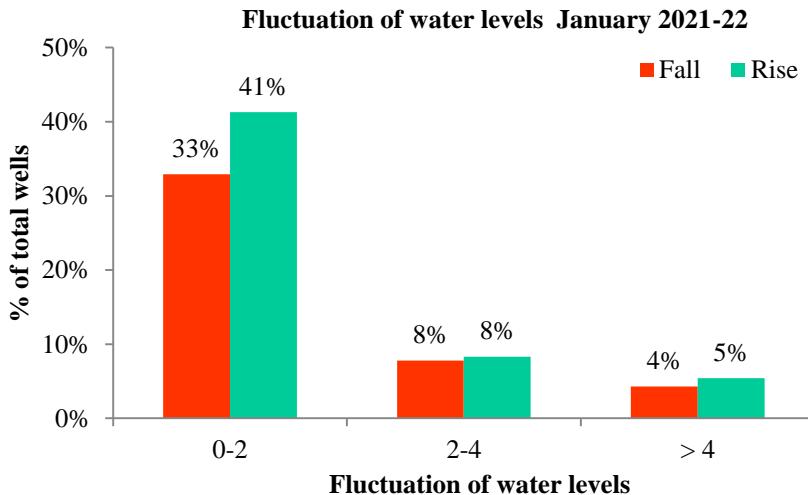


Fig. 15: Annual fluctuation of water levels

3.3.1 May 2020 to May 2021

A perusal of Fig 16 and Table 11 reveals that 50% of the total monitoring stations of state show a rise in water level. Rise of 0 to 2 m is observed in about 34% of total well of the state. More than 4 m rise is observed in 7% of total well. Fall in water level is observed mainly in Kachchh, Saurashtra, Central and Southern part of Gujarat in scattered places. Fall is mainly in the range of 0 to 2 m and covers about 34% of total wells of the state. The maximum rise of 16.05 m is recorded in Junagadh district, whereas the maximum decline of 36.86 m bgl is recorded in Junagadh district.

About 52% of the total wells observed the rise of water level in the North Gujarat and most of which (42% of wells) is in the range of 0 to 2 m. Rise of more than 4 m is mostly seen in the central part of region in Gandhinagar district. Eastern part of the region shows rise of 0 to 2 m in Arvalli and Mahisagar districts. Fall of water level mostly observed in 48% of total well in North Gujarat, in Anand, Arvalli, Dahod, Mahesana, Banaskantha, Patan and Ahmedabad districts.

South Gujarat region shows fall in water level covers an area by 56% of well in the region. Rise in water level is observed in 44% of wells. Rise and fall of more than 2 m has observed in all over the region. Fall of more than 4 m is observed at few locations in Chhota Udepur, Narmada, Navsari, Surat, Tapi and The dangs districts.

About 49% of total well in Saurashtra region has experienced rise where as 51% shows fall. In 0 to 2 m range, 29% of well shows rise where as 27% shows fall. Fall of more than 4 m is observed in scattered patches in all over the region except Morbi and Surendranagar district. Amreli, Bhavnagar, Botad and Junagadh districts experienced rise of more than 4 m in few patches.

In Kachchh region, 77% of total well is experienced rise in water level where as 23% shows fall. Fall mostly ranges in 0 to 2 m in Kachchh region. Overall Kachchh region shows rise. However, Central part of the regions shows fall in few patches in the ranges of 0 to 2 m.

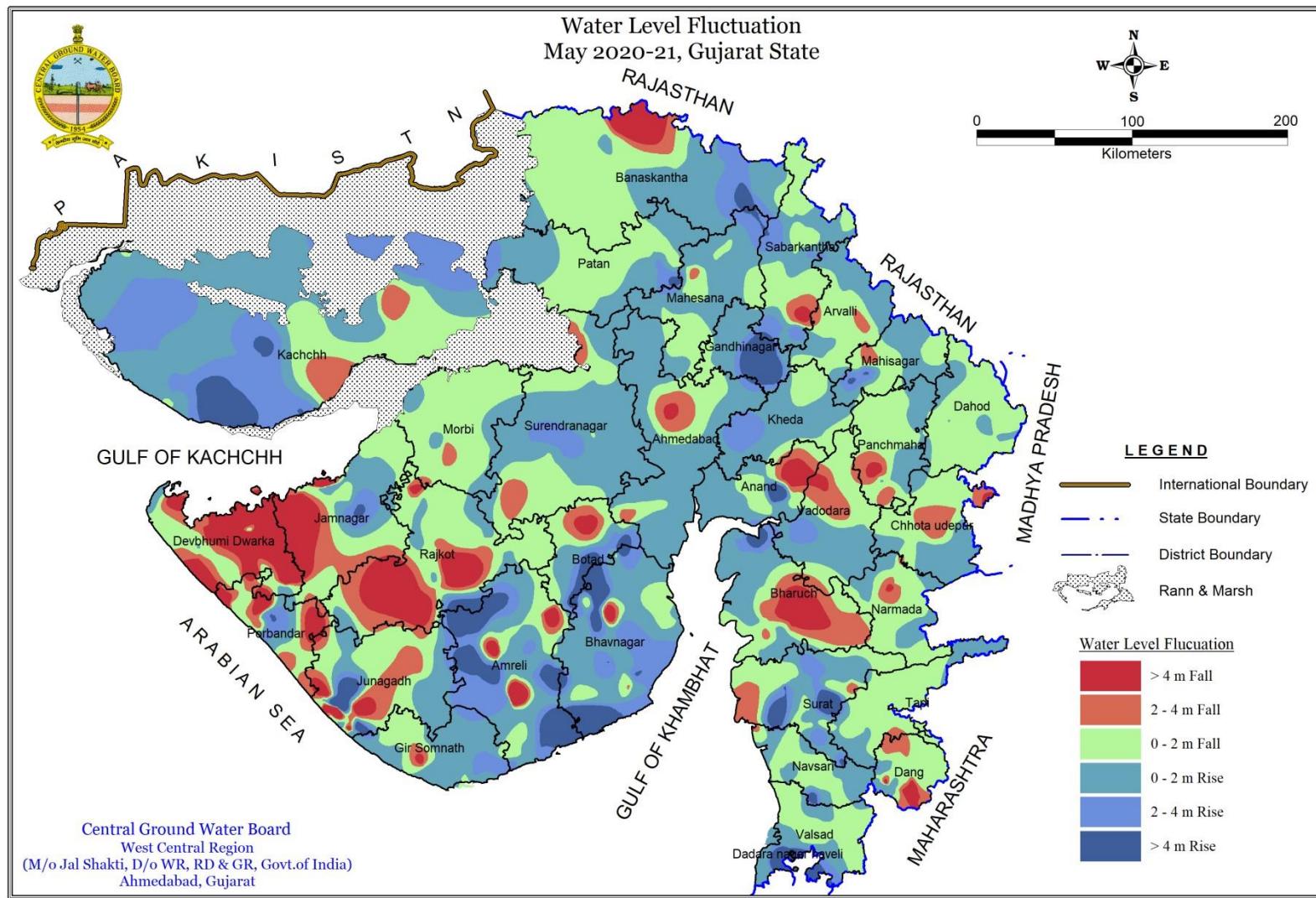


Fig. 16: Annual fluctuation of water level May 2020 to May 2021

Table 11. Categorisation of changes in water level between May 2020 to May 2021

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in difrent depth range						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	0.05	1.62	0.03	4.52	7 63.6%	0 0.0%	0 0.0%	2 18.2%	1 9.1%	1 9.1%	7	4
2	Anand	10	0.13	13.91	0.12	5.7	3 30.0%	0 0.0%	2 20.0%	4 40.0%	0 0.0%	1 10.0%	5	5
3	Arvalli	13	0.59	2.07	0.04	2.56	3 23.1%	1 7.7%	0 0.0%	7 53.8%	2 15.4%	0 0.0%	4	9
4	Banaskantha	17	0.22	6.19	0.75	7.65	9 52.9%	2 11.8%	1 5.9%	3 17.6%	1 5.9%	1 5.9%	12	5
5	Dahod	21	0.02	0.83	0.22	1.94	6 28.6%	0 0.0%	0 0.0%	15 71.4%	0 0.0%	0 0.0%	6	15
6	Gandhinagar	4	0.14	14.72	0.05	0.05	2 50.0%	0 0.0%	1 25.0%	1 25.0%	0 0.0%	0 0.0%	3	1
7	Kheda	13	0.04	3.61	0.33	1.55	8 61.5%	1 7.7%	0 0.0%	4 30.8%	0 0.0%	0 0.0%	9	4
8	Mahesana	22	0.13	1.83	0.01	3.10	14 63.6%	0 0.0%	0 0.0%	7 31.8%	1 4.5%	0 0.0%	14	8
9	Mahisagar	15	0.25	4.2	0.2	3.23	4 26.7%	0 0.0%	2 13.3%	8 53.3%	1 6.7%	0 0.0%	6	9
10	Panchmahals	14	0.10	1.75	0.17	4.95	5 35.7%	0 0.0%	0 0.0%	7 50.0%	1 7.1%	1 7.1%	5	9
11	Patan	8	0.21	4.62	0.05	0.65	3 37.5%	1 12.5%	1 12.5%	3 37.5%	0 0.0%	0 0.0%	5	3
12	Sabarkantha	23	0.08	4.02	0.21	4.83	8 34.8%	3 13.0%	1 4.3%	10 43.5%	0 0.0%	1 4.3%	12	11
North Gujarat		171	0.02	14.72	0.01	7.65	72 42.1%	8 4.7%	8 4.7%	71 41.5%	7 4.1%	5 2.9%	88	83
13	Bharuch	27	0.03	5.92	0.01	11.46	14 51.9%	1 3.7%	1 3.7%	6 22.2%	3 11.1%	2 7.4%	16	11
14	Chhota Udepur	12	0.43	1.92	0.08	4.15	4 33.3%	0 0.0%	0 0.0%	4 33.3%	3 25.0%	1 8.3%	4	8
15	Narmada	13	0.20	1.10	0	4	4 30.8%	0 0.0%	0 0.0%	7 53.8%	1 7.7%	1 7.7%	4	9
16	Navsari	16	0.36	5.9	0.27	1.4	8 50.0%	0 0.0%	1 6.3%	7 43.8%	0 0.0%	0 0.0%	9	7
17	Surat	26	0.10	10.36	0.33	3.8	7 26.9%	3 11.5%	4 15.4%	10 38.5%	2 7.7%	0 0.0%	14	12
18	Tapi	11	0.05	3.26	0.07	2	3 27.3%	1 9.1%	0 0.0%	7 63.6%	0 0.0%	0 0.0%	4	7
19	The dangs	21	0.15	2.55	0.07	10.65	3 14.3%	1 4.8%	0 0.0%	9 42.9%	2 9.5%	6 28.6%	4	17
20	Vadodara	9	1.14	2.67	0.6	4.3	2 22.2%	1 11.1%	0 0.0%	4 44.4%	1 11.1%	1 11.1%	3	6
21	Valsad	16	0.16	2.6	0.13	1.72	6 37.5%	1 6.3%	1 6.3%	8 50.0%	0 0.0%	0 0.0%	8	8
South Gujarat		151	0.03	10.36	0.01	11.46	51 33.8%	8 5.3%	7 4.6%	62 41.1%	12 7.9%	11 7.3%	66	85
22	Amreli	35	0.38	12.24	0.26	14.48	12 34.3%	8 22.9%	6 17.1%	6 17.1%	0 0.0%	3 8.6%	26	9
23	Bhavnagar	28	0.27	10.75	0.07	7.38	12 42.9%	3 10.7%	6 21.4%	4 14.3%	2 7.1%	1 3.6%	21	7
24	Botad	7	1.44	8.4	0.77	5.9	1 14.3%	1 14.3%	2 28.6%	1 14.3%	1 14.3%	1 14.3%	4	3
25	Devbhumi Dwarka	20	0.14	1	0.29	20.87	4 20.0%	0 0.0%	0 0.0%	4 20.0%	1 5.0%	11 55.0%	4	16
26	Gir Somnath	18	0.01	3.99	0.79	4.91	9 50.0%	4 22.2%	0 0.0%	4 22.2%	0 0.0%	1 5.6%	13	5
27	Jamnagar	16	0.07	4.48	0.05	14.21	4 25.0%	0 0.0%	1 6.3%	8 50.0%	1 6.3%	2 12.5%	5	11
28	Junagadh	26	0.36	16.05	0.09	36.86	3 11.5%	2 7.7%	3 11.5%	10 38.5%	3 11.5%	5 19.2%	8	18
29	Morbi	7	0.30	0.95	0.51	2.46	2 28.6%	0 0.0%	0 0.0%	4 57.1%	1 14.3%	0 0.0%	2	5
30	Porbandar	22	1.15	4.2	0.19	12.35	1 4.5%	3 13.6%	1 4.5%	7 31.8%	4 18.2%	6 27.3%	5	17
31	Rajkot	21	0.12	1.81	0.15	10.04	7 33.3%	0 0.0%	0 0.0%	6 28.6%	4 19.0%	4 19.0%	7	14
32	Surendranagar	18	0.08	3.42	0.03	3.24	8 44.4%	3 16.7%	0 0.0%	5 27.8%	2 11.1%	0 0.0%	11	7
Saurashtra		218	0.01	16.05	0.03	36.86	63 28.9%	24 11.0%	19 8.7%	59 27.1%	19 8.7%	34 15.6%	106	112
33	Kachchh	31	0.20	10.15	0.03	3.9	8 25.8%	12 38.7%	4 12.9%	4 12.9%	3 9.7%	0 0.0%	24	7
Kachchh		31	0.20	10.15	0.03	3.90	8 25.8%	12 38.7%	4 12.9%	4 12.9%	3 9.7%	0 0.0%	24	7
Gujarat State		571	0.01	16.05	0.01	36.86	194 34.0%	52 9.1%	38 6.7%	196 34.3%	41 7.2%	50 8.8%	284	287

3.3.2 August 2020 to August 2021

A perusal of Fig 17 and Table 12 reveals that 19% of total monitoring well in the Gujarat state shows a rise in water level. Rise in water level within range of 0 to 2 m is observed in about 16% of well. Fall in the range of 0 to 2 m experienced by 34% of well of the state. Overall 81% of total monitoring well in the Gujarat state shows fall in water level. The maximum rise of 25.35 m is recorded in Ahmedabad district whereas the maximum decline of 14.00 m is recorded in Kachchh district.

About 6% of the total well shows rise of water level in the North Gujarat and most of which (4% of well) is in the range of 0 to 2 m of fluctuation of water level. Rise of more than 4 m is seen in Anand and Gandhinagar districts. Fall of 0 to 4 m and more than 4 m is observed in 53% and 41% of well of the region, respectively. Fall of water level observed in all over the region.

In South Gujarat region, 14% of the total well shows rise in water level and out of which, 13% are in the range of 0 to 2 m in the region. Similarly, 86% of total well shows fall in water level and a maximum of 40% of well are in the range of 0 to 2 m.

About 29% of the total well in the Saurashtra region experienced the rise of water level and out of which, 26% of well are in the range of 0 to 2 m. The fall of water level experienced in 71% of wells. More than 4 m of fall is observed in 20% of the total number of wells analysed. Fall of more than 4 m is predominantly observed in Porbandar, Junagadh, Jamnagar and Surendranager districts.

In Kachchh region, 58% of the total well in the area is experienced by a fall in water level where as 42% shows rise. Water level in range of less than 2 m, about 26% of well shows rise while 13% shows fall. Fall in water level observed in eastern and western part of Kachchh region.

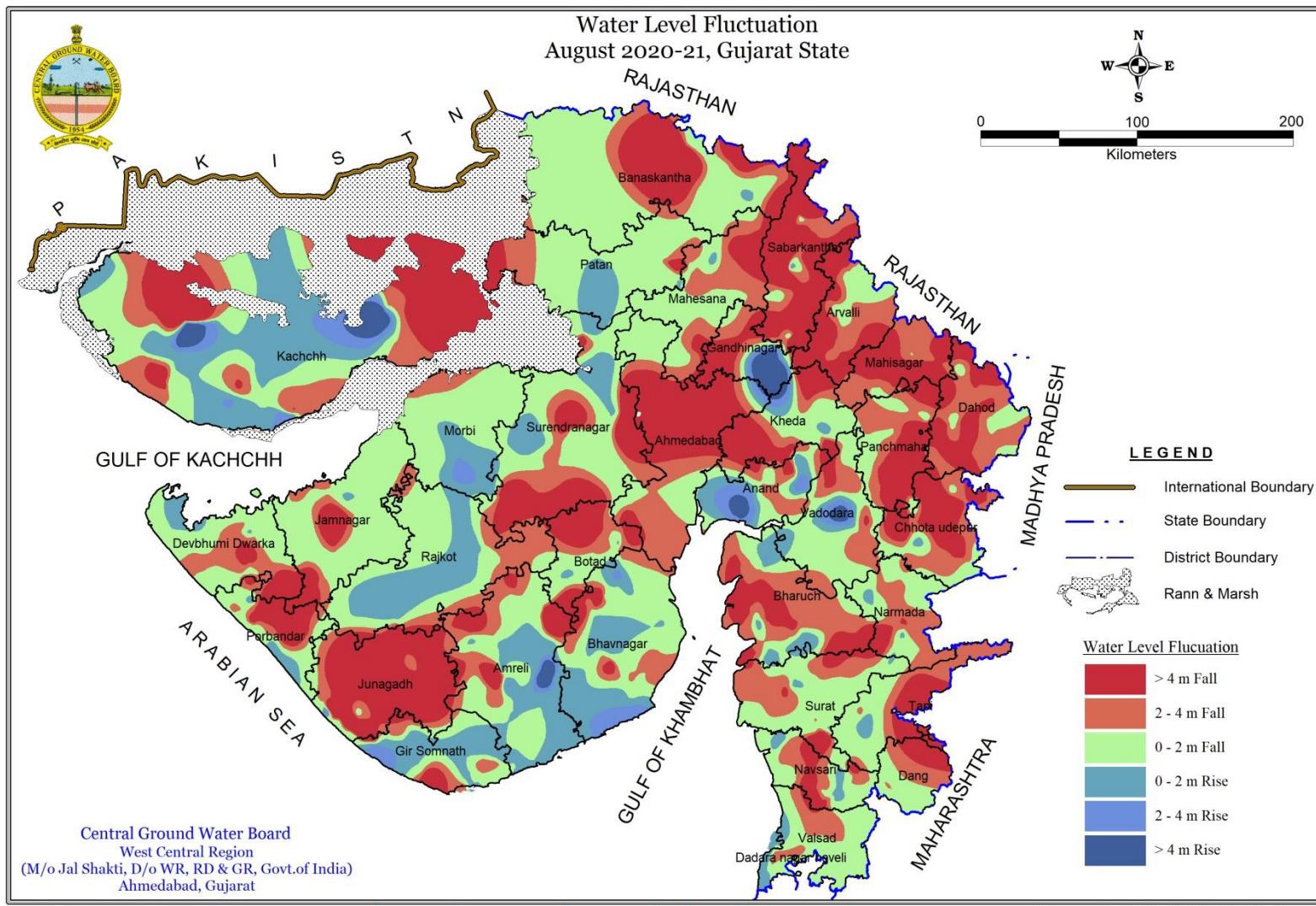


Fig. 17: Annual fluctuation of water level August 2020 to August 2021

Table 12. Categorisation of changes in water level between August 2020 to August 2021

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in difrent depth range						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	7	0.00	0	0.97	25.35	0 0.0%	0 0.0%	0 0.0%	3 42.9%	1 14.3%	3 42.9%	0	7
2	Anand	11	2.00	5.14	0.77	5.3	1 9.1%	1 9.1%	1 9.1%	3 27.3%	4 36.4%	1 9.1%	3	8
3	Arvalli	14	0.00	0	0.85	12.53	0 0.0%	0 0.0%	0 0.0%	3 21.4%	3 21.4%	8 57.1%	0	14
4	Banaskantha	11	0.96	0.96	0.18	13.11	1 9.1%	0 0.0%	0 0.0%	7 63.6%	1 9.1%	2 18.2%	1	10
5	Dahod	23	0.43	0.43	1.18	12.78	1 4.3%	0 0.0%	0 0.0%	5 21.7%	7 30.4%	10 43.5%	1	22
6	Gandhinagar	2	10.08	10.08	5.68	5.68	0 0.0%	0 0.0%	1 50.0%	0 0.0%	0 0.0%	1 50.0%	1	1
7	Kheda	10	0.27	0.27	0.3	11.54	1 10.0%	0 0.0%	0 0.0%	3 30.0%	1 10.0%	5 50.0%	1	9
8	Mahesana	17	0.74	0.74	0.13	7.45	1 5.9%	0 0.0%	0 0.0%	9 52.9%	5 29.4%	2 11.8%	1	16
9	Mahisagar	16	0.00	0	1.7	24.79	0 0.0%	0 0.0%	0 0.0%	2 12.5%	3 18.8%	11 68.8%	0	16
10	Panchmahals	21	0.00	0	0.1	13.82	0 0.0%	0 0.0%	0 0.0%	8 38.1%	5 23.8%	8 38.1%	0	21
11	Patan	4	0.21	0.21	0.3	6.04	1 25.0%	0 0.0%	0 0.0%	2 50.0%	0 0.0%	1 25.0%	1	3
12	Sabarkantha	26	0.50	0.5	0.68	16.15	1 3.8%	0 0.0%	0 0.0%	5 19.2%	6 23.1%	14 53.8%	1	25
	North Gujarat	162	0.00	10.08	0.10	25.35	7 4.3%	1 0.6%	2 1.2%	50 30.9%	36 22.2%	66 40.7%	10	152
13	Bharuch	26	0.14	2.11	0.07	10.77	5 19.2%	1 3.8%	0 0.0%	5 19.2%	7 26.9%	8 30.8%	6	20
14	Chhota Udepur	19	0.46	0.46	1.39	10.7	1 5.3%	0 0.0%	0 0.0%	3 15.8%	7 36.8%	8 42.1%	1	18
15	Narmada	17	0.26	0.40	0	10	3 17.6%	0 0.0%	0 0.0%	5 29.4%	5 29.4%	4 23.5%	3	14
16	Navsari	14	0.40	1.14	0.3	5.46	3 21.4%	0 0.0%	0 0.0%	5 35.7%	3 21.4%	3 21.4%	3	11
17	Surat	21	0.13	0.55	0.36	8.87	2 9.5%	0 0.0%	0 0.0%	13 61.9%	4 19.0%	2 9.5%	2	19
18	Tapi	7	0.83	0.83	0.1	6.95	1 14.3%	0 0.0%	0 0.0%	4 57.1%	1 14.3%	1 14.3%	1	6
19	The dangs	7	0.00	0	0.84	3.3	0 0.0%	0 0.0%	0 0.0%	6 85.7%	1 14.3%	0 0.0%	0	7
20	Vadodara	12	0.36	5.23	0.29	4.45	1 8.3%	0 0.0%	1 8.3%	6 50.0%	2 16.7%	2 16.7%	2	10
21	Valsad	10	1.70	1.7	0.25	5.45	1 10.0%	0 0.0%	0 0.0%	6 60.0%	2 20.0%	1 10.0%	1	9
	South Gujarat	133	0.00	5.23	0.04	10.77	17 12.8%	1 0.8%	1 0.8%	53 39.8%	32 24.1%	29 21.8%	19	114
22	Amreli	35	0.02	10.64	0.37	14.94	15 42.9%	1 2.9%	1 2.9%	11 31.4%	3 8.6%	4 11.4%	17	18
23	Bhavnagar	32	0.04	2.86	0.07	10.93	11 34.4%	2 6.3%	0 0.0%	10 31.3%	6 18.8%	3 9.4%	13	19
24	Botad	4	0.22	0.22	3.5	12.25	1 25.0%	0 0.0%	0 0.0%	0 0.0%	1 25.0%	2 50.0%	1	3
25	Devbhumi Dwarka	20	0.11	0.85	0.33	19.25	4 20.0%	0 0.0%	0 0.0%	9 45.0%	3 15.0%	4 20.0%	4	16
26	Gir Somnath	15	0.16	3.38	0.31	5.83	6 40.0%	1 6.7%	0 0.0%	3 20.0%	3 20.0%	2 13.3%	7	8
27	Jamnagar	13	0.21	0.21	0.71	18.14	1 7.7%	0 0.0%	0 0.0%	6 46.2%	4 30.8%	2 15.4%	1	12
28	Junagadh	31	0.13	2.85	0.06	23.35	1 3.2%	1 3.2%	0 0.0%	9 29.0%	5 16.1%	15 48.4%	2	29
29	Morbi	7	0.86	2.35	0.91	1.98	2 28.6%	1 14.3%	0 0.0%	4 57.1%	0 0.0%	0 0.0%	3	4
30	Porbandar	25	0.08	2.25	0.09	10.46	4 16.0%	1 4.0%	0 0.0%	10 40.0%	3 12.0%	7 28.0%	5	20
31	Rajkot	12	0.20	0.79	0.19	3.93	5 41.7%	0 0.0%	0 0.0%	3 25.0%	4 33.3%	0 0.0%	5	7
32	Surendranagar	18	0.20	1.3	0.2	6.75	4 22.2%	0 0.0%	0 0.0%	8 44.4%	3 16.7%	3 16.7%	4	14
	Saurashtra	212	0.02	10.64	0.06	23.35	54 25.5%	7 3.3%	1 0.5%	73 34.4%	35 16.5%	42 19.8%	62	150
33	Kachchh	31	0.10	14	0.13	12.7	8 25.8%	3 9.7%	2 6.5%	4 12.9%	6 19.4%	8 25.8%	13	18
	Kachchh	31	0.10	14.00	0.13	12.70	8 25.8%	3 9.7%	2 6.5%	4 12.9%	6 19.4%	8 25.8%	13	18
	Gujarat State	538	0.00	14.00	0.04	25.35	86 16.0%	12 2.2%	6 1.1%	180 33.5%	109 20.3%	145 27.0%	104	434

3.3.3. November 2020 to November 2021

A perusal of Fig 18 and Table 13 reveals that 51% of total monitoring wells show a rise and 49% shows fall in water level of the Gujarat state. Fall in water level within the range of 0 to 2 m is observed in about 33%, 2 to 4 m in 10% and more than 4 m in 6% of the total well in the state. Rise in the water level is in the range of less than 2 m and is about 37% of the total wells. The maximum decline of 11.80 m is recorded in Mahisagar district where as the maximum rise of 22.20 m is recorded in Vadodara district.

About 39% of the total well shows rise of water level in the North Gujarat and most of which (31%) shows fluctuation in the range of 0 to 2 m of water level. Fall of more than 2 m is mostly seen in Banaskantha, Mahesana, Mahesana and Sabarkantha in the north region. Fall is observed in 61% of the total well found mainly in the northern, central and western part of the north Gujarat region.

In South Gujarat region, 50% of total well analyzed shows rise in water level and in the range of 0 to 2 m represents 34% of well in the region. Rise of water level in 0 to 4 m is observed in Bharuch, Surat, Narmada, Valsad and Tapi district. Fall in water level is observed maximum in the range of 0 to 2 m in 36% of the total well analyzed. Baruch, Chhota udepur and Narmda districts shows fall of more than 4 m in isolated patches.

About 40% of total well in Saurashtra region has experienced fall in water level and fall in the range of more than 2 m represents about 10% of the total well analysed found in all districts of Saurashtra region except Amreli and Jamnagar districts. Rise in water level found in 60% of total well in almost all part of the Saurashtra region.

In Kachchh region, 53% of the total well analysed shows fall in water level and 29% is in the range of 0 to 2 m. Fall of more than 4 m is observed in western part of the region near Chhota rann. Rise is observed in 47% of total well in the scattered parts of Kachchh district. The rise observed in 38% of total well in Kuchchh region in the range of 0 to 2 m.

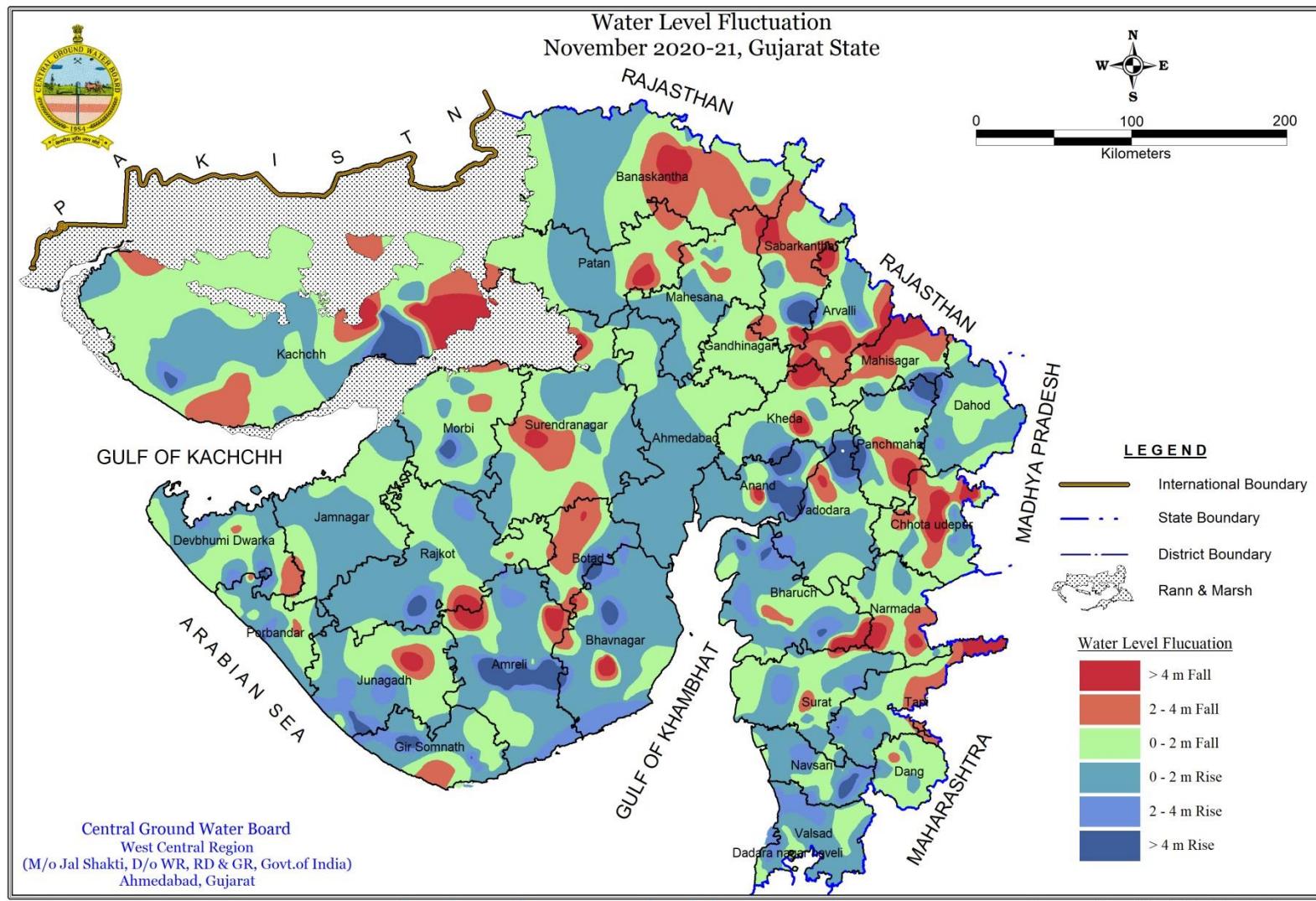


Fig. 18: Annual fluctuation of water level Noveber 2020 to November 2021

Table 13: Categorisation of changes in water level between November 2020 to November 2021

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in difrent depth range						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	0.01	1.56	0.12	0.9	5 45.5%	0 0.0%	0 0.0%	6 54.5%	0 0.0%	0 0.0%	5	6
2	Anand	14	0.30	19.75	0.2	6.09	4 28.6%	1 7.1%	4 28.6%	4 28.6%	0 0.0%	1 7.1%	9	5
3	Arvalli	9	0.46	3.05	1.06	7.21	1 11.1%	1 11.1%	0 0.0%	2 22.2%	2 22.2%	3 33.3%	2	7
4	Banaskantha	17	0.19	2.35	0.04	7.85	5 29.4%	2 11.8%	0 0.0%	4 23.5%	5 29.4%	1 5.9%	7	10
5	Dahod	19	0.05	4.33	0.17	1.95	10 52.6%	0 0.0%	1 5.3%	8 42.1%	0 0.0%	0 0.0%	11	8
6	Gandhinagar	2	1.75	1.75	5.05	5.05	1 50.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 50.0%	1	1
7	Kheda	12	0.02	0.55	0.06	9.2	5 41.7%	0 0.0%	0 0.0%	5 41.7%	0 0.0%	2 16.7%	5	7
8	Mahesana	21	0.19	2.32	0.08	3.84	11 52.4%	1 4.8%	0 0.0%	4 19.0%	5 23.8%	0 0.0%	12	9
9	Mahisagar	12	1.24	1.24	0.5	11.8	1 8.3%	0 0.0%	0 0.0%	4 33.3%	5 41.7%	2 16.7%	1	11
10	Panchmahals	12	0.05	7.4	0.17	5.6	2 16.7%	0 0.0%	1 8.3%	7 58.3%	1 8.3%	1 8.3%	3	9
11	Patan	5	1.12	1.12	0.05	6.22	1 20.0%	0 0.0%	0 0.0%	3 60.0%	0 0.0%	1 20.0%	1	4
12	Sabarkantha	20	1.20	9.19	0.09	6.16	1 5.0%	1 5.0%	1 5.0%	9 45.0%	6 30.0%	2 10.0%	3	17
	North Gujarat	154	0.01	19.75	0.04	11.80	47 30.5%	6 3.9%	7 4.5%	56 36.4%	24 15.6%	14 9.1%	60	94
13	Bharuch	28	0.10	5.2	0.01	8.45	12 42.9%	3 10.7%	3 10.7%	6 21.4%	2 7.1%	2 7.1%	18	10
14	Chhota Udepur	20	0.10	2.6	0.1	9.08	6 30.0%	2 10.0%	0 0.0%	4 20.0%	4 20.0%	4 20.0%	8	12
15	Narmada	19	0.04	1.22	0	10	7 36.8%	0 0.0%	0 0.0%	6 31.6%	2 10.5%	2 21.1%	7	12
16	Navsari	16	0.05	5.8	0.1	2	5 31.3%	2 12.5%	2 12.5%	7 43.8%	0 0.0%	0 0.0%	9	7
17	Surat	25	0.10	3.9	0.1	3.4	8 32.0%	3 12.0%	0 0.0%	13 52.0%	1 4.0%	0 0.0%	11	14
18	Tapi	11	0.05	4.1	0.5	6.3	4 36.4%	1 9.1%	1 9.1%	3 27.3%	1 9.1%	1 9.1%	6	5
19	The dangs	16	0.35	2.8	0.05	3.45	3 18.8%	1 6.3%	0 0.0%	11 68.8%	1 6.3%	0 0.0%	4	12
20	Vadodara	12	0.05	22.2	0.5	4.37	5 41.7%	2 16.7%	1 8.3%	3 25.0%	0 0.0%	1 8.3%	8	4
21	Valsad	15	0.15	3.8	0.1	1.1	5 33.3%	5 33.3%	0 0.0%	5 33.3%	0 0.0%	0 0.0%	10	5
	South Gujarat	162	0.04	22.20	0.01	10.05	55 34.0%	19 11.7%	7 4.3%	58 35.8%	11 6.8%	12 7.4%	81	81
22	Amreli	38	0.34	16.87	0.03	6.77	18 47.4%	5 13.2%	6 15.8%	7 18.4%	0 0.0%	2 5.3%	29	9
23	Bhavnagar	32	0.08	7.13	0.28	9.3	22 68.8%	2 6.3%	1 3.1%	3 9.4%	2 6.3%	2 6.3%	25	7
24	Botad	6	0.76	5.72	3.35	4.04	2 33.3%	1 16.7%	1 16.7%	0 0.0%	1 16.7%	1 16.7%	4	2
25	Devbhumi Dwarka	17	0.10	3.35	0.13	3.34	6 35.3%	2 11.8%	0 0.0%	6 35.3%	3 17.6%	0 0.0%	8	9
26	Gir Somnath	18	0.30	5.8	0.13	3.79	5 27.8%	2 11.1%	2 11.1%	7 38.9%	2 11.1%	0 0.0%	9	9
27	Jamnagar	15	0.02	1.7	0.08	1.05	10 66.7%	0 0.0%	0 0.0%	5 33.3%	0 0.0%	0 0.0%	10	5
28	Junagadh	26	0.13	5.2	0.3	5.35	8 30.8%	7 26.9%	2 7.7%	6 23.1%	2 7.7%	1 3.8%	17	9
29	Morbi	14	0.20	8.62	0.27	3.54	3 21.4%	0 0.0%	1 7.1%	9 64.3%	1 7.1%	0 0.0%	4	10
30	Porbandar	29	0.20	4.68	0.03	3.24	14 48.3%	1 3.4%	2 6.9%	10 34.5%	2 6.9%	0 0.0%	17	12
31	Rajkot	22	0.27	5.25	0.07	3.77	7 31.8%	2 9.1%	1 4.5%	11 50.0%	1 4.5%	0 0.0%	10	12
32	Surendranagar	26	0.06	1.28	0.02	5.3	12 46.2%	0 0.0%	0 0.0%	9 34.6%	3 11.5%	2 7.7%	12	14
	Saurashtra	243	0.02	16.87	0.02	9.30	107 44.0%	22 9.1%	16 6.6%	73 30.0%	17 7.0%	8 3.3%	145	98
33	Kachchh	34	0.05	11.72	0.2	6.9	13 38.2%	0 0.0%	3 8.8%	10 29.4%	5 14.7%	3 8.8%	16	18
	Kachchh	34	0.05	11.72	0.20	6.90	13 38.2%	0 0.0%	3 8.8%	10 29.4%	5 14.7%	3 8.8%	16	18
	Gujarat State	593	0.01	22.20	0.01	11.80	222 37.4%	47 7.9%	33 5.6%	197 33.2%	57 9.6%	37 6.2%	302	291

3.3.4 January 2021 to January 2022

A perusal of Fig 19 and Table 14 reveals that out of total monitoring wells, 45% shows a fall where as 55% shows rise in water level of the Gujarat state. Fall in water level mainly within range of 0 to 2 m is observed in about 33% of the total well in the state. Fall in water level is mainly observed in Saurashtra, Central, Northern and Kachchh part of Gujarat state. Rise mainly observed in the range of 0 to 2 m covers about 41% of the total well in state. The maximum rise of 13.56 m is recorded in Amreli district whereas the maximum decline of 14.40 m is recorded in Kachchh district.

About 62% of the total well shows the fall of water level in the North Gujarat and most of which (38%) shows fall in the range of 0 to 2 m. Fall of more than 4 m is mostly seen in the parts of Banaskantha, Mahesana and Sabarkantha districts and few scattered patches in Arvalli, Dahod, Kheda and Panchmahals districts which is 12% of total well analysed in the region. Rise of 0 to 4 m range is observed in 35% of the total well observed in almost all area of the region except Mahisagar district.

In South Gujarat region, 42% of total well analysed shows fall in water level and 36% represents in the range of 0 to 2 m of total well in the region. Fall of water level observed in the range of 2 to 4 m in isolated patches distributed sporadically in South Gujarat region. Only Vadodara district shows more than 4 m fall in the region. Rise in water level observed in the range of 0 to 2 m in 45% of the total well analysed lying mainly in Navsari, Surat, Vadodara and Narmada districts in the South Gujarat region.

About 33% of the Saurashtra region has experienced the fall in water level and in the range of 0 to 2 m observed in 26% of the total well analysed. Fall of water level in 2% of well observed more than 4 m is predominantly found in Amreli, Gir Somnath, Rajkot and Junagadh district in the region. The rise in water level also found in 67% of total well distributed all over the Saurashtra region. About 49% area of the region observed rise of 0 to 2 m. Rise of more than 4 m is observed in all districts of the region except Botad, Porbandar and Surendranagar districts in isolated patches.

In Kachchh region, rise in water level experienced in 35% of total well equally distributed in the region. Fall of water level mainly ranges in 0 to 2 m is observed in 44% of total well western part of the district. About 65% area shows fall in the region.

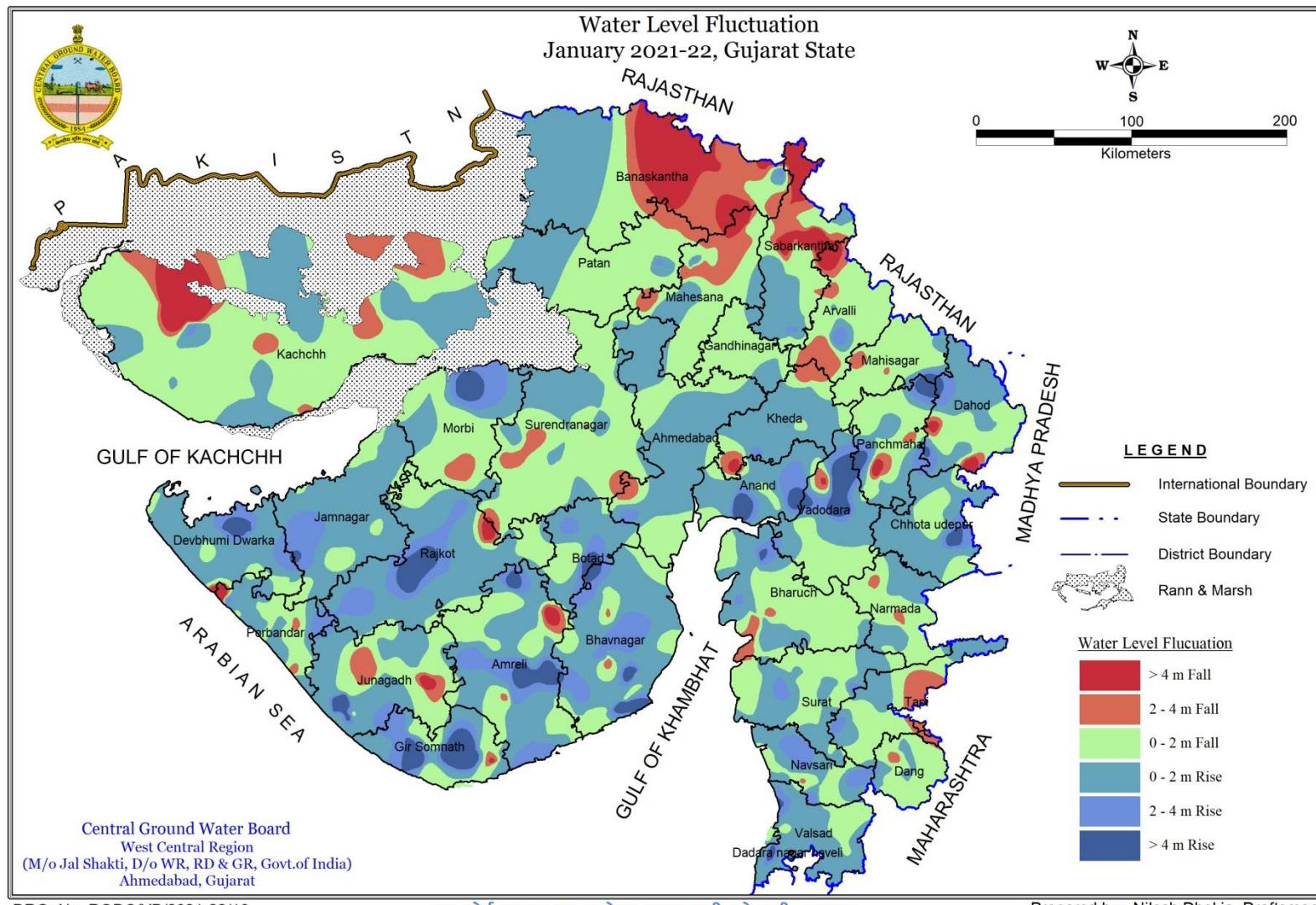


Fig. 19: Annual fluctuation of water level January 2021 to January 2022

Table 14: Categorisation of changes in water level between January 2021 to January 2022

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in different depth range						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	0.34	2.7	0.02	1.31	6 54.5%	1 9.1%	0 0.0%	4 36.4%	0 0.0%	0 0.0%	7	4
2	Anand	11	0.10	7.77	0.04	0.49	5 45.5%	1 9.1%	2 18.2%	3 27.3%	0 0.0%	0 0.0%	8	3
3	Arvalli	14	0.14	3.25	0.23	8.72	1 7.1%	1 7.1%	0 0.0%	6 42.9%	3 21.4%	3 21.4%	2	12
4	Banaskantha	12	0.91	2.39	0.73	11.13	1 8.3%	1 8.3%	0 0.0%	2 16.7%	4 33.3%	4 33.3%	2	10
5	Dahod	24	0.10	4.57	0.04	5.95	10 41.7%	1 4.2%	1 4.2%	10 41.7%	0 0.0%	2 8.3%	12	12
6	Gandhinagar	3	0.38	0.38	0.22	3.12	1 33.3%	0 0.0%	0 0.0%	1 33.3%	1 33.3%	0 0.0%	1	2
7	Kheda	15	0.18	2.23	0.13	5.15	11 73.3%	1 6.7%	0 0.0%	1 6.7%	1 6.7%	1 6.7%	12	3
8	Mahesana	21	0.22	2.48	0.07	10.38	4 19.0%	1 4.8%	0 0.0%	8 38.1%	5 23.8%	3 14.3%	5	16
9	Mahisagar	13	-	-	0.12	3.11	0 0.0%	0 0.0%	0 0.0%	10 76.9%	3 23.1%	0 0.0%	0	13
10	Panchmahals	15	0.08	6	0.56	7.06	5 33.3%	0 0.0%	3 20.0%	5 33.3%	1 6.7%	1 6.7%	8	7
11	Patan	6	0.15	2.26	0.21	1.21	1 16.7%	1 16.7%	0 0.0%	4 66.7%	0 0.0%	0 0.0%	2	4
12	Sabarkantha	27	0.05	2.4	0.02	11.34	5 18.5%	2 7.4%	0 0.0%	11 40.7%	3 11.1%	6 22.2%	7	20
	North Gujarat	172	0.05	7.77	0.02	11.34	50 29.1%	10 5.8%	6 3.5%	65 37.8%	21 12.2%	20 11.6%	66	106
13	Bharuch	29	0.20	4.79	0.1	3.62	15 51.7%	2 6.9%	1 3.4%	8 27.6%	3 10.3%	0 0.0%	18	11
14	Chhota Udepur	17	0.16	6.69	0.26	1.83	10 58.8%	0 0.0%	2 11.8%	5 29.4%	0 0.0%	0 0.0%	12	5
15	Narmada	17	0.07	2.06	0	2	8 47.1%	1 5.9%	0 0.0%	6 35.3%	2 11.8%	0 0.0%	9	8
16	Navsari	18	0.03	3.72	0.04	2.18	5 27.8%	4 22.2%	0 0.0%	8 44.4%	1 5.6%	0 0.0%	9	9
17	Surat	24	0.02	2.83	0.28	1.92	8 33.3%	4 16.7%	0 0.0%	12 50.0%	0 0.0%	0 0.0%	12	12
18	Tapi	9	0.23	3.62	0.44	3.92	5 55.6%	1 11.1%	0 0.0%	2 22.2%	1 11.1%	0 0.0%	6	3
19	The dangs	22	0.01	2.57	0.05	3.64	7 31.8%	1 4.5%	0 0.0%	12 54.5%	2 9.1%	0 0.0%	8	14
20	Vadodara	10	0.44	8.52	0.09	4.51	4 40.0%	1 10.0%	2 20.0%	2 20.0%	0 0.0%	1 10.0%	7	3
21	Valsad	17	0.20	5.65	0.15	1.5	11 64.7%	0 0.0%	2 11.8%	4 23.5%	0 0.0%	0 0.0%	13	4
	South Gujarat	163	0.01	8.52	0.04	4.51	73 44.8%	14 8.6%	7 4.3%	59 36.2%	9 5.5%	1 0.6%	94	69
22	Amreli	38	0.39	13.56	0.37	5.98	17 44.7%	9 23.7%	4 10.5%	6 15.8%	1 2.6%	1 2.6%	30	8
23	Bhavnagar	38	0.04	8.32	0.01	2.9	18 47.4%	6 15.8%	3 7.9%	9 23.7%	2 5.3%	0 0.0%	27	11
24	Botad	4	0.44	2.25	0	0	3 75.0%	1 25.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	4	0
25	Devbhumi Dwarka	20	0.06	6.07	0.23	0.6	14 70.0%	0 0.0%	2 10.0%	4 20.0%	0 0.0%	0 0.0%	16	4
26	Gir Somnath	16	0.39	13.49	0.37	4.65	3 18.8%	2 12.5%	4 25.0%	6 37.5%	0 0.0%	1 6.3%	9	7
27	Jamnagar	21	0.12	4.19	0.14	1.2	14 66.7%	1 4.8%	1 4.8%	5 23.8%	0 0.0%	0 0.0%	16	5
28	Junagadh	36	0.18	8.46	0.7	11.1	20 55.6%	2 5.6%	4 11.1%	6 16.7%	3 8.3%	1 2.8%	26	10
29	Morbi	12	0.02	4.83	0.05	2.76	3 25.0%	0 0.0%	1 8.3%	7 58.3%	1 8.3%	0 0.0%	4	8
30	Porbandar	28	0.07	3.55	0.02	13.5	15 53.6%	3 10.7%	0 0.0%	7 25.0%	2 7.1%	1 3.6%	18	10
31	Rajkot	20	0.14	5.85	0.16	5.65	10 50.0%	3 15.0%	2 10.0%	4 20.0%	0 0.0%	1 5.0%	15	5
32	Surendranagar	27	0.02	1.66	0.05	3.6	9 33.3%	0 0.0%	0 0.0%	14 51.9%	4 14.8%	0 0.0%	9	18
	Saurashtra	260	0.02	13.56	0.00	13.50	126 48.5%	27 10.4%	21 8.1%	68 26.2%	13 5.0%	5 1.9%	174	86
33	Kachchh	34	0.07	2.98	0.02	14.4	11 32.4%	1 2.9%	0 0.0%	15 44.1%	6 17.6%	1 2.9%	12	22
	Kachchh	34	0.07	2.98	0.02	14.40	11 32.4%	1 2.9%	0 0.0%	15 44.1%	6 17.6%	1 2.9%	12	22
	Gujarat State	629	0.01	13.56	0.00	14.40	126 41.3%	260 8.3%	34 5.4%	207 32.9%	49 7.8%	27 4.3%	346	283

3.4 Long Term Groundwater 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 pre-monsoon and post-monsoon from 2012-2021, and comparison of May, August, November 2021 against decadal average of 2011-2020 and January 2022 against decadal average of 2012-2021 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 2012-2021 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 (2012-2021)

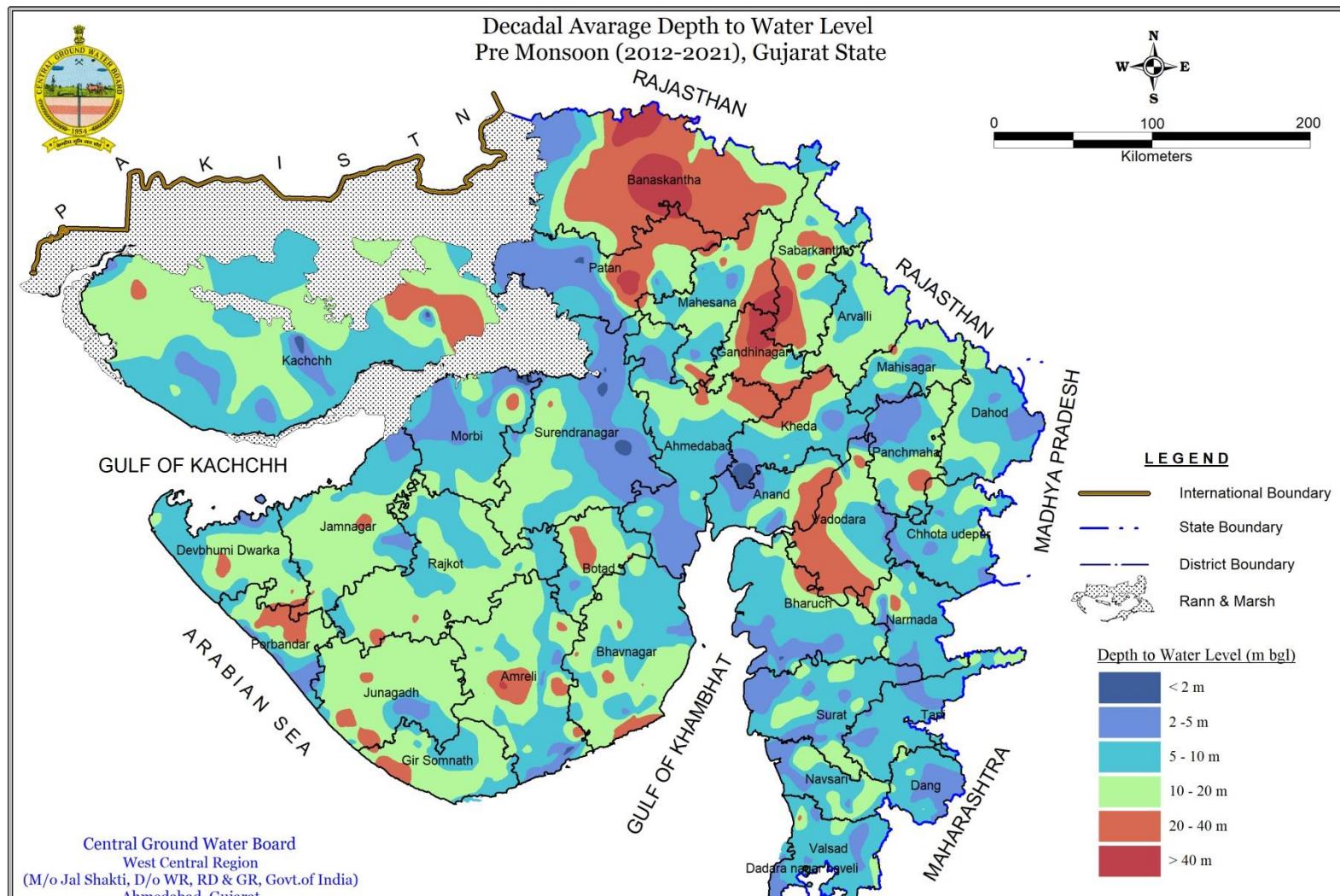
Decadal average water level map for the period May 2012 to May 2021 (Fig. 20) reveals that the decadal average water level in Gujarat is generally from 0.71 to 61.14 m bgl. Isolated pockets of shallow water levels of less than 2 m are observed in few places in Kachchh, Kheda and Surendranagar districts in the state. Depth to water level more than 40 m observed prominently in Banaskantha, Gandhinagar Patan and Sabarkantha district of North Gujarat region. The maximum depth of water level observed 61.14 m bgl at Dantiwada in Banaskantha while minimum water level is 0.71 m bgl at Lilpur in Kachchh.

The Decadal average water levels in North Gujarat generally range from less than 2 to 61.14 m bgl. Water level of 20 to 40 m is observed in isolated pockets in Banaskantha, Gandhinagar, Kheda, Mahesana, Patan and Sabarkantha districts. Depth to water level more than 40 m observed in Banaskantha, Gandhinagar, Patan and Sabarkantha district.

In South Gujarat, average water level is less than 2 m bgl to 31.89 m bgl. Deep water levels of 20 to 40 m are observed in central part of Vadodara district which extending towards Bharuch district and an isolated patch in Narmada district. Water level of less than 5 m bgl is found along the coast and in parts of Bharuch, Surat and Navsari districts. It is also observed in The Dangs, Valsad and Tapi districts.

In Saurashtra the average water level is vary from less than 2 m to 42.66 m with isolated pockets of 20 to 40 m are found as in Amreli, Bhavnagar, Jamnagar, Junagadh Porbandar and Surendranagar districts of Saurashtra region except district. Water level of more than 40 m bgl is found at Morjhar in Amreli district.

In Kachchh district, range of the average water level is found from less than 2 m to 30.05 m. Deeper water levels of 20 to 40 m are observed in isolated patches in Kachchh while all other area varies with in 5 to 20 m bgl. Shallowest water level is observed at Lilpur.



DRG. No. RODC/YB/2021-22/17

दूषित नहीं करना है जल नहीं तो नष्ट हो जायेगा हमारा आने वाला कल

Prepared by : Nilesh Dhokia, Draftsman

Fig. 20: Decadal average depth of water level during pre-monsoon (2012-2021)

3.4.1.2 Post-monsoon Water Levels (2012-2021)

Decadal average water level map for the period November 2012 to November 2021 (Fig. 21) and Annexure IV reveals that in major part of Gujarat state, the decadal average water level is mostly in the range of less than 2 m to 50.52 m bgl. Deep water levels of more than 20 m are observed mainly in Anand, Banaskantha, Mahesana and Sabarkantha districts of North Gujarat, Amreli district in Saurashtra, Vadodara district in South and Kachchh district. 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 50.52 m bgl at Dantiwada in Banaskantha and shallowest is 0.17 m at Pipli in Surendranagar district.

In North Gujarat, the water levels during post monsoon period are generally less than 20 m bgl. Deeper water levels of more than 20 m bgl are predominant in the district of Anand, 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 m bgl. Shallow water levels of less than 5 m bgl are observed in major parts of Panchmahal and Mahisagar some parts of Arvalli, 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 m bgl. Deep water levels of more than 10 m bgl are observed in Navsari and Surat district. Deeper Water level more than 20 m bgl are observed mostly in Vadodara and Bharuch districts. Shallow water levels of less than 5 m are recorded along the coast, The Dangs and Surat district. Water level less than 2 m is also recorded in Surat, Valsad and The Dangs district.

In Saurashtra Region, water levels are in the range of less than 2 m to 20 m bgl 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 2 m 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 20 m except few pockets of more than 20 m in the central parts. In western parts, along cost line, water levels less than 10 m bgl are observed.

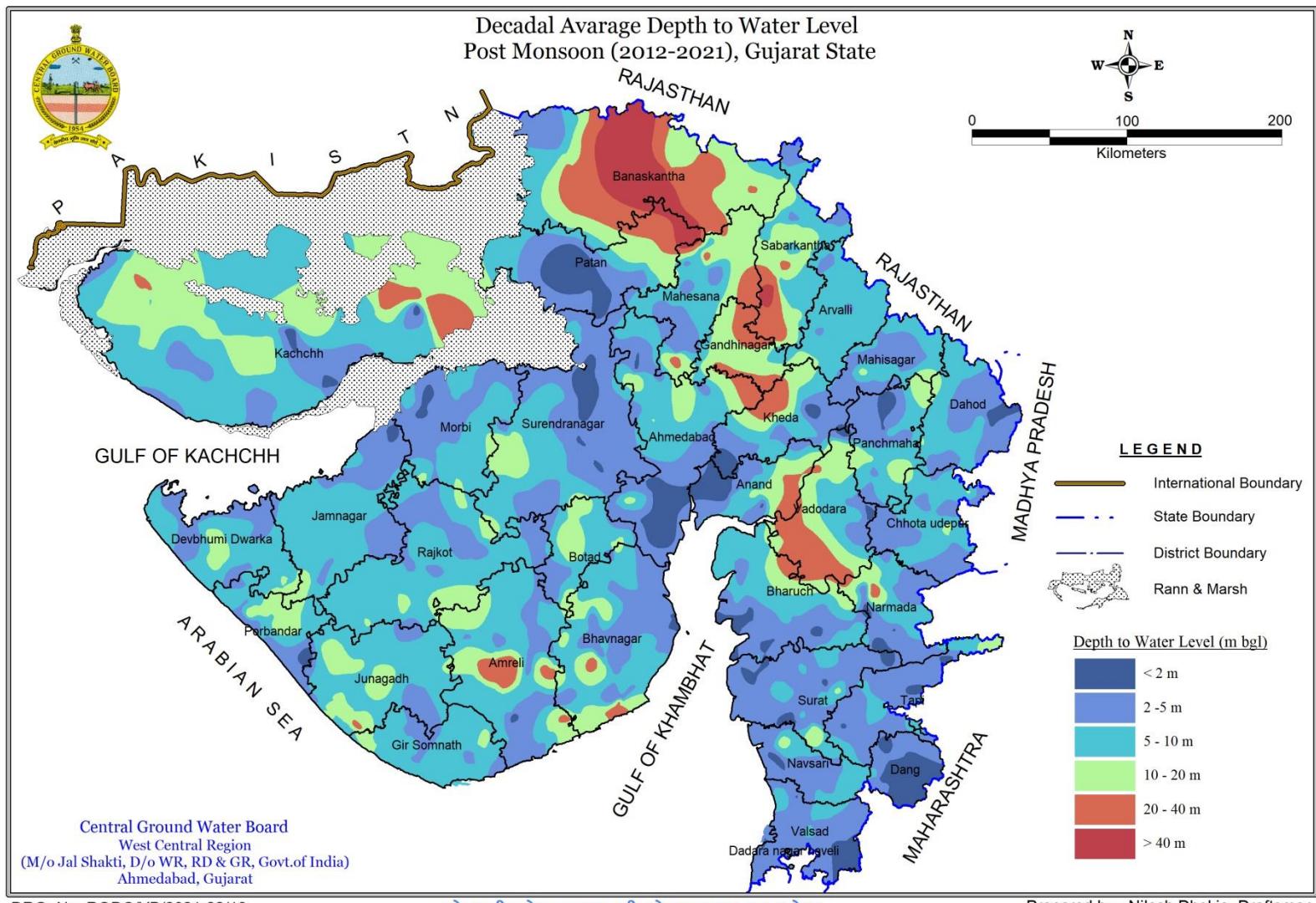


Fig. 21: Decadal average depth of water level during post-monsoon (2012-2021)

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 2011-2020 for May, August, November and 2012-2021 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

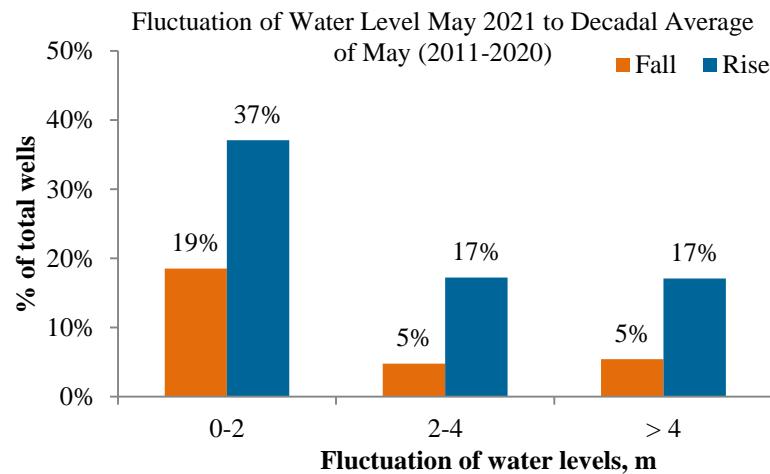


Fig: 22 b

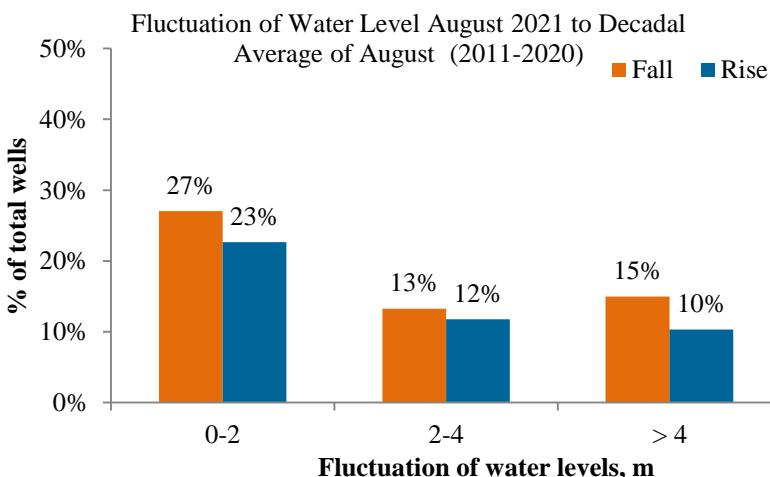


Fig: 22 c

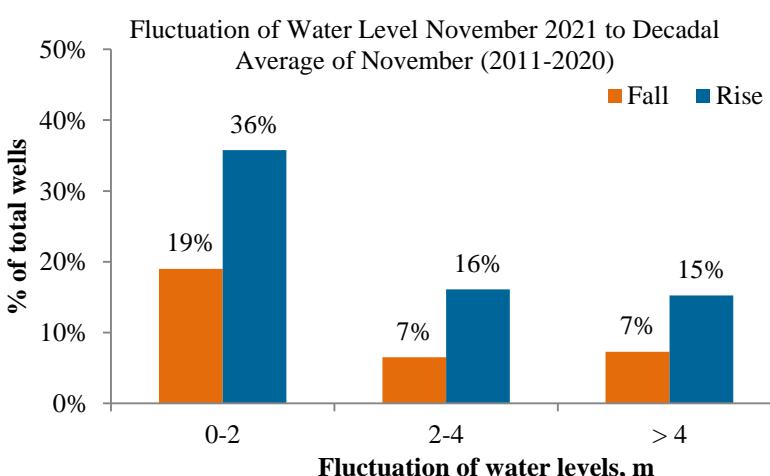


Fig: 22 d

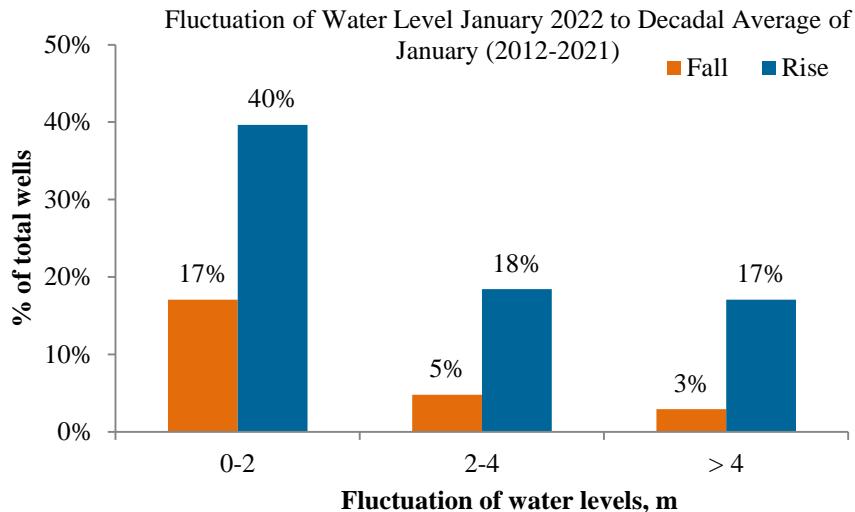


Fig. 22: Fluctuation of seasonal water level to decadal average

3.4.2.1 Decadal average of May (2011-2020) to May 2021

A comparison of the water level of the May 2021 with the average water level of the May for last one decade (2011-2020) reveals that there is a rise of 71% of the wells monitored. Rise and fall is mostly in the range of 0 to 2 m. Fall of more than 4 m is observed in parts of Saurashtra region in Devbhumi Dwarka and Rajkot district, Banaskantha, Sabarkantha, Mahesana, Patan, Panchmahal and Anand districts in north Gujarat and Navsari, Narmada and Dang district in south Gujarat. The maximum rise of 32.87 m is recorded at Bopal in Ahmedabad district whereas the maximum fall of 41.57 m is recorded at Dhanera in Banaskantha district (Fig. 23).

In North Gujarat 70% of wells show the rise and mostly are in range of 0 to 2 m (38% of wells) in entire North Gujarat. The fall of water level is mostly less than 2 m and in about 20% of the total wells analyzed. The fall of more than 4 m is mostly observed in Anand, Banskantha, Gandhinagar, Mahesana and Patan districts.

In south Gujarat, the major part has experienced rise (67% of wells analyzed). The fall is mainly (24% of wells) in the range of 0 to 2 m. About 48% of wells recorded rise of decadal fluctuation of water level in the range of 0 to 2 m. The Dangs, Narmada and Navsari districts showed more than 4 m fall in water levels.

In Saurashtra region about 78% of wells observed the rise in water level and out of which 28% wells shows the rise in the range of 0 to 2 m. The fall is observed in 22% of the well analysed. The fall of water level is less than 2 m in 14% in whole region. Rise of more than 4 m water level is observed in 30% of the wells analysed in Saurashtra region.

In Kachchh, 82% of the wells have recorded the rise in water level of the district. Fall is mostly (11% of wells) in the range of 0 to 2 m, whereas rise of 0 to 2 m is recorded in 45% of wells.

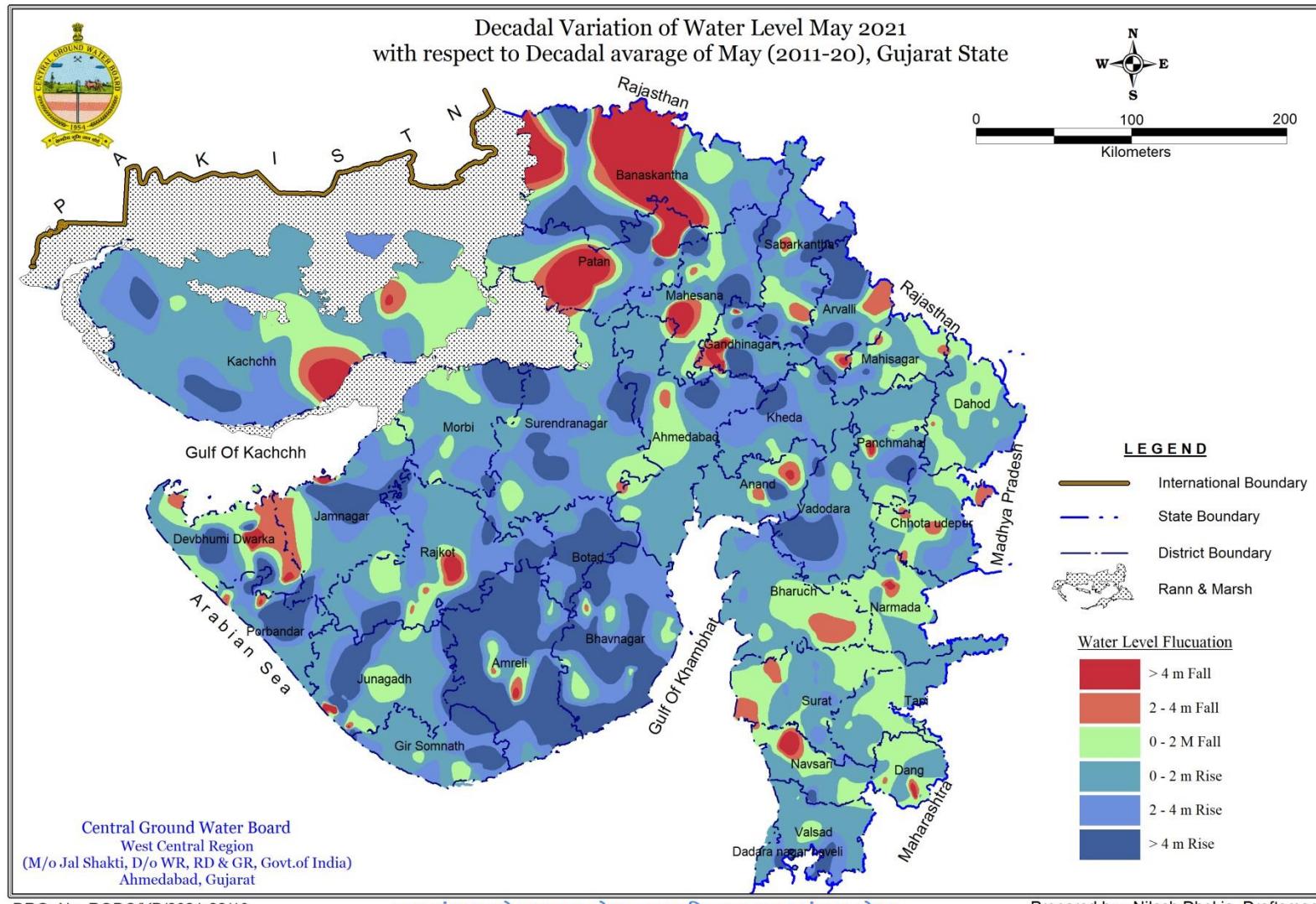


Fig. 23: Variation of water level of May 2021 to decadal average of May 2011-2020

Table 15. Well wise categorisation of changes in water level during May 2021 with respect to decadal average of May (2011 to 2020)

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in different depth range						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	23	0.10	32.87	0.05	2.64	9 39.1%	3 13.0%	4 17.4%	6 26.1%	1 4.3%	0 0.0%	16	7
2	Anand	20	0.32	12.98	0.16	7.08	11 55.0%	2 10.0%	2 10.0%	3 15.0%	0 0.0%	2 10.0%	15	5
3	Arvalli	19	0.00	16.91	0.69	4.93	5 26.3%	2 10.5%	8 42.1%	2 10.5%	1 5.3%	1 5.3%	15	4
4	Banaskantha	29	0.24	14.87	1.25	41.57	7 24.1%	7 24.1%	3 10.3%	2 6.9%	2 6.9%	8 27.6%	17	12
5	Dahod	28	0.24	3.20	0.08	2.89	13 46.4%	2 7.1%	0 0.0%	11 39.3%	2 7.1%	0 0.0%	15	13
6	Gandhinagar	20	1.32	22.86	0.17	13.48	2 10.0%	0 0.0%	4 20.0%	6 30.0%	1 5.0%	7 35.0%	6	14
7	Kheda	19	0.46	6.62	0.04	0.29	8 42.1%	5 26.3%	2 10.5%	4 21.1%	0 0.0%	0 0.0%	15	4
8	Mahesana	32	0.14	22.72	0.11	12.08	12 37.5%	8 25.0%	1 3.1%	7 21.9%	3 9.4%	1 3.1%	21	11
9	Mahisagar	18	0.01	4.46	0.03	2.64	10 55.6%	1 5.6%	1 5.6%	5 27.8%	1 5.6%	0 0.0%	12	6
10	Panchmahals	23	0.08	5.62	0.57	5.95	13 56.5%	4 17.4%	1 4.3%	3 13.0%	1 4.3%	1 4.3%	18	5
11	Patan	13	0.68	6.63	0.33	22.81	2 15.4%	3 23.1%	2 15.4%	4 30.8%	0 0.0%	2 15.4%	7	6
12	Sabarkantha	30	0.06	7.75	0.25	4.39	12 40.0%	6 20.0%	8 26.7%	2 6.7%	1 3.3%	1 3.3%	26	4
	North Gujarat	274	0.00	32.87	0.03	41.57	104 38.0%	43 15.7%	36 13.1%	55 20.1%	13 4.7%	23 8.4%	183	91
13	Bharuch	32	0.11	4.67	1.24	8.74	21 65.6%	4 12.5%	1 3.1%	2 6.3%	3 9.4%	1 3.1%	26	6
14	Chhota Udepur	13	0.29	3.15	0.34	2.93	3 23.1%	3 23.1%	0 0.0%	4 30.8%	3 23.1%	0 0.0%	6	7
15	Narmada	17	0.06	3.72	0.01	5.55	7 41.2%	2 11.8%	0 0.0%	6 35.3%	1 5.9%	1 5.9%	9	8
16	Navsari	19	0.06	6.06	0.22	16.40	12 63.2%	1 5.3%	1 5.3%	4 21.1%	0 0.0%	1 5.3%	14	5
17	Surat	29	0.11	4.00	0.10	3.07	11 37.9%	6 20.7%	0 0.0%	9 31.0%	3 10.3%	0 0.0%	17	12
18	Tapi	12	0.20	2.30	0.11	1.82	7 58.3%	1 8.3%	0 0.0%	4 33.3%	0 0.0%	0 0.0%	8	4
19	The dangs	22	0.51	2.35	0.07	6.09	7 31.8%	2 9.1%	0 0.0%	9 40.9%	2 9.1%	2 9.1%	9	13
20	Vadodara	18	0.45	6.21	0.08	1.24	6 33.3%	3 16.7%	6 33.3%	3 16.7%	0 0.0%	0 0.0%	15	3
21	Valsad	17	0.13	5.89	0.01	0.46	12 70.6%	1 5.9%	2 11.8%	2 11.8%	0 0.0%	0 0.0%	15	2
	South Gujarat	179	0.06	6.21	0.01	16.40	86 48.0%	23 12.8%	10 5.6%	43 24.0%	12 6.7%	5 2.8%	119	60
22	Amreli	39	0.11	17.27	0.08	5.24	5 12.8%	6 15.4%	22 56.4%	4 10.3%	1 2.6%	1 2.6%	33	6
23	Bhavnagar	41	0.09	15.29	0.39	2.87	4 9.8%	9 22.0%	21 51.2%	6 14.6%	1 2.4%	0 0.0%	34	7
24	Botad	3	3.88	5.99	-	-	0 0.0%	1 33.3%	2 66.7%	0 0.0%	0 0.0%	0 0.0%	3	0
25	Devbhumi Dwarka	21	0.48	10.17	0.55	17.86	4 19.0%	2 9.5%	3 14.3%	6 28.6%	3 14.3%	3 14.3%	9	12
26	Gir Somnath	20	0.03	10.29	0.51	1.97	8 40.0%	6 30.0%	4 20.0%	2 10.0%	0 0.0%	0 0.0%	18	2
27	Jamnagar	16	0.70	9.01	1.15	7.87	6 37.5%	3 18.8%	4 25.0%	1 6.3%	1 6.3%	1 6.3%	13	3
28	Junagadh	29	0.22	16.74	0.44	19.68	7 24.1%	5 17.2%	5 17.2%	9 31.0%	0 0.0%	3 10.3%	17	12
29	Morbi	16	0.61	8.07	0.49	1.73	6 37.5%	4 25.0%	2 12.5%	4 25.0%	0 0.0%	0 0.0%	12	4
30	Porbandar	22	0.17	14.47	1.54	4.62	10 45.5%	4 18.2%	5 22.7%	1 4.5%	0 0.0%	2 9.1%	19	3
31	Rajkot	30	0.09	10.40	2.53	6.93	11 36.7%	9 30.0%	6 20.0%	0 0.0%	3 10.0%	1 3.3%	26	4
32	Surendranagar	26	0.01	6.43	0.15	2.70	12 46.2%	5 19.2%	4 15.4%	4 15.4%	1 3.8%	0 0.0%	21	5
	Saurashtra	263	0.01	17.27	0.08	19.68	73 27.8%	54 20.5%	78 29.7%	37 14.1%	10 3.8%	11 4.2%	205	58
33	Kachchh	38	0.13	7.04	-	5.85	17 44.7%	10 26.3%	4 10.5%	4 10.5%	1 2.6%	2 5.3%	31	7
	Kachchh	38	0.13	7.04	-	5.85	17 44.7%	10 26.3%	4 10.5%	4 10.5%	1 2.6%	2 5.3%	31	7
	Gujarat State	754	0.00	32.87	0.01	41.57	280 37.1%	130 17.2%	128 17.0%	139 18.4%	36 4.8%	41 5.4%	538	216

3.4.2.2 Decadal average of August (2011 to 2020) to August 2021

A comparison of the water level of the August 2021 with the average water level of the August for last one decade (2011-2020) Fig 24 and Table 16 reveals that there is the rise in 45% of well analysed. Rise is mostly in the range of 0 to 2 m (23% of total wells). The rise of more than 2 m observed mostly in Saurashtra and North Gujarat region. Fall in water levels is observed in 55% of well analysed. Fall mostly observed in North Gujarat, western part of South Gujarat and Junagadh district of Saurashtra region. The maximum rise of 22.26 m is recorded in Bopal of Ahmedabad district whereas the maximum decline of 46.13 m is recorded in Dhanera of Banaskantha district.

In North Gujarat, 22% of wells have shown rise and mostly in range of 0 to 2 m (12% of wells). The fall of 78% in water level is located in the almost all area of North Gujarat except Patan district. Fall of more than 4 m is prominently observed in Ahmedabad, Anand, Arvalli, Banaskantha, Dahod, Gandhinagar, Kheda, Mahesana, Mahisagar, Panchmahals, Patan and Sabarkantha districts.

South Gujarat has experienced the rise in 23% of wells analysed whereas 77% shows the fall. In the range of 0 to 2 m, 44% of well shows the fall while 22% of wells shows the rise. More than 2 m of fall in water shows in all districts of South Gujarat region.

In Saurashtra region, 80% of total well shows the rise in water level where as 20% shows the fall. The fall of water level in more than 4 m is observed in Amreli, Devbhumi Dwarka and Junagadh districts. The rise in water level is observed in all districts of the Saurashtra region and rise of more than 4 m in water level is observed 21% wells of Saurashtra region.

In Kachchh, 49% of the wells analysed have recorded the rise in water levels in the district. Fall is mostly (40% of wells) in the range of 0 to 2 m. Rise is observed in 51% wells in the district mostly in the range of 0 to 2 m (24%).

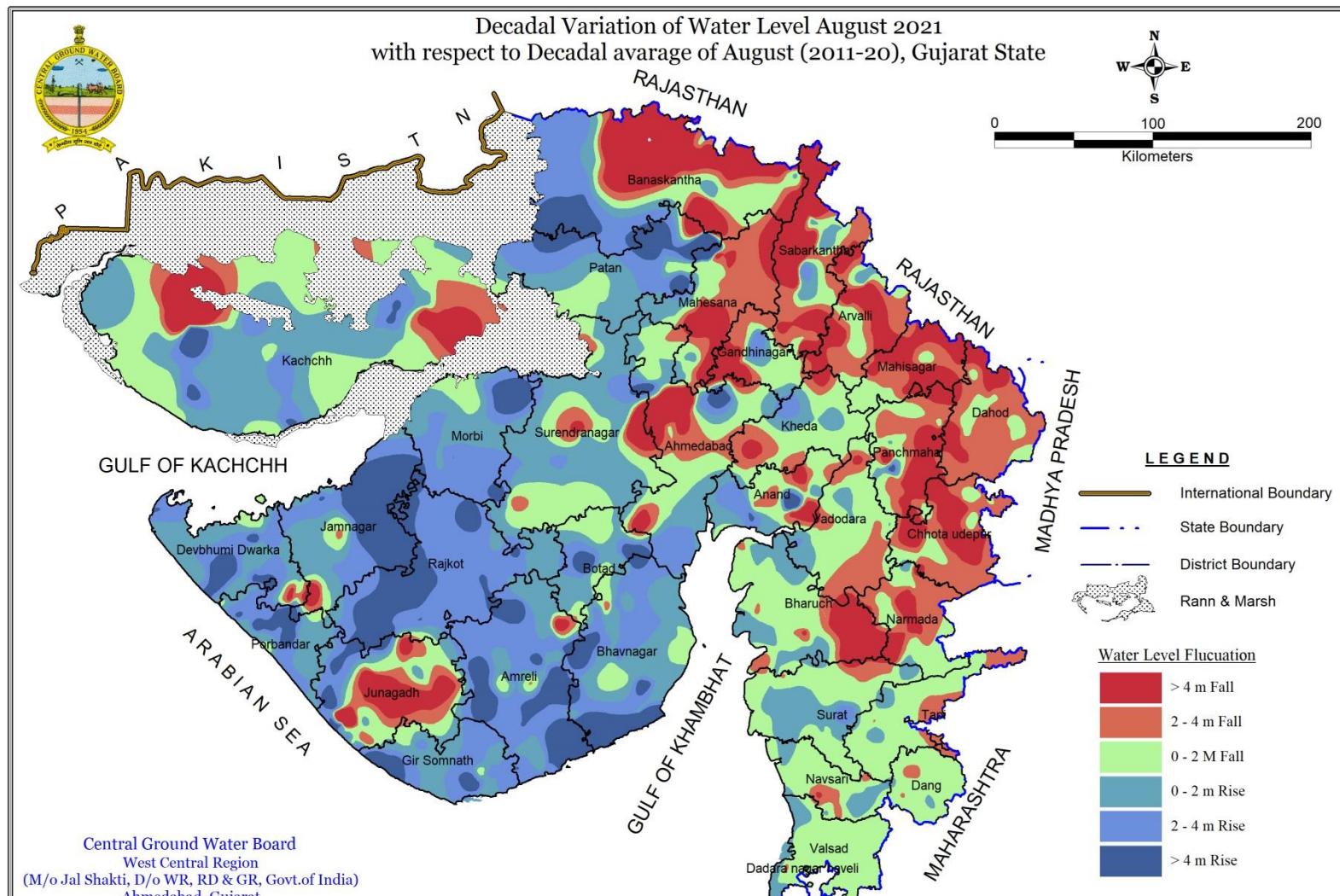


Fig. 24: Variation of water level of August 2021 to decadal average of August 2011-2020

Table 16. Well wise categorisation of changes in water level during August 2021 with respect to decadal average of August (2011 to 2020)

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in different depth range						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	23	0.08	22.26	0.01	23.34	4 17.4%	2 8.7%	2 8.7%	9 39.1%	1 4.3%	5 21.7%	8	15
2	Anand	22	0.34	10.95	0.24	6.76	2 9.1%	1 4.5%	3 13.6%	8 36.4%	4 18.2%	4 18.2%	6	16
3	Arvalli	14	1.40	1.40	0.50	6.79	1 7.1%	0 0.0%	0 0.0%	4 28.6%	3 21.4%	6 42.9%	1	13
4	Banaskantha	28	0.01	5.37	0.28	46.13	7 25.0%	0 0.0%	2 7.1%	6 21.4%	1 3.6%	12 42.9%	9	19
5	Dahod	26	0.33	0.33	0.95	12.48	1 3.8%	0 0.0%	0 0.0%	8 30.8%	12 46.2%	5 19.2%	1	25
6	Gandhinagar	17	2.72	10.41	1.31	17.25	0 0.0%	2 11.8%	3 17.6%	2 11.8%	3 17.6%	7 41.2%	5	12
7	Kheda	18	0.01	6.36	0.52	8.81	3 16.7%	0 0.0%	2 11.1%	8 44.4%	3 16.7%	2 11.1%	5	13
8	Mahesana	32	0.11	1.55	0.03	9.01	7 21.9%	0 0.0%	0 0.0%	11 34.4%	7 21.9%	7 21.9%	7	25
9	Mahisagar	16	-	-	1.02	20.67	0 0.0%	0 0.0%	0 0.0%	4 25.0%	4 25.0%	8 50.0%	0	16
10	Panchmahals	22	0.18	5.60	0.07	8.43	2 9.1%	0 0.0%	1 4.5%	5 22.7%	8 36.4%	6 27.3%	3	19
11	Patan	9	0.17	7.24	0.36	1.69	1 11.1%	3 33.3%	2 22.2%	3 33.3%	0 0.0%	0 0.0%	6	3
12	Sabarkantha	27	0.53	3.61	0.30	15.52	3 11.1%	2 7.4%	0 0.0%	7 25.9%	5 18.5%	10 37.0%	5	22
	North Gujarat	254	0.01	22.26	0.01	46.13	31 12.2%	10 3.9%	15 5.9%	75 29.5%	51 20.1%	72 28.3%	56	198
13	Bharuch	31	0.05	2.43	0.09	10.26	11 35.5%	1 3.2%	0 0.0%	9 29.0%	5 16.1%	5 16.1%	12	19
14	Chhota Udepur	23	-	-	0.43	9.47	0 0.0%	0 0.0%	0 0.0%	5 21.7%	8 34.8%	10 43.5%	0	23
15	Narmada	19	0.01	1.32	0.12	7.96	3 15.8%	0 0.0%	0 0.0%	6 31.6%	3 15.8%	7 36.8%	3	16
16	Navsari	18	0.14	1.05	0.03	4.24	5 27.8%	0 0.0%	0 0.0%	9 50.0%	3 16.7%	1 5.6%	5	13
17	Surat	27	0.12	3.25	0.26	2.33	9 33.3%	1 3.7%	0 0.0%	14 51.9%	3 11.1%	0 0.0%	10	17
18	Tapi	12	1.15	1.26	0.18	3.28	2 16.7%	0 0.0%	0 0.0%	7 58.3%	3 25.0%	0 0.0%	2	10
19	The dangs	20	0.43	0.86	0.06	3.99	2 10.0%	0 0.0%	0 0.0%	15 75.0%	3 15.0%	0 0.0%	2	18
20	Vadodara	19	0.07	3.80	0.08	4.48	5 26.3%	1 5.3%	0 0.0%	6 31.6%	6 31.6%	1 5.3%	6	13
21	Valsad	16	0.15	1.22	0.09	2.33	3 18.8%	0 0.0%	0 0.0%	11 68.8%	2 12.5%	0 0.0%	3	13
	South Gujarat	185	0.01	3.80	0.03	10.26	40 21.6%	3 1.6%	0 0.0%	82 44.3%	36 19.5%	24 13.0%	43	142
22	Amreli	42	0.25	18.53	0.51	5.72	13 31.0%	13 31.0%	12 28.6%	2 4.8%	1 2.4%	1 2.4%	38	4
23	Bhavnagar	38	0.03	12.15	0.46	3.40	16 42.1%	8 21.1%	7 18.4%	6 15.8%	1 2.6%	0 0.0%	31	7
24	Botad	4	0.69	5.67	1.46	1.99	1 25.0%	0 0.0%	1 25.0%	2 50.0%	0 0.0%	0 0.0%	2	2
25	Devbhumi Dwarka	23	0.12	7.32	0.34	4.80	7 30.4%	7 30.4%	5 21.7%	2 8.7%	0 0.0%	2 8.7%	19	4
26	Gir Somnath	18	0.59	8.74	0.74	2.26	7 38.9%	7 38.9%	2 11.1%	1 5.6%	1 5.6%	0 0.0%	16	2
27	Jamnagar	13	0.77	6.07	0.18	7.93	4 30.8%	3 23.1%	3 23.1%	1 7.7%	1 7.7%	1 7.7%	10	3
28	Junagadh	38	0.12	8.10	0.03	15.86	5 13.2%	5 13.2%	6 15.8%	9 23.7%	5 13.2%	8 21.1%	16	22
29	Morbi	14	0.05	6.80	0.57	1.73	7 50.0%	2 14.3%	3 21.4%	2 14.3%	0 0.0%	0 0.0%	12	2
30	Porbandar	28	0.29	9.80	0.31	0.69	9 32.1%	11 39.3%	6 21.4%	2 7.1%	0 0.0%	0 0.0%	26	2
31	Rajkot	27	0.75	9.87	-	0.00	5 18.5%	10 37.0%	12 44.4%	0 0.0%	0 0.0%	0 0.0%	27	0
32	Surendranagar	24	0.19	2.92	0.82	4.43	15 62.5%	4 16.7%	0 0.0%	2 8.3%	2 8.3%	1 4.2%	19	5
	Saurashtra	269	0.03	18.53	0.03	15.86	89 33.1%	70 26.0%	57 21.2%	29 10.8%	11 4.1%	13 4.8%	216	53
33	Kachchh	45	0.20	12.41	0.05	11.59	11 24.4%	6 13.3%	5 11.1%	18 40.0%	2 4.4%	3 6.7%	22	23
	Kachchh	45	0.20	12.41	0.05	11.59	11 24.4%	6 13.3%	5 11.1%	18 40.0%	2 4.4%	3 6.7%	22	23
	Gujarat State	753	0.01	22.26	0.01	46.13	171 22.7%	89 11.8%	77 10.2%	204 27.1%	100 13.3%	112 14.9%	337	416

3.4.2.3 Decadal average of November (2011-2020) to November 2021

A comparison of the water level of the November 2021 with the average water level of the November for last one decade (2011-2020) Fig 25 & Table 17 reveals that there is the rise in water level in the state (67% of total well analysed). Rise and fall is mostly in the range of 0 to 2 m. The fall of more than 4 m is observed mostly in Kachchh, North and Southern region. The maximum rise of 24.89 m is recorded at Bopal of Ahmedabad district whereas the maximum fall of 40.71 m is recorded at Dhanera of Banaskantha district.

In North Gujarat 53% of wells are shown fall and mostly well are in range of 0 to 2 m (26% of wells) in entire North Gujarat. The rise of water level found in 47% of the wells of which 33% of wells were found in the range of 0 to 2 m. Fall of more than 4 m is mainly observed in Arvalli, Ahmedabad, Gandhinagar, Banaskantha, Patan and Sabarkantha districts.

In South Gujarat, 60% of total well analysed shows the rise where as 40% shows the fall. In the range of 0 to 2 m, 45% shows the rise and 27% shows the fall scattered in whole South Gujarat region. Fall of more than 4 m is predominantly observed in Bharuch, Chota Udepur and Narmada districts.

In Saurashtra region about 09% of wells analysed show fall in water level and out of which 2% wells in more than 2 m. Rise of water level are experienced in 91% of the well and 33% are in the 0 to 2 m. One well in each Bhavnagar, Morbi and Surendranagar districts show more than 4 m fall in water level.

In Kachchh, 38% of the total wells analysed are recorded fall in water level in the district. Fall is mostly (21% of wells) in the range of 0 to 2 m. Rise in water level is observed in 62% of the wells analysed in distributed all over the Kachchh region. Rise and fall of more than 4 m is witnessed in isolated pockets in the region.

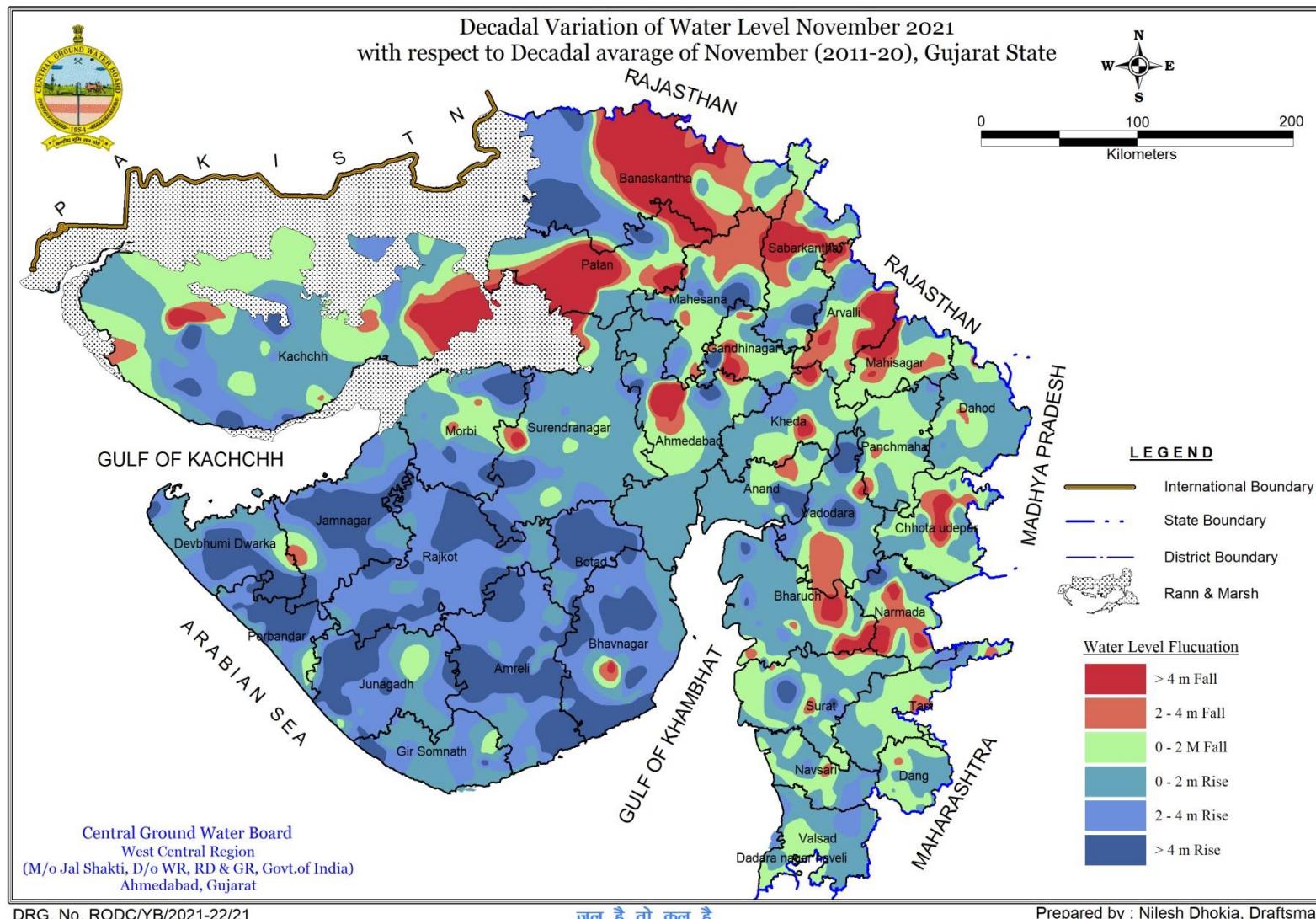


Fig. 25: Variation of water level of November 2021 to decadal average of November 2011-2020

Table 17. Well wise categorisation of changes in water level during November 2021 with respect to decadal average of November (2011 to 2020)

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in diffrent depth range						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	21	0.20	24.89	0.19	18.12	10 47.6%	1 4.8%	2 9.5%	4 19.0%	2 9.5%	2 9.5%	13	8
2	Anand	22	0.10	19.01	0.71	3.75	9 40.9%	1 4.5%	2 9.1%	8 36.4%	2 9.1%	0 0.0%	12	10
3	Arvalli	16	0.60	3.82	0.21	13.38	2 12.5%	2 12.5%	0 0.0%	5 31.3%	2 12.5%	5 31.3%	4	12
4	Banaskantha	28	0.28	7.47	0.55	40.71	5 17.9%	3 10.7%	2 7.1%	3 10.7%	6 21.4%	9 32.1%	10	18
5	Dahod	28	0.01	4.19	0.06	2.99	18 64.3%	0 0.0%	1 3.6%	6 21.4%	3 10.7%	0 0.0%	19	9
6	Gandhinagar	19	0.12	14.28	0.69	17.66	2 10.5%	1 5.3%	3 15.8%	5 26.3%	1 5.3%	7 36.8%	6	13
7	Kheda	18	0.08	6.78	0.18	6.29	7 38.9%	0 0.0%	2 11.1%	6 33.3%	1 5.6%	2 11.1%	9	9
8	Mahesana	36	0.12	19.34	0.21	7.21	12 33.3%	6 16.7%	2 5.6%	7 19.4%	5 13.9%	4 11.1%	20	16
9	Mahisagar	15	1.54	1.54	0.05	13.16	1 6.7%	0 0.0%	0 0.0%	8 53.3%	2 13.3%	4 26.7%	1	14
10	Panchmahals	21	0.10	3.12	0.45	5.07	10 47.6%	2 9.5%	0 0.0%	7 33.3%	1 4.8%	1 4.8%	12	9
11	Patan	9	0.00	4.17	0.33	16.36	3 33.3%	1 11.1%	1 11.1%	1 11.1%	1 11.1%	2 22.2%	5	4
12	Sabarkantha	29	0.02	7.80	0.35	11.26	7 24.1%	4 13.8%	1 3.4%	9 31.0%	4 13.8%	4 13.8%	12	17
	North Gujarat	262	0.00	24.89	0.05	40.71	86 32.8%	21 8.0%	16 6.1%	69 26.3%	30 11.5%	40 15.3%	123	139
13	Bharuch	34	0.19	5.11	0.43	8.42	21 61.8%	3 8.8%	3 8.8%	1 2.9%	3 8.8%	3 8.8%	27	7
14	Chhota Udepur	22	0.05	2.16	0.09	6.82	10 45.5%	1 4.5%	0 0.0%	6 27.3%	3 13.6%	2 9.1%	11	11
15	Narmada	22	0.18	6.65	0.12	7.27	8 36.4%	1 4.5%	1 4.5%	5 22.7%	2 9.1%	5 22.7%	10	12
16	Navsari	18	0.02	3.54	0.06	2.83	6 33.3%	4 22.2%	0 0.0%	7 38.9%	1 5.6%	0 0.0%	10	8
17	Surat	29	0.03	5.79	0.02	3.04	12 41.4%	1 3.4%	3 10.3%	11 37.9%	2 6.9%	0 0.0%	16	13
18	Tapi	12	0.01	1.45	0.23	5.07	7 58.3%	0 0.0%	0 0.0%	3 25.0%	1 8.3%	1 8.3%	7	5
19	The dangs	21	0.01	2.76	0.08	2.69	9 42.9%	1 4.8%	0 0.0%	10 47.6%	1 4.8%	0 0.0%	10	11
20	Vadodara	21	0.19	19.89	0.02	4.96	8 38.1%	4 19.0%	3 14.3%	4 19.0%	1 4.8%	1 4.8%	15	6
21	Valsad	16	0.06	3.14	0.31	1.07	7 43.8%	3 18.8%	0 0.0%	6 37.5%	0 0.0%	0 0.0%	10	6
	South Gujarat	195	0.01	19.89	0.02	8.42	88 45.1%	18 9.2%	10 5.1%	53 27.2%	14 7.2%	12 6.2%	116	79
22	Amreli	44	0.19	23.54	0.59	0.59	12 27.3%	17 38.6%	14 31.8%	1 2.3%	0 0.0%	0 0.0%	43	1
23	Bhavnagar	40	0.89	14.81	0.64	5.24	12 30.0%	13 32.5%	13 32.5%	1 2.5%	0 0.0%	1 2.5%	38	2
24	Botad	3	4.40	7.05	-	-	0 0.0%	0 0.0%	3 100.0%	0 0.0%	0 0.0%	0 0.0%	3	0
25	Devbhumi Dwarka	24	0.44	9.92	-	-	8 33.3%	6 25.0%	10 41.7%	0 0.0%	0 0.0%	0 0.0%	24	0
26	Gir Somnath	20	0.52	5.42	0.03	0.72	9 45.0%	7 35.0%	2 10.0%	2 10.0%	0 0.0%	0 0.0%	18	2
27	Jamnagar	21	0.06	8.25	2.71	2.71	6 28.6%	5 23.8%	9 42.9%	0 0.0%	1 4.8%	0 0.0%	20	1
28	Junagadh	30	0.16	7.28	0.96	2.00	8 26.7%	10 33.3%	9 30.0%	3 10.0%	0 0.0%	0 0.0%	27	3
29	Morbi	17	0.22	6.76	0.07	5.56	5 29.4%	4 23.5%	2 11.8%	4 23.5%	1 5.9%	1 5.9%	11	6
30	Porbandar	29	0.03	12.00	0.14	1.29	7 24.1%	7 24.1%	13 44.8%	2 6.9%	0 0.0%	0 0.0%	27	2
31	Rajkot	30	0.28	8.50	-	-	8 26.7%	9 30.0%	13 43.3%	0 0.0%	0 0.0%	0 0.0%	30	0
32	Surendranagar	31	0.15	10.73	0.15	7.02	19 61.3%	3 9.7%	1 3.2%	6 19.4%	1 3.2%	1 3.2%	23	8
	Saurashtra	289	0.03	23.54	0.03	7.02	94 32.5%	81 28.0%	19 30.8%	19 6.6%	3 1.0%	3 1.0%	264	25
33	Kachchh	48	0.17	7.98	0.15	13.60	16 33.3%	8 16.7%	10 12.5%	10 20.8%	5 10.4%	3 6.3%	30	18
	Kachchh	48	0.17	7.98	0.15	13.60	16 33.3%	8 16.7%	6 12.5%	10 20.8%	5 10.4%	3 6.3%	30	18
	Gujarat State	794	0.00	24.89	0.02	40.71	284 35.8%	128 16.1%	121 15.2%	151 19.0%	52 6.5%	58 7.3%	533	261

3.4.2.4 Decadal average of January(2012-2021) to January 2022

A comparison of the water level of the January 2022 with the average water level of the January for last one decade (2012-2021) Fig 26 and Table 18 reveals that there is a rise in water level in the state (75% of total well analysed). Rise and fall is mostly in the range of 0 to 2 m. Fall of more than 4 m is observed mostly in Northern, Saurashtra and Southern region and occur as isolated patches. The maximum rise of 18.22 m is recorded at Mandal in Amreli district whereas the maximum fall of 15.01 m is recorded at Sabalwad of Sabarkantha district.

In North Gujarat 56% of wells are shown the rise with mostly well are in range of 0 to 2 m (42% of wells), 44% of total well shows fall with 27% in the range of 0 to 2 m. Isolated patches in Arvalli, Mahesana and Sabarkantha districts shows fall of more than 4 m in water level.

In South Gujarat, 78% of total well analysed shows rise whereas 22% shows fall for this decadal variation. The rise and fall mainly in the range of 0 to 2 m (63% rise and 18% fall). Few patches show fall of 2 to 4 m in Bharuch, Navsasri, Surat and Vadodara districts.

In Saurashtra region, about 11% of wells observed fall in water level and out of which 7% wells shows rise in the range of 0 to 2 m. The rise of water level is observed in 89% wells in the region. The rise of more than 4 m is experienced in 38% of the total well in region distributed all over the region. Rise of the water level in the range 0 to 2 m is observed in 7% wells of the region which is distributed sporadically in the Saurashtra region.

In Kachchh, 36% of the total wells analysed are recorded fall in water level in the district. Fall is mostly (29% of wells) in the range of 0 to 2 m. The fall mainly observed in the central and western part of Kachchh. The rise of 64% of the total wells analysed is recorded in Kachchh region. Fall of more than 4 m is not observed in any place in Kachchh region.

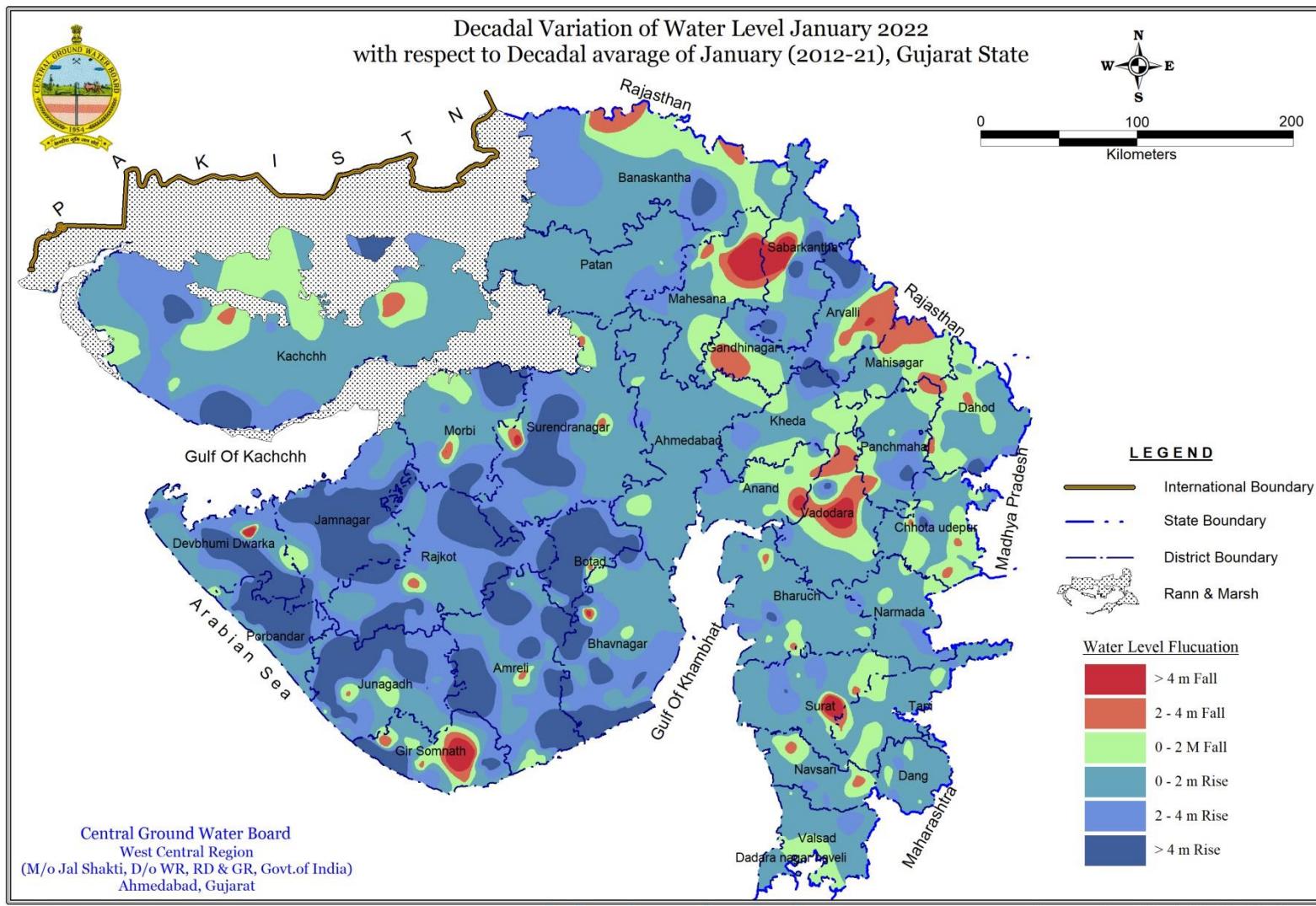


Fig. 26: Variation of water level of January 2022 to decadal average of January 2012-2021

Table 18. Well wise categorisation of changes in water level during January 2022 with respect to decadal average of January (2012 to 2021)

Sr. No.	District Name	No of well analysed	Fluctuation range, m		Fluctuation range, m		No. of wells in diffrent depth range						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	0.01	3.46	0.37	4.17	10 58.8%	5 29.4%	0 0.0%	1 5.9%	1 5.9%	0 0.0%	15	2
2	Anand	17	0.02	8.64	0.55	5.64	13 76.5%	2 11.8%	0 0.0%	2 11.8%	0 0.0%	0 0.0%	15	2
3	Arvalli	18	0.30	3.93	0.04	5.19	5 27.8%	2 11.1%	2 11.1%	6 33.3%	0 0.0%	3 16.7%	9	9
4	Banaskantha	16	0.99	6.19	0.01	3.74	4 25.0%	0 0.0%	2 12.5%	6 37.5%	4 25.0%	0 0.0%	6	10
5	Dahod	27	0.17	2.42	0.38	7.41	16 59.3%	1 3.7%	0 0.0%	8 29.6%	2 7.4%	0 0.0%	17	10
6	Gandhinagar	9	0.55	7.71	0.36	2.73	3 33.3%	0 0.0%	0 0.0%	4 44.4%	2 22.2%	0 0.0%	3	6
7	Kheda	20	0.28	7.66	0.48	1.63	12 60.0%	2 10.0%	2 10.0%	4 20.0%	0 0.0%	0 0.0%	16	4
8	Mahesana	35	0.94	3.53	0.45	7.84	9 25.7%	4 11.4%	0 0.0%	8 22.9%	6 17.1%	8 22.9%	13	22
9	Mahisagar	14	1.43	1.43	0.03	11.37	1 7.1%	0 0.0%	0 0.0%	8 57.1%	5 35.7%	0 0.0%	1	13
10	Panchmahals	21	0.14	3.49	0.46	3.86	9 42.9%	4 19.0%	0 0.0%	7 33.3%	1 4.8%	0 0.0%	13	8
11	Patan	11	0.18	3.84	0.97	10.68	5 45.5%	3 27.3%	0 0.0%	3 27.3%	0 0.0%	0 0.0%	8	3
12	Sabarkantha	29	0.08	3.36	0.05	15.01	12 41.4%	3 10.3%	0 0.0%	6 20.7%	3 10.3%	5 17.2%	15	14
	North Gujarat	234	0.01	8.64	0.01	15.01	99 42.3%	26 11.1%	6 2.6%	63 26.9%	24 10.3%	16 6.8%	131	103
13	Bharuch	37	0.55	4.89	0.32	2.75	19 51.4%	7 18.9%	1 2.7%	8 21.6%	2 5.4%	0 0.0%	27	10
14	Chhota Udepur	21	0.06	5.61	0.02	2.30	9 42.9%	4 19.0%	3 14.3%	4 19.0%	1 4.8%	0 0.0%	16	5
15	Narmada	17	0.04	2.46	0.33	1.91	13 76.5%	1 5.9%	0 0.0%	3 17.6%	0 0.0%	0 0.0%	14	3
16	Navsari	21	0.04	3.81	2.43	2.65	17 81.0%	2 9.5%	0 0.0%	0 0.0%	2 9.5%	0 0.0%	19	2
17	Surat	30	0.09	6.77	0.69	1.48	20 66.7%	2 6.7%	2 6.7%	4 13.3%	1 3.3%	1 3.3%	24	6
18	Tapi	10	0.52	1.99	0.02	1.97	7 70.0%	0 0.0%	0 0.0%	3 30.0%	0 0.0%	0 0.0%	7	3
19	The dangs	24	0.24	3.74	0.09	1.59	14 58.3%	2 8.3%	0 0.0%	8 33.3%	0 0.0%	0 0.0%	16	8
20	Vadodara	13	0.52	6.94	0.11	3.41	5 38.5%	1 7.7%	3 23.1%	3 23.1%	1 7.7%	0 0.0%	9	4
21	Valsad	17	0.06	3.81	0.10	4.56	12 70.6%	4 23.5%	0 0.0%	1 5.9%	0 0.0%	0 0.0%	16	1
	South Gujarat	190	0.04	6.94	0.02	4.56	116 61.1%	23 12.1%	9 4.7%	34 17.9%	7 3.7%	1 0.5%	148	42
22	Amreli	45	0.31	18.22	0.14	0.66	5 11.1%	17 37.8%	20 44.4%	3 6.7%	0 0.0%	0 0.0%	42	3
23	Bhavnagar	42	0.12	15.96	0.10	1.17	11 26.2%	12 28.6%	16 38.1%	3 7.1%	0 0.0%	0 0.0%	39	3
24	Botad	4	5.80	7.82	-	-	0 0.0%	0 0.0%	4 100.0%	0 0.0%	0 0.0%	0 0.0%	4	0
25	Devbhumi Dwarka	22	0.23	15.65	4.14	4.14	4 18.2%	8 36.4%	9 40.9%	0 0.0%	0 0.0%	1 4.5%	21	1
26	Gir Somnath	19	0.19	8.80	0.91	5.05	5 26.3%	7 36.8%	4 21.1%	2 10.5%	0 0.0%	1 5.3%	16	3
27	Jamnagar	19	1.19	10.36	-	-	4 21.1%	5 26.3%	9 47.4%	1 5.3%	0 0.0%	0 0.0%	18	1
28	Junagadh	35	0.49	14.34	0.13	6.67	9 25.7%	5 14.3%	16 45.7%	2 5.7%	2 5.7%	1 2.9%	30	5
29	Morbi	13	0.68	4.11	0.12	3.93	4 30.8%	4 30.8%	1 7.7%	2 15.4%	2 15.4%	0 0.0%	9	4
30	Porbandar	28	0.14	15.42	0.06	9.59	6 21.4%	5 17.9%	15 53.6%	2 7.1%	0 0.0%	0 0.0%	26	2
31	Rajkot	27	1.01	9.57	6.00	6.00	4 14.8%	13 48.1%	9 33.3%	0 0.0%	0 0.0%	1 3.7%	26	1
32	Surendranagar	33	0.04	9.54	0.06	3.30	13 39.4%	7 21.2%	6 18.2%	4 12.1%	3 9.1%	0 0.0%	26	7
	Saurashtra	287	0.04	18.22	0.06	9.59	65 22.6%	83 28.9%	109 38.0%	19 6.6%	7 2.4%	4 1.4%	257	30
33	Kachchh	42	0.11	5.69	0.08	10.01	17 40.5%	6 14.3%	4 9.5%	12 28.6%	3 7.1%	0 0.0%	27	15
	Kachchh	42	0.11	5.69	0.08	10.01	17 40.5%	6 14.3%	4 9.5%	12 28.6%	3 7.1%	0 0.0%	27	15
	Gujarat State	753	0.01	18.22	0.01	15.01	297 39.4%	138 18.3%	128 17.0%	41 17.0%	21 5.4%	190 2.8%	563	190

4 WATER TABLE SCENARIO

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

4.1. May 2021 (Water Table in May 2021)

The water table map for pre-monsoon period (Fig. 27) reveals that the water table in different parts of the state ranges between 6.46 m bmsl and 592.75 m 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. Groundwater 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 100 m amsl, thus making groundwater mound in the central parts of both the Regions. The elevation of the water table is more than 300 m amsl in the Banaskantha in north, more than 400 m amsl Dangs and more than 200 m amsl in Narmada in south region. Water table below mean sea level is observed in coastal Bharuch, Bhavnagar, Devbhumi Dwarka, Gir Somnath, Junagadh, Porbandar, Surat and Valsad districts of Gujarat.

4.2 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 extending from the foothill of the Arvalli in the northeast to the little Rann of Kachchh in the west. Shallow water level is recorded in Anand district and deeper water level in Sabarkantha district. The data of the depth to water level in confined aquifer is given in Annexure IIB.

4.3 Confined Aquifer

Tentative boundary of confined aquifer is marked in the plain land of Gujarat State and extending from Banaskantha district in north to Gulf of Khambat in south close to Anand and Vadodara districts.

4.3.1 Confined Aquifer Depth to Piezometric surface - May 2021

Piezometers tapping confined aquifer were monitored and analysed during May 2021. Based on the water levels measured, piezometric surface map was prepared (Fig 28). A perusal of the map shows that in general depth to piezometric surface declines from east to west. In perusal of Fig. 28, Depth to piezometric surface ranges between 3.36 m bgl at Tarapur in Anand district to 195.41 m bgl at Charada in Gandhinagar district. Deeper water levels are observed in isolated patches located in Banaskantha, Patan, Mahesana and Gandhinagar districts. Shallow piezometric surface are close to Rann and Marsh and Gulf of Khambat.

4.3.2 Confined Aquifer Isopiestic Map m MSL - May 2021

Based on the water levels measured, an isopiestic map was prepared (Fig 29). A perusal of the map shows that, groundwater flow direction in general from north east to south west directions towards Rann and Marsh and Gulf of Khambat. Piezometric surface is below 125 m MSL in Patan district. A groundwater trough is observed below 75 m MSL in adjoining area of Gandhinagar and Mahesana. Piezometric surface ranges from 186.37 m in Banaskantha district and 136 m below MSL at Jagral in Patan district.

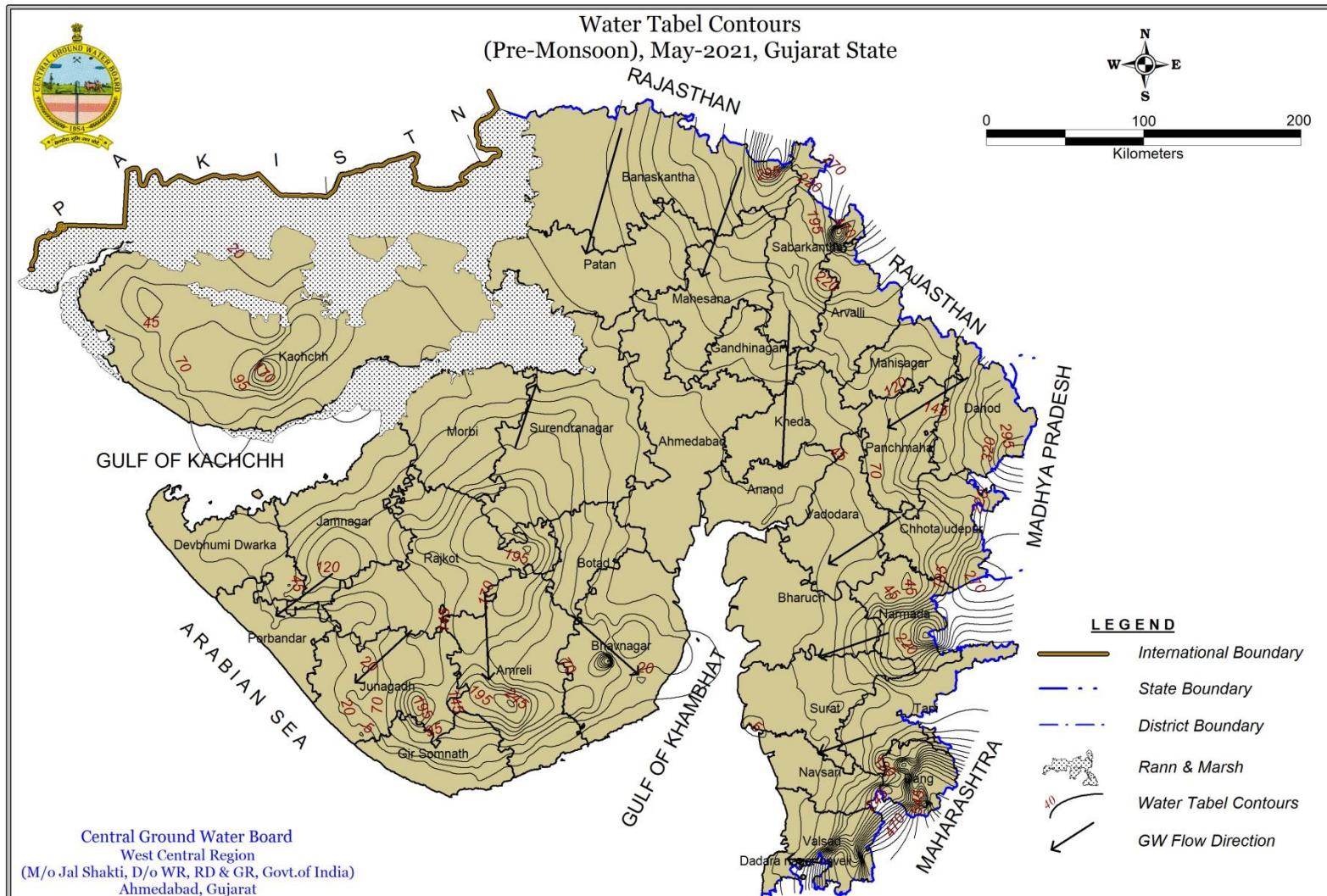


Fig. 27: Groundwater table contours of Gujarat May 2021

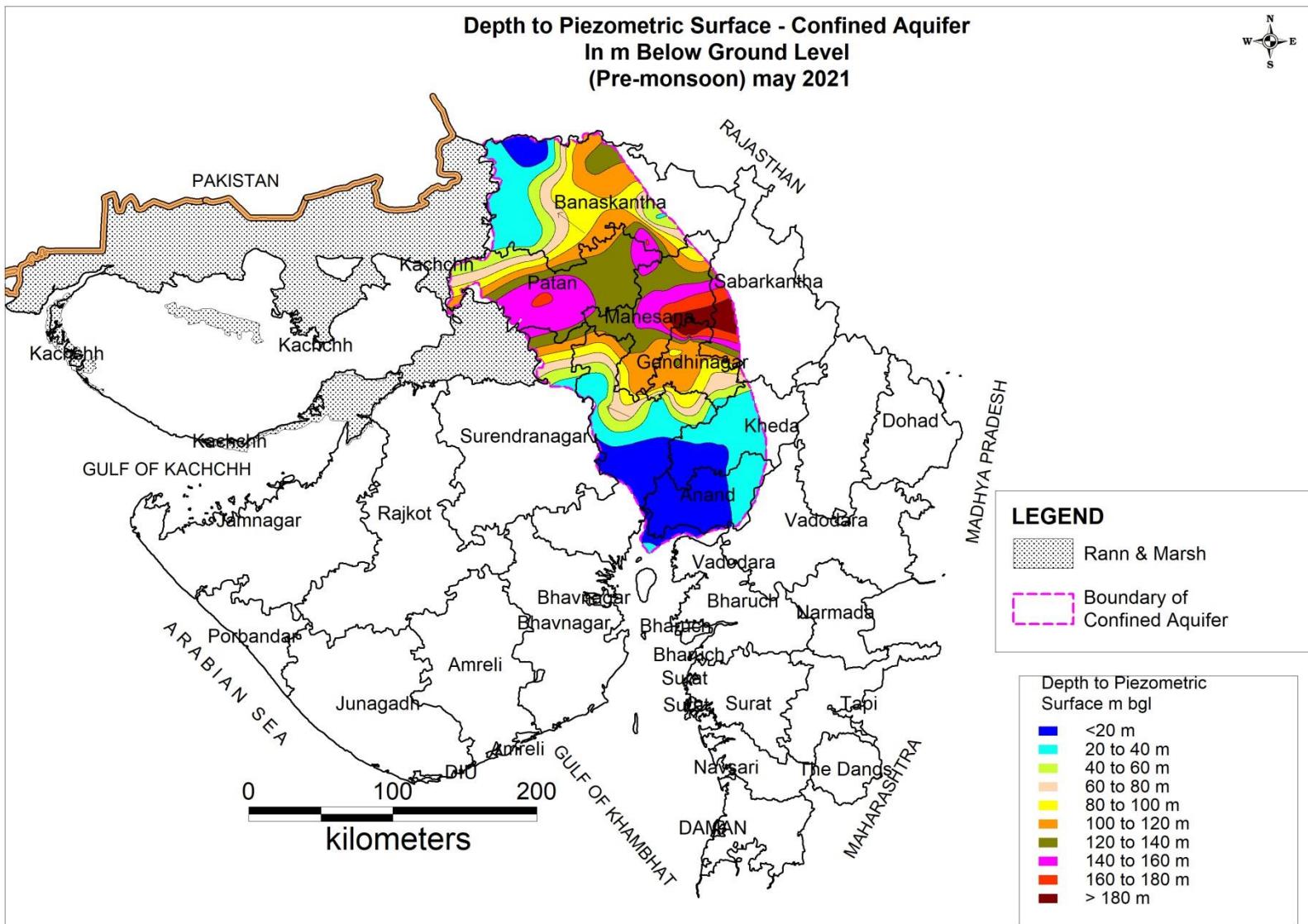


Fig. 28: Depth to water level map of confined aquifer May 2021 in m bgl

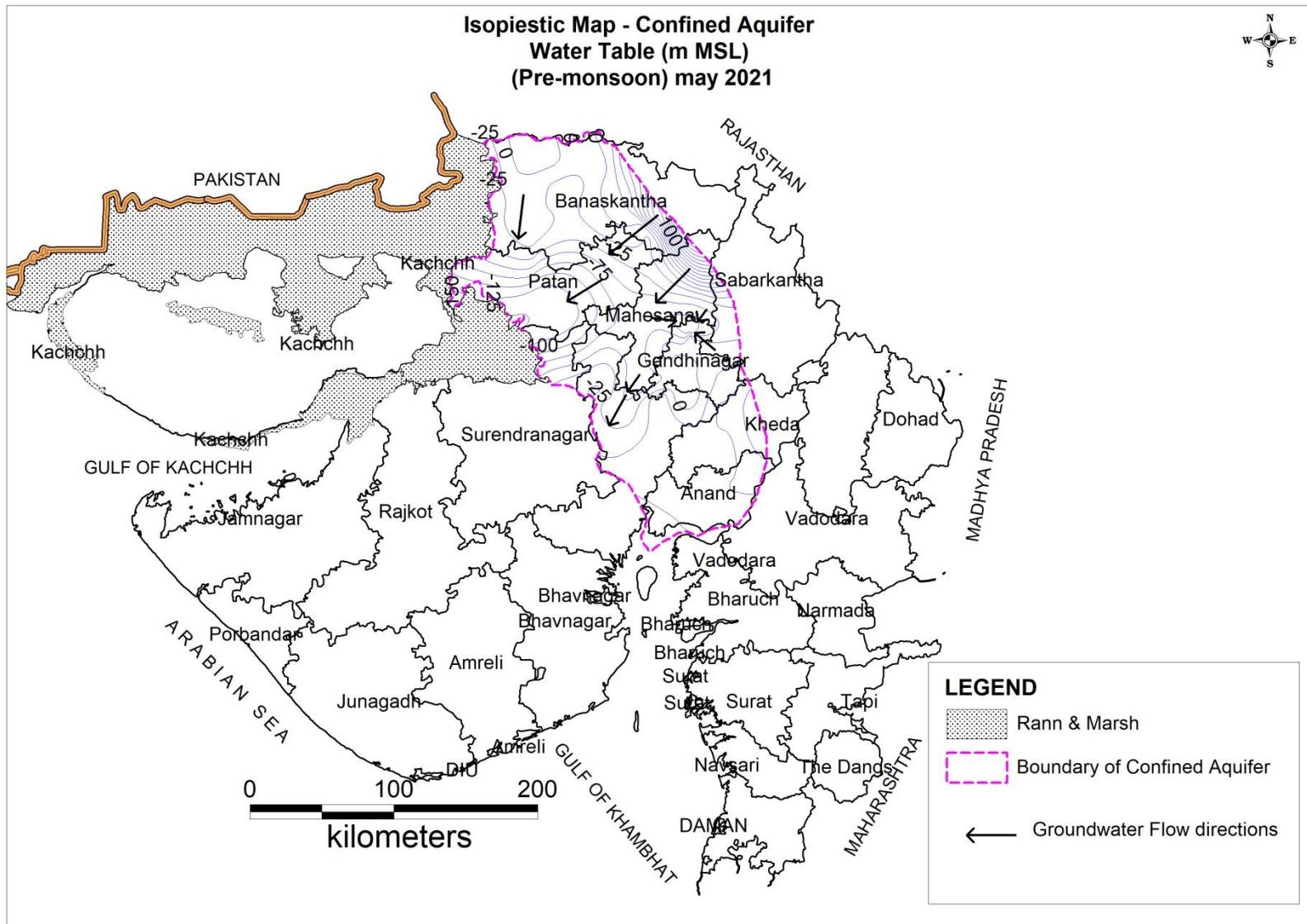


Fig. 29: Isopiestic map of second aquifer May 2021 in m MSL

5. 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 its coasts. High chemical concentrations mostly occur in coastal regions due to seawater intrusion brought by upconing or reversal in hydraulic gradient.

5.1 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 Groundwater Board (WCR), Ahmedabad has monitored a total number of 518 water samples collected during May 2021, for basic parameters determining pH, EC, TDS, CO_3 , HCO_3 , Cl, NO_3 , SO_4 , 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 601 water samples were collected for heavy metal analysis from the all locations of NHNS. The samples for heavy metal analysis was collected in 250 ml 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.

5.2 Groundwater 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 563 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 state. 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 19.

Major quality findings are described as under

5.2.1 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 portability 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 – 15000 uS/cm, is considered as Brackish water and > 15000 uS/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 15000 uS/cm and more. It was observed that out of 539 water samples 106 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 30.

A close observation of the Annexure-V reveals high EC Values > 3200 uS/cm have been found in 101 numbers of samples out of 563 total numbers 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.

Table 19. Quality index of National Hydrograph monitoring stations of Gujarat, May 2021

S. N.	District	No of Samples	EC in $\mu\text{S}/\text{cm}$			Cl in mg/l			NO ₃ in mg/l			F in mg/l			
			Max	Min	No of samples with EC >3200 $\mu\text{S}/\text{cm}$	Max	Min	No of samples with Cl >1000 mg/l	Max	Min	No of samples with NO ₃ >45 mg/l	Max	Min	No of samples with F >1.5 mg/l	
1	Ahmedabad	16	12980	430	9	3834.00	35.50	7	46.00	0.00	1	5.00	0.48	7	
2	Amreli	23	8258	668	4	1995.10	42.60	3	250.00	3.19	9	1.22	0.42	0	
3	Anand	10	5090	686	2	1099.00	57.00	1	106.00	5.00	4	1.39	0.42	0	
4	Arvalli	14	3364	451	1	815.35	49.63	0	146.00	3.20	8	1.20	0.50	0	
5	Banaskantha	9	3320	566	1	852.00	63.90	0	142.70	10.90	4	1.50	0.23	0	
6	Bharuch	26	6856	470	6	1738.00	43.00	5	173.30	1.70	4	1.51	0.15	1	
7	Bhavnagar	21	5070	720	2	1114.70	78.10	1	224.20	6.38	12	2.75	0.29	2	
8	Botad	5	7385	710	3	1207.00	78.10	2	180.00	11.15	2	3.75	0.56	1	
9	Chhota Udepur	10	7777	495	1	2269.00	28.00	1	42.30	0.40	0	1.39	0.35	0	
10	Dahod	16	8684	425	1	1985.20	28.36	1	372.00	1.20	5	6.50	0.67	5	
11	Dang	20	1755	366	0	326.14	14.18	0	31.00	0.18	0	0.36	0.13	0	
12	Devbhumi Dwarka	23	6028	416	5	1900.12	49.63	3	152.00	0.99	9	1.98	0.11	1	
13	Gandhinagar	1	2730	2730	0	440.20	440.20	0	47.00	47.00	1	1.30	1.30	0	
14	Gir Somnath	15	2365	410	0	589.30	35.50	0	117.00	4.32	4	2.30	0.22	2	
15	Jammagar	19	12970	516	2	4239.82	64.00	2	349.00	0.81	9	0.78	0.13	0	
16	Junagadh	25	7660	351	7	2779.28	21.27	7	165.00	0.59	6	0.92	0.11	0	
17	Kheda	13	6728	920	4	1732.40	43.00	2	134.00	0.00	1	1.29	0.26	0	
18	Kutchch	33	8660	650	13	2751.70	28.37	9	170.60	0.31	4	3.90	0.00	7	
19	Mahisagar	14	1530	412	0	212.70	28.36	0	59.00	0.00	1	1.20	0.27	0	
20	Mehsana	12	3760	493	2	859.10	49.70	0	80.00	2.30	2	1.06	0.05	0	
21	Morbi	15	7557	472	6	2425.00	28.00	4	286.00	2.20	5	3.50	0.21	4	
22	Narmada	11	1050	570	0	177.00	43.00	0	65.90	0.40	2	0.55	0.21	0	
23	Navsari	19	3651	578	2	1035.14	49.63	2	29.18	0.63	0	1.02	0.13	0	
24	Panchmahal	18	1934	464	0	340.32	49.63	0	140.00	1.40	5	1.90	0.21	2	
25	Patan	7	23660	370	2	8012.00	14.00	2	64.00	0.42	1	7.20	0.08	2	
26	Porbandar	20	26200	582	9	9075.20	77.99	7	124.00	14.00	7	2.22	0.23	2	
27	Rajkot	31	7017	592	4	2233.00	21.00	3	315.00	1.20	22	2.40	0.19	2	
28	Sabarkantha	24	4432	365	2	1332.92	14.18	1	263.00	1.10	17	4.40	0.24	6	
29	Surat	28	4056	438	1	1020.96	35.45	1	120.00	0.00	5	1.19	0.14	0	
30	Surendranagar	33	19220	214	10	6665.00	21.00	6	273.00	0.83	10	4.50	0.20	6	
31	Tapi	8	1487	322	0	269.42	21.27	0	24.00	0.94	0	0.80	0.13	0	
32	Vadodara	8	4340	670	2	780.00	57.00	0	39.40	1.80	0	1.24	0.29	0	
33	Valsad	16	1588	302	0	297.78	14.18	0	61.00	1.74	1	0.57	0.08	0	
		Total	563	26200	214	101	9075.20	14.00	70	372.00	0.00	161	7.20	0.00	50

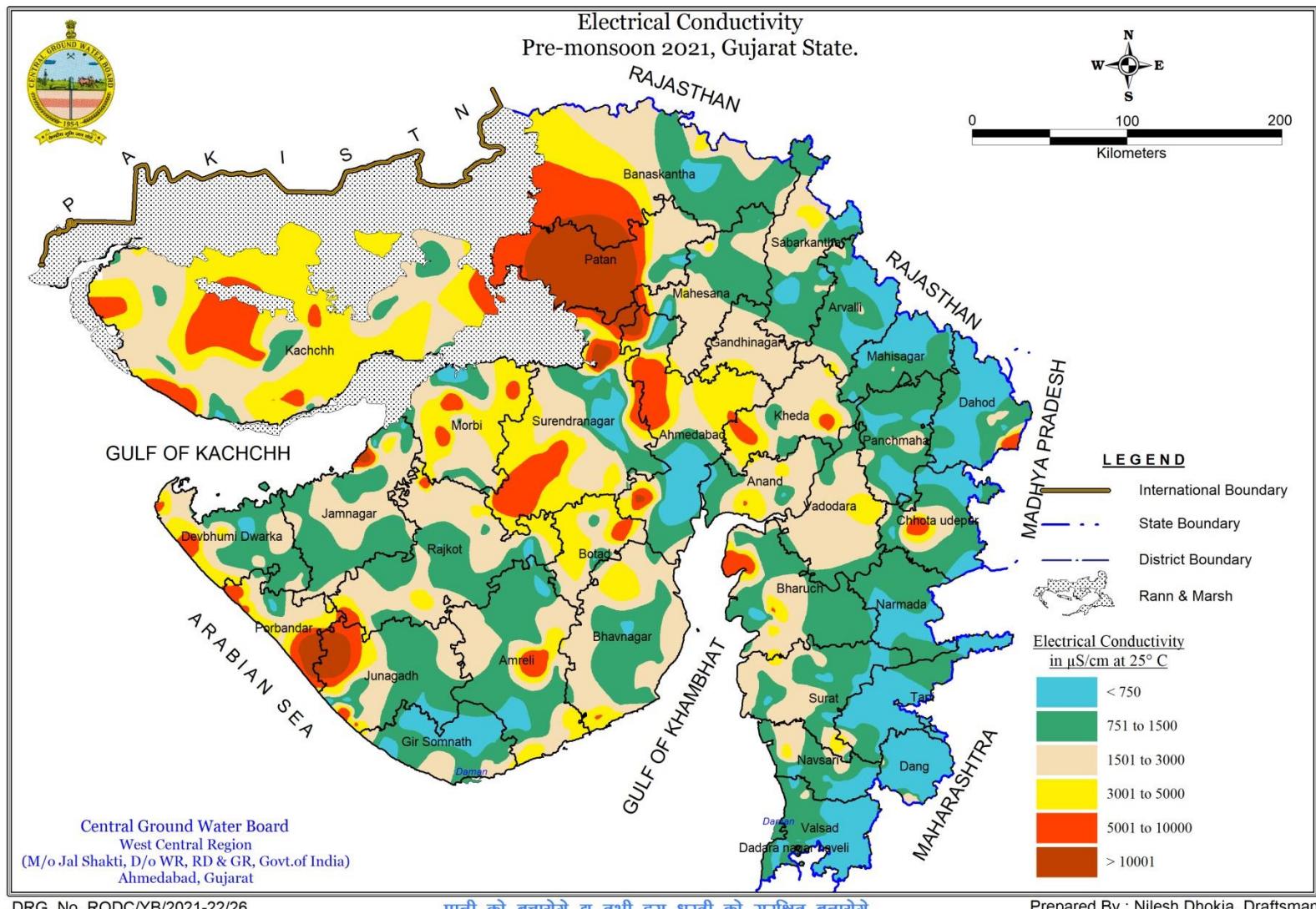


Fig. 30: Isocontour map of EC (May 2021)

5.2.2 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 250 mg/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 31.

A close observation of the Annexure V, High Chloride > 1000mg/L have been found in 70 numbers of samples out of 563 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.

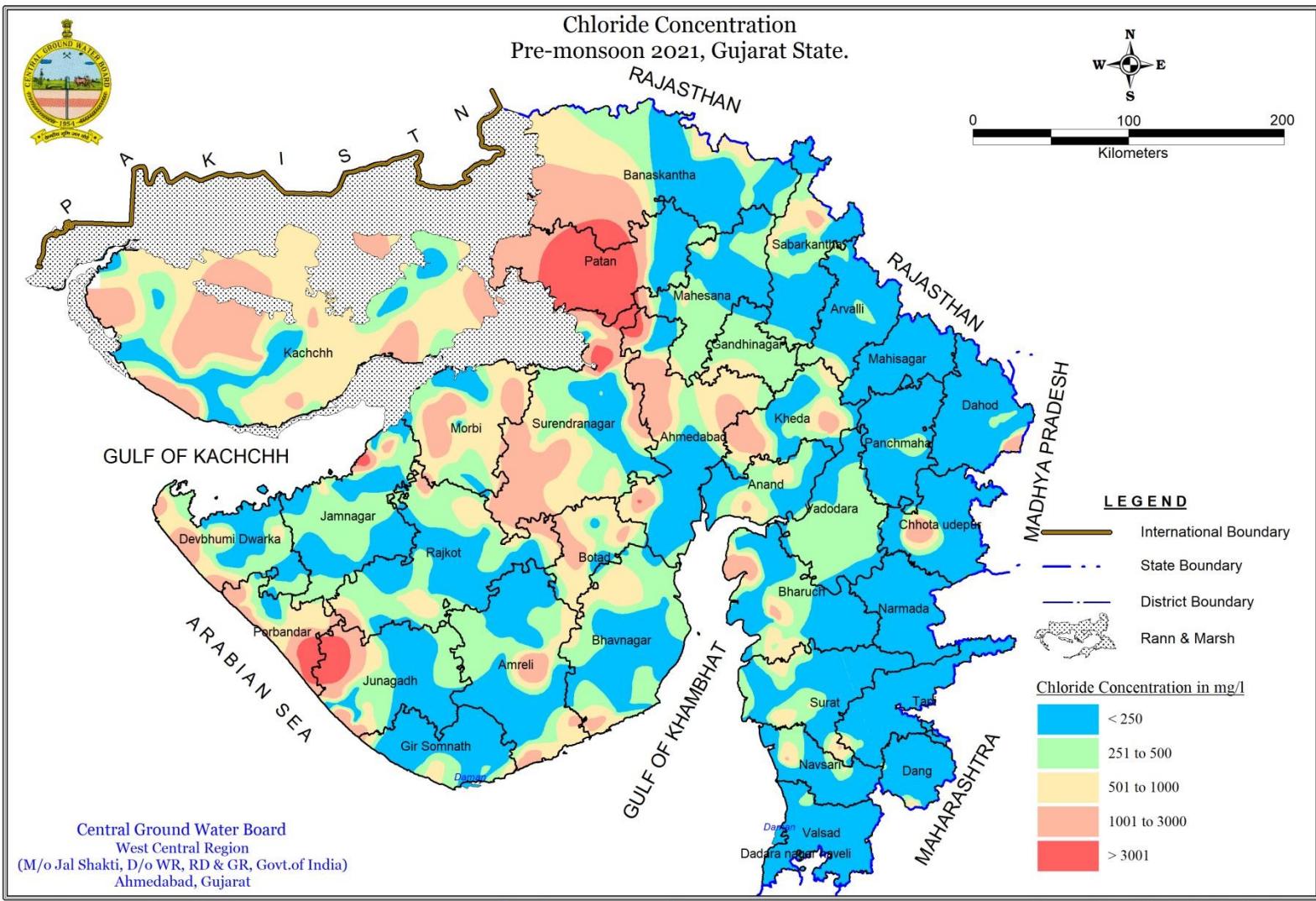


Figure 31: Isocontor map of Chloride (May 2021)

5.2.3 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 groundwater. Some chemical and microbiological processes such as nitrification and denitrification also influence the nitrate concentration in groundwater. The map showing distribution of nitrate in the state is represented in Fig 32.

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 372 mg/l where high Nitrate > 45 mg/L, (Annexure V) have been found in 161 number of samples out of 563 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.

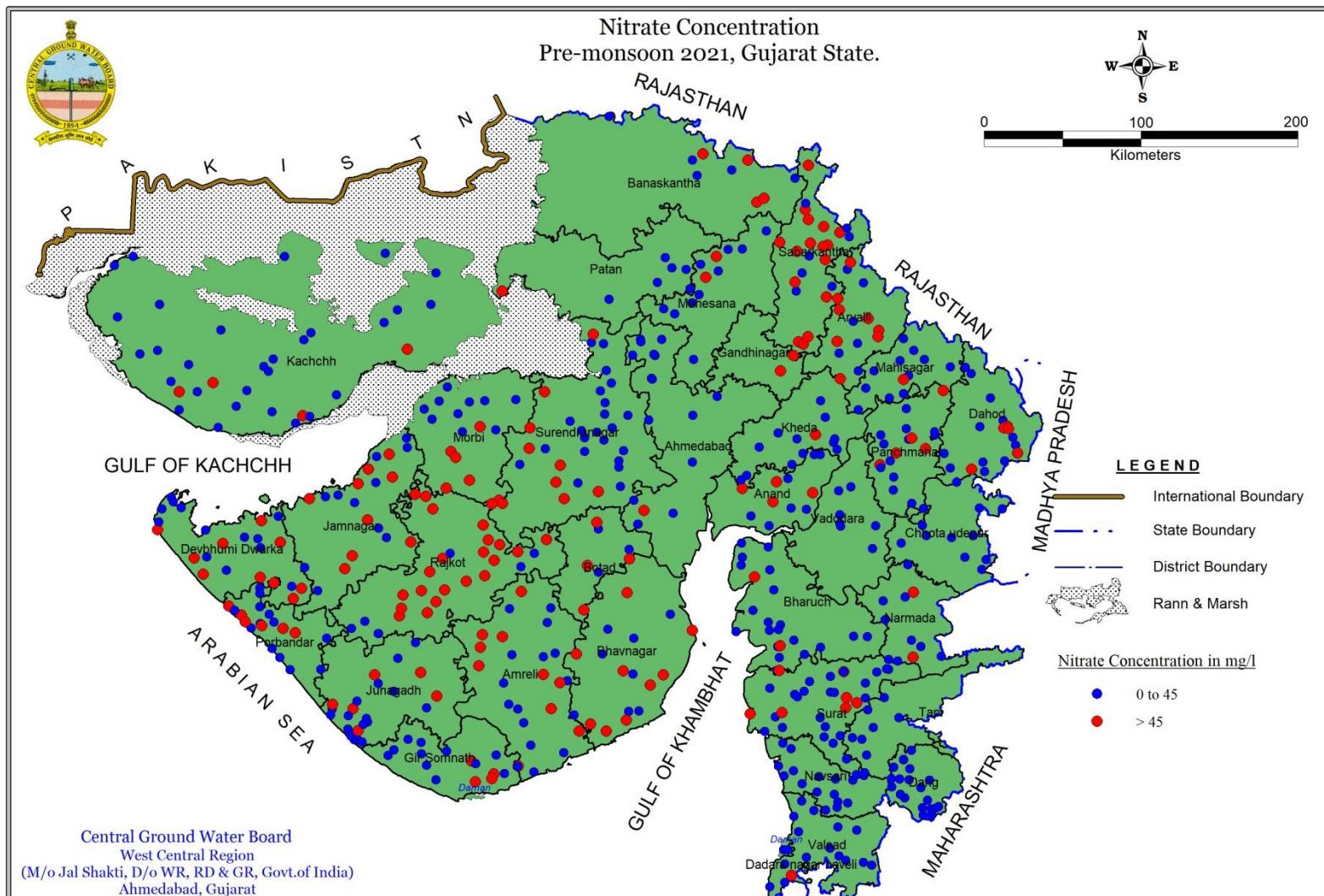


Fig. 32: Map of Nitrate concentration (May 2021)

5.2.4 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 and 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 33.

It is well known that small amount of fluoride ($>1.0 \text{ mg/l}$) 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 ($>1.5 \text{ mg/l}$) have resulted in staining of tooth enamel while higher levels of fluoride ($> 5.0 \text{ mg/l}$) 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 $>1.5 \text{ mg/l}$, (Annexure V) which is mainly attributed due to geogenic conditions ranged from 0 to 7.2 mg/l, have been observed in 50 water samples out of 563 water samples analyzed.

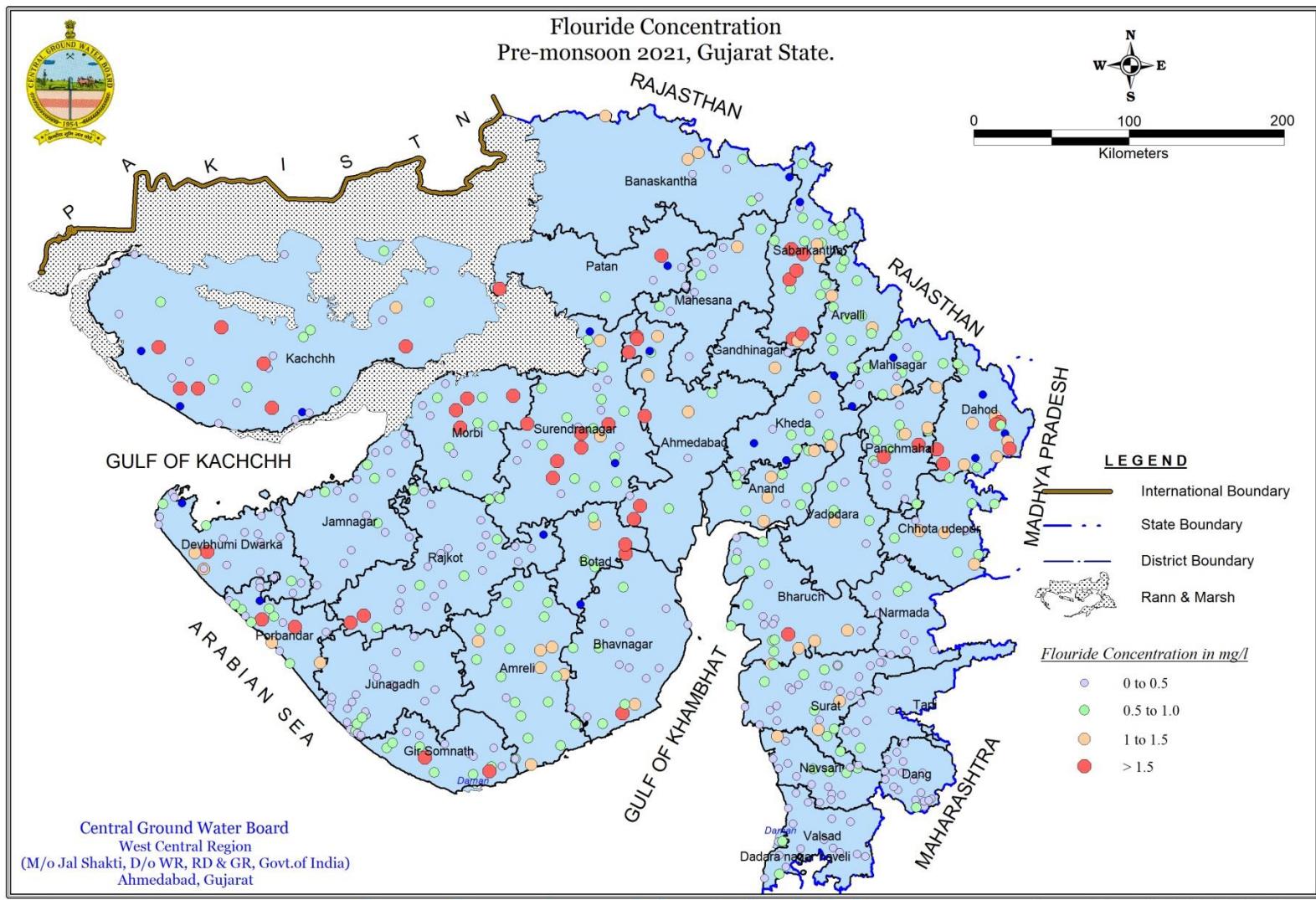


Fig. 33: Map of Flouride concentration (May 2021)

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 Rb Of Sabarmati And Upper Part Beyond Hathmati	22 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 Rivers draining into Arabian Sea (Western part)	58 5
Anand	Southern Kathiawar Total		63
	Amreli Total		21
	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 Draining into Gulf of Kutch Total	32 32
	Luni and other drainage into Great Rann of Kutch	Mainly Luni Mostly Great Rann Of Kutch	8 32
	Luni and other drainage into Great Rann of Kutch Total		40
	Sabarmati	Lb Of Sabarmati Upto Hathmati Rb Of Sabarmati And Upper Part Beyond Hathmati	1 1
	Sabarmati Total		2
Bharuch	Banaskantha Total		74
	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 Mahi Total Southern Kathiawar	1 1 Draining Into Gulf Of Khambat Rivers draining into Arabian Sea (Western part)
	Southern Kathiawar Total		54 1 54
Dohad	Bhavnagar Total		55
	Mahi	Kadana Dam To Jakham Confluence Upto Kadana Dam	16 16
	Mahi Total		32
	Dohad Total		32
	Gandhinagar	Draining into Gulf of Kutch Draining into Gulf of Kutch Total	10 10
	Sabarmati	Lb Of Sabarmati Upto Hathmati Rb Of Sabarmati And Upper Part Beyond Hathmati	9 14
	Sabarmati Total		23
	Gandhinagar Total		33
	Jamnagar	Draining into Gulf of Kutch Draining into Gulf of Kutch Total	42 42
	Southern Kathiawar	Rivers draining into Arabian Sea (Western part)	17
Junagadh	Southern Kathiawar Total		17
	Jamnagar Total		59
	Southern Kathiawar	Draining Into Gulf Of Khambat Rivers draining into Arabian Sea (Western part)	9 67
	Southern Kathiawar Total		76
Kachchh	Junagadh Total		76
	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 Upto Kadana Dam	1 5
	Mahi Total		6
	Sabarmati	Lb Of Sabarmati Upto Hathmati	22
	Sabarmati Total		22
Mahesana	Kheda Total		28
	Draining into Gulf of Kutch	Ruper	53
	Draining into Gulf of Kutch Total		53
	Sabarmati	Lb Of Sabarmati Upto Hathmati Rb Of Sabarmati And Upper Part Beyond Hathmati	2 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 Upto Kadana Dam	3 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 South Flowing Drainage Mostly Bhuj Area	26 4
	Draining into Gulf of Kutch Total		30
	Luni and other drainage into Great Rann of Kutch	Mainly Luni Mostly Great Rann Of Kutch	2 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 Rivers draining into Arabian Sea (Western part)	4 26
	Southern Kathiawar Total		30
Rajkot Total			61
Sabarkantha	Sabarmati	Lb Of Sabarmati Upto Hathmati Rb Of Sabarmati And Upper Part Beyond Hathmati	47 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 Sea Confluence To Ukai	4 36
	Tapti Total		40
Surat Total			75
Surendranagar	Draining into Gulf of Kutch	North Flowing Drainage Of Jamnagar Ruper	24 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 II A
 Water level of the National Hydrograph Stations in Gujarat 2021-2022

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
1	Ahmedabad	Ahmedabad cant_Pz_I (Rep)	23°4'21" N	72°36'15" E	Tube Well	96.12			
2	Ahmedabad	Ahmedabad cant_Pz_II	23°4'20" N	72°36'45" E	Tube Well	17.47			
3	Ahmedabad	Bagodara Pz_I	22°38'30" N	72°12'50" E	Tube Well	9.47	9.3	8.82	10.05
4	Ahmedabad	Bagodara Pz_II	22°38'30" N	72°12'50" E	Tube Well	6.02	5.73	4.52	4.95
5	Ahmedabad	Bopal Pz_I	23°2'19" N	72°27'28" E	Tube Well	34.18	34.35	33.5	28.76
6	Ahmedabad	Bopal Pz_III	23°2'19" N	72°27'28" E	Tube Well	3.7	3.2	2.89	2.8
7	Ahmedabad	Dalod	23°22'0" N	71°58'0" E	Dug Well	6.6	6.4		5.72
8	Ahmedabad	Devalia	22°22'40" N	71°59'10" E	Dug Well	20.4	20.4		20.4
9	Ahmedabad	Dhandhukal	22°22'30" N	71°59'10" E	Dug Well	2.9	3.1	1.65	
10	Ahmedabad	Endla	23°16'20" N	72°3'30" E	Dug Well	1.96	1.9	1.8	0.36
11	Ahmedabad	Gamph	22°21'30" N	72°10'0" E	Dug Well	1.55	0.9	0.62	-0.3
12	Ahmedabad	Ghuma	23°2'0" N	72°26'45" E	Dug Well	3.9	2.7	3.3	2.45
13	Ahmedabad	Hansalpur Pz-I	23°5'20" N	72°1'0" E	Tube Well	21.35	20.33	19	24.21
14	Ahmedabad	Hansalpur Pz-II	23°5'20" N	72°1'0" E	Tube Well			25.76	
15	Ahmedabad	Hansalpur Pz-III	23°5'20" N	72°1'0" E	Tube Well	4.05	3.85	3.22	3.2
16	Ahmedabad	Jhanjharia Pz_II	23°24'53" N	72°3'30" E	Tube Well		18.78		
17	Ahmedabad	Jholapur Pz_I	22°59'15" N	72°12'15" E	Tube Well	73.59	84.89	79.96	
18	Ahmedabad	Kumarkhan	22°54'0" N	72°1'0" E	Dug Well	2.55	27.55	2	2.6
19	Ahmedabad	Kundal	22°54'5" N	72°13'25" E	Dug Well	11.8	11.8	11.8	7.7
20	Ahmedabad	Pachcham Pz	22°13'56" N	72°10'44" E	Tube Well	1.63	1.43	0.85	2.35
21	Ahmedabad	Sanand II	23°0'12" N	72°22'25" E	Tube Well	16.55	16.13	15.34	15.38
22	Ahmedabad	Sola(HC) Pz_I	23°4'52" N	72°30'49" E	Tube Well	68.57	68.58	68.53	68.37
23	Ahmedabad	Tagadi1	22°17'45" N	71°56'50" E	Dug Well	7.42	8.03	1.06	0.27
24	Ahmedabad	Ughraj1	23°22'0" N	72°6'0" E	Dug Well		6.82		
25	Ahmedabad	Upardhal1	22°51'0" N	72°8'45" E	Dug Well	11.9	11.9	11.9	
26	Ahmedabad	Vagad(Repl) Pz	22°21'37" N	71°52'5" E	Tube Well	4.02	4.25	3.81	3.75
27	Ahmedabad	Vatwa Pz-III	22°57'13" N	72°36'59" E	Tube Well	28.68	26.85	26.11	26.64
28	Ahmedabad	Viramgam2	23°8'30" N	72°2'0" E	Dug Well	3.02	3	2.25	1.84
29	Amreli	Amreli	21°36'30" N	71°13'30" E	Dug Well	4.54		3.24	3.48
30	Amreli	Amreli Pz	21°36'45" N	71°13'30" E	Bore Well	6.46	2.97	5.2	5.42
31	Amreli	Ankadia mota	21°38'45" N	71°6'30" E	Dug Well	5.81	3.49	4.01	5.38
32	Amreli	Babra Pz	21°50'50" N	71°17'45" E	Bore Well	4.97	3.83	3.85	5.21
33	Amreli	Badhda	21°15'57" N	71°20'20" E	Dug Well		0.34	0.55	1.81
34	Amreli	Bagasara	21°28'45" N	70°57'45" E	Dug Well	8.81	6.72	3.65	6.23
35	Amreli	Bherai	20°52'5" N	71°21'45" E	Dug Well	0.68	0.08	-0.07	0.57
36	Amreli	Bhuva	21°25'58" N	71°21'50" E	Dug Well	3.92	2.54	3.6	3.56
37	Amreli	Chalala	21°25'0" N	71°10'0" E	Dug Well	22.67	21.42	19.05	20.76
38	Amreli	Charkhadia Pz	21°23'15" N	71°17'30" E	Tube Well	24.39	22.85	21.33	21.88
39	Amreli	Charkhadia1	21°23'30" N	71°17'45" E	Dug Well			5.4	7.24
40	Amreli	Chavand	21°49'0" N	71°24'45" E	Dug Well		3.67	2.1	5.76
41	Amreli	Devaliya	21°49'15" N	71°6'30" E	Dug Well		2.87	2.65	4.4
42	Amreli	Dharangani	21°20'0" N	71°12'0" E	Dug Well		26.76	25.35	28.35
43	Amreli	Dhari Pz	21°19'35" N	71°1'5" E	Bore Well	7	5.47	4.96	5.52
44	Amreli	Dhrai Balmukand	21°50'3" N	71°13'2" E	Dug Well	6.96	3.55	1.47	4.45
45	Amreli	Fifad	21°26'10" N	71°32'25" E	Dug Well	6.07	2.78	2.1	2.56
46	Amreli	Gopalpura Vanda Pz	21°22'30" N	71°29'30" E	Tube Well	18.39	15.06	8.8	10
47	Amreli	Goradka	21°13'30" N	71°24'40" E	Dug Well	2.15	0.7	1.8	3.37
48	Amreli	Govadka	21°32'30" N	71°9'30" E	Dug Well	4.2	-0.06	0.05	2.19
49	Amreli	Haripur Pz_I	21°36'35" N	71°26'35" E	Bore Well	6.6	1.35	1.58	3.63
50	Amreli	Ingoralia	21°14'0" N	71°12'0" E	Dug Well	9.48	8.35	9.2	12.44
51	Amreli	Jafrabad	20°52'0" N	71°21'45" E	Dug Well	2		0.67	
52	Amreli	Jesar Pz	21°22'17" N	71°40'13" E	Tube Well	4.93	4.48	4.19	4.27
53	Amreli	Junasavar Pz	21°27'50" N	71°23'20" E	Tube Well			12.8	12.25
54	Amreli	Kadiyali	20°54'30" N	71°21'37" E	Dug Well	4.56	1.63	1.65	1.97

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
55	Amreli	Kerala	21°23'50" N	71°13'0" E	Dug Well	36.73	32.02	29.75	31.09
56	Amreli	Khamba	21°9'0" N	71°14'20" E	Dug Well	3.73	2.87	3.76	3.73
57	Amreli	Khamba Pz	21°8'30" N	71°15'15" E	Bore Well	5.9	3.54	5.89	6.63
58	Amreli	Kotadapitha	21°57'30" N	71°12'15" E	Dug Well			0.19	3.06
59	Amreli	Kunkavav	21°39'45" N	70°59'0" E	Dug Well	9.13	7.54	17.4	19.78
60	Amreli	Lathi	21°43'15" N	71°23'0" E	Dug Well	2.49	1.31	1.45	1.83
61	Amreli	Liliya Pz I	21°32'5" N	71°22'45" E	Bore Well	2.64	2.17	1.66	2.77
62	Amreli	Mandal	21°6'0" N	71°35'0" E	Dug Well	11.26	7.58	6.4	9.36
63	Amreli	Manila Pz	21°26'0" N	71°10'0" E	Tube Well	19.78	18.38	17.4	18.53
64	Amreli	Morjhar	21°22'34" N	71°7'7" E	Dug Well	43.77	36.4	12.5	16.65
65	Amreli	Nageshri	20°55'30" N	71°21'15" E	Dug Well		2.39	1.75	2.31
66	Amreli	Piyava	21°23'0" N	71°28'0" E	Dug Well	19.37	9.5	6.8	9.96
67	Amreli	Punjapadar	21°31'30" N	71°21'30" E	Dug Well	2.74	0.89	0.88	3.58
68	Amreli	Sanaria	21°33'28" N	71°28'5" E	Dug Well	3.4	0.46	1.55	2.6
69	Amreli	Tajpur	21°43'30" N	71°28'0" E	Dug Well	21.56	15.02	7.38	9.05
70	Amreli	Timbi2	20°53'45" N	71°12'15" E	Dug Well	3.92	1.02	1.32	2.02
71	Amreli	Trakuda	21°1'0" N	71°16'50" E	Dug Well	8.3	2.86	2.4	4.55
72	Amreli	Untvad	21°55'0" N	71°13'0" E	Dug Well	12.03	5.92	2.11	5.1
73	Amreli	Vaghania juna	21°35'0" N	70°58'0" E	Dug Well	3.39	1.33	1.5	3.63
74	Amreli	Vanda	21°23'23" N	71°30'27" E	Dug Well	6.73	6.04	4.15	5.38
75	Amreli	Vankiya	21°31'15" N	71°8'10" E	Dug Well	11.96	4.11	5.65	6.9
76	Amreli	Vankiya1	21°14'0" N	71°15'0" E	Dug Well	21.58	3.83	4.5	4.56
77	Amreli	Virpur	21°15'15" N	71°9'0" E	Dug Well	10.59	6.56	6.4	7.65
78	Anand	Adas DW	22°28'43" N	73°1'49" E	Dug Well	22.1	18.77	22	20.77
79	Anand	Anand	22°34'30" N	72°58'20" E	Dug Well		15.59	14.64	
80	Anand	Anklav Pz II	22°22'35" N	72°59'50" E	Tube Well			4.15	
81	Anand	Anklav2	22°23'0" N	73°0'30" E	Dug Well	24.78	27.88	23.82	22.79
82	Anand	Bandhani	22°32'30" N	72°49'0" E	Dug Well	6.05	5.95	6.05	4.78
83	Anand	Bhadran	22°21'20" N	72°53'50" E	Dug Well	16.7	18.75	16.6	15.74
84	Anand	Boriyani	22°37'56" N	73°0'15" E	Dug Well		6.9	6.3	
85	Anand	Borsad I	22°24'35" N	72°54'5" E	Tube Well	4.45	4.33		
86	Anand	Borsad Pz II	22°24'35" N	72°54'5" E	Tube Well	4.5	4.2	4.25	
87	Anand	Dali	22°16'30" N	72°46'0" E	Dug Cum Bore Well	3.72		2.02	1.51
88	Anand	Davalpura Pz	22°27'30" N	72°48'10" E	Tube Well		2.75	2.45	2.4
89	Anand	Dharmaj	22°25'15" N	72°47'40" E	Dug Cum Bore Well	16.65		12.59	7.1
90	Anand	Ghora	22°41'30" N	73°3'15" E	Dug Well	5.66	4.26	2.6	3.01
91	Anand	Hariyan Pz	22°24'15" N	72°40'20" E	Tube Well	4.74	6	2.8	3.32
92	Anand	Kansari1	22°20'30" N	72°39'0" E	Dug Well	11.5	4.8		3.23
93	Anand	Kathana Pz I	22°17'40" N	72°47'25" E	Tube Well	12.42	13.67	9.83	9.42
94	Anand	Laxmipura	22°25'0" N	72°36'30" E	Dug Well		1.15	0.55	1.15
95	Anand	Parvata	22°42'49" N	73°7'36" E	Dug Well	6.2	4.85	3.99	4.28
96	Anand	Petlad Pz I	22°28'30" N	72°48'0" E	Tube Well	11.1	13.5	12.61	11.74
97	Anand	Petlad Pz II	22°28'30" N	72°48'0" E	Tube Well	12.72	14.06	13.69	12.65
98	Anand	Ras	22°20'45" N	72°50'0" E	Dug Well	3.27	3.07	0.95	1.21
99	Anand	Sarsa Pz I	22°32'40" N	73°4'15" E	Tube Well				16.95
100	Anand	Tarapur Pz-I	22°29'10" N	72°39'40" E	Tube Well	3.36	2.75	1.9	1.56
101	Anand	Tarapur Pz-II	22°29'10" N	72°39'40" E	Tube Well	3.21	2.7	2.15	1.4
102	Anand	Tol	22°30'39" N	72°34'0" E	Dug Well	0.4	-0.15	0.01	0.74
103	Anand	Walmi I	22°30'40" N	72°58'55" E	Tube Well	22.85	22.78	22.45	20.98
104	Anand	Walmi II	22°30'30" N	72°58'56" E	Tube Well	27.92	22.48	22.22	26.04
105	Arvalli	Alwakampa	23°16'29" N	73°12'30" E	Dug Well	6.3	7.15		13.3
106	Arvalli	Bayad Pz	23°13'0" N	73°13'45" E	Tube Well	11.4			
107	Arvalli	Bhiloda2	23°46'0" N	73°16'20" E	Dug Cum Bore Well	5.3			5.1
108	Arvalli	Bibipur1	23°15'10" N	73°12'45" E	Dug Well		16.47	14.8	17.05
109	Arvalli	Boral	23°7'30" N	73°12'30" E	Dug Well	11.4	10.87	9.1	9.25
110	Arvalli	Dhansura1	23°21'0" N	73°12'0" E	Dug Well	7.3	8.15	8.55	6.1

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
111	Arvalli	Gadada	23°34'31" N	73°15'11" E	Dug Well	6.35	10.16	4.2	10.15
112	Arvalli	Hamirpur	23°24'30" N	73°27'30" E	Dug Well	14	8.9	10.5	19.4
113	Arvalli	Karanpur	23°20'0" N	73°18'0" E	Dug Well	3.4	3.3	8.55	8.55
114	Arvalli	Kuski Pz	23°38'20" N	73°22'10" E	Bore Well	8.65	10.37	3.75	11.89
115	Arvalli	Malpur 1	23°20'41" N	73°27'52" E	Dug Well	17.4		21.2	
116	Arvalli	Malpur Pz	23°20'30" N	73°28'5" E	Bore Well	11.4		11.05	
117	Arvalli	Medasana	23°30'43" N	73°16'28" E	Dug Well	7.35	6.63	8.4	6.95
118	Arvalli	Meghraj 1	23°29'45" N	73°30'30" E	Dug Well	13.5		13.5	
119	Arvalli	Modasa	23°27'45" N	73°18'30" E	Dug Well	6.83	6.94	7.38	6.68
120	Arvalli	Punasan	23°40'10" N	73°10'25" E	Dug Well	6.65	6.95	6.15	6.45
121	Arvalli	Sathamba	23°10'30" N	73°20'15" E	Dug Well	23.4	7.65	8.55	10.45
122	Arvalli	Seenawad	23°29'11" N	73°23'55" E	Dug Well	11.2			11.2
123	Arvalli	Shamlaji	23°41'10" N	73°22'0" E	Dug Well	6.55	5.85	5.25	6.95
124	Arvalli	Takatuka 1	23°51'5" N	73°18'18" E	Dug Well	14.3	14.1	15.35	13.3
125	Arvalli	Vejpur Pz	23°47'50" N	73°13'15" E	Bore Well	12.7	12.87	9.25	12.67
126	Banaskantha	Ambaji Pz	24°20'10" N	72°50'50" E	Bore Well	11.36	13.34	7.14	10.95
127	Banaskantha	Amirgadh	24°24'20" N	72°38'30" E	Dug Well	12.87	15.88	13.82	15.74
128	Banaskantha	Bhabhar iii	24°3'35" N	71°35'46" E	Tube Well	27.76	28.08	26.94	28.6
129	Banaskantha	Danta	24°11'20" N	72°45'55" E	Bore Well	9.77	9.47	7.66	9.59
130	Banaskantha	Dantiwada	24°11'20" N	72°45'38" E	Tube Well	33.86	33.99	33.1	35.87
131	Banaskantha	Dantiwada	24°16'39" N	72°15'41" E	Dug Cum Bore Well	27.34	27.4		27.2
132	Banaskantha	Deesa Pzi	24°15'24" N	72°11'15" E	Tube Well	98.86		99.07	
133	Banaskantha	Dhanera Pz-I	24°30'22" N	72°1'45" E	Tube Well	123.56	124.31	123.63	123.47
134	Banaskantha	Fagudara Pz	24°25'49" N	72°14'3" E	Bore Well			91.49	
135	Banaskantha	Ganapipli	24°17'50" N	72°56'50" E	Dug Well	8.02	7.82	7.84	7.56
136	Banaskantha	Gangodra	24°26'10" N	72°21'55" E	Dug Well	22.26	21.96	19.93	23.66
137	Banaskantha	Iqbalgarh	24°20'45" N	72°32'15" E	Dug Well	31.52	30.93	30.3	32.27
138	Banaskantha	Jhat	24°29'15" N	72°21'10" E	Dug Well		16.35	15.82	15.83
139	Banaskantha	Khoda	24°39'30" N	71°46'0" E	Dug Well	24.78	24.94	23.44	25.02
140	Banaskantha	Lakhani i	24°18'50" N	71°49'5" E	Tube Well	89.25	90.58	91.21	91.55
141	Banaskantha	Mahi Pz	24°1'43" N	72°22'51" E	Tube Well	160.47	159.96	156.92	161.6
142	Banaskantha	Meda	24°23'50" N	72°17'5" E	Dug Well	8.35	17.3	9.71	17.36
143	Banaskantha	Mohabbat gadh	24°10'0" N	72°43'40" E	Dug Well	20.02	20.41	19.84	20.87
144	Banaskantha	Nandotra Brahmanvas Pz (OW II)	24°20'27" N	72°18'51" E	Bore Well	21.95	23.29		22.87
145	Banaskantha	Naroli Pzi	24°36'59" N	71°38'19" E	Tube Well	7.27	7.01	6.15	7.87
146	Banaskantha	Naroli Pzii	24°36'59" N	71°38'19" E	Tube Well	6.45	6.16	5.35	7.55
147	Banaskantha	Palanpur Pz	24°10'20" N	72°27'0" E	Tube Well	39.63	40.06	39.71	39.93
148	Banaskantha	Palanpur2	24°11'40" N	72°26'0" E	Dug Well		25.29	24.75	25.32
149	Banaskantha	Rah Pz I	24°29'45" N	71°50'10" E	Tube Well	62.58	55.32	55.07	55.86
150	Banaskantha	Rah Pz II	24°29'45" N	71°50'10" E	Tube Well	53.66	52.49	52.46	52.47
151	Banaskantha	Ratanpur2	24°10'30" N	72°44'45" E	Dug Well	15.74	16.41	16.25	16.34
152	Banaskantha	Sodapur	24°24'5" N	72°17'45" E	Dug Well	20.57	22.64	21.42	
153	Banaskantha	Tharad Pzi	24°23'6" N	71°37'10" E	Tube Well	10.03	10.02	9.19	9.98
154	Banaskantha	Tharad Pzii	24°23'6" N	71°37'10" E	Tube Well	9.93	9.85	9.02	9.96
155	Banaskantha	Tharad Pziii	24°23'6" N	71°37'10" E	Tube Well	9.88	9.96	9.17	
156	Banaskantha	Vav ii	24°21'40" N	71°30'40" E	Tube Well	34.5			
157	Banaskantha	Vav i	24°21'30" N	71°30'30" E	Tube Well	24.28			
158	Banaskantha	Vinchivadi Pz-II	24°35'10" N	71°56'0" E	Tube Well	81.14	81.65	82.06	82.47
159	Bharuch	Arethi	21°36'45" N	73°26'7" E	Dug Well		14.45	14.45	5.99
160	Bharuch	Bharuch	21°42'0" N	73°0'15" E	Dug Well	7.35	6.4	6.03	6.16
161	Bharuch	Bharuch I	21°42'30" N	73°0'0" E	Tube Well	17.3			3.7
162	Bharuch	Bharuch Ii	21°42'30" N	73°0'0" E	Tube Well	5.9	5.3	2.9	
163	Bharuch	Bhensli	21°43'30" N	72°45'0" E	Dug Well	2.1	2.45	1	1.3
164	Bharuch	Chhindra	22°7'36" N	72°40'11" E	Dug Well	7.08	4.83	3.68	5.18
165	Bharuch	Dahegam	22°11'5" N	72°35'50" E	Dug Well	5.72	7.2	8	6.9
166	Bharuch	Hansot	21°35'0" N	72°48'30" E	Tube Well	7.5	2.6	2.7	2.51
167	Bharuch	Ilav	21°27'0" N	72°48'0" E	Dug Well	5.65	4.55	3.05	3.18

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
168	Bharuch	Jambusar	22°31'10" N	72°48'20" E	Tube Well	7.05	6.65	5.95	5.49
169	Bharuch	Jambusar2	22°3'0" N	72°48'0" E	Dug Well		9.6	9.6	4.81
170	Bharuch	Jetpur1	21°29'30" N	72°42'30" E	Dug Well	1.7	4.65	4.65	4.13
171	Bharuch	Jokhla	21°35'45" N	73°10'9" E	Dug Well	5.8	2.5	0.5	4.9
172	Bharuch	Juna borbhata	21°40'30" N	72°58'30" E	Dug Well		8.5	8.5	8.5
173	Bharuch	Kadodara	21°45'45" N	72°38'20" E	Tube Well	7.25	5.55	6.3	6.41
174	Bharuch	Kalak1	22°1'7" N	72°45'47" E	Dug Well	7	6.35	5	4.57
175	Bharuch	Kaswa	21°41'0" N	72°49'0" E	Dug Well	6.95	6.15	2.65	2.6
176	Bharuch	Kavi	22°11'37" N	72°38'22" E	Dug Well	6.3	6.55	5.3	5.18
177	Bharuch	Kondh	21°34'50" N	73°4'5" E	Dug Well	4.06	2	1.7	2.57
178	Bharuch	Luhara	21°40'30" N	72°33'30" E	Dug Well	1.4	0.31	0.48	-1.12
179	Bharuch	Mahegam1	21°41'0" N	72°45'30" E	Dug Well	4.35	1.65	0.75	4.07
180	Bharuch	Mokhdi	21°32'0" N	73°17'15" E	Dug Well		11.84	11.84	
181	Bharuch	Motwan	21°33'20" N	72°53'15" E	Dug Well	1.9			1.13
182	Bharuch	Mungaj	21°41'18" N	73°23'2" E	Dug Well		7.35	7.35	
183	Bharuch	Navetha	21°42'28" N	72°49'50" E	Dug Well	6.2	5.1	3.91	3.8
184	Bharuch	Netrang(Rep) Pz	21°38'30" N	73°22'0" E	Bore Well	11.98	11.4	5.9	6.95
185	Bharuch	Netrang1	21°38'0" N	73°22'0" E	Dug Well	8.7	8.6	2.6	6.52
186	Bharuch	Nirnavi	21°47'30" N	72°40'5" E	Dug Well	7.3	6.3	1.5	3.29
187	Bharuch	Panoli	21°32'15" N	72°58'30" E	Dug Well	2.19	0.25	1.55	4.08
188	Bharuch	Raymal	21°31'15" N	72°49'15" E	Dug Well	1.1	1.05	1.11	0.38
189	Bharuch	Roja tankaria	21°55'0" N	72°47'30" E	Dug Well	8.15	8.8	7.15	7.76
190	Bharuch	Sahol	21°28'22" N	72°48'35" E	Dug Well	4	2.45	2.7	2.16
191	Bharuch	Sajod	21°37'0" N	72°55'25" E	Dug Well	3.9	3.9	0.45	2.94
192	Bharuch	Sarod	22°9'30" N	72°45'30" E	Dug Well	9.3	9.3	8.1	7.21
193	Bharuch	Simodra	21°44'30" N	73°12'30" E	Dug Well		9.68	9.68	2.7
194	Bharuch	Sindhav	22°1'37" N	72°38'10" E	Dug Well	6.63	7.43	4.63	4.48
195	Bharuch	Tankari	21°59'30" N	72°40'30" E	Dug Well	4.05	4	1.7	1.25
196	Bharuch	Utraj	21°35'30" N	72°49'30" E	Dug Well	4.3	3.7	3.9	3.19
197	Bhavnagar	Ambala	21°42'40" N	71°50'30" E	Dug Well	21.96		2.35	15.03
198	Bhavnagar	Ayodhayapuram	21°57'37" N	71°53'11" E	Dug Well	7.16	4.92	4.37	6.68
199	Bhavnagar	Bhavnagar1	21°46'0" N	72°9'0" E	Dug Well	3.92	3.7	3.4	4.32
200	Bhavnagar	Bhudel	21°41'30" N	72°9'30" E	Dug Well	3.82	0.95	0.5	1.32
201	Bhavnagar	Bhumbhali	21°40'46" N	72°14'39" E	Dug Well	3.41	2.45	0.9	1.43
202	Bhavnagar	Bhutia	21°44'50" N	71°42'0" E	Dug Well	22.3			
203	Bhavnagar	Bora	21°11'28" N	71°55'44" E	Dug Well	20.94	13.96	9.44	11.45
204	Bhavnagar	Datha	21°13'15" N	71°57'0" E	Dug Well	1.03	0.76	2.74	5.84
205	Bhavnagar	Dhasa	21°48'0" N	71°30'30" E	Dug Well	5.71	1.8	1.45	3.29
206	Bhavnagar	Dudhala	21°8'15" N	71°39'30" E	Dug Cum Bore Well	7.8			4.88
207	Bhavnagar	Gadhada1	21°58'5" N	71°34'55" E	Bore Well	6.04	5.04	4.77	5.27
208	Bhavnagar	Gadhada2	21°58'0" N	71°34'45" E	Dug Well		2.92	2.5	2.98
209	Bhavnagar	Gariyadhar	21°32'35" N	71°33'55" E	Dug Well	12.84	3.29	5.2	8.27
210	Bhavnagar	Ghogha1	21°41'0" N	72°16'45" E	Dug Well	0.74	1.2	0.6	1.73
211	Bhavnagar	Jalia	21°48'0" N	71°37'0" E	Dug Well	10.59	12.24	8.07	10.71
212	Bhavnagar	Kardej	21°45'7" N	72°1'52" E	Tube Well	20.79	20.85	11.25	12.5
213	Bhavnagar	Khijadiya	21°38'15" N	71°42'0" E	Dug Well	8.29	4.6	2.82	4.46
214	Bhavnagar	Kundheli	21°22'46" N	71°58'50" E	Dug Well	21.65	4.09	1.48	3.28
215	Bhavnagar	Longadi	21°12'50" N	71°53'0" E	Dug Well	1.84	0.2	1.05	2.2
216	Bhavnagar	Lonjhara	22°5'50" N	71°53'50" E	Dug Well	13.22	12.27	7.76	10.98
217	Bhavnagar	Mahuva1	21°5'45" N	71°46'0" E	Dug Cum Bore Well	9.31			8.84
218	Bhavnagar	Motividal	21°11'50" N	71°33'0" E	Dug Well	2.29	1.44	1.8	4.02
219	Bhavnagar	Ningala	22°1'5" N	71°42'0" E	Dug Well	4.4	8.02	4.99	6.31
220	Bhavnagar	Palitana1	21°31'30" N	71°49'25" E	Bore Well	6.48	2.42	2.25	3.93
221	Bhavnagar	Palitana2	21°31'20" N	71°50'20" E	Dug Well		2.67	3.2	4.62
222	Bhavnagar	Paliyad2	22°15'20" N	71°33'50" E	Dug Well		0.66	0.3	1.81
223	Bhavnagar	Panchpipla	21°33'0" N	71°43'15" E	Dug Well	0.01	-0.35	-0.35	1.21
224	Bhavnagar	Panvil	22°4'30" N	71°53'30" E	Dug Well	3.94	2.28	1.65	2.52

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
225	Bhavnagar	Pasvi	21°17'30" N	71°58'0" E	Dug Well	14			
226	Bhavnagar	Piparla	21°38'11" N	71°55'8" E	Dug Well	1.72	1.1	-0.2	0.47
227	Bhavnagar	Porbada	21°48'0" N	71°42'0" E	Dug Well	12.98	5.1	5.53	
228	Bhavnagar	Sajnasar	21°25'30" N	71°54'45" E	Dug Well	2.23	1.88	1.55	2.4
229	Bhavnagar	Sandhida	21°41'15" N	71°45'30" E	Dug Well	1.83	0.48	0.3	0.56
230	Bhavnagar	Satanes	21°26'30" N	71°50'15" E	Dug Well	6.55	7.05	9.73	10.27
231	Bhavnagar	Shantinagar	21°14'45" N	71°39'0" E	Dug Well	12.72	3.06	0.7	2
232	Bhavnagar	Talaja2	21°22'0" N	72°1'0" E	Dug Well	4.4	2.25	1.68	2.75
233	Bhavnagar	Tansa	21°30'30" N	72°7'30" E	Dug Well				12.74
234	Bhavnagar	Tardhera	22°13'45" N	71°36'15" E	Dug Cum Bore Well	21.86			7.5
235	Bhavnagar	Tatam	22°3'30" N	71°38'0" E	Dug Well	10.3	6.98	4.82	6.2
236	Bhavnagar	Timbi2	21°49'54" N	71°45'58" E	Dug Well	2.88	12.12	6.4	6.64
237	Bhavnagar	Trapaj	21°25'30" N	72°5'45" E	Dug Well	9.91	5.52	5.2	7.17
238	Bhavnagar	Umrala	21°50'50" N	71°48'30" E	Dug Well	6.12	6.5	4.6	5.8
239	Bhavnagar	Vadal	21°28'37" N	71°48'22" E	Dug Well	3.14	3.47	4	2.74
240	Bhavnagar	Vallabhipur1	21°53'0" N	71°52'40" E	Tube Well	3.08	3.18	3.18	4.46
241	Bhavnagar	Vallbhipur	21°53'0" N	71°52'30" E	Dug Well	2.44	3.13	2.2	3.72
242	Bhavnagar	Vavdi	21°34'5" N	72°11'53" E	Dug Well	12.13	2.48	0.9	2.54
243	Botad	Barvala	22°9'0" N	71°53'30" E	Dug Well	4.39	2.93	1.64	3.03
244	Botad	Kundali	22°16'10" N	71°42'0" E	Dug Well	9.97	9.18		1.86
245	Botad	Rajpada	22°18'30" N	71°41'30" E	Dug Well	15.09	14.03	10.05	10.47
246	Botad	Salangpor	22°9'30" N	71°46'15" E	Dug Well		5.65	5.23	5.25
247	Chhota Udepur	Alladpur	22°15'0" N	73°43'0" E	Dug Well		10.43	10.43	
248	Chhota Udepur	Asala	22°23'0" N	73°56'0" E	Dug Well		12.5	12.5	6.23
249	Chhota Udepur	Asar	22°12'13" N	74°0'38" E	Dug Well		17.2	10.1	
250	Chhota Udepur	Baladgam	22°8'15" N	74°0'30" E	Dug Well		13	9.45	6.31
251	Chhota Udepur	Bhindol	22°12'0" N	73°54'0" E	Dug Well	12.3	10.1	10.4	6.32
252	Chhota Udepur	Bodeli	22°16'15" N	73°43'0" E	Dug Well	6.48	6.13	1.88	4.69
253	Chhota Udepur	Chavaria	22°11'15" N	73°59'15" E	Dug Well		12.3	12.3	5.12
254	Chhota Udepur	Chhota udepur	22°18'30" N	74°1'0" E	Dug Well		2.8	1.8	3.38
255	Chhota Udepur	Chisadia	22°24'0" N	74°8'0" E	Dug Well		11.88	11.88	
256	Chhota Udepur	Chota udepur	22°18'30" N	74°1'0" E	Bore Well	5.23			1.36
257	Chhota Udepur	Devat (thadgam)	22°6'0" N	73°59'0" E	Dug Well		11.7	4.9	4.71
258	Chhota Udepur	Ferkuva	22°22'0" N	74°12'30" E	Dug Well	10.35	4.9	3.1	2.32
259	Chhota Udepur	Ghamodi	22°22'0" N	74°4'30" E	Dug Well	9.85	6.05	8.95	4.3
260	Chhota Udepur	Govindpura	22°12'40" N	73°44'29" E	Dug Well	6.3	4.45	3.6	2.88
261	Chhota Udepur	Jojh	22°26'30" N	73°57'45" E	Dug Well		8.08	8.2	7.94
262	Chhota Udepur	Kevadi	22°31'0" N	73°56'30" E	Dug Well	7.3	6.2	4.4	4.19
263	Chhota Udepur	Kosindra Pz-I	22°8'48" N	73°45'20" E	Bore Well	3.96	2.84	2.35	2.35
264	Chhota Udepur	Moti chikhali	22°0'40" N	74°5'0" E	Dug Well	3.2	5.54	3.1	3.96
265	Chhota Udepur	Panwad	22°12'0" N	74°2'30" E	Dug Well	9.4	6.2	4.4	3.27
266	Chhota Udepur	Pavi	22°20'30" N	73°50'0" E	Dug Well		7.76	7.76	4.76
267	Chhota Udepur	Pitha	22°15'15" N	73°38'30" E	Dug Well		12.66		
268	Chhota Udepur	Saidivasana	22°3'30" N	74°1'0" E	Dug Well		6.7	2.6	2.93
269	Chhota Udepur	Sengpur	22°21'5" N	73°53'15" E	Dug Well	7.4	6.04	6.5	5.32
270	Chhota Udepur	Vadtalav Pz	22°15'31" N	73°47'2" E	Bore Well	13.5	10.19	6.4	7.59
271	Chhota Udepur	Vagudan	22°4'0" N	74°8'30" E	Dug Well	6.5	5.97	5.8	5.37
272	DAMAN	Ambawadi	20°24'10" N	72°50'40" E	Dug Well	3.2			
273	DAMAN	Dalwada	20°26'35" N	72°51'7" E	Dug Well	9.75			
274	DAMAN	Daman	20°25'27" N	72°51'1" E	Bore Well	5.21	0.05	0.14	2.85
275	DAMAN	Warkund	20°24'29" N	72°51'35" E	Dug Well	4.25			
276	Devbhumi Dwarka	Amaliya Chokri	22°14'25" N	69°7'31" E	Dug Well		1.2		
277	Devbhumi Dwarka	Ambardi	21°54'59" N	69°51'29" E	Dug Well	14.34	7.95	1.86	2.11
278	Devbhumi Dwarka	Aramda	22°26'0" N	69°2'30" E	Dug Well	5.1	2.25	3.35	4.2
279	Devbhumi Dwarka	Bhadthar	22°4'45" N	69°34'45" E	Dug Well	15.1	7.23	2.65	3.87
280	Devbhumi Dwarka	Bhatia	22°5'30" N	69°18'5" E	Dug Well	3.91	0.96	1.06	2.23
281	Devbhumi Dwarka	Bhatiya	22°5'40" N	69°16'0" E	Bore Well	2.15	0.05	0.5	0.72
282	Devbhumi Dwarka	Bhogat1	21°59'30" N	69°14'45" E	Dug Well	10.45	4.45	3.05	6

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
283	Devbhumi Dwarka	Dwarka	22°14'45" N	68°57'30" E	Dug Well	7.5	6.3	7.3	7.42
284	Devbhumi Dwarka	Juvanpur	22°10'15" N	69°22'0" E	Dug Well	14		3	5
285	Devbhumi Dwarka	Kajuda	22°20'0" N	69°42'30" E	Dug Well	9.2	1.55	1.6	2.03
286	Devbhumi Dwarka	Kalyanpur2	22°10' N	69°23'30" E	Dug Well		3.05	2.5	2.2
287	Devbhumi Dwarka	Khambhaliya	22°12'35" N	69°38'45" E	Bore Well	13.55	2.86	3.55	4.24
288	Devbhumi Dwarka	Khirsara	21°58'45" N	69°36'0" E	Dug Well	13.09	1.17	1.39	
289	Devbhumi Dwarka	Kuvadia	22°12'5" N	69°35'0" E	Dug Well	4.85	1.55	4.65	17.05
290	Devbhumi Dwarka	Lambha 1	21°53'56" N	69°19'25" E	Dug Well	12.3	1.6	1.6	1.76
291	Devbhumi Dwarka	Modpar	21°51'30" N	69°48'30" E	Dug Well	16.4	17.4	5.4	9.22
292	Devbhumi Dwarka	Mojap	22°22'0" N	68°59'0" E	Dug Well	6.64	2.04	2.89	5.32
293	Devbhumi Dwarka	Mota kalawad	21°54'30" N	69°49'45" E	Dug Well	28.65	21.21	6.5	10.55
294	Devbhumi Dwarka	Pindara1	22°14'50" N	69°15'30" E	Dug Well	8.5	2.96	3.87	3.24
295	Devbhumi Dwarka	Raval	21°55'47" N	69°29'31" E	Dug Well	4.85	2.9	1.3	4.48
296	Devbhumi Dwarka	Salaya	22°18'20" N	69°36'15" E	Dug Well		2.86	2.24	2
297	Devbhumi Dwarka	Samrasar1	22°22'30" N	69°6'15" E	Dug Well	7.8	0.6	1.78	1.3
298	Devbhumi Dwarka	Vadtara	22°12'30" N	69°30'0" E	Dug Well	12	3.3	3.9	3.63
299	Devbhumi Dwarka	Varwada	22°17'30" N	68°58'0" E	Dug Cum Bore Well			2.2	
300	Devbhumi Dwarka	Vinjhalpur	22°9'0" N	69°36'0" E	Dug Well	26.2	4.6	3.6	3.25
301	DIU	Chakarteeth Pz	20°42'30" N	70°58'8" E	Tube Well	5.58	5.61	5.72	6.2
302	DIU	Gomtimata	20°42'30" N	70°52'35" E	Dug Well			2.03	
303	DIU	Jalawadi	20°43'18" N	70°55'59" E	Dug Well		4.87	3.75	
304	DIU	Pothia Bapa	20°42'6" N	70°54'43" E	Tube Well	6.39	6.41	6.35	6.97
305	Dohad	Ambakatch	22°40'0" N	74°13'13" E	Dug Well	3.1	3.3	1.22	2.8
306	Dohad	Bapda	22°40'12" N	73°50'30" E	Dug Well	6.9	4.48	2.45	3.95
307	Dohad	Dadhela	22°50'15" N	74°4'0" E	Dug Well	7.95	6.05	5.35	5.55
308	Dohad	Dahod	22°50'25" N	74°15'45" E	Bore Well	1.7	0.7	1.7	1.46
309	Dohad	Dahod2	22°49'30" N	74°14'0" E	Dug Well	7.57	6.92	5.87	5.42
310	Dohad	Devgadh Baria	22°42'0" N	73°54'50" E	Dug Well	10.8	7.52	3.25	9.5
311	Dohad	Devgadh bariya	22°42'0" N	73°55'0" E	Bore Well	14.8	12.17	7.2	9.2
312	Dohad	Dhanpur	22°38'0" N	74°6'15" E	Dug Well	11.75	10.34	7.25	8.4
313	Dohad	Dohad Urban1	22°51'27" N	74°14'58" E	Dug Well	6.35	3.51	3.65	5.75
314	Dohad	Dohad Urban2	22°50'41" N	74°16'0" E	Dug Well	6.25	5.15	5.25	6.17
315	Dohad	Dohad Urban3	22°50'23" N	74°14'2" E	Dug Well	5.22	2.9	2.52	2.72
316	Dohad	Fatepura(Karodia)	23°15'15" N	74°1'45" E	Bore Well	13.96	11.98		9.68
317	Dohad	Garada	23°9'53" N	74°7'22" E	Dug Well			4.6	2.15
318	Dohad	Garbara	22°40'50" N	74°18'45" E	Dug Well	3.85	3.62	2	1.75
319	Dohad	Jhalod	23°5'35" N	74°8'50" E	Bore Well	9.97	8.15	5.8	
320	Dohad	Jhalod1	23°5'30" N	74°8'0" E	Dug Well		13.1	5.9	5.15
321	Dohad	Kanjetha	22°34'50" N	74°6'50" E	Dug Well	9.95	7.93	5.9	6.7
322	Dohad	Khandania	22°42'15" N	73°50'15" E	Dug Well	12.6	12.06	9.8	11.65
323	Dohad	Limbdi2	23°0'15" N	74°9'30" E	Dug Well	3.6	3.07	1.6	1.3
324	Dohad	Limkheda	22°49'50" N	73°59'10" E	Bore Well	7.65	3.52	4.8	5.35
325	Dohad	Mirakhedi	22°56'0" N	74°12'0" E	Dug Well	7.3	5.05	2.55	4.15
326	Dohad	Panchwada	22°43'45" N	74°18'30" E	Dug Well	4.5	5	3.25	3.96
327	Dohad	Pipero	22°38'50" N	74°5'25" E	Bore Well	11.85	8.69	5.5	6.6
328	Dohad	Salaya1	22°48'30" N	73°53'30" E	Dug Well	15.52	15.52	6.37	15.52
329	Dohad	Sarsava	23°13'40" N	73°58'37" E	Dug Well	13.6			15.7
330	Dohad	Sukhsar	23°9'0" N	74°3'0" E	Dug Well	8.85	6.39	6.2	6
331	Dohad	Thada	22°56'58" N	74°5'20" E	Dug Well	10.3	2.8	4.28	
332	Dohad	Tokarba	22°36'15" N	74°2'15" E	Dug Well	7.15	5.3	3.6	4.85
333	Dohad	Varamkheda	22°48'0" N	74°16'30" E	Dug Well	2.55	2.05	0.6	0.75
334	Dohad	Wadia	22°54'0" N	74°3'0" E	Dug Well	8.34		7.29	5.24
335	Gandhinagar	Adalaj Pz I	23°10'30" N	72°33'30" E	Tube Well	109.1	107.23	109.4	109.95
336	Gandhinagar	Adalaj Pz II	23°10'30" N	72°33'30" E	Tube Well	90.52	90.63	90.8	90.68
337	Gandhinagar	Adalaj Pz III	23°10'30" N	72°33'30" E	Tube Well	26.02	25.96	24.87	24.1
338	Gandhinagar	Amrapur Pzi	23°22'25" N	72°42'18" E	Tube Well	106.2	95.37	100.68	100.89
339	Gandhinagar	Amrapur Pzii	23°22'25" N	72°42'18" E	Tube Well	84.66	84.63	82.54	82.99
340	Gandhinagar	Charada Pz -II	23°28'54" N	72°39'6" E	Tube Well	101.78	97.5	101.84	100.75

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
341	Gandhinagar	Charada Pz I	23°28'54" N	72°39'6" E	Tube Well	195.41	186.32	191.73	194.2
342	Gandhinagar	Chiloda Pz II	23°13'38" N	72°44'21" E	Tube Well				107.7
343	Gandhinagar	Dahegam I	23°10'15" N	72°50'30" E	Tube Well	73.47	73.2	72.17	72.26
344	Gandhinagar	Dahegam II	23°10'15" N	72°50'30" E	Tube Well	7.51	6.85	6.32	4.39
345	Gandhinagar	Gandhinagar II	23°14'5" N	72°38'30" E	Tube Well	58.9	60.07	60.37	55.4
346	Gandhinagar	Gandhinagar Pz-I	23°14'5" N	72°38'30" E	Tube Well	39.39	38	40.19	
347	Gandhinagar	Kalol(Nest) Pz II	23°15'30" N	72°28'20" E	Tube Well	130.63		127.22	131.04
348	Gandhinagar	Kalol(Nest) Pz III	23°15'30" N	72°28'20" E	Tube Well		125.93	59.65	
349	Gandhinagar	Kalol(Rep) Pz II	23°14'36" N	72°29'6" E	Tube Well	55.63	55.74	55.41	
350	Gandhinagar	Kasturinagar(IFFCO)	23°11'25" N	72°33'10" E	Tube Well	14.2	13.33	12.72	14.13
351	Gandhinagar	Kharoj Dabhi Pz I	23°22'48" N	72°31'12" E	Tube Well	142.68	137.69	137.04	139.37
352	Gandhinagar	Kharoj Dabhi Pz II	23°22'48" N	72°31'12" E	Tube Well	158.14	149.48	150.74	155.98
353	Gandhinagar	Lakroda Pz	23°25'48" N	72°47'24" E	Tube Well		71.03		
354	Gandhinagar	Lodra	23°27'50" N	72°43'13" E	Tube Well	52.26	52.31	52.33	51.53
355	Gandhinagar	Mansa	23°25'23" N	72°39'54" E	Tube Well	119.88	120.01	120.55	119.44
356	Gandhinagar	Nardipur i	23°19'55" N	72°34'0" E	Tube Well	97.18	97.77	97.7	97.57
357	Gandhinagar	Padusma Pz I	23°29'39" N	72°37'18" E	Tube Well	183.97	173.07	180.32	182.8
358	Gandhinagar	Paliya	23°10'45" N	72°50'30" E	Dug Cum Bore Well	2.8	3.02	2.92	4.22
359	Gandhinagar	Pethapur Pz-I	23°16'2" N	72°40'23" E	Tube Well	109.05		107.55	
360	Gandhinagar	Pethapur Pz-II	23°16'2" N	72°40'23" E	Tube Well	77.26	71.77	79.25	77.82
361	Gandhinagar	Pethapur Pz-III	23°16'2" N	72°40'23" E	Tube Well	35.55	34.86	34.04	35.08
362	Gandhinagar	Sardhav Pz -I	23°17'50" N	72°34'26" E	Tube Well	122.98	121.22	120.16	120.55
363	Gandhinagar	Sardhav Pz-II	23°17'50" N	72°34'26" E	Tube Well		134.66	142.42	149.06
364	Gandhinagar	Serthapara1	23°11'40" N	72°34'0" E	Dug Well	20.45	20.45	20.45	20.45
365	Gir Somnath	Ajotha	20°54'7" N	70°31'5" E	Dug Well	20.15		4.57	
366	Gir Somnath	Alwani	21°13'50" N	70°38'15" E	Dug Well	3.15		1.7	2.13
367	Gir Somnath	Ankolvadi 1	21°2'49" N	70°39'53" E	Dug Well		2.78	3	5.03
368	Gir Somnath	Bhim Deval	20°58'39" N	70°36'33" E	Dug Well	11.45	2.67	3.4	5.9
369	Gir Somnath	Dhokadva	20°57'30" N	71°4'15" E	Dug Well	9.55	8.84	10.92	11.2
370	Gir Somnath	Dolasa	20°49'15" N	70°51'30" E	Dug Well			6.6	
371	Gir Somnath	Gangda Pz	20°51'30" N	71°10'0" E	Tube Well	3.98	1.56	2.15	2.53
372	Gir Somnath	Girgadhada	20°55'30" N	70°55'0" E	Dug Well	5.43	0.96	3	4.33
373	Gir Somnath	Govindpura2	20°56'45" N	70°23'45" E	Dug Well	27.52	2.42	5.3	7
374	Gir Somnath	Jambur[madhapar	21°1'45" N	70°36'30" E	Dug Well	7.02	1.46	2.36	4.47
375	Gir Somnath	Jamvala1	20°59'0" N	70°45'45" E	Dug Well	4.96	3.96	4.5	7.5
376	Gir Somnath	Jargla Jargali	20°52'51" N	70°59'3" E	Dug Well	5.65	2.48	1.66	2.97
377	Gir Somnath	Kansari	20°52'12" N	71°3'4" E	Dug Well	5.76	4.63	3.55	4.87
378	Gir Somnath	Kesariya1	20°47'47" N	70°56'31" E	Dug Well	16.64	0.83	4.1	12.17
379	Gir Somnath	Kodinar	20°48'0" N	70°41'30" E	Tube Well	9.07	7.29	6.48	7.12
380	Gir Somnath	Kodinar1	20°48'0" N	70°41'30" E	Dug Well	11.5	7.44	8.8	9.88
381	Gir Somnath	Moraj	20°59'0" N	70°26'10" E	Dug Well	10.64	0.9	4.5	4.7
382	Gir Somnath	Prasli	20°51'3" N	70°40'9" E	Dug Well	16.86	1.12	2.5	6.86
383	Gir Somnath	Sametar	20°51'15" N	71°7'15" E	Dug Well	6.02	6.7	6.75	9.3
384	Gir Somnath	Talala Pz	21°3'50" N	70°32'18" E	Bore Well	9.95	8.68	4.75	5.02
385	Gir Somnath	Talala1	21°3'5" N	70°31'30" E	Dug Well	10.12	5.59	4.24	5.25
386	Gir Somnath	Una2	20°49'30" N	71°2'30" E	Dug Well	2.81	2.03	2.53	3.79
387	Jamnagar	Balwa	21°54'15" N	69°57'30" E	Dug Well	14.62	20.04	5.89	11.9
388	Jamnagar	Bed1	22°26'15" N	69°54'0" E	Dug Well	8.04	4.84	4.09	5.66
389	Jamnagar	Bedanpur	22°41'0" N	70°19'0" E	Dug Well	2		1.1	2.22
390	Jamnagar	Changa	22°21'0" N	70°2'30" E	Dug Cum Bore Well			3.58	
391	Jamnagar	Dhrol2	22°34'0" N	70°25'0" E	Dug Well	3.36		0.86	1.41
392	Jamnagar	Dudhai2	22°47'30" N	70°30'15" E	Dug Well	5.05		0.6	0.85
393	Jamnagar	Falla 1	22°32'1" N	70°18'51" E	Dug Well	3.14		0.14	0.84
394	Jamnagar	Gordhanpur	22°27'0" N	70°0'5" E	Dug Well	3.1	2.6	2.55	2.86
395	Jamnagar	Haripur2	22°16'15" N	70°20'0" E	Dug Cum Bore Well			1.19	
396	Jamnagar	Jambuda	22°31'30" N	70°12'15" E	Dug Well	7.19		2.74	3.69

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
397	Jamnagar	Jamjodhpur	21°54'20" N	70°1'50" E	Bore Well	5.03	4.09	2.75	4.09
398	Jamnagar	Jamnagar1	22°28'15" N	70°3'0" E	Bore Well	20.53	3.55	1.15	1.95
399	Jamnagar	Jamnagar2	22°27'30" N	70°4'45" E	Dug Well	4.19	2.79	0.89	1.08
400	Jamnagar	Kalawad	22°13'0" N	70°23'0" E	Dug Well	3.03		2.63	2.95
401	Jamnagar	Kesia	22°41'47" N	70°23'49" E	Dug Well	8.8		3.95	5.73
402	Jamnagar	Lalpur1	22°11'30" N	69°57'40" E	Dug Well		5.98		2.03
403	Jamnagar	Motagop	22°21'15" N	69°52'30" E	Dug Well		1.45	9.52	5.33
404	Jamnagar	Moti khavdi	22°23'15" N	69°52'0" E	Dug Well	11.33	3.17	2.3	
405	Jamnagar	Moti matli	22°19'0" N	70°15'50" E	Dug Well	15.75	2.21	1.35	3.17
406	Jamnagar	Nikava	22°11'30" N	70°32'0" E	Dug Well	2.7		2.5	1.32
407	Jamnagar	Seth vadala	22°2'0" N	70°7'30" E	Dug Well	9.15	1.86	2.5	3.35
408	Jamnagar	Toda	22°3'45" N	70°23'0" E	Dug Well			-0.32	0.94
409	Jamnagar	Vad panchasara	22°14'0" N	70°7'0" E	Dug Well		11.5	1.75	3
410	Jamnagar	Vijarkha	22°25'0" N	70°11'0" E	Dug Well	4.4	0.5	1.32	1.65
411	Junagadh	Anandpur	21°24'37" N	70°31'5" E	Dug Well		9.05		7.2
412	Junagadh	Antroli	21°14'10" N	70°0'25" E	Dug Well			0.68	
413	Junagadh	Arena	21°4'50" N	70°10'35" E	Dug Well	11.63	5.45	4.53	5.95
414	Junagadh	Bamanwara	21°13'15" N	70°3'20" E	Dug Well	8.61	4.31	1.31	3.48
415	Junagadh	Bantva	21°29'15" N	70°5'0" E	Dug Well		5.15	5.1	4.98
416	Junagadh	Bhatsimroli	21°13'25" N	70°11'0" E	Dug Well	18.9		3.75	9.94
417	Junagadh	Bilkha	21°26'20" N	70°36'0" E	Dug Well	11.2	4.67	10.05	3.5
418	Junagadh	Budhecha	21°5'45" N	70°13'0" E	Dug Well			3.13	
419	Junagadh	Chokli	21°36'7" N	70°32'30" E	Dug Well		16.3		5.63
420	Junagadh	Chorwad	21°2'30" N	70°13'0" E	Dug Well	12.42	3.12	1.82	4.37
421	Junagadh	Gadu	21°3'15" N	70°16'45" E	Tube Well	37	24.91	18.2	23.91
422	Junagadh	Galodar	21°8'50" N	70°16'30" E	Dug Well	20.96	6.81	7.06	10.53
423	Junagadh	Goraj1	21°11'0" N	70°9'15" E	Dug Well	16.5	24.9	3.65	10.52
424	Junagadh	Junagadh	21°30'34" N	70°27'44" E	Bore Well	13.75	11.14	9.25	8.02
425	Junagadh	Junagadh1	21°31'0" N	70°27'30" E	Dug Well	7.35	6.7	2.5	1.69
426	Junagadh	Juthal	21°10'0" N	70°16'0" E	Dug Well	6.43	5.78	6.63	5.73
427	Junagadh	Kalej	21°14'55" N	70°3'30" E	Dug Well	12.65	3.48	4.1	2.45
428	Junagadh	Kanek	21°1'50" N	70°14'30" E	Dug Well	9.65	2.27		4.75
429	Junagadh	Kasia Naka Check Post	21°16'13" N	70°40'50" E	Dug Well		1.35		1.4
430	Junagadh	Kewarda	21°16'0" N	70°12'30" E	Dug Well	4.5	9.08	6.4	15.21
431	Junagadh	Khambalia1	21°2'40" N	70°11'30" E	Dug Well	8.78	6.68	8.23	8.23
432	Junagadh	Khokharda	21°25'15" N	70°19'0" E	Dug Well	17.9	21.15	4	9.42
433	Junagadh	Khorada1	21°3'50" N	70°10'25" E	Dug Well	4.65	0.7	8.15	1.48
434	Junagadh	Khoras ahir	21°22'15" N	70°20'20" E	Dug Well	15.75	15.85	6.25	11.7
435	Junagadh	Kukaswada	21°3'15" N	70°12'30" E	Dug Well		6.09	4.4	7.28
436	Junagadh	Lohej	21°10'0" N	70°4'0" E	Dug Well	16	3.76		9.12
437	Junagadh	Maktupur1	21°8'35" N	70°5'45" E	Dug Well		3.95		7.21
438	Junagadh	Mandawad	21°21'30" N	70°44'45" E	Dug Well	14.51	12.96		14.51
439	Junagadh	Mangrol	21°7'30" N	70°6'30" E	Tube Well	18.4	14.24	15.5	16.25
440	Junagadh	Mangrol1	21°7'50" N	70°7'10" E	Dug Well		6.79		8.86
441	Junagadh	Manketara	21°9'0" N	70°7'45" E	Dug Well	50	16.25		9.72
442	Junagadh	Mendarda1	21°19'30" N	70°26'0" E	Dug Well	18	15.8	6.6	13.4
443	Junagadh	Patla	21°36'15" N	70°34'9" E	Dug Well	10.35	6.28	2.85	
444	Junagadh	Prempara	21°18'0" N	70°42'0" E	Dug Well	17.5	16.85	7.3	21.6
445	Junagadh	Saradiya	21°35'19" N	70°2'15" E	Dug Well		1.9	1.2	
446	Junagadh	Sepa	21°7'0" N	70°13'10" E	Dug Well		16.67		14.92
447	Junagadh	Seriakhan	21°8'0" N	70°14'55" E	Dug Well	20.38	11.63	10.53	18.16
448	Junagadh	Shardagram	21°6'15" N	70°9'10" E	Dug Well	9.6	8.92	10.69	9.92
449	Junagadh	Sil	21°11'8" N	70°2'47" E	Dug Well	5.64	1.99	2.34	
450	Junagadh	Sil bandar	21°13'25" N	70°3'20" E	Dug Well		1.94	2.87	5.58
451	Junagadh	Vadal	21°36'32" N	70°30'8" E	Dug Well				9.33
452	Junagadh	Vanthali ii	21°28'15" N	70°19'40" E	Dug Well		4.72		
453	Junagadh	Visavadar	21°20'20" N	70°44'55" E	Bore Well	15.03	14.59		
454	Kachchh	Asambia mota Pz	22°58'5" N	69°27'5" E	Tube Well	3.46	3.48	1.79	2.19

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
455	Kachchh	Asambia motal	22°58'5" N	69°26'15" E	Dug Well	6.3	13.15	10.46	
456	Kachchh	Balasar	23°50'40" N	70°40'10" E	Tube Well	7.14	7.02	6.93	6.91
457	Kachchh	Bambhdai	22°56'20" N	69°4'58" E	Dug Well	4.61	4.43	5.05	4.35
458	Kachchh	Bhadreshwar	22°54'0" N	69°54'0" E	Dug Well	5.1	4.96	4.52	5.3
459	Kachchh	Bhuj (Circuit House)	23°15'0" N	69°40'0" E	Dug Well	14.94	16.45	16.07	16.46
460	Kachchh	Chandranagar	23°27'0" N	69°24'0" E	Dug Well		8.67	8.67	
461	Kachchh	Dayapar1	23°38'0" N	68°52'15" E	Dug Well		4.43		
462	Kachchh	Desalpur	23°12'10" N	69°26'45" E	Tube Well	5.92		5.3	
463	Kachchh	Deshalpur rapar	23°44'50" N	70°40'45" E	Dug Well	11.75	11.83	10.13	14.4
464	Kachchh	Devisar	23°24'10" N	69°19'45" E	Dug Well	11.85	10.05	11.31	12.1
465	Kachchh	Dholavira	23°53'0" N	70°13'0" E	Dug Well		11.38		
466	Kachchh	Dhori1	23°26'0" N	69°45'15" E	Dug Well			6.53	
467	Kachchh	Dunai	23°3'0" N	69°30'0" E	Dug Well	9.83	8.94	10.69	8.53
468	Kachchh	Gadhsisa	23°6'22" N	69°20'28" E	Tube Well	66.39			
469	Kachchh	Gagodar	23°25'0" N	70°48'0" E	Dug Well		33	33	25.14
470	Kachchh	Haboi	23°21'30" N	69°52'0" E	Dug Well	1.39	0.29	0.39	0.49
471	Kachchh	Kakarwa	23°28'30" N	70°24'15" E	Dug Well		10.65	12.1	
472	Kachchh	Karagoga	22°56'30" N	69°39'45" E	Dug Well	0.55	1.4	1.52	0.4
473	Kachchh	Kharai 1	23°27'47" N	68°41'8" E	Dug Well			0.6	
474	Kachchh	Kharoi	23°27'15" N	70°21'0" E	Dug Well	5.65	2.35	7.95	6.55
475	Kachchh	Khavada	23°50'20" N	69°43'50" E	Dug Well	4.81	4.77	5.79	4.58
476	Kachchh	Khavda	23°50'40" N	69°43'55" E	Tube Well	4.77	5.08	5.67	3.8
477	Kachchh	Kotada	23°22'37" N	69°11'57" E	Dug Well		23	27.6	36.82
478	Kachchh	Kotadi	23°2'30" N	69°11'30" E	Dug Well	3.92	4.2	3.22	4.06
479	Kachchh	Kotaya	23°2'30" N	69°4'30" E	Dug Well	10.62	9.82	5.16	10.14
480	Kachchh	Kuda	23°32'4" N	70°26'25" E	Dug Well	30.54	18.4	20.14	25.55
481	Kachchh	Lakhpat	23°49'23" N	68°46'30" E	Dug Well	6.86	8.23	6.7	6.45
482	Kachchh	Lilpur	23°30'40" N	70°39'0" E	Dug Well		6.08	7.07	0.39
483	Kachchh	Lodai	23°24'0" N	69°53'30" E	Dug Cum Bore Well			13.95	14.5
484	Kachchh	Lohariya	23°5'35" N	69°53'3" E	Tube Well				54.55
485	Kachchh	Luni	22°52'24" N	69°48'42" E	Dug Well	5.56	2.26	2.49	3.08
486	Kachchh	Madhapar	23°13'55" N	69°41'50" E	Tube Well	46.85	47.27	47.07	47.02
487	Kachchh	Mandvi	22°50'32" N	69°22'15" E	Tube Well	23.15		20.95	21.02
488	Kachchh	Mandvi (Mahadev Temple)	22°50'0" N	69°20'0" E	Dug Well				5.53
489	Kachchh	Mandvi (Shitla Mata)	22°50'0" N	69°20'0" E	Dug Well		4.36	3.72	
490	Kachchh	Mata no madh	23°32'0" N	68°57'0" E	Dug Well	5.71	9.79	8.47	6.92
491	Kachchh	Mathak1	22°59'50" N	70°1'30" E	Dug Well		11.65	11.65	11.65
492	Kachchh	Mau Moti 1	23°4'35" N	69°17'55" E	Dug Well	3.33			3.15
493	Kachchh	Mothala	23°12'30" N	69°7'30" E	Dug Well	2.4	1.58	1.7	2.43
494	Kachchh	Moti cher	23°45'30" N	68°40'30" E	Dug Well	2.53	1.35	1.43	2.72
495	Kachchh	Mundra	22°49'40" N	69°43'15" E	Tube Well	3.44	5.2	2.77	
496	Kachchh	Naliya	23°15'21" N	68°50'24" E	Tube Well	10.45	10.67	11.12	10.81
497	Kachchh	Naliya (Bus S)	23°16'0" N	68°50'0" E	Dug Well	9.14	11.05	10.82	
498	Kachchh	Nirona	23°27'55" N	69°31'30" E	Tube Well	14.3	14.13	15.06	14.5
499	Kachchh	Palaswa Pz II	23°28'18" N	70°55'15" E	Tube Well	3.1			
500	Kachchh	Panchasar Pz I	23°32'53" N	70°46'13" E	Tube Well	97.71	97.9	98.47	99.1
501	Kachchh	Panchasar Pz II	23°32'53" N	70°46'13" E	Tube Well	30.15	30.24	31.72	30.37
502	Kachchh	Rapar	23°34'30" N	70°38'30" E	Tube Well	27.25	22.42		
503	Kachchh	Rapar2	23°34'0" N	70°38'15" E	Dug Well	27.76	23.95	25.41	26.58
504	Kachchh	Ratanpur Khadir1	23°51'39" N	70°21'47" E	Dug Well	14.35	12.8	10.75	12.7
505	Kachchh	Ratanpur(maum.)	23°6'30" N	69°17'30" E	Dug Well		1.37	1.52	
506	Kachchh	Rawapar	23°31'0" N	69°4'30" E	Dug Well	14.7	14.7	14.7	14.7
507	Kachchh	Rudramata	23°23'30" N	69°42'30" E	Dug Well	11.4			11.4
508	Kachchh	Samkhiari	23°18'0" N	70°30'30" E	Dug Well	4.6	3.8	4.83	4.65
509	Kachchh	Sedat	23°10'17" N	69°38'15" E	Dug Well	8.8	9.9	10.8	10.07
510	Kachchh	Shinaya	23°2'0" N	70°3'15" E	Dug Well	9.15	3.57	1.42	2.3
511	Kachchh	Sudana Vandh Pz I	23°39'14" N	70°32'20" E	Tube Well	3.65	3.36	3.47	3.06

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
512	Kachchh	Sudana Vandh Pz II	23°39'14" N	70°32'20" E	Tube Well	3.53	3.23	3.32	3.2
513	Kachchh	Sukhpar	23°12'30" N	69°37'0" E	Dug Well	13.1	13	11.08	13.15
514	Kachchh	Suthri	23°2'2" N	68°54'55" E	Dug Well	10.9	10.9		
515	Kachchh	Tera	23°17'0" N	68°56'50" E	Dug Well	10.07	9.92	9.57	9.5
516	Kachchh	Tunga	23°49'6" N	69°51'18" E	Dug Well	8.83		2.1	2.32
517	Kachchh	Ugardi	23°27'47" N	69°8'17" E	Dug Well		40.8	40.8	40.8
518	Kachchh	Vadala	22°54'58" N	69°51'20" E	Dug Well	11.75	8	6.7	7.92
519	Kachchh	Vinjhan1	23°6'0" N	69°1'30" E	Dug Well	7.85	8.17		4.3
520	Kheda	Alina	22°48'30" N	73°3'30" E	Dug Well	8.5	8.7	15.14	8.6
521	Kheda	Alindra	22°42'3" N	72°58'36" E	Dug Well	10.77	10.58	9.64	9.6
522	Kheda	Boriyavi	22°38'8" N	72°54'33" E	Dug Well	8.6	8.95	7.53	7.8
523	Kheda	Dakor	22°45'45" N	73°10'10" E	Dug Well	6.5	6.2	5.85	5.08
524	Kheda	Kalesar	22°43'15" N	73°11'30" E	Dug Well	4.2	0.56	1.3	0.8
525	Kheda	Kapadvanj	23°0'15" N	73°5'30" E	Dug Well	12.1	7.42	6.42	7.09
526	Kheda	Kheda	22°44'15" N	72°42'15" E	Dug Well	3.25	3.55		1.45
527	Kheda	Ladvel	22°54'30" N	73°7'15" E	Dug Well	1.3	0.4	0.7	1.08
528	Kheda	Mahudha	22°47'0" N	72°56'30" E	Dug Well	3.45	3.22	2.81	2.5
529	Kheda	Matar I	22°42'35" N	72°40'5" E	Tube Well	16.92	21.85	15.38	15.62
530	Kheda	Matar II	22°42'35" N	72°40'5" E	Tube Well	5.33	5.34	3.84	4.55
531	Kheda	Muliyad	22°46'59" N	73°10'36" E	Dug Well	0.9	0.03	0.96	0.7
532	Kheda	Nadiad Pz-I	22°42'40" N	72°52'0" E	Tube Well	19.23	20.06	18.58	18.96
533	Kheda	Nes Pz	22°42'30" N	73°12'10" E	Tube Well	8.94	8.22	8.78	8.24
534	Kheda	Sarkhej I	22°59'10" N	72°52'50" E	Tube Well	24.25	24.04	23.67	23.07
535	Kheda	Sarkhej II	22°59'10" N	72°52'50" E	Tube Well	31.29	31.72	29.48	28.33
536	Kheda	Sarkhej Pz-III	22°59'10" N	72°52'50" E	Tube Well	36.93	37.8	35.24	33.58
537	Kheda	Shekhupura	22°34'30" N	72°37'30" E	Dug Well	0.28	1.59	0.03	5.45
538	Kheda	Thasra	22°47'40" N	73°12'40" E	Tube Well				2.53
539	Kheda	Vaso	22°39'40" N	72°45'15" E	Tube Well	5.77	6.31	4.55	4.52
540	Kheda	Vyas vasna	23°6'20" N	73°6'15" E	Bore Well	25.12	23.64	20.52	17
541	Mahesana	Asjol	23°30'30" N	72°11'0" E	Dug Well	5.7	4.23	0.53	1.7
542	Mahesana	Bhalu Moti Pz I	24°2'24" N	72°42'36" E	Bore Well	26.47	27.72	21.64	26.95
543	Mahesana	Bhandupara	23°43'30" N	72°23'0" E	Dug Well	12.21	9.33	7.1	10.98
544	Mahesana	Budasan	23°17'15" N	72°22'30" E	Dug Well	5.39	6.83	3.76	4.7
545	Mahesana	Daran Pz-I	23°12'23" N	72°16'47" E	Tube Well	102.47	102.34	99.29	103.3
546	Mahesana	Daran Pz-II	23°12'23" N	72°16'47" E	Tube Well	44.38	44.53	43.7	47.47
547	Mahesana	Dharpura	23°32'45" N	72°6'45" E	Dug Well	5.89	5.96	4.5	8.35
548	Mahesana	Dosaj	23°50'30" N	72°27'0" E	Dug Well		12.97	10.66	13.96
549	Mahesana	Jaska(Sy 4")Pz II	23°49'25" N	72°32'5" E	Tube Well	16.4	16.77	15.44	16.95
550	Mahesana	Jaska(Sy 8")Pz I	23°49'25" N	72°32'5" E	Tube Well		59.02	58.2	58.97
551	Mahesana	Jotana Pzi	23°28'26" N	72°17'16" E	Tube Well	138.67	130.23	135.95	131.4
552	Mahesana	Jotana Pzii	23°28'26" N	72°17'16" E	Tube Well	16.57			
553	Mahesana	Jotana Pziii	23°28'0" N	72°17'50" E	Tube Well		16.62	14.67	16.63
554	Mahesana	Kalyanpur	23°7'37" N	72°11'35" E	Tube Well	3.5	3.24	1.38	2.36
555	Mahesana	Karalli (i)	23°48'15" N	72°29'10" E	Tube Well	133.98	133.39	133.34	133.7
556	Mahesana	Karalli (iii)	23°48'15" N	72°29'10" E	Tube Well	11.77	11.76	10.83	11.61
557	Mahesana	Karalli II	23°48'15" N	72°29'10" E	Tube Well	48.41	48.5	47.8	49.43
558	Mahesana	Kheralu (deep)	23°53'52" N	72°36'38" E	Tube Well	49.14	48.08	47.12	47.42
559	Mahesana	Kheralu(shallow)	23°53'52" N	72°36'38" E	Tube Well	3.04	3.32	2.77	3.29
560	Mahesana	Kheralu1	23°53'15" N	72°36'45" E	Dug Well	10.91	14.88	16.42	15.8
561	Mahesana	Magroda Pz	23°36'36" N	72°30'2" E	Tube Well	169.05	168.5	171.66	176.5
562	Mahesana	Maguna	23°34'40" N	72°17'20" E	Dug Well	6.95	6.3	5.21	5.25
563	Mahesana	Mau	23°30'37" N	72°31'9" E	Tube Well	9		7.38	8.48
564	Mahesana	Mehsana I	23°35'51" N	72°23'55" E	Tube Well	152.45	150.07	148.59	150.43
565	Mahesana	Mehsana II	23°35'51" N	72°23'55" E	Tube Well	152.6	150	148.69	150.85
566	Mahesana	Mehsana III	23°35'51" N	72°23'55" E	Tube Well	99.35	99.16	89.5	100.72
567	Mahesana	Mewad	23°32'0" N	72°23'0" E	Tube Well	15.61	17.29	12.99	16.78
568	Mahesana	Modhera i	23°43'0" N	72°28'0" E	Tube Well	8.08	8	6.61	7.33
569	Mahesana	Motipura Pz II	23°32'2" N	72°36'15" E	Tube Well	51.14	66.64	53.54	50.48
570	Mahesana	Nani Hirvani Pz	23°52'53" N	72°32'49" E	Tube Well	96.37	90.28	89.42	96.46

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
571	Mahesana	Padhadya	23°31'21" N	72°32'0" E	Tube Well	11.96	12.18	10.84	11.98
572	Mahesana	Panchot	23°37'45" N	72°20'30" E	Dug Well	6	5.07	1.94	3.35
573	Mahesana	Rampural	23°53'30" N	72°31'0" E	Dug Well	10.82	10.15	11.26	12.33
574	Mahesana	Ramvijaynagar Pz I	23°42'36" N	72°20'24" E	Tube Well	167.95	167.25	169.55	170.7
575	Mahesana	Ramvijaynagar Pz II	23°42'36" N	72°20'24" E	Tube Well	85.94	86.3	85.36	87.25
576	Mahesana	Ramvijaynagar Pz III	23°42'36" N	72°20'24" E	Tube Well	18.12	18.36	17.51	19.4
577	Mahesana	Sih	23°48'0" N	72°21'0" E	Dug Well	11.1	12.21	11	9.52
578	Mahesana	Tarabh	23°45'30" N	72°27'30" E	Dug Well	8.62	8.71	8.07	9.15
579	Mahesana	Thol Pz -IV	23°7'50" N	72°22'34" E	Tube Well	113.37	112.51	108.04	113.7
580	Mahesana	Timba 1	23°59'14" N	72°45'32" E	Dug Well	13.02	15.06	14.3	14.65
581	Mahesana	Unawa	23°46'0" N	72°21'45" E	Dug Well	3.13	3.69	2.88	2.6
582	Mahesana	Unjha	23°47'52" N	72°23'40" E	Dug Well		4.12	3.14	4.1
583	Mahesana	Vidaj	23°14'50" N	72°18'0" E	Dug Cum Bore Well	3.04	2.1	-0.09	-1
584	Mahesana	Visnagar iv	23°42'0" N	72°32'0" E	Tube Well	3.7	4.6	4.98	6.51
585	Mahisagar	Balasinor	22°57'30" N	73°20'10" E	Bore Well	4.25			
586	Mahisagar	Balasinor1	22°57'0" N	73°19'30" E	Dug Well	5.97			
587	Mahisagar	Bar	23°10'5" N	73°24'40" E	Dug Well	6.54	6.69	3.43	5.84
588	Mahisagar	Bavaliya Pz	23°18'24" N	73°33'18" E	Bore Well	27.85	25.86	17.55	26.55
589	Mahisagar	Gadhar	23°9'0" N	73°46'30" E	Dug Well	12.65	13.54	6.4	9.4
590	Mahisagar	Jokha	23°3'43" N	73°37'13" E	Dug Well	9.58	9.52	6.08	7.88
591	Mahisagar	Juna vasadra	23°5'0" N	73°21'45" E	Dug Well	3.1	3.34	4.5	2.95
592	Mahisagar	Kantha	23°10'42" N	73°39'8" E	Dug Well	4.4	6.77	2.8	3.4
593	Mahisagar	Khanpur	23°22'12" N	73°40'38" E	Dug Well	10.4	13.77	8.42	13.2
594	Mahisagar	Kothamba	23°1'10" N	73°31'10" E	Dug Well	4.1	3.74	3.1	3.8
595	Mahisagar	Limbadia peti	23°12'15" N	73°36'0" E	Dug Well	4.8	7.62	5.15	5.5
596	Mahisagar	Lunawada	23°7'45" N	73°36'30" E	Dug Well	10.41	9.38	8.01	9.26
597	Mahisagar	Malekpurl	23°13'50" N	73°44'10" E	Dug Well	3.1	2.85	2.8	3.2
598	Mahisagar	Pandarvada	23°22'30" N	73°38'0" E	Dug Well	13.56	5.36	13.41	15.56
599	Mahisagar	Santrampur	23°10'15" N	73°54'30" E	Bore Well	9.55	8.77	5.82	6.55
600	Mahisagar	Santrampur1	23°11'30" N	73°54'30" E	Dug Well	9.2	9.77	9.2	12
601	Mahisagar	Ucharpi Pz	23°7'9" N	73°28'18" E	Bore Well	13.27	13.01	14.8	13.9
602	Mahisagar	Virpur Pz	23°11'35" N	73°29'7" E	Bore Well	8.63	7.5		
603	Morbi	Amar nagar	22°56'0" N	70°48'30" E	Dug Well	2	0.7	1.5	1.82
604	Morbi	Bhalgam	22°26'30" N	71°5'0" E	Dug Well	10	-0.13	6.25	6.52
605	Morbi	Chhatar	22°30'15" N	70°45'15" E	Dug Well	6.7			
606	Morbi	Hadmatia	22°41'0" N	70°48'30" E	Dug Well	10.6	1	1.35	9.72
607	Morbi	Halvad2	23°1'15" N	71°11'15" E	Dug Well	4.66	2.73	3.81	
608	Morbi	Jetpur Pithad	23°1'19" N	70°55'5" E	Dug Well	8.5		4.17	6.07
609	Morbi	Juna Devaliya 1	22°58'46" N	71°0'32" E	Dug Well	3.98		4.48	
610	Morbi	Kalyanpur2	22°39'30" N	70°44'0" E	Dug Well	5.55	2.45	1.4	2.35
611	Morbi	Lajai	22°43'0" N	70°46'45" E	Dug Well	4.15		2.65	
612	Morbi	Macchukunda	23°0'5" N	70°53'45" E	Dug Well		5.7	5.82	6.86
613	Morbi	Malia	23°5'30" N	70°45'45" E	Dug Well	4.35	2.9	2.91	4.02
614	Morbi	Mathak	22°50'24" N	71°3'28" E	Dug Well	10.65	8.18	8.82	9.65
615	Morbi	Modpar1	22°54'0" N	70°40'0" E	Dug Well	2.16	-1.02	0.09	0.83
616	Morbi	Morbi	22°49'30" N	70°51'30" E	Tube Well	2.65	1.77	2.19	2.28
617	Morbi	Morvi	22°49'0" N	70°50'30" E	Dug Well	2.08	0.65	7.73	
618	Morbi	Mota dhansura	22°57'30" N	70°37'0" E	Dug Well	6.28	4.19	4.63	5.2
619	Morbi	Nichi mandal	22°51'30" N	70°57'0" E	Dug Well	4.4	2.75	4.52	5.66
620	Morbi	Sarvad	23°0'23" N	70°42'25" E	Dug Well	2.15	0.16	1.08	1.5
621	Morbi	Sindhavadar	22°33'0" N	70°53'30" E	Dug Well	8.8	7.56	5.98	8.36
622	Narmada	Agar(Rep) Pz	22°1'52" N	73°39'24" E	Bore Well	12.7	10.58	8.76	8.99
623	Narmada	Almadi	21°36'32" N	73°30'39" E	Dug Well		7.35	7.35	
624	Narmada	Amayar	21°32'50" N	73°46'0" E	Dug Well		9.25	9.25	3.03
625	Narmada	Baman Phalia Pz	21°47'54" N	73°22'45" E	Bore Well	20.6	19.67	14.6	15.12
626	Narmada	Chikada	21°31'15" N	73°38'45" E	Dug Well	4.7	2.3	1.4	2.53
627	Narmada	Chuli	21°33'17" N	73°28'32" E	Dug Well		12.23	12.23	5.88
628	Narmada	Garudeshwar	21°53'30" N	73°39'0" E	Dug Well	11.7	11.7	9.9	8.14

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
629	Narmada	Hirapura	21°52'5" N	73°36'0" E	Dug Well	11.46	10.4	10.18	
630	Narmada	Jankh	21°29'32" N	73°35'49" E	Dug Well	3	0.9	0.8	1.62
631	Narmada	Kanbi pitha	21°31'15" N	73°38'45" E	Dug Well	3.45	3.25	2.9	2.59
632	Narmada	Kewadia Pz	21°52'58" N	73°42'2" E	Bore Well	6.89	5.07	1.9	2.22
633	Narmada	Khaidipada	21°30'50" N	73°31'10" E	Dug Well		6	6	1.03
634	Narmada	Khota amba	21°44'0" N	73°28'30" E	Dug Well	2.09	1.94	2.29	1.56
635	Narmada	Namaria	22°2'40" N	73°37'20" E	Dug Well	3.4	2.01	2.3	2.72
636	Narmada	Nani singlot	21°40'10" N	73°40'0" E	Dug Well		9.8	9.8	7.96
637	Narmada	Rajpipla	21°52'30" N	73°30'0" E	Tube Well	30.2	30.02	28.02	30.24
638	Narmada	Ralda	21°36'36" N	73°39'9" E	Dug Well	4.6	1.74	1.8	0.52
639	Narmada	Rasela	21°55'30" N	73°29'30" E	Dug Well		13.6	9.7	
640	Narmada	Rasulpura Pz	21°58'0" N	73°37'30" E	Tube Well	21.13	20.78	21.8	21.08
641	Narmada	Ringani	21°50'30" N	73°28'0" E	Dug Well	2.2	1.79	2.15	2.27
642	Narmada	Selemba 1	21°36'36" N	73°45'48" E	Dug Well	7		8	
643	Narmada	Sunderpura Pz	21°50'20" N	73°32'5" E	Bore Well	29.52	31.05	30.38	
644	Narmada	Umran	21°29'17" N	73°52'59" E	Dug Well	8	4.4	1.5	2.56
645	Navsari	Abrama	20°51'45" N	72°54'0" E	Dug Well	2.8	1.26	0.8	0.9
646	Navsari	Chadav	20°49'52" N	73°20'4" E	Dug Well	8.87	7	3.3	5.45
647	Navsari	Chinam	20°59'30" N	72°53'10" E	Dug Well	3.47	0.93	1.23	1.98
648	Navsari	Dandi	20°53'30" N	72°48'30" E	Dug Well	3.6	1.8	2.55	2.75
649	Navsari	Duvada	20°49'43" N	73°3'27" E	Dug Well	6.7	3.1	1.95	2.5
650	Navsari	Hond	20°44'20" N	73°2'45" E	Dug Well	8.66	7.26	4.7	5.6
651	Navsari	Kaliyari	20°43'30" N	73°9'0" E	Dug Well	10.1	3.77	2.6	2.7
652	Navsari	Kantasvel	20°47'50" N	73°17'30" E	Dug Well	7.75	3.21	3.65	4.35
653	Navsari	Khergam	20°38'0" N	73°5'45" E	Dug Well	2	1.4	0.7	0.8
654	Navsari	Manav Khadak	20°40'27" N	73°14'0" E	Dug Well	2.7	1.8	2.8	3.3
655	Navsari	Moti Valzar	20°48'18" N	73°16'0" E	Dug Well	7.27	2.31	3.05	4.1
656	Navsari	Navsari	20°57'0" N	72°56'0" E	Tube Well	45			
657	Navsari	Navsari 1	20°57'29" N	72°56'6" E	Dug Well	5.32	3.77	2.97	3.35
658	Navsari	Onjal	20°50'0" N	72°50'30" E	Dug Well	5.52	2.8	3.6	4.25
659	Navsari	Panikhadak	20°38'57" N	73°10'1" E	Dug Well	12.1	7.2	6.9	7.65
660	Navsari	Parjan	21°0'40" N	72°50'21" E	Dug Well		1.5		
661	Navsari	Pipalkhed	20°40'30" N	73°17'0" E	Dug Well	17.45	1.95	2.15	7.45
662	Navsari	Rankuva	20°48'45" N	73°9'30" E	Dug Well	8.84	2.56	5	3.35
663	Navsari	Rumla	20°41'21" N	73°9'32" E	Dug Well		3.8	4.9	2.8
664	Navsari	Sari khurd	20°47'15" N	72°57'15" E	Dug Well	2.46	2.65	2.2	2.4
665	Navsari	Ubhrat	21°0'30" N	72°44'45" E	Dug Well				2.55
666	Navsari	Vansda	20°45'52" N	73°21'47" E	Bore Well	10.8	6.45	6.15	7.75
667	Panchmahals	Chhabanpur	22°49'40" N	73°36'45" E	Dug Well	8.55	8.73	8.75	7.25
668	Panchmahals	Dhanol	22°45'31" N	73°30'24" E	Dug Well	2.6	1.24	1.25	1
669	Panchmahals	Godhra UR1	22°47'34" N	73°36'24" E	Dug Well	5.53	5.2	3.48	4.13
670	Panchmahals	Godhra UR2	22°46'9" N	73°35'28" E	Dug Well	5.45		4.9	
671	Panchmahals	Godhra UR3	22°46'48" N	73°36'25" E	Dug Well	2.88	0.88	1.13	1.05
672	Panchmahals	Godhra2	22°46'15" N	73°38'0" E	Dug Well	9.54	9.74	7.04	8.14
673	Panchmahals	Jambughoda	22°22'10" N	73°43'30" E	Bore Well	6.75	4.7	6.55	5.98
674	Panchmahals	Jambughoda1	22°22'22" N	73°43'22" E	Dug Well	3.4			2.3
675	Panchmahals	Javan	22°24'5" N	73°41'6" E	Dug Well	9.6	6.2	5.05	5.9
676	Panchmahals	Kalol UR1	22°36'1" N	73°26'36" E	Dug Well	12.9	12.4	11.45	11.7
677	Panchmahals	Kalol UR2	22°35'23" N	73°27'5" E	Dug Well	16.84	17.04	16.56	18.19
678	Panchmahals	Khadki Vadiya	22°39'44" N	73°30'1" E	Dug Well	21.6	16.57	13.59	15.9
679	Panchmahals	Morwa (Hadaf) Pz-I	22°55'5" N	73°50'40" E	Bore Well	11.6	11.2		11.1
680	Panchmahals	Natapur	22°51'26" N	73°49'14" E	Dug Well	7.8	6.4	6.4	7.6
681	Panchmahals	Palla Rajgarh Pz	22°31'22" N	73°42'3" E	Bore Well	18.55	18.1	12.85	16.5
682	Panchmahals	Pavagadh	22°29'15" N	73°33'20" E	Dug Well	8.36	6.26	4.21	5.16
683	Panchmahals	Ranipura	22°43'30" N	73°45'30" E	Dug Well	7.2	9.04	3.65	4.5
684	Panchmahals	Santroad1	22°48'12" N	73°47'35" E	Dug Well	15.6	15.78	10.4	11.2
685	Panchmahals	Shehra	22°57'15" N	73°37'30" E	Dug Well	2.3	2.34	1.7	2.8
686	Panchmahals	Shivrajpur	22°25'30" N	73°35'30" E	Dug Well	12.5	8.7	5.95	7.2
687	Panchmahals	Suliyat	23°3'44" N	73°51'3" E	Dug Well	20.1	15.6	13.9	15.7

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
688	Panchmahals	Tarkanda	22°32'45" N	73°31'45" E	Dug Well	7.7	5.23	2.45	11.76
689	Panchmahals	Tarvada	22°36'20" N	73°31'20" E	Tube Well		5.33	6.55	
690	Panchmahals	Tuwa	22°48'15" N	73°28'15" E	Dug Well	4.3	4.56	3	4.05
691	Panchmahals	Vejalpur	22°41'45" N	73°33'30" E	Dug Well	4.8	4.6	5.88	4.1
692	Patan	Bhutia vasna i	23°55'0" N	72°6'0" E	Tube Well	20.15	20.32	20.51	20.5
693	Patan	Biliya(Temple) Pz I	23°53'18" N	72°23'55" E	Tube Well	28.88	23.15		
694	Patan	Biliya(Temple) Pz II	23°53'18" N	72°23'55" E	Tube Well	46.75			
695	Patan	Dharmoda	23°41'50" N	72°4'10" E	Dug Well	2.84	1.69	6.89	1.82
696	Patan	Dhinoj1	23°39'45" N	72°16'45" E	Dug Well	10.5	8.21	8.5	9.24
697	Patan	Jangral Pzi	23°41'41" N	71°41'38" E	Tube Well	160.8	142.68	154	161.88
698	Patan	Kanesara Pz	23°53'24" N	72°20'24" E	Tube Well	125.2	124.95	125.35	125.84
699	Patan	Kot Pz	23°53'59" N	72°24'34" E	Tube Well	92.25			93.07
700	Patan	Lanwa Pz-I	23°41'12" N	72°14'55" E	Tube Well	131.1	129.49	131.63	131.2
701	Patan	Lukhsasan	23°57'36" N	72°28'12" E	Tube Well	133.9	109.1	125.32	136.05
702	Patan	Matarwadi II	23°52'6" N	72°8'50" E	Tube Well	102.45			
703	Patan	Moti chander	23°35'40" N	71°46'50" E	Dug Well	2.38		0.53	1.4
704	Patan	Nagwasan	23°56'52" N	72°27'47" E	Tube Well	130.2	129.15		132.23
705	Patan	Patan2	23°50'30" N	72°7'25" E	Dug Well	17.78	15.08	17.21	17.68
706	Patan	Piprala 1	23°39'17" N	71°5'9" E	Dug Well	10.7			10.4
707	Patan	Sander	23°46'0" N	72°15'15" E	Dug Cum Bore Well	12.6	10.75		8.5
708	Patan	Sankheshwar	23°31'19" N	71°47'27" E	Tube Well	0.01	1.23	0.11	0.59
709	Patan	Shankhari	23°46'45" N	72°9'45" E	Dug Well	12.67	15.61	16.53	12.5
710	Patan	Sidhpur Naditat Pz I	23°55'29" N	72°23'54" E	Tube Well	86.9	85.34	87.67	87.34
711	Patan	Vauva(Repl) Pz	23°47'55" N	71°5'25" E	Tube Well				2.76
712	Porbandar	Adityana	21°42'31" N	69°42'39" E	Dug Well	8	7.89	5.71	6.13
713	Porbandar	Adwana2	21°55'0" N	69°36'0" E	Dug Well	15.15	8.28	5.1	9.48
714	Porbandar	Babda	21°46'12" N	69°35'17" E	Dug Well		3	0.9	2.44
715	Porbandar	Bakharla	21°45'53" N	69°39'40" E	Dug Well	26.61	6.76	2.51	6.31
716	Porbandar	Balej	21°22'15" N	69°52'30" E	Dug Well	4.55	1.25	3.7	5.8
717	Porbandar	Balej 1	21°22'15" N	69°52'30" E	Dug Well				5.6
718	Porbandar	Bhavpura	21°48'35" N	69°24'30" E	Dug Well	9.16		3.21	17.71
719	Porbandar	Bhod	21°39'32" N	69°49'16" E	Dug Well	15.74	7.84	10.39	7.45
720	Porbandar	Degam	21°42'37" N	69°36'20" E	Dug Well	16.75	11.59	6.15	7.38
721	Porbandar	Hanumangadh1	21°47'35" N	69°48'10" E	Dug Well		8.88	2.8	3.4
722	Porbandar	Kadegi	21°27'2" N	69°59'0" E	Dug Well	1.84	-0.41	1.84	
723	Porbandar	Kandorna	21°38'52" N	69°53'0" E	Dug Well		12.05	6.23	8.98
724	Porbandar	Khambodar	21°48'30" N	69°36'5" E	Dug Well	7.1	0.92	2.3	1.22
725	Porbandar	Kolikhada	21°41'59" N	69°36'51" E	Dug Well	25.68	9.48	7.01	7.18
726	Porbandar	Kuchhadi	21°41'0" N	69°33'0" E	Dug Well	2.65	1.55	1.8	2.28
727	Porbandar	Kutiyana Pz	21°37'20" N	69°59'50" E	Bore Well	11.45	1.77	2.25	4.85
728	Porbandar	Kutiyana1	21°37'50" N	70°1'0" E	Dug Well	11.23	3.47	2.56	5.05
729	Porbandar	Miyani	21°50'0" N	69°23'20" E	Dug Well		6.15	6.3	7.32
730	Porbandar	Mocha	21°20'54" N	69°53'21" E	Dug Well		0.4		2.83
731	Porbandar	Mojiwana	21°53'9" N	69°36'1" E	Dug Well	8.65	3.02	0.55	1.89
732	Porbandar	Nagka	21°49'17" N	69°38'57" E	Bore Well	19.05	3.85	0.6	1.87
733	Porbandar	Navibandar	21°26'45" N	69°47'30" E	Dug Well	4.48	1.1	2.22	1.31
734	Porbandar	Oddar	21°34'0" N	69°40'50" E	Dug Well	3.3	5.7	1.15	5.8
735	Porbandar	Palkhada1	21°45'30" N	69°29'15" E	Dug Well	10.38	3.66	2.71	4.43
736	Porbandar	Pata	21°17'50" N	69°56'30" E	Dug Well		2.1	4.3	
737	Porbandar	Porbandar	21°38'42" N	69°38'33" E	Tube Well	4.9		1.45	2.07
738	Porbandar	Porbandar1	21°38'30" N	69°37'30" E	Dug Well		2.81	3.45	3.83
739	Porbandar	Ranavav2	21°41'0" N	69°44'45" E	Dug Well	6.75	4.63	2.1	4.12
740	Porbandar	Ratadi	21°43'13" N	69°30'43" E	Dug Well	6.94	2.95	3.97	5.57
741	Porbandar	Ratia	21°26'17" N	69°48'22" E	Dug Well		3.16	2.5	6.3
742	Porbandar	Simar	21°56'49" N	69°41'9" E	Dug Well	5.95	6.05	1.1	5.17
743	Porbandar	Tukda	21°30'58" N	69°43'43" E	Dug Well	1.83	-0.52	2.28	1.8
744	Porbandar	Visavada Mul Dwarka	21°47'8" N	69°26'47" E	Dug Well	13.4	3.27	4.4	5.71
745	Rajkot	Bhada jodiya	21°39'45" N	70°20'30" E	Dug Well	12.05	2.96	1.7	2.66

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
746	Rajkot	Bhadla	22°11'0" N	71°5'30" E	Dug Well	12.5	5.95	6.91	11.65
747	Rajkot	Chordi	21°55'0" N	70°44'55" E	Dug Well	8.71		3.85	
748	Rajkot	Dadia	22°5'30" N	70°44'0" E	Dug Well	11.75	2.34	4.07	4.23
749	Rajkot	Dhoraji	21°44'45" N	70°17'9" E	Dug Well	14	0.25	4.25	8.4
750	Rajkot	Ganod	21°40'30" N	70°10'45" E	Dug Well	4.93	0.36	2.4	12
751	Rajkot	Gogavadar	21°58'0" N	70°52'30" E	Dug Well	17.3	1.73	3.83	6.3
752	Rajkot	Hadmadiya	21°58'41" N	70°37'23" E	Dug Well		0.5	1.15	2.32
753	Rajkot	Halenda	22°5'30" N	71°3'0" E	Dug Well	4.46	0.46	0.53	1.09
754	Rajkot	Jamkandorna	21°53'50" N	70°29'30" E	Bore Well	12.2		9.86	11.65
755	Rajkot	Jasapur	21°53'30" N	70°29'0" E	Dug Well	16.7			
756	Rajkot	Jasdan	22°2'40" N	71°12'50" E	Bore Well	7.1	5.01	3.6	4.37
757	Rajkot	Jasdan2	22°3'30" N	71°13'15" E	Dug Well	5.28	3.65	5.4	5.28
758	Rajkot	Jetpur	21°45'22" N	70°37'10" E	Bore Well	15.02	-0.17	-0.08	5.28
759	Rajkot	Jetpur pithad.	21°46'30" N	70°38'0" E	Dug Well	13.96	4.76	5.06	8.92
760	Rajkot	Kamlapur	22°8'45" N	71°12'0" E	Dug Well	11.95	3.65	4.05	5.65
761	Rajkot	Khamta	22°28'30" N	70°33'0" E	Dug Well	8.25	2.64	1.75	2.25
762	Rajkot	Lalavadar	22°8'0" N	71°18'15" E	Dug Well	6.63	3.53	3.21	5.56
763	Rajkot	Lodhika	22°8'0" N	70°37'55" E	Bore Well	7.15	1.01	3.05	3.53
764	Rajkot	Lodhikal	22°8'30" N	70°38'30" E	Dug Well	7.1			4.1
765	Rajkot	Mota Dadwa	21°59'54" N	70°59'38" E	Dug Well	9.03	0.16	2.06	5.25
766	Rajkot	Motagundala	21°44'5" N	70°30'5" E	Dug Well	4.81	0.9	2.05	2.33
767	Rajkot	Movaiya	22°27'0" N	70°36'30" E	Dug Well	8.4	2.45	3.5	
768	Rajkot	Padadhari1	22°26'50" N	70°36'30" E	Dug Well		3.9	4.1	4.57
769	Rajkot	Patanvav	21°38'40" N	70°15'40" E	Dug Well	15.7	0.7	3.35	6.47
770	Rajkot	Ranpur1	22°22'0" N	70°55'45" E	Dug Well		2.35	5	6.05
771	Rajkot	Ribda	22°7'30" N	70°46'0" E	Dug Well	11	1.2	2.22	3.88
772	Rajkot	Sardhar1	22°8'45" N	70°59'20" E	Dug Well	3.34	0.17	1.02	1.46
773	Rajkot	Targhari	22°23'0" N	70°40'0" E	Dug Well	5.5	1.6	2.8	2.93
774	Rajkot	Umrali	21°55'10" N	70°36'15" E	Dug Well	6.36		4.1	6.05
775	Rajkot	Upleta1	21°44'55" N	70°16'30" E	Dug Well	6.66	5.61	5.56	5.61
776	Rajkot	Vinchhia	22°12'30" N	71°22'45" E	Dug Well	2.75		2.25	
777	Rajkot	Virpur1	21°51'0" N	70°41'45" E	Dug Well	12.93	3.13	3.55	7.42
778	Sabarkantha	Abhapur	23°57'51" N	73°15'29" E	Dug Well	5.7	7.47	7.28	7.3
779	Sabarkantha	Anwarpura Pz	23°24'20" N	72°50'44" E	Tube Well	33.45	40.6	35.23	36.8
780	Sabarkantha	Atarsumba	23°59'10" N	73°12'30" E	Dug Well	6.7	3.42	2.6	4.4
781	Sabarkantha	Bhadreshwar	23°44'45" N	72°58'45" E	Dug Well	23.7	21.9	19.55	20.3
782	Sabarkantha	Boriya	23°14'34" N	72°56'27" E	Dug Well	7.6	7.9	6.95	7
783	Sabarkantha	Chandap DW	23°55'24" N	72°51'12" E	Dug Well	9	16.3		15.5
784	Sabarkantha	Chandap Pz	23°55'55" N	72°51'25" E	Bore Well	9.85	14.1	14.25	12.3
785	Sabarkantha	Choriwad	23°54'0" N	73°7'10" E	Dug Well	22.21	20.09		20.11
786	Sabarkantha	Derol Pz-II	23°35'58" N	72°54'9" E	Tube Well	48.3	45.2	44.29	45
787	Sabarkantha	Gadha	23°42'30" N	72°56'30" E	Dug Well	17.6	18	18.65	18.1
788	Sabarkantha	Harsol1	23°22'40" N	73°1'0" E	Dug Well	10.85	11.17	12.65	12.25
789	Sabarkantha	Himmatnagar Pz	23°36'30" N	72°58'15" E	Tube Well	9.05	6.9	8.55	8.54
790	Sabarkantha	Idar	23°50'30" N	73°2'15" E	Dug Well	9.3	8.7	7.22	7.3
791	Sabarkantha	Jhaloti	23°57'0" N	73°20'15" E	Dug Well			6.6	
792	Sabarkantha	Kesharpura	23°54'55" N	73°8'43" E	Dug Well	19.75		20.15	23.75
793	Sabarkantha	Kesharpura Mayal	23°19'20" N	72°56'56" E	Dug Well	3.08	2.58	2.52	2.68
794	Sabarkantha	Khedbrahma Pz	24°2'10" N	73°2'40" E	Bore Well	3.65	2	2.25	2.55
795	Sabarkantha	Khedbrahma 1	24°1'45" N	73°3'0" E	Dug Well	16	3.43	8.8	19.1
796	Sabarkantha	Kherwada	23°58'10" N	73°14'1" E	Dug Well	5.7	4.47	3.67	4.1
797	Sabarkantha	Mathasuliya	23°36'9" N	73°9'16" E	Dug Well	7.13	6.78	5.6	6.33
798	Sabarkantha	Matoda	24°6'40" N	73°0'30" E	Dug Well	15.4	17	13.4	15.3
799	Sabarkantha	Poshina2	24°22'30" N	73°2'0" E	Dug Well	6.8	13.1	3.5	12.4
800	Sabarkantha	Ratanpur	24°12'30" N	72°59'55" E	Dug Well				12.6
801	Sabarkantha	Revas	23°49'15" N	73°7'0" E	Dug Well	13.4	15.47	10.7	12.8
802	Sabarkantha	Sabalwad	23°52'27" N	72°57'47" E	Dug Well	23.5	22.5	21.12	28.1
803	Sabarkantha	Silwad	24°0'30" N	73°7'0" E	Dug Well	8.1	6.1	4.8	6
804	Sabarkantha	Umadpura	23°18'13" N	72°57'52" E	Dug Well	12.4	13.6	6.75	10.35

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
805	Sabarkantha	Varvada	23°26'31" N	73°3'24" E	Dug Well	18.7	18.7	3.56	13.5
806	Sabarkantha	Vijaynagar	24°0'30" N	73°21'15" E	Dug Well	4.7		1.8	
807	Sabarkantha	Vijaynagar Pz	24°0'25" N	73°20'0" E	Bore Well	11.15	7.25	5.35	5.76
808	Sabarkantha	Virpur (Himmat)	23°39'15" N	72°57'30" E	Dug Well		12.5	9.35	
809	Sabarkantha	Virpur 1(Himmat)	23°39'6" N	72°57'14" E	Dug Well	13.75			11.86
810	Sabarkantha	Wadali	23°56'0" N	73°2'0" E	Dug Well	29.2	25	25.25	29.1
811	Sabarkantha	Waliampura Pz	23°21'4" N	72°58'15" E	Tube Well	38	39.2	38.35	35.4
812	Surat	Allu	21°3'45" N	73°11'30" E	Dug Well	4.5	2.42	4.35	3.3
813	Surat	Bardoli	21°6'55" N	73°6'0" E	Tube Well	5.61	3.5	2.87	3.35
814	Surat	Bhatkol	21°22'49" N	73°0'15" E	Dug Well	3.41	3.25	3.05	3.25
815	Surat	Chavada	21°28'29" N	73°35'42" E	Dug Well	4.3		1.6	
816	Surat	Dungri	21°24'30" N	73°8'0" E	Dug Well	8.65	3.85	2.15	2.8
817	Surat	Gangadhra	21°7'7" N	73°4'31" E	Dug Well	9.31	5.31	3.85	5.75
818	Surat	Gangtha	21°31'30" N	74°0'0" E	Dug Well	9.92	4.76	4.3	4.6
819	Surat	Jhankhavav	21°27'0" N	73°19'45" E	Dug Well		5.7	4.7	5.1
820	Surat	Jhankhvav	21°28'0" N	72°57'10" E	Bore Well	9.65	4.65	4.04	4.85
821	Surat	Juna umarpada	21°27'30" N	73°29'30" E	Dug Well		4	3.1	3.55
822	Surat	Juna Umarpada2	21°26'57" N	73°29'12" E	Dug Well	8.35			
823	Surat	Kadod 1	21°13'17" N	73°13'8" E	Dug Well	4.89	2.25	2.05	2.35
824	Surat	Kasal	21°19'20" N	73°7'37" E	Dug Well	5.7	3.64	3.75	4.1
825	Surat	Kathor	21°17'30" N	72°55'45" E	Dug Well	11.21	7.1	4	5
826	Surat	Katradevi	21°24'53" N	73°25'40" E	Dug Well		3.1	2	2.65
827	Surat	Mahuva2	21°1'15" N	73°8'45" E	Dug Well	13.75	14.92	14.95	16.35
828	Surat	Malda	21°22'0" N	73°21'0" E	Dug Well	8.92			6
829	Surat	Mandvi2	21°15'15" N	73°17'45" E	Dug Well	13.6		12.4	13.4
830	Surat	Mota	21°10'13" N	73°4'7" E	Dug Well	3.3	1.7	5.1	2.3
831	Surat	Moti Sarkui	21°16'45" N	73°20'59" E	Dug Well	9.35	3.67	4.05	5.55
832	Surat	Navi pardi	21°19'20" N	72°58'15" E	Dug Well	2.68	1.93		2.43
833	Surat	Nogama	21°17'27" N	73°12'52" E	Dug Well	2.9	2.04	1.14	1.24
834	Surat	Olpad2	21°20'30" N	72°45'30" E	Dug Well	3.45	1.3	2.1	1.7
835	Surat	Palsana	21°4'40" N	72°59'30" E	Dug Well	3.19	2.14	1.31	1.49
836	Surat	Puna	20°55'25" N	73°14'0" E	Bore Well	12.88	7.5	8.9	8.6
837	Surat	Puna1	20°55'45" N	73°13'45" E	Dug Well	9.4	3.94	5.4	6
838	Surat	Sachin town	21°5'30" N	72°52'30" E	Dug Well	3.8	0.9	2.2	
839	Surat	Sarbhon	21°3'30" N	73°5'30" E	Dug Well	2.83	2.66	2.2	
840	Surat	Sayan	21°18'20" N	72°54'39" E	Dug Well	9.72			7.7
841	Surat	Sultanabad	21°5'30" N	72°43'30" E	Dug Well	8.46	4.31	4.51	4.81
842	Surat	Tadkeshwar	21°22'51" N	73°4'35" E	Dug Well	5.6			
843	Surat	Ten-bardoli	21°7'0" N	73°6'0" E	Dug Well	5.83	3.7	3.2	3.9
844	Surat	Ushker	21°20'26" N	73°5'52" E	Dug Well	4.34	3.68	6.05	5.35
845	Surat	Vaheval	20°50'14" N	73°17'16" E	Dug Well	8	3.59	5.15	5.75
846	Surat	Wadoli	21°25'30" N	72°49'45" E	Dug Well	5.27	2.6	3.45	2.95
847	Surendranagar	Anindra	22°48'37" N	71°42'21" E	Dug Well	2.58	2.08	2.48	3.36
848	Surendranagar	Bajana	23°7'0" N	71°47'0" E	Dug Well	1.86	-1.04	1.07	1.91
849	Surendranagar	Bamanbor	22°25'0" N	71°2'30" E	Dug Well	9.85	4.17	5.08	6.41
850	Surendranagar	Chotila1	22°25'30" N	71°10'54" E	Bore Well	11	8.36	4.07	5.86
851	Surendranagar	Dasada	23°19'12" N	71°49'27" E	Tube Well		2.67	3.3	3.84
852	Surendranagar	Dedadra	22°46'30" N	71°44'0" E	Dug Well	2.45			1.12
853	Surendranagar	Dhama	23°23'7" N	71°40'46" E	Dug Well	6	3.91	4.2	5.45
854	Surendranagar	Gamda	22°53'54" N	71°33'25" E	Dug Well	2.83	2.63	1.58	1.96
855	Surendranagar	Ghansyam Gadh	23°6'24" N	71°29'3" E	Dug Well			0.88	2
856	Surendranagar	Jhinjhuvada	23°21'0" N	71°39'30" E	Dug Well	9.17	7.85	8.8	9.62
857	Surendranagar	Kharaghoda	23°11'15" N	71°45'0" E	Dug Well	1.65	1.2	1.5	2.05
858	Surendranagar	Kherwa	23°0'15" N	71°44'45" E	Dug Well	1.54	0.14	0.54	1.01
859	Surendranagar	Kukavati	23°7'22" N	71°28'47" E	Dug Well	3.1	2.1	3.16	3.26
860	Surendranagar	Lakhtar	22°51'30" N	71°47'0" E	Dug Well	5.1		3.97	4.15
861	Surendranagar	Latuda	22°48'47" N	71°36'29" E	Dug Well	2	0.95	1.85	2.3
862	Surendranagar	Limbdi-Pz	22°34'20" N	71°48'30" E	Tube Well	2.43			1.81
863	Surendranagar	Modhvana	22°52'53" N	71°44'8" E	Dug Well	0.4	-0.35	1.05	1.36

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
864	Surendranagar	Moti Moladi	22°25'15" N	71°6'37" E	Dug Well	5.8	1.85	2.9	4.8
865	Surendranagar	Muli	22°39'0" N	71°28'0" E	Dug Well	5.38	3.95	5.32	3.41
866	Surendranagar	Nava Raisngpur	22°44'31" N	71°15'42" E	Dug Well	16.7	16.2	18.18	19.45
867	Surendranagar	Olak	22°55'7" N	71°51'48" E	Dug Well	2.69	1.85	2.95	3.25
868	Surendranagar	Pipli	23°3'36" N	71°44'3" E	Dug Well	0.65		-0.45	
869	Surendranagar	Rajsitapur	22°50'30" N	71°35'30" E	Dug Well	4.05	7.15	3.85	2.7
870	Surendranagar	Ratanpur1	22°51'30" N	71°16'15" E	Dug Well	8.07	5.6	6.95	7.85
871	Surendranagar	Sarla	22°44'0" N	71°22'0" E	Dug Well	8.3	7.75	6.76	7.95
872	Surendranagar	Sayala	22°32'0" N	71°29'0" E	Bore Well	7.65	4.46	4.05	4.68
873	Surendranagar	Shiyani	22°40'0" N	71°49'45" E	Dug Well		2.5	2.72	3.32
874	Surendranagar	Sudamda	22°27'15" N	71°29'6" E	Dug Well	3.88	3.04	3.2	4.66
875	Surendranagar	Surendranagar	22°43'25" N	71°40'15" E	Tube Well	1.56	0.15	1.05	1.34
876	Surendranagar	Surendranagar2	22°43'0" N	71°36'30" E	Dug Well	3.41	2.3	5	5.11
877	Surendranagar	Tarnetar	22°38'30" N	71°13'0" E	Dug Well	15.6	13.5	14.22	15.43
878	Surendranagar	Tavi 1	22°43'13" N	71°51'6" E	Dug Well	0.5	-0.4	-0.3	-0.24
879	Surendranagar	Than	22°34'45" N	71°11'59" E	Dug Well			3.68	5.63
880	Surendranagar	Vanala	22°26'0" N	71°55'15" E	Dug Well	6.44	0.91	1.36	4.43
881	Surendranagar	Visawadi	23°20'30" N	71°44'0" E	Dug Well	3.75			
882	Tapi	Bedchit	20°57'0" N	73°21'5" E	Dug Well	8.4	3.66	4.75	7.4
883	Tapi	Bhurvel (ukai)	21°13'30" N	73°34'45" E	Dug Well	7	3.4	3.7	3.1
884	Tapi	Chapawadi	21°9'5" N	73°23'37" E	Dug Well	7.7	4.62	3.55	4.2
885	Tapi	Karanjvel	21°0'46" N	73°27'29" E	Dug Well	7.45	3.2	4.4	
886	Tapi	Kelkui	21°2'31" N	73°19'24" E	Dug Well	2.5	1.7	1	2.25
887	Tapi	Khedwada (Ashram Falia)	21°16'52" N	73°27'55" E	Dug Well	7.2	3.4	4.3	4.8
888	Tapi	Motichher	21°12'45" N	73°21'44" E	Dug Well	2.73	2.15	2.3	1.95
889	Tapi	Nizar	21°28'50" N	74°12'0" E	Bore Well	12.55	14.85	13.25	12.55
890	Tapi	Nizar1	21°28'38" N	74°11'26" E	Dug Well	12.24	11.63	13.1	
891	Tapi	Uchchhal	21°10'19" N	73°46'9" E	Dug Well	10.37	10.65	9.95	10.65
892	Tapi	Valod	21°3'0" N	73°16'0" E	Dug Well	4.45	3.4	1.4	2.2
893	Tapi	Vyara1	21°6'30" N	73°23'45" E	Dug Well	4	2.17	3.7	4.4
894	The dangs	Aherdi	20°41'30" N	73°37'0" E	Dug Well		2.66	3.25	3.6
895	The dangs	Ahwa Pz	20°45'32" N	73°41'10" E	Bore Well	2.6			2.15
896	The dangs	Ahwa1	20°45'30" N	73°41'0" E	Dug Well	2.6	2.06	1	1.1
897	The dangs	Bari Pada	20°38'24" N	73°41'29" E	Dug Well		3.15	2.26	1.45
898	The dangs	Bori Gaotha 1	20°48'39" N	73°30'11" E	Dug Well	6.95	2.7	1.6	2.05
899	The dangs	Chikhli	20°39'30" N	73°41'15" E	Dug Well	7.63	2.15	1.2	1.12
900	The dangs	Chinchnogaotha	20°48'30" N	73°33'10" E	Dug Well	6.56	2.41	2.56	3.91
901	The dangs	Chinchpada	20°38'15" N	73°46'30" E	Dug Well	3.25	1.5		3.9
902	The dangs	Dhumkal	20°38'45" N	73°47'30" E	Dug Well	5.07	1.3	0.1	0.9
903	The dangs	Gadad	20°38'15" N	73°46'30" E	Dug Well	5.15		3.75	1.2
904	The dangs	Ghubita	20°48'0" N	73°44'15" E	Dug Well	1.88	1.6	0.55	0.65
905	The dangs	Jakana	20°38'0" N	73°44'45" E	Dug Well	11.7		1.75	1.65
906	The dangs	Jamalpada	20°43'54" N	73°31'14" E	Dug Well	7.85	3.2	4.8	3.6
907	The dangs	Kalibel	20°55'15" N	73°34'50" E	Dug Well	2.54	1.85	0.9	1.32
908	The dangs	Mahal	20°55'0" N	73°40'45" E	Dug Well	6.6	4.3	3.05	3.2
909	The dangs	Malegaon	20°36'0" N	73°44'45" E	Dug Well	5.16	1.34	0.4	0.95
910	The dangs	Nadak khadi	20°48'15" N	73°36'45" E	Dug Well	7.47	1.98	1	1.2
911	The dangs	Nana pada	20°42'0" N	73°35'0" E	Dug Well	8.03	2.5	1.98	3.58
912	The dangs	Sakarpatal	20°43'10" N	73°33'25" E	Dug Well	8.4	3.9	1.9	2.8
913	The dangs	Sodmal	20°52'0" N	73°37'0" E	Dug Well	11.9	5.22	4.65	5.45
914	The dangs	Subir	20°55'20" N	73°34'50" E	Dug Well	8.16	2.16	2.4	3
915	The dangs	Umberpada	20°41'0" N	73°43'30" E	Dug Well	10.49	0.15	0.65	1.85
916	The dangs	Vaghai	20°45'50" N	73°30'16" E	Dug Well	12.1			5.4
917	The dangs	Vazat Amba	20°52'42" N	73°31'6" E	Dug Well	7.96	3.4	3.75	4.15
918	Vadodara	Amreshwar	22°13'40" N	73°29'0" E	Dug Well		2.05	2.45	
919	Vadodara	Chella Karamsiya Pz	22°23'48" N	73°25'56" E	Tube Well	2.94	2	1.8	1.74
920	Vadodara	Chhaliyar	22°40'0" N	73°19'0" E	Dug Well		24.92	2.15	
921	Vadodara	Chital PZ II	22°10'55" N	72°56'45" E	Tube Well	21.8	22.15	20.8	19.37

S.N.	District	Well Name	Latitude	Longitude	Well Type	May 2021	Aug 2021	Nov 2021	Jan 2022
922	Vadodara	Chitral Pz-I	22°10'55" N	72°56'45" E	Tube Well	21.87	22.07	21.32	19.8
923	Vadodara	Ghayaj ii	22°14'0" N	73°3'15" E	Tube Well	18.4	20.9	21.35	23.48
924	Vadodara	Juna samalya	22°30'15" N	73°17'0" E	Dug Well	13.7	9.02	9.9	3.88
925	Vadodara	Karamasiya	22°25'15" N	73°25'10" E	Dug Well			13.2	13.2
926	Vadodara	Masor	22°8'30" N	72°54'30" E	Dug Well		10.75	9.05	8.09
927	Vadodara	Patiyapura	22°16'30" N	73°26'30" E	Dug Well	8.4	6.8	4.6	4.76
928	Vadodara	Raypura i	22°16'55" N	73°5'25" E	Tube Well	24.29	24.24	26.7	23.08
929	Vadodara	Saidal	22°17'0" N	73°30'10" E	Dug Well	3	0.65	0.48	1.67
930	Vadodara	Sankarda	22°26'20" N	73°7'20" E	Tube Well		26.15		
931	Vadodara	Sankarda1	22°26'20" N	73°7'20" E	Tube Well			20.39	
932	Vadodara	Sankheda	22°32'20" N	73°10'30" E	Tube Well	22.1	22.05	25.9	
933	Vadodara	Segwa chouki ii	22°0'30" N	73°23'0" E	Tube Well	37			
934	Vadodara	Segwa chowki I	22°0'30" N	73°23'0" E	Tube Well	36.7	34.7	34.54	
935	Vadodara	Sinor	21°54'45" N	73°20'30" E	Dug Well		22.9	23.1	
936	Vadodara	Tundav	22°29'0" N	73°12'10" E	Dug Well	9.6	8.17	8.42	9.11
937	Vadodara	Vadodara I	22°18'17" N	73°16'18" E	Tube Well	15.29	14.9	5.5	13.52
938	Vadodara	Vadodara Ii	22°18'17" N	73°16'18" E	Tube Well	7.32	6.8		5.3
939	Vadodara	Vadodara_Kevada Bag	22°17'36" N	73°11'54" E	Dug Well	7.06	5.94	3.3	2.97
940	Vadodara	Vadodara ONGC	22°16'9" N	73°12'46" E	Dug Well	6.62	6.4	4.95	3.88
941	Vadodara	Vadodara Sama	22°20'33" N	73°12'2" E	Dug Well	2.25	2.3	2.1	-0.07
942	Vadodara	Vadshala Pzi	22°9'47" N	73°10'10" E	Tube Well	18.5		17.75	
943	Vadodara	Vadshala Pz-II	22°9'47" N	73°10'10" E	Tube Well				-0.7
944	Vadodara	Vega	22°9'34" N	73°24'45" E	Dug Well	5.45	5.85	3.45	
945	Vadodara	Vejpur2	22°44'50" N	73°21'20" E	Dug Well		1.62	1.4	
946	Valsad	Awadha	20°31'0" N	73°17'15" E	Dug Well	3.29	2.35	1.95	1.55
947	Valsad	Chavshala	20°19'42" N	73°19'33" E	Dug Well	2.86	2	1.25	1.25
948	Valsad	Dahli (bhilad)	20°15'30" N	72°53'0" E	Dug Well	3.19	1.79		1.89
949	Valsad	Dharampur 3	20°31'51" N	73°9'45" E	Dug Well	12.85	9.75	7.4	7.8
950	Valsad	Dharampur1	20°32'11" N	73°10'14" E	Bore Well	10	4	2.05	6.4
951	Valsad	Dungri	20°41'19" N	72°56'58" E	Dug Well	9.43	5	4.7	5.3
952	Valsad	Fali	20°18'47" N	73°22'34" E	Dug Well	11.22	0.35	0.4	2.15
953	Valsad	Kanadu	20°19'30" N	72°50'30" E	Dug Well	5.2	3.8	1.7	0.3
954	Valsad	Kaparda	20°20'30" N	73°13'0" E	Dug Well	1.65	2.3	2	2.4
955	Valsad	Karwad	20°21'45" N	72°58'30" E	Dug Well	4.43	2.68	3.6	4.25
956	Valsad	Mandwa	20°22'0" N	73°10'30" E	Dug Well				7.5
957	Valsad	Mandwa 1	20°21'57" N	73°10'48" E	Dug Well	10.5	3.59	2.15	
958	Valsad	Motaponda	20°21'30" N	73°2'0" E	Dug Well				4.8
959	Valsad	Muli1	20°38'0" N	73°1'30" E	Dug Well	3.43	1.22	1.8	1.2
960	Valsad	Nanaponda	20°24'50" N	73°7'15" E	Dug Well	10.5	3.96	5.7	7.6
961	Valsad	Tithal	20°36'0" N	72°54'0" E	Dug Well	7.43	3.25	2.55	2.1
962	Valsad	Tumb	20°13'0" N	72°50'30" E	Dug Well	3.7	1.53	3.15	2.85
963	Valsad	Udwada	20°27'49" N	72°55'5" E	Dug Well	5.85	2.55	2.65	3.2
964	Valsad	Umargaon	20°11'30" N	72°45'0" E	Dug Well	3.84	1.9	4.5	3.75
965	Valsad	Vapi Balitha	20°22'49" N	72°54'16" E	Dug Well	7.35	2.3	5.7	8

Annexure IIB

Water levels of the national hydrograph stations in Gujarat 2021-2022 (confined)

S. N.	District	Site Name	LAT	LONG	May 2021, m bgl	Elevation, m	WT Elevation, m MSL
1	Ahmedabad	Ahmedabad cant_Pz_I (Rep)	23.072500	72.604167	96.12	56.0	-40.12
2	Ahmedabad	Bagodara_Pz_I	22.641667	72.213889	9.47	12.0	2.53
3	Ahmedabad	Bopal_Pz_I	23.038611	72.457778	34.18	45.0	10.82
4	Ahmedabad	Hansalpur_Pz-I	23.088889	72.016667	21.35	23.0	1.65
5	Ahmedabad	Jholapur_Pz_I	22.987500	72.204167	73.59	28.0	-45.59
6	Anand	Hariyan_Pz	22.404167	72.672222	4.74	15.0	10.26
7	Anand	Kathana_Pz_I	22.294444	72.790278	12.42	25.0	12.58
8	Anand	Petlad_Pz_I	22.475000	72.800000	11.10	33.0	21.90
9	Anand	Tarapur Pz-I	22.486111	72.661111	3.36	24.0	20.64
10	Anand	Walmi_I	22.511111	72.981944	22.85	49.0	26.15
11	Banaskantha	Bhabhar_iii	24.059722	71.596111	27.76	37.0	9.24
12	Banaskantha	Deesa Pzi	24.256667	72.187500	98.86	143.0	44.14
13	Banaskantha	Dhanera Pz-I	24.506111	72.029167	123.56	136.0	12.44
14	Banaskantha	Lakhani_i	24.313889	71.818056	89.25	82.0	-7.25
15	Banaskantha	Mahi_Pz	24.028611	72.380833	160.47	159.0	-1.47
16	Banaskantha	Naroli Pzi	24.616389	71.638611	7.27	54.0	46.73
17	Banaskantha	Palanpur_Pz	24.172222	72.450000	39.63	226.0	186.37
18	Banaskantha	Vav_ii	24.361111	71.511111	34.50	52.0	17.50
19	Gandhinagar	Adalaj_Pz_I	23.175000	72.558333	109.10	64.0	-45.10
20	Gandhinagar	Amrapur Pzi	23.373611	72.705000	106.20	94.0	-12.20
21	Gandhinagar	Charada	23.481667	72.651667	101.78	110.0	8.22
22	Gandhinagar	Dahegam_I	23.170833	72.841667	73.47	74.0	0.53
23	Gandhinagar	Mansa	23.423056	72.665000	119.88	105.0	-14.88
24	Gandhinagar	Nardipur_i	23.331944	72.566667	97.18	81.0	-16.18
25	Gandhinagar	Pethapur_Pz-I	23.267222	72.673056	109.05	81.0	-28.05
26	Gandhinagar	Sardhav Pz -I	23.297222	72.573889	122.98	82.0	-40.98
27	Kheda	Matar I	22.709722	72.668056	16.92	27.0	10.08
28	Kheda	Nadiad Pz-I	22.711111	72.866667	19.23	36.0	16.77
29	Kheda	Sarkhej_I	22.986111	72.880556	24.25	53.0	28.75
30	Mahesana	Daran_Pz-I	23.206389	72.279722	102.47	48.0	-54.47
31	Mahesana	Jotana Pzi	23.473889	72.287778	138.67	74.0	-64.67
32	Mahesana	Karalli_(i)	23.804167	72.486111	133.98	133.0	-0.98
33	Mahesana	Mehsana_I	23.597500	72.398611	152.45	91.0	-61.45
34	Mahesana	Thol Pz -IV	23.130556	72.376111	113.37	58.0	-55.37
35	Patan	Jangral Pzi	23.694722	71.693889	160.80	24.0	-136.80
36	Patan	Lanwa Pz-I	23.686667	72.248611	131.10	77.0	-54.10

Annexure III
Groundwater Table of Gujarat state during May 2021

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
1	Ahmedabad	Bagodara_Pz_II	22.641667	72.213889	6.02	11.70	5.68
2	Ahmedabad	Bopal_Pz_III	23.038611	72.457778	3.70	44.10	40.40
3	Ahmedabad	Dalod	23.366667	71.966667	6.60	31.00	24.40
4	Ahmedabad	Devalia	22.377778	71.986111	20.40	24.40	4.00
5	Ahmedabad	Dhandhuka1	22.375000	71.986111	2.90	22.70	19.80
6	Ahmedabad	Endla	23.272222	72.058333	1.96	34.30	32.34
7	Ahmedabad	Gamph	22.358333	72.166667	1.55	16.00	14.45
8	Ahmedabad	Ghuma	23.033333	72.445833	3.90	44.00	40.10
9	Ahmedabad	Hansalpur_Pz-III	23.088889	72.016667	4.05	23.70	19.65
10	Ahmedabad	Kumarkhan	22.900000	72.016667	2.55	17.00	14.45
11	Ahmedabad	Kundal	22.901389	72.223611	11.80	22.00	10.20
12	Ahmedabad	Pachcham_Pz	22.232222	72.178889	1.63	9.10	7.47
13	Ahmedabad	Sanand II	23.003333	72.373611	16.55	35.00	18.45
14	Ahmedabad	Tagadi1	22.295833	71.947222	7.42	23.00	15.58
15	Ahmedabad	Upardhal1	22.850000	72.145833	11.90	20.00	8.10
16	Ahmedabad	Vagad(Repl)_Pz	22.360278	71.868056	4.02	40.20	36.18
17	Ahmedabad	Viramgam2	23.141667	72.033333	3.02	29.00	25.98
18	Amreli	Amreli	21.608333	71.225000	4.54	127.00	122.46
19	Amreli	Amreli_Pz	21.612500	71.225000	6.46	128.00	121.54
20	Amreli	Ankadia mota	21.645833	71.108333	5.81	153.00	147.19
21	Amreli	Bagasara	21.479167	70.962500	8.81	152.00	143.19
22	Amreli	Bherai	20.868056	71.362500	0.68	8.30	7.62
23	Amreli	Bhuva	21.432778	71.363889	3.92	86.20	82.28
24	Amreli	Chalala	21.416667	71.166667	22.67	135.00	112.33
25	Amreli	Charkhadia_Pz	21.387500	71.291667	24.39	112.00	87.61
26	Amreli	Dhari_Pz	21.326389	71.018056	7.00	211.00	204.00
27	Amreli	Dhrai Balmukand	21.834167	71.217222	6.96	191.30	184.34
28	Amreli	Fifad	21.436111	71.540278	6.07	66.70	60.63
29	Amreli	Gopalpura Vanda Pz	21.375000	71.491667	18.39	98.00	79.61
30	Amreli	Goradka	21.225000	71.411111	2.15	134.30	132.15
31	Amreli	Govadka	21.541667	71.158333	4.20	113.00	108.80
32	Amreli	Ingoral	21.233333	71.200000	9.48	267.00	257.52
33	Amreli	Jafrabad	20.866667	71.362500	2.00	17.00	15.00
34	Amreli	Kadiyali	20.908333	71.360278	4.56	8.30	3.74
35	Amreli	Kerala	21.397222	71.216667	36.73	127.30	90.57
36	Amreli	Khamba	21.150000	71.238889	3.73	219.70	215.97
37	Amreli	Khamba_Pz	21.141667	71.254167	5.90	202.00	196.10
38	Amreli	Kunkavav	21.662500	70.983333	9.13	173.00	163.87
39	Amreli	Lathi	21.720833	71.383333	2.49	121.00	118.51
40	Amreli	Mandal	21.100000	71.583333	11.26	46.00	34.74
41	Amreli	Manila Pz	21.433333	71.166667	19.78	129.00	109.22
42	Amreli	Morjhar	21.376111	71.118611	43.77	171.00	127.23
43	Amreli	Piyava	21.383333	71.466667	19.37	98.00	78.63
44	Amreli	Punjapadar	21.525000	71.358333	2.74	91.00	88.26
45	Amreli	Sanaria	21.557778	71.468056	3.40	85.70	82.30

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
46	Amreli	Tajpur	21.725000	71.466667	21.56	114.00	92.44
47	Amreli	Timbi2	20.895833	71.204167	3.92	35.00	31.08
48	Amreli	Trakuda	21.016667	71.280556	8.30	81.30	73.00
49	Amreli	Untvad	21.916667	71.216667	12.03	192.00	179.97
50	Amreli	Vaghania juna	21.583333	70.966667	3.39	152.00	148.61
51	Amreli	Vanda	21.389722	71.507500	6.73	86.00	79.27
52	Amreli	Vankiya	21.520833	71.136111	11.96	120.30	108.34
53	Amreli	Vankiya1	21.233333	71.250000	21.58	233.00	211.42
54	Amreli	Virpur	21.254167	71.150000	10.59	242.00	231.41
55	Anand	Anklav2	22.383333	73.008333	24.78	37.00	12.22
56	Anand	Bandhani	22.541667	72.816667	6.05	34.00	27.95
57	Anand	Bhadran	22.355556	72.897222	16.70	28.10	11.40
58	Anand	Borsad I	22.409722	72.901389	4.45	34.30	29.85
59	Anand	Borsad_Pz_II	22.409722	72.901389	4.50	34.30	29.80
60	Anand	Dali	22.275000	72.766667	3.72	24.00	20.28
61	Anand	Dharmaj	22.420833	72.794444	16.65	23.70	7.05
62	Anand	Ghora	22.691667	73.054167	5.66	52.00	46.34
63	Anand	Kansaril	22.341667	72.650000	11.50	14.00	2.50
64	Anand	Petlad_Pz_II	22.475000	72.800000	12.72	33.00	20.28
65	Anand	Ras	22.345833	72.833333	3.27	24.00	20.73
66	Anand	Tarapur Pz-II	22.486111	72.661111	3.21	25.10	21.89
67	Anand	Walmi_II	22.508333	72.982222	27.92	49.30	21.38
68	Arvalli	Alwakampa	23.274722	73.208333	6.30	104.00	97.70
69	Arvalli	Bayad_Pz	23.216667	73.229167	11.40	104.00	92.60
70	Arvalli	Bhiloda2	23.766667	73.272222	5.30	205.00	199.70
71	Arvalli	Boral	23.125000	73.208333	11.40	104.00	92.60
72	Arvalli	Dhansura1	23.350000	73.200000	7.30	131.00	123.70
73	Arvalli	Hamirpur	23.408333	73.458333	14.00	148.00	134.00
74	Arvalli	Karanpur	23.333333	73.300000	3.40	134.00	130.60
75	Arvalli	Malpur_Pz	23.341667	73.468056	11.40	150.00	138.60
76	Arvalli	Modasa	23.462500	73.308333	6.83	147.00	140.17
77	Arvalli	Sathamba	23.175000	73.337500	23.40	148.00	124.60
78	Arvalli	Seenawad	23.486389	73.398611	11.20	163.10	151.90
79	Arvalli	Shamlaji	23.686111	73.366667	6.55	218.30	211.75
80	Arvalli	Vejpur_Pz	23.797222	73.220833	12.70	216.00	203.30
81	Banas Kantha	Ambaji_Pz	24.336111	72.847222	11.36	454.30	442.94
82	Banas Kantha	Amirgadh	24.405556	72.641667	12.87	227.30	214.43
83	Banas Kantha	Danta	24.188889	72.765278	9.77	279.60	269.83
84	Banas Kantha	Dantiwada	24.277500	72.261389	27.34	158.70	131.36
85	Banas Kantha	Dantiwada	24.188889	72.760556	33.86	271.80	237.94
86	Banas Kantha	Ganapipli	24.297222	72.947222	8.02	259.20	251.18
87	Banas Kantha	Gangodra	24.436111	72.365278	22.26	196.60	174.34
88	Banas Kantha	Iqbalgarh	24.345833	72.537500	31.52	210.00	178.48
89	Banas Kantha	Khoda	24.658333	71.766667	24.78	61.00	36.22
90	Banas Kantha	Meda	24.397222	72.284722	8.35	173.80	165.45
91	Banas Kantha	Mohabbat gadh	24.166667	72.727778	20.02	252.30	232.28
92	Banas Kantha	Ratanpur2	24.175000	72.745833	15.74	262.00	246.26
93	Banas Kantha	Sodapur	24.401389	72.295833	20.57	173.30	152.73
94	Banas Kantha	Tharad Pziii	24.385000	71.619444	9.88	46.30	36.42

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
95	Bharuch	Bharuch	21.700000	73.004167	7.35	6.00	-1.35
96	Bharuch	Bharuch I	21.708333	73.000000	17.30	21.00	3.70
97	Bharuch	Bhensli	21.725000	72.750000	2.10	8.00	5.90
98	Bharuch	Chhindra	22.126667	72.669722	7.08	11.70	4.62
99	Bharuch	Dahegam	22.184722	72.597222	5.72	11.60	5.88
100	Bharuch	Hansot	21.583333	72.808333	7.50	14.00	6.50
101	Bharuch	Ilav	21.450000	72.800000	5.65	13.00	7.35
102	Bharuch	Jambusar	22.052778	72.805556	7.05	14.10	7.05
103	Bharuch	Jokhla	21.595833	73.169167	5.80	46.00	40.20
104	Bharuch	Kalak1	22.018611	72.763056	7.00	8.60	1.60
105	Bharuch	Kaswa	21.683333	72.816667	6.95	11.00	4.05
106	Bharuch	Kavi	22.193611	72.639444	6.30	15.90	9.60
107	Bharuch	Kondh	21.580556	73.068056	4.06	35.10	31.04
108	Bharuch	Luhara	21.675000	72.558333	1.40	10.00	8.60
109	Bharuch	Mahegam1	21.683333	72.758333	4.35	6.00	1.65
110	Bharuch	Motwan	21.555556	72.887500	1.90	12.30	10.40
111	Bharuch	Navetha	21.707778	72.830556	6.20	9.40	3.20
112	Bharuch	Netrang(Rep)_Pz	21.641667	73.366667	11.98	126.00	114.02
113	Bharuch	Netrang1	21.633333	73.366667	8.70	128.00	119.30
114	Bharuch	Nirnavi	21.791667	72.668056	7.30	8.70	1.40
115	Bharuch	Panoli	21.537500	72.975000	2.19	26.00	23.81
116	Bharuch	Raymal	21.520833	72.820833	1.10	13.00	11.90
117	Bharuch	Roja tankaria	21.916667	72.791667	8.15	7.00	-1.15
118	Bharuch	Sahol	21.472778	72.809722	4.00	12.20	8.20
119	Bharuch	Sajod	21.616667	72.923611	3.90	10.00	6.10
120	Bharuch	Sarod	22.158333	72.758333	9.30	19.00	9.70
121	Bharuch	Sindhav	22.026944	72.636111	6.63	6.00	-0.63
122	Bharuch	Tankari	21.991667	72.675000	4.05	6.00	1.95
123	Bharuch	Utraj	21.591667	72.825000	4.30	6.00	1.70
124	Bharuch	Wadoli	21.425000	72.829167	5.27	10.00	4.73
125	Bhavnagar	Ambala	21.711111	71.841667	21.96	55.00	33.04
126	Bhavnagar	Ayodhayapuram	21.960278	71.886389	7.16	17.40	10.24
127	Bhavnagar	Bhavnagar1	21.766667	72.150000	3.92	25.00	21.08
128	Bhavnagar	Bhudel	21.691667	72.158333	3.82	33.00	29.18
129	Bhavnagar	Bhumbhali	21.679444	72.244167	3.41	7.70	4.29
130	Bhavnagar	Bhutia	21.747222	71.700000	22.30	59.00	36.70
131	Bhavnagar	Bora	21.191111	71.928889	20.94	18.70	-2.24
132	Bhavnagar	Datha	21.220833	71.950000	1.03	31.00	29.97
133	Bhavnagar	Dudhala	21.137500	71.658333	7.80	53.00	45.20
134	Bhavnagar	Gariyadhar	21.543056	71.565278	12.84	97.60	84.76
135	Bhavnagar	Ghogha1	21.683333	72.279167	0.74	12.00	11.26
136	Bhavnagar	Jalia	21.800000	71.616667	10.59	70.00	59.41
137	Bhavnagar	Jesar_Pz	21.371389	71.670278	4.93	95.80	90.87
138	Bhavnagar	Khijadiya	21.637500	71.700000	8.29	95.00	86.71
139	Bhavnagar	Kundheli	21.379444	71.980556	21.65	40.80	19.15
140	Bhavnagar	Longadi	21.213889	71.883333	1.84	38.30	36.46
141	Bhavnagar	Mahuva1	21.095833	71.766667	9.31	21.00	11.69
142	Bhavnagar	Motividal	21.197222	71.550000	2.29	114.70	112.41
143	Bhavnagar	Palitana1	21.525000	71.823611	6.48	67.70	61.22

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
144	Bhavnagar	Panchpipla	21.550000	71.720833	0.01	82.00	81.99
145	Bhavnagar	Panvi1	22.075000	71.891667	3.94	16.00	12.06
146	Bhavnagar	Pasvi	21.291667	71.966667	14.00	51.00	37.00
147	Bhavnagar	Piparla	21.636389	71.918889	1.72	93.70	91.98
148	Bhavnagar	Porbada	21.800000	71.700000	12.98	45.00	32.02
149	Bhavnagar	Sajnasar	21.425000	71.912500	2.23	66.00	63.77
150	Bhavnagar	Sandhida	21.687500	71.758333	1.83	84.00	82.17
151	Bhavnagar	Satanes	21.441667	71.837500	6.55	85.00	78.45
152	Bhavnagar	Shantinagar	21.245833	71.650000	12.72	123.00	110.28
153	Bhavnagar	Talaja2	21.366667	72.016667	4.40	21.00	16.60
154	Bhavnagar	Timbi2	21.831667	71.766111	2.88	29.30	26.42
155	Bhavnagar	Trapaj	21.425000	72.095833	9.91	54.00	44.09
156	Bhavnagar	Umrala	21.847222	71.808333	6.12	23.30	17.18
157	Bhavnagar	Vadal	21.476944	71.806111	3.14	254.20	251.06
158	Bhavnagar	Vallabhipur1	21.883333	71.877778	3.08	16.00	12.92
159	Bhavnagar	Vallbhipur	21.883333	71.875000	2.44	16.00	13.56
160	Bhavnagar	Vavdi	21.568056	72.198056	12.13	70.70	58.57
161	Botad	Barvala	22.150000	71.891667	4.39	28.00	23.61
162	Botad	Dhasa	21.800000	71.508333	5.71	90.00	84.29
163	Botad	Kundali	22.269444	71.700000	9.97	80.30	70.33
164	Botad	Lonjdhara	22.097222	71.897222	13.22	23.10	9.88
165	Botad	Ningala	22.018056	71.700000	4.40	56.30	51.90
166	Botad	Rajpada	22.308333	71.691667	15.09	81.00	65.91
167	Botad	Tardhera	22.229167	71.604167	21.86	112.00	90.14
168	Botad	Tatam	22.058333	71.633333	10.30	79.00	68.70
169	Chhota Udaipur	Bhindol	22.200000	73.900000	12.30	109.00	96.70
170	Chhota Udaipur	Bodeli	22.270833	73.716667	6.48	87.00	80.52
171	Chhota Udaipur	Chota udepur	22.308333	74.016667	5.23	151.00	145.77
172	Chhota Udaipur	Ferkuva	22.366667	74.208333	10.35	241.00	230.65
173	Chhota Udaipur	Ghamodi	22.366667	74.075000	9.85	174.00	164.15
174	Chhota Udaipur	Govindpura	22.211111	73.741389	6.30	78.80	72.50
175	Chhota Udaipur	Kevadi	22.516667	73.941667	7.30	198.00	190.70
176	Chhota Udaipur	Kosindra Pz-I	22.146667	73.755556	3.96	83.30	79.34
177	Chhota Udaipur	Moti chikhali	22.011111	74.083333	3.20	296.70	293.50
178	Chhota Udaipur	Panwad	22.200000	74.041667	9.40	174.00	164.60
179	Chhota Udaipur	Sengpur	22.037500	73.887500	7.40	162.00	154.60
180	Chhota Udaipur	Vadtalav Pz	22.258611	73.783889	13.50	97.00	83.50
181	Chhota Udaipur	Vagudan	22.066667	74.141667	6.50	263.00	256.50
182	Dahod	Dadhela	22.837500	74.066667	7.95	262.00	254.05
183	Dahod	Dahod	22.840278	74.262500	1.70	305.00	303.30
184	Dahod	Dahod2	22.825000	74.233333	7.57	310.00	302.43
185	Dahod	Devgadh Baria	22.700000	73.913889	10.80	200.70	189.90
186	Dahod	Devgadh bariya	22.700000	73.916667	14.80	207.00	192.20
187	Dahod	Dhanpur	22.633333	74.104167	11.75	258.00	246.25
188	Dahod	Fatepura(Karodia)	23.254167	74.029167	13.96	188.00	174.04
189	Dahod	Garbara	22.680556	74.312500	3.85	353.70	349.85
190	Dahod	Jhalod	23.093056	74.147222	9.97	269.70	259.73
191	Dahod	Kanjetha	22.580556	74.113889	9.95	253.20	243.25
192	Dahod	Khandania	22.704167	73.837500	12.60	220.00	207.40

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
193	Dahod	Limbdi2	23.004167	74.158333	3.60	277.00	273.40
194	Dahod	Limkheda	22.830556	73.986111	7.65	205.00	197.35
195	Dahod	Mirakhedi	22.933333	74.200000	7.30	323.00	315.70
196	Dahod	Panchwada	22.729167	74.308333	4.50	327.00	322.50
197	Dahod	Pipero	22.647222	74.090278	11.85	244.10	232.25
198	Dahod	Salaya1	22.808333	73.891667	15.52	200.00	184.48
199	Dahod	Sukhsar	23.150000	74.050000	8.85	196.00	187.15
200	Dahod	Tokarba	22.604167	74.037500	7.15	232.00	224.85
201	Dahod	Varamkheda	22.800000	74.275000	2.55	298.00	295.45
202	Dahod	Wadia	22.900000	74.050000	8.34	229.00	220.66
203	Daman	Ambawadi	20.402778	72.844444	3.20	14.10	10.90
204	Daman	Dalwada	20.443056	72.851944	9.75	22.40	12.65
205	Daman	Daman	20.424167	72.850278	5.21	17.00	11.79
206	Daman	Warkund	20.408056	72.859722	4.25	9.30	5.05
207	Devbhumi Dwarka	Ambardi	21.916389	69.858056	14.34	82.30	67.96
208	Devbhumi Dwarka	Aramda	22.433333	69.041667	5.10	7.00	1.90
209	Devbhumi Dwarka	Bhadthar	22.079167	69.579167	15.10	48.00	32.90
210	Devbhumi Dwarka	Bhanvad	21.927778	69.795833	4.70	63.00	58.30
211	Devbhumi Dwarka	Bhatia	22.091667	69.301389	3.91	36.30	32.39
212	Devbhumi Dwarka	Bhatiya	22.094444	69.266667	2.15	20.30	18.15
213	Devbhumi Dwarka	Bhogat1	21.991667	69.245833	10.45	9.00	-1.45
214	Devbhumi Dwarka	Dwarka	22.245833	68.958333	7.50	12.00	4.50
215	Devbhumi Dwarka	Juvanpur	22.170833	69.366667	14.00	44.00	30.00
216	Devbhumi Dwarka	Kajuda	22.333333	69.708333	9.20	22.00	12.80
217	Devbhumi Dwarka	Khambaliya	22.209722	69.645833	13.55	38.30	24.75
218	Devbhumi Dwarka	Khirsara	21.979167	69.600000	13.09	38.00	24.91
219	Devbhumi Dwarka	Kuvadia	22.201389	69.583333	4.85	44.00	39.15
220	Devbhumi Dwarka	Modpar	21.858333	69.808333	16.40	87.00	70.60
221	Devbhumi Dwarka	Mojap	22.366667	68.983333	6.64	10.00	3.36
222	Devbhumi Dwarka	Mota kalawad	21.908333	69.829167	28.65	69.00	40.35
223	Devbhumi Dwarka	Pindara1	22.247222	69.258333	8.50	15.00	6.50
224	Devbhumi Dwarka	Raval	21.929722	69.491944	4.85	7.40	2.55
225	Devbhumi Dwarka	Samrasar1	22.375000	69.104167	7.80	9.00	1.20
226	Devbhumi Dwarka	Vadtara	22.208333	69.500000	12.00	43.00	31.00
227	Devbhumi Dwarka	Vinjalpur	22.150000	69.600000	26.20	61.00	34.80
228	Diu	Chakarteeth_Pz	20.708333	70.968889	5.58	7.30	1.72
229	Gandhinagar	Adalaj_Pz_III	23.175000	72.558333	26.02	64.00	37.98
230	Gandhinagar	Dahegam II	23.170833	72.841667	7.51	75.00	67.49
231	Gandhinagar	Kasturinagar(IFFCO)	23.190278	72.552778	14.20	74.00	59.80
232	Gandhinagar	Lodra	23.463889	72.720278	52.26	110.90	58.64
233	Gandhinagar	Paliya	23.179167	72.841667	2.80	78.00	75.20
234	Gandhinagar	Pethapur_Pz-III	23.267222	72.673056	35.55	81.20	45.65
235	Gandhinagar	Serthapara1	23.194444	72.566667	20.45	66.70	46.25
236	Gir Somnath	Ajotha	20.901944	70.518056	20.15	29.20	9.05
237	Gir Somnath	Bhim Deval	20.977500	70.609167	11.45	80.00	68.55
238	Gir Somnath	Dhokadva	20.958333	71.070833	9.55	75.00	65.45
239	Gir Somnath	Gangda_Pz	20.858333	71.166667	3.98	22.00	18.02
240	Gir Somnath	Girgadhada	20.925000	70.916667	5.43	84.00	78.57
241	Gir Somnath	Govindpura2	20.945833	70.395833	27.52	27.00	-0.52

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
242	Gir Somnath	Jambur[madhapar	21.029167	70.608333	7.02	113.00	105.98
243	Gir Somnath	Jamvala1	20.983333	70.762500	4.96	97.00	92.04
244	Gir Somnath	Jargla Jargali	20.880833	70.984167	5.65	55.00	49.35
245	Gir Somnath	Kansari	20.870000	71.051111	5.76	44.30	38.54
246	Gir Somnath	Kesariya1	20.796389	70.941944	16.64	28.40	11.76
247	Gir Somnath	Kodinar	20.800000	70.691667	9.07	15.00	5.93
248	Gir Somnath	Kodinar1	20.800000	70.691667	11.50	15.00	3.50
249	Gir Somnath	Moraj	20.983333	70.436111	10.64	55.70	45.06
250	Gir Somnath	Prasli	20.850833	70.669167	16.86	23.00	6.14
251	Gir Somnath	Sametar	20.854167	71.120833	6.02	31.00	24.98
252	Gir Somnath	Talala_Pz	21.063889	70.538333	9.95	94.30	84.35
253	Gir Somnath	Talala1	21.051389	70.525000	10.12	87.30	77.18
254	Gir Somnath	Una2	20.825000	71.041667	2.81	31.00	28.19
255	Jamnagar	Balwa	21.904167	69.958333	14.62	116.00	101.38
256	Jamnagar	Bed1	22.437500	69.900000	8.04	16.00	7.96
257	Jamnagar	Bedanpur	22.683333	70.316667	2.00	13.00	11.00
258	Jamnagar	Dhrol2	22.566667	70.416667	3.36	32.00	28.64
259	Jamnagar	Dudhai2	22.791667	70.504167	5.05	14.00	8.95
260	Jamnagar	Gordhanpur	22.450000	70.001389	3.10	13.70	10.60
261	Jamnagar	Jambuda	22.525000	70.204167	7.19	8.00	0.81
262	Jamnagar	Jamjodhpur	21.905556	70.030556	5.03	101.00	95.97
263	Jamnagar	Jamnagar1	22.470833	70.050000	20.53	22.00	1.47
264	Jamnagar	Jamnagar2	22.458333	70.079167	4.19	16.00	11.81
265	Jamnagar	Kalawad	22.216667	70.383333	3.03	88.00	84.97
266	Jamnagar	Moti khavdi	22.387500	69.866667	11.33	23.00	11.67
267	Jamnagar	Moti matli	22.316667	70.263889	15.75	75.30	59.55
268	Jamnagar	Nikava	22.191667	70.533333	2.70	126.00	123.30
269	Jamnagar	Seth vadala	22.033333	70.125000	9.15	149.00	139.85
270	Jamnagar	Vijarkha	22.416667	70.183333	4.40	29.00	24.60
271	Junagadh	Alwani	21.230556	70.637500	3.15	216.00	212.85
272	Junagadh	Arena	21.080556	70.176389	11.63	11.60	-0.03
273	Junagadh	Bamanwara	21.220833	70.055556	8.61	12.30	3.69
274	Junagadh	Bhatsimroli	21.223611	70.183333	18.90	44.00	25.10
275	Junagadh	Bilkha	21.438889	70.600000	11.20	95.30	84.10
276	Junagadh	Chorwad	21.041667	70.216667	12.42	18.00	5.58
277	Junagadh	Gadu	21.054167	70.279167	37.00	31.00	-6.00
278	Junagadh	Galodar	21.147222	70.275000	20.96	54.00	33.04
279	Junagadh	Goraj1	21.183333	70.154167	16.50	37.00	20.50
280	Junagadh	Junagadh	21.509444	70.462222	13.75	100.30	86.55
281	Junagadh	Junagadh1	21.516667	70.458333	7.35	90.00	82.65
282	Junagadh	Juthal	21.166667	70.266667	6.43	62.00	55.57
283	Junagadh	Kalej	21.248611	70.058333	12.65	13.30	0.65
284	Junagadh	Kanek	21.030556	70.241667	9.65	13.30	3.65
285	Junagadh	Kewarda	21.266667	70.208333	4.50	52.00	47.50
286	Junagadh	Khambalia1	21.044444	70.191667	8.78	11.00	2.22
287	Junagadh	Khokharda	21.420833	70.316667	17.90	37.00	19.10
288	Junagadh	Khorada1	21.063889	70.173611	4.65	11.30	6.65
289	Junagadh	Khoras ahir	21.370833	70.338889	15.75	47.00	31.25
290	Junagadh	Lohej	21.166667	70.066667	16.00	15.00	-1.00

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
291	Junagadh	Mandawad	21.358333	70.745833	14.51	131.00	116.49
292	Junagadh	Mangrol	21.125000	70.108333	18.40	14.00	-4.40
293	Junagadh	Mendarda1	21.325000	70.433333	18.00	86.00	68.00
294	Junagadh	Patla	21.604167	70.569167	10.35	106.00	95.65
295	Junagadh	Prempara	21.300000	70.700000	17.50	146.00	128.50
296	Junagadh	Seriakhan	21.133333	70.248611	20.38	47.70	27.32
297	Junagadh	Shardagram	21.104167	70.152778	9.60	10.70	1.10
298	Junagadh	Sil	21.185556	70.046389	5.64	11.10	5.46
299	Junagadh	Visavadar	21.338889	70.748611	15.03	135.00	119.97
300	Kachchh	Asambia mota_Pz	22.968056	69.451389	3.46	67.80	64.34
301	Kachchh	Asambia mota1	22.968056	69.437500	6.30	61.00	54.70
302	Kachchh	Bambhdai	22.938889	69.082778	4.61	7.70	3.09
303	Kachchh	Bhadreshwar	22.900000	69.900000	5.10	10.00	4.90
304	Kachchh	Bhuj (Circuit House)	23.250000	69.666667	14.94	105.00	90.06
305	Kachchh	Deshalpur rapar	23.747222	70.679167	11.75	13.70	1.95
306	Kachchh	Devisar	23.402778	69.329167	11.85	82.70	70.85
307	Kachchh	Dunai	23.050000	69.500000	9.83	108.00	98.17
308	Kachchh	Haboi	23.358333	69.866667	1.39	112.00	110.61
309	Kachchh	Karagoga	22.941667	69.662500	0.55	51.00	50.45
310	Kachchh	Kharoi	23.454167	70.350000	5.65	39.00	33.35
311	Kachchh	Khavada	23.838889	69.730556	4.81	16.80	11.99
312	Kachchh	Kotadi	23.041667	69.191667	3.92	77.00	73.08
313	Kachchh	Kotaya	23.041667	69.075000	10.62	35.00	24.38
314	Kachchh	Kuda	23.534444	70.440278	30.54	58.90	28.36
315	Kachchh	Lakhpat	23.823056	68.775000	6.86	14.30	7.44
316	Kachchh	Luni	22.873333	69.811667	5.56	13.00	7.44
317	Kachchh	Mata no madh	23.533333	68.950000	5.71	91.00	85.29
318	Kachchh	Mothala	23.208333	69.125000	2.40	83.00	80.60
319	Kachchh	Moti cher	23.758333	68.675000	2.53	16.00	13.47
320	Kachchh	Mundra	22.827778	69.720833	3.44	7.00	3.56
321	Kachchh	Naliya	23.255833	68.840000	10.45	24.00	13.55
322	Kachchh	Naliya (Bus S)	23.266667	68.833333	9.14	21.00	11.86
323	Kachchh	Rapar	23.575000	70.641667	27.25	54.00	26.75
324	Kachchh	Rapar2	23.566667	70.637500	27.76	63.00	35.24
325	Kachchh	Ratanpur Khadir1	23.860833	70.363056	14.35	37.00	22.65
326	Kachchh	Rawapar	23.516667	69.075000	14.70	71.00	56.30
327	Kachchh	Rudramata	23.391667	69.708333	11.40	41.00	29.60
328	Kachchh	Samkhiari	23.300000	70.508333	4.60	42.00	37.40
329	Kachchh	Sedat	23.171389	69.637500	8.80	221.00	212.20
330	Kachchh	Shinaya	23.033333	70.054167	9.15	40.00	30.85
331	Kachchh	Sukhpar	23.208333	69.616667	13.10	120.00	106.90
332	Kachchh	Tera	23.283333	68.947222	10.07	46.30	36.23
333	Kachchh	Vinjhan1	23.100000	69.025000	7.85	47.00	39.15
334	Kheda	Alina	22.808333	73.058333	8.50	49.00	40.50
335	Kheda	Dakor	22.762500	73.169444	6.50	60.30	53.80
336	Kheda	Kalesar	22.720833	73.191667	4.20	59.00	54.80
337	Kheda	Kapadvanj	23.004167	73.091667	12.10	73.00	60.90
338	Kheda	Kheda	22.737500	72.704167	3.25	25.00	21.75
339	Kheda	Ladvel	22.908333	73.120833	1.30	69.00	67.70

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
340	Kheda	Mahudha	22.783333	72.941667	3.45	40.00	36.55
341	Kheda	Nes Pz	22.708333	73.202778	8.94	61.70	52.76
342	Kheda	Sarkhej _ II	22.986111	72.880556	31.29	54.20	22.91
343	Kheda	Sarkhej _ Pz-III	22.986111	72.880556	36.93	54.20	17.27
344	Kheda	Shekhupura	22.575000	72.625000	0.28	24.00	23.72
345	Kheda	Vaso	22.661111	72.754167	5.77	32.00	26.23
346	Kheda	Vyas vasna	23.105556	73.104167	25.12	86.00	60.88
347	Mahesana	Asjol	23.508333	72.183333	5.70	56.00	50.30
348	Mahesana	Bhandupara	23.725000	72.383333	12.21	101.00	88.79
349	Mahesana	Budasan	23.287500	72.375000	5.39	62.00	56.61
350	Mahesana	Dharpura	23.545833	72.112500	5.89	51.00	45.11
351	Mahesana	Jaska(Sy_4")Pz_ II	23.823611	72.534722	16.40	145.40	129.00
352	Mahesana	Jotana Pzii	23.473889	72.287778	16.57	73.80	57.23
353	Mahesana	Kalyanpur	23.126944	72.193056	3.50	34.30	30.80
354	Mahesana	Karalli (iii)	23.804167	72.486111	11.77	132.30	120.53
355	Mahesana	Kheralu(shallow	23.897778	72.610556	3.04	176.20	173.16
356	Mahesana	Kheralu1	23.887500	72.612500	10.91	174.00	163.09
357	Mahesana	Maguna	23.577778	72.288889	6.95	72.60	65.65
358	Mahesana	Mau	23.510278	72.519167	9.00	100.70	91.70
359	Mahesana	Padhadya	23.522500	72.533333	11.96	106.00	94.04
360	Mahesana	Panchot	23.629167	72.341667	6.00	82.00	76.00
361	Mahesana	Rampura1	23.891667	72.516667	10.82	160.00	149.18
362	Mahesana	Sihi	23.800000	72.350000	11.10	111.00	99.90
363	Mahesana	Tarabh	23.758333	72.458333	8.62	122.00	113.38
364	Mahesana	Unawa	23.766667	72.362500	3.13	110.00	106.87
365	Mahesana	Vidaj	23.247222	72.300000	3.04	56.70	53.66
366	Mahesana	Visnagar iv	23.700000	72.533333	3.70	125.00	121.30
367	Mahisagar	Balasinor	22.958333	73.336111	4.25	92.00	87.75
368	Mahisagar	Balasinor1	22.950000	73.325000	5.97	92.00	86.03
369	Mahisagar	Bar	23.168056	73.411111	6.54	147.30	140.76
370	Mahisagar	Bavaliya_Pz	23.306667	73.555000	27.85	166.00	138.15
371	Mahisagar	Gadhar	23.150000	73.775000	12.65	149.00	136.35
372	Mahisagar	Juna vasadra	23.083333	73.362500	3.10	103.00	99.90
373	Mahisagar	Kothamba	23.019444	73.519444	4.10	92.10	88.00
374	Mahisagar	Limbadia peti	23.204167	73.600000	4.80	91.00	86.20
375	Mahisagar	Lunawada	23.129167	73.608333	10.41	103.00	92.59
376	Mahisagar	Malekpur1	23.230556	73.736111	3.10	110.00	106.90
377	Mahisagar	Pandarvada	23.375000	73.633333	13.56	158.00	144.44
378	Mahisagar	Santrampur	23.170833	73.908333	9.55	136.00	126.45
379	Mahisagar	Santrampur1	23.191667	73.908333	9.20	144.00	134.80
380	Mahisagar	Ucharpi Pz	23.119167	73.471667	13.27	104.00	90.73
381	Mahisagar	Virpur Pz	23.193056	73.485278	8.63	103.60	94.97
382	Morbi	Amar nagar	22.933333	70.808333	2.00	33.00	31.00
383	Morbi	Bhalgam	22.441667	71.083333	10.00	180.00	170.00
384	Morbi	Chhatar	22.504167	70.754167	6.70	97.00	90.30
385	Morbi	Hadmatia	22.683333	70.808333	10.60	80.00	69.40
386	Morbi	Halvad2	23.020833	71.187500	4.66	45.00	40.34
387	Morbi	Jetpur Pithad	23.021944	70.918056	8.50	26.60	18.10
388	Morbi	Juna Devaliya 1	22.979444	71.008889	3.98	46.20	42.22

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
389	Morbi	Kalyanpur2	22.658333	70.733333	5.55	63.00	57.45
390	Morbi	Lajai	22.716667	70.779167	4.15	62.00	57.85
391	Morbi	Malia	23.091667	70.762500	4.35	6.00	1.65
392	Morbi	Mathak	22.840000	71.057778	10.65	85.70	75.05
393	Morbi	Modparl	22.900000	70.666667	2.16	24.00	21.84
394	Morbi	Morvi	22.816667	70.841667	2.08	47.00	44.92
395	Morbi	Mota dhansura	22.958333	70.616667	6.28	9.00	2.72
396	Morbi	Nichi mandal	22.858333	70.950000	4.40	72.00	67.60
397	Morbi	Sarvad	23.006389	70.706944	2.15	18.00	15.85
398	Morbi	Sindhavadar	22.550000	70.891667	8.80	104.00	95.20
399	Narmada	Agar(Rep)_Pz	22.031111	73.656667	12.70	60.00	47.30
400	Narmada	Baman Phalia_Pz	21.798333	73.379167	20.60	90.00	69.40
401	Narmada	Chikada	21.520833	73.645833	4.70	239.00	234.30
402	Narmada	Garudeshwar	21.891667	73.650000	11.70	42.00	30.30
403	Narmada	Hirapura	21.868056	73.600000	11.46	65.00	53.54
404	Narmada	Jankh	21.492222	73.596944	3.00	206.80	203.80
405	Narmada	Kanbi pitha	21.520833	73.645833	3.45	239.00	235.55
406	Narmada	Kewadia_Pz	21.882778	73.700556	6.89	60.90	54.01
407	Narmada	Khota amba	21.733333	73.475000	2.09	155.00	152.91
408	Narmada	Namaria	22.044444	73.622222	3.40	62.10	58.70
409	Narmada	Ralda	21.610000	73.652500	4.60	265.00	260.40
410	Narmada	Ringani	21.841667	73.466667	2.20	73.00	70.80
411	Narmada	Selemba 1	21.610000	73.763333	7.00	383.00	376.00
412	Narmada	Sunderpura_Pz	21.838889	73.534722	29.52	69.00	39.48
413	Narmada	Umran	21.488056	73.883056	8.00	111.60	103.60
414	Navsari	Abrama	20.862500	72.900000	2.80	4.00	1.20
415	Navsari	Chadav	20.831111	73.334444	8.87	73.70	64.83
416	Navsari	Chinam	20.991667	72.886111	3.47	7.70	4.23
417	Navsari	Dandi	20.891667	72.808333	3.60	4.00	0.40
418	Navsari	Duvada	20.828611	73.057500	6.70	23.00	16.30
419	Navsari	Hond	20.738889	73.045833	8.66	20.70	12.04
420	Navsari	Kaliyari	20.725000	73.150000	10.10	47.00	36.90
421	Navsari	Kantasvel	20.797222	73.291667	7.75	69.00	61.25
422	Navsari	Khergam	20.633333	73.095833	2.00	41.00	39.00
423	Navsari	Manav Khadak	20.674167	73.233333	2.70	81.00	78.30
424	Navsari	Moti Valzar	20.805000	73.266667	7.27	72.00	64.73
425	Navsari	Navsari 1	20.958056	72.935000	5.32	7.00	1.68
426	Navsari	Onjal	20.833333	72.841667	5.52	11.00	5.48
427	Navsari	Panikhadak	20.649167	73.166944	12.10	62.30	50.20
428	Navsari	Pipalkhed	20.675000	73.283333	17.45	134.00	116.55
429	Navsari	Rankuva	20.812500	73.158333	8.84	38.00	29.16
430	Navsari	Sari khurd	20.787500	72.954167	2.46	5.00	2.54
431	Navsari	Vansda	20.764444	73.363056	10.80	108.90	98.10
432	Panch Mahals	Godhra2	22.770833	73.633333	9.54	128.00	118.46
433	Panch Mahals	Jambughoda	22.369444	73.725000	6.75	107.00	100.25
434	Panch Mahals	Jambughoda1	22.372778	73.722778	3.40	104.30	100.90
435	Panch Mahals	Morwa (Hadaf) Pz-I	22.918056	73.844444	11.60	147.60	136.00
436	Panch Mahals	Natapur	22.857222	73.820556	7.80	153.90	146.10
437	Panch Mahals	Palla Rajgarh Pz	22.522778	73.700833	18.55	191.70	173.15

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
438	Panch Mahals	Pavagadh	22.487500	73.555556	8.36	127.00	118.64
439	Panch Mahals	Ranipura	22.725000	73.758333	7.20	174.00	166.80
440	Panch Mahals	Shehra	22.954167	73.625000	2.30	126.00	123.70
441	Panch Mahals	Shivrajpur	22.425000	73.591667	12.50	100.00	87.50
442	Panch Mahals	Suliyat	23.062222	73.850833	20.10	148.30	128.20
443	Panch Mahals	Tarkanda	22.545833	73.529167	7.70	103.00	95.30
444	Panch Mahals	Tuwa	22.804167	73.470833	4.30	82.00	77.70
445	Panch Mahals	Vejalpur	22.695833	73.558333	4.80	105.00	100.20
446	Patan	Dharmoda	23.697222	72.069444	2.84	60.20	57.36
447	Patan	Dhinoj1	23.662500	72.279167	10.50	80.00	69.50
448	Patan	Moti chander	23.594444	71.780556	2.38	27.30	24.92
449	Patan	Patan2	23.841667	72.123611	17.78	80.70	62.92
450	Patan	Sander	23.766667	72.254167	12.60	89.00	76.40
451	Patan	Sankheshwar	23.521944	71.790833	0.01	25.70	25.69
452	Patan	Shankhari	23.779167	72.162500	12.67	80.00	67.33
453	Porbandar	Adityana	21.708611	69.710833	8.00	23.30	15.30
454	Porbandar	Adwana2	21.916667	69.600000	15.15	20.00	4.85
455	Porbandar	Bakharla	21.764722	69.661111	26.61	46.80	20.19
456	Porbandar	Balej	21.370833	69.875000	4.55	6.00	1.45
457	Porbandar	Bhavpura	21.809722	69.408333	9.16	10.00	0.84
458	Porbandar	Bhod	21.658889	69.821111	15.74	21.90	6.16
459	Porbandar	Degam	21.710278	69.605556	16.75	18.60	1.85
460	Porbandar	Kadegi	21.450556	69.983333	1.84	10.00	8.16
461	Porbandar	Khambodar	21.808333	69.601389	7.10	22.00	14.90
462	Porbandar	Kutiyana_Pz	21.622222	69.997222	11.45	10.70	-0.75
463	Porbandar	Kutiyana1	21.630556	70.016667	11.23	21.00	9.77
464	Porbandar	Mojiwana	21.885833	69.600278	8.65	21.00	12.35
465	Porbandar	Navibandar	21.445833	69.791667	4.48	9.00	4.52
466	Porbandar	Oddar	21.566667	69.680556	3.30	9.30	6.00
467	Porbandar	Palkhadal	21.758333	69.487500	10.38	13.00	2.62
468	Porbandar	Porbandar	21.645000	69.642500	4.90	7.00	2.10
469	Porbandar	Ranavav2	21.683333	69.745833	6.75	30.00	23.25
470	Porbandar	Ratadi	21.720278	69.511944	6.94	6.10	-0.84
471	Porbandar	Simar	21.946944	69.685833	5.95	54.70	48.75
472	Porbandar	Tukda	21.516111	69.728611	1.83	6.90	5.07
473	Porbandar	Visavada Mul Dwarka	21.785556	69.446389	13.40	16.70	3.30
474	Rajkot	Bhada jodiya	21.662500	70.341667	12.05	61.00	48.95
475	Rajkot	Bhadla	22.183333	71.091667	12.50	230.00	217.50
476	Rajkot	Chordi	21.916667	70.748611	8.71	127.30	118.59
477	Rajkot	Dadia	22.091667	70.733333	11.75	153.00	141.25
478	Rajkot	Dhoraji	21.745833	70.285833	14.00	44.00	30.00
479	Rajkot	Ganod	21.675000	70.179167	4.93	31.00	26.07
480	Rajkot	Gogavadar	21.966667	70.875000	17.30	155.00	137.70
481	Rajkot	Halenda	22.091667	71.050000	4.46	212.00	207.54
482	Rajkot	Jasapur	21.891667	70.483333	16.70	99.00	82.30
483	Rajkot	Jasdan	22.044444	71.213889	7.10	200.60	193.50
484	Rajkot	Jasdan2	22.058333	71.220833	5.28	205.00	199.72
485	Rajkot	Jetpur	21.756111	70.619444	15.02	89.60	74.58
486	Rajkot	Jetpur pithad.	21.775000	70.633333	13.96	84.00	70.04

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
487	Rajkot	Kamlapur	22.145833	71.200000	11.95	243.00	231.05
488	Rajkot	Khamta	22.475000	70.550000	8.25	73.00	64.75
489	Rajkot	Lalavadar	22.133333	71.304167	6.63	255.00	248.37
490	Rajkot	Lodhikai1	22.141667	70.641667	7.10	159.00	151.90
491	Rajkot	Mota Dadwa	21.998333	70.993889	9.03	164.30	155.27
492	Rajkot	Motagundala	21.734722	70.501389	4.81	81.40	76.59
493	Rajkot	Movaiya	22.450000	70.608333	8.40	70.00	61.60
494	Rajkot	Patanvav	21.644444	70.261111	15.70	81.70	66.00
495	Rajkot	Ribda	22.125000	70.766667	11.00	173.00	162.00
496	Rajkot	Sardhar1	22.145833	70.988889	3.34	213.70	210.36
497	Rajkot	Targhari	22.383333	70.666667	5.50	84.00	78.50
498	Rajkot	Umrali	21.919444	70.604167	6.36	101.30	94.94
499	Rajkot	Upletai1	21.748611	70.275000	6.66	45.70	39.04
500	Rajkot	Vinchhia	22.208333	71.379167	2.75	171.00	168.25
501	Rajkot	Virpur1	21.850000	70.695833	12.93	114.00	101.07
502	Sabarkantha	Abhapur	23.964167	73.258056	5.70	491.70	486.00
503	Sabarkantha	Anwarpura Pz	23.405556	72.845556	33.45	113.10	79.65
504	Sabarkantha	Atarsumba	23.986111	73.208333	6.70	275.30	268.60
505	Sabarkantha	Bhadreshwar	23.745833	72.979167	23.70	167.00	143.30
506	Sabarkantha	Boriya	23.242778	72.940833	7.60	80.70	73.10
507	Sabarkantha	Chandap_Pz	23.931944	72.856944	9.85	163.70	153.85
508	Sabarkantha	Choriwad	23.900000	73.119444	22.21	218.70	196.49
509	Sabarkantha	Derol Pz-II	23.599444	72.902500	48.30	142.70	94.40
510	Sabarkantha	Gadha	23.708333	72.941667	17.60	166.00	148.40
511	Sabarkantha	Harsoli1	23.377778	73.016667	10.85	116.70	105.85
512	Sabarkantha	Himmatnagar_Pz	23.608333	72.970833	9.05	137.00	127.95
513	Sabarkantha	Idar	23.841667	73.037500	9.30	200.00	190.70
514	Sabarkantha	Khedbrahma_Pz	24.036111	73.044444	3.65	200.00	196.35
515	Sabarkantha	Matoda	24.111111	73.008333	15.40	208.00	192.60
516	Sabarkantha	Poshina2	24.375000	73.033333	6.80	286.00	279.20
517	Sabarkantha	Punasan	23.669444	73.173611	6.65	239.10	232.45
518	Sabarkantha	Revas	23.820833	73.116667	13.40	199.00	185.60
519	Sabarkantha	Silwad	24.008333	73.116667	8.10	224.00	215.90
520	Sabarkantha	Varvada	23.441944	73.056667	18.70	119.30	100.60
521	Sabarkantha	Vijaynagar	24.008333	73.354167	4.70	356.00	351.30
522	Sabarkantha	Vijaynagar_Pz	24.006944	73.333333	11.15	350.70	339.55
523	Sabarkantha	Wadali	23.933333	73.033333	29.20	217.00	187.80
524	Sabarkantha	Walampura Pz	23.351111	72.970833	38.00	109.00	71.00
525	Surat	Allu	21.062500	73.191667	4.50	42.00	37.50
526	Surat	Bardoli	21.115278	73.100000	5.61	34.30	28.69
527	Surat	Bhatkol	21.380278	73.004167	3.41	27.00	23.59
528	Surat	Chavada	21.474722	73.595000	4.30	222.70	218.40
529	Surat	Dungri	21.408333	73.133333	8.65	48.00	39.35
530	Surat	Gangadhra	21.118611	73.075278	9.31	28.10	18.79
531	Surat	Jhankhvav	21.466667	72.952778	9.65	30.70	21.05
532	Surat	Kadod 1	21.221389	73.218889	4.89	22.10	17.21
533	Surat	Kasal	21.322222	73.126944	5.70	38.20	32.50
534	Surat	Kathor	21.291667	72.929167	11.21	21.00	9.79
535	Surat	Mahuva2	21.020833	73.145833	13.75	32.00	18.25

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
536	Surat	Malda	21.366667	73.350000	8.92	88.00	79.08
537	Surat	Mandvi2	21.254167	73.295833	13.60	41.00	27.40
538	Surat	Mota	21.170278	73.068611	3.30	26.80	23.50
539	Surat	Moti Sarkui	21.279167	73.349722	9.35	43.30	33.95
540	Surat	Navi pardi	21.322222	72.970833	2.68	23.30	20.62
541	Surat	Nogama	21.290833	73.214444	2.90	51.30	48.40
542	Surat	Olpad2	21.341667	72.758333	3.45	9.00	5.55
543	Surat	Palsana	21.077778	72.991667	3.19	16.70	13.51
544	Surat	Puna	20.923611	73.233333	12.88	50.70	37.82
545	Surat	Puna1	20.929167	73.229167	9.40	53.00	43.60
546	Surat	Sachin town	21.091667	72.875000	3.80	11.00	7.20
547	Surat	Sarbhon	21.058333	73.091667	2.83	27.00	24.17
548	Surat	Sayan	21.305556	72.910833	9.72	17.30	7.58
549	Surat	Sultanabad	21.091667	72.725000	8.46	2.00	-6.46
550	Surat	Tadkeshwar	21.380833	73.076389	5.60	42.00	36.40
551	Surat	Ten-bardoli	21.116667	73.100000	5.83	34.00	28.17
552	Surat	Ushker	21.340556	73.097778	4.34	34.10	29.76
553	Surat	Vaheval	20.837222	73.287778	8.00	68.00	60.00
554	Surendra Nagar	Anindra	22.810278	71.705833	2.58	58.30	55.72
555	Surendra Nagar	Bajana	23.116667	71.783333	1.86	10.00	8.14
556	Surendra Nagar	Bamanbor	22.416667	71.041667	9.85	194.00	184.15
557	Surendra Nagar	Chotila1	22.425000	71.181667	11.00	197.00	186.00
558	Surendra Nagar	Dedadra	22.775000	71.733333	2.45	51.00	48.55
559	Surendra Nagar	Dhama	23.385278	71.679444	6.00	19.30	13.30
560	Surendra Nagar	Gamda	22.898333	71.556944	2.83	75.30	72.47
561	Surendra Nagar	Jhinjhuwada	23.350000	71.658333	9.17	18.00	8.83
562	Surendra Nagar	Kharaghoda	23.187500	71.750000	1.65	8.00	6.35
563	Surendra Nagar	Kherwa	23.004167	71.745833	1.54	39.00	37.46
564	Surendra Nagar	Kukavati	23.122778	71.479722	3.10	10.70	7.60
565	Surendra Nagar	Lakhtar	22.858333	71.783333	5.10	42.00	36.90
566	Surendra Nagar	Latuda	22.813056	71.608056	2.00	72.30	70.30
567	Surendra Nagar	Limbdhi-Pz	22.572222	71.808333	2.43	48.00	45.57
568	Surendra Nagar	Modhvana	22.881389	71.735556	0.40	45.70	45.30
569	Surendra Nagar	Moti Moladi	22.420833	71.110278	5.80	194.70	188.90
570	Surendra Nagar	Muli	22.650000	71.466667	5.38	110.00	104.62
571	Surendra Nagar	Nava Raisngpur	22.741944	71.261667	16.70	100.30	83.60
572	Surendra Nagar	Olak	22.918611	71.863333	2.69	25.00	22.31
573	Surendra Nagar	Pipli	23.060000	71.734167	0.65	26.00	25.35
574	Surendra Nagar	Rajsitapur	22.841667	71.591667	4.05	72.00	67.95
575	Surendra Nagar	Ratanpur1	22.858333	71.270833	8.07	85.00	76.93
576	Surendra Nagar	Sarla	22.733333	71.366667	8.30	118.00	109.70
577	Surendra Nagar	Sayala	22.533333	71.483333	7.65	122.00	114.35
578	Surendra Nagar	Sudamda	22.454167	71.485000	3.88	114.00	110.12
579	Surendra Nagar	Surendranagar	22.723611	71.670833	1.56	66.00	64.44
580	Surendra Nagar	Surendranagar2	22.716667	71.608333	3.41	75.00	71.59
581	Surendra Nagar	Tarnetar	22.641667	71.216667	15.60	126.00	110.40
582	Surendra Nagar	Tavi 1	22.720278	71.851667	0.50	29.00	28.50
583	Surendra Nagar	Vanala	22.433333	71.920833	6.44	28.00	21.56
584	Surendra Nagar	Visawadi	23.341667	71.733333	3.75	29.00	25.25

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
585	Tapi	Bedchit	20.950000	73.351389	8.40	73.70	65.30
586	Tapi	Bhurvel (ukai)	21.225000	73.579167	7.00	85.00	78.00
587	Tapi	Chapawadi	21.151389	73.393611	7.70	85.10	77.40
588	Tapi	Gangtha	21.525000	74.000000	9.92	117.00	107.08
589	Tapi	Karanjvel	21.012778	73.458056	7.45	111.70	104.25
590	Tapi	Kelkui	21.041944	73.323333	2.50	63.00	60.50
591	Tapi	Khedwada (Ashram Falia)	21.281111	73.465278	7.20	57.10	49.90
592	Tapi	Motichher	21.212500	73.362222	2.73	57.30	54.57
593	Tapi	Nizar	21.480556	74.200000	12.55	119.00	106.45
594	Tapi	Nizar1	21.477222	74.190556	12.24	119.90	107.66
595	Tapi	Uchchhal	21.171944	73.769167	10.37	119.70	109.33
596	Tapi	Valod	21.050000	73.266667	4.45	54.00	49.55
597	Tapi	Vyara1	21.108333	73.395833	4.00	81.00	77.00
598	The Dangs	Ahwa_Pz	20.758889	73.686111	2.60	470.70	468.10
599	The Dangs	Ahwa1	20.758333	73.683333	2.60	464.00	461.40
600	The Dangs	Bori Gaotha 1	20.810833	73.503056	6.95	124.70	117.75
601	The Dangs	Chikhli	20.658333	73.687500	7.63	397.00	389.37
602	The Dangs	Chinchnogaotha	20.808333	73.552778	6.56	172.00	165.44
603	The Dangs	Chinchpada	20.637500	73.775000	3.25	596.00	592.75
604	The Dangs	Dhumkal	20.645833	73.791667	5.07	484.00	478.93
605	The Dangs	Gadad	20.637500	73.775000	5.15	596.00	590.85
606	The Dangs	Ghubita	20.800000	73.737500	1.88	462.00	460.12
607	The Dangs	Jakana	20.633333	73.745833	11.70	458.00	446.30
608	The Dangs	Jamalpada	20.731667	73.520556	7.85	271.30	263.45
609	The Dangs	Kalibel	20.920833	73.580556	2.54	173.00	170.46
610	The Dangs	Mahal	20.916667	73.679167	6.60	212.00	205.40
611	The Dangs	Malegaon	20.600000	73.745833	5.16	553.00	547.84
612	The Dangs	Nadak khadi	20.804167	73.612500	7.47	207.00	199.53
613	The Dangs	Nana pada	20.700000	73.583333	8.03	236.00	227.97
614	The Dangs	Sakarpatal	20.719444	73.556944	8.40	232.30	223.90
615	The Dangs	Sodmal	20.866667	73.616667	11.90	342.00	330.10
616	The Dangs	Subir	20.922222	73.580556	8.16	170.80	162.64
617	The Dangs	Umberpada	20.683333	73.725000	10.49	361.00	350.51
618	The Dangs	Vaghai	20.763889	73.504444	12.10	158.00	145.90
619	The Dangs	Vazat Amba	20.878333	73.518333	7.96	217.00	209.04
620	Vadodara	Chella Karamsiya Pz	22.396667	73.432222	2.94	70.70	67.76
621	Vadodara	Chitral PZ_II	22.181944	72.945833	21.80	23.00	1.20
622	Vadodara	Ghayaj ii	22.233333	73.054167	18.40	29.00	10.60
623	Vadodara	Juna samalya	22.504167	73.283333	13.70	55.00	41.30
624	Vadodara	Patiyapura	22.275000	73.441667	8.40	60.00	51.60
625	Vadodara	Saidal	22.283333	73.502778	3.00	65.70	62.70
626	Vadodara	Sankheda	22.538889	73.175000	22.10	51.30	29.20
627	Vadodara	Tundav	22.483333	73.202778	9.60	44.70	35.10
628	Vadodara	Vadodara Ii	22.304722	73.271667	7.32	36.30	28.98
629	Vadodara	Vega	22.159444	73.412500	5.45	46.00	40.55
630	Valsad	Awadha	20.516667	73.287500	3.29	157.00	153.71
631	Valsad	Chavshala	20.328333	73.325833	2.86	242.00	239.14
632	Valsad	Dahli (bhilad)	20.258333	72.883333	3.19	42.00	38.81
633	Valsad	Dharampur 3	20.530833	73.162500	12.85	70.00	57.15

S. N.	District	Site Name	Lat	Long	May 2021, m bgl	Elevation, m	WT May, m MSL
634	Valsad	Dharampur1	20.536389	73.170556	10.00	78.60	68.60
635	Valsad	Dungri	20.688611	72.949444	9.43	15.90	6.47
636	Valsad	Fali	20.313056	73.376111	11.22	500.60	489.38
637	Valsad	Kanadu	20.325000	72.841667	5.20	43.00	37.80
638	Valsad	Kaparda	20.341667	73.216667	1.65	337.00	335.35
639	Valsad	Karwad	20.362500	72.975000	4.43	25.00	20.57
640	Valsad	Muli1	20.633333	73.025000	3.43	32.00	28.57
641	Valsad	Nanaponda	20.413889	73.120833	10.50	63.30	52.80
642	Valsad	Tithal	20.600000	72.900000	7.43	6.00	-1.43
643	Valsad	Tumb	20.216667	72.841667	3.70	20.00	16.30
644	Valsad	Udwada	20.463611	72.918056	5.85	20.00	14.15
645	Valsad	Umargaon	20.191667	72.750000	3.84	10.00	6.16
646	Valsad	Vapi Balitha	20.380278	72.904444	7.35	25.90	18.55

Annexure IV

Mean decadal water level of the National Hydrograph Stations in Gujarat state (phreatic) 2012-2021

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
1	Ahmedabad	Bagodara_Pz_II	22.64167	72.21389	6.85	5.70
2	Ahmedabad	Dalod	23.36667	71.96667	6.63	5.86
3	Ahmedabad	Devalia	22.37778	71.98611	20.33	-
4	Ahmedabad	Dhandhuka1	22.37500	71.98611	3.95	2.79
5	Ahmedabad	Endla	23.27222	72.05833	2.96	2.03
6	Ahmedabad	Gamph	22.35833	72.16667	2.64	1.50
7	Ahmedabad	Ghuma	23.03333	72.44583	5.08	-
8	Ahmedabad	Hansalpur_Pz-III	23.08889	72.01667	4.01	3.02
9	Ahmedabad	Kumarkhan	22.90000	72.01667	7.07	3.05
10	Ahmedabad	Kundal	22.90139	72.22361	-	7.72
11	Ahmedabad	Mandal2	23.27500	71.91667	5.65	4.11
12	Ahmedabad	Pachcham_Pz	22.23222	72.17889	-	1.19
13	Ahmedabad	Tagadi1	22.29583	71.94722	6.46	2.43
14	Ahmedabad	Ughraj1	23.36667	72.10000	8.49	6.67
15	Ahmedabad	Upardhal1	22.85000	72.14583	11.39	10.09
16	Ahmedabad	Vagad(Repl)_Pz	22.36028	71.86806	6.36	4.92
17	Ahmedabad	Viramgam2	23.14167	72.03333	3.49	1.94
18	Amreli	Amreli	21.60833	71.22500	10.88	5.84
19	Amreli	Amreli_Pz	21.61250	71.22500	12.25	7.29
20	Amreli	Amritvel_Pz	21.39722	71.35833	3.31	-
21	Amreli	Ankadia mota	21.64583	71.10833	9.71	6.27
22	Amreli	Badhda	21.26583	71.33889	9.89	6.98
23	Amreli	Bagasara	21.47917	70.96250	17.18	13.21
24	Amreli	Bhavardi1	21.10833	71.25833	6.02	0.96
25	Amreli	Bherai	20.86806	71.36250	2.85	2.20
26	Amreli	Bhuva	21.43278	71.36389	4.46	3.82
27	Amreli	Chalala	21.41667	71.16667	28.70	25.90
28	Amreli	Charkhadia_Pz	21.38750	71.29167	23.20	21.06
29	Amreli	Charkhadia1	21.39167	71.29583	18.50	16.63
30	Amreli	Chavand	21.81667	71.41250	9.59	4.78
31	Amreli	Dharangani	21.33333	71.20000	30.72	32.24
32	Amreli	Dhari_Pz	21.32639	71.01806	20.06	9.16
33	Amreli	Fifad	21.43611	71.54028	6.00	4.73
34	Amreli	Gopalpura Vanda Pz	21.37500	71.49167	26.37	23.66
35	Amreli	Goradka	21.22500	71.41111	9.04	3.72
36	Amreli	Govadka	21.54167	71.15833	6.47	2.42
37	Amreli	Hipavadli	21.37889	71.61472	-	8.49
38	Amreli	Ingoral	21.23333	71.20000	15.36	9.65
39	Amreli	Jafrabad	20.86667	71.36250	2.37	1.65
40	Amreli	Kadiyali	20.90833	71.36028	5.92	2.53
41	Amreli	Kerala	21.39722	71.21667	38.98	33.56
42	Amreli	Khamba	21.15000	71.23889	8.89	4.22
43	Amreli	Khamba_Pz	21.14167	71.25417	11.72	7.94
44	Amreli	Kunkavav	21.66250	70.98333	17.94	19.97
45	Amreli	Lathi	21.72083	71.38333	7.45	3.69

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
46	Amreli	Lotpur	20.96250	71.43333	5.75	5.14
47	Amreli	Luvariya	21.62500	71.39583	9.80	4.66
48	Amreli	Mandal	21.10000	71.58333	27.19	22.14
49	Amreli	Manila Pz	21.43333	71.16667	19.95	18.49
50	Amreli	Morjhar	21.37611	71.11861	42.66	35.46
51	Amreli	Nageshri	20.92500	71.35417	5.14	2.82
52	Amreli	Piyava	21.38333	71.46667	28.22	23.40
53	Amreli	Punjapadar	21.52500	71.35833	9.52	5.04
54	Amreli	Tajpur	21.72500	71.46667	20.80	7.46
55	Amreli	Timbi2	20.89583	71.20417	6.39	4.70
56	Amreli	Timbi2	20.89583	71.20417	6.39	4.70
57	Amreli	Timbi2	20.89583	71.20417	6.39	4.70
58	Amreli	Trakuda	21.01667	71.28056	10.45	4.87
59	Amreli	Untvad	21.91667	71.21667	14.32	9.64
60	Amreli	Vaghania junia	21.58333	70.96667	9.59	4.47
61	Amreli	Vankiya	21.52083	71.13611	10.57	6.27
62	Amreli	Vankiya1	21.23333	71.25000	17.25	6.70
63	Amreli	Victor	21.01250	71.54167	1.26	-
64	Anand	Anand	22.57500	72.97222	15.39	11.75
65	Anand	Anklav2	22.38333	73.00833	26.13	25.00
66	Anand	Bandhani	22.54167	72.81667	5.91	4.79
67	Anand	Bhadran	22.35556	72.89722	17.74	15.75
68	Anand	Dali	22.27500	72.76667	4.45	2.63
69	Anand	Davalpura_Pz	22.45833	72.80278	3.36	1.47
70	Anand	Dharmaj	22.42083	72.79444	13.19	10.89
71	Anand	Ghora	22.69167	73.05417	6.44	3.91
72	Anand	Kansari1	22.34167	72.65000	12.80	-
73	Anand	Laxmipura	22.41667	72.60833	3.36	1.23
74	Anand	Navapura	22.31250	72.96250	26.25	25.29
75	Anand	Ras	22.34583	72.83333	2.47	1.60
76	Anand	Tarapur Pz-II	22.48611	72.66111	3.71	2.39
77	Arvalli	Alwakampa	23.27472	73.20833	13.01	7.38
78	Arvalli	Bayad_Pz	23.21667	73.22917	10.63	9.50
79	Arvalli	Boral	23.12500	73.20833	16.52	8.70
80	Arvalli	Dhansura1	23.35000	73.20000	9.43	4.61
81	Arvalli	Hamirpur	23.40833	73.45833	15.78	9.47
82	Arvalli	Karanpur	23.33333	73.30000	11.30	7.95
83	Arvalli	Malpur_Pz	23.34167	73.46806	12.86	8.10
84	Arvalli	Modasa	23.46250	73.30833	6.94	6.10
85	Arvalli	Punasan	23.66944	73.17361	6.80	5.06
86	Arvalli	Sathamba	23.17500	73.33750	18.88	6.26
87	Arvalli	Seenawad	23.48639	73.39861	11.12	4.54
88	Arvalli	Shamlaji	23.68611	73.36667	11.49	8.31
89	Arvalli	Vejpur_Pz	23.79722	73.22083	16.39	5.33
90	Banaskantha	Ambaji_Pz	24.33611	72.84722	12.02	6.80
91	Banaskantha	Amirgadh	24.40556	72.64167	12.88	10.80
92	Banaskantha	Bharol1	24.52917	71.54167	2.94	2.63
93	Banaskantha	Danta	24.18889	72.76528	10.26	7.99

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
94	Banaskantha	Dantiwada	24.18889	72.76056	61.14	50.52
95	Banaskantha	Dantiwada	24.27750	72.26139	61.14	50.52
96	Banaskantha	Deesa Pzii	24.25667	72.18750	59.74	-
97	Banaskantha	Ganapipli	24.29722	72.94722	11.69	8.50
98	Banaskantha	Gangodra	24.43611	72.36528	22.73	15.44
99	Banaskantha	Iqbalgarh	24.34583	72.53750	29.81	26.75
100	Banaskantha	Jhat	24.48750	72.35278	15.86	-
101	Banaskantha	Khoda	24.65833	71.76667	22.36	21.67
102	Banaskantha	Kidotar	24.39444	72.62778	19.04	16.27
103	Banaskantha	Meda	24.39722	72.28472	9.98	7.66
104	Banaskantha	Mohabbat gadh	24.16667	72.72778	22.01	17.45
105	Banaskantha	Naroli Pziii	24.61639	71.63861	8.96	8.20
106	Banaskantha	Palanpur2	24.19444	72.43333	29.50	26.16
107	Banaskantha	Ratanpur2	24.17500	72.74583	18.43	14.37
108	Banaskantha	Sodapur	24.40139	72.29583	15.45	13.08
109	Banaskantha	Tharad Pziii	24.38500	71.61944	12.21	11.33
110	Bharuch	Arethi	21.61250	73.43528	11.54	6.89
111	Bharuch	Bharuch	21.70000	73.00417	6.26	4.08
112	Bharuch	Bhensli	21.72500	72.75000	2.87	1.65
113	Bharuch	Chhindra	22.12667	72.66972	9.24	8.06
114	Bharuch	Dahegam	22.18472	72.59722	7.36	8.18
115	Bharuch	Hansot	21.58333	72.80833	5.08	-
116	Bharuch	Ilav	21.45000	72.80000	7.53	5.73
117	Bharuch	Jambusar	22.05278	72.80556	7.22	6.71
118	Bharuch	Jambusar2	22.05000	72.80000	8.15	-
119	Bharuch	Jetpur1	21.49167	72.70833	3.44	2.45
120	Bharuch	Jokhla	21.59583	73.16917	-	1.53
121	Bharuch	Juna borbhata	21.67500	72.97500	7.05	5.46
122	Bharuch	Kaswa	21.68333	72.81667	7.17	3.64
123	Bharuch	Kavi	22.19361	72.63944	7.08	6.09
124	Bharuch	Kondh	21.58056	73.06806	4.63	2.82
125	Bharuch	Luhara	21.67500	72.55833	2.87	1.55
126	Bharuch	Mahegam1	21.68333	72.75833	4.89	1.88
127	Bharuch	Mokhdi	21.53333	73.28750	10.03	5.92
128	Bharuch	Motwan	21.55556	72.88750	2.44	1.96
129	Bharuch	Mulad	21.68333	73.01944	-	4.80
130	Bharuch	Navetha	21.70778	72.83056	6.23	4.42
131	Bharuch	Netrang(Rep)_Pz	21.64167	73.36667	9.83	6.08
132	Bharuch	Netrang1	21.63333	73.36667	7.35	3.26
133	Bharuch	Nirnavi	21.79167	72.66806	9.39	5.27
134	Bharuch	Panoli	21.53750	72.97500	2.85	2.07
135	Bharuch	Raymal	21.52083	72.82083	1.67	1.31
136	Bharuch	Roja tankaria	21.91667	72.79167	8.64	7.55
137	Bharuch	Sajod	21.61667	72.92361	4.63	3.28
138	Bharuch	Sarod	22.15833	72.75833	11.24	8.72
139	Bharuch	Simodra	21.74167	73.20833	6.74	4.75
140	Bharuch	Sindhav	22.02694	72.63611	7.77	6.19
141	Bharuch	Tankari	21.99167	72.67500	5.11	3.01

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
142	Bharuch	Utraj	21.59167	72.82500	4.97	4.35
143	Bhavnagar	Ambala	21.71111	71.84167	21.03	14.23
144	Bhavnagar	Ayodhayapuram	21.96028	71.88639	9.22	7.14
145	Bhavnagar	Bhavnagar1	21.76667	72.15000	6.70	4.89
146	Bhavnagar	Bhudel	21.69167	72.15833	4.60	2.04
147	Bhavnagar	Bhumbhali	21.67944	72.24417	3.06	2.31
148	Bhavnagar	Bhutia	21.74722	71.70000	19.97	-
149	Bhavnagar	Bora	21.19111	71.92889	26.09	22.40
150	Bhavnagar	Datha	21.22083	71.95000	5.28	3.93
151	Bhavnagar	Dhasa	21.80000	71.50833	5.85	2.42
152	Bhavnagar	Dudhala	21.13750	71.65833	13.69	7.93
153	Bhavnagar	Gadhada2	21.96667	71.57917	4.55	3.81
154	Bhavnagar	Gariyadhar	21.54306	71.56528	20.13	10.79
155	Bhavnagar	Ghogha1	21.68333	72.27917	3.52	1.49
156	Bhavnagar	Jalia	21.80000	71.61667	-	13.89
157	Bhavnagar	Khijadiya	21.63750	71.70000	11.79	8.47
158	Bhavnagar	Kundheli	21.37944	71.98056	-	9.94
159	Bhavnagar	Longadi	21.21389	71.88333	4.52	2.87
160	Bhavnagar	Lonjdhara	22.09722	71.89722	25.04	16.59
161	Bhavnagar	Mahuval	21.09583	71.76667	18.69	-
162	Bhavnagar	Malvav_Pz	21.16056	71.90833	28.60	22.73
163	Bhavnagar	Motivadal	21.19722	71.55000	6.21	2.87
164	Bhavnagar	Ningala	22.01806	71.70000	12.07	7.73
165	Bhavnagar	Palitana1	21.52500	71.82361	8.90	5.33
166	Bhavnagar	Palitana2	21.52222	71.83889	12.84	5.56
167	Bhavnagar	Paliyad2	22.25556	71.56389	21.11	-
168	Bhavnagar	Panchpipla	21.55000	71.72083	5.64	1.72
169	Bhavnagar	Panvil	22.07500	71.89167	9.62	3.63
170	Bhavnagar	Pasvi	21.29167	71.96667	15.24	7.91
171	Bhavnagar	Porbada	21.80000	71.70000	12.36	7.74
172	Bhavnagar	Sajnasar	21.42500	71.91250	8.53	2.35
173	Bhavnagar	Sandhida	21.68750	71.75833	5.73	2.25
174	Bhavnagar	Satanes	21.44167	71.83750	13.96	5.34
175	Bhavnagar	Shantinagar	21.24583	71.65000	12.12	4.73
176	Bhavnagar	Talaja2	21.36667	72.01667	11.27	5.55
177	Bhavnagar	Tansa	21.50833	72.12500	14.14	7.98
178	Bhavnagar	Tardhera	22.22917	71.60417	21.94	19.26
179	Bhavnagar	Tatam	22.05833	71.63333	24.06	15.57
180	Bhavnagar	Timbi2	21.83167	71.76611	6.39	4.70
181	Bhavnagar	Timbi2	21.83167	71.76611	6.39	4.70
182	Bhavnagar	Timbi2	21.83167	71.76611	6.39	4.70
183	Bhavnagar	Trapaj	21.42500	72.09583	14.81	7.50
184	Bhavnagar	Umrala	21.84722	71.80833	13.10	8.06
185	Bhavnagar	Vadal	21.47694	71.80611	10.53	3.43
186	Bhavnagar	Vallabhipur1	21.88333	71.87778	5.27	4.40
187	Bhavnagar	Vallbhipur	21.88333	71.87500	5.08	3.64
188	Bhavnagar	Vavdi	21.56806	72.19806	-	2.24
189	Botad	Barvala	22.15000	71.89167	9.90	8.07

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
190	Botad	Kundali	22.26944	71.70000	14.38	7.30
191	Botad	Rajpada	22.30833	71.69167	18.53	13.74
192	Botad	Salangpor	22.15833	71.77083	-	7.88
193	Chhota Udepur	Alladpur	22.25000	73.71667	8.56	8.47
194	Chhota Udepur	Asala	22.38333	73.93333	11.78	6.11
195	Chhota Udepur	Baladgam	22.13750	74.00833	12.76	9.46
196	Chhota Udepur	Bhindol	22.20000	73.90000	9.63	5.54
197	Chhota Udepur	Bodeli	22.27083	73.71667	4.57	2.02
198	Chhota Udepur	Chavaria	22.18750	73.98750	11.80	11.63
199	Chhota Udepur	Chhota udepur	22.30833	74.01667	7.40	3.44
200	Chhota Udepur	Devat (thadgam)	22.10000	73.98333	10.48	6.60
201	Chhota Udepur	Ferkuva	22.36667	74.20833	8.09	3.23
202	Chhota Udepur	Ghamodi	22.36667	74.07500	8.86	5.42
203	Chhota Udepur	Govindpura	22.21111	73.74139	6.87	3.86
204	Chhota Udepur	Jojh	22.44167	73.96250	12.82	8.40
205	Chhota Udepur	Kevadi	22.51667	73.94167	6.96	4.31
206	Chhota Udepur	Kosindra Pz-I	22.14667	73.75556	3.14	2.85
207	Chhota Udepur	Moti chikhali	22.01111	74.08333	4.34	3.04
208	Chhota Udepur	Panwad	22.20000	74.04167	12.24	5.61
209	Chhota Udepur	Pavi	22.34167	73.83333	4.73	4.33
210	Chhota Udepur	Pitha	22.25417	73.64167	8.51	4.82
211	Chhota Udepur	Saidivasana	22.05833	74.01667	6.54	3.00
212	Chhota Udepur	Sengpur	22.03750	73.88750	9.94	5.62
213	Chhota Udepur	Vadtalav Pz	22.25861	73.78389	12.98	8.34
214	Chhota Udepur	Vagudan	22.06667	74.14167	6.75	5.32
215	DAMAN	Ambawadi	20.40278	72.84444	4.79	3.29
216	DAMAN	Dabhel	20.41111	72.88611	-	3.01
217	DAMAN	Dalwada	20.44306	72.85194	8.06	2.26
218	DAMAN	Daman	20.42417	72.85028	8.82	2.31
219	DAMAN	Jempore	20.37778	72.82694	3.42	1.40
220	DAMAN	Khariwad daman	20.42500	72.84583	4.36	2.64
221	DAMAN	Morwad	20.43528	72.83111	9.30	4.66
222	DAMAN	Warkund	20.40806	72.85972	6.12	2.27
223	Devbhumi Dwarka	Ambardi	21.91639	69.85806	10.37	7.36
224	Devbhumi Dwarka	Aramda	22.43333	69.04167	5.92	4.84
225	Devbhumi Dwarka	Bhatia	22.09167	69.30139	14.23	6.32
226	Devbhumi Dwarka	Bhatiya	22.09444	69.26667	4.73	2.45
227	Devbhumi Dwarka	Bhogat1	21.99167	69.24583	9.54	5.35
228	Devbhumi Dwarka	Dwarka	22.24583	68.95833	7.94	7.63
229	Devbhumi Dwarka	Juvanpur	22.17083	69.36667	19.97	11.75
230	Devbhumi Dwarka	Kajuda	22.33333	69.70833	6.71	3.96
231	Devbhumi Dwarka	Kalyanpur2	22.01667	69.39167	21.74	12.36
232	Devbhumi Dwarka	Kalyanpur2	22.65833	70.73333	21.74	12.36
233	Devbhumi Dwarka	Kambhaliya	22.20972	69.64583	10.87	4.40
234	Devbhumi Dwarka	Khirsara	21.97917	69.60000	11.61	4.54
235	Devbhumi Dwarka	Kuvadia	22.20139	69.58333	12.05	7.71
236	Devbhumi Dwarka	Modpar	21.85833	69.80833	17.28	9.80
237	Devbhumi Dwarka	Mojap	22.36667	68.98333	8.49	7.13

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
238	Devbhumi Dwarka	Mota kalawad	21.90833	69.82917	23.29	15.91
239	Devbhumi Dwarka	Pindara1	22.24722	69.25833	7.24	4.59
240	Devbhumi Dwarka	Raval	21.92972	69.49194	7.57	3.74
241	Devbhumi Dwarka	Salaya	22.30556	69.60417	3.14	2.74
242	Devbhumi Dwarka	Samrasar1	22.37500	69.10417	5.70	3.51
243	Devbhumi Dwarka	Vadtara	22.20833	69.50000	11.30	7.74
244	Devbhumi Dwarka	Varwada	22.29167	68.96667	14.41	8.88
245	Devbhumi Dwarka	Vinjhalpur	22.15000	69.60000	10.57	4.97
246	DIU	Chakarteeth_Pz	20.70833	70.96889	6.15	6.14
247	Dohad	Dabhava	22.58333	73.90417	5.61	4.01
248	Dohad	Dadhela	22.83750	74.06667	7.58	3.47
249	Dohad	Dahod	22.84028	74.26250	2.09	1.78
250	Dohad	Dahod2	22.82500	74.23333	8.40	5.47
251	Dohad	Devgadh Baria	22.70000	73.91389	11.52	7.12
252	Dohad	Devgadh bariya	22.70000	73.91667	13.85	7.31
253	Dohad	Dhanpur	22.63333	74.10417	12.67	7.00
254	Dohad	Fatepura(Karodia)	23.25417	74.02917	12.70	8.28
255	Dohad	Garbara	22.68056	74.31250	6.47	2.41
256	Dohad	Jhalod	23.09306	74.14722	9.08	6.15
257	Dohad	Jhalod1	23.09167	74.13333	8.48	5.00
258	Dohad	Kanjetha	22.58056	74.11389	10.10	5.81
259	Dohad	Khandania	22.70417	73.83750	12.95	10.43
260	Dohad	Limbd12	23.00417	74.15833	4.17	2.13
261	Dohad	Limkheda	22.83056	73.98611	8.20	5.16
262	Dohad	Mirakhedi	22.93333	74.20000	6.69	2.89
263	Dohad	Panchwada	22.72917	74.30833	5.67	4.03
264	Dohad	Pipero	22.64722	74.09028	11.71	6.13
265	Dohad	Salaya1	22.80833	73.89167	13.73	5.60
266	Dohad	Sukhsar	23.15000	74.05000	9.75	6.57
267	Dohad	Tokarba	22.60417	74.03750	5.97	3.28
268	Dohad	Varamkheda	22.80000	74.27500	2.23	1.58
269	Dohad	Wadia	22.90000	74.05000	7.94	4.66
270	Gandhinagar	Adalaj_Pz_III	23.17500	72.55833	23.79	-
271	Gandhinagar	Kasturinagar(IFFCO)	23.19028	72.55278	13.43	11.73
272	Gandhinagar	Paliya	23.17917	72.84167	13.05	10.65
273	Gandhinagar	Serthapara1	23.19444	72.56667	15.99	13.44
274	Gir Somnath	Amervel Nes	21.00889	70.72583	-	1.85
275	Gir Somnath	Bhim Deval	20.97750	70.60917	12.32	5.27
276	Gir Somnath	Dhokadva	20.95833	71.07083	13.28	10.34
277	Gir Somnath	Gangda_Pz	20.85833	71.16667	8.48	4.38
278	Gir Somnath	Girgadhada	20.92500	70.91667	8.50	6.74
279	Gir Somnath	Govindpura2	20.94583	70.39583	31.08	10.33
280	Gir Somnath	Jambur[madhapar]	21.02917	70.60833	8.47	3.68
281	Gir Somnath	Jamvala1	20.98333	70.76250	5.99	4.89
282	Gir Somnath	Jargla Jargali	20.88083	70.98417	12.20	3.17
283	Gir Somnath	Kansari	20.87000	71.05111	12.46	7.79
284	Gir Somnath	Kesariya1	20.79639	70.94194	14.92	6.51
285	Gir Somnath	Kodinar	20.80000	70.69167	12.43	7.31

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
286	Gir Somnath	Kodinar1	20.80000	70.69167	14.43	8.91
287	Gir Somnath	Moraj	20.98333	70.43611	11.07	5.74
288	Gir Somnath	Prachi_Pz	20.92194	70.61333	16.85	7.20
289	Gir Somnath	Prasli	20.85083	70.66917	16.41	4.00
290	Gir Somnath	Sametar	20.85417	71.12083	15.17	8.85
291	Gir Somnath	Talala_Pz	21.06389	70.53833	11.33	6.02
292	Gir Somnath	Talala1	21.05139	70.52500	11.17	6.46
293	Gir Somnath	Una2	20.82500	71.04167	5.53	4.05
294	Jamnagar	Amran_Pz	22.82222	70.54583	4.68	-
295	Jamnagar	Amran1	22.82917	70.56250	4.75	2.65
296	Jamnagar	Balwa	21.90417	69.95833	20.23	13.75
297	Jamnagar	Bed1	22.43750	69.90000	8.92	5.47
298	Jamnagar	Bedanpur	22.68333	70.31667	5.92	4.12
299	Jamnagar	Bhadthar	22.07917	69.57917	14.27	-
300	Jamnagar	Bhanvad	21.92778	69.79583	15.19	-
301	Jamnagar	Changa	22.35000	70.04167	15.59	9.96
302	Jamnagar	Dhrol2	22.56667	70.41667	5.50	2.62
303	Jamnagar	Dudhai2	22.79167	70.50417	4.14	1.81
304	Jamnagar	Gordhanpur	22.45000	7-1388889	11.81	6.87
305	Jamnagar	Haripur2	22.27083	70.33333	19.16	6.12
306	Jamnagar	Jambuda	22.52500	70.20417	8.35	4.21
307	Jamnagar	Jamjodhpur	21.90556	70.03056	6.65	4.84
308	Jamnagar	Jamnagar1	22.47083	70.05000	14.15	4.65
309	Jamnagar	Jamnagar2	22.45833	70.07917	7.89	4.56
310	Jamnagar	Kalawad	22.21667	70.38333	3.90	2.95
311	Jamnagar	Kalyanpur2	22.01667	69.39167	21.74	12.36
312	Jamnagar	Lalpur1	22.19167	69.96111	13.50	8.68
313	Jamnagar	Motagop	22.03750	69.87500	8.45	7.23
314	Jamnagar	Moti khavdi	22.38750	69.86667	9.33	6.80
315	Jamnagar	Moti matli	22.31667	70.26389	21.31	8.04
316	Jamnagar	Nikava	22.19167	70.53333	4.05	2.58
317	Jamnagar	Seth vadala	22.03333	70.12500	11.07	4.99
318	Jamnagar	Sumana	22.10833	70.16667	12.40	8.97
319	Jamnagar	Toda	22.06250	70.38333	11.65	4.30
320	Jamnagar	Vad panchasara	22.23333	70.11667	17.46	8.58
321	Jamnagar	Vijarkha	22.41667	70.18333	11.97	6.68
322	Junagadh	Antroli	21.23611	7-6944444	-	4.53
323	Junagadh	Arena	21.08056	70.17639	12.31	6.52
324	Junagadh	Bamanwara	21.22083	70.05556	10.74	5.86
325	Junagadh	Bantva	21.48750	70.08333	19.02	11.06
326	Junagadh	Bhatsimroli	21.22361	70.18333	21.51	10.74
327	Junagadh	Bilkha	21.43889	70.60000	13.46	8.30
328	Junagadh	Budhecha	21.09583	70.21667	8.01	4.75
329	Junagadh	Chorwad	21.04167	70.21667	8.07	4.28
330	Junagadh	Gadu	21.05417	70.27917	35.80	22.46
331	Junagadh	Galodar	21.14722	70.27500	20.09	9.00
332	Junagadh	Goraj1	21.18333	70.15417	31.65	9.94
333	Junagadh	Junagadh	21.50944	70.46222	13.03	9.66

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
334	Junagadh	Junagadh1	21.51667	70.45833	10.67	5.75
335	Junagadh	Juthal	21.16667	70.26667	8.40	8.58
336	Junagadh	Kalej	21.24861	70.05833	14.03	9.49
337	Junagadh	Kanek	21.03056	70.24167	14.24	7.20
338	Junagadh	Kewarda	21.26667	70.20833	13.52	9.41
339	Junagadh	Khambalia1	21.04444	70.19167	9.01	8.35
340	Junagadh	Khokharda	21.42083	70.31667	22.74	11.04
341	Junagadh	Khorada1	21.06389	70.17361	8.56	6.14
342	Junagadh	Khoras ahir	21.37083	70.33889	14.22	8.93
343	Junagadh	Kukaswada	21.05417	70.20833	10.06	6.98
344	Junagadh	Lohej	21.16667	70.06667	10.93	9.51
345	Junagadh	Maktupur1	21.14306	70.09583	9.35	9.02
346	Junagadh	Mandawad	21.35833	70.74583	14.04	8.64
347	Junagadh	Mangrol	21.12500	70.10833	17.62	16.52
348	Junagadh	Mangrol1	21.13056	70.11944	-	11.87
349	Junagadh	Manketara	21.15000	70.12917	34.02	19.63
350	Junagadh	Mendarda	21.32500	70.44028	-	12.73
351	Junagadh	Mendarda1	21.32500	70.43333	17.41	11.16
352	Junagadh	Patla	21.60417	70.56917	10.10	3.78
353	Junagadh	Prempara	21.30000	70.70000	19.27	10.01
354	Junagadh	Sepa	21.11667	70.21944	27.74	22.33
355	Junagadh	Seriakhan	21.13333	70.24861	19.99	13.55
356	Junagadh	Shardagram	21.10417	70.15278	11.73	9.76
357	Junagadh	Sil	21.18556	70.04639	6.77	4.96
358	Junagadh	Sil bandar	21.22361	70.05556	7.61	5.22
359	Junagadh	Vanthali ii	21.47083	70.32778	14.54	-
360	Junagadh	Visavadar	21.33889	70.74861	15.83	-
361	Kachchh	Asambia mota_Pz	22.96806	69.45139	7.72	-
362	Kachchh	Asambia mota1	22.96806	69.43750	13.62	11.59
363	Kachchh	Bambhdai	22.93889	69.08278	5.76	4.80
364	Kachchh	Bhadreshwar	22.90000	69.90000	7.90	6.66
365	Kachchh	Bhadreshwar	22.90000	69.90000	7.90	6.66
366	Kachchh	Bhadreshwar	23.74583	72.97917	7.90	6.66
367	Kachchh	Bhuj (Circuit House)	23.25000	69.66667	15.67	15.24
368	Kachchh	Chandranagar	23.45000	69.40000	7.79	7.13
369	Kachchh	Deshalpur rapar	23.74722	70.67917	13.24	11.62
370	Kachchh	Devisar	23.40278	69.32917	12.44	11.30
371	Kachchh	Dholavira	23.88333	70.21667	11.04	9.71
372	Kachchh	Dhori1	23.43333	69.75417	14.79	-
373	Kachchh	Dunai	23.05000	69.50000	11.16	9.43
374	Kachchh	Gagodar	23.41667	70.80000	30.05	27.58
375	Kachchh	Haboi	23.35833	69.86667	0.89	0.45
376	Kachchh	Kakarwa	23.47500	70.40417	16.57	15.22
377	Kachchh	Karagoga	22.94167	69.66250	2.52	2.14
378	Kachchh	Kharoi	23.45417	70.35000	7.23	6.16
379	Kachchh	Khavada	23.83889	69.73056	6.27	5.31
380	Kachchh	Kotadi	23.04167	69.19167	8.26	7.96
381	Kachchh	Kotaya	23.04167	69.07500	11.03	9.01

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
382	Kachchh	Kothara	23.16194	68.91194	5.70	5.19
383	Kachchh	Kuda	23.53444	70.44028	27.35	23.49
384	Kachchh	Kumbhariya	23.34111	70.72361	7.62	-
385	Kachchh	Lakhpat	23.82306	68.77500	8.97	6.21
386	Kachchh	Lilpur	23.51111	70.65000	0.71	1.25
387	Kachchh	Lodai	23.40000	69.89167	15.57	14.84
388	Kachchh	Luni	22.87333	69.81167	9.00	6.87
389	Kachchh	Mata no madh	23.53333	68.95000	11.01	9.92
390	Kachchh	Mothala	23.20833	69.12500	3.95	3.21
391	Kachchh	Moti cher	23.75833	68.67500	3.84	3.11
392	Kachchh	Mundra	22.82778	69.72083	5.90	4.82
393	Kachchh	Naliya	23.25583	68.84000	10.80	9.54
394	Kachchh	Naliya (Bus S)	23.26667	68.83333	10.67	9.22
395	Kachchh	Rapar2	23.56667	70.63750	27.18	23.06
396	Kachchh	Ratanpur Khadir1	23.86083	70.36306	16.89	12.93
397	Kachchh	Rawapar	23.51667	69.07500	14.70	14.19
398	Kachchh	Rudramata	23.39167	69.70833	10.26	6.29
399	Kachchh	Samkhiari	23.30000	70.50833	7.22	5.67
400	Kachchh	Sedat	23.17139	69.63750	12.01	11.63
401	Kachchh	Shinaya	23.03333	70.05417	4.06	1.91
402	Kachchh	Sukhpar	23.20833	69.61667	13.77	13.03
403	Kachchh	Tera	23.28333	68.94722	11.85	11.38
404	Kachchh	Vinjhlan1	23.10000	69.02500	9.27	6.95
405	Kheda	Alina	22.80833	73.05833	11.28	9.74
406	Kheda	Dakor	22.76250	73.16944	7.28	5.37
407	Kheda	Kalesar	22.72083	73.19167	3.93	1.98
408	Kheda	Kapadvanj	23.00417	73.09167	13.03	7.51
409	Kheda	Kheda	22.73750	72.70417	6.00	-
410	Kheda	Ladvel	22.90833	73.12083	2.66	1.19
411	Kheda	Mahudha	22.78333	72.94167	4.95	2.90
412	Kheda	Nadiad2	22.68333	72.88333	10.27	-
413	Kheda	Nes_Pz	22.70833	73.20278	9.54	6.96
414	Kheda	Sarkhej_Pz-III	22.98611	72.88056	39.14	33.95
415	Kheda	Shekhupura	22.57500	72.62500	1.06	-
416	Kheda	Thasra	22.79444	73.21111	5.43	2.48
417	Kheda	Vaso	22.66111	72.75417	6.87	4.26
418	Kheda	Vyas vasna	23.10556	73.10417	24.87	15.08
419	Mahesana	Asjol	23.50833	72.18333	7.05	3.78
420	Mahesana	Bhandupara	23.72500	72.38333	9.74	8.12
421	Mahesana	Budasan	23.28750	72.37500	5.71	3.13
422	Mahesana	Daran_Pz-III	23.20639	72.27972	3.06	2.17
423	Mahesana	Dharpura	23.54583	72.11250	7.60	6.31
424	Mahesana	Dosaj	23.84167	72.45000	10.25	7.85
425	Mahesana	Jaska(Sy_4")Pz_II	23.82361	72.53472	15.43	16.02
426	Mahesana	Kalyanpur	23.12694	72.19306	4.87	4.24
427	Mahesana	Karalli (iii)	23.80417	72.48611	11.35	10.92
428	Mahesana	Kheralu(shallow	23.89778	72.61056	5.88	3.85
429	Mahesana	Kheralu1	23.88750	72.61250	12.53	9.65

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
430	Mahesana	Maguna	23.57778	72.28889	8.86	6.26
431	Mahesana	Mau	23.51028	72.51917	9.22	-
432	Mahesana	Modhera iii	23.71667	72.46667	9.53	7.50
433	Mahesana	Panchot	23.62917	72.34167	6.01	3.61
434	Mahesana	Rampura1	23.89167	72.51667	8.92	8.00
435	Mahesana	Sihi	23.80000	72.35000	12.49	10.61
436	Mahesana	Tarabh	23.75833	72.45833	8.98	6.96
437	Mahesana	Unad1	23.84583	72.71667	13.93	-
438	Mahesana	Unawa	23.76667	72.36250	4.38	3.56
439	Mahesana	Vidaj	23.24722	72.30000	3.78	2.09
440	Mahesana	Visnagar iv	23.70000	72.53333	3.25	2.62
441	Mahisagar	Balasinor	22.95833	73.33611	4.18	2.76
442	Mahisagar	Balasinor1	22.95000	73.32500	7.69	3.17
443	Mahisagar	Bar	23.16806	73.41111	6.07	2.78
444	Mahisagar	Bavaliya_Pz	23.30667	73.55500	26.81	5.87
445	Mahisagar	Gadhar	23.15000	73.77500	12.10	4.00
446	Mahisagar	Juna vasadra	23.08333	73.36250	5.19	2.88
447	Mahisagar	Kothamba	23.01944	73.51944	4.18	2.98
448	Mahisagar	Limbadia peti	23.20417	73.60000	5.24	2.82
449	Mahisagar	Lunawada	23.12917	73.60833	10.84	6.92
450	Mahisagar	Malekpur1	23.23056	73.73611	3.87	2.02
451	Mahisagar	Pandarvada	23.37500	73.63333	15.34	5.35
452	Mahisagar	Santrampur	23.17083	73.90833	9.37	5.23
453	Mahisagar	Santrampur1	23.19167	73.90833	9.72	5.44
454	Mahisagar	Ucharpi Pz	23.11917	73.47167	17.54	10.97
455	Mahisagar	Virpur_Pz	23.19306	73.48528	7.94	4.41
456	Morbi	Amar nagar	22.93333	70.80833	3.30	2.87
457	Morbi	Bhalgam	22.44167	71.08333	15.05	8.00
458	Morbi	Chhatar	22.50417	70.75417	6.45	4.38
459	Morbi	Hadmatia	22.68333	70.80833	9.55	5.94
460	Morbi	Halvad2	23.02083	71.18750	11.26	44682.00
461	Morbi	Juna Devaliya 1	22.97944	71.00889	-	2.40
462	Morbi	Kalyanpur2	22.65833	70.73333	21.74	12.36
463	Morbi	Lajai	22.71667	70.77917	6.10	3.65
464	Morbi	Macchukunda	23.00139	70.89583	6.34	5.43
465	Morbi	Malia	23.09167	70.76250	3.75	2.62
466	Morbi	Modpar1	22.90000	70.66667	2.90	1.86
467	Morbi	Morvi	22.81667	70.84167	3.07	2.91
468	Morbi	Mota dhansura	22.95833	70.61667	8.87	5.65
469	Morbi	Nichi mandal	22.85833	70.95000	6.15	4.57
470	Morbi	Sarvad	23.00639	70.70694	2.76	1.36
471	Morbi	Sindhavadar	22.55000	70.89167	12.19	9.49
472	Morbi	Sukhpar1	23.00833	71.28333	5.94	3.17
473	Narmada	Agar(Rep)_Pz	22.03111	73.65667	9.85	8.07
474	Narmada	Amayar	21.54722	73.76667	8.77	4.91
475	Narmada	Baman Phalia_Pz	21.79833	73.37917	19.82	15.56
476	Narmada	Chikada	21.52083	73.64583	5.37	3.01
477	Narmada	Garudeshwar	21.89167	73.65000	11.70	9.84

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
478	Narmada	Hirapura	21.86806	73.60000	6.56	5.01
479	Narmada	Jankh	21.49222	73.59694	3.25	-
480	Narmada	Kanbi pitha	21.52083	73.64583	3.42	1.94
481	Narmada	Kewadia_Pz	21.88278	73.70056	5.81	3.07
482	Narmada	Khaidipada	21.51389	73.51944	-	1.44
483	Narmada	Khota amba	21.73333	73.47500	2.06	1.27
484	Narmada	Namaria	22.04444	73.62222	4.43	2.99
485	Narmada	Nani singlot	21.66944	73.66667	9.76	7.20
486	Narmada	Ralda	21.61000	73.65250	-	1.96
487	Narmada	Rasela	21.92500	73.49167	-	15.40
488	Narmada	Ringani	21.84167	73.46667	2.08	2.06
489	Narmada	Sunderpura_Pz	21.83889	73.53472	31.89	-
490	Narmada	Umran	21.48806	73.88306	8.05	-
491	Navsari	Abrama	20.86250	72.90000	3.12	1.00
492	Navsari	Anklas	20.61944	73.26667	10.41	8.06
493	Navsari	Chadav	20.83111	73.33444	10.73	4.71
494	Navsari	Chinam	20.99167	72.88611	3.35	2.06
495	Navsari	Dandi	20.89167	72.80833	3.87	2.35
496	Navsari	Duvada	20.82861	73.05750	5.42	4.11
497	Navsari	Hond	20.73889	73.04583	8.69	3.88
498	Navsari	Kaliyari	20.72500	73.15000	11.38	2.67
499	Navsari	Kantasvel	20.79722	73.29167	8.15	3.90
500	Navsari	Khergam	20.63333	73.09583	7.51	2.79
501	Navsari	Manav Khadak	20.67417	73.23333	3.69	2.82
502	Navsari	Moti Valzar	20.80500	73.26667	7.60	3.40
503	Navsari	Navsari 1	20.95806	72.93500	5.40	2.35
504	Navsari	Onjal	20.83333	72.84167	6.11	3.69
505	Navsari	Panikhadak	20.64917	73.16694	12.71	6.00
506	Navsari	Pipalkhed	20.67500	73.28333	16.53	5.63
507	Navsari	Rankuva	20.81250	73.15833	7.65	2.75
508	Navsari	Sari_khurd	20.78750	72.95417	3.74	2.00
509	Navsari	Ubhrat	21.00833	72.74583	-	2.62
510	Navsari	Unai	20.85000	73.34167	9.49	-
511	Navsari	Vansda	20.76444	73.36306	11.31	8.45
512	Panchmahals	Bavaliya	23.32500	73.56944	8.87	-
513	Panchmahals	Godhra2	22.77083	73.63333	7.68	5.38
514	Panchmahals	Jambughoda	22.36944	73.72500	6.70	5.90
515	Panchmahals	Morwa (Hadaf) Pz-I	22.91806	73.84444	12.50	10.34
516	Panchmahals	Natapur	22.85722	73.82056	8.68	6.56
517	Panchmahals	Palla Rajgarh Pz	22.52278	73.70083	23.32	11.79
518	Panchmahals	Pavagadh	22.48750	73.55556	9.69	5.24
519	Panchmahals	Ranipura	22.72500	73.75833	8.57	4.26
520	Panchmahals	Shehra	22.95417	73.62500	3.18	1.33
521	Panchmahals	Shivrajpur	22.42500	73.59167	11.92	6.10
522	Panchmahals	Suliyat	23.06222	73.85083	20.17	15.91
523	Panchmahals	Tarkanda	22.54583	73.52917	10.89	3.60
524	Panchmahals	Timbi2	22.50833	73.50833	6.39	4.70
525	Panchmahals	Timbi2	22.50833	73.50833	6.39	4.70

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
526	Panchmahals	Timbi2	22.50833	73.50833	6.39	4.70
527	Panchmahals	Tuwa	22.80417	73.47083	4.68	3.32
528	Panchmahals	Vejalpur	22.69583	73.55833	6.30	4.09
529	Patan	Dharmoda	23.69722	72.06944	4.61	3.82
530	Patan	Dhinoj1	23.66250	72.27917	12.72	11.62
531	Patan	Moti chander	23.59444	71.78056	3.08	1.92
532	Patan	Patan2	23.84167	72.12361	17.51	17.01
533	Patan	Radhanpur2	23.82500	71.61389	1.93	-
534	Patan	Sander	23.76667	72.25417	13.15	10.71
535	Patan	Sankheshwar	23.52194	71.79083	2.09	1.10
536	Patan	Shankhari	23.77917	72.16250	16.99	16.13
537	Porbandar	Adityana	21.70861	69.71083	20.66	11.65
538	Porbandar	Adwana2	21.91667	69.60000	14.06	7.86
539	Porbandar	Babda	21.77000	69.58806	13.82	4.71
540	Porbandar	Bakharla	21.76472	69.66111	22.57	9.63
541	Porbandar	Bhavpura	21.80972	69.40833	9.45	6.69
542	Porbandar	Bhod	21.65889	69.82111	23.29	15.96
543	Porbandar	Degam	21.71028	69.60556	18.24	12.22
544	Porbandar	Hanumangadh1	21.79306	69.80278	27.01	14.29
545	Porbandar	Kadegi	21.45056	69.98333	2.63	0.73
546	Porbandar	Kandorna	21.64778	69.88333	21.22	12.00
547	Porbandar	Khambodar	21.80833	69.60139	11.16	5.37
548	Porbandar	Kolikhada	21.69972	69.61417	28.32	16.34
549	Porbandar	Kuchhadi	21.68333	69.55000	3.02	2.35
550	Porbandar	Kutiyana_Pz	21.62222	69.99722	13.34	5.56
551	Porbandar	Kutiyana1	21.63056	70.01667	12.65	5.27
552	Porbandar	Miyani	21.83333	69.38889	7.44	6.08
553	Porbandar	Mojiwana	21.88583	69.60028	13.24	5.03
554	Porbandar	Navibandar	21.44583	69.79167	5.09	3.56
555	Porbandar	Oddar	21.56667	69.68056	6.27	5.56
556	Porbandar	Palkhada1	21.75833	69.48750	12.88	7.06
557	Porbandar	Pata	21.29722	69.94167	5.30	4.37
558	Porbandar	Porbandar	21.64500	69.64250	5.72	2.66
559	Porbandar	Porbandar1	21.64167	69.62500	4.40	3.51
560	Porbandar	Ranavav2	21.68333	69.74583	18.26	9.34
561	Porbandar	Ratadi	21.72028	69.51194	7.09	4.83
562	Porbandar	Simar	21.94694	69.68583	13.23	6.92
563	Porbandar	Tukda	21.51611	69.72861	3.51	2.48
564	Porbandar	Visavada Mul Dwarka	21.78556	69.44639	9.62	6.85
565	Rajkot	Bhada jodiya	21.66250	70.34167	22.58	10.17
566	Rajkot	Bhadla	22.18333	71.09167	17.94	11.40
567	Rajkot	Chordi	21.91667	70.74861	10.08	6.77
568	Rajkot	Dadia	22.09167	70.73333	12.48	7.68
569	Rajkot	Dhoraji	21.74583	70.28583	17.64	10.13
570	Rajkot	Ganod	21.67500	70.17917	5.37	3.47
571	Rajkot	Gogavadar	21.96667	70.87500	11.04	5.75
572	Rajkot	Halenda	22.09167	71.05000	8.09	2.94
573	Rajkot	Jamwali	21.93333	70.76667	7.25	3.51

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
574	Rajkot	Jasapur	21.89167	70.48333	13.50	9.16
575	Rajkot	Jasdan	22.04444	71.21389	8.95	5.64
576	Rajkot	Jasdan2	22.05833	71.22083	10.70	6.00
577	Rajkot	Jetpur	21.75611	70.61944	13.50	5.48
578	Rajkot	Jetpur pithad.	21.77500	70.63333	14.36	-
579	Rajkot	Kalithad1	22.01944	70.66028	7.82	5.20
580	Rajkot	Khamta	22.47500	70.55000	12.97	6.73
581	Rajkot	Lalavadar	22.13333	71.30417	10.18	5.55
582	Rajkot	Lodhika1	22.14167	70.64167	9.72	6.26
583	Rajkot	Mota Dadwa	21.99833	70.99389	12.98	5.44
584	Rajkot	Motagundala	21.73472	70.50139	10.10	6.06
585	Rajkot	Movaiya	22.45000	70.60833	9.94	7.32
586	Rajkot	Padadhari1	22.44722	70.60833	-	5.10
587	Rajkot	Patanvav	21.64444	70.26111	17.27	7.60
588	Rajkot	Pedhla	21.75139	70.59167	22.22	14.55
589	Rajkot	Rajkot	22.30556	70.80833	5.55	3.57
590	Rajkot	Rajkot1	22.30000	70.80000	7.37	4.84
591	Rajkot	Ranpur1	22.36667	70.92917	15.05	10.63
592	Rajkot	Ribda	22.12500	70.76667	10.94	6.23
593	Rajkot	Targhari	22.38333	70.66667	7.43	4.14
594	Rajkot	Umrali	21.91944	70.60417	9.12	5.75
595	Rajkot	Upleta1	21.74861	70.27500	-	7.20
596	Rajkot	Vinchhia	22.20833	71.37917	4.97	2.81
597	Rajkot	Viranagar	22.02500	71.12500	10.62	6.00
598	Rajkot	Virpur1	21.85000	70.69583	10.75	8.27
599	Sabarkantha	Anwarpura Pz	23.40556	72.84556	38.12	37.58
600	Sabarkantha	Atarsumba	23.98611	73.20833	9.64	-
601	Sabarkantha	Bhadreshwar	23.74583	72.97917	7.90	6.66
602	Sabarkantha	Bhiloda_Pz	23.76667	73.25000	9.20	-
603	Sabarkantha	Boriya	23.24278	72.94083	7.65	6.58
604	Sabarkantha	Chandap_Pz	23.93194	72.85694	13.69	9.53
605	Sabarkantha	Choriwad	23.90000	73.11944	24.14	17.93
606	Sabarkantha	Derol Pz-II	23.59944	72.90250	46.83	42.86
607	Sabarkantha	Gadha	23.70833	72.94167	18.43	16.17
608	Sabarkantha	Harsol1	23.37778	73.01667	15.57	10.97
609	Sabarkantha	Himmatnagar_Pz	23.60833	72.97083	9.21	7.47
610	Sabarkantha	Idar	23.84167	73.03750	9.13	5.51
611	Sabarkantha	Jhaloti	23.95000	73.33750	11.39	5.44
612	Sabarkantha	Khedbrahma_Pz	24.03611	73.04444	4.49	1.93
613	Sabarkantha	Matoda	24.11111	73.00833	17.10	10.78
614	Sabarkantha	Poshina2	24.37500	73.03333	6.95	3.34
615	Sabarkantha	Revas	23.82083	73.11667	18.80	11.42
616	Sabarkantha	Silwad	24.00833	73.11667	11.39	6.37
617	Sabarkantha	Varvada	23.44194	73.05667	-	10.38
618	Sabarkantha	Vijaynagar	24.00833	73.35417	7.91	-
619	Sabarkantha	Vijaynagar_Pz	24.00694	73.33333	11.65	4.89
620	Sabarkantha	Wadali	23.93333	73.03333	29.17	18.56
621	Sabarkantha	Waliampura Pz	23.35111	72.97083	38.55	37.30

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
622	Surat	Allu	21.06250	73.19167	4.00	2.81
623	Surat	Bardoli	21.11528	73.10000	6.82	3.49
624	Surat	Bhatkol	21.38028	73.00417	3.90	3.08
625	Surat	Chavada	21.47472	73.59500	4.09	1.79
626	Surat	Digas	21.24833	73.02556	11.53	4.90
627	Surat	Dungri	21.40833	73.13333	10.48	3.17
628	Surat	Dungri	20.68861	72.94944	10.48	3.17
629	Surat	Gangadhra	21.11861	73.07528	9.97	6.68
630	Surat	Jhankhavav	21.45000	73.32917	7.40	4.53
631	Surat	Jhankhvav	21.46667	72.95278	9.39	4.01
632	Surat	Juna umarpada	21.45833	73.49167	-	3.46
633	Surat	Kadod 1	21.22139	73.21889	7.31	5.87
634	Surat	Kasal	21.32222	73.12694	7.86	3.85
635	Surat	Kathor	21.29167	72.92917	13.69	9.29
636	Surat	Mahuva2	21.02083	73.14583	17.31	15.80
637	Surat	Malda	21.36667	73.35000	7.98	3.89
638	Surat	Mandvi2	21.25417	73.29583	13.74	10.99
639	Surat	Mota	21.17028	73.06861	3.21	2.40
640	Surat	Moti Sarkui	21.27917	73.34972	8.71	4.54
641	Surat	Navi pardi	21.32222	72.97083	3.37	3.28
642	Surat	Nogama	21.29083	73.21444	3.14	1.68
643	Surat	Olpad2	21.34167	72.75833	2.51	1.78
644	Surat	Palsana	21.07778	72.99167	2.80	1.40
645	Surat	Paneshwar	21.45417	73.19833	14.16	7.64
646	Surat	Puna	20.92361	73.23333	12.92	7.86
647	Surat	Puna1	20.92917	73.22917	10.09	6.01
648	Surat	Sachin town	21.09167	72.87500	4.63	2.16
649	Surat	Sarbhon	21.05833	73.09167	3.56	2.51
650	Surat	Sultanabad	21.09167	72.72500	6.15	4.66
651	Surat	Ten-bardoli	21.11667	73.10000	7.18	3.42
652	Surat	Ushker	21.34056	73.09778	5.27	4.81
653	Surat	Vaheval	20.83722	73.28778	11.16	4.61
654	Surat	Wadoli	21.42500	72.82917	2.29	1.53
655	Surendranagar	Anindra	22.81028	71.70583	5.75	2.35
656	Surendranagar	Bajana	23.11667	71.78333	2.23	2.08
657	Surendranagar	Bamanbor	22.41667	71.04167	9.82	6.88
658	Surendranagar	Chotila1	22.42500	71.18167	10.58	6.16
659	Surendranagar	Dasada	23.32000	71.82417	4.91	3.68
660	Surendranagar	Dedadra	22.77500	71.73333	4.05	3.23
661	Surendranagar	Jhinjhuvada	23.35000	71.65833	7.52	5.91
662	Surendranagar	Kharaghoda	23.18750	71.75000	-	1.76
663	Surendranagar	Kherwa	21.41889	73.95972	2.76	1.28
664	Surendranagar	Kherwa	23.00417	71.74583	2.76	1.28
665	Surendranagar	Lakhtar	22.85833	71.78333	4.58	3.92
666	Surendranagar	Limbdil	22.56667	71.81250	-	2.09
667	Surendranagar	Limbdil-Pz	22.57222	71.80833	2.68	1.76
668	Surendranagar	Moti Moladi	22.42083	71.11028	10.61	6.25
669	Surendranagar	Muli	22.65000	71.46667	8.89	6.29

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
670	Surendranagar	Olak	22.91861	71.86333	6.56	3.27
671	Surendranagar	Pipli	23.06000	71.73417	0.90	0.17
672	Surendranagar	Rajsitapur	22.84167	71.59167	6.86	3.49
673	Surendranagar	Ratanpur1	22.85833	71.27083	-	6.95
674	Surendranagar	Sara	22.80000	71.19722	4.18	-
675	Surendranagar	Sarla	22.73333	71.36667	12.66	8.71
676	Surendranagar	Sayala	22.53333	71.48333	13.84	6.53
677	Surendranagar	Shiyani	22.66667	71.82917	4.22	2.82
678	Surendranagar	Sudamda	22.45417	71.48500	5.14	2.64
679	Surendranagar	Surendranagar	22.72361	71.67083	3.17	1.83
680	Surendranagar	Surendranagar2	22.71667	71.60833	5.21	4.68
681	Surendranagar	Tarnetar	22.64167	71.21667	17.34	15.21
682	Surendranagar	Vanala	22.43333	71.92083	-	2.64
683	Surendranagar	Visawadi	23.34167	71.73333	4.44	3.36
684	Tapi	Bedchit	20.95000	73.35139	9.88	4.99
685	Tapi	Bhurvel (ukai)	21.22500	73.57917	5.47	2.82
686	Tapi	Chapawadi	21.15139	73.39361	7.04	2.88
687	Tapi	Gandhinagar	21.16417	73.69556	-	2.62
688	Tapi	Jesingpura[sg]	21.17083	73.55417	7.73	6.21
689	Tapi	Karanjvel	21.01278	73.45806	8.21	4.93
690	Tapi	Kelkui	21.04194	73.32333	2.41	1.95
691	Tapi	Khedwada (Ashram Falia)	21.28111	73.46528	7.39	5.20
692	Tapi	Kherwa	21.41889	73.95972	2.76	1.28
693	Tapi	Kherwa	23.00417	71.74583	2.76	1.28
694	Tapi	Motichher	21.21250	73.36222	3.84	2.31
695	Tapi	Nizar	21.48056	74.20000	14.62	13.46
696	Tapi	Nizar1	21.47722	74.19056	12.06	8.84
697	Tapi	Tawali	21.37611	73.90167	7.74	5.07
698	Tapi	Tokarwa 1	21.31000	73.85111	-	4.03
699	Tapi	Uchchhal	21.17194	73.76917	11.54	7.71
700	Tapi	Vadade-Khurd	21.25167	73.81694	3.20	0.89
701	Tapi	Valod	21.05000	73.26667	4.79	2.80
702	Tapi	Vyara1	21.10833	73.39583	4.16	3.45
703	The dangs	Aherdi	20.69167	73.61667	-	1.81
704	The dangs	Ahwa_Pz	20.75889	73.68611	3.24	2.45
705	The dangs	Ahwa1	20.75833	73.68333	3.66	1.15
706	The dangs	Bari Pada	20.64000	73.69139	11.77	1.23
707	The dangs	Bori Gaotha 1	20.81083	73.50306	8.98	4.05
708	The dangs	Chikhli	20.65833	73.68750	8.72	0.91
709	The dangs	Chinchnogaotha	20.80833	73.55278	7.50	2.58
710	The dangs	Chinchpada	20.63750	73.77500	5.55	1.24
711	The dangs	Dhumkal	20.64583	73.79167	4.16	1.06
712	The dangs	Gadad	20.63750	73.77500	5.06	2.51
713	The dangs	Ghubita	20.80000	73.73750	2.63	0.65
714	The dangs	Jakana	20.63333	73.74583	6.70	1.29
715	The dangs	Jamalpada	20.73167	73.52056	7.25	4.31
716	The dangs	Kalibel	20.92083	73.58056	3.22	0.90
717	The dangs	Mahal	20.91667	73.67917	5.62	3.10

S. N.	District	Site Name	Latitude	Longitude	Pre-Monsoon WL, m bgl	Post-Monsoon WL, m bgl
718	The dangs	Malegaon	20.60000	73.74583	4.46	0.68
719	The dangs	Nadak khadi	20.80417	73.61250	6.31	1.51
720	The dangs	Nana pada	20.70000	73.58333	8.10	2.22
721	The dangs	Sakarpatal	20.71944	73.55694	5.97	1.49
722	The dangs	Sodmal	20.86667	73.61667	11.40	2.24
723	The dangs	Subir	20.92222	73.58056	6.45	1.31
724	The dangs	Umberpada	20.68333	73.72500	5.87	1.40
725	The dangs	Vaghai	20.76389	73.50444	12.55	-
726	The dangs	Vazat Amba	20.87833	73.51833	6.97	3.47
727	Vadodara	Amreshwar	22.22778	73.48333	4.03	2.20
728	Vadodara	Chella Karamsiya Pz	22.39667	73.43222	3.56	1.97
729	Vadodara	Chhaliyar	22.66667	73.31667	22.42	19.90
730	Vadodara	Chisadia	22.40000	74.13333	11.88	-
731	Vadodara	Chitral PZ_II	22.18194	72.94583	24.69	23.64
732	Vadodara	Ghayaj ii	22.23333	73.05417	23.78	21.26
733	Vadodara	Juna samalya	22.50417	73.28333	12.59	10.64
734	Vadodara	Karamasiya	22.42083	73.41944	12.90	8.52
735	Vadodara	Masor	22.14167	72.90833	-	11.55
736	Vadodara	Patiyapura	22.27500	73.44167	8.96	5.50
737	Vadodara	Saidal	22.28333	73.50278	2.89	1.49
738	Vadodara	Sankheda	22.53889	73.17500	27.52	-
739	Vadodara	Sinor	21.91250	73.34167	23.69	22.61
740	Vadodara	Tundav	22.48333	73.20278	12.56	8.55
741	Vadodara	Vadodara Ii	22.30472	73.27167	6.50	6.76
742	Vadodara	Vega	22.15944	73.41250	6.37	3.96
743	Vadodara	Vejpur2	22.74722	73.35556	2.44	1.56
744	Vadodara	Waghodia Pz	22.36389	73.37694	7.19	-
745	Valsad	Awadha	20.51667	73.28750	3.70	4.82
746	Valsad	Chavshala	20.32833	73.32583	4.59	1.30
747	Valsad	Dahli (bhilad)	20.25833	72.88333	8.97	2.43
748	Valsad	Dharampur 3	20.53083	73.16250	12.99	8.35
749	Valsad	Dharampur1	20.53639	73.17056	10.32	4.57
750	Valsad	Dungri	21.40833	73.13333	10.48	3.17
751	Valsad	Dungri	20.68861	72.94944	10.48	3.17
752	Valsad	Fali	20.31306	73.37611	11.40	1.12
753	Valsad	Kanadu	20.32500	72.84167	6.37	3.38
754	Valsad	Kaparda	20.34167	73.21667	5.56	2.10
755	Valsad	Karwad	20.36250	72.97500	4.62	3.28
756	Valsad	Lakadmal	20.46667	73.15833	7.63	-
757	Valsad	Muli1	20.63333	73.02500	3.41	1.96
758	Valsad	Nanaponda	20.41389	73.12083	10.06	5.62
759	Valsad	Tithal	20.60000	72.90000	7.78	5.53
760	Valsad	Tumb	20.21667	72.84167	4.01	2.88
761	Valsad	Udwada	20.46361	72.91806	6.41	2.09
762	Valsad	Umargaon	20.19167	72.75000	3.95	3.51
763	Valsad	Valsad1	20.60556	72.92778	-	9.58
764	Valsad	Vapi Balitha	20.38028	72.90444	9.54	4.80

Annexure V

Water quality data of National Hydrograph Stations of Gujarat State May 2021

S.N.	District	Site Name	Latitude	Longitude	pH	EC μs/cm at 25°C	TDS	TH	CO ₃	HCO ₃	Cl	S04	NO ₃	F	Alkal- inity	Ca	Mg	Na	K	SiO ₂	SAR
1	Ahmedabad	Dalod	23.36667	71.96667	7.90	12860	8616	1290	0	1220	3834	625	5.60	4.20	1000	136	231	2400	55	33	29.05
2	Ahmedabad	Dhandhuka1	22.37500	71.98611	8.37	12310	8248	1300	192	537	3195	755	46.00	5.00	760	96	258	2140	28	51	25.81
3	Ahmedabad	Endla	23.27222	72.05833	7.67	713	478	260	0	342	43	42	5.00	0.54	280	52	32	50	10	22	1.35
4	Ahmedabad	Gamph	22.35833	72.16667	7.87	430	288	140	0	195	36	16	0.70	0.67	160	28	17	42	3.20	34	1.54
5	Ahmedabad	Ghuma	23.03333	72.44583	7.34	4252	2849	750	0	781	888	280	0.50	0.67	640	92	126	485	225	34	7.70
6	Ahmedabad	Kumarkhan	22.90000	72.01667	7.51	9154	6133	760	0	695	2485	410	14.00	2.10	570	100	124	1720	42	45	27.13
7	Ahmedabad	Mandal2	23.27500	71.91667	8.71	3827	2564	180	60	195	973	226	1.20	1.65	260	36	22	750	3.10	18	24.31
8	Ahmedabad	Tagadi1	22.29583	71.94722	7.65	1642	1100	320	0	415	241	185	21.00	1.92	340	64	39	248	4.80	26	6.02
9	Ahmedabad	Ughraj1	23.36667	72.10000	7.65	610	409	180	0	256	57	45	0.30	1.20	210	36	22	70	1.60	17	2.27
10	Ahmedabad	Viramgam2	23.14167	72.03333	8.13	6681	4476	410	0	781	1775	370	1.70	1.21	640	44	73	1400	9.30	26	30.06
11	Ahmedabad	Koth	22.65505	72.28780	7.87	611	409	200	0	207	57	46	21.00	0.48	170	64	10	55	0.20	9	1.69
12	Ahmedabad	Vagad	22.29710	71.94673	7.30	7736	5183	1460	0	891	1562	1075	1.70	2.00	730	248	204	1110	31	76	12.63
13	Ahmedabad	Vinchhiya	22.92524	72.29120	7.83	2632	1763	360	0	744	341	259	0.00	1.31	610	64	49	450	4.00	21	10.31
14	Ahmedabad	Viramgam	23.13639	72.03861	8.16	6724	4505	370	0	757	1773	389	2.80	1.30	620	44	63	1432	11	25	32.37
15	Ahmedabad	Dalod	23.35278	71.96750	8.01	12980	8697	1271	0	1196	3772	638	12.00	4.10	981	144	221	2480	53	31	30.26
16	Ahmedabad	Endla	23.28028	72.04861	7.87	688	461	250	0	329	43	36	3.00	0.50	270	48	32	50	11	20	1.37
17	Amreli	Ankadia mota	21.64529	71.10612	8.14	1300	871	360	0	293	199	88	88.80	0.85	240	64	49	155	1.61	48	3.56
18	Amreli	Bagasara	21.47675	70.96082	8.18	2358	1580	490	0	171	454	195	161.70	0.66	140	108	54	280	1.77	47	5.50
19	Amreli	Bherai	20.97403	71.48683	8.20	2140	1434	360	0	244	511	80	11.44	0.72	200	56	54	300	29	30	6.87
20	Amreli	Bhuva	21.42771	71.35965	8.39	8258	5533	530	192	488	1995	514	171.25	1.04	720	32	109	1580	72	34	29.84
21	Amreli	Chavand	21.81105	71.40574	8.12	670	449	210	0	317	57	20	11.00	0.90	260	40	27	71	0.90	46	2.12
22	Amreli	Dharai (Balmukund)	21.80774	71.14809	8.33	925	620	310	36	183	135	55	31.16	0.75	210	68	34	84	0.85	44	2.07
23	Amreli	Goradka	21.22802	71.40808	8.01	1190	797	460	0	195	178	94	116.85	0.66	160	88	58	76	0.63	60	1.55
24	Amreli	Ingoral	21.22684	71.20257	8.26	775	519	260	0	281	64	76	29.21	0.64	230	36	41	75	0.69	45	2.02
25	Amreli	Kadiyali	20.86175	71.30227	7.79	4710	3156	750	0	183	1377	158	8.44	1.09	150	164	83	660	10	22	10.48
26	Amreli	Khamba	21.14645	71.23811	8.30	668	448	210	48	220	50	23	10.21	0.75	260	40	27	70	0.86	39	2.10
27	Amreli	Kunkavav	21.65550	70.98048	7.97	1550	1039	450	0	329	270	120	77.60	0.82	270	72	66	166	1.19	68	3.41
28	Amreli	Lathi	21.72698	71.38298	8.27	1535	1028	280	0	268	298	67	24.46	0.92	220	32	49	204	2.49	55	5.31
29	Amreli	Mandal	21.09944	71.57929	7.89	4648	3114	1310	0	195	1179	190	250.00	0.89	160	204	195	400	6.45	87	4.81
30	Amreli	Morjhar	21.37577	71.11398	8.35	895	600	320	48	171	149	31	30.40	0.63	220	60	41	73	1.00	48	1.77

31	Amreli	Piyava	21.37955	71.46023	8.47	1350	905	260	72	366	156	26	76.00	0.82	420	28	46	206	0.81	47	5.55
32	Amreli	Punjapadar	21.53050	71.35919	8.58	1165	781	70	96	207	128	51	10.13	1.22	330	16	7	220	7.14	36	11.43
33	Amreli	Sanaria	21.55006	71.43192	8.25	4030	2700	550	0	464	511	950	3.19	1.20	380	72	90	685	5.83	7	12.70
34	Amreli	Trakuda	21.01651	71.28288	8.62	738	494	260	36	146	107	46	30.33	0.76	180	60	27	65	1.97	33	1.75
35	Amreli	Untvad	21.90680	71.22283	8.38	1060	710	420	60	73	135	90	135.80	0.80	160	100	41	68	0.50	51	1.44
36	Amreli	Vaghania junia	21.58344	70.96950	8.28	1960	1313	360	0	488	341	100	95.00	1.06	400	36	66	300	17	68	6.87
37	Amreli	Vanda	21.38972	71.50750	8.65	1710	1146	70	108	464	227	57	5.81	1.04	560	16	7	394	2.31	18	20.47
38	Amreli	Vankiya	21.53957	71.16553	8.26	1490	998	250	0	366	270	68	35.00	0.78	300	36	39	230	1.63	41	6.32
39	Amreli	Virpur	21.25393	71.14588	8.23	775	519	310	0	403	43	28	11.69	0.42	330	64	36	52	4.25	37	1.28
40	Anand	Adas_DW	22.47249	73.03515	8.33	1760	1179	625	60	464	213	25	86.10	0.55	480	44	125	95	3.17	38	1.65
41	Anand	Anklav2	22.37637	72.99713	8.39	1895	1270	640	60	604	213	32	40.30	0.72	595	20	143	140	2.61	70	2.41
42	Anand	Bandhani	22.53797	72.81221	8.27	2246	1505	720	60	397	454	21	69.00	1.05	425	132	95	162	33	27	2.62
43	Anand	Bhadran (Utiyapara)	22.38449	72.90135	8.27	686	460	300	60	177	57	8	5.00	0.42	245	52	41	19	1.31	37	0.47
44	Anand	Dali	22.28320	72.76294	8.52	3276	2195	650	66	622	589	161	15.60	1.18	620	180	49	541	23	51	9.23
45	Anand	Dharmaj	22.42074	72.78741	8.62	2796	1873	310	126	738	269	108	106.00	1.39	815	32	56	492	2.48	78	12.14
46	Anand	Ghora	22.69264	73.04956	8.33	2395	1605	690	6	354	518	112	42.00	0.57	300	264	7	207	20	58	3.42
47	Anand	Kansari1	22.34128	72.65155	8.54	5090	3410	700	168	488	1099	233	22.70	0.82	680	100	109	846	3.47	50	13.91
48	Anand	Parvata	22.69117	73.08490	8.28	1368	917	460	90	287	170	65	6.90	1.03	385	72	68	97	2.55	39	1.96
49	Anand	Tol	22.49961	72.59696	6.91	700	469	270	0	207	78	20	62.00	0.65	170	48	36	32	7.01	23	0.84
50	Arvalli	Shamlaji	23.68300	73.36843	7.72	451	302	140	0	159	50	17	3.20	0.85	130	40	10	41	0.65	22	1.51
51	Arvalli	Bhiloda2	23.76232	73.26778	7.71	839	562	240	0	256	113	42	26.00	0.93	210	48	29	84	3.10	26	2.36
52	Arvalli	Takatuka_1	23.80310	73.28951	7.63	1822	1221	430	0	317	355	63	89.00	0.59	260	88	51	222	1.40	24	4.65
53	Arvalli	Gadada	23.59517	73.20598	7.94	1683	1128	570	0	183	255	217	146.00	1.20	150	100	78	130	0.65	32	2.37
54	Arvalli	Medasana	23.52886	73.21644	8.13	904	606	250	0	183	142	44	46.00	0.55	150	48	32	92	0.63	33	2.53
55	Arvalli	Modasa2	23.46114	73.30266	8.02	738	494	170	0	134	113	50	34.00	0.73	110	40	17	88	2.70	50	2.93
56	Arvalli	Seenawad	23.47635	73.39560	7.86	1590	1065	550	0	134	333	130	110.00	0.87	110	120	61	99	17	26	1.84
57	Arvalli	Hamirpur	23.40632	73.46060	7.74	1340	898	470	0	146	284	56	97.00	1.10	120	124	39	95	0.97	26	1.91
58	Arvalli	Malpur_1	23.37151	73.45550	7.93	756	507	310	0	183	64	37	122.00	0.72	150	68	34	35	0.45	43	0.86
59	Arvalli	Karanpur	23.33241	73.32694	7.89	633	424	180	0	183	85	23	32.00	0.67	150	44	17	69	0.40	15	2.24
60	Arvalli	Dhansura	23.34719	73.19948	7.91	984	659	380	0	305	121	56	51.00	0.59	250	52	61	72	0.54	63	1.61
61	Arvalli	Alwa Kampa	23.27700	73.21062	8.15	906	607	290	0	366	85	43	31.00	0.70	300	36	49	94	0.58	64	2.40
62	Arvalli	Boral	23.12906	73.21503	7.90	3364	2254	861	0	342	815	69	131.00	0.50	280	80	161	345	1.20	57	5.11
63	Arvalli	Sathamba	23.17337	73.33040	8.35	768	515	290	36	293	64	23	4.80	0.75	300	44	44	61	2.70	52	1.56
64	Banaskantha	Dantiwada	24.31485	72.32659	8.07	566	379	240	0	220	64	21	26.50	0.23	180	68	17	32	0.83	33	0.90
65	Banaskantha	Sodhapur	24.40309	72.29688	8.26	908	608	170	0	390	85	35	30.00	1.31	320	40	17	152	2.50	33	5.07
66	Banaskantha	Gangundra	24.43964	72.36480	7.74	3320	2224	1000	0	439	852	120	79.65	1.33	360	216	112	312	18	44	4.28
67	Banaskantha	Khoda	24.65671	71.77069	8.97	2518	1687	150	120	464	412	140	10.90	1.38	580	12	29	510	9.05	16	18.09
68	Banaskantha	Mohabatgadh	24.15584	72.70437	7.77	1255	841	420	0	171	277	60	77.85	0.99	140	144	15	120	2.74	38	2.55
69	Banaskantha	Ratanpur	24.17833	72.74837	7.43	1243	833	490	0	183	213	70	142.70	0.24	150	136	36	90	2.40	42	1.77
70	Banaskantha	Ghanapipdi	24.29368	72.94674	7.80	830	556	280	0	342	71	36	41.65	1.50	280	60	32	80	2.15	53	2.08

71	Banaskantha	Amirgadh	24.40072	72.64781	8.14	2998	2009	880	0	622	611	162	94.85	0.74	510	112	146	355	3.75	53	5.20
72	Banaskantha	Iqbalgadh	24.34487	72.54673	7.93	755	506	320	0	305	71	32	41.85	0.36	250	64	39	42	1.28	50	1.02
73	Bharuch	Bharuch	21.68160	72.81526	8.29	1400	938	410	78	232	227	84	10.90	0.48	320	80	51	128	6.02	54	2.75
74	Bharuch	Bhensli	21.72439	72.75247	8.35	836	560	240	6	146	191	15	6.90	0.45	130	56	24	81	10	35	2.28
75	Bharuch	Chhindra	22.10140	72.59498	8.32	1105	740	350	54	207	156	35	43.80	0.35	260	76	39	53	68	48	1.24
76	Bharuch	Dahegam	22.18464	72.59017	7.84	1520	1018	600	0	415	284	13	5.60	0.15	340	60	109	44	47	36	0.77
77	Bharuch	Ilav	21.44526	72.80360	7.79	2700	1809	320	0	958	408	10	36.80	1.23	785	92	22	449	40	54	10.92
78	Bharuch	Jetpur1	21.58398	72.81075	8.27	5555	3722	1550	144	146	1489	296	15.70	0.65	360	220	243	522	59	44	5.77
79	Bharuch	Jokhla	21.63768	73.28153	8.11	1044	699	330	0	293	184	33	13.80	1.07	240	32	61	92	0.76	72	2.19
80	Bharuch	Kalak_1	22.02876	72.76415	8.02	874	586	320	0	299	106	13	30.50	0.80	245	68	36	39	25	48	0.95
81	Bharuch	Kaswa (Koswa)	21.68163	72.81538	8.31	800	536	330	54	171	121	6	1.70	0.21	230	76	34	20	24	46	0.47
82	Bharuch	Kavi	21.19533	72.63668	8.72	2350	1575	300	108	360	340	135	125.40	0.37	475	24	58	151	416	45	3.80
83	Bharuch	Kondh	21.57764	73.07601	8.06	1040	697	480	0	311	128	64	36.00	1.09	255	28	100	15	13	42	0.30
84	Bharuch	Luhara	21.67211	72.55233	7.93	1051	704	230	0	171	184	65	43.90	0.74	140	36	34	92	81	28	2.63
85	Bharuch	Mahegam1	21.67619	72.75987	8.28	470	315	170	24	165	43	4	5.00	0.33	175	36	19	28	2.64	25	0.93
86	Bharuch	Motwan	22.55401	72.88333	7.96	3842	2574	950	0	439	957	185	9.70	0.68	360	220	97	460	11	38	6.49
87	Bharuch	Navetha	21.70914	72.82814	7.91	5205	3487	1700	0	732	1312	119	8.10	0.22	600	280	243	365	85	66	3.85
88	Bharuch	Netrang1	21.63507	73.36611	8.03	987	661	320	0	189	177	63	12.90	0.44	155	80	29	65	1.41	51	1.57
89	Bharuch	Nirnavi	21.79446	72.65811	8.27	750	503	260	60	189	85	2	21.10	0.63	255	60	27	42	17	31	1.14
90	Bharuch	Panoli	21.53694	72.97481	8.10	2572	1723	300	0	256	652	140	33.60	1.40	210	44	46	458	1.05	28	11.49
91	Bharuch	Raymal	21.51905	72.81970	8.28	2150	1441	400	60	348	454	37	8.50	0.88	385	56	63	304	7.84	20	6.62
92	Bharuch	Roja tankaria	21.91044	72.78855	8.28	1425	955	430	36	421	199	24	4.60	0.21	405	96	46	103	41	50	2.15
93	Bharuch	Sahol	21.44464	72.81835	8.07	4600	3082	1250	0	415	1135	208	173.30	0.94	340	280	134	477	2.52	42	5.87
94	Bharuch	Sajod	21.61920	72.91082	8.66	2620	1755	240	114	610	369	80	29.60	1.51	690	32	39	490	2.62	59	13.75
95	Bharuch	Sarod	22.16102	72.75574	8.39	1550	1039	460	114	317	184	48	8.10	0.78	450	40	88	140	2.43	44	2.84
96	Bharuch	Tankari	21.98822	72.66913	8.08	6856	4594	1900	0	854	1738	227	72.60	0.51	700	100	401	636	162	44	6.35
97	Bharuch	Utraj	21.58766	72.82431	8.41	2000	1340	540	72	519	213	90	56.90	0.73	545	56	97	186	21	67	3.49
98	Bharuch	Bhadkodara	22.05727	72.58730	8.48	5150	3451	1100	216	781	1028	163	3.90	0.73	1000	100	207	635	70	28	8.32
99	Bhavnagar	Timbi2	20.89583	71.20417	8.39	2660	1782	390	96	244	462	146	224.20	0.88	360	32	75	412	7.94	44	9.06
100	Bhavnagar	Bhavnagar1	21.77363	72.14550	7.18	1315	881	360	0	305	241	65	29.60	0.49	250	80	39	150	3.71	40	3.44
101	Bhavnagar	Bora	21.16294	71.87259	8.64	1470	985	80	120	488	78	50	55.00	2.75	600	12	12	325	1.88	23	15.80
102	Bhavnagar	Datha	21.21385	71.95005	8.45	1435	961	220	84	122	312	50	7.53	1.09	240	44	27	224	9.25	19	6.57
103	Bhavnagar	Dudhala	21.14092	71.65106	7.94	2540	1702	840	0	305	540	154	167.35	0.46	250	88	151	214	4.00	101	3.21
104	Bhavnagar	Gariyadhar	21.54434	71.56363	7.83	2595	1739	820	0	244	525	284	152.90	0.65	200	88	146	231	0.87	91	3.51
105	Bhavnagar	Ghogha	21.68028	72.28174	8.42	2780	1863	420	120	403	391	199	182.20	0.29	530	92	46	420	63	51	8.91
106	Bhavnagar	Jalia	21.79995	71.61096	7.30	2910	1950	1050	0	293	689	210	82.65	0.50	240	224	119	226	1.70	82	3.03
107	Bhavnagar	Longadi	21.21325	71.88606	8.20	760	509	140	0	293	78	40	6.38	0.60	240	40	10	96	28.70	68	3.51
108	Bhavnagar	Lonjdhara	22.09637	71.89315	8.48	1445	968	280	72	317	213	28	77.25	1.72	380	32	49	238	0.69	89	6.19
109	Bhavnagar	Mahuva	21.09996	71.74701	8.52	5070	3397	220	132	451	1115	310	72.25	0.94	590	24	39	1025	2.16	42	30.05
110	Bhavnagar	Motividal	21.19150	71.54910	8.26	1230	824	440	0	403	185	65	25.00	0.35	330	64	68	99	6.86	74	2.06

111	Bhavnagar	Panchpipla	21.54456	71.72486	8.16	1535	1028	350	0	403	284	65	36.00	0.64	330	40	61	210	0.56	56	4.87
112	Bhavnagar	Piparla	21.63639	71.91889	8.05	720	482	270	0	256	78	40	29.27	0.33	210	48	36	52	0.88	82	1.39
113	Bhavnagar	Sajinasar	21.42872	71.91444	8.18	790	529	250	0	244	92	52	35.35	0.49	200	44	34	78	3.14	50	2.14
114	Bhavnagar	Sandhida	21.68750	71.75833	7.97	890	596	340	0	342	99	48	10.29	0.39	280	56	49	68	3.35	48	1.61
115	Bhavnagar	Talaja2	21.36575	72.02076	8.08	2000	1340	790	0	232	476	128	85.70	0.37	190	84	141	113	0.86	96	1.75
116	Bhavnagar	Timbi2	20.89445	71.20252	8.59	815	546	260	48	73	156	56	30.04	0.39	140	32	44	86	1.75	45	2.33
117	Bhavnagar	Trapaj	21.42437	72.09983	7.19	1475	988	670	0	281	163	160	175.00	0.34	230	132	83	58	1.11	74	0.97
118	Bhavnagar	Vadal	21.44738	71.85346	8.02	990	663	360	0	281	107	56	85.00	0.45	230	60	51	75	0.81	75	1.72
119	Bhavnagar	Vallbhipur	21.90037	71.87841	8.88	4835	3239	290	108	342	959	557	57.65	0.52	460	20	58	1030	5.65	43	26.30
120	Botad	Barvala	22.15000	71.89167	8.53	7385	4948	300	192	915	1193	975	32.00	3.75	1200	24	58	1600	10	80	40.16
121	Botad	Kundali	22.26944	71.70000	8.34	1017	681	320	48	183	170	18	17.81	1.05	230	40	54	92	0.63	60	2.23
122	Botad	Rajpada	22.30833	71.69167	8.33	4060	2720	1130	180	366	845	224	54.88	0.93	680	220	141	420	28	74	5.43
123	Botad	Ningala	22.01806	71.70000	8.48	710	476	110	48	159	78	40	11.15	0.57	210	20	15	115	1.39	41	4.77
124	Botad	Tatam	22.05833	71.63333	8.09	4775	3199	1870	0	329	1207	300	180.00	0.56	270	176	348	300	2.66	79	3.02
125	Chhota udepur	Bhindol	22.20107	73.89710	8.30	2000	1340	440	138	616	170	17	0.40	1.39	735	28	90	251	1.35	57	5.21
126	Chhota udepur	Bodeli	22.27519	73.71561	7.88	2300	1541	430	0	451	553	16	20.90	0.35	370	64	66	326	5.96	36	6.82
127	Chhota udepur	Ferkuva	22.36392	74.21430	8.28	896	600	375	6	189	149	38	41.00	0.51	165	100	30	30	4.30	59	0.68
128	Chhota udepur	Ghamodi	22.36908	74.07344	8.28	495	332	180	6	207	28	5	14.10	0.86	180	52	12	29	1.46	73	0.94
129	Chhota udepur	Govindpura	22.21554	73.73999	8.32	7777	5211	1925	120	293	2269	221	23.00	1.36	440	180	359	915	4.94	30	9.07
130	Chhota udepur	Kevadi	22.52256	73.93433	7.89	660	442	310	0	256	128	10	25.10	0.93	210	72	32	32	3.56	62	0.80
131	Chhota udepur	Moti chikhali	22.01515	74.08063	7.88	606	406	400	0	317	113	15	33.60	1.38	260	56	63	28	0.79	67	0.60
132	Chhota udepur	Panwad	22.21018	74.03093	8.28	1240	831	490	36	256	177	89	1.30	0.48	270	100	58	54	8.97	23	1.06
133	Chhota udepur	Sengpur	22.08659	73.97762	8.09	1170	784	525	0	384	170	25	1.00	0.65	315	112	60	26	2.97	52	0.49
134	Chhota udepur	Vagudan	22.07119	74.10902	8.28	850	570	340	6	207	142	2	42.30	0.84	180	120	10	28	11.21	78	0.66
135	Dahod	Limbsdi	23.00571	74.15355	7.84	598	401	170	0	281	57	10	1.20	1.00	230	32	22	71	4.80	25	2.37
136	Dahod	Sukhsar	23.14910	74.03478	7.80	654	438	140	0	232	43	31	45.00	0.90	190	32	15	87	1.40	27	3.20
137	Dahod	Dadhela	22.84035	74.08350	7.97	618	414	200	0	244	57	36	27.00	1.30	200	40	24	63	4.70	29	1.94
138	Dahod	Dahod Urban-1	22.87508	74.22925	7.98	425	285	150	0	146	28	27	39.00	1.10	120	32	17	36	0.32	72	1.28
139	Dahod	Dahod Urban-2	22.84091	74.25566	7.72	2815	1886	781	0	281	603	145	150.00	2.90	230	108	124	280	4.20	32	4.36
140	Dahod	Dahod2	22.83110	74.23284	8.07	1789	1199	370	0	354	319	106	55.00	2.00	290	40	66	260	2.50	29	5.88
141	Dahod	Dahod Urban-3	22.82589	74.26364	7.92	1389	931	300	0	329	184	139	80.00	0.67	270	48	44	194	2.90	35	4.87
142	Dahod	Varamkheda	22.77518	74.28866	7.56	691	463	230	0	281	78	26	4.60	1.00	230	48	27	66	3.10	10	1.89
143	Dahod	Panchwada	22.72895	74.30539	8.11	790	529	240	0	378	57	28	21.00	1.40	310	28	41	89	3.70	23	2.50
144	Dahod	Garbara	22.68487	74.31505	7.87	8684	5818	1501	0	439	1985	774	372.00	6.50	360	124	289	1338	31	20	15.02
145	Dahod	Ambakatch	22.64060	74.23334	8.13	1360	911	410	0	598	128	32	18.00	1.48	490	40	75	128	6.60	31	2.75
146	Dahod	Dhanpur	22.63602	74.09878	8.09	538	360	210	0	207	50	21	21.00	1.50	170	44	24	34	1.70	27	1.02
147	Dahod	Kanjetha	22.57994	74.10945	7.99	611	409	190	0	281	43	28	14.00	0.67	230	36	24	67	2.80	57	2.11
148	Dahod	Tokarba	22.59677	74.02846	7.98	640	429	240	0	146	78	41	64.00	1.10	120	52	27	45	0.89	39	1.26
149	Dahod	Khandania	22.60436	73.89661	8.15	448	300	130	0	195	28	21	17.00	3.10	160	28	15	53	1.10	65	2.02
150	Dahod	Badpa	22.68894	73.85801	8.45	970	650	100	36	195	135	65	10.00	3.40	220	16	15	176	1.70	30	7.65

151	Dang	Kalibel	20.92083	73.58056	7.97	1120	750	470	0	403	163	38	4.63	0.17	330	100	54	62	13.00	44	1.24
152	Dang	Bardipada	20.97472	73.62972	7.95	595	399	280	0	281	43	18	9.49	0.29	230	64	29	22	0.32	82	0.57
153	Dang	Subir	20.92222	73.58056	8.25	385	258	170	0	134	43	27	5.29	0.16	110	32	22	18	0.74	55	0.60
154	Dang	Ahwa1	20.75833	73.68333	7.50	721	483	260	0	256	99	41	0.58	0.21	210	72	19	59	11.00	29	1.59
155	Dang	Umberpada	20.68333	73.72500	7.80	387	259	170	0	183	28	16	1.56	0.29	150	40	17	18	1.34	42	0.60
156	Dang	Malegaon	20.60000	73.74583	7.88	438	293	210	0	195	43	14	4.62	0.29	160	60	15	15	0.42	48	0.45
157	Dang	Jakana	20.63333	73.74583	8.02	586	393	280	0	232	50	25	30.00	0.27	190	72	24	18	0.74	64	0.47
158	Dang	Dhumkal	20.64583	73.79167	8.04	545	365	260	0	220	50	24	25.00	0.21	180	68	22	20	0.74	49	0.54
159	Dang	Boripada	20.64000	73.69139	7.71	438	293	200	0	244	21	7	5.05	0.27	200	56	15	16	0.98	76	0.49
160	Dang	Chikhli	20.64000	73.69139	7.91	375	251	160	0	171	21	6	0.18	0.23	140	52	7	10	0.23	61	0.34
161	Dang	Nana pada	20.70000	73.58333	8.03	388	260	190	0	220	14	7	1.04	0.26	180	44	19	12	0.26	60	0.38
162	Dang	Sakarpatal	20.71944	73.55694	8.03	398	267	190	0	207	21	8	9.22	0.24	170	52	15	13	0.20	60	0.41
163	Dang	Waghai	20.76389	73.50444	7.95	610	409	290	0	220	64	43	12.00	0.24	180	52	39	22	0.32	62	0.56
164	Dang	Chinchnogaotha	20.80833	73.55278	7.81	649	435	310	0	232	71	30	31.00	0.31	190	76	29	23	0.17	84	0.57
165	Dang	Vazat Amba	20.87833	73.51833	8.25	466	312	230	0	244	21	12	7.26	0.13	200	56	22	13	0.24	52	0.37
166	Dang	Sodmal	20.86667	73.61667	8.18	425	285	200	0	220	21	10	1.70	0.23	180	40	24	14	0.31	61	0.43
167	Dang	Nadak khadi	20.80417	73.61250	8.12	482	323	200	0	220	35	14	9.02	0.21	180	48	19	28	0.33	54	0.86
168	Dang	Ghubita	20.80000	73.73750	8.13	425	285	200	0	232	21	5	2.08	0.24	190	48	19	15	0.51	63	0.46
169	Dang	Chinchpada	20.63750	73.77500	8.12	366	245	170	0	207	14	4	0.39	0.20	170	40	17	15	0.37	26	0.50
170	Dang	Bori Goatha 1	20.81083	73.50306	7.99	1755	1176	390	0	293	326	249	11.79	0.36	240	72	51	248	2.78	19	5.46
171	Devbhumi Dwarka	Ambardi	21.91667	69.85833	8.00	1540	1032	610	0	134	284	180	104.00	0.22	110	128	71	86	1.10	56	1.51
172	Devbhumi Dwarka	Aramda	22.43333	69.04167	7.90	1737	1164	560	0	403	376	62	3.30	0.38	330	84	85	180	5.70	25	3.31
173	Devbhumi Dwarka	Bhanvad	21.92778	69.79583	8.20	906	607	250	0	366	99	41	7.10	0.56	300	48	32	106	3.30	40	2.91
174	Devbhumi Dwarka	Bhogat1	21.99167	69.24583	7.80	3361	2252	641	0	244	787	293	16.30	1.04	200	108	90	425	11	18	7.30
175	Devbhumi Dwarka	Dwarka	22.24583	68.95833	7.92	2590	1735	370	0	366	518	200	72.00	0.11	300	56	56	378	34	18	8.54
176	Devbhumi Dwarka	Juvanpur	22.17083	69.36667	8.16	3612	2420	901	0	268	922	205	73.00	0.11	220	96	161	450	8.90	45	6.52
177	Devbhumi Dwarka	Kajuda	22.33333	69.70833	8.18	886	594	290	0	354	92	50	9.40	0.22	290	44	44	92	0.10	58	2.35
178	Devbhumi Dwarka	Kalyanpur	22.01667	69.39167	7.90	965	647	250	0	281	142	53	18.50	0.17	230	44	34	118	0.80	44	3.24
179	Devbhumi Dwarka	Khirsara	21.97917	69.60000	7.92	1677	1124	671	0	256	347	102	63.20	0.14	210	168	61	102	1.50	40	1.71
180	Devbhumi Dwarka	Kuvadia	22.20139	69.58333	8.23	796	533	270	0	268	113	34	32.00	0.24	220	72	22	78	0.70	33	2.06
181	Devbhumi Dwarka	Modpar	21.85833	69.80833	7.89	1618	1084	320	0	195	383	72	54.00	0.45	160	88	24	242	3.30	80	5.88
182	Devbhumi Dwarka	Mojap	22.36667	68.98333	7.99	4362	2923	711	0	366	1149	210	24.00	0.69	300	92	117	706	4.90	21	11.52
183	Devbhumi Dwarka	Pindara1	22.24722	69.25833	7.95	860	576	270	0	195	142	91	1.90	0.57	160	76	19	90	8.90	9	2.38
184	Devbhumi Dwarka	Raval	21.99306	69.24583	7.69	2928	1962	1001	0	85	879	102	85.00	0.33	70	337	39	199	1.50	27	2.74
185	Devbhumi Dwarka	Salaya	22.30556	69.60417	8.00	1156	775	400	0	232	191	51	152.00	0.26	190	76	51	109	1.10	65	2.37
186	Devbhumi Dwarka	Samrasar1	22.37500	69.10417	8.00	1829	1225	440	0	244	390	129	25.00	0.50	200	80	58	228	3.00	7	4.73
187	Devbhumi Dwarka	Vadtara	22.20833	69.50000	8.29	416	279	160	0	146	50	22	2.71	0.29	120	36	17	28	2.21	20	0.96
188	Devbhumi Dwarka	Varwada	22.29167	68.96667	7.97	5892	3948	1341	0	195	1900	257	18.70	0.38	160	289	151	870	7.36	17	10.33
189	Devbhumi Dwarka	Vinjhulpur	22.15000	69.60000	8.28	838	561	280	0	317	99	45	20.80	0.20	260	32	49	84	1.24	44	2.18
190	Devbhumi Dwarka	Hambusar	22.40810	69.05430	8.14	1140	764	220	0	476	113	54	0.99	0.23	390	44	27	175	23	29	5.13

191	Devbhumi Dwarka	Vamansa	22.08400	69.18870	7.80	6028	4039	1281	0	146	1758	384	113.00	1.48	120	124	236	811	6.33	28	9.86
192	Devbhumi Dwarka	Bhatia	22.09148	69.26849	8.24	1863	1248	430	0	256	362	244	7.49	1.98	210	116	34	243	48	22	5.10
193	Devbhumi Dwarka	Hanzdapur	22.18324	69.72270	8.19	2416	1619	580	0	207	567	123	107.00	0.40	170	128	63	290	1.95	190	5.24
194	Gandhinagar	Paliya	23.17917	72.84167	7.98	2730	1829	750	0	830	440	152	47.00	1.30	680	52	151	310	19	40	4.92
195	Gir Somnath	Bhim Deval	20.96458	70.60682	8.21	852	571	250	0	256	114	55	29.11	0.64	210	48	32	88	2.03	40	2.42
196	Gir Somnath	Dhokadva	20.95855	71.06818	8.35	730	489	290	60	232	57	24	7.08	0.26	290	44	44	50	2.14	54	1.28
197	Gir Somnath	Girgadhada	20.92523	70.91676	8.08	680	456	270	0	244	64	32	50.00	0.25	200	52	34	48	1.13	47	1.27
198	Gir Somnath	Govindpura2	20.95507	70.40212	8.04	630	422	240	0	207	71	21	30.41	0.66	170	48	29	40	2.07	30	1.12
199	Gir Somnath	Jambur[madhapar]	21.03101	70.60555	8.22	645	432	240	0	268	71	25	7.36	0.27	220	40	34	53	0.99	45	1.49
200	Gir Somnath	Jamvala1	20.98155	70.76364	8.24	410	275	150	0	183	36	18	6.00	0.37	150	36	15	35	0.44	47	1.24
201	Gir Somnath	Jargla Jargali	20.90865	70.94205	8.11	465	312	190	0	207	36	17	4.32	0.35	170	44	19	28	0.38	53	0.88
202	Gir Somnath	Kansari	20.84946	71.05532	8.00	1255	841	290	0	293	156	90	117.00	0.64	240	44	44	173	3.54	52	4.40
203	Gir Somnath	Kesariyaji_1	20.80379	70.94031	8.10	975	653	280	0	171	192	56	55.00	0.79	140	56	34	97	3.75	26	2.53
204	Gir Somnath	Kodinar1	20.81364	70.69736	8.02	2365	1585	620	0	256	589	114	44.30	0.84	210	68	109	250	1.20	55	4.37
205	Gir Somnath	Moraj	20.98591	70.43724	8.20	950	637	220	0	122	213	46	25.41	0.86	100	56	19	110	0.57	19	3.22
206	Gir Somnath	Prasil	20.89942	70.63903	7.99	910	610	230	0	281	114	51	35.18	1.76	230	44	29	102	12	25	2.91
207	Gir Somnath	Sametar	20.85164	71.12067	7.75	1010	677	360	0	427	99	32	40.00	0.47	350	60	51	78	13	50	1.79
208	Gir Somnath	Talala1	21.04905	70.52615	8.15	680	456	230	0	293	71	23	10.33	0.22	240	44	29	65	1.05	48	1.86
209	Gir Somnath	Una2	20.82239	71.04157	8.36	1805	1209	330	108	305	277	115	61.90	2.30	430	36	58	300	3.69	42	7.18
210	Jamnagar	Balwa	21.90417	69.95833	7.86	1213	813	390	0	159	262	60	21.00	0.23	130	112	27	97	1.30	31	2.14
211	Jamnagar	Bed1	22.43750	69.90000	7.70	1154	773	300	0	183	128	180	89.00	0.17	150	64	34	120	3.60	77	3.01
212	Jamnagar	Bedanpur	22.68333	70.31667	8.28	516	346	170	0	159	78	31	5.50	0.13	130	32	22	50	6.10	4	1.67
213	Jamnagar	Dhrol2	22.56667	70.41667	7.90	1755	1176	320	0	366	248	243	75.00	0.48	300	120	5	300	0.50	50	7.29
214	Jamnagar	Dudhai2	22.79167	70.50417	8.10	662	444	150	0	305	64	22	2.70	0.33	250	40	12	97	1.70	22	3.44
215	Jamnagar	Gordhanpur	22.45000	70.00139	7.60	2447	1639	605	0	171	645	93	1.70	0.64	140	132	67	255	4.30	41	4.51
216	Jamnagar	Haripur2	22.27083	70.33333	8.25	1895	1270	701	0	488	333	120	44.10	0.64	400	160	73	156	8.00	55	2.56
217	Jamnagar	Jambuda	22.52500	70.20417	7.75	1891	1267	641	0	183	454	109	51.00	0.36	150	92	100	156	1.20	60	2.68
218	Jamnagar	Jamnagar2	22.45833	70.07917	8.29	755	506	260	0	329	71	31	1.10	0.28	270	48	34	72	1.50	37	1.94
219	Jamnagar	Kalawad	22.21667	70.38333	8.00	922	618	280	0	183	156	104	1.50	0.24	150	52	36	99	3.30	21	2.57
220	Jamnagar	Motagop	22.03750	69.87500	7.90	916	614	310	0	232	135	45	24.00	0.45	190	72	32	71	0.50	38	1.75
221	Jamnagar	Moti matli	22.31667	70.26389	8.00	2245	1504	490	0	342	454	106	103.00	0.48	280	88	66	305	5.00	69	5.99
222	Jamnagar	Nikava	22.19167	70.53333	8.15	1529	1024	530	0	439	170	98	163.00	0.41	360	104	66	140	12	57	2.64
223	Jamnagar	Seth vadala	22.03333	70.12500	8.12	1352	906	450	0	195	213	94	139.00	0.23	160	80	61	113	1.00	48	2.32
224	Jamnagar	Vijarkha	22.41667	70.18333	8.23	829	555	320	0	232	170	21	0.81	0.36	190	40	54	64	0.36	38	1.56
225	Jamnagar	Falla	22.53360	70.31410	8.28	820	549	80	0	281	128	34	7.80	0.78	230	12	12	171	0.96	49	8.31
226	Jamnagar	Haryana			7.96	12970	8690	3623	0	183	4240	531	349.00	0.54	150	232	739	1359	4.72	52	9.82
227	Jamnagar	Kesya	22.69720	70.39700	7.79	4683	3138	1681	0	171	1461	266	76.70	0.31	140	152	316	421	1.58	59	4.47
228	Jamnagar	Samana	22.11000	70.16980	7.81	1654	1108	600	0	98	362	204	68.00	0.38	80	164	46	133	1.20	52	2.36
229	Junagadh	Alwani	21.23056	70.63750	8.15	745	499	290	0	378	50	16	0.59	0.15	310	16	61	55	0.44	72	1.40
230	Junagadh	Arena	21.08056	70.17639	7.60	6811	4563	2392	0	98	2432	220	42.00	0.22	80	329	382	565	3.54	13	5.02

231	Junagadh	Bamanwara	21.22083	70.05556	7.90	2952	1978	1201	0	98	1028	41	38.00	0.13	80	325	95	190	8.68	7	2.38
232	Junagadh	BhatsimROLI	21.22361	70.18333	8.49	895	600	250	12	195	142	55	52.00	0.44	180	52	29	113	1.03	41	3.11
233	Junagadh	Bilkha	21.43546	70.59960	8.26	1355	908	520	0	329	206	95	111.00	0.56	270	52	95	105	0.50	42	2.00
234	Junagadh	Budhecha	21.09583	70.21667	8.27	770	516	300	0	232	99	41	49.00	0.77	190	40	49	58	1.31	13	1.46
235	Junagadh	Chorwad	21.04167	70.21667	7.75	7660	5132	3163	0	98	2779	209	27.00	0.29	80	1014	153	602	2.20	11	4.66
236	Junagadh	Galodar	21.14722	70.27500	8.44	1109	743	250	18	183	241	68	26.00	0.29	180	48	32	166	1.61	44	4.56
237	Junagadh	GorajI	21.18333	70.15417	8.49	597	400	230	12	195	85	29	0.68	0.28	180	40	32	42	4.27	26	1.20
238	Junagadh	Junagadh1	21.51667	70.45833	8.29	845	566	280	0	171	156	59	45.00	0.22	140	52	36	85	2.86	39	2.21
239	Junagadh	Juthal	21.16667	70.26667	8.19	2554	1711	410	0	98	815	155	14.00	0.41	80	112	32	430	24	39	9.23
240	Junagadh	Kalej	21.24861	70.05833	7.86	4796	3213	2052	0	122	1702	71	108.00	0.44	100	184	387	276	4.07	21	2.65
241	Junagadh	Kanek	21.03056	70.24167	7.98	3545	2375	1261	0	146	1241	82	16.00	0.16	120	421	51	310	2.45	10	3.80
242	Junagadh	Kewarda	21.26667	70.20833	8.52	1145	767	470	0	256	227	55	31.00	0.20	210	112	46	71	1.87	43	1.42
243	Junagadh	Khambalia1	21.04444	70.19167	8.21	5544	3714	1041	0	159	1886	240	32.00	0.11	130	224	117	926	8.97	16	12.48
244	Junagadh	Khokharda	21.42083	70.31667	8.28	3321	2225	831	0	329	844	235	165.00	0.46	270	72	158	461	1.05	57	6.96
245	Junagadh	Khorada1	21.06389	70.17361	7.54	1229	823	250	0	415	156	59	27.90	0.30	340	48	32	94	168	17	2.58
246	Junagadh	Khoras ahir	21.37083	70.33889	7.65	1703	1141	440	0	171	425	110	26.65	0.31	140	120	34	211	1.08	45	4.37
247	Junagadh	Kukaswada	21.05417	70.20833	7.85	1386	929	300	0	281	277	93	26.21	0.92	230	56	39	212	4.53	28	5.32
248	Junagadh	Mendarda1	21.32500	70.43333	7.40	1531	1026	701	0	427	262	87	41.90	0.42	350	116	100	68	1.32	56	1.12
249	Junagadh	Patla	21.60833	70.56667	8.10	795	533	310	0	366	71	15	17.10	0.40	300	72	32	54	2.64	49	1.33
250	Junagadh	Prempara	21.30000	70.70000	7.94	1327	889	550	0	183	248	124	119.20	0.26	150	84	83	85	0.29	59	1.58
251	Junagadh	Seriakhan	21.13333	70.24861	7.91	891	597	260	0	268	142	56	13.71	0.62	220	48	34	99	11.00	32	2.67
252	Junagadh	Shardagram	21.10417	70.15278	7.50	7226	4841	1942	0	122	2538	289	13.52	0.31	100	216	340	925	3.72	30	9.13
253	Junagadh	Sil	21.18556	70.04639	8.11	351	235	170	0	183	21	7	8.00	0.11	150	60	5	7	7.48	14	0.23
254	Kheda	Alina	22.80833	73.05833	7.37	2838	1901	750	0	476	511	231	134.00	0.87	390	84	131	300	6.50	28	4.76
255	Kheda	Alindra	22.70083	72.97667	7.90	920	616	170	0	488	43	32	17.00	0.92	400	32	22	150	0.90	47	5.02
256	Kheda	Boriyavi	22.63556	72.90917	7.98	1080	724	280	0	488	99	26	24.00	0.50	400	52	36	135	19	36	3.51
257	Kheda	Dakor	22.76250	73.16944	7.60	2362	1583	520	0	817	383	48	14.00	0.89	670	80	78	330	34	56	6.29
258	Kheda	Kalesar	22.72083	73.19167	8.00	1295	868	300	0	671	64	54	11.00	1.29	550	32	54	188	6.80	41	4.72
259	Kheda	Kapadvanj	23.00417	73.09167	7.52	1820	1219	210	0	915	142	27	19.00	1.28	750	48	22	340	12	51	10.20
260	Kheda	Kheda	22.73750	72.70417	7.51	5330	3571	1660	0	390	1448	368	9.90	0.50	320	300	221	480	32	30	5.12
261	Kheda	Ladvel	22.90833	73.12083	7.64	3670	2459	930	0	366	937	50	4.50	0.41	300	188	112	370	18	29	5.28
262	Kheda	Mahudha	22.78333	72.94167	7.70	2450	1642	550	0	817	391	140	3.10	0.71	670	60	97	320	43	34	5.93
263	Kheda	Mulyiad	22.78306	73.17667	7.68	6728	4508	1400	0	415	1732	440	0.00	0.54	340	284	168	830	75	28	9.64
264	Kheda	Shekhupura	22.57500	72.62500	8.76	3315	2221	340	180	598	440	269	0.00	0.26	790	28	66	470	275	41	11.08
265	Kheda	Vanthwadi	22.81927	72.82313	7.63	1164	780	250	0	525	128	28	16.00	0.38	430	80	12	166	18	36	4.56
266	Kheda	Viroja	22.54974	72.59091	7.74	1220	817	350	0	403	178	70	0.00	0.60	330	80	36	146	10	34	3.39
267	Kutchch	Desalpur	23.75020	70.68102	7.42	768	515	180	0	183	113	70	3.20	0.15	150	40	19	95	10	21	3.08
268	Kutchch	Ratanpar Khadir	23.86210	70.36230	7.73	4419	2961	701	0	403	1064	310	13.00	0.78	330	96	112	712	17	21	11.70
269	Kutchch	Rapar	23.56689	70.65177	7.60	2942	1971	400	0	281	567	538	33.00	0.93	230	132	17	552	26	29	12.00
270	Kutchch	Kuda	23.53444	70.44038	7.35	1464	981	410	0	610	142	25	0.31	1.04	500	104	36	125	18	44	2.68

271	Kutchch	Kharoi	23.46007	70.35659	7.62	1304	874	400	0	281	241	77	1.50	0.33	230	68	56	105	4.20	21	2.28
272	Kutchch	Sedat	23.17166	69.63736	7.74	972	651	350	0	305	113	76	0.83	0.10	250	40	61	70	6.60	16	1.63
273	Kutchch	Sukhpur	23.19869	69.60709	7.34	5906	3957	1351	0	293	1099	1292	42.00	2.00	240	341	122	902	5.00	44	10.67
274	Kutchch	Bhuj	23.24327	69.66415	7.32	1183	793	330	0	281	142	143	6.60	0.22	230	104	17	104	10	32	2.49
275	Kutchch	Habai	23.35487	69.85534	7.61	1442	966	370	0	317	206	168	5.70	0.77	260	60	54	156	9.10	28	3.53
276	Kutchch	Lodai	23.39703	69.90000	7.45	5224	3500	1121	0	439	1028	886	5.00	0.86	360	136	190	792	23	35	10.29
277	Kutchch	Khavda	23.83750	69.72731	7.42	3827	2564	661	0	354	851	410	7.70	0.40	290	128	83	612	16	26	10.36
278	Kutchch	Devisar	23.40664	69.33391	7.00	7340	4918	1651	0	268	1914	730	31.00	1.82	220	393	163	952	47	21	10.19
279	Kutchch	Mata na Madh	23.54752	68.94839	7.28	1330	891	260	0	232	206	135	20.00	0.64	190	64	24	161	7.30	26	4.34
280	Kutchch	Lakhpat	23.82330	68.77525	7.54	3212	2152	850	0	342	816	128	2.00	0.41	280	140	122	350	5.20	13	5.22
281	Kutchch	Moti Cher	23.76901	68.65821	6.87	1250	838	200	0	220	35	352	23.20	0.00	180	64	10	190	11	12	5.84
282	Kutchch	Kharoi	23.47229	68.68397	7.61	5362	3593	1120	0	525	1525	58	3.20	0.12	430	200	151	700	20	13	9.09
283	Kutchch	Naliya	23.25940	68.83056	8.33	1610	1079	175	15	635	156	37	13.20	1.00	545	50	12	288	2.60	19	9.47
284	Kutchch	Tera	23.28303	68.94035	7.73	2550	1709	380	0	635	461	66	34.20	3.90	520	64	54	406	7.90	21	9.06
285	Kutchch	Mothala	23.20307	69.13545	7.55	5017	3361	1120	0	256	1560	75	5.40	0.45	210	204	148	626	3.20	26	8.13
286	Kutchch	Vinjhan	23.10469	69.02678	7.58	1225	821	390	0	378	43	229	2.60	0.45	310	76	49	96	5.90	20	2.11
287	Kutchch	Kotaya	23.04451	69.07902	7.56	2000	1340	290	0	500	255	198	46.00	2.70	410	60	34	322	1.60	31	8.22
288	Kutchch	Bambhdai	22.94148	69.08258	7.63	8660	5802	1100	0	366	2752	80	9.20	1.00	300	196	148	1474	8.00	20	19.32
289	Kutchch	Kotadi	23.04659	69.19384	7.86	2100	1407	180	0	537	163	351	11.20	3.55	440	24	29	390	5.10	27	12.64
290	Kutchch	Mau Moti	23.10103	69.29059	7.55	1612	1080	410	0	195	184	329	56.80	0.95	160	84	49	182	4.80	33	3.91
291	Kutchch	Mandvi	22.84286	69.32740	7.74	650	436	230	0	220	28	88	7.60	0.12	180	48	27	40	5.60	10	1.15
292	Kutchch	Asambia Mota	22.96548	69.43888	7.51	2550	1709	300	0	366	461	294	7.00	0.13	300	80	24	450	4.50	16	11.30
293	Kutchch	Dhunai	23.05806	69.50183	7.11	1505	1008	310	0	317	163	245	20.20	0.72	260	88	22	206	2.70	87	5.09
294	Kutchch	Karagoga	22.93808	69.66175	7.85	4999	3349	260	0	1037	901	349	18.20	1.75	850	48	34	1030	2.70	36	27.77
295	Kutchch	Luni	22.87277	69.80994	7.67	3052	2045	440	0	415	738	132	15.40	0.32	340	80	58	496	9.40	21	10.28
296	Kutchch	Vadala	22.91678	69.85413	7.60	5787	3877	790	0	866	1177	360	170.60	1.00	710	148	102	936	36	31	14.48
297	Kutchch	Bhadeshwar	22.91277	69.89732	7.71	1304	874	410	0	183	269	109	21.80	0.16	150	84	49	106	13	27	2.28
298	Kutchch	Shinaya	23.03956	70.06257	7.94	4925	3300	350	0	329	940	818	6.40	0.67	270	124	10	972	4.30	28	22.59
299	Kutchch	Samakhiali	23.30665	70.50414	7.56	5000	3350	910	0	573	1347	34	71.60	2.60	470	112	153	716	14	25	10.32
300	Mahisagar	Balasinor	22.94809	73.32546	7.65	727	487	250	0	244	99	35	6.20	0.50	200	92	5	56	7.70	24	1.54
301	Mahisagar	Juna vasadra	23.07433	73.37466	8.33	789	529	280	36	317	50	35	3.20	0.41	320	64	29	72	1.40	87	1.87
302	Mahisagar	Bar	23.17292	73.42830	8.01	711	476	240	0	195	92	45	35.00	0.56	160	56	24	61	5.30	29	1.71
303	Mahisagar	Limbadia peti	23.22965	73.59100	8.08	736	493	240	0	317	57	37	7.90	1.00	260	32	39	74	1.30	35	2.08
304	Mahisagar	Pandarvada	23.35802	73.61470	8.47	567	380	150	24	207	71	2	0.00	0.61	210	20	24	70	0.45	8	2.48
305	Mahisagar	Khanpur	23.28778	73.67848	8.18	636	426	200	0	159	92	38	38.00	0.49	130	32	29	65	0.84	43	2.00
306	Mahisagar	Malekpur1	23.23574	#####	8.05	626	419	200	0	220	64	43	11.00	0.72	180	40	24	61	3.20	28	1.88
307	Mahisagar	Gadhar	23.01457	73.52183	7.86	996	667	300	0	256	149	67	15.00	0.84	210	56	39	99	3.70	28	2.49
308	Mahisagar	Kantha	23.14330	73.64325	7.93	815	546	180	0	232	106	50	12.00	0.87	190	40	19	102	1.20	26	3.31
309	Mahisagar	Lunawada	23.11949	73.61098	8.19	1530	1025	620	0	451	213	90	59.00	0.27	370	188	36	96	14	45	1.68
310	Mahisagar	Jokha	23.03853	73.61048	8.20	1080	724	360	0	549	50	30	36.00	1.20	450	76	41	99	17	68	2.27

311	Mahisagar	Kothamba	23.01457	73.52183	8.18	1159	777	270	0	305	177	78	16.00	0.69	250	36	44	160	2.10	53	4.23
312	Mahisagar	Sarsava	23.18600	74.00027	7.86	412	276	130	0	207	28	11	0.75	0.63	170	36	10	43	1.70	8	1.64
313	Mahisagar	Santrampur1	23.19012	73.90559	7.69	916	614	290	0	195	170	49	20.00	0.55	160	64	32	84	1.10	29	2.14
314	Mehsana	Maguna	23.57727	72.29040	8.25	3400	2278	1080	0	805	660	280	3.73	0.46	660	48	233	350	28	41	4.63
315	Mehsana	Aasjol	23.51355	72.18144	8.20	493	330	210	0	207	50	14	23.00	0.17	170	60	15	24	8	20	0.72
316	Mehsana	Delwada Khant	23.54361	72.11190	8.26	2336	1565	460	0	903	277	144	15.42	0.81	740	84	61	336	68	45	6.80
317	Mehsana	Panchot	23.62354	72.33618	8.04	2032	1361	400	0	549	291	250	6.81	0.22	450	76	51	271	90	45	5.89
318	Mehsana	Vidaj	23.24813	72.29752	8.27	1884	1262	340	0	549	320	93	18.25	0.10	450	76	36	219	147	59	5.15
319	Mehsana	Bhandupura	23.72462	72.37779	8.61	1227	822	190	48	244	163	76	58.00	0.56	280	32	27	215	14	35	6.78
320	Mehsana	Shihi	23.79952	72.34738	7.30	713	478	180	0	305	71	25	22.11	0.33	250	40	19	68	49	22	2.22
321	Mehsana	Dasaj	23.84459	72.44649	7.80	3760	2519	510	0	439	859	237	80.00	0.10	360	92	68	549	110	25	10.57
322	Mehsana	Rampura	23.88393	72.51980	7.90	1096	734	400	0	439	121	54	15.71	0.26	360	88	44	94	1.95	36	2.04
323	Mehsana	Tarabh	23.75920	72.45704	7.82	768	515	260	0	305	107	20	2.30	0.05	250	60	27	70	10	32	1.89
324	Mehsana	Kheralu	23.88725	72.60823	8.18	1610	1079	440	0	476	298	60	20.71	1.06	390	60	71	208	0.69	46	4.30
325	Mehsana	Timba	23.99066	72.76133	8.20	743	498	320	0	342	64	19	9.60	0.87	280	88	24	40	1.21	42	0.97
326	Morbi	Bhalgam	22.43556	71.08250	7.57	2095	1404	861	0	232	532	102	63.00	0.31	190	196	90	84	0.60	56	1.25
327	Morbi	Chhatar	22.50528	70.75306	8.02	1426	955	460	0	232	277	114	52.00	0.66	190	96	54	140	0.45	66	2.84
328	Morbi	Lajai	22.71583	70.78028	7.53	5723	3834	2372	0	220	1631	249	286.00	0.66	180	481	285	329	2.10	71	2.94
329	Morbi	Sindhavadar	22.55167	70.89722	8.18	1497	1003	290	0	317	255	87	74.00	0.70	260	44	44	208	0.51	58	5.31
330	Morbi	Modpar	22.90167	70.66278	8.16	4229	2833	641	0	317	1205	184	7.50	0.21	260	124	80	669	8.60	9	11.50
331	Morbi	Mota Dahisara	22.96194	70.61361	8.09	1808	1211	450	0	317	404	113	4.60	0.34	260	96	51	228	10	30	4.67
332	Morbi	Sarvad	23.00639	70.70694	7.88	1834	1229	340	0	366	411	56	2.70	0.54	300	56	49	295	5.80	29	6.96
333	Morbi	Molia	23.08861	70.75694	8.02	472	316	180	0	244	28	8	2.80	0.36	200	48	15	31	10.00	29	1.00
334	Morbi	Amarnagar	22.93444	70.82417	7.81	7557	5063	1731	0	329	2425	162	2.20	3.50	270	204	297	1062	8.40	16	11.10
335	Morbi	Morvi	22.83139	70.85278	8.20	1350	905	290	0	390	170	85	27.00	2.40	320	76	24	190	3.10	35	4.85
336	Morbi	Nichimandal	22.86111	70.96333	7.88	3296	2208	420	0	415	766	125	100.00	0.82	340	72	58	563	11.00	32	11.94
337	Morbi	Mathak	22.84278	71.06139	7.85	3435	2301	540	0	232	858	170	32.00	0.90	190	100	71	520	4.80	17	9.73
338	Morbi	Juna Devaliya 1	23.01111	70.99083	8.12	835	559	210	0	317	92	21	6.40	0.81	260	40	27	100	6.20	22	3.00
339	Morbi	Jitpur	23.00278	70.89472	8.16	1452	973	280	0	329	269	67	19.00	2.30	270	40	44	222	7.80	20	5.77
340	Morbi	Halvard 2	23.01917	71.18500	7.79	5435	3641	851	0	378	1290	683	31.00	3.40	310	148	117	975	21.00	40	14.54
341	Narmada	Chikada	21.51401	73.64641	8.28	1050	704	450	6	153	177	83	65.90	0.29	135	144	22	30	2.82	56	0.61
342	Narmada	Garudeshwar	21.88914	73.65355	8.28	957	641	380	72	244	50	37	61.30	0.55	320	88	39	45	0.68	71	0.99
343	Narmada	Hirapura	21.86207	73.60232	8.38	864	579	320	60	195	113	3	14.50	0.53	260	108	12	47	4.88	71	1.14
344	Narmada	Jankh	21.50217	73.49507	8.09	590	395	270	0	214	71	12	10.30	0.39	175	52	34	11	0.24	54	0.30
345	Narmada	Kanbi pitha	21.57322	73.69625	8.05	570	382	270	0	183	85	10	13.40	0.26	150	56	32	11	0.47	55	0.29
346	Narmada	Khota amba	21.73258	73.47718	8.02	588	394	260	0	275	43	6	3.30	0.44	225	52	32	12	1.01	53	0.33
347	Narmada	Namaria	22.04910	73.62350	8.27	805	539	270	42	329	43	4	1.20	0.21	340	48	36	12	78	73	0.32
348	Narmada	Ralda	21.61120	73.63758	8.13	665	446	310	0	256	89	2	2.30	0.35	210	68	34	9	1.21	41	0.21
349	Narmada	Ringani	21.84144	73.46601	8.28	750	503	340	42	287	43	0	2.10	0.35	305	68	41	11	1.81	41	0.26
350	Narmada	Salemba 1	21.51625	73.82048	8.05	750	503	240	0	128	149	42	21.80	0.31	105	64	19	58	0.46	51	1.63

351	Narmada	Umaran	24.49132	73.55166	8.15	725	486	350	0	195	128	24	0.40	0.24	160	60	49	9	1.01	36	0.22
352	Navsari	Moti Valzar	20.80500	73.26667	7.86	711	476	290	0	293	50	65	3.78	0.71	240	64	32	48	0.48	49	1.23
353	Navsari	Kantasvel	20.59761	73.69487	7.73	2073	1389	661	0	73	631	125	0.63	0.84	60	232	19	223	1.11	38	3.77
354	Navsari	Rankuva	20.81250	73.15833	8.10	1201	805	350	0	305	241	51	18.27	0.64	250	64	46	142	2.20	34	3.30
355	Navsari	Kaliyari	20.72500	73.15000	8.15	701	470	330	0	256	78	35	20.03	0.24	210	64	41	26	0.40	39	0.62
356	Navsari	Rumla	20.68028	73.17170	8.13	852	571	400	0	354	85	35	15.33	0.27	290	96	39	27	0.51	71	0.59
357	Navsari	Panikhadak	20.64917	73.16694	8.27	711	476	300	0	232	99	35	5.28	0.32	190	92	17	26	1.36	87	0.65
358	Navsari	Manav Khadak	20.67417	73.23333	8.27	578	387	240	0	195	64	37	1.07	0.34	160	48	29	26	0.88	42	0.73
359	Navsari	Hond	20.73889	73.04583	7.22	1084	726	420	0	244	199	85	1.67	0.13	200	96	44	73	1.52	41	1.55
360	Navsari	Duvada	20.82861	73.05750	8.10	865	580	300	0	390	64	54	2.83	0.85	320	36	51	77	1.10	41	1.93
361	Navsari	Sari_khurd	20.78750	72.95417	8.25	612	410	210	0	268	71	14	1.45	0.38	220	20	39	48	12	26	1.43
362	Navsari	Abrama	20.86250	72.90000	8.17	3491	2339	901	0	268	1035	84	2.18	0.33	220	120	146	409	15	24	5.93
363	Navsari	Onjal	20.83333	72.84167	8.19	896	600	310	0	415	85	20	1.63	0.46	340	84	24	69	4.39	27	1.70
364	Navsari	Dandi	20.89167	72.80833	8.20	919	616	230	0	415	57	36	5.99	0.25	340	32	36	81	59	29	2.32
365	Navsari	Navsari_1	20.80500	73.26667	8.12	3651	2446	991	0	427	1007	140	5.24	0.41	350	184	129	444	10	33	6.14
366	Navsari	Chinam	20.99167	72.88611	8.55	2738	1834	360	30	635	461	90	29.18	0.25	570	60	51	343	209	39	7.86
367	Navsari	Parujan	21.02297	72.83600	8.51	1577	1057	290	36	659	128	75	13.46	1.02	600	60	34	266	2.59	36	6.79
368	Navsari	Chadav	20.83111	73.33444	7.25	782	524	340	0	268	99	41	11.00	0.59	220	64	44	39	1.26	49	0.92
369	Navsari	Unai	20.84876	73.33769	7.87	766	513	330	0	305	85	28	8.13	0.43	250	56	46	41	1.53	53	0.98
370	Navsari	Khergam	20.63333	73.09583	7.73	1101	738	390	0	183	191	107	5.67	0.25	150	88	41	59	0.50	40	1.30
371	Panchmahal	Shehra	22.95150	73.62741	8.19	1085	727	210	0	488	85	30	6.30	0.49	400	32	32	103	93	73	3.09
372	Panchmahal	Santroad_1	22.79666	73.80389	7.58	650	436	220	0	256	57	34	17.00	0.74	210	52	22	60	2.70	35	1.76
373	Panchmahal	Suliyat	23.05244	73.85951	8.08	1068	716	400	0	366	121	30	64.00	1.20	300	116	27	70	19	48	1.52
374	Panchmahal	Natapur	22.81607	73.80137	7.89	711	476	220	0	244	71	44	32.00	1.48	200	44	27	73	1.80	27	2.14
375	Panchmahal	Ranipura	22.71714	73.74420	7.98	1934	1296	721	0	354	340	109	140.00	1.90	290	68	134	145	2.70	74	2.35
376	Panchmahal	Godhra UR_1	22.77490	73.63831	8.18	1105	740	220	0	317	177	61	10.00	0.76	260	28	36	160	0.77	44	4.69
377	Panchmahal	Godhra2	22.78150	73.65700	7.98	713	478	240	0	171	71	58	72.00	1.30	140	60	22	60	0.85	65	1.68
378	Panchmahal	Chhabanpur	22.83649	73.62493	7.96	710	476	210	0	195	99	38	38.00	0.67	160	44	24	77	1.00	49	2.31
379	Panchmahal	Tuwa	22.80067	73.46539	8.06	724	485	250	0	378	50	14	5.60	0.59	310	44	34	61	14	41	1.68
380	Panchmahal	Dhanol	22.74789	73.48364	7.68	698	468	180	0	281	78	31	3.10	0.89	230	32	24	90	9.10	19	2.92
381	Panchmahal	Vejalpur	22.69473	73.55976	7.98	1587	1063	520	0	378	284	102	47.00	0.97	310	44	100	162	7.10	42	3.09
382	Panchmahal	Khadki Vadiya	22.65079	73.52208	8.39	1199	777	300	54	476	78	64	2.50	1.66	390	20	56	155	1.30	37	3.64
383	Panchmahal	Kalol UR_2	22.62826	73.45678	8.08	1883	1262	631	0	488	326	97	99.00	0.73	400	40	129	182	0.55	43	3.15
384	Panchmahal	Kalol UR_1	22.61252	73.46307	8.16	1255	841	500	0	525	142	27	15.00	0.21	430	64	83	83	12	34	1.61
385	Panchmahal	Tarkanda	22.55610	73.54096	8.11	464	311	160	0	159	50	34	2.50	0.46	130	32	19	39	1.00	21	1.34
386	Panchmahal	Pavagadh	22.48311	73.53762	7.75	676	453	290	0	232	78	34	35.00	0.21	190	48	41	39	0.27	276	1.00
387	Panchmahal	Javan	22.40203	73.65244	7.02	518	347	170	0	183	71	23	1.40	0.42	150	40	17	43	10	34	1.43
388	Panchmahal	Jambughoda	22.37190	73.72468	7.98	840	563	230	0	207	128	51	28.00	0.86	170	37	33	87	0.95	44	2.49
389	Patan	Dhinoj	23.65926	72.27918	7.34	2369	1587	520	0	525	404	166	1.60	0.08	430	132	46	308	29	29	5.87
390	Patan	Sander	23.76939	72.25458	7.43	370	248	150	0	207	14	0	1.40	0.10	170	40	12	19	3.20	18	0.70

391	Patan	Patan	23.83876	72.12509	7.77	2378	1593	350	0	1293	85	30	39.00	2.50	1061	72	41	413	27	48	9.60
392	Patan	Sankhari	23.78028	72.16495	7.71	798	535	190	0	366	50	19	15.00	1.00	300	32	27	86	21	25	2.71
393	Patan	Dharmoda	23.69631	72.07352	8.19	979	656	180	0	525	57	9	0.42	0.18	430	40	19	136	24	26	4.41
394	Patan	Moti Chander	23.59921	71.77013	7.21	23660	15852	5104	0	390	8012	1300	22.00	0.59	320	581	888	3425	31	25	20.90
395	Patan	Piprala	23.64604	71.09687	7.96	7455	4995	891	0	830	1595	533	64.00	7.20	681	48	187	1250	1.60	69	18.20
396	Porbandar	Adityana	21.72008	69.68884	7.88	582	390	180	0	171	78	37	26.42	0.57	140	40	19	62	3.74	30	2.01
397	Porbandar	Adwana2	21.91667	69.60000	7.93	993	665	330	0	268	177	45	21.01	0.23	220	48	51	101	0.53	47	2.42
398	Porbandar	Bakharla	21.76472	69.66111	7.83	733	491	270	0	207	113	23	44.70	0.53	170	60	29	60	3.67	45	1.59
399	Porbandar	Bhavpura	21.80972	69.40833	7.58	5388	3610	1661	0	159	1829	206	56.00	0.28	130	180	294	607	8.53	54	6.48
400	Porbandar	Bhod	21.65889	69.82111	7.79	2859	1916	721	0	195	822	124	81.90	2.22	160	144	88	362	2.45	43	5.87
401	Porbandar	Degam	21.71028	69.60556	8.29	2544	1704	751	0	488	539	96	23.57	1.00	400	176	75	245	40	29	3.89
402	Porbandar	Kadegi	21.45056	69.98333	7.61	26200	17554	801	0	366	9075	927	25.64	1.40	300	172	90	5489	32	37	83.87
403	Porbandar	Khambodar	21.80833	69.60139	8.29	1890	1266	320	0	500	298	146	31.93	1.50	410	40	54	324	12	60	7.87
404	Porbandar	Kolikhada village-2	21.69972	69.61417	8.43	2105	1410	190	36	598	319	112	54.55	1.90	550	24	32	447	1.0	47	14.10
405	Porbandar	Kuchhadi	21.68333	69.55000	8.12	4842	3244	600	0	390	1347	313	19.96	0.51	320	40	122	896	90	18	15.90
406	Porbandar	Kutiyana1	21.63056	70.01667	8.15	3363	2253	510	0	293	872	47	37.13	0.37	240	64	85	505	1.65	52	9.72
407	Porbandar	Mojiwana	21.88583	69.60028	7.92	1780	1193	550	0	293	432	80	27.00	0.27	240	88	80	201	0.91	62	3.73
408	Porbandar	Navibandar	21.44583	69.79167	8.24	4849	3249	560	0	403	1219	299	26.70	0.95	330	32	117	845	31	7	15.53
409	Porbandar	Oddar	21.56667	69.68056	8.22	4152	2782	440	0	427	1021	266	37.60	1.04	350	36	85	739	24	22	15.32
410	Porbandar	Palkhada1	21.75833	69.48750	7.75	3215	2154	701	0	183	808	93	124.00	0.54	150	80	122	361	48	26	5.93
411	Porbandar	Ranavav2	21.68333	69.74583	7.92	1312	879	260	0	329	234	78	49.00	0.40	270	64	24	186	49	54	5.02
412	Porbandar	Ratadi	21.72028	69.51194	7.70	5399	3617	1001	0	134	1560	313	62.00	0.28	110	116	173	475	547	26	6.53
413	Porbandar	Simar	21.94694	69.68583	7.91	1256	842	460	0	159	241	108	65.00	0.28	130	100	51	92	0	58	1.87
414	Porbandar	Tukda	21.51611	69.72861	8.12	2567	1720	360	0	342	567	145	42.00	0.46	280	24	73	402	16	12	9.21
415	Porbandar	Visavada	21.78556	69.44639	7.45	8211	5501	1861	0	61	2552	471	14.00	0.78	50	228	314	993	9.48	11	10.01
416	Rajkot	Rafala	22.29028	70.98361	7.76	3195	2141	1041	0	244	744	210	159.00	0.32	200	112	185	245	1.70	48	3.30
417	Rajkot	Golida	22.20426	71.01645	7.88	1079	723	330	0	268	142	55	86.00	0.48	220	60	44	92	0.60	54	2.20
418	Rajkot	Sardhar2	22.13528	70.98722	7.81	1631	1093	290	0	573	170	77	57.00	0.29	470	36	49	230	65	42	5.87
419	Rajkot	Halenda	22.08750	71.05417	7.67	2621	1756	921	0	488	496	153	156.00	0.42	400	100	163	238	6.40	51	3.41
420	Rajkot	Bhadla	22.17889	71.08667	7.83	1840	1233	590	0	305	326	138	131.00	0.51	250	64	105	181	0.70	49	3.24
421	Rajkot	Kamlapur	22.13806	71.20000	7.61	2992	2005	921	0	244	674	201	188.00	0.35	200	232	83	234	0.70	46	3.35
422	Rajkot	Jasdan 2	22.05111	71.21833	7.72	894	599	290	0	293	113	41	16.00	0.20	240	52	39	68	0.50	43	1.74
423	Rajkot	Lalavadar	22.12861	71.30278	7.93	592	397	210	0	305	21	21	14.00	0.31	250	36	29	53	0.70	40	1.59
424	Rajkot	Vinchhiya	22.20806	71.37806	7.54	4614	3091	1421	0	268	1205	248	188.00	0.50	220	329	146	443	0.50	66	5.11
425	Rajkot	Mota Dadwa	21.99806	70.99417	7.69	1600	1072	600	0	281	262	136	81.00	0.37	230	124	71	100	0.60	41	1.77
426	Rajkot	Gogavadar	21.96472	70.88000	7.73	1419	951	470	0	281	177	156	130.00	0.51	230	100	54	125	0.80	45	2.51
427	Rajkot	Chordi	21.91501	70.74549	7.78	849	569	270	0	256	71	62	77.00	0.25	210	84	15	69	0.30	44	1.83
428	Rajkot	Virpur1	21.84667	70.69278	7.72	1513	1014	420	0	354	177	130	138.00	0.25	290	88	49	155	3.70	51	3.29
429	Rajkot	Jetpur Pithad	21.78306	70.64083	7.33	3906	2617	1641	0	256	851	524	64.00	0.19	210	325	202	125	0.70	60	1.34
430	Rajkot	Mota Gundala	22.73667	70.50833	7.82	1157	775	400	0	232	241	44	1.20	0.43	190	44	71	92	0.20	39	2.00

431	Rajkot	Bhada Jaliya	21.65889	70.33694	7.92	1333	893	180	0	537	170	35	22.00	0.55	440	36	22	240	0.50	49	7.78
432	Rajkot	Bhada Jaliya	21.65889	70.33694	7.92	1333	893	180	0	537	170	35	22.00	0.55	440	36	22	240	0.50	49	7.78
433	Rajkot	Patan Vav	21.65898	70.33720	8.15	885	593	320	0	378	85	26	21.00	0.32	310	108	12	67	20.00	49	1.63
434	Rajkot	Upleta	21.72944	70.25194	8.37	2424	1624	150	60	635	454	39	37.00	2.40	620	24	22	523	0.74	40	18.57
435	Rajkot	Ganod	21.68861	70.16917	7.88	6088	4079	851	0	329	1453	940	36.00	2.40	270	156	112	1116	0.48	44	16.64
436	Rajkot	Dhoraji 1	21.76333	70.46583	7.82	1662	1114	711	0	207	376	65	96.00	0.31	170	168	71	80	0.50	57	1.31
437	Rajkot	Taravada	21.80611	70.47889	7.69	2452	1643	1081	0	159	539	140	277.00	0.26	130	240	117	94	0.31	55	1.24
438	Rajkot	Jasapar	21.88472	70.48806	8.17	952	638	360	0	256	113	63	84.00	0.35	210	88	34	74	0.39	58	1.70
439	Rajkot	Umrali	21.90861	70.60194	7.89	1786	1197	651	0	195	383	150	155.00	0.60	160	136	75	156	0.36	47	2.66
440	Rajkot	Kalithad	22.01889	70.65167	7.83	1604	1075	721	0	146	347	165	105.00	0.22	120	164	75	77	0.22	48	1.25
441	Rajkot	Daliya	22.09583	70.73250	8.18	728	488	280	0	195	85	38	51.00	0.34	160	64	29	43	1.20	40	1.12
442	Rajkot	Ribda	22.12667	70.77833	7.82	930	623	350	0	244	156	46	20.00	0.20	200	76	39	70	0.62	55	1.63
443	Rajkot	Targhari	22.38306	70.66944	7.84	2207	1479	811	0	232	482	238	101.00	0.43	190	140	112	190	0.46	63	2.90
444	Rajkot	Khamta	22.46611	70.56028	8.08	1891	1267	500	0	549	248	155	74.00	0.55	450	80	73	250	2.70	75	4.86
445	Rajkot	Moviya	22.45639	70.62528	7.64	7017	4701	3102	0	171	2233	282	315.00	0.33	140	681	340	366	1.10	59	2.86
446	Rajkot	Hadmatiya	22.68222	70.81139	7.75	2952	1978	1061	0	146	737	206	86.00	0.25	120	269	95	192	0.94	56	2.56
447	Sabarkantha	Boriya	23.26707	72.92394	7.57	2109	1413	450	0	256	496	158	105.00	0.44	210	76	63	325	1.20	50	6.66
448	Sabarkantha	Umedpura	23.33343	72.98680	7.99	1393	933	380	0	415	220	42	89.00	1.40	340	40	68	172	0.30	22	3.84
449	Sabarkantha	Harsoli1	23.37483	73.01564	8.04	1194	800	250	0	476	99	49	93.00	1.70	390	36	39	180	0.54	22	4.95
450	Sabarkantha	Kesarpura(Mayal)	23.34620	72.95824	8.18	1420	951	310	0	329	248	68	96.00	1.70	270	40	51	206	0.19	19	5.09
451	Sabarkantha	Virpur_1(Himmat)	23.63929	72.94627	8.04	365	245	140	0	146	14	15	33.00	0.63	120	44	7	22	0.21	20	0.81
452	Sabarkantha	Gadha1	23.69362	72.93774	7.84	2419	1621	390	0	256	482	268	92.00	1.60	210	80	46	385	1.74	37	8.48
453	Sabarkantha	Bhadreshwar (Daramli)	23.74520	72.98319	8.42	1910	1280	280	60	293	333	194	45.00	2.00	340	28	51	336	1.10	32	8.73
454	Sabarkantha	Sabalwad	23.87090	72.95335	8.04	1005	673	270	0	220	128	83	77.00	4.40	180	60	29	108	1.20	42	2.86
455	Sabarkantha	Chandap_DW	23.92282	72.84433	7.76	2183	1463	681	0	171	567	110	92.00	0.69	140	152	73	195	4.17	54	3.25
456	Sabarkantha	Wadali	23.91690	73.03726	7.98	1199	803	350	0	146	213	67	92.00	0.94	120	80	36	107	2.80	42	2.49
457	Sabarkantha	Matoda	24.11150	73.00773	7.68	2236	1498	831	0	207	560	170	118.00	0.24	170	180	92	150	29	72	2.26
458	Sabarkantha	Poshina2	24.36841	73.03111	7.86	1208	809	380	0	317	184	98	50.00	0.88	260	60	56	115	4.00	50	2.56
459	Sabarkantha	Hingatiya	24.14659	73.01063	8.04	2028	1359	600	0	305	425	216	42.00	1.50	250	72	102	216	7.30	44	3.83
460	Sabarkantha	Khedbramha_1	24.05409	73.02759	7.56	3227	2162	1241	0	195	915	198	120.00	0.80	160	377	73	200	2.00	61	2.47
461	Sabarkantha	Silwad	24.01280	73.12410	7.84	4432	2969	1191	0	256	1333	213	123.00	0.96	210	140	204	510	10	59	6.43
462	Sabarkantha	Punasan	23.66486	73.17127	7.76	518	347	120	0	159	50	27	30.00	0.99	130	32	10	66	0.37	32	2.62
463	Sabarkantha	Mathasuliya	23.60373	73.13662	7.57	1558	1044	410	0	256	213	130	180.00	0.80	210	124	24	150	59	30	3.22
464	Sabarkantha	Kherwada	23.95178	73.28306	7.75	716	480	220	0	220	99	29	1.10	0.87	180	60	17	64	1.80	36	1.88
465	Sabarkantha	Atarsumba1	23.97735	73.22355	7.64	838	561	280	0	159	135	34	57.00	0.73	130	72	24	59	1.90	33	1.53
466	Sabarkantha	Abhapur	24.00133	73.26901	8.19	438	293	170	0	220	35	8	2.30	0.95	180	40	17	27	8.90	30	0.90
467	Sabarkantha	Kesharpura	23.90549	73.14643	7.65	1314	880	480	0	159	227	80	139.00	0.57	130	128	39	72	1.60	51	1.43
468	Sabarkantha	Choriwad	23.89635	73.11744	7.40	2055	1377	861	0	146	447	85	200.00	1.10	120	248	58	82	2.20	45	1.22
469	Sabarkantha	Revas	23.81991	73.13054	7.62	1725	1156	671	0	195	319	65	263.00	1.20	160	144	75	94	1.30	36	1.58
470	Sabarkantha	Idar	23.84167	73.03043	8.05	1624	1088	430	0	525	227	69	12.00	3.90	430	76	58	198	5.50	43	4.15

471	Surat	Bhatkol	21.38028	73.00417	7.93	912	611	320	0	268	142	43	0.00	0.88	220	44	51	74	1.44	26	1.80
472	Surat	Navi pardi	21.32222	72.97083	8.02	1025	687	330	0	268	170	59	3.30	0.48	220	84	29	92	6.53	28	2.20
473	Surat	Uchchhal1	21.20000	72.83333	7.90	780	523	340	0	232	85	46	64.00	0.20	190	56	49	28	0.21	84	0.66
474	Surat	Nizar1	21.43333	73.21667	7.88	1362	913	500	0	305	213	67	120.00	0.80	250	60	85	102	0.75	68	1.98
475	Surat	Mandvi2	21.25417	73.29583	7.79	907	608	340	0	244	106	60	97.00	0.48	200	64	44	72	0.48	59	1.70
476	Surat	Malda	21.36667	73.35000	7.98	820	549	380	0	366	71	20	24.00	0.30	300	92	36	32	2.85	80	0.71
477	Surat	Katradevi	21.42990	73.42088	7.85	787	527	220	0	171	156	44	0.00	0.33	140	64	15	90	0.56	63	2.64
478	Surat	Juna umarpada	21.44578	73.49489	7.90	438	293	200	0	183	43	25	8.37	0.30	150	52	17	19	0.31	51	0.58
479	Surat	Kherwa(Vadli)	21.43333	73.21667	7.93	700	469	250	0	268	85	42	4.35	0.43	220	52	29	59	0.38	50	1.62
480	Surat	Ten-bardoli	21.11667	73.10000	8.10	766	513	200	0	268	71	28	2.56	0.46	220	36	27	75	2.39	55	2.31
481	Surat	Allu	21.06250	73.19167	8.27	620	415	230	0	268	43	29	4.60	0.98	220	36	34	44	0.13	35	1.26
482	Surat	Moti Sarkui	21.27917	73.34972	8.29	590	395	250	0	207	64	29	21.30	0.48	170	48	32	31	0.43	60	0.86
483	Surat	Jiav	21.11472	72.83528	8.06	2404	1611	801	0	110	702	75	1.75	0.14	90	224	58	178	16	18	2.74
484	Surat	Mahuva2	21.02083	73.14583	8.43	1546	1036	270	36	500	199	53	42.50	0.75	470	24	51	265	0.66	44	7.01
485	Surat	Puna1	20.92917	73.22917	8.16	4056	2718	1651	0	757	1021	89	12.73	0.75	620	204	277	254	20	44	2.72
486	Surat	Vaheval	20.83722	73.28778	8.25	645	432	260	0	195	92	33	13.74	0.34	160	48	34	41	0.34	42	1.11
487	Surat	Sarbhon	21.05833	73.09167	8.25	901	604	240	0	366	71	53	2.53	1.17	300	28	41	103	2.10	40	2.89
488	Surat	Mota	21.17028	73.06861	8.29	2475	1658	300	0	512	510	140	17.20	0.83	420	28	56	478	1.63	27	12.00
489	Surat	Miyawadi	21.22389	73.22722	7.15	1346	902	530	0	573	135	28	58.25	1.19	470	96	71	94	9.01	66	1.78
490	Surat	Kasal	21.28333	73.23333	7.50	858	575	430	0	281	85	61	55.00	0.26	230	84	54	21	0.38	56	0.44
491	Surat	Nogama	21.31667	73.13333	7.50	672	450	260	0	232	64	43	42.00	0.35	190	56	29	51	0.36	54	1.38
492	Surat	Ushker	21.31389	73.15833	7.50	605	405	200	0	220	43	33	32.45	0.31	180	40	24	51	1.74	47	1.57
493	Surat	Dungri	21.40833	73.13333	7.90	1736	1163	500	0	635	241	42	40.00	0.75	520	112	54	187	7.18	70	3.64
494	Surat	Surat(Gaviyar)	21.17500	72.79167	7.40	648	434	210	0	293	35	19	4.39	0.37	240	80	2	37	12	29	1.11
495	Surat	Sultanabad	21.09167	72.72500	8.00	1028	689	320	0	403	113	53	19.23	0.14	330	20	66	100	19	32	2.43
496	Surat	Olpad2	21.34167	72.75833	7.70	1406	942	200	0	598	142	48	28.07	0.62	490	20	36	196	115	33	6.03
497	Surat	Sayan	21.30556	72.91083	7.72	1999	1339	651	0	244	475	216	17.37	0.29	200	44	131	206	1.25	84	3.51
498	Surat	Kathor	21.29167	72.92917	7.90	1766	1183	530	0	342	184	377	35.01	0.40	280	36	107	198	1.10	42	3.74
499	Surendranagar	Olak	22.92778	71.88611	7.65	495	332	100	0	171	57	29	1.20	0.76	140	36	2	61	8.80	44	2.65
500	Surendranagar	Lakhtar	22.85472	71.78667	7.73	595	399	130	0	268	50	27	2.80	1.66	220	40	7	80	7.30	26	3.05
501	Surendranagar	Dedarda	22.78333	71.73611	7.72	651	436	160	0	293	50	22	8.40	1.10	240	56	5	85	6.90	35	2.92
502	Surendranagar	Tavi 1	22.72229	71.85795	7.43	214	143	60	0	85	21	7	5.90	0.27	70	16	5	25	2.30	23	1.40
503	Surendranagar	Shiyani	22.66250	71.82972	7.85	1113	746	90	0	134	213	135	1.30	0.87	110	20	10	205	5.70	18	9.40
504	Surendranagar	Ghaghretiya	22.62583	71.82861	7.79	2251	1508	230	0	220	355	420	3.60	1.50	180	32	36	410	13	28	11.75
505	Surendranagar	Borana	22.51417	71.83806	7.74	4989	3343	530	0	146	787	1282	7.90	0.51	120	88	75	882	1.90	21	16.66
506	Surendranagar	Vanala	22.43417	71.92167	7.32	1407	943	220	0	98	355	125	14.00	0.42	80	52	22	239	4.60	32	7.01
507	Surendranagar	Chuda	22.48639	71.70111	7.51	1767	1184	661	0	281	269	99	273.00	0.60	230	160	63	110	0.90	62	1.86
508	Surendranagar	Navi Morvad	22.53566	71.57473	7.47	2694	1805	701	0	415	581	136	40.00	0.75	340	120	97	300	0.80	70	4.93
509	Surendranagar	Sudamda	22.44583	71.48806	7.42	3316	2222	971	0	488	603	210	237.00	0.33	400	228	97	328	2.30	62	4.58
510	Surendranagar	Nava Sudamda	22.53972	71.43583	7.73	6355	4258	861	0	427	1276	888	145.00	4.50	350	124	134	1010	1.10	32	14.97

511	Surendranagar	Moti Moladi	22.41778	71.10417	7.12	6765	4533	3253	0	268	1985	520	106.00	0.75	220	437	525	231	0.90	76	1.76
512	Surendranagar	Bamanbor	22.41444	71.03722	7.45	1237	829	440	0	366	135	82	78.00	0.61	300	124	32	80	1.30	85	1.66
513	Surendranagar	Kankavati	23.06389	71.36444	7.83	1932	1294	390	0	268	411	90	65.00	0.69	220	88	41	262	2.60	32	5.77
514	Surendranagar	Khambhada	22.89278	71.52361	8.20	2321	1555	410	0	561	369	135	23.00	0.52	460	124	24	294	107	27	6.31
515	Surendranagar	Rajsitapur	22.83778	71.59667	7.64	2678	1794	801	0	171	837	39	1.50	0.48	140	208	68	272	5.10	31	4.18
516	Surendranagar	Latuda	22.79841	71.61542	7.96	1540	1032	370	0	293	326	66	0.95	3.00	240	76	44	174	6.70	30	3.93
517	Surendranagar	Surendranagar 2	22.71722	71.61667	8.19	3166	2121	350	0	659	610	190	33.00	2.70	540	48	56	618	2.60	56	14.36
518	Surendranagar	Muli	22.63889	71.46417	7.86	6755	4526	1211	0	415	1843	250	88.00	3.30	340	192	178	1012	2.90	72	12.65
519	Surendranagar	Sadla/Sarla	22.73389	71.36889	8.39	2175	1457	620	60	378	425	150	14.00	0.92	410	172	46	237	57	31	4.14
520	Surendranagar	Nava Raisngpur	22.73694	71.27028	7.87	4700	3149	1191	0	232	1347	210	96.00	0.20	190	381	58	582	1.20	21	7.34
521	Surendranagar	Tarnetar	22.64222	71.21139	8.18	4285	2871	751	0	293	1219	208	13.00	0.47	240	200	61	696	5.10	21	11.05
522	Surendranagar	Ratanpur 1	22.85528	71.27444	7.82	3995	2677	851	0	390	964	212	48.00	2.50	320	140	122	540	3.10	24	8.05
523	Surendranagar	Anindra	22.82944	71.69222	8.19	522	350	190	0	195	57	23	1.50	0.57	160	60	10	32	6.30	17	1.01
524	Surendranagar	Modhwana	22.93528	71.74139	7.84	385	258	150	0	195	21	10	2.00	0.36	160	52	5	26	2.90	20	0.92
525	Surendranagar	Kherwa	23.00056	71.74333	8.06	1447	969	310	0	232	262	135	0.83	0.74	190	76	29	182	7.40	16	4.49
526	Surendranagar	Piplidham	23.06861	71.71389	8.14	458	307	150	0	207	28	19	2.00	0.44	170	36	15	40	3.60	18	1.42
527	Surendranagar	Bajana	23.11361	71.78306	7.99	710	476	170	0	171	113	53	2.90	0.40	140	52	10	90	6.03	17	3.00
528	Surendranagar	Kharaghoda	23.18750	71.75083	7.67	19220	12877	5454	0	256	6665	593	9.30	0.87	210	313	1136	2390	22	1	14.08
529	Surendranagar	Visavadi	23.34250	71.73444	8.32	3066	2054	570	48	427	752	57	7.80	1.20	430	120	66	428	26	39	7.79
530	Surendranagar	Jhinjhuwada	23.34889	71.65722	8.43	760	509	310	36	366	35	1	1.90	0.55	360	68	34	44	11	35	1.09
531	Surendranagar	Dhama	23.39583	71.67139	7.99	3426	2295	510	0	451	666	325	91.00	1.50	370	72	80	442	245	22	8.51
532	Tapi	Vyara1	21.10833	73.39583	7.82	590	395	250	0	244	50	27	7.70	0.13	200	68	19	26	5.75	52	0.71
533	Tapi	Songarh	21.16465	73.55346	7.85	648	434	300	0	366	21	10	0.94	0.15	300	60	36	24	0.59	77	0.60
534	Tapi	Kherwada	21.28111	73.46528	7.81	685	459	300	0	244	92	33	20.00	0.40	200	76	27	33	0.26	56	0.83
535	Tapi	Moti Chher	21.21250	73.36222	8.04	490	328	210	0	207	35	27	12.00	0.20	170	52	19	27	0.28	55	0.81
536	Tapi	Pinpur	21.44784	73.48140	8.03	322	216	130	0	134	21	22	13.00	0.34	110	28	15	22	0.55	46	0.84
537	Tapi	Valod	21.05000	73.26667	8.05	465	312	180	0	171	35	21	1.75	0.40	140	52	12	18	0.17	34	0.58
538	Tapi	Kelkui	21.04194	73.32333	7.90	489	328	220	0	232	35	23	5.81	0.36	190	60	17	23	0.51	38	0.67
539	Tapi	Bedchit	20.95000	73.35139	7.84	1487	996	600	0	415	269	76	24.00	0.80	340	68	105	103	0.91	73	1.83
540	Vadodara	Juna samalya	22.50406	73.27419	8.36	1760	1179	310	96	275	291	59	39.40	0.29	385	52	44	232	49	38	5.74
541	Vadodara	Kevada Bag	22.29231	73.20243	8.06	1260	844	400	0	445	142	32	39.40	0.71	365	36	75	96	8.26	34	2.09
542	Vadodara	ONGC	22.27625	73.20700	8.27	3236	2168	350	72	305	780	117	11.70	1.24	370	80	36	589	2.21	32	13.69
543	Vadodara	Patiyapura	22.27704	73.42524	8.33	4340	2908	1850	288	952	489	184	3.40	0.57	1260	280	280	129	13	56	1.30
544	Vadodara	Saidal	22.17457	73.58393	8.15	670	449	290	0	256	57	16	38.10	0.96	210	44	44	21	1.78	39	0.54
545	Vadodara	Sama	22.34212	73.20322	8.44	1980	1327	430	96	580	248	0	1.80	0.73	635	40	80	233	40	42	4.89
546	Vadodara	Tundav	22.48168	73.19740	8.04	1350	905	380	0	390	191	71	4.00	0.52	320	64	54	93	71	38	2.08
547	Vadodara	Vega	22.14398	73.40289	8.32	1910	1280	430	66	336	333	99	19.00	0.39	385	140	19	226	29	35	4.73
548	Valsad	Dharampur 3	20.53640	73.17060	8.22	520	348	210	0	183	64	24	3.57	0.45	150	48	22	32	0.20	49	0.96
549	Valsad	Awadha	20.51667	73.28750	8.28	397	266	170	0	159	43	12	5.43	0.18	130	32	22	20	0.18	53	0.67
550	Valsad	Nanaponda	20.41389	73.12083	8.07	984	659	400	0	244	135	115	30.35	0.49	200	64	58	52	0.86	68	1.13

551	Valsad	Fali	20.31306	73.37611	8.20	302	202	140	0	159	14	8	4.52	0.26	130	40	10	11	1.03	47	0.40
552	Valsad	Chavshala	20.32833	73.32583	8.12	385	258	170	0	159	35	19	7.22	0.19	130	48	12	17	4.67	25	0.57
553	Valsad	Kaparda	20.34167	73.21667	8.09	345	231	150	0	122	35	13	28.00	0.12	100	36	15	16	1.59	27	0.57
554	Valsad	Mandwa	20.36667	73.17500	7.20	481	322	230	0	207	57	13	2.21	0.08	170	56	22	15	1.50	43	0.43
555	Valsad	Dungri	20.68861	72.94944	8.25	621	416	270	0	244	57	23	3.77	0.20	200	72	22	22	1.22	58	0.58
556	Valsad	Muli1	20.63333	73.02500	8.15	1588	1064	300	0	366	298	131	1.74	0.43	300	60	36	264	1.67	36	6.63
557	Valsad	Tithal	20.60000	72.90000	8.27	1299	870	450	0	488	191	42	7.65	0.27	400	108	44	105	22	35	2.15
558	Valsad	Udwada	20.51000	72.92806	8.00	848	568	350	0	268	99	48	7.24	0.25	220	72	41	37	0.69	58	0.86
559	Valsad	Karwad	20.36250	72.97500	8.20	748	501	300	0	305	78	35	4.93	0.20	250	76	27	47	7.69	40	1.18
560	Valsad	Tumb	20.21667	72.84167	8.29	647	433	250	0	256	85	19	2.28	0.57	210	44	34	45	1.41	40	1.24
561	Valsad	Umargaon	20.19167	72.75000	8.07	990	663	400	0	415	85	48	8.23	0.14	340	52	66	61	3.64	21	1.33
562	Valsad	Kanadu	20.32500	72.84167	8.53	412	276	180	12	183	21	13	1.98	0.38	170	48	15	20	0.91	40	0.65
563	Valsad	Dahli (bhilad)	20.25833	72.88333	7.60	1062	712	460	0	354	121	61	61.00	0.25	290	84	61	59	0.41	44	1.20