FINAL REPORT

WATER QUALITY STATUS OF MAHARASHTRA

2022-2023

(COMPILATION OF WATER QUALITY DATA RECORDED BY MPCB)

Prepared by

The Energy and Resources Institute

...towards global sustainable development

Abbreviations

BCM	Billion Cubic Meters
BIS	Bureau of Indian Standards
BOD	Biochemical Oxygen Demand
CAGR	Compound Annual Growth Rate
CGWB	Central Ground Water Board
CPCB	Central Pollution Control Board
CWC	Central Water Commission
DO	Dissolved Oxygen
FC	Fecal Coliform
GIS	Geographical Information System
GSDA	Ground water Surveys & Development Agency
GW	Ground Water
IPC	Irrigation Potential Created
IPU	Irrigation Potential Utilized
MoEF	Ministry of Environment and Forests
MoEFCC	Ministry of Environment Forest and Climate Change
MPCB	Maharashtra Pollution Control Board
NSFWQI	National Sanitation Foundation Water Quality Index
NWMP	National Water Quality Monitoring Program
pH	Potential of Hydrogen
POPs	Persistent Organic Pollutants
RO	Regional Office
SD	Standard Deviation
Shp	Shape files
SPCBs	State Pollution Control Boards
SW	Surface Water
SWMP	State Water Quality Monitoring Program
TDS	Total Dissolved Solids
TH	Total Hardness
WHO	World Health Organisation
WQI	Water Quality Index
WQMS	Water Quality Monitoring Stations

Maharashtra Pollution Control Board
महाराष्ट्र प्रदूषण नियंत्रण मंडळ

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EXECUTIVE SUMMARY

The survival of all living organisms and the smooth functioning of ecosystems, communities, and economics are favored by a clean, safe, and adequate supply of freshwater. Degradation of water quality has become a global issue of concern as the human population grows; industrial and agricultural activities expand and climate change threatens to cause the major alterations in the hydrological cycle[1].

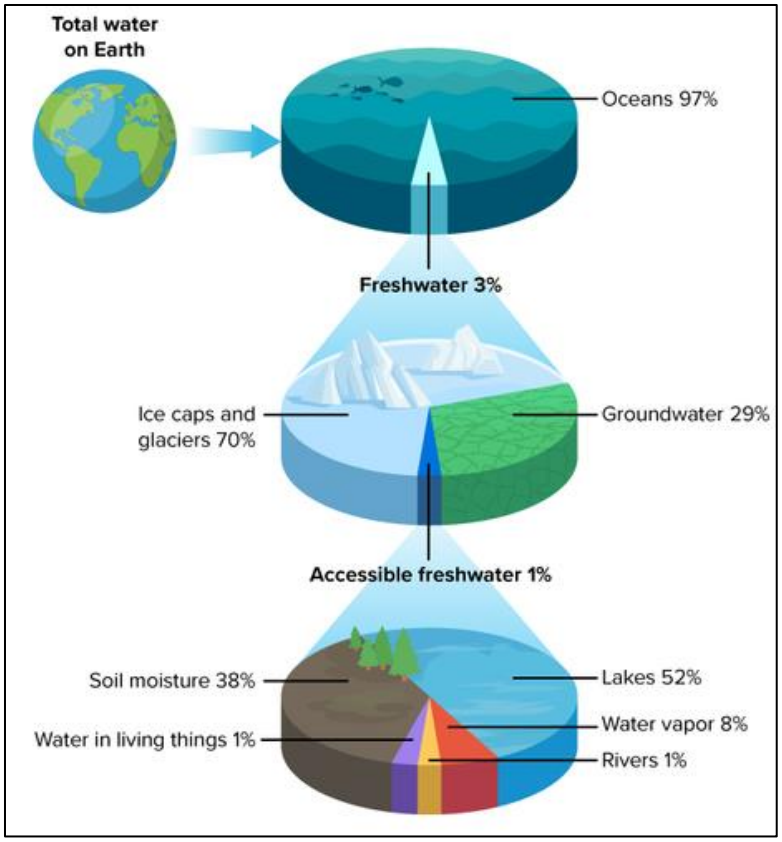


Figure No. 1 Water distribution on Earth

Source : ***https://flexbooks.ck12.org/cbook/ck-12-middle-school-earth-science-flexbook-2.0/section/8.1/primary/lesson/distribution-of-water-on-earth-ms-es/***

About 97% of the water on our globe is saltwater, and only 3% of it is freshwater. The majority of the freshwater on Earth is trapped below in aquifers and glaciers. Only 1% of the water on Earth is readily available freshwater[2] .

The available freshwater sources are under immense pressure due rise in demand owing to population growth, urbanization, industrialization, and allied activities. Approximately 2 billion people around the world do not have safely managed drinking water supply/services, 3.6 billion people do not have safely managed sanitation services and 2.3 billion lack basic handwashing facilities[3].

The current population of India accounts for about 17.5% of the total population of the world and the livestock population accounts for a total of 20% of the world. This scenario has caused a huge decline in the per capita availability of utilizable surface water in India from 672 cubic m. in 2001 to 570 cubic m. in 2011 and is expected to be further reduced to 421 cubic m. by the year 2050[4].

In order to have continuous vigilance checks on water quality across Maharashtra, the Maharashtra Pollution Control Board (MPCB), being the state nodal agency under the Central Pollution Control Board (CPCB), has installed 294 Water Quality Monitoring Stations (WQMS)

[1] https://www.unwater.org/sites/default/files/app/uploads/2017/05/waterquality_policybrief.pdf
[1]https://olc.worldbank.org/sites/default/files/sco/E7B1C4DE-C187-5EDB-3EF2-897802DEA3BF/Nasa/chapter1.html
[3] https://www.worldbank.org/en/topic/water/overview
[4] http://nihroorkee.gov.in/sites/default/files/uploadfiles/WaterRes-Mgmt-India.pdf

across the state which are regularly monitoring the level of water pollutants and water quality under two programs namely the National Water Quality Monitoring Program (NWMP) and the State Water Quality Monitoring Program (SWMP). The surface water (SW) samples are monitored once every month whereas the ground water (GW) samples are monitored bi-annually. In this report, the statistically analyzed data for the year 2022-2023 is presented along with illustrations and spatial representation of Maharashtra's surface and groundwater quality.

The report also showcases the Water Quality Index (WQI) across 294 WQMS for both surface and groundwater. WQI provides a single number that expresses an overall water quality at a certain location and time based on several water quality parameters. The objective of an index is to turn complex water quality data into information that is understandable and usable by the public. The WQI has been determined based on the formula developed by the National Sanitation Foundation (NSF) and further modified by CPCB. Moreover, the report provides information on polluted river stretches in the state of Maharashtra, listed priority-wise based on their compliance with the desired criteria for Biochemical Oxygen Demand (BOD). On a similar front, CPCB published a report titled "POLLUTED RIVER STRETCHES FOR RESTORATION OF WATER QUALITY-2022" in October 2022 which provides information about the polluted river stretches in the country by analyzing the water quality data for the years 2019 and 2021. As per the report, About 55 Polluted river stretches in 2022 up from 53 in 2018 has been identified in state of the Maharashtra[5]. Based on the data analysis, it was found that, the Amravati and the Burai river are categorized under priority V & IV respectively in the year 2022 which were considered under 'Less Polluted' category in the year 2018 whereas the Muchkundi river remained 'Less Polluted' during both instances.

Surface Water Quality

There are a total of 43 parameters decided by MPCB for testing and analysis of SW samples. Each collected SW sample undergoes testing and analysis for these parameters which are divided into 4 sections namely Field observations (6), Core Parameters (9), General Parameters (18), and Trace Metals (10). Out of these, 4 parameters namely pH, Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), and Fecal Coliform (FC) are being utilized for calculating WQI. For its easy interpretation, color codes are assigned which depict the water quality of that particular SW sample/water body.

Water Quality Index - Surface Water			
WQI	Quality Classification	Remarks	Colour Code
63-100	Good to Excellent	Non-Polluted	
50-63	Medium to Good	Non-Polluted	
38-50	Bad	Polluted	
38 and less	Bad to Very Bad	Heavily Polluted	

Table No. 1: Classification of Water Quality for Surface Water

Source: http://www.mpcb.gov.in/envtdata/Ebulletin_pdf/E_bulletin_Oct2016.pdf

[5] Water Quality Management (I) Division ,Central Pollution Control Board ,*Polluted River Stretches For Restoration Of Water Quality*, Pg 19

Table No. 2: Annual Average WQI for Surface WQMS in various basins and sub basins

Basin	Sub Basin	Name of the rivers	G2E	M2G	B	B2V	Dry	NA	Grand Total
Tapi	Tapi Upper	Tapi, Purna, Pedhi	5						5
	Tapi Middle	Tapi, Girna, Rangavali, Amravati, Bori, Burai, Gomai, Hiwara, Kan, Mor, Panzara, Titur, Waghur	14				1		15
Krishna	Bhima Upper	Bhima, Nira, Chandrabhaga, Mutha, Ghod, Indrayani, Pawana, Sina, Vel, Mula-Mutha	28	8					36
	Krishna Upper	Krishna, Panchganga, Koyna, Urmodi, Venna	21						21
Godavari 1	Godavari Upper	Godavari, Darna, Kadwa, Kham, Shivna	16	2	2				20
	Godavari Middle	Godavari, Bindusara, Sukhna, Purna	9	1	1				11
	Manjra	Godavari, Manjra	2						2
Godavari 2	Weinganga	Kolar, Kanhan, Wainganga	11	2	2				15
	Wardha	Wardha, Penganga, Wena, Morna	12						12
	Pranhita & Others	Wainganga	1						1
Coastal	West Flowing Rivers	Kalu, Ulhas, Patalganga, Bhatsa, Vashishti, Mithi, Kundalika, Savitri, Amba, Kundalik, Muchkundi, Surya, Tansa, Vaitarna	41			1			42
	Sea/Creek		12	23	1				36
	Nallah	Rabodi nallah, Colour Chem nallah, Sandoz nalla, BPT Navapur, Tarapur MIDC nallah, Pimpal-Paneri nallah, Chikali Nallah,Nallah at Alkai Mandir,Moti Nallah and Lowki Nallah	3	2	2	5			12
Total			**175**	**38**	**8**	**6**	**1**	**0**	**228**

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	No data	Does not comply with WQI Calculation criteria (NA)

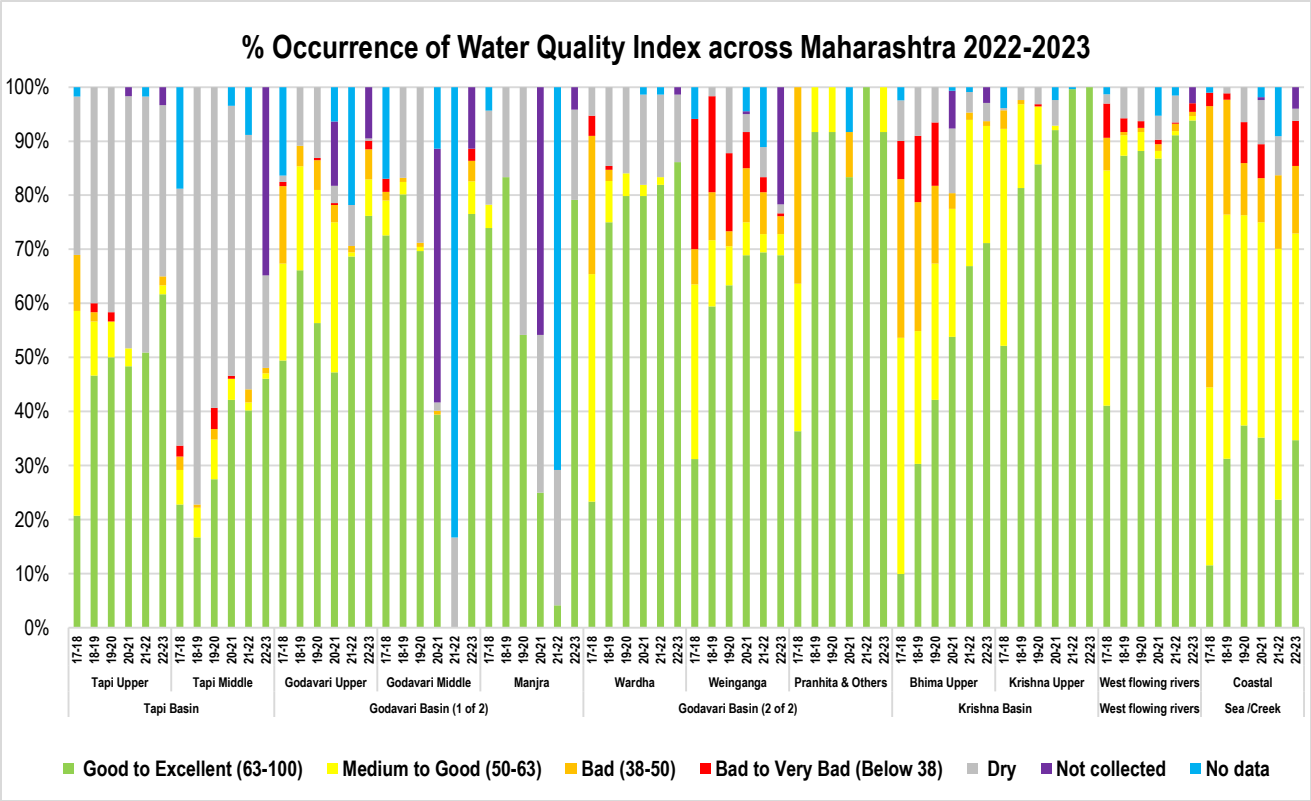


Figure No. 2: Percentage Occurrence of different category of WQI across WQMS in respective sub basins of Maharashtra

Note: The above comparison is based on WQI recorded at a monitoring station and the average number of timesthe WQI was of a certain category at all the WQMS in that basin.

As illustrated in **Figure No. 2**, in the year 2022-23, about 61.67% of the total observations were recorded under the category of 'Good to Excellent' by the WQMS installed at Tapi Upper Sub-Basin, whereas 31.67% of observations were recorded under the 'Dry' category. A significant increase in the percent share of the 'Good to Excellent' category, from 48.33% in the year 2021-22 to 61.67% in the year 2022-23 was observed which indicates the improvement in water quality. The percent share of observations under the 'Dry' category was reduced from 45% in 2021-22 to 31.67% in 2022-23.

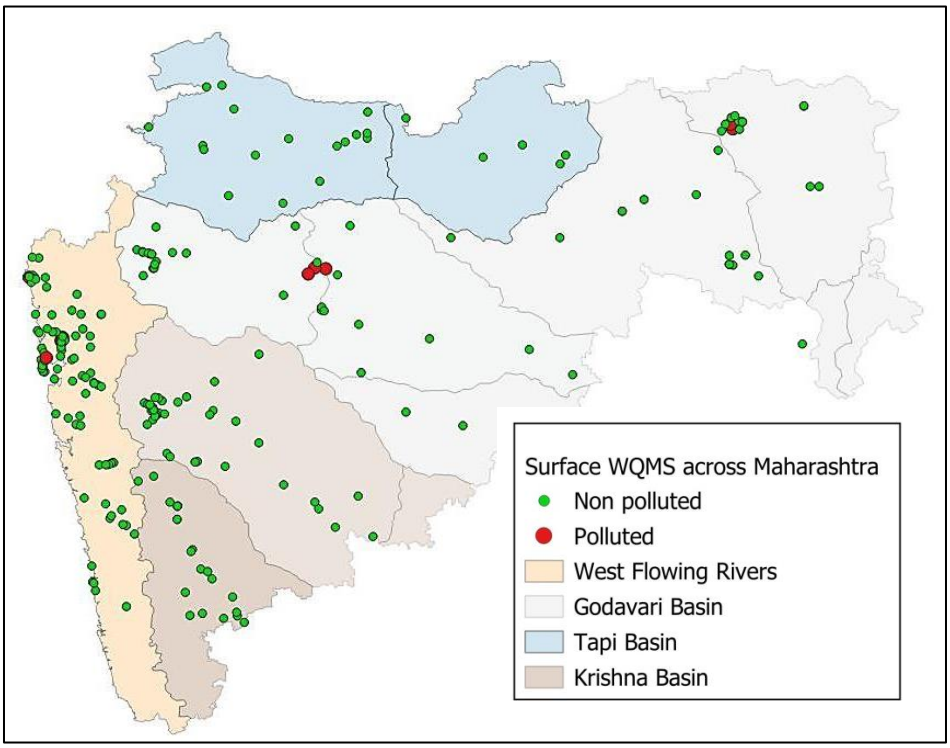
In the Tapi Middle sub-basin, an increasing trend was noted in case of the share of observations under the 'Good to Excellent'category (from 40.20% to 46.08%) as compared to the previous year (2021-22). A significant decrease was observed in the percent share of observations recorded under the 'Dry' category (from 47.06% in the year 2021-22 to 17.16% in the year 2022-23). About 34.80% of observations were recorded under the category of 'Not Collected' by the WQMS installed at the Tapi Middle sub-basin.

In the Godavari Upper sub-basin, a significant increase in the percent share of observations recorded under the 'Good to Excellent' category was observed (from 68.65% in the year 2021-22 to 76.19% in the year 2022-23). About 76.52% of the total observations recorded by WQMS (Godavari Middle sub basin) were found to be recorded under the category of 'Good to Excellent'. The share of similar category observations were found to be about 79.17% by the Manjra sub-basin's WQMS.

In Godavari Basin (2 of 2), out of 3 sub-basins, Wardha sub-basin witnessed a slight increase in the percent share of observations recorded under the 'Good to Excellent' category (from 81.94% in the year 2021-22 to 86.11% in the year 2022-23) whereas a slight decrease was observed in case of the percent share of the observations recorded under the category of 'Good to Excellent' by WQMS installed at Weinganga sub-basin (from 69.44 in the year 2021-22 to 68.89% in the year 2022-23) and Pranhita & Others sub-basin (from 100% in the year 2021-22 to 91.67% in the year 2022-23) indicating the deterioration in water quality.

The percent share of 'Good to Excellent' category observations witnessed a slight increase by the WQMS installed at the Bhima Upper sub-basin (from 66.89% in the year 2021-22 to 71.17% in the year 2022-23) and Krishna Upper sub-basin (from 99.60% in the year 2021-22 to 100% in the year 2022-23). No observations were recorded under the category of 'Bad to Very Bad' in the case of both the sub-basins. On the other hand, a slight decrease was observed in the percent share of the observations recorded under the category of 'Medium to Good' (from 27.03% in the year 2021-22 to 21.62% in the year 2022-23) in the case of Bhima Upper sub-basin.

For West Flowing Rivers, a slight increase in the percent share of observations recorded under the 'Good to Excellent' category, from 91.07% (2021-22) to 93.85% (2022-23). Similarly, the Coastal Basin also recorded an increasing trend from 23.67 %(2021-22) to 34.66% (2022-23) hereby indicating improvement in water quality in the current year.



Map No. 1: Spatial representation of Surface WQMS which recorded WQI as polluted for more than 50% of the observations.

Table No. 3: WQMS which recorded WQI as polluted for more than 50% observations in 2022-23

Sr. No.	Station Code	Station Name	Village	Taluka	District
1	2168	Mithi river near Road bridge	Mahim	Bandra	Mumbai
2	2782	Rabodi Nallah	Rabodi	Thane	Thane
3	2783	Colour chem Nallah,	Majiwada	Thane	Thane
4	2784	Sandoz Nallah	Sandozbaug	Thane	Thane
5	2785	BPT, Navapur	Navapur	Palghar	Palghar
6	2812	Sea water at Juhu beach	Juhugaon	Santacruz	Mumbai

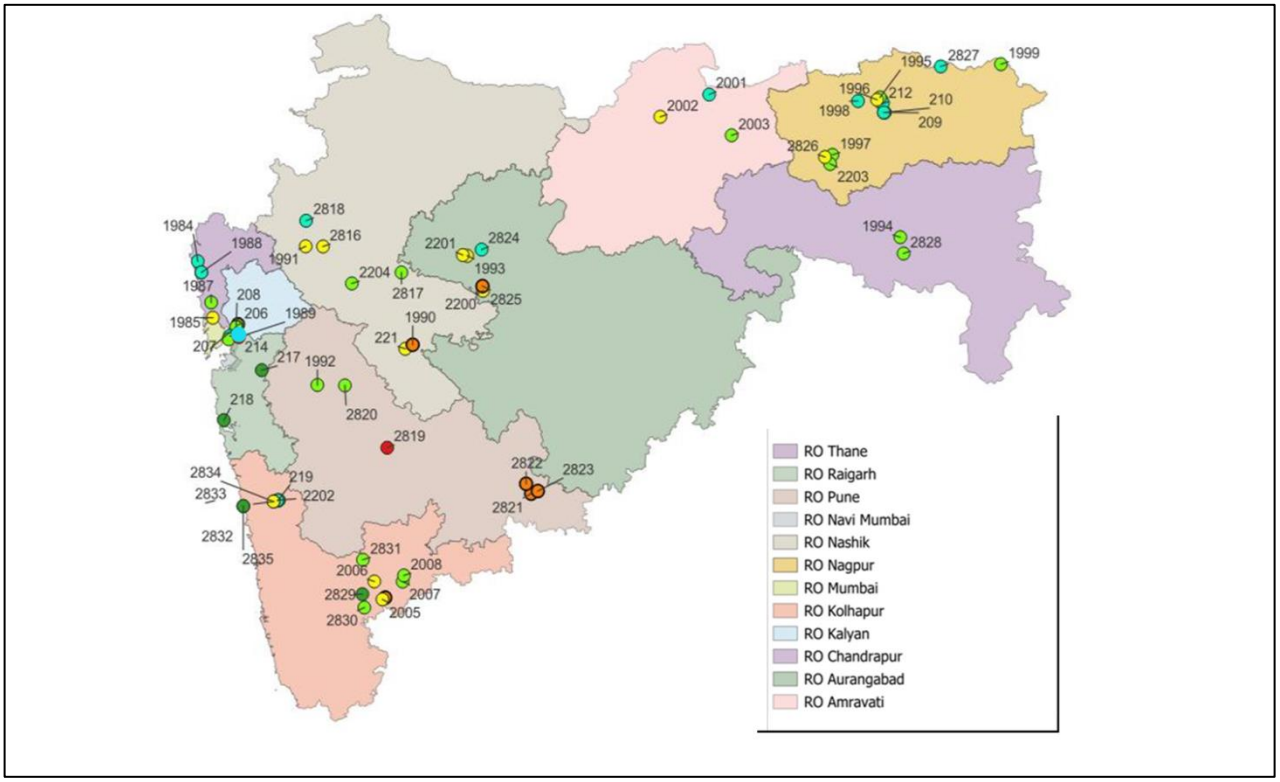
Ground Water Quality

As far as the quality of groundwater is concerned, MPCB monitors the water quality through an established network of 66 WQMS installed across state of Maharashtra. The water samples from these WQMS are collected biannually to monitor the levels of water pollutants. For calculating WQI, a total of 9 parameters viz pH, Total Hardness, Total Dissolved Solids, Calcium, Magnesium, Chloride, Fluoride, Sulphate and Nitrate are taken into consideration. As far as drinking water is concerned, CPCB has assigned specific weightage to each of these parameters based on parameter stringency and its relative importance in overall water quality. For easy interpretation, color codes are assigned for each category of WQI (Table No. 4)

Table No. 4: Classification of Water Quality for Ground water

Water Quality Index – Ground Water			
WQI	**Water Quality**	**Remark**	**Colour Code**
<50	Excellent	Non Polluted	
50-100	Good water	Non Polluted	
100-200	Poor Water	Polluted	
200-300	Very Poor Water	Polluted	
>300	Water Unsuitable for Drinking	Heavily Polluted	

Source: http://www.mpcb.gov.in/envtdata/Ebulletin_pdf/E_bulletin_English_March2017_13062017.pdf



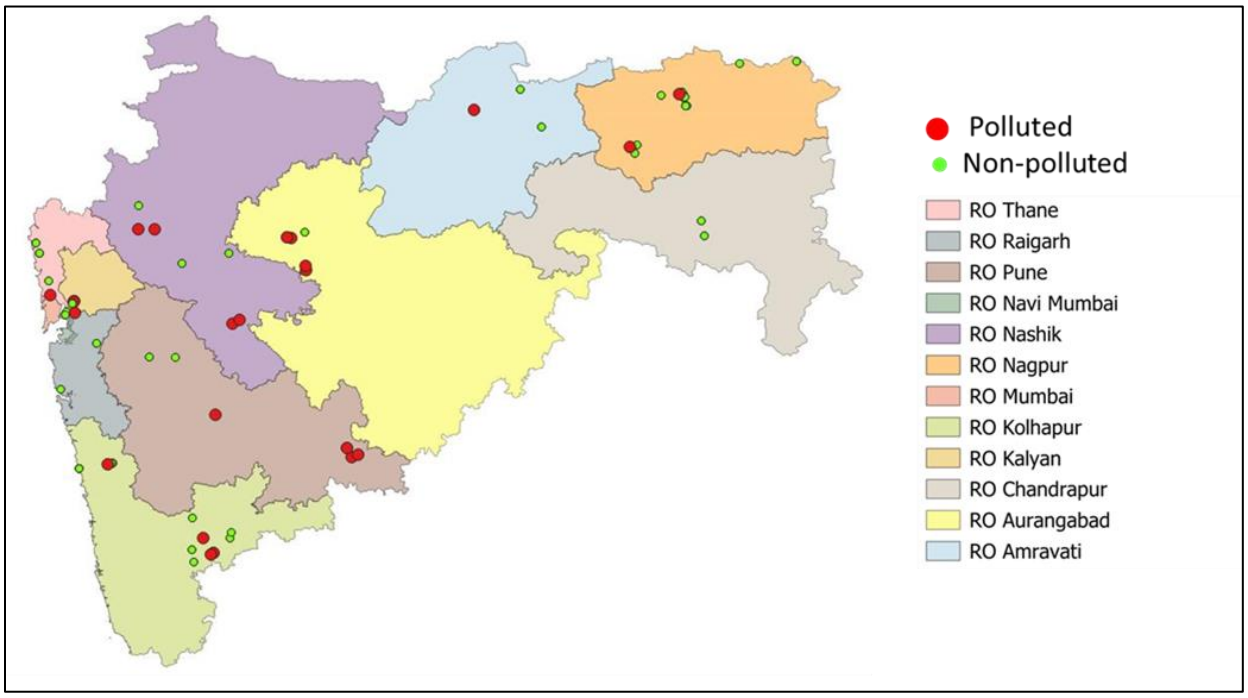
Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	NA

Map No. 2: Spatial representation for average groundwater WQI represented as per the standard color code

Table No. 5: List of WQMS which recorded annual average WQI in the 'Water Unsuitable for Drinking' category in 2022-23

Station Code	Regional Office	Water Body	Station Name	Village	Taluka	District
2819	Pune	Dug Well	Dug well owned by Shri Deshmukh	Malegaon	Baramati	Pune



Map No. 3 : Spatial representation representing WQMS as polluted for more than 50% observations in 2022-23 (Ground Water)

Table No. 6: WQMS which recorded WQI as polluted for more than 50% observations in 2022-23 (Ground Water)

MPCB RO	Station Code	Station Name	Village	Taluka	District
Aurangabad	2200	Bore well at Katpur, near Z.P. school, pump house at Dam,	Paligaon		Beed
	2201	Dug well at Ranjangaon	Ranjangaon	Gangapur	Aurangabad
	2825	Bore well at, near Zilla Parishad school	Wahegaon	Paithan	Aurangabad
Kalyan	205	Dug well opp. KAMA office, MIDC Ph-I, Dombivali	Dombivali	Kalyan	Thane
Kolhapur	2004	Bore well at Parvati Industrial Estate	Yadrav	Shirol	Kolhapur
	2005	Bore well at Khanjirenagar	Khanjirenagar	Hatkanangale	Kolhapur
	2006	Bore well at Shinoli near M/s Aqua Alloy Steel,MIDC	Shinoli	Chandgad	Kolhapur
Nagpur	1996	Gram Panchayath Dug well, Near Jagadamba G. M. S. Mandir Sahakari Sanstha	Koradi	Kamptee	Nagpur
Nashik	1990	Bore well at BMW Site,	Burudgaon	Ahmednagar	Ahmednagar
Nashik	1993	Dug well at Pandharpur		Gangapur	Aurangabad

MPCB RO	Station Code	Station Name	Village	Taluka	District
Nashik	2816	Dug well of Mr.Sampat Walunj, near M/s Mahajeet Clayton	Shinde village	Nashik	Nashik.
Pune	2819	Dug well owned by Shri Deshmukh	Malegaon	Baramati	Pune
Pune	2821	Bore well at Bale railway station premises owned by Shri. Digambar Joshi.	Dahegaon	North Solapur	Solapur
Pune	2822	Bore well near Chincholi MIDC	Chincholi	Mohol	Solapur
Pune	2823	Bore well at Shete Vasti, near old Tuljapur road	Shete vasthi, Tuljapur naka	Solapur	Solapur
Thane	1985	Dug well at 5 -Star Industrial estate	Kashimira	Mira-Bhayander	Thane

INTRODUCTION

Freshwater is a finite source; critical for socio-economic development, maintaining healthy ecosystems and human survival. At the core of sustainable development; water plays a vital role in reducing the global burden of disease, improving the health, welfare and productivity of the population. It is a crucial link between the climate system, human society and the environment.

Fundamental to the concept of existence, Water cannot be replaced by any other source. Thus, there is a need to conserve and manage available water resources efficiently. This is because about more than 1.7 billion people in the world live in river basin areas where the rate of water utilization is high than the rate of water recharge. This trend is going to affect the world as it may cause about a two third of the world's population to live in water-stressed countries by 2025[6]. The United Nations (UN) too has given more emphasis on water conservation and has also targeted to ensure the availability and sustainable management of water and sanitation for all by 2030 through its Sustainable Development Goal 6 (SDG 6: Clean Water and Sanitation).

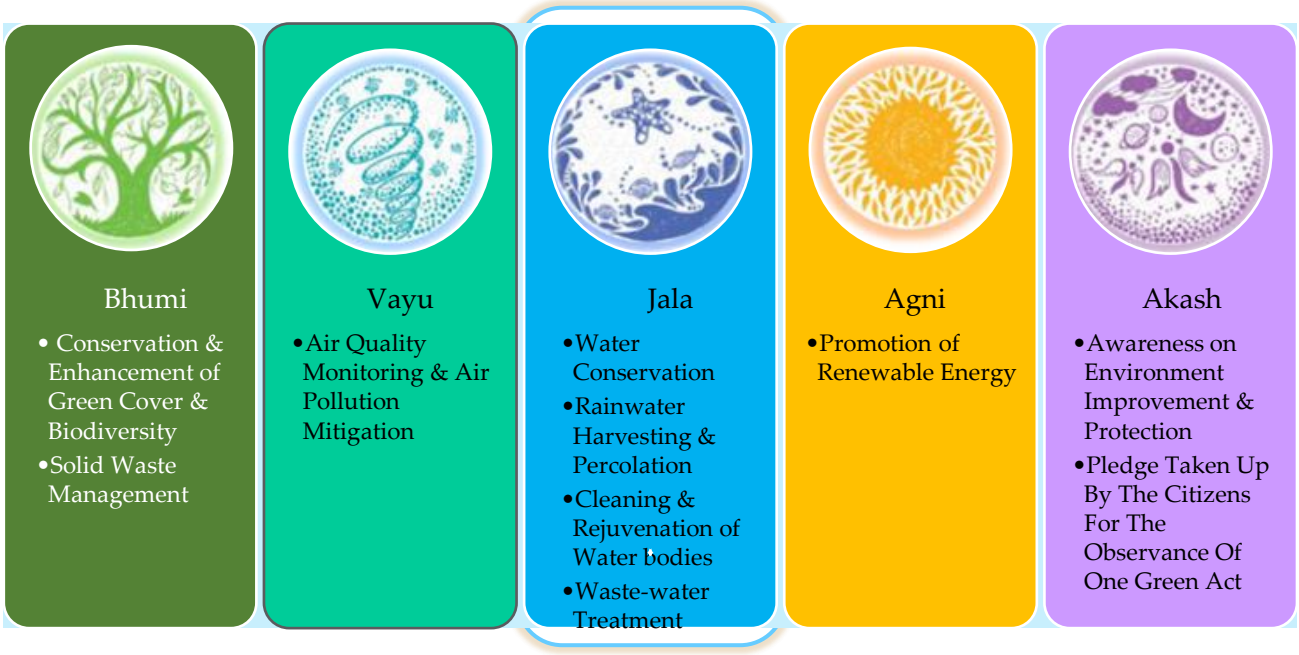


Figure No. 3: The Five Elements of Nature and respective theme areas as mentioned in the 'Mazhi Vasundhara Abhiyan'.
Source: https://www.majhivasundhara.in/en/majhi-vasundhara

In this regard, The Department of Environment and Climate Change, Government of Maharashtra, adopted a holistic approach titled 'Mazhi Vasundhara Abhiyan' to convey the environmental issues to the citizens more efficiently and urge every citizen to adopt the best practices and efforts to make our environment more sustainable. This initiative shall support the state government in taking timely decisions and implementing climate change mitigation

[6] https://www.un.org/waterforlifedecade/water_and_sustainable_development.shtml

and adaptation measures. This unique initiative focuses on all five elements of nature[7] i.e. 'Panchmahabhuta'.

Why Conservation and Monitoring of Water Resources is Important?

Water is one of the most important natural resources for all forms of life on our planet. However, the majority of the water (about 97%) is in the form of seawater/saline which is not suitable for drinking, industrial and other day-to-day applications directly. This makes only 3% of the water (freshwater) available for use. Even in this 3%, a major portion is in the form of glaciers and ice caps. This leaves a very tiny fraction of freshwater in the form of surface and groundwater resources.

With the increasing trend of population and anthropogenic activities, the demand for freshwater is growing exponentially. Many research works have shown that by 2025, many countries on the face of this earth would be labeled as 'Water stress' countries due to decreasing water resources[8]. Climate change has further aggravated the water scarcity scenario owing to the change in the precipitation patterns and increased water demand. India which accounts for about 2.45% of the world's surface area holds about 4% of the world's water resources however, supports about 16% of the world's population. Moreover, predominantly being an agrarian country, about two-thirds of the population has been dependent on agriculture which demands a high amount of freshwater for irrigation purposes[9]. Considering the population rise and water demand in agriculture and other industrial and domestic activities, the need has arisen to conserve and effectively manage the available freshwater resources. Besides this, we need to tap into the issue of water pollution which is responsible for the degradation of the water quality of water bodies. The sustainable use of available water resources and periodic water quality monitoring thus have become essential.

Water Pollution

Water is an important natural resource used for drinking and other developmental activities. The Availability of safe drinking water is crucial for human health all over the world. Water, even termed as a Universal Solvent, is quite vulnerable to pollution arises due to various anthoropogenic activities. As stated by the World Health Organization (WHO), 80% of the diseases are water borne[10]. The occurrence of such water borne diseases could be due to the significant level of water pollution in that particular area[11].

[7] https://majhivasundhara.in/mar/majhi-vasundhara-abhiyan
[8] https://www.netsolwater.com/conservation-of-water-resources-in-india-importance-and-need.php?blog=105
[9] https://ncert.nic.in/ncerts/l/legy206.pdf
[10] https://www.researchgate.net/publication/326828651_Water_pollution_and_human_health
[11] https://www.researchgate.net/publication/49597629_Types_of_water_pollution_Point_source_and_nonpoint_source

Sources of Water pollution

Water pollutants can be broadly categorized into 2 categories namely

- Point Sources (contamination originates from a single source) such as effluent discharged from industrial settlements, wastewater discharged from public and industrial wastewater treatment plants
- Non-Point sources (contamination derived from a combination of diffused pollutant sources) such as surface runoff from agricultural and construction sites, water runoff from human settlements containing dirt, facial matter, oil and litter etc.

Health impacts associated with the Water pollution

The use and consumption of polluted water has led towards the poor health in India. Pathogenic and waterborne diseases like cholera, typhoid, paratyphoid fever, dysentery, diarrhoea, jaundice, amoebiasis etc. are single most factors causing a significant rate of human mortality in India. In rural India and slums, children are the most affected by the waterborne diseases. Contamination with faecal matter causes development of unsafe drinking water contributing to high infant mortality. The presence of different trace metals and inorganic substances in high concentration is the result of industrial pollution. Some of the major inorganic substances found in water are sodium, potassium, calcium, magnesium, bicarbonate, sulfate and chloride and the trace metals include aluminium, arsenic, boron, cadmium, chromium, copper, lead, nickel, zinc, etc. The high concentration of calcium and magnesium compounds imparts excessive hardness to the water and can pose a threat to the people having diseases of heart and kidneys. If the trace metal found in water is exceeding the prescribed limits, then it could prove toxic[12]. Along with the diseases, unsafe drinking water and poor environmental hygiene can result into intestinal illness, inhibiting nutrient absorption and malnutrition[13].

Environmental Impacts associated with the Water Pollution

Water pollution leads to the alteration of the parameters such as turbidity, alkalinity, acidity, nutrients, hardness, dissolved oxygen, etc. of the water. These parameters are important for the growth and the wellbeing of the organisms in the water body. The non-metallic ions such as nitrates, phosphates may lead to nutrient enrichment of water causing eutrophication. Eutrophication is the major problem with most of the urban water bodies as it causes excessive growth of some organisms which may lead to the reduction in dissolved oxygen content which is important parameter for growth of the organisms in water[14]. Along with the content of salts present in water body can lead to the increase in the salinity of the water.

[12] https://medcraveonline.com/IJH/IJH-04-00240.pdf
[13] https://www.frontiersin.org/articles/10.3389/fenvs.2022.880246/full
[14] https://www.ilkogretim-online.org/fulltext/218-1665496356.pdf

Water Pollution Act

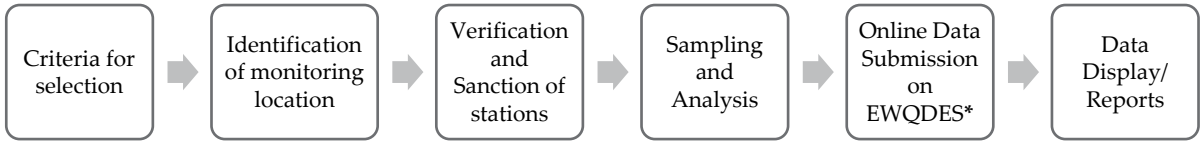
The Water (Prevention and Control of Pollution) Act, 1974 came into effect on March 23rd, 1974. It was one of the main legislation made for the control and prevention of water pollution and to maintain water quality by establishing the central and state pollution control boards to effectively monitor and enforce the regulations in the country. This act empowers the CPCB and respective SPCBs to check and control water pollution and implement mitigative measures to improve water quality. The act also gives power to the respective boards to restrict any industrial unit, to take samples of the effluents and analyse them in the central and state-affiliated laboratories. Failing to comply with any of the provision/s of this act could result in penalties as per the set standards in the policy for polluting water bodies[15]. Further, in order to levy and collection of cess on water consumed by industries and local authorities; the Water (Prevention and Control of Pollution) Cess Act was enacted in 1977.

National Water Quality Monitoring Program

The periodic water quality monitoring becomes imperative in order to assess and maintain/restore quality of water-bodies. For doing so, CPCB in collaboration with SPCBs has established a National Water Quality Monitoring Network (NWMP) in order to assess status of water quality of water resources and to facilitate for prevention and control of pollution in water bodies. The water quality monitoring is carried out with following objectives[16]

- To assess nature and extent of pollution control needed in different water bodies or their part
- To evaluate effectiveness of pollution control measures already in existence
- To evaluate water quality trend over a period of time
- To assess assimilative capacity of a water body thereby reducing cost on pollution control
- To understand the environmental fate of different pollutants
- To assess the fitness of water for different uses
- To carry out rational planning of pollution control strategies and their prioritization

Steps involved in water quality monitoring under the NWMP are as follows[17]



***EWQDES: Environmental Water Quality Data Entry System.**

[15] https://www.indiawaterportal.org/articles/water-prevention-and-control-pollution-act-1974
[16] https://cpcb.nic.in/uploads/WQM_Objective.pdf
[17] https://cpcb.nic.in/uploads/WQM_Objective.pdf

WATER QUALITY MONITORING IN MAHARASHTRA

The state of Maharashtra is the third largest state of India in terms of land area (about 3.08 km^2)[18] and constitutes about 9.36% of the country's total geographical area. The total geographical area of the state is subdivided into 5 river basins namely the Godavari, the Tapi, the Krishna, the Narmada and the West flowing rivers (Konkan region). MPCB, being a nodal agency for monitoring environmental pollution; regularly monitor and record the water quality by collecting water samples and testing the levels of water pollutants. Water samples are collected across 294 WQMS (176 are on rivers, 36 on sea/creek, 12 on nallahs, and 66 on the groundwater locations). The samples of surface water are monitored at monthly intervals whereas groundwater samples are monitored biannually.

Table No. 7: Basin and water body typewise tally of WQMS in Maharashtra

	Water body	**Basin**				
		Tapi	Godavari	Krishna	West Flowing Rivers	**Grand Total**
Surface Water	Rivers	20	60	57	40	176
	Dam		2		2	4
	Sea				16	16
	Creek				20	20
	Nalla	2	1	1	8	12
Groundwater	Bore well	1	10	10	8	29
	Dug well	1	14	6	13	34
	Hand pump		1			1
	Tube well	1				1
	Well		1			1
Total		**25**	**88**	**74**	**107**	**294**

[18] https://www.ibef.org/download/Maharashtra-June-2021.pdf

METHODOLOGY

For the evaluation of both surface and groundwater quality; the WQMS installed across the state are organized basin-wise in order to effectively monitor, collect and record data sets. Further, in order to study the trend of water quality, the WQMS are arranged from upstream to downstream. Table No.8 provides information on the classification of the various rivers, their basins and sub-basins considered in this report. Generally, 4 parameters namely pH, BOD (mg/l), DO (mg/l to %) and FC (MPN/100 ml) are taken into consideration for the calculation of the WQI. The formula coined by the NSF and the relative weights modified by CPCB are used in order to calculate WQI. Moreover, spatial data in the form of the Geographical Information System (GIS) maps are also developed in order to present data in an effective manner.

Table No. 8: Classification of the rivers considered under basins and sub basins in the report

Basin	Sub basins	Name of rivers	Number of WQM stations
Tapi	Tapi Upper	Tapi, Purna, Pedhi	8
	Tapi Middle	Tapi, Girna, Rangavali, Amravati, Bori, Burai, Gomai, Hiwara, Kan, Mor, Panzara, Titur, Waghur, Waghur	17
Godavari 1	Godavari Upper	Godavari, Chikhali nalla, Darna	28
	Godavari Middle	Godavari, Bindusara	14
	Manjra	Godavari, Manjra	2
Godavari 2	Wardha	Wardha, Penganga	17
	Wainganga	Kolar, Kanhan, Wainganga	26
	Pranhita and others	Wainganga	1
Krishna	Bhima Upper	Bhima, Nira, Chandrabhaga, Mutha, Ghod, Indrayani, Pawana, Sina, Vel, Nalla, Mula-Mutha	45
	Krishna Upper	Krishna, Panchganga, Koyna, Urmodi, Venna	29
West Flowing rivers		Kalu, Ulhas, Patalganga, Bhatsa, Vashishti, Mithi, Kundalika, Savitri, Amba, Kundalik, Muchkundi, Surya, Tansa, Vaitarna	59
		Rabodi nalla, Colour Chem nalla, Sandoz nalla, BPT Navapur, Tarapur MIDC nalla, Pimpal-Paneri nalla	12
Saline			36
Total			**294**

Developing spatial maps

Sub-basin level maps

- Of the 5 major basin, Narmada basin comprises of just 0.5% of the total area. Hence, it was included in the Tapi basin for ease and convenience, while the remaining WQMS were divided into the remaining four basins.
- The sub basin level map was generated as per data & demarcation published by the Central Ground Water Board (CGWB), Ministry of Water Resources Government of India.
- The imageries, for the basins of Tapi, Krishna and Godavari, were downloaded and upon geo-referencing those, the maps were digitized on GIS platform to generate shape (.shp) files.

MPCB Regional Office (RO) maps

- Maps depicting the jurisdiction of the regional offices of MPCB, superimposed with district boundaries have been generated as part of this report.
- The peak season water quality index for the stations in each RO have been compiled for the necessary action by the respective RO's of MPCB.

Organizing and presentation of Data sets

- The data sets for water quality parameters like temperature, dissolved oxygen, pH, conductivity, BOD, COD, and Fecal Coliform and so on were shared by MPCB in soft copy for the year 2021- 2023.
- The data sets were organized in spread sheets for further analysis and illustrative presentation. Stock graphs have been generated to depict the minimum, maximum, 25th and 75th percentile values along with the mean values observed for parameters namely pH, BOD, DO and FC.

Water Quality Index

A water quality index provides a single number (like a grade) that expresses overall water quality of a certain water sample (location and time specific) for several water quality parameters.

The objective of developing an index is to simplify the complex water quality parametric data into comprehensive information for easy understanding. A water index based on important parameters provides a simple indicator of water quality and a general idea on the possible problems with the water in the region.

1970

The National Sanitation Foundation, USA developed the Water Quality Index (NSFWQI), a standardized method for comparing the water quality of various water bodies.

The expression for calculation the NSFWQI

$$NSFWQI = \sum_{i=1}^{p} WiIi$$

Ii= sub index for ith water quality parameter

Wi= weight (in terms of importance) associated with water quality parameter

P= number of water quality parameters

WQI for surface water

The NSF WQI has been modified considering the Indian context and relative weights have been assigned by the CPCB. This ensures uniformity in the WQI assessment across the country, based on the parameters monitored in India under the NWMP. The modified weights as per CPCB are given in Table No. 9 and the equations used to determine the sub-index values are given in Table No. 10. Upon determining the Water Quality Index, the water quality is described for easy understanding and interpretation. The description used in the report for classifying and the describing the water quality is presented in Table No.11.

Table No. 9: Modified weights for computation of WQI based on DO, FC, pH and BOD

Parameters	Original Weights from NSF WQI	Modified Weights by CPCB
Dissolved Oxygen (DO)	0.17	0.31
Fecal Coliform (FC)	0.15	0.28
pH	0.12	0.22
BOD	0.1	0.19

Table No. 10: Sub index equation used to calculate NSF WQI for DO, FC, pH and BOD

Water Quality Parameters (units)	Range Applicable	Equation
Dissolved Oxygen (DO)(% Saturation)	0-40	0.18 + 0.66 X % Saturation DO
	40-100	(-13.55) + 1.17 X % Saturation DO
	100-140	163.34 - 0.62 X % Saturation DO
Fecal Coliform (FC) (counts/100 ml)	1 - 10^3	97.2 - 26.6 X log FC
	10^3 - 10^5	42.33 - 7.75 X log FC
	>10^5	2
pH	02 - 05	16.1 + 7.35 X (pH)
	05 - 7.3	(-142.67) + 33.5 X (pH)
	7.3 - 10	316.96 - 29.85 X (pH)
	10 – 12	96.17 - 8.0 X (pH)
	<2, >12	0
BOD (mg/l)	0 – 10	96.67 - 7 X (BOD)
	10 – 30	38.9 - 1.23 X (BOD
	>30	2

Table No. 11: Water Quality Classification and Best Designated use

WQI	Quality classification	Class by CPCB	Class by MPCB	Remarks	Colour code
63 - 100	Good to Excellent	A	A-I	Non Polluted	
50 - 63	Medium to Good	B	Not Prescribed	Non Polluted	
38 - 50	Bad	C	A-II	Polluted	
38 and less	Bad to Very Bad	D, E	A-III, A-IV	Heavily Polluted	

Sample calculation for determining Surface WQI

Parameters considered in the year 2022-2023- Biological Oxygen Demand (BOD), Dissolved Oxygen (DO), pH, Fecal Coliform (FC)

Station Name : Krishna river at Rajapur Weir, Village- Rajapur, Taluka- Shirol, District- Kolhapur

Station Code : 1153 (April month)

Sub basin	:	Krishna Upper	Basin	:	Krishna
BOD	:	2.2mg/l	DO	:	5.5 mg/l
FC	:	6 MPN/100 ml	pH	:	7.6

Formula

$$NSFWQI = \sum_{i=1}^{p} WiIi$$

Where;

Ii= sub index for water quality parameter

Wi= weight (in terms of importance) associated with water quality parameter

Sub index for BOD

BOD value = 2.2 mg/l

Since 2.2 lies in range (0-10), the corresponding formula is used Table No.10

Sub Index (BOD) = 96.67 – 7 X (BOD value)

= 96.67 – 7 X 2.2

= 81.27 X Modified Weights by CPCB for BOD (Table No.9)

= 81.27 X 0.19

= 15.44

Sub index for Dissolved Oxygen (DO)

DO value = 5.5 mg/l

DO (saturation %) = 5.5 /6.5 X 100 [6.5 has been taken as constant as per DO vs temp]

= 84.61

Since 84.61 lies in range (40-100), the corresponding formula is used from Table No.10

Sub Index (DO) = (-13.55) + 1.17 X % Saturation DO value

= (-13.55) + 1.17 X 84.61

= 85.44 X Modified Weights by CPCB for DO (Table No.9)

= 85.44* 0.31
= 26.48

Sub index for Fecal Coliform (FC)

Fecal Coliform value = 6 MPN/100ml

Since 6 lies in range (1-10^3), the corresponding formula is used from Table No.10

Sub Index (FC) = 97.2 - 26.6 X log FC
= 97.2-26.6 X log 6
= 76.50 X Modified Weights by CPCB for FC (Table No.9)
= 76.50 X 0.28
= 21.42

Sub Index for pH

pH value = 7.6

Since 7.6 lies in range (7.3-10), the corresponding formula is used from Table No.10

Sub Index (pH) = 316.96 - 29.85 X (pH)
= 316.96-29.85 X 7.6
= 90.1 X Modified Weights by CPCB for pH (Table No.9)
= 90.1 X 0.22
= 19.82

WQI of Krishna river at Rajapur Weir, Village- Rajapur, Taluka- Shirol, District-Kolhapur

WQI = ∑ (sub –index of all parameters)
= ∑ (15.44+26.48+21.42+19.82)
= 83.16

Quality Classification: Good to Excellent

WQI for ground water

Once in every six months, MPCB monitors the water quality of groundwater collected from the respective monitoring stations. The water is tested to record levels of pH, Total Hardness, Calcium, Magnesium, Chloride, Total Dissolved Solids, Fluoride, Manganese, Nitrate, Sulphates and so on. Based on the stringency of the parameters and their relative importance in the overall quality of water for drinking purposes, each parameter has been assigned a specific weightage[19]. The relative weights of the same have been determined (Table No.12) for the parameters monitored and recorded by MPCB for the water samples monitored in the year 2022-23. These weights indicate the relative harmfulness when present in water. The maximum weight assigned is 5 and minimum is 1.

Table No. 12: Relative Weight of chemical parameters used for calculating WQI for Ground water

Chemical Parameters	Indian Standards for Drinking Water Quality[20]		Weight (Wi)			
	Acceptable Limit	Permissible Limits	Weight	Relative Weight	Weight w/o Iron, Manganese and Bicarbonate	Relative Weight w/o Iron, Manganese and Bicarbonate
pH	6.5-8.5	No relaxation	4	0.09756	4	0.13333
Total Hardness (TH)	300	600	2	0.04878	2	0.06667
Calcium	75	200	2	0.04878	2	0.06667
Magnesium	30	No relaxation	2	0.04878	2	0.06667
Bicarbonate	244	732	3	0.07317	-	-
Chloride	250	1000	3	0.07317	3	0.10000
Total Dissolved Solids (TDS)	500	2000	4	0.09756	4	0.13333
Fluoride	1	1.5	4	0.09756	4	0.13333
Manganese	0.1	0.3	4	0.09756	-	-
Nitrate	45	No relaxation	5	0.12195	5	0.16667
Iron	0.3	No relaxation	4	0.09756	-	-
Sulphate	200	400	4	0.09756	4	0.13333
	Total		41	1	30	1

Source: BIS 10500 and CPCB 2001

[19] C. R. Ramakrishnaiah, *Assessment of Water Quality Index for the Groundwater* , E-Journal of Chemistry, 2009, 6(2), 523-530; ISSN: 0973-4945

[20] Bureau of Indian Standards, *Draft Indian Standard Drinking Water – Specification*; Second Revision of IS 10500, ICS No. 13.060.20

The maximum weight of 5 has been assigned to the parameter nitrate due to its major importance in water quality while, magnesium is given the minimum weight of 1 as may not be harmful.

The relative weight is then computed from the following equation

$$Wi = \frac{wi}{\sum_{i=1}^{n} wi}$$

Where;

Wi = the relative weight

wi = the weight of each parameter

n = number of parameters

In the next step a quality rating scale (qi) for each parameter is assigned by dividing its concentration in each water sample by its respective standard according to the guidelines published by BIS (Bureau of Indian Standards) and the result thus obtained is multiplied by 100.

qi= (Ci/Si) x 100

Where;

Qi = quality rating

Ci = the concentration of each chemical parameter in each water sample in mg/L

Si = the Indian drinking water standard for each chemical parameter in mg/L according to the guidelines of the BIS 10500, (2004-2005).

Based on the absolute value of the index determined from the calculations, water quality is classified as presented below in Table No.13.

Table No. 13: Ground water classification based on the Water Quality Index

WQI Value	Water Quality	Colour code used in this report
<50	Excellent	
50-100	Good water	
100-200	Poor Water	
200-300	Very Very Poor water	
>300	Water Unsuitable for drinking	

Sample Calculation for determining Ground WQI

Station name : Milgaon Borewell water, Nr. Khopoli, MSW Site

Station code : 217 (October Month) Sub basin : West Flowing River

Basin Coastal

Calcium	: 51.6 mg/l	Chlorides	: 17.99 mg/l	Fluoride: 0.2	
Magnesium	: 29.6 mg/l	Nitrate	: 0.3 mg/l	Sulphate: 14.55 mg/l	
pH	: 7.9	TDS	: 242 mg/l	TH	: 81.2 mg/l

Formula

$$\text{WQI} = \sum_{i=1}^{n=9} qi.wi$$

Where;

Wi = relative weight

qi = quality rating

wi = relative of each weight

$$qi = (Ci/Si) \times 100$$

Where;

Ci = the concentration of each chemical parameter in each water sample in mg/l

Si = the Indian drinking water standard for each chemical parameter in mg/l according to

Parameters considered for ground water monitoring: pH, Total hardness, Calcium, Magnesium, Chloride, Total Dissolved Solids, Fluoride and Sulphate.

*The relative weight (wi) without iron, manganese and Bicarbonate has been considered in calculation.

Sub Index for pH

pH	=	7.9
Sub index (pH)	=	Concentration /Standard X 100
	=	7.9/7.5 X 100
	=	105.33 X relative weight (Table no. 12)
	=	105.33 X 0.13333

= 14.044

Sub index for Total hardness

Total hardness = 81.2
Sub index (TH) = Concentration /Standard X 100
= 81.2 / 300*100
= 27.066 X relative weight (Table no. 12)
= 27.066 X 0.06667
= 1.80

Sub index Calcium

Calcium = 51.6
Sub index (Calcium) = Concentration /Standard *100
= 51.6 / 75 X 100
= 68.8 X relative weight (Table no. 12)
= 68.8 X 0.0666
= 4.57

Sub index for Chloride

Chloride = 17.99
Sub index (Chloride) = Concentration /Standard X 100
= 17.99/ 250 X 100
= 7.169 X relative weight (Table no. 12)
= 7.169 X 0.1
= 0.716

Sub index for Fluoride

Fluoride = 0.2
Sub index (Fluoride) = Concentration /Standard X 100
= 0.2/ 1 X 100
= 20X relative weight (Table no. 12)
= 20X 0.1333
= 2.666

Sub index for Magnesium

Magnesium = 29.6
Sub index (Mg) = Concentration/ Standard X 100
= 29.6 / 30*100
= 98.66 X relative weight (Table no. 12)
= 98.66 X 0.06667
= 6.578

Sub index for Nitrate

Nitrate = 0.3

Sub index (Nitrate) = Concentration/ Standard X 100
= 0.3 /45 *100
= 0.667 X relative weight (Table no. 12)
= 2.6 X 0.16667
= 0.111

Sub index for Sulphate
Sulphate = 14.55
Sub index (Sulphate) = Concentration/ Standard X 100
= 14.55 / 200 X 100
= 7.27 X relative weight (Table no. 12)
= 7.27 X 0.13333
= 0.9699

Total Dissolved Solids
Total Dissolved Solids= 242
Sub index (TDS) = Concentration/ Standard X 100
= 242/ 500 X 100
= 48.4 X relative weight (Table no. 12)
= 48.4 X 0.13333
= 6.45

WQI of Milgaon Borewell water, Nr. Khopoli, MSW Site
WQI = ∑ (sub –index of all parameters)
= ∑ (14.044+ 1.80+ 4.57+ 0.716+ 2.666+ 6.578+ 0.111+ 0.9699+ 6.45)
= 37.9

Quality Classification: Excellent

CAGR: Compound Annual Growth Rate

Compound Annual Growth Rate= ((End value/Start value) ^ (1/Number of intervals))- 12
Number of intervals = (Number of observations)-1 *100
Sample Calculation for determining CAGR
Example Station code: 2695
WQI
(End value) : 49; WQI of 2013-14 ;(Start value) :69; WQI of 2022-23 ; Number of intervals: 10
CAGR % = ((End value/Start Value) ^1/Number of intervals)) - 1 X 100
= ((49/69) ^ (1/10)-1 *100
= 3.39%
=Quality Improved

SURFACE WATER QUALITY

Surface water resources (the water in rivers, lakes, reservoirs, wetlands, glaciers) forms an intricate part of the water cycle, on which all forms of life on this planet earth depend. The main applications of the surface water include drinking-water and other public uses, irrigation uses, and for use by the thermoelectric-power industry to cool electricity-generating equipment.

As far as the Surface water resources of the state of Maharashtra are concerned, the area of the state is covered under five major river basins namely the Godavari, the Krishna, the Tapi, the Narmada and the West flowing river basins. The state government has made a significant investment in the water sector in order to increase the irrigation potential, acceleration of industrial growth, effective management of drinking water and increase the rate of hydropower capacity. In spite of such efforts, the existing surface water resources face a few critical challenges which include

- Growing imbalance between demand and supply of water
- Uncertainty in the availability of water
- Limitation to access available water
- Lack of assured access to an allocated quota of water
- Low operational efficiency
- Significant gap between Irrigation Potential Created (IPC) and Irrigation Potential Utilized (IPU)
- Losses in Urban Distribution Network[21]

At the state level, MPCB monitors the quality of water by collecting and recording the water quality data taken from the network of installed WQMS across the state. The total WQMS for the year 2022-23 is represented in Table No. 14. The spatial presence of the stations is presented basin-wise in the respective sections. The following section presents the intra as well as inter basin performance and WQI of major river basins (Tapi, Godavari, Krishna and West flowing rivers) and coastal basin (Sea/Creek). Further, it represents the concentration level of parameters (pH, DO, BOD & FC) in graphical form recorded by 228 surface WQMS.

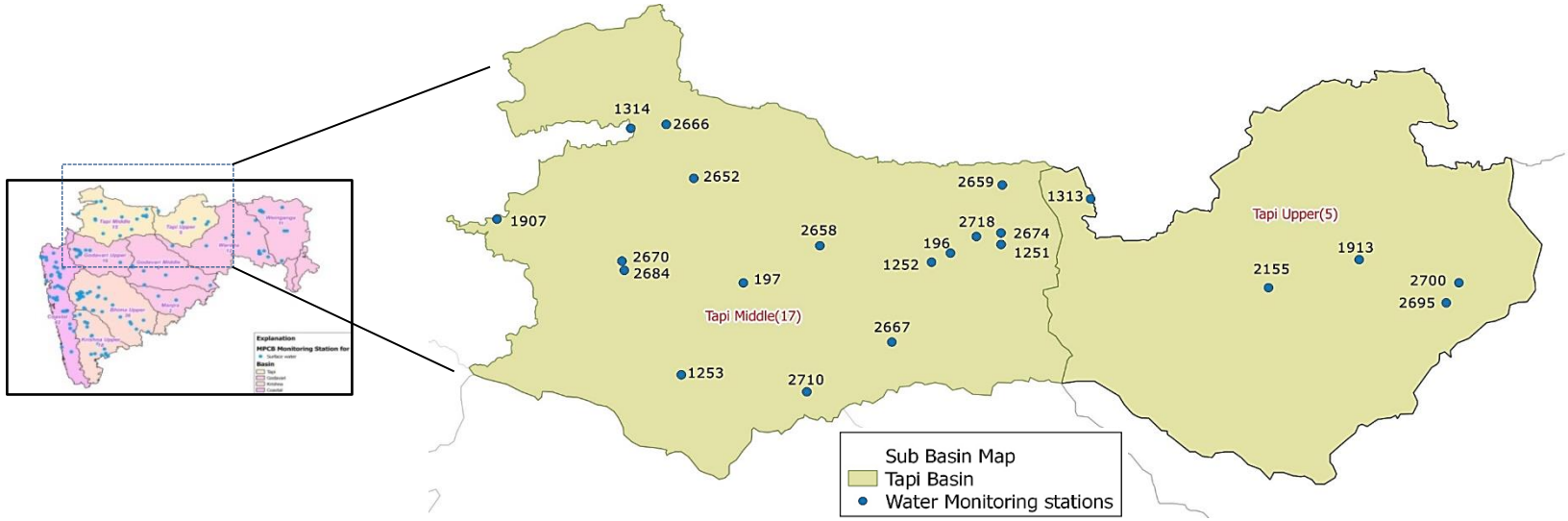
Table No. 14: List of monitoring stations across different type of water bodies under MPCB

Water Quality Monitoring Stations	
Water Bodies	**2022-23**
Rivers	176
Sea and Creek	36
Nalla	12
Dams	4
Total	**228**

[21] https://mwrra.maharashtra.gov.in/en/wp-content/uploads/sites/2/2022/09/State-Water-Policy-2019.pdf

Tapi Basin

The Tapi River is one of the major rivers of peninsular India. The river flows east to west and is one of the only 3 rivers in peninsular India running east to west, the other two being the Narmada and the Mahi River. With a total drainage area of about 65,145 sq.km, the Tapi is the second largest westward draining interstate river basin which covers a large area in the state of Maharashtra (~79.1%) besides areas of the states of Madhya Pradesh (15%) and Gujarat (~5.9%). In the case of Maharashtra, the river basin covers the Amaravati, Akola, Washim, Buldhana, Jalgaon, Dhule and Nandurbar district[22]. The Tapi River has 14 tributaries out of which major tributaries include Rivers such as the Purna, the Girna, the Gomai, the Panzara, the Pedhi and the Arna[23]. A list of WQMS stations installed in areas of the Tapi basin has been provided in the Table No. 15.



[22] https://www.interscience.in/cgi/viewcontent.cgi?article=1111&context=ijmie

[23] https://indiawris.gov.in/wris/#/

Tapi Basin (Intra Basin analysis)

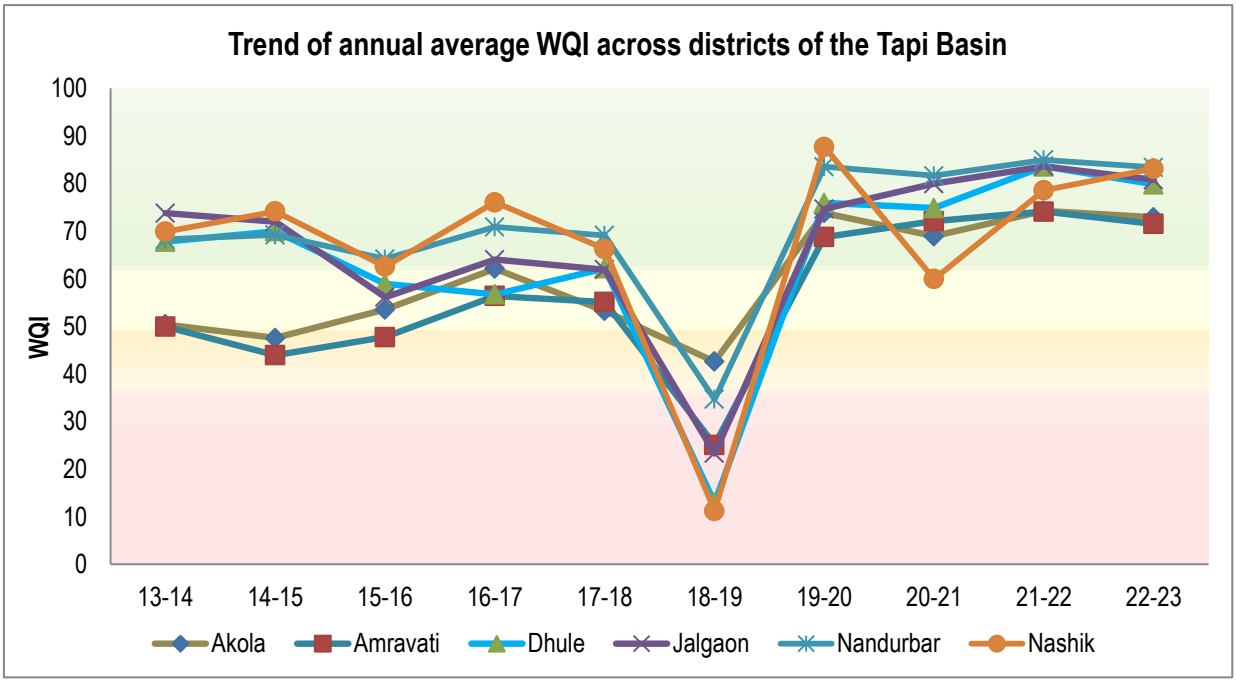


Figure No. 4: Trend of annual average WQI across districts of the Tapi basin

WQI	WQI Category	Class by CPCB	Represented in the above graph
63-100	Good to Excellent	A	Non-polluted
50-63	Medium to Good	B	Non-polluted
38-50	Bad	C	Polluted
38 & less	Bad to Very Bad	D, E	Heavily polluted

Note: This graph considers the average WQI for all the monitoring stations in that particular district and hence may include some bias. This graph is only for an overview and monitoring station-wise data may be analyzed to pinpoint the most affected and polluted patches of rivers in that district.

Figure No. 4 illustrates the intrabasin performance of the Tapi basin across 6 districts of the Maharashtra state. It is important to note that the annual average WQI of 5 districts except Nashik showed a slight downward trend indicating deterioration in water quality as compared to the previous year. WQMS installed at Dhule recorded decrease in WQI by 3.76% (from 83.61 to 79.84) followed by WQMS installed at Amravati by 3.47% (from 74.11 to 71.54) . The decrease in WQI about 2.87% (from 83.64 to 80.77) was noted at Jalgaon district followed by Nandurbar district which recorded decrease in WQI by 1.58% (from 84.99 to 83.41) in the year 2022-23.

WQMS installed at Nashik district recorded about 5.76% increase in the annual average WQI (from 78.6 to 83.13) as compared to the previous year (2021-22) showcasing overall improvement in the water quality.

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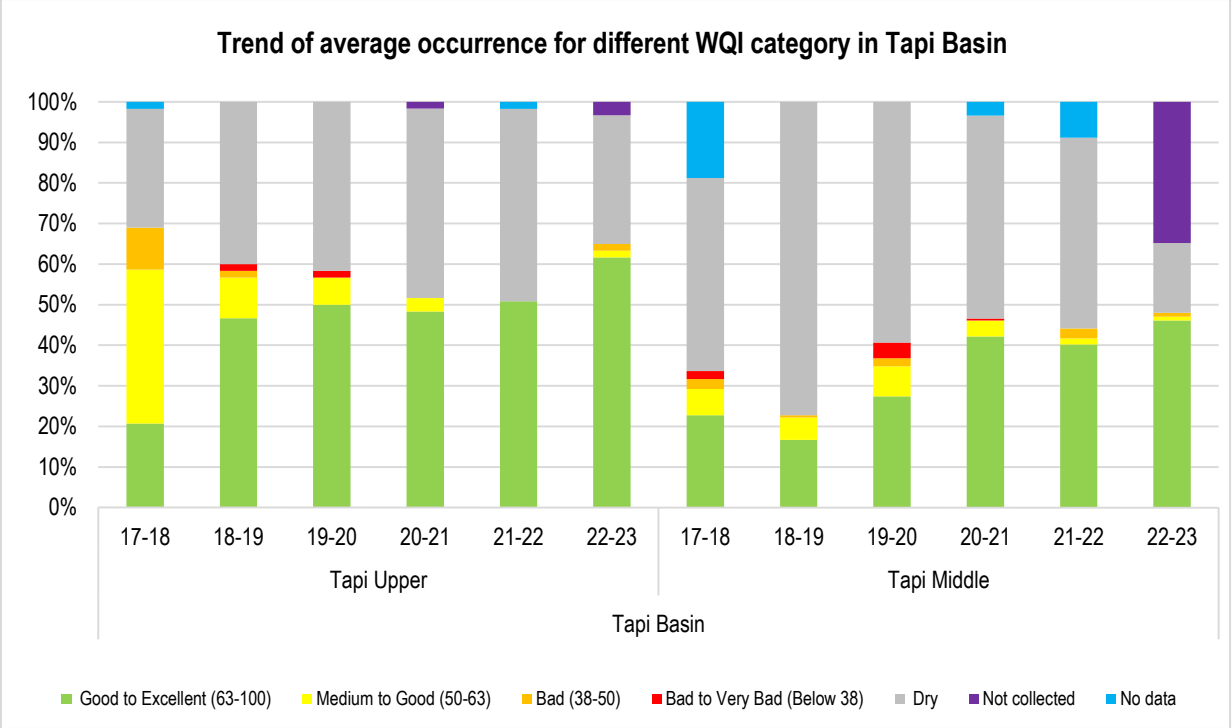
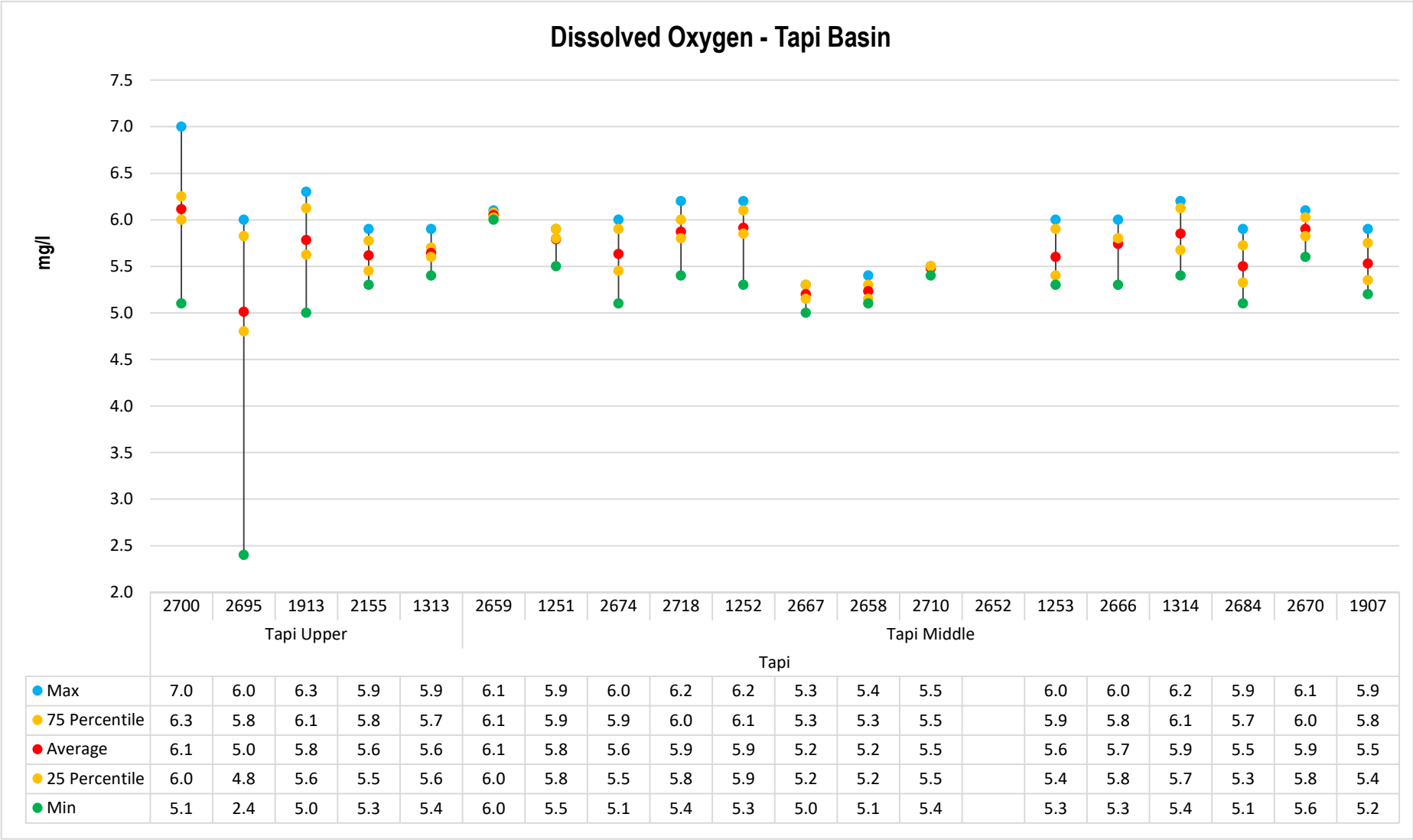


Figure No. 5: Trend in average occurrence for different categories of WQI in the Tapi basin

The interbasin analysis of the Tapi basin is illustrated in Figure No. 5.

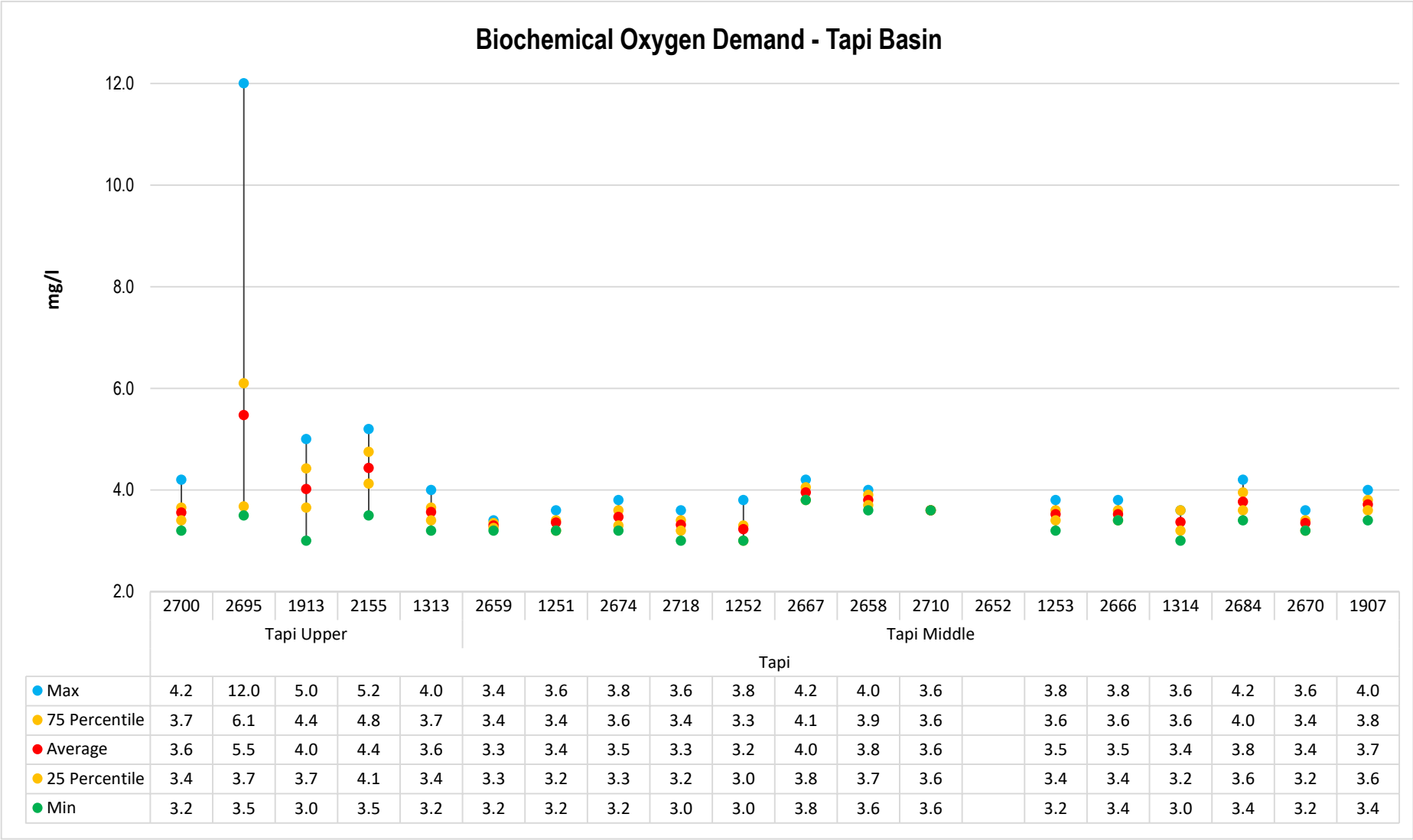
In Tapi Upper, about 62% of total observations were recorded under 'Good to Excellent' WQI category. The share of observations recorded under the categories of 'Medium to Good' and 'Bad' were found to be 1.67% each. No single observation was recorded under the 'Bad to Very Bad'. About 31.67% of observations were noted to be under 'Dry' category and 3.33% for 'No Data' WQI category.

In the case of Tapi Middle, the percentage share of observations under the category of 'Good to Excellent' noted an increased trend in the year 2022-23. The percentage share of 'Good to Excellent' category observations increased from 40.2% (2021- 22) to about 46.08 % in 2022-23. However, the percentage share of the observations under the 'Medium to Good' category decreased from about 1.47% (2021-22) to 0.98% in 2022-23. About 0.98% of the total observations were recorded under the WQI category of 'Bad' whereas no single observation was recorded under the 'Bad to Very Bad' category. The share of 'Dry' and 'Not Collected' category observations were found to be about 17.16% and 34.80% respectively.



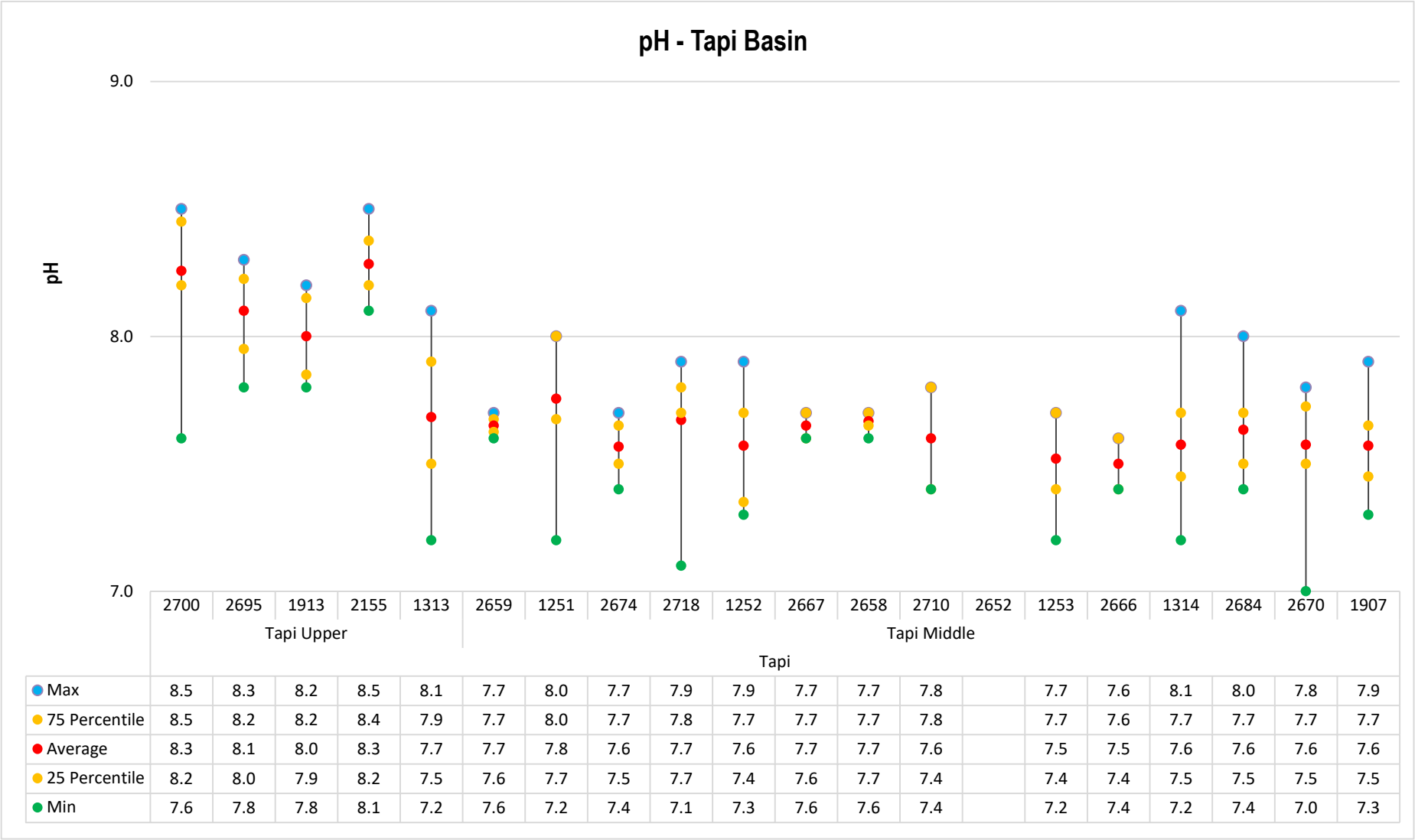
	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
	Tapi Upper					Tapi Middle														
	Tapi																			
Max	7.0	6.0	6.3	5.9	5.9	6.1	5.9	6.0	6.2	6.2	5.3	5.4	5.5		6.0	6.0	6.2	5.9	6.1	5.9
75 Percentile	6.3	5.8	6.1	5.8	5.7	6.1	5.9	5.9	6.0	6.1	5.3	5.3	5.5		5.9	5.8	6.1	5.7	6.0	5.8
Average	6.1	5.0	5.8	5.6	5.6	6.1	5.8	5.6	5.9	5.9	5.2	5.2	5.5		5.6	5.7	5.9	5.5	5.9	5.5
25 Percentile	6.0	4.8	5.6	5.5	5.6	6.0	5.8	5.5	5.8	5.9	5.2	5.2	5.5		5.4	5.8	5.7	5.3	5.8	5.4
Min	5.1	2.4	5.0	5.3	5.4	6.0	5.5	5.1	5.4	5.3	5.0	5.1	5.4		5.3	5.3	5.4	5.1	5.6	5.2

Figure No. 6: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Tapi basin



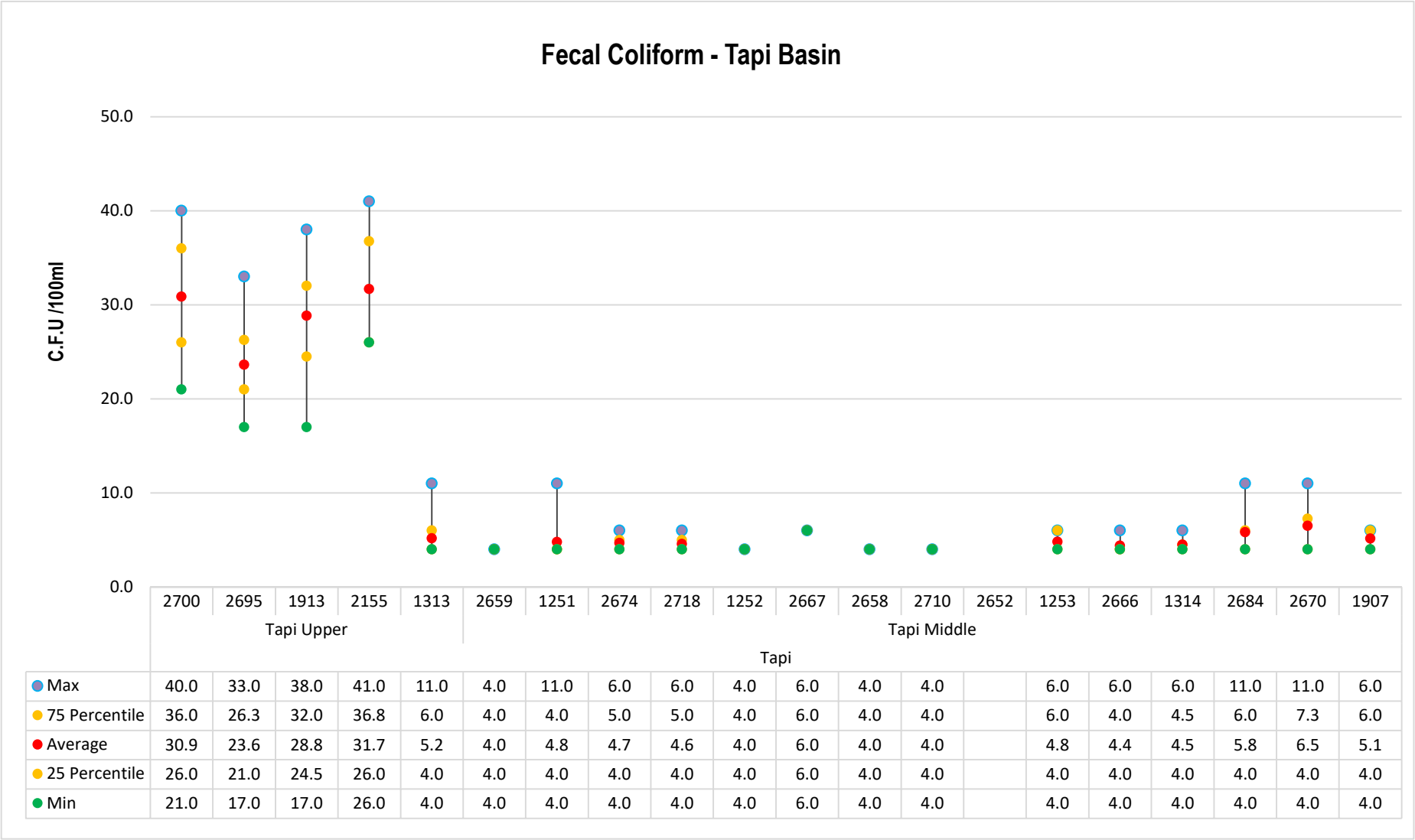
	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
Max	4.2	12.0	5.0	5.2	4.0	3.4	3.6	3.8	3.6	3.8	4.2	4.0	3.6		3.8	3.8	3.6	4.2	3.6	4.0
75 Percentile	3.7	6.1	4.4	4.8	3.7	3.4	3.4	3.6	3.4	3.3	4.1	3.9	3.6		3.6	3.6	3.6	4.0	3.4	3.8
Average	3.6	5.5	4.0	4.4	3.6	3.3	3.4	3.5	3.3	3.2	4.0	3.8	3.6		3.5	3.5	3.4	3.8	3.4	3.7
25 Percentile	3.4	3.7	3.7	4.1	3.4	3.3	3.2	3.3	3.2	3.0	3.8	3.7	3.6		3.4	3.4	3.2	3.6	3.2	3.6
Min	3.2	3.5	3.0	3.5	3.2	3.2	3.2	3.2	3.0	3.0	3.8	3.6	3.6		3.2	3.4	3.0	3.4	3.2	3.4

Figure No. 7: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Tapi basin



	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
Max	8.5	8.3	8.2	8.5	8.1	7.7	8.0	7.7	7.9	7.9	7.7	7.7	7.8		7.7	7.6	8.1	8.0	7.8	7.9
75 Percentile	8.5	8.2	8.2	8.4	7.9	7.7	8.0	7.7	7.8	7.7	7.7	7.7	7.8		7.7	7.6	7.7	7.7	7.7	7.7
Average	8.3	8.1	8.0	8.3	7.7	7.7	7.8	7.6	7.7	7.6	7.7	7.7	7.6		7.5	7.5	7.6	7.6	7.6	7.6
25 Percentile	8.2	8.0	7.9	8.2	7.5	7.6	7.7	7.5	7.7	7.4	7.6	7.7	7.4		7.4	7.4	7.5	7.5	7.5	7.5
Min	7.6	7.8	7.8	8.1	7.2	7.6	7.2	7.4	7.1	7.3	7.6	7.6	7.4		7.2	7.4	7.2	7.4	7.0	7.3

Figure No. 8: Trend of pH levels recorded at WQMS at Tapi basin



	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
Max	40.0	33.0	38.0	41.0	11.0	4.0	11.0	6.0	6.0	4.0	6.0	4.0	4.0		6.0	6.0	6.0	11.0	11.0	6.0
75 Percentile	36.0	26.3	32.0	36.8	6.0	4.0	4.0	5.0	5.0	4.0	6.0	4.0	4.0		6.0	4.0	4.5	6.0	7.3	6.0
Average	30.9	23.6	28.8	31.7	5.2	4.0	4.8	4.7	4.6	4.0	6.0	4.0	4.0		4.8	4.4	4.5	5.8	6.5	5.1
25 Percentile	26.0	21.0	24.5	26.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Min	21.0	17.0	17.0	26.0	4.0	4.0	4.0	4.0	4.0	4.0	6.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0

Figure No. 9: Trend of Fecal Coliform levels recorded at WQMS at Tapi basin

Water Quality Index for WQMS in Tapi Basin

Apr	Dry	Dry	Dry	Dry	82	Dry	NC	NC	NC	NC	NC	NC	NC	Dry	Dry	Dry	81	Dry	83	Dry
May	Dry	Dry	Dry	Dry	80	Dry	NC	NC	NC	NC	NC	NC	NC	Dry	Dry	Dry	83	Dry	Dry	Dry
Jun	Dry	Dry	Dry	Dry	83	Dry	NC	NC	NC	NC	NC	NC	NC	Dry	Dry	Dry	82	Dry	Dry	Dry
Jul	Dry	Dry	Dry	Dry	82	Dry	84	NC	NC	NC	NC	Dry	NC	Dry	Dry	Dry	88	82	84	85
Aug	74	74	69	72	84	NC	83	NC	88	84	80	NC	84	NC	88	86	89	80	83	84
Sep	73	76	81	70	83	87	85	87	86	85	80	82	84	Dry	83	86	87	80	83	83
Oct	80	47	75	71	84	85	83	84	81	84	82	80	81	NC	81	85	84	81	84	81
Nov	75	75	74	72	82	Dry	82	NC	83	85	77	79	81	Dry	80	81	84	84	87	82
Dec	73	76	76	72	82	NC	85	79	83	88	NC	NC	82	NC	84	85	88	80	85	77
Jan	75	76	74	70	83	NC	82	NC	83	85	NC	NC	NC	NC	NC	NC	84	NC	81	82
Feb	71	55	NC	NC	83	NC	83	NC	83	90	NC	NC	NC	NC	NC	NC	83	NC	NC	NC
Mar	Dry	71	Dry	Dry	82	Dry	82	NC	NC	NC	NC	NC	NC	Dry	Dry	Dry	83	Dry	Dry	Dry
Station Code	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
Sub Basin	Tapi Upper					Tapi Middle														
Basin	Tapi																			

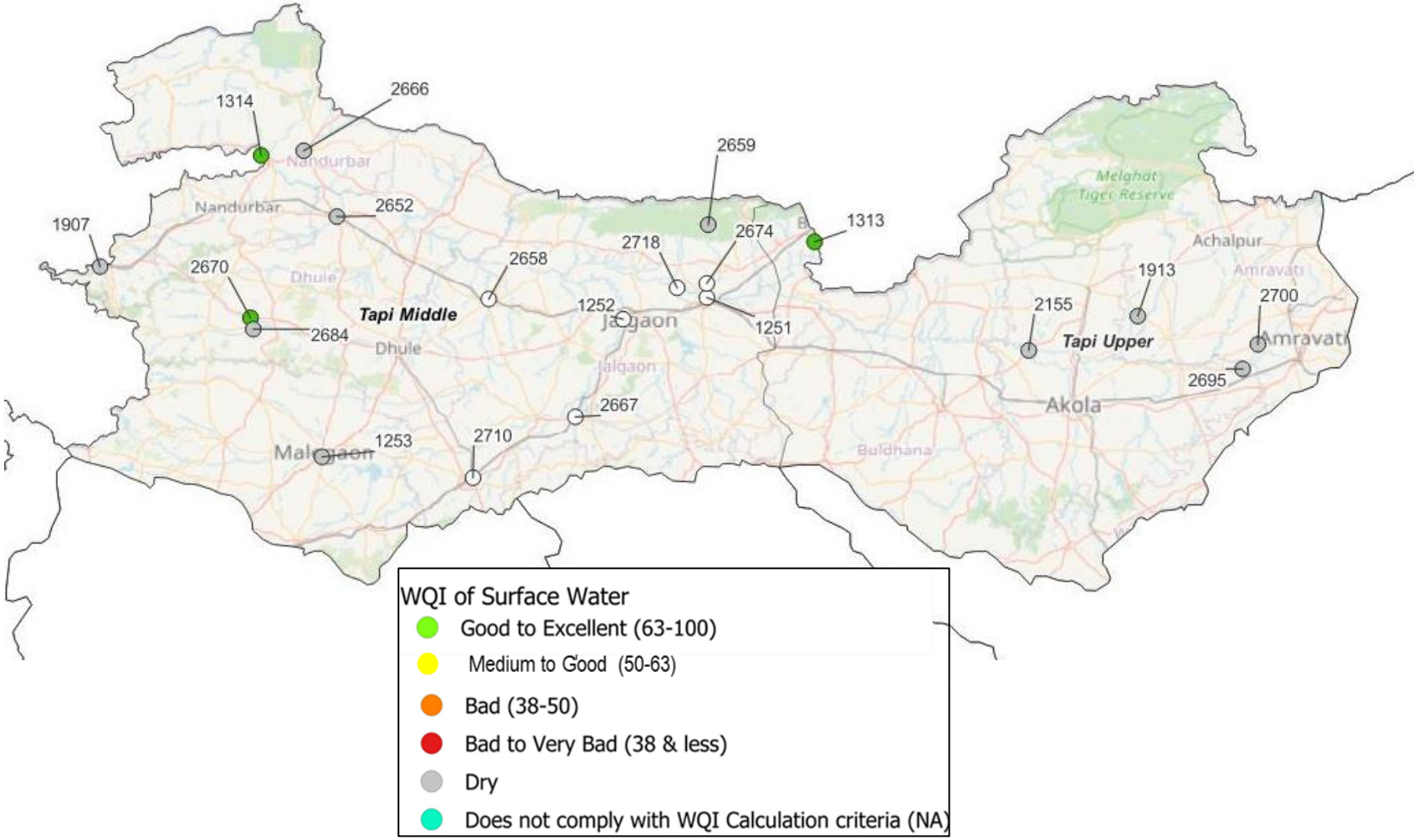
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

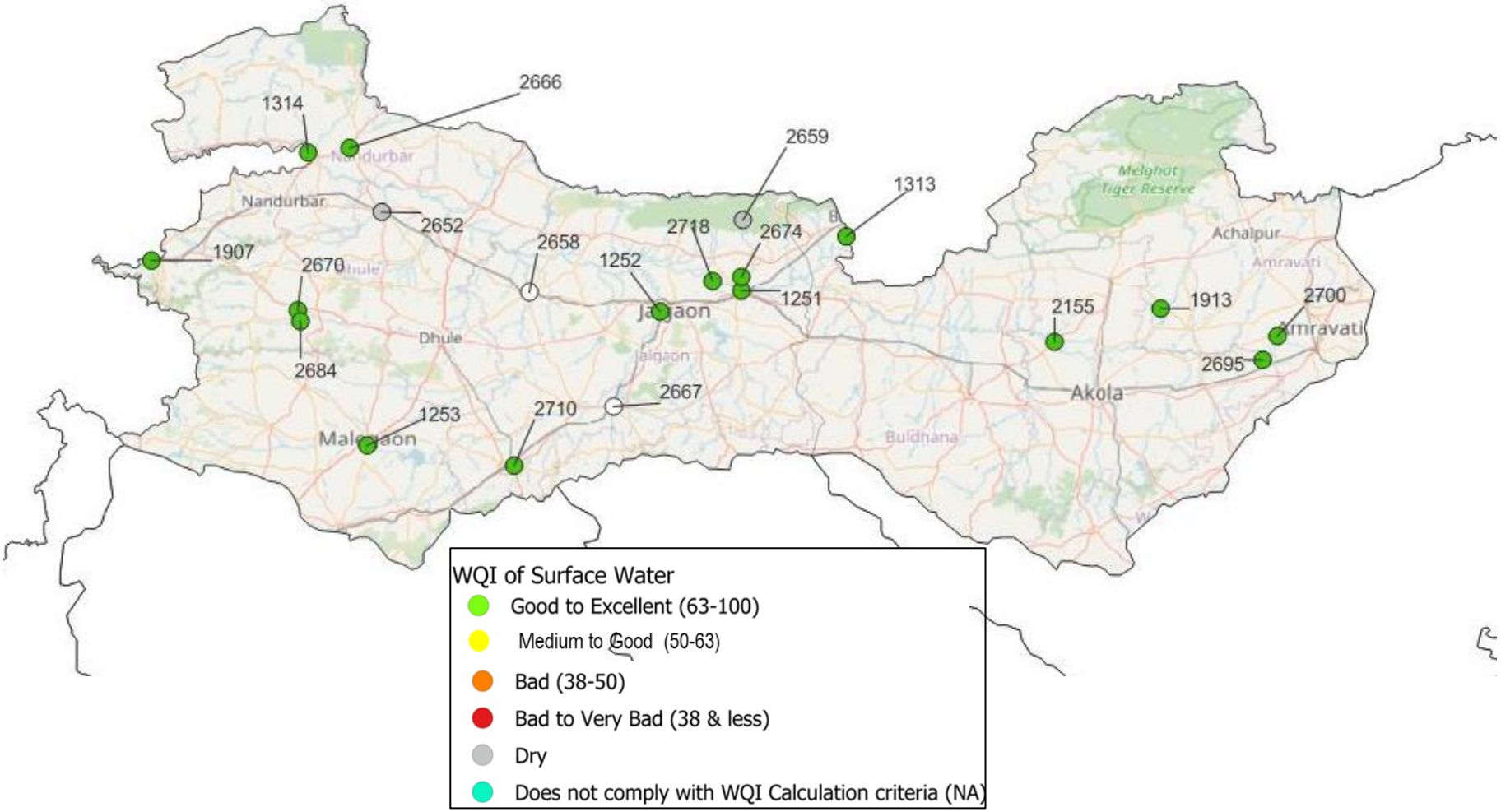
Table No. 15 : Surface water quality monitoring stations in Tapi basin

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2700	Purna	Purna near Achalpur-Amravati Road Bridge, Asegaon	Asegaon	Chandur bazaar	Amravati
NWMP	2695	Pedhi	Pedhi near Road Bridge at Dadhi-Pedhi village	Asegaon	Chandur Bazar	Amravati
NWMP	1913	Purna	Purna at Dhupeshwar at U/s of Malkapur Water works	Malkapur	Akola	Akola
NWMP	2155	Purna	Purna at D/s of confluence of Morna & Purna at Andhura village	Andura	Balapur	Akola
NWMP	1313	Tapi	Tapi at Ajnad	Ajnad	Raver	Jalgaon
NWMP	2659	Burai	Burai before confluece to Tapi	Mukudas	Dhule	Dhule
NWMP	1251	Tapi	Tapi at Bhusawal	Bhusawal Railway Colony	Bhusawal	Jalgaon
NWMP	2674	Mor	Mor near Padalshe	Padalashe	Jalgaon	Jalgaon
NWMP	2718	Waghur	Waghur at Sakegaon before Confluence with Tapi	Sakegaon	Jalgaon	Jalgaon
NWMP	1252	Girna	Girna at Jalgaon at intake of Girna pump house	Girna pump house area	Jalgaon	Jalgaon
NWMP	2667	Hiwara	Hiwara D/s of Pachora	Pachora	Jalgaon	Jalgaon
NWMP	2658	Bori	Bori D/s of Amalner	Amalner	Jalgaon	Jalgaon
NWMP	2710	Titur	Titur D/s of Chalisgaon	Chalisgaon	Jalgaon	Jalgaon
NWMP	2652	Amravati	Amravati D/s of Dondaicha	Dondaicha	Dhule	Dhule
NWMP	1253	Girna	Girna at Malegaon at Malegaon road bridge	Malegaon	Malegaon	Nashik
NWMP	2666	Gomai	Gomai D/s of Shahada	Shahada	Dhule	Dhule
NWMP	1314	Tapi	Tapi at Ubad village near Gujrat border	Ubad	Shahada	Nandurbar
NWMP	2684	Panjhra	Panjhra near Panzarakan SSK Ltd	Panjhre	Dhule	Dhule
NWMP	2670	Kan	Kan near Sakri water works	Sakri	Dhule	Dhule
NWMP	1907	Rangavali	Rangavali at D/s of Navapur near Rangavali bridge	Navapur	Navapur	Nandurbar

Spatial map of Surface WQI at Tapi Basin (April -2022)



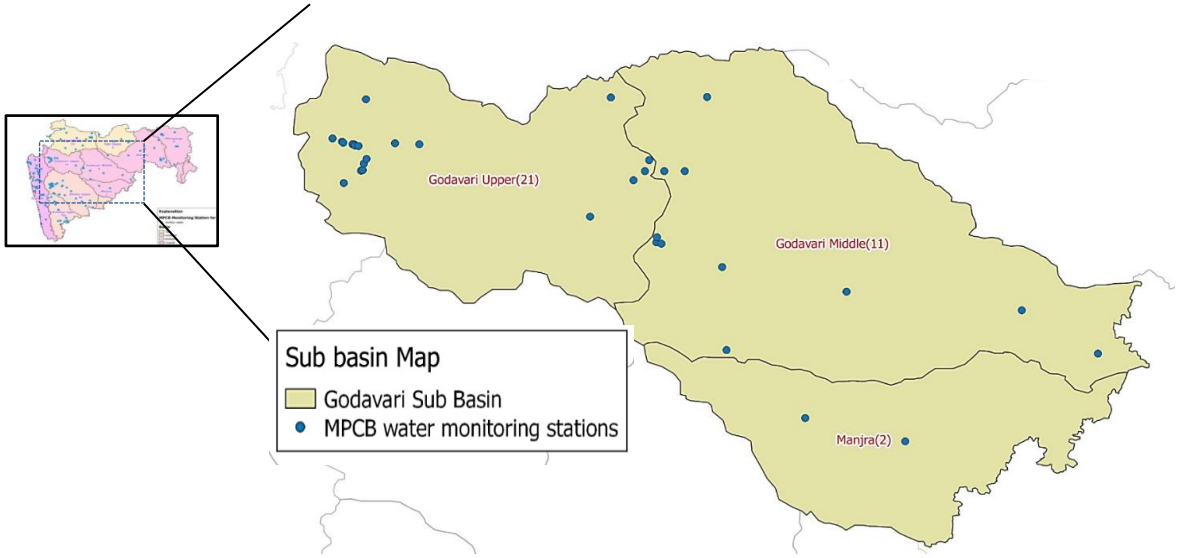
Spatial map of Surface WQI at Tapi Basin (December -2022)



Godavari Basin :

The Godavari River is the largest river in peninsular India whereas its basin is the second largest after the Ganges basin. The total drainage area is about 3,12,812 Sq.km which is roughly 9.5% of the country's total geographical area. The River rises in the Sahyadris near the Trimbakeshwar in the Nashik district of Maharashtra and flows across the Deccan Plateau from the Western to the Eastern Ghats. About 48.66% of its total basin area comes under the state of Maharashtra followed by 19.87% in Telangana, 10.69% in Chhattisgarh, 10.17% in Madhya Pradesh, 5.67% in Odisha, 3.53% in Andhra Pradesh, 1.41% in Karnataka and only about 0.001% in Puducherry (Union Territory)[24]. For ease of understanding, Godavari basin is further divided into - Godavari Basin (1 of 2): Godavari Upper, Godavari Middle and Manjra Sub Basin & Godavari Basin (2 of 2): Wardha, Wainganga and Pranhita Sub Basin. A list of WQMS stations installed in areas of the Godavari basin (1 of 2) has been provided in the Table No.16 and Table No.17.

Godavari Basin (1 of 2): Godavari upper, Godavari Middle and Manjra Sub basin



[24] https://www.grmb.gov.in/grmb/basin

Godavari Basin (1 of 2) (Intra Basin analysis)

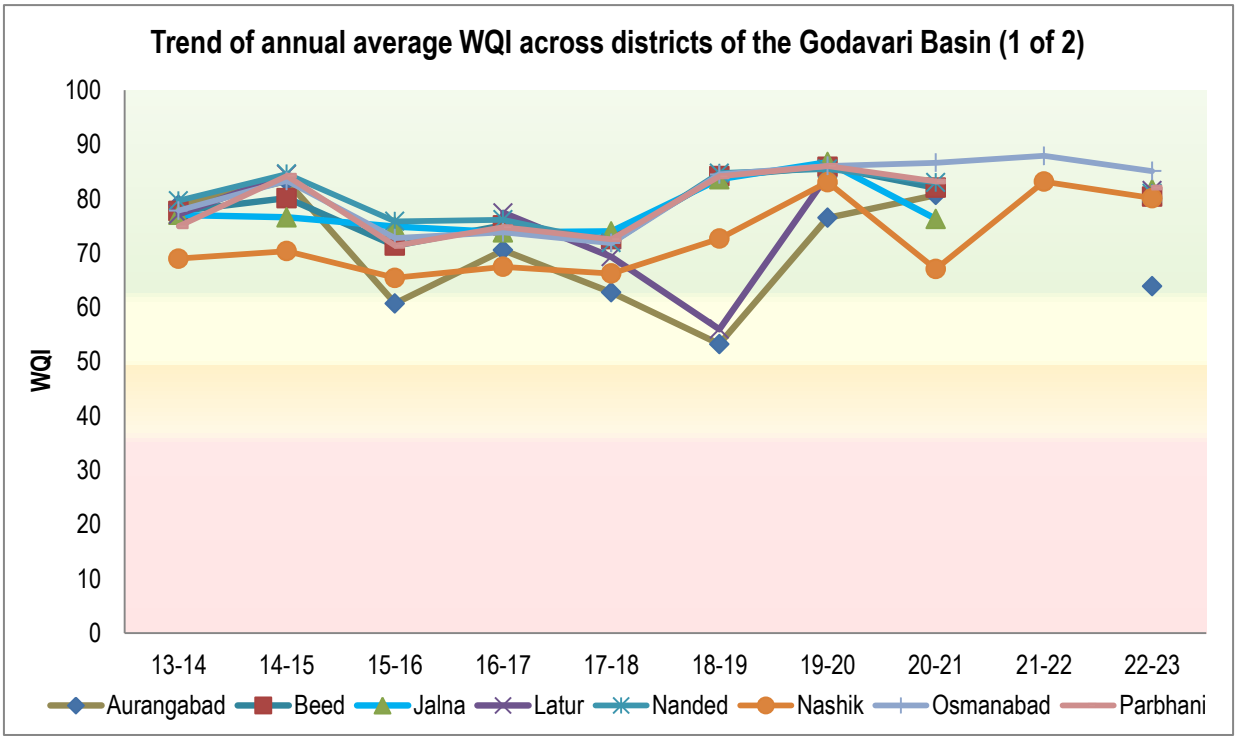


Figure No. 10: Trend in annual average WQI across districts of the Godavari basin (1 of 2)

WQI	WQI Category	Class by CPCB	Represented in the above graph
63-100	Good to Excellent	A	Non-polluted
50-63	Medium to Good	B	Non-polluted
38-50	Bad	C	Polluted
38 & less	Bad to Very Bad	D, E	Heavily polluted

Note: This graph considers the average WQI for all the monitoring stations in that particular district and hence may include some bias. This graph is only for an overview and monitoring station-wise data may be analyzed to pinpoint the most affected and polluted patches of rivers in that district.

The intra basin performance of Godavari (1 of 2) and average occurrence of different category of WQI across all WQMS is depicted in Figure No.11. Godavari Basin (1of 2) records annual average WQI of Aurangabad, Beed, Jalna, Latur, Nanded, Nashik, Osmanabad, and Parbhani districts.

In the current year 2022-23, the 8 districts were noted to be under 'Good to Excellent ' category. However, out of these 8 districts, the WQI recorded by WQMS installed at locations under the Nashik and Osmanabad districts noted a slight decreasing trend in WQI (from 83.17 to 80.13 and from 87.92 to 85.11 in 2022-23 respectively).

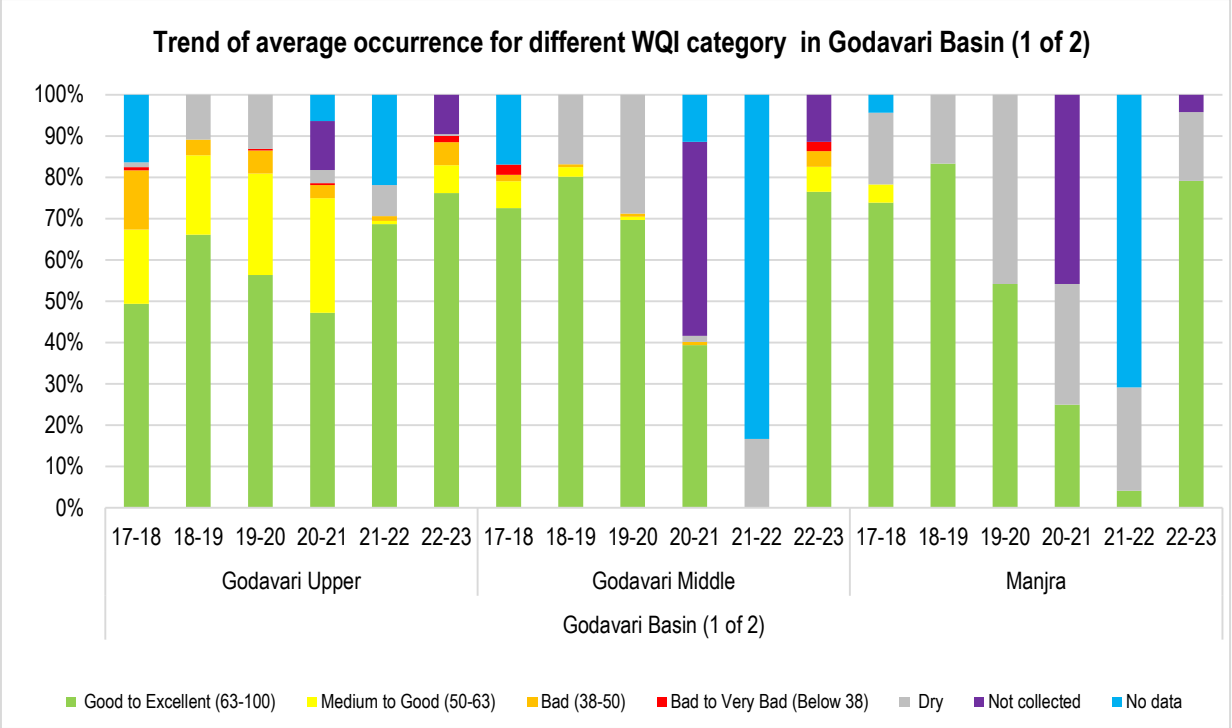
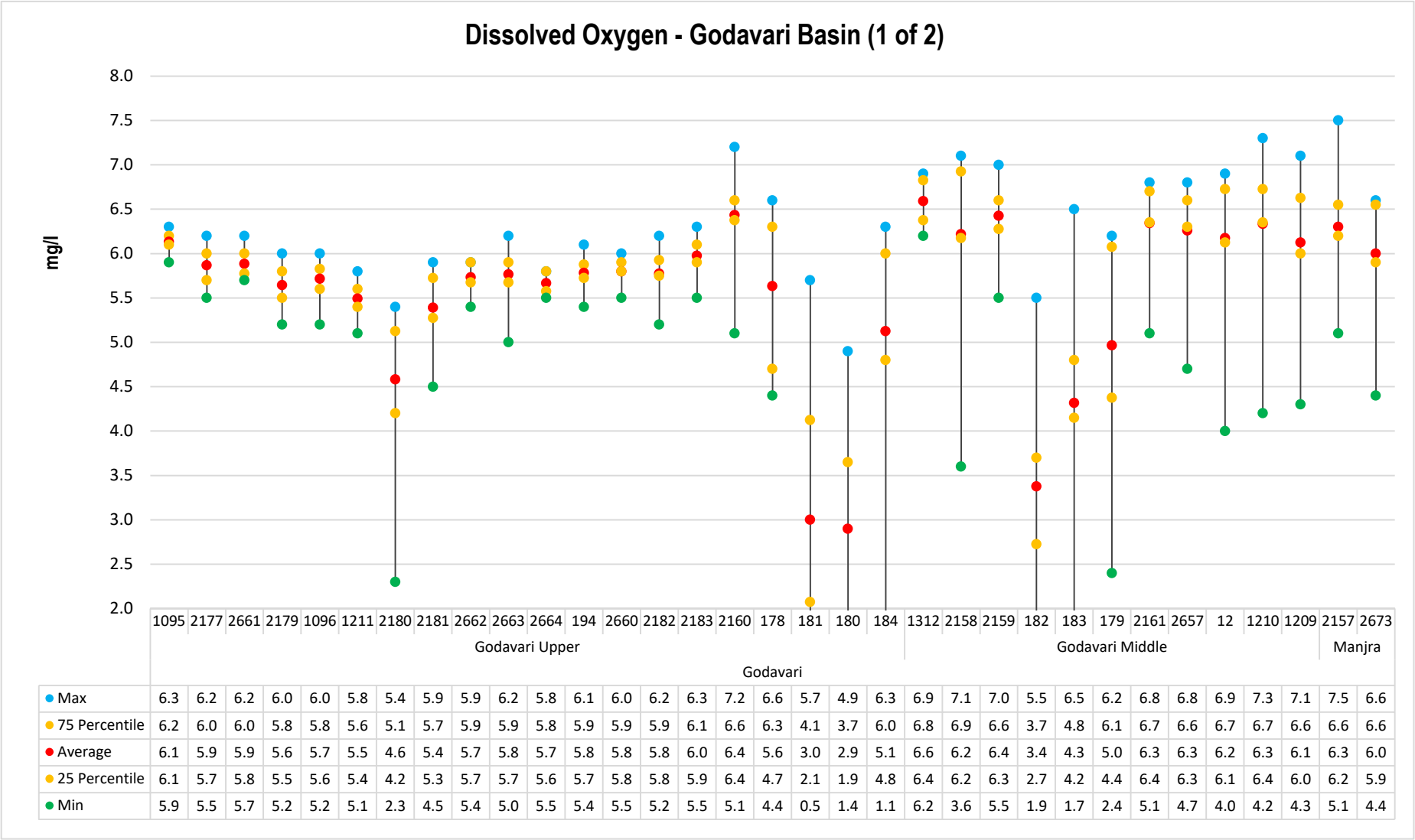


Figure No. 11: Trend of average occurrence for different WQI categories – the Godavari basin (1 of 2)

The interbasin performance of the Godavari basin (1 of 2) is shown in the Figure No. 11. During the year 2022-23, a considerable increase in the percentage share of observations under the 'Good to Excellent' (from 68.65% to 76.19%) and 'Medium to Good' (from 0.79% to 6.75%) were recorded by the WQMS installed at Godavari Upper sub basin. This is a good outcome as far as the overall water quality of the Godavari Upper region is concerned. The share of 'Bad' and ''Bad to Very Bad' were recorded to be around 5.56% and 1.59%. The 'Dry' category and 'Not Collected' observations were observed to be 0.40% and 9.52% respectively. A decreasing trend was observed in the percentage of 'Dry' category observations (from 7.54% to 0.40%) and 'No Data' category observations (from 21.83% to 0%).

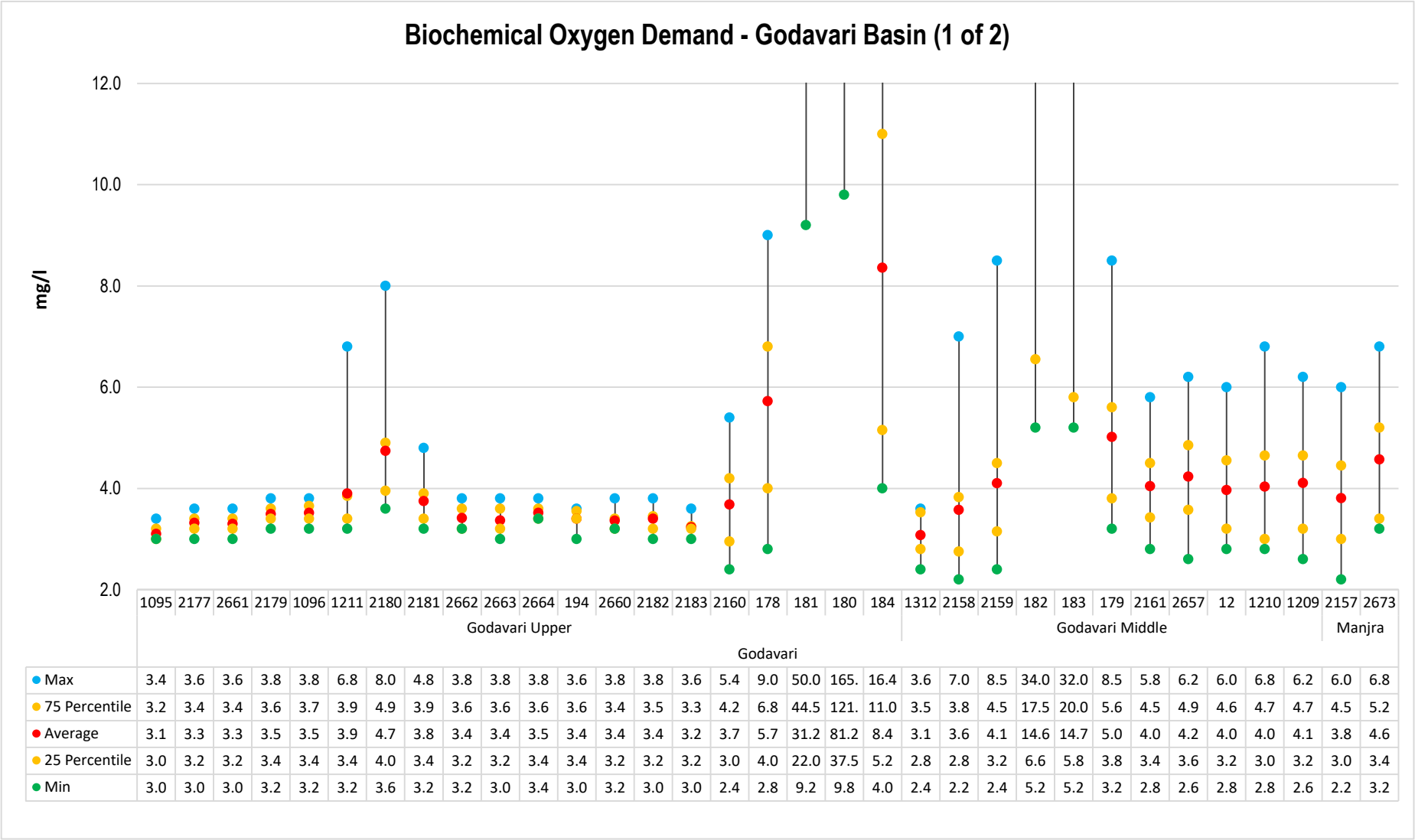
The annual average WQI of about 76.52% of the total observations recorded by WQMS (The Godavari Middle) were recorded under the 'Good to Excellent' category followed by 6.06% ('Medium to Good'), 3.79% ('Bad'), 2.27% ('Bad to Very Bad') and about 11.36% under the 'Not Collected' category.

About 79.17% of the total observations recorded by WQMS from the Manjra sub-basin were recorded annual average WQI under the 'Good to Excellent' category followed by 16.67% ('Dry') and 4.17% ('Not Collected') category. No single observation was recorded under the categories of 'Medium to Good', 'Bad', 'Bad to Very Bad' and 'No Data'.



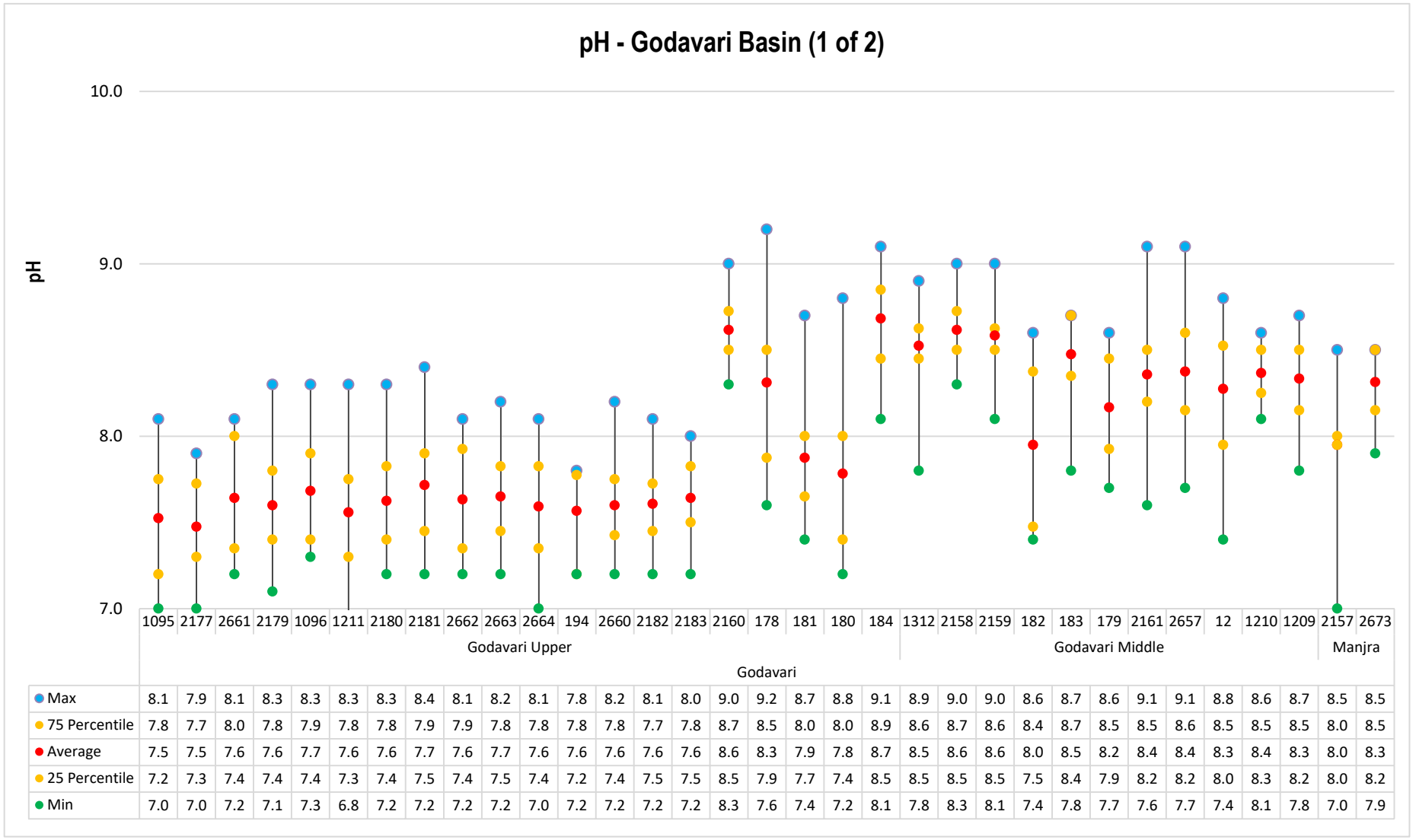
	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
	Godavari Upper																				Godavari Middle											Manjra
	Godavari																															
Max	6.3	6.2	6.2	6.0	6.0	5.8	5.4	5.9	5.9	6.2	5.8	6.1	6.0	6.2	6.3	7.2	6.6	5.7	4.9	6.3	6.9	7.1	7.0	5.5	6.5	6.2	6.8	6.8	6.9	7.3	7.1	7.5	6.6
75 Percentile	6.2	6.0	6.0	5.8	5.8	5.6	5.1	5.7	5.9	5.9	5.8	5.9	5.9	5.9	6.1	6.6	6.3	4.1	3.7	6.0	6.8	6.9	6.6	3.7	4.8	6.1	6.7	6.6	6.7	6.7	6.6	6.6	6.6
Average	6.1	5.9	5.9	5.6	5.7	5.5	4.6	5.4	5.7	5.8	5.7	5.8	5.8	5.8	6.0	6.4	5.6	3.0	2.9	5.1	6.6	6.2	6.4	3.4	4.3	5.0	6.3	6.3	6.2	6.3	6.1	6.3	6.0
25 Percentile	6.1	5.7	5.8	5.5	5.6	5.4	4.2	5.3	5.7	5.7	5.6	5.7	5.8	5.8	5.9	6.4	4.7	2.1	1.9	4.8	6.4	6.2	6.3	2.7	4.2	4.4	6.4	6.3	6.1	6.4	6.0	6.2	5.9
Min	5.9	5.5	5.7	5.2	5.2	5.1	2.3	4.5	5.4	5.0	5.5	5.4	5.5	5.2	5.5	5.1	4.4	0.5	1.4	1.1	6.2	3.6	5.5	1.9	1.7	2.4	5.1	4.7	4.0	4.2	4.3	5.1	4.4

Figure No. 12: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Godavari basin (1 of 2)



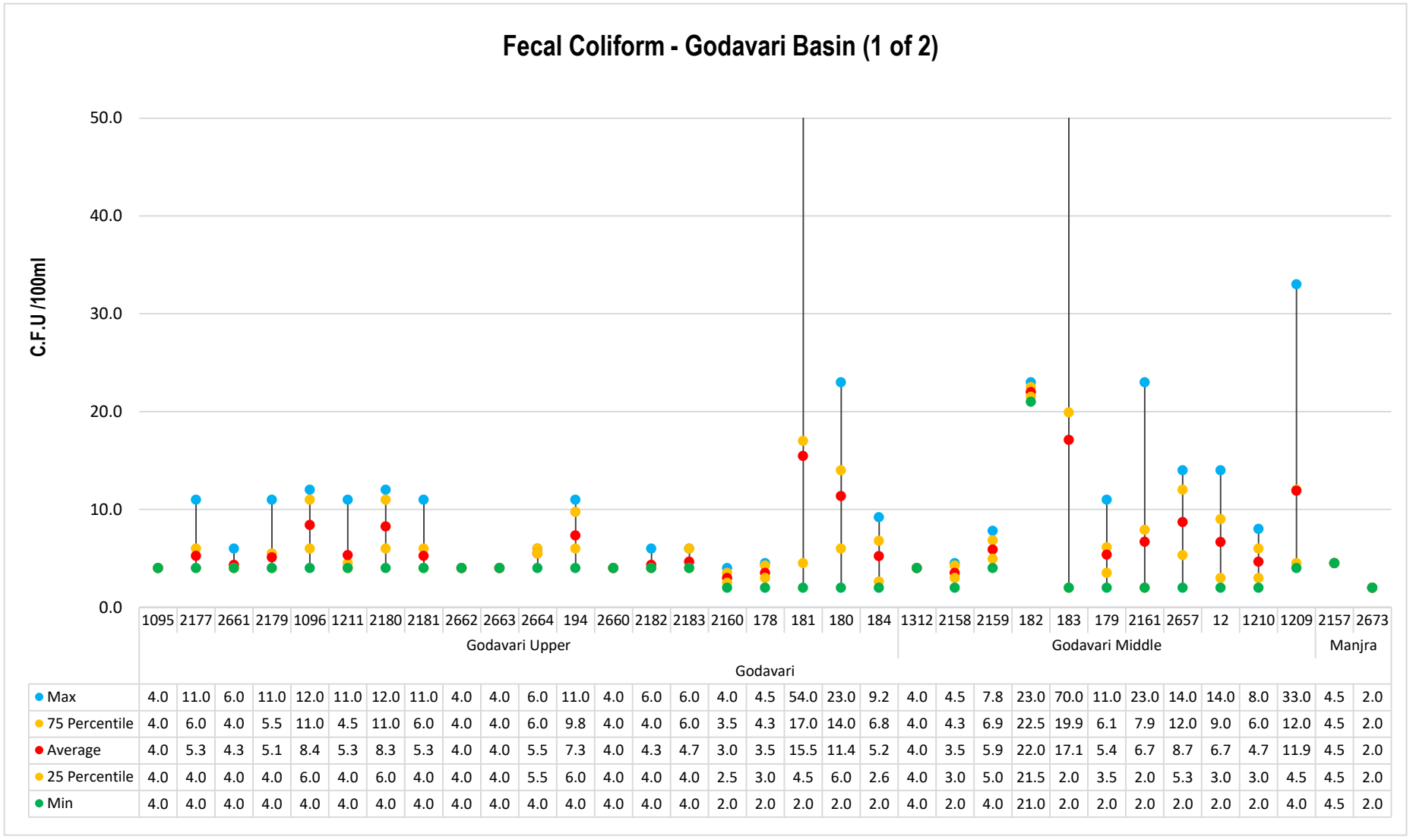
	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
Max	3.4	3.6	3.6	3.8	3.8	6.8	8.0	4.8	3.8	3.8	3.8	3.6	3.8	3.8	3.6	5.4	9.0	50.0	165.	16.4	3.6	7.0	8.5	34.0	32.0	8.5	5.8	6.2	6.0	6.8	6.2	6.0	6.8
75 Percentile	3.2	3.4	3.4	3.6	3.7	3.9	4.9	3.9	3.6	3.6	3.6	3.6	3.4	3.5	3.3	4.2	6.8	44.5	121.	11.0	3.5	3.8	4.5	17.5	20.0	5.6	4.5	4.9	4.6	4.7	4.7	4.5	5.2
Average	3.1	3.3	3.3	3.5	3.5	3.9	4.7	3.8	3.4	3.4	3.5	3.4	3.4	3.4	3.2	3.7	5.7	31.2	81.2	8.4	3.1	3.6	4.1	14.6	14.7	5.0	4.0	4.2	4.0	4.0	4.1	3.8	4.6
25 Percentile	3.0	3.2	3.2	3.4	3.4	3.4	4.0	3.4	3.2	3.2	3.4	3.4	3.2	3.2	3.2	3.0	4.0	22.0	37.5	5.2	2.8	2.8	3.2	6.6	5.8	3.8	3.4	3.6	3.2	3.0	3.2	3.0	3.4
Min	3.0	3.0	3.0	3.2	3.2	3.2	3.6	3.2	3.2	3.0	3.4	3.0	3.2	3.0	3.0	2.4	2.8	9.2	9.8	4.0	2.4	2.2	2.4	5.2	5.2	3.2	2.8	2.6	2.8	2.8	2.6	2.2	3.2

Figure No. 13: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Godavari basin (1 of 2)



	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
Max	8.1	7.9	8.1	8.3	8.3	8.3	8.3	8.4	8.1	8.2	8.1	7.8	8.2	8.1	8.0	9.0	9.2	8.7	8.8	9.1	8.9	9.0	9.0	8.6	8.7	8.6	9.1	9.1	8.8	8.6	8.7	8.5	8.5
75 Percentile	7.8	7.7	8.0	7.8	7.9	7.8	7.8	7.9	7.9	7.8	7.8	7.8	7.8	7.7	7.8	8.7	8.5	8.0	8.0	8.9	8.6	8.7	8.6	8.4	8.7	8.5	8.5	8.6	8.5	8.5	8.5	8.0	8.5
Average	7.5	7.5	7.6	7.6	7.7	7.6	7.6	7.7	7.6	7.7	7.6	7.6	7.6	7.6	7.6	8.6	8.3	7.9	7.8	8.7	8.5	8.6	8.6	8.0	8.5	8.2	8.4	8.4	8.3	8.4	8.3	8.0	8.3
25 Percentile	7.2	7.3	7.4	7.4	7.4	7.3	7.4	7.5	7.4	7.5	7.4	7.2	7.4	7.5	7.5	8.5	7.9	7.7	7.4	8.5	8.5	8.5	8.5	7.5	8.4	7.9	8.2	8.2	8.0	8.3	8.2	8.0	8.2
Min	7.0	7.0	7.2	7.1	7.3	6.8	7.2	7.2	7.2	7.2	7.0	7.2	7.2	7.2	7.2	8.3	7.6	7.4	7.2	8.1	7.8	8.3	8.1	7.4	7.8	7.7	7.6	7.7	7.4	8.1	7.8	7.0	7.9

Figure No. 14: Trend of pH levels recorded at WQMS at Godavari basin (1 of 2)



	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
	Godavari Upper																				Godavari Middle											Manjra
	Godavari																															
Max	4.0	11.0	6.0	11.0	12.0	11.0	12.0	11.0	4.0	4.0	6.0	11.0	4.0	6.0	6.0	4.0	4.5	54.0	23.0	9.2	4.0	4.5	7.8	23.0	70.0	11.0	23.0	14.0	14.0	8.0	33.0	4.5	2.0
75 Percentile	4.0	6.0	4.0	5.5	11.0	4.5	11.0	6.0	4.0	4.0	6.0	9.8	4.0	4.0	6.0	3.5	4.3	17.0	14.0	6.8	4.0	4.3	6.9	22.5	19.9	6.1	7.9	12.0	9.0	6.0	12.0	4.5	2.0
Average	4.0	5.3	4.3	5.1	8.4	5.3	8.3	5.3	4.0	4.0	5.5	7.3	4.0	4.3	4.7	3.0	3.5	15.5	11.4	5.2	4.0	3.5	5.9	22.0	17.1	5.4	6.7	8.7	6.7	4.7	11.9	4.5	2.0
25 Percentile	4.0	4.0	4.0	4.0	6.0	4.0	6.0	4.0	4.0	4.0	5.5	6.0	4.0	4.0	4.0	2.5	3.0	4.5	6.0	2.6	4.0	3.0	5.0	21.5	2.0	3.5	2.0	5.3	3.0	3.0	4.5	4.5	2.0
Min	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0	2.0	2.0	2.0	2.0	4.0	2.0	4.0	21.0	2.0	2.0	2.0	2.0	2.0	2.0	4.0	4.5	2.0

Figure No. 15: Trend of Fecal Coliform levels recorded at WQMS at Godavari basin (1 of 2)

Water Quality Index for WQMS in Godavari Basin (1 of 2): Sub-Basin-Godavari Upper

Apr	88	85	85	84	80	84	76	84	86	82	84	NC	85	80	82	82	NC	28	NC	37
May	85	85	86	79	78	75	78	82	87	83	80	NC	87	85	85	83	NC	38	NC	44
Jun	86	79	81	73	76	74	70	71	81	79	78	NC	79	80	81	84	NC	NC	NC	47
Jul	84	84	83	82	82	83	75	73	81	80	80	81	82	83	85	84	87	NC	NC	70
Aug	89	87	80	87	84	81	80	79	84	89	83	83	83	88	90	84	62	NC	NC	71
Sep	87	86	88	87	83	82	79	81	85	87	84	83	87	89	88	85	72	53	46	61
Oct	88	85	87	82	83	83	81	83	85	85	82	NC	83	86	86	74	46	NC	NC	78
Nov	88	87	88	86	86	86	75	77	84	84	86	NC	86	86	88	84	46	31	25	54
Dec	85	85	84	85	81	80	68	84	81	84	81	NC	NC	79	86	83	81	49	NC	58
Jan	89	83	88	82	81	82	55	83	88	88	84	89	87	85	84	80	52	64	60	73
Feb	87	87	84	85	82	81	73	84	83	84	83	80	85	85	83	84	59	53	NC	49
Mar	85	83	81	NC	80	84	74	83	83	83	82	81	86	82	83	80	45	56	NC	43
Station Code	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184
Sub Basin	Godavari Upper																			
Basin	Godavari																			

Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

Table No. 16 : Surface water quality monitoring stations in Godavari Basin (1 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	1095	Godavari	Godavari at U/s of Gangapur Dam	Gangapur	Nashik	Nashik
NWMP	2177	Godavari	Godavari near Someshwar Temple	Someshwar	Nashik	Nashik
NWMP	2661	Darna	Darna at Aswali (Darna Dam)	Aswali	Igatpuri	Nashik
NWMP	2179	Godavari	Godavari at Hanuman Ghat	Nashik city	Nashik	Nashik
NWMP	1096	Godavari	Godavari at Panchavati at Ramkund	Panchavati	Nashik	Nashik
NWMP	1211	Godavari	Godavari at Nashik D/s of near Amardham	Gadgebaba Maharaj Nagar	Nashik	Nashik
NWMP	2180	Godavari	Godavari at near Tapovan	Tapovan	Nashik	Nashik
NWMP	2181	Godavari	Godavari at Kapila -Godavari confluence point	Tapovan	Nashik	Nashik
NWMP	2662	Darna	Darna at MES site Pumping station	Bhagur	Nashik	Nashik
NWMP	2663	Darna	Darna at Bhagur Pumping station near Pandhurli Bridge	Bhagur	Nashik	Nashik
NWMP	2664	Darna	Darna at Sansari	Sansari	Nashik	Nashik
SWMP	194	Kadwa	Kadwa at Awankhed Village, Taluka - Dindori, District - Nashik	Awankhed Village	Dindori	Nashik
NWMP	2660	Darna	Darna at Chehedi pumping station	Chehedi	Nashik	Nashik
NWMP	2182	Godavari	Godavari at Saikheda	Saikheda	Niphad	Nashik
NWMP	2183	Godavari	Godavari at Nandur-Madhameshwar Dam	Nandur	Niphad	Nashik
NWMP	2160	Godavari	Godavari at U/s of Aurangabad Reservoir Kaigaon Tokka near, Kaigaon Bridge	Kaigaon	Gangapur	Aurangabad
SWMP	178	Shivna	Kannad - D/S of Kannad near Bridge	Kannad	Kannad	Aurangabad
SWMP	181	Kham	Aurangabad - Near Patoda Village	Aurangabad	Aurangabad	Aurangabad
SWMP	180	Kham	Aurangabad - Near Holly cross bridge	Aurangabad	Aurangabad	Aurangabad
SWMP	184	Harsool Dam	Aurangabad - Harsool Dam	Aurangabad	Aurangabad	Aurangabad

Water Quality Index for WQMS in Godavari Basin (1 of 2): Sub-Basin-Godavari Middle and Manjra

Apr	82	82	82	NC	26	NC	80	79	84	84	86	90	Dry
May	84	83	83	NC	61	NC	80	80	92	85	78	85	Dry
Jun	82	83	82	NC	48	NC	91	89	85	85	84	83	Dry
Jul	84	85	84	NC	71	86	89	89	84	72	64	88	Dry
Aug	84	84	85	49	NC	55	85	83	70	84	85	77	79
Sep	88	81	77	NC	45	71	78	82	83	70	84	79	88
Oct	82	63	81	54	77	81	74	69	78	85	83	89	69
Nov	83	69	83	36	43	46	82	74	88	82	82	83	84
Dec	85	86	84	50	33	59	79	79	80	84	78	88	84
Jan	86	79	77	NC	76	NC	80	79	81	84	82	87	82
Feb	84	81	80	NC	51	NC	87	78	75	85	85	88	83
Mar	82	81	82	NC	52	NC	77	84	84	82	72	84	NC
Station Code	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
Sub Basin	Godavari Middle											Manjra	
Basin	Godavari												

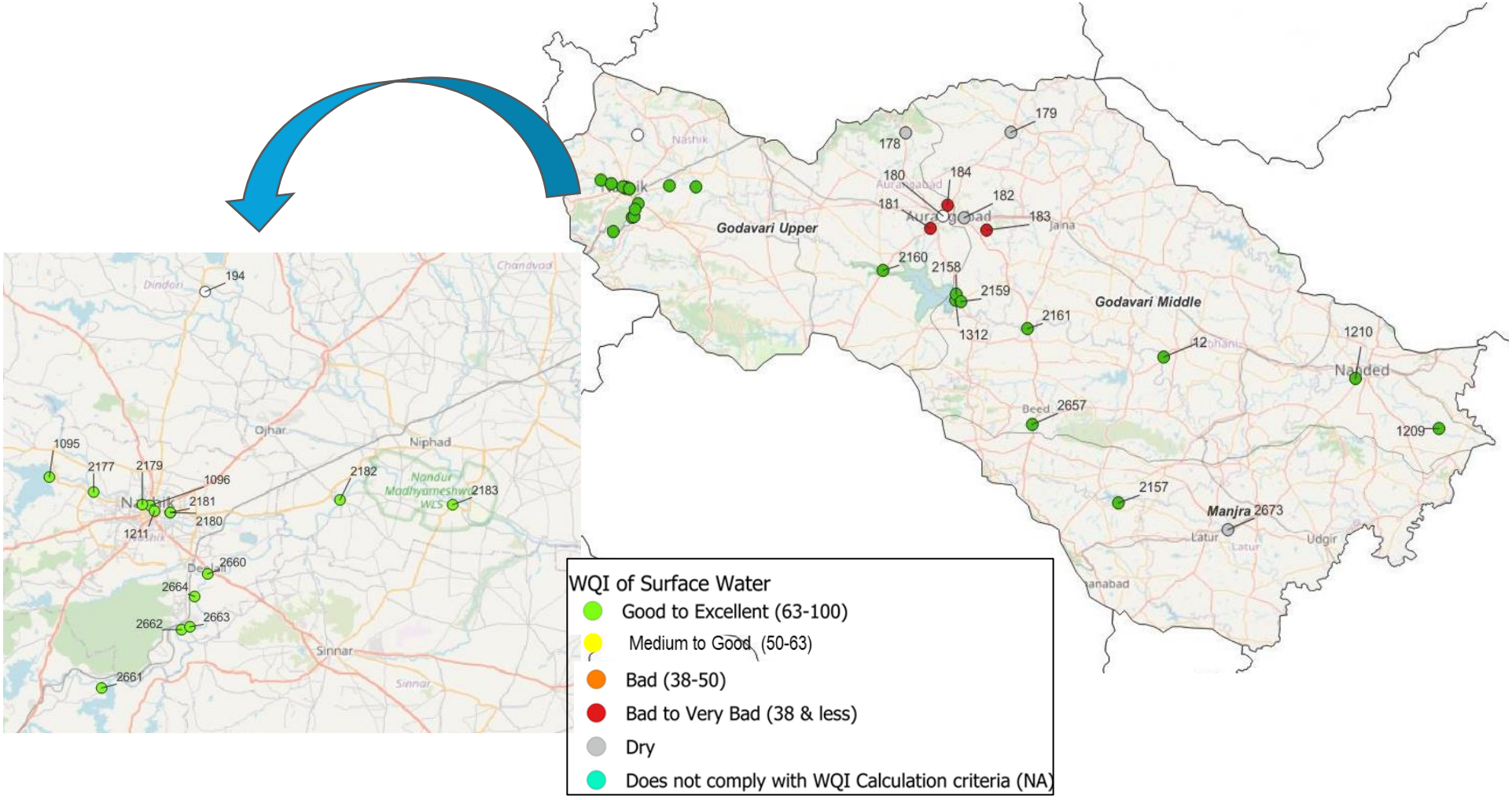
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

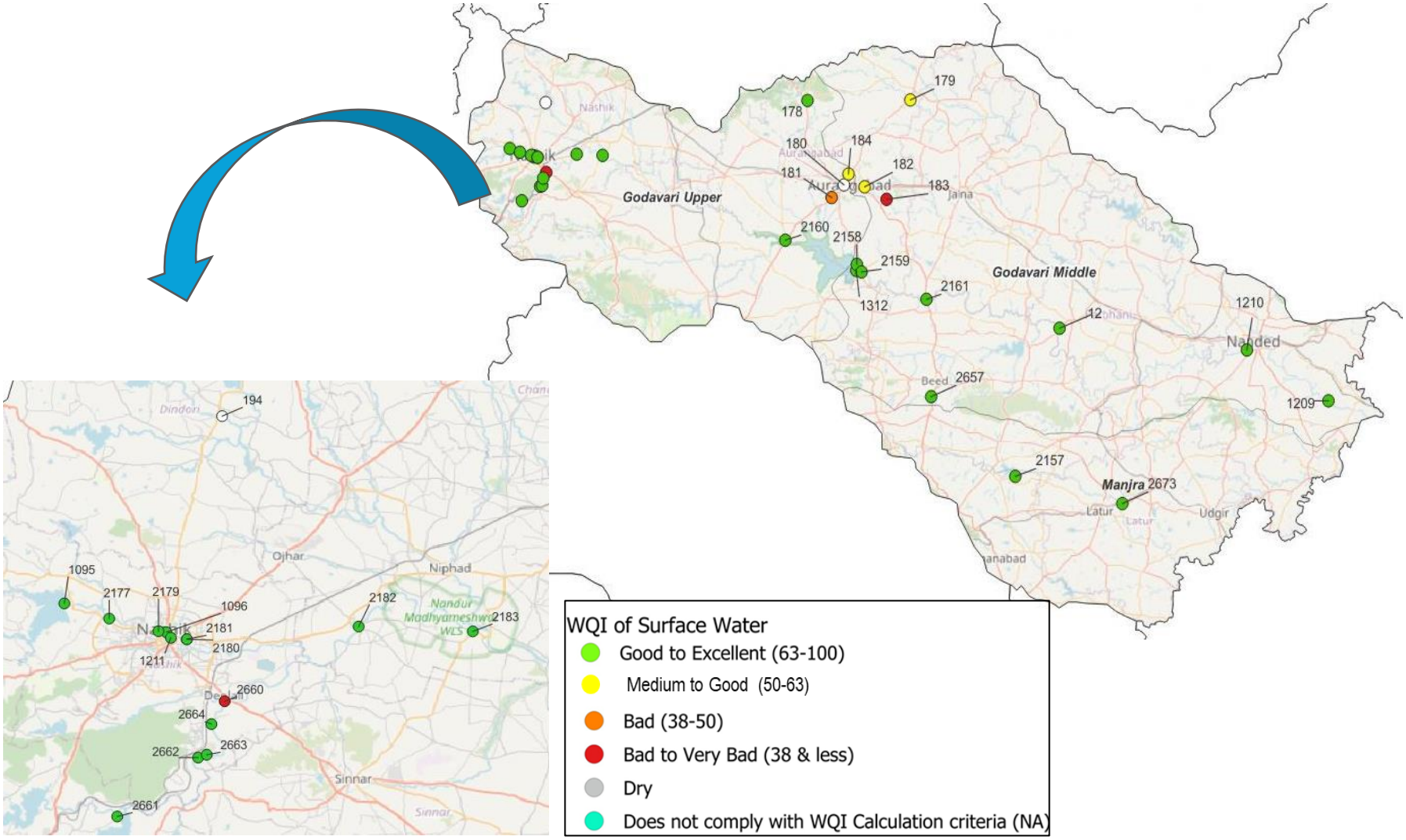
Table No. 17 : Surface water quality monitoring stations in Godavari Basin (1of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	1312	Godavari	Godavari at Jaikwadi Dam, Paithan	Paithan	Paithan	Aurangabad
NWMP	2158	Godavari	Godavari at Paithan U/s of Paithan Intake pump house	Jayakwadi	Paithan	Aurangabad
NWMP	2159	Godavari	Godavari at D/s of Paithan at Pathegaon bridge	Pathegaon	Paithan	Aurangabad
SWMP	182	Sukhna	Aurangabad - Near Chikhalthana Bridge	Aurangabad	Aurangabad	Aurangabad
SWMP	183	Sukhna Dam	Aurangabad - At Sukhna Dam	Aurangabad	Aurangabad	Aurangabad
SWMP	179	Purna	Sillod - D/S of Sillod near bridge at bhavan	Sillod	Sillod	Aurangabad
NWMP	2161	Godavari	Godavari at Jalna Intake water pump house Shahagad	Shahabad	Ambad	Jalna
NWMP	2657	Bindusara	Bindusara at Beed, near Intake water pump house at Dam	Paligaon	Beed	Beed
NWMP	12	Godavari	Godavari at Dhalegaon	Dhalegaon	Pathari	Parbhani
NWMP	1210	Godavari	Godavari at Intake of pump house	Vishnupuri	Nanded	Nanded
NWMP	1209	Godavari	Godavari at Raher	Raher	Nayagaon	Nanded
NWMP	2157	Godavari	Godavari at Latur Water intake near pump house	Dhamegaon	Kalumb	Osmanabad
NWMP	2673	Manjra	Manjra at D/s of Latur, near Latur-Nanded Bridge	Bhatkheda	Latur	Latur

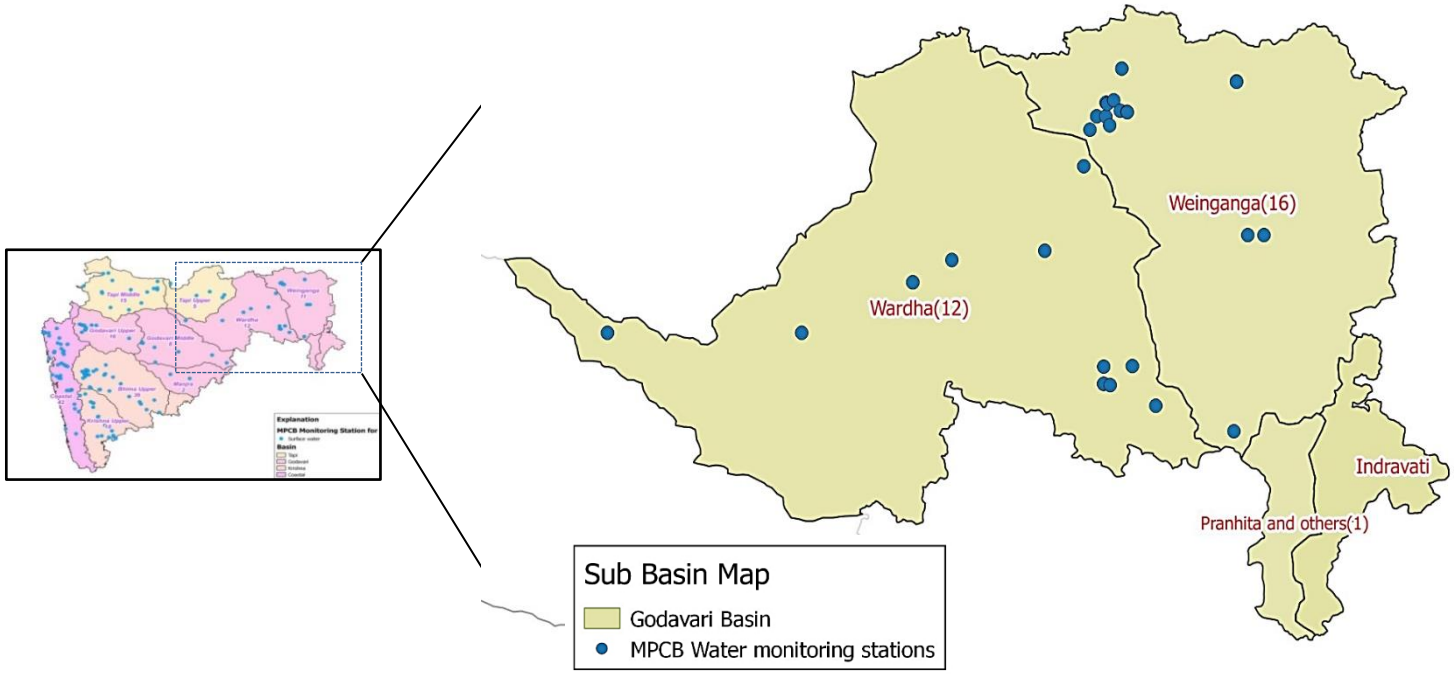
Spatial map of Surface WQI at Godavari Basin 1 of 2 (April -2022)



Spatial map of Surface WQI at Godavari Basin 1 of 2 (December -2022)



Godavari Basin (2 of 2): Wardha, Wainganga and Pranhita Sub basin



In basin 2, there are a total 29 surface water monitoring stations (12 on Wardha, 16 on Wainganga and 1 on Pranhita River). A list of WQMS stations installed in areas of the Godavari basin (2 of 2) basin has been provided in the Table No.18 and Table No. 19.

Godavari Basin (2 of 2) (Intra Basin analysis)

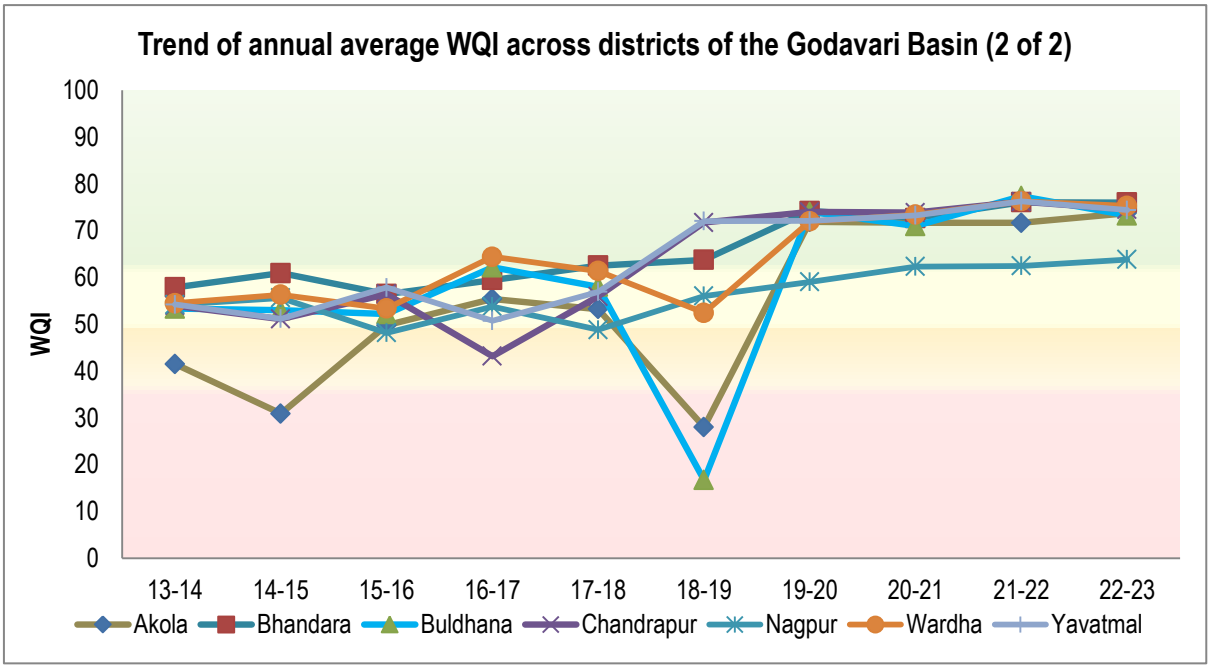


Figure No. 16: Trend of annual average WQI across districts of the Godavari basin (2 of 2)

WQI	WQI Category	Class by CPCB	Represented in the above graph
63-100	Good to Excellent	A	Non-polluted
50-63	Medium to Good	B	Non-polluted
38-50	Bad	C	Polluted
38 & less	Bad to Very Bad	D, E	Heavily polluted

Note: This graph considers the average WQI for all the monitoring stations in that particular district and hence may include some bias. This graph is only for an overview and monitoring station-wise data may be analyzed to pinpoint the most affected and polluted patches of rivers in that district.

From Figure No. 16, it can be observed that the WQMS installed in all 7 districts coming under the Godavari basin (2 of 2) recorded annual average WQI under the 'Good to Excellent' category. An increase trend was observed at Akola and Nagpur districts which recorded an increase of about 2.90% and 2.14% (from 71.67 to 73.75 and from 62.48 to 63.82) respectively as compared to previous year.

On the other hand, as compared to previous year (2021-22), a declining curve was recorded at district of Buldhana which recorded decrease in WQI about 5.33%% from (77.36 to 73.24) , followed by Yavatmal district about 2.46% (from 76.29 to 74.41) and a 2.11% decrease in Chandrapur (from 76.16 to 74.55).

Similarly, WQMS installed at both Bhandara and Wardha districts recorded a decrease in annual average WQI of about 0.12% and 1.26% respectively indicating deterioration of water quality in the current year.

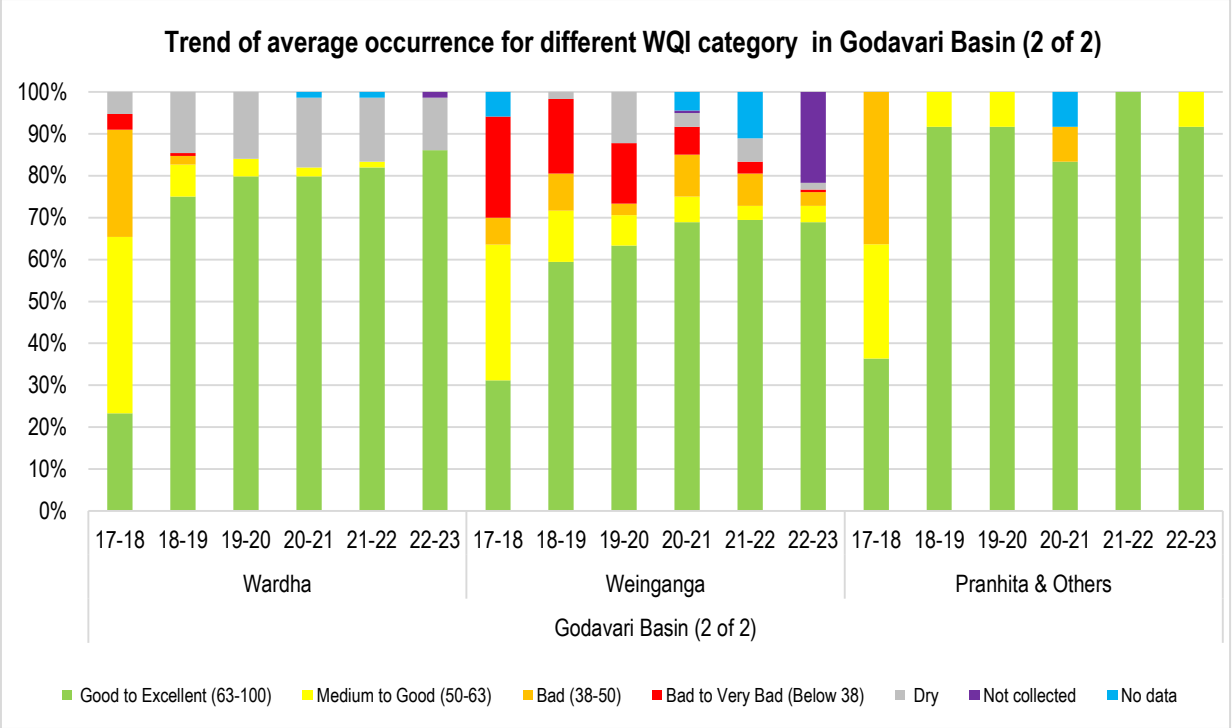


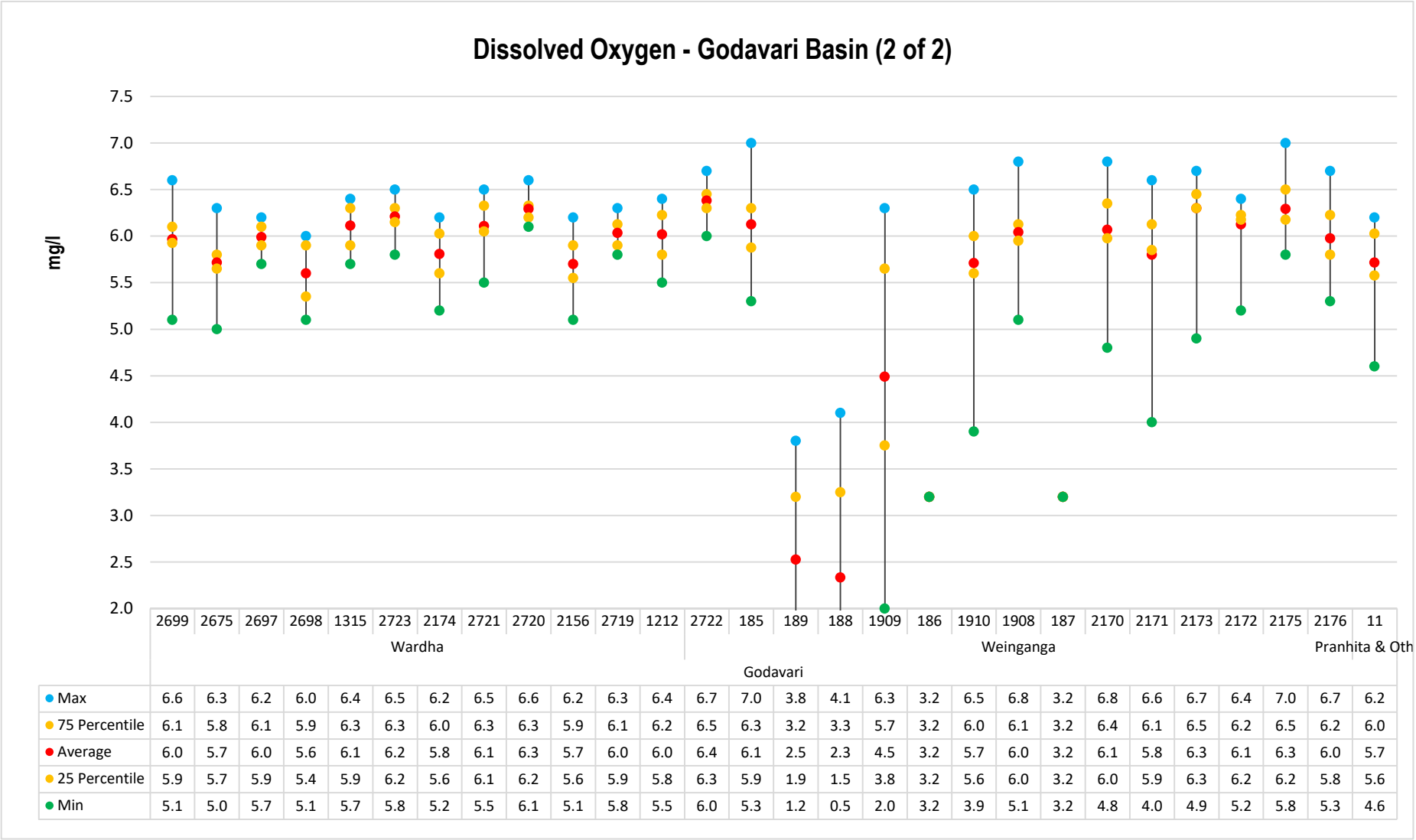
Figure No. 17: Trend of average occurrence for different WQI categories in the Godavari basin (2 of 2)

Interbasin analysis of the Godavari basin (2 of 2) for the last 5 consecutive years is illustrated graphically in Figure No. 17.

An increasing trend in 'Good to Excellent' WQI category observations about 4.17% was noted at Wardha sub basin which recorded the majority of the observations (86.11%) under Good to Excellent' as compared to previous year (81.94%). About 12.50% of the observations were recorded as 'Dry' while a very small percentage of observations were recorded under the category of 'Not Collected' (1.39%).

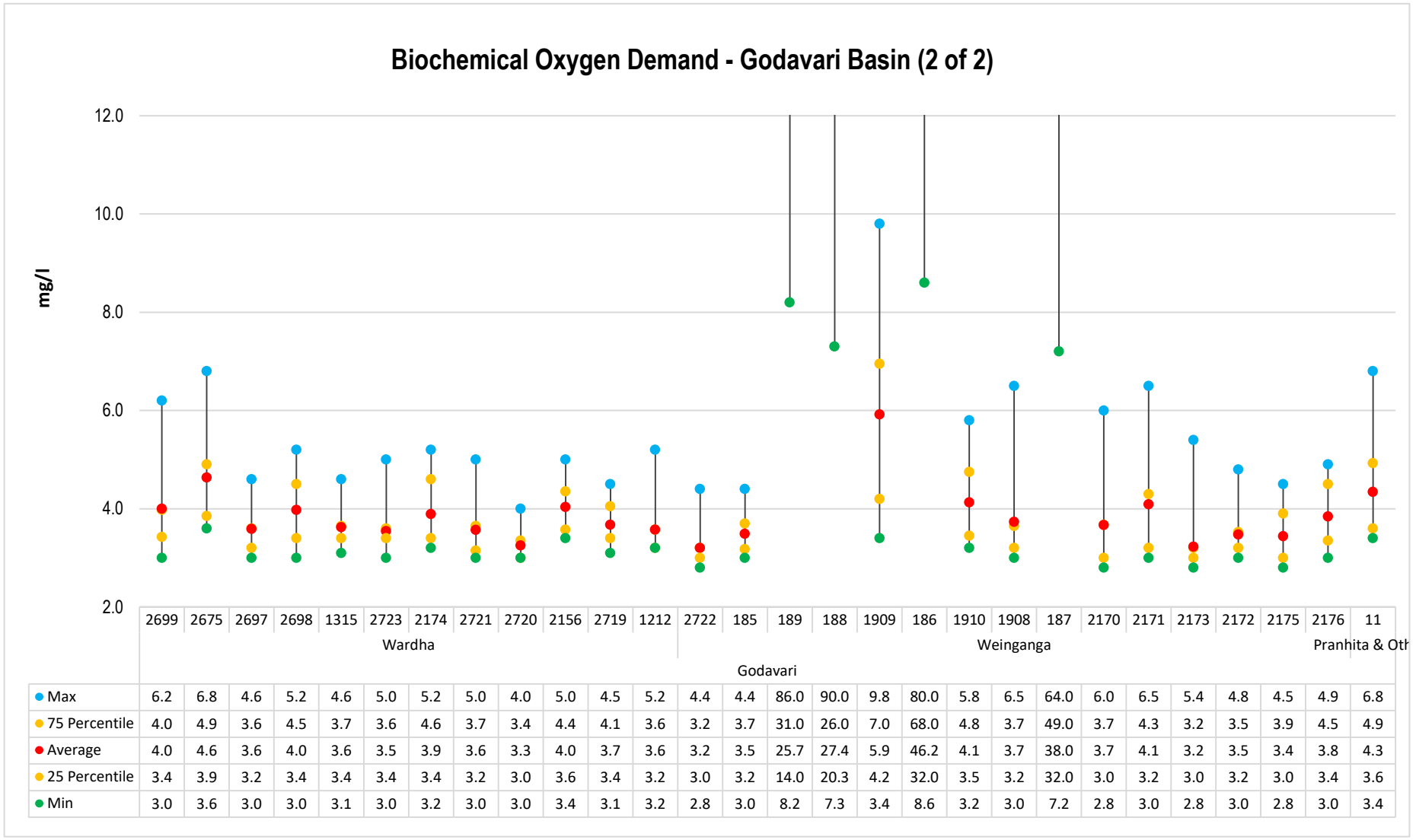
In regards to Weinganga sub-basin, about 68.89% of the observations were recorded under the 'Good to Excellent' category followed by 3.89% under the 'Medium to Good', 3.33% under the 'Bad', and 0.56% under the 'Bad to Very Bad' WQI category. About 1.67% of the total observations were observed as 'Dry'. The percentage share of observations recorded under 'Not collected' was found to be around 21.67%.

In the Pranhita and Others sub-basin, 11 out of 12 observations recorded in the year 2022-23 were found to be in the 'Good to Excellent' WQI category. As compared to the last year 2021-22, the share of the observations under this category witnessed a decreasing trend (from 100% to 91.67%) whereas the remaining 8.33% of the observations were recorded under the 'Medium to Good' category.



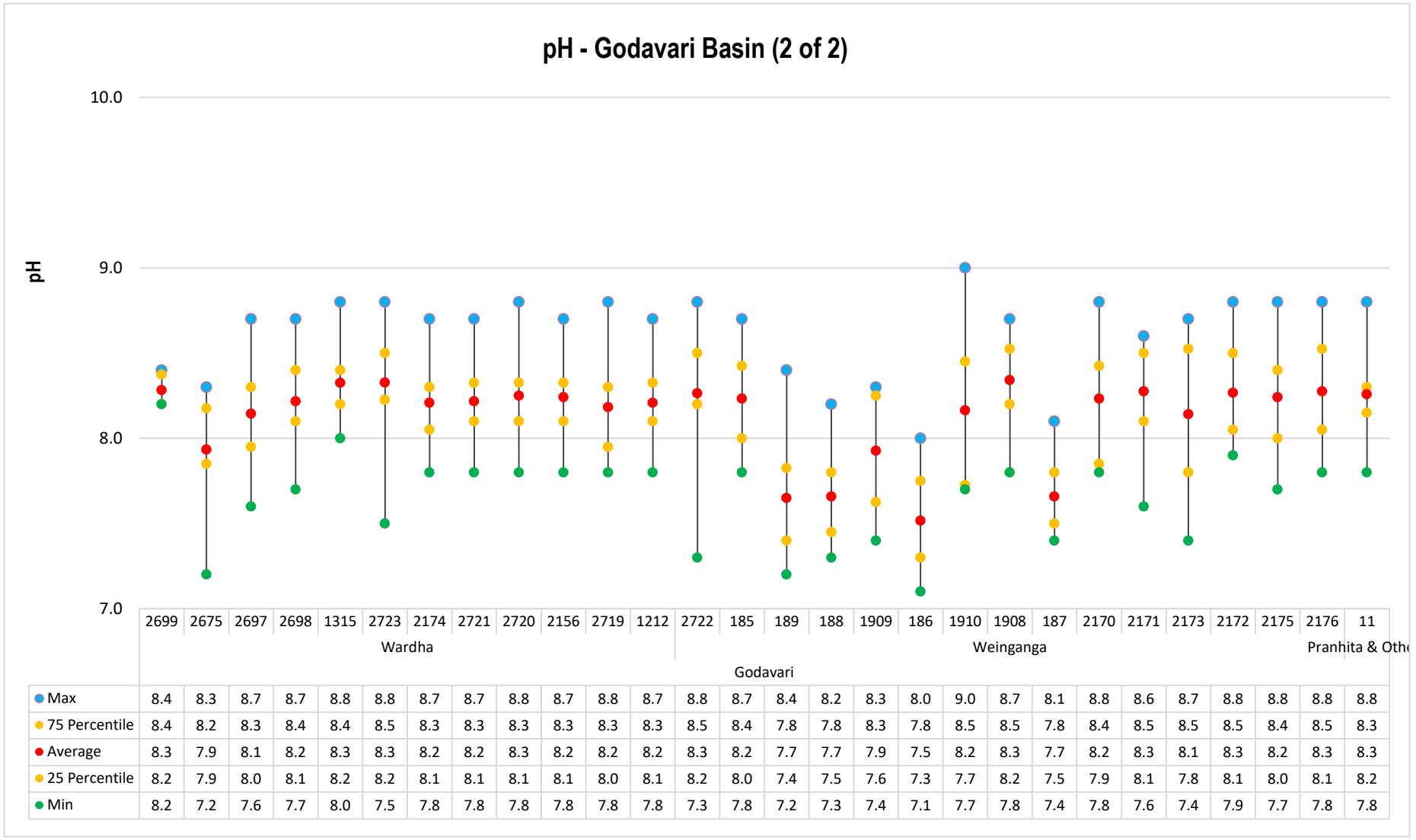
	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
	Wardha												Weinganga														Pranhita & Oth	
	Godavari																											
Max	6.6	6.3	6.2	6.0	6.4	6.5	6.2	6.5	6.6	6.2	6.3	6.4	6.7	7.0	3.8	4.1	6.3	3.2	6.5	6.8	3.2	6.8	6.6	6.7	6.4	7.0	6.7	6.2
75 Percentile	6.1	5.8	6.1	5.9	6.3	6.3	6.0	6.3	6.3	5.9	6.1	6.2	6.5	6.3	3.2	3.3	5.7	3.2	6.0	6.1	3.2	6.4	6.1	6.5	6.2	6.5	6.2	6.0
Average	6.0	5.7	6.0	5.6	6.1	6.2	5.8	6.1	6.3	5.7	6.0	6.0	6.4	6.1	2.5	2.3	4.5	3.2	5.7	6.0	3.2	6.1	5.8	6.3	6.1	6.3	6.0	5.7
25 Percentile	5.9	5.7	5.9	5.4	5.9	6.2	5.6	6.1	6.2	5.6	5.9	5.8	6.3	5.9	1.9	1.5	3.8	3.2	5.6	6.0	3.2	6.0	5.9	6.3	6.2	6.2	5.8	5.6
Min	5.1	5.0	5.7	5.1	5.7	5.8	5.2	5.5	6.1	5.1	5.8	5.5	6.0	5.3	1.2	0.5	2.0	3.2	3.9	5.1	3.2	4.8	4.0	4.9	5.2	5.8	5.3	4.6

Figure No. 18: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Godavari basin (2 of 2)



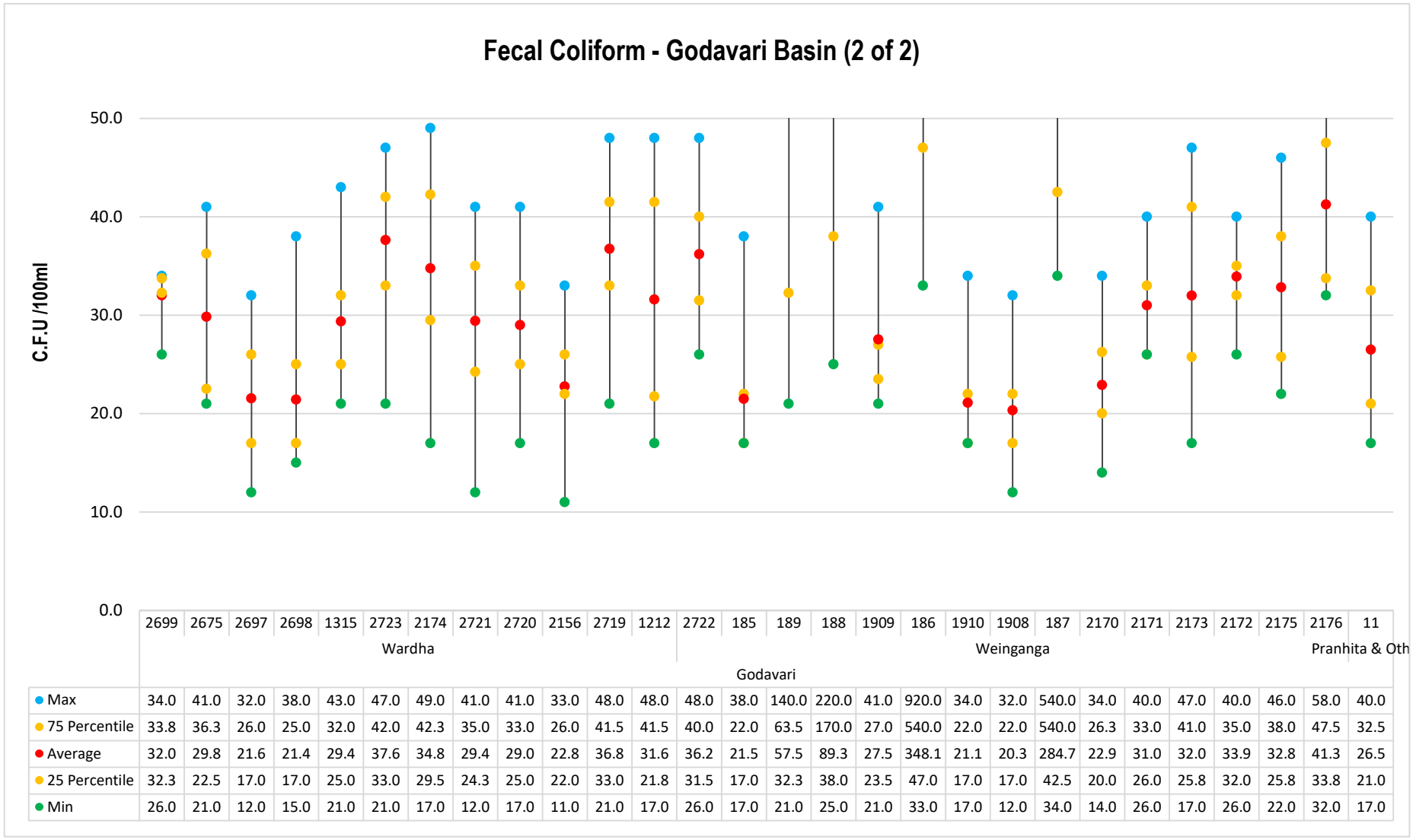
	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
Max	6.2	6.8	4.6	5.2	4.6	5.0	5.2	5.0	4.0	5.0	4.5	5.2	4.4	4.4	86.0	90.0	9.8	80.0	5.8	6.5	64.0	6.0	6.5	5.4	4.8	4.5	4.9	6.8
75 Percentile	4.0	4.9	3.6	4.5	3.7	3.6	4.6	3.7	3.4	4.4	4.1	3.6	3.2	3.7	31.0	26.0	7.0	68.0	4.8	3.7	49.0	3.7	4.3	3.2	3.5	3.9	4.5	4.9
Average	4.0	4.6	3.6	4.0	3.6	3.5	3.9	3.6	3.3	4.0	3.7	3.6	3.2	3.5	25.7	27.4	5.9	46.2	4.1	3.7	38.0	3.7	4.1	3.2	3.5	3.4	3.8	4.3
25 Percentile	3.4	3.9	3.2	3.4	3.4	3.4	3.4	3.2	3.0	3.6	3.4	3.2	3.0	3.2	14.0	20.3	4.2	32.0	3.5	3.2	32.0	3.0	3.2	3.0	3.2	3.0	3.4	3.6
Min	3.0	3.6	3.0	3.0	3.1	3.0	3.2	3.0	3.0	3.4	3.1	3.2	2.8	3.0	8.2	7.3	3.4	8.6	3.2	3.0	7.2	2.8	3.0	2.8	3.0	2.8	3.0	3.4

Figure No. 19: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Godavari basin (2 of 2)



	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
Max	8.4	8.3	8.7	8.7	8.8	8.8	8.7	8.7	8.8	8.7	8.8	8.7	8.8	8.7	8.4	8.2	8.3	8.0	9.0	8.7	8.1	8.8	8.6	8.7	8.8	8.8	8.8	8.8
75 Percentile	8.4	8.2	8.3	8.4	8.4	8.5	8.3	8.3	8.3	8.3	8.3	8.3	8.5	8.4	7.8	7.8	8.3	7.8	8.5	8.5	7.8	8.4	8.5	8.5	8.5	8.4	8.5	8.3
Average	8.3	7.9	8.1	8.2	8.3	8.3	8.2	8.2	8.3	8.2	8.2	8.2	8.3	8.2	7.7	7.7	7.9	7.5	8.2	8.3	7.7	8.2	8.3	8.1	8.3	8.2	8.3	8.3
25 Percentile	8.2	7.9	8.0	8.1	8.2	8.2	8.1	8.1	8.1	8.1	8.0	8.1	8.2	8.0	7.4	7.5	7.6	7.3	7.7	8.2	7.5	7.9	8.1	7.8	8.1	8.0	8.1	8.2
Min	8.2	7.2	7.6	7.7	8.0	7.5	7.8	7.8	7.8	7.8	7.8	7.8	7.3	7.8	7.2	7.3	7.4	7.1	7.7	7.8	7.4	7.8	7.6	7.4	7.9	7.7	7.8	7.8

Figure No. 20: Trend of pH levels recorded at WQMS at Godavari basin (2 of 2)



	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
	Wardha												Weinganga														Pranhita & Oth	
	Godavari																											
Max	34.0	41.0	32.0	38.0	43.0	47.0	49.0	41.0	41.0	33.0	48.0	48.0	48.0	38.0	140.0	220.0	41.0	920.0	34.0	32.0	540.0	34.0	40.0	47.0	40.0	46.0	58.0	40.0
75 Percentile	33.8	36.3	26.0	25.0	32.0	42.0	42.3	35.0	33.0	26.0	41.5	41.5	40.0	22.0	63.5	170.0	27.0	540.0	22.0	22.0	540.0	26.3	33.0	41.0	35.0	38.0	47.5	32.5
Average	32.0	29.8	21.6	21.4	29.4	37.6	34.8	29.4	29.0	22.8	36.8	31.6	36.2	21.5	57.5	89.3	27.5	348.1	21.1	20.3	284.7	22.9	31.0	32.0	33.9	32.8	41.3	26.5
25 Percentile	32.3	22.5	17.0	17.0	25.0	33.0	29.5	24.3	25.0	22.0	33.0	21.8	31.5	17.0	32.3	38.0	23.5	47.0	17.0	17.0	42.5	20.0	26.0	25.8	32.0	25.8	33.8	21.0
Min	26.0	21.0	12.0	15.0	21.0	21.0	17.0	12.0	17.0	11.0	21.0	17.0	26.0	17.0	21.0	25.0	21.0	33.0	17.0	12.0	34.0	14.0	26.0	17.0	26.0	22.0	32.0	17.0

Figure No. 21: Trend of Fecal Coliform levels recorded at WQMS at Godavari basin (2 of 2)

Water Quality Index for WQMS in Godavari Basin (2 of 2): Sub-Basin-Wardha

Apr	Dry	Dry	Dry	74	Dry	73	76	79	77	78	74	75
May	Dry	Dry	Dry	79	Dry	84	80	81	81	80	79	81
Jun	Dry	Dry	Dry	72	Dry	Dry	72	75	79	71	79	79
Jul	Dry	Dry	74	70	72	73	70	72	76	68	72	76
Aug	74	73	72	69	75	74	72	73	75	72	72	75
Sep	66	67	79	73	78	78	69	72	77	76	75	70
Oct	76	76	79	81	78	75	74	76	76	74	75	75
Nov	75	78	79	68	76	75	74	76	78	72	77	76
Dec	75	77	77	74	73	73	74	76	76	74	74	75
Jan	73	72	76	75	77	72	71	77	78	73	76	75
Feb	NC	NC	75	73	70	73	72	76	75	71	72	73
Mar	Dry	Dry	77	73	Dry	73	73	74	72	72	70	71
Station Code	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212
Sub Basin	Wardha											
Basin	Godavari											

Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

Table No. 18: Surface water quality monitoring stations in Godavari Basin (2 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2699	Penganga	Penganga at Mehkar-Buldana Road Bridge	Mehkar	Mehkar	Buldana
NWMP	2675	Morna	Morna at D/s of Railway Bridge	Akola	Akola	Akola
NWMP	2697	Penganga	Penganga near water supply scheme of Umarkhed MC	Belkhed	Umarkhed	Yavatmal
NWMP	2698	Penganga	Penganga D/s of Isapur Dam	Isapur	Pusad	Yavatmal
NWMP	1315	Wardha	Wardha at Pulgaon Railway Bridge	Pulgaon	wardha	Wardha
NWMP	2723	Wena	Wena at D/s of Mohata Mills, near Bridge on Hinganghat-Wadner Road	Hinganghat	Hinganghat	Wardha
NWMP	2174	Wardha	Wardha at D/s of ACC Ghuggus	Ghuggus	Chandrapur	Chandrapur
NWMP	2721	Wardha	Wardha at U/s of ACC Ghuggus	Ghuggus	Chandrapur	Chandrapur
NWMP	2720	Wardha	Wardha at U/s of Erai	Hadasti	Chandrapur	Chandrapur
NWMP	2156	Wardha	Wardha at confluence point of Penganga & Wardha	Jugad	Wani	Yavatmal
NWMP	2719	Wardha	Wardha at D/s of Erai	Hadasti	Chandrapur	Chandrapur
NWMP	1212	Wardha	Wardha at Rajura bridge	Rajura	Chandrapur	Chandrapur

Water Quality Index for WQMS in Godavari Basin (2 of 2): Sub-Basin-Wainganga and Pranhita

Apr	75	76	46	NC	75	NC	73	75	NC	76	74	83	78	76	73	73
May	83	69	NC	NC	65	NC	75	76	NC	75	73	77	74	81	80	81
Jun	Dry	81	48	NC	Dry	NC	Dry	78	NC	73	70	63	66	73	69	71
Jul	80	75	NC	NC	63	NC	74	67	NC	70	68	80	78	73	69	71
Aug	75	74	48	41	61	NC	76	72	NC	75	74	81	76	71	67	70
Sep	77	77	59	62	77	48	80	78	55	79	78	77	77	76	73	73
Oct	76	78	NC	NC	66	NC	72	80	NC	70	60	80	77	78	75	76
Nov	77	75	NC	37	77	NC	80	77	NC	81	77	81	77	80	77	74
Dec	74	79	NC	NC	73	NC	80	74	NC	75	72	77	76	77	72	62
Jan	75	78	NC	NC	68	NC	74	75	NC	78	74	77	75	80	76	74
Feb	73	75	NC	NC	51	NC	58	74	NC	75	75	74	72	74	73	74
Mar	75	75	NC	NC	44	NC	74	75	NC	77	75	75	74	71	70	70
Station Code	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
Sub Basin	Wainganga															Pranhita & Others
Basin	Godavari															

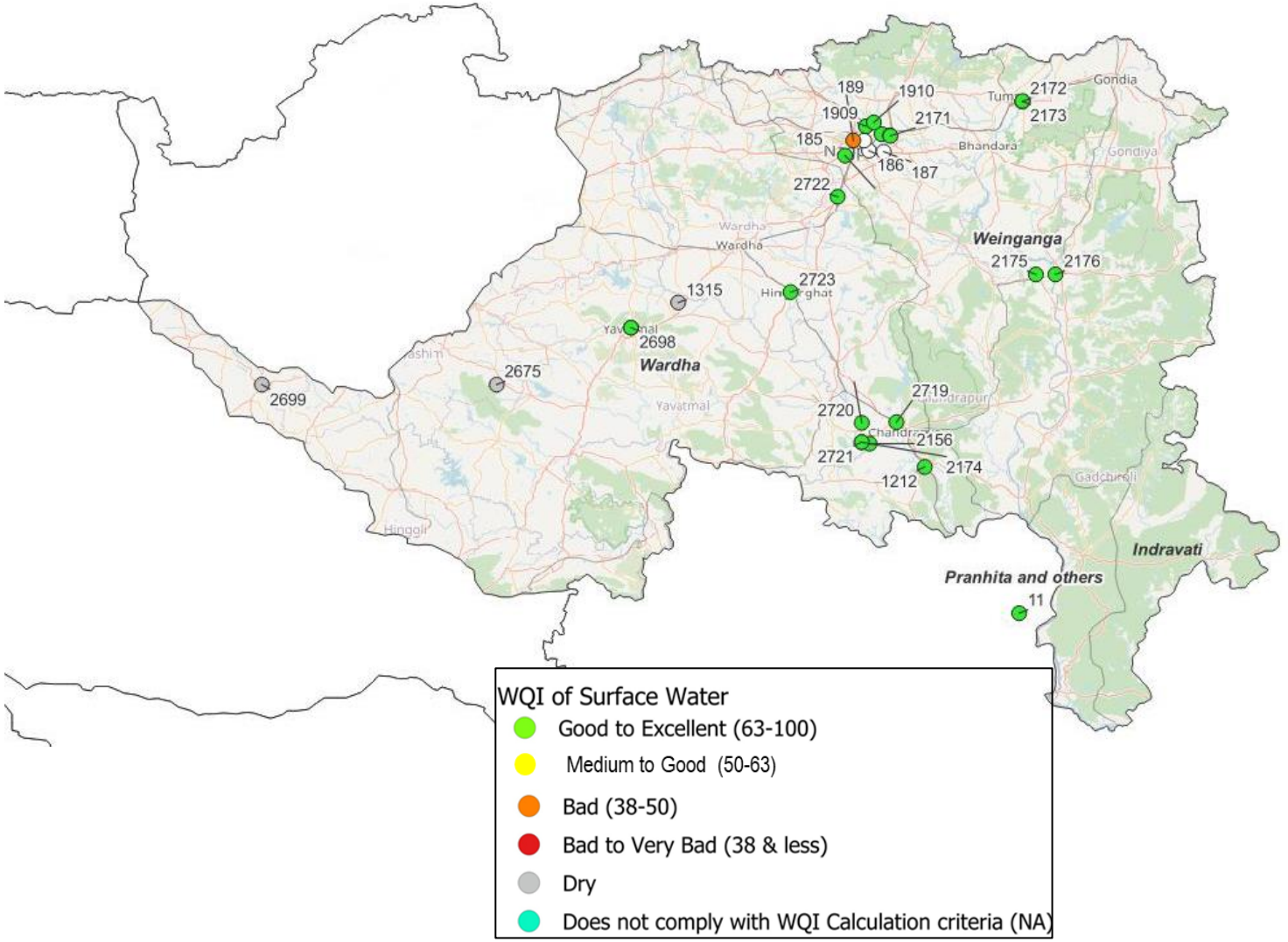
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

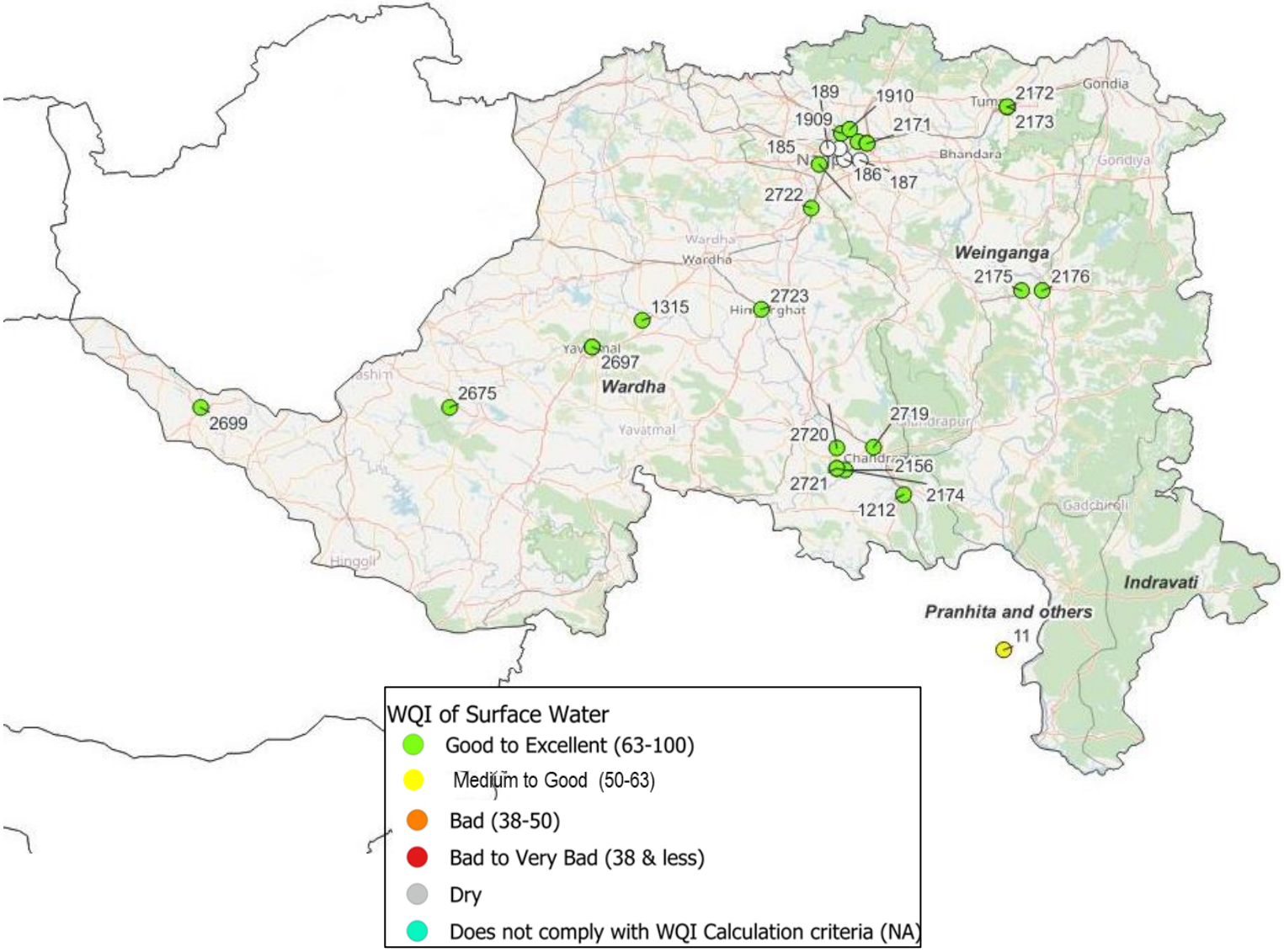
Table No. 19: Surface water quality monitoring stations in Godavari Basin (2 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2722	Wena	Wena at U/s of Mohata Mills, nearby Brigde on Hinganghat Wadner Road	Hinganghat	Hinganghat	Wardha
SWMP	185	Nag	Nag Near, Ambazari Lake, Nagpur	Nagpur	Nagpur	Nagpur
SWMP	189	Pill	Pill Near, Mankapur on Koradi Road, Nagpur	Nagpur	Nagpur	Nagpur
SWMP	188	Pill	Pill Near, Wanjra Layout Kamptee Road, Nagpur	Nagpur	Nagpur	Nagpur
NWMP	1909	Kanhan	Kanhan at D/s of Nagpur	Agargaon	Kuhi	Nagpur
SWMP	186	Nag	Nag Near, Bhandewadi Bridge, Nagpur	Nagpur	Nagpur	Nagpur
NWMP	1910	Wainganga	Wainganga after confluence with Kanhan	Ambhora	Kuhi	Nagpur
NWMP	1908	Kolar	Kolar before confluence with Kanhan at Waregaon Bridge	Waregaon	Kamptee	Nagpur
SWMP	187	Nag	Nag Near, Asoli Bridge, Bhandara Road, Nagpur	Nagpur	Nagpur	Nagpur
NWMP	2170	Kanhan	Kanhan (Wainganga basin) at U/s of M/s Vidharba Paper Mill	Sinora	Parseoni	Nagpur
NWMP	2171	Kanhan	Kanhan (Wainganga basin) at D/s of M/s Vidharbha Paper Mills	Sinora	Parseoni	Nagpur
NWMP	2173	Wainganga	Wainganga at U/s of Ellora Paper Mills	Tumsar	Tumsar	Bandara
NWMP	2172	Wainganga	Wainganga at D/s of Ellora Paper Mill	Tumsar	Tumsar	Bandara
NWMP	2175	Wainganga	Wainganga at U/s of Gaurav Paper Mills near Jack Well	Bramhpuri	Chandrapur	Chandrapur
NWMP	2176	Wainganga	Wainganga at D/s of Gaurav Paper Mills Near Jackwell	Bramhpuri	Chandrapur	Chandrapur
NWMP	11	Wainganga	Wainganga at Ashti	Ashti	Gondpipri	Chandrapur

Spatial map of Surface WQI at Godavari Basin (2of 2)- (April 2022)

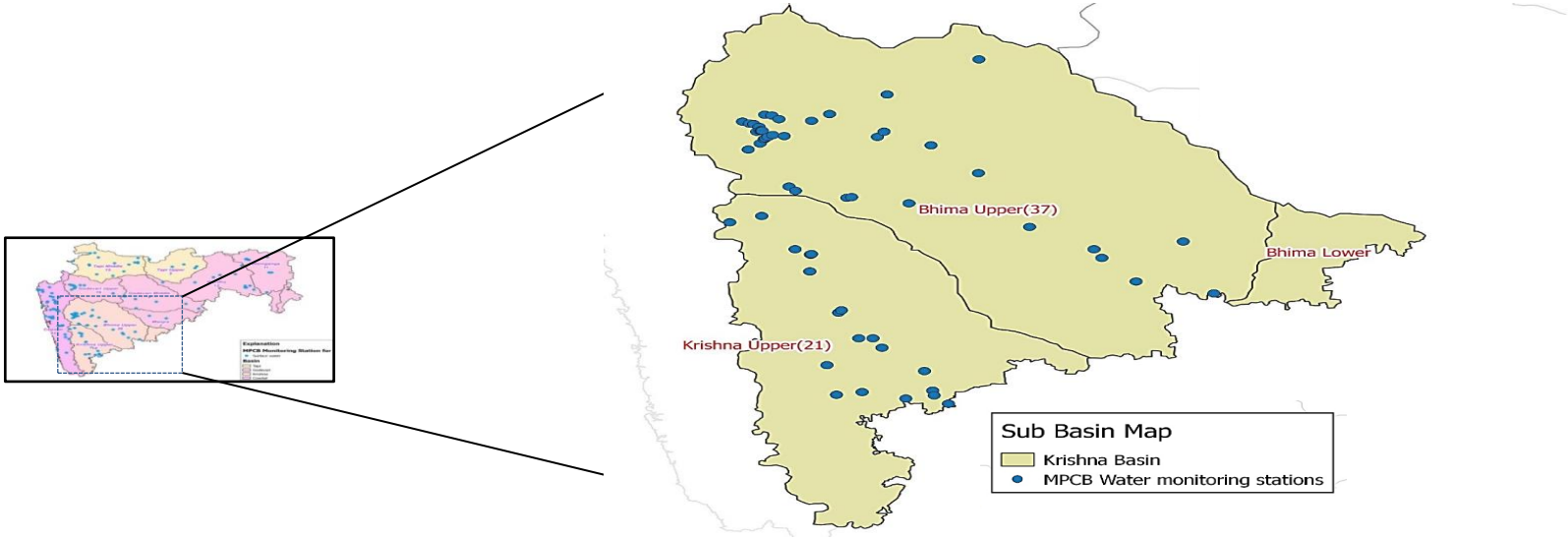


Spatial map of SurfaceWQI at Godavari Basin (2 of 2)- (December 2022)



Krishna Basin

The second largest eastward draining interstate river in Peninsular India, the Krishna River drains an area of about 2,58,948 sq. km which is around 8% of the total geographical area of the country. The river rises in the Western Ghats at an altitude of 1337m just north of Mahabaleshwar, about 64 km. from the Arabian Sea and flows from west to east and joins the Bay of Bengal, downstream of Vijayawada (Andhra Pradesh). During its course of about 1400 km, about 13 major tributaries join the Krishna River[25]. This river is a major source of irrigation for the states of Maharashtra, Karnataka, Telangana and Andhra Pradesh. The Krishna Basin is further divided into Bhima Upper and Krishna Upper. A list of WQMS stations installed in areas of the Tapi basin has been provided in the Table No.20 to Table No. 22.



[25] https://cwc.gov.in/sites/default/files/admin/About-Krishna-Basin-kgbo.pdf

Krishna Basin (Intra Basin analysis)

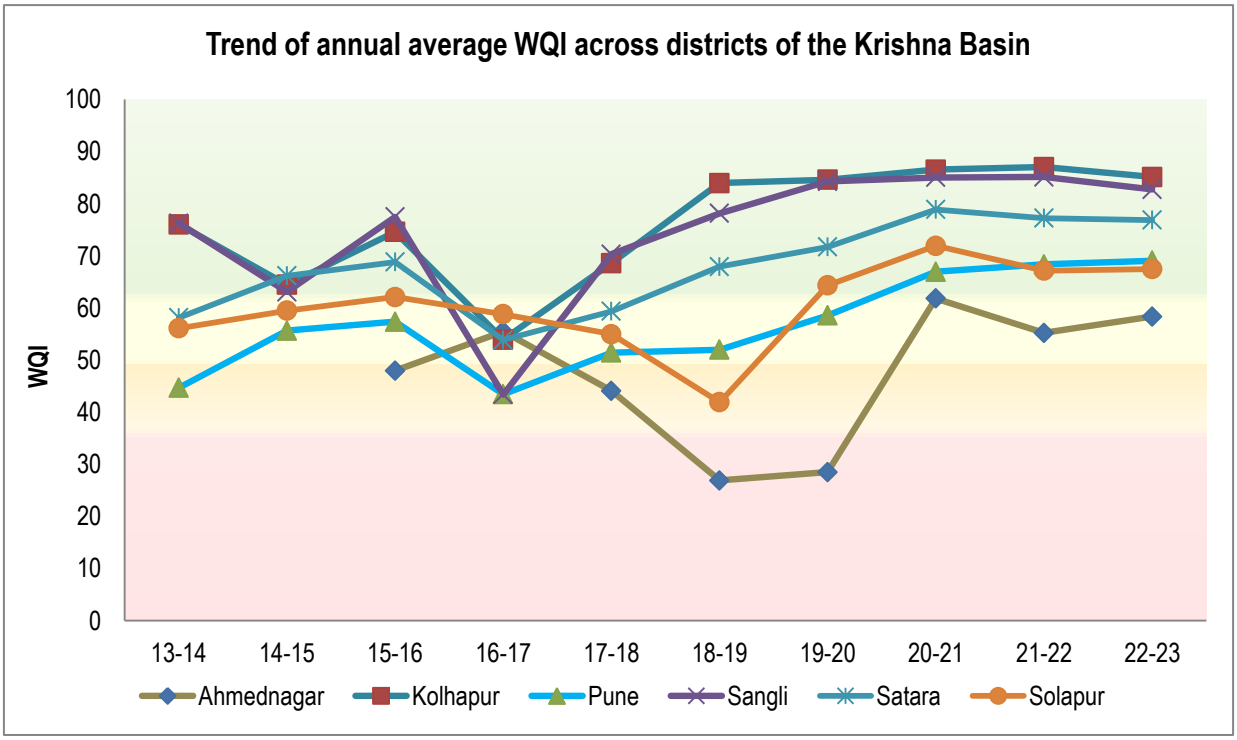


Figure No. 22: Trend of annual average WQI across districts of the Krishna basin

WQI	WQI Category	Class by CPCB	Represented in the above graph
63-100	Good to Excellent	A	Non-polluted
50-63	Medium to Good	B	Non-polluted
38-50	Bad	C	Polluted
38 & less	Bad to Very Bad	D, E	Heavily polluted

Note: This graph considers the average WQI for all the monitoring stations in that particular district and hence may include some bias. This graph is only for an overview and monitoring station-wise data may be analyzed to pinpoint the most affected and polluted patches of rivers in that district.

Figure No. 22 represents the intrabasin performance of the Krishna basin. Out of 6 districts coming under the Krishna basin, WQMS installed in 3 districts namely Kolhapur, Sangli and Satara recorded a decreasing trend in the annual average WQI whereas an increasing trend was recorded by WQMS installed in the remaining 3 districts namely Ahmednagar, Pune and Solapur. It is important to note that the annual average WQI recorded by WQMS in Ahmednagar district was recorded under the 'Medium to Good' category as the annual average WQI value was found to be 58.34 in 2022-23. The WQMS in Kolhapur, Sangli, and Satara; though recorded a decreasing trend in annual average WQI; still the category of WQI remained unchanged ('Good to Excellent'). As far as the annual average WQI value of WQMS from the districts of Ahmednagar, Pune and Solapur is concerned, the values are increased by about 5.66%, 1.01 %, and 0.44% respectively as compared to the previous year (2021-22).

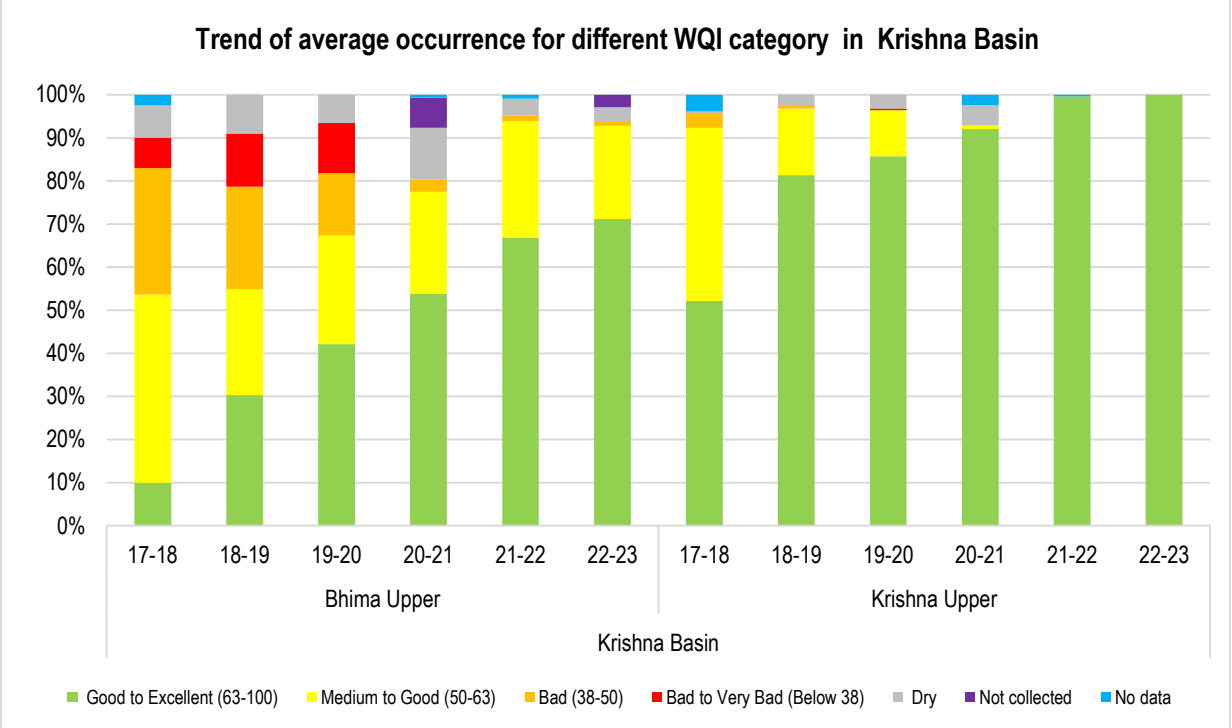
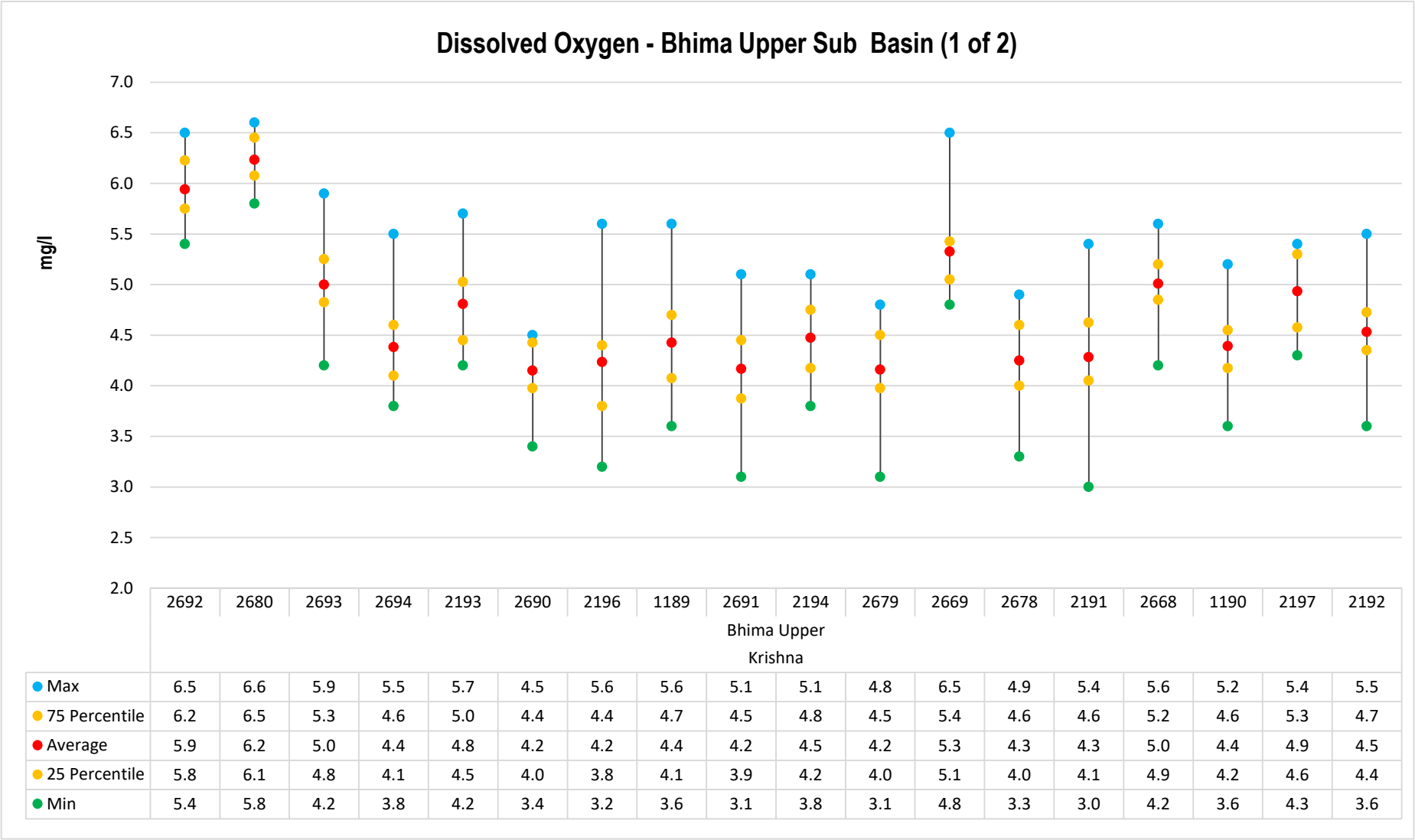


Figure No. 23: Trend of average occurrence for different WQI categories in the Krishna Basin

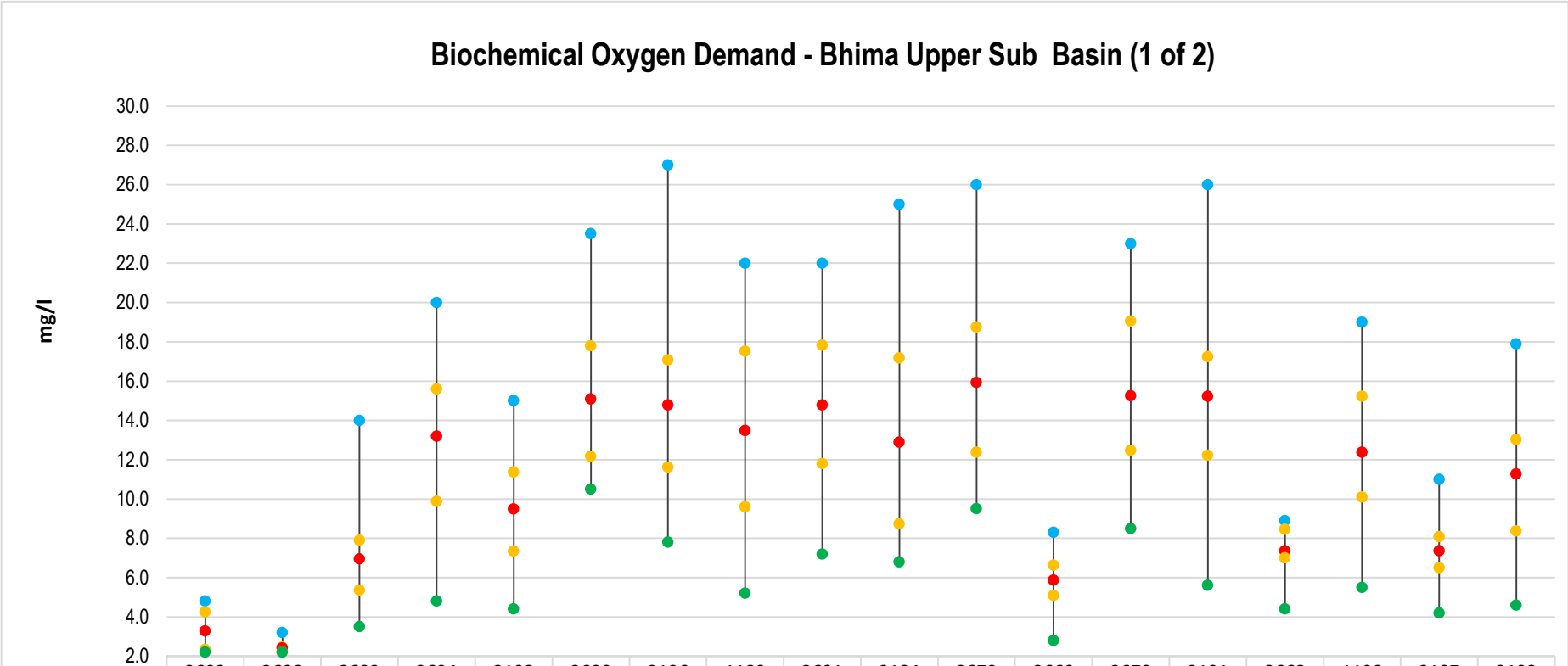
The interbasin analysis of the Krishna basin (Figure No. 23) shows an improvement in water quality in the year 2022-23. This is because both sub-basins; the Bhima Upper and the Krishna Upper recorded an increasing trend in the percentage share of observations recorded under the 'Good to Excellent' WQI category. In the Bhima Upper, the percentage share has seen an increase from 66.89% to about 71.17% whereas the 100% of observations from the Krishna Upper sub-basin were recorded under this category.

In terms of Bhima sub basin, about 21.62% of observations' were recorded under the 'Medium to Good' category followed by 0.90% in the 'Bad' category. The share of observations recorded as 'Dry' and 'Not Collected' was found to be about 3.38% and 2.93% respectively.



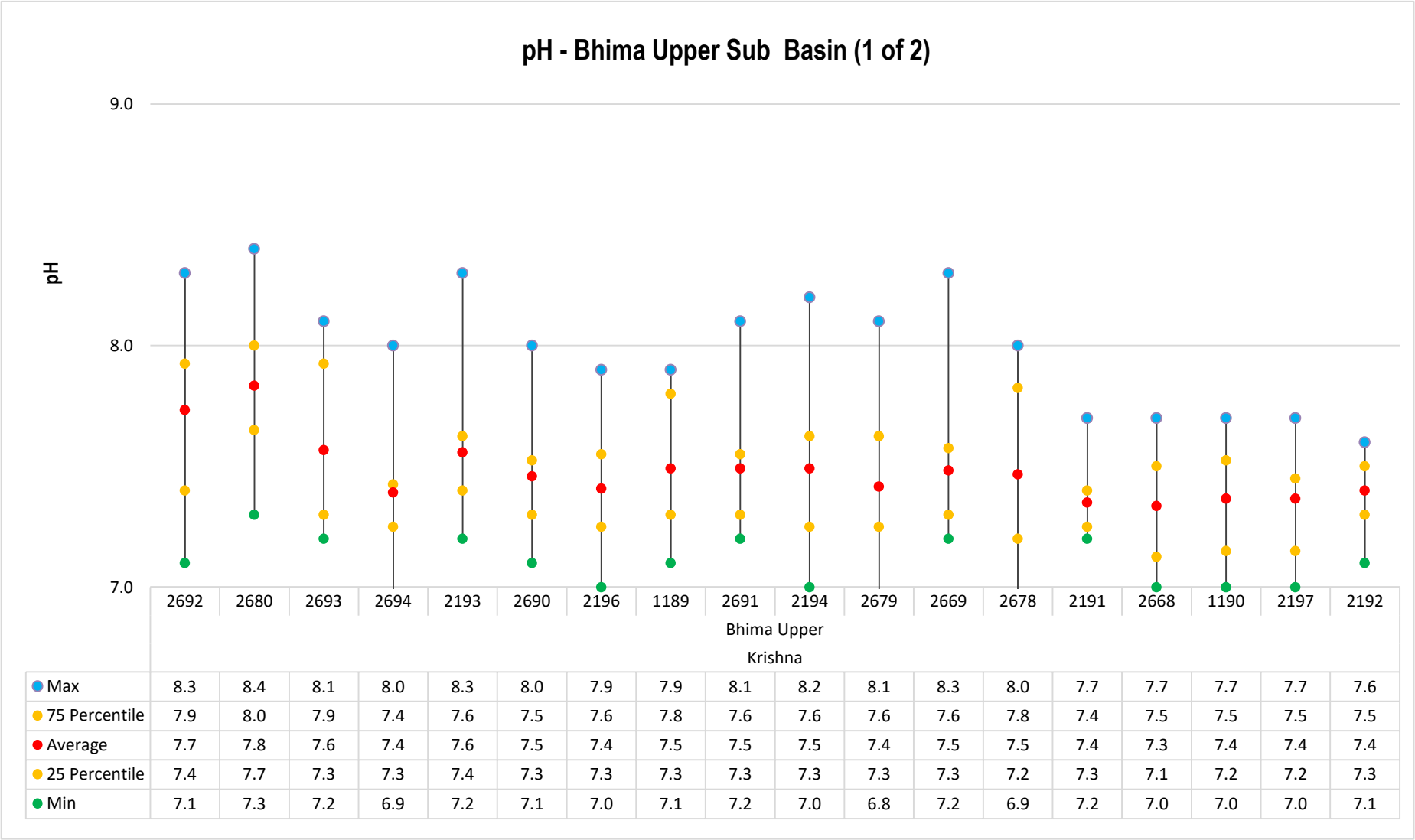
	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
Max	6.5	6.6	5.9	5.5	5.7	4.5	5.6	5.6	5.1	5.1	4.8	6.5	4.9	5.4	5.6	5.2	5.4	5.5
75 Percentile	6.2	6.5	5.3	4.6	5.0	4.4	4.4	4.7	4.5	4.8	4.5	5.4	4.6	4.6	5.2	4.6	5.3	4.7
Average	5.9	6.2	5.0	4.4	4.8	4.2	4.2	4.4	4.2	4.5	4.2	5.3	4.3	4.3	5.0	4.4	4.9	4.5
25 Percentile	5.8	6.1	4.8	4.1	4.5	4.0	3.8	4.1	3.9	4.2	4.0	5.1	4.0	4.1	4.9	4.2	4.6	4.4
Min	5.4	5.8	4.2	3.8	4.2	3.4	3.2	3.6	3.1	3.8	3.1	4.8	3.3	3.0	4.2	3.6	4.3	3.6

Figure No. 24: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (1 of 2)



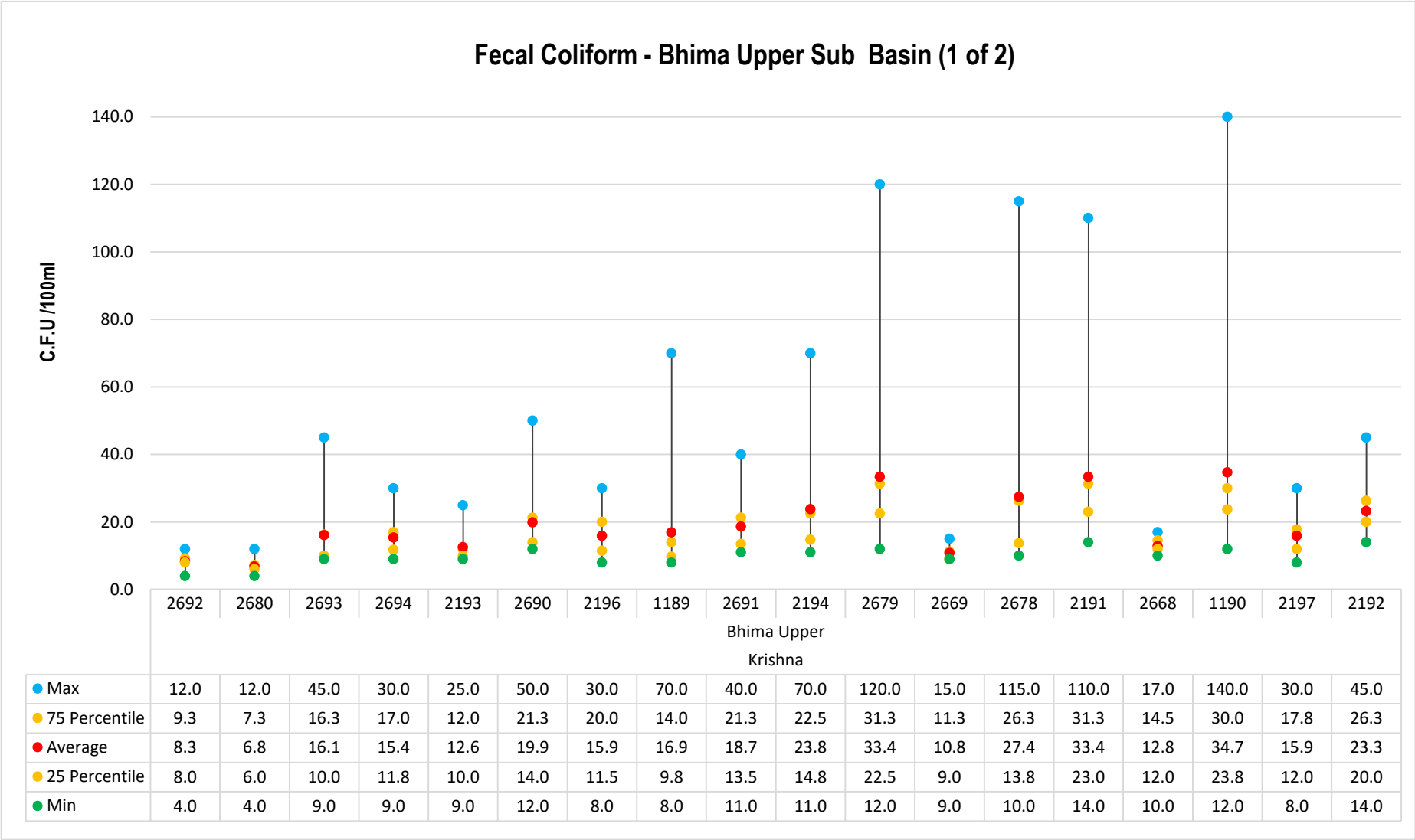
	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
Max	4.8	3.2	14.0	20.0	15.0	23.5	27.0	22.0	22.0	25.0	26.0	8.3	23.0	26.0	8.9	19.0	11.0	17.9
75 Percentile	4.3	2.5	7.9	15.6	11.4	17.8	17.1	17.5	17.8	17.2	18.8	6.6	19.1	17.3	8.5	15.2	8.1	13.0
Average	3.3	2.4	7.0	13.2	9.5	15.1	14.8	13.5	14.8	12.9	15.9	5.9	15.3	15.2	7.4	12.4	7.4	11.3
25 Percentile	2.4	2.2	5.4	9.9	7.4	12.2	11.6	9.6	11.8	8.7	12.4	5.1	12.5	12.2	7.0	10.1	6.5	8.4
Min	2.2	2.2	3.5	4.8	4.4	10.5	7.8	5.2	7.2	6.8	9.5	2.8	8.5	5.6	4.4	5.5	4.2	4.6

Figure No. 25: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (1 of 2)



	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
Max	8.3	8.4	8.1	8.0	8.3	8.0	7.9	7.9	8.1	8.2	8.1	8.3	8.0	7.7	7.7	7.7	7.7	7.6
75 Percentile	7.9	8.0	7.9	7.4	7.6	7.5	7.6	7.8	7.6	7.6	7.6	7.6	7.8	7.4	7.5	7.5	7.5	7.5
Average	7.7	7.8	7.6	7.4	7.6	7.5	7.4	7.5	7.5	7.5	7.4	7.5	7.5	7.4	7.3	7.4	7.4	7.4
25 Percentile	7.4	7.7	7.3	7.3	7.4	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.2	7.3	7.1	7.2	7.2	7.3
Min	7.1	7.3	7.2	6.9	7.2	7.1	7.0	7.1	7.2	7.0	6.8	7.2	6.9	7.2	7.0	7.0	7.0	7.1

Figure No. 26: Trend of pH levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (1 of 2)



	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
Max	12.0	12.0	45.0	30.0	25.0	50.0	30.0	70.0	40.0	70.0	120.0	15.0	115.0	110.0	17.0	140.0	30.0	45.0
75 Percentile	9.3	7.3	16.3	17.0	12.0	21.3	20.0	14.0	21.3	22.5	31.3	11.3	26.3	31.3	14.5	30.0	17.8	26.3
Average	8.3	6.8	16.1	15.4	12.6	19.9	15.9	16.9	18.7	23.8	33.4	10.8	27.4	33.4	12.8	34.7	15.9	23.3
25 Percentile	8.0	6.0	10.0	11.8	10.0	14.0	11.5	9.8	13.5	14.8	22.5	9.0	13.8	23.0	12.0	23.8	12.0	20.0
Min	4.0	4.0	9.0	9.0	9.0	12.0	8.0	8.0	11.0	11.0	12.0	9.0	10.0	14.0	10.0	12.0	8.0	14.0

Figure No. 27: Trend of Fecal Coliform levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (1 of 2)

Water Quality Index for WQMS in Krishna Basin (1 of 2): Sub-Basin-Bhima Upper (1 of 2)

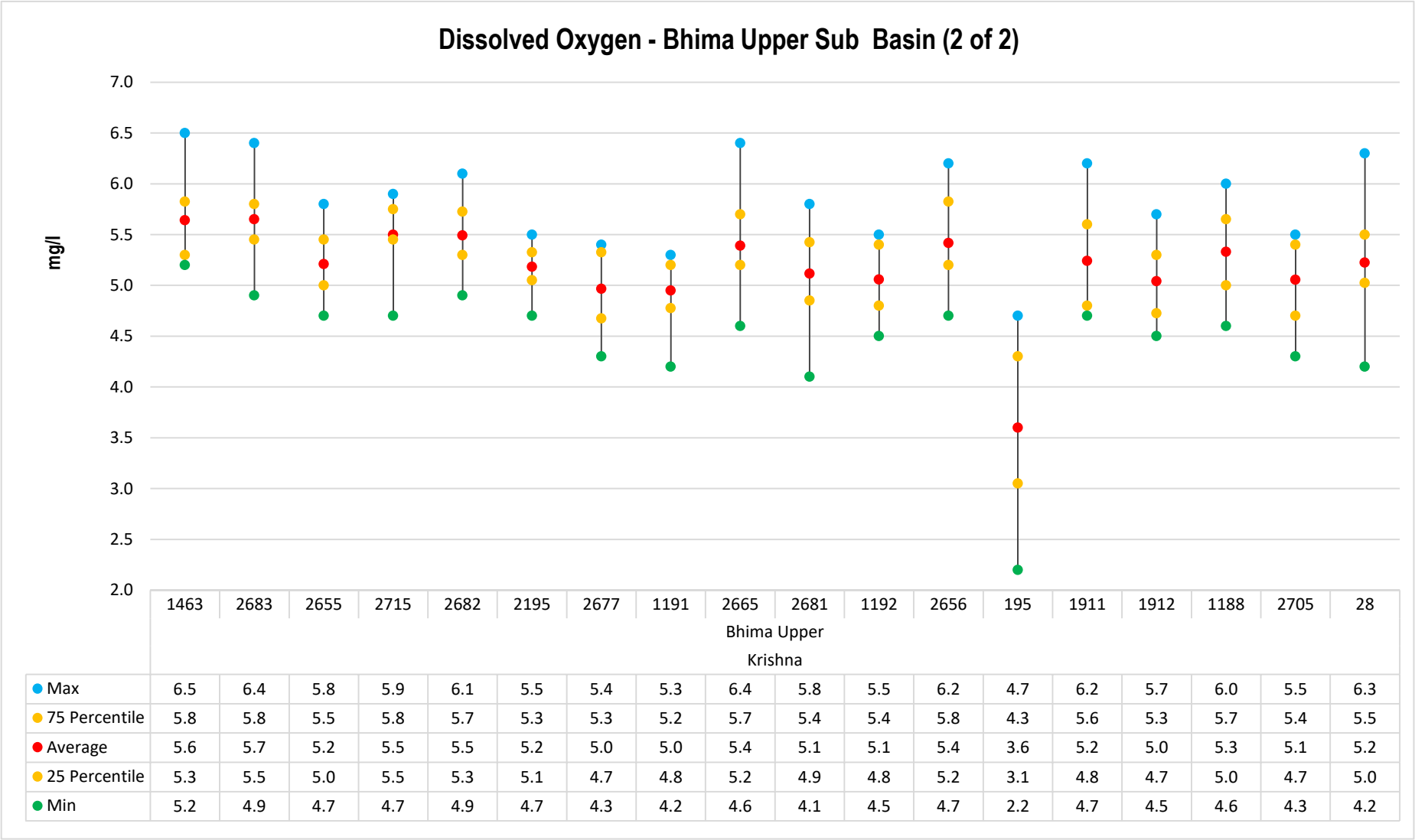
Apr	87	86	64	69	66	66	75	79	63	67	64	78	64	66	Dry	63	72	67
May	84	86	70	68	77	65	67	73	67	74	65	77	63	77	72	76	65	67
Jun	80	85	79	76	65	56	55	64	54	63	62	71	61	65	72	56	66	63
Jul	75	81	74	62	63	59	57	63	60	61	63	74	65	63	69	73	73	71
Aug	84	78	76	62	71	62	69	70	70	70	68	77	70	62	69	65	78	76
Sep	76	83	65	61	71	60	60	57	61	60	59	77	60	59	74	64	68	66
Oct	80	85	77	63	80	65	65	67	67	68	63	88	64	64	80	63	75	65
Nov	83	88	79	65	72	64	65	67	66	66	61	74	62	63	66	61	69	65
Dec	84	84	68	64	64	61	63	59	63	61	56	78	58	61	71	59	72	62
Jan	88	90	76	65	69	63	63	59	61	60	50	77	53	52	72	62	75	63
Feb	82	87	67	60	64	58	60	63	57	61	56	71	57	59	74	60	68	59
Mar	83	85	68	58	64	56	55	55	54	49	51	75	54	52	73	53	74	60
Station Code	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
Sub Basin	Bhima Upper (1 of 2)																	
Basin	Krishna																	

Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

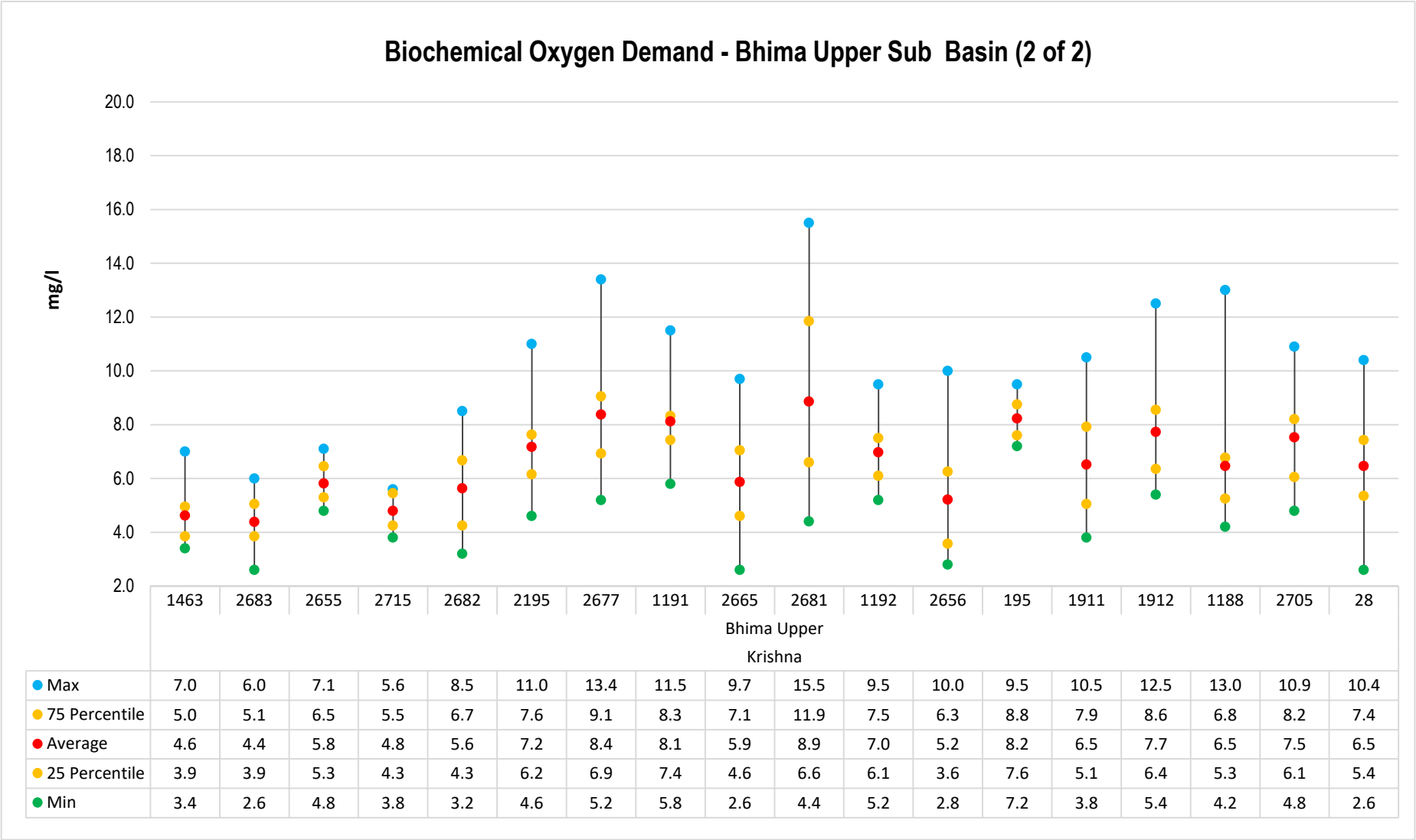
Table No. 20 : Surface water quality monitoring stations in Krishna Basin (1 of 2) Sub Basin –Bhima Upper (1 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2692	Pawana	Pawana at Ravet Weir, Pune	Ravet	Haweli	Pune
NWMP	2680	Mutha	Mutha at Khadakvasla Dam Pune	Kadakvasla	Haweli	Pune
NWMP	2693	Pawana	Pawana at Chinchwadgaon, Pune	Chinchwadgaon	Haweli	Pune
NWMP	2694	Pawana	Pawana at Pimprigaon, Pune	Pimprigaon	Haweli	Pune
NWMP	2193	Mula	Mula at Aundh Bridge -Aundgaon	Aundhgaon	Haweli	Pune
NWMP	2690	Pawana	Pawana at Kasarwadi Pune	Kasarwadi	Haweli	Pune
NWMP	2196	Pawana	Pawana at Sangavigaon, Pune	Sangavigaon	Haweli	Pune
NWMP	1189	Bhima	Bhima at Pune(Mutha) at U/s of Vithalwadi near Sankar Mandir	Vithalwadi	Haweli	Pune
NWMP	2691	Pawana	Pawana at Dapodi Bridge at Pawana-Mulla Sangan Pune	Dapodi	Haweli	Pune
NWMP	2194	Mula	Mula at Harrison Bridge near Mula -Pawana Sangam	Bopodi	Haweli	Pune
NWMP	2679	Mutha	Mutha at Deccan Bridge, Pune	Deccan	Pune	Pune
NWMP	2669	Indrayani	Indrayani at U/s of Moshigaon, Pune	Moshigaon	Haweli	Pune
NWMP	2678	Mutha	Mutha near Veer Savarkar Bhavan	Pune M.C	Pune	Pune
NWMP	2191	Mutha	Mutha at Sangam Bridge Near Ganpathi Ghat	Shivaji Nagar	Pune	Pune
NWMP	2668	Indrayani	Indrayani at D/s of Moshi village	Moshi	Haveli	Pune
NWMP	1190	Bhima	Bhima at D/s of Bundgarden, Pune	Yerwada	Haweli	Pune
NWMP	2197	Indrayani	Indrayani at D/s of Alandigaon, Pune	Alandigaon	Haweli	Pune
NWMP	2192	Mula-Mutha	Mula-Mutha at Mundhwa Bridge	Mundhawa	Haweli	Pune



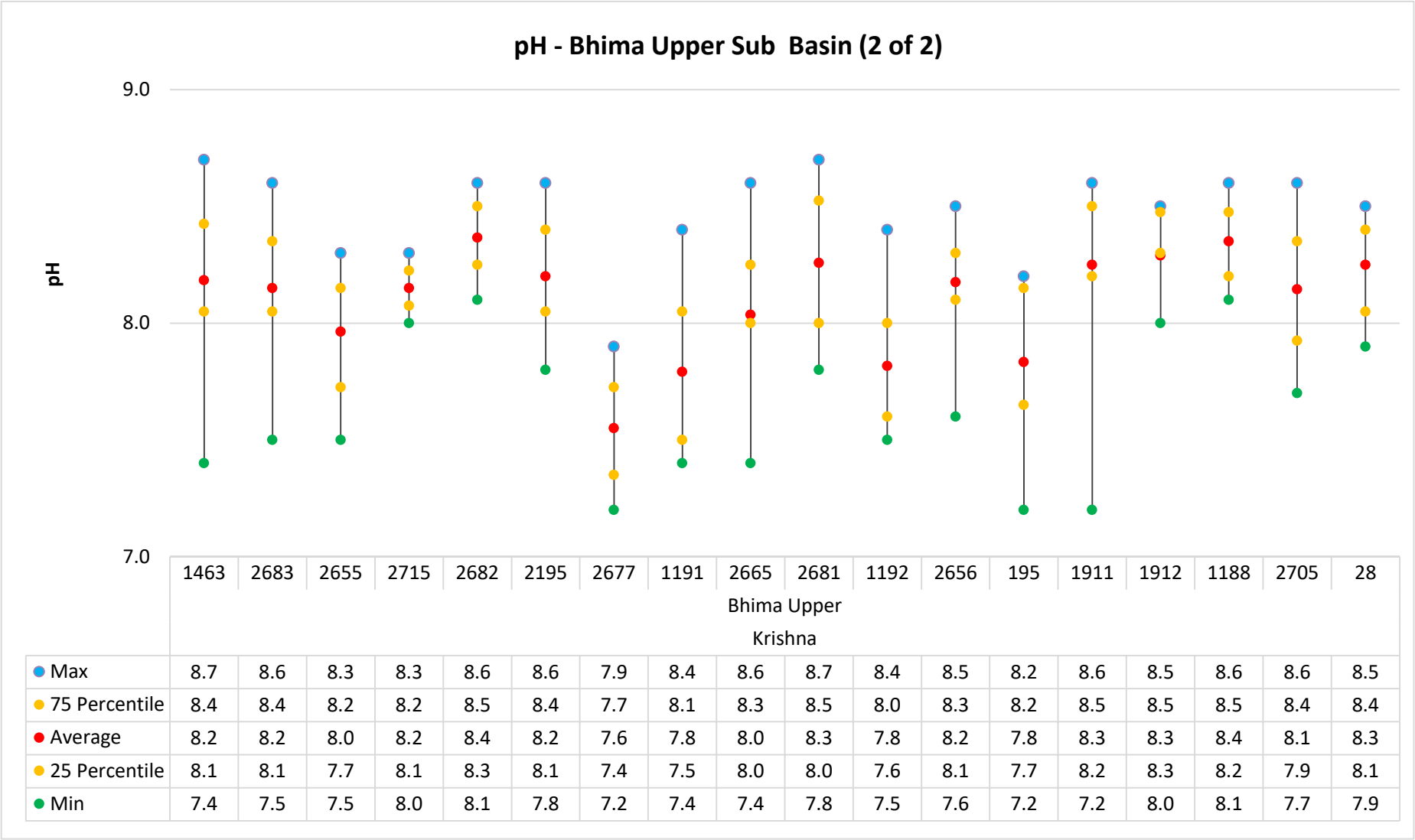
	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
	Bhima Upper																	
	Krishna																	
Max	6.5	6.4	5.8	5.9	6.1	5.5	5.4	5.3	6.4	5.8	5.5	6.2	4.7	6.2	5.7	6.0	5.5	6.3
75 Percentile	5.8	5.8	5.5	5.8	5.7	5.3	5.3	5.2	5.7	5.4	5.4	5.8	4.3	5.6	5.3	5.7	5.4	5.5
Average	5.6	5.7	5.2	5.5	5.5	5.2	5.0	5.0	5.4	5.1	5.1	5.4	3.6	5.2	5.0	5.3	5.1	5.2
25 Percentile	5.3	5.5	5.0	5.5	5.3	5.1	4.7	4.8	5.2	4.9	4.8	5.2	3.1	4.8	4.7	5.0	4.7	5.0
Min	5.2	4.9	4.7	4.7	4.9	4.7	4.3	4.2	4.6	4.1	4.5	4.7	2.2	4.7	4.5	4.6	4.3	4.2

Figure No. 28: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (2 of 2)



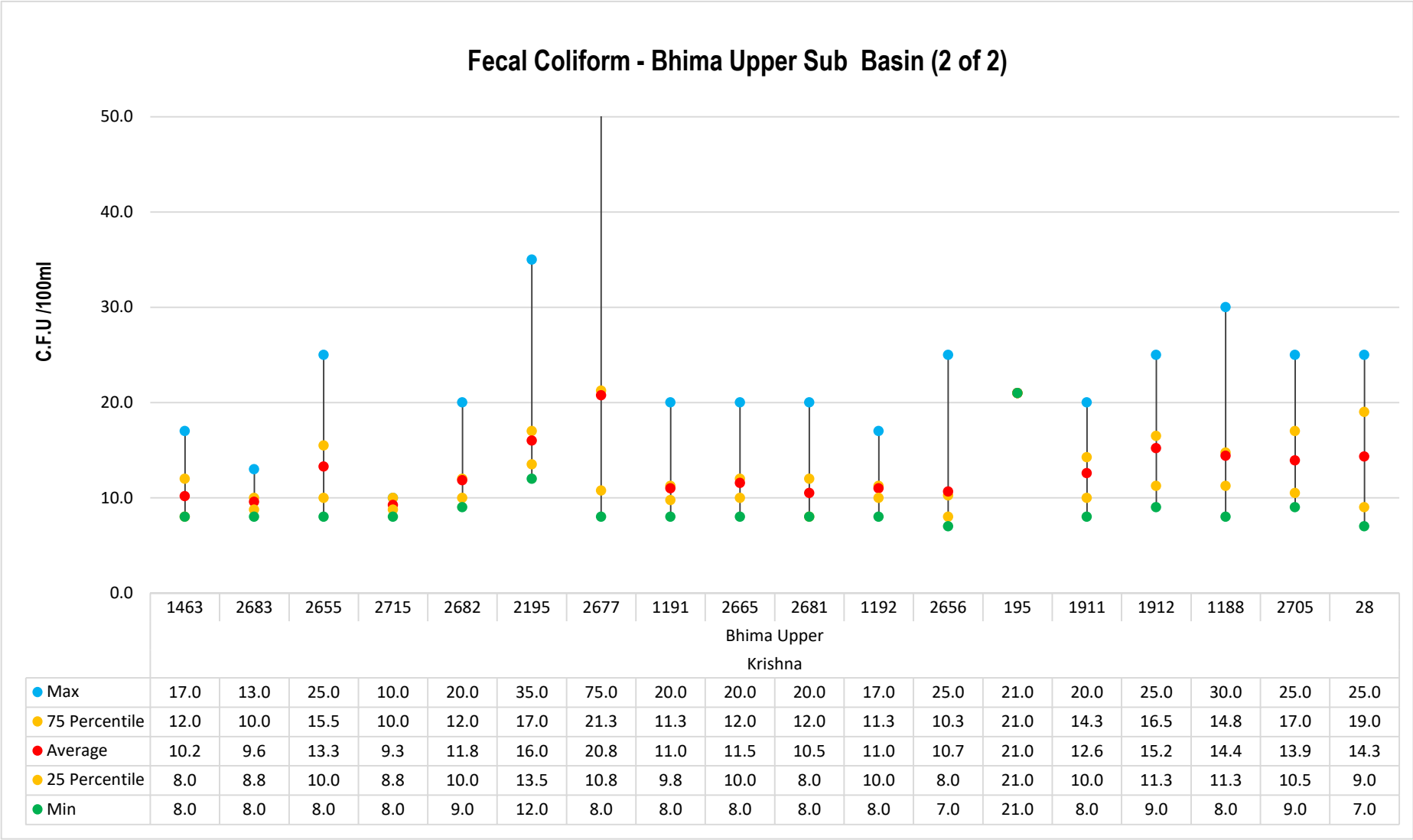
	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
Max	7.0	6.0	7.1	5.6	8.5	11.0	13.4	11.5	9.7	15.5	9.5	10.0	9.5	10.5	12.5	13.0	10.9	10.4
75 Percentile	5.0	5.1	6.5	5.5	6.7	7.6	9.1	8.3	7.1	11.9	7.5	6.3	8.8	7.9	8.6	6.8	8.2	7.4
Average	4.6	4.4	5.8	4.8	5.6	7.2	8.4	8.1	5.9	8.9	7.0	5.2	8.2	6.5	7.7	6.5	7.5	6.5
25 Percentile	3.9	3.9	5.3	4.3	4.3	6.2	6.9	7.4	4.6	6.6	6.1	3.6	7.6	5.1	6.4	5.3	6.1	5.4
Min	3.4	2.6	4.8	3.8	3.2	4.6	5.2	5.8	2.6	4.4	5.2	2.8	7.2	3.8	5.4	4.2	4.8	2.6

Figure No. 29: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (2 of 2)



	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
	Bhima Upper																	
	Krishna																	
Max	8.7	8.6	8.3	8.3	8.6	8.6	7.9	8.4	8.6	8.7	8.4	8.5	8.2	8.6	8.5	8.6	8.6	8.5
75 Percentile	8.4	8.4	8.2	8.2	8.5	8.4	7.7	8.1	8.3	8.5	8.0	8.3	8.2	8.5	8.5	8.5	8.4	8.4
Average	8.2	8.2	8.0	8.2	8.4	8.2	7.6	7.8	8.0	8.3	7.8	8.2	7.8	8.3	8.3	8.4	8.1	8.3
25 Percentile	8.1	8.1	7.7	8.1	8.3	8.1	7.4	7.5	8.0	8.0	7.6	8.1	7.7	8.2	8.3	8.2	7.9	8.1
Min	7.4	7.5	7.5	8.0	8.1	7.8	7.2	7.4	7.4	7.8	7.5	7.6	7.2	7.2	8.0	8.1	7.7	7.9

Figure No. 30: Trend of pH levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (2 of 2)



	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
Max	17.0	13.0	25.0	10.0	20.0	35.0	75.0	20.0	20.0	20.0	17.0	25.0	21.0	20.0	25.0	30.0	25.0	25.0
75 Percentile	12.0	10.0	15.5	10.0	12.0	17.0	21.3	11.3	12.0	12.0	11.3	10.3	21.0	14.3	16.5	14.8	17.0	19.0
Average	10.2	9.6	13.3	9.3	11.8	16.0	20.8	11.0	11.5	10.5	11.0	10.7	21.0	12.6	15.2	14.4	13.9	14.3
25 Percentile	8.0	8.8	10.0	8.8	10.0	13.5	10.8	9.8	10.0	8.0	10.0	8.0	21.0	10.0	11.3	11.3	10.5	9.0
Min	8.0	8.0	8.0	8.0	9.0	12.0	8.0	8.0	8.0	8.0	8.0	7.0	21.0	8.0	9.0	8.0	9.0	7.0

Figure No. 31: Trend of Fecal Coliform levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (2 of 2)

Water Quality Index for WQMS in Krishna Basin (1 of 2): Sub-Basin-Bhima Upper (2 of 2)

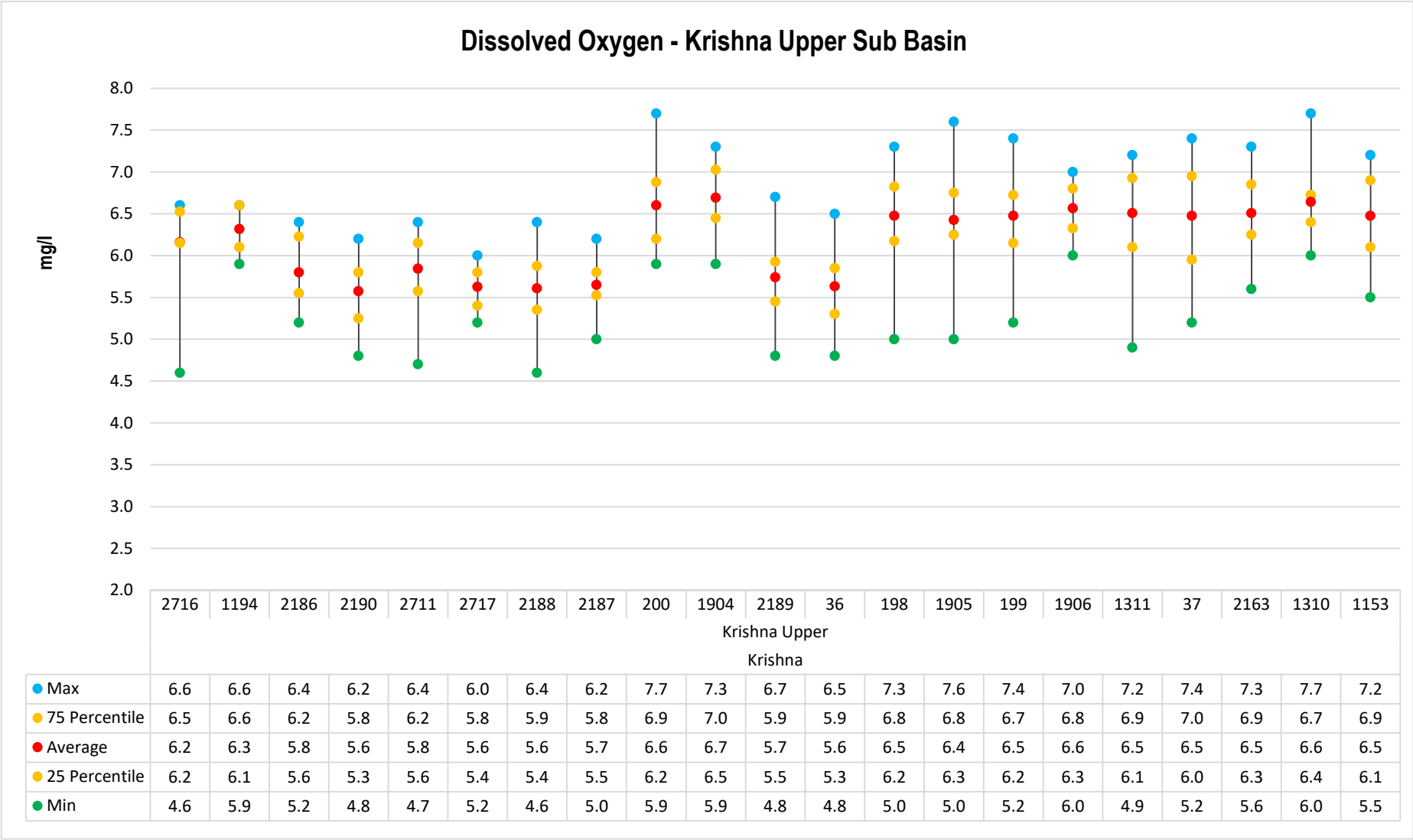
Apr	84	77	Dry	Dry	68	63	77	72	71	76	69	72	70	61	Dry	63	69	70
May	68	72	74	Dry	69	60	79	74	80	59	74	69	59	75	64	Dry	68	64
Jun	77	81	68	Dry	70	67	71	64	Dry	66	69	67	46	66	63	Dry	58	58
Jul	72	74	73	Dry	62	67	71	64	73	71	70	59	NC	59	57	56	Dry	65
Aug	73	74	67	79	74	68	73	69	79	56	62	81	NC	64	60	65	60	77
Sep	72	72	71	70	70	68	65	69	66	66	71	78	NC	76	72	75	70	73
Oct	78	76	74	75	77	74	72	76	73	73	75	76	NC	79	71	71	77	73
Nov	77	76	76	75	78	75	75	69	80	76	77	80	NC	77	72	77	73	75
Dec	71	71	71	NC	71	67	68	71	75	69	76	71	NC	71	NC	68	68	69
Jan	80	80	77	NC	75	70	63	70	69	72	70	72	NC	70	70	72	70	70
Feb	73	78	72	NC	72	67	62	62	63	63	65	74	NC	64	62	70	62	62
Mar	79	81	69	Dry	71	68	59	72	70	62	76	80	NC	73	71	76	67	75
Station Code	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
Sub Basin	Bhima Upper (2 of2)																	
Basin	Krishna																	

Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

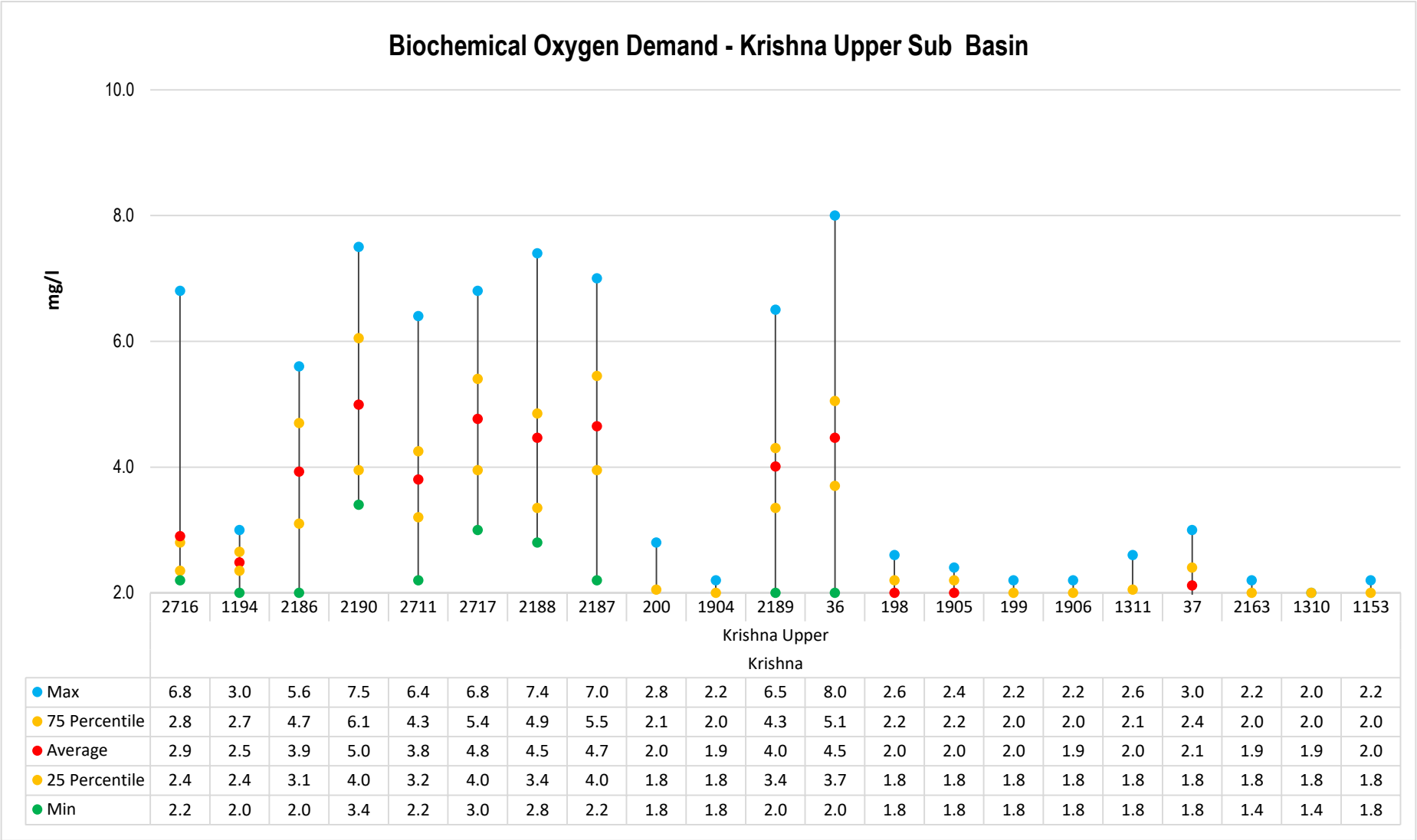
Table No. 21 : Surface water monitoring stations at Krishna Basin (1 of 2) Sub Basin Bhima Upper (2 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	1463	Nira	Nira at Sarola bridge	Sarola	Bhor	Pune
NWMP	2683	Nira	Nira at Shindewadi	Shindewadi, Shirwal	Khandala	Satara
NWMP	2655	Bhima	Bhima at Koregaon near Koregaon Bridge, Pune	Koregaon	Shirur	Pune
NWMP	2715	Vel	Vel at Shikrapur, Pune	Shikrapur	Shirur	Pune
NWMP	2682	Nira	Nira at U/s of Jubilant Organosis Pune	Nira(Datta ghat)	Baramati	Pune
NWMP	2195	Nira	Nira at D/s of Jubilant Organosis Pune	Nimbut	Baramati	Pune
NWMP	2677	Mula-Mutha	Mula-Mutha at D/s of Theur, Pune	Theur	Haweli	Pune
NWMP	1191	Bhima	Bhima after confluence with Mula-Mutha at Pargaon near Vasant Bandara	Pargaon	Daund	Pune
NWMP	2665	Ghod	Ghod at Shirur, Pune	Shirur	Shirur	Pune
NWMP	2681	Nira	Nira at Sangavi	Sangavi	Phaltan	Satara
NWMP	1192	Bhima	Bhima at Daund near Mahadev temple	Daund	Daund	Pune
NWMP	2656	Bhima	Bhima Backwater of Ujani Dam near raw water pump house	Kumbargaon	Indapur	Pune
SWMP	195	Sina	Sina Bridge At Burudgaon Road, A/P Ahmednagar, Taluka & District Ahmednagar	Burudgaon	Ahmednagar	Ahmednagar
NWMP	1911	Chandrabhaga	Chandrabhaga at U/s of Pandharpur town	Gursale	Pandarpur	Solapur
NWMP	1912	Chandrabhaga	Chandrabhaga at D/s of Pandharpur town near Vishnupant Mandir	Gopalpur	Pandarpur	Solapur
NWMP	1188	Bhima	Bhima at Narshingpur near Sangam Bridge after confluence with Nira	Narsingpur	Malshiros	Solapur
NWMP	2705	Sina	Sina near Laboti till naka Solapur	Laboti	Mohal	Solapur
NWMP	28	Bhima	Bhima at Takli	Takali	South Solapur	Solapur



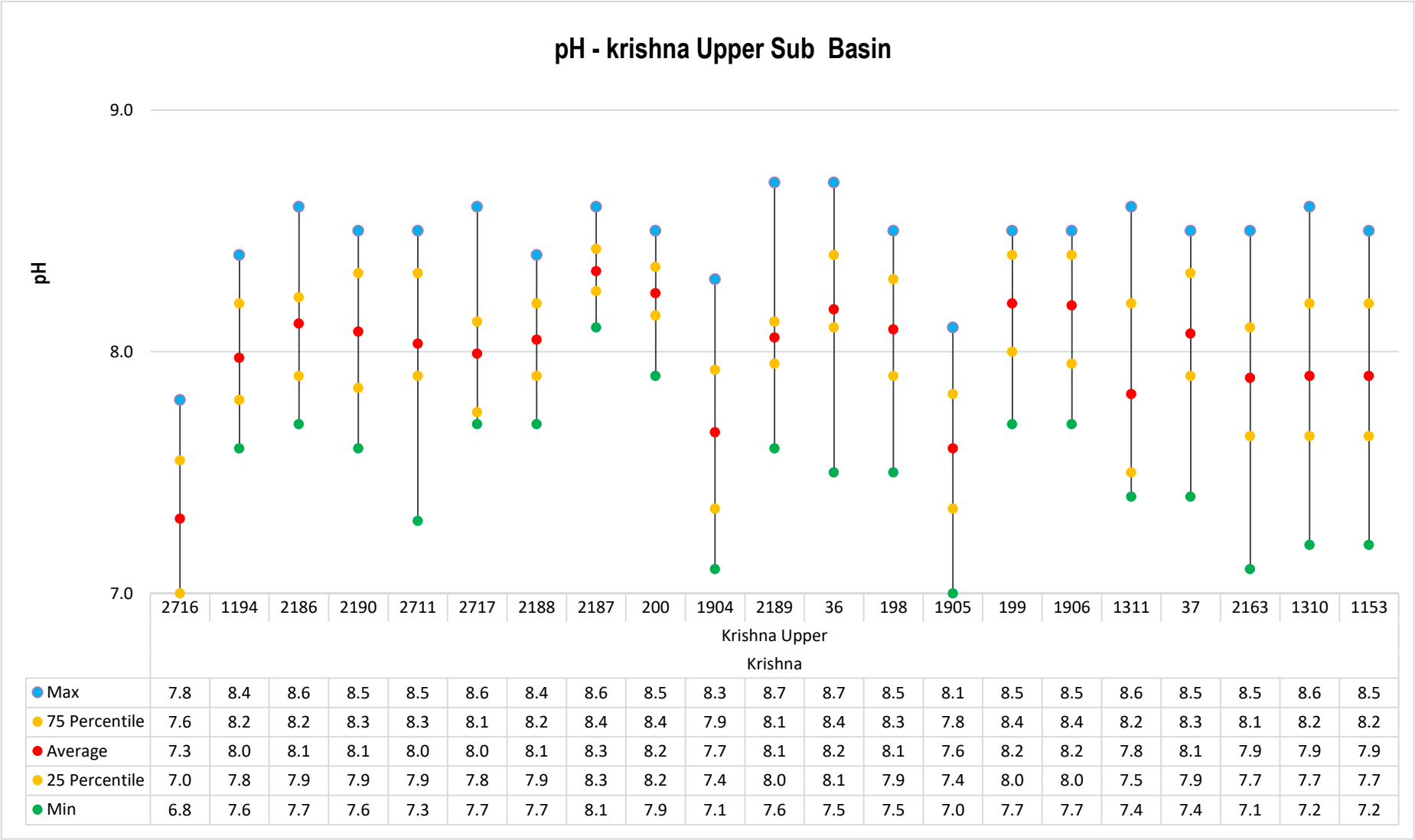
	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
Max	6.6	6.6	6.4	6.2	6.4	6.0	6.4	6.2	7.7	7.3	6.7	6.5	7.3	7.6	7.4	7.0	7.2	7.4	7.3	7.7	7.2
75 Percentile	6.5	6.6	6.2	5.8	6.2	5.8	5.9	5.8	6.9	7.0	5.9	5.9	6.8	6.8	6.7	6.8	6.9	7.0	6.9	6.7	6.9
Average	6.2	6.3	5.8	5.6	5.8	5.6	5.6	5.7	6.6	6.7	5.7	5.6	6.5	6.4	6.5	6.6	6.5	6.5	6.5	6.6	6.5
25 Percentile	6.2	6.1	5.6	5.3	5.6	5.4	5.4	5.5	6.2	6.5	5.5	5.3	6.2	6.3	6.2	6.3	6.1	6.0	6.3	6.4	6.1
Min	4.6	5.9	5.2	4.8	4.7	5.2	4.6	5.0	5.9	5.9	4.8	4.8	5.0	5.0	5.2	6.0	4.9	5.2	5.6	6.0	5.5

Figure No. 32: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Krishna upper sub basin -Krishna Basin



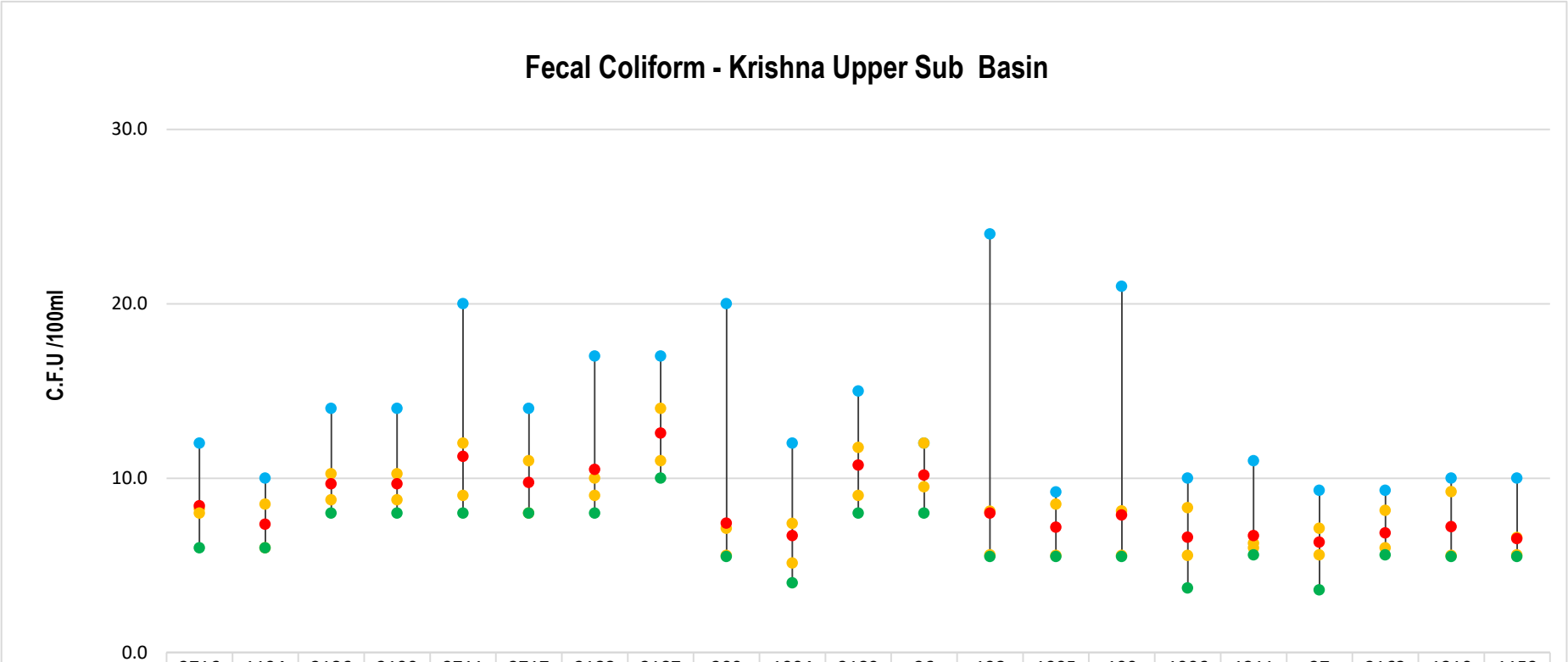
	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
Max	6.8	3.0	5.6	7.5	6.4	6.8	7.4	7.0	2.8	2.2	6.5	8.0	2.6	2.4	2.2	2.2	2.6	3.0	2.2	2.0	2.2
75 Percentile	2.8	2.7	4.7	6.1	4.3	5.4	4.9	5.5	2.1	2.0	4.3	5.1	2.2	2.2	2.0	2.0	2.1	2.4	2.0	2.0	2.0
Average	2.9	2.5	3.9	5.0	3.8	4.8	4.5	4.7	2.0	1.9	4.0	4.5	2.0	2.0	2.0	1.9	2.0	2.1	1.9	1.9	2.0
25 Percentile	2.4	2.4	3.1	4.0	3.2	4.0	3.4	4.0	1.8	1.8	3.4	3.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Min	2.2	2.0	2.0	3.4	2.2	3.0	2.8	2.2	1.8	1.8	2.0	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.4	1.8

Figure No. 33: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Krishna upper sub basin - Krishna Basin



	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
Max	7.8	8.4	8.6	8.5	8.5	8.6	8.4	8.6	8.5	8.3	8.7	8.7	8.5	8.1	8.5	8.5	8.6	8.5	8.5	8.6	8.5
75 Percentile	7.6	8.2	8.2	8.3	8.3	8.1	8.2	8.4	8.4	7.9	8.1	8.4	8.3	7.8	8.4	8.4	8.2	8.3	8.1	8.2	8.2
Average	7.3	8.0	8.1	8.1	8.0	8.0	8.1	8.3	8.2	7.7	8.1	8.2	8.1	7.6	8.2	8.2	7.8	8.1	7.9	7.9	7.9
25 Percentile	7.0	7.8	7.9	7.9	7.9	7.8	7.9	8.3	8.2	7.4	8.0	8.1	7.9	7.4	8.0	8.0	7.5	7.9	7.7	7.7	7.7
Min	6.8	7.6	7.7	7.6	7.3	7.7	7.7	8.1	7.9	7.1	7.6	7.5	7.5	7.0	7.7	7.7	7.4	7.4	7.1	7.2	7.2

Figure No. 34: Trend of pH levels recorded at WQMS at Krishna upper sub basin -Krishna Basin



	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
Max	12.0	10.0	14.0	14.0	20.0	14.0	17.0	17.0	20.0	12.0	15.0	12.0	24.0	9.2	21.0	10.0	11.0	9.3	9.3	10.0	10.0
75 Percentile	8.3	8.5	10.3	10.3	12.0	11.0	10.0	14.0	7.1	7.4	11.8	12.0	8.1	8.5	8.1	8.3	6.3	7.1	8.2	9.2	6.6
Average	8.4	7.4	9.7	9.7	11.3	9.8	10.5	12.6	7.4	6.7	10.8	10.2	8.0	7.2	7.9	6.6	6.7	6.3	6.9	7.2	6.5
25 Percentile	8.0	6.0	8.8	8.8	9.0	8.0	9.0	11.0	5.6	5.1	9.0	9.5	5.6	5.6	5.6	5.6	6.0	5.6	6.0	5.6	5.6
Min	6.0	6.0	8.0	8.0	8.0	8.0	8.0	10.0	5.5	4.0	8.0	8.0	5.5	5.5	5.5	3.7	5.6	3.6	5.6	5.5	5.5

Figure No. 35: Trend of Fecal Coliform recorded at WQMS at Krishna upper sub basin -Krishna Basin

Water Quality Index for WQMS in Krishna Basin (2 of 2): Sub-Basin-Krishna Upper

Apr	89	85	84	72	86	72	71	68	82	89	75	75	77	78	82	86	80	85	86	86	83
May	83	82	70	68	71	82	83	67	84	90	71	65	83	90	85	84	86	83	87	89	86
Jun	70	80	71	72	75	70	75	70	81	88	73	73	79	88	80	85	89	85	88	88	89
Jul	82	78	74	74	72	74	74	79	86	92	75	76	87	89	86	86	89	86	88	90	89
Aug	89	82	81	75	79	75	81	75	81	86	77	74	81	84	81	82	84	81	83	85	84
Sep	88	84	83	75	79	81	75	77	82	88	80	81	83	90	83	83	85	83	87	89	88
Oct	87	84	75	84	81	80	74	77	83	84	78	79	82	86	82	82	82	81	83	82	83
Nov	86	88	78	76	76	78	77	76	83	84	76	75	83	88	84	84	87	85	88	89	82
Dec	88	86	75	75	67	75	64	70	83	85	78	73	85	86	79	82	83	83	80	83	81
Jan	86	88	81	74	88	76	83	76	80	84	86	79	81	79	82	84	80	79	79	78	82
Feb	87	85	83	81	80	77	77	73	82	81	78	76	87	86	83	81	86	82	80	84	82
Mar	84	88	78	77	84	76	78	76	81	85	79	79	83	83	81	82	84	81	84	81	87
Station Code	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
Sub Basin	Krishna Upper																				
Basin	Krishna																				

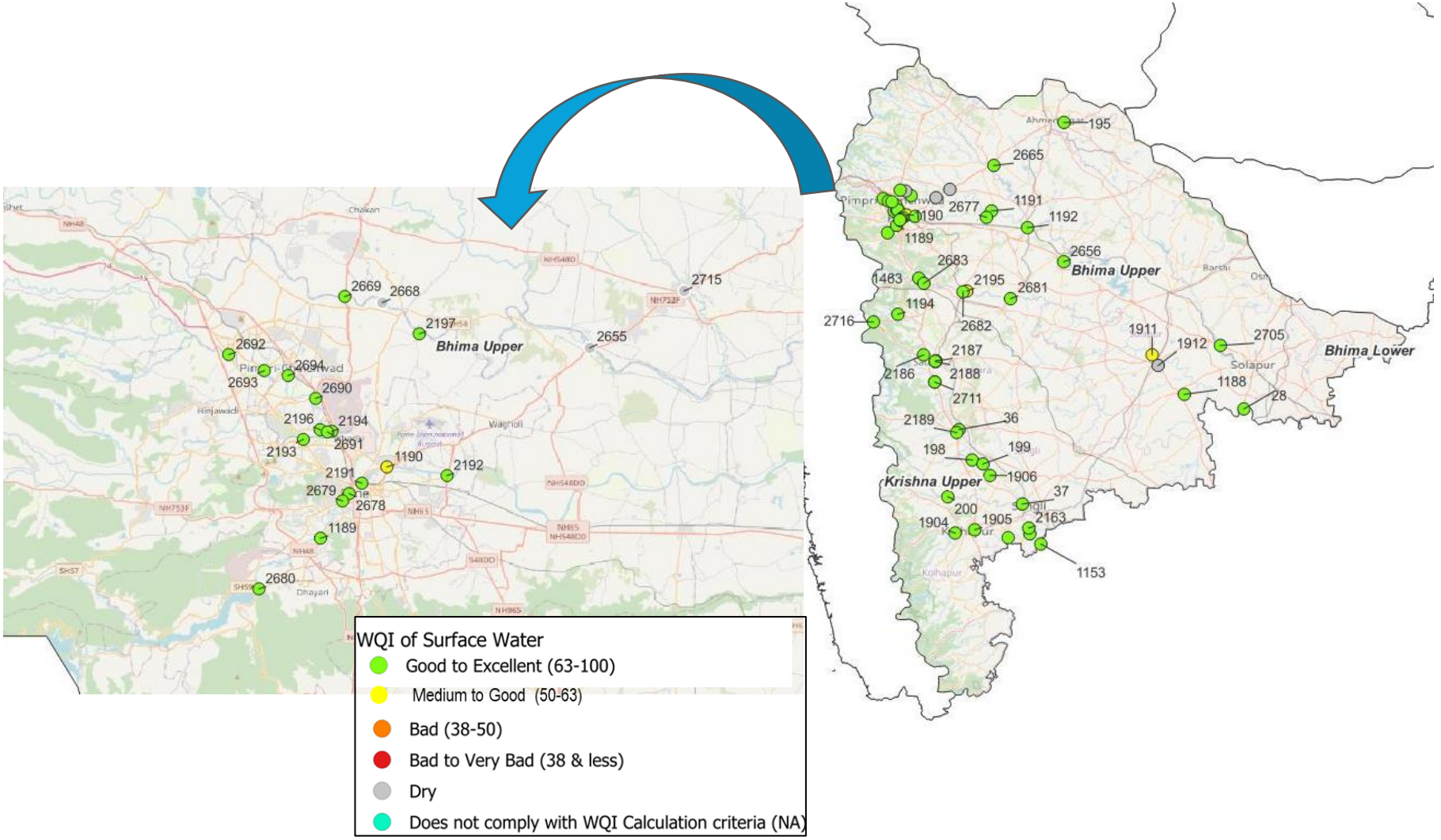
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

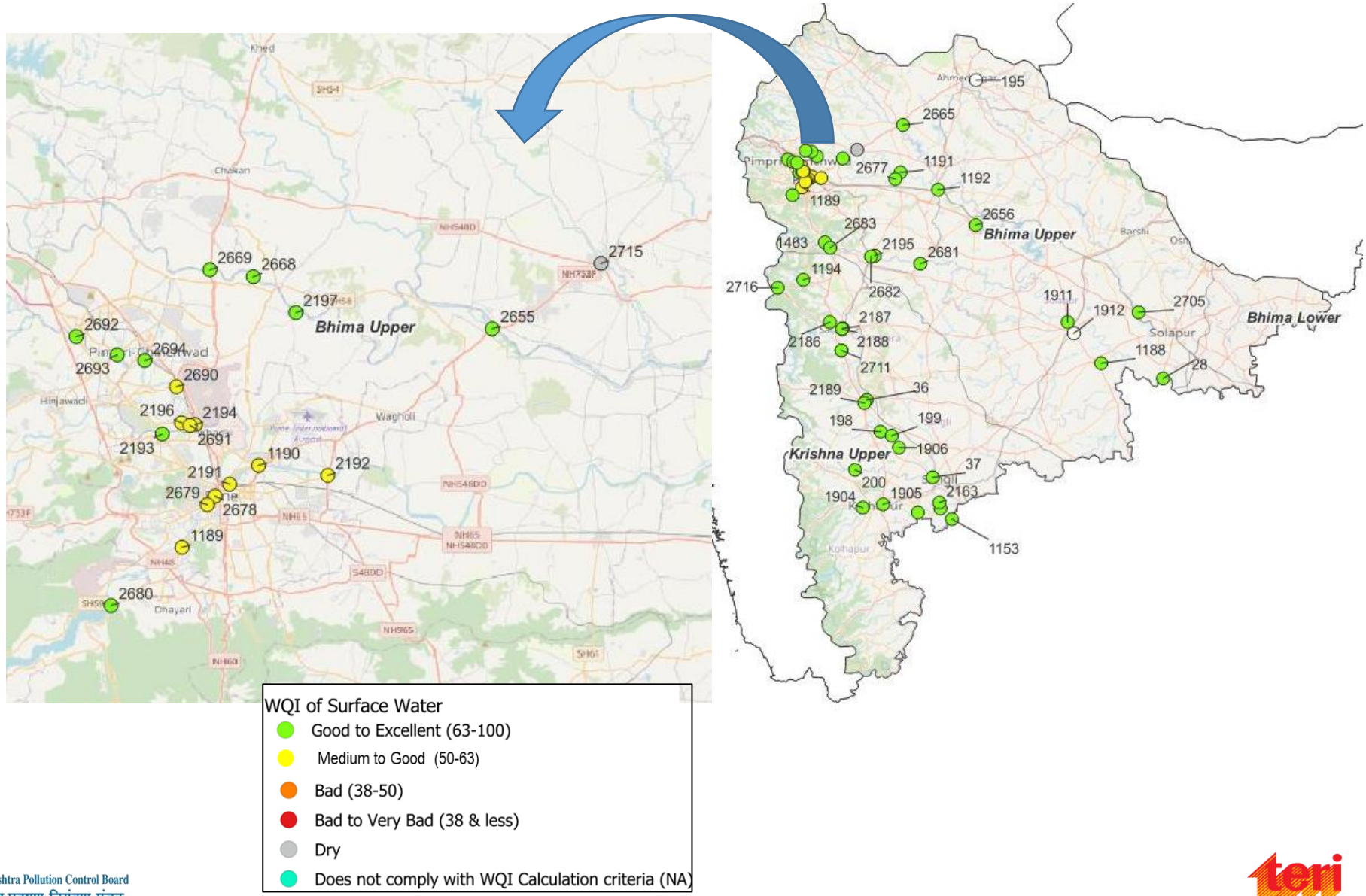
Table No. 22 : Surface water quality monitoring stations in Krishna Basin (2 of 2): Sub basin Krishna Upper

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2716	Venna	Venna at Mahabaleshwar	Mahabaleshwar	Mahabaleshwar	Satara
NWMP	1194	Krishna	Krishna at Dhom Dam	Wai	Mahabaleshwar	Satara
NWMP	2186	Venna	Venna at Varya, Satara	Varye	Satara	Satara
NWMP	2190	Krishna	Krishna at Wai	Wai	Wai	Satara
NWMP	2711	Urmodi	Urmodi at Nagthane Satara	Nagthane	Satara	Satara
NWMP	2717	Venna	Venna at Mahuli	Mahuli	Satara	Satara
NWMP	2188	Krishna	Krishna at Krishna-Venna Sangam, Mahuli	Mahuli	Mahuli	Satara
NWMP	2187	Krishna	Krishna at Kshetra Mahuli Satara	Kshetra Mahuli	Mahuli	Satara
SWMP	200	Warna	Mangle Bridge, (After Confluence of Morna)	Mangle	Shirala	Sangli
NWMP	1904	Panchganga	U/s of Kolhapur town near Balinga Pumping Station	Balinga	Karvir	Kolhapur
NWMP	2189	Koyna	Koyna at Karad	Karad	Karad	Satara
NWMP	36	Krishna	Krishna at Krishna Bridge, Karad	Karad	Karad	Satara
SWMP	198	Krishna	Bahe KT Weir, Bahe, Taluka - Walwa, District - Sangli	Bahe	Walwa	Sangli
NWMP	1905	Panchaganga	Panchaganga at D/s of Kolhapur town at Gandhi nagar near NH-4 bridge and MIDC intake well	Uchegaon	Kolhapur	Kolhapur
SWMP	199	Krishna	Borgaon KT Weir, Borgaon, Taluka - Walwa, District - Sangli	Borgaon	Walwa	Sangli
NWMP	1906	Krishna	Krishna at Walwa, D/s of Islampur near Vithal Temple	Walwa	Walwa	Sangli
NWMP	1311	Panchganga	Panchganga at Ichalkaranji near MIDC intake well	Shiradhwad (Ichalkaranji ghat)	Hatkanangale	Kolhapur
NWMP	37	Krishna	Krishna at Maighat, Sangli	Gawali gally	Miraj	Sangli
NWMP	2163	Panchganga	Panchganga at Shirol near Shirol intake well	Shirol	Shirol	Kolhapur
NWMP	1310	Krishna	Krishna at Kurundwad	Narshingwadi, Kurundwad	Shirol	Kolhapur
NWMP	1153	Krishna	Krishna at Rajapur Weir	Rajapur	Shirol	Kolhapur

Spatial map of Surface WQI at Krishna Basin (April 2022)



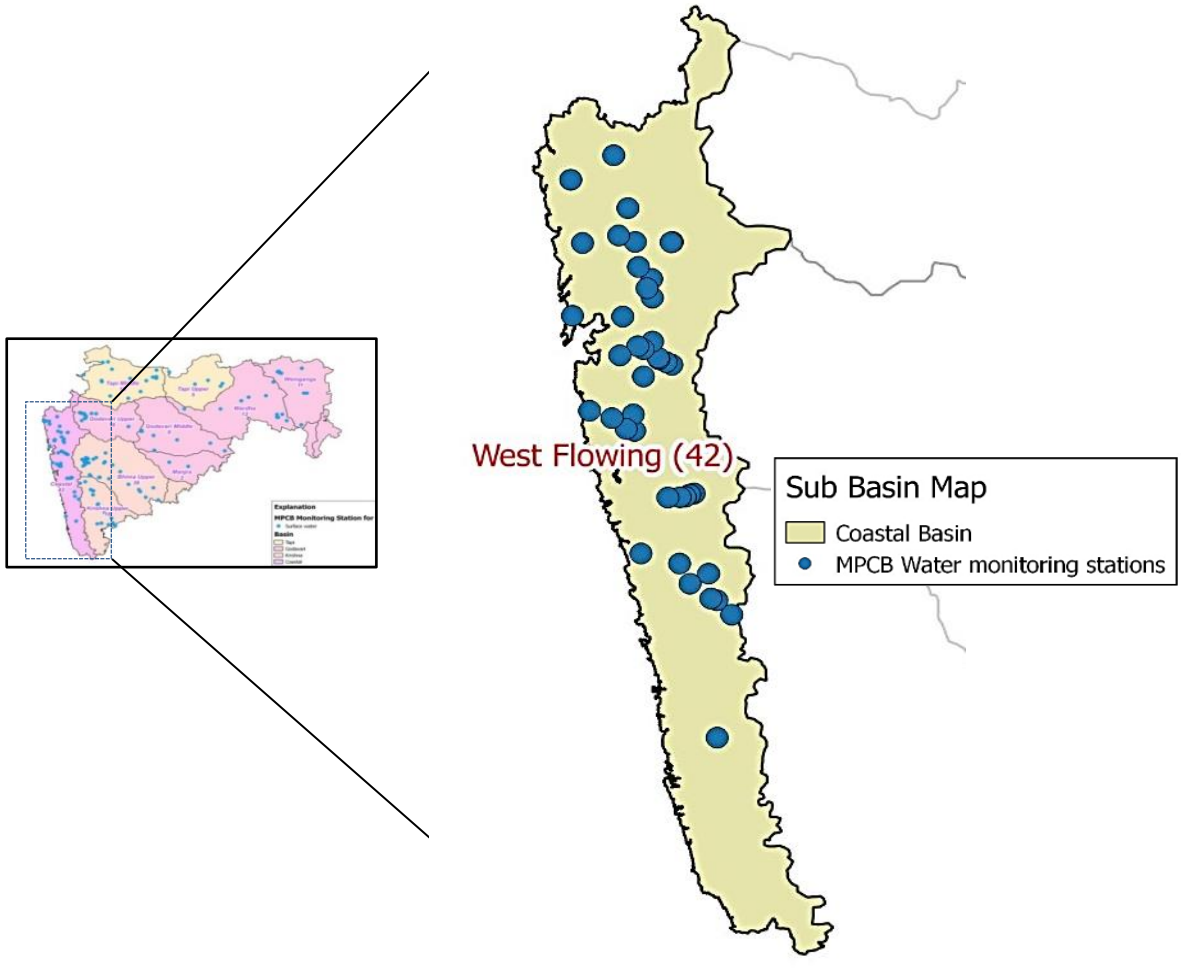
Spatial map of Surface WQI at Krishna Basin (December 2022)



West Flowing Rivers

As compared to eastward flowing rivers, westward flowing rivers of the peninsular India are smaller and fewer. Some of such important rivers include the Surya, the Vaitrana, the Ulhas, the Savitri, the Kundalika, the Patalganga, and the Vashishti. Most of these rivers are mainly monsoon specific emanating from the Western Ghats and draining into the Arabian Sea. About 45% of the state's water resources come from these rivers[26].

Some of the oldest and largest industrial complexes are established very close to some of the west-flowing rivers namely the Ulhas, the Patalganga, the Amba to name a few. These river waters are particularly prone to a high level of water pollution due to the release of effluents from the established industrial complexes apart from domestic sewage from nearby settlements. To monitor the status of water quality, MPCB has installed a total of about 42 WQMS at the designated sites along the west-flowing rivers.



[26] https://sandrp.files.wordpress.com/2018/03/rivers_of_maharashtra_dec_2011.pdf

West Flowing Rivers Basin (Intra Basin analysis)

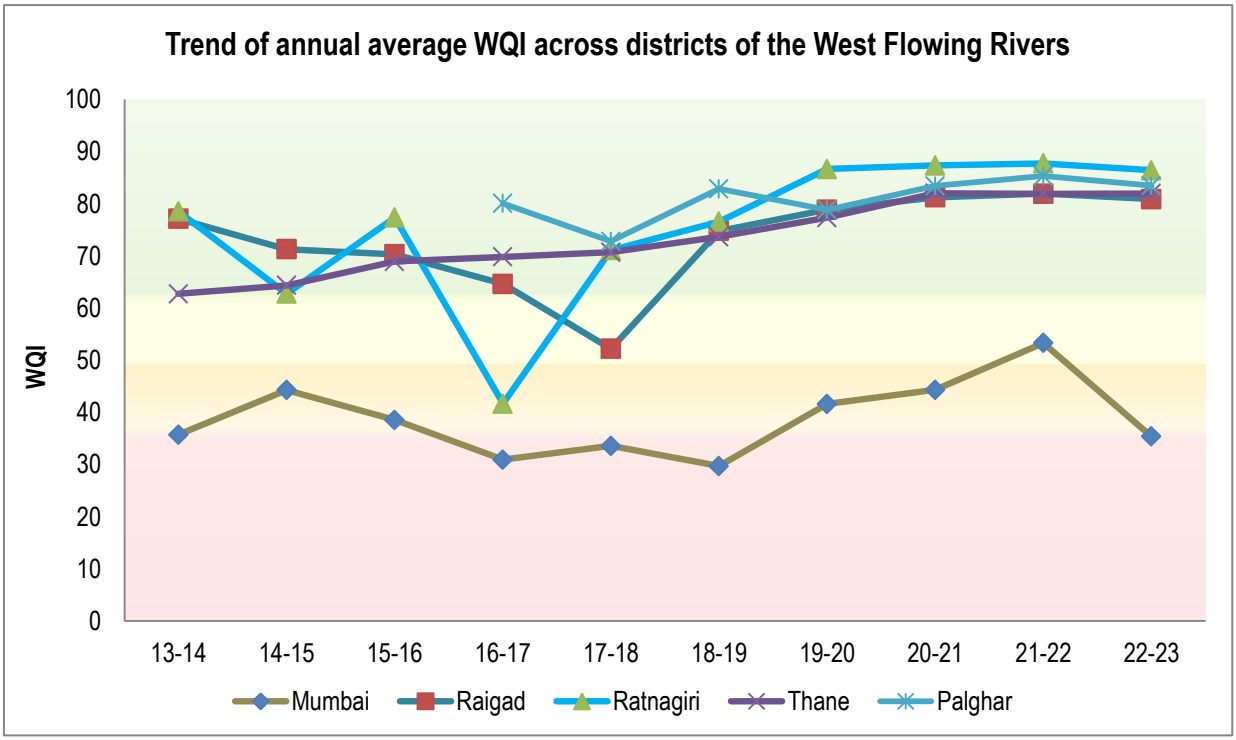


Figure No. 36: Trend of annual average WQI across districts of the West Flowing Rivers

WQI	WQI Category	Class by CPCB	Represented in the above graph
63-100	Good to Excellent	A	Non-polluted
50-63	Medium to Good	B	Non-polluted
38-50	Bad	C	Polluted
38 & less	Bad to Very Bad	D, E	Heavily polluted

Note: This graph considers the average WQI for all the monitoring stations in that particular district and hence may include some bias. This graph is only for an overview and monitoring station-wise data may be analyzed to pinpoint the most affected and polluted patches of rivers in that district.

As evident from Figure No. 36, it is important to note that the annual average WQI recorded by WQMS in the Mumbai district showed a sizable decrease as compared to last year. The WQI value decreased by around 33.64% (from 53.31 in 2021-22 to 35.38) in 2022-23. This brought the water quality from 'Medium to Good' (2021-22) to 'Bad to Very Bad' category (from non-polluted to polluted category) in the year 2022-23. Apart from Mumbai, WQMS installed in districts namely Raigad, Ratnagiri and Palghar witnessed a slight decrease in annual average WQI by about 1.26%, 1.49% and 2.19% respectively. Only 1 district (Thane) recorded a slight increase in WQI value by just 0.07% (from 81.92 to 81.98).

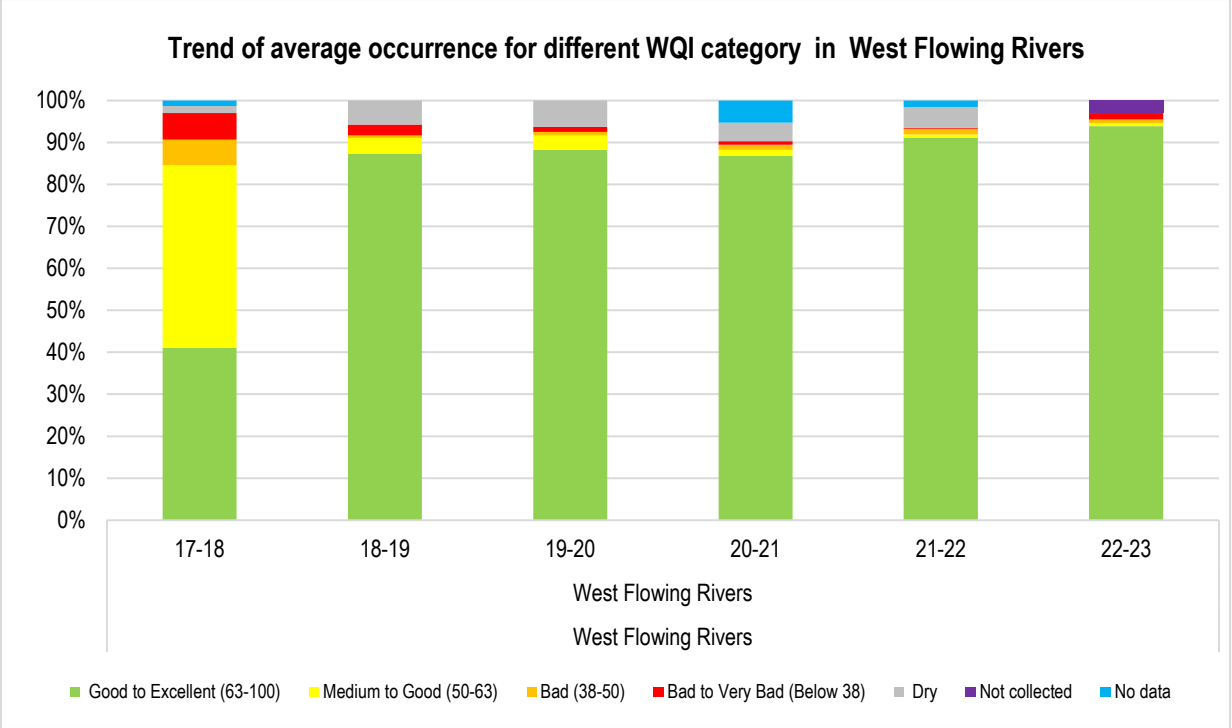
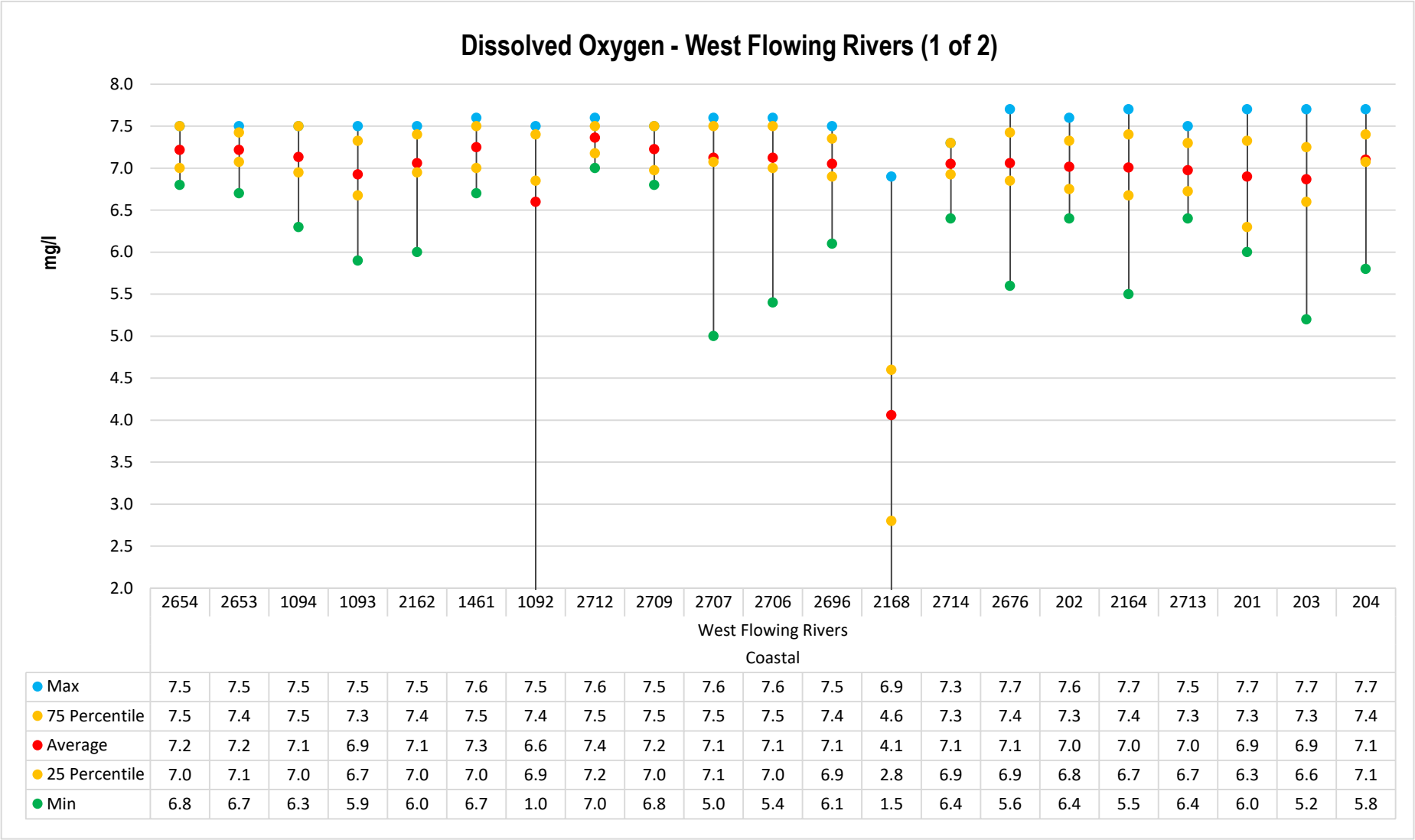


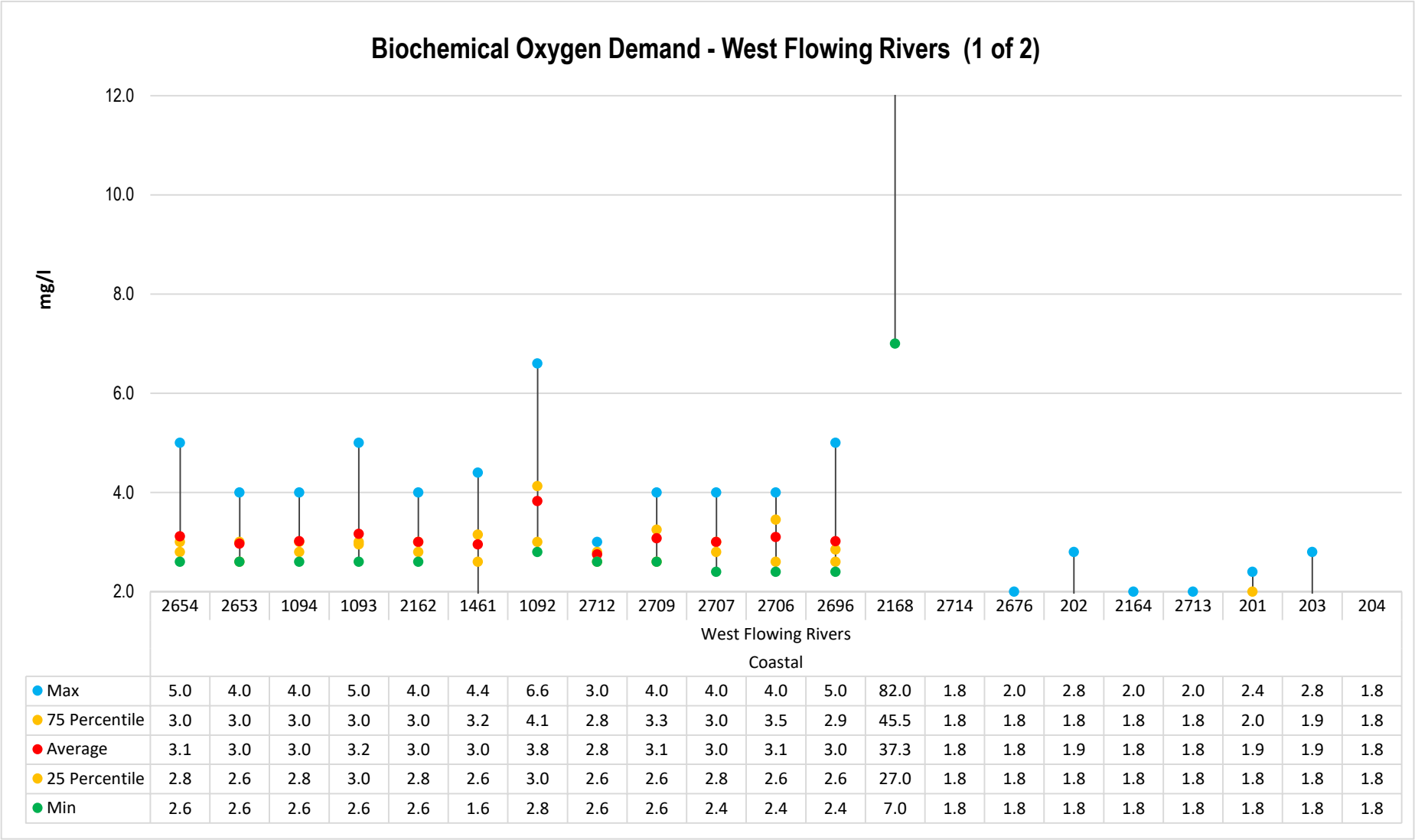
Figure No. 37: Trend of average occurrence for different WQI categories in the West Flowing Rivers

Figure No. 37 represents the interbasin performance of the West Flowing Rivers. As compared to 2021-22, there was an increase in the percentage share of the observations under the 'Good to Excellent' category (from 91.07% to 93.85%). The share of 'Medium to Good' WQI category observations was recorded to be around 0.79%. About 0.79% of observations were noted under 'Bad' whereas 1.59% of observations were observed as 'Bad to Very Bad'category. No single observations was recorded as 'Dry' and 'No Data' whereas about 2.98% of the total observations were recorded as 'Not Collected'.



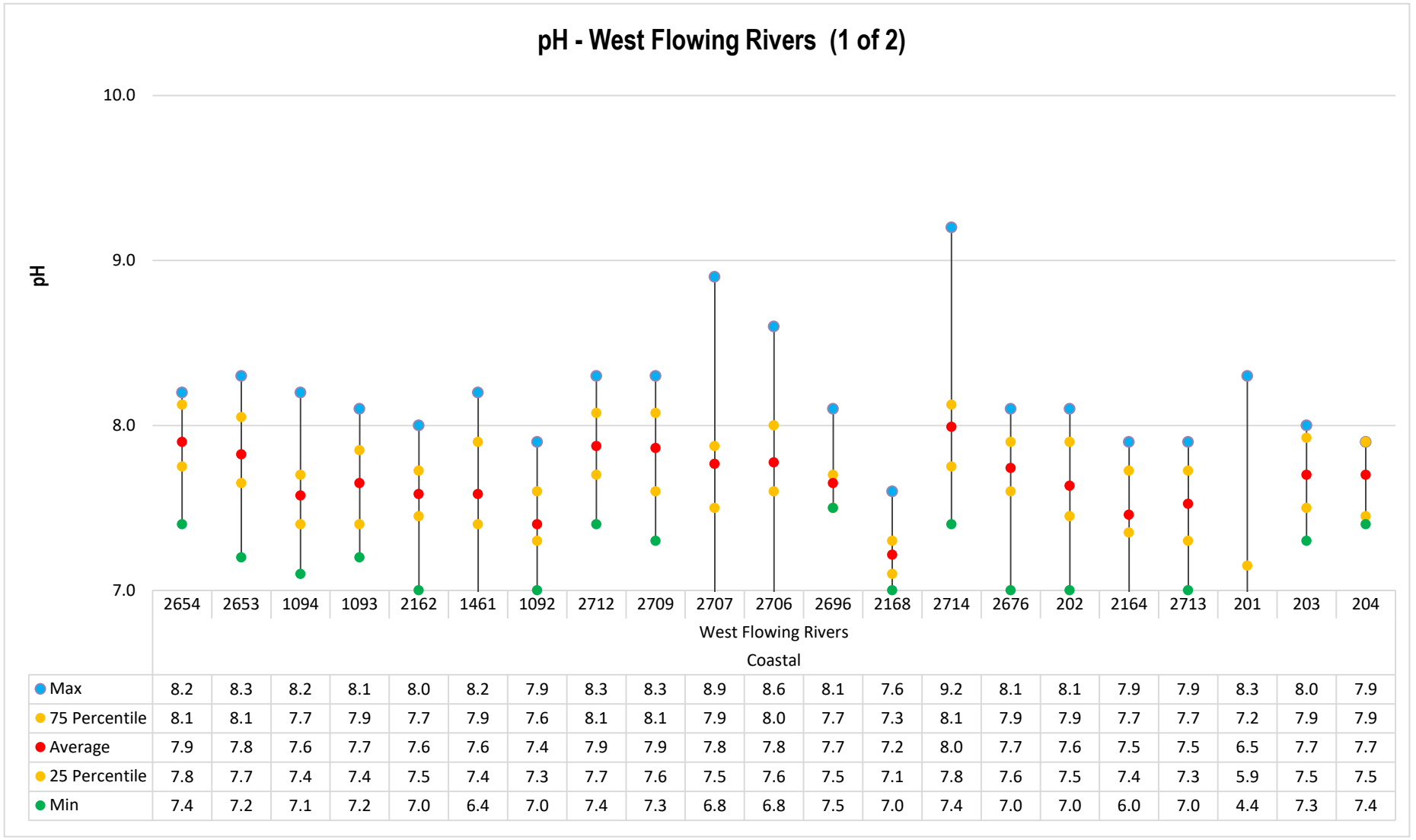
	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Max	7.5	7.5	7.5	7.5	7.5	7.6	7.5	7.6	7.5	7.6	7.6	7.5	6.9	7.3	7.7	7.6	7.7	7.5	7.7	7.7	7.7
75 Percentile	7.5	7.4	7.5	7.3	7.4	7.5	7.4	7.5	7.5	7.5	7.5	7.4	4.6	7.3	7.4	7.3	7.4	7.3	7.3	7.3	7.4
Average	7.2	7.2	7.1	6.9	7.1	7.3	6.6	7.4	7.2	7.1	7.1	7.1	4.1	7.1	7.1	7.0	7.0	7.0	6.9	6.9	7.1
25 Percentile	7.0	7.1	7.0	6.7	7.0	7.0	6.9	7.2	7.0	7.1	7.0	6.9	2.8	6.9	6.9	6.8	6.7	6.7	6.3	6.6	7.1
Min	6.8	6.7	6.3	5.9	6.0	6.7	1.0	7.0	6.8	5.0	5.4	6.1	1.5	6.4	5.6	6.4	5.5	6.4	6.0	5.2	5.8

Figure No. 38: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at West flowing rivers (Coastal basin) (1 of 2)



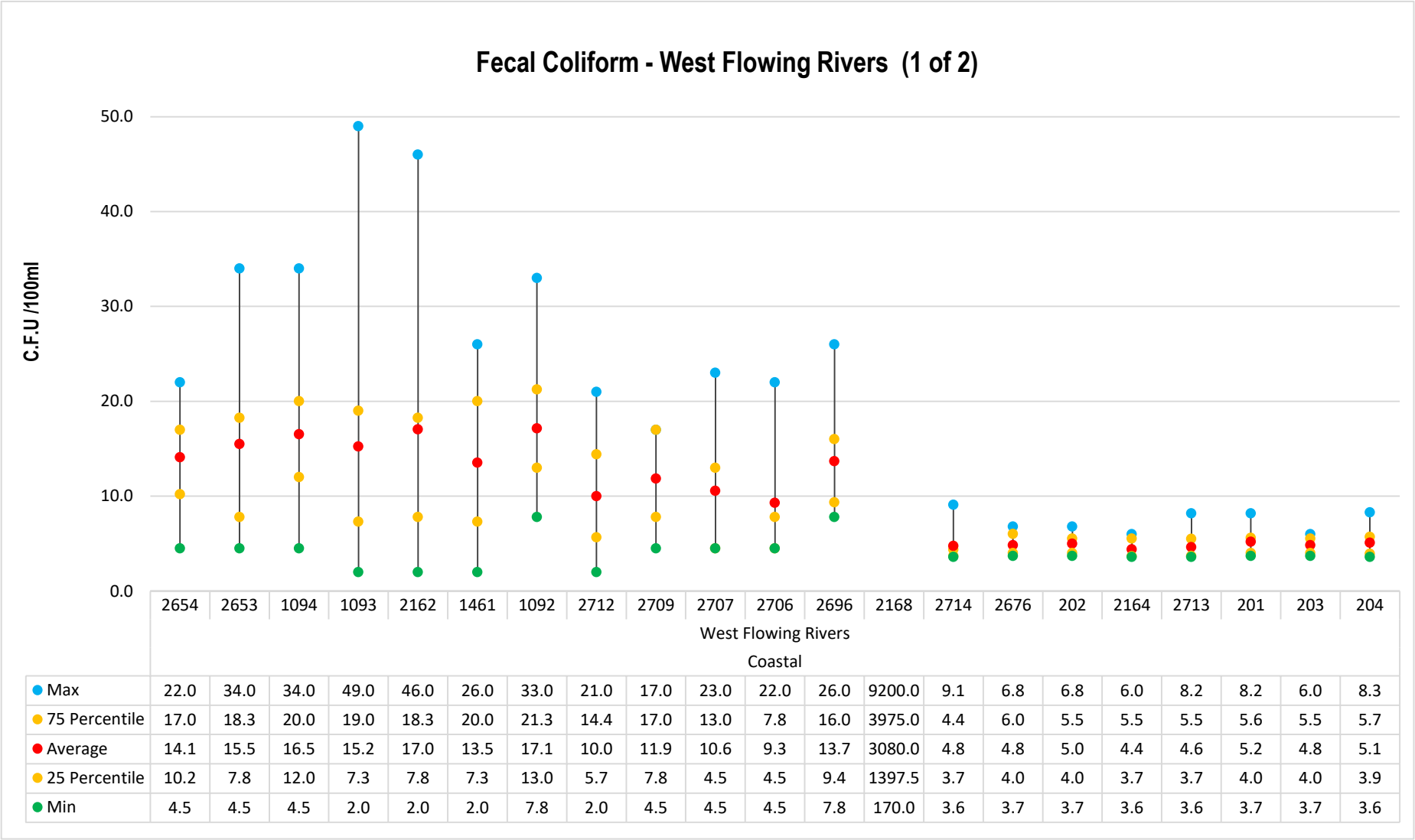
	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Max	5.0	4.0	4.0	5.0	4.0	4.4	6.6	3.0	4.0	4.0	4.0	5.0	82.0	1.8	2.0	2.8	2.0	2.0	2.4	2.8	1.8
75 Percentile	3.0	3.0	3.0	3.0	3.0	3.2	4.1	2.8	3.3	3.0	3.5	2.9	45.5	1.8	1.8	1.8	1.8	1.8	2.0	1.9	1.8
Average	3.1	3.0	3.0	3.2	3.0	3.0	3.8	2.8	3.1	3.0	3.1	3.0	37.3	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.8
25 Percentile	2.8	2.6	2.8	3.0	2.8	2.6	3.0	2.6	2.6	2.8	2.6	2.6	27.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Min	2.6	2.6	2.6	2.6	2.6	1.6	2.8	2.6	2.6	2.4	2.4	2.4	7.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8

Figure No. 39: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at West flowing rivers (Coastal basin) (1 of 2)



	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Max	8.2	8.3	8.2	8.1	8.0	8.2	7.9	8.3	8.3	8.9	8.6	8.1	7.6	9.2	8.1	8.1	7.9	7.9	8.3	8.0	7.9
75 Percentile	8.1	8.1	7.7	7.9	7.7	7.9	7.6	8.1	8.1	7.9	8.0	7.7	7.3	8.1	7.9	7.9	7.7	7.7	7.2	7.9	7.9
Average	7.9	7.8	7.6	7.7	7.6	7.6	7.4	7.9	7.9	7.8	7.8	7.7	7.2	8.0	7.7	7.6	7.5	7.5	6.5	7.7	7.7
25 Percentile	7.8	7.7	7.4	7.4	7.5	7.4	7.3	7.7	7.6	7.5	7.6	7.5	7.1	7.8	7.6	7.5	7.4	7.3	5.9	7.5	7.5
Min	7.4	7.2	7.1	7.2	7.0	6.4	7.0	7.4	7.3	6.8	6.8	7.5	7.0	7.4	7.0	7.0	6.0	7.0	4.4	7.3	7.4

Figure No. 40: Trend of pH levels recorded at WQMS at West flowing rivers (Coastal basin) (1 of 2)



	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Max	22.0	34.0	34.0	49.0	46.0	26.0	33.0	21.0	17.0	23.0	22.0	26.0	9200.0	9.1	6.8	6.8	6.0	8.2	8.2	6.0	8.3
75 Percentile	17.0	18.3	20.0	19.0	18.3	20.0	21.3	14.4	17.0	13.0	7.8	16.0	3975.0	4.4	6.0	5.5	5.5	5.5	5.6	5.5	5.7
Average	14.1	15.5	16.5	15.2	17.0	13.5	17.1	10.0	11.9	10.6	9.3	13.7	3080.0	4.8	4.8	5.0	4.4	4.6	5.2	4.8	5.1
25 Percentile	10.2	7.8	12.0	7.3	7.8	7.3	13.0	5.7	7.8	4.5	4.5	9.4	1397.5	3.7	4.0	4.0	3.7	3.7	4.0	4.0	3.9
Min	4.5	4.5	4.5	2.0	2.0	2.0	7.8	2.0	4.5	4.5	4.5	7.8	170.0	3.6	3.7	3.7	3.6	3.6	3.7	3.7	3.6

Figure No. 41: Trend of Fecal Coliform recorded at WQMS at West flowing rivers (Coastal basin) (1 of 2)

Water Quality Index for WQMS in West Flowing Rivers (1 of 2)

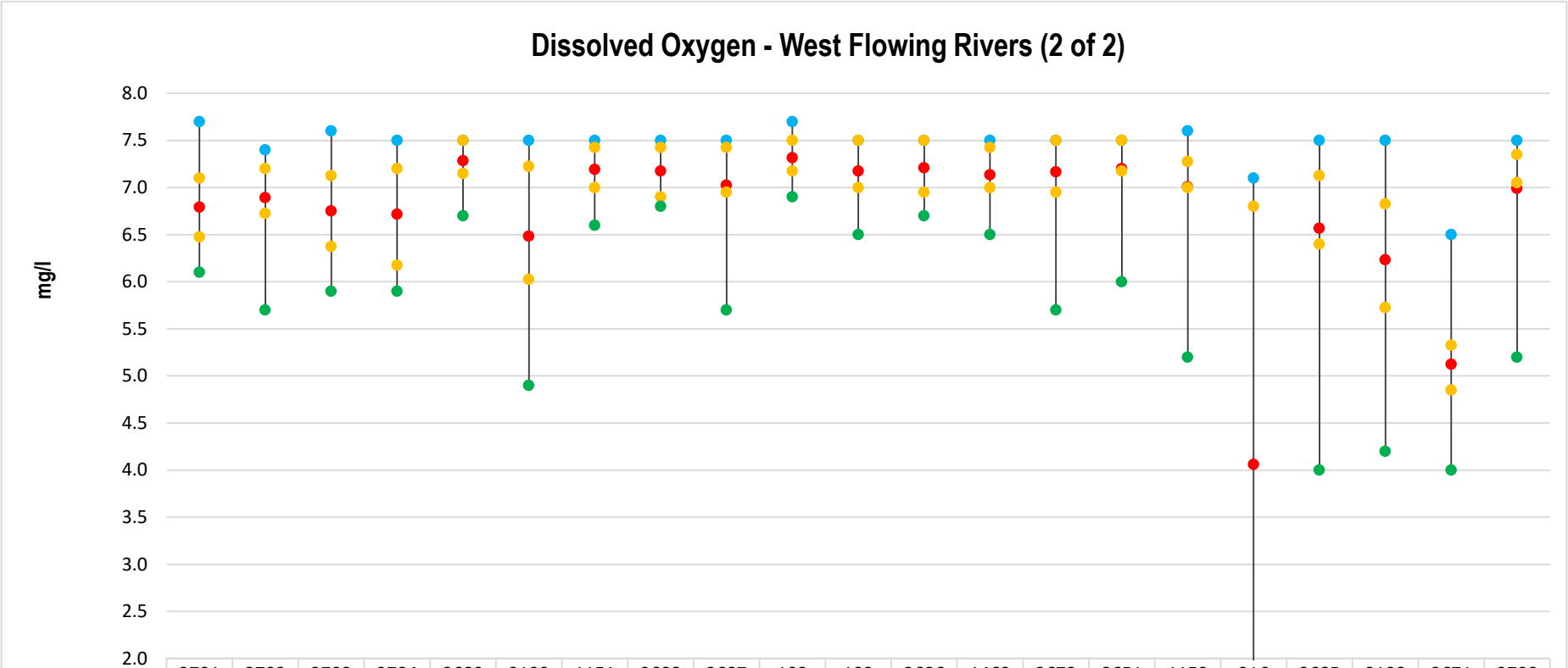
Apr	79	79	76	82	80	78	82	NC	NC	82	80	81	25	89	86	86	90	88	87	79	85
May	80	79	81	82	80	79	82	NC	NC	81	80	82	27	87	90	89	91	93	88	91	92
Jun	82	88	84	82	82	91	80	NC	NC	81	83	80	25	90	86	89	90	91	90	88	87
Jul	81	79	82	82	82	82	82	79	79	80	88	90	72	89	88	91	92	91	75	90	88
Aug	79	81	79	81	79	85	83	80	78	87	85	85	29	87	85	86	87	87	78	87	86
Sep	84	83	83	81	82	83	80	88	84	86	85	85	32	86	86	85	88	88	90	85	86
Oct	81	78	81	83	82	82	81	88	85	81	83	83	40	85	88	90	85	87	90	86	90
Nov	76	78	89	88	84	81	81	79	76	84	79	84	29	87	86	86	88	88	78	88	86
Dec	78	84	83	78	83	78	80	87	91	87	87	83	46	77	83	86	78	88	83	86	86
Jan	79	78	81	82	81	84	82	80	81	82	86	77	25	86	83	84	86	86	86	87	84
Feb	83	82	83	88	84	88	82	83	87	89	84	90	51	81	84	86	85	87	83	83	82
Mar	83	83	90	89	90	82	56	NC	NC	72	76	83	25	80	85	86	84	89	85	90	85
Station Code	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Sub Basin	West Flowing Rives (1 of2)																				
Basin	Coastal																				

Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

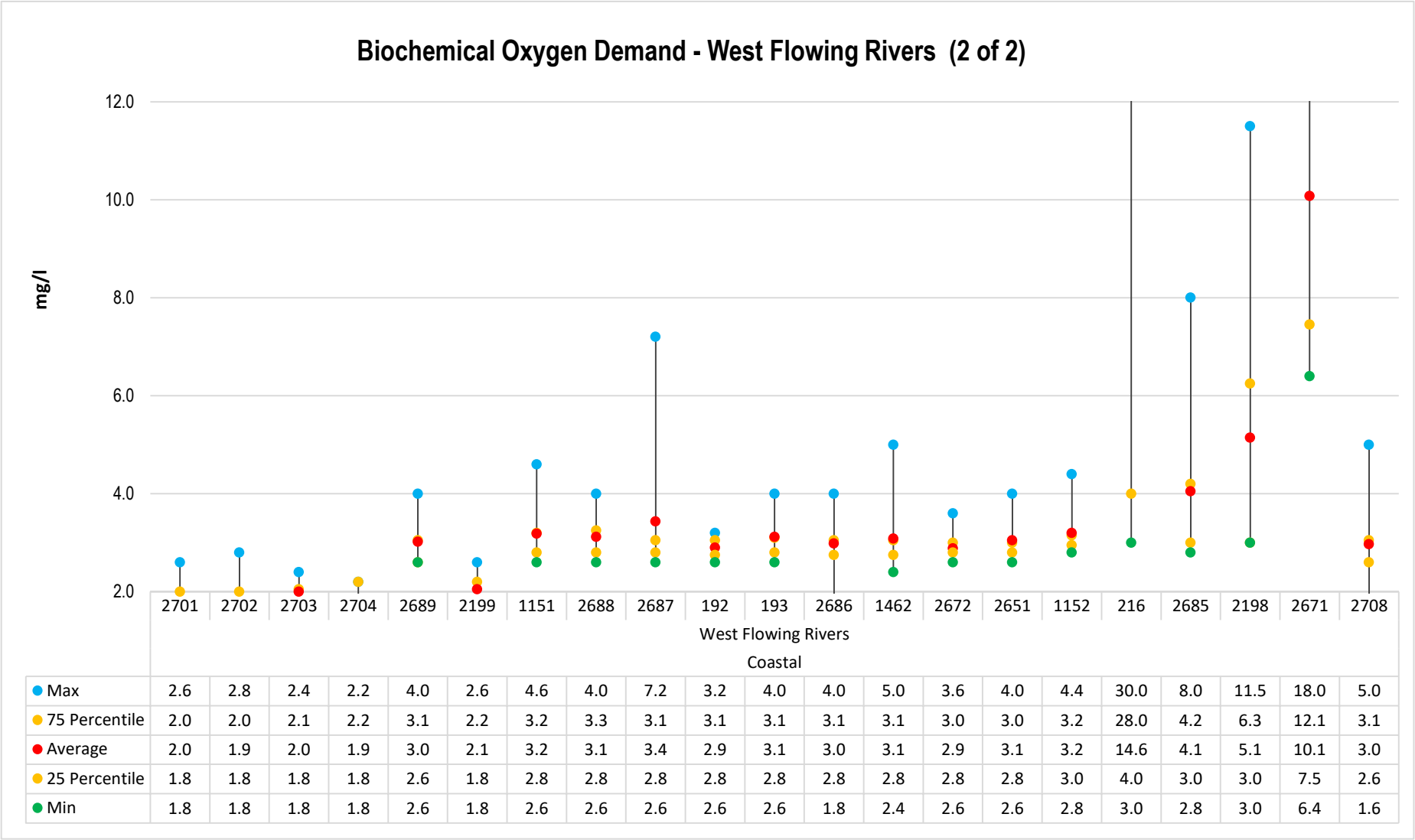
Table No. 23 : Surface water monitoring stations at West Flowing Rivers (1 of 2)

Program	Station ID	River	Station Name	Village	Taluka	District
NWMP	2654	Bhatsa	Bhatsa at D/s of Liberty Oil Mills	Satne	Shahapur	Thane
NWMP	2653	Bhatsa	Bhatsa at D/s of Liberty Oil Mills	Satne	Shahapur	Thane
NWMP	1094	Ulhas	Ulhas at U/s of Badlapur water works	Kulgaon	Ambernath	Thane
NWMP	1093	Ulhas	Ulhas at U/s of NRC Bund	Mohane	Kalyan	Thane
NWMP	2162	Ulhas	Ulhas at Jambhul water works	Jambhul	Ambernath	Thane
NWMP	1461	Bhatsa	Bhatsa at D/s of Pise Dam	Pise	Bhiwandi	Thane
NWMP	1092	Kalu	Kalu at Atale village	Atale	Kalyan	Thane
NWMP	2712	Vaitarna	Vaitarna near Road Bridge	Gandhare	Wada	Thane
NWMP	2709	Tansa	Tansa near road bridge	Dakewali	Wada	Thane
NWMP	2707	Surya	Surya at MIDC pumping station	Garvashet	Palghar	Thane
NWMP	2706	Surya	Surya U/s of Surya Dam	Dhamni	Vikramgad	Thane
NWMP	2696	Pelhar	Pelhar dam	Pelhar	Vasai	Palghar
NWMP	2168	Mithi	Mithi at near bridge	Mahim	Bandra	Mumbai
NWMP	2714	Vashishti	Vashishti at U/s of Pophali near Konphansawane Bridge	Pophali	Chiplun	Ratnagiri
NWMP	2676	Muchkundi	Muchkundi at Waked Ratnagiri near M/s Asahi India Glass	Waked	Lanja	Ratnagiri
SWMP	202	Vashisti	Vashisti at Khadpoli, Taluka Chiplun, District - Ratnagiri	Khadpoli	Chiplun	Ratnagiri
NWMP	2164	Vashishti	Vashishti at U/s of Three M Paper Mills near M/s Multifilms Plastic Pvt Ltd	Kherdi	Chiplun	Ratnagiri
NWMP	2713	Vashishti	Vashishti at D/s of Three M Paper Mills near Chiplun water intake Jackwell	Kherdi	Chiplun	Ratnagiri
SWMP	201	Sonpatra	Sonpatra at Kotwali Village, Taluka - Khed, District - Ratnagiri	Kotwali	Khed	Ratnagiri
SWMP	203	Jagbudi	Jagbudi, D/S of Khed City, Taluka - Khed, District Ratnagiri	Khed City	Khed	Ratnagiri
SWMP	204	Jog	Jog at Dapoli, Taluka Dapoli, District - Rantnagiri	Dapoli	Dapoli	Ratnagiri



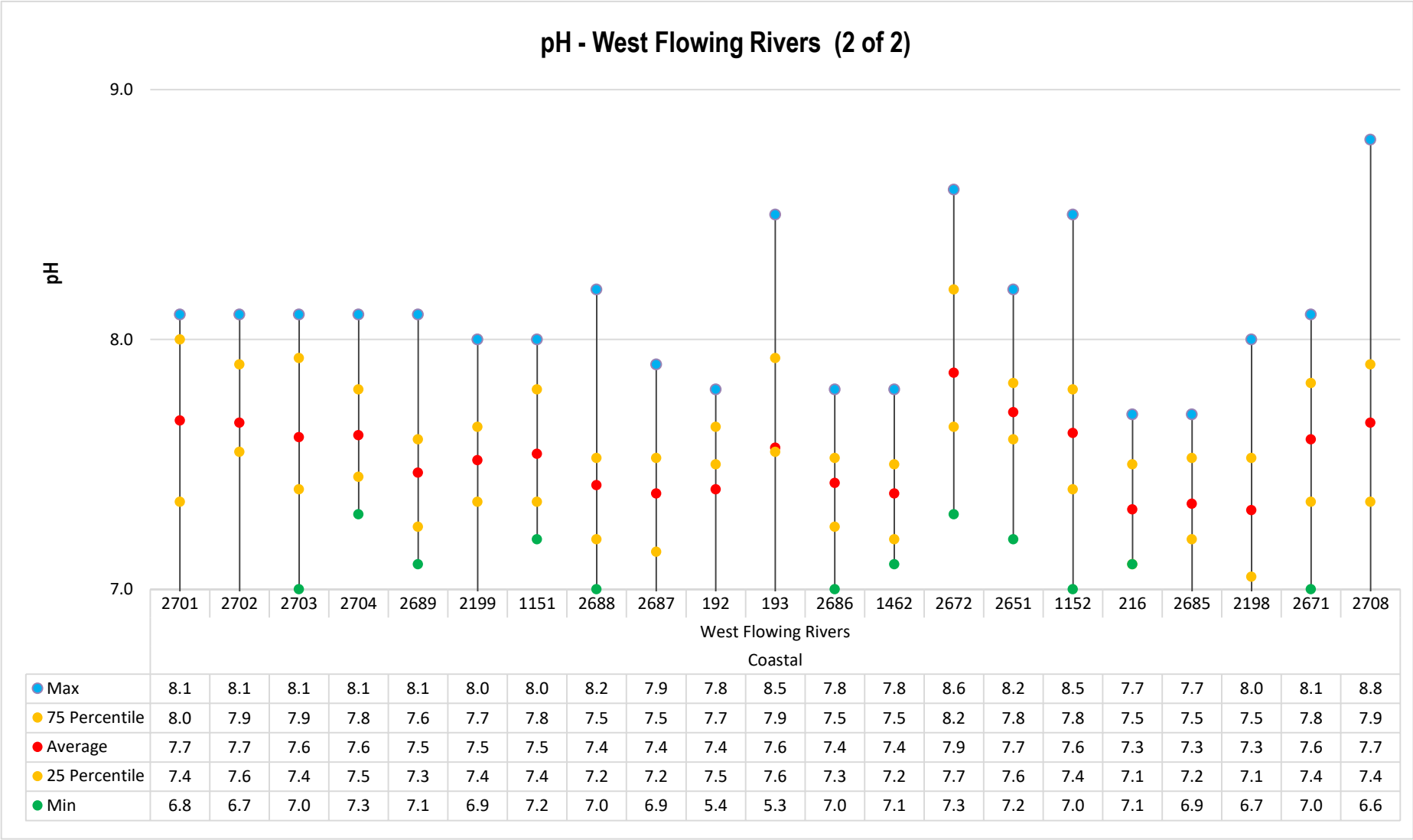
	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Max	7.7	7.4	7.6	7.5	7.5	7.5	7.5	7.5	7.5	7.7	7.5	7.5	7.5	7.5	7.5	7.6	7.1	7.5	7.5	6.5	7.5
75 Percentile	7.1	7.2	7.1	7.2	7.5	7.2	7.4	7.4	7.4	7.5	7.5	7.5	7.4	7.5	7.5	7.3	6.8	7.1	6.8	5.3	7.4
Average	6.8	6.9	6.8	6.7	7.3	6.5	7.2	7.2	7.0	7.3	7.2	7.2	7.1	7.2	7.2	7.0	4.1	6.6	6.2	5.1	7.0
25 Percentile	6.5	6.7	6.4	6.2	7.2	6.0	7.0	6.9	7.0	7.2	7.0	7.0	7.0	7.0	7.2	7.0	1.5	6.4	5.7	4.9	7.1
Min	6.1	5.7	5.9	5.9	6.7	4.9	6.6	6.8	5.7	6.9	6.5	6.7	6.5	5.7	6.0	5.2	1.1	4.0	4.2	4.0	5.2

Figure No. 42: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at West flowing rivers (Coastal basin) (2 of 2)



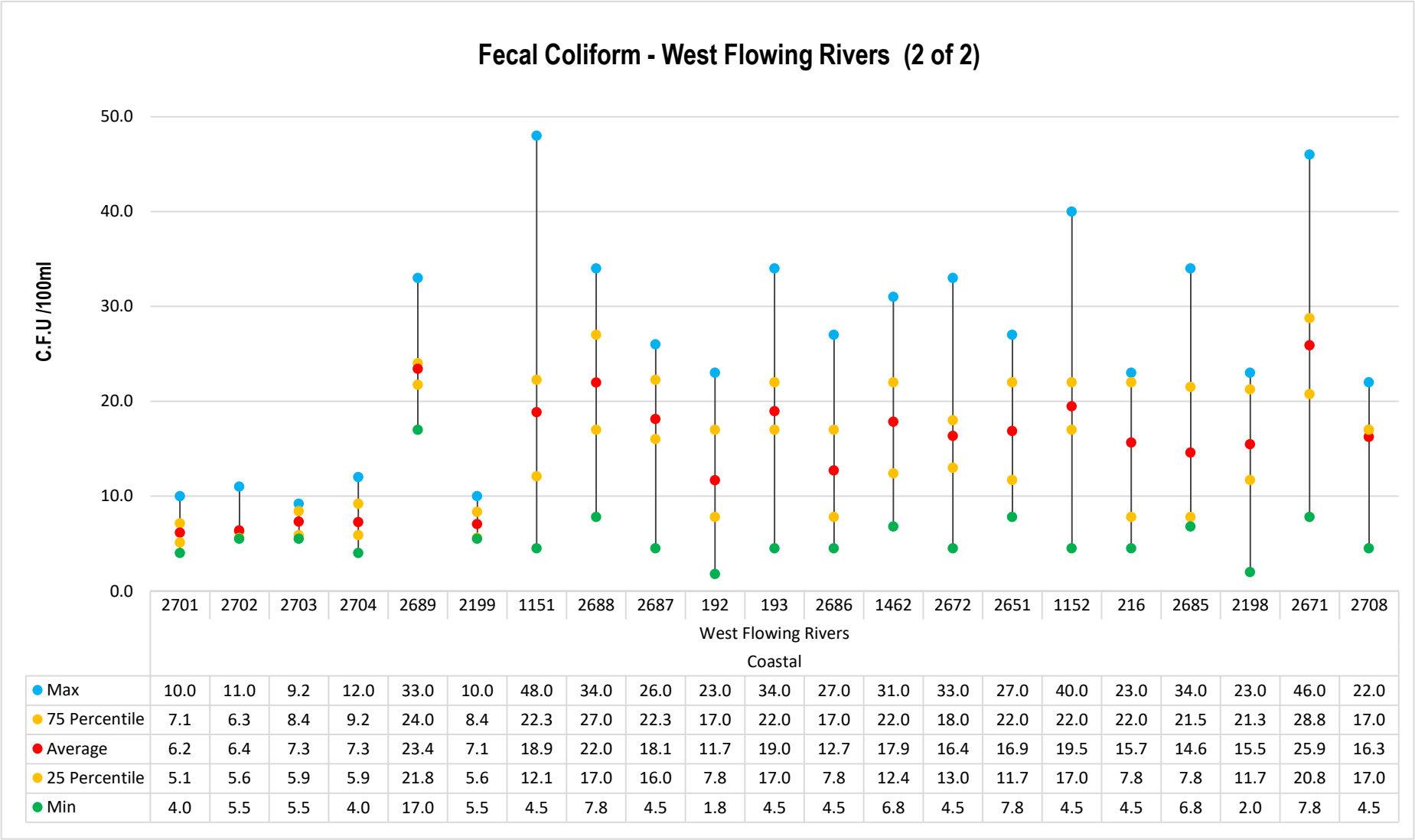
	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Max	2.6	2.8	2.4	2.2	4.0	2.6	4.6	4.0	7.2	3.2	4.0	4.0	5.0	3.6	4.0	4.4	30.0	8.0	11.5	18.0	5.0
75 Percentile	2.0	2.0	2.1	2.2	3.1	2.2	3.2	3.3	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.2	28.0	4.2	6.3	12.1	3.1
Average	2.0	1.9	2.0	1.9	3.0	2.1	3.2	3.1	3.4	2.9	3.1	3.0	3.1	2.9	3.1	3.2	14.6	4.1	5.1	10.1	3.0
25 Percentile	1.8	1.8	1.8	1.8	2.6	1.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.0	4.0	3.0	3.0	7.5	2.6
Min	1.8	1.8	1.8	1.8	2.6	1.8	2.6	2.6	2.6	2.6	2.6	1.8	2.4	2.6	2.6	2.8	3.0	2.8	3.0	6.4	1.6

Figure No. 43: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at West flowing rivers (Coastal basin) (2 of 2)



	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Max	8.1	8.1	8.1	8.1	8.1	8.0	8.0	8.2	7.9	7.8	8.5	7.8	7.8	8.6	8.2	8.5	7.7	7.7	8.0	8.1	8.8
75 Percentile	8.0	7.9	7.9	7.8	7.6	7.7	7.8	7.5	7.5	7.7	7.9	7.5	7.5	8.2	7.8	7.8	7.5	7.5	7.5	7.8	7.9
Average	7.7	7.7	7.6	7.6	7.5	7.5	7.5	7.4	7.4	7.4	7.6	7.4	7.4	7.9	7.7	7.6	7.3	7.3	7.3	7.6	7.7
25 Percentile	7.4	7.6	7.4	7.5	7.3	7.4	7.4	7.2	7.2	7.5	7.6	7.3	7.2	7.7	7.6	7.4	7.1	7.2	7.1	7.4	7.4
Min	6.8	6.7	7.0	7.3	7.1	6.9	7.2	7.0	6.9	5.4	5.3	7.0	7.1	7.3	7.2	7.0	7.1	6.9	6.7	7.0	6.6

Figure No. 44: Trend of pH levels recorded at WQMS at West flowing rivers (Coastal basin) (2 of 2)



	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Max	10.0	11.0	9.2	12.0	33.0	10.0	48.0	34.0	26.0	23.0	34.0	27.0	31.0	33.0	27.0	40.0	23.0	34.0	23.0	46.0	22.0
75 Percentile	7.1	6.3	8.4	9.2	24.0	8.4	22.3	27.0	22.3	17.0	22.0	17.0	22.0	18.0	22.0	22.0	22.0	21.5	21.3	28.8	17.0
Average	6.2	6.4	7.3	7.3	23.4	7.1	18.9	22.0	18.1	11.7	19.0	12.7	17.9	16.4	16.9	19.5	15.7	14.6	15.5	25.9	16.3
25 Percentile	5.1	5.6	5.9	5.9	21.8	5.6	12.1	17.0	16.0	7.8	17.0	7.8	12.4	13.0	11.7	17.0	7.8	7.8	11.7	20.8	17.0
Min	4.0	5.5	5.5	4.0	17.0	5.5	4.5	7.8	4.5	1.8	4.5	4.5	6.8	4.5	7.8	4.5	4.5	6.8	2.0	7.8	4.5

Figure No. 45: Trend of Fecal Coliform recorded at WQMS at West flowing rivers (Coastal basin) (2 of 2)

Water Quality Index for WQMS in West Flowing Rivers (2 of 2)

Apr	88	82	85	84	79	79	83	82	77	78	74	85	84	83	80	74	NC	68	64	54	78
May	87	87	86	89	79	83	83	82	76	87	75	81	79	79	77	78	NC	78	77	68	84
Jun	88	88	83	85	81	85	78	83	83	82	81	80	80	78	82	81	NC	83	84	68	81
Jul	91	89	90	88	84	90	84	84	85	82	84	84	85	81	81	83	85	84	82	78	88
Aug	86	85	84	84	83	84	79	81	81	84	83	85	81	80	80	83	44	86	88	63	82
Sep	90	88	88	90	81	88	82	79	82	82	80	84	85	83	82	82	80	85	83	72	83
Oct	83	84	85	87	81	85	85	82	83	89	78	80	83	80	83	83	68	87	83	73	83
Nov	87	85	87	85	81	88	83	80	80	86	83	86	83	80	79	87	42	85	68	70	81
Dec	89	85	88	87	82	88	78	81	81	82	78	86	83	80	76	77	NC	82	74	69	79
Jan	82	83	81	84	82	85	83	80	81	81	80	84	83	74	79	82	NC	77	78	71	86
Feb	84	85	88	86	82	87	80	84	87	83	86	85	92	79	85	82	NC	86	81	61	81
Mar	82	83	86	86	79	84	87	79	82	74	70	85	86	85	85	74	NC	85	82	63	69
Station Code	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Sub Basin	West Flowing Rives (2 of2)																				
Basin	Coastal																				

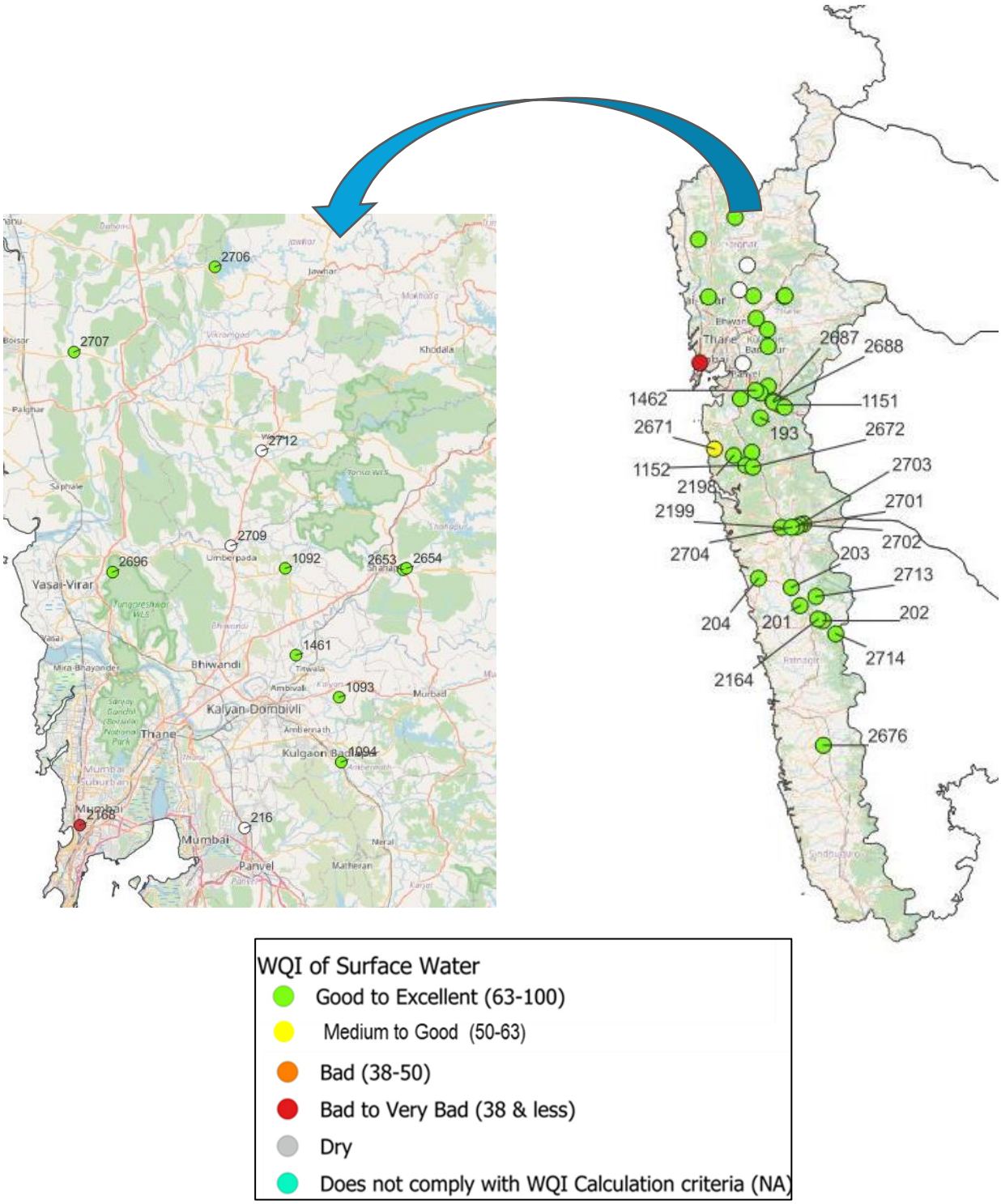
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

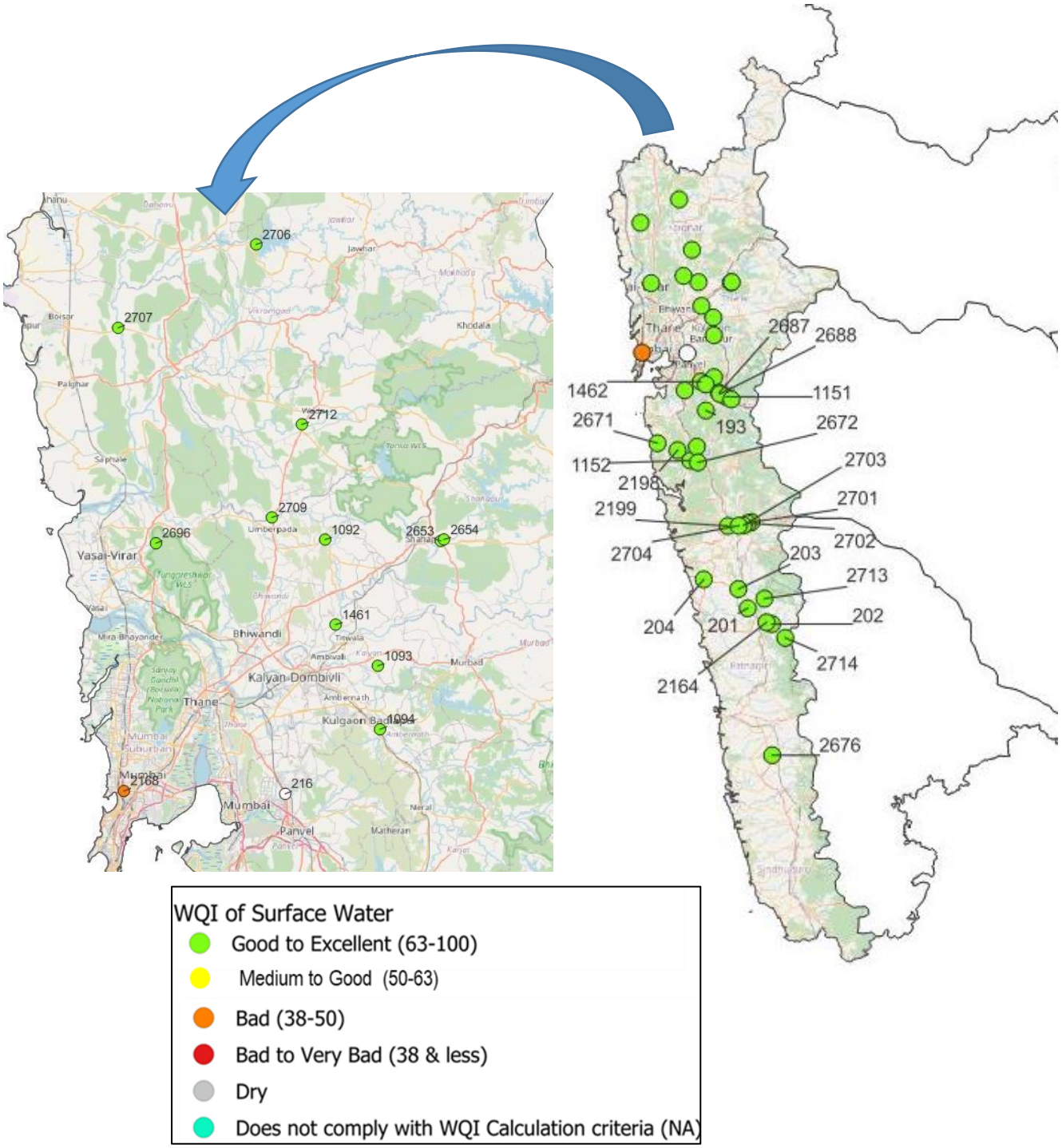
Table No. 24 : Surface water quality monitoring stations on West flowing rivers (2 of 2)

Program	Station ID	River	Station Name	Village	Taluka	District
NWMP	2701	Savitri	Savitri Jackwell at Upsa kendra	Nangalwadi	Mahad	Raigad
NWMP	2702	Savitri	Savitri at Shedav Doh	Shedav Dov	Mahad	Raigad
NWMP	2703	Savitri	Savitri at Dadli Bridge	Dadli	Mahad	Raigad
NWMP	2704	Savitri	Savitri at Muthavali village	Muthavali	Mahad	Raigad
NWMP	2689	Patalganga	Patalganga at Gagangiri Maharaj Temple	Khopoli	Khalapur	Raigad
NWMP	2199	Savitri	Savitri at Ovale village	Ovale	Mahad	Raigad
NWMP	1151	Patalganga	Patalganga at Shilphata Bridge	Khopoli	Khalapur	Raigad
NWMP	2688	Patalganga	Patalganga at Savroli Bridge	Savroli	Khalapur	Raigad
NWMP	2687	Patalganga	Patalganga at Khalapur pumping house	Khalapur	Khalapur	Raigad
SWMP	192	Dam	Morbe Dam, Taluka - Khalapur, District - Raigad	Khalapur	Khalapur	Raigad
SWMP	193	Balganga	Balganga , Village Ransai, Taluka - Khalapur, District - Raigad	Ransai	Khalapur	Raigad
NWMP	2686	Patalganga	Patalganga at Vyal pump house	Vyal	Khalapur	Raigad
NWMP	1462	Patalganga	Patalganga near intake of MIDC water works(Turade w/w)	Turade	Khalapur	Raigad
NWMP	2672	Kundalika	Kundalika at Dhatav at Jackwell	Dhatav	Roha	Raigad
NWMP	2651	Amba	Amba at D/s of Waken Bridge	Waken Phata	Roha	Raigad
NWMP	1152	Kundalika	Kundalika at Roha Bridge	Roha	Roha	Raigad
SWMP	216	Kasardi	Near Ganesh Ghat	Taloja	Panvel	Raigad
NWMP	2708	Surya	Surya at Intake of Vasai-Virar water scheme	Masvan	Palghar	Thane
NWMP	2685	Patalganga	Patalganga at D/s of Kharpada Bridge	Kharpada	Khalapur	Raigad
NWMP	2198	Kundalika	Kundalika at Are Khurd (Saline Zone)	Are Khurd	Roha	Raigad
NWMP	2671	Kundalika	Kundalika near Salav Bridge (Saline Zone)	Salav	Roha	Raigad

Spatial map of Surface WQI at West Flowing Rivers (April 2022)

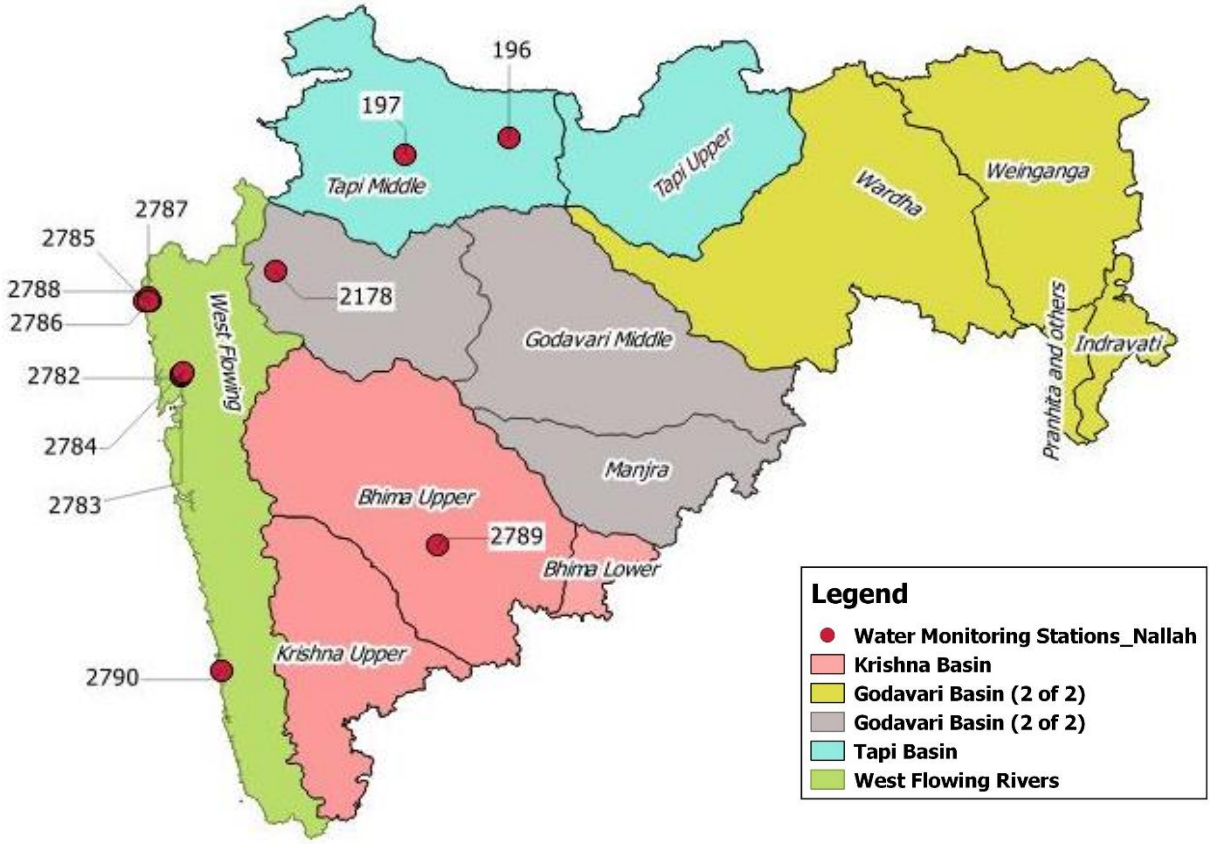


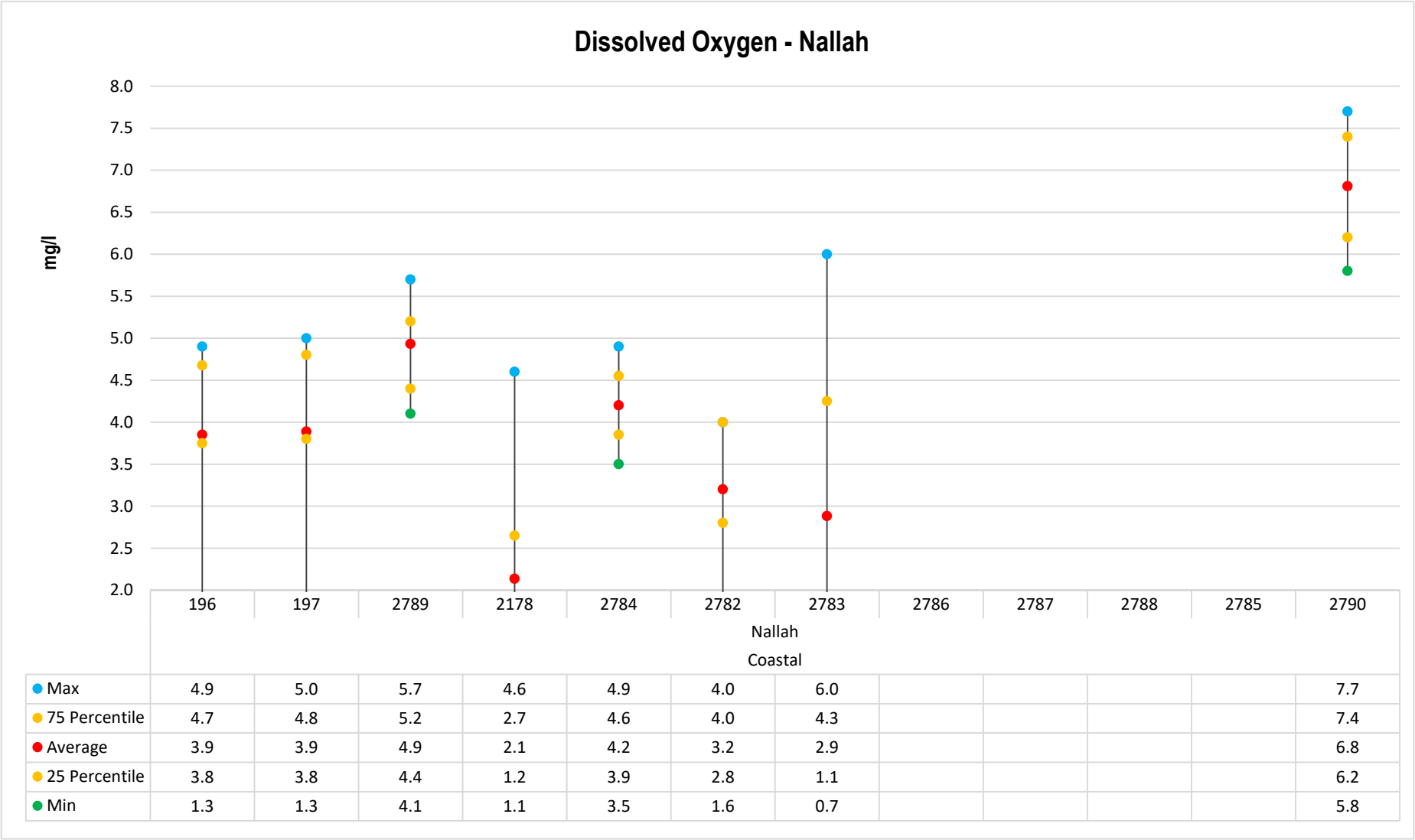
Spatial ma p of Surface WQI at West Flowing Rivers (December 2022)



Nallahs

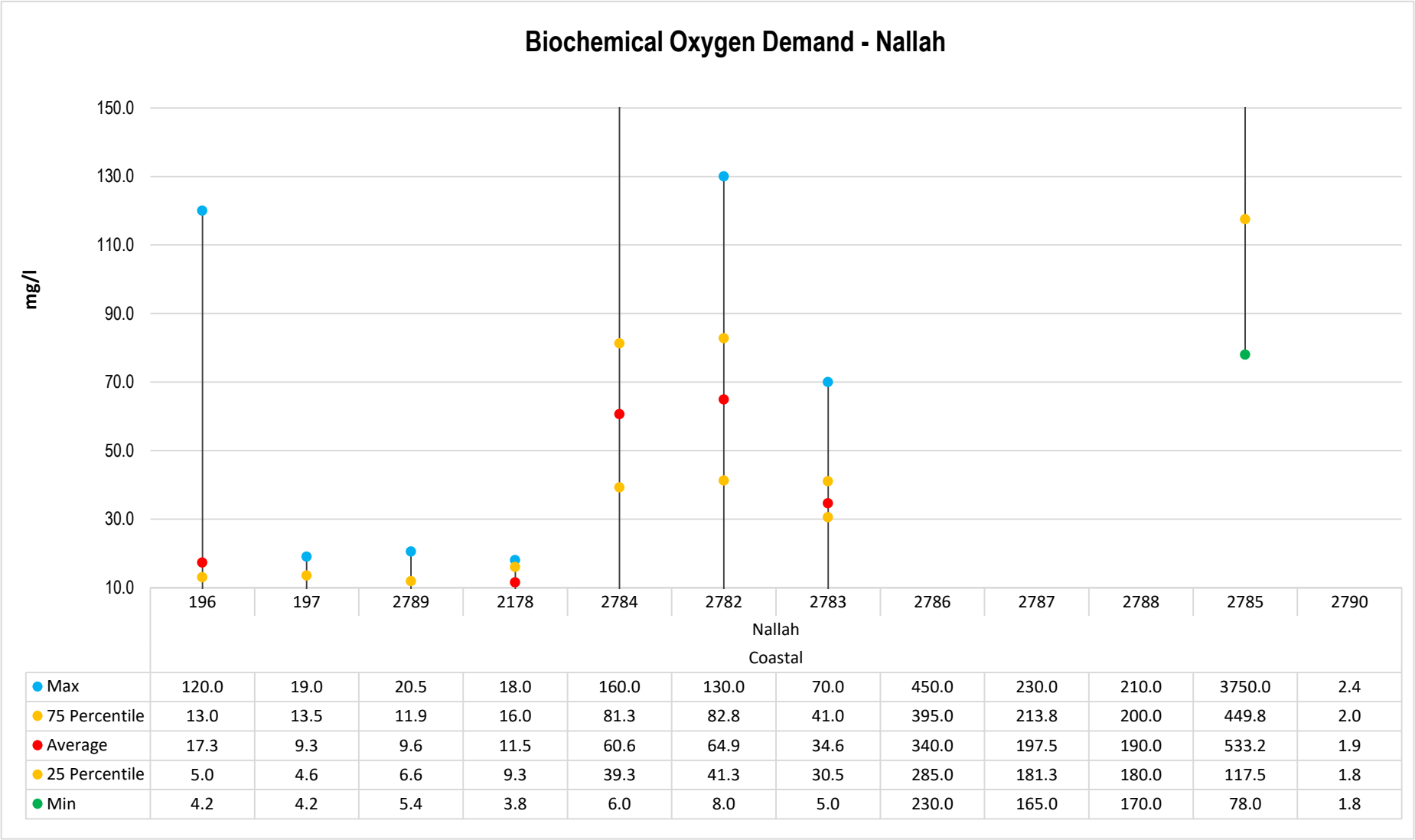
There are 12 water monitoring stations across nallahs in the state. The majority of nallahs of the coastal basin are located in Thane district.





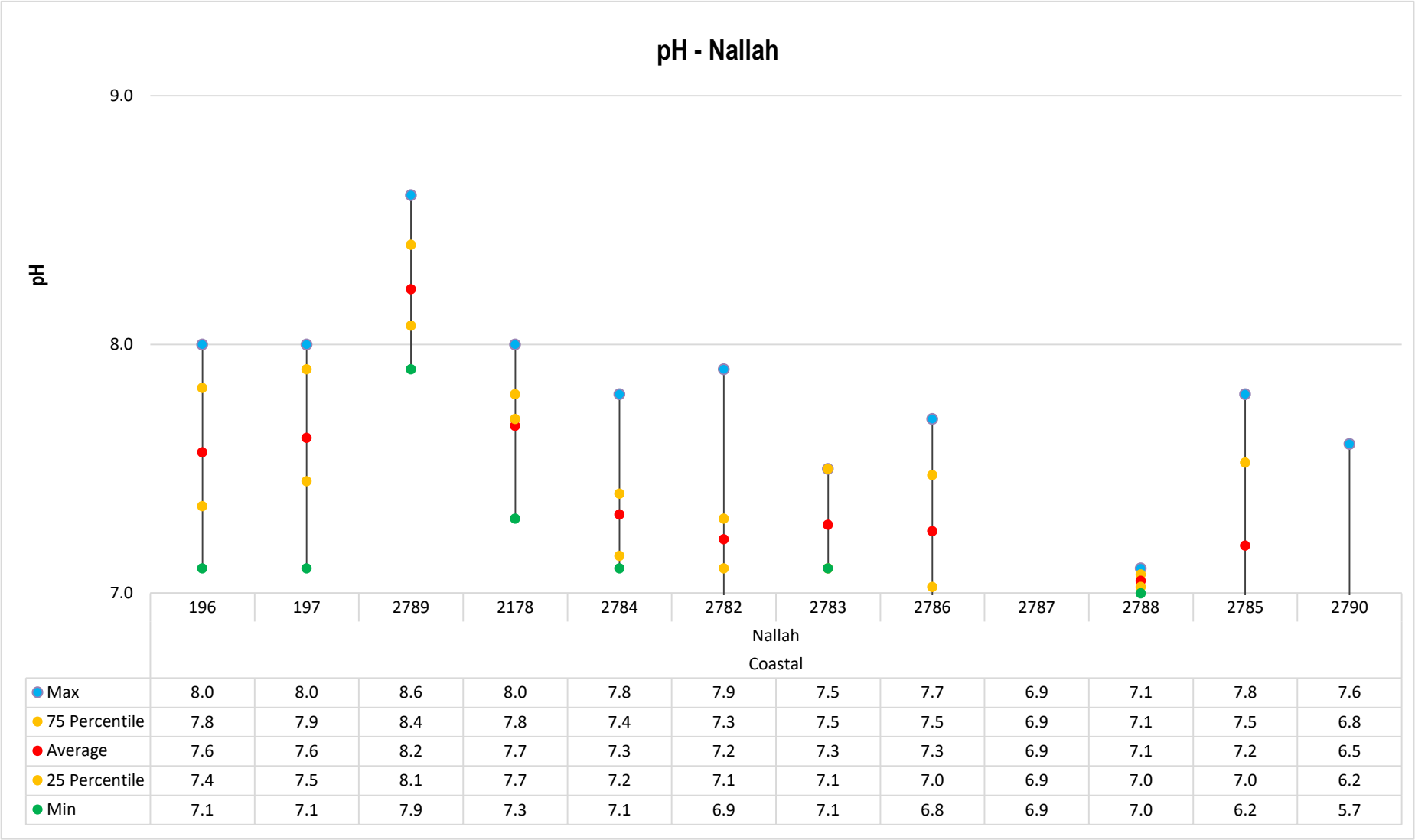
	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	4.9	5.0	5.7	4.6	4.9	4.0	6.0					7.7
75 Percentile	4.7	4.8	5.2	2.7	4.6	4.0	4.3					7.4
Average	3.9	3.9	4.9	2.1	4.2	3.2	2.9					6.8
25 Percentile	3.8	3.8	4.4	1.2	3.9	2.8	1.1					6.2
Min	1.3	1.3	4.1	1.1	3.5	1.6	0.7					5.8

Figure No. 46: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Nallah (Coastal basin)



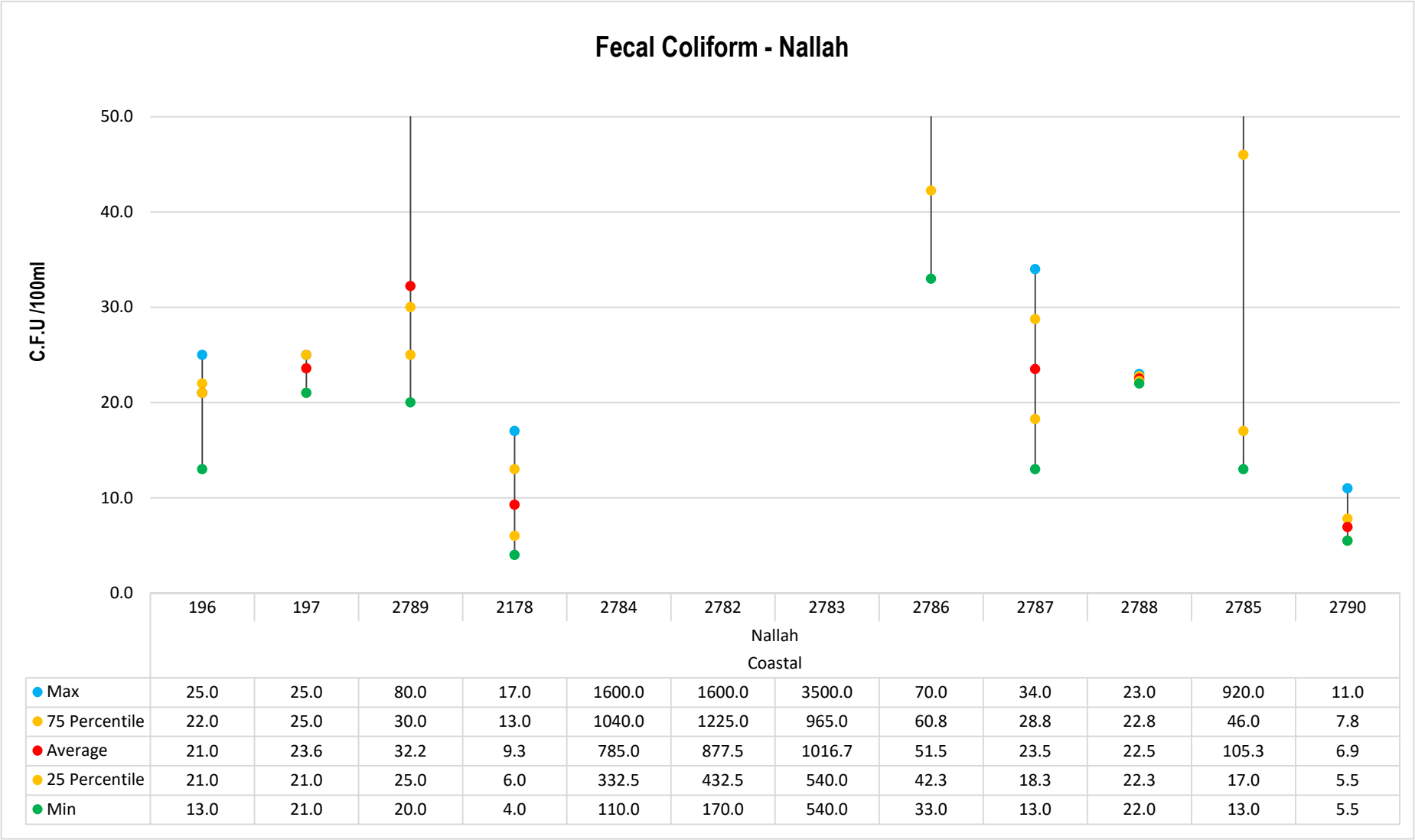
	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	120.0	19.0	20.5	18.0	160.0	130.0	70.0	450.0	230.0	210.0	3750.0	2.4
75 Percentile	13.0	13.5	11.9	16.0	81.3	82.8	41.0	395.0	213.8	200.0	449.8	2.0
Average	17.3	9.3	9.6	11.5	60.6	64.9	34.6	340.0	197.5	190.0	533.2	1.9
25 Percentile	5.0	4.6	6.6	9.3	39.3	41.3	30.5	285.0	181.3	180.0	117.5	1.8
Min	4.2	4.2	5.4	3.8	6.0	8.0	5.0	230.0	165.0	170.0	78.0	1.8

Figure No. 47: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS at Nallah (Coastal basin)



	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	8.0	8.0	8.6	8.0	7.8	7.9	7.5	7.7	6.9	7.1	7.8	7.6
75 Percentile	7.8	7.9	8.4	7.8	7.4	7.3	7.5	7.5	6.9	7.1	7.5	6.8
Average	7.6	7.6	8.2	7.7	7.3	7.2	7.3	7.3	6.9	7.1	7.2	6.5
25 Percentile	7.4	7.5	8.1	7.7	7.2	7.1	7.1	7.0	6.9	7.0	7.0	6.2
Min	7.1	7.1	7.9	7.3	7.1	6.9	7.1	6.8	6.9	7.0	6.2	5.7

Figure No. 48: Trend of pH levels recorded at WQMS at Nallah (Coastal basin)



	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	25.0	25.0	80.0	17.0	1600.0	1600.0	3500.0	70.0	34.0	23.0	920.0	11.0
75 Percentile	22.0	25.0	30.0	13.0	1040.0	1225.0	965.0	60.8	28.8	22.8	46.0	7.8
Average	21.0	23.6	32.2	9.3	785.0	877.5	1016.7	51.5	23.5	22.5	105.3	6.9
25 Percentile	21.0	21.0	25.0	6.0	332.5	432.5	540.0	42.3	18.3	22.3	17.0	5.5
Min	13.0	21.0	20.0	4.0	110.0	170.0	540.0	33.0	13.0	22.0	13.0	5.5

Figure No. 49: Trend of Fecal Coliform levels recorded at WQMS at Nallah (Coastal basin)

Water Quality Index for WQMS in Nallah (Coastal Basin)

Apr	NC	74	Dry	49	27	29	29	Dry	Dry	Dry	40	86
May	NC	56	Dry	60	31	27	30	Dry	Dry	Dry	36	78
Jun	NC	NC	Dry	Dry	27	28	27	Dry	Dry	Dry	33	82
Jul	71	NC	48	47	60	50	70	NC	NC	NC	21	80
Aug	67	NC	53	72	31	31	34	34	37	39	33	NC
Sep	70	62	69	61	32	29	27	36	40	40	40	NC
Oct	NC	72	67	51	35	33	27	NC	NC	NC	35	NC
Nov	NC	70	68	52	31	28	29	NC	NC	NC	40	85
Dec	NC	65	66	51	32	31	45	NC	NC	NC	39	86
Jan	75	67	66	48	27	29	27	NC	NC	NC	41	83
Feb	65	67	60	48	46	52	55	NC	NC	NC	40	79
Mar	46	43	68	51	25	27	30	Dry	Dry	Dry	39	77
Station Code	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Sub Basin	Nallah											
Basin	Nallah											

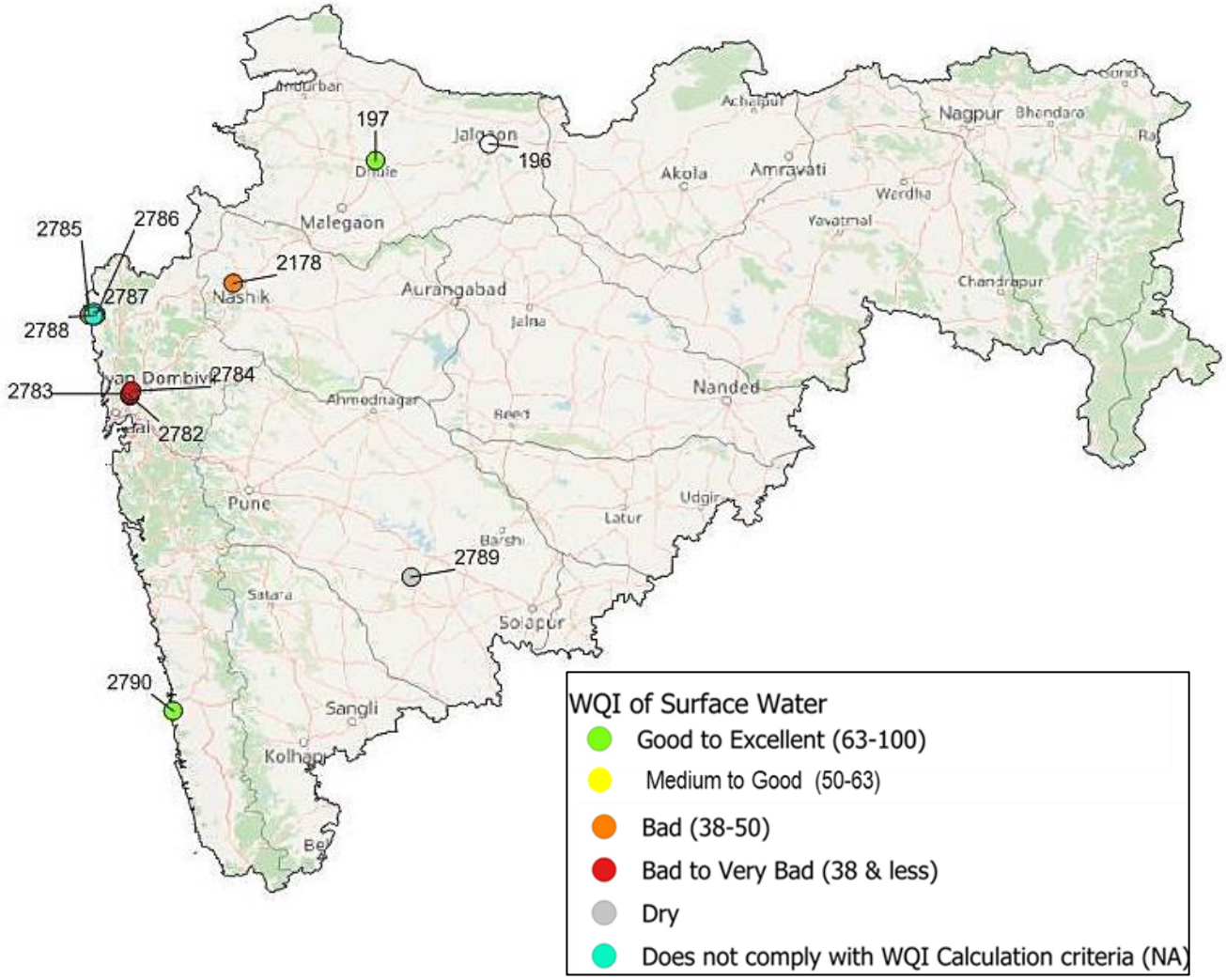
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

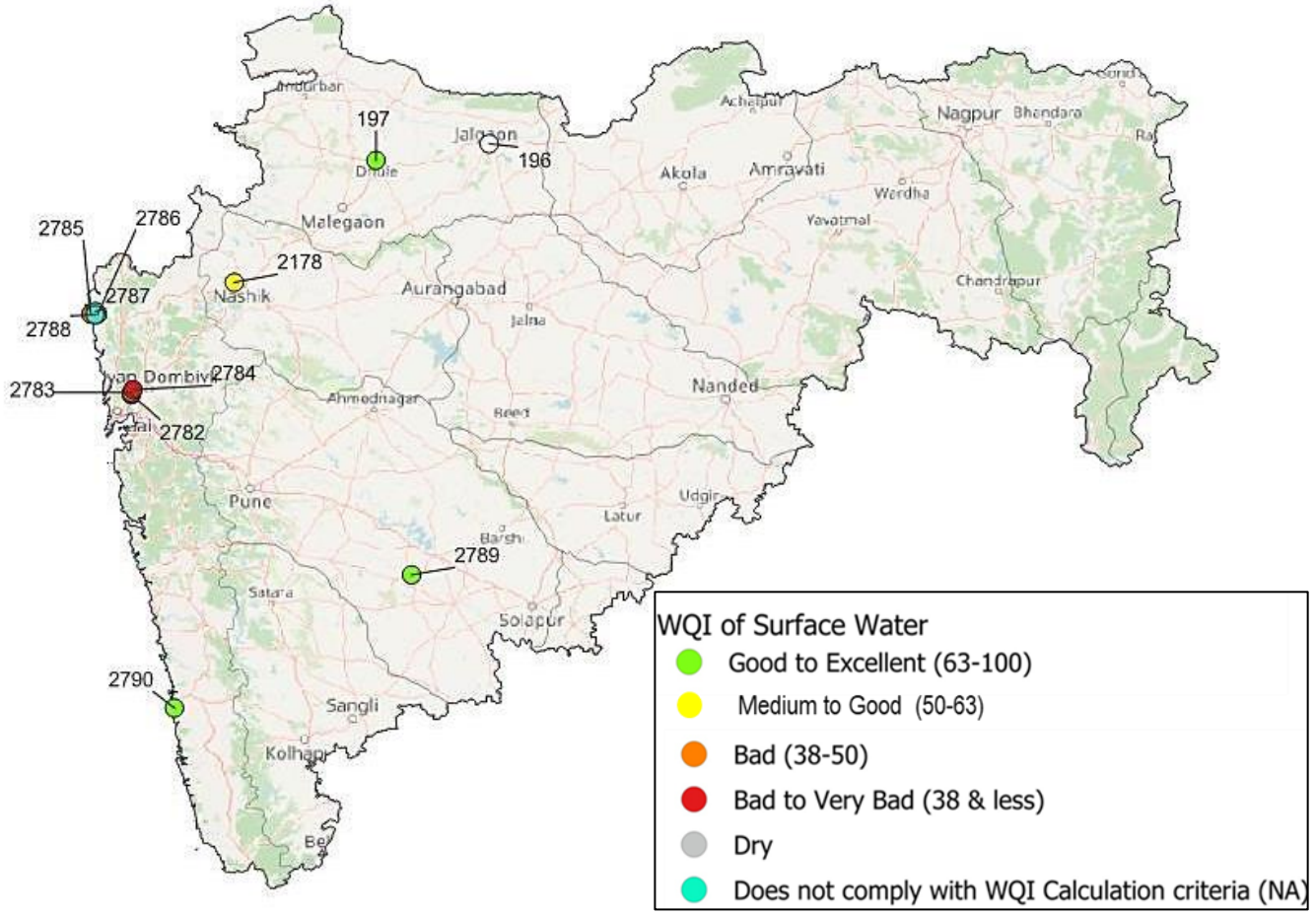
Table No. 25: Surface water monitoring stations at Nallahs

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
SWMP	196	Lowki Nalla	Lowki Nalla At Khedi, Taluka & District - Jalgaon	Khedi	Khedi	Jalgaon
SWMP	197	Moti Nalla	Moti Nalla before Confluence with Panjara Dhule, Taluka & District - Dhule	Dhule	Dhule	Dhule
NWMP	2178	Chikhali nalla	Chikhali Nalla Meets Godavari	Chikhali	Nashik	Nashik
NWMP	2789	Nalla	Nalla at D/s of Alkai Mandir, Solapur	Aklai	Malshiras	Solapur
NWMP	2784	Sandoz nalla	Sandoz Nalla	Sandozbaug	Thane	Thane
NWMP	2782	Rabodi nalla	Rabodi Nalla	Rabodi	Thane	Thane
NWMP	2783	Colour Chem nalla	Colour Chem Nalla	Majiwada	Thane	Thane
NWMP	2786	Tarapur MIDC nalla	Tarapur MIDC Nalla, near sump No1	MIDC Tarapur	Palghar	Palghar
NWMP	2787	Tarapur MIDC nalla	Tarapur MIDC Nalla	MIDC Tarapur	Palghar	Palghar
NWMP	2788	Tarapur MIDC nalla	Tarapur MIDC Nalla near sump-III	MIDC Tarapur	Palghar	Palghar
NWMP	2785	BPT Navapur	BPT Navapur	Navapur	Palghar	Palghar
NWMP	2790	Pimpal-Paneri nalla	Pimpal-Paneri Nalla at Ratnagiri near Finolex Industries	Yahganigaon	Ratnagiri	Ratnagiri

Spatial map of Surface WQI at Nallahs (April 2022)



Spatial map of Surface WQI at Nallahs (December 2022)



Saline (Sea and Creek) Water Quality

The Maharashtra state is stretches from the coast of the Arabian Sea along the Western Ghats to the Deccan plateau. The coastal region of the state is characterized by beaches surrounded by the rocky cliffs of Deccan basalt, estuarine areas and mangrove patches. The state has about 720 km long coastline and comprises of coastal districts of Thane, Palghar, Raigad, Ratnagiri and Sindhudurg. These ecosystems are enriched with diversified flora and fauna. With the diverse and rich coastline, marine fisheries also form a source of livelihood, employment and food security.

Some of the major problems faced by Maharashtra's coastal areas include coastal erosion, water pollution, siltation, anthropogenic pressures on mangroves, salt marshes and so on[27]. In order to ensure the sustainable development and management of coastal areas and their resources, appropriate management strategies are needed.

To monitor the pollution levels in the coastal regions, MPCB has established a monitoring network of 45 monitoring stations (36 along sea/creek especially along the sensitive and pollution-prone areas of the state's coastline and 12 along the nallahs. The following section presents the DO, FC, pH and BOD data recorded at the sea and creek WQMS in an illustrative manner.

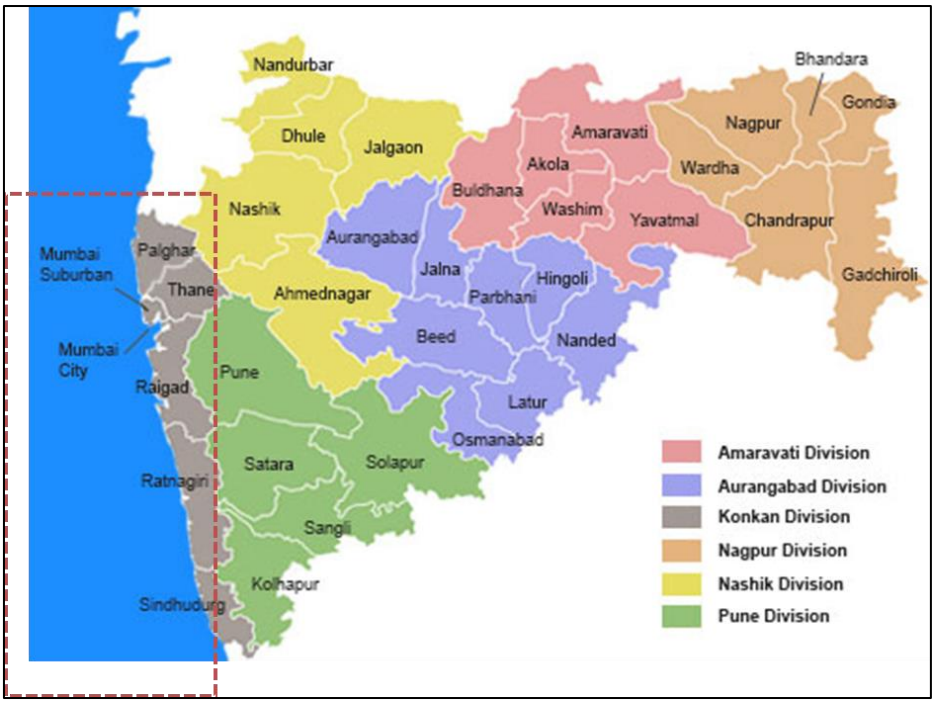


Figure No. 50: Map representing Coastal areas of Mahrashtra
Source of Map: http://divcomkonkan.gov.in/Document/en/page/MapGallery.aspx

[27] https://www.annauniv.edu/iom/iomour/EIA's%20Maharashtra.php#:~:text=It%20is%20bordered%20by%20the,are%20Godavari%2C%20Bhima%20and%20Krishna.

Coastal Basin (Sea/ Creek Water Samples)

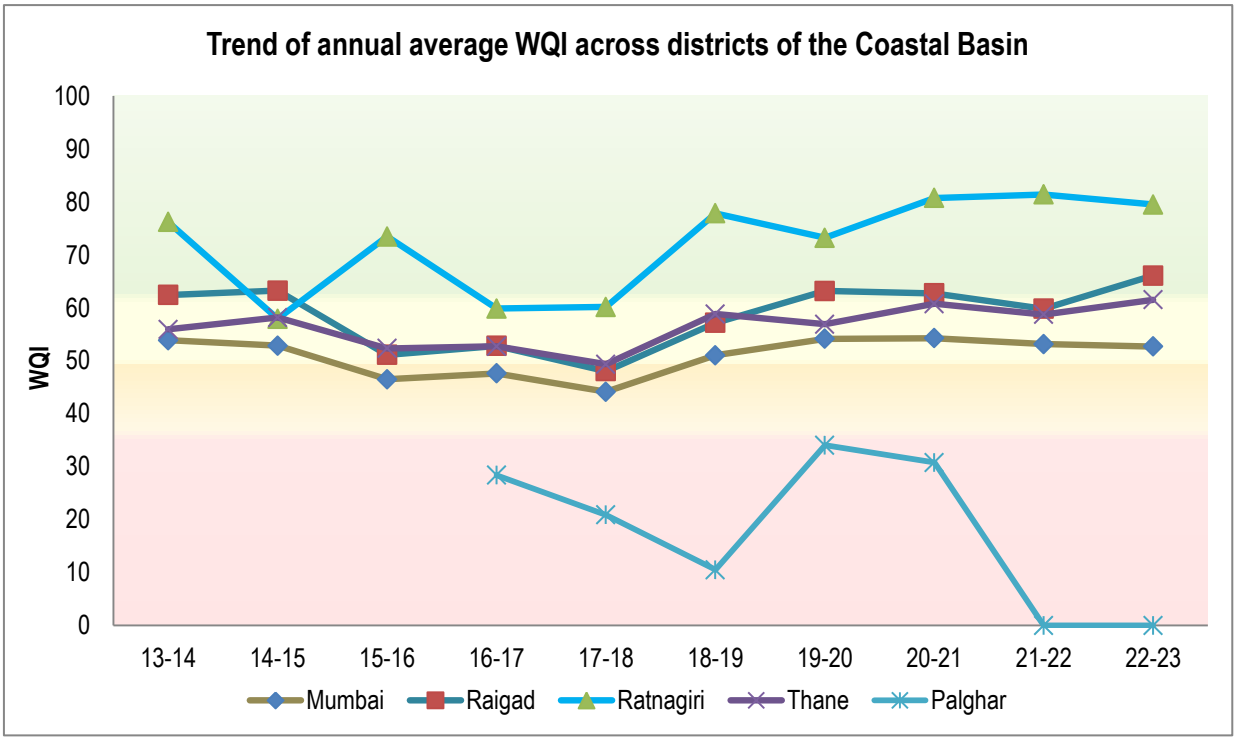


Figure No. 51: Trend of the annual average of WQI across districts of the Coastal basin

WQI	WQI Category	Class by CPCB	Represented in the above graph
63-100	Good to Excellent	A	Non-polluted
50-63	Medium to Good	B	Non-polluted
38-50	Bad	C	Polluted
38 & less	Bad to Very Bad	D, E	Heavily polluted

Note: This graph considers the average WQI for all the monitoring stations in that particular district and hence may include some bias. This graph is only for an overview and monitoring station-wise data may be analyzed to pinpoint the most affected and polluted patches of rivers in that district.

The intrabasin analysis of the Coastal basin is depicted in the Figure No. 51.

Out of 5 districts, WQMS installed in Mumbai and Ratnagiri district recorded a decrease in WQI of about 0.82% (from 53.11 to 52.67) and 2.32% (from 81.37 to 79.47) respectively. The water quality at Raigad and Thane is observed to be slightly improved WQI at Raigad was noted to increase by 10.43% (from 59.81 to 66.05) and 4.73% (58.71 to 61.49) at Thane district. In 2022-23, no WQI was recorded by WQMS installed in the jurisidction of the Palghar district.

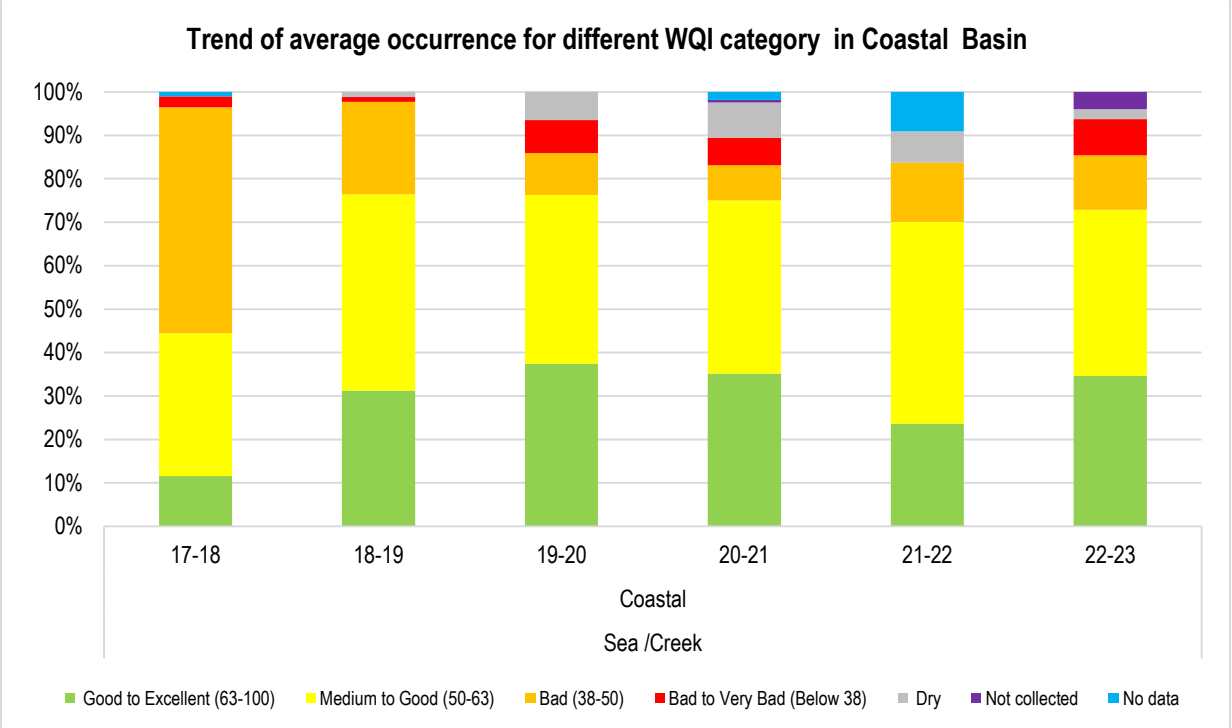
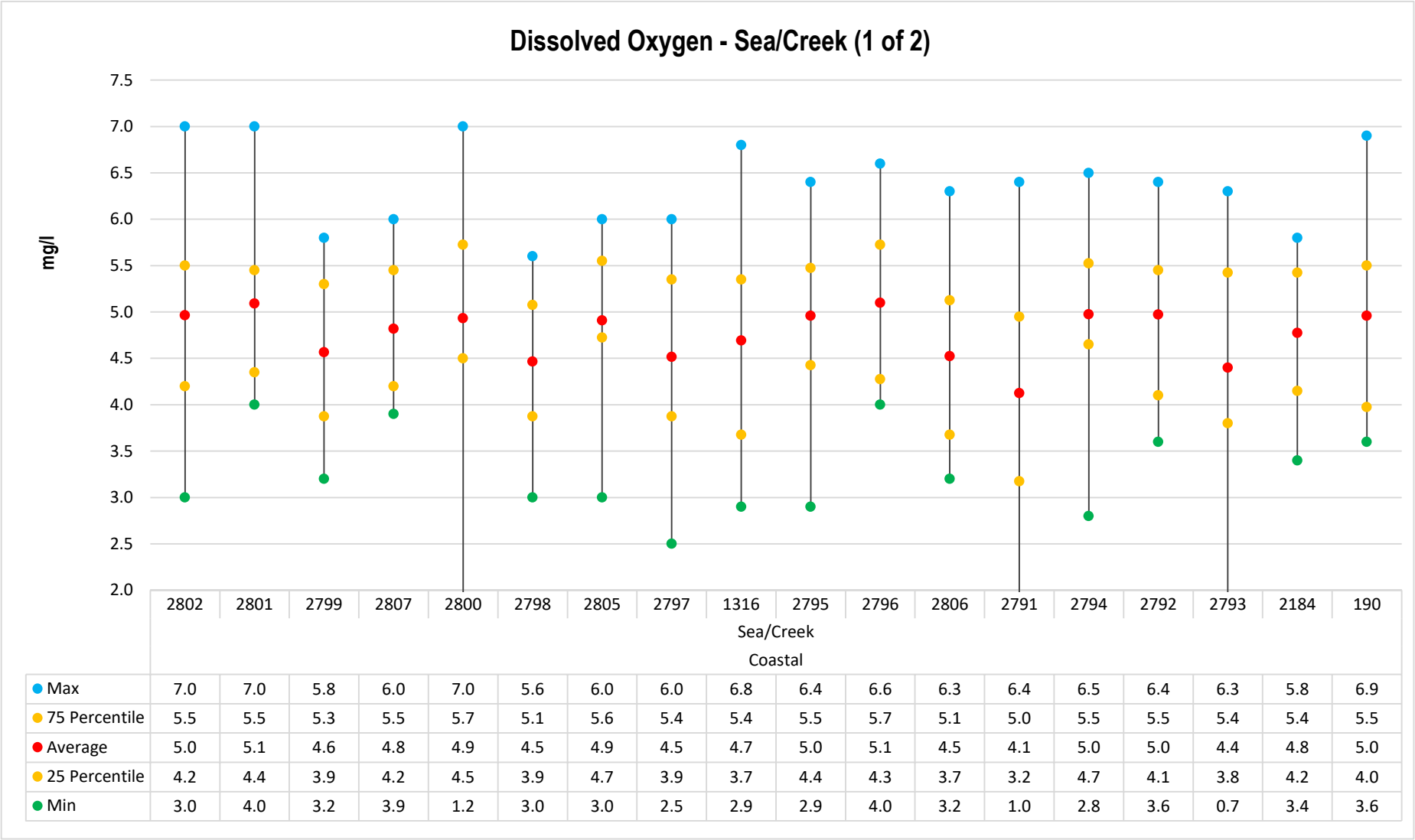


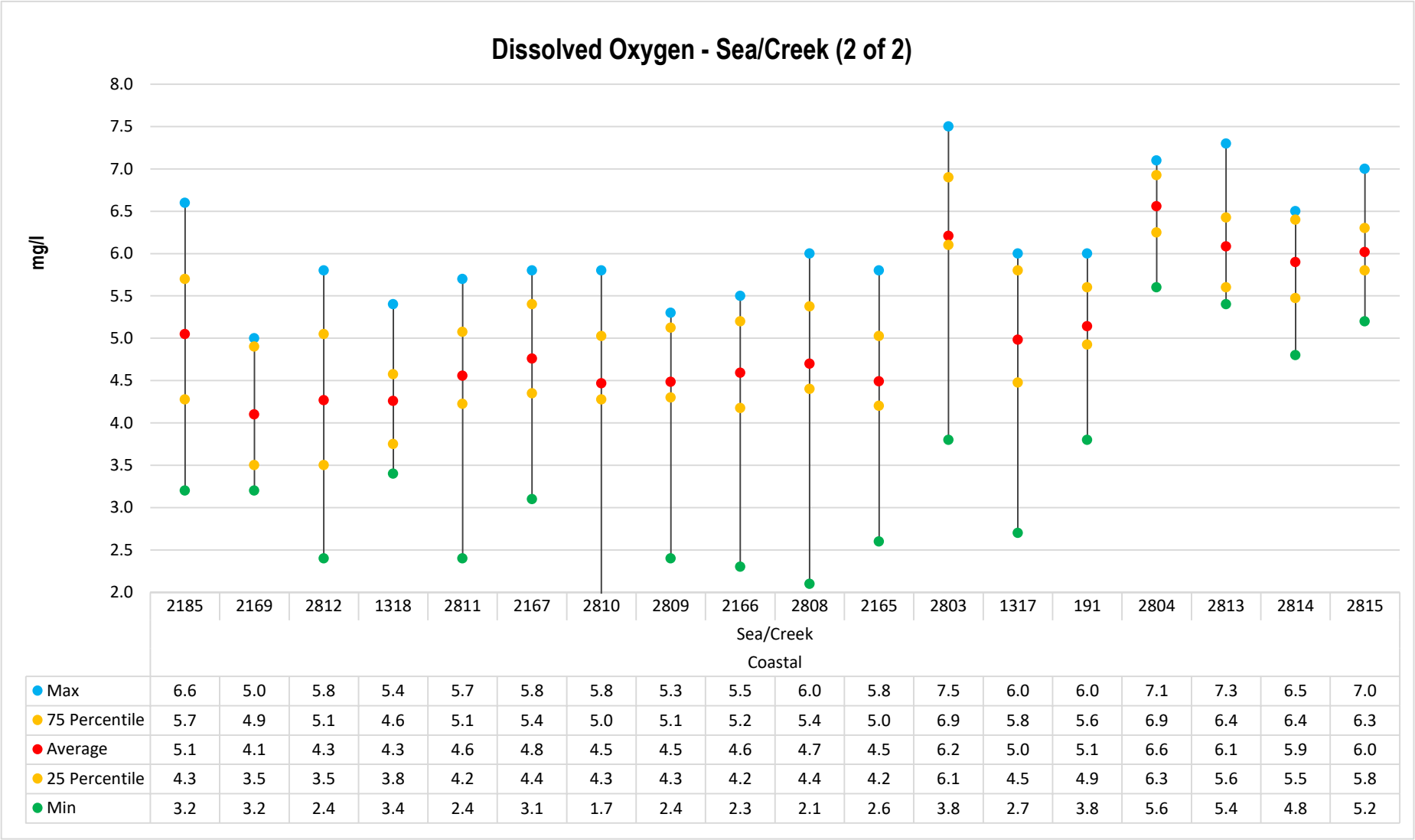
Figure No. 52: Trend of average occurrence for different WQI categories in the Coastal basin

The interbasin analysis of the Coastal basin is depicted in Figure No. 52. It can be observed that the percentage share of 'Good to Excellent' category observations has increased in the year 2022-23 as compared to 2021-22 (from 23.67% to 34.66%). On the other hand, the percentage share of 'Medium to Good' category observations have decreased from 46.4% (2021-22) to 38.26% in 2022-23. A slight decrease was observed in the case of the 'Bad' category (from 13.64% to 12.50%) and 'Dry' category observations (from 7.2% to 2.27%).



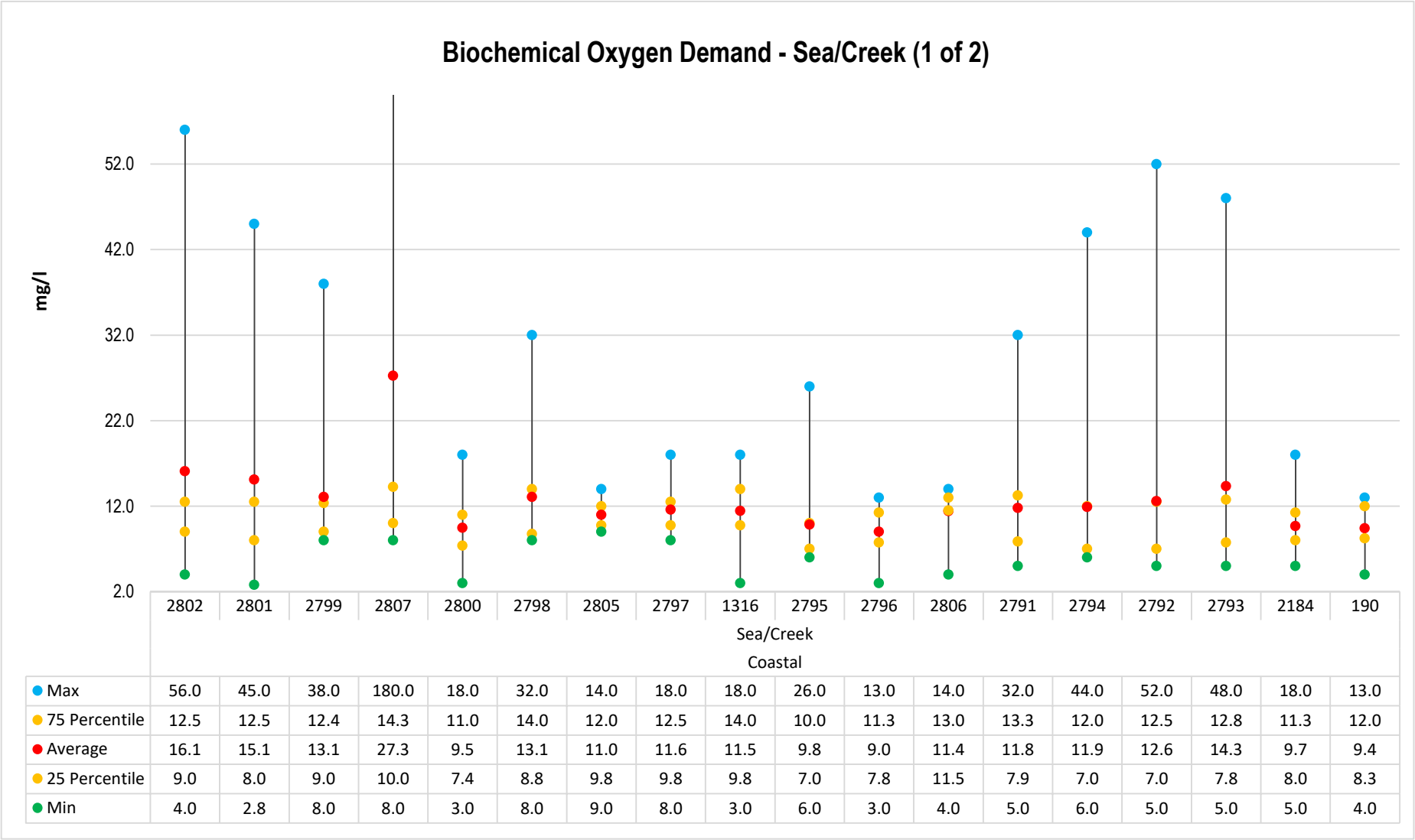
	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	7.0	7.0	5.8	6.0	7.0	5.6	6.0	6.0	6.8	6.4	6.6	6.3	6.4	6.5	6.4	6.3	5.8	6.9
75 Percentile	5.5	5.5	5.3	5.5	5.7	5.1	5.6	5.4	5.4	5.5	5.7	5.1	5.0	5.5	5.5	5.4	5.4	5.5
Average	5.0	5.1	4.6	4.8	4.9	4.5	4.9	4.5	4.7	5.0	5.1	4.5	4.1	5.0	5.0	4.4	4.8	5.0
25 Percentile	4.2	4.4	3.9	4.2	4.5	3.9	4.7	3.9	3.7	4.4	4.3	3.7	3.2	4.7	4.1	3.8	4.2	4.0
Min	3.0	4.0	3.2	3.9	1.2	3.0	3.0	2.5	2.9	2.9	4.0	3.2	1.0	2.8	3.6	0.7	3.4	3.6

Figure No. 53: Trend of Dissolved Oxygen (DO) levels recorded at WQMS monitoring sea and creek water (1 of 2)



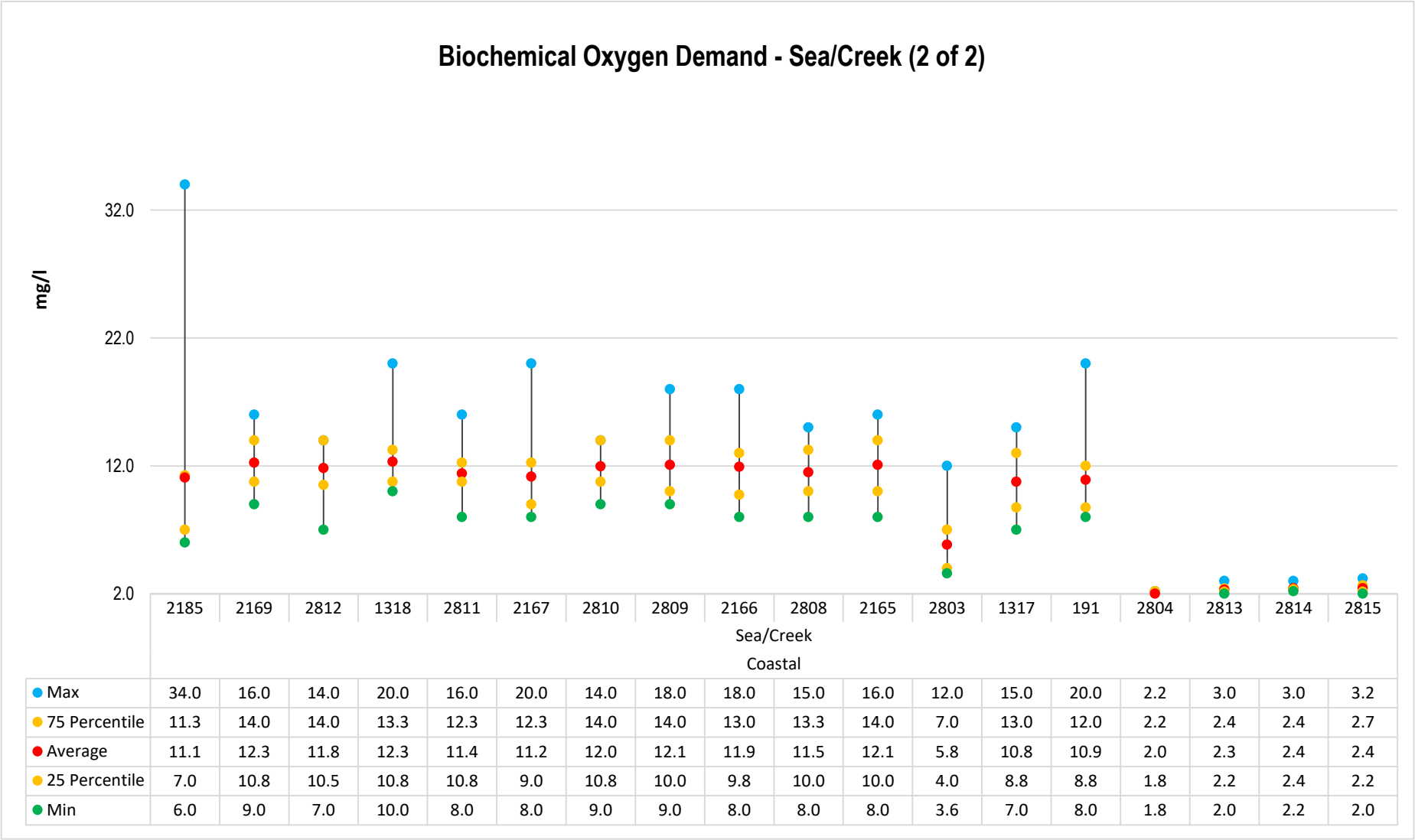
	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	6.6	5.0	5.8	5.4	5.7	5.8	5.8	5.3	5.5	6.0	5.8	7.5	6.0	6.0	7.1	7.3	6.5	7.0
75 Percentile	5.7	4.9	5.1	4.6	5.1	5.4	5.0	5.1	5.2	5.4	5.0	6.9	5.8	5.6	6.9	6.4	6.4	6.3
Average	5.1	4.1	4.3	4.3	4.6	4.8	4.5	4.5	4.6	4.7	4.5	6.2	5.0	5.1	6.6	6.1	5.9	6.0
25 Percentile	4.3	3.5	3.5	3.8	4.2	4.4	4.3	4.3	4.2	4.4	4.2	6.1	4.5	4.9	6.3	5.6	5.5	5.8
Min	3.2	3.2	2.4	3.4	2.4	3.1	1.7	2.4	2.3	2.1	2.6	3.8	2.7	3.8	5.6	5.4	4.8	5.2

Figure No. 54: Trend of Dissolved Oxygen (DO) levels recorded at WQMS monitoring sea and creek water (2 of 2)



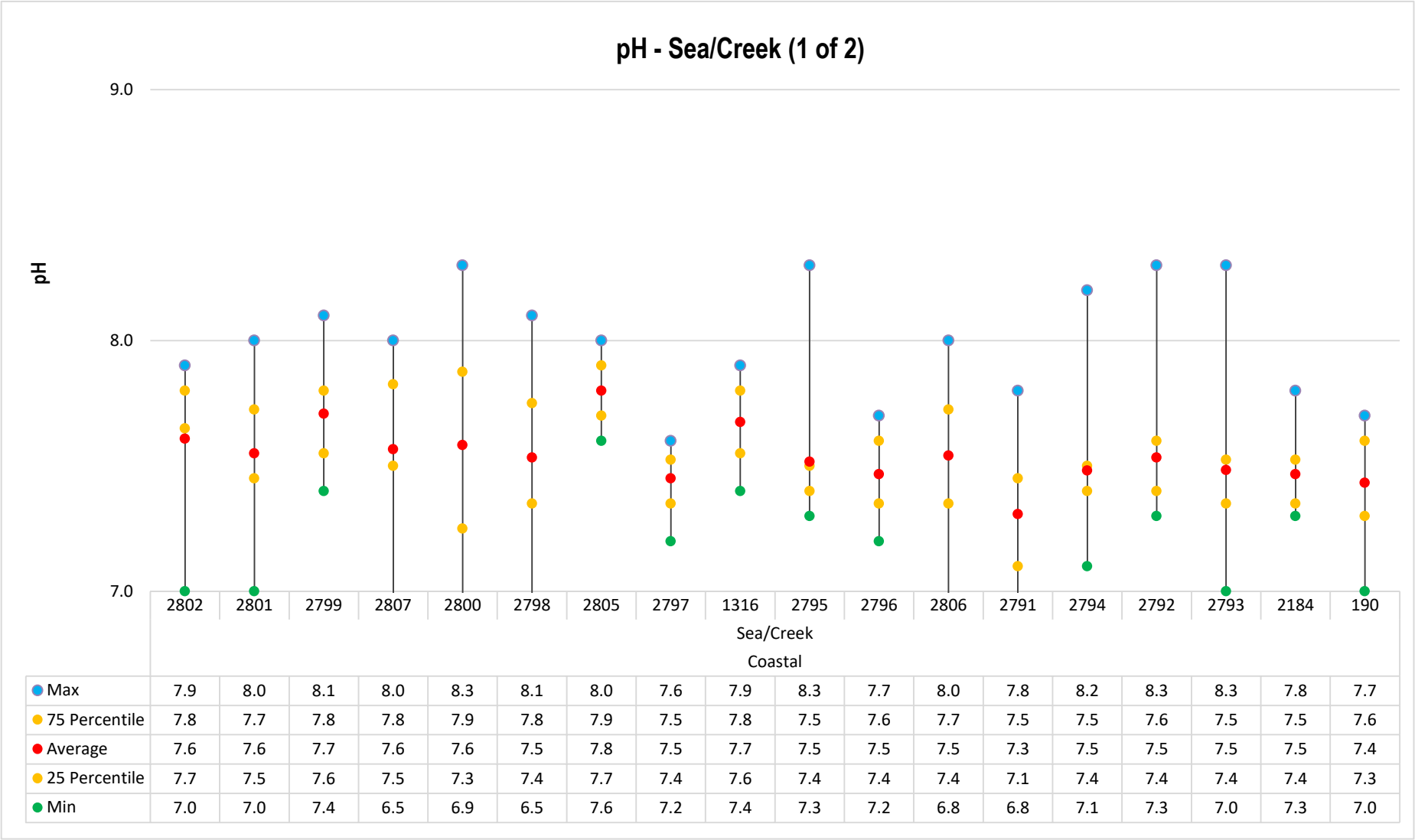
	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	56.0	45.0	38.0	180.0	18.0	32.0	14.0	18.0	18.0	26.0	13.0	14.0	32.0	44.0	52.0	48.0	18.0	13.0
75 Percentile	12.5	12.5	12.4	14.3	11.0	14.0	12.0	12.5	14.0	10.0	11.3	13.0	13.3	12.0	12.5	12.8	11.3	12.0
Average	16.1	15.1	13.1	27.3	9.5	13.1	11.0	11.6	11.5	9.8	9.0	11.4	11.8	11.9	12.6	14.3	9.7	9.4
25 Percentile	9.0	8.0	9.0	10.0	7.4	8.8	9.8	9.8	9.8	7.0	7.8	11.5	7.9	7.0	7.0	7.8	8.0	8.3
Min	4.0	2.8	8.0	8.0	3.0	8.0	9.0	8.0	3.0	6.0	3.0	4.0	5.0	6.0	5.0	5.0	5.0	4.0

Figure No. 55: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS monitoring sea and creek water (1 of 2)



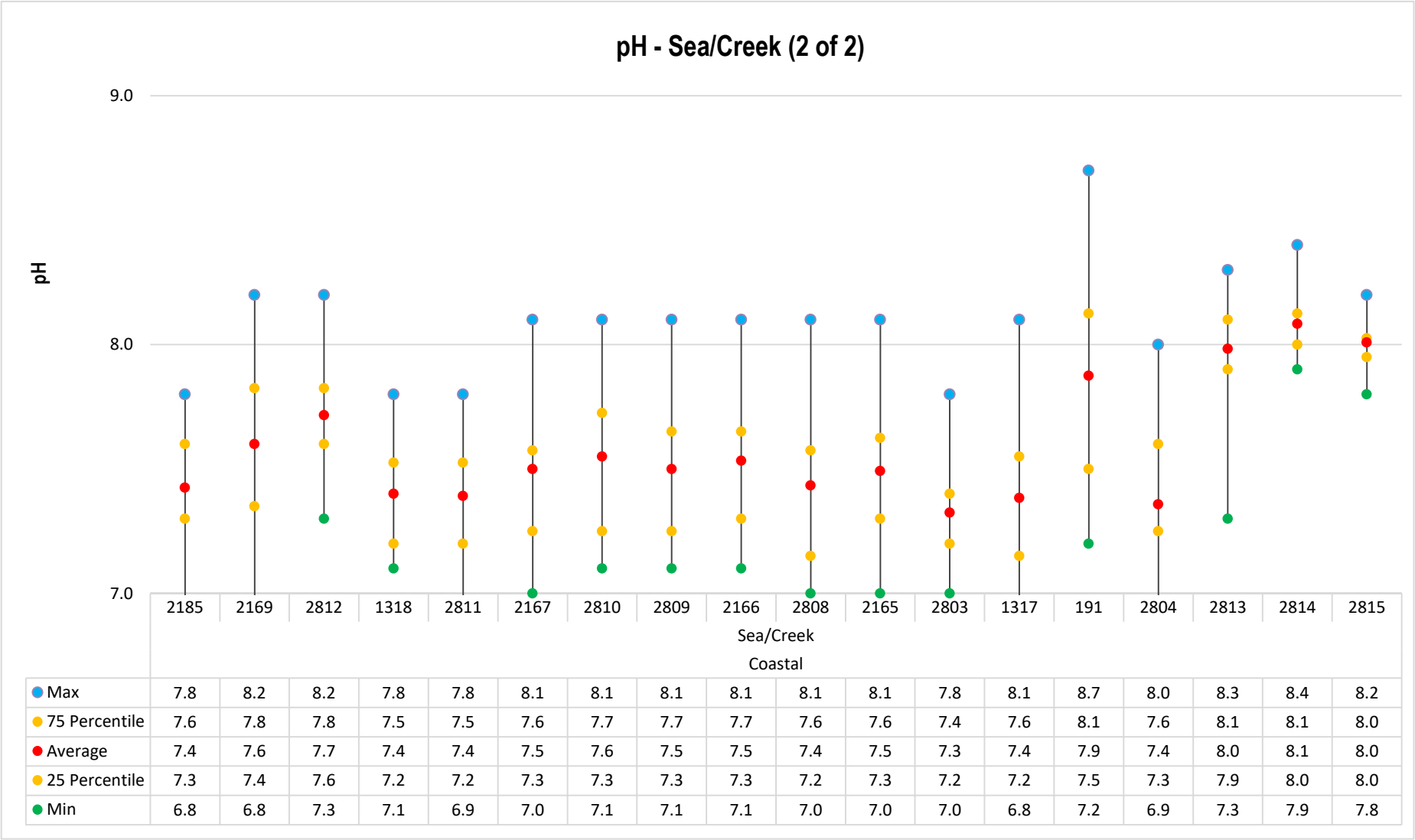
	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	34.0	16.0	14.0	20.0	16.0	20.0	14.0	18.0	18.0	15.0	16.0	12.0	15.0	20.0	2.2	3.0	3.0	3.2
75 Percentile	11.3	14.0	14.0	13.3	12.3	12.3	14.0	14.0	13.0	13.3	14.0	7.0	13.0	12.0	2.2	2.4	2.4	2.7
Average	11.1	12.3	11.8	12.3	11.4	11.2	12.0	12.1	11.9	11.5	12.1	5.8	10.8	10.9	2.0	2.3	2.4	2.4
25 Percentile	7.0	10.8	10.5	10.8	10.8	9.0	10.8	10.0	9.8	10.0	10.0	4.0	8.8	8.8	1.8	2.2	2.4	2.2
Min	6.0	9.0	7.0	10.0	8.0	8.0	9.0	9.0	8.0	8.0	8.0	3.6	7.0	8.0	1.8	2.0	2.2	2.0

Figure No. 56: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS monitoring sea and creek water (2 of 2)



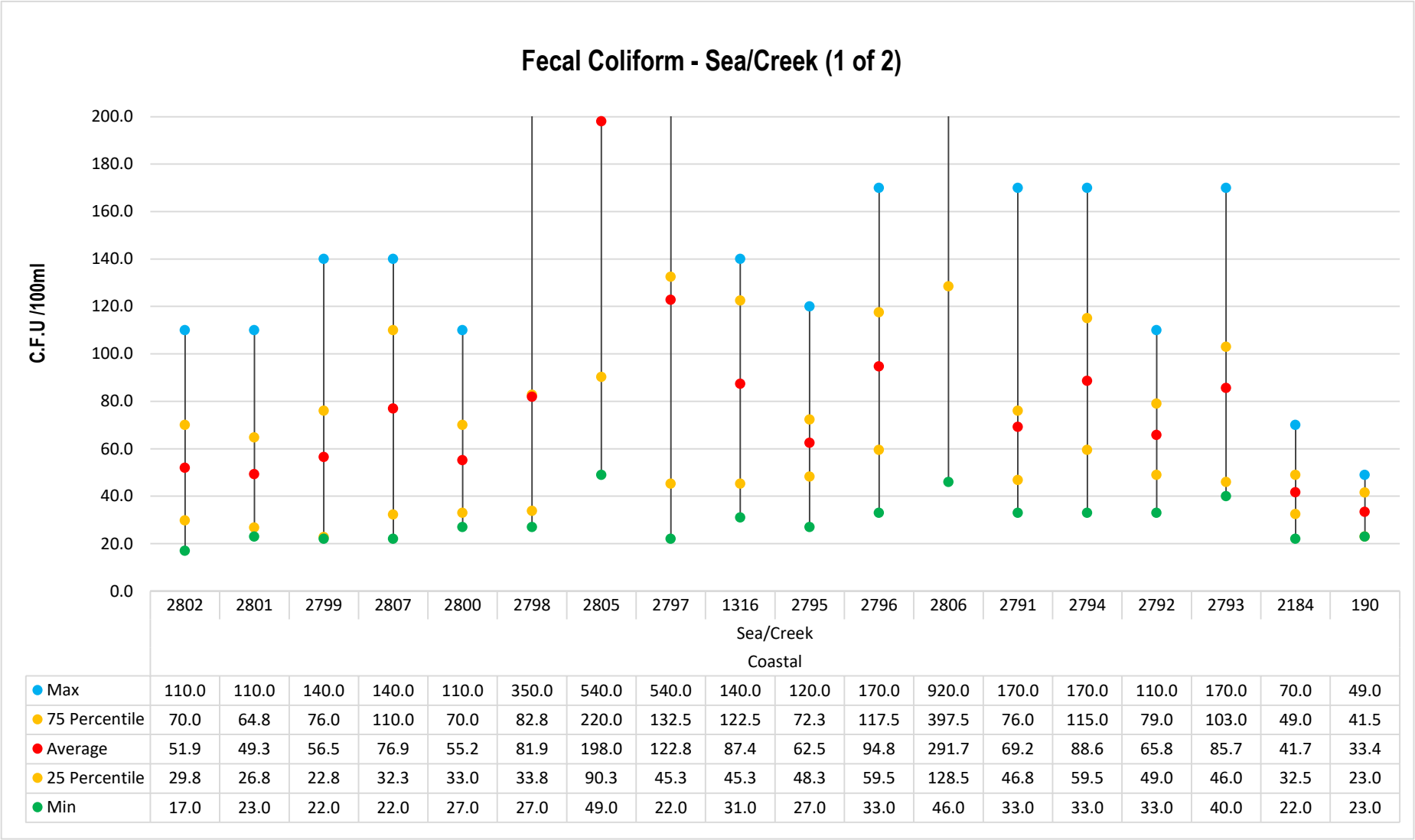
	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	7.9	8.0	8.1	8.0	8.3	8.1	8.0	7.6	7.9	8.3	7.7	8.0	7.8	8.2	8.3	8.3	7.8	7.7
75 Percentile	7.8	7.7	7.8	7.8	7.9	7.8	7.9	7.5	7.8	7.5	7.6	7.7	7.5	7.5	7.6	7.5	7.5	7.6
Average	7.6	7.6	7.7	7.6	7.6	7.5	7.8	7.5	7.7	7.5	7.5	7.5	7.3	7.5	7.5	7.5	7.5	7.4
25 Percentile	7.7	7.5	7.6	7.5	7.3	7.4	7.7	7.4	7.6	7.4	7.4	7.4	7.1	7.4	7.4	7.4	7.4	7.3
Min	7.0	7.0	7.4	6.5	6.9	6.5	7.6	7.2	7.4	7.3	7.2	6.8	6.8	7.1	7.3	7.0	7.3	7.0

Figure No. 57: Trend of pH levels recorded at WQMS monitoring sea and creek water (1 of 2)



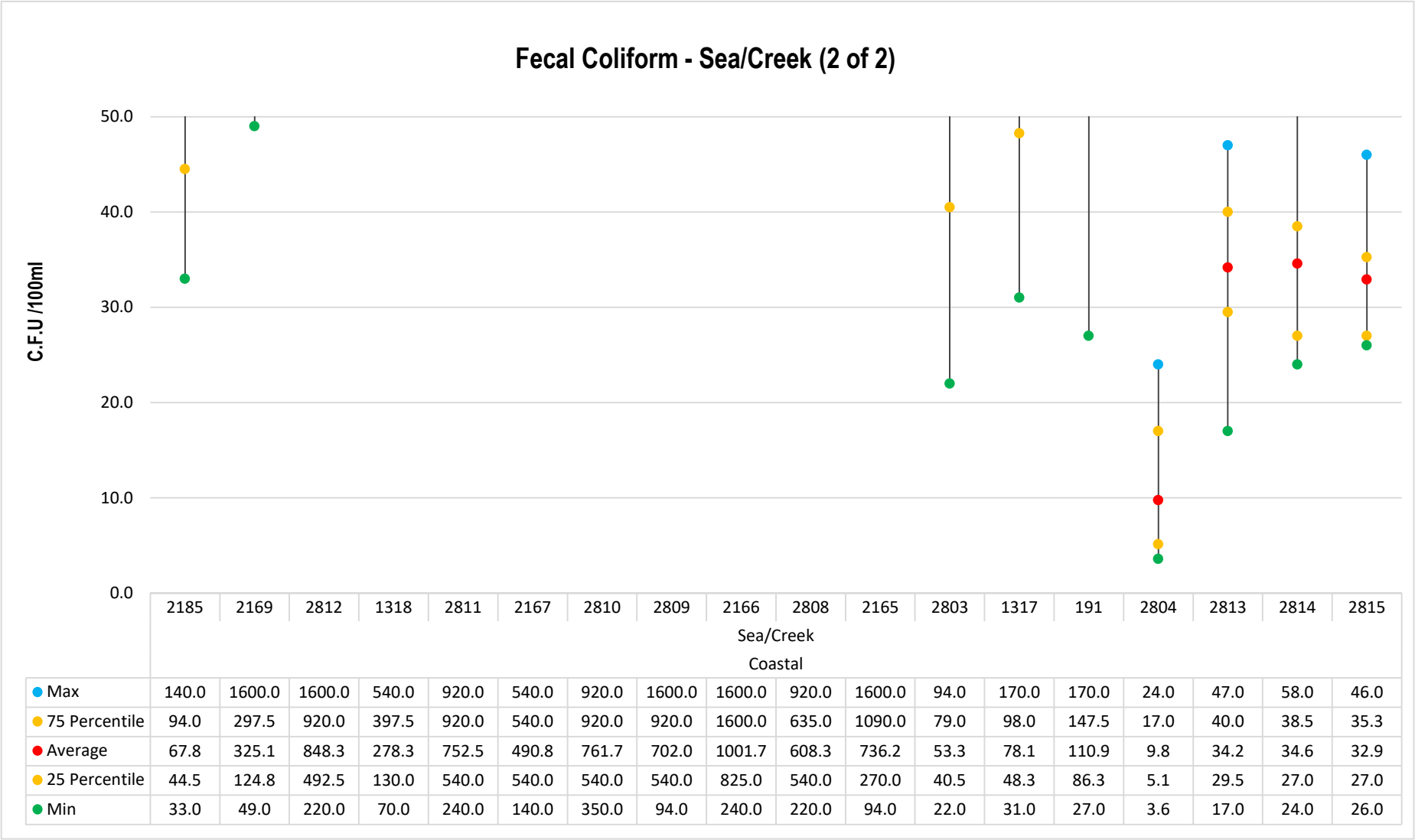
	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	7.8	8.2	8.2	7.8	7.8	8.1	8.1	8.1	8.1	8.1	8.1	7.8	8.1	8.7	8.0	8.3	8.4	8.2
75 Percentile	7.6	7.8	7.8	7.5	7.5	7.6	7.7	7.7	7.7	7.6	7.6	7.4	7.6	8.1	7.6	8.1	8.1	8.0
Average	7.4	7.6	7.7	7.4	7.4	7.5	7.6	7.5	7.5	7.4	7.5	7.3	7.4	7.9	7.4	8.0	8.1	8.0
25 Percentile	7.3	7.4	7.6	7.2	7.2	7.3	7.3	7.3	7.3	7.2	7.3	7.2	7.2	7.5	7.3	7.9	8.0	8.0
Min	6.8	6.8	7.3	7.1	6.9	7.0	7.1	7.1	7.1	7.0	7.0	7.0	6.8	7.2	6.9	7.3	7.9	7.8

Figure No. 58: Trend of pH levels recorded at WQMS monitoring sea and creek water (2 of 2)



	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	110.0	110.0	140.0	140.0	110.0	350.0	540.0	540.0	140.0	120.0	170.0	920.0	170.0	170.0	110.0	170.0	70.0	49.0
75 Percentile	70.0	64.8	76.0	110.0	70.0	82.8	220.0	132.5	122.5	72.3	117.5	397.5	76.0	115.0	79.0	103.0	49.0	41.5
Average	51.9	49.3	56.5	76.9	55.2	81.9	198.0	122.8	87.4	62.5	94.8	291.7	69.2	88.6	65.8	85.7	41.7	33.4
25 Percentile	29.8	26.8	22.8	32.3	33.0	33.8	90.3	45.3	45.3	48.3	59.5	128.5	46.8	59.5	49.0	46.0	32.5	23.0
Min	17.0	23.0	22.0	22.0	27.0	27.0	49.0	22.0	31.0	27.0	33.0	46.0	33.0	33.0	33.0	40.0	22.0	23.0

Figure No. 59: Trend of Fecal coliform levels recorded at WQMS monitoring sea and creek water (1 of 2)



	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	140.0	1600.0	1600.0	540.0	920.0	540.0	920.0	1600.0	1600.0	920.0	1600.0	94.0	170.0	170.0	24.0	47.0	58.0	46.0
75 Percentile	94.0	297.5	920.0	397.5	920.0	540.0	920.0	920.0	1600.0	635.0	1090.0	79.0	98.0	147.5	17.0	40.0	38.5	35.3
Average	67.8	325.1	848.3	278.3	752.5	490.8	761.7	702.0	1001.7	608.3	736.2	53.3	78.1	110.9	9.8	34.2	34.6	32.9
25 Percentile	44.5	124.8	492.5	130.0	540.0	540.0	540.0	540.0	825.0	540.0	270.0	40.5	48.3	86.3	5.1	29.5	27.0	27.0
Min	33.0	49.0	220.0	70.0	240.0	140.0	350.0	94.0	240.0	220.0	94.0	22.0	31.0	27.0	3.6	17.0	24.0	26.0

Figure No. 60: Trend of Fecal coliform levels recorded at WQMS monitoring sea and creek water (2 of 2)

Water Quality Index for WQMS Monitoring Sea and Creek Water (1 of 2)

Apr	56	59	63	57	63	63	50	59	52	55	57	53	60	52	58	40	61	62
May	62	64	53	32	68	54	58	59	62	47	69	55	60	43	35	36	62	68
Jun	61	60	53	66	61	57	67	56	60	63	61	60	62	62	52	51	53	68
Jul	75	79	62	67	77	59	68	67	79	75	82	77	64	72	81	78	76	77
Aug	63	62	61	55	67	61	56	66	59	75	71	63	76	77	74	71	74	74
Sep	37	35	62	61	64	61	56	62	61	68	64	55	70	45	67	68	70	77
Oct	70	72	67	59	73	72	58	65	65	72	71	61	68	69	70	65	70	65
Nov	67	61	69	60	68	57	58	48	53	69	62	51	52	68	66	67	73	65
Dec	72	73	65	73	69	68	67	57	54	63	63	48	53	65	70	65	56	58
Jan	63	68	60	58	43	55	54	64	65	73	60	43	64	71	70	69	67	58
Feb	49	57	50	50	65	48	55	59	58	66	56	54	50	66	60	63	59	59
Mar	57	60	58	55	49	56	45	56	49	54	60	48	39	53	51	53	64	63
Station Code	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Sub Basin	Sea/Creek (1 of 2)																	
Basin	Coastal																	

Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

Table No. 26 : Surface water quality monitoring stations monitoring Sea/Creek water (1 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2802	Dahanu creek	Dahanu Creek at Dahanu Fort	Danugaon	Dahanu	Thane
NWMP	2801	Savta creek	Savta Creek	Savta	Dahanu	Thane
NWMP	2799	Dandi creek	Dandi Creek	Dandi	Palghar	Thane
NWMP	2807	Navapur sea	Navapur Sea	Navapur	Palghar	Thane
NWMP	2800	Sarwali creek	Sarwali Creek	Sarwali	Palghar	Thane
NWMP	2798	Kharekuran Murbe creek	Kharekuran Murbe Creek	Kharekuran	Palghar	Thane
NWMP	2805	Arnala sea	Arnala Sea	Arnala	Vasai	Thane
NWMP	2797	Bhayander creek	Bhayander Creek at D/s of Railway Bridge at Jasal Park Chowpatty	Navghar	Bhayander	Thane
NWMP	1316	Bassein creek	Bassein creek at Vasai Fort, Thane	Bassein	Vasai	Thane
NWMP	2795	Ulhas creek	Ulhas Creek at Gaimukh at Nagla Bunder on Ghod Bunder Road	Nagla	Thane	Thane
NWMP	2796	Ulhas creek	Ulhas Creek at Versova Bridge	Versova	Vasai	Thane
NWMP	2806	Uttan sea	Uttan Sea at Bhayander	Uttan	Bhayander	Thane
NWMP	2791	Ulhas creek	Ulhas Creek at Reti Bunder, D/s of Kalyan-Bhiwandi Bridge	Kalyan	Kalyan	Thane
NWMP	2794	Ulhas creek	Ulhas Creek at Kolshet Reti Bunder	Kolshet	Thane	Thane
NWMP	2792	Ulhas creek	Ulhas Creek at Mumbra Reti Bunder	Mumbra	Thane	Thane
NWMP	2793	Thane creek	Thane Creek at Kalwa Road Bridge	Kalwa	Thane	Thane
NWMP	2184	Vashi creek	Vashi Creek at Airoli Bridge	Airoli	Thane	Thane
SWMP	190	Creek water	TTC Creek At Ghansoli Jetty	Ghansoli	Thane	Thane

Water Quality Index for WQMS Monitoring Sea and Creek Water (2 of 2)

Apr	61	47	45	54	55	58	53	60	58	56	61	60	60	57	86	75	71	79
May	67	47	49	57	50	56	49	53	51	58	61	67	63	56	92	73	74	76
Jun	53	52	36	51	55	56	47	52	51	50	50	80	67	62	89	78	75	78
Jul	74	60	50	61	56	58	54	55	55	53	51	78	66	64	87	81	81	81
Aug	68	57	58	52	59	61	58	57	58	53	54	78	68	66	87	77	79	79
Sep	69	60	57	56	53	56	53	59	58	61	59	74	71	62	90	77	81	81
Oct	75	56	59	56	56	47	55	55	48	54	53	77	69	57	93	75	74	73
Nov	59	52	61	57	58	60	59	57	56	57	62	79	70	65	83	78	79	77
Dec	69	46	45	48	38	45	36	41	38	39	43	75	49	66	81	80	72	76
Jan	63	49	45	55	52	58	53	47	56	65	44	72	55	64	84	79	75	79
Feb	60	58	47	58	53	57	50	49	47	52	50	75	60	46	87	79	79	76
Mar	56	47	47	47	45	45	46	44	48	48	49	79	58	61	82	81	78	73
Station Code	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Sub Basin	Sea/Creek (2 of 2)																	
Basin	Coastal																	

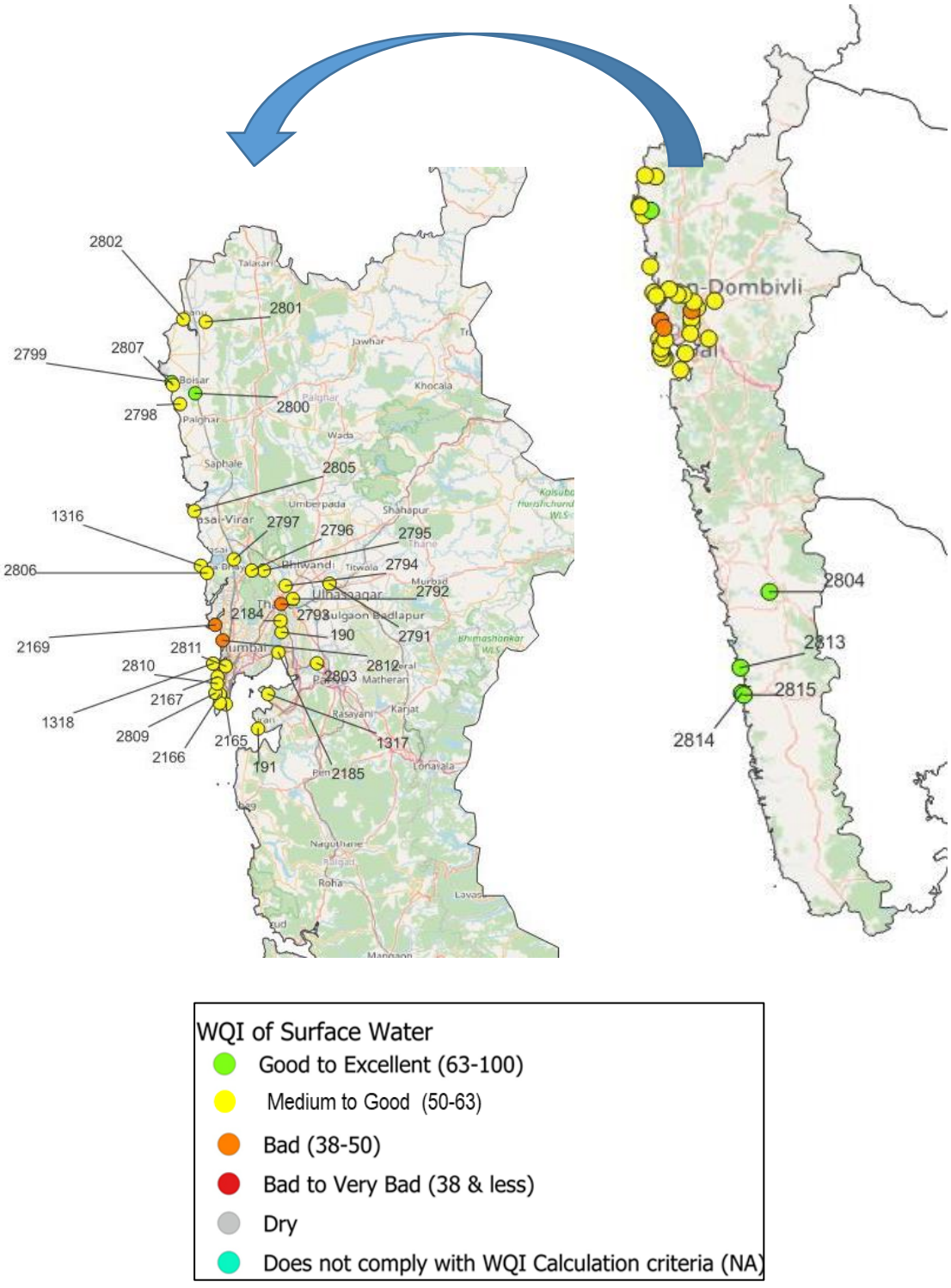
Legend

Good to Excellent	Medium to Good	Bad	Bad to Very Bad	Dry	Not Collected

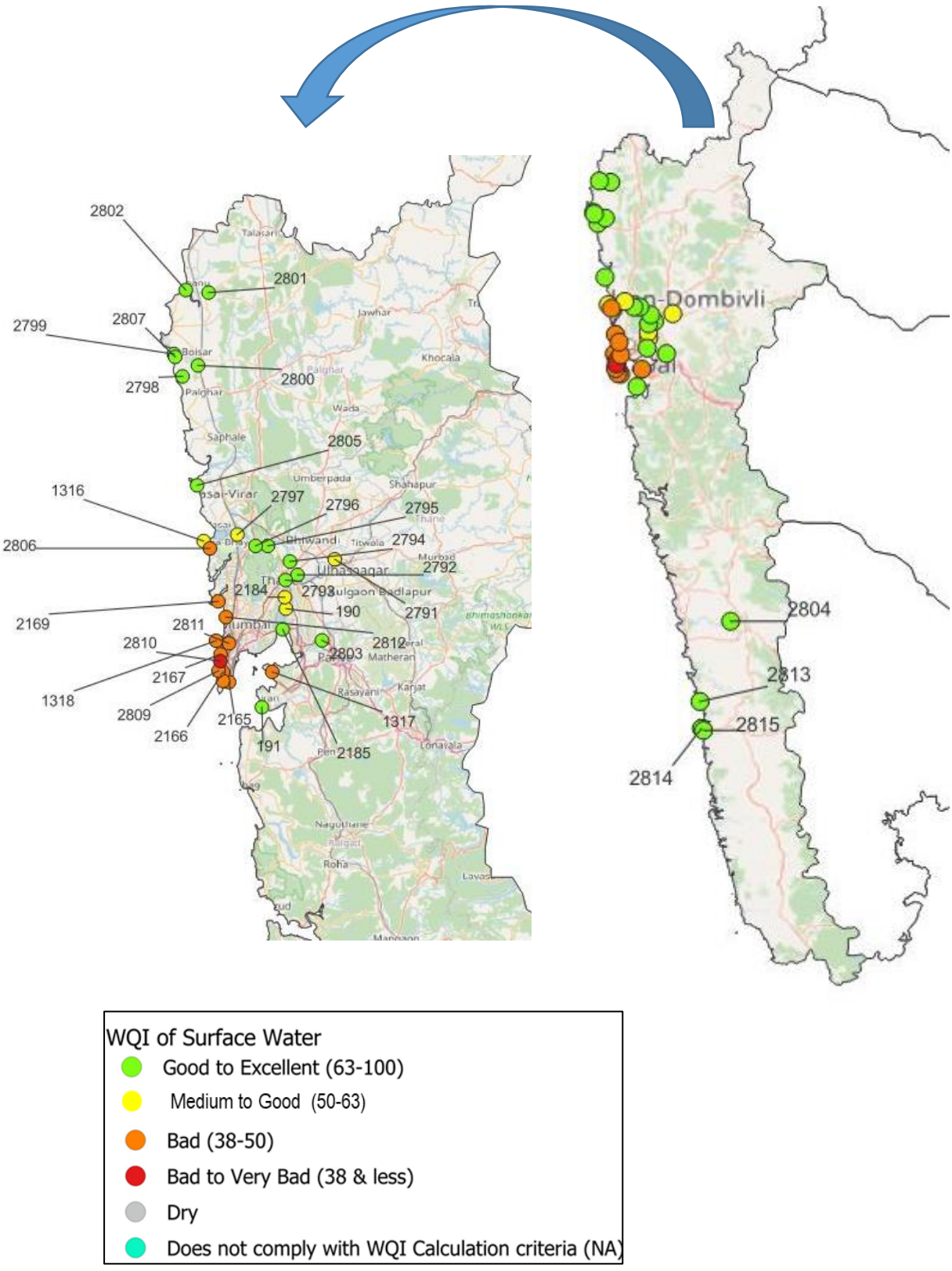
Table No. 27 : Surface water quality monitoring stations monitoring Sea/Creek water (2 of 2)

Program	Station ID	River/Nalla	Station Name	Village	Taluka	District
NWMP	2185	Vashi creek	Vashi Creek at Vashi Bridge	Vashi	Thane	Thane
NWMP	2169	Sea	Sea Water at Varsova Beach	Versova	Andheri	Mumbai
NWMP	2812	Sea	Sea Water at Juhu Beach	Juhugaon	Santacruz	Mumbai
NWMP	1318	Mahim creek	Mahim creek at Mahim Bay	Mahim	Bandra	Mumbai
NWMP	2811	Sea	Sea Water at Shivaji Park (Dadar Chowpatty)	Dadar	Dadar	Mumbai
NWMP	2167	Sea	Sea Water at Worli Seaface	Worli	Worli	Mumbai
NWMP	2810	Sea	Sea Water at Haj Ali	Worli	Worli	Mumbai
NWMP	2809	Sea	Sea Water at Malabar Hill	Walkeshwar	Mumbai	Mumbai
NWMP	2166	Sea	Sea Water at Charni Road Chowpatty	Girgaon	Mumbai	Mumbai
NWMP	2808	Sea	Sea Water at Nariman Point	Colaba	Colaba	Mumbai
NWMP	2165	Sea	Sea Water at Gateway of India	Colaba	Colaba	Mumbai
NWMP	2803	Panvel creek	Panvel Creek at Kopra Bridge	Kopra	Panvel	Raigad
NWMP	1317	Thane creek	Thane creek at Elephanta Island	Gharapuri,Elephanta Island	Uran	Raigad
SWMP	191	Sea Water	Arabian Sea behind ONGC Uran	Uran	Uran	Raigad
NWMP	2804	Karambavane creek	Karambavane Creek at Chiplun	Karambavane	Chiplun	Ratnagiri
NWMP	2813	Sea	Sea Water at Ganapatipule	Ganapatipule	Ratnagiri	Ratnagiri
NWMP	2814	Sea	Sea Water at Bhagwati Bunder, Ratnagiri near Ultra Tech Cement Jetty	Mirkarwada	Ratnagiri	Ratnagiri
NWMP	2815	Madvi sea	Madvi Sea Water at Ratnagiri near Jodhale Maruti Temple	Madvigaon	Ratnagiri	Ratnagiri

Spatial map of Surface WQI at Saline/Creek (April 2022)

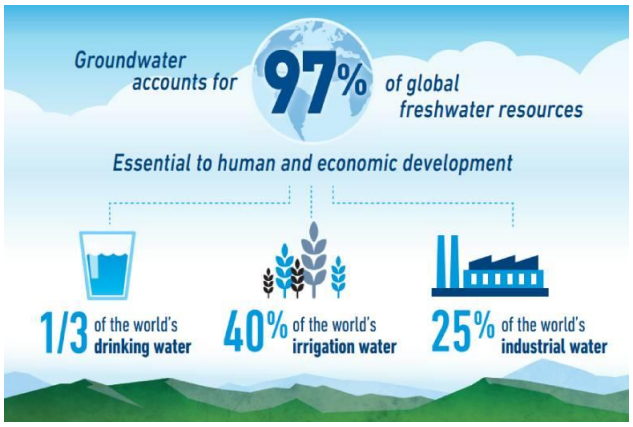


Spatial map of Surface WQI at Saline/Creek (December 2022)



GROUND WATER QUALITY

Groundwater is precipitation that has infiltrated the soil beyond the surface and collected in underground empty spaces. In terms of storage at any one instant in time, groundwater is the largest single supply of fresh water available for use by humans. These resources are utilized by humans for drinking, irrigation and industrial purposes. Just like surface water resources, with respect to groundwater resources as well, there is a growing concern about the deterioration of groundwater due to geogenic and anthropogenic activities.



Picture No. 1: Why Groundwater is necessary?
Source:
https://www.worldbank.org/en/topic/water/publication/seeing-the-invisible-a-strategic-report-on-groundwater-quality

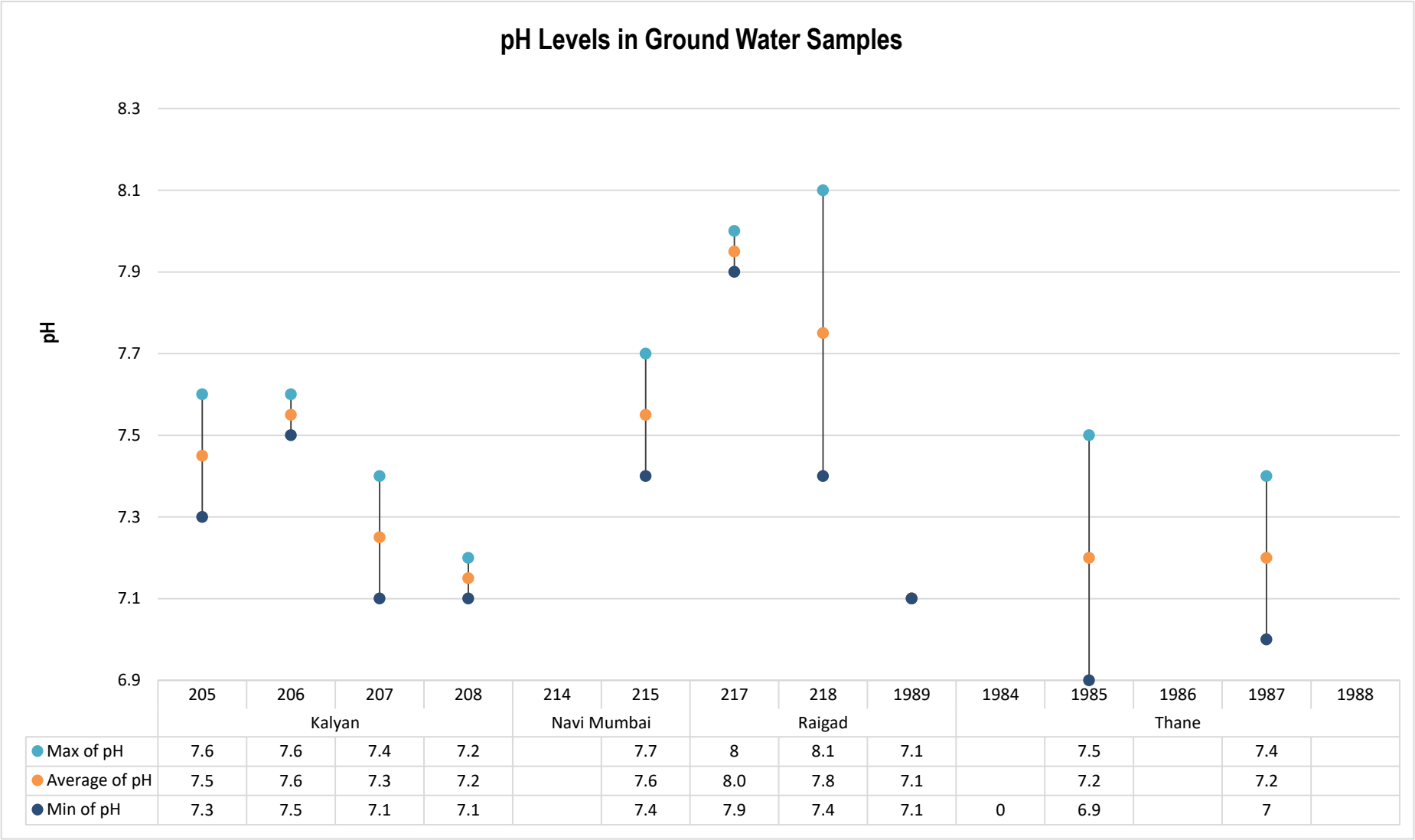
It has been observed that the quality of groundwater has undergone a change to an extent wherein the groundwater has turned unsuitable for applications. In several states of India, increase in overall salinity in the groundwater and/or presence of high concentrations of fluoride, nitrate, iron, arsenic, total hardness and few toxic metal ions have been noticed[28].

For monitoring the groundwater level and its quality, Central Ground Water Board (CGWB), Ground water Survey and Development Agency (GSDA) and MPCB monitor the ground water quality across various districts of the state. For this purpose, MPCB has installed 66 ground water monitoring stations that monitor water quality twice a year for parameters like pH, Nitrate, TDS, Hardness, Fluoride, microbial content, sulphates and so on. The total WQMS for year 2022-23 are represented in the Table No.28.

Table No. 28: List of Groundwater Quality Monitoring stations

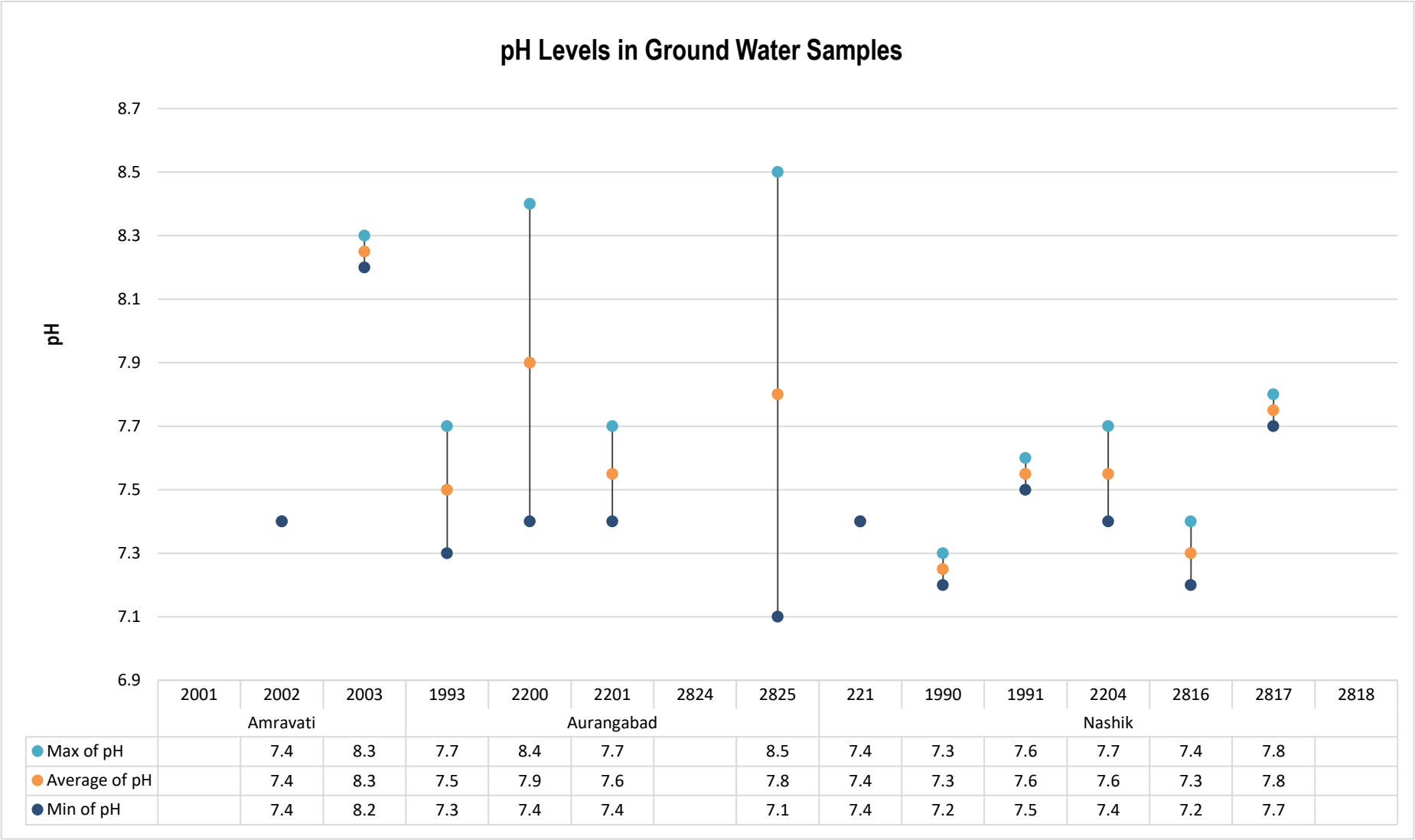
Water Quality Monitoring Stations	
Water Bodies	**2022-23**
Bore well	29
Dug well	35
Tube well	1
Hand pump	1
Total	**66**

28 https://cgwb.gov.in/WQ/GROUND%20WATER%20QUALITY%20SCENARIO%20IN%20INDIA.pdf



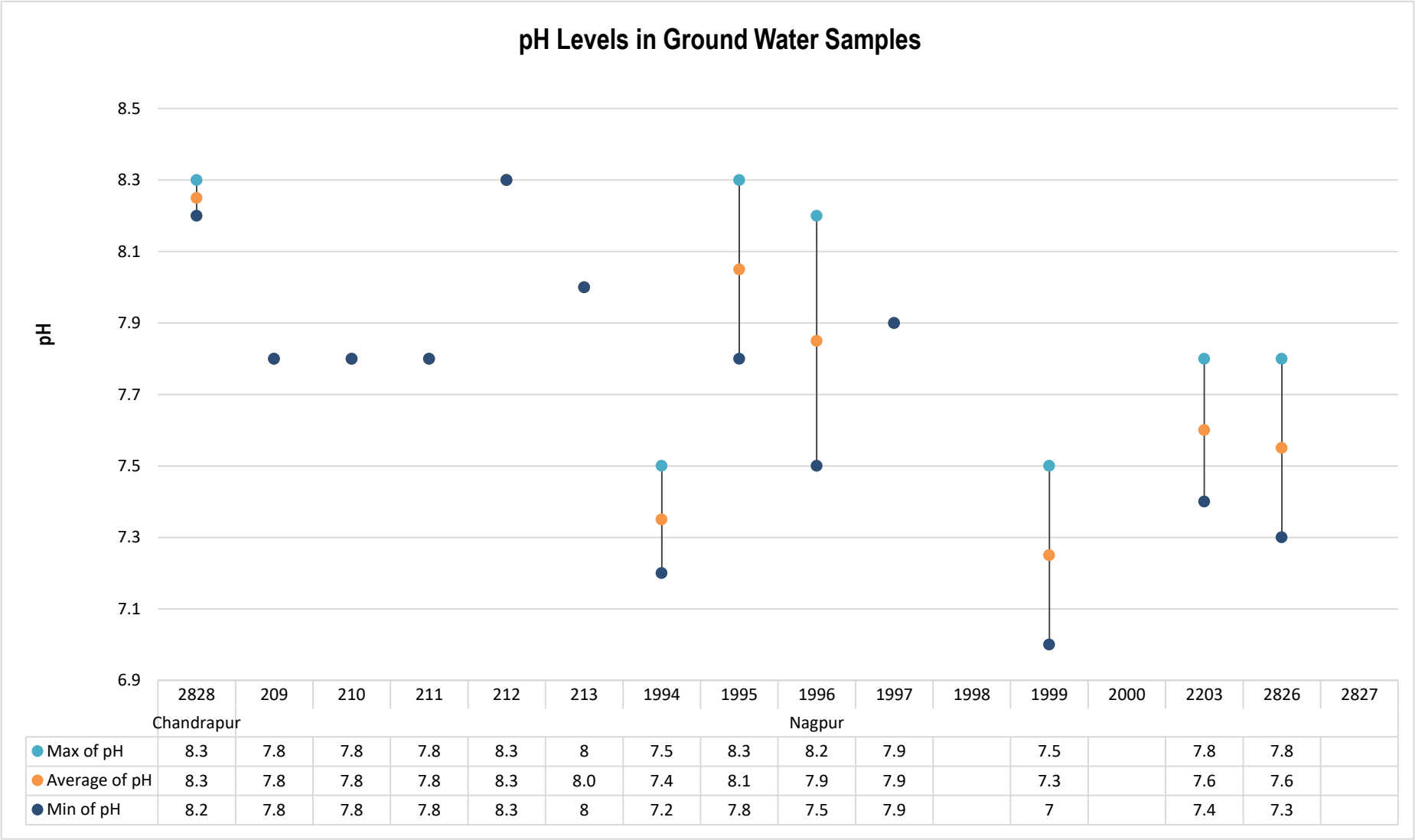
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of pH	7.6	7.6	7.4	7.2		7.7	8	8.1	7.1		7.5		7.4	
Average of pH	7.5	7.6	7.3	7.2		7.6	8.0	7.8	7.1		7.2		7.2	
Min of pH	7.3	7.5	7.1	7.1		7.4	7.9	7.4	7.1	0	6.9		7	

Figure No. 61: Parametric values of pH recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



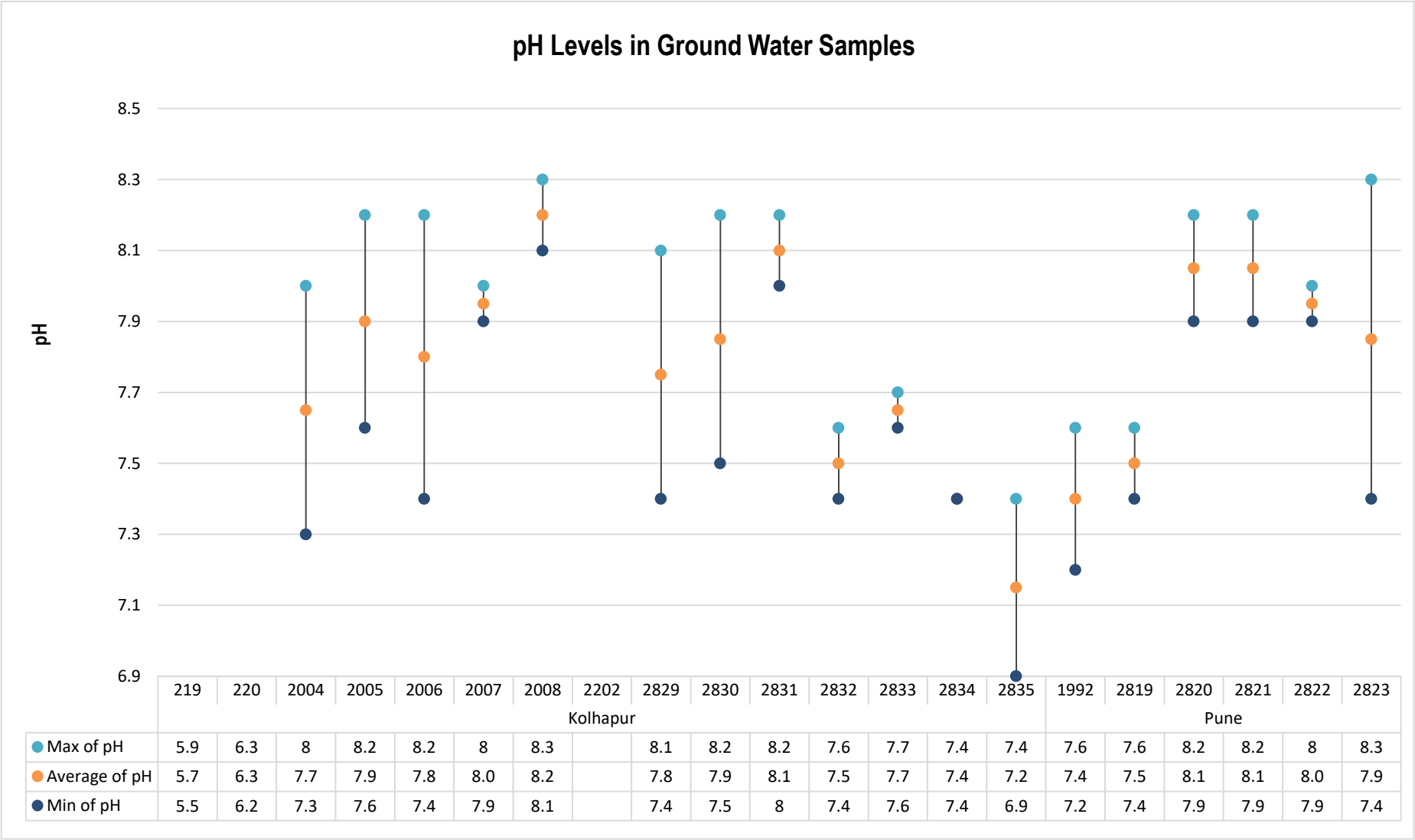
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati			Aurangabad							Nashik			
Max of pH		7.4	8.3	7.7	8.4	7.7		8.5	7.4	7.3	7.6	7.7	7.4	7.8	
Average of pH		7.4	8.3	7.5	7.9	7.6		7.8	7.4	7.3	7.6	7.6	7.3	7.8	
Min of pH		7.4	8.2	7.3	7.4	7.4		7.1	7.4	7.2	7.5	7.4	7.2	7.7	

Figure No. 62: Parametric values of pH recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



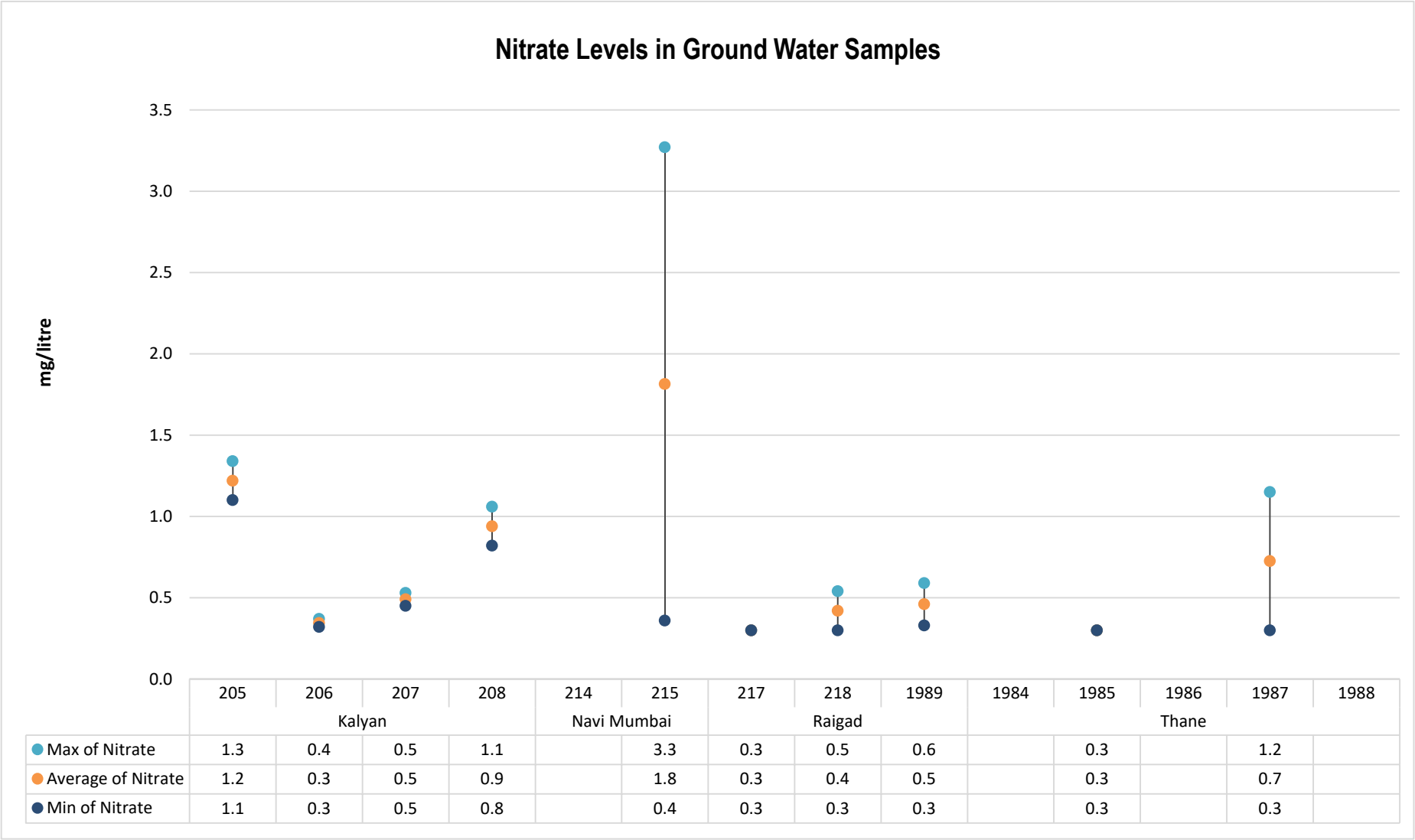
	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
	Chandrapur						Nagpur									
Max of pH	8.3	7.8	7.8	7.8	8.3	8	7.5	8.3	8.2	7.9		7.5		7.8	7.8	
Average of pH	8.3	7.8	7.8	7.8	8.3	8.0	7.4	8.1	7.9	7.9		7.3		7.6	7.6	
Min of pH	8.2	7.8	7.8	7.8	8.3	8	7.2	7.8	7.5	7.9		7		7.4	7.3	

Figure No. 63: Parametric values of pH recorded at WQMS monitoring ground water at Chandrapur and Nagpur



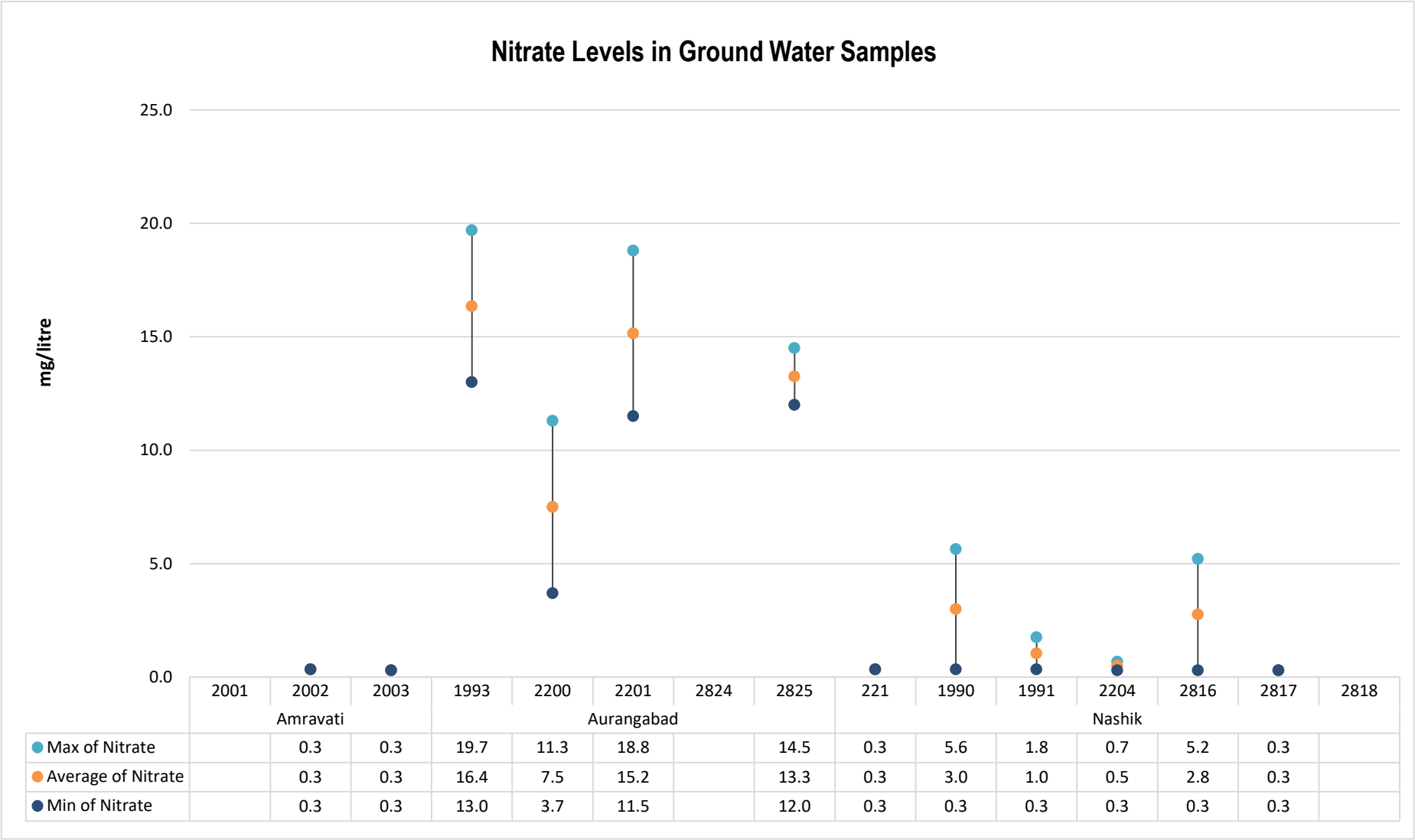
	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of pH	5.9	6.3	8	8.2	8.2	8	8.3		8.1	8.2	8.2	7.6	7.7	7.4	7.4	7.6	7.6	8.2	8.2	8	8.3
Average of pH	5.7	6.3	7.7	7.9	7.8	8.0	8.2		7.8	7.9	8.1	7.5	7.7	7.4	7.2	7.4	7.5	8.1	8.1	8.0	7.9
Min of pH	5.5	6.2	7.3	7.6	7.4	7.9	8.1		7.4	7.5	8	7.4	7.6	7.4	6.9	7.2	7.4	7.9	7.9	7.9	7.4

Figure No. 64: Parametric values of pH recorded at WQMS monitoring ground water at Kolhapur and Pune



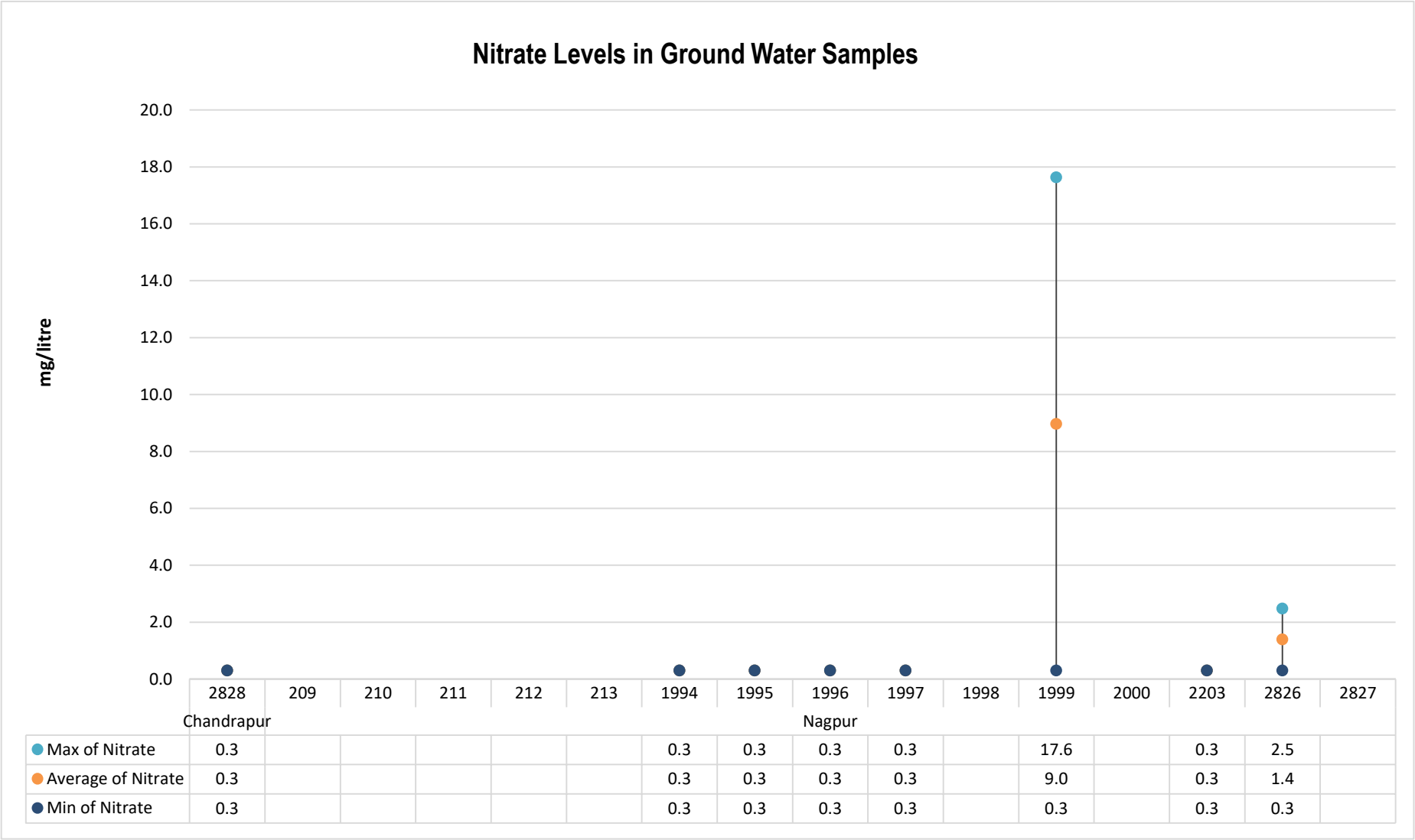
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of Nitrate	1.3	0.4	0.5	1.1		3.3	0.3	0.5	0.6		0.3		1.2	
Average of Nitrate	1.2	0.3	0.5	0.9		1.8	0.3	0.4	0.5		0.3		0.7	
Min of Nitrate	1.1	0.3	0.5	0.8		0.4	0.3	0.3	0.3		0.3		0.3	

Figure No. 65: Parametric values of Nitrate recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



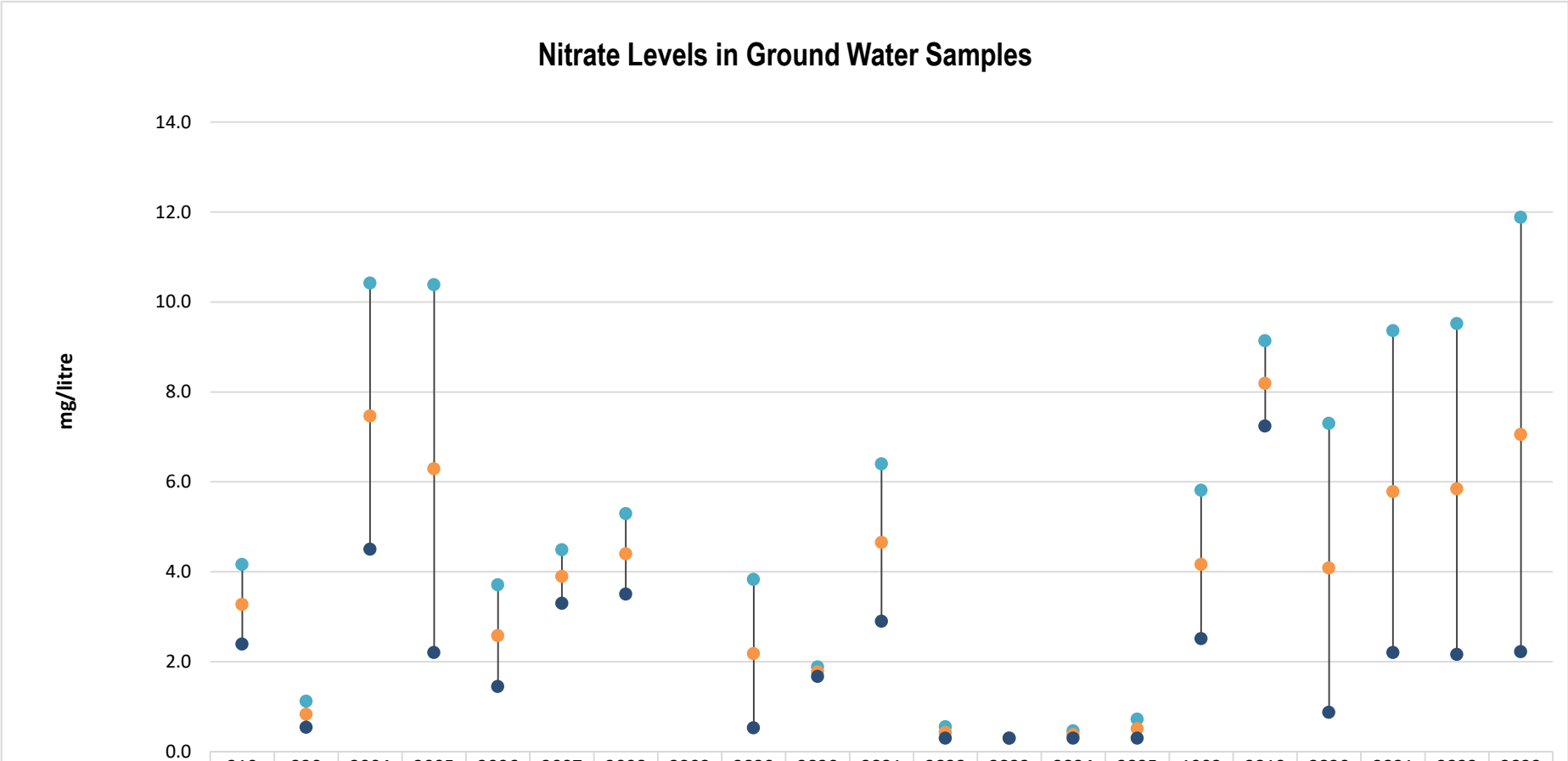
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad					Nashik				
Max of Nitrate		0.3	0.3	19.7	11.3	18.8		14.5	0.3	5.6	1.8	0.7	5.2	0.3	
Average of Nitrate		0.3	0.3	16.4	7.5	15.2		13.3	0.3	3.0	1.0	0.5	2.8	0.3	
Min of Nitrate		0.3	0.3	13.0	3.7	11.5		12.0	0.3	0.3	0.3	0.3	0.3	0.3	

Figure No. 66: Parametric values of Nitrate recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



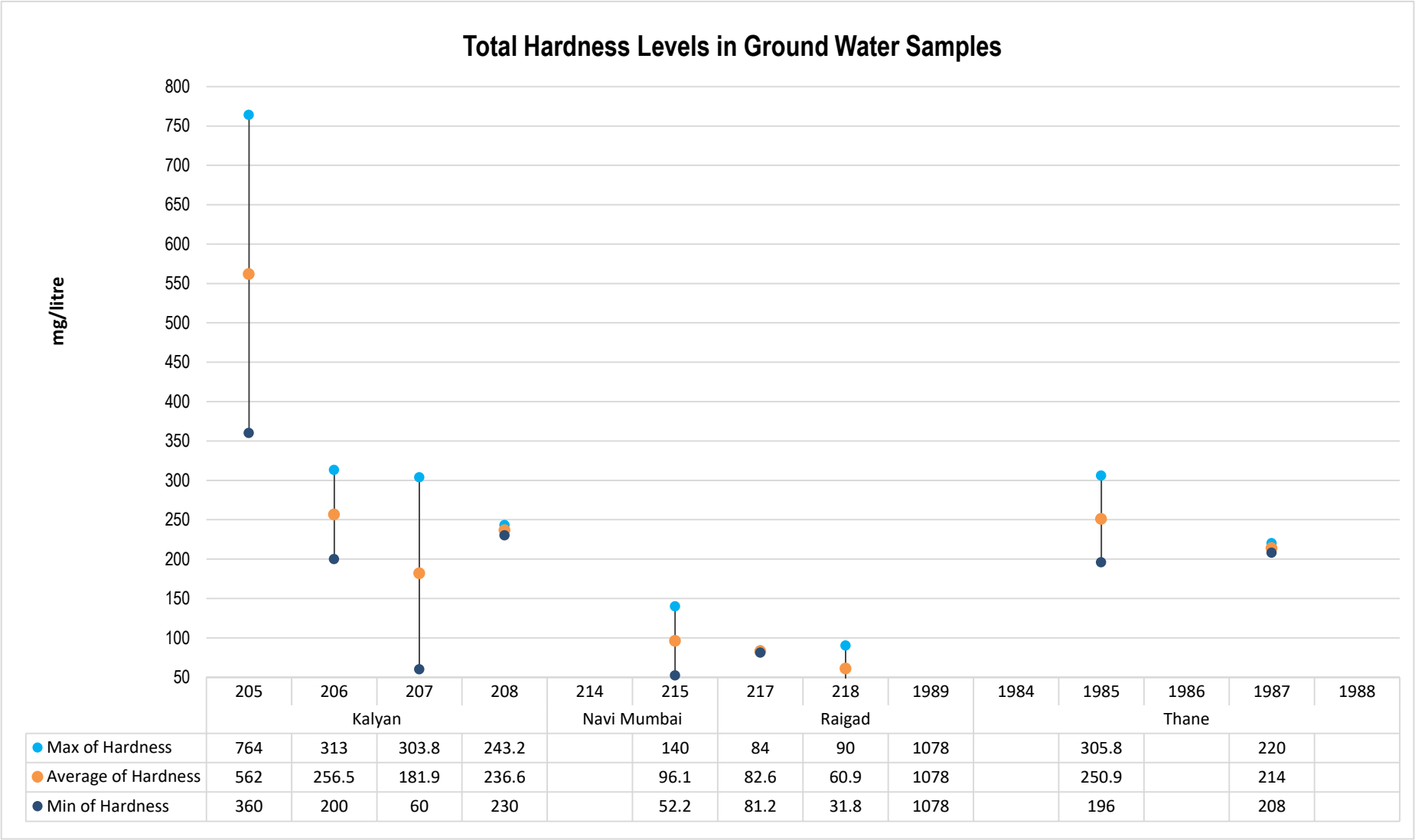
	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
	Chandrapur						Nagpur									
Max of Nitrate	0.3						0.3	0.3	0.3	0.3		17.6		0.3	2.5	
Average of Nitrate	0.3						0.3	0.3	0.3	0.3		9.0		0.3	1.4	
Min of Nitrate	0.3						0.3	0.3	0.3	0.3		0.3		0.3	0.3	

Figure No. 67: Parametric values of Nitrate recorded at WQMS monitoring ground water at Chandrapur and Nagpur



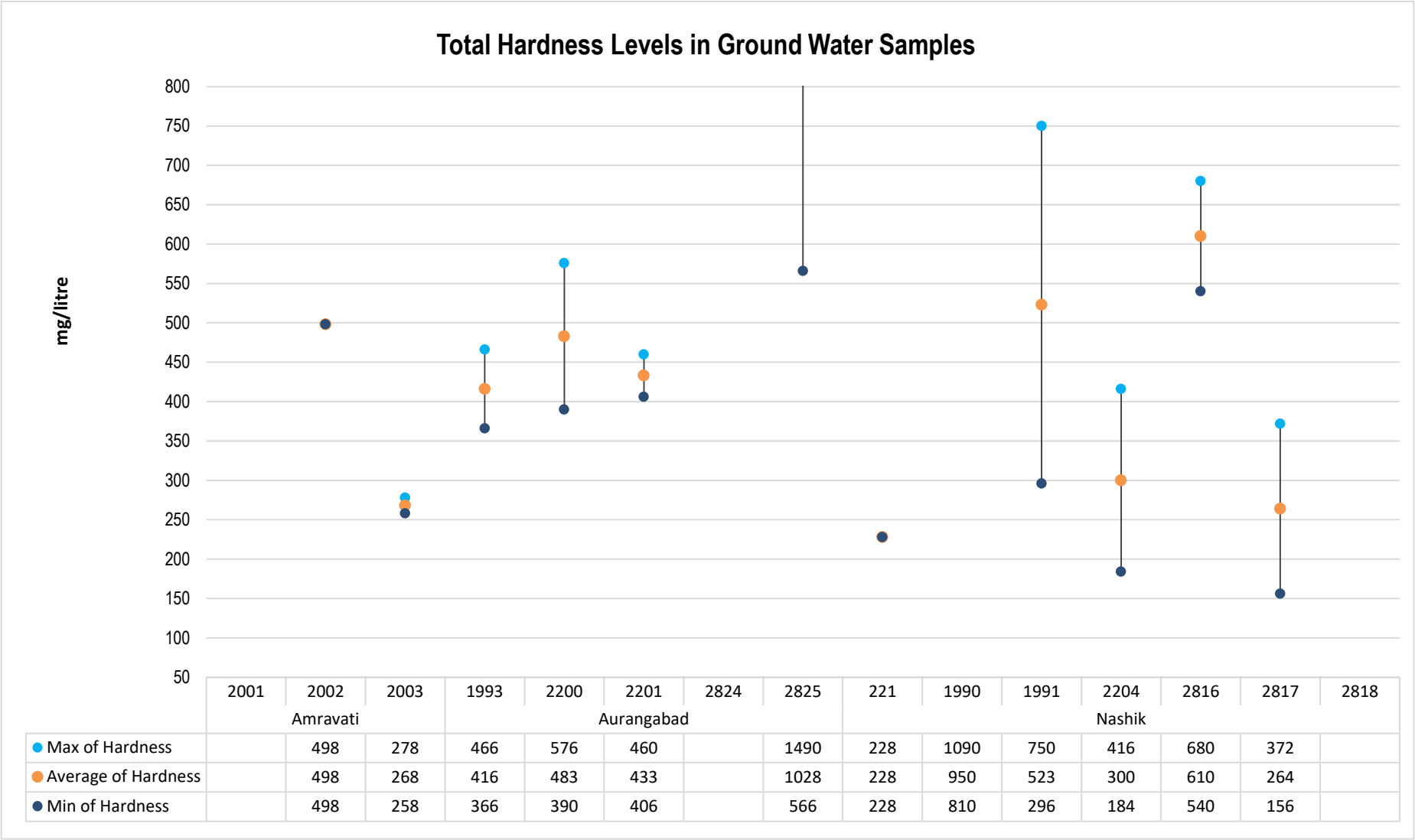
	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of Nitrate	4.2	1.1	10.4	10.4	3.7	4.5	5.3		3.8	1.9	6.4	0.6	0.3	0.5	0.7	5.8	9.1	7.3	9.4	9.5	11.9
Average of Nitrate	3.3	0.8	7.5	6.3	2.6	3.9	4.4		2.2	1.8	4.7	0.4	0.3	0.4	0.5	4.2	8.2	4.1	5.8	5.8	7.1
Min of Nitrate	2.4	0.5	4.5	2.2	1.5	3.3	3.5		0.5	1.7	2.9	0.3	0.3	0.3	0.3	2.5	7.2	0.9	2.2	2.2	2.2

Figure No. 68: Parametric values of Nitrate recorded at WQMS monitoring ground water at Kolhapur and Pune



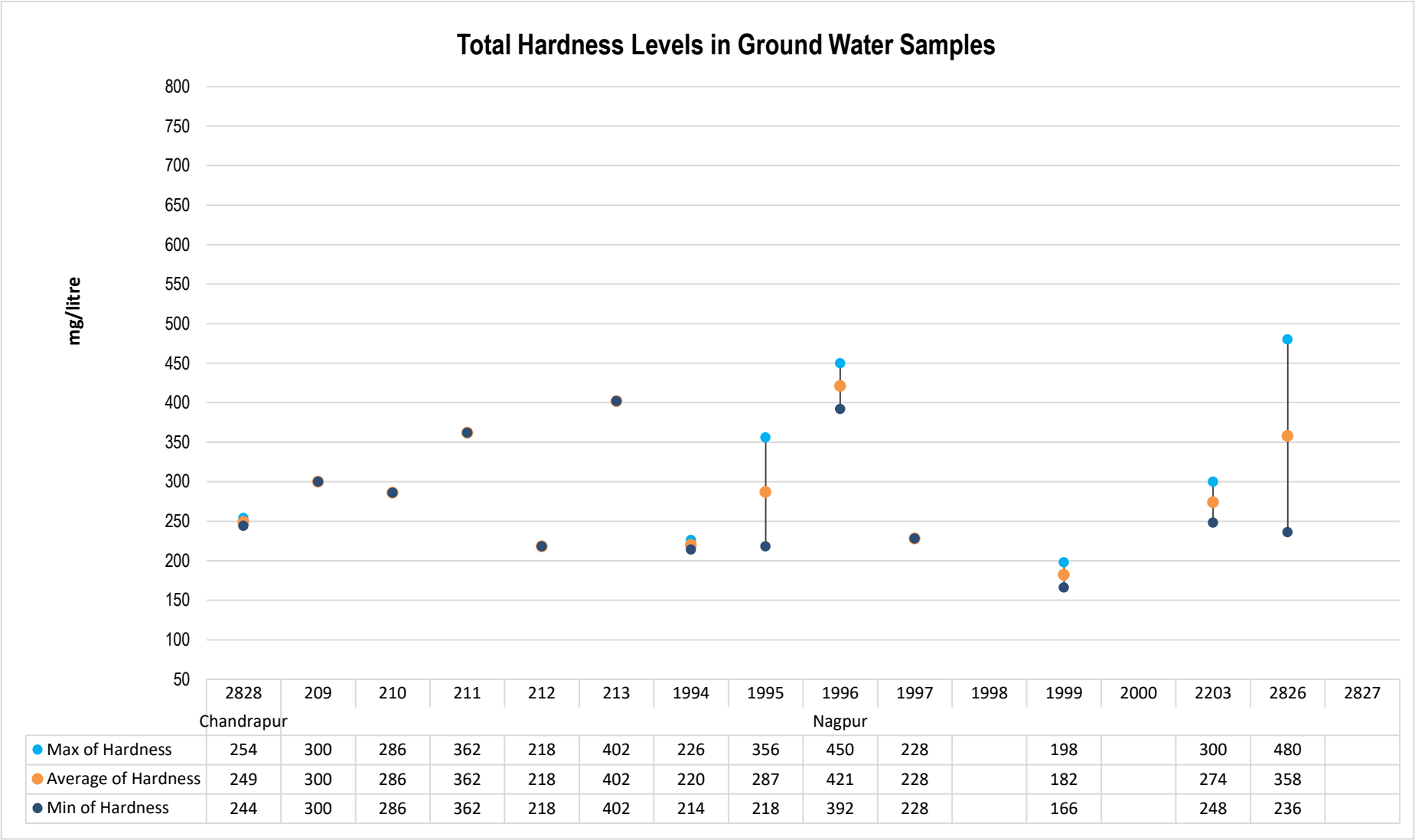
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of Hardness	764	313	303.8	243.2		140	84	90	1078		305.8		220	
Average of Hardness	562	256.5	181.9	236.6		96.1	82.6	60.9	1078		250.9		214	
Min of Hardness	360	200	60	230		52.2	81.2	31.8	1078		196		208	

Figure No. 69: Parametric values of Hardness at $CaCO_3$ recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



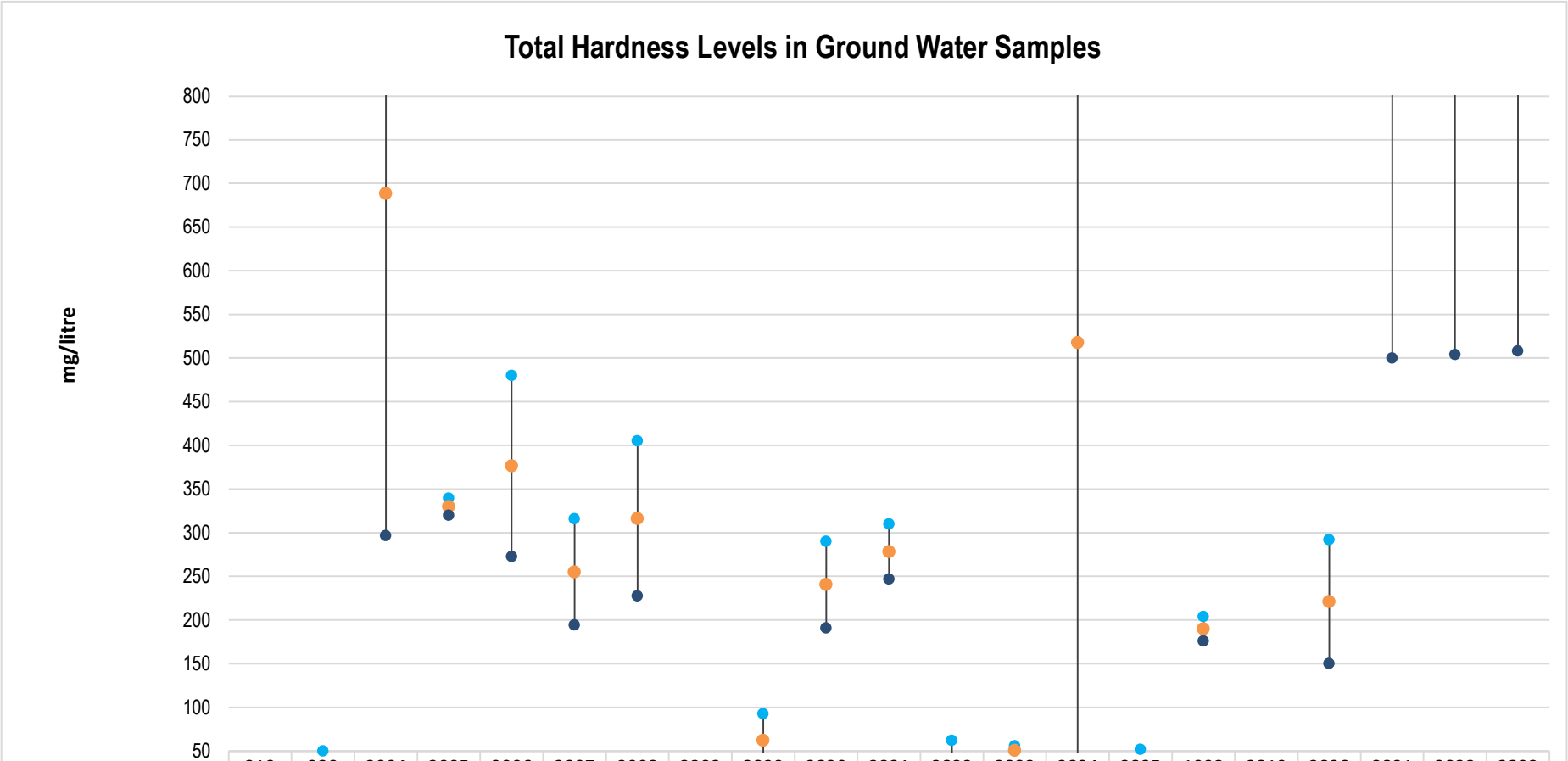
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad						Nashik			
Max of Hardness		498	278	466	576	460		1490	228	1090	750	416	680	372	
Average of Hardness		498	268	416	483	433		1028	228	950	523	300	610	264	
Min of Hardness		498	258	366	390	406		566	228	810	296	184	540	156	

Figure No. 70: Parametric values of Hardness at CaCO3 recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



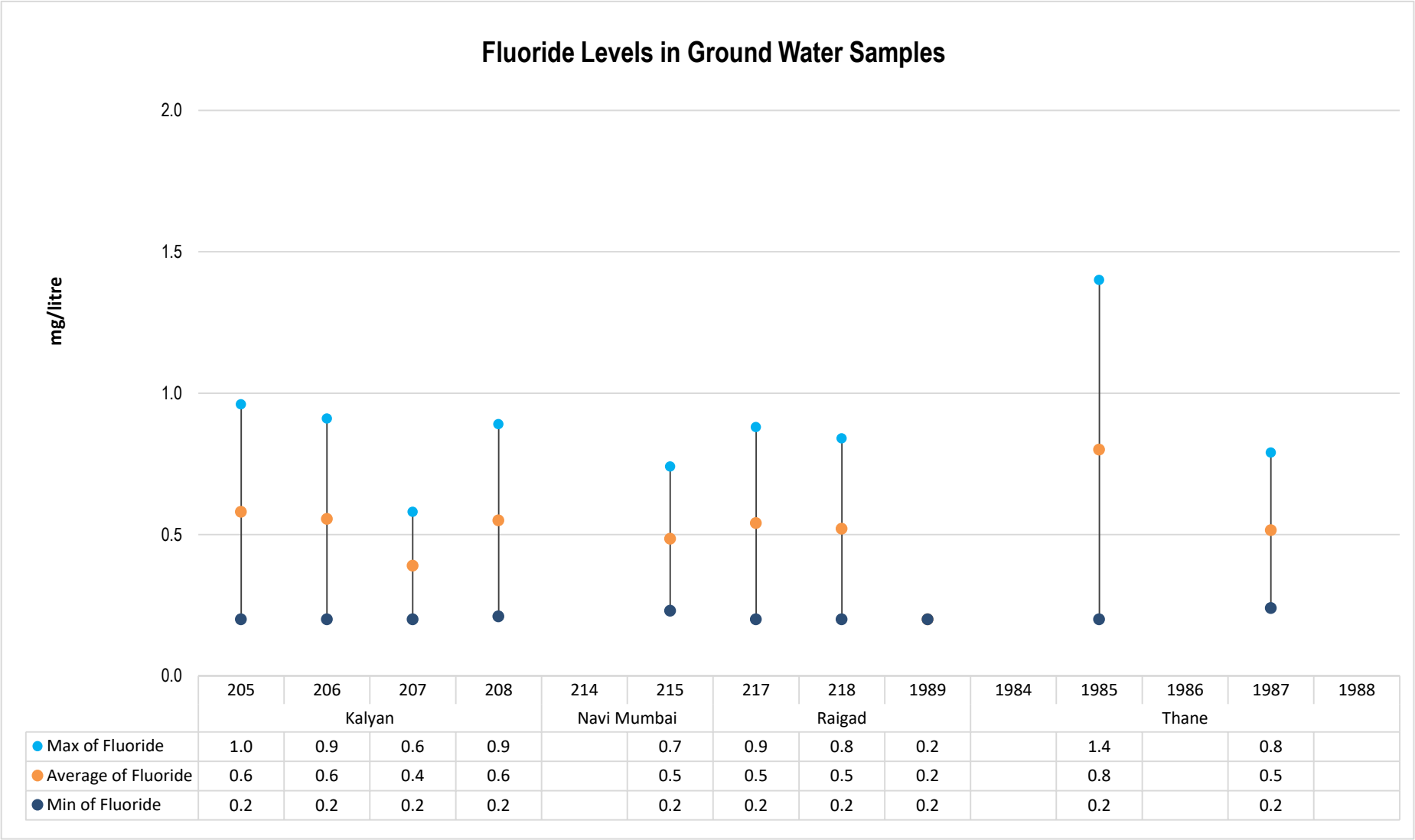
	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
	Chandrapur								Nagpur							
Max of Hardness	254	300	286	362	218	402	226	356	450	228		198		300	480	
Average of Hardness	249	300	286	362	218	402	220	287	421	228		182		274	358	
Min of Hardness	244	300	286	362	218	402	214	218	392	228		166		248	236	

Figure No. 71: Parametric values of Hardness at CaCO3 recorded at WQMS monitoring ground water at Chandrapur and Nagpur



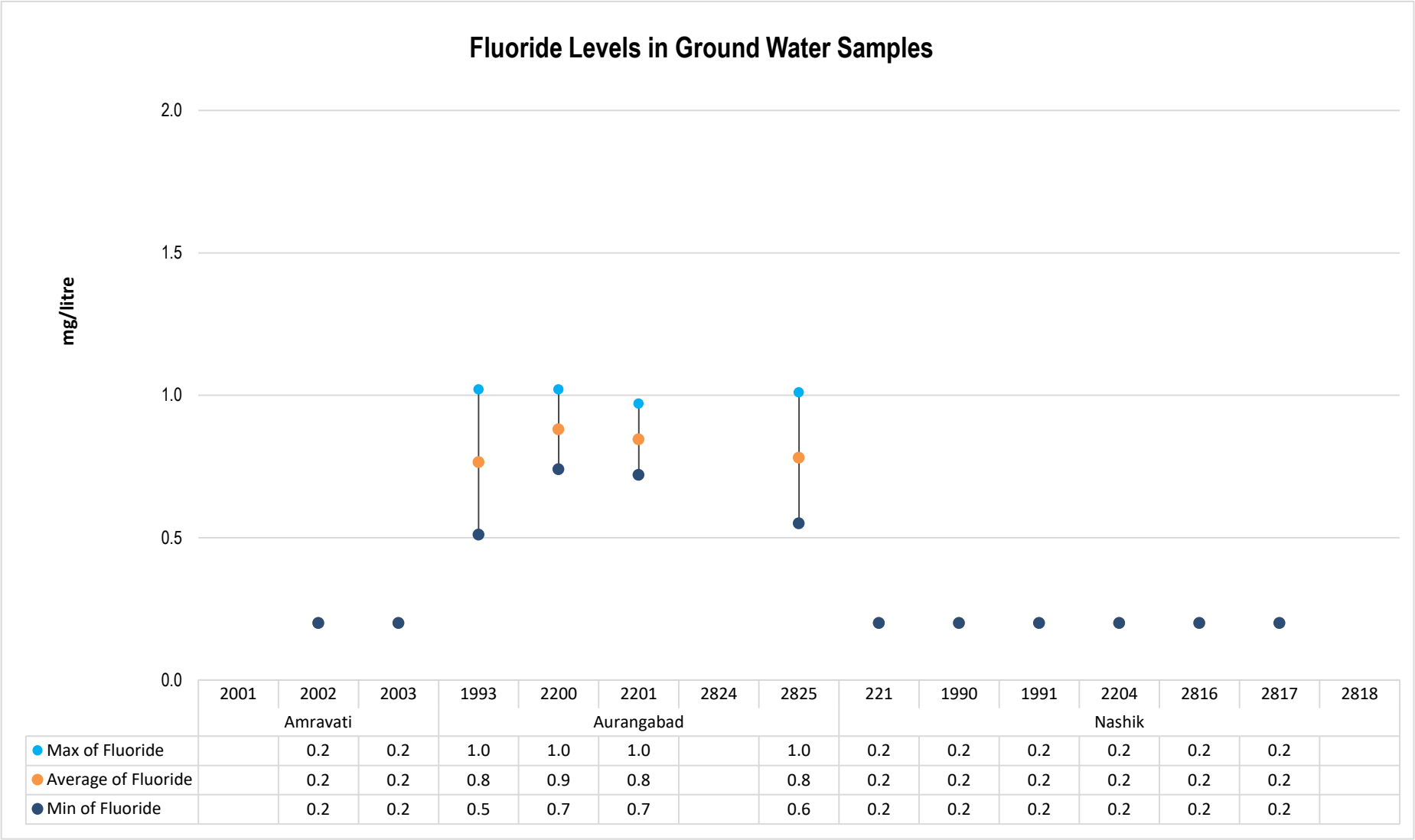
	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of Hardness	30	50	1080	339.6	480	316	405		92.6	290	310	62	56	1000	52	204	1000	292	1270	1260	1310
Average of Hardness	28.1	38.2	688.3	329.8	376.4	255.1	316.3		62.3	240.5	278.4	43.9	50.6	517.8	39.7	190	990	221	885	882	909
Min of Hardness	26.2	26.4	296.6	320	272.8	194.2	227.6		32	191	246.8	25.8	45.2	35.6	27.4	176	980	150	500	504	508

Figure No. 72: Parametric values of Hardness at CaCO3 recorded at WQMS monitoring ground water at Kolhapur and Pune



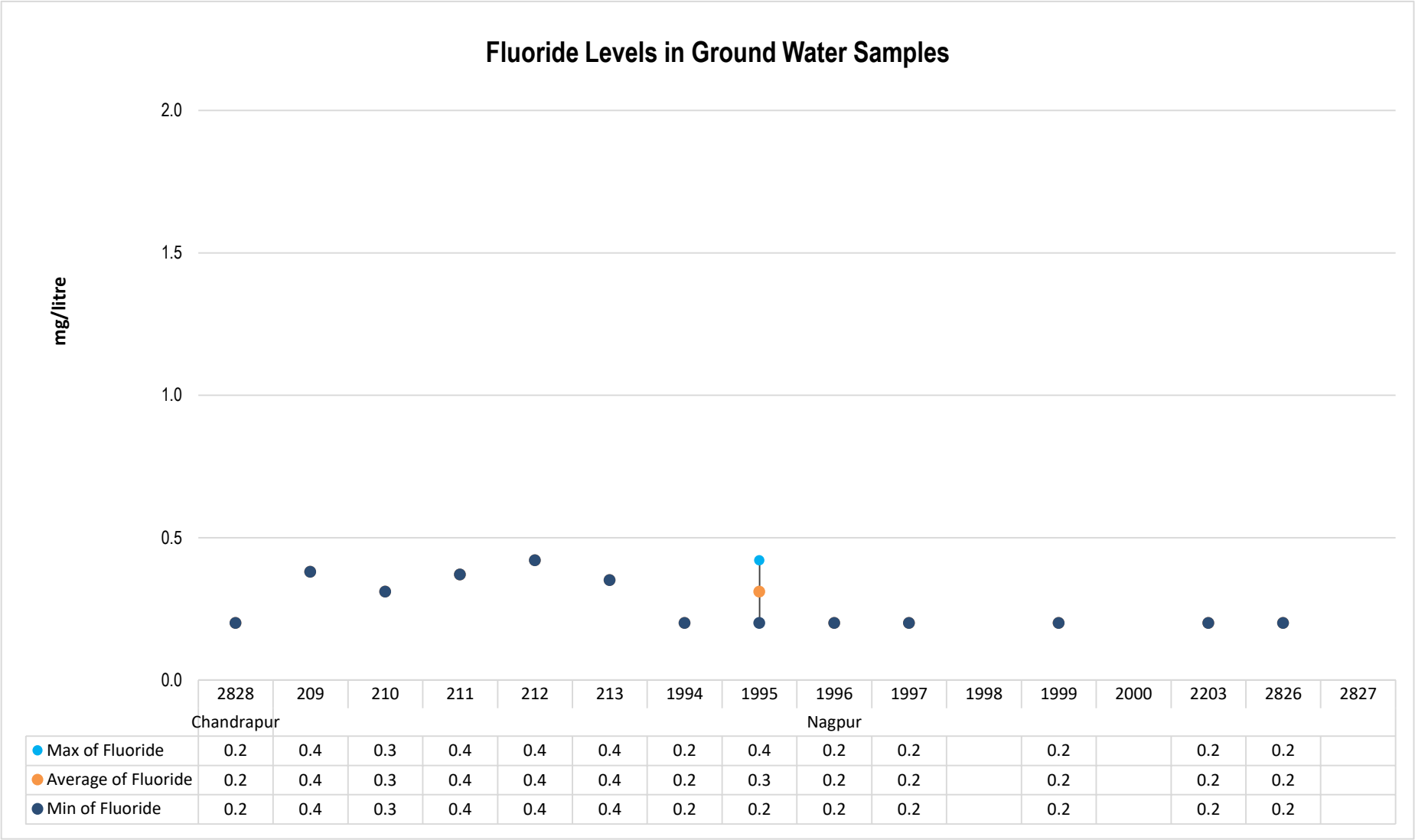
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of Fluoride	1.0	0.9	0.6	0.9		0.7	0.9	0.8	0.2		1.4		0.8	
Average of Fluoride	0.6	0.6	0.4	0.6		0.5	0.5	0.5	0.2		0.8		0.5	
Min of Fluoride	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2		0.2		0.2	

Figure No. 73: Parametric values of Fluoride recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



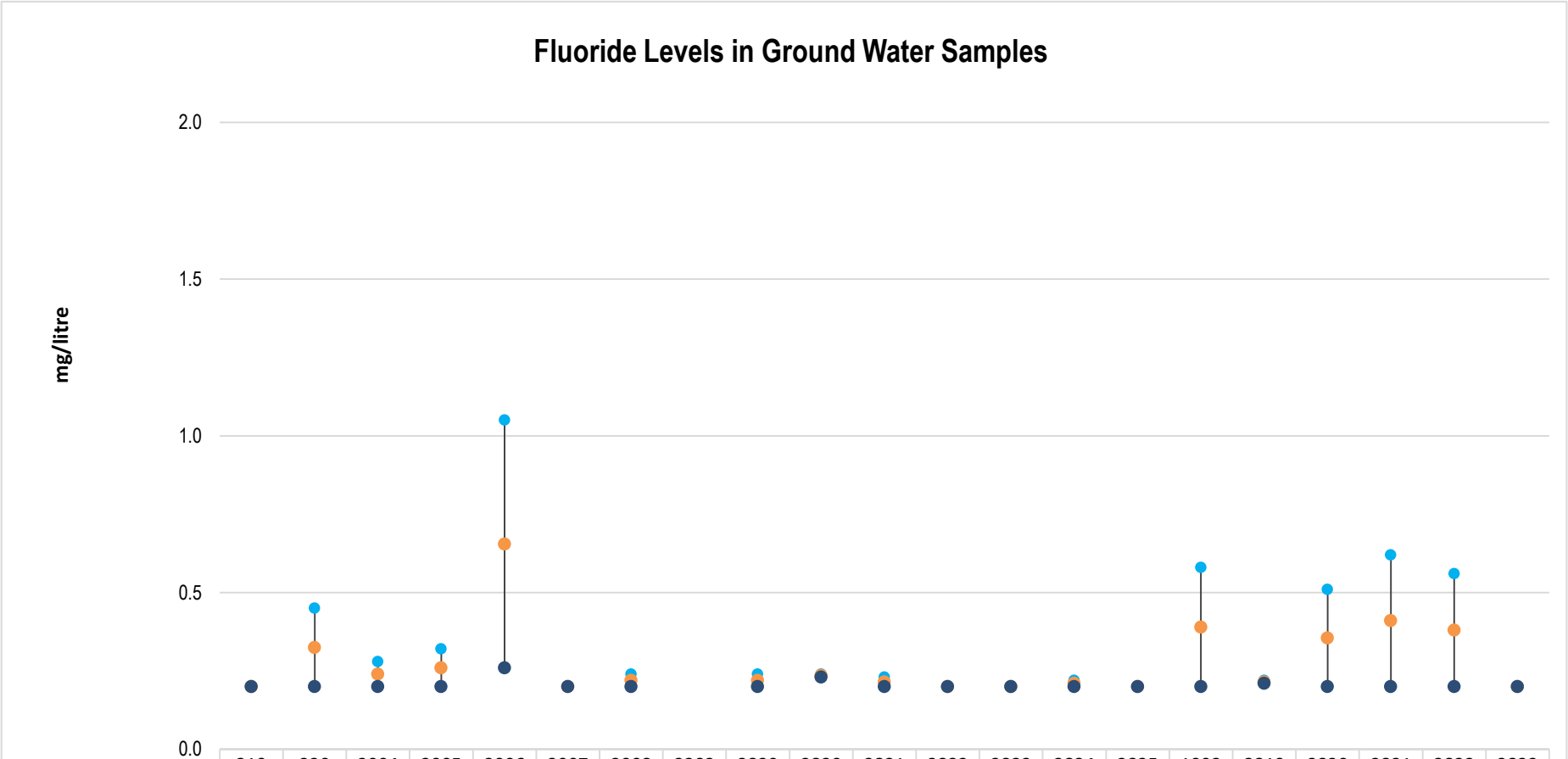
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad						Nashik			
Max of Fluoride		0.2	0.2	1.0	1.0	1.0		1.0	0.2	0.2	0.2	0.2	0.2	0.2	
Average of Fluoride		0.2	0.2	0.8	0.9	0.8		0.8	0.2	0.2	0.2	0.2	0.2	0.2	
Min of Fluoride		0.2	0.2	0.5	0.7	0.7		0.6	0.2	0.2	0.2	0.2	0.2	0.2	

Figure No. 74: Parametric values of Fluoride recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
	Chandrapur							Nagpur								
Max of Fluoride	0.2	0.4	0.3	0.4	0.4	0.4	0.2	0.4	0.2	0.2		0.2		0.2	0.2	
Average of Fluoride	0.2	0.4	0.3	0.4	0.4	0.4	0.2	0.3	0.2	0.2		0.2		0.2	0.2	
Min of Fluoride	0.2	0.4	0.3	0.4	0.4	0.4	0.2	0.2	0.2	0.2		0.2		0.2	0.2	

Figure No. 75: Parametric values of Fluoride recorded at WQMS monitoring ground water at Chandrapur and Nagpur



	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of Fluoride	0.2	0.5	0.3	0.3	1.1	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.6	0.2	0.5	0.6	0.6	0.2
Average of Fluoride	0.2	0.3	0.2	0.3	0.7	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.4	0.4	0.4	0.2
Min of Fluoride	0.2	0.2	0.2	0.2	0.3	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Figure No. 76: Parametric values of Fluoride recorded at WQMS monitoring ground water at Kolhapur and Pune

Water Quality Index for Ground Water at Kalyan, Navi Mumbai, Raigad and Thane.

Apr	184	98	37	106	No Data	90	57	53	NA	No Data	131	No Data	112	No Data
Dec	232	104	94	75	No Data	48	38	35	NA	No Data	106	Dry	76	Dry
Station code	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
RO	Kalyan				Navi Mumbai		Raigad			Thane				

Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	NA

Table No. 29: Ground water quality monitoring stations installed in the areas of Kalyan, Navi Mumbai, Raigad and Thane RO

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
SWMP	Kalyan	205	Dug well opp. KAMA office, MIDC Ph-I, Dombivali	Well water	Kalyan	Dombivali	MIDC,Dombivali
SWMP	Kalyan	206	Dug well near Mamta Hospital, Milap Nagar, Dombivali	Well water	Kalyan	Dombivali	MIDC,Dombivali
SWMP	Kalyan	207	Dug well at pimpleshwar Temple, MIDC Ph-II, Dombivali	Well water	Kalyan	Dombivali	MIDC,Dombivali
SWMP	Kalyan	208	Dug well addjusent to M/S. Altra pure chem., Sr. No. 45, Hissa No. 3, MIDC Ph-II, Dombivali.	Well water	Kalyan	Dombivali	MIDC,Dombivali
SWMP	Navi Mumbai	214	Borewell at TTCWMA, Mahape	Well water	Thane	Thane	TTCWMA,Mahape
SWMP	Navi Mumbai	215	Well water at Turbhe Store, Turbhe	Well water	Thane	Thane	Turbhe
SWMP	Raigad	217	Borewell water at village Milgaon, Taluka - Khalapur, District - Raigad.	BoreWell	Raigad	Khalapur	Milgaon
SWMP	Raigad	218	Borewell water near MSW site, Murud - Janjira.	Well water	Murud	Murud	Murud Janjira
NWMP	Raigad	1989	Bore well at MWML Site at Taloja	Bore Well	Raigad	Panvel	Karawla- Taloja
NWMP	Thane	1984	Bore well at M/s Tata Iron {} Steel Co. Ltd, S-76	Bore Well	Thane	Palghar	MIDC Tarapur, Industrial Estate, Tarapur
NWMP	Thane	1985	Dug well at 5 Star Industrial Estate	Dug well	Thane	Mira-Bhayander	Kashimira
NWMP	Thane	1986	Bore well at Motapada	Bore Well	Thane	Dahanu	Motapada
NWMP	Thane	1987	Bore well at Vasai	Bore Well	Thane	Vasai	Gokhiware
NWMP	Thane	1988	Bore well at Gharatwadi, Palghar	Bore Well	Thane	Palghar	Aliyali

Water Quality Index for Ground Water at Amravati, Aurangabad and Nashik.

Apr	No Data	Dry	122	134	153	No Data	357	104	334	83	61	157	53	Dry
Dec	No Data	137	155	193	158	No Data	191	No Data	197	198	119	187	94	No Data
Station code	2001	2002	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
RO	Amravati		Aurangabad					Nashik						

Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	NA

Table No. 30: Ground water quality monitoring stations installed in the areas of Amaravati, Aurangabad and Nashik RO

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
NWMP	Amravati	2001	Tube well at water treatment plant of M.C.Achalpur near Post Office.	Tube well	Amravati	Achalpur	Paratwada
NWMP	Amravati	2002	Bore well Opp. Gajanan Maharaj Temple at Anjangaon road.	Bore well	Akola	Akot	Anjangaon
NWMP	Aurangabad	1993	Dug well at Pandarpur, Gangapur, Aurangabad	Well Water	Aurangabad	Gangapur	Pandharpur
NWMP	Aurangabad	2200	Bore Well at Katpur, Near Z.P.School	Well Water	Aurangabad	Paithan	Katpur
NWMP	Aurangabad	2201	Dug Well at Ranjangaon	Well Water	Aurangabad	Gangapur	Ranjangaon
NWMP	Aurangabad	2824	Dug Well at Naregaon	Well Water	Aurangabad	Aurangabad	Naregaon
NWMP	Aurangabad	2825	Bore Well at Wahegaon, near Zilla Parishet School	Well Water	Aurangabad	Paithan	Wahegaon
SWMP	Nashik	221	well water of Bappaji, Akolner, Ahmadnagar, Nashik	River	Nashik	Ahmadnagar	Akolner
NWMP	Nashik	1990	Bore well at BMW Site , Burudgaon	Bore well	Ahmadnagar	Ahmednagar	Burudgaon

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
NWMP	Nashik	1991	Bore well at MSW Site, Pathardi, Nashik	Bore well	Nashik	Nashik	Pathardi
NWMP	Nashik	2204	Dug well at Gunjalwadi, Sangamner near Primary Health Care Center.	Dug Well	Ahmadnagar	Sangamner	Gunjalwadi
NWMP	Nashik	2816	Dug Well of Mr. Sampat Walunj, near M/s. Mahajeet Clayton	Dug Well	Nashik	Nashik	Shinde village
NWMP	Nashik	2817	Bore Well at Chitali near Wagh vasthi	Bore well	Ahmadnagar	Rahata	Chitali
NWMP	Nashik	2818	Bore Well at M/s. Spectron Ethers Rasegaon near Siddeshwar Mahadev Mandir	Bore well	Nashik	Dindori	Rasegaon

Water Quality Index for Ground Water at Chandrapur and Nagpur.

Apr	85	103	85	No Data	No Data	No Data	No Data	No Data	109	117	No Data	Dry	74	Dry	92	148	Dry
Dec	68	89	94	No Data	No Data	No Data	No Data	No Data	82	117	76	No Data	77	No Data	84	81	No Data
Station Code	1994	2003	2828	209	210	211	212	213	1995	1996	1997	1998	1999	2000	2203	2826	2827
RO	Chandrapur			Nagpur													

Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	NA

Table No. 31: Ground water quality monitoring stations installed in the areas of Chandrapur and Nagpur RO

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
NWMP	Chandrapur	1994	Dug well At TPS Durgapur near Naseeb Kirana {} general Store.	Dug Well	Chandrapur	Chandrapur	Durgapur
NWMP	Chandrapur	2003	Dug well at Plot No- 4, Street No. 49-C, at Nehru Bal Udyan Azad Maidan, owned by Yavatmal M.C.	Dug Well	Yavatmal	Yavatmal	Nehru Bal Udyan Azad Maidan
NWMP	Chandrapur	2828	Dug Well near Jilla Parishad Primary School Visapur	Dug Well	Chandrapur	Ballarpur	Visapur
SWMP	Nagpur	209	Bore well near Pardhi House, Bhandewadi, Nagpur	Bore well	Nagpur	Nagpur	Bhandewadi
SWMP	Nagpur	210	Bore well near Dearao Kale House, Bhandewadi, Nagpur	Bore well	Nagpur	Nagpur	Bhandewadi
SWMP	Nagpur	211	Grampanchayat Suradevi Intake well On Kolar River At Suradevi, Taluka - Kamptee, District -Nagpur	River	Nagpur	Kamptee	Suradevi

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
SWMP	Nagpur	212	Grampanchayat Mhasala, Dugwell On Nalla At Mhasala, Taluka - Kamptee, District - Nagpur	Dug Well	Nagpur	Kamptee	Mhasala
SWMP	Nagpur	213	Grampanchayat Kawtha, Dugwell At Kawtha, Taluka - Kamptee, District - Nagpur	Dug Well	Nagpur	Kamptee	Kawtha
NWMP	Nagpur	1995	Gram Panchayath Dug well , Near Balaji Gajbhiye House, Khaperkheda	Dug Well	Nagpur	Saoner	Khaperkheda(Ward No.4)
NWMP	Nagpur	1996	Gram Panchayath Dug well , Near Jagadamba G M S Mandir Sahakari Sanstha	Dug Well	Nagpur	Kamptee	Koradi
NWMP	Nagpur	1997	Bore well near Primary Health Centre, Raipur(Hingna)	Hand pump	Nagpur	Hingna	Raipur
NWMP	Nagpur	1998	Gram Panchayat Dug well near Gram Panchayat Office, Brahmni	Dug Well	Nagpur	Kalmeshwar	Brahmni
NWMP	Nagpur	1999	Bore well Near Gram Panchayat,Changera.	Bore well	Gondia	Gondia	Changera
NWMP	Nagpur	2000	Dug well near Sarode Kirana Store, Bhandewadi, Nagpur	Dug Well	Nagpur	Nagpur	Bhandewadi
NWMP	Nagpur	2203	Hand Pump in the premises of Z.P.Primary School	Ground water	Wardha	wardha	Bhugaon
NWMP	Nagpur	2826	Dug Well near Railway Station, Cottaon Market	Dug Well	Wardha	wardha	Wardha
NWMP	Nagpur	2827	Bore Well near Railway crossing at Dongi Buzurg	Bore well	Bandara	Tumsar	Dongri-Buzurg

Water Quality Index for Ground Water at Kolhapur and Pune.

Apr	21	27	310	104	140	92	110	No Data	41	81	92	31	29	361	34	72	346	63	396	381	424
Dec	22	21	107	126	118	75	83	No Data	38	61	96	23	28	25	23	82	308	110	163	163	166
Station code	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
RO	Kolhapur															Pune					

Legend

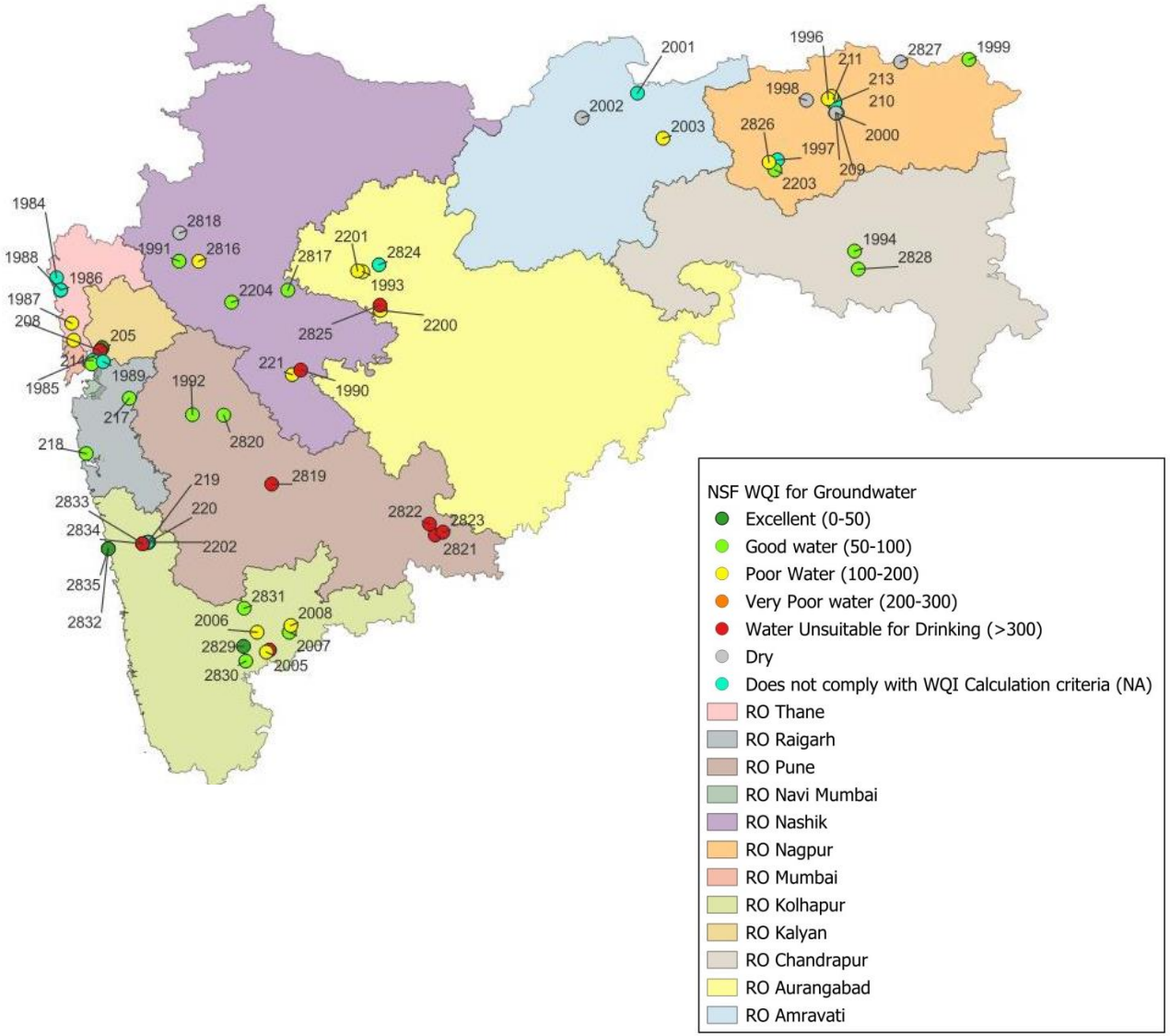
Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	NA

Table No. 32: Ground water quality monitoring stations installed in the areas of Kolhapur and Pune RO

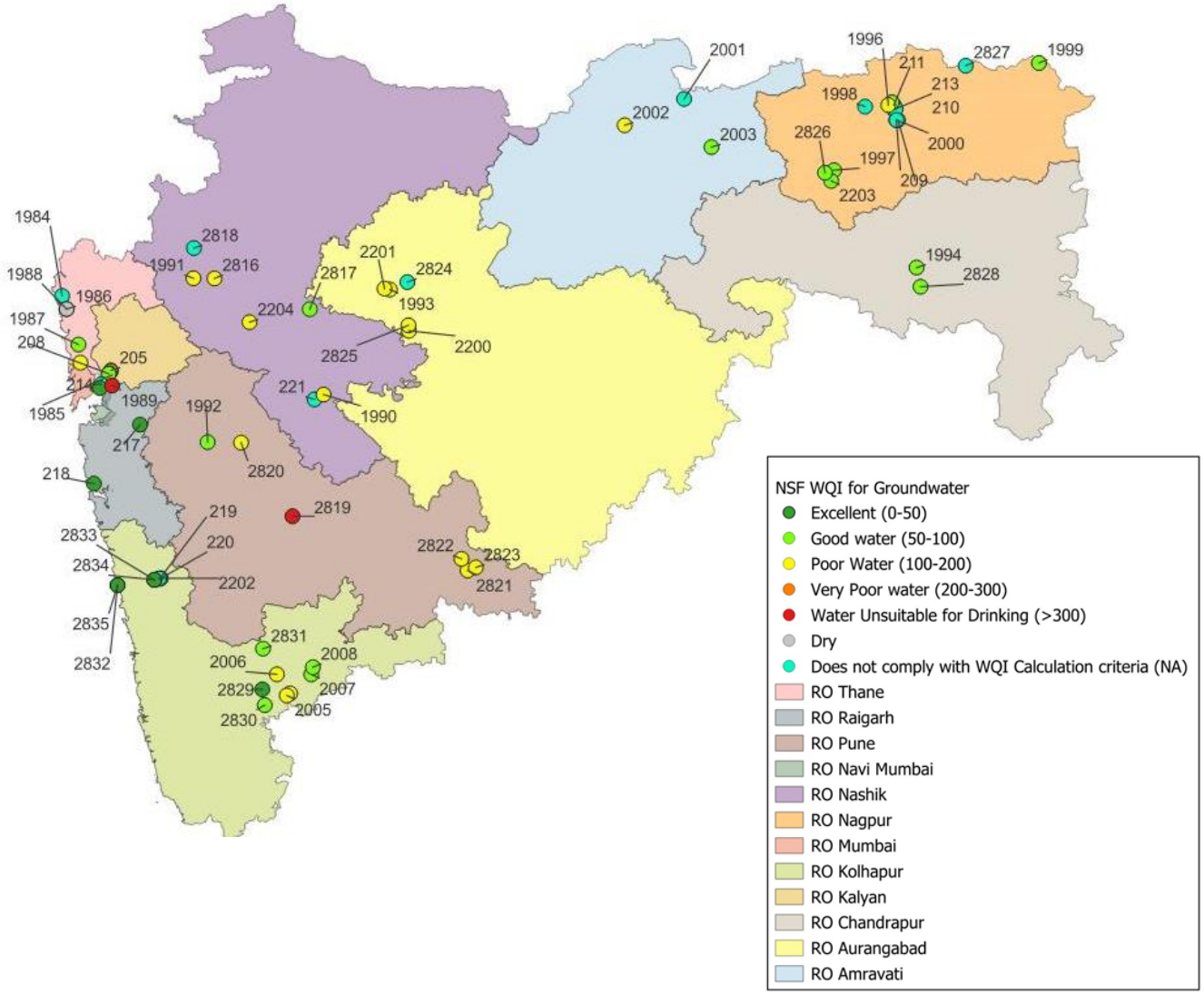
Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
SWMP	Kolhapur	219	Common well Water At Patwardhan, Lote, Taluka - Khed, District - Rantnagiri	Well water	Ratnagiri	Khed	Lote
SWMP	Kolhapur	220	Dugwell backside Excel India At Chalkewadi, Taluka - Khed, District - Ratnagiri.	Well water	Ratnagiri	Khed	Chalkewadi
NWMP	Kolhapur	2004	Bore well at Parvati Industrial Estate, Yadrav, Kolhapur	Bore Well Water	Kolhapur	Shirol	Yadrav
NWMP	Kolhapur	2005	Bore well at Khanjirenagar, Kolhapur	Bore Well Water	Kolhapur	Hatkananga le	Khanjirenagar
NWMP	Kolhapur	2006	Bore well at Shinoli near M/s Aqua Alloy Steel.	Bore Well Water	Kolhapur	Chandgad	Shinoli
NWMP	Kolhapur	2007	Bore well at Savali, near Gram Panchayat office.	Bore Well Water	Sangli	Miraj	Savali
NWMP	Kolhapur	2008	Dug well at Sambarwadi, owned by Shri. Kishan Hali Rajput.	Dug Well Water	Sangli	Miraj	Sambarwadi

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
NWMP	Kolhapur	2202	Dug Well at Ghane Kunt, near Awashi, onwed by shri Rajendra Amre	Dug Well Water	Ratnagiri	Khed	Ghane Kunt
NWMP	Kolhapur	2829	Bore Well at MIDC Shiroli near M/s. Pratibha Enterprises	Bore Well Water	Kolhapur	Hatkananga le	Shiroli
NWMP	Kolhapur	2830	Bore Well at MIDC Gokul Shirgaon	Bore Well Water	Kolhapur	Karvir	Gokul-Shirgaon
NWMP	Kolhapur	2831	Dug Well at Sakharali near MIDC Islampur near Krishna Milk Industry	Bore Well Water	Sangli	Walwa	Sakharali
NWMP	Kolhapur	2832	Dug Well No.1 at Brahmanwadi-Anjanwel, owned by Shri Vaidya	Dug Well Water	Ratnagiri	Guhagar	Anjanwel
NWMP	Kolhapur	2833	Dug Well No.1 at Group Gram Panchayat at Arketwadi, near Masjid	Dug Well Water	Ratnagiri	Khed	Arketwadi
NWMP	Kolhapur	2834	Dug Well No.2 at Arketwadi	Dug Well Water	Ratnagiri	Khed	Arketwadi
NWMP	Kolhapur	2835	Dug Well No.2 at owned by Group Gram Panchayat, Brahmanwadi-Anjanwel	Dug Well Water	Ratnagiri	Guhagar	Anjanwel
NWMP	Pune	1992	Dug well at MSW Site,owned by Shri.Dattu Kondiba Borate at Borate Vasthi.	Dug Well	Pune	Haveli	Moshi
NWMP	Pune	2819	Dug Well Owned by Shri Deshmukh	Dug Well	Pune	Baramati	Malegaon
NWMP	Pune	2820	Dug Well Owned by Shri Shivaji Baban Darekar	Dug well	Pune	Shirur	Sanaswadi
NWMP	Pune	2821	Bore Well at Bale Railway Station premises Owned by Shri Digambar Joshi	Bore Well	Solapur	North Solapur	Dahegaon
NWMP	Pune	2822	Bore Well near Chincholi	Bore Well	Solapur	Mohol	Chincholi
NWMP	Pune	2823	Bore Well at Shete Vasti near old Tuljapur Road	Bore Well	Solapur	Solapur	Shete vasthi, Tuljapur Naka

Spatial map for Groundwater WQI in Maharashtra (April 2022)



Spatial map for Groundwater WQI in Maharashtra (December 2022)



CONCLUSION

MPCB has established network of 294 WQMS for both surface water (176 on rivers, 36 on sea/creeks ,12 on drains and 4 dams) and Groundwater (29 Borewells, 34 Dugwells, 1 handpump, 1 Tube well and 1 well) under NWMP & SWMP programme to keep vigorous check on the water quality across the state.

In terms of surface water , the overall improvement in water quality was observed as the annual average WQI was recorded under 'Non-Polluted' as compared to 2021-22. Out of the 228 WQMS, about 214 WQMS (93.85%) were observed under the Non polluted catergory as compared to 193 (84.64%) in the previous year (2021-22).Further out of 214 WQMS, 175 WQMS (81.77%) recorded their annual average WQI under the 'Good to Excellent' whereas 38 WQMS (17.75%) recorded WQI under the 'Medium to Good' category.

Out of the 'Polluted' category, 7 WQMS (3.07%) and 6 WQMS (2.63%) recorded annual average WQI under the 'Bad' and 'Bad to Very bad' categories respectively. Only 1 WQMS (as compared to 5 in 2021- 22) were placed in the category of 'Dry'.

In case of Priority ranking of Polluted River Stretches, it has been observed that the Mithi River has been consistently included in the Priority I (having BOD value more than 30 mg/l). This is due to the level of pollution the river is having owing to effluent/waste discharge from surrounding residential and commercial settlements. In the year 2022-23, 4 rivers were placed in the list of Priority II namely the Bhima, the Mula, the Mutha and the Pawana. In 2022-23, the total number of rivers placed under the Priority III, IV and V were 7, 15 and 23 respectively. It is important to note that 5 rivers (as compared to 4 in 2021-22) namely the Munchkundi, the Panchganga, the Savitri, the Vaitarna and the Vashishti were included in the category of 'Less Polluted' (BOD less than 3mg/l).

In the case of WQMS for Groundwater, the highest number of WQMS recording as 'Excellent' WQI was found in the Kolhapur district (6 Nos.) followed by Raigad district (2 Nos.). Similarly, the highest number of WQMS recording annual average WQI under the 'Good Water' category was found at the Nagpur district (5 Nos.) followed by Kolhapur (4 Nos.) The 'Poor Water' WQI was recorded at Aurangabad, Kolhapur and Nashik district (3 each) followed by Nagpur district (2 Nos.). 3 WQMS from Pune district and 1 WQMS each from Nashik, Kolhapur, Aurangabad, Kalyan district recorded annual average WQI in the 'Very Poor' WQI category. Only 1 WQMS in Pune district recorded WQI under the category of 'Water Unsuitable for Drinking'.

Annex –I : RO wise Summary of WQI in 2022-2023

The Maharashtra State government in 1981 adopted the Water (Prevention and Control of Pollution) Act 1974 and under this, Maharashtra Pollution Control Board (MPCB) was established in the year 1981.

The main functions of MPCB are:

- To plan a comprehensive program for the prevention, control or abatement of pollution and secure executions thereof,
- To collect and disseminate information relating to pollution and the prevention, control or abatement thereof,
- To inspect sewage or trade effluent treatment and disposal facilities, and air pollution control systems and to review plans, specification or any other data relating to the treatment plants, disposal systems and air pollution control systems in connection with the consent granted,
- Supporting and encouraging the developments in the fields of pollution control, waste recycle reuse, eco-friendly practices etc.
- To educate and guide the entrepreneurs in improving environment by suggesting appropriate pollution control technologies and techniques
- To create public awareness about clean and healthy environment and attending the public complaints regarding pollution.

Being a highly industrialized, populated and urbanized state, Maharashtra has numerous sources which lead to water pollution, which have deteriorated the water quality of many, seas, creeks, drains ground water and so on. Release of sewage, industrial waste water, and dumping of solid waste are the three major causes of water pollution.

Hence, to keep a constant vigilance MPCB has established 12 Regional Offices (ROs) across the state to check and regulate the pollution levels with necessary control measures. MPCB implements a range of environmental legislation in the state and functions under the administrative control of Environment Department, Government of Maharashtra.

The following section presents the RO wise highlights on the status of the water quality monitoring network for the year 2022-23 and presents the gist of the water quality index for the respective stations for months of April and December/October.

RO – Amravati

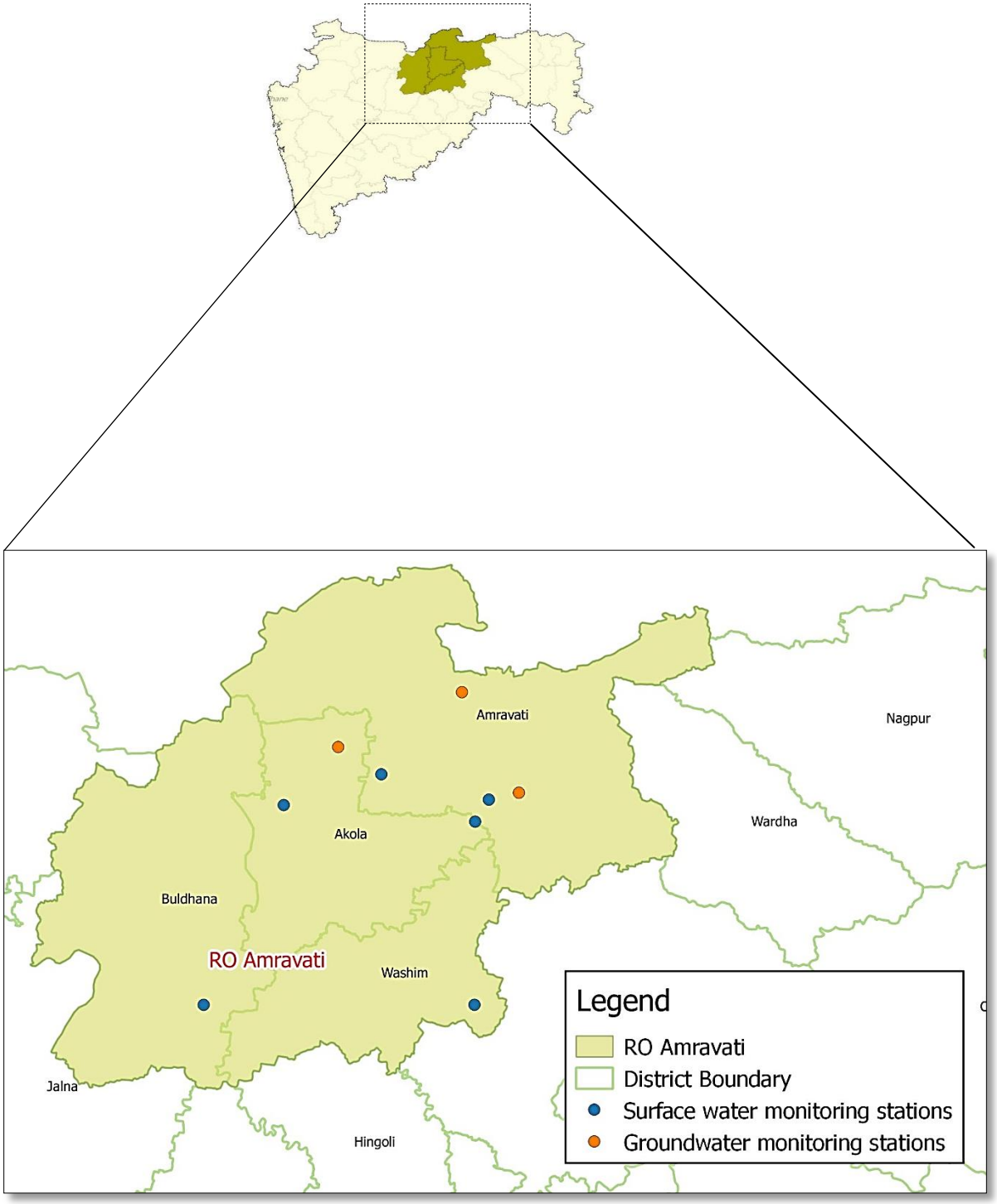

Amravati
Nagpur
Akola
Wardha
Buldhana
RO Amravati
Washim
Jalna
Hingoli
Legend
RO Amravati
District Boundary
Surface water monitoring stations
Groundwater monitoring stations

Table No. 33: Water quality Index for surface and ground water monitoring at Amravati-RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2700	Purna River near Achalpur-Amravati Road Bridge, Asegaon	Dry	79.61	75	Amravati	Chandur bazaar	Asegaon
	2695	Pedhi River near Road Bridge at Dadhi-Pedhi village	Dry	46.61	69	Amravati	Chandur Bazar	Asegaon
	1913	Purna River at Dhupeshwar at U/s of Malkapur Water works	Dry	74.80	75	Akola	Akola	Malkapur
	2155	Purna River at D/s of confluence of Morna & Purna at Andhura village	Dry	70.54	71	Akola	Balapur	Andura
	2699	Penganga River at Mehkar-Buldana Road Bridge	Dry	76.07	73	Buldana	Mehkar	Mehkar
	2675	Morna River at D/s of Railway Bridge	Dry	76.26	74	Akola	Akola	Akola
	2697	Penganga River near water supply scheme of Umarkhed MC	Dry	78.93	76	Yavatmal	Umarkhed	Belkhed
	2698	Penganga River D/s of Isapur Dam	73.78	80.87	73	Yavatmal	Pusad	Isapur
GW	2001	Tube well at water treatment plant of M.C.Achalpur near Post Office.	NA	NA	NA	Amravati	Achalpur	Paratwada
	2002	Bore well Opp. Gajanan Maharaj Temple at Anjangaon road.	Dry	137.26	137.26	Akola	Akot	Anjangaon

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Aurangabad

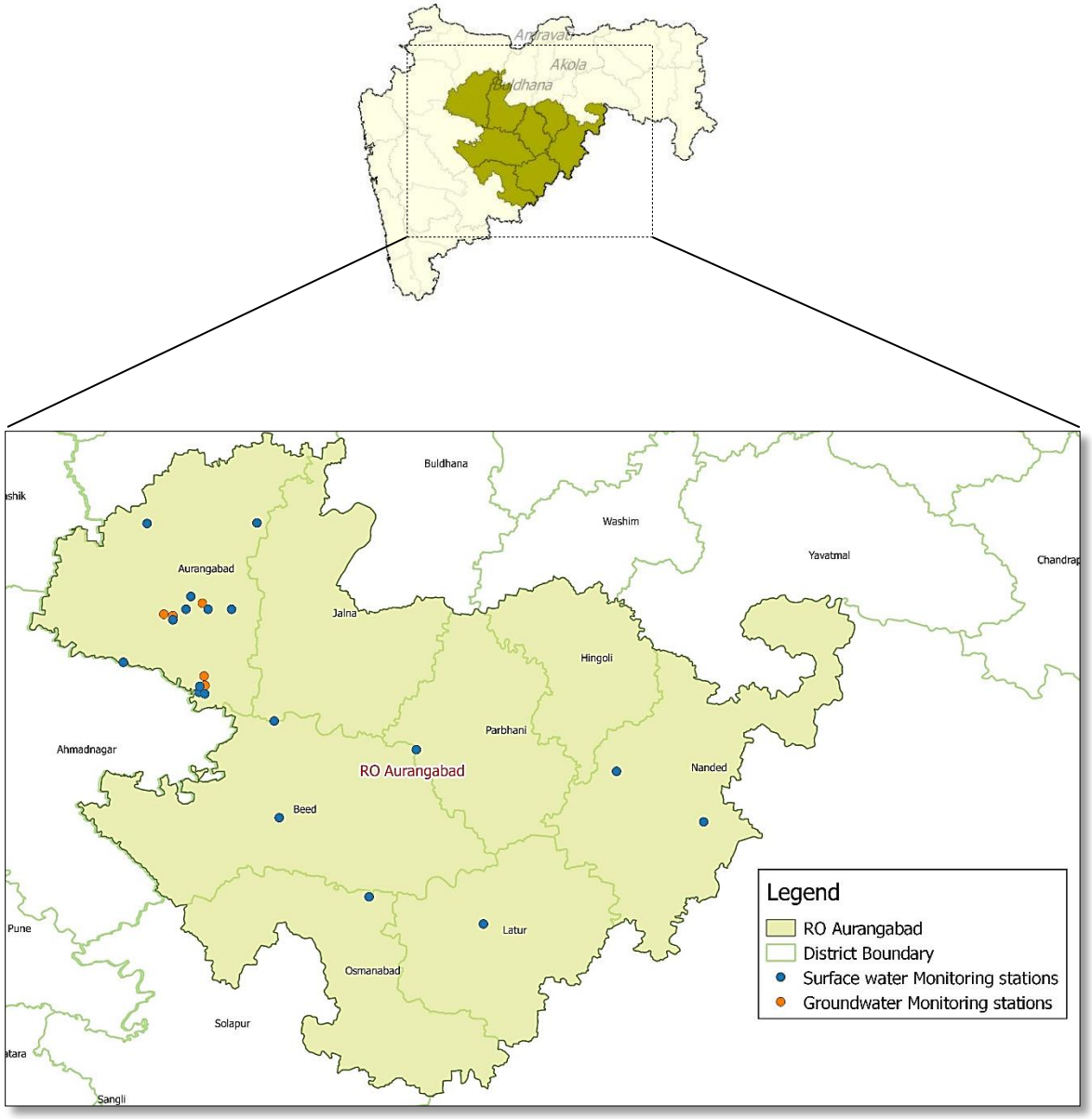


Table No. 34: Water quality Index for surface and ground water monitoring at Aurangabad-RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2160	Godavari River at U/s of Aurangabad Reservoir Kaigaon Tokka near, Kaigaon Bridge	81.78	74.01	82	Aurangabad	Gangapur	Kaigaon
	178	Kannad - D/S of Kannad near Bridge	Dry	45.82	59	Aurangabad	Kannad	Kannad
	181	Aurangabad - Near Patoda Village	27.57	49.02	46	Aurangabad	Aurangabad	Aurangabad
	180	Aurangabad - Near Holly cross bridge	No Data	No Data	44	Aurangabad	Aurangabad	Aurangabad
	184	Aurangabad - Harsool Dam	37.23	77.60	57	Aurangabad	Aurangabad	Aurangabad
	1312	Godavari river at Jaikwadi Dam, Paithan	81.90	82.42	84	Aurangabad	Paithan	Paithan
	2158	Godavari River at Paithan U/s of Paithan Intake pump house	82.34	62.86	80	Aurangabad	Paithan	Jayakwadi
	2159	Godavari River at D/s of Paithan at Pathegaon bridge	82.37	81.09	82	Aurangabad	Paithan	Pathegaon
	182	Aurangabad - Near Chikhalthana Bridge	Dry	53.73	47	Aurangabad	Aurangabad	Aurangabad
	183	Aurangabad - At Sukhna Dam	25.92	76.59	53	Aurangabad	Aurangabad	Aurangabad
	179	Sillod - D/S of Sillod near bridge at bhavan	Dry	80.68	70	Aurangabad	Sillod	Sillod
	2161	Godavari River at Jalna Intake water pump house Shahagad	79.53	74.33	82	Jalna	Ambad	Shahabad
	2657	Bindusara River at Beed, near Intake water pump house at Dam	79.39	68.52	80	Beed	Beed	Paligaon
	12	Godavari River at Dhalegaon	83.67	77.60	82	Parbhani	Pathari	Dhalegaon
	1210	Godavari River at Intake of pump house	83.97	84.85	82	Nanded	Nanded	Vishnupuri
	1209	Godavari River at Raher	85.61	82.52	80	Nanded	Nayagaon	Raher

	2157	Godavari River at Latur Water intake near pump house	89.54	88.69	85	Osmanabad	Kalumb	Dhamegaon
	2673	Manjra River at D/s of Latur, near Latur-Nanded Bridge	Dry	68.90	82	Latur	Latur	Bhatkheda
GW	1993	Dug well at Pandarpur, Gangapur, Aurangabad	121.84	155.33	138.58	Aurangabad	Gangapur	Pandharpur
	2200	Bore Well at Katpur, Near Z.P.School	133.56	192.63	163.10	Aurangabad	Paithan	Katpur
	2201	Dug Well at Ranjangaon	153.29	157.59	155.44	Aurangabad	Gangapur	Ranjangaon
	2824	Dug Well at Naregaon	NA	NA	NA	Aurangabad	Aurangabad	Naregaon
	2825	Bore Well at Wahegaon, near Zilla Parishet School	357.11	191.22	274.17	Aurangabad	Paithan	Wahegaon

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Chandrapur

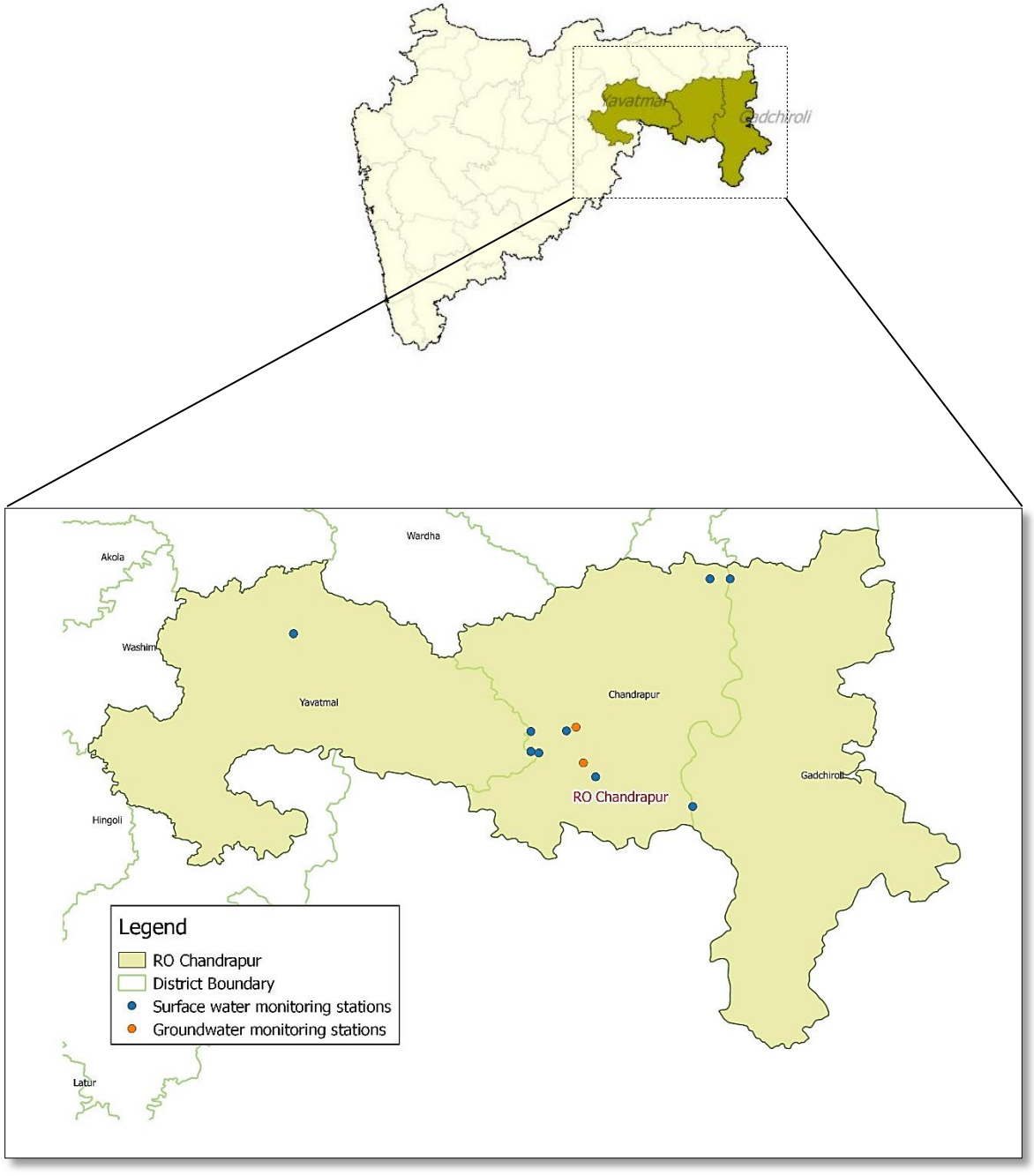


Table No. 35: Water quality Index for surface and ground water monitoring at Chandrapur RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2174	Wardha River at D/s of ACC Ghuggus	76.22	74.30	73	Chandrapur	Chandrapur	Ghuggus
	2721	Wardha River at U/s of ACC Ghuggus	78.74	76.41	76	Chandrapur	Chandrapur	Ghuggus
	2720	Wardha River at U/s of Erai River	77.07	75.76	77	Chandrapur	Chandrapur	Hadasti
	2156	Wardha River at confluence point of Penganga & Wardha	78.37	74.21	73	Yavatmal	Wani	Jugad
	2719	Wardha River at D/s of Erai River	74.12	74.72	75	Chandrapur	Chandrapur	Hadasti
	1212	Wardha river at Rajura bridge	75.41	75.11	75	Chandrapur	Chandrapur	Rajura
	2175	Wainganga at U/s of Gaurav Paper Mills near Jack Well	76.15	77.78	76	Chandrapur	Chandrapur	Bramhpuri
	2176	Wainganga River at D/s of Gaurav Paper Mills Near Jackwell	73.17	74.65	73	Chandrapur	Chandrapur	Bramhpuri
	11	Wainganga River at Ashti	72.98	76.40	73	Chandrapur	Gondpipri	Ashti
GW	2003	Dug well at Plot No- 4, Street No. 49-C, at Nehru Bal Udyan Azad Maidan, owned by Yavatmal M.C.	2003	102.93	88.91	Yavatmal	Yavatmal	Nehru Bal Udyan Azad Maidan
	1994	Dugwell At TPS Durgapur near Naseeb Kirana {} general Store.	85.49	68.36	76.93	Chandrapur	Chandrapur	Durgapur
	2828	Dug Well near Jilla Parishad Primary School Visapur	85.43	94.26	89.85	Chandrapur	Ballarpur	Visapur

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Kalyan

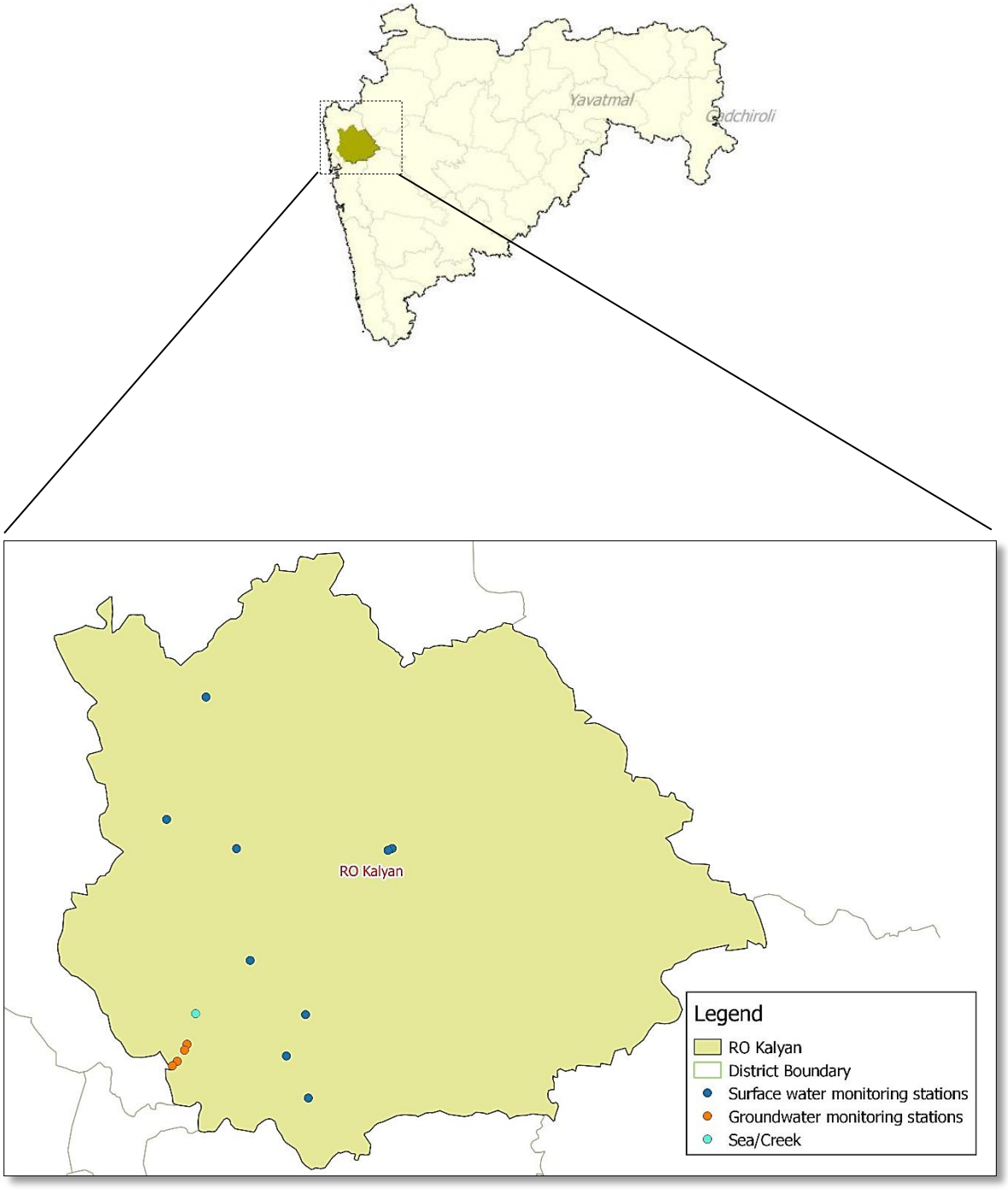

Yavatmal
RO Kalyan
Legend
RO Kalyan
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Sea/Creek

Table No. 36: Water quality Index for surface and ground water monitoring at Kalyan-RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2791	Ulhas Creek at Reti Bunder, D/s of Kalyan-Bhiwandi Bridge	59.68	68.21	60	Thane	Kalyan	Kalyan
	2654	Bhatsa River at D/s of Liberty Oil Mills	79.31	80.68	80	Thane	Shahapur	Satne
	2653	Bhatsa River at D/s of Liberty Oil Mills	78.66	77.92	81	Thane	Shahapur	Satne
	1094	Ulhas River at U/s of Badlapur water works	76.31	80.68	83	Thane	Ambernath	Kulgaon
	1093	Ulhas river at U/s of NRC Bund	81.98	83.34	83	Thane	Kalyan	Mohane
	2162	Ulhas River at Jambhul water works	79.57	82.12	82	Thane	Ambernath	Jambhul
	1461	Bhatsa river at D/s of Pise Dam	78.18	82.45	83	Thane	Bhiwandi	Pise
	1092	Kalu River at Atale village	82.27	81.29	79	Thane	Kalyan	Atale
	2712	Vaitarna River near Road Bridge	No Data	87.51	84	Thane	Wada	Gandhare
	2709	Tansa River near road bridge	No Data	85.11	86	Thane	Wada	Dakewali
GW	205	Dug well opp. KAMA office, MIDC Ph-I, Dombivali	183.68	232.46	208.07	Kalyan	Dombivali	MIDC,Dombivali
	206	Dug well near Mamta Hospital, Milap Nagar, Dombivali	97.52	103.77	100.64	Kalyan	Dombivali	MIDC,Dombivali
	207	Dug well at pimpleshwar Temple, MIDC Ph-II, Dombivali	36.91	94.44	65.68	Kalyan	Dombivali	MIDC,Dombivali
	208	Dug well addjusent to M/S. Altra pure chem., Sr. No. 45, Hissa No. 3, MIDC Ph-II, Dombivali.	105.99	74.86	90.43	Kalyan	Dombivali	MIDC,Dombivali

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Kolhapur

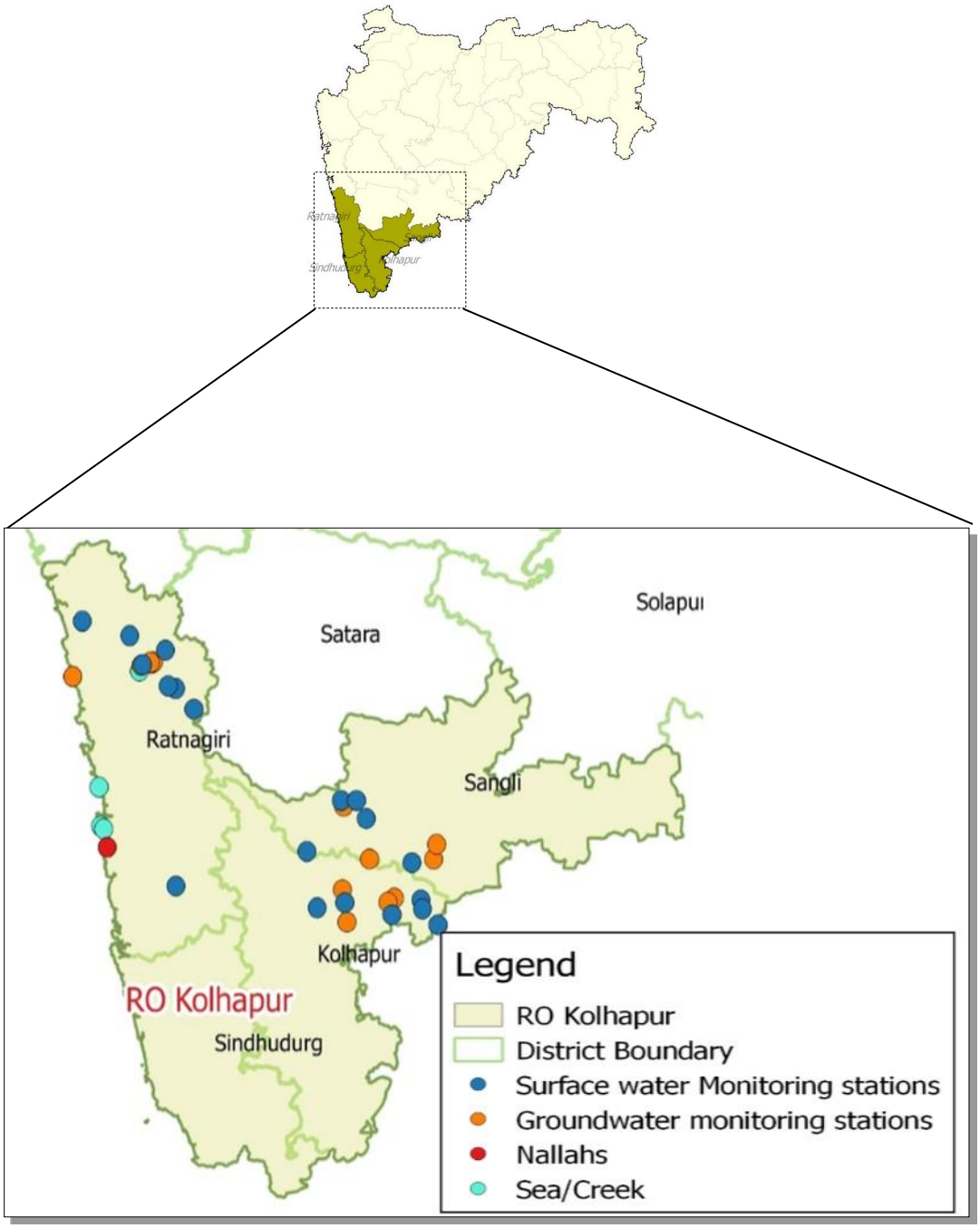

Satara
Solapur
Ratnagiri
Sangli
Kolhapur
RO Kolhapur
Sindhudurg
Legend
RO Kolhapur
District Boundary
Surface water Monitoring stations
Groundwater monitoring stations
Nallahs
Sea/Creek

Table No. 37: Water quality Index for surface and ground water monitoring at Kolhapur-RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	200	Mangle Bridge, Mangle, Taluka - Shirala, District - Sangli	81.97	82.65	82	Sangli	Shirala	Mangle
	1904	Panchganga River at U/s of Kolhapur town near Balinga Pumping Station	88.59	83.74	86	Kolhapur	Karvir	Balinga
	198	Bahe KT Weir, Bahe, Taluka - Walwa, District - Sangli	76.79	82.43	83	Sangli	Walwa	Bahe
	1905	Panchaganga river at D/s of Kolhapur town at Gandhi nagar near NH-4 bridge and MIDC intake well	78.36	85.90	86	Kolhapur	Kolhapur	Uchegaon
	199	Borgaon KT Weir, Borgaon, Taluka - Walwa, District - Sangli	81.86	82.15	82	Sangli	Walwa	Borgaon
	1906	Krishna river at Walwa, D/s of Islampur near Vithal Temple	86.08	81.62	83	Sangli	Walwa	Walwa
	1311	Panchganga River at Ichalkaranji near MIDC intake well	79.95	81.58	84	Kolhapur	Hatkanangale	Shiradhwad (Ichalkaranji ghat)
	37	Krishna River at Maighat, Sangli	85.04	81.08	83	Sangli	Miraj	Gawali gally
	2163	Panchganga River at Shirol near Shirol intake well	86.31	83.20	85	Kolhapur	Shirol	Shirol
	1310	Krishna River at Kurundwad	85.71	81.70	85	Kolhapur	Shirol	Narshingwadi, Kurundwad
	1153	Krishna River at Rajapur Weir	83.17	82.74	85	Kolhapur	Shirol	Rajapur
	2804	Karambavane Creek at Chiplun	86.45	92.71	87	Ratnagiri	Chiplun	Karambavane
	2813	Sea Water at Ganapatipule	75.03	74.86	78	Ratnagiri	Ratnagiri	Ganapatipule
	2814	Sea Water at Bhagwati Bunder, Ratnagiri near Ultra Tech Cement Jetty	71.06	74.35	76	Ratnagiri	Ratnagiri	Mirkarwada
	2815	Madvi Sea Water at Ratnagiri near Jodhale Maruti Temple	78.95	72.60	77	Ratnagiri	Ratnagiri	Madvigaon
	2714	Vashishti River at U/s of Pophali near Konphansawane Bridge	89.28	85.23	85	Ratnagiri	Chiplun	Pophali

	2676	Muchkundi River at Waked Ratnagiri near M/s Asahi India Glass	85.57	88.33	86	Ratnagiri	Lanja	Waked
	202	Vashisti River At Khadpoli, Taluka Chiplun, District - Ratnagiri	86.01	90.42	87	Ratnagiri	Chiplun	Khadpoli
	2164	Vashishti River at U/s of Three M Paper Mills near M/s Multifilms Plastic Pvt Ltd	90.33	85.27	87	Ratnagiri	Chiplun	Kherdi
	2713	Vashishti River at D/s of Three M Paper Mills near Chiplun water intake Jackwell	88.35	87.09	89	Ratnagiri	Chiplun	Kherdi
	201	Sonpatra River At Kotwali Village, Taluka - Khed, District - Ratnagiri	87.03	90.38	84	Ratnagiri	Khed	Kotwali
	203	Jagbudi River, D/S of Khed City, Taluka - Khed, District Ratnagiri	79.39	85.99	87	Ratnagiri	Khed	Khed City
	204	Jog river at Dapoli, Taluka Dapoli, District - Rantnagiri	84.97	89.53	86	Ratnagiri	Dapoli	Dapoli
	2790	Pimpal-Paneri Nalla at Ratnagiri near Finolex Industries	85.71	86.18	84	Ratnagiri	Ratnagiri	Yahganigaon
GW	219	Common well Water At Patwardhan, Lote, Taluka - Khed, District - Rantnagiri	21.01	22.14	21.57	Ratnagiri	Khed	Lote
	220	Dugwell backside Excel India At Chalkewadi, Taluka - Khed, District - Ratnagiri.	27.25	20.80	24.03	Ratnagiri	Khed	Chalkewadi
	2004	Bore well at Parvati Industrial Estate, Yadrav, Kolhapur	310.43	107.07	208.75	Kolhapur	Shirol	Yadrav
	2005	Bore well at Khanjirenagar, Kolhapur	104.48	126.49	115.49	Kolhapur	Hatkanangale	Khanjirenagar
	2006	Bore well at Shinoli near M/s Aqua Alloy Steel.	140.48	118.29	129.39	Kolhapur	Chandgad	Shinoli
	2007	Bore well at Savali, near Gram Panchayat office.	92.48	75.05	83.77	Sangli	Miraj	Savali
	2008	Dug well at Sambarwadi, owned by Shri. Kishan Hali Rajput.	110.13	82.55	96.34	Sangli	Miraj	Sambarwadi
	2202	Dug Well at Ghane Kunt, near Awashi, onwed by shri Rajendra Amre	NA	NA	NA	Ratnagiri	Khed	Ghane Kunt
	2829	Bore Well at MIDC Shiroli near M/s. Pratibha Enterprises	40.89	37.58	39.24	Kolhapur	Hatkanangale	Shiroli
	2830	Bore Well at MIDC Gokul Shirgaon	80.54	61.06	70.80	Kolhapur	Karvir	Gokul-Shirgaon
	2831	Dug Well at Sakharali near MIDC Islampur near Krishna Milk Industry	92.02	96.01	94.01	Sangli	Walwa	Sakharali

	2832	Dug Well No.1 at Brahmanwadi-Anjanwel, owned by Shri Vaidya	31.06	23.02	27.04	Ratnagiri	Guhagar	Anjanwel
	2833	Dug Well No.1 at Group Gram Panchayat at Arketwadi, near Masjid	29.38	28.35	28.86	Ratnagiri	Khed	Arketwadi
	2834	Dug Well No.2 at Arketwadi	360.54	25.09	192.81	Ratnagiri	Khed	Arketwadi
	2835	Dug Well No.2 at owned by Group Gram Panchayat, Brahmanwadi-Anjanwel	34.02	23.49	28.75	Ratnagiri	Guhagar	Anjanwel

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Mumbai

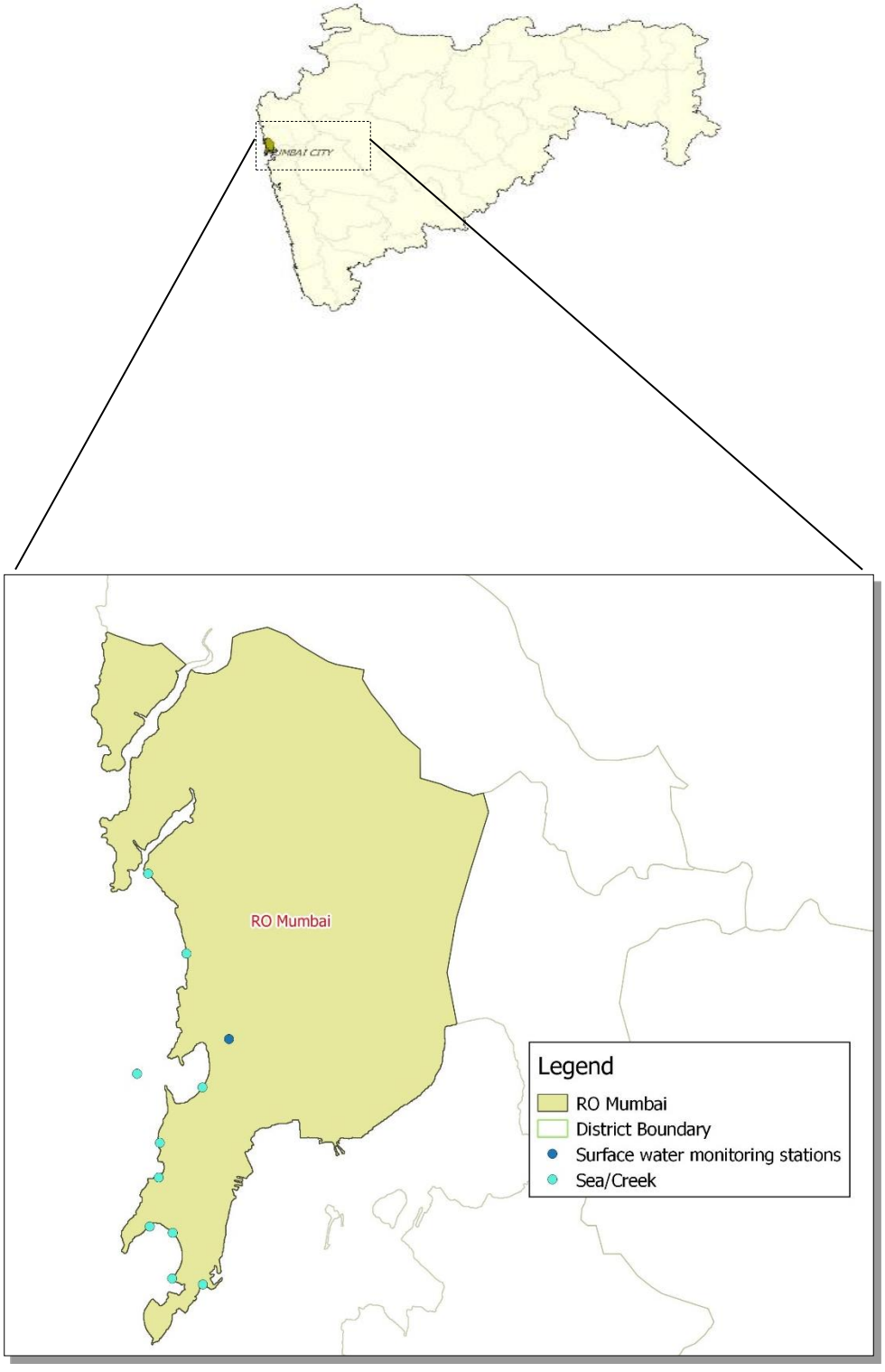

MUMBAI CITY
RO Mumbai
Legend
RO Mumbai
District Boundary
Surface water monitoring stations
Sea/Creek

Table No. 38: Water quality Index for surface and ground water monitoring at Mumbai-RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2169	Sea Water at Varsova Beach	46.92	56.05	53	Mumbai	Andheri	Versova
	2812	Sea Water at Juhu Beach	44.91	58.87	50	Mumbai	Santacruz	Juhugaon
	1318	Mahim creek at Mahim Bay	53.85	56.12	54	Mumbai	Bandra	Mahim
	2811	Sea Water at Shivaji Park (Dadar Choupathy)	55.50	55.86	53	Mumbai	Dadar	Dadar
	2167	Sea Water at Worli Seaface	57.59	47.03	55	Mumbai	Worli	Worli
	2810	Sea Water at Haj Ali	53.26	55.26	51	Mumbai	Worli	Worli
	2809	Sea Water at Malabar Hill	59.62	55.45	52	Mumbai	Mumbai	Walkeshwar
	2166	Sea Water at Charni Road Choupathy	58.08	47.85	52	Mumbai	Mumbai	Girgaon
	2808	Sea Water at Nariman Point	56.13	53.91	54	Mumbai	Colaba	Colaba
	2165	Sea Water at Gateway of India	61.47	53.35	53	Mumbai	Colaba	Colaba
	2168	Mithi River at near bridge	24.74	39.58	35	Mumbai	Bandra	Mahim

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Nagpur

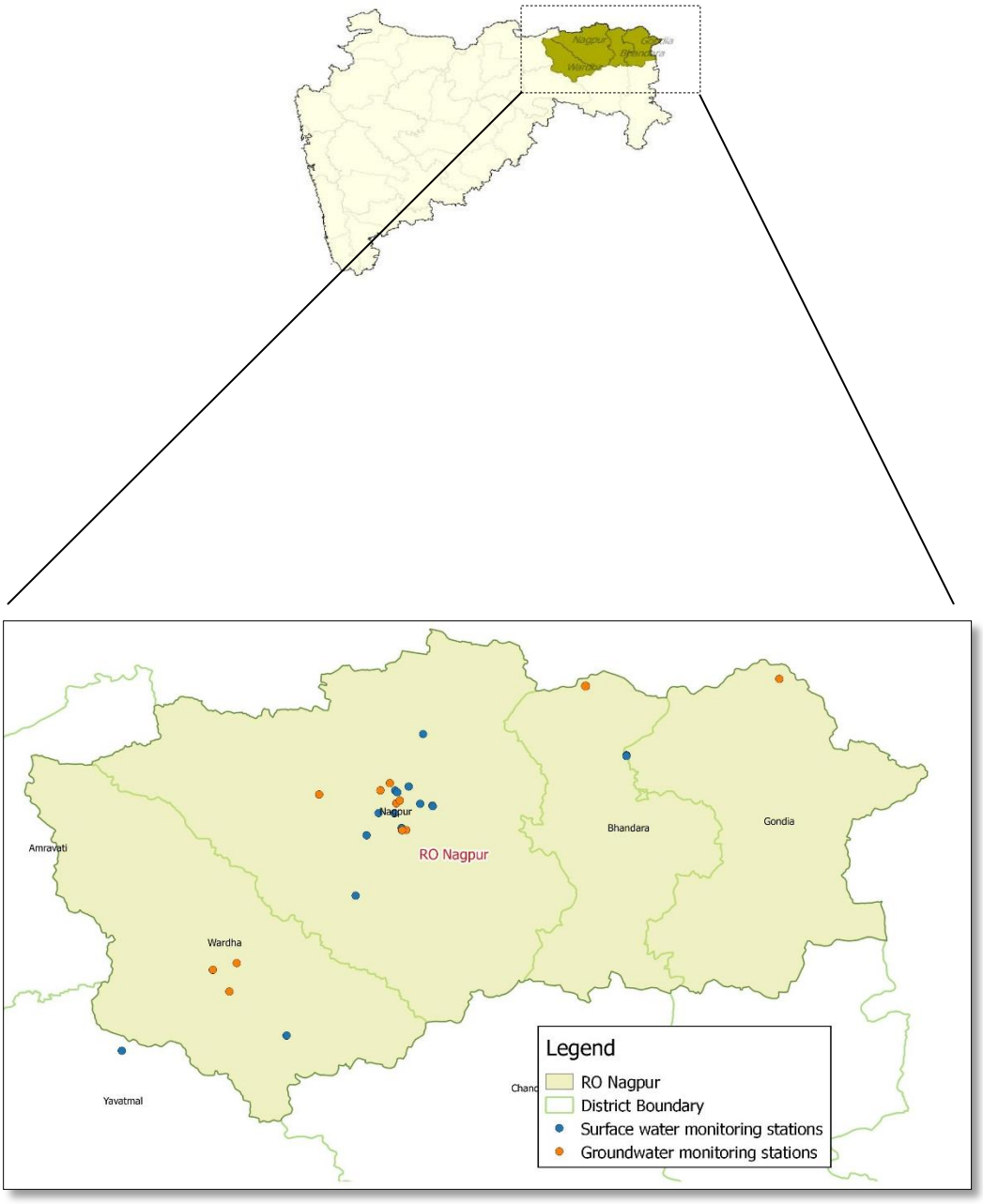

Nagpur
Gondia
Bhandara
Wardha
Amravati
RO Nagpur
Bhandara
Gondia
Wardha
Yavatmal
Legend
RO Nagpur
District Boundary
Surface water monitoring stations
Groundwater monitoring stations

Table No. 39: Water quality Index for surface and ground water monitoring at Nagpur-RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	1315	Wardha River at Pulgaon Railway Bridge	Dry	77.79	75	Wardha	wardha	Pulgaon
	2723	Wena River at D/s of Mohata Mills, near Bridge on Hinganghat-Wadner Road	72.58	75.10	75	Wardha	Hinganghat	Hinganghat
	2722	Wena River at U/s of Mohata Mills, nearby Brigde on Hinganghat Wadner Road	74.71	76.46	76	Wardha	Hinganghat	Hinganghat
	185	Nag River Near, Ambazari Lake, Nagpur	76.18	77.65	76	Nagpur	Nagpur	Nagpur
	189	Pill River Near, Mankapur on Koradi Road, Nagpur	46.34	No Data	50	Nagpur	Nagpur	Nagpur
	188	Pill River Near, Wanjra Layout Kamptee Road, Nagpur	No Data	No Data	46	Nagpur	Nagpur	Nagpur
	1909	Kanhan river at D/s of Nagpur	74.80	65.68	65	Nagpur	Kuhi	Agargaon
	186	Nag River Near, Bhandewadi Bridge, Nagpur	No Data	No Data	48	Nagpur	Nagpur	Nagpur
	1910	Wainganga river after confluence with Kanhan river	73.16	71.56	74	Nagpur	Kuhi	Ambhora
	1908	Kolar river before confluence with Kanhan river at Waregaon Bridge	75.49	80.23	75	Nagpur	Kamptee	Waregaon
	187	Nag River Near, Asoli Bridge, Bhandara Road, Nagpur	No Data	No Data	55	Nagpur	Nagpur	Nagpur
	2170	Kanhan River (Wainganga basin) at U/s of M/s Vidharba Paper Mill	75.66	70.33	76	Nagpur	Parseoni	Sinora
	2171	Kanhan River (Wainganga basin) at D/s of M/s Vidharbha Paper Mills	74.17	59.74	72	Nagpur	Parseoni	Sinora
	2173	Wainganga River at U/s of Ellora Paper Mills	82.92	79.86	77	Bandara	Tumsar	Tumsar
	2172	Wainganga River at D/s of Ellora Paper Mill	77.54	77.04	75	Bandara	Tumsar	Tumsar
GW	209	Bore well near Pardhi House, Bhandewadi, Nagpur	NA	NA	NA	Nagpur	Nagpur	Bhandewadi
	210	Bore well near Dearao Kale House, Bhandewadi, Nagpur	NA	NA	NA	Nagpur	Nagpur	Bhandewadi

	211	Grampanchayat Suradevi Intake well On Kolar River At Suradevi, Taluka - Kamptee, District -Nagpur	NA	NA	NA	Nagpur	Kamptee	Suradevi
	212	Grampanchayat Mhasala, Dugwell On Nalla At Mhasala, Taluka - Kamptee, District - Nagpur	NA	NA	NA	Nagpur	Kamptee	Mhasala
	213	Grampanchayat Kawtha, Dugwell At Kawtha, Taluka - Kamptee, District - Nagpur	NA	NA	NA	Nagpur	Kamptee	Kawtha
	1995	Gram Panchayath Dug well , Near Balaji Gajbhiye House, Khaperkheda	109.30	81.64	95.47	Nagpur	Saoner	Khaperkheda(Ward No.4)
	1996	Gram Panchayath Dug well , Near Jagadamba G M S Mandir Sahakari Sanstha	116.69	116.95	116.82	Nagpur	Kamptee	Koradi
	1997	Bore well near Primary Health Centre, Raipur(Hingna)	NA	76.33	76.33	Nagpur	Hingna	Raipur
	1998	Gram Panchayat Dug well near Gram Panchayat Office, Brahmni	Dry	NA	NA	Nagpur	Kalmeshwar	Brahmni
	1999	Borewell Near Gram Panchayat,Changera.	74.32	77.42	75.87	Gondia	Gondia	Changera
	2000	Dug well near Sarode Kirana Store, Bhandewadi, Nagpur	Dry	NA	NA	Nagpur	Nagpur	Bhandewadi
	2203	Hand Pump in the premises of Z.P.Primary School	92.08	84.12	88.10	Wardha	wardha	Bhugaon
	2826	Dug Well near Railway Station, Cottaon Market	147.88	81.33	114.61	Wardha	wardha	Wardha
	2827	Bore Well near Railway crossing at Dongi Buzurg	Dry	NA	NA	Bandara	Tumsar	Dongri-Buzurg

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Nashik

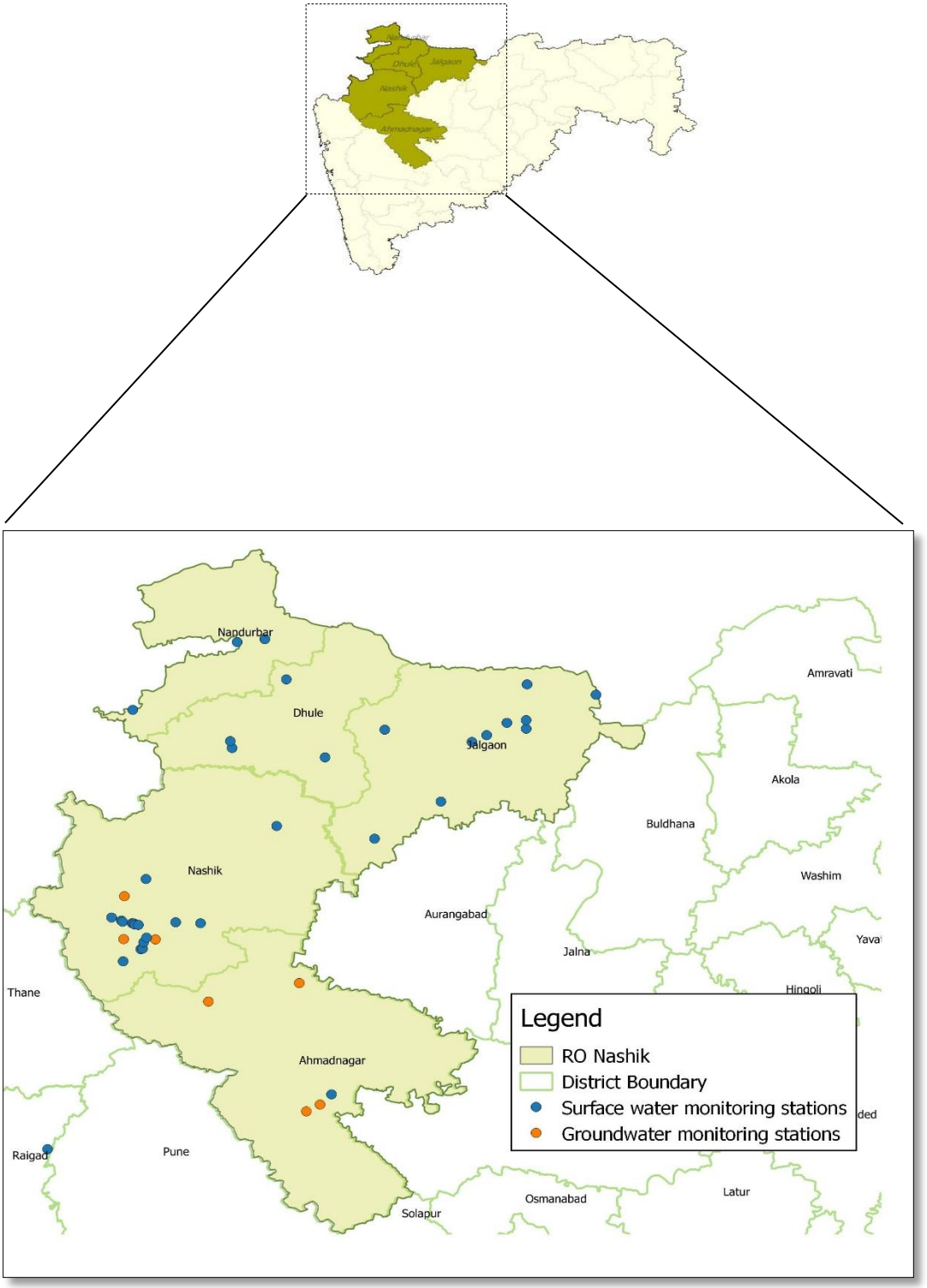

Dhule
Jalgaon
Nashik
Ahmadnagar
Nandurbar
Amravati
Akola
Buldhana
Washim
Aurangabad
Jalna
Yava
Hingoli
Thane
Pune
Raigad
Solapur
Osmanabad
Latur
Legend
RO Nashik
District Boundary
Surface water monitoring stations
Groundwater monitoring stations

Table No. 40: Water quality Index for surface and ground water monitoring at Nashik -RO – 2022-23

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	1313	Tapi River at Ajnad	81.63	84.46	83	Jalgaon	Raver	Ajnad
	2659	Burai River before confluece to Tapi River	Dry	85.02	86	Dhule	Dhule	Mukudas
	1251	Tapi River at Bhusawal	No Data	82.52	83	Jalgaon	Bhusawal	Bhusawal Railway Colony
	2674	Mor River near Padalshe	No Data	83.91	83	Jalgaon	Jalgaon	Padalashe
	2718	Waghur River at Sakegaon before Confluence with Tapi River	No Data	81.41	84	Jalgaon	Jalgaon	Sakegaon
	1252	Girna river at Jalgaon at intake of Girna pump house	No Data	83.91	86	Jalgaon	Jalgaon	Girna pump house area
	2667	Hiwara River D/s of Pachora	No Data	82.34	80	Jalgaon	Jalgaon	Pachora
	2658	Bori River D/s of Amalner	No Data	80.03	80	Jalgaon	Jalgaon	Amalner
	2710	Titur River D/s of Chalisgaon	No Data	81.31	83	Jalgaon	Jalgaon	Chalisgaon
	2652	Amravati River D/s of Dondaicha	Dry	Dry	Dry	Dhule	Dhule	Dondaicha
	1253	Girna river at Malegaon at Malegaon road bridge	Dry	80.58	83	Nashik	Malegaon	Malegaon
	2666	Gomai River D/s of Shahada	Dry	84.56	84	Dhule	Dhule	Shahada
	1314	Tapi river at Ubad village near Gujrat border	81.41	83.91	85	Nandurbar	Shahada	Ubad
	2684	Panzara River near Panzarakan SSK Ltd	Dry	81.14	81	Dhule	Dhule	Panzare
	2670	Kan River near Sakri water works	82.53	84.46	84	Dhule	Dhule	Sakri
	1907	Rangavali river at D/s of Navapur near Rangavali bridge	Dry	80.97	82	Nandurbar	Navapur	Navapur

	195	Sina River Bridge At Burudgaon Road, A/P Ahmednagar, Taluka & District Ahmednagar	69.86	No Data	70	Ahmednagar	Ahmednagar	Burudgaon
	1095	Godavari River at U/s of Gangapur Dam	88.08	88.27	87	Nashik	Nashik	Gangapur
	2177	Godavari River near Someshwar Temple	84.86	84.56	85	Nashik	Nashik	Someshwar
	2661	Darna River at Aswali (Darna Dam)	85.29	87.15	85	Nashik	Igatpuri	Aswali
	2179	Godavari River at Hanuman Ghat	84.04	81.90	76	Nashik	Nashik	Nashik city
	1096	Godavari River at Panchavati at Ramkund	80.17	83.25	81	Nashik	Nashik	Panchavati
	1211	Godavari River at Nashik D/s of near Amardham	84.15	82.62	81	Nashik	Nashik	Gadgebaba Maharaj Nagar
	2180	Godavari River at near Tapovan	76.28	81.17	74	Nashik	Nashik	Tapovan
	2181	Godavari River at Kapila -Godavari confluence point	84.40	83.38	80	Nashik	Nashik	Tapovan
	2662	Darna River at MES site Pumping station	86.04	84.66	84	Nashik	Nashik	Bhagur
	2663	Darna River at Bhagur Pumping station near Pandhurli Bridge	81.68	84.66	84	Nashik	Nashik	Bhagur
	2664	Darna River at Sansari	83.94	81.87	82	Nashik	Nashik	Sansari
	194	Kadwa River at Awankhed Village, Taluka - Dindori, District - Nashik	No Data	No Data	83	Nashik	Dindori	Awankhed Village
	2660	Darna River at Chehedi pumping station	85.22	82.62	77	Nashik	Nashik	Chehedi
	2182	Godavari River at Saikheda	79.83	85.94	84	Nashik	Niphad	Saikheda
	2183	Godavari River at Nandur-Madhameshwar Dam	81.97	85.85	85	Nashik	Niphad	Nandur
	2689	Patalganga River at Gagangiri Maharaj Temple	78.81	80.70	81	Raigad	Khalapur	Khopoli
	2178	Chikhali Nalla Meets Godavari River	49.40	51.32	54	Nashik	Nashik	Chikhali

	196	Lowki Nalla At Khedi, Taluka & District - Jalgaon	No Data	No Data	66	Jalgaon	Khedi	Khedi
	197	Moti Nalla before Confluence with Panjara river Dhule, Taluka & District - Dhule	74.45	72.45	64	Dhule	Dhule	Dhule
GW	221	Well water of Bappaji, Akolner, Ahmadnagar, Nashik	104.44	NA	104.44	Nashik	Ahmadnagar	Akolner
	1990	Bore well at BMW Site , Burudgaon	334.17	196.57	265.37	Ahmadnagar	Ahmednagar	Burudgaon
	1991	Bore well at MSW Site, Pathardi, Nashik	82.75	198.45	140.60	Nashik	Nashik	Pathardi
	2204	Dug well at Gunjalwadi, Sangamner near Primary Health Care Center.	61.40	119.33	90.37	Ahmadnagar	Sangamner	Gunjalwadi
	2816	Dug Well of Mr. Sampat Walunj, near M/s. Mahajeet Clayton	156.73	186.85	171.79	Nashik	Nashik	Shinde village
	2817	Bore Well at Chitali near Wagh vasthi	53.48	94.41	73.95	Ahmadnagar	Rahata	Chitali
	2818	Bore Well at M/s. Spectron Ethers Rasegaon near Siddeshwar Mahadev Mandir	Dry	NA	NA	Nashik	Dindori	Rasegaon

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Navi Mumbai

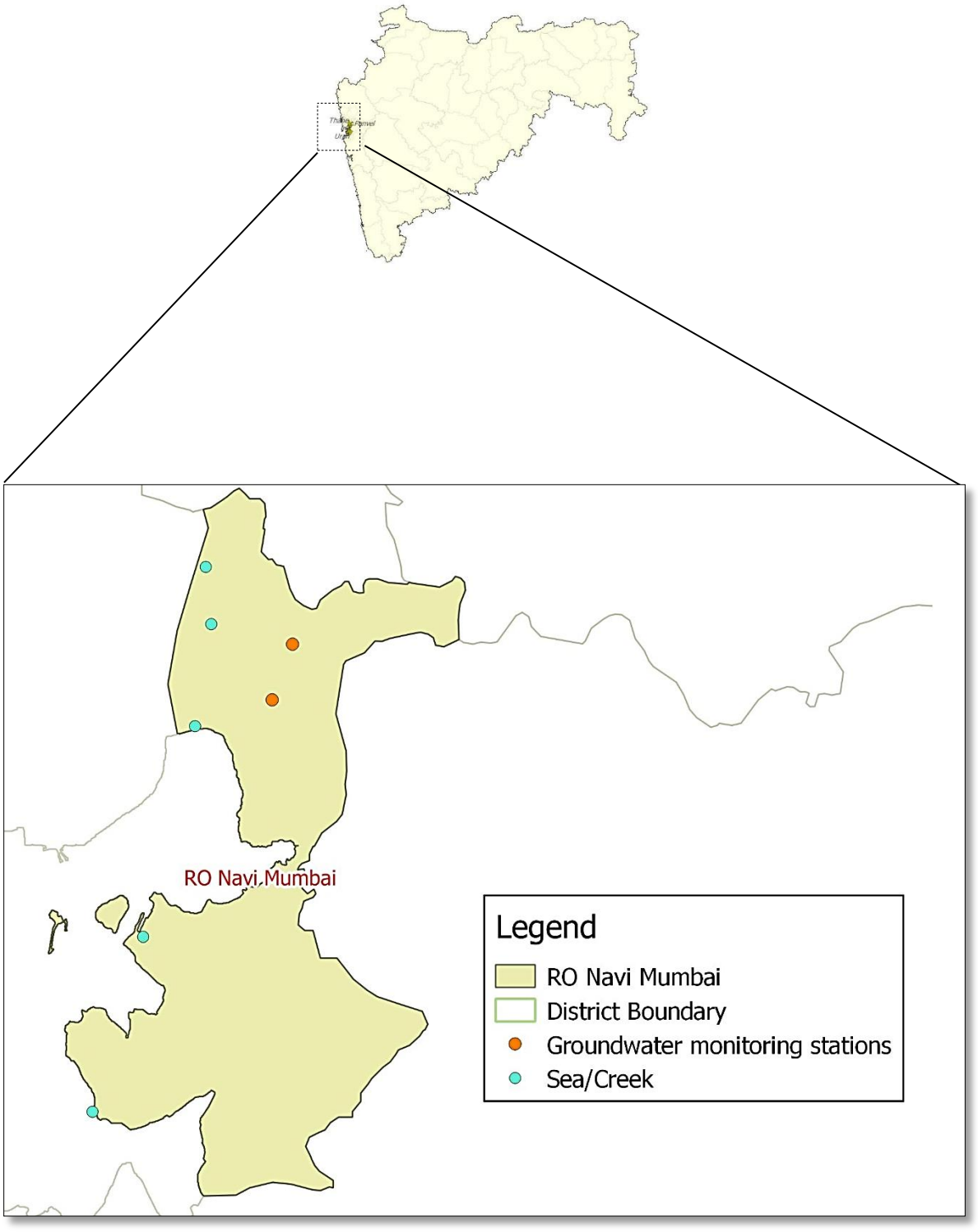


Table No. 41: Water quality Index for surface and ground water monitoring at Navi Mumbai-RO – 2022-23

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2184	Vashi Creek at Airoli Bridge	61.10	70.08	65	Thane	Thane	Airoli
	190	TTC Creek At Ghansoli Jetty	61.56	65.20	66	Thane	Thane	Ghansoli
	2185	Vashi Creek at Vashi Bridge	61.34	75.35	65	Thane	Thane	Vashi
	1317	Thane creek at Elephanta Island	60.21	68.91	63	Raigad	Uran	Gharapuri, Elephanta Island
	191	Arabian Sea behind ONGC Uran	57.08	57.04	61	Raigad	Uran	Uran
	216	Kasardi River near Ganesh Ghat	No Data	68.02	68	Raigad	Panvel	Taloja
GW	214	Borewell at TTCWMA, Mahape	NA	NA	NA	Thane	Thane	TTCWMA,Mahape
	215	Well water at Turbhe Store, Turbhe	89.64	48.21	68.93	Thane	Thane	Turbhe

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Pune

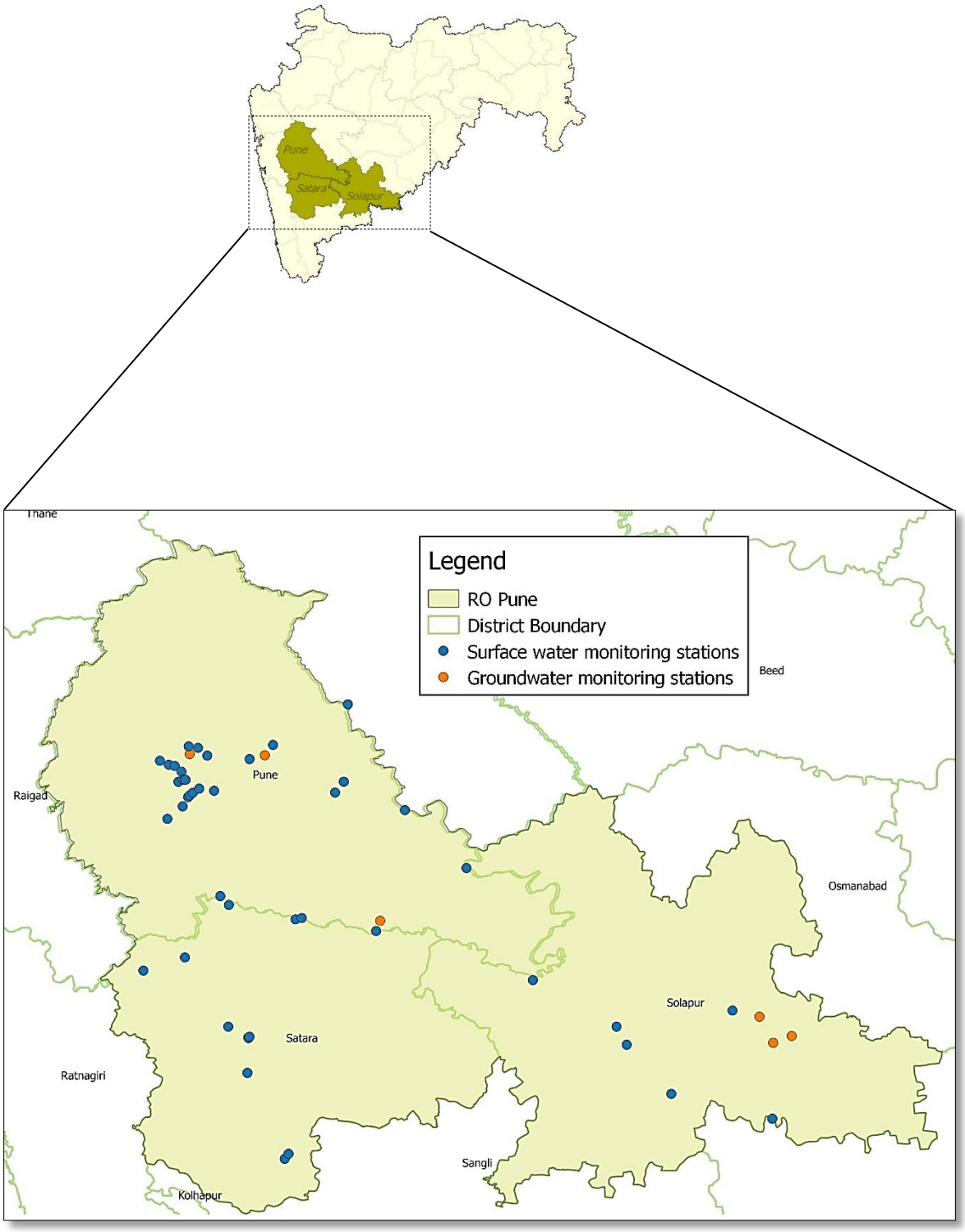

Pune
Satara
Solapur
Legend
RO Pune
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Thane
Beed
Raigad
Pune
Osmanabad
Solapur
Satara
Ratnagiri
Sangli
Kolhapur

Table No. 42: Water quality Index for surface and ground water monitoring at Pune-RO – 2022-23

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2692	Pawana River at Ravet Weir, Pune	87.46	79.54	82	Pune	Haweli	Ravet
	2680	Mutha River at Khadakvasla Dam Pune	86.02	85.04	85	Pune	Haweli	Kadakvasla
	2693	Pawana River at Chinchwadgaon, Pune	63.94	77.18	72	Pune	Haweli	Chinchwadgaon
	2694	Pawana River at Pimprigaon, Pune	69.38	63.19	64	Pune	Haweli	Pimprigaon
	2193	Mula River at Aundh Bridge -Aundgaon	66.43	79.91	69	Pune	Haweli	Aundhgaon
	2690	Pawana River at Kasarwadi Pune	66.02	65.41	61	Pune	Haweli	Kasarwadi
	2196	Pawana River at Sangavigaon, Pune	74.54	64.68	63	Pune	Haweli	Sangavigaon
	1189	Bhima river at Pune(Mutha river) at U/s of Vithalwadi near Sankar Mandir	78.81	67.03	65	Pune	Haweli	Vithalwadi
	2691	Pawana River at Dapodi Bridge at Pawana-Mulla Sangan Pune	63.19	66.79	62	Pune	Haweli	Dapodi
	2194	Mula River at Harrison Bridge near Mula -Pawana Sangam	67.32	67.55	63	Pune	Haweli	Bopodi
	2679	Mutha River at Deccan Bridge, Pune	64.27	63.27	60	Pune	Pune	Deccan
	2669	Indrayani River at U/s of Moshigaon, Pune	78.19	87.85	76	Pune	Haweli	Moshigaon
	2678	Mutha River near Veer Savarkar Bhavan	63.65	63.88	61	Pune	Pune	Pune M.C
	2191	Mutha River at Sangam Bridge Near Ganpathi Ghat	66.18	64.40	62	Pune	Pune	Shivaji Nagar
	2668	Indrayani River at D/s of Moshi village	Dry	80.42	72	Pune	Haveli	Moshi
	1190	Bhima river at D/s of Bundgarden, Pune	62.54	62.85	63	Pune	Haweli	Yerwada
	2197	Indrayani River at D/s of Alandigaon, Pune	71.85	75.09	71	Pune	Haweli	Alandigaon
	2192	Mula-Mutha River at Mundhwa Bridge	66.92	65.29	65	Pune	Haweli	Mundhawa

	1463	Nira river at Sarola bridge	84.19	78.17	75	Pune	Bhor	Sarola
	2683	Nira River at Shindewadi	77.07	76.20	76	Satara	Khandala	Shindewadi, Shirwal
	2655	Bhima River at Koregaon near Koregaon Bridge, Pune	Dry	73.63	72	Pune	Shirur	Koregaon
	2715	Vel River at Shikrapur, Pune	Dry	75.11	75	Pune	Shirur	Shikrapur
	2682	Nira River at U/s of Jubilant Organosis Pune	67.84	77.47	71	Pune	Baramati	Nira(Datta ghat)
	2195	Nira River at D/s of Jubilant Organosis Pune	62.83	73.90	68	Pune	Baramati	Nimbut
	2677	Mula-Mutha River at D/s of Theur, Pune	77.32	72.07	70	Pune	Haweli	Theur
	1191	Bhima river after confluence with Mula-Mutha at Pargaon near Vasant Bandara	71.71	75.72	69	Pune	Daund	Pargaon
	2665	Ghod River at Shirur, Pune	71.37	73.03	73	Pune	Shirur	Shirur
	2681	Nira River at Sangavi	76.09	73.02	67	Satara	Phaltan	Sangavi
	1192	Bhima river at Daund near Mahadev temple	68.55	74.79	71	Pune	Daund	Daund
	2656	Bhima River Backwater of Ujani Dam near raw water pump house	71.90	76.26	73	Pune	Indapur	Kumbargaon
	1911	Chandrabhaga river at U/s of Pandharpur town	61.02	79.36	69	Solapur	Pandarpur	Gursale
	1912	Chandrabhaga river at D/s of Pandharpur town near Vishnupant Mandir	Dry	70.69	66	Solapur	Pandarpur	Gopalpur
	1188	Bhima River at Narshingpur near Sangam Bridge after confluence with Nira	63.41	70.98	69	Solapur	Malshiros	Narsingpur
	2705	Sina River near Laboti till naka Solapur	69.21	76.85	68	Solapur	Mohal	Laboti
	28	Bhima River at Takli	70.43	72.76	69	Solapur	South Solapur	Takali
	2716	Venna River at Mahabaleshwar	88.74	86.93	85	Satara	Mahabaleshwar	Mahabaleshwar
	1194	Krishna river at Dhom Dam	85.10	84.38	84	Satara	Mahabaleshwar	Wai
	2186	Venna River at Varya, Satara	83.72	75.29	78	Satara	Satara	Varye

	2190	Krishna River at Wai	71.84	83.99	75	Satara	Wai	Wai
	2711	Urmodi River at Nagthane Satara	85.59	81.50	78	Satara	Satara	Nagthane
	2717	Venna River at Mahuli	72.48	79.68	76	Satara	Satara	Mahuli
	2188	Krishna River at Krishna-Venna Sangam, Mahuli	70.74	74.01	76	Satara	Mahuli	Mahuli
	2187	Krishna River at Kshetra Mahuli Satara	67.58	77.47	74	Satara	Mahuli	Kshetra Mahuli
	2189	Koyna River at Karad	74.98	78.47	77	Satara	Karad	Karad
	36	Krishna River at Krishna Bridge, Karad	75.21	78.77	75	Satara	Karad	Karad
	2789	Nalla at D/s of Alkai Mandir, Solapur	Dry	67.44	63	Solapur	Malshiras	Aklai
GW	1992	Dug well at MSW Site,owned by Shri.Dattu Kondiba Borate at Borate Vasthi.	71.75	82.35	77.05	Pune	Haveli	Moshi
	2819	Dug Well Owned by Shri Deshmukh	345.85	305.47	325.66	Pune	Baramati	Malegaon
	2820	Dug Well Owned by Shri Shivaji Baban Darekar	63.23	109.63	86.43	Pune	Shirur	Sanaswadi
	2821	Bore Well at Bale Railway Station premises Owned by Shri Digambar Joshi	396.02	162.83	279.43	Solapur	North Solapur	Dahegaon
	2822	Bore Well near Chincholi	381.36	162.76	272.06	Solapur	Mohol	Chincholi
	2823	Bore Well at Shete Vasti near old Tuljapur Road	424.08	165.72	294.90	Solapur	Solapur	Shete vasthi, Tuljapur Naka

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Raigad

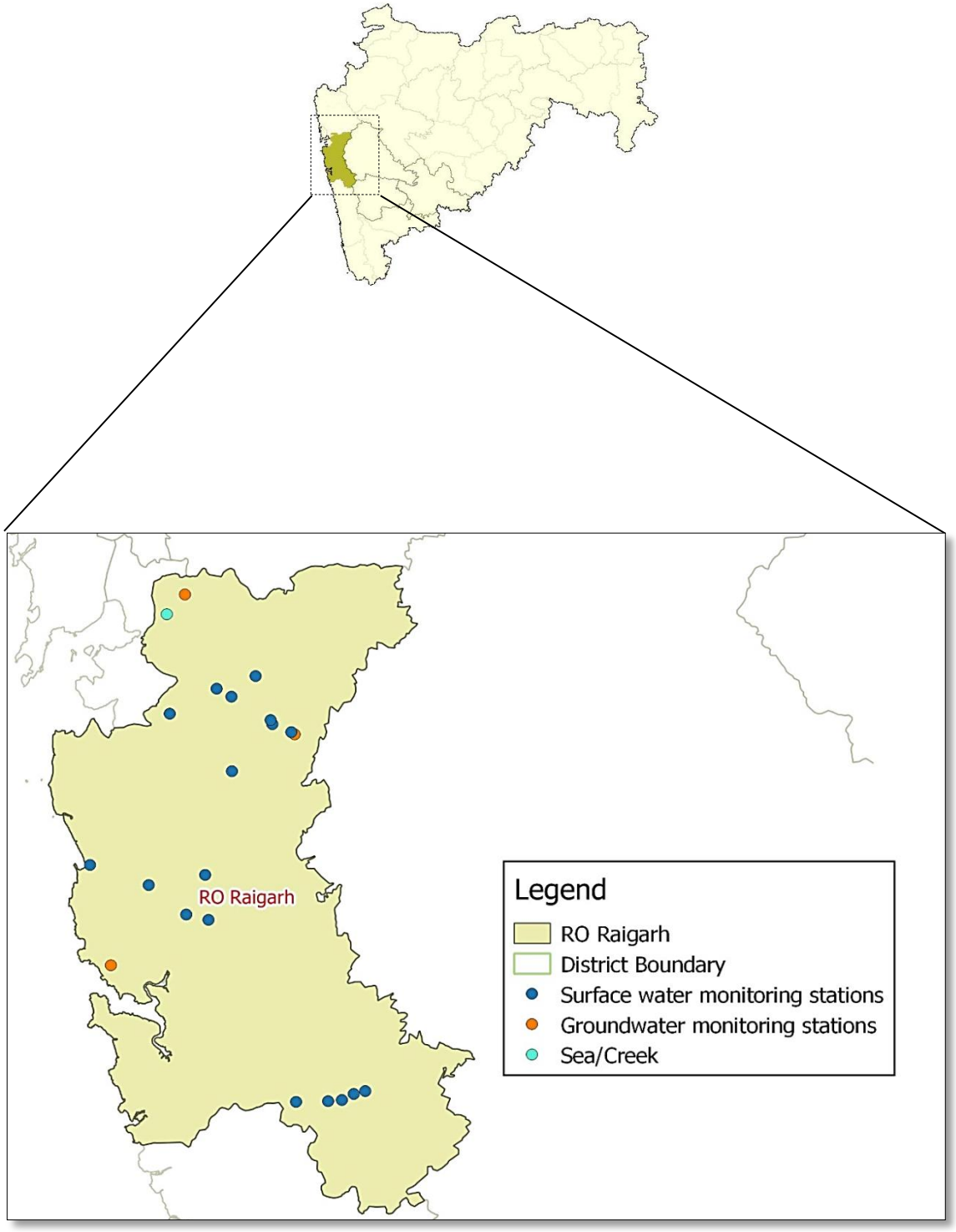

RO Raigarh
Legend
RO Raigarh
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Sea/Creek

Table No. 43: Water quality Index for surface and ground water monitoring at Raigad RO – 2022-23

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2803	Panvel Creek at Kopra Bridge	59.70	77.45	75	Raigad	Panvel	Kopra
	2701	Savitri River Jackwell at Upsa kendra	87.56	83.26	86	Raigad	Mahad	Nangalwadi
	2702	Savitri River at Shedav Doh	82.18	84.47	85	Raigad	Mahad	Shedav Dov
	2703	Savitri River at Dadli Bridge	85.06	85.40	86	Raigad	Mahad	Dadli
	2704	Savitri River at Muthavali village	83.91	86.86	86	Raigad	Mahad	Muthavali
	2199	Savitri River at Ovale village	78.51	85.31	86	Raigad	Mahad	Ovale
	1151	Patalganga River at Shilphata Bridge	83.10	84.55	82	Raigad	Khalapur	Khopoli
	2688	Patalganga River at Savroli Bridge	81.83	81.90	81	Raigad	Khalapur	Savroli
	2687	Patalganga River at Khalapur pumping house	76.86	82.72	82	Raigad	Khalapur	Khalapur
	192	Morbe Dam, Taluka - Khalapur, District - Raigad	78.45	88.90	83	Raigad	Khalapur	Khalapur
	193	Balganga River, Village Ransai, Taluka - Khalapur, District - Raigad	74.36	78.34	79	Raigad	Khalapur	Ransai
	2686	Patalganga River at Vyal pump house	84.79	79.66	84	Raigad	Khalapur	Vyal
	1462	Patalganga near intake of MIDC water works(Turade w/w)	84.04	82.52	84	Raigad	Khalapur	Turade
	2672	Kundalika River at Dhatav at Jackwell	83.37	79.66	80	Raigad	Roha	Dhatav
	2651	Amba River at D/s of Waken Bridge	80.24	82.84	81	Raigad	Roha	Waken Phata

	1152	Kundalika River at Roha Bridge	74.00	82.61	80	Raigad	Roha	Roha
	2685	Patalganga River at D/s of Kharpada Bridge	67.55	86.58	82	Raigad	Khalapur	Kharpada
	2198	Kundalika River at Are Khurd (Saline Zone)	64.41	83.46	79	Raigad	Roha	Are Khurd
	2671	Kundalik River near Salav Bridge (Saline Zone)	54.31	73.19	68	Raigad	Roha	Salav
GW	217	Borewell water at village Milgaon, Taluka - Khalapur, District - Raigad.	56.88	37.93	47.41	Raigad	Khalapur	Milgaon
	218	Borewell water near MSW site, Murud - Janjira.	53.24	35.14	44.19	Murud	Murud	Murud Janjira
	1989	Bore well at MWML Site at Taloja	NA	310.13	310.13	Raigad	Panvel	Karawla- Taloja

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

RO – Thane

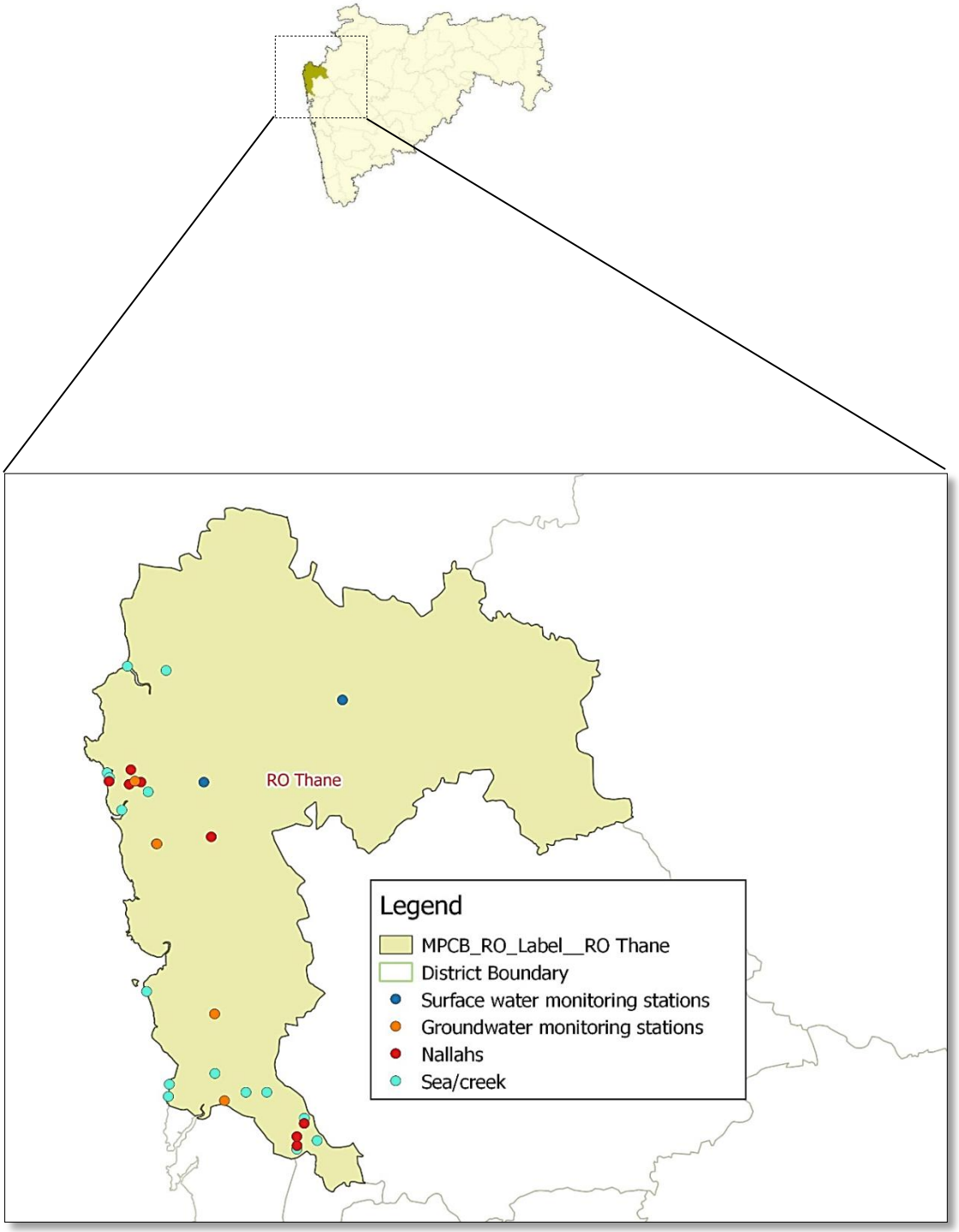

RO Thane
Legend
MPCB_RO_Label__RO Thane
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Nallahs
Sea/creek

Table No. 44: Water quality index for surface and ground water monitoring at Thane RO -2022-23

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2802	Dahanu Creek at Dahanu Fort	56.10	70.04	61	Thane	Dahanu	Danugaon
	2801	Savta Creek	58.57	72.46	62	Thane	Dahanu	Savta
	2799	Dandi Creek	63.09	67.50	60	Thane	Palghar	Dandi
	2807	Navapur Sea	56.95	59.43	58	Thane	Palghar	Navapur
	2800	Sarwali Creek	63.23	72.85	64	Thane	Palghar	Sarwali
	2798	Kharekuran Murbe Creek	62.76	71.82	59	Thane	Palghar	Kharekuran
	2805	Arnala Sea	50.29	58.16	58	Thane	Vasai	Arnala
	2797	Bhayander Creek at D/s of Railway Bridge at Jasal Park Choupathy	59.29	65.07	60	Thane	Bhayander	Navghar
	1316	Bassein creek at Vasai Fort, Thane	52.21	65.42	60	Thane	Vasai	Bassein
	2795	Ulhas Creek at Gaimukh at Nagla Bunder on Ghod Bunder Road	54.59	71.56	65	Thane	Thane	Nagla
	2796	Ulhas Creek at Versova Bridge	56.55	70.60	65	Thane	Vasai	Versova
	2806	Uttan Sea at Bhayander	52.58	60.94	56	Thane	Bhayander	Uttan
	2794	Ulhas Creek at Kolshet Reti Bunder	51.88	69.03	62	Thane	Thane	Kolshet
	2792	Ulhas Creek at Mumbra Reti Bunder	57.57	69.64	63	Thane	Thane	Mumbra
	2793	Thane Creek at Kalwa Road Bridge	40.07	64.71	60	Thane	Thane	Kalwa
	2707	Surya River at MIDC pumping station	81.52	81.48	83	Thane	Palghar	Garvashet
	2706	Surya River U/s of Surya Dam	80.10	82.86	83	Thane	Vikramgad	Dhamni

	2696	Pelhar dam	80.50	83.02	83	Palghar	Vasai	Pelhar
	2708	Surya River at Intake of Vasai-Virar water scheme	77.66	83.12	81	Thane	Palghar	Masvan
	2784	Sandoz Nalla	27.46	34.80	34	Thane	Thane	Sandozbaug
	2782	Rabodi Nalla	28.94	32.92	33	Thane	Thane	Rabodi
	2783	Colour Chem Nalla	29.18	27.46	36	Thane	Thane	Majiwada
	2786	Tarapur MIDC Nalla, near sump No1	NA	NA	NA	Palghar	Palghar	MIDC Tarapur
	2787	Tarapur MIDC Nalla	NA	NA	NA	Palghar	Palghar	MIDC Tarapur
	2788	Tarapur MIDC Nalla near sump-III	NA	NA	NA	Palghar	Palghar	MIDC Tarapur
	2785	BPT Navapur	40.37	34.72	36	Palghar	Palghar	Navapur
GW	1984	Bore well at M/s Tata Iron {} Steel Co. Ltd, S-76	NA	NA	NA	Thane	Palghar	MIDC Tarapur, Industrial Estate, Tarapur
	1985	Dug well at 5 Star Industrial Estate	131.00	106.45	118.72	Thane	Mira-Bhayander	Kashimira
	1986	Bore well at Motapada	NA	Dry	NA	Thane	Dahanu	Motapada
	1987	Bore well at Vasai	112.36	75.78	94.07	Thane	Vasai	Gokhiware
	1988	Bore well at Gharatwadi, Palghar	NA	Dry	NA	Thane	Palghar	Aliyali

Surface Water		**Good to Excellent**	**Medium to Good**	**Bad**	**Bad to Very Bad**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**
Ground Water	**Excellent**	**Good**	**Poor**	**Very Poor**	**Not suitable for drinking**	**Dry**	**No data**	**Does not comply with WQI Calculation criteria (NA)**

Annex – II : List of Pending writ petitions

List of the Applications/Appeals pending before the Hon'ble National Green Tribunal, Principal Bench, New Delhi / Western Zone, Pune regd. river pollution, for the year 2022-2023

Sr. No.	Name of the Parties	Application /Appeal No.	Region	Subject matter	Status
1	News Item Published In 'The Hindu' Authored By Shri. Jacob Koshy Titled "More river stretches are now critically polluted: CPCB"	Original Application No. 673/2018	NA	"More river stretches are now critically polluted: CPCB"	Disposed
2	Paryavaran Suraksha Samiti & Anr. V/s Union of India & Ors.	Original Application No. 593/2017	NA	Establishment and functioning of ETPs/CETPs/STPs to prevent untreated sewage/effluents being discharged in water bodies, including rivers and canals meeting such rivers or otherwise.	Disposed
3	Sarang Yadwadkar & Ors V/s. Pune Municipal corporation & Ors	Original Application No. 49/2019	Pune	Dumping of construction material on the flood plains of the river flowing through Pune and Pimpri Chinchwad Cities	Pending
4	Dr. Kiran Ramdas Kamble & anr V/s. The State of Maharashtra & Ors	Original application no. 544/2019	Nashik	Disposal of sewage into river Godavari at Trimbkeshwar	Pending
5	Devraj Bhatia v/s Pune Municipal Corporation	Original Application No.3/2020	Pune	Concrete road construction in river area causing obstruction to flow of river water.	Pending

Sr. No.	Name of the Parties	Application /Appeal No.	Region	Subject matter	Status
6	Sarang Yadwadkar & Ors. v/s Pune Municipal Corporation & Ors.	Original Application No.28/2020	Pune	Pillars construction in Pune Metro Project in the riverbed, which creates increase in flood possibility in Pune region.	Pending
7	News item published in the Indian Exoress dated 29.12.2021 titled "The road to redisovery of Kham, the sesonal river of Auranagabad "	Original Application no. 25/2022 (WZ), Earlier Original Application No. 144/2022, NGT, PB , New Delhi	Aurangabad	The Application has raised issued of pollution of Kham River due to due to encroachment and dumping of slid waste which has reduced the seasonal river to flow of garbage.	Disposed
8	Sunil Pharate Sangli District Head of Swatantra Bharat Paksh V/s. State of Maharashtra & Ors	Original Application No. 69/2022 , NGT, WZ, Pune	Sangli , Kolhapur	The present Application pertains to the substantial issue of environment due to mixing of untreated hazardous waste water directly into river Krishna which resulting into lakhs of fish were found dead and floating in the river with the permanent , irreversible damage caused to the bio diversity of river Krishna.	Pending
9	Raju Alias Devavappa Anna Shetty & Ors v/s. Shri Dutta India Pvt Ltd.,& Ors	Original Application No. 32/2023, NGT, WZ	Kolhapur	The Applicant has contended that Krishna River gets polluted in Sangli District on a large scale because of various drainage outlets released in the river while it passes from Sangli Miraj and Kupwad Cities.	Pending

Sr. No.	Name of the Parties	Application /Appeal No.	Region	Subject matter	Status
10	Shivdipsing Hatesing Jagtap & Anr V/s. The State of Maharashtra & Ors	PIL. No. 35/2022	Nashik	The Petition being aggrieved by the construction work carrying in flood line without marking the red line as well as blue line of river Girna and at some place in the riverbed itself with any environment impact assessment the blue line is marked considering maximum flood discharge in 25 years, while the red line is marked considering maximum floods in over 100 years. The area between the blue line and the river bank is prohibitive zone	Pending
11	Arif Nawaz M. M. Iraqi V/s. State of Maharashtra	O.A. No. 63/2023 (WZ) Earlier O.A. No.105/2022 (PB)	Thane	Ulhas river & Desai Creek in Mumbra and Diva, Dist- Thane.	Pending
12	Dombivli Better Environment System Association V/s. Vanashakti & Ors	Civil Appeal No. 4635/2022	Kalyan	This Civil Appeal is flled against the order dated 18.04.2022passed by the Hon'ble NGT , Special Bench, New Delhi in Original Application No. 37/2013 (Ulhas river Pollution due to discharge of untreated effluents ,sewage	Pending

Annex – III : List of Polluted Stretches across Maharashtra

Priority wise list of Rivers declared by CPCB in September 2018 based on data of 2016 & 2017				
Priority I (9 Nos.)	**Priority II (6 Nos.)**	**Priority III (14 Nos.)**	**Priority IV (10 Nos.)**	**Priority V (14 Nos.)**
Godavari	Bhima	Ghod	Bindusara	Amba
Kalu	Indrayani	Kanhan	Bori	Bhatsa
Kundalika	Mula-Mutha	Kolar (MAH)	Chandrabhaga	Gomai
Mithi	Pawna	Krishna	Darna	Kan, Manjara
Morna	Wainganga	Mor	Girna	Panchaganga
Mula	Wardha	Patalganga, Pedhi	Hiwara	Panzara
Mutha		Penganga, Purna	Koyna	Rangavali
Nira		Tapi, Urmodi	Pelhar	Savitri, Surya
Vel		Venna, Waghur	Sina	Tansa, Ulhas
		Wena	Titur	Vaitarna, Vashishti
Polluted River Stretches in Maharashtra Declared by CPCB On the basis of data 2019 & 2021				
Priority I (4 Nos.)	**Priority II (5 Nos.)**	**Priority III (18 Nos.)**	**Priority IV (17 Nos.)**	**Priority V (11 Nos.)**
Bhima	Godavari	Chandrabhaga	Bhatsa	Amba
Mithi	Kanhan	Darna	Burai	Amravati
Mutha	Mula	Ghod	Kalu	Bindusara
Savitri	Mula-Mutha	Girna	Kan	Bori
	Pawna	Indrayani	Koyana	Gomai
		Krishna	Manjara	Hiwara
		Kundalika	Mor	Kolar
		Morna	Pelhar	Tansa
		Muchkundi	Panzara	Ulhas
		Nira	Pedhi	Vaitarna
		PatalGanga	Penganga	Vashishti
		Rangavali	Purna	
		Surya	Sina	
		Tapi	Urmodi	
		Titur	Vel	
		Waghur	Venna	
		Wainganga	Wena	
		Wardha		
Less Polluted (1) Panchaganga				
Priority wise list of Rivers on data of (April 2022- March 2023)				
Priority I (1 Nos.)	**Priority II (4 Nos.)**	**Priority III (7 Nos.)**	**Priority IV (15 Nos.)**	**Priority V (23 Nos.)**
Mithi	Bhima,	Chandrabhaga,	Bindusara,Ghod	Amba, Bhatsa, Bori, Burai, Darna,
	Mula,	Indrayani,Kundalika	Godavari,Kalu, Kanhan,	Girna, Gomai, Hiwara,
	Mutha,	Mula-Mutha,Nira,	Kolar, Koyna,Krishna,	Kan, Mor, Panzara,
	Pawana	Pedhi, Sina	Manjara,Morna,	Pelhar, Purna, Rangavli
			Patalganga,Penganga,	Surya, Tansa, Tapi, Titur,
			Urmodi,Venna,	Ulhas, Vel
			Wainganga	Waghur,Wardha,
				Wena
Less Polluted (5) : Muchkundi, Panchganga,Savitri,Vaitarna,Vashishthi				
Dry Rivers (1) : Amravati				

Source : MPCB

Annex - IV : Status Of Sewage Treatment Of Maharashtra

Municipal Corporations

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
1	Bhiwandi Municipal Corporation	A	Thane	160.6	43	43.0
2	Mumbai Municipal Corporation	A	Mumbai	3513.2	2687	1451.0
3	Nagpur Municipal Corporation	A	Nagpur	589.6	443.5	370.3
4	Pune Municipal Corporation	A	Pune	856	487	487.0
5	Ahmednagar Municipal Corporation	B	Ahmednagar	44.3	55.7	44.0
6	Nashik Municipal Corporation	B	Nashik	426	360.5	319.1
7	Pimpri Chinchwad Municipal Corporation	B	Pune	647	353	353.0
8	Thane Municipal Corporation	B	Thane	316.3	304.47	187.0
9	Aurangabad Municipal Corporation	C	Aurangabad	174.9	211	84.0
10	Kalyan Dombavli Municipal Corporation	C	Thane	568	210	66.0
11	Navi Mumbai Municipal Corporation	C	Thane	286.6	454	286.0
12	Vasai Virar Municipal Corporation	C	Palghar	242.8	30	30.0
13	Akola Municipal Corporation	D	Akola	128	37	37.0
14	Amravati Municupal Corporation	D	Amravati	100	74.5	74.5
15	Chandrapur Municipal Corporation	D	Chandrapur	36	70.5	36.0
16	Dhule Municipal Corporation	D	Dhule	19.4	57.0	19.0
17	Jalgaoan Municipal Corporation	D	Jalgaon	120	48	0.0
18	Kolhapur Municipal Corporation	D	Kolhapur	120	93	93.0
19	Latur Municipal Corporation	D	Latur	28.9	0	0.0
20	Malegaon Municipal Corporation	D	Malegaon	73	63.0	63.0
21	Mira Bhainder Municipal Corporation	D	Thane	147.8	94	93.0
22	Nanded Municipal Corporation	D	Nanded	76	132	58.0
23	Panvel Municipal Corporation	D	Raigad	171	278	286.0
24	Parbhani Municipal Corporation	D	Parbhani	37.2	0	0.0

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
25	Sangli Municipal Corporation	D	Sangli	156.1	59.5	49.0
26	Solapur Municipal Corporation	D	Solapur	115.2	102.5	90.0
27	Ulhasnagar Municipal Corporation	D	Thane	113.7	66.98	67.0

Municipal Councils

Status of Sewage Treatment in A Class Municipal Council in Maharashtra						
Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
1	Achalpur Municipal Council	A	Amravati	21.4	0	0
2	Beed Municipal Council	A	Beed	41.6	0	0
3	Gondia Municipal Council	A	Gondia	18.3	12	12
4	Hingoli Municipal Council	A	Hingoli	8.1	15	8
5	Bhusawal Municipal Council	A	Jalgaon	29.1	0	0
6	Jalna Municipal Council	A	Jalna	31	0	0
7	Udgir Municipal Council	A	Latur	35.2	0	0
8	Nandurbar Municipal Council	A	Nandurbar	11.7	17.5	11
9	Osmanabad Municipal Council	A	Osmanabad	27.4	0	0
10	Baramati Municipal Council	A	Pune	15.8	11.5	11.5
11	Satara Municipal Council	A	Satara	57.2	5.5	0
12	Barshi Municipal Council	A	Solapur	15.1	18.5	15
13	Ambarnath Municipal Council	A	Thane	58.1	54	28
14	Kulgaon-Badalapur Municipal Council	A	Thane	36.8	29.5	21.5
15	Hingan Ghat Municipal Council	A	Wardha	16.6	13.5	9.5
16	Wardha Municipal Council	A	Wardha	9.6	17	9.5
17	Yavatmal Municipal Council	A	Yavatmal	52.8	25	20

Status of Sewage Treatment in B Class Municipal Council in Maharashtra						
Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
1	Kopargaon Municipal Council	B	Ahmednagar	7.8	0	0
2	Sangamner Municipal Council	B	Ahmednagar	10.4	0	0
3	Shrirampur Municipal Council	B	Ahmednagar	12	6	6
4	Murtizapur Municipal Council	B	Akola	6	0	0
5	Balapur Municipal Council	B	Akola	3.6	0	0
6	Akot Municipal Council	B	Akola	18.3	0	0
7	Warud Municipal Council	B	Amravati	4.2	0	0
8	Anjangaon Surji Municipal Council	B	Amravati	3.7	0	0
9	Paithan Municipal Council	B	Aurangabad	2.2	0	0
10	Kannada Municipal Council	B	Aurangabad	1.9	0	0
11	Vaijapur Municipal Council	B	Aurangabad	7.2	0	0
12	Sillod Municipal Council	B	Aurangabad	3.9	0	0
13	Majalgaon Municipal Council	B	Beed	0.9	0	0
14	Ambejogai Municipal Council	B	Beed	6.6	0	0
15	Parli Vaijinath Municipal Council	B	Beed	8.9	17	8.8
16	Tumsar Municipal Council	B	Bhandara	1.9	0	0
17	Bhandara Municipal Council	B	Bhandara	8	0	0
18	Malkapur - Buldhana Municipal Council	B	Buldhana	4.6	0	0
19	Shegaon Municipal Council	B	Buldhana	5.3	7	4
20	Chikhli Municipal Council	B	Buldhana	6.2	0	0
21	Mehkar Municipal Council	B	Buldhana	3.4	0	0
22	Khamgaon Municipal Council	B	Buldhana	11.8	0	0
23	Nandura Municipal Council	B	Buldhana	4.8	0	0
24	Buldhana Municipal Council	B	Buldhana	12.3	0	0
25	Bhadravati Municipal Council	B	Chandrapur	6.4	0	0
26	Ballarpur Municipal Council	B	Chandrapur	7	7.5	0

Status of Sewage Treatment in B Class Municipal Council in Maharashtra						
27	Warora Municipal Council	B	Chandrapur	5.6	0	0
28	Dondaicha-Varwade Municipal Council	B	Dhule	10	0	0
29	Shirpur-Varwade Municipal Council	B	Dhule	9.8	12.5	9
30	Gadchiroli Municipal Council	B	Gadchiroli	9.3	0	0
31	Pachora Municipal Council	B	Jalgaon	3.9	9	3
32	Chalisgaon Municipal Council	B	Jalgaon	16.3	0	0
33	Chopda Municipal Council	B	Jalgaon	13.4	0	0
34	Amalner Municipal Council	B	Jalgaon	11.3	12.7	0
35	Jamner Municipal Council	B	Jalgaon	5.4	8	5.4
36	Jaysingpur Municipal Council	B	Kolhapur	4.6	0	0
37	Ahmedpur Municipal Council	B	Latur	11.5	0	0
38	Kamptee Municipal Council	B	Nagpur	16.2	2	0
39	Katol Municipal Council	B	Nagpur	4.2	0	0
40	Umred Municipal Council	B	Nagpur	6.1	2	1.5
41	Wadi Municipal Council	B	Nagpur	13.7	0	0
42	Deglur Municipal Council	B	Nanded	8.2	8	2
43	Shahada Municipal Council	B	Nandurbar	3.4	0.0	0.0
44	Sinnar Municipal Council	B	Nashik	17.7	0	0
45	Manmad Municipal Council	B	Nashik	4.1	0	0
46	Yeola Municipal Council	B	Nashik	7.4	0	0
47	Dahanu Municipal Council	B	Palghar	2.2	0	0
48	Palghar Municipal Council	B	Palghar	6.3	0	0
49	Jintur Municipal Council	B	Parbhani	7	0	0
50	Gangakhed Municipal Council	B	Parbhani	4.4	0	0
51	Sailu Municipal Council	B	Parbhani	5	0	0
52	Talegaon Dhabade Municipal Council	B	Pune	13.4	14.35	0
53	Daund Municipal Council	B	Pune	4.5	10.5	4
54	Lonavala Municipal Council	B	Pune	19	6	6
55	Khopoli Municipal Council	B	Raigad	10.8	0	0

Status of Sewage Treatment in B Class Municipal Council in Maharashtra						
56	Ratnagiri Municipal Council	B	Ratnagiri	23.6	0	0
57	Chiplun Municipal Council	B	Ratnagiri	24.4	0	0
58	Islampur Municipal Council	B	Sangli	4.3	0	0
59	Vita Municipal Council	B	Sangli	4.4	0	0
60	Karad Municipal Council	B	Satara	11.0	12.5	10
61	Phaltan Municipal Council	B	Satara	3.6	8	2
62	Pandharpur Municipal Council	B	Solapur	10.8	18	10
63	Akkalkot Municipal Council	B	Solapur	3.2	0	0
64	Arvi Municipal Council	B	Wardha	2.7	0	0
65	Karanja Municipal Council	B	Washim	2.2	0	0
66	Washim Municipal Council	B	Washim	8.9	8	7
67	Wani Municipal Council	B	Yavatmal	2.6	0	0
68	Umarkhed Municipal Council	B	Yavatmal	2	0	0
69	Digras Municipal Council	B	Yavatmal	7.4	0	0
70	Pusad Municipal Council	B	Yavatmal	17.7	0	0

Status of Sewage Treatment in C Class Municipal Council in Maharashtra						
Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
1	Pathardi Municipal Council	C	Ahmednagar	1.9	0	0
2	Rahata Pimplas Municipal Council	C	Ahmednagar	2.8	3	2.8
3	Jamkhed Municipal Council	C	Ahmednagar	1.0	0	0
4	Devlali Pravara Municipal Council	C	Ahmednagar	3.3	5	3
5	Srigonda Municipal Council	C	Ahmednagar	3.4	0	0
6	Rahuri Municipal Council	C	Ahmednagar	8.5	0	0
7	Shevgaon Municipal Council	C	Ahmednagar	4.7	1	0
8	Patur Municipal Council	C	Akola	1.8	0	0

Status of Sewage Treatment in C Class Municipal Council in Maharashtra						
9	Telhara Municipal Council	C	Akola	2.8	0	0
10	ChandurRailway Municipal Council	C	Amravati	1.4	0	0
11	Daryapur Municipal Council	C	Amravati	1.0	0	0
12	Shendurjana Ghat Municipal Council	C	Amravati	2.4	0	0
13	Chikhaldara Hill Station Municipal Council	C	Amravati	0.3	0	0
14	Dhamangaon Municipal Council	C	Amravati	1.6	0	0
15	ChandurBazaar Municipal Council	C	Amravati	3.2	0	0
16	Morshi Municipal Council	C	Amravati	10.4	0	0
17	Gangapur Municipal Council	C	Aurangabad	6.4	4.2	0
18	Khuldabad Municipal Council	C	Aurangabad	3.2	0	0
19	Gevrai Municipal Council	C	Beed	3.7	0	0
20	Dharur Municipal Council	C	Beed	1.5	2	1.5
21	Pavani Municipal Council	C	Bhandara	3.3	0	0
22	Sakoli Municipal Council	C	Bhandara	1.4	0	0
23	Lonar Municipal Council	C	Buldhana	1.4	5.5	1
24	Jalgaon Jamod Municipal Council	C	Buldhana	3.2	0	0
25	Deulgaon Raja Municipal Council	C	Buldhana	2.3	0	0
26	Sindkhed Raja Municipal Council	C	Buldhana	3.3	0	0
27	Gadchandur Municipal Council	C	Chandrapur	1.6	0	0
28	Mool Municipal Council	C	Chandrapur	3.4	0	0
29	Chimur Municipal Council	C	Chandrapur	2.4	0	0
30	Rajura Municipal Council	C	Chandrapur	5.8	0	0
31	Bramhapuri Municipal Council	C	Chandrapur	2.4	0	0
32	Nagbhid Municipal Council	C	Chandrapur	6.1	0	0
33	Desaiganj (Wadsa) Municipal Council	C	Gadchiroli	1.6	0	0
34	Tirora Municipal Council	C	Gondia	1.4	0	0
35	Amgaon Municipal Council	C	Gondia	2.9	0	0
36	Basmat Municipal	C	Hingoli	8.5	15	8

Status of Sewage Treatment in C Class Municipal Council in Maharashtra						
	Council					
37	Kalamnuri Municipal Council	C	Hingoli	2.8	0	0
38	Raver Municipal Council	C	Jalgaon	5.8	0	0
39	Yawal Municipal Council	C	Jalgaon	3.1	0	0
40	Varangaon Municipal Council	C	Jalgaon	1.2	10.15	1.2
41	Dharangaon Municipal Council	C	Jalgaon	3.2	0	0
42	Faizpur Municipal Council	C	Jalgaon	2.0	0	0
43	Erandol Municipal Council	C	Jalgaon	4.5	0	0
44	Bhadgaon Municipal Council	C	Jalgaon	5.1	0	0
45	Parola Municipal Council	C	Jalgaon	2.8	0	0
46	Savda Municipal Council	C	Jalgaon	2.4	0	0
47	Partur Municipal Council	C	Jalna	2.5	5	2
48	Bhokardan Municipal Council	C	Jalna	2.2	0	0
49	Ambad Municipal Council	C	Jalna	2.3	3.5	2
50	Kagal Municipal Council	C	Kolhapur	3.2	1	0.8
51	Gadhinglaj Municipal Council	C	Kolhapur	2.8	0	0
52	Kurundwad Municipal Council	C	Kolhapur	1.5	0	0
53	Murgud Municipal Council	C	Kolhapur	1.6	1	1
54	Malkapur Municipal Council	C	Kolhapur	0.5	0	0
55	Panhala Municipal Council	C	Kolhapur	0.2	0	0
56	Vadgaon Municipal Council	C	Kolhapur	6.4	0	0
57	Hupari Municipal Council	C	Kolhapur	8.5	0	
58	Shirol Municipal Council	C	Kolhapur	1.6	0	
59	Nilanga Municipal Council	C	Latur	6.0	0	0
60	Ausa Municipal Council	C	Latur	3.9	0	0
61	Mowad Municipal Council	C	Nagpur	0.6	0	0
62	Narkhed Municipal Council	C	Nagpur	1.4	0	0
63	Ramtek Municipal Council	C	Nagpur	2.7	0	0

Status of Sewage Treatment in C Class Municipal Council in Maharashtra						
64	Kanhann Pimpari Municipal Council	C	Nagpur	2.6	0	0
65	Kalmeshwar Municipal Council	C	Nagpur	6.9	0	0
66	Savner Municipal Council	C	Nagpur	3.3	0	0
67	Khapa Municipal Council	C	Nagpur	33.4	0	0
68	Mohapa Municipal Council	C	Nagpur	1.2	0	0
69	Butibori Municipal council	C	Nagpur	1.6	0	1.6
70	Wanadongari Municipal Council	C	Nagpur	5.3	0	0
71	Mudkhed Municipal Council	C	Nanded	2.7	0	0
72	Kinwat Municipal Council	C	Nanded	1.8	0	0
73	Kundalwadi Municipal Council	C	Nanded	0.7	0	0
74	Kandhar Municipal Council	C	Nanded	2.1	0	0
75	Biloli Municipal Council	C	Nanded	1.7	0	0
76	Loha Municipal Council	C	Nanded	1.4	0	0
77	Mukhed Municipal Council	C	Nanded	2.5	0	0
78	Bhokar Municipal Council	C	Nanded	4.6	0	0
79	Hadgaon Municipal Council	C	Nanded	10.8	0	0
80	Dharmabad Municipal Council	C	Nanded	3.9	0	0
81	Umri Municipal Council	C	Nanded	0.96	0	0
82	Taloda Municipal Council	C	Nandurbar	3.5	0	0
83	Navapur Municipal Council	C	Nandurbar	1.2	0	0
84	Trimbak Municipal Council	C	Nashik	1.4	1.4	1.3
85	Bhagur Municipal Council	C	Nashik	1.6	0	0
86	Nandgaon Municipal Council	C	Nashik	2.48	0	0
87	Chandwad Municipal Council	C	Nashik	2.1	1	0.2
88	Satana Municipal Council	C	Nashik	4.48	0	0
89	Igatpuri Municipal Council	C	Nashik	4.976	0	0
90	Kalamb Municipal Council	C	Osmanabad	4.512	0	0
91	Paranda Municipal Council	C	Osmanabad	0.88	0	0
92	Bhoom Municipal Council	C	Osmanabad	1.736	0	0

Status of Sewage Treatment in C Class Municipal Council in Maharashtra						
93	Tuljapur Municipal Council	C	Osmanabad	5.6	0	0
94	Naldurg Municipal Council	C	Osmanabad	0.67	0	0
95	Omerga Municipal Council	C	Osmanabad	5.44	0	0
96	Murum Municipal Council	C	Osmanabad	0.59	0	0
97	Jawhar Municipal Council	C	Palghar	1.12	0	0
98	Purna Municipal Council	C	Parbhani	2.036	0	0
99	Sonpeth Municipal Council	C	Parbhani	0.72	0	0
100	Pathri Municipal Council	C	Parbhani	1.92	0	0
101	Manwath Municipal Council	C	Parbhani	2.14	0	0
102	Junnar Municipal Council	C	Pune	6.28	0	0
103	Indapur Municipal Council	C	Pune	5.8	0	0
104	Shirur Municipal Council	C	Pune	10.08	6	6
105	Jejuri Municipal Council	C	Pune	2.768	0	0
106	Alandi Municipal Council	C	Pune	5.5	10	2.8
107	Saswad Municipal Council	C	Pune	5.84	2	2
108	Rajgurunagar Municipal Council	C	Pune	3.48	6.7	3
109	Bhor Municipal Council	C	Pune	3.92	0	0
110	Chakan Municipal Council	C	Pune	4.168	0	4.17
111	Murud-Janjira Municipal Council	C	Raigad	3.2	0	0
112	Matheran Municipal Council	C	Raigad	1.11	0	0
113	Shrivardhan Municipal Council	C	Raigad	2.32	0	0
114	Karjat Municipal Council	C	Raigad	5.083	0	0
115	Roha Municipal Council	C	Raigad	7.68	0	0
116	Mahad Municipal Council	C	Raigad	5.65	0	0
117	Pen Municipal Council	C	Raigad	15.36	0	0
118	Uran Municipal Council	C	Raigad	3.12	0	0
119	Alibag Municipal Council	C	Raigad	8.28	0	0
120	Rajapur Municipal Council	C	Ratnagiri	1.44	0	0
121	Khed Municipal Council	C	Ratnagiri	2.064	0	0

Status of Sewage Treatment in C Class Municipal Council in Maharashtra						
122	Palus Municipal Council	C	Sangli	2.1	0	0
123	Jat Municipal Council	C	Sangli	0.295	0	0
124	Ashta Municipal Council	C	Sangli	6.352	0	0
125	Tasgaon Municipal Council	C	Sangli	5.954	0	0
126	Wai Municipal Council	C	Satara	10.88	0	0
127	Mahabaleshwar Municipal Council	C	Satara	2.182	5	1.9
128	Rahimatpur Municipal Council	C	Satara	2.1	0	0
129	Mhaswad Municipal Council	C	Satara	2.816	0	0
130	Panchgani Municipal Council	C	Satara	1.456	2.5	1.4
131	Malvan Municipal Council	C	Sindhudurg	1.6	0	0
132	Vengurla Municipal Council	C	Sindhudurg	0.56	0	0
133	Sawantvadi Municipal Council	C	Sindhudurg	1.8	0	0
134	Kurduvadi Municipal Council	C	Solapur	1.8	0	0
135	Maindargi Municipal Council	C	Solapur	3.2	0	0
136	Karmala Municipal Council	C	Solapur	1.4	0	0
137	Dudhani Municipal Council	C	Solapur	1.288	0	0
138	Sangola Municipal Council	C	Solapur	3.6	0	0
139	Mangalwedha Municipal Council	C	Solapur	2.72	0	0
140	Mohol Municipal Council	C	Solapur	0.96	0	0
141	Sindi Municipal Council	C	Wardha	3.6	0	0
142	Deoli Municipal Council	C	Wardha	1.08	0	0
143	Pulgaon Municipal Council	C	Wardha	3.521	0	0
144	Mangrulpir Municipal Council	C	Washim	2.4	0	0
145	Risod Municipal Council	C	Washim	1.68	0	0
146	Darwha Municipal Council	C	Yavatmal	4.78	0	0
147	Pandharkawada Municipal Council	C	Yavatmal	3.12	0	0
148	Arni Municipal Council	C	Yavatmal	6.4	0	0
149	Ghatanji Municipal Council	C	Yavatmal	1.4	0	0
152	Nashirabad Muncipal Council	C	Jalgaon	4	0	0

Nagar Parishad and Nagar Panchyat

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
1	Ner Nababpur Nagar Parishad	C	Yavatmal	3.36	0	0
2	Armori Municipal Council	NP	Gadchiroli	4.4	0	0
3	Malkapur Municipal Council	NP	Satara	8.296	8	8
4	Barshi Takali Nagar Panchayat	NP	Akola	1.43	0	0
5	Nandgaon Khandeshwar Nagar Panchayat	NP	Amravati	1.46	0	0
6	Bhatkuli Nagar Panchayat	NP	Amravati	0.51	0	0
7	Dharani Nagar Panchayat	NP	Amravati	0.36	0	0
8	Tiwasa Nagar Panchayat	NP	Amravati	5.23	0	0
9	Motala Nagar Panchayat	NP	Buldhana	0.891	0	0
10	Sangrampur Nagar Panchayat	NP	Buldhana	0.406	0	0
11	Manora Nagar Panchayat	NP	Washim	0.64	0	0
12	Malegaon Nagar Panchayat	NP	Washim	2.84	0	0
13	Maregaon Nagar Panchayat	NP	Yavatmal	0.8	0	0
14	Ralegaon Nagar Panchayat	NP	Yavatmal	2.96	0	0
15	Kalamb Nagar Panchayat	NP	Yavatmal	1.12	0	0
16	Babhulgaon Nagar Panchayat	NP	Yavatmal	0.38	0	0
17	Mahagaon Nagar Panchayat	NP	Yavatmal	1.22	0	0
18	Zari Jamni Nagar Panchayat	NP	Yavatmal	0.1	0	0
19	Dhanki Nagar Panchayat	NP	Yavatmal	21.16	0	0
20	Phulambri Nagar Panchayat	NP	Aurangabad	1.38	0	0
21	Soyagaon Nagar Panchayat	NP	Aurangabad	0.456	0	0
22	Shirur Kasar Nagar Panchayat	NP	Beed	7.2	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
23	Kej Nagar Panchayat	NP	Beed	1.36	0	0
24	Ashti Nagar Panchayat	NP	Beed	0.242	0	0
25	Patoda Nagar Panchayat	NP	Beed	2.16	0	0
26	Wadwani Nagar Panchayat	NP	Beed	4	0	0
27	Aundha Nagnath Nagar Panchayat	NP	Hingoli	1.664	0	0
28	Sengaon Nagar Panchayat	NP	Hingoli	1.232	0	0
29	Ghansawangi Nagar Panchayat	NP	Jalna	0.266	0	0
30	Japharabad Nagar Panchayat	NP	Jalna	1.92	0	0
31	Badnapur Nagar Panchayat	NP	Jalna	12	0	0
32	Mantha Nagar Panchayat	NP	Jalna	2.22	0	0
33	Devani Nagar Panchayat	NP	Latur	12.8	0	0
34	Chakur Nagar Panchayat	NP	Latur	2	0	0
35	Jalkot Nagar Panchayat	NP	Latur	0.61	0	0
36	Shirur Anantpal Nagar Panchayat	NP	Latur	0.72	0	0
37	Renapur Nagar Panchayat	NP	Latur	1.04	0	0
38	Ardhapur Nagar Panchayat	NP	Nanded	6	15	6
39	Himayatnagar Nagar Panchayat	NP	Nanded	0.96	0	0
40	Naygaon Nagar Panchayat	NP	Nanded	4.368	0	0
41	Mahur Nagar Panchayat	NP	Nanded	1.68	0	0
42	Lohara Bu Nagar Panchayat	NP	Osmanabad	0.66	0	0
43	Washi Nagar Panchayat	NP	Osmanabad	8.86	8	7
44	Palam Nagar Panchayat	NP	Parbhani	0.368	0	0
45	Vikramgad Nagar Panchayat	NP	Palghar	0.816	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
46	Mokhada Nagar Panchayat	NP	Palghar	0.54	0	0
47	Talasari Nagar Panchayat	NP	Palghar	0.288	0	0
48	Wada Nagar Panchayat	NP	Palghar	2.42	0	0
49	Mangaon Nagar Panchayat	NP	Raigad	4.64	0	0
50	Poladpur Nagar Panchayat	NP	Raigad	0.48	0	0
51	Tala Nagar Panchayat	NP	Raigad	0.416	0	0
52	Khalapur Nagar Panchayat	NP	Raigad	4.074	2	2
53	Mhasala Nagar Panchayat	NP	Raigad	2.88	0	0
54	Ajara Nagarpanchayat	NP	Kolhapur	1.812	0	0
55	Chandgad Nagarpanchayat	NP	Kolhapur	1	0	0
56	Hatkanangale Nagarpanchayat	NP	Kolhapur	8.3	0	0
57	Lanja Nagar Panchayat	NP	Ratnagiri	2.4	0	0
58	Devrukh Nagar Panchayat	NP	Ratnagiri	1.088	0	0
59	Guhagar Nagar Panchayat	NP	Ratnagiri	0.8	0	0
60	Mandangad Nagar Panchayat	NP	Ratnagiri	0.368	0	0
61	Dapoli Nagar Panchayat	NP	Ratnagiri		0	0
62	Vaibhavwadi Nagar Panchayat	NP	Sindhudurg	0.151	0	0
63	Kasai-Dodamarg Nagar Panchayat	NP	Sindhudurg	0.44	0	0
64	Kudal Nagar Panchayat	NP	Sindhudurg	0.4	0	0
65	Devgadjamsande Nagar Panchayat	NP	Sindhudurg	1.5	0	0
66	Kankavli Nagar Panchayat	NP	Sindhudurg	3.2	0	0
67	Shahapur Nagar Panchayat	NP	Thane	0.44	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
68	Murbad Nagar Panchayat	NP	Thane	3.2	0	0
69	Lakhani Nagar Panchayat	NP	Bhandara	0.48	0	0
70	Lakhandur Nagar Panchayat	NP	Bhandara	0.24	0	0
71	Mohadi Nagar Panchayat	NP	Bhandara	0.538	0	0
72	Sawali Nagar Panchayat	NP	Chandrapur	0.588	0	0
73	Pombhurna Nagar Panchayat	NP	Chandrapur	0.336	0	0
74	Gondpimpri Nagar Panchayat	NP	Chandrapur	0.648	0	0
75	Korpana Nagar Panchayat	NP	Chandrapur	0.34	0	0
76	Jiwati Nagar Panchayat	NP	Chandrapur	0.708	0	0
77	Sindewahi Nagar Panchayat	NP	Chandrapur	4	0	0
78	Kurkheda Nagar Panchayat	NP	Gadchiroli	0.44	0	0
79	Mulchera Nagar Panchayat	NP	Gadchiroli	0.72	0	0
80	Sironcha Nagar Panchayat	NP	Gadchiroli	1.224	0	0
81	Etapalli Nagar Panchayat	NP	Gadchiroli	0.44	0	0
82	Aheri Nagar Panchayat	NP	Gadchiroli	0.904	0	0
83	Bhamragad Nagar Panchayat	NP	Gadchiroli	0.8	0	0
84	Chamoshi Nagar Panchayat	NP	Gadchiroli	0.96	0	0
85	Dhanora Nagar Panchayat	NP	Gadchiroli	0.4	0	0
86	Korchi Nagar Panchayat	NP	Gadchiroli	2.2	0	0
87	Sadak-Arjuni Nagar Panchayat	NP	Gondia	81	0	0
88	Salekasa Nagar Panchayat	NP	Gondia	0.544	0	0
89	Daveri Nagar Panchayat	NP	Gondia	1.608	0	0
90	Goregaon Nagar Panchayat	NP	Gondia	1.144	0	0
91	Arjuni Nagar Panchayat	NP	Gondia	0.89	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
92	Hingana Nagar Panchayat	NP	Nagpur	2	0	0
93	Bhiwapur Nagar Panchayat	NP	Nagpur	0.44	0	0
94	Kuhi Nagar Panchayat	NP	Nagpur	0.528	0	0
95	Mahadula Nagar Panchayat	NP	Nagpur	3.2	0	3.2
96	Parshiwani Nagar Panchayat	NP	Nagpur	0.88	0	0
97	Mouda Nagar Panchayat	NP	Nagpur	2.08	0	0
98	Ashti Nagar Panchayat	NP	Wardha	1.456	0	0
99	Karanja Nagar Panchayat	NP	Wardha	0.4	0	0
100	Samudrapur Nagar Panchayat	NP	Wardha	0.64	0	0
101	Selu Nagar Panchayat	NP	Wardha	1.536	0	0
102	Parner Nagar Panchayat	NP	Ahmednagar	0.682	0	0
103	Karjat Nagar Panchayat	NP	Ahmednagar	5.083	0	0
104	Akole Nagar Panchayat	NP	Ahmednagar	0.952	0	0
105	Nevasa Nagar Panchayat	NP	Ahmednagar	1.92	0	0
106	Shirdi Nagar Panchayat	NP	Ahmednagar	4.95	16	4.9
107	Sakri Nagar Panchayat	NP	Dhule	1.072	0	0
108	Sindkheda Nagar Panchayat	NP	Dhule	3.288	0	0
109	Bodvad Nagar Panchayat	NP	Jalgaon	4.8	0	0
110	Shendurni Nagarpanchayat	NP	Jalgaon	2.216	0	0
111	Muktainagar Nagarpanchayat	NP	Jalgaon	3.001	0	0
112	Dhadgaon Wadphalya-Roshmal Bu Nagar Panchayat	NP	Nandurbar	2.464	0.0	0.0

Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
113	Surgana Nagar Panchayat	NP	Nashik	4.8	0	0
114	Peth Nagar Panchayat	NP	Nashik	0.96	0	0
115	Niphad Nagar Panchayat	NP	Nashik	2.56	0	0
116	Devala Nagar Panchayat	NP	Nashik	0.496	0	0
117	Kalawan Nagar Panchayat	NP	Nashik	2.521	0.6	0.6
118	Dindori Nagar Panchayat	NP	Nashik	3.964	0	0
119	Kadegaon Nagar Panchayat	NP	Sangli	2.4	0	0
120	Khanapur Nagar Panchayat	NP	Sangli	1.2	0	0
121	Kavathemahankal Nagar Panchayat	NP	Sangli	1.2	0	0
122	Shirala Nagar Panchayat	NP	Sangli	1.232	0	0
123	Vadgaon Nagarpanchayat	NP	Pune	6.4	0	0
124	Dahivadi Nagar Panchayat	NP	Satara	0.6	0	0
125	Lonand Nagar Panchayat	NP	Satara	6.184	0	0
126	Medha Nagar Panchayat	NP	Satara	0.721	0	0
127	Patan Nagar Panchayat	NP	Satara	1.6	3	1.6
128	Vaduj Nagar Panchayat	NP	Satara	3.2	0	0
129	Khandala Nagar Panchayat	NP	Satara	1.28	0	0
130	Koregaon Nagar Panchayat	NP	Satara	4.5	0	0
131	Madha Nagar Panchayat	NP	Solapur	1.202	0	0
132	Malshiras Nagar Panchayat	NP	Solapur	0.8	0	0
133	Akluj Nagar Panchayat	NP	Solapur	6.456	0	0
134	Anghar Nagar Panchayat	NP	Solapur	1.22	0	0
135	Dehu Nagar Panchayat	NP	Pune	2.4	3.2	2

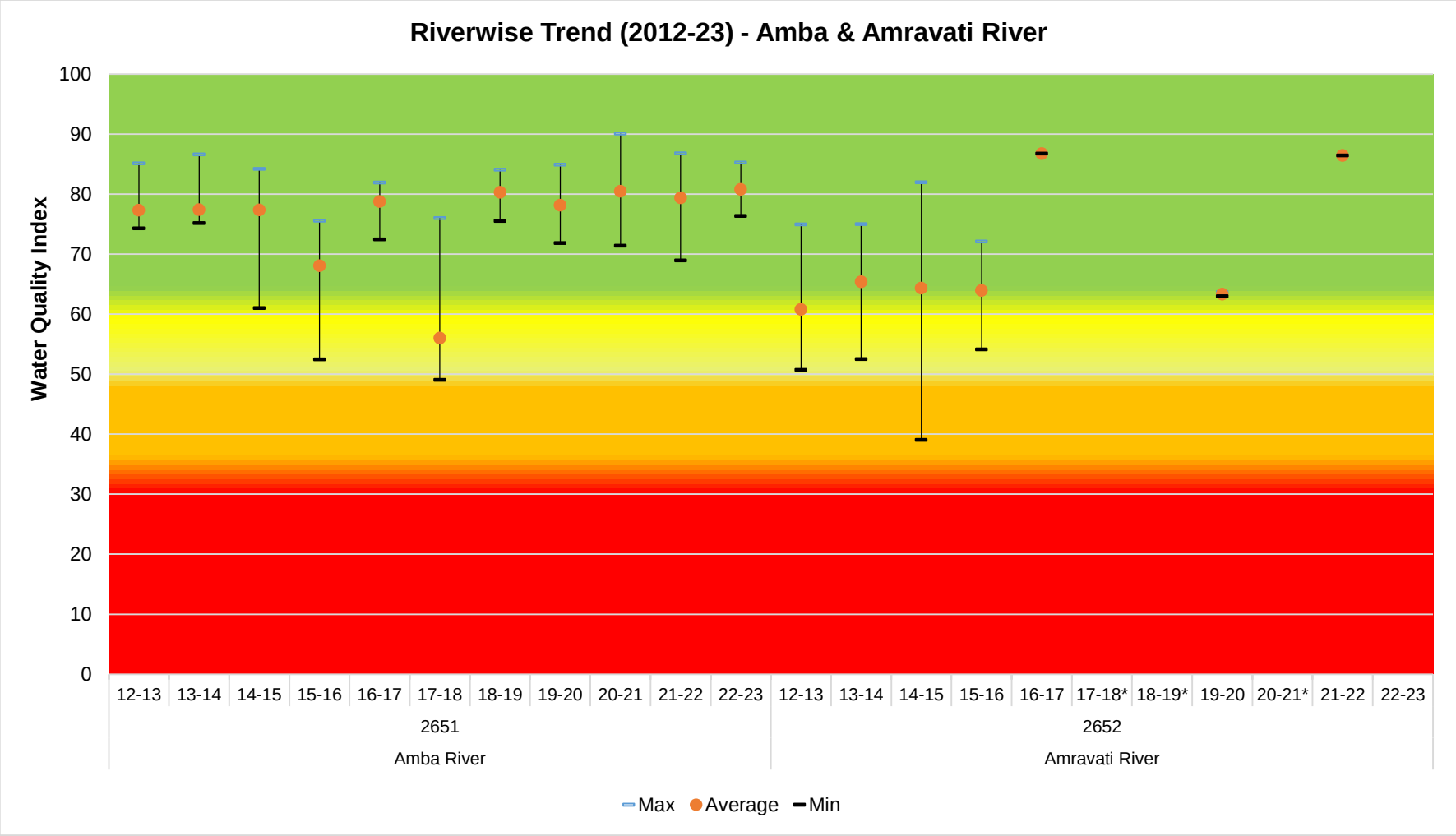
Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)
136	Mahalung Shripur Nagar Panchayat	NP	Solapur	2.8	0	0
137	Natepute Nagar Panchayat	NP	Solapur	4.18	0	0
138	Pali Nagar Panchayat	NP	Raigad	19.2	0	0
139	Tirthpuri Nagar Panchayat	NP	Jalna	2	0	0
140	Vairag Nagar Panchayat	NP	Solapur	6.16	0	0

Cantonment

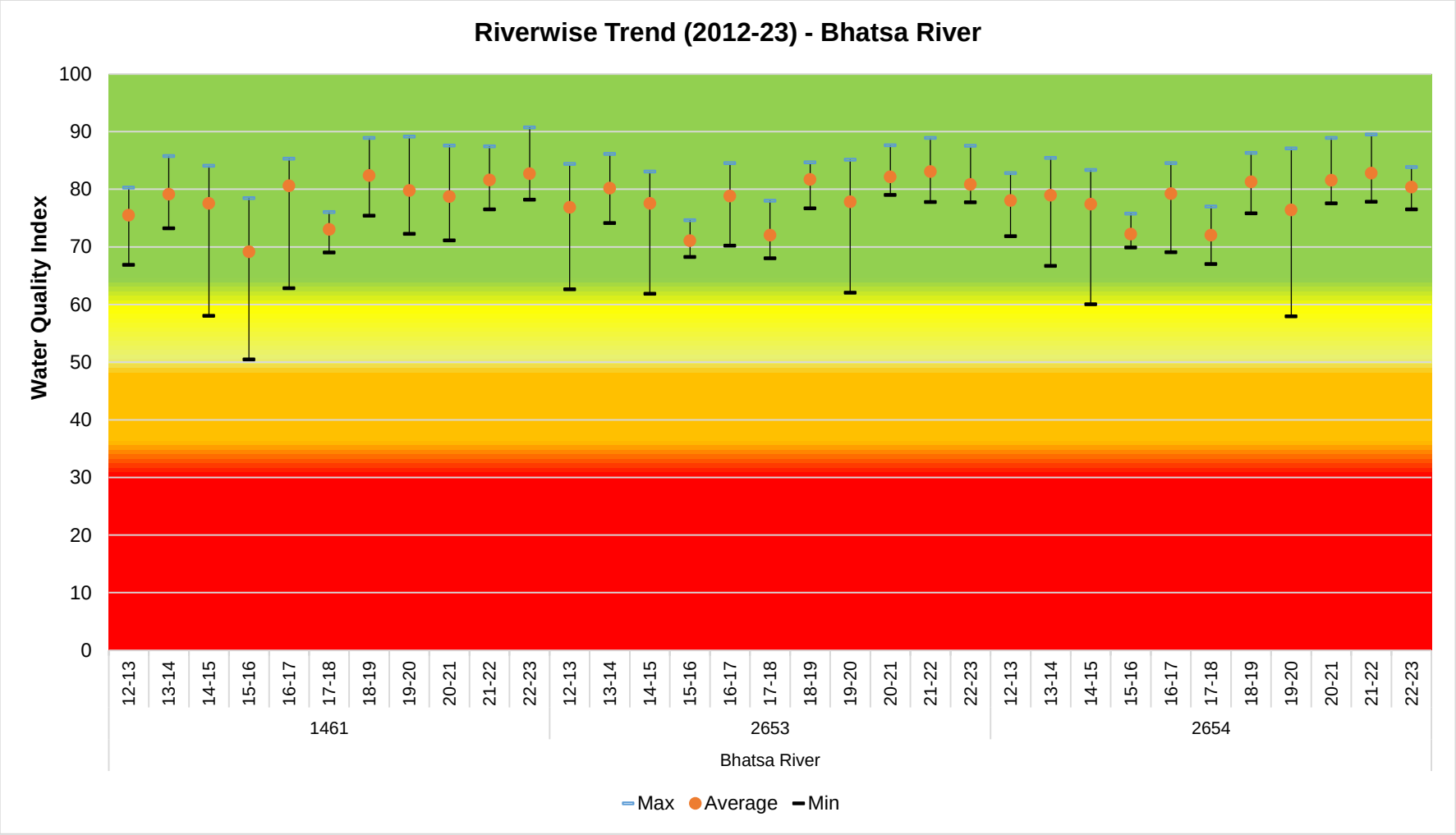
Sr. No.	Name of Municipal Council	Class	District	Sewage Geneartion MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
1	Ahmednagar Cantonment	**Cant.**	Ahmednagar	1.128	0	0.0	0.0
2	Aurangabad Cantonment	Cant.	Aurangabad	3.601	0	0	0.0
3	Bhinagar Cantonment	Cant.	Ahmednagar				
4	Dehu Cantonment	Cant.	Pune	3.872	0	0	0.0
5	Devalali Cantonment	Cant.	Nashik	1.08	0	0	0.0
6	Kamptee Cantonment	Cant.	Nagpur	0.751	0	0	0.0
7	Khadki Cantonment	Cant.	Pune	2.08	17.2	2	96.2
8	Pune Cantonment	Cant.	Pune	115.36	20	20	17.3

Annex – V : Data Sets Of Water Quality Monitored in 2022-2023

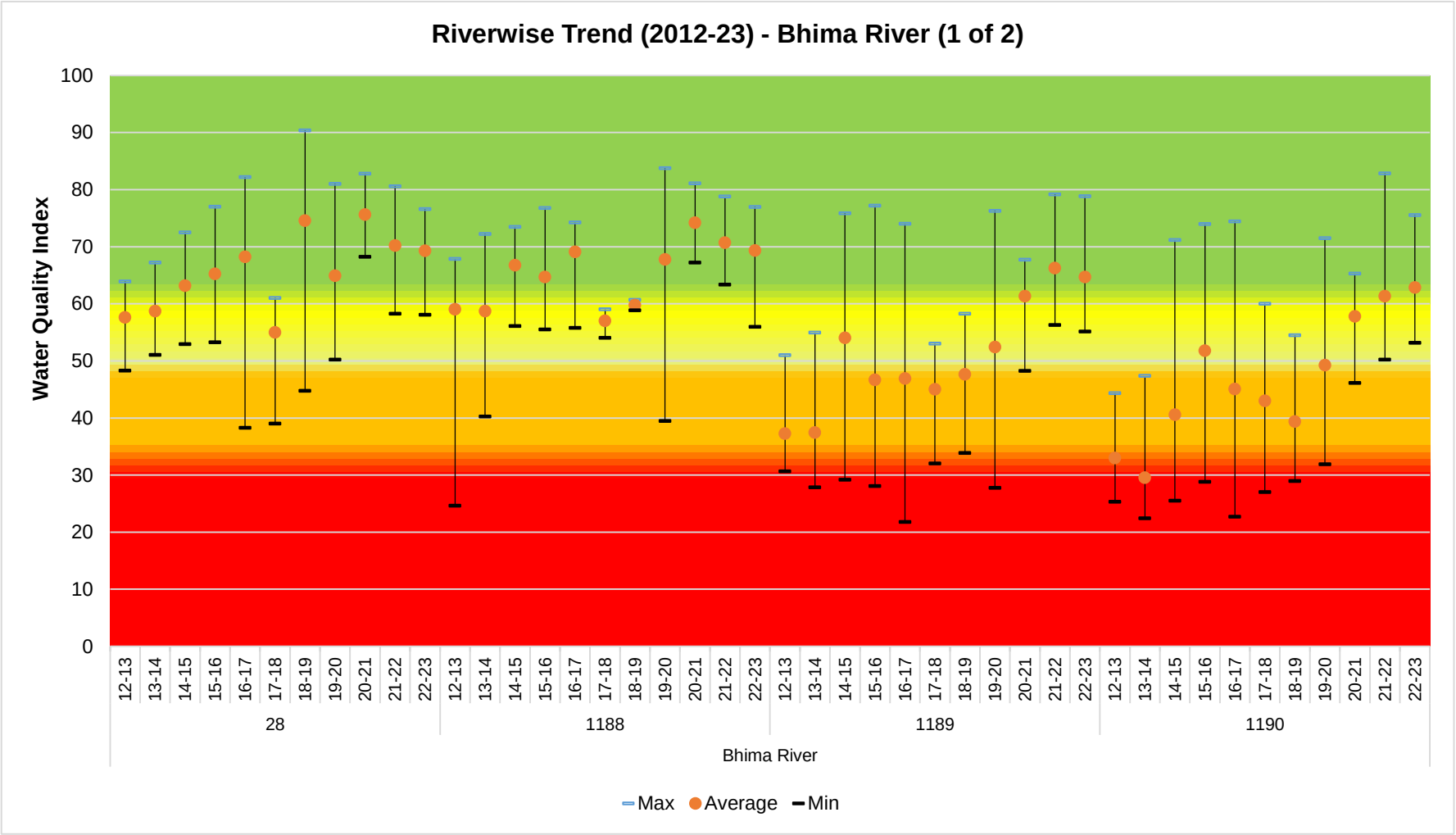
Annex - VI : Riverwise Trend In WQI (2012-23)



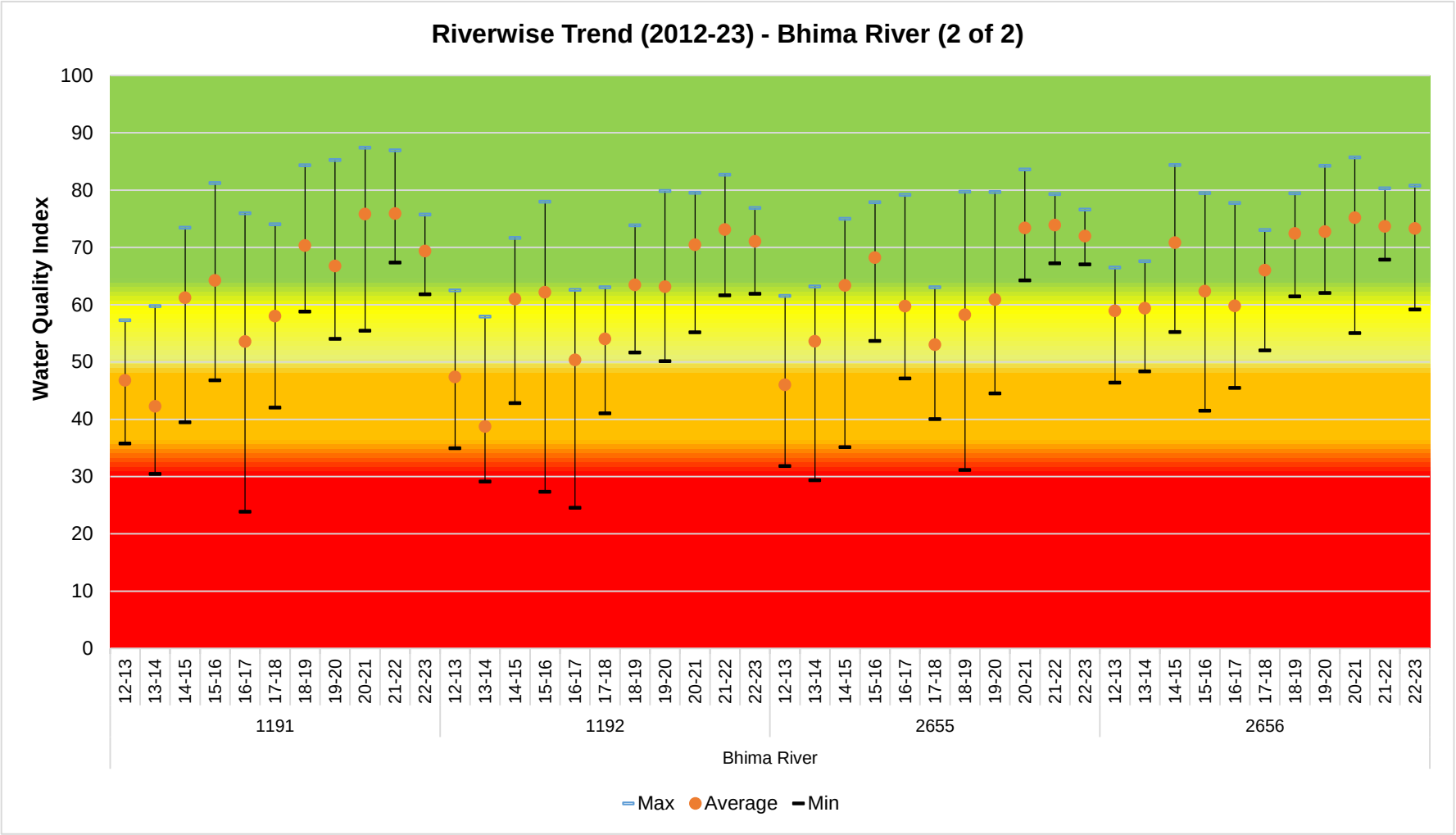
Note:* Stations are Dry/ No data available for respective year



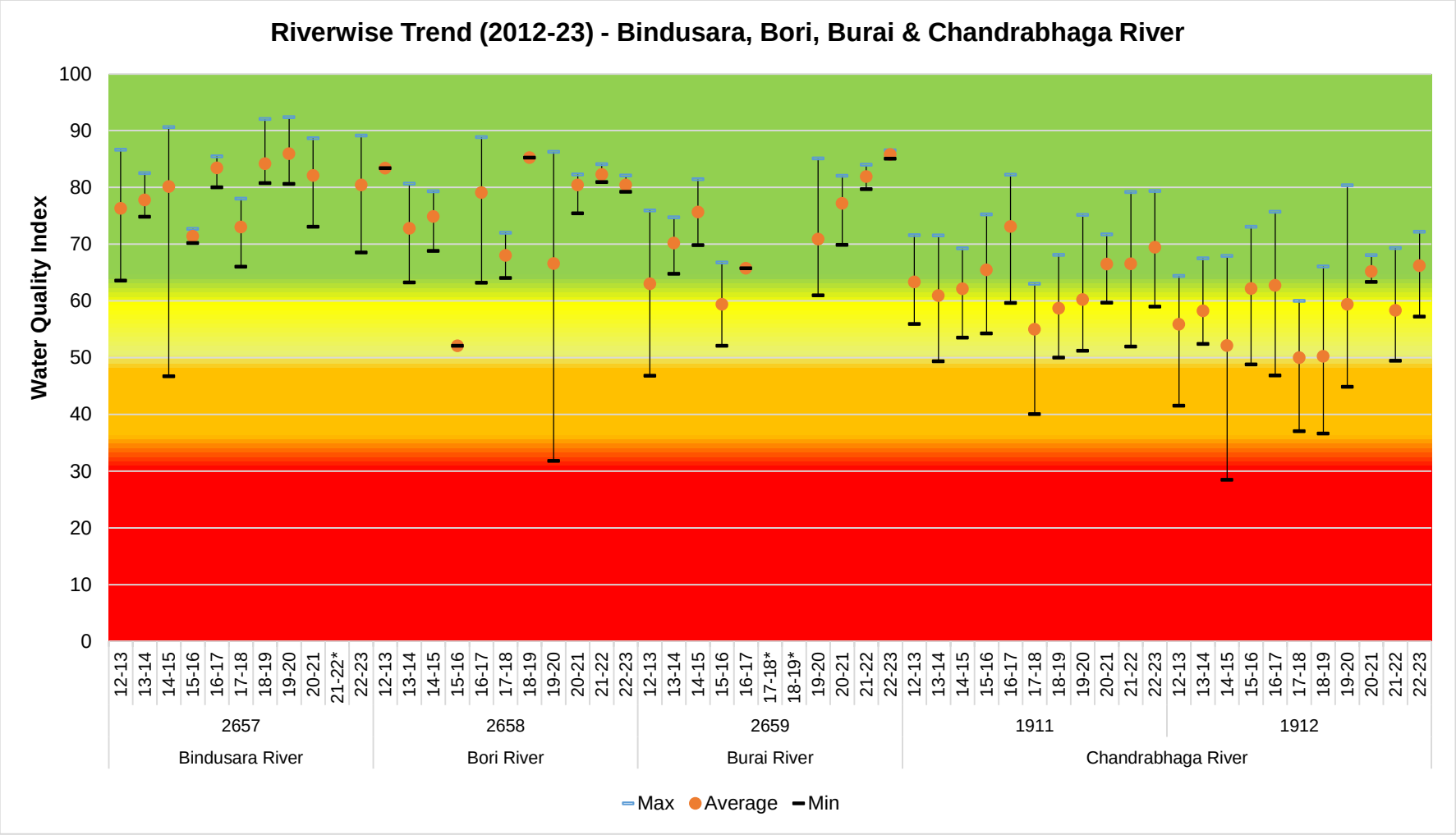
Note:* Stations are Dry/ No data available for respective year



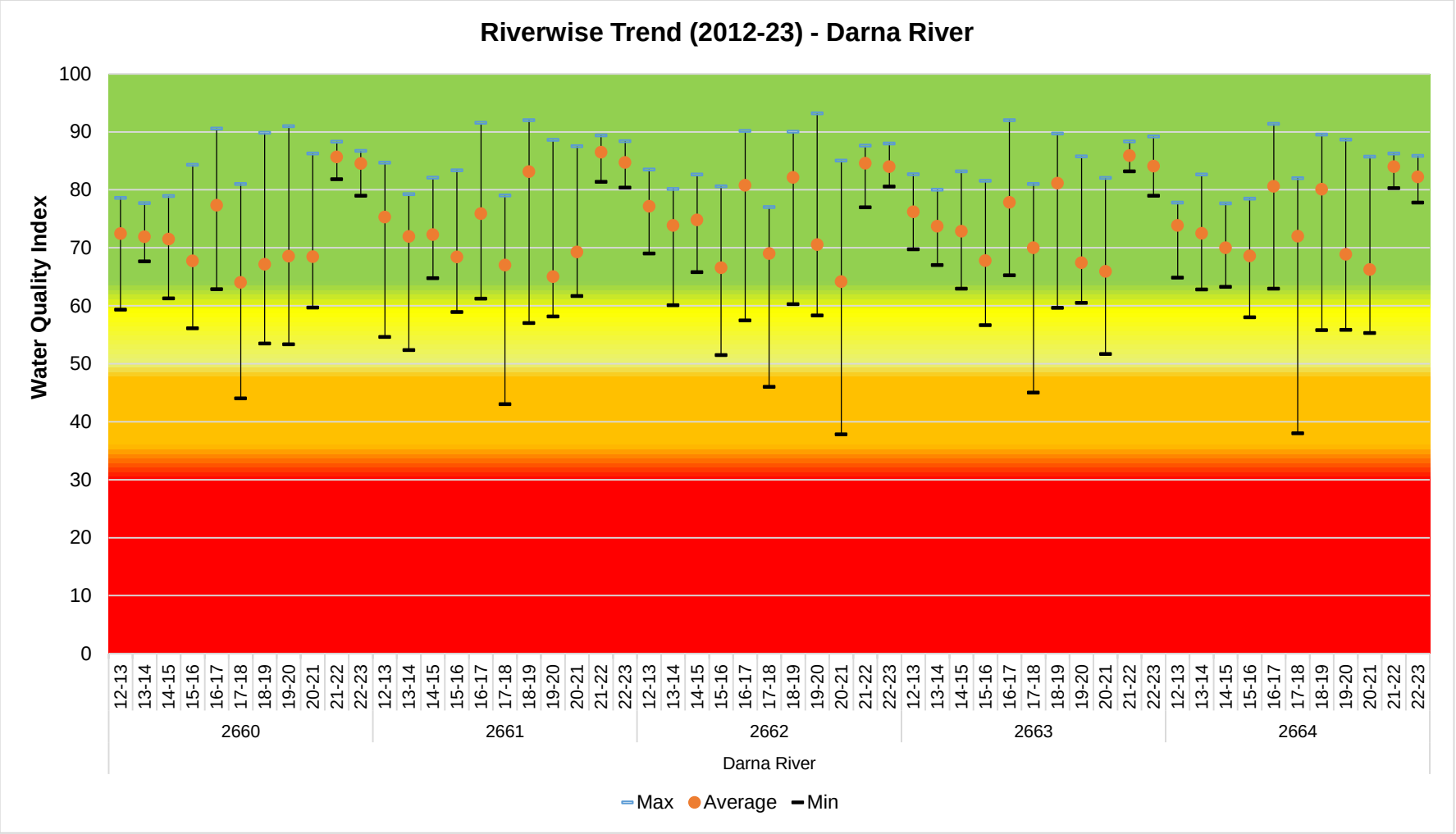
Note:* Stations are Dry/ No data available for respective year



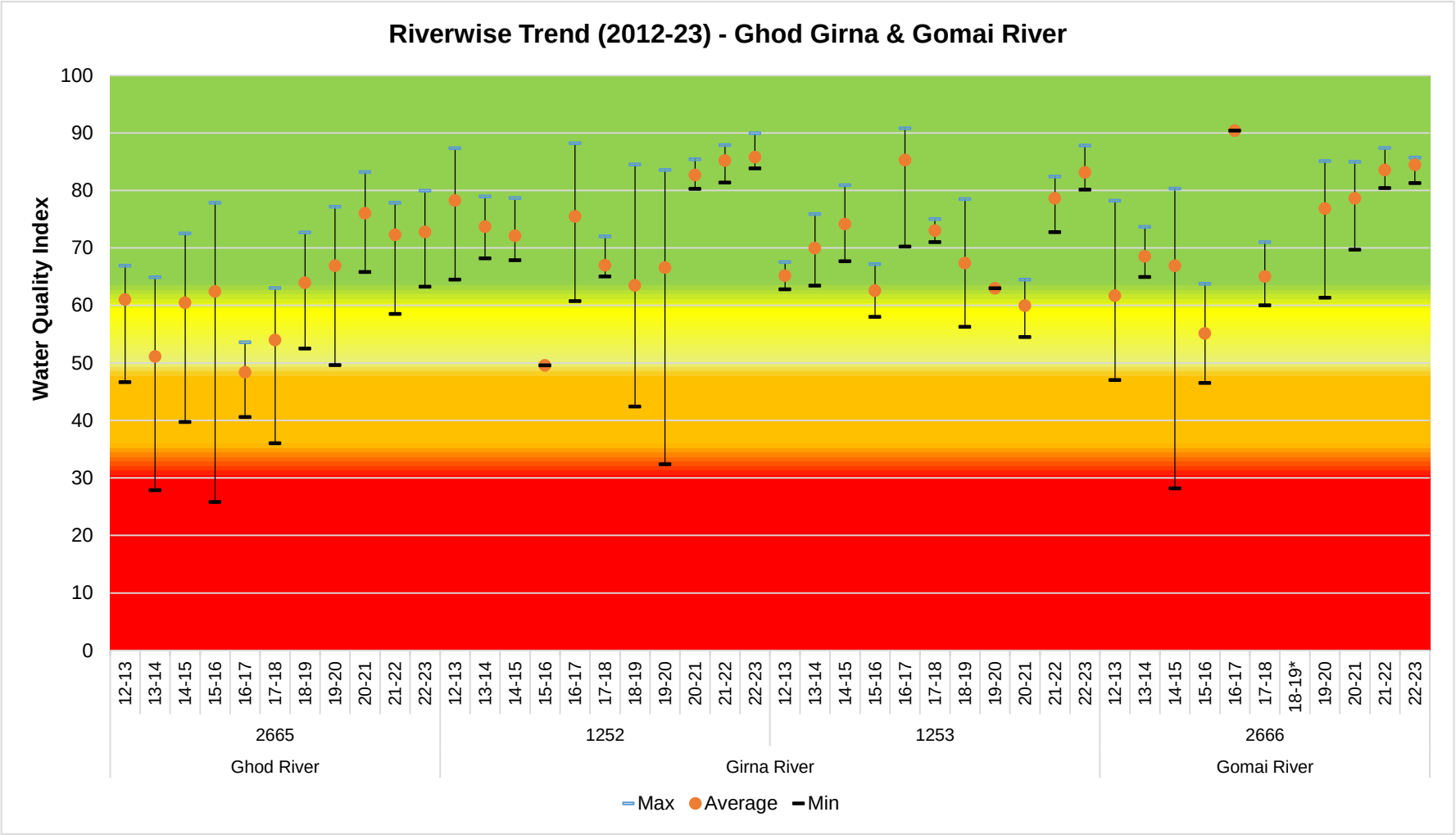
Note:* Stations are Dry/ No data available for respective year



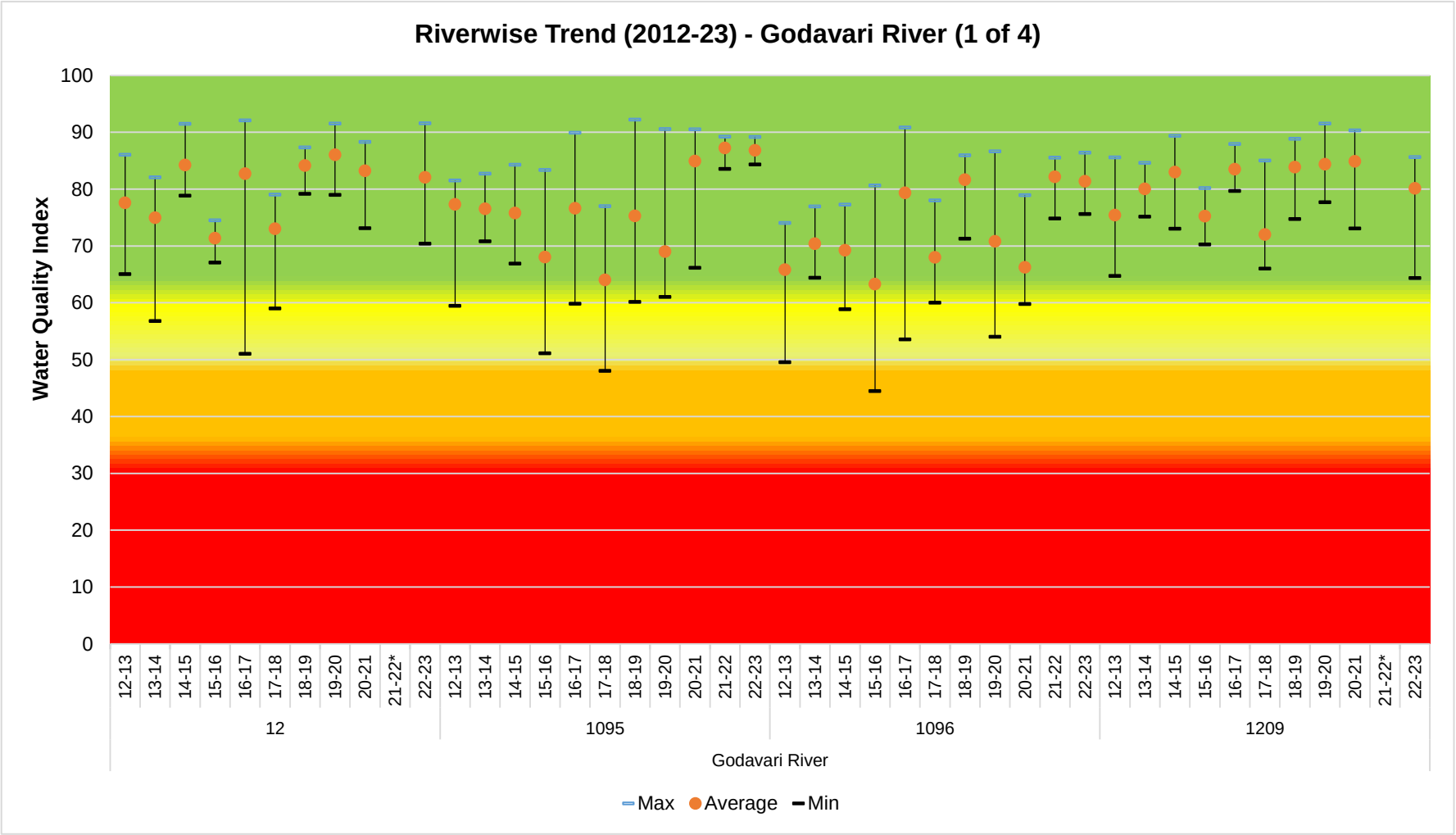
Note:* Stations are Dry/ No data available for respective year



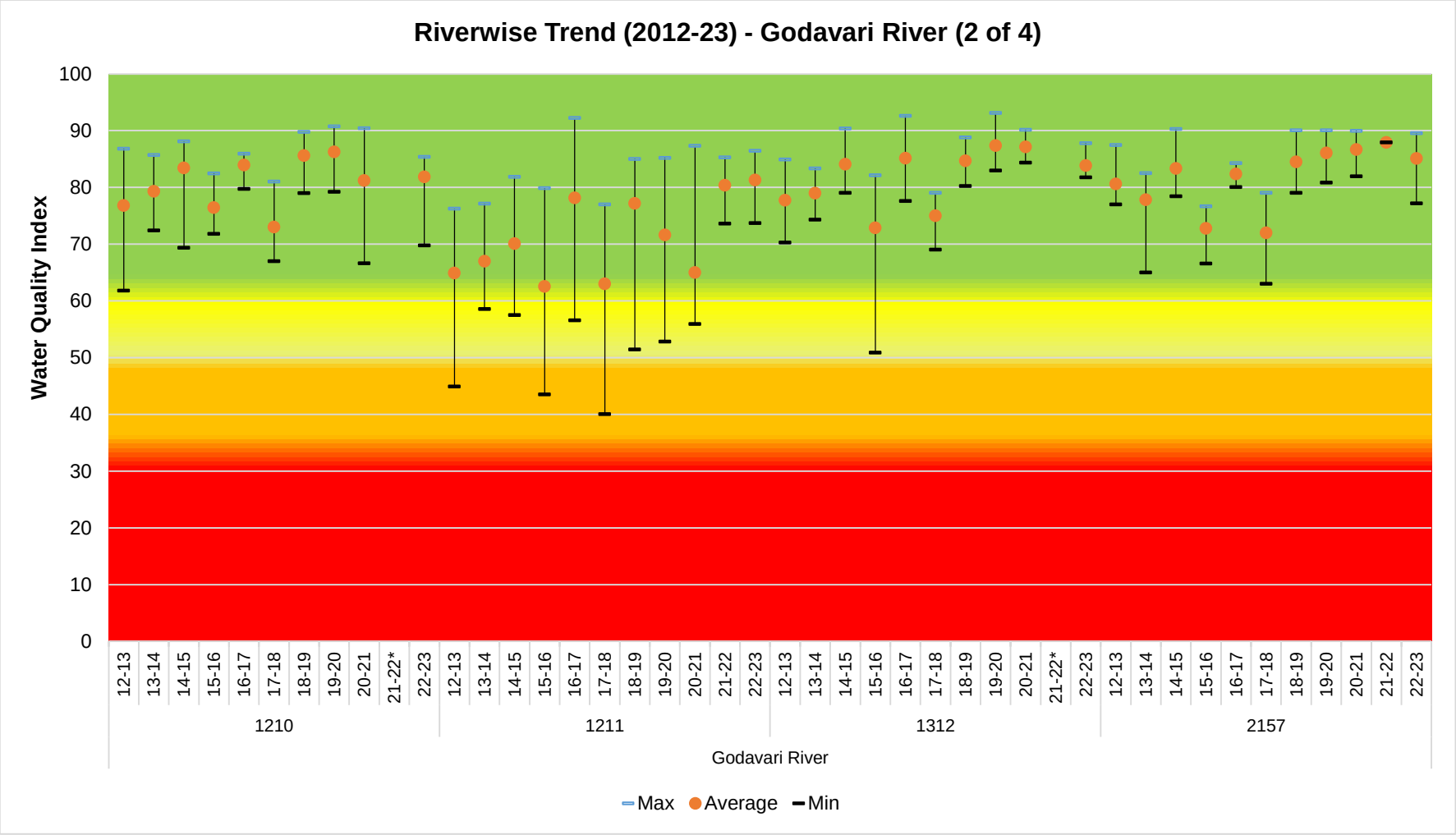
Note:* Stations are Dry/ No data available for respective year



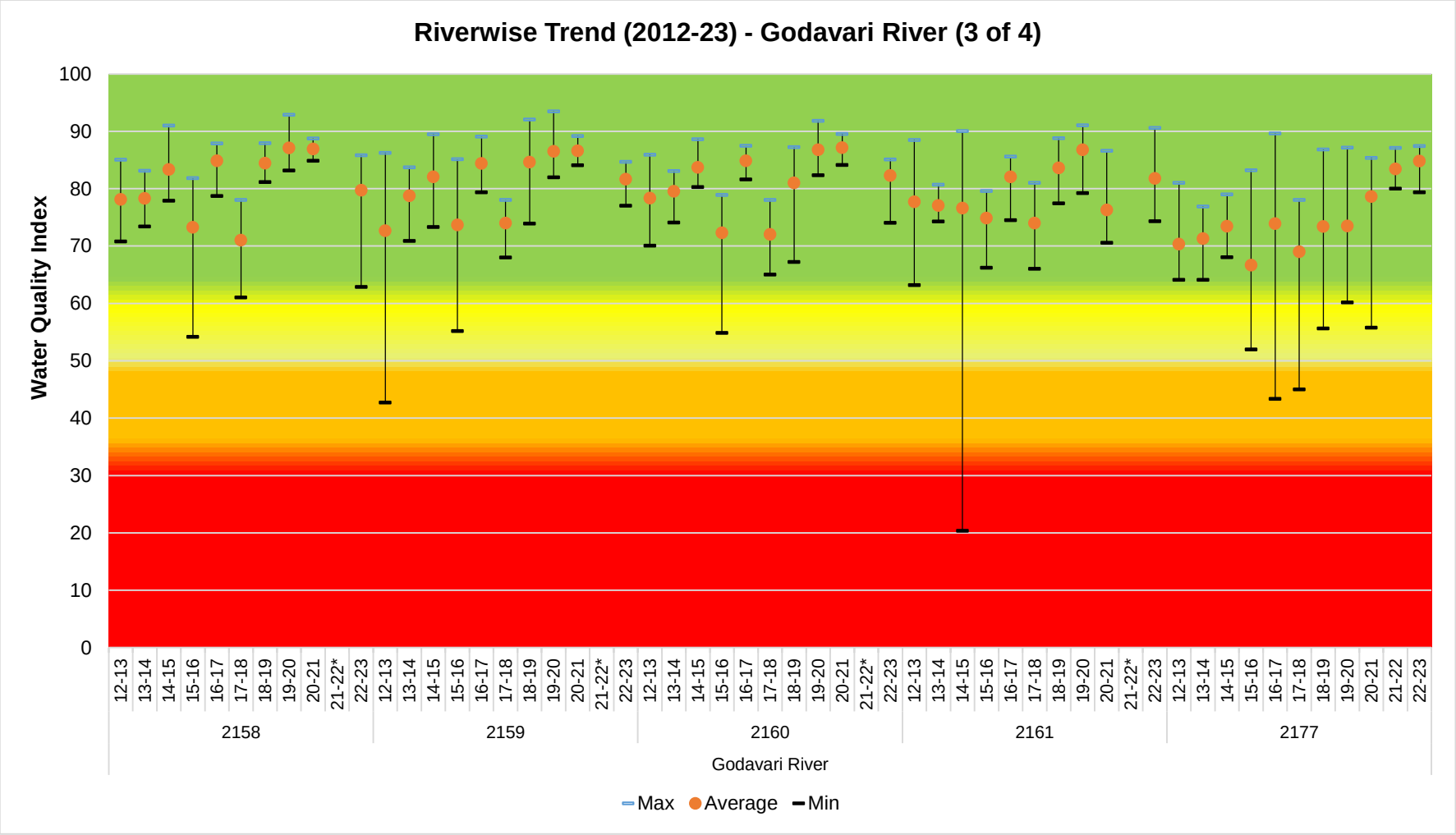
Note:* Stations are Dry/ No data available for respective year



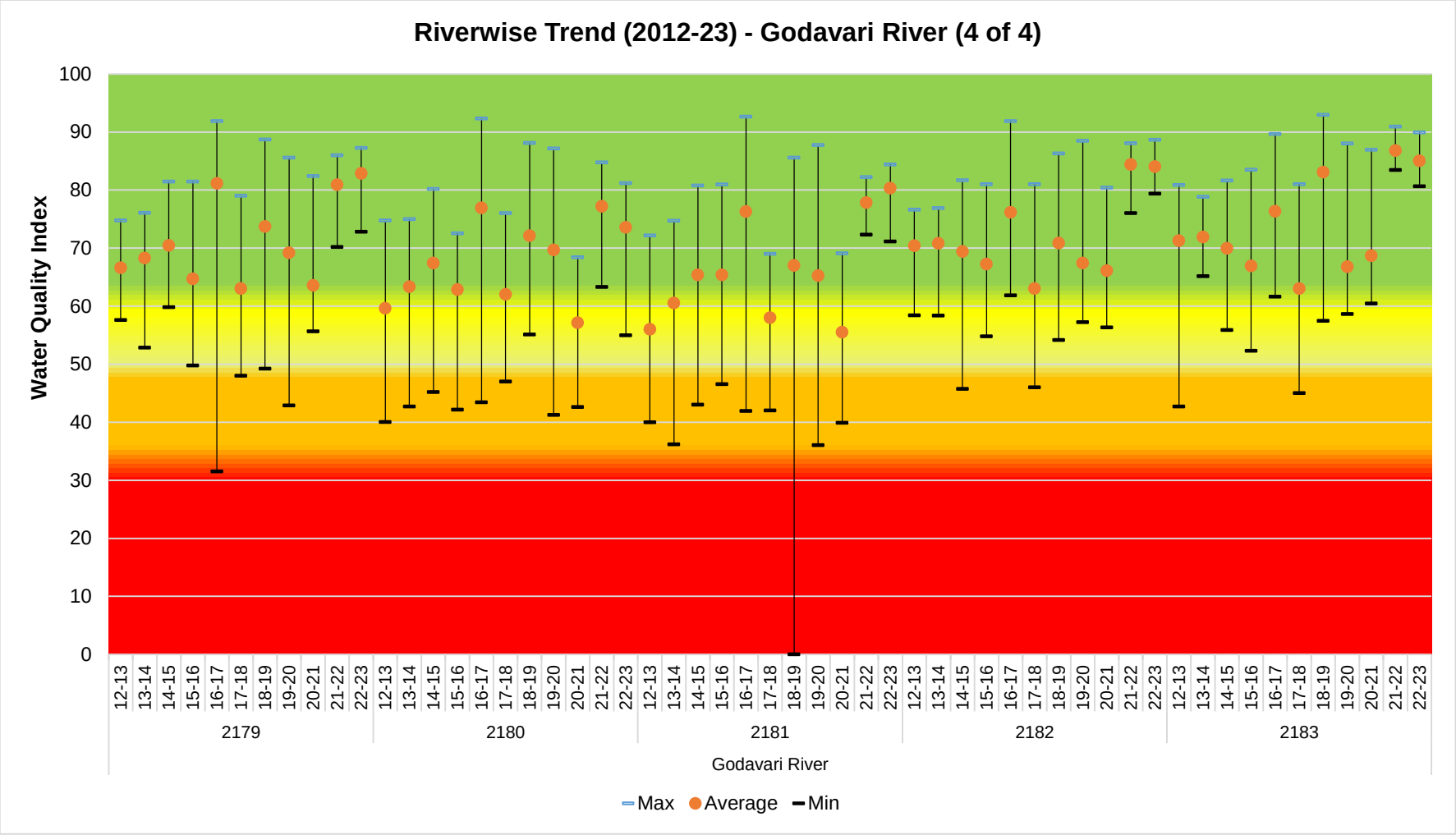
Note:* Stations are Dry/ No data available for respective year



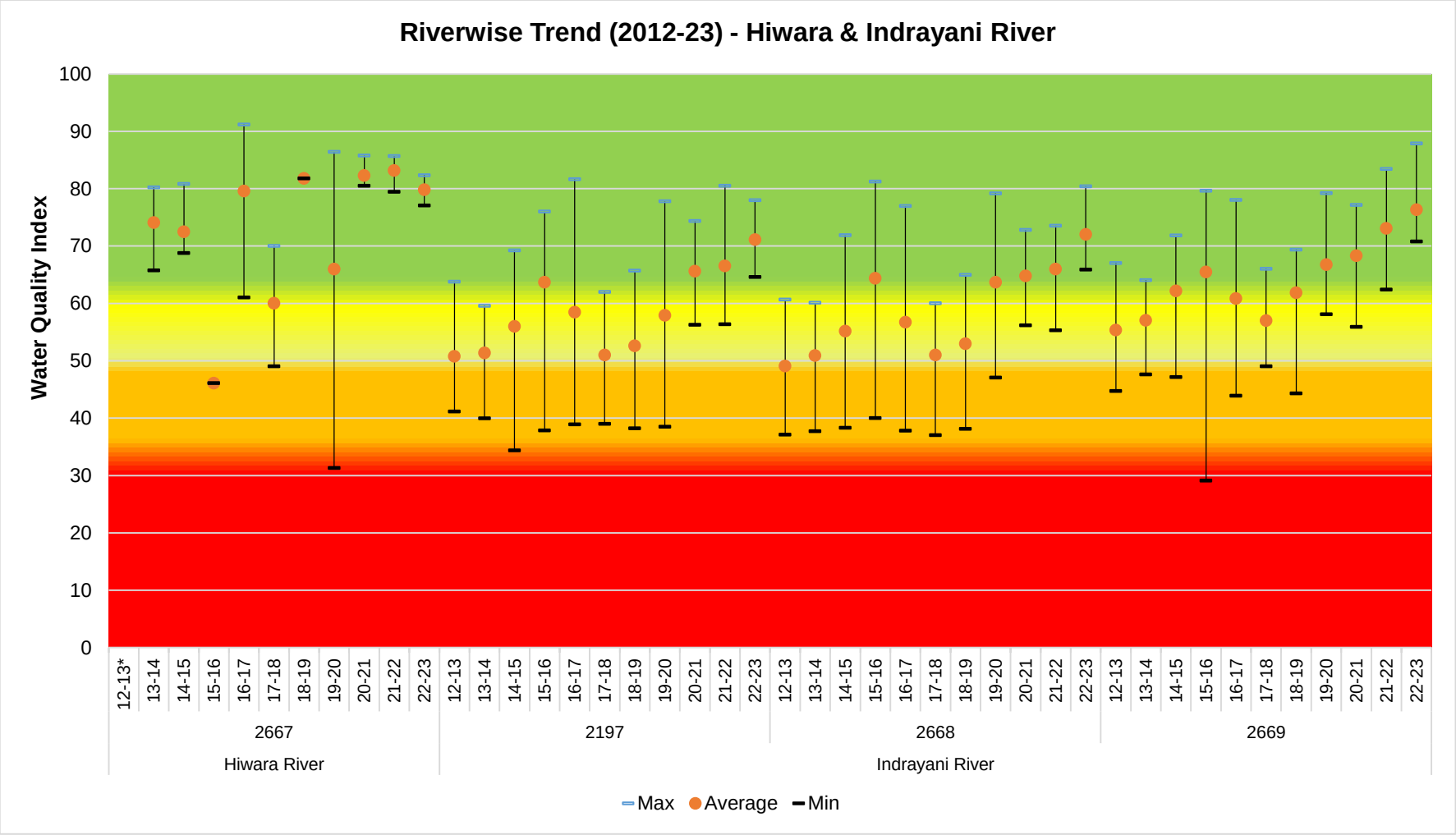
Note:* Stations are Dry/ No data available for respective year



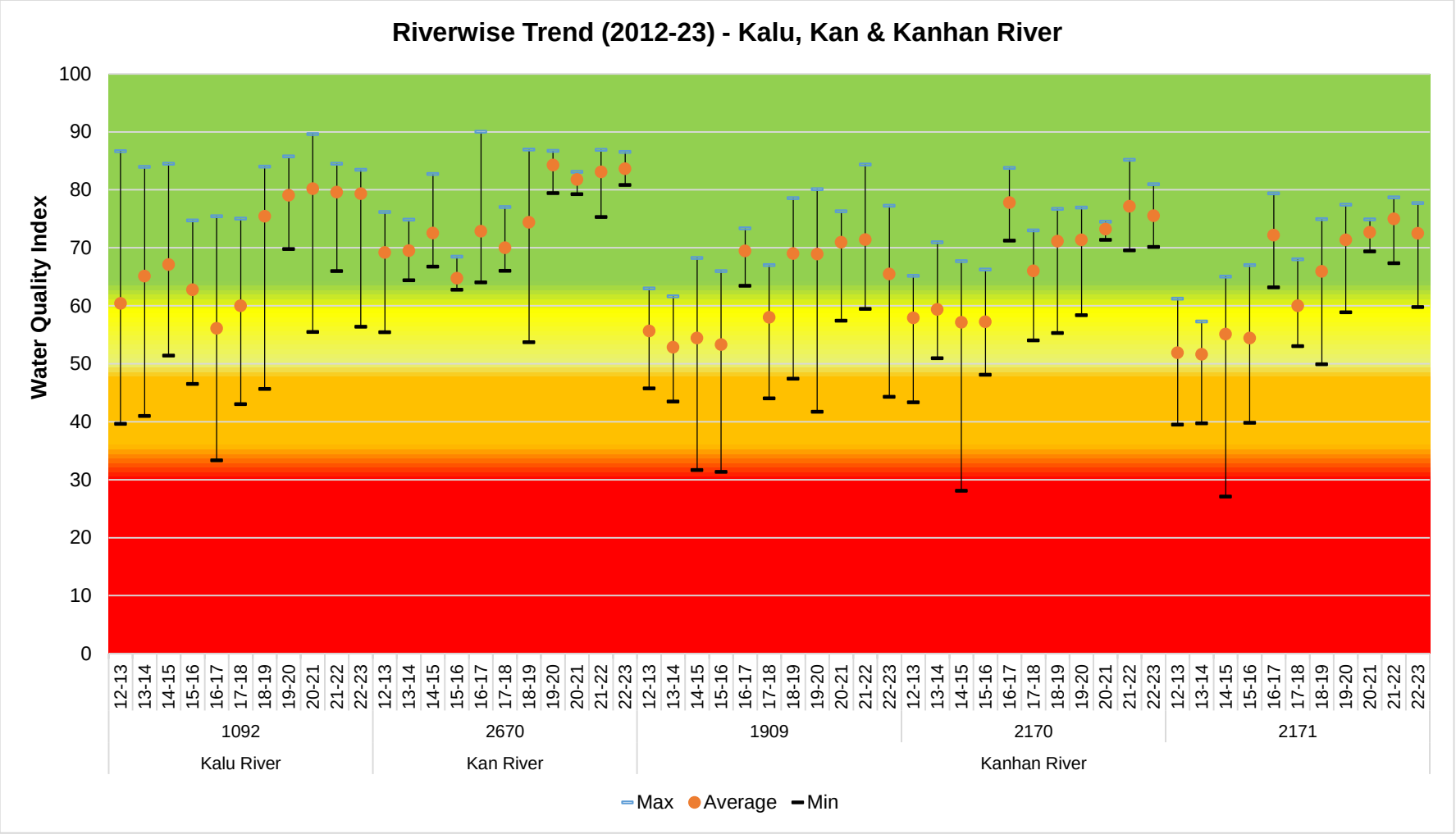
Note:* Stations are Dry/ No data available for respective year



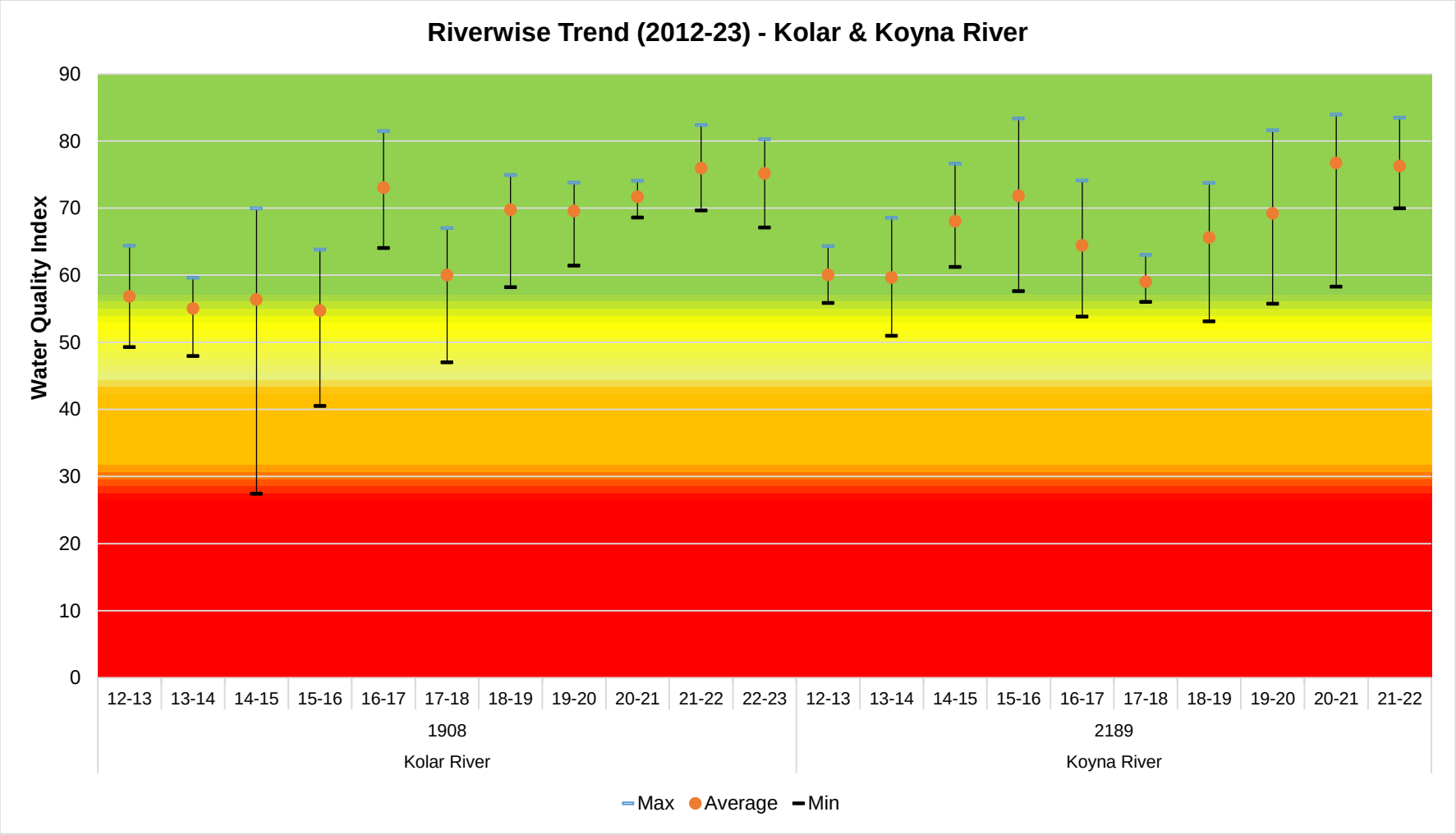
Note:* Stations are Dry/ No data available for respective year



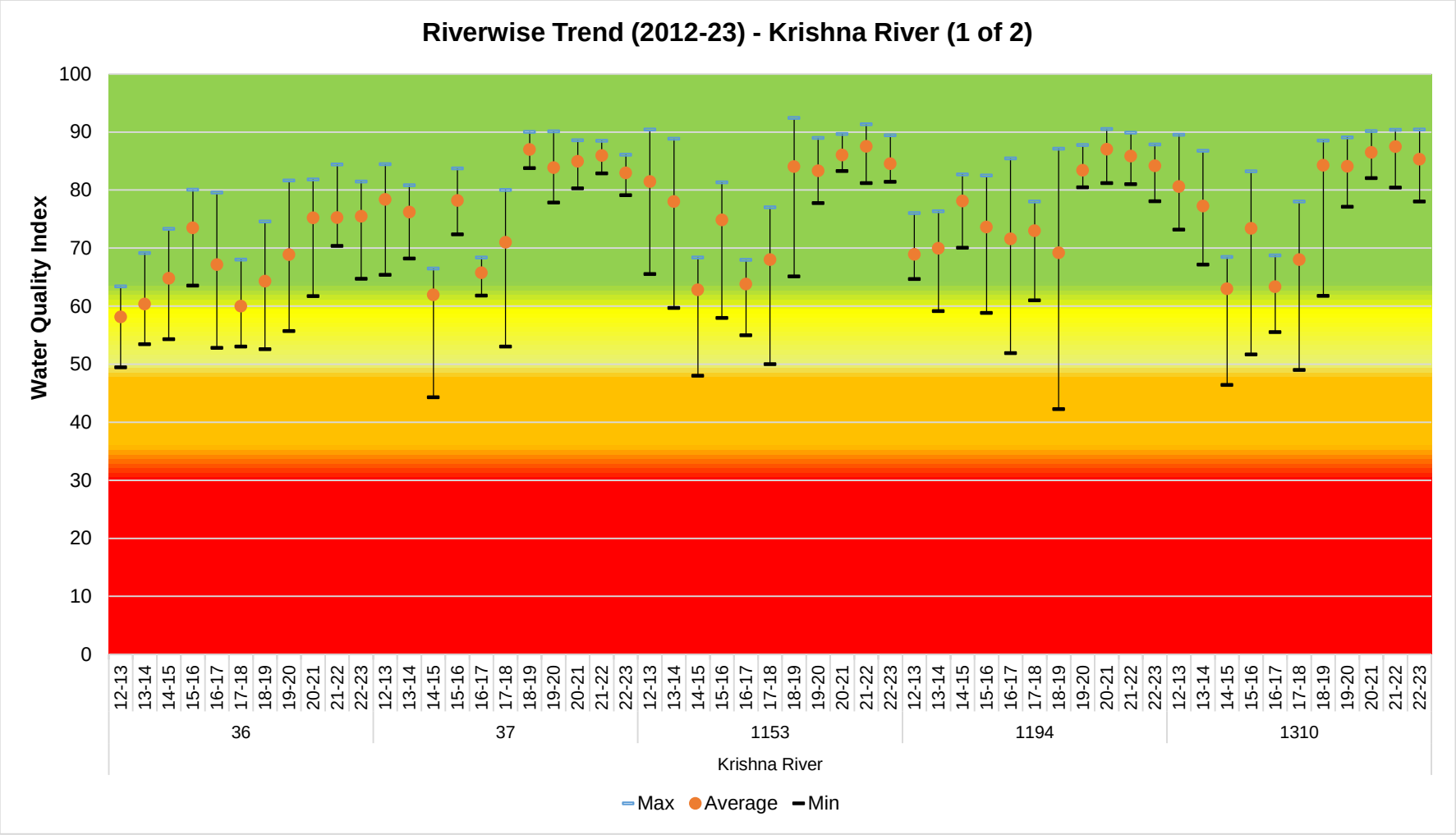
Note:* Stations are Dry/ No data available for respective year



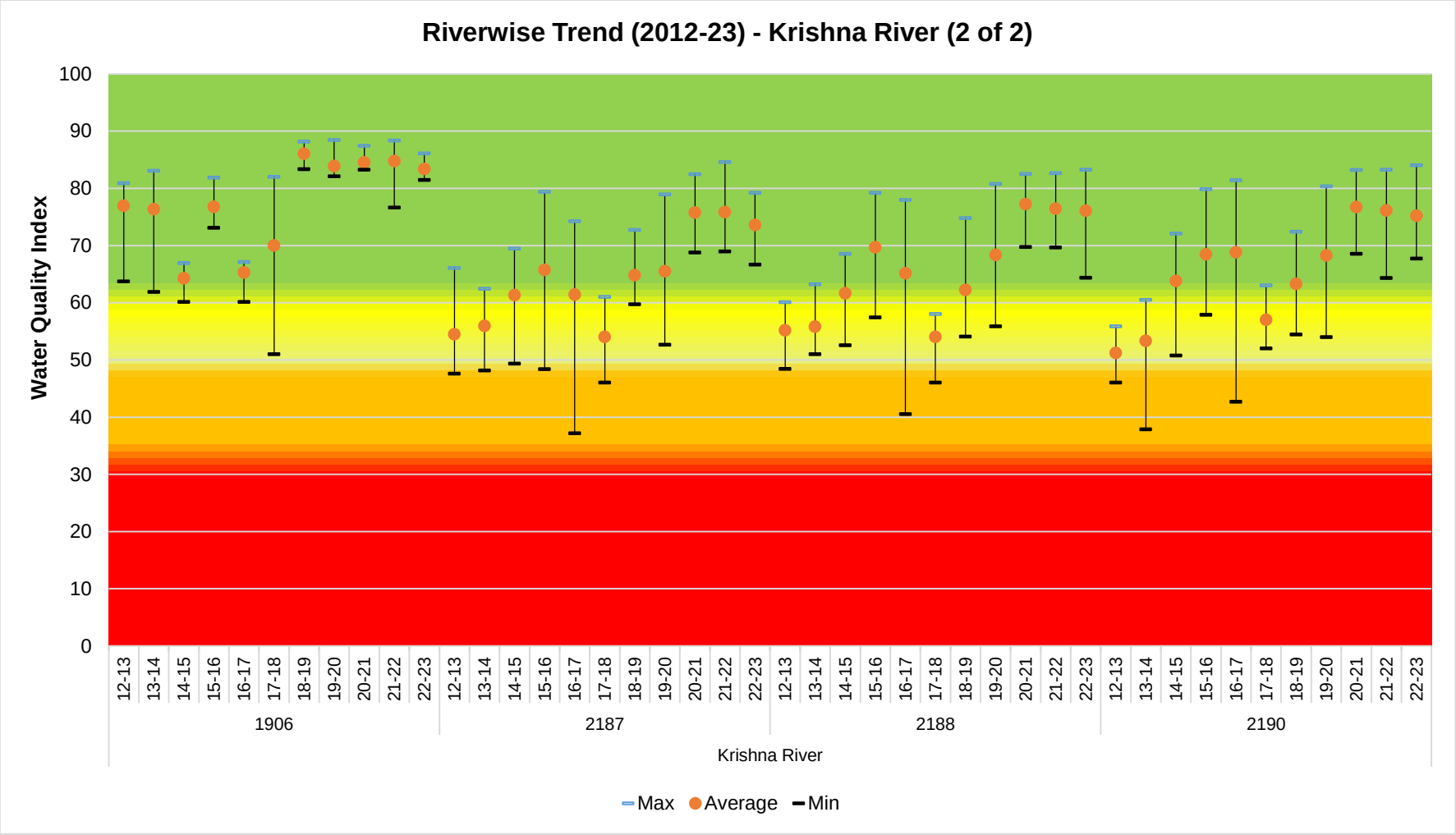
Note:* Stations are Dry/ No data available for respective year



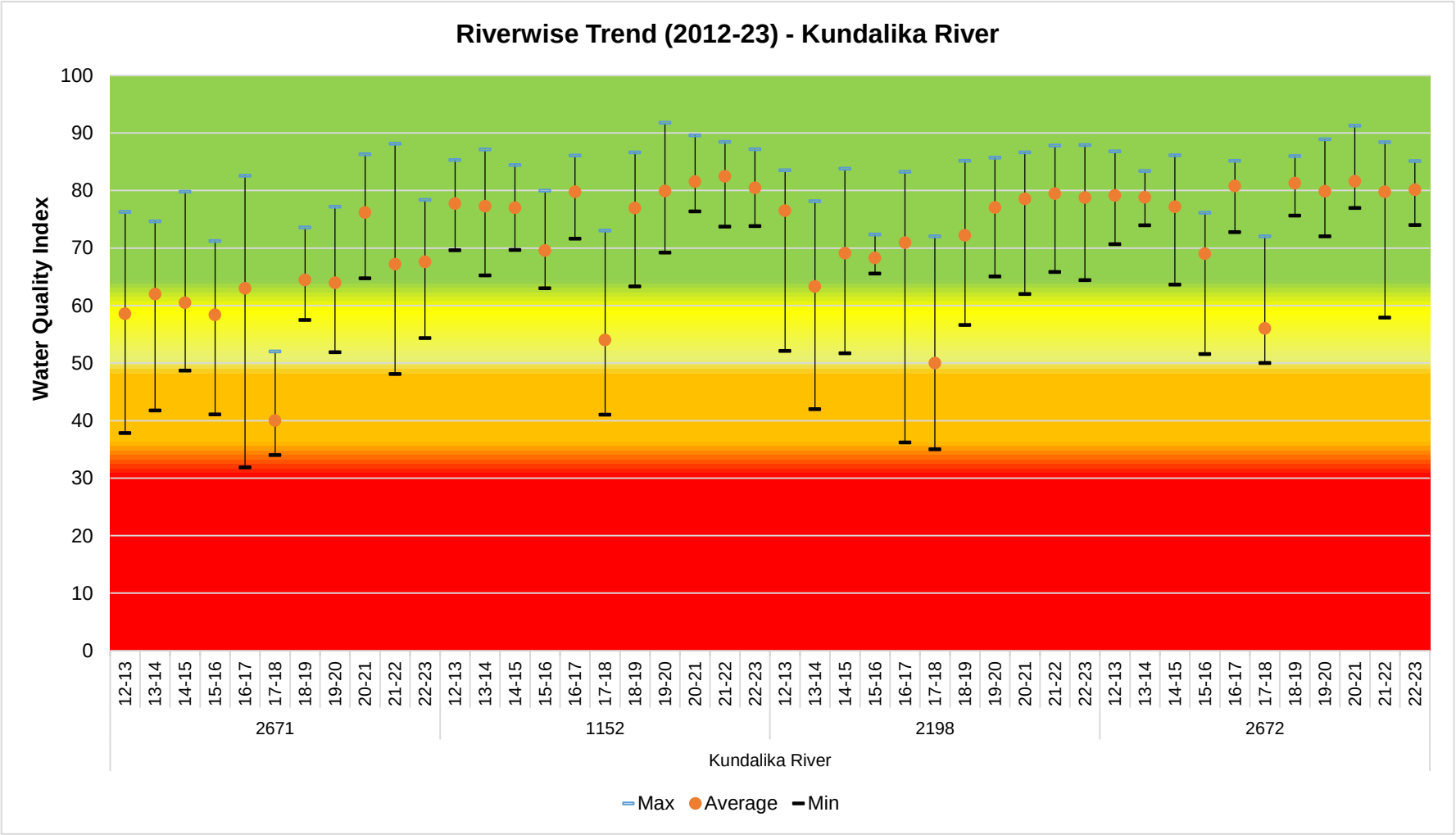
Note:* Stations are Dry/ No data available for respective year



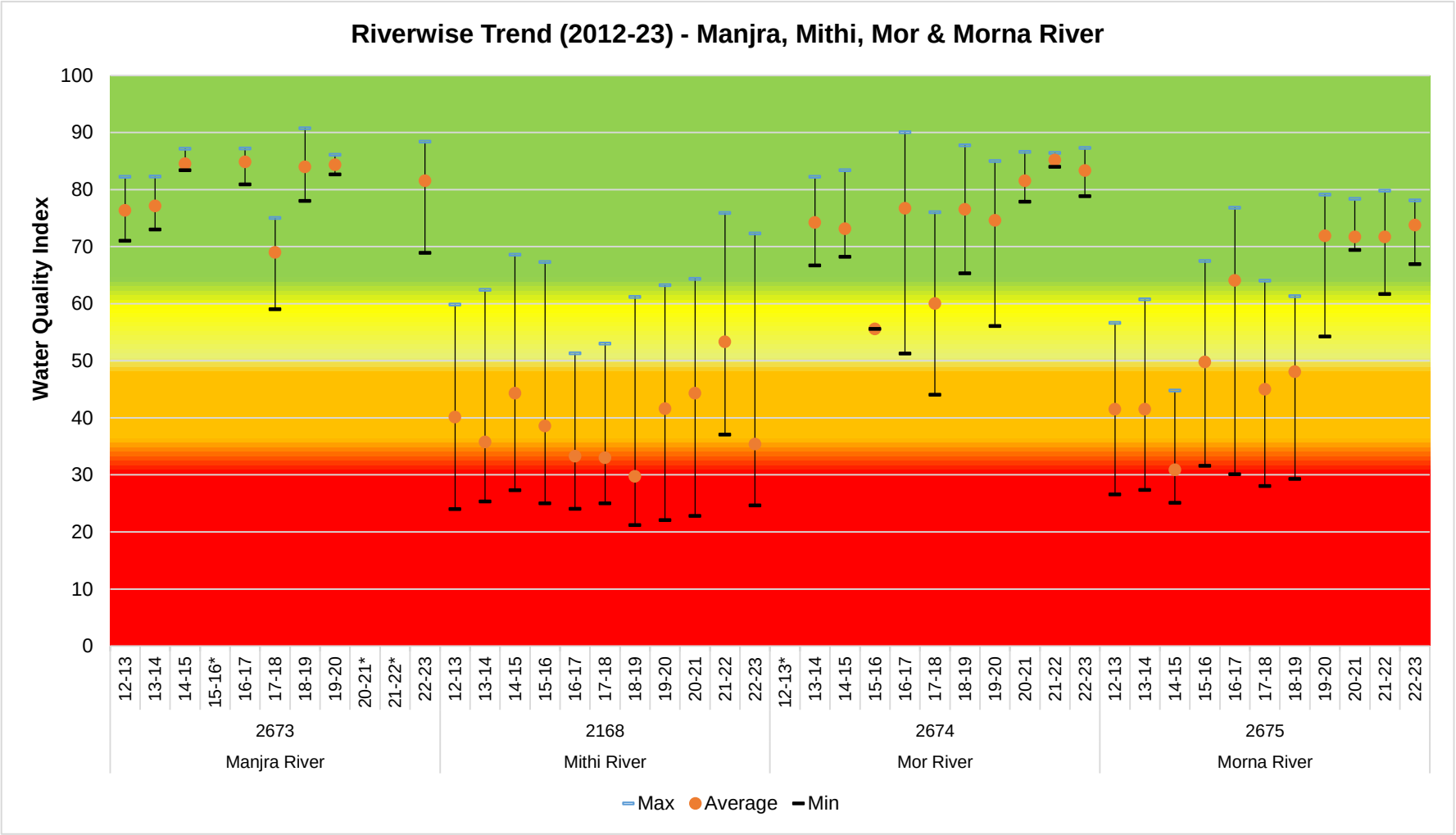
Note:* Stations are Dry/ No data available for respective year



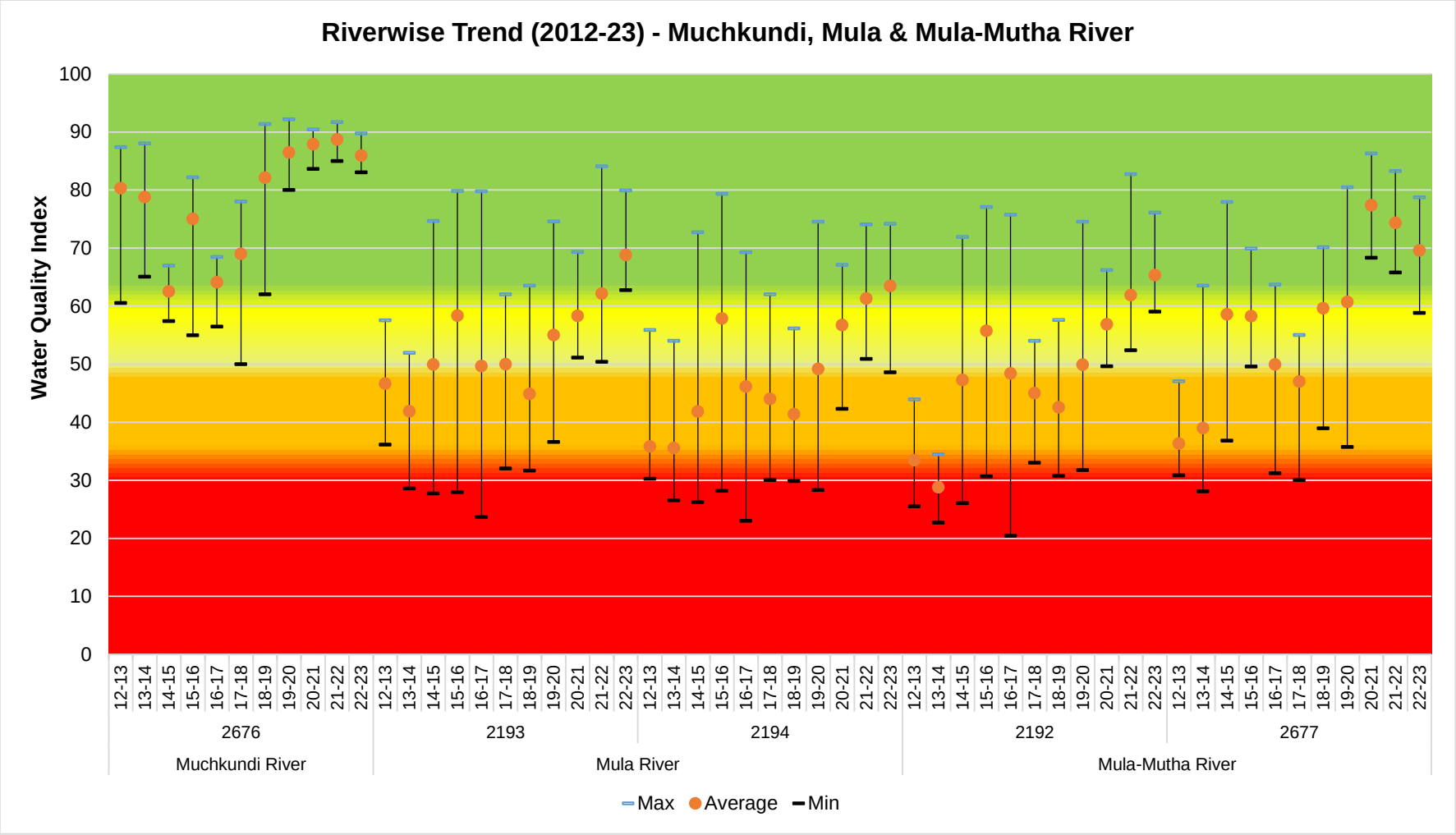
Note:* Stations are Dry/ No data available for respective year



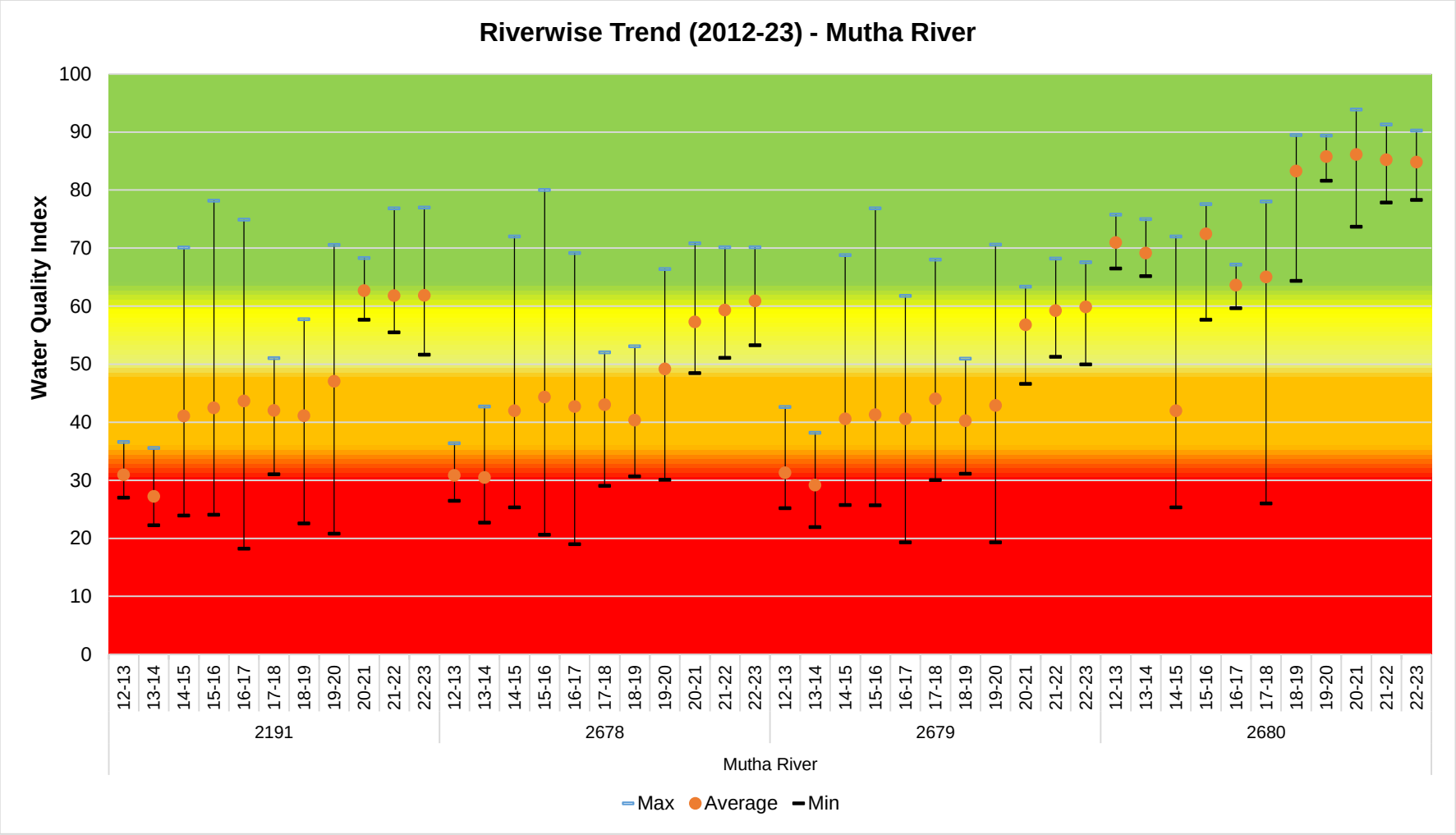
Note:* Stations are Dry/ No data available for respective year



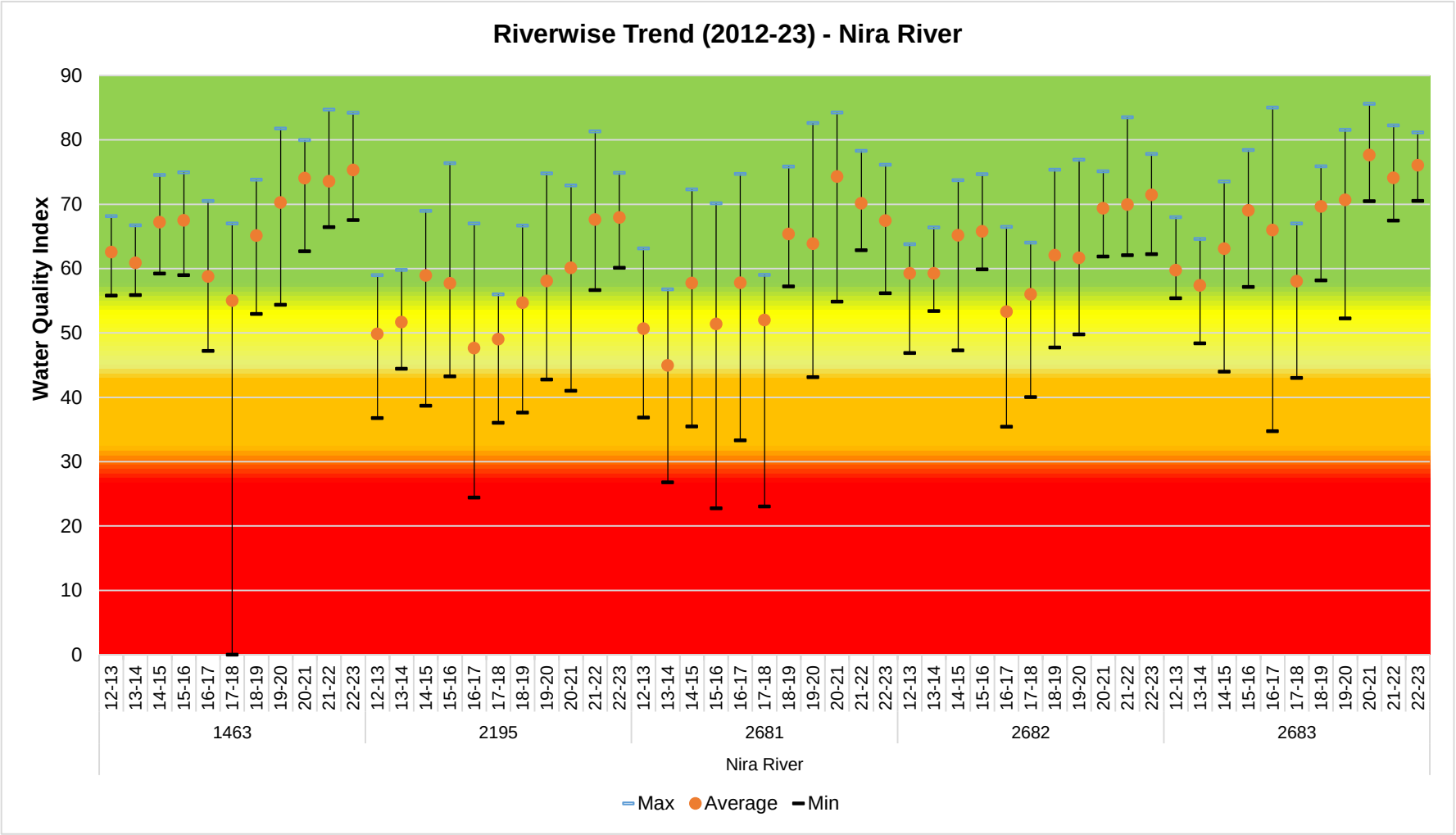
Note:* Stations are Dry/ No data available for respective year



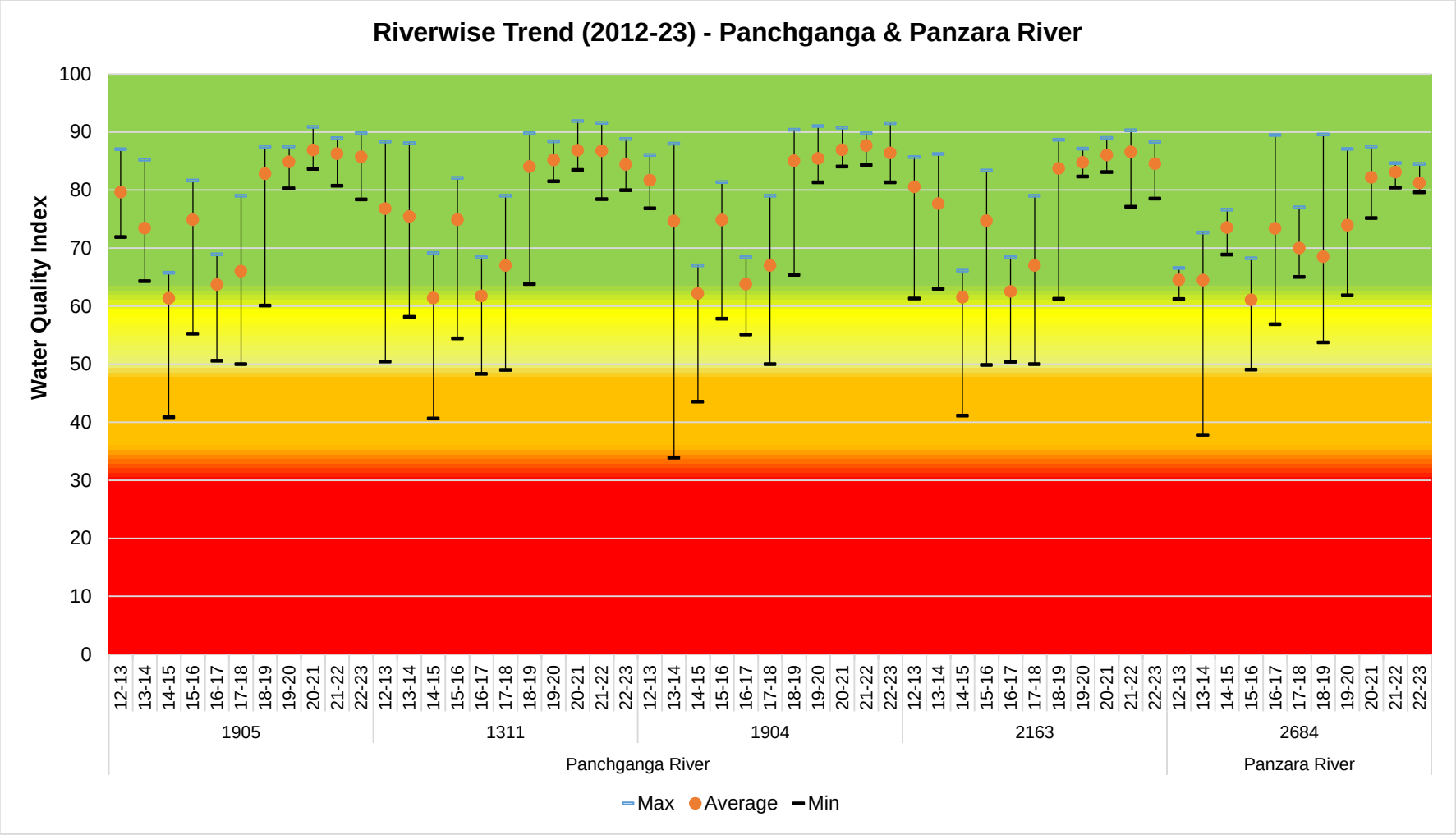
Note:* Stations are Dry/ No data available for respective year



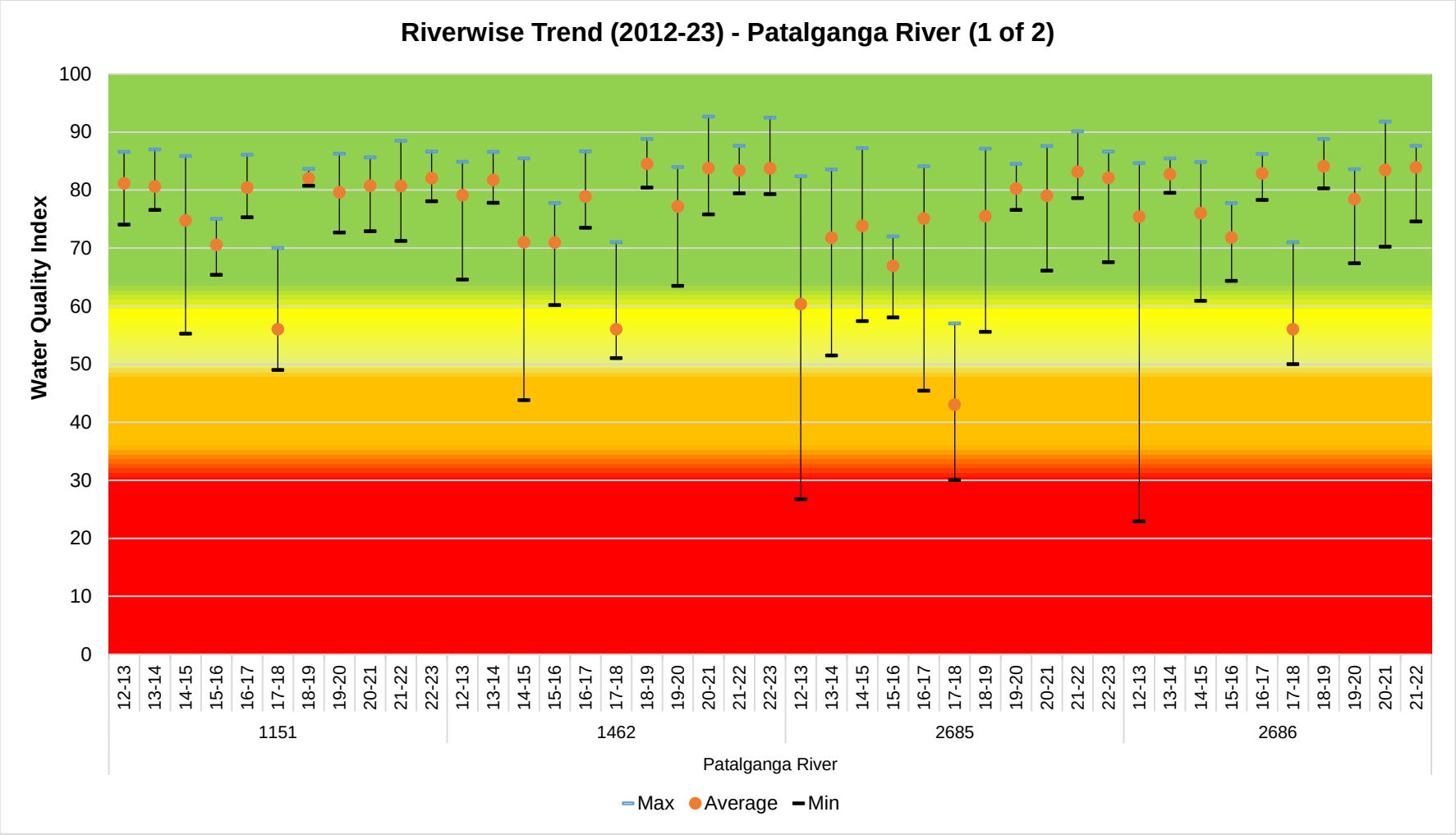
Note:* Stations are Dry/ No data available for respective year



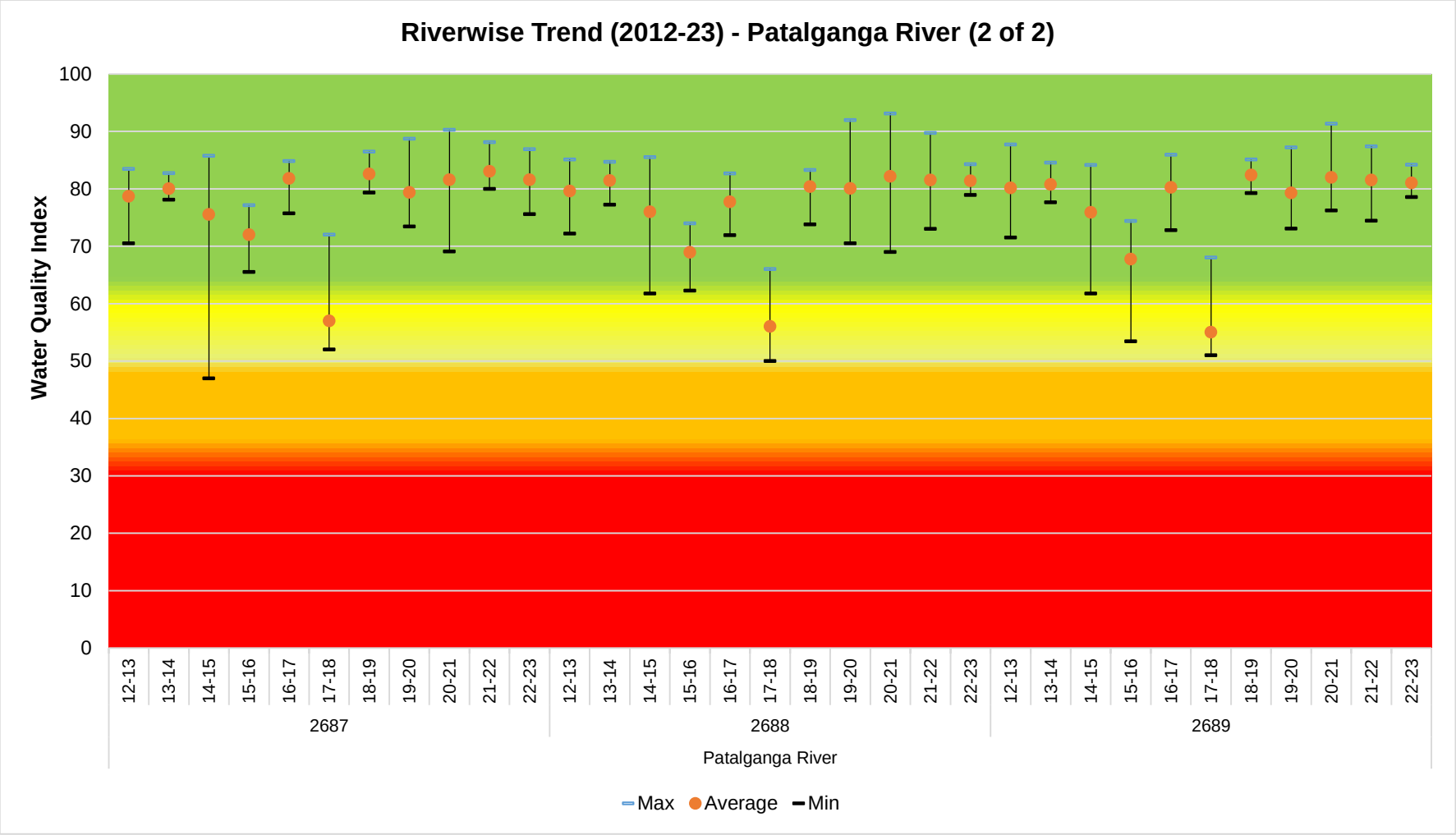
Note:* Stations are Dry/ No data available for respective year



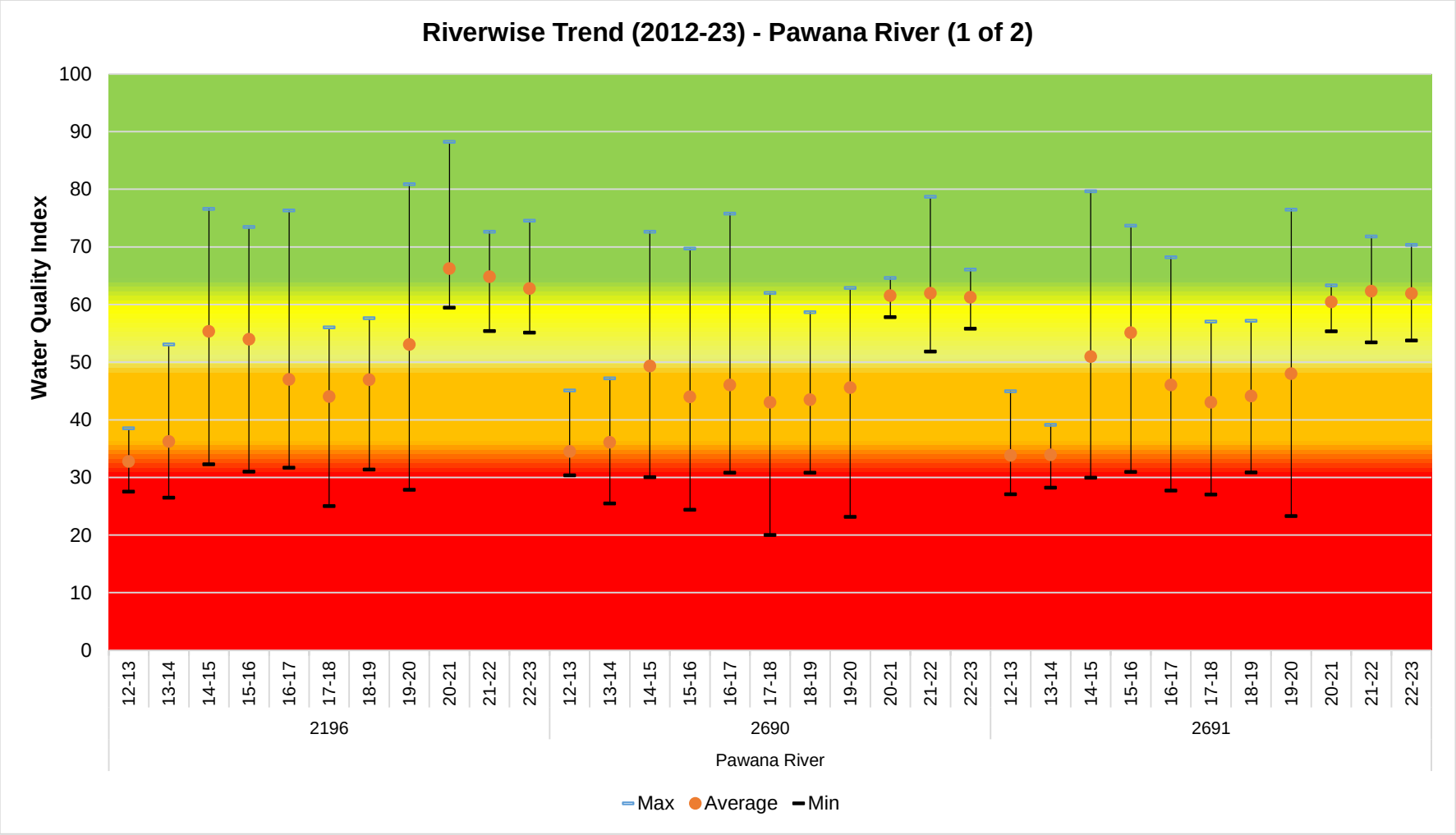
Note:* Stations are Dry/ No data available for respective year



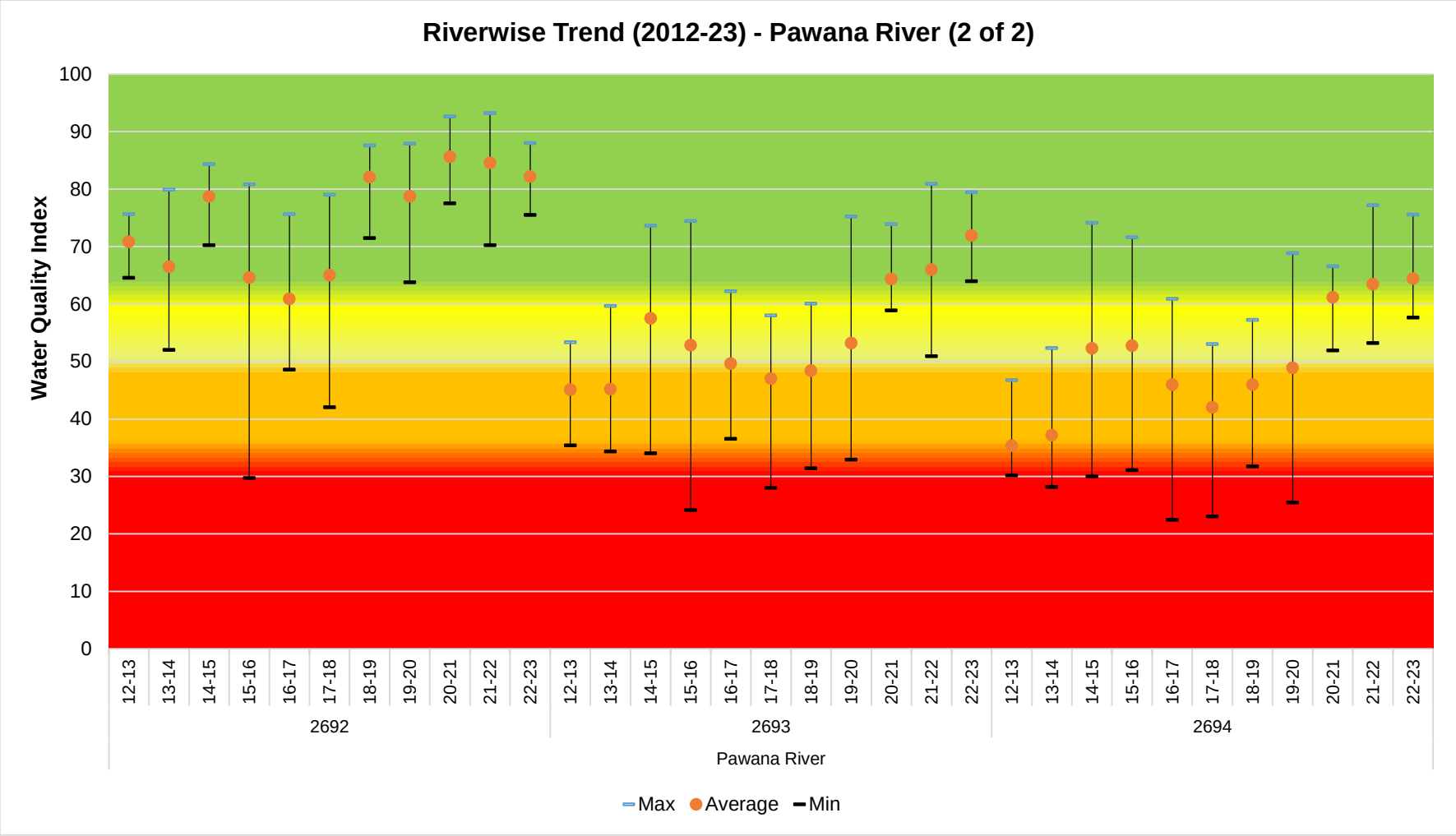
Note:* Stations are Dry/ No data available for respective year



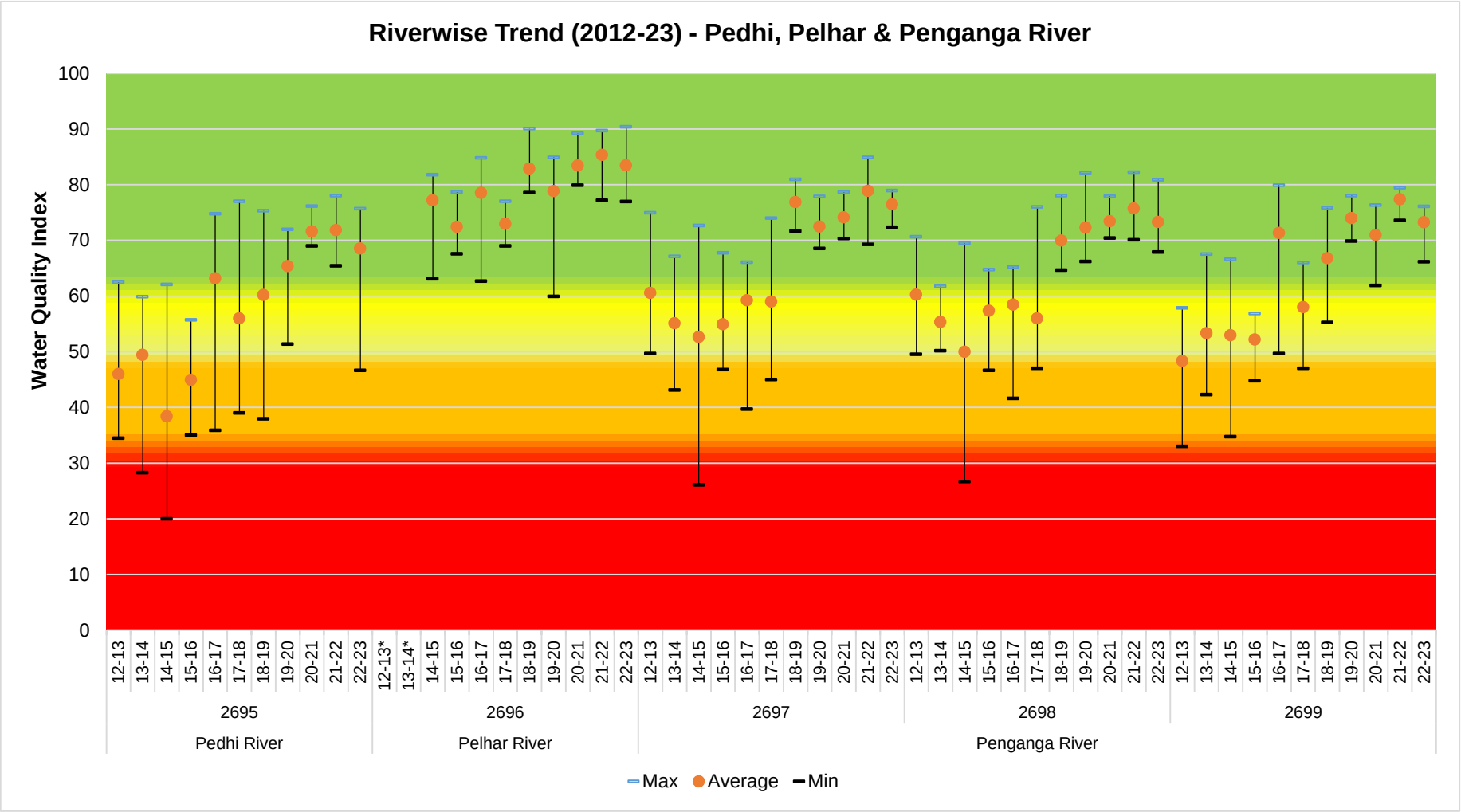
Note:* Stations are Dry/ No data available for respective year



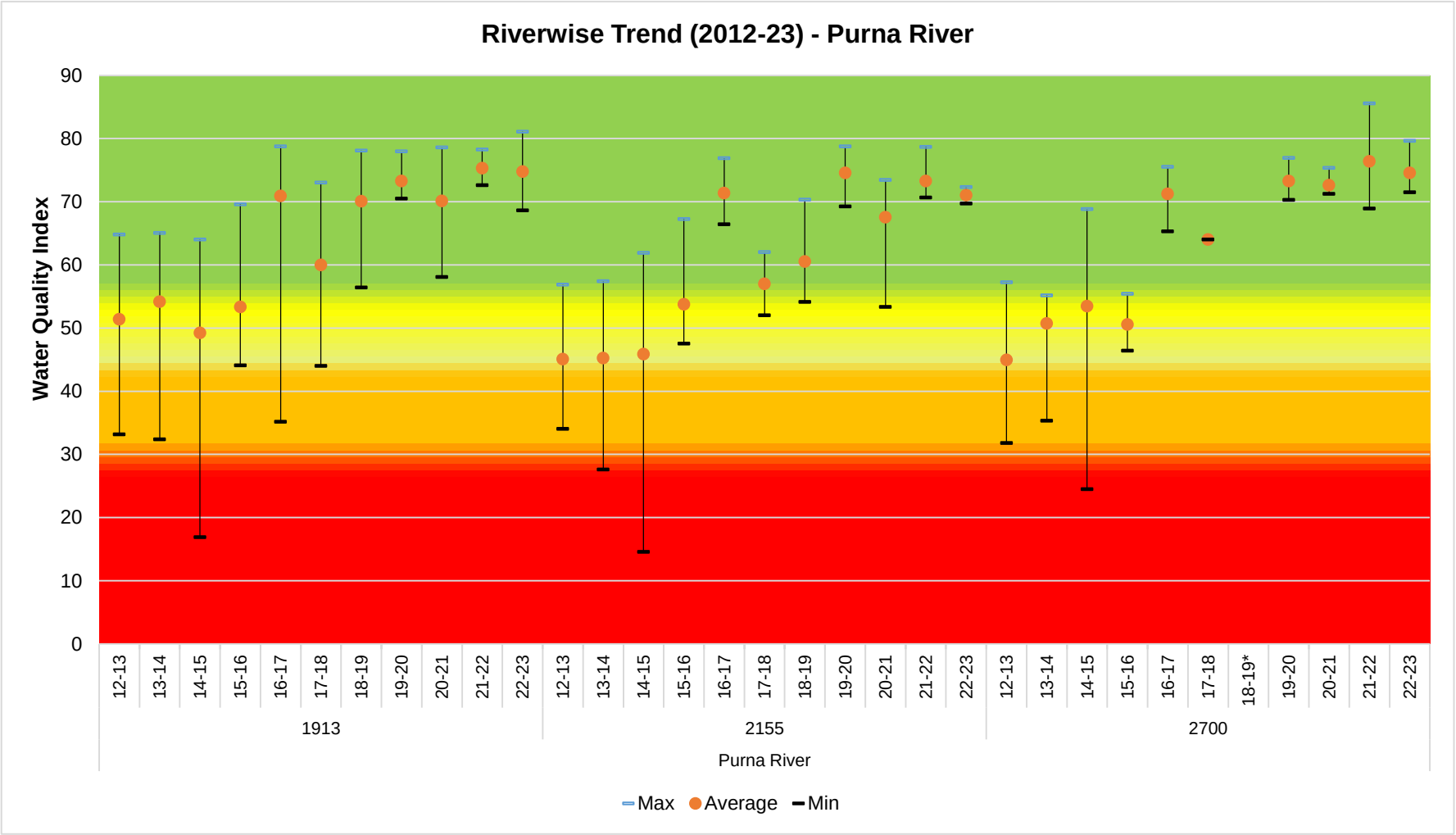
Note:* Stations are Dry/ No data available for respective year



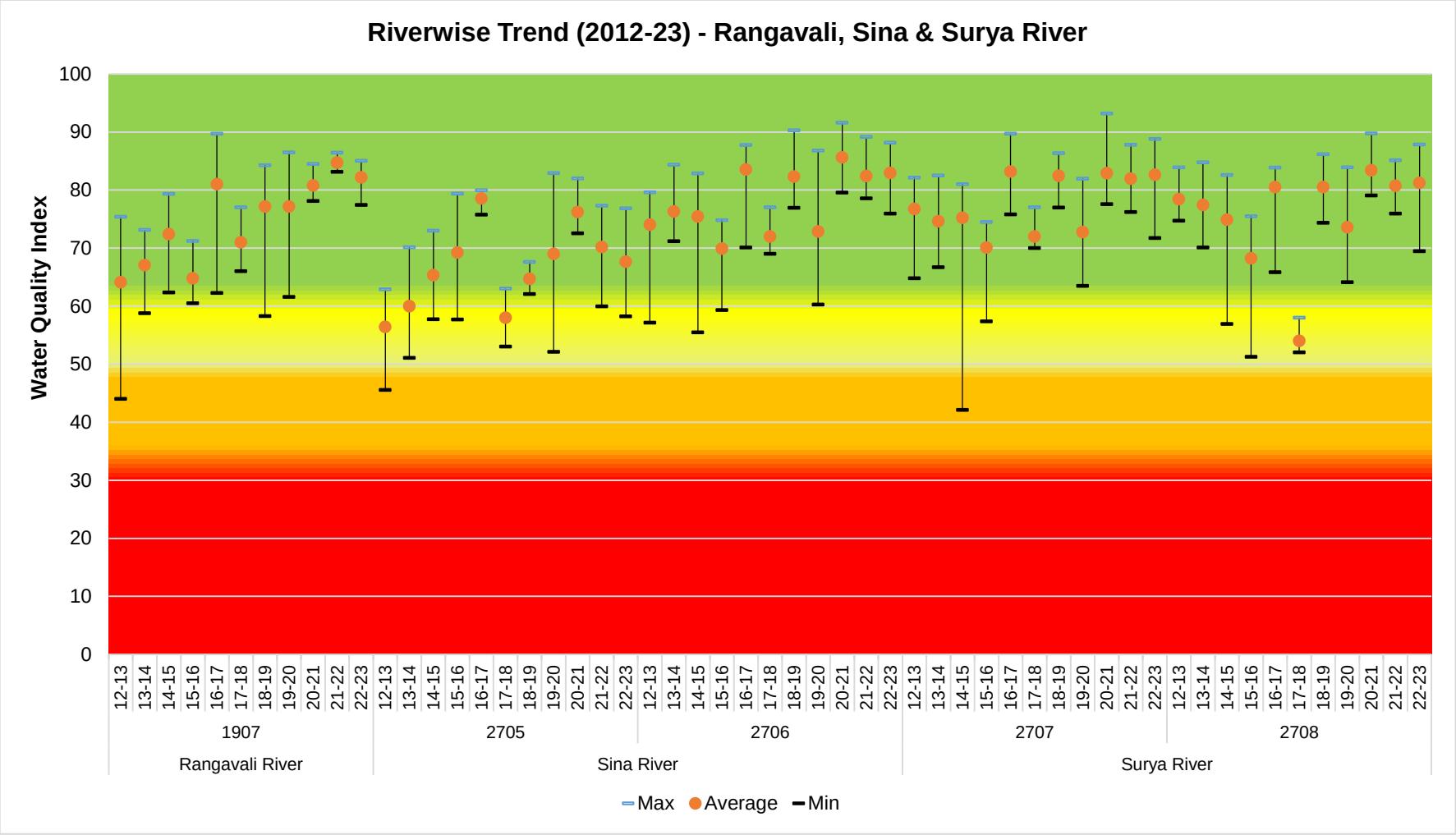
Note:* Stations are Dry/ No data available for respective year



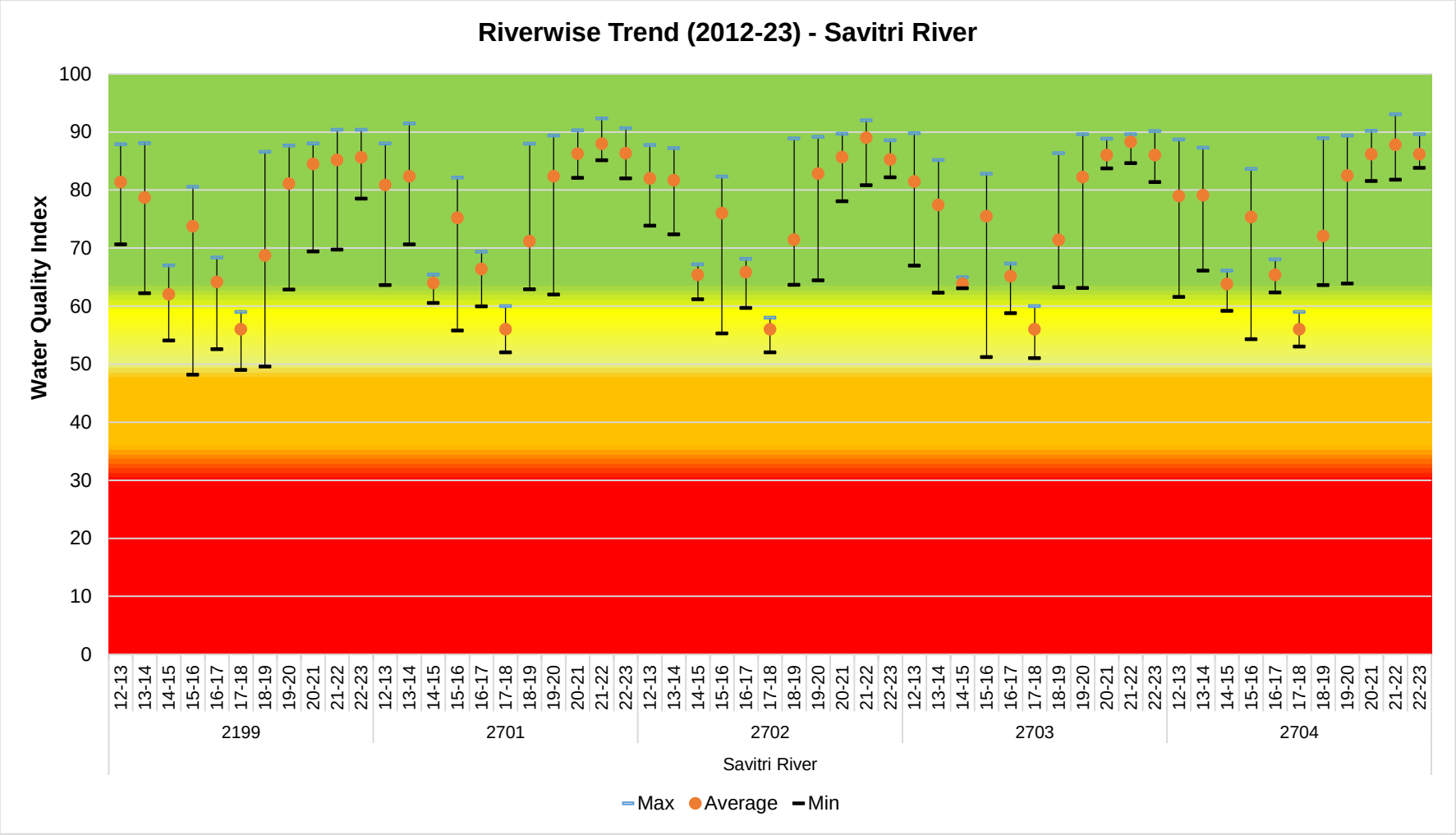
Note:* Stations are Dry/ No data available for respective year



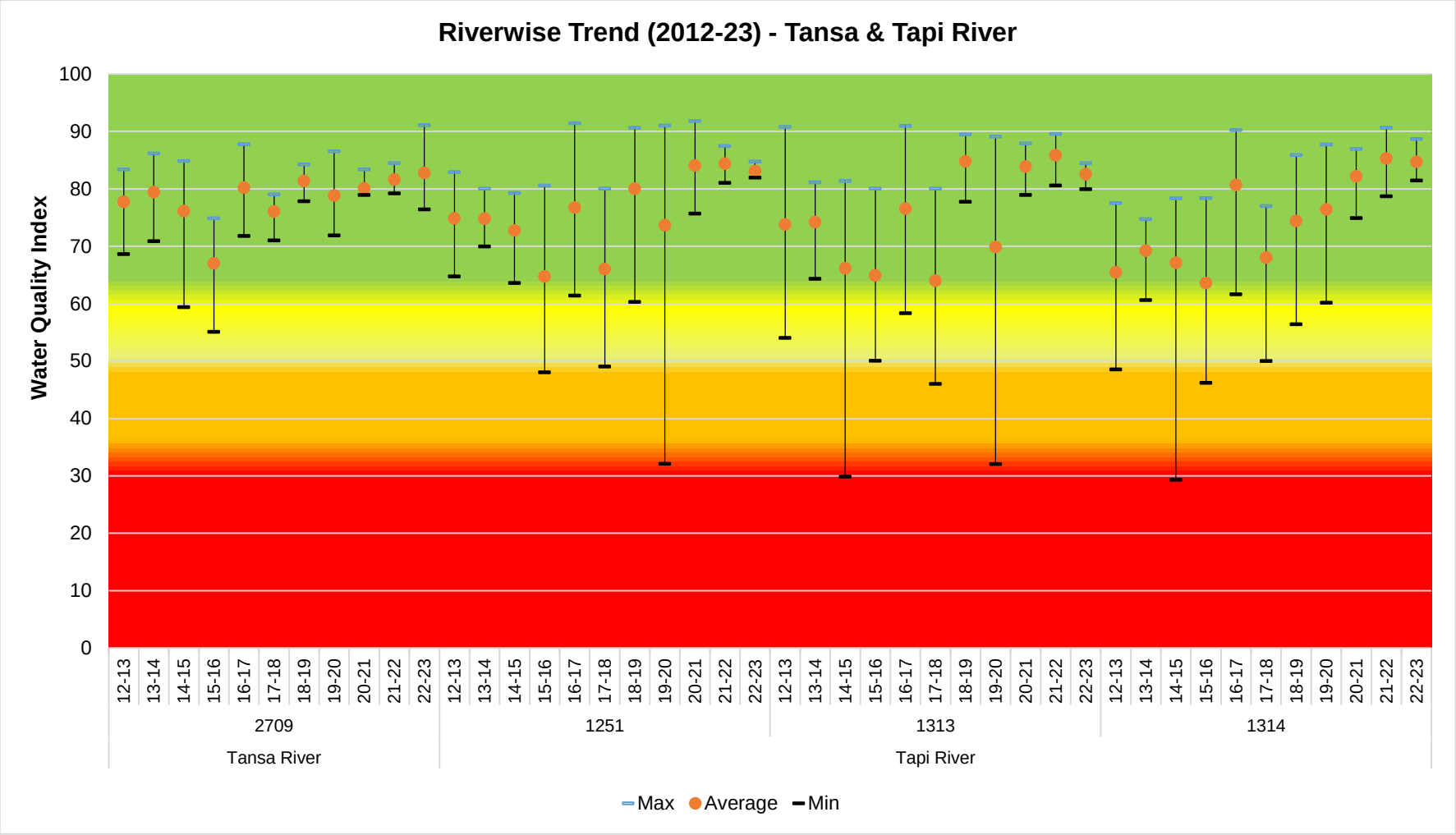
Note:* Stations are Dry/ No data available for respective year



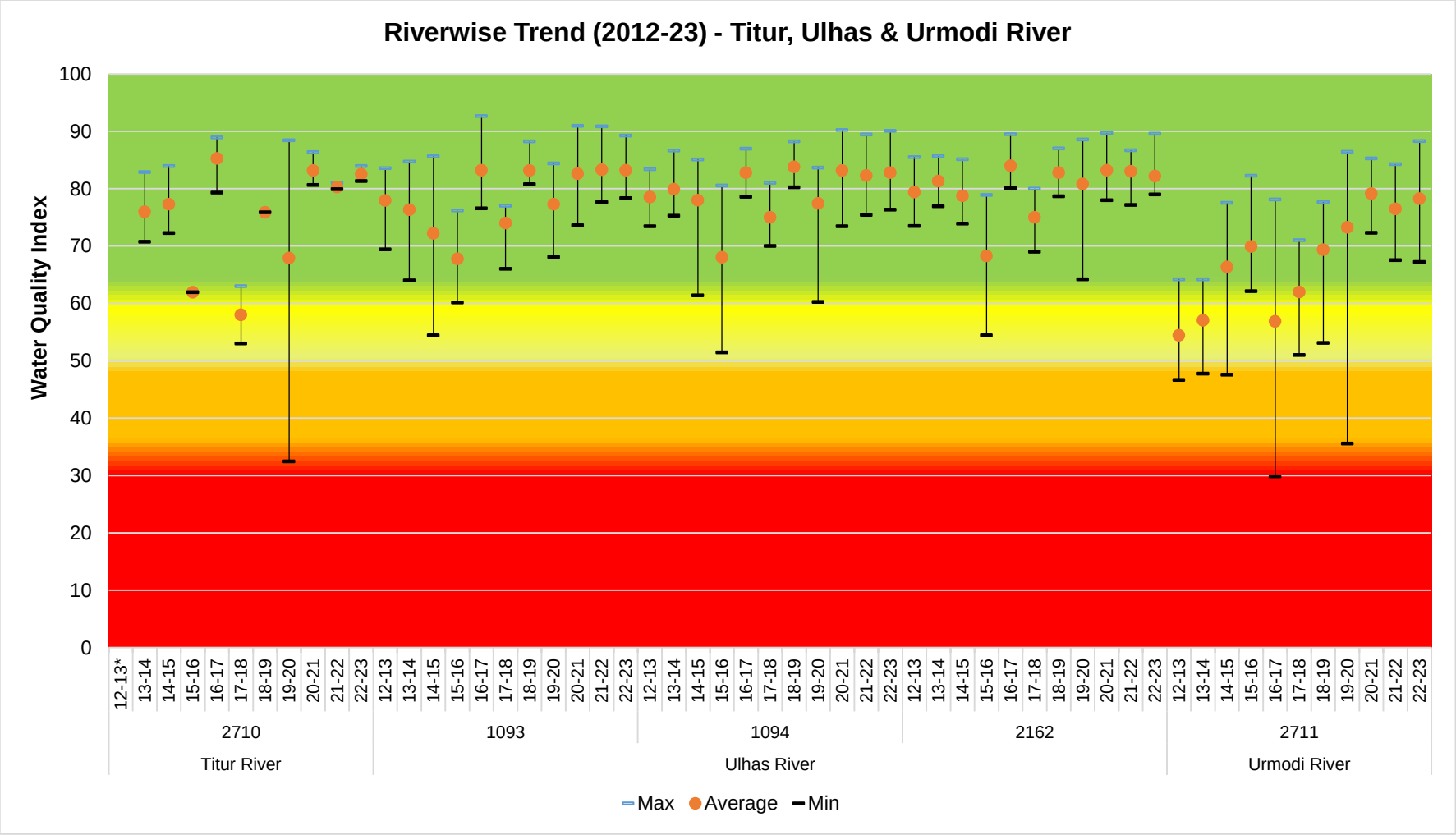
Note:* Stations are Dry/ No data available for respective year



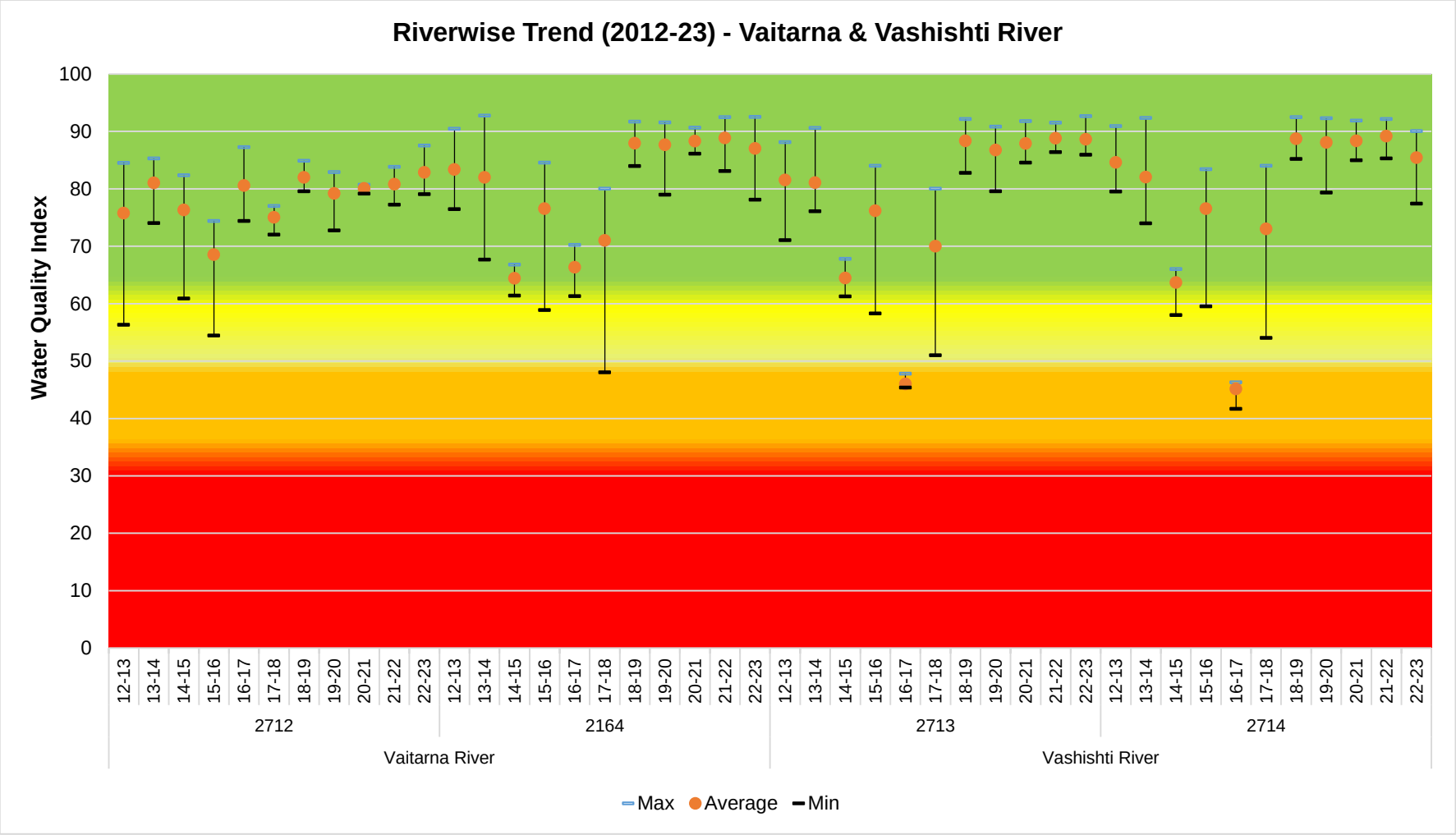
Note:* Stations are Dry/ No data available for respective year



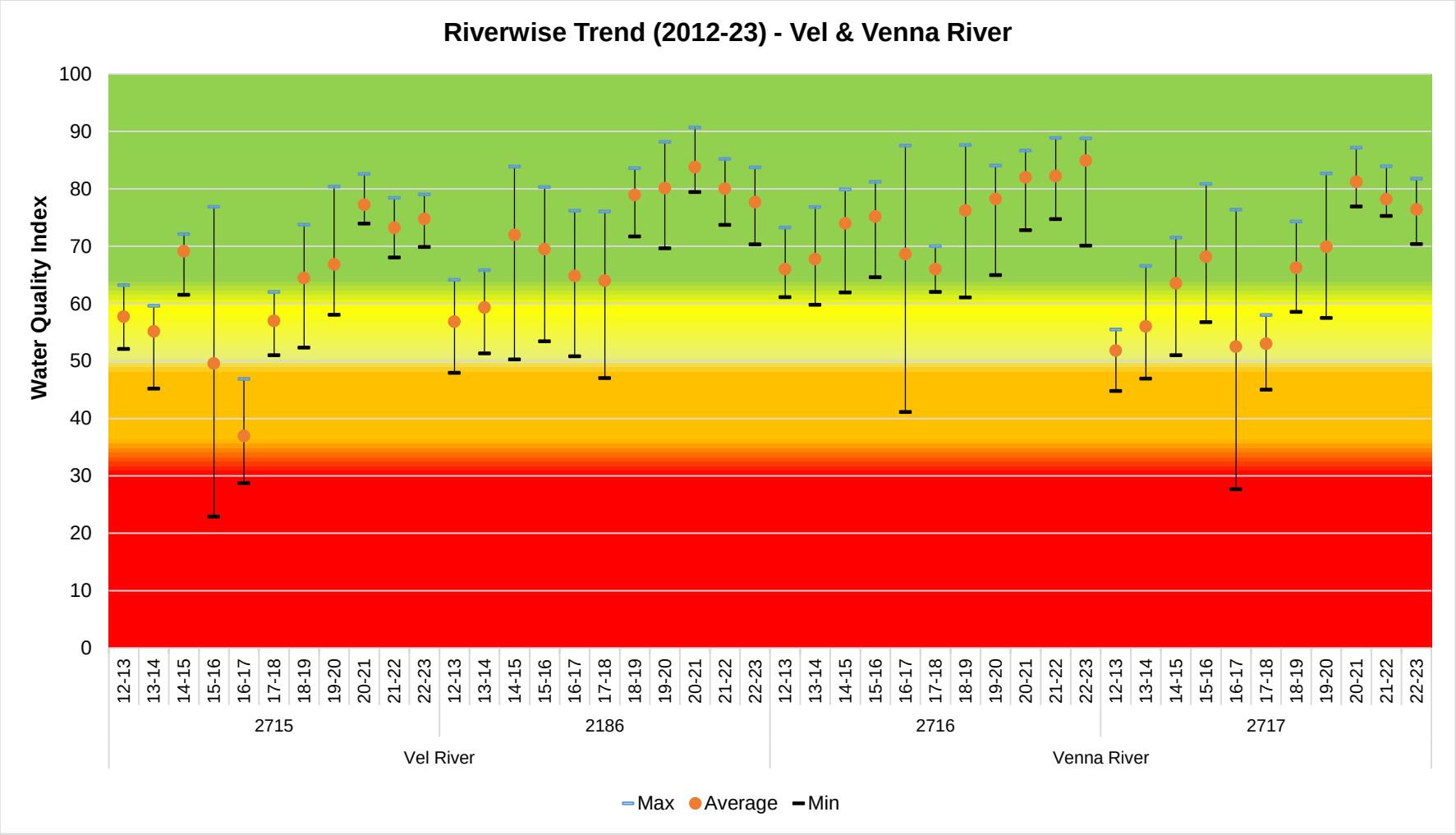
Note:* Stations are Dry/ No data available for respective year



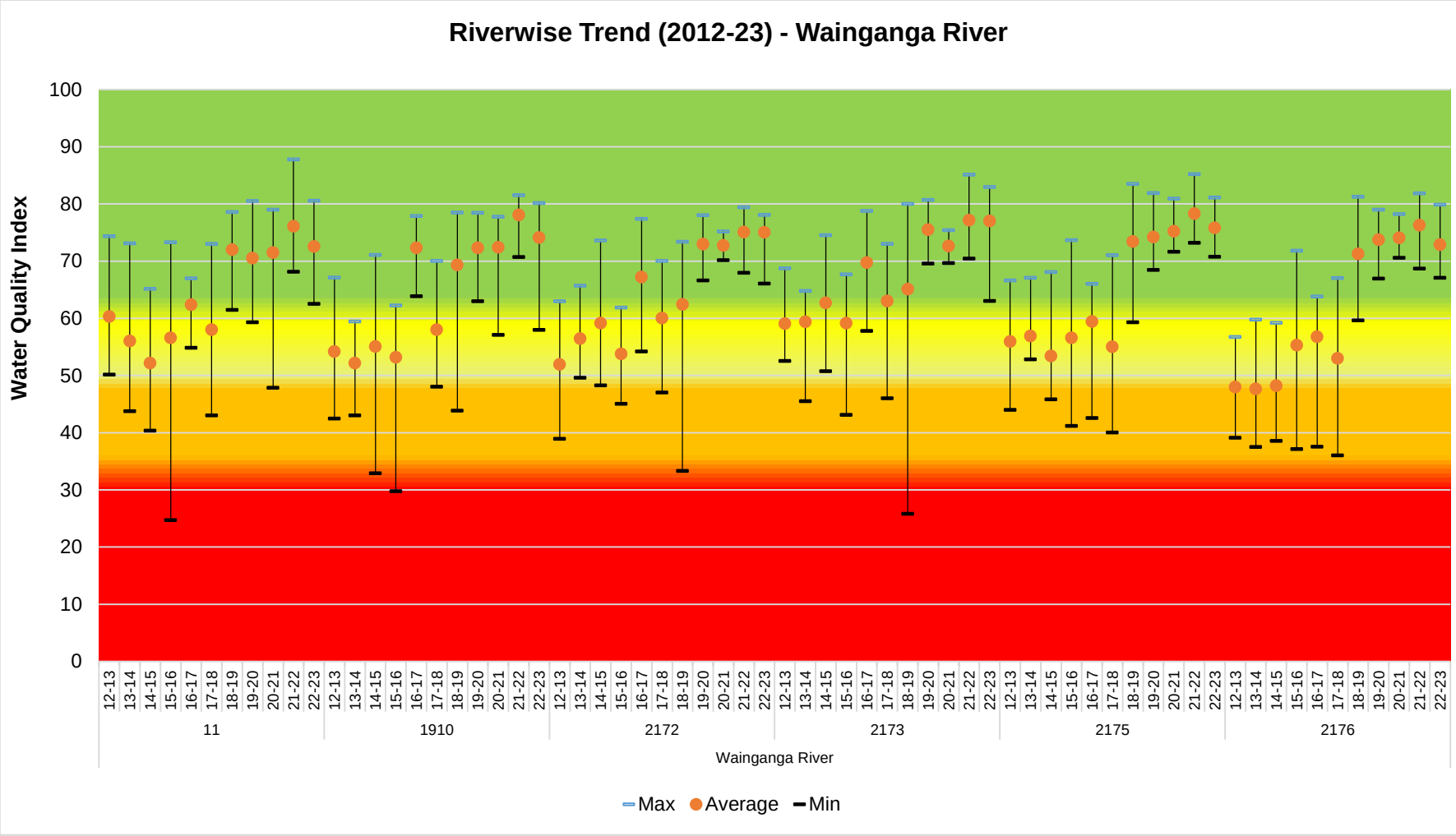
Note:* Stations are Dry/ No data available for respective year



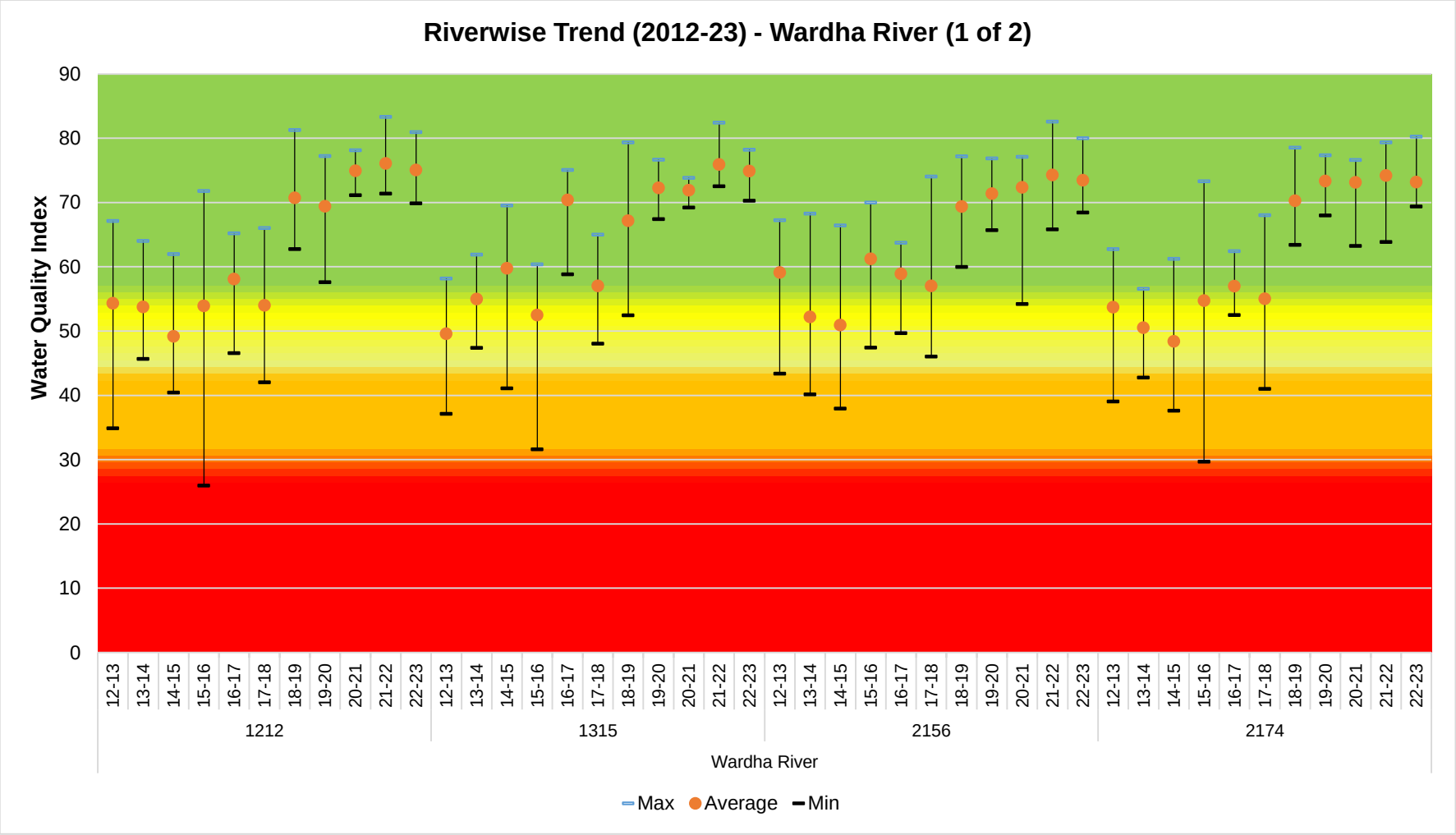
Note:* Stations are Dry/ No data available for respective year



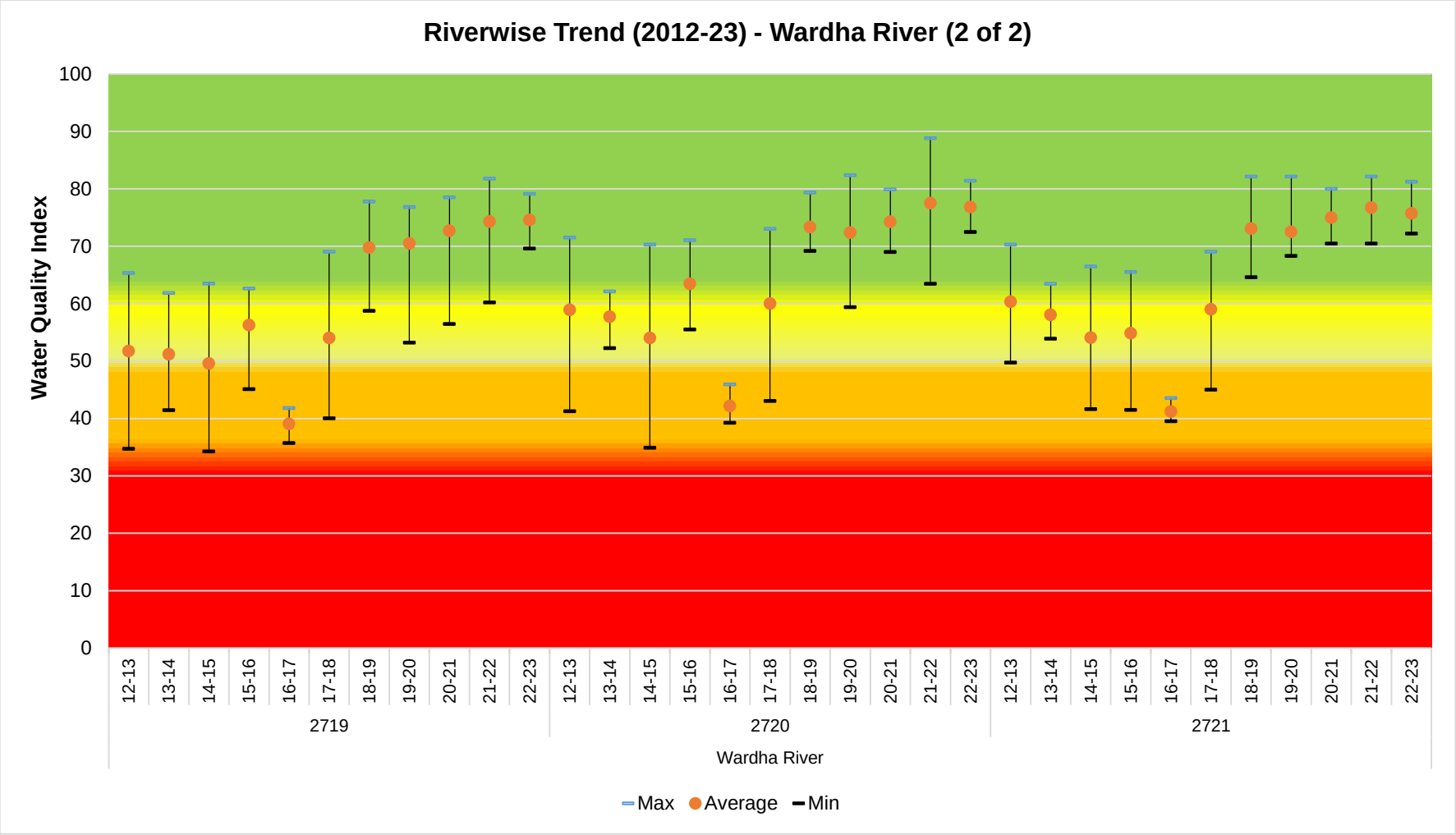
Note:* Stations are Dry/ No data available for respective year



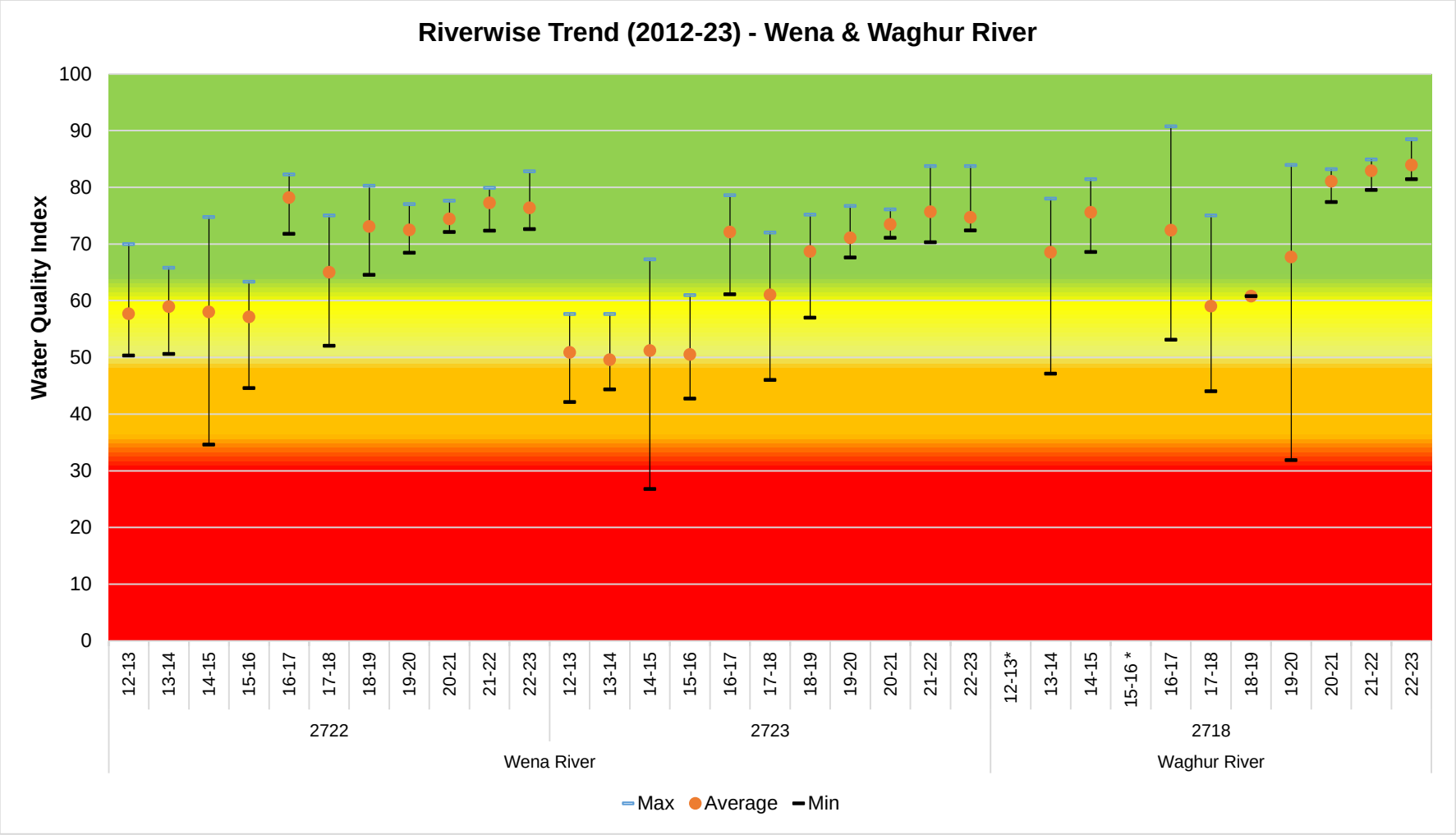
Note:* Stations are Dry/ No data available for respective year



Note:* Stations are Dry/ No data available for respective year



Note:* Stations are Dry/ No data available for respective year

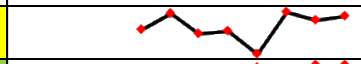
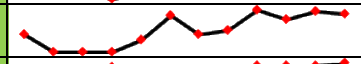
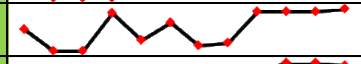
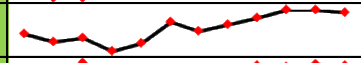
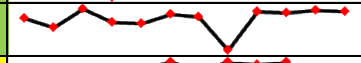
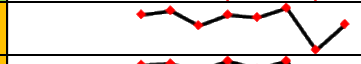
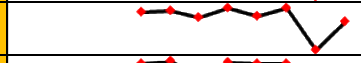
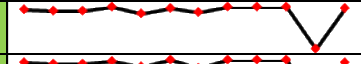
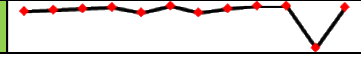


Note:* Stations are Dry/ No data available for respective year

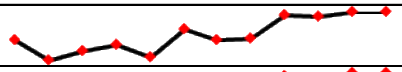
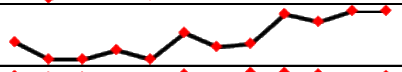
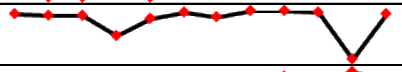
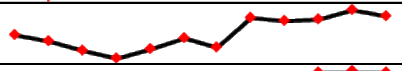
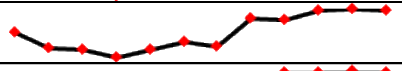
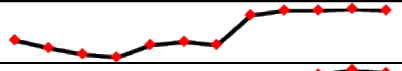
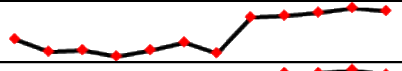
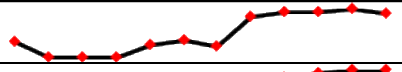
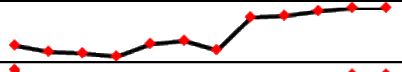
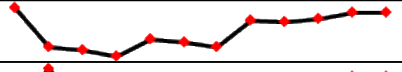
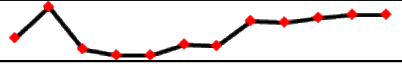
Annex - VII : Stationwise Trend In WQI (2011-23)

Surface water

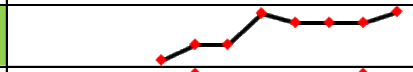
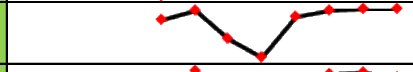
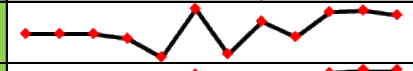
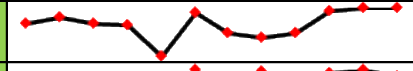
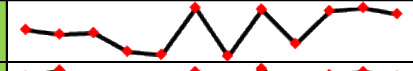
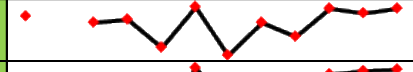
Ahmednagar, Akola, Amravati & Aurangabad District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Ahmednagar	195					48	60	44	46	29	62	55	58		Quality Improved	2.40
Akola	1913	55	51	54	49	53	70	59	70	73	70	75	75		Quality Improved	3.30
Akola	2155	57	46	45	46	54	70	57	61	75	68	73	71		Quality Improved	4.61
Akola	2675	59	41	41	71	50	63	46	48	72	72	72	74		Quality Improved	5.96
Amravati	2695	52	46	49	38	45	62	54	60	65	72	72	69		Quality Improved	3.39
Amravati	2700	62	45	81	53	51	70	64	Dry	73	73	76	75		No Significant Change	-0.73
Aurangabad	178					68	82	66	82	75	82	NA	61		Quality Deteriorated	-1.34
Aurangabad	179						81	38	Dry	82	80	NA	66		Quality Deteriorated	-2.91
Aurangabad	180					60	67	42	60	55	73	NA	44		Quality Deteriorated	-3.74
Aurangabad	181					62	65	53	67	56	69	NA	46		Quality Deteriorated	-3.58
Aurangabad	182					63	68	40	65	62	62	NA	47		Quality Deteriorated	-3.57
Aurangabad	183					58	76	58	73	68	81	NA	53		Quality Deteriorated	-1.02
Aurangabad	184					66	81	64	66	80	81	NA	57		Quality Deteriorated	-1.84
Aurangabad	1312	80	78	79	85	73	85	75	85	87	87	NA	84		No Significant Change	0.62
Aurangabad	2158	79	79	78	83	73	85	70	84	87	87	NA	80		No Significant Change	0.21
Aurangabad	2159	73	73	79	83	74	84	73	85	87	87	NA	82		No Significant Change	0.40
Aurangabad	2160	75	78	80	84	72	85	72	81	87	87	NA	82		No Significant Change	0.31

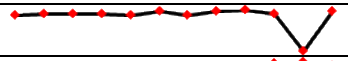
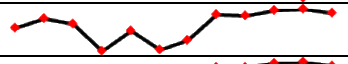
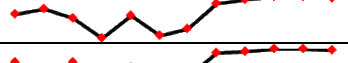
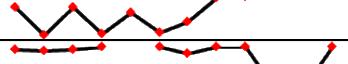
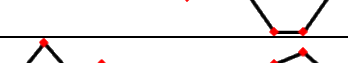
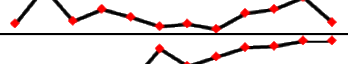
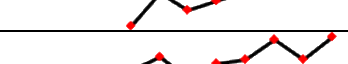
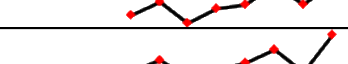
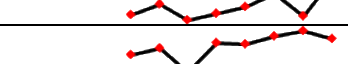
Bhandara, Beed, Buldana & Chandrapur District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Bhandara	2172	61	52	56	59	54	66	61	62	73	73	75	75		Quality Improved	2.89
Bhandara	2173	65	59	59	63	59	69	64	65	75	73	77	77		Quality Improved	2.63
Beed	2657	78	76	78	41	71	83	73	84	86	82	NA	80		No Significant Change	0.29
Buldana	2699	55	48	53	53	52	70	58	67	74	71	77	73		Quality Improved	3.19
Chandrapur	11	63	61	56	52	57	62	57	72	70	71	76	73		Quality Improved	2.63
Chandrapur	1212	63	54	54	49	54	57	55	71	69	75	76	75		Quality Improved	3.39
Chandrapur	2174	58	54	51	48	55	57	55	70	73	73	74	73		Quality Improved	3.75
Chandrapur	2175	62	56	57	53	57	61	55	73	74	75	78	76		Quality Improved	2.94
Chandrapur	2176	57	48	48	48	55	58	54	71	74	74	76	73		Quality Improved	4.36
Chandrapur	2719	56	52	51	50	56	58	53	70	70	73	74	75		Quality Improved	3.89
Chandrapur	2720	80	59	58	54	63	61	59	73	72	74	77	77		Quality Improved	2.92
Chandrapur	2721	64	81	58	55	55	60	59	73	73	75	77	76		Quality Improved	2.68

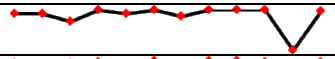
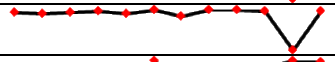
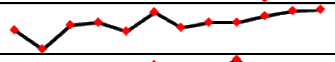
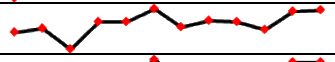
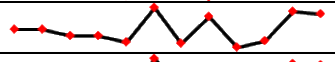
Dhule & Jalgaon District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Dhule	197					50	54	54	63	61	61	61	64		Quality Improved	3.26
Dhule	2652	75	31	65	64	64	87	No data	Dry	63	Dry	86	Dry		NA	NA
Dhule	2659	75	63	40	76	59	90	No data	Dry	71	77	82	86		Quality Improved	7.88
Dhule	2666	73	62	69	67	55	90	65	Dry	77	79	84	84		Quality Improved	2.05
Dhule	2670	73	69	70	73	65	89	70	74	84	82	83	84		Quality Improved	1.91
Dhule	2684	75	65	64	74	62	87	70	69	74	82	83	81		Quality Improved	2.31
Jalgaon	196					59	65	45	32	61	65	66	66		Quality Improved	1.47
Jalgaon	1251	75	75	75	73	65	86	66	80	74	84	84	83		Quality Improved	1.05
Jalgaon	1252	74	78	74	73	50	81	67	63	67	83	85	86		Quality Improved	1.56
Jalgaon	1313	76	74	74	66	65	85	64	85	70	84	86	83		Quality Improved	1.12
Jalgaon	2658	80	83	73	75	53	83	68	85	67	80	82	80		No Significant Change	0.95
Jalgaon	2667	78		75	72	46	83	60	82	66	82	83	80		No Significant Change	0.67
Jalgaon	2674	78		74	74	56	86	60	77	75	82	85	83		Quality Improved	1.12
Jalgaon	2710	79		76	77	62	84	58	76	68	83	80	83		No Significant Change	0.89
Jalgaon	2718	74		69	76	51	86	59	61	68	81	83	84		Quality Improved	2.06

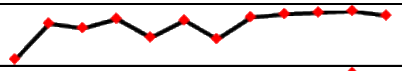
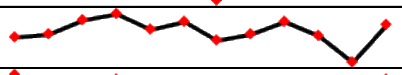
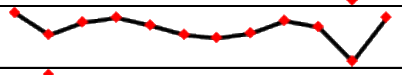
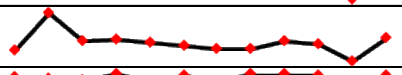
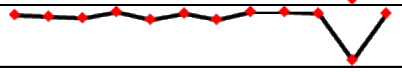
Jalna, Kolhapur, Latur, Mumbai & Nagpur District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Jalna	2161	75	78	77	77	75	82	74	84	87	76	NA	82		No Significant Change	0.57
Kolhapur	1153	76	81	78	63	75	63	69	84	83	86	88	85		No Significant Change	0.84
Kolhapur	1310	78	70	77	63	73	63	69	84	84	86	87	85		No Significant Change	0.96
Kolhapur	1311	78	77	75	61	75	61	69	84	85	87	87	84		Quality Improved	1.08
Kolhapur	1904	78	82	75	62	75	63	68	85	85	87	88	86		Quality Improved	1.42
Kolhapur	1905	76	80	73	61	75	63	67	83	85	87	86	86		Quality Improved	1.59
Kolhapur	2163	78	60	78	62	75	62	68	84	85	86	87	85		No Significant Change	0.91
Latur	2673	78	76	77	85		85	69	84	84	Dry	NA	82		No Significant Change	0.61
Mumbai	2168	34	61	36	44	39	32	34	30	42	44	53	35		No Significant Change	-0.21
Nagpur	185					51	71	60	66	71	72	76	76		Quality Improved	5.11
Nagpur	186					32	38	28	35	37	46	37	48		Quality Improved	5.25
Nagpur	187					33	40	30	34	38	46	33	55		Quality Improved	6.65
Nagpur	188					38	41	29	44	43	48	51	46		Quality Improved	2.54
Nagpur	189					47	45	31	42	47	48	51	50		No Significant Change	0.65
Nagpur	1908	60	57	55	56	55	72	60	70	70	72	76	75		Quality Improved	3.08
Nagpur	1909	59	56	53	54	53	69	60	69	69	71	71	65		Quality Improved	2.09
Nagpur	1910	62	54	52	55	53	72	59	69	72	72	78	74		Quality Improved	3.56
Nagpur	2170	60	58	59	57	57	77	66	71	71	73	77	76		Quality Improved	2.50
Nagpur	2171	56	52	52	56	54	72	61	66	71	73	75	72		Quality Improved	3.39

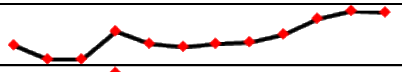
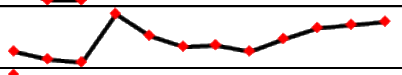
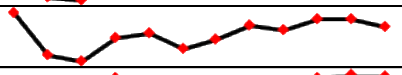
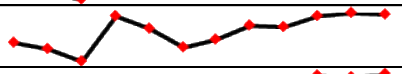
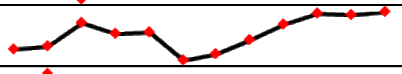
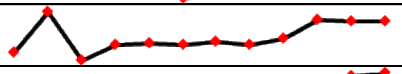
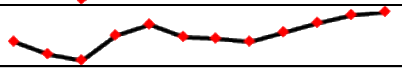
Nanded, Nandurbar & Nashik District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Nanded	1209	77	75	61	83	75	83	72	84	84	85	NA	80		Quality Improved	2.83
Nanded	1210	79	77	79	83	76	84	72	86	86	81	NA	82		No Significant Change	0.33
Nandurbar	1314	75	65	69	68	64	86	68	74	76	82	85	85		Quality Improved	2.07
Nandurbar	1907	73	65	67	72	65	88	71	77	77	81	85	82		Quality Improved	1.97
Nashik	194					62	88	55	79	Dry	73	81	83		Quality Improved	3.66
Nashik	1095	77	77	77	76	69	88	64	75	69	85	87	87		Quality Improved	1.28
Nashik	1096	63	66	70	69	63	80	68	82	71	66	82	81		Quality Improved	1.45
Nashik	1211	59	65	67	80	63	79	63	77	72	65	80	81		Quality Improved	1.92
Nashik	1253	77	65	70	74	63	84	73	67	63	60	79	83		Quality Improved	1.73
Nashik	2177	67	51	71	73	67	83	69	73	74	79	83	85		Quality Improved	1.77
Nashik	2178	49	54	51	68	59	72	59	67	76	62	62	54		No Significant Change	0.53
Nashik	2179	60	67	68	51	65	80	63	74	69	64	81	76		Quality Improved	1.08
Nashik	2180	53	60	63	67	63	80	62	72	70	57	77	74		Quality Improved	1.57
Nashik	2181	52	56	30	65	65	82	58	67	65	56	78	80		Quality Improved	10.14
Nashik	2182	66	60	51	69	67	87	70	71	67	66	84	84		Quality Improved	5.14
Nashik	2183	76	71	72	70	67	87	69	83	67	69	87	85		Quality Improved	1.69
Nashik	2660	73	72	72	71	68	89	72	67	69	68	86	77		No Significant Change	0.69
Nashik	2661	75	75	72	72	68	89	67	83	65	69	86	85		Quality Improved	1.68
Nashik	2662	75	77	74	75	67	88	69	82	71	64	85	84		Quality Improved	1.30
Nashik	2663	75	76	74	73	68	87	70	81	67	66	86	84		Quality Improved	1.31
Nashik	2664	77	74	72	70	69	88	72	80	69	66	84	82		Quality Improved	1.24

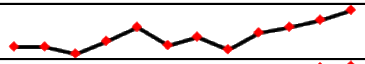
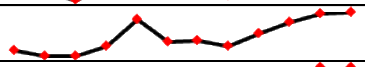
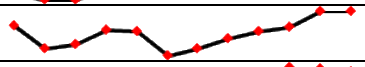
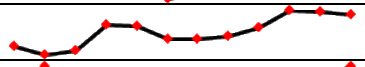
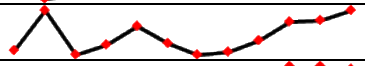
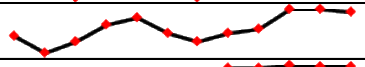
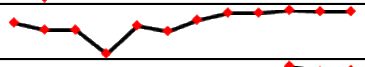
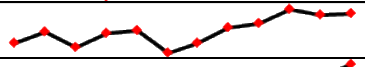
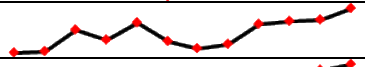
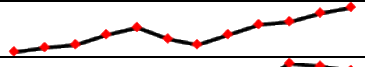
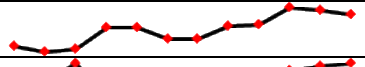
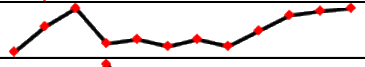
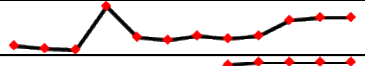
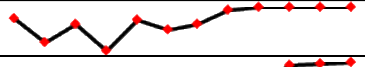
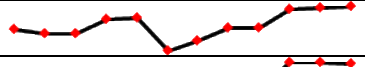
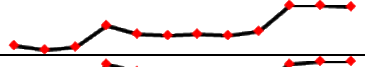
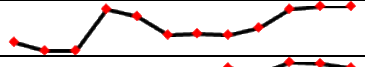
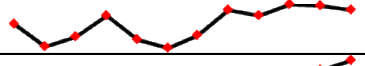
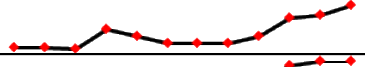
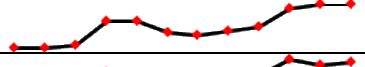
Osmanabad, Palghar &Parbhani District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Osmanabad	2157	61	81	78	83	73	82	72	85	86	87	88	85		No Significant Change	0.88
Palghar	2696				77	72	80	73	83	79	83	85	83		No Significant Change	0.81
Palghar	2785	24	22	27	26	28	26	20	28	33	32	30	36		Quality Improved	2.87
Palghar	2786	23	26	39	46	31	37	21	27	37	25	Dry	35		Quality Deteriorated	-1.18
Palghar	2787	43	24	35	39	31	24	22	25	37	30	Dry	38		No Significant Change	0.86
Palghar	2788	19	80	33	36	32	26	21	23	34	29	Dry	39		Quality Improved	1.54
Parbhani	12	79	78	75	84	71	81	73	84	86	83	NA	82		No Significant Change	0.91

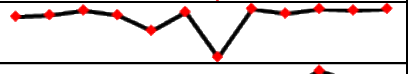
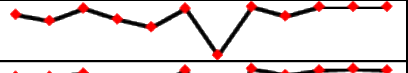
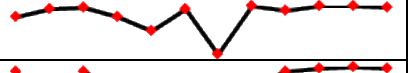
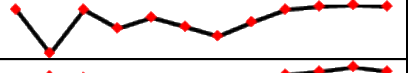
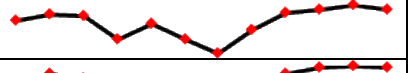
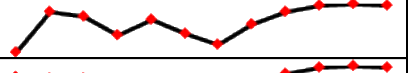
Pune District (1)

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Pune	1189	46	37	37	54	47	45	47	48	52	61	66	65		Quality Improved	5.67
Pune	1190	39	33	30	70	52	43	45	39	49	58	61	63		Quality Improved	7.87
Pune	1191	81	47	42	61	64	52	59	70	67	76	76	69		Quality Improved	5.03
Pune	1192	52	47	39	70	62	49	55	63	63	70	73	71		Quality Improved	6.25
Pune	1463	62	63	71	67	67	58	60	65	70	74	74	75		No Significant Change	0.58
Pune	2191	34	71	27	41	42	41	43	41	47	63	62	62		Quality Improved	8.58
Pune	2192	42	33	29	47	56	46	46	43	50	57	62	65		Quality Improved	8.49

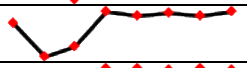
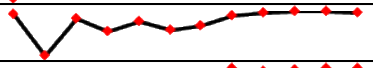
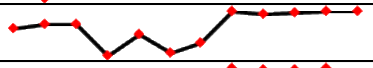
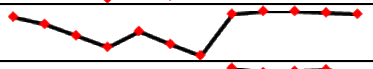
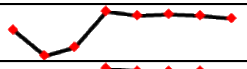
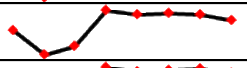
Pune District (2)

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Pune	2193	46	47	42	50	58	47	52	45	55	58	62	69		Quality Improved	5.12
Pune	2194	39	36	36	42	58	44	46	41	49	57	61	63		Quality Improved	5.89
Pune	2195	61	50	52	59	58	46	49	55	58	60	68	68		Quality Improved	2.78
Pune	2196	39	33	36	55	54	45	45	47	53	66	65	63		Quality Improved	5.69
Pune	2197	54	71	51	56	64	57	51	53	58	66	67	71		Quality Improved	3.30
Pune	2655	57	46	54	63	68	58	53	58	61	73	74	72		Quality Improved	3.00
Pune	2656	64	59	59	41	62	58	67	72	73	75	74	73		Quality Improved	2.09
Pune	2665	54	61	51	60	62	48	54	64	67	76	72	73		Quality Improved	3.63
Pune	2668	49	49	61	55	64	55	51	53	64	65	66	72		Quality Improved	1.68
Pune	2669	53	55	57	62	65	59	57	62	67	68	73	76		Quality Improved	2.87
Pune	2677	42	36	39	59	58	49	48	60	61	77	74	70		Quality Improved	6.03
Pune	2678	38	51	60	42	44	40	44	40	49	57	59	61		No Significant Change	0.11
Pune	2679	33	31	29	71	41	39	42	40	43	57	59	60		Quality Improved	7.49
Pune	2680	74	51	69	42	72	63	69	83	86	86	85	85		Quality Improved	2.09
Pune	2682	61	59	59	65	66	52	56	62	62	69	70	71		Quality Improved	1.83
Pune	2690	37	34	37	49	44	44	44	43	46	62	62	61		Quality Improved	5.20
Pune	2691	39	34	34	60	55	44	45	44	48	60	62	62		Quality Improved	6.22
Pune	2692	73	60	66	79	65	60	67	82	79	86	85	82		Quality Improved	2.12
Pune	2693	46	46	45	57	53	49	48	48	53	64	66	72		Quality Improved	4.77
Pune	2694	35	35	37	52	53	45	43	46	49	61	63	64		Quality Improved	5.59
Pune	2715	52	58	55	69	50	49	57	64	67	77	73	75		Quality Improved	3.13

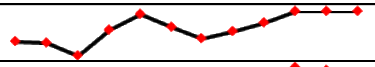
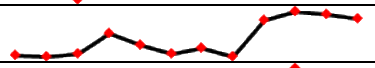
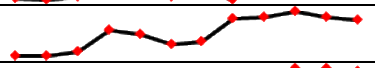
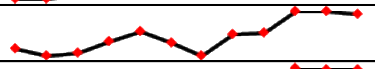
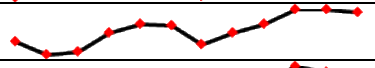
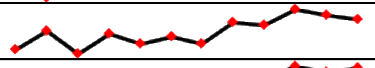
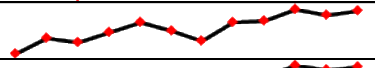
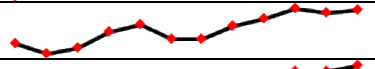
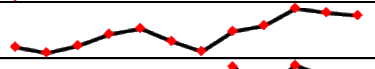
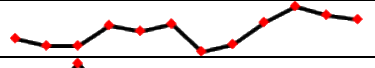
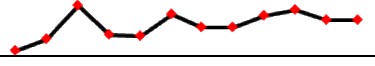
Raigad District

Raigad	1152	76	78	77	77	70	79	53	77	80	82	82	80		No Significant Change	0.35
Raigad	1462	78	80	82	31	71	78	55	84	77	84	83	84		No Significant Change	0.27
Raigad	2198	73	76	63	70	68	70	48	72	77	79	79	79		Quality Improved	2.24
Raigad	2199	76	81	79	63	74	64	56	69	81	84	85	86		No Significant Change	0.88
Raigad	2651	77	78	80	77	69	78	54	80	78	80	79	81		No Significant Change	0.18
Raigad	2671	59	59	62	61	58	61	38	64	64	76	67	68		No Significant Change	0.93
Raigad	2672	77	79	79	77	69	80	55	81	80	82	80	80		No Significant Change	0.15
Raigad	2685	74	81	72	74	67	74	42	75	80	79	83	82		Quality Improved	1.34
Raigad	2686	79	75	83	76	72	83	54	84	78	83	84	84		No Significant Change	0.15
Raigad	2687	79	79	80	76	72	82	55	83	79	82	83	82		No Significant Change	0.22
Raigad	2688	76	80	81	76	69	77	55	80	80	82	81	81		No Significant Change	-0.05
Raigad	2689	76	81	81	76	68	80	54	82	79	82	82	81		No Significant Change	0.00
Raigad	2701	83	40	82	64	75	66	56	71	82	86	88	86		No Significant Change	0.44
Raigad	2702	78	82	82	65	76	66	56	71	83	86	89	85		No Significant Change	0.40
Raigad	2703	50	81	77	64	75	65	56	71	82	86	88	86		Quality Improved	1.05
Raigad	2704	80	79	80	64	75	65	57	72	82	86	88	86		No Significant Change	0.75

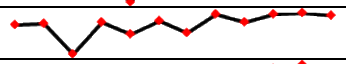
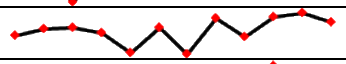
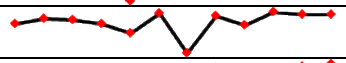
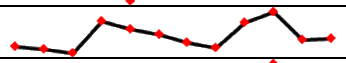
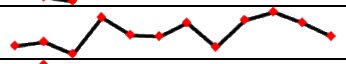
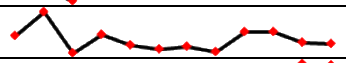
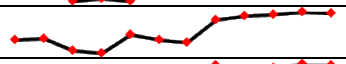
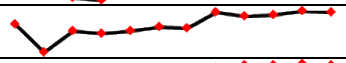
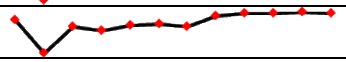
Ratnagiri and Sangli District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Raigad	192					72	83	55	80	80	80	84	83		Quality Improved	1.81
Raigad	193					71	81	56	80	82	82	83	79		Quality Improved	1.27
Raigad	216					65	62	34	62	72	59	69	64		No Significant Change	-0.25
Raigad	1151	76	81	70	75	71	80	55	82	80	81	81	82		Quality Improved	1.54
Ratnagiri	201					79	65	69	84	82	83	82	84		No Significant Change	0.75
Ratnagiri	202					79	65	71	87	88	87	88	87		Quality Improved	1.23
Ratnagiri	203					79	66	71	86	87	88	88	87		Quality Improved	1.22
Ratnagiri	204					78	65	70	88	87	87	89	86		Quality Improved	1.23
Ratnagiri	2164	61	83	82	64	77	66	72	88	88	88	89	87		No Significant Change	0.60
Ratnagiri	2676	84	31	79	63	75	64	70	82	86	88	89	86		No Significant Change	0.88
Ratnagiri	2713	80	82	82	64	76	66	72	88	87	88	89	89		No Significant Change	0.86
Ratnagiri	2714	83	85	82	64	77	65	74	89	88	88	89	85		No Significant Change	0.33
Ratnagiri	2790	79	73	65	56	69	59	49	81	83	84	83	82		Quality Improved	2.40
Sangli	37	76	78	76	62	78	66	72	87	84	85	86	83		No Significant Change	0.86
Sangli	198					78	64	69	87	84	85	85	83		No Significant Change	0.84
Sangli	199					78	64	69	87	85	85	85	82		No Significant Change	0.69
Sangli	200					77	64	69	87	84	85	85	82		No Significant Change	0.76
Sangli	1906	77	77	76	64	77	65	72	86	84	85	85	83		No Significant Change	0.84

Satara and Solapur District

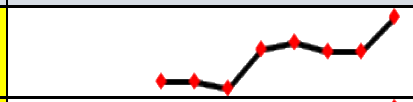
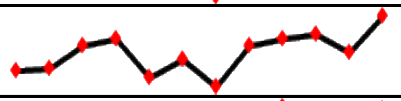
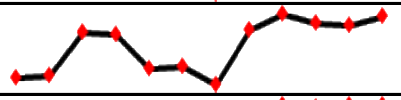
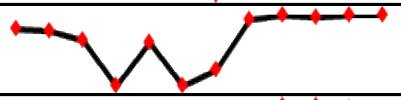
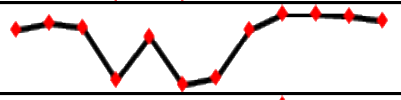
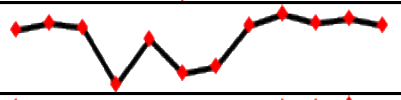
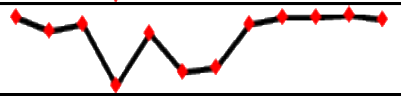
District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Satara	36	59	58	51	65	73	66	60	64	69	75	75	75		Quality Improved	3.99
Satara	1194	70	69	70	78	74	70	73	69	83	87	86	84		Quality Improved	1.85
Satara	2186	57	57	59	72	69	64	65	79	80	84	80	78		Quality Improved	2.78
Satara	2187	58	54	56	61	66	60	54	65	66	76	76	74		Quality Improved	2.83
Satara	2188	55	55	56	62	70	64	54	62	68	77	76	76		Quality Improved	3.13
Satara	2189	59	60	60	68	72	64	59	66	69	77	76	77		Quality Improved	2.59
Satara	2190	59	51	53	64	68	68	57	63	68	77	76	75		Quality Improved	3.47
Satara	2681	48	60	45	58	51	56	51	65	64	74	70	67		Quality Improved	4.07
Satara	2683	50	60	57	64	69	64	58	70	71	78	74	76		Quality Improved	2.85
Satara	2711	60	54	58	66	70	63	62	69	73	79	76	78		Quality Improved	3.09
Satara	2716	65	66	68	74	75	74	65	76	78	82	82	85		Quality Improved	2.30
Satara	2717	56	52	56	64	68	59	53	66	70	81	78	76		Quality Improved	3.03
Solapur	28	55	58	59	63	65	67	56	75	65	76	70	69		Quality Improved	1.63
Solapur	1188	62	59	59	67	65	67	57	60	68	74	71	69		Quality Improved	1.61
Solapur	1911	65	63	80	62	65	72	56	59	60	66	67	69		Quality Deteriorated	-1.47
Solapur	1912	59	56	58	52	62	62	51	50	59	65	58	66		Quality Improved	1.26
Solapur	2705	59	56	60	65	69	78	58	65	69	76	70	68		Quality Improved	1.27
Solapur	2789	30	43	80	47	46	70	55	56	68	74	63	63		Quality Deteriorated	-2.36

Thane, Wardha and Yavatmal District

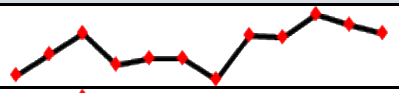
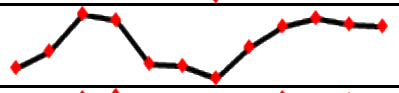
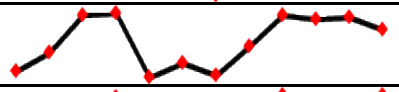
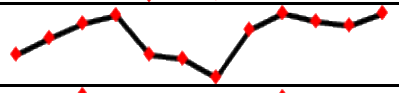
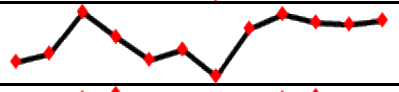
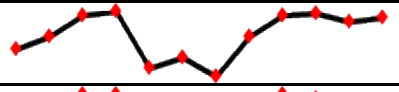
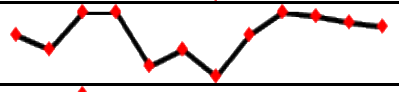
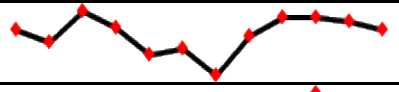
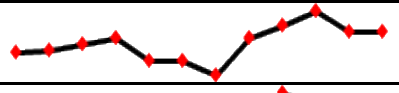
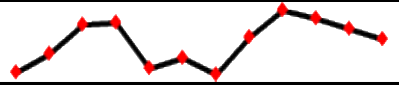
District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Thane	1092	66	70	65	67	63	54	60	75	79	80	80	79		Quality Improved	1.95
Thane	1093	75	78	76	72	68	82	74	83	77	83	83	83		No Significant Change	0.84
Thane	1094	77	79	80	78	68	82	74	84	77	83	82	83		No Significant Change	0.38
Thane	1461	58	75	79	78	69	82	73	82	80	79	82	83		No Significant Change	0.48
Thane	2162	78	79	81	79	68	84	75	83	81	83	83	82		No Significant Change	0.08
Thane	2653	76	77	61	78	72	78	72	82	78	82	83	81		Quality Improved	2.89
Thane	2654	77	78	79	77	72	79	72	81	76	82	83	80		No Significant Change	0.14
Thane	2706	74	74	76	75	70	83	72	82	73	86	82	83		No Significant Change	0.85
Thane	2707	73	77	75	75	70	83	72	82	73	83	82	83		Quality Improved	1.07
Thane	2708	75	78	77	75	68	82	54	81	74	83	81	81		No Significant Change	0.46
Thane	2709	74	78	79	76	67	79	76	81	79	80	82	83		No Significant Change	0.44
Thane	2712	75	76	81	76	69	80	75	82	79	80	81	83		No Significant Change	0.29
Thane	2782	30	28	26	42	38	35	32	29	41	47	33	33		Quality Improved	2.41
Thane	2783	32	33	29	43	36	36	41	32	42	46	42	36		Quality Improved	2.32
Thane	2784	41	60	27	42	33	30	32	28	44	43	35	34		Quality Improved	2.45
Wardha	1315	59	50	55	60	52	70	57	67	72	72	76	75		Quality Improved	3.15
Wardha	2722	81	58	59	59	57	78	66	73	72	74	77	76		Quality Improved	2.57
Wardha	2723	55	80	50	51	50	71	61	69	71	73	76	75		Quality Improved	4.23
Yavatmal	2156	58	59	52	51	61	58	57	69	71	72	74	73		Quality Improved	3.41
Yavatmal	2697	63	30	55	53	55	60	58	77	72	74	79	76		Quality Improved	3.25
Yavatmal	2698	64	21	55	50	57	59	55	70	72	73	76	73		Quality Improved	2.81

Saline water

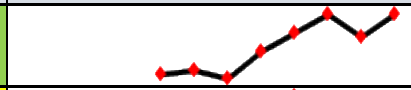
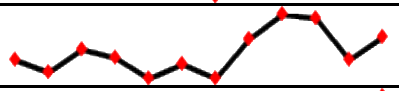
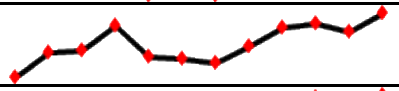
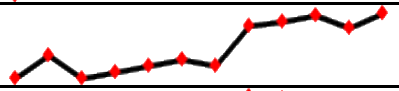
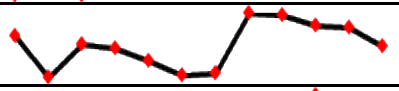
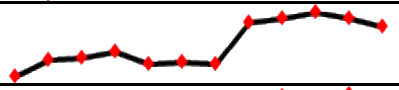
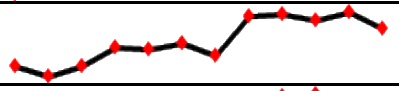
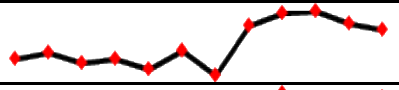
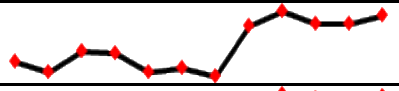
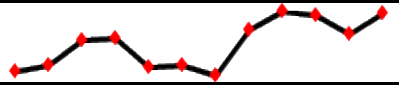
Raigad & Ratnagiri District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Raigad	191					48	48	46	54	56	54	54	61		Quality Improved	3.07
Raigad	1317	49	50	55	57	48	52	45	56	57	58	54	63		Quality Improved	2.09
Raigad	2803	55	55	70	69	58	58	52	71	76	73	72	75		Quality Improved	2.69
Ratnagiri	2804	82	82	79	63	77	64	69	85	87	86	87	87		No Significant Change	0.50
Ratnagiri	2813	75	77	76	62	74	60	62	75	80	80	79	78		No Significant Change	0.28
Ratnagiri	2814	74	76	75	54	71	59	61	75	80	77	78	76		No Significant Change	0.20
Ratnagiri	2815	78	73	76	53	72	58	60	75	78	78	79	77		No Significant Change	-0.10

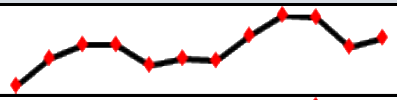
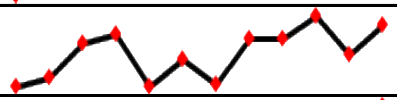
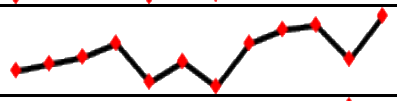
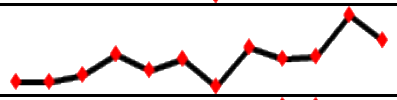
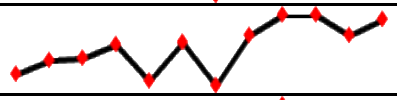
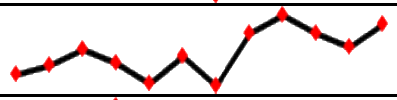
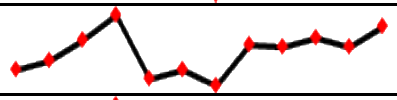
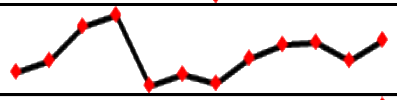
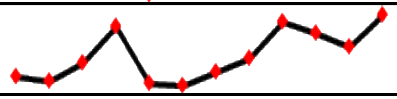
Mumbai District

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Mumbai	1318	47	51	54	49	50	50	46	54	53	57	55	54		Quality Improved	1.15
Mumbai	2165	46	49	55	54	47	47	44	49	53	54	54	53		Quality Improved	1.18
Mumbai	2166	46	49	54	55	45	47	45	50	54	54	54	52		Quality Improved	1.04
Mumbai	2167	48	51	53	55	48	47	43	52	55	53	53	55		Quality Improved	1.21
Mumbai	2169	45	46	55	50	45	47	41	52	54	53	52	53		Quality Improved	1.44
Mumbai	2808	49	51	54	55	46	47	44	51	54	55	53	54		No Significant Change	0.85
Mumbai	2809	51	48	55	55	45	48	43	51	55	54	53	52		No Significant Change	0.23
Mumbai	2810	51	49	54	51	47	48	43	50	53	53	53	51		No Significant Change	0.01
Mumbai	2811	49	50	51	52	48	48	45	52	54	57	53	53		No Significant Change	0.60
Mumbai	2812	45	48	52	53	46	47	45	50	55	53	52	50		No Significant Change	0.91

THANE DISTRICT (1 OF 2)

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Thane	190					52	53	51	57	62	66	61	66		Quality Improved	3.12
Thane	1316	55	53	57	56	52	55	52	60	65	64	55	60		No Significant Change	0.66
Thane	2184	49	55	55	61	54	53	52	57	61	62	60	65		Quality Improved	2.45
Thane	2185	52	56	52	53	54	56	54	62	63	64	62	65		Quality Improved	1.91
Thane	2791	63	52	61	60	57	53	53	69	68	65	65	60		No Significant Change	-0.37
Thane	2792	51	55	56	57	54	55	54	64	65	66	65	63		Quality Improved	1.70
Thane	2793	50	47	50	55	54	56	53	64	64	62	65	60		Quality Improved	1.49
Thane	2794	57	58	56	56	54	58	53	63	65	66	63	62		No Significant Change	0.77
Thane	2795	57	55	59	59	55	56	54	63	66	63	63	65		Quality Improved	1.11
Thane	2796	53	55	60	60	54	55	53	62	66	65	61	65		Quality Improved	1.64

THANE DISTRICT (2 OF 2)

District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	Trend	Quality	CAGR %
Thane	2797	47	54	58	58	52	54	54	61	66	65	57	60		Quality Improved	2.14
Thane	2798	49	51	56	58	49	54	49	57	57	61	54	59		Quality Improved	1.50
Thane	2799	51	52	53	55	49	52	48	55	58	58	53	60		Quality Improved	1.41
Thane	2800	55	55	56	61	57	60	54	62	60	61	70	64		Quality Improved	1.29
Thane	2801	54	56	56	58	52	59	52	60	63	63	59	62		Quality Improved	1.24
Thane	2802	53	55	57	55	52	56	52	60	63	60	57	61		Quality Improved	1.11
Thane	2805	50	52	55	60	48	50	47	55	54	56	54	58		Quality Improved	1.25
Thane	2806	50	52	59	61	47	49	48	53	55	55	52	56		No Significant Change	0.96
Thane	2807	47	46	49	56	46	45	48	50	57	54	52	58		Quality Improved	1.77

Maharashtra Pollution Control Board
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