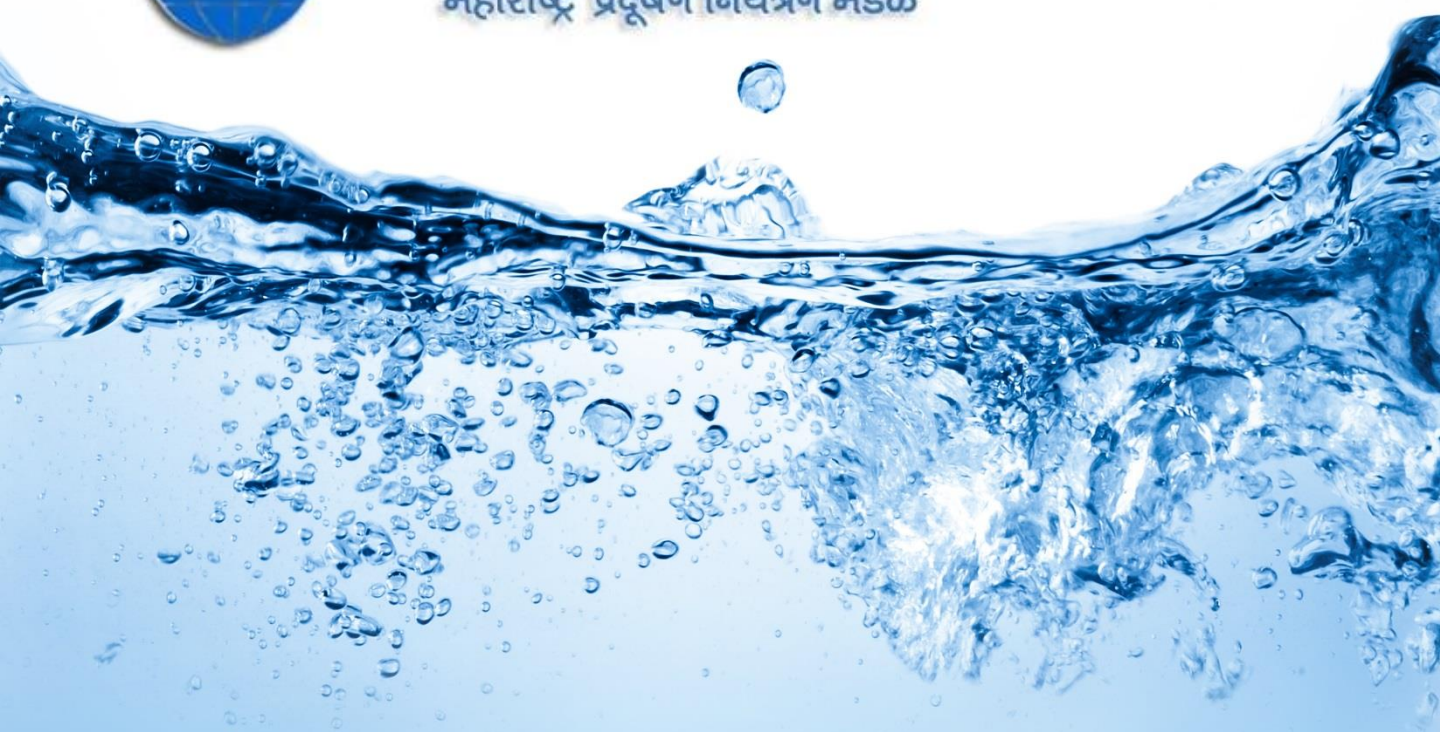
Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ



Water Quality Status of Maharashtra

2021-2022

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FINAL REPORT

WATER QUALITY STATUS OF MAHARASHTRA

2021-2022

(COMPILATION OF WATER QUALITY DATA RECORDED BY MPCB)

Prepared by

The Energy and Resources Institute

...towards global sustainable development

MAHARASHTRA POLLUTION CONTROL BOARD

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"Your Service is our Duty"

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Preface

Maharashtra Pollution Control Board (MPC Board) is monitoring water quality in Maharashtra to comply with the mandate of Water (Prevention & Control of Pollution) Act, 1974 and to disseminate status of water quality in the State of Maharashtra. MPC Board is monitoring water quality under National Water Monitoring Programme (NWMP) and State Water Monitoring Programme (SWMP) at various locations as per the Uniform Monitoring Protocol of Central Pollution Control Board / MoEF & CC, New Delhi.

This document contains compilation & statistical analysis of Water Quality Monitoring data observed at 294 monitoring stations during the period April 2021 to March 2022. Also National Sanitation Foundation, USA's formula has been used to calculate Water Quality Index (WQI) to depict the water quality in an easy to understand the general public at large. The WQI is also used to compare with the water quality of last few years.

In the year 2021-22, there was a slight decrease in the total number of Water Quality Monitoring System (WQMS) (surface water) having an annual average WQI recorded under the 'non polluted' as compared to 2020-21. It includes about 1933 WQMS (84.64) % of the total WQMS installed) as compared to 214 (93.85%) in the previous year (2020-21). Out of 193 WQMS, 150 WQMS recorded their annual average WQI under the 'Good to Excellent' whereas 43 WQMS recorded WQI under the 'Medium to Good' category. Out of the Polluted category, 19 and 11 WQMS recorded their annual average WQI under 'Bad' and 'Bad to Very bad' categories respectively. In the current year, 5 WQMS were considered under the 'Dry' category as compared to 2 in the previous year 2020-2021.

In case of Priority ranking, it has been observed that the Mithi River has been consistently included in the Priority I (having BOD value more than 30 mg/l). In the year 2021-22, no river was placed in the Priority II (as compared to the Pawna River in 2020-21). In 2021-22, the total number of rivers placed under the Priority III, IV and V were 11, 15 and 22 respectively. It is important to note that 4 rivers (as compared to 2 in 2020-21) namely, the Mor, the Panchganga, the Savitri and the Vashishthi were included in the category of 'Less Polluted' (BOD less than 3mg/l).

In terms of Groundwater, 5 WQMS (2 WQMS each in Kolhapur & Raigad District and 1 in Nashik) out of 66 WQMS recorded 'Excellent' WQI Category followed by 23 WQMS recorded 'Good Water'.

This report is prepared by The Energy and Resources Institute (TERI), Western Regional Centre and I appreciate the efforts of Smt. Pranali Sarang, Research Associate and Shri. Manish Asodekar, Research Associate, TERI in preparing this report. Dr. Y. B. Sontakke, Joint Director-WPC and Mr. Pradeep Khuspe, Field Officer are appreciated for their inputs in the report.

With this, I am glad to present this status report and I am sure that it would serve as a useful monitoring tool for all concerned departments to prepare suitable action plans for improving water quality.

Date: 01/03/2023

(Pravin Darade, IAS)
Principal Secretary
Environment & Climate Change Deptt, GoM
Member Secretary, MPC Board

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
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	Power 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

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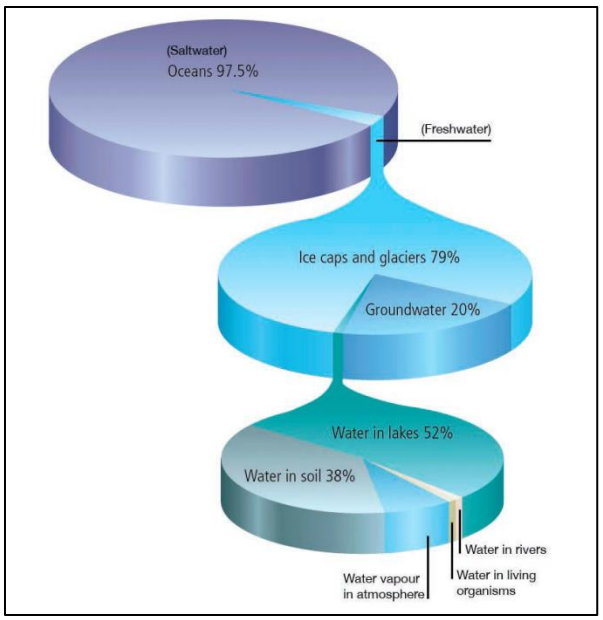
EXECUTIVE SUMMARY & HIGHLIGHTS

Water is one of the natural resources which is intertwined in the everyday life of human beings in myriad ways (drinking, washing, bathing, cleaning, cooking, irrigation, and other industrial and domestic uses). It acts as a driver of health, food security, quality of life and as a pillar for economic development. 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[1] .



Picture No. 1 : Water on Earth
Source:https://olc.worldbank.org/sites/default/files/sco/E7B1C4DE-C187-5EDB-3EF2-897802DEA3BF/Nasa/chapter1.html

The available fresh water sources are under immense pressure due to rise in demand owing to population growth, urbanization, industrialization and allied activities. further the quality of these water resources is depleting due to pollution from the sources such as industrial and domestic effeluent discharge, agricultural run off and so on.. As per the World Health Organization (WHO), approximately 2 billion people around the world do not have safely managed drinking water services[2].

It's estimated that around 70% of surface water in India is unfit for consumption[3]. Only a small portion of the nearly 40 million litres of wastewater that enter rivers and other bodies of water every day is adequately treated[4] degrading the overall quality of water. Monitoring the water quality of water resources is therefore becomes vital.Water quality is the measure of the physical, chemical and biological characteristics of water. It provides a real time scenario about the condition of water bodies and helps to determine the current, ongoing and future problems, compliance with the drinking water standards that can help protect the human health and the environment.

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

[1]https://olc.worldbank.org/sites/default/files/sco/E7B1C4DE-C187-5EDB-3EF2-897802DEA3BF/Nasa/chapter1.html
[2] https://www.worldbank.org/en/topic/water/overview
[3] https://www.adriindia.org/adri/india_water_facts
[4] https://www.weforum.org/agenda/2019/10/water-pollution-in-india-data-tech-solution/

programs of NWMP (National Water Quality Monitoring Program) and SWMP (State Water Quality Monitoring Program). Surface water samples are monitored once every month whereas the ground water samples are monitored bi-annually.

In this report, statistically analyzed data for the year 2021-2022 is presented along with illustrations and spatial representation of Maharashtra's surface and ground water quality. The report also showcases the Water Quality index (WQI) across 294 WQMS for both surface and ground water.

WQI provides a single number (like a grade) that expresses 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 useable by the public. The WQI has been determined based on the formula developed by NSF (National Sanitation Foundation) and further modified by CPCB.

Surface Water Quality

There are total 43 parameters decided by MPCB for testing and analysis of surface water 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, DO (Dissolved Oxygen), BOD (Biochemical Oxygen Demand) and FC (Fecal Coliform) gets considered for calculating WQI (Water Quality Index). For its easy interpretation, color codes are assigned which depicts the water quality of that particular SW sample/water body.

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

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	

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

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	15						15
Krishna	Bhima Upper	Bhima, Nira, Chandrabhaga, Mutha, Ghod, Indrayani, Pawana, Sina, Vel, Mula-Mutha	25	11					36
	Krishna Upper	Krishna, Panchganga, Koyna, Urmodi, Venna	21						21
Godavari 1	Godavari Upper	Godavari, Darna, Kadwa, Kham, Shivna	15					5	20
	Godavari Middle	Godavari, Bindusara, Sukhna, Purna						11	11
	Manjra	Godavari, Manjra	1					1	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		11	25					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	1	3	3		12
Total			**161**	**40**	**2**	**5**	**3**	**17**	**228**

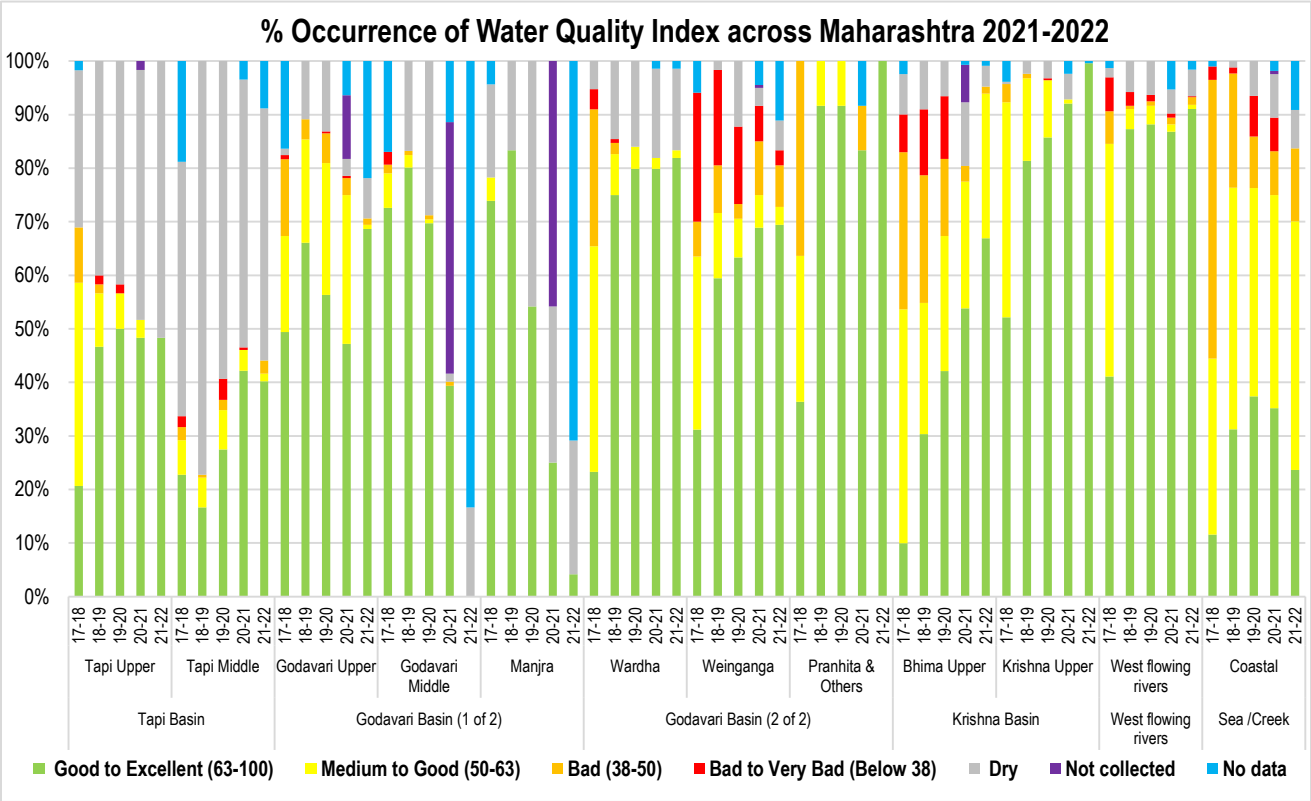


Figure No. 1: Percentage Occurrence of different category of WQI across WQMS in respective sub basins of Maharashtra

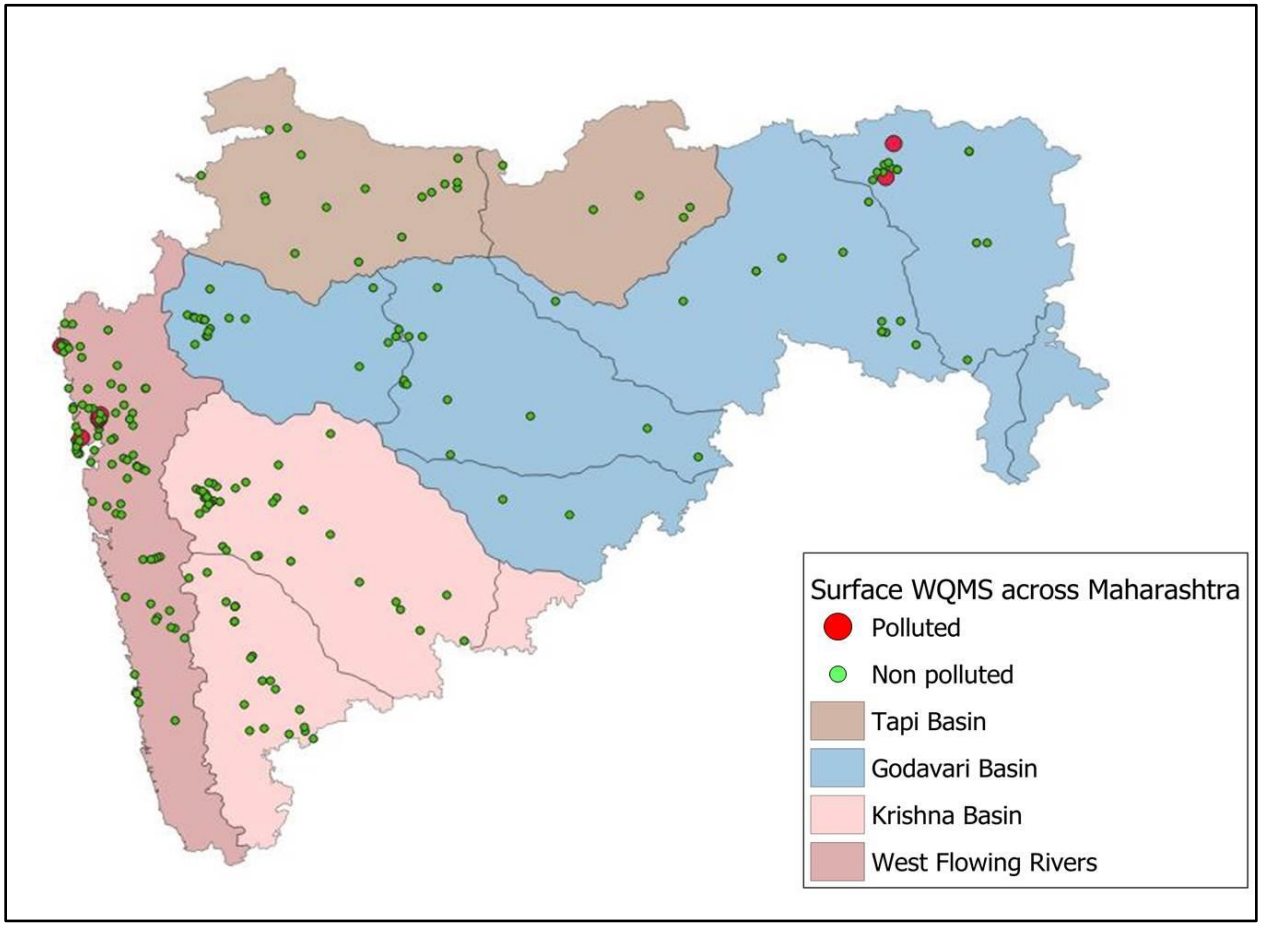
Note: The above comparison is based on WQI recorded at a monitoring station and the average number of timesthe WQI was of a certain category at all the WQMS in that basin.

As Illustrated in Figure No. 1, in the current year , about 48.33% observations recorded at Tapi Upper sub-basin was categorized under the 'Good to Excellent' WQI category whereas 51.67% of the total observations were found to be recorded under the 'Dry' category. In case of Tapi Middle, a slight reduction in WQI was recorded as there is a decrease in % share of 'Good to Excellent' WQI observations (from 42.16% to 40.2%) recorded in 2021-22 as compared to previous year. A similar decreasing trend was recorded for the observations coming under the 'Medium to Good' category (from 3.92% to 1.47%). Out of remaining observations, a share of observations recorded under the 'Bad', 'Dry' and 'No Data' categories were found to be around 2.45%, 47.06% and 8.82% respectively.

In case of the Godavari Upper sub basin, an improvement in water quality was observed as about 68.65% of the total observations recorded under the 'Good to Excellent' WQI category as compared to about 47.22% recorded in the year 2020-21. In case of Godavari Middle, the highest share of observations (83.33%) were recorded under the 'No Data' category followed by 16.67% in the 'Dry' category. Similar trend was observed in the Manjra sub basin (70.83% under the 'No Data' followed by 25% in 'Dry' and 4.16% in the 'good to Excellent' category.

It is important to note that all 3 sub-basins (under the Godavari basin 2 of 2) namely Wardha (from 79.86% to 81.94%), Wainganga (from 68.89% to 69.44%) and Pranhita & others (from 83.33% to 100%) recorded increase in obaservations recorded under the 'Good to Excellent' WQI category which shows improvement in the overall water quality as compared to last year.

Similar trend was observed in sub basins of the Krishna basin i.e the Bhima Upper (from 53.83% to 66.89%) and the Krishna Upper (from 92.06% to 99.6%) and for West flowing rivers (from 86.79% to 91.07%) in 2021-22. A reverese trend however, was observed in case of observations from the Coastal basin as the % of 'Good to Excellent' WQI category witnessed a decrease from about 35.19% (2020-21) to about 23.67% in 2021-22.



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

Map No. 1 provides the spatial representation of the polluted locations which recorded WQI under 'Polluted' category for more than 50% of the observations and the corresponding details of WQMS are mentioned in Table No. 3. The districts of Nagpur, Mumbai, Thane and Palghar have polluted rivers as per the analyzed data.

Table No. 3: WQMS which recorded WQI as polluted for more than 50% observations in 2021-22

Sr. No	Station code	Station Name	Village	Taluka	District
1	186	Nag River Near, Bhandewadi Bridge, Nagpur	Nagpur	Nagpur	Nagpur
2	187	Nag River Near, Asoli Bridge, Bhandara Road, Nagpur	Nagpur	Nagpur	Nagpur
3	2168	Mithi River at near bridge	Mahim	Bandra	Mumbai
4	2782	Rabodi Nalla	Rabodi	Thane	Thane
5	2783	Colour Chem Nalla	Majiwada	Thane	Thane
6	2784	Sandoz Nalla	Sandozbaug	Thane	Thane
7	2785	BPT Navapur	Navapur	Palghar	Palghar

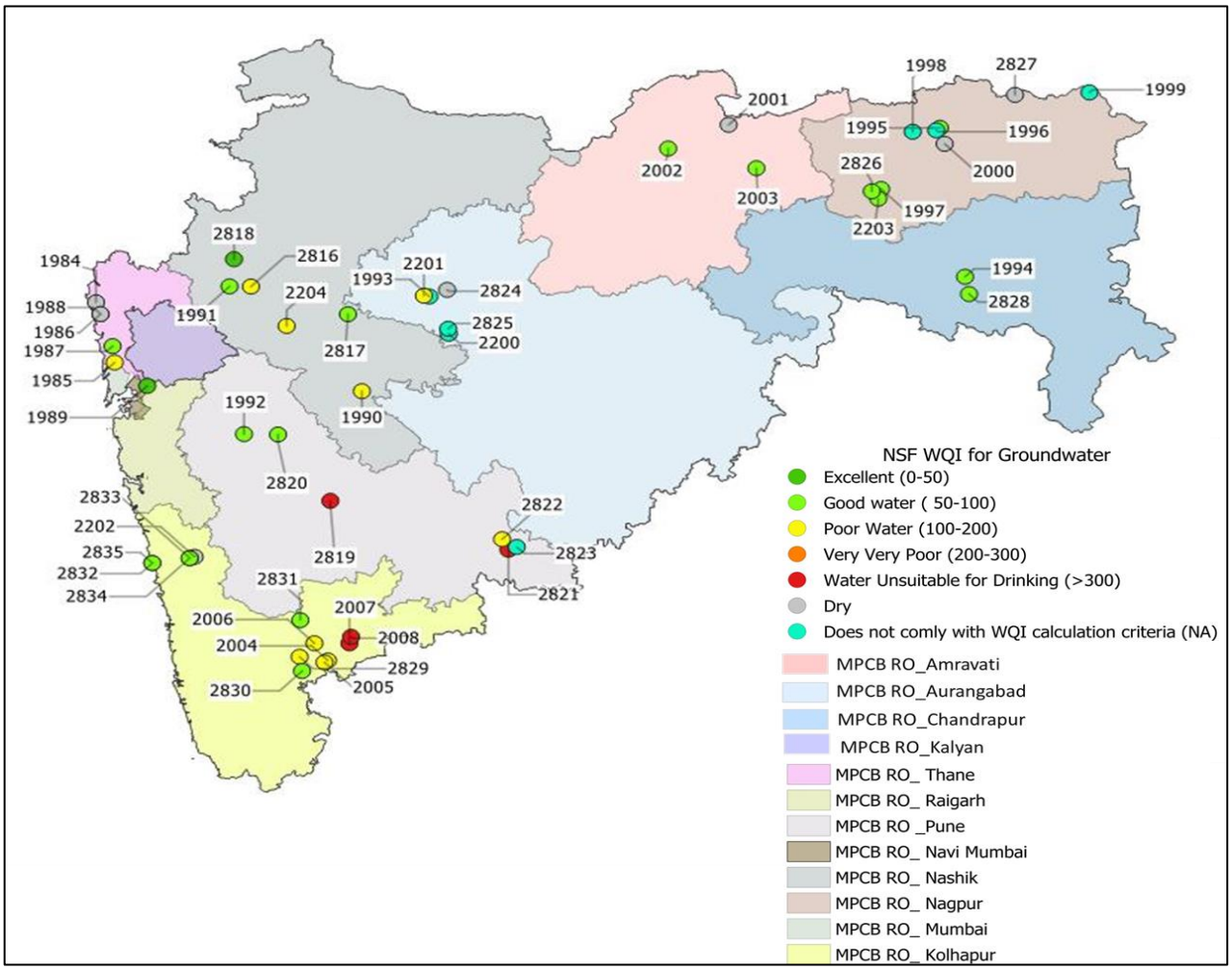
Ground Water Quality

MPCB collects water samples every after 6 months to monitor the levels of water pollutants in the waterbodies. The samples are collected from a total of 66 WQMS installed across the state of Maharashtra. A total of 9 parameters namely namely pH, Total Hardness, Total Dissolved Solids, Calcium, Magnesium, Chloride, Fluoride, Sulphate and Nitrate are taken into consideration for calculating the WQI. 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**		**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

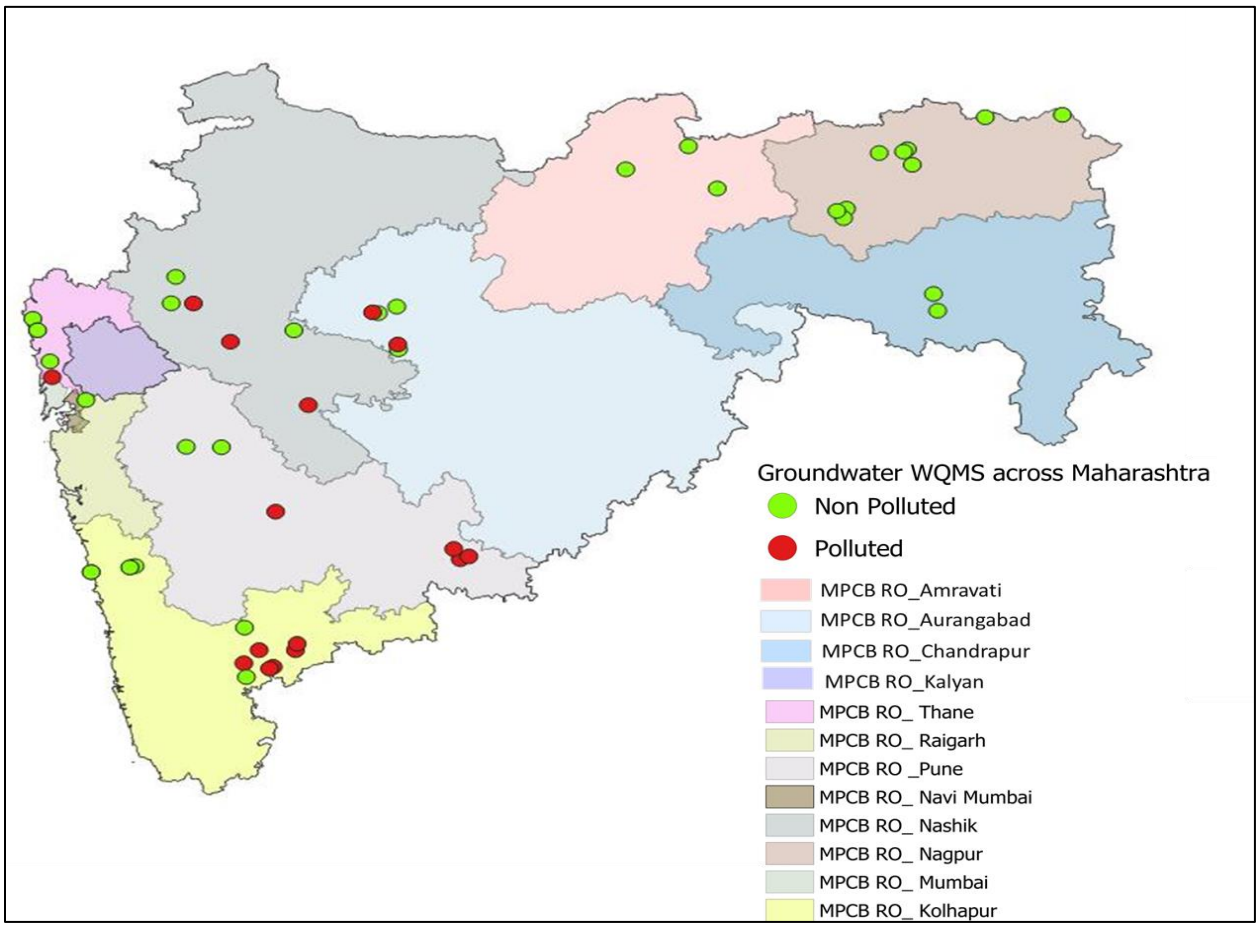


Map No. 2: Spatial representation for average groundwater WQI

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

Station Code	Regional Office	Water body	Station Name	Village	Taluka	District
215	Navi Mumbai	Well	Well water at Turbhe Store, Turbhe	Turbhe	Thane	Thane
220	Kolhapur	Dug well	Dugwell backside Excel India At Chalkewadi, Taluka - Khed, District - Ratnagiri.	Chalkewadi	Khed	Ratnagiri
2007	Kolhapur	Borewell	Bore well at Savali, near Gram Panchayat office.	Savali	Miraj	Sangli
2008	Kolhapur	Dug well	Dug well at Sambarwadi, owned by Shri. Kishan Hali Rajput.	Sambarwadi	Miraj	Sangli

Station Code	Regional Office	Water body	Station Name	Village	Taluka	District
2819	Pune	Dug well	Dug Well Owned by Shri Deshmukh	Malegaon	Baramati	Pune
2821	Pune	Bore Well	Bore Well at Bale Railway Station premises Owned by Shri Digambar Joshi	Dahegaon	North Solapur	Solapur



Map No. 3: Spatial representation of Groundwater WQMS which recorded WQI as polluted for more than 50% of the observations

Table No. 6: WQMS which recorded WQI as polluted for more than 50% observations in 2021-22 (Ground Water)

MPCB RO	Station Code	Station Name	Village	Taluka	District
Aurangabad	2201	Dug Well at Ranjangaon	Ranjangaon	Gangapur	Aurangabad
Aurangabad	2825	Bore Well at Wahegaon; near Zilla Parishet School	Wahegaon	Paithan	Aurangabad
Kolhapur	2004	Bore well at Parvati Industrial Estate; Yadrav; Kolhapur	Yadrav	Shirol	Kolhapur
Kolhapur	2005	Bore well at Khanjirenagar;	Khanjirenagar	Hatkanangale	Kolhapur

MPCB RO	Station Code	Station Name	Village	Taluka	District
		Kolhapur			
Kolhapur	2006	Bore well at Shinoli near M/s Aqua Alloy Steel.	Shinoli	Chandgad	Kolhapur
Kolhapur	2007	Bore well at Savali; near Gram Panchayat office.	Savali	Miraj	Sangli
Kolhapur	2008	Dug well at Sambarwadi; owned by Shri. Kishan Hali Rajput.	Sambarwadi	Miraj	Sangli
Kolhapur	2829	Bore Well at MIDC Shiroli near M/s. Pratibha Enterprises	Shiroli	Hatkanangale	Kolhapur
Nashik	1990	Bore well at BMW Site ; Burudgaon	Burudgaon	Ahmednagar	Ahmadnagar
Nashik	2204	Dug well at Gunjalwadi; Sangamner near Primary Health Care Center.	Gunjalwadi	Sangamner	Ahmadnagar
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	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

Water is at the center of sustainable development and is critical for socio-economic development, industrial growth, food production, energy generation, healthy ecosystems etc. For the survival of every species on this planet, water is essential. Water is also a major linking factor between society and the environment, as far as the issue of climate change is concerned.
Climate Change is one of the pressing issues the world is facing today; which is getting more and more attention on the national as well as international platforms such as Climate Summits, and efforts are being taken by the stakeholders from all sectors around the globe to implement mitigative measures on ground to tackle climate change including issues associated with the water resources such as water pollution and water scarcity. The United Nations (UN) 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).

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 and adaptation measures. This unique initiative focuses on all five elements of nature[5] i.e. 'Panchmahabhuta'.

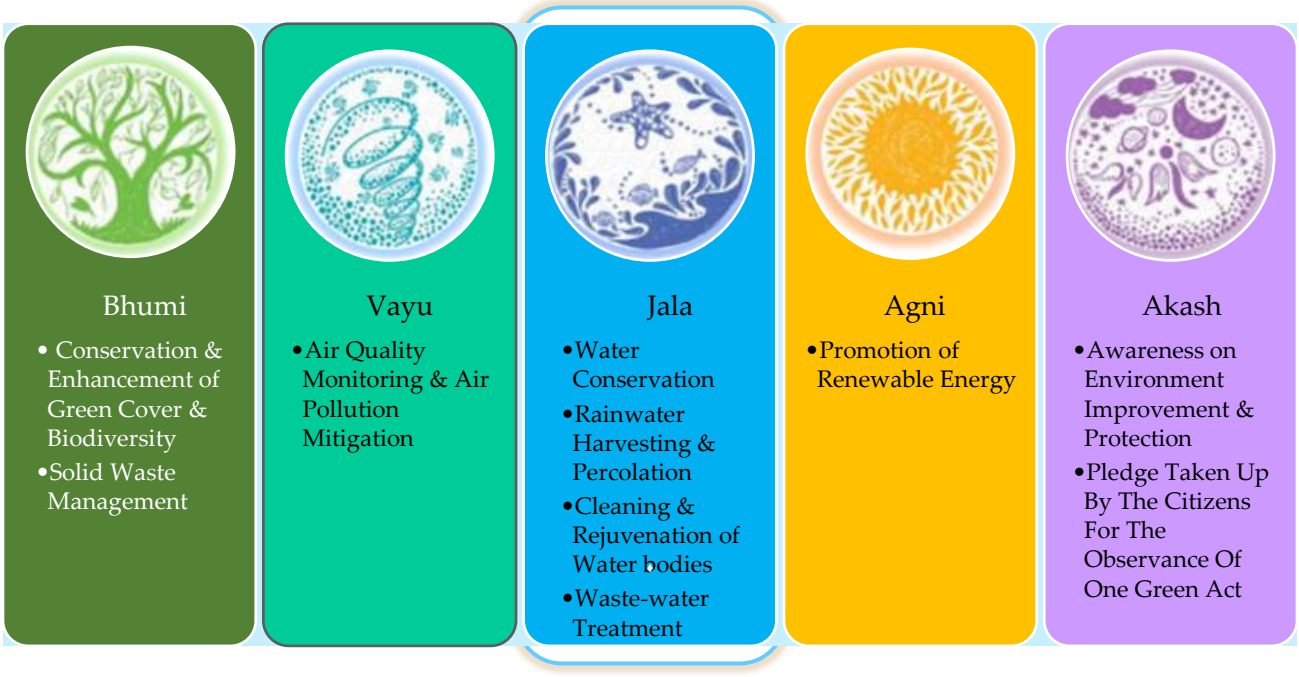


Figure No. 2: The Five Elements of Nature and respective theme areas as mentioned in the 'Mazhi Vasundhara Abhiyan'.

Source: **https://www.majhivasundhara.in/en/majhi-vasundhara**

[5] https://majhivasundhara.in/mar/majhi-vasundhara-abhiyan

Why Conservation And Monitoring Of Water Resources Is Important?

Water especially freshwater is one of the most important natural resources available to mankind on this planet. Although water is abundant on earth (covers about 71% of the earth's surface), it is important to know that only 3% of earth's available water resources come under the Freshwater category. Out of this 3%, a major chunk of freshwater 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. These resources are also threatened due to increased anthropogenic activities and unplanned exploitation and are facing issues such as water pollution and associated health impacts due to the consumption of polluted water. Apart from this, many areas of the world are facing acute water scarcity with highly depleted water levels in the available sources including groundwater sources. Climate change has further aggravated the water scarcity scenario owing to the change in the precipitation patterns and increased water demand. Some of the important challenges faced by the world in regard to water resources are water pollution, health impacts due to consumption of polluted water and water insecurity. Thus, periodic monitoring of water resources becomes a necessity which would help to take timely mitigative measures to address such issues.

Water Pollution

According to World Health Organization (WHO), water pollution is defined as any change in the physical, chemical and biological properties of water that has negative impacts on living beings.

Water being a 'Universal Solvent' is highly vulnerable to pollution as harmful substances produced from industrial activities, urban areas and agricultural practices get readily dissolved in water; thus making it unfit for human consumption as well as the environment.

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

Consumption of contaminated water may lead to serious health effects such as gastrointestinal illnesses, nervous system or reproductive system-related illnesses and chronic diseases. The extent of these health effects depends on the type of contaminant present in the water sources, its overall concentration, amount of water consumed,

exposure duration and immune system which differs from individual to individual.

In case of exposure to chemical contaminants such as heavy metals, pesticidal/fertilizer remains through drinking water may lead to a variety of short and long-term health effects. If our body is exposed to a high amount of chemical contaminants, it may lead to some serious health consequences such as skin discoloration, organ damage or an effect on the nervous system. On the other hand, exposure to lower concentration levels of these contaminants over a long period of time may lead to the rise of chronic disorders which persists for a longer duration of time.

Consumption of water laden with pathogens may lead to waterborne diseases. Some of these diseases may turn life-threatening such as cholera, typhoid and hepatitis. Some of the common diseases include dysentery, diarrhea and gastroenteritis. Such diseases may prove fatal to elderly and malnourished individuals and individuals having a weak immune system.

Environmental Impacts Associated With the Water Pollution

A high level of water pollutants in waterbodies introduces an increased amount of nutrients which stimulates algal growth (algal bloom). This condition tends to decrease the level of oxygen in such water bodies. The phenomenon is called 'Eutrophication'. This phenomenon creates dead zones (water devoid of life). In some cases, such harmful algal blooms can also produce some neurotoxins which may affect aquatic wildlife[6].

Industrial effluents (untreated) add a high amount of chemicals and heavy metals to the water bodies. These contaminants are very toxic to aquatic life and its associated ecosystems. Such contaminants have the ability to bioaccumulate in the organism and thereby enter the associated food chain as well.

Some facts about drinking water, water pollution and water scarcity

- More than 80% of the world's wastewater gets released into the environment without being treated or reused[7]
- About 2 billion people use drinking water sources contaminated with fecal matter. Such microbial contamination of drinking water poses a greater risk of drinking water safety and increases the risk of transmission of water-borne diseases such as cholera, dysentery, diarrhea, typhoid and other gastrointestinal diseases[8]
- About 450 million children live in areas of high or extremely high water vulnerability[9]
- Water scarcity could displace about 700 million people by 2030[10]

[6] https://www.nrdc.org/stories/water-pollution-everything-you-need-know

[7] https://www.nrdc.org/stories/water-pollution-everything-you-need-know

Left Image Source: https://www.dreamstime.com/illustration/toxicity.html

Right Image Source: https://www.dreamstime.com/stock-illustration-microscopic-bacteria-cutlery-concept-plate-knife-fork-place-setting-magnifying-_glass-showing-image62676947

[8] https://www.who.int/news-room/fact-sheets/detail/drinking-water

[9] https://www.unicef.org/media/95241/file/water-security-for-all.pdf

[10] https://www.un.org/sustainabledevelopment/wp-content/uploads/2019/07/E_Infographic_06.pdf

Water Pollution Act

The rise in water pollution due to industrial and domestic settlements became a cause of concern which led to the enaction of the legislation of the Water (Prevention and Control of Pollution) Act in 1974. This was the first of a series of legislation passed by the Government of India (GoI) pertaining to the regulation of the environmental aspects in the country. The main feature of this act is the control of pollution through a permit or consent administration procedure. The act empowers the CPCB and SPCB to check and control water pollution and implement mitigative measures to improve water quality. As per this act, the effluent discharge into the waterbodies was only allowed by obtaining the consent of the respective SPCB [11]. Further to this, The Water (Prevention and Control of Pollution) Cess act was enacted in 1977 in order to levy and collection of cess on water consumed by industries and local authorities. This act was enacted to augment the resources of the respective SPCBs.

National Water Quality Monitoring Program

In order to keep the check on the water quality across nation, 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 current NWMP water quality monitoring network consists of 4484 surface and groundwater monitoring stations spread across 28 States and 8 Union Territories. In accordance with the Ministry of Environment, Forest, and Climate Change's (MoEF & CC).2017 Guidelines on Water Quality Monitoring, water samples are examined for 9 core parameters, 19 general parameters, 9 trace metals, and a set of pesticides. Monitoring is carried out with a frequency on monthly, quarterly, half-yearly and yearly basis Analyzed water quality parameters are further compared with the designated best use water quality criteria recommended by CPCB [12].

[11] https://eco-intelligent.com/2019/08/31/water-act-1974-an-overview/

[12] https://cpcb.nic.in/wqm/nwmp_monitoring_network.pdf

WATER QUALITY MONITORING IN MAHARASHTRA

Maharashtra is the third largest state in the country both in terms of size and population. It is bordered by the Arabian sea in the west, Gujarat in the North-West, Andhra Pradesh in the South-East and Karnataka and Goa in the South. The Sahyadris Western Ghats run parallel to the Sea Coast[13].The geographical area of Maharashtra state is 308 lakh ha and its cultivable area is 225 lakh ha. Out of this, 40% of the area is drought prone. About 7% of the area is flood prone. In Maharashtra, of the 5 river basin systems, 55% of the dependable yield is available in the four river basins (Krishna, Godavari, Tapi and Narmada) east of the Western Ghats. These four river basins comprise 92% of the cultivable land and more than 60% of the population in rural areas. About 45% of state's water resources are from West Flowing Rivers which are mainly monsoon specific rivers emanating from the Ghats and draining into the Arabian Sea[14].

In order to keep check on water quality at state level, MPCB regularly monitors the water quality across 294 WQMS for both surface and ground water under two programs of NWMP project titled Global Environment Monitoring System (GEMS) and Monitoring of Indian National Aquatic Resources (MINARS). The samples of surface water are monitored at monthly intervals whereas groundwater samples are monitored every six months at intervals.

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**

[13] https://www.annauniv.edu/iom/iomour/EIA's%20Maharashtra.php
[14] https://mwrra.org/overview-of-the-state/

METHODOLOGY

The comprehensive data sets recorded by WQMS across the state were organised basin wise for evaluation for both surface and ground water quality. The water monitoring stations were further arranged from upstream to downstream in order to study basin wise trend of water quality. The classification of the various rivers, their basins and subbasins considered in this report is presented in Table No.8. The Water quality index is determined by calculating the basic parameters like pH, BOD (mg/l), DO (mg/l to %) and FC (MPN/100ml). The WQI has been calculated separately for surface water and ground water water samples using the formula provided by National Sanitation Foundation (NSF) and the relative weights modified by CPCB. To present the data in a spatial format GIS (Geographical Information System) maps were generated.

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 CGWB (Central Ground Water Board), 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- 2022.
- 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

Given the parameters monitored in India under the NWMP and to maintain uniformity while comparing the WQI across the nation, the NSF WQI has been modified and relative weights been assigned by CPCB. The modified weights as per CPCB are given in Table No. 9 and the equations used to determine the sub-index values are given

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
Total	0.54	1

. 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
Total	0.54	1

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 2021-2022- Biological Oxygen Demand (BOD), Dissolved Oxygen (DO), pH, Fecal Coliform (FC)

Station Name : Pedhi River near Road Bridge at Dadhi-Pedhi village

Station Code : 2695

Sub basin	:	Tapi Upper	Basin	:	Tapi
BOD	:	3.8 mg/l	DO	:	6 mg/l
FC	:	24 MPN/100 ml	pH	:	7.8

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 = 3.8 mg/l

Since 3.8 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 3.8
= 70 X Modified Weights by CPCB for BOD (Table No.9)
= 70 X 0.19
= 13

Sub index for Dissolved Oxygen (DO)
DO value = 6 mg/l
DO (saturation %) = 6 /6.5 X 100 [6.5 has been taken as constant as per DO vs temp]
= 92

Since 92 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 92
= 94 X Modified Weights by CPCB for DO (Table No.9)
= 94* 0.31
= 29

Sub index for Fecal Coliform (FC)
Fecal Coliform value = 24 MPN/100ml
Since 24 lies in range (0-10^3), 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 24
= 60 X Modified Weights by CPCB for FC (Table No.9)
= 60 X 0.28
= 17

Sub Index for pH
pH value = 7.8
Since 7.8 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 7.8
= 84 X Modified Weights by CPCB for pH (Table No.9)
= 84 X 0.22
= 19

WQI of Pedhi River near Road Bridge at Dadhi-Pedhi village

WQI = $\sum$ (sub –index of all parameters)

= $\sum$ (13+29+17+19)

= 78

Quality Classification: Good to Excellent

WQI for ground water

MPCB monitors ground water quality for parameters like pH, total hardness, Calcium, Magnesium, Chloride, total dissolved solids, Fluoride, Manganese, Nitrate, Sulphates and so on once in six months. Based on the stringency of the parameters and its relative importance in the overall quality of water for drinking purposes each parameter has been assigned specific weightage[15]. 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 2018-19.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[16]		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
			41	1	30	1

Source: BIS 10500 and CPCB 2001

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

[16] 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 notbe 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.12.

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 : Dug well at TPS-Durgapur, near Naseeb Kirana and general stores, Village-Durgapur, Taluka-Chandrapur,District-Chandrapur

Station code	: 1994	Sub basin	: Wardhe	Basin	: Godavari
Calcium	:144 mg/l	Chlorides	: 44mg/l	Fluoride: 0.4	
Magnesium	: 106 mg/l	Nitrate	: 1.2 mg/l	Sulphate: 29mg/l	
pH	: 8.6	TDS	: 603mg/l	TH	: 250 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 = 8.6

Sub index (pH) = Concentration /Standard X 100

= 8.6/7.5 X 100

= 114.6 X relative weight (Table no. 12)

= 114.6 X 0.13333

= 15.28

Sub index for Total hardness

Total hardness = 250

Sub index (TH) = Concentration /Standard X 100

= 250/ 300*100

= 83.3 X relative weight (Table no. 12)

= 83.3 X 0.06667

= 5.55

Sub index Calcium

Calcium = 144

Sub index (Calcium) = Concentration /Standard *100

= 144/ 75 X 100

= 192 X relative weight (Table no. 12)

= 192 X 0.0666

= 12.8

Sub index for Chloride

Chloride = 44

Sub index (Chloride) = Concentration /Standard X 100

= 44/ 250 X 100

= 17.6 X relative weight (Table no. 12)

= 17.6 X 0.1

= 1.76

Sub index for Fluoride

Fluoride = 0.4

Sub index (Fluoride) = Concentration /Standard X 100

= 0.4/ 1 X 100

= 40X relative weight (Table no. 12)

= 40X 0.1333

= 5.3

Sub index for Magnesium

Magnesium = 106

Sub index (Mg) = Concentration/ Standard X 100

= 106/ 30*100

= 353.3 X relative weight (Table no. 12)

= 353.3 X 0.06667

= 23.5

Sub index for Nitrate

Nitrate = 1.2

Sub index (Nitrate) = Concentration/ Standard X 100

= 1.2/45 *100

= 2.6 X relative weight (Table no. 12)
= 2.6 X 0.16667
= 0.44

Sub index for Sulphate
Sulphate = 29
Sub index (Sulphate) = Concentration/ Standard X 100
= 29/ 200 X 100
= 14.5 X relative weight (Table no. 12)
= 14.5 X 0.13333
= 1.93

Total Dissolved Solids
Total Dissolved Solids= 603
Sub index (TDS) = Concentration/ Standard X 100
= 603/ 500 X 100
= 120.6 X relative weight (Table no. 12)
= 120.6 X 0.13333
= 16.07

WQI of Bore well at Parvati Industrial Estate, Yadrav, Kolhapur
WQI = ∑ (sub –index of all parameters)
= ∑ (15.28 + 5.55 + 12.8+ 1.76 + 5.3+ 23.5 + 0.44+ 1.93+ 16.07)
= 82
Quality Classification: Good Water

CAGR: Compound Annual Growth Rate

Compound Annual Growth Rate= ((End value/Start value) ^ (1/Number of intervals))- 1
Number of intervals = (Number of observations)-1 *100
Sample Calculation for determining CAGR
Example Station code: 2165
WQI
(End value) : 46; WQI of 2011-12 ;(Start value) : 54; WQI of 2021-22 ; Number of intervals: 11
CAGR % = ((End value/Start Value) ^1/Number of intervals)) - 1 X 100
= ((46/54) ^ (1/11)-1 *100
= 1.38%
=Quality_Improved

SURFACE WATER QUALITY

Surface water is any body of water above ground, including streams, rivers, lakes, wetlands, reservoirs, and creeks. The ocean, despite being saltwater, is also considered surface water[17]. India accounts for about 2.45 per cent of world's surface area, 4 per cent of the world's water resources and about 16 per cent of world's population[18]. The state of Maharashtra has estimated average annual availability of water resources as 198 Billion cubic metres (BCM) which consists of 164 BCM of surface water[19].

To ensure contionous vigilance of water quality across the state, MPCB has installed WQMS across the state. Table No.14 summarizes the total WQMS for year 2021-22.The monthly water quality assessment is conducted at all WQMS. The spatial presence of the stations is presented basin wise in the respective sections.

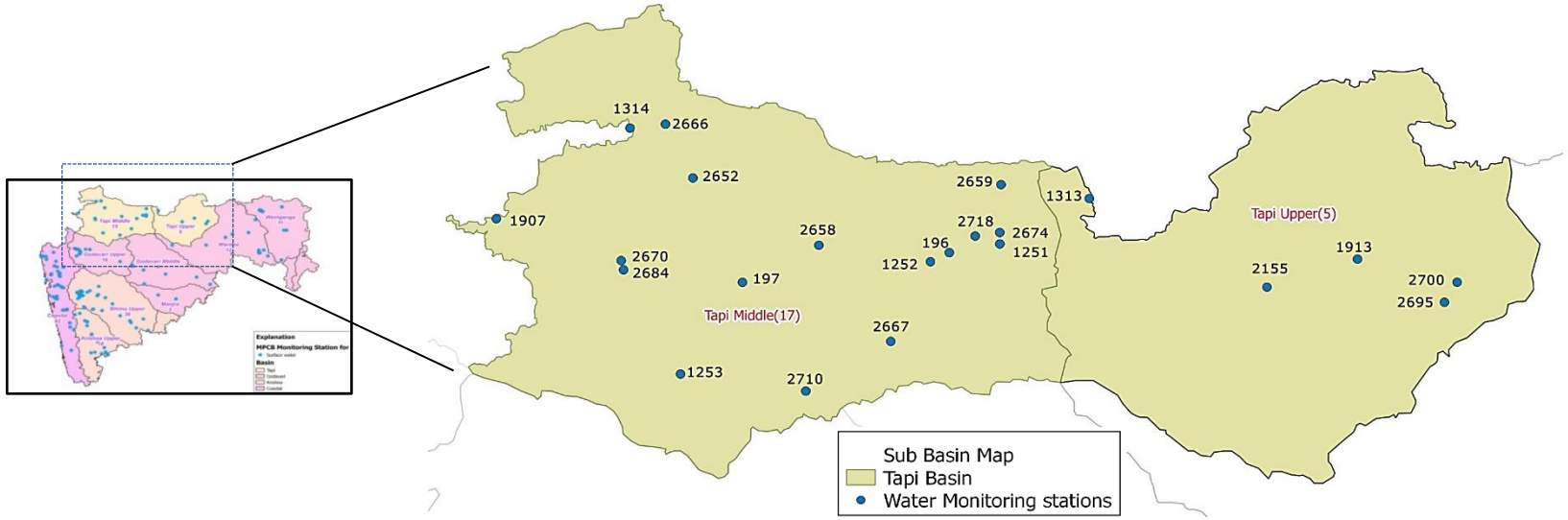
Table No. 14: List of monitoring stations across different type of water bodies under MPCB

Water Quality monitoring stations	
Water Bodies	**2021-22**
Rivers	176
Sea and Creek	36
Nalla	12
Dams	4
Total	**228**

In the following section parameters pH, DO, BOD and FC are illustrated in lucid format for 228 surface water quality monitoring stations of MPCB as well as basin wise water quality index for the basins of Krishna, Godvari, Tapi and West flowing rivers.

[17] https://education.nationalgeographic.org/resource/surface-water
[18] https://ncert.nic.in/ncerts/l/legy206.pdf
[19] https://wrd.maharashtra.gov.in/Site/Upload/PDF/State%20Water%20Policy%2005092019-pages-32-55.pdf

Tapi Basin



The Tapi Basin is situated in the northern part of the Deccan Plateau and extends over an area of 65.145 km which is nearly 2% of the total geographical area of the country. Nearly 80% of the basin lies in state of Maharashtra. The basin lies between east longitudes of 720 38′ to 780 17′ and north latitudes of 200 05′ to 220 03. The Tapi River along with its tributaries flows over the plains of vidharbha, Khandesh and Gujarat and over large areas in the state of Maharashtra and small area in Madhya Pradesh and Gujarat[20].

[20] http://cwc.gov.in/sites/default/files/ntbouser/tapiwyb2011-12.pdf

Tapi Basin (Intra Basin analysis)

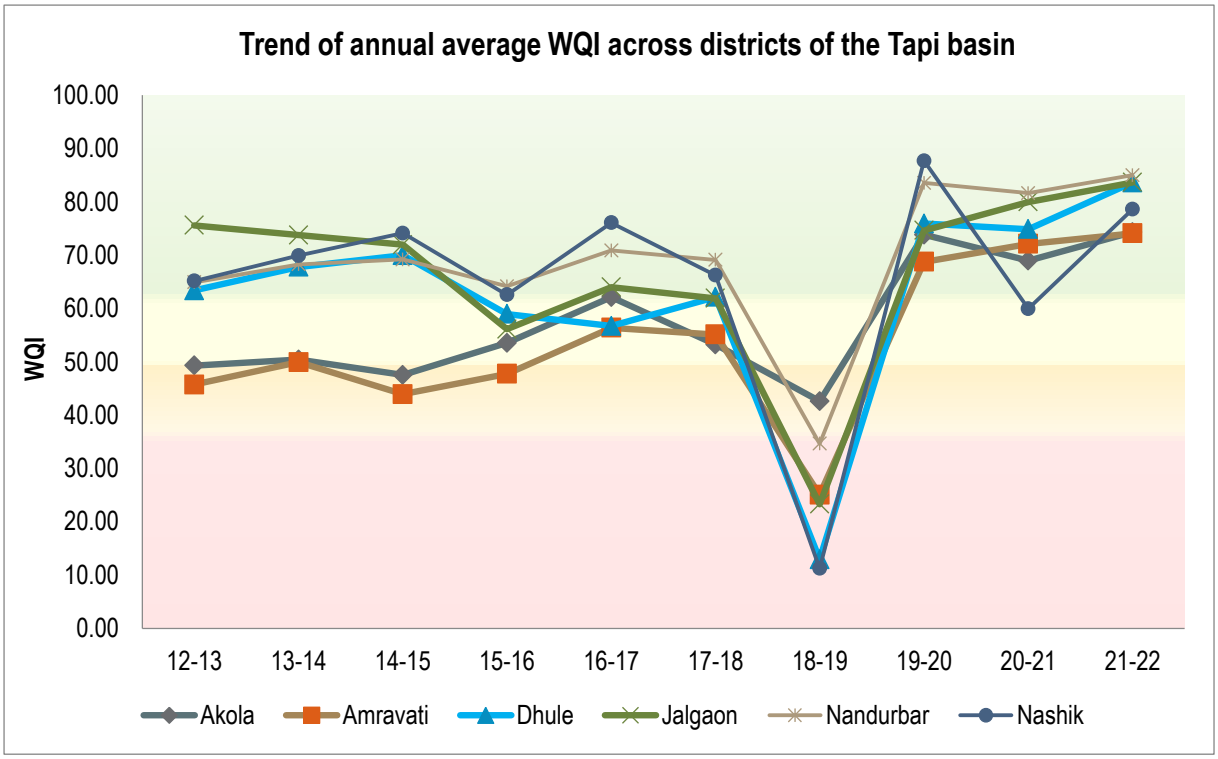


Figure No. 3: Trend of annual average WQI across districts of the Tapi basin

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.3 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 all these 6 districts showed an upward trend which shows an improvement in water quality as compared to the previous year. Apart from this, the annual average WQI of all these districts was recorded in the 'Good to Excellent' (Non-polluted) category .

Out of 6 districts, WQMS installed in Nashik district recorded the highest increase of about 31.06% in the annual average WQI value (from 59.97 to 78.60) as compared to the previous year (2020-21). This was followed by Dhule (11.67%, from 74.87 to 83.61), Akola (7.75%, from 68.95 to 74.3). About 4% each increase in annual average WQI was recorded by WQMS installed in Jalgaon (4.56%) and Nandurbar district (4.1%). About 2.78% increase in annual average WQI was recorded by WQMS installed in Amaravati (from 72.11 to 74.11).

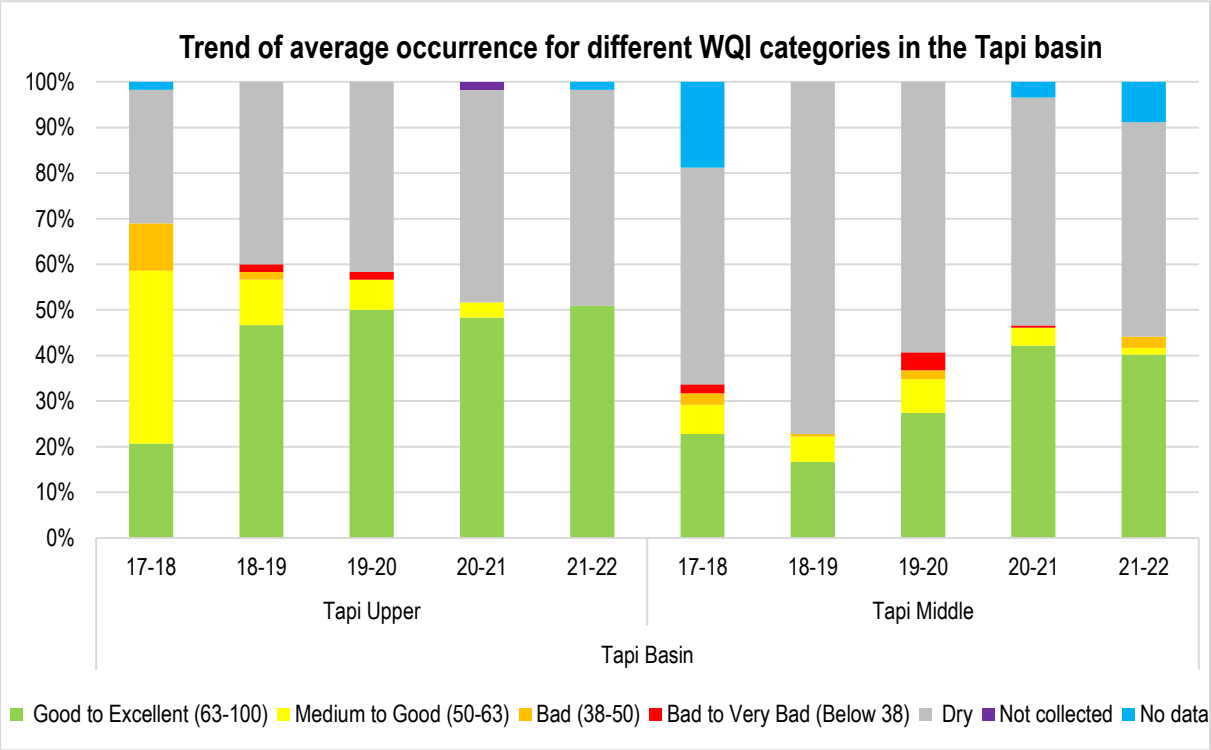
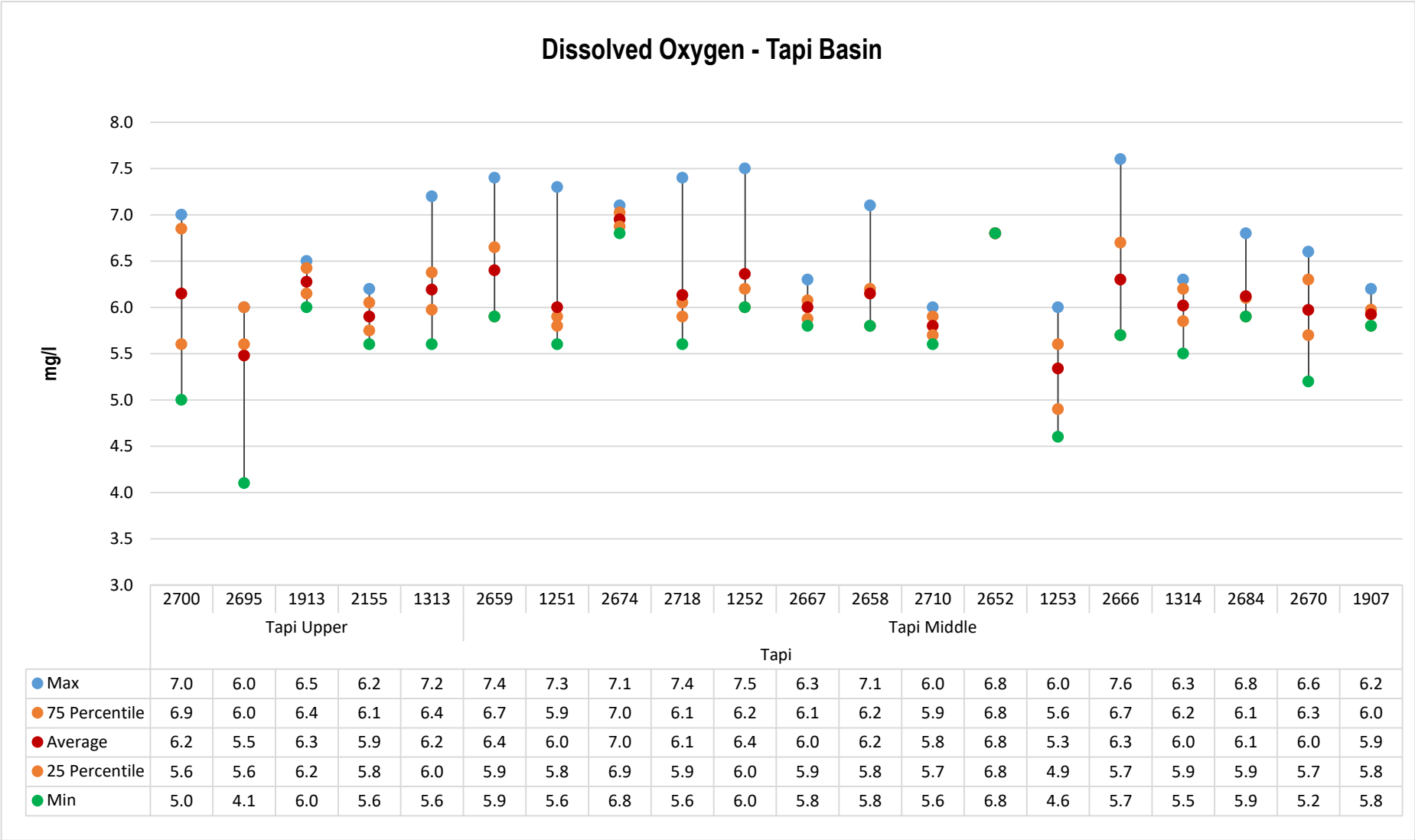


Figure No. 4: Trend in average occurrence for different categories of WQI in the Tapi basin

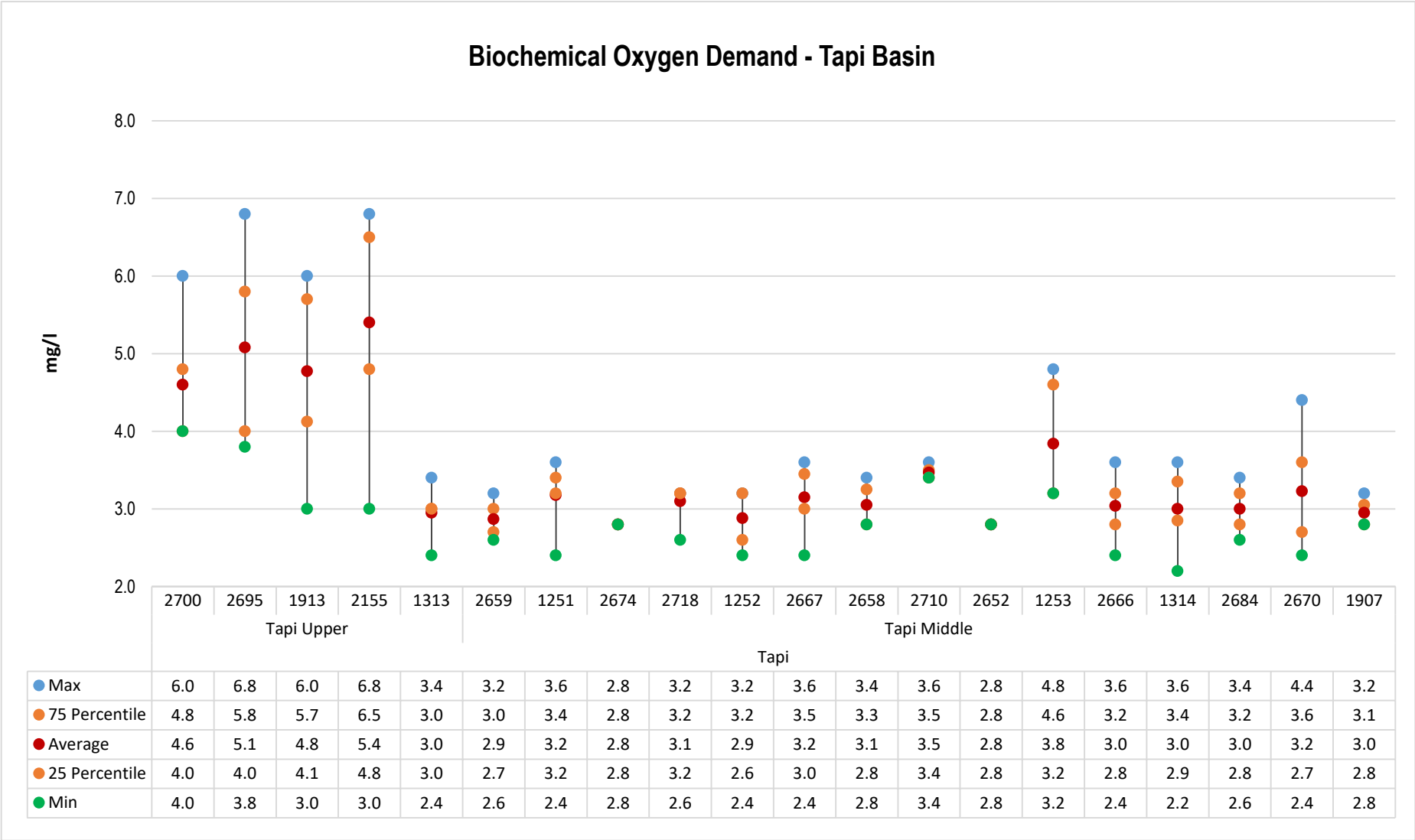
The interbasin analysis of the Tapi basin is illustrated in Figure No. 4. In Tapi Upper, the total percentage share of observation recorded under the 'Good to Excellent' WQI category was around 48% (48.33%). This was followed by the observations under the 'Dry' category (45%) and 'No Data' (6.67%). No observation was recorded under the categories of 'Medium to Good', 'Bad' and 'Bad to Very Bad'.

In the case of Tapi Middle, the percentage share of observations under the categories of 'Good to Excellent' and 'Medium to Good' recorded a slight dip in the year 2021-22. The percentage share of 'Good to Excellent' category observations decreased from 42.16% (2020-21) to about 40.2 % in 2021-22. Similarly, the 'Medium to Good' category percentage decreased from 3.92% (2020-21) to 1.47% in 2021-22. About 2.45% 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 'No Data' category observations were found to be about 47.06% and 8.82% respectively.



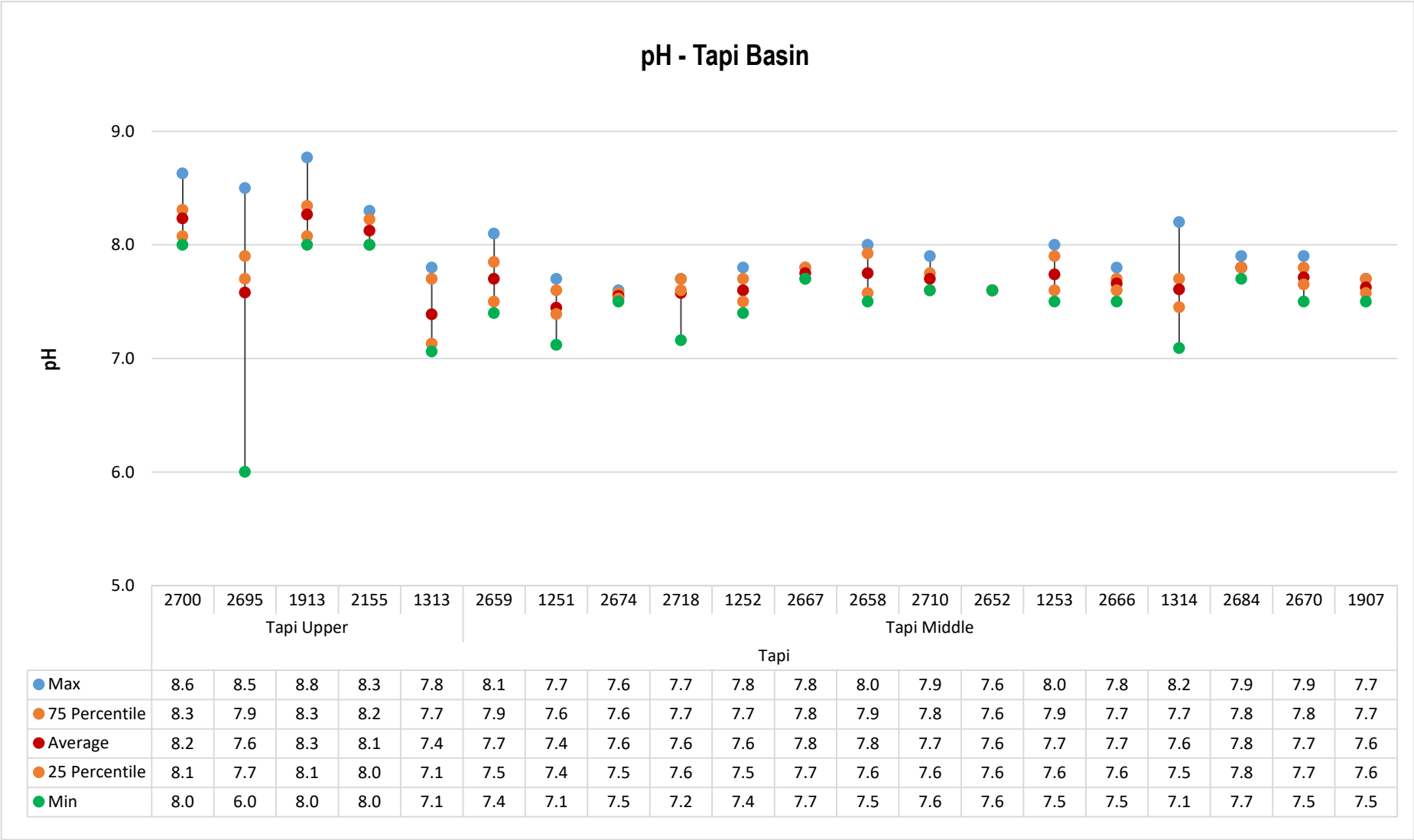
	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
Max	7.0	6.0	6.5	6.2	7.2	7.4	7.3	7.1	7.4	7.5	6.3	7.1	6.0	6.8	6.0	7.6	6.3	6.8	6.6	6.2
75 Percentile	6.9	6.0	6.4	6.1	6.4	6.7	5.9	7.0	6.1	6.2	6.1	6.2	5.9	6.8	5.6	6.7	6.2	6.1	6.3	6.0
Average	6.2	5.5	6.3	5.9	6.2	6.4	6.0	7.0	6.1	6.4	6.0	6.2	5.8	6.8	5.3	6.3	6.0	6.1	6.0	5.9
25 Percentile	5.6	5.6	6.2	5.8	6.0	5.9	5.8	6.9	5.9	6.0	5.9	5.8	5.7	6.8	4.9	5.7	5.9	5.9	5.7	5.8
Min	5.0	4.1	6.0	5.6	5.6	5.9	5.6	6.8	5.6	6.0	5.8	5.8	5.6	6.8	4.6	5.7	5.5	5.9	5.2	5.8

Figure No. 5: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Tapi basin



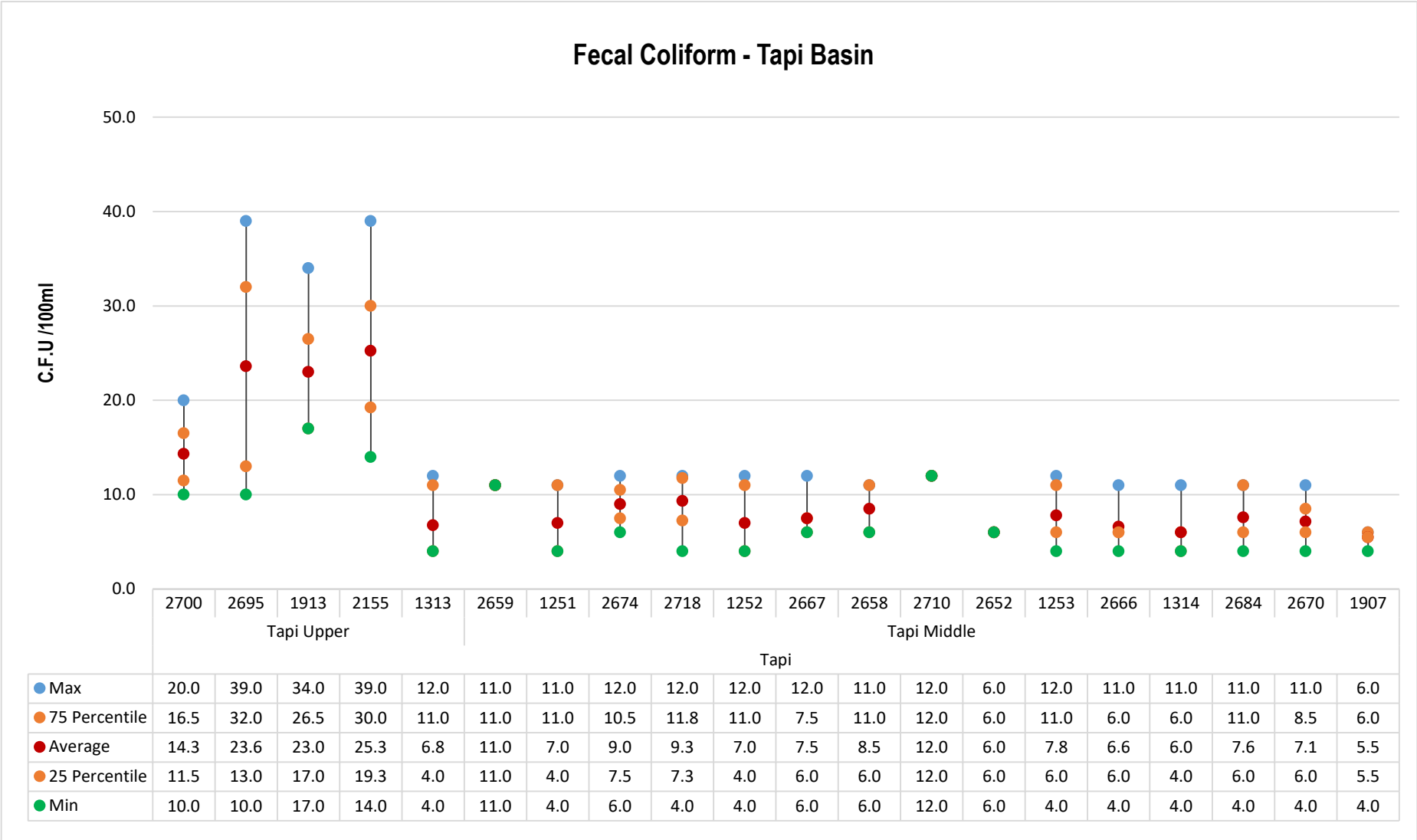
	2700	2695	1913	2155	1313	2659	1251	2674	2718	1252	2667	2658	2710	2652	1253	2666	1314	2684	2670	1907
Max	6.0	6.8	6.0	6.8	3.4	3.2	3.6	2.8	3.2	3.2	3.6	3.4	3.6	2.8	4.8	3.6	3.6	3.4	4.4	3.2
75 Percentile	4.8	5.8	5.7	6.5	3.0	3.0	3.4	2.8	3.2	3.2	3.5	3.3	3.5	2.8	4.6	3.2	3.4	3.2	3.6	3.1
Average	4.6	5.1	4.8	5.4	3.0	2.9	3.2	2.8	3.1	2.9	3.2	3.1	3.5	2.8	3.8	3.0	3.0	3.0	3.2	3.0
25 Percentile	4.0	4.0	4.1	4.8	3.0	2.7	3.2	2.8	3.2	2.6	3.0	2.8	3.4	2.8	3.2	2.8	2.9	2.8	2.7	2.8
Min	4.0	3.8	3.0	3.0	2.4	2.6	2.4	2.8	2.6	2.4	2.4	2.8	3.4	2.8	3.2	2.4	2.2	2.6	2.4	2.8

Figure No. 6: 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	8.6	8.5	8.8	8.3	7.8	8.1	7.7	7.6	7.7	7.8	7.8	8.0	7.9	7.6	8.0	7.8	8.2	7.9	7.9	7.7
75 Percentile	8.3	7.9	8.3	8.2	7.7	7.9	7.6	7.6	7.7	7.7	7.8	7.9	7.8	7.6	7.9	7.7	7.7	7.8	7.8	7.7
Average	8.2	7.6	8.3	8.1	7.4	7.7	7.4	7.6	7.6	7.6	7.8	7.8	7.7	7.6	7.7	7.7	7.6	7.8	7.7	7.6
25 Percentile	8.1	7.7	8.1	8.0	7.1	7.5	7.4	7.5	7.6	7.5	7.7	7.6	7.6	7.6	7.6	7.6	7.5	7.8	7.7	7.6
Min	8.0	6.0	8.0	8.0	7.1	7.4	7.1	7.5	7.2	7.4	7.7	7.5	7.6	7.6	7.5	7.5	7.1	7.7	7.5	7.5

Figure No. 7: 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	20.0	39.0	34.0	39.0	12.0	11.0	11.0	12.0	12.0	12.0	12.0	11.0	12.0	6.0	12.0	11.0	11.0	11.0	11.0	6.0
75 Percentile	16.5	32.0	26.5	30.0	11.0	11.0	11.0	10.5	11.8	11.0	7.5	11.0	12.0	6.0	11.0	6.0	6.0	11.0	8.5	6.0
Average	14.3	23.6	23.0	25.3	6.8	11.0	7.0	9.0	9.3	7.0	7.5	8.5	12.0	6.0	7.8	6.6	6.0	7.6	7.1	5.5
25 Percentile	11.5	13.0	17.0	19.3	4.0	11.0	4.0	7.5	7.3	4.0	6.0	6.0	12.0	6.0	6.0	6.0	4.0	6.0	6.0	5.5
Min	10.0	10.0	17.0	14.0	4.0	11.0	4.0	6.0	4.0	4.0	6.0	6.0	12.0	6.0	4.0	4.0	4.0	4.0	4.0	4.0

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

Water Quality Index for WQMS in Tapi Basin

Apr	Dry	Dry	Dry	Dry	89	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	91	Dry	Dry	Dry
May	Dry	Dry	Dry	Dry	85	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Jun	Dry	Dry	Dry	Dry	88	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry
Jul	Dry	68	75	72	88	Dry	83	Dry	85	Dry	Dry	Dry	Dry	Dry	Dry	Dry	88	Dry	Dry	Dry
Aug	76	65	73	72	88	Dry	85	Dry	84	Dry	Dry	Dry	Dry	Dry	Dry	Dry	79	Dry	Dry	Dry
Sep	86	72	75	71	85	80	87	84	85	87	82	81	80	Dry	75	83	81	84	85	Dry
Oct	69	76	78	79	90	82	81	86	83	83	86	83	81	86	82	87	87	84	87	83
Nov	75	78	Dry	Dry	82	84	85	Dry	80	88	85	84	80	Dry	81	84	85	85	85	83
Dec	Dry	Dry	Dry	Dry	86	Dry	84	Dry	81	81	79	Dry	Dry	Dry	81	Dry	87	82	86	86
Jan	Dry	Dry	Dry	Dry	84	Dry	86	Dry	Dry	87	Dry	81	Dry	Dry	73	83	88	80	82	86
Feb	Dry	Dry	Dry	Dry	81	Dry	84	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	80	85	Dry	75	Dry
Mar	Dry	Dry	Dry	Dry	86	Dry	83	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	83	Dry	83	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																			

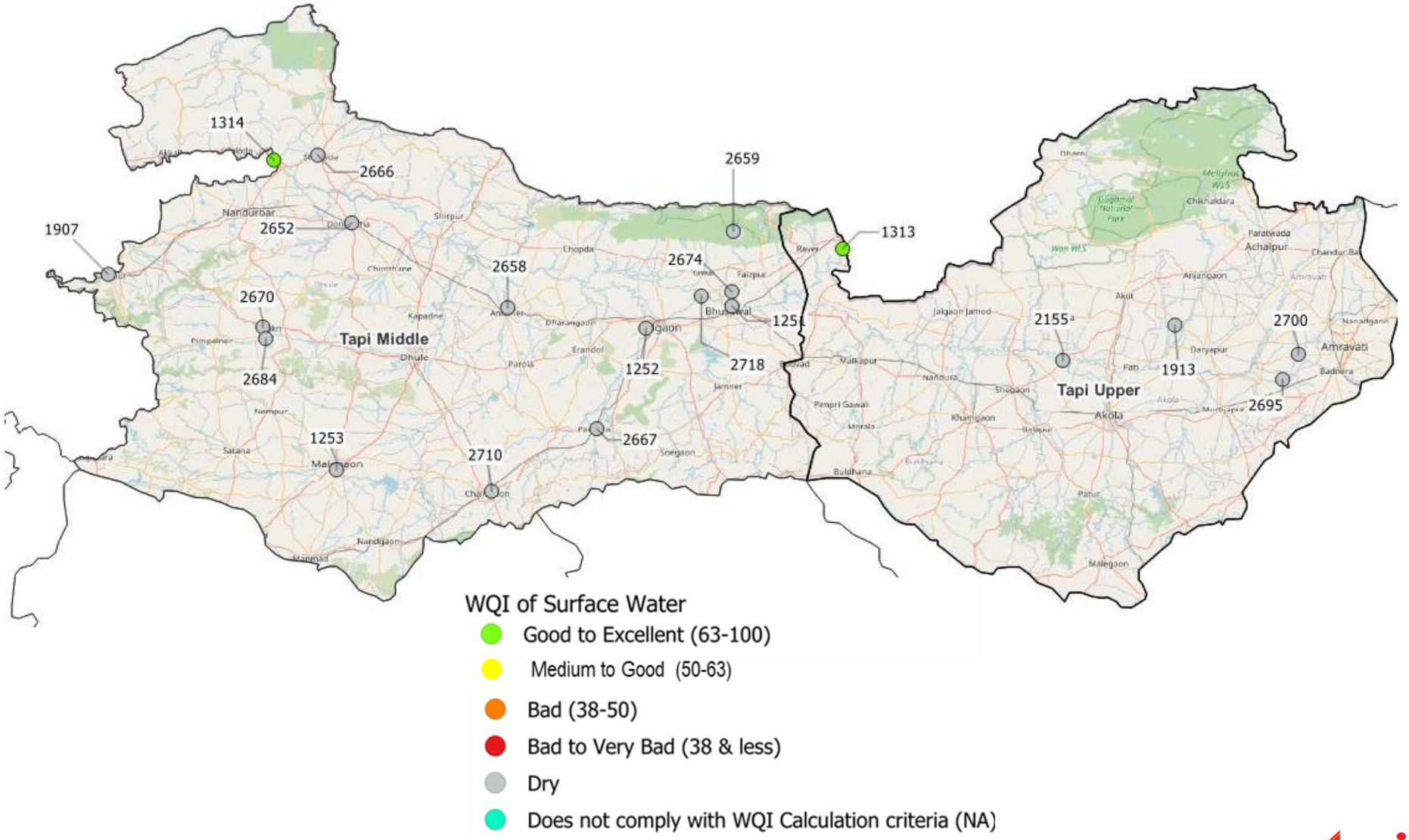
Legend

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

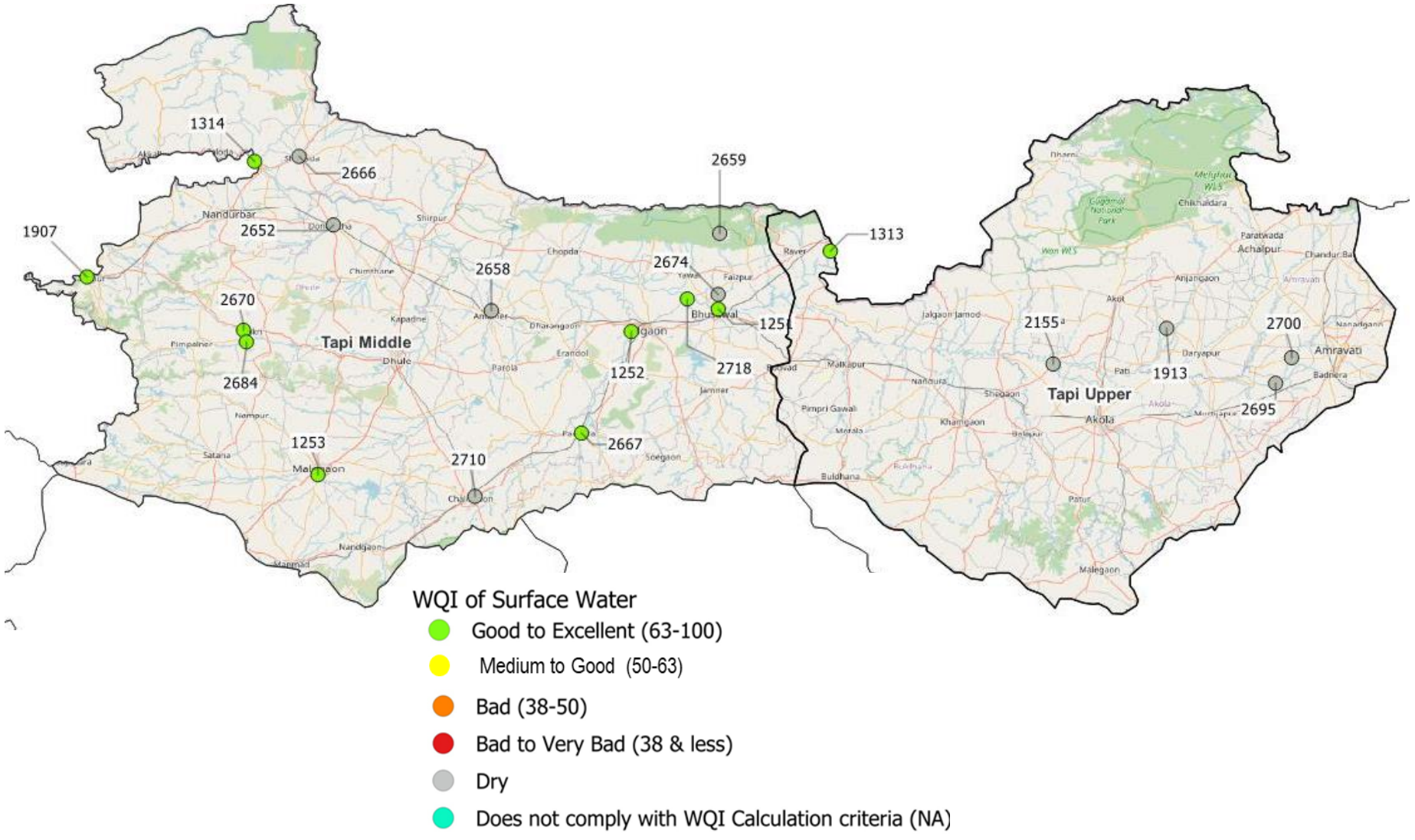
Table No. 15 : Surface water quality monitoring stations in Tapi basin

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 -2021



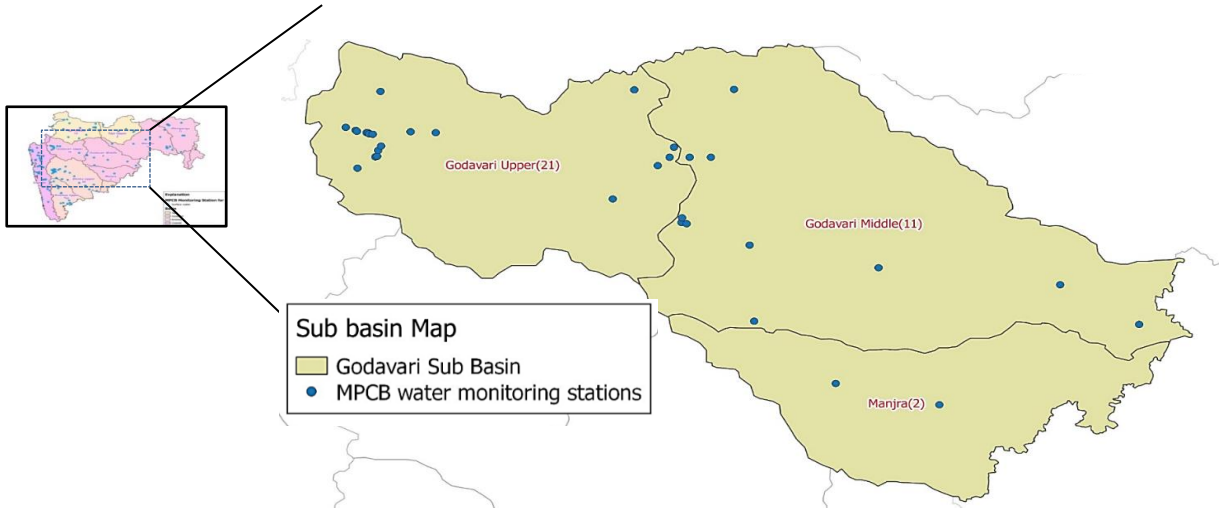
Spatial map of Surface WQI at Tapi Basin (December -2021)



Godavari Basin :

The Godavari River is the largest river in peninsular India and known as the 'Dakshina Ganga'. The Godavari Basin is the second largest basin after the Ganges basin and accounts for nearly 9.50 % of the total geographical area of the country. The River rises in the Sahyadris, at an altitude of 1,067 m above mean sea level near Trimbakeshwar in the Nashik district of Maharashtra and flows across the Deccan Plateau from the Western to the Eastern Ghats[21].For ease of understanding, Godvari 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.

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



[21] https://grmb.gov.in/grmb/basin#about

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

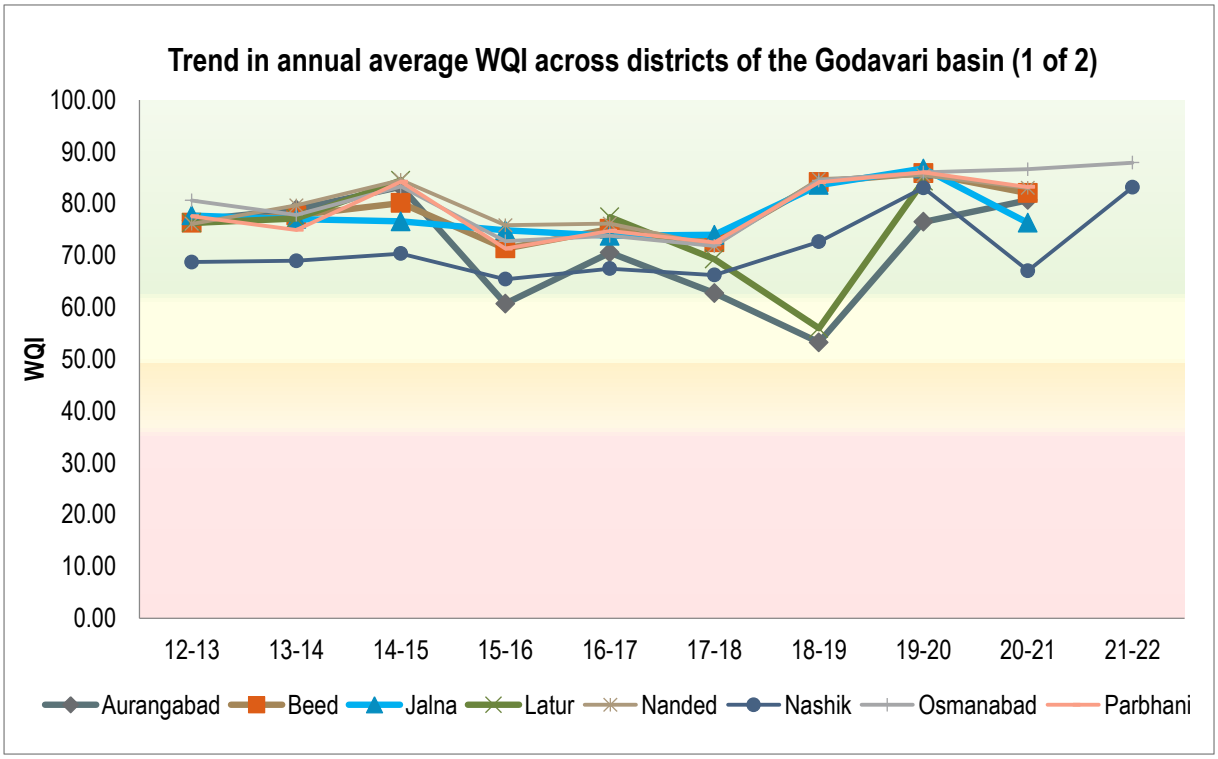


Figure No. 9: Trend in annual average WQI across districts of the Godavari basin (1 of 2)

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.

Out of 8 districts coming under the Godavari basin (1 of 2), only 2 districts namely Nashik and Osmanabad recorded annual average WQI by their respective WQMS. This may be because the high percentage of the observations under the 'No Data' category was due to the fact that the recorded available data did not comply with the WQI calculation criteria.

Both WQMS installed at Nashik and Osmanabad recorded annual average WQI in the 'Good to Excellent' category with an increase of about 24% (from 67.06 to 83.2) and 1.89% (from 86.65 to 87.92) respectively as compared to the previous year.

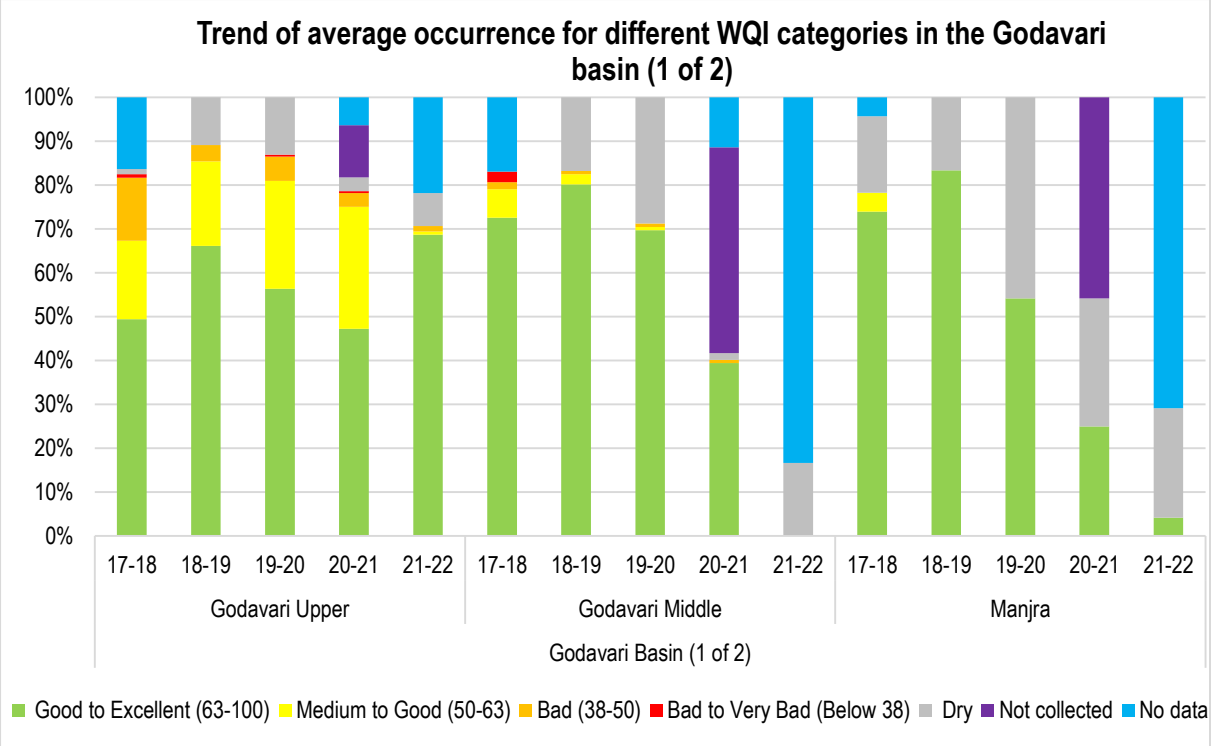
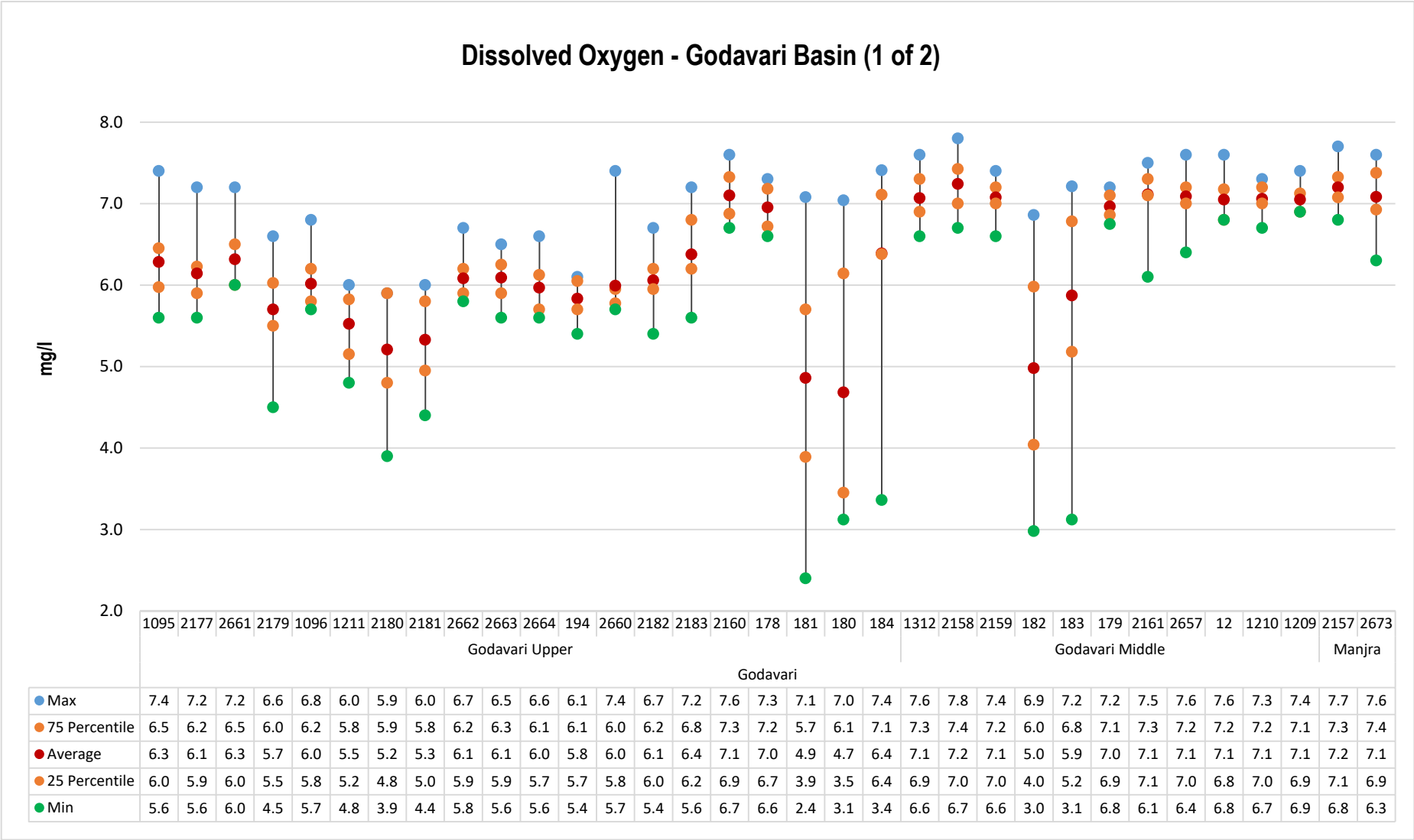


Figure No. 10: Trend of average occurrence for different WQI categories – the Godavari basin (1 of 2)

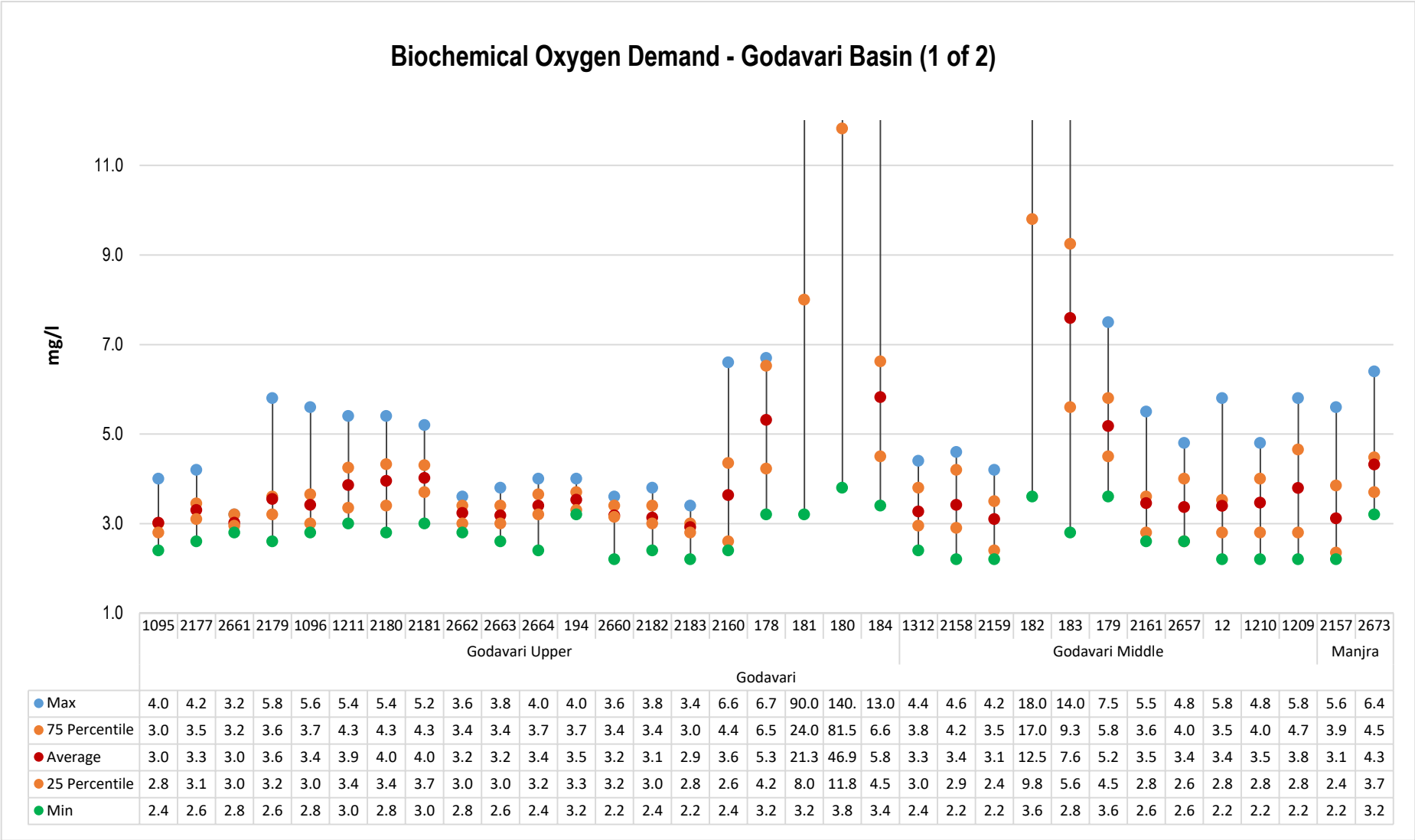
The interbasin performance of the Godavari basin (1 of 2) is shown in Figure No. 10. In 2021-22, a considerable increase (from 47.22% to 68.65%) in the percentage share of 'Good to Excellent' category observations was recorded in the Godavari Upper whereas a considerable decrease (from 27.78% to 0.79%) was recorded in the observations coming under the 'Medium to Good' category. This is a good outcome as far as the overall water quality of the Godavari Upper region is concerned. The share of 'Bad', 'Dry' and 'No Data' category observations were recorded to be around 1.19%, 7.54% and 21.8% respectively. No single observation was recorded in the 'Bad to Very Bad' and 'Not Collected' categories. On the other side, an increasing trend was observed in the percentage of 'Dry' category observations (from 3.17% to 7.54%) and 'No Data' category observations (from 6.35% to 21.83%). The high percentage of the observations under the 'No Data' category was due to the fact that the recorded available data did not comply with the WQI calculation criteria.

A similar condition was observed in the case of Godavari Middle, as about 83% (83.33%) of the total recorded observations came under the 'No Data' category as the available data did not comply with the WQI calculation criteria whereas the remaining 16.67% of the observations were recorded under the 'Dry' category. A somewhat similar situation was recorded for the Manjra sub-basin wherein 70.83% of the total observations were placed under the 'No Data' category followed by 25% in the 'Dry' category. The remaining 4.17% of the observations were recorded under the 'Good to Excellent' WQI category.



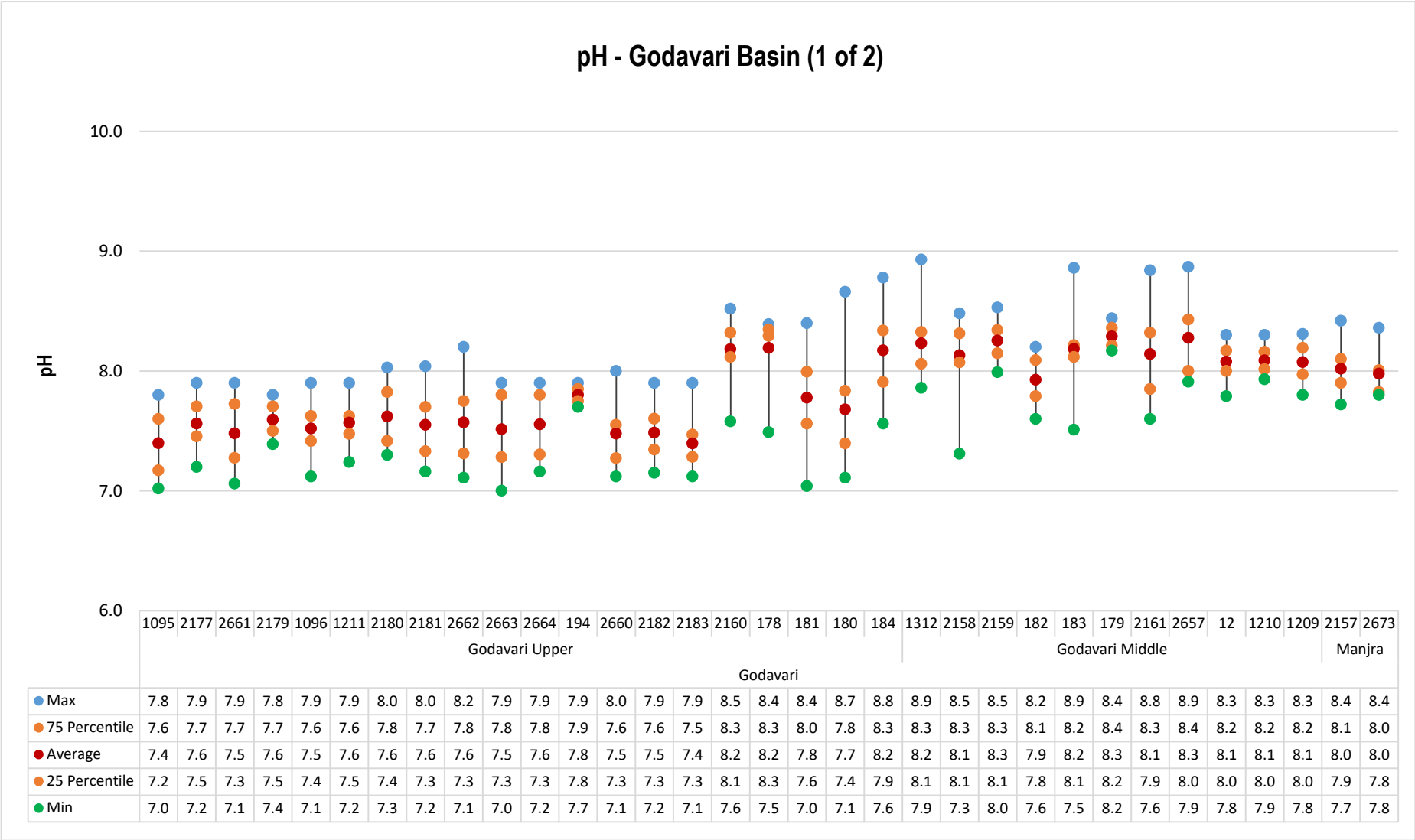
	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
	Godavari Upper																				Godavari Middle										Manjra	
	Godavari																															
Max	7.4	7.2	7.2	6.6	6.8	6.0	5.9	6.0	6.7	6.5	6.6	6.1	7.4	6.7	7.2	7.6	7.3	7.1	7.0	7.4	7.6	7.8	7.4	6.9	7.2	7.2	7.5	7.6	7.6	7.3	7.4	7.7	7.6
75 Percentile	6.5	6.2	6.5	6.0	6.2	5.8	5.9	5.8	6.2	6.3	6.1	6.1	6.0	6.2	6.8	7.3	7.2	5.7	6.1	7.1	7.3	7.4	7.2	6.0	6.8	7.1	7.3	7.2	7.2	7.2	7.1	7.3	7.4
Average	6.3	6.1	6.3	5.7	6.0	5.5	5.2	5.3	6.1	6.1	6.0	5.8	6.0	6.1	6.4	7.1	7.0	4.9	4.7	6.4	7.1	7.2	7.1	5.0	5.9	7.0	7.1	7.1	7.1	7.1	7.1	7.2	7.1
25 Percentile	6.0	5.9	6.0	5.5	5.8	5.2	4.8	5.0	5.9	5.9	5.7	5.7	5.8	6.0	6.2	6.9	6.7	3.9	3.5	6.4	6.9	7.0	7.0	4.0	5.2	6.9	7.1	7.0	6.8	7.0	6.9	7.1	6.9
Min	5.6	5.6	6.0	4.5	5.7	4.8	3.9	4.4	5.8	5.6	5.6	5.4	5.7	5.4	5.6	6.7	6.6	2.4	3.1	3.4	6.6	6.7	6.6	3.0	3.1	6.8	6.1	6.4	6.8	6.7	6.9	6.8	6.3

Figure No. 11: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Godavari basin (1 of 2)



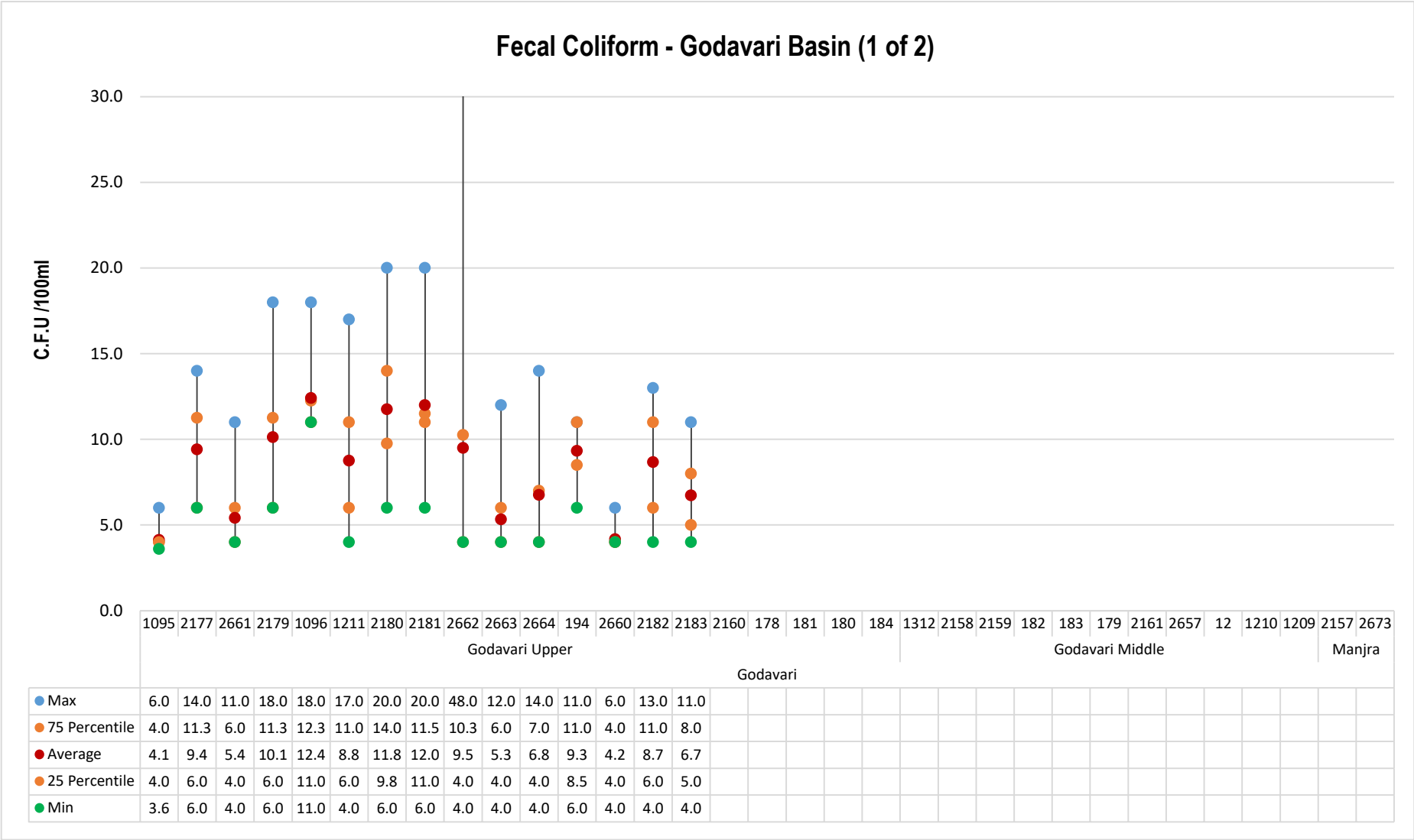
	1095	2177	2661	2179	1096	1211	2180	2181	2662	2663	2664	194	2660	2182	2183	2160	178	181	180	184	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
	Godavari Upper																				Godavari Middle											Manjra
	Godavari																															
Max	4.0	4.2	3.2	5.8	5.6	5.4	5.4	5.2	3.6	3.8	4.0	4.0	3.6	3.8	3.4	6.6	6.7	90.0	140.	13.0	4.4	4.6	4.2	18.0	14.0	7.5	5.5	4.8	5.8	4.8	5.8	5.6	6.4
75 Percentile	3.0	3.5	3.2	3.6	3.7	4.3	4.3	4.3	3.4	3.4	3.7	3.7	3.4	3.4	3.0	4.4	6.5	24.0	81.5	6.6	3.8	4.2	3.5	17.0	9.3	5.8	3.6	4.0	3.5	4.0	4.7	3.9	4.5
Average	3.0	3.3	3.0	3.6	3.4	3.9	4.0	4.0	3.2	3.2	3.4	3.5	3.2	3.1	2.9	3.6	5.3	21.3	46.9	5.8	3.3	3.4	3.1	12.5	7.6	5.2	3.5	3.4	3.4	3.5	3.8	3.1	4.3
25 Percentile	2.8	3.1	3.0	3.2	3.0	3.4	3.4	3.7	3.0	3.0	3.2	3.3	3.2	3.0	2.8	2.6	4.2	8.0	11.8	4.5	3.0	2.9	2.4	9.8	5.6	4.5	2.8	2.6	2.8	2.8	2.8	2.4	3.7
Min	2.4	2.6	2.8	2.6	2.8	3.0	2.8	3.0	2.8	2.6	2.4	3.2	2.2	2.4	2.2	2.4	3.2	3.2	3.8	3.4	2.4	2.2	2.2	3.6	2.8	3.6	2.6	2.6	2.2	2.2	2.2	2.2	3.2

Figure No. 12: 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
	Godavari Upper																				Godavari Middle											Manjra
	Godavari																															
Max	7.8	7.9	7.9	7.8	7.9	7.9	8.0	8.0	8.2	7.9	7.9	7.9	8.0	7.9	7.9	8.5	8.4	8.4	8.7	8.8	8.9	8.5	8.5	8.2	8.9	8.4	8.8	8.9	8.3	8.3	8.3	8.4	8.4
75 Percentile	7.6	7.7	7.7	7.7	7.6	7.6	7.8	7.7	7.8	7.8	7.8	7.9	7.6	7.6	7.5	8.3	8.3	8.0	7.8	8.3	8.3	8.3	8.3	8.1	8.2	8.4	8.3	8.4	8.2	8.2	8.2	8.1	8.0
Average	7.4	7.6	7.5	7.6	7.5	7.6	7.6	7.6	7.6	7.5	7.6	7.8	7.5	7.5	7.4	8.2	8.2	7.8	7.7	8.2	8.2	8.1	8.3	7.9	8.2	8.3	8.1	8.3	8.1	8.1	8.1	8.0	8.0
25 Percentile	7.2	7.5	7.3	7.5	7.4	7.5	7.4	7.3	7.3	7.3	7.3	7.8	7.3	7.3	7.3	8.1	8.3	7.6	7.4	7.9	8.1	8.1	8.1	7.8	8.1	8.2	7.9	8.0	8.0	8.0	8.0	7.9	7.8
Min	7.0	7.2	7.1	7.4	7.1	7.2	7.3	7.2	7.1	7.0	7.2	7.7	7.1	7.2	7.1	7.6	7.5	7.0	7.1	7.6	7.9	7.3	8.0	7.6	7.5	8.2	7.6	7.9	7.8	7.9	7.8	7.7	7.8

Figure No. 13: 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	6.0	14.0	11.0	18.0	18.0	17.0	20.0	20.0	48.0	12.0	14.0	11.0	6.0	13.0	11.0																	
75 Percentile	4.0	11.3	6.0	11.3	12.3	11.0	14.0	11.5	10.3	6.0	7.0	11.0	4.0	11.0	8.0																	
Average	4.1	9.4	5.4	10.1	12.4	8.8	11.8	12.0	9.5	5.3	6.8	9.3	4.2	8.7	6.7																	
25 Percentile	4.0	6.0	4.0	6.0	11.0	6.0	9.8	11.0	4.0	4.0	4.0	8.5	4.0	6.0	5.0																	
Min	3.6	6.0	4.0	6.0	11.0	4.0	6.0	6.0	4.0	4.0	4.0	6.0	4.0	4.0	4.0																	

Figure No. 14: 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	89	83	88	Dry	86	82	77	82	87	87	86	NA	88	88	91	NA	Dry	NA	NA	NA
May	88	84	87	Dry	81	75	77	75	85	88	85	Dry	85	86	85	NA	Dry	NA	NA	NA
Jun	89	80	89	Dry	83	80	63	Dry	86	83	84	Dry	88	83	89	NA	Dry	NA	NA	NA
Jul	89	84	87	84	81	79	70	72	87	87	85	Dry	86	83	86	NA	Dry	NA	NA	NA
Aug	87	84	89	81	83	83	80	74	87	86	82	Dry	88	88	88	NA	Dry	NA	NA	NA
Sep	85	85	83	81	83	85	83	75	82	85	83	Dry	87	88	88	NA	NA	NA	NA	NA
Oct	89	87	89	86	84	83	85	81	88	88	85	Dry	85	86	85	NA	NA	NA	NA	NA
Nov	85	83	86	85	82	84	83	82	77	88	86	Dry	84	83	88	NA	NA	NA	NA	NA
Dec	88	87	84	82	83	83	83	81	86	85	86	Dry	86	84	87	NA	NA	NA	NA	NA
Jan	84	84	81	78	83	81	81	77	83	86	84	82	82	84	84	NA	Dry	NA	NA	NA
Feb	89	80	85	70	75	74	72	74	83	83	81	84	83	76	87	NA	NA	NA	NA	NA
Mar	84	80	88	Dry	82	77	73	82	86	85	80	76	86	84	83	NA	Dry	NA	NA	NA
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	No data	Does not comply with WQI Calculation criteria (NA)

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	NA	NA	NA	NA	NA	Dry	Dry	Dry	NA	NA	NA	NA	Dry
May	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	Dry
Jun	NA	NA	NA	Dry	NA	Dry	Dry	Dry	NA	NA	NA	88	Dry
Jul	NA	NA	NA	Dry	NA	Dry	Dry	Dry	NA	NA	NA	NA	Dry
Aug	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	Dry
Sep	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nov	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dec	NA	NA	NA	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jan	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA
Feb	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	NA
Mar	NA	NA	NA	Dry	NA	Dry	NA	NA	NA	NA	NA	NA	Dry
Station Code	1312	2158	2159	182	183	179	2161	2657	12	1210	1209	2157	2673
Sub Basin	Godavari Middle											Manjra	
Basin	Godavari												

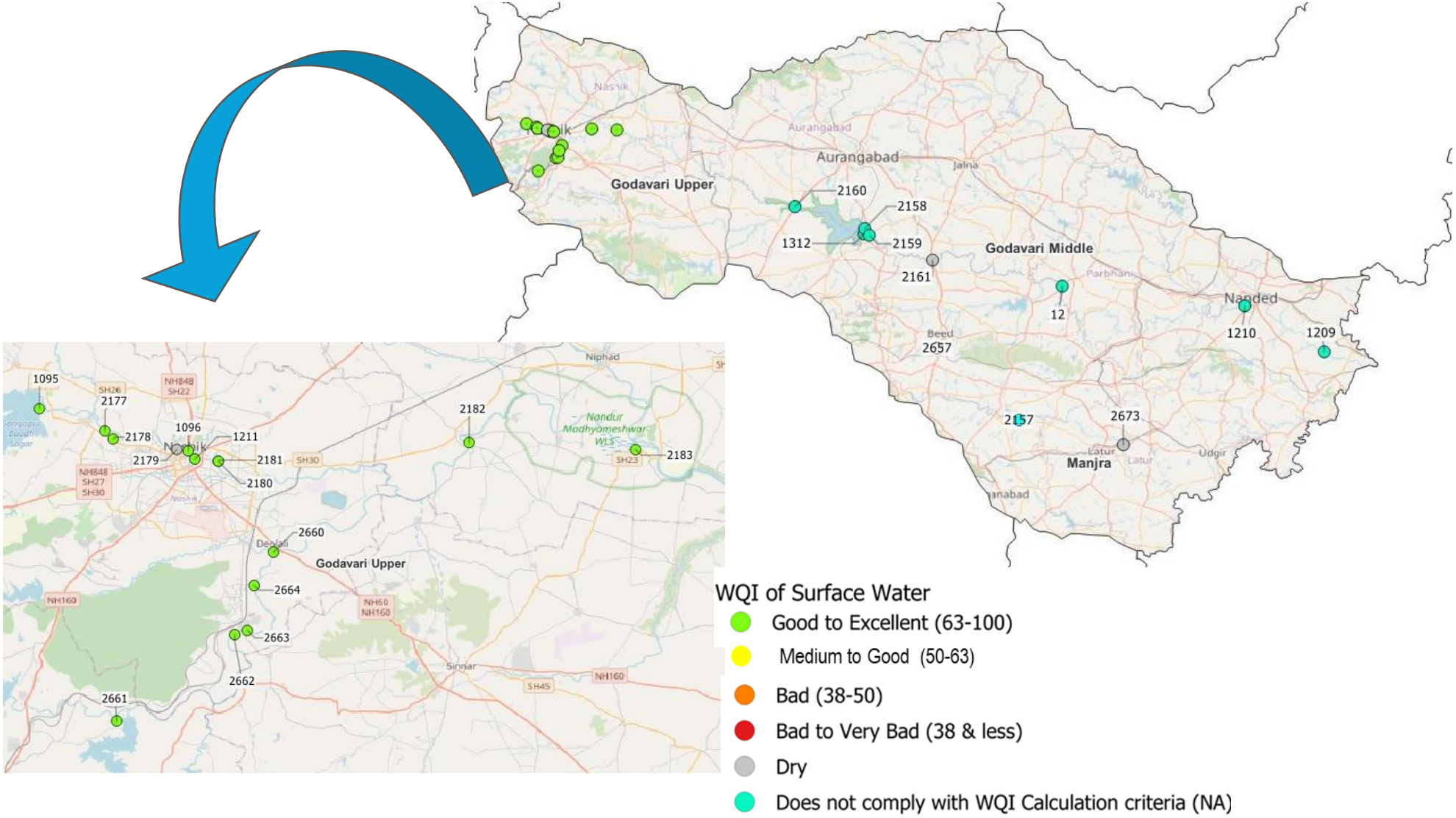
Legend

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

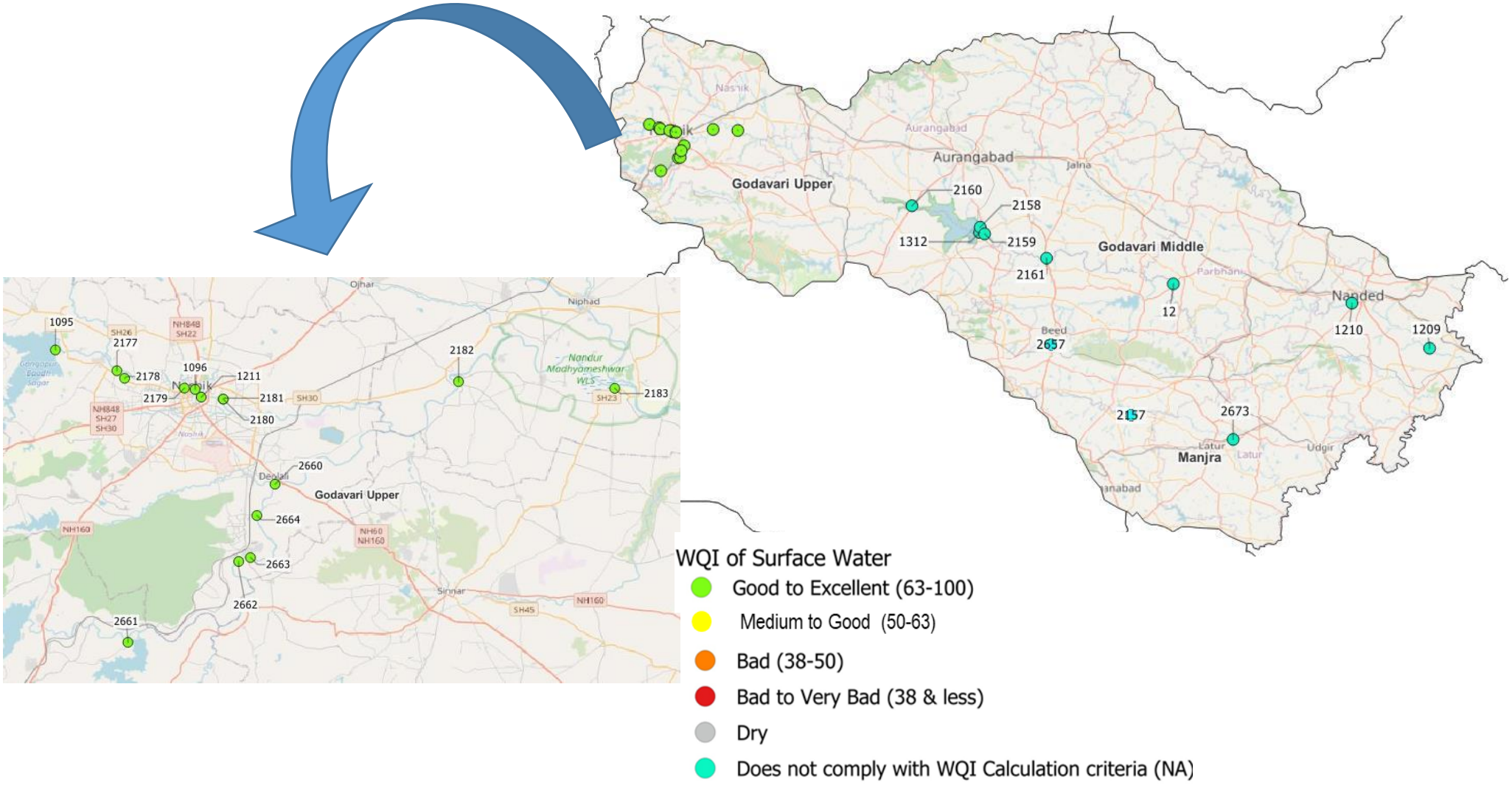
Table No. 17 : Surface water quality monitoring stations in Godavari Basin (1of 2)

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

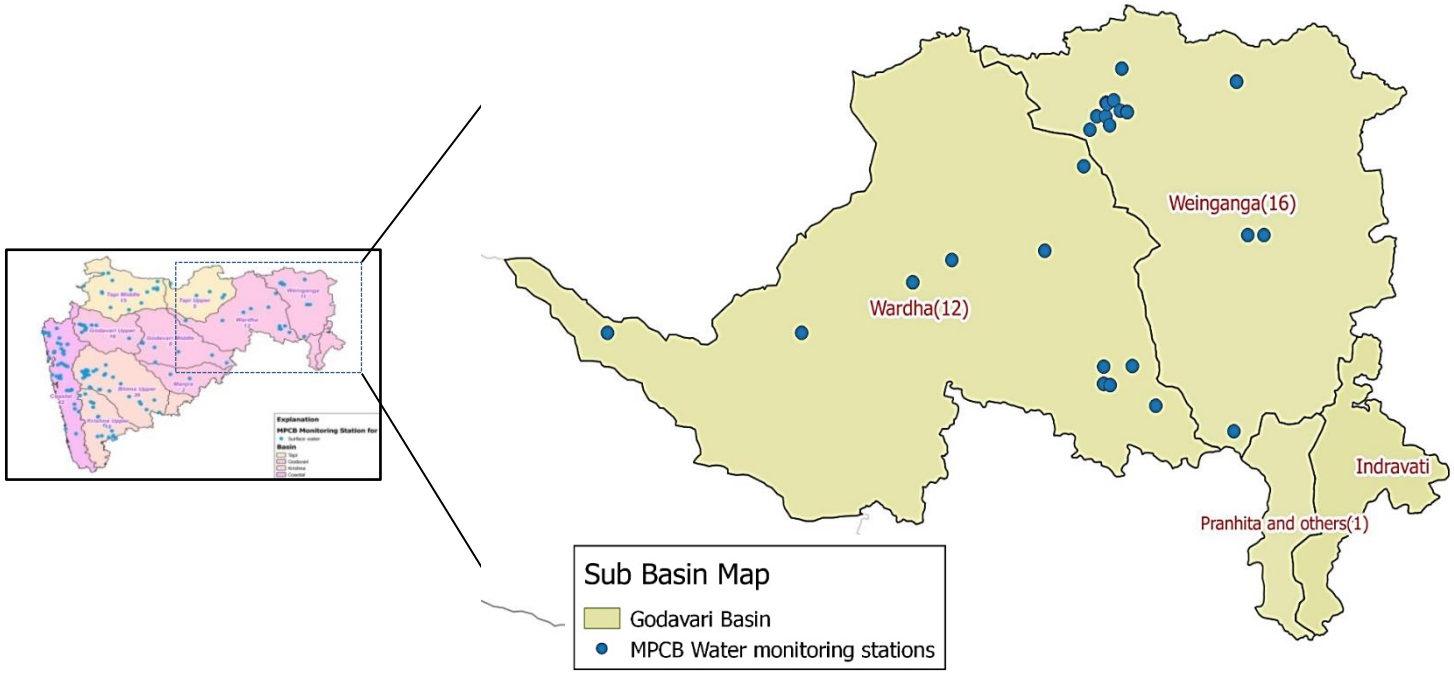
Spatial map of SurfaceWQI at Godavari Basin (1 of 2) (April 2021)



Spatial map of SurfaceWQI at Godavari Basin (1 of 2) (December 2021)



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)

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

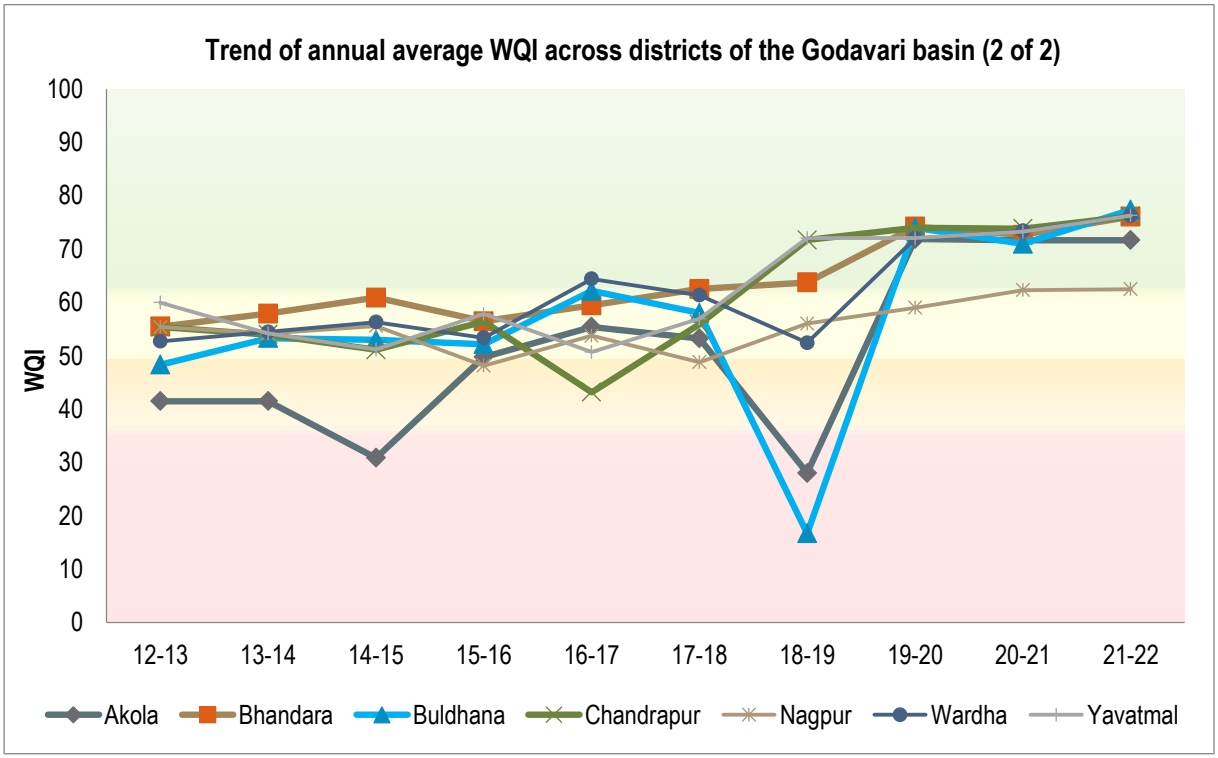


Figure No. 15: Trend of annual average WQI across districts of the Godavari basin (2 of 2)

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.15 it can be observed that the WQMs installed in all 7 districts coming under the Godavari basin (2 of 2) recorded annual average WQI in the 'Good to Excellent' category. However, as compared to last year (2020-21), the annual average WQI value of WQMS from the Akola district recorded a slight decrease of about 0.02% from 71.68 to 71.67. An increase in WQI from WQMS of all other 6 districts was recorded in the year 2021-22. This includes an increase of about 8.99% (Buldhana district) from 70.98 to 77.36; followed by a 4.7 % increase (from 72.67 to 76.1) in Buldhana and a 4.11% increase in Yavatmal. WQMS installed at both Chandrapur and Wardha recorded an increase of about 3.15% and 3.88% respectively in annual average WQI. A fraction of an increase of about 0.27% in annual average WQI was recorded by WQMS from Nagpur district.

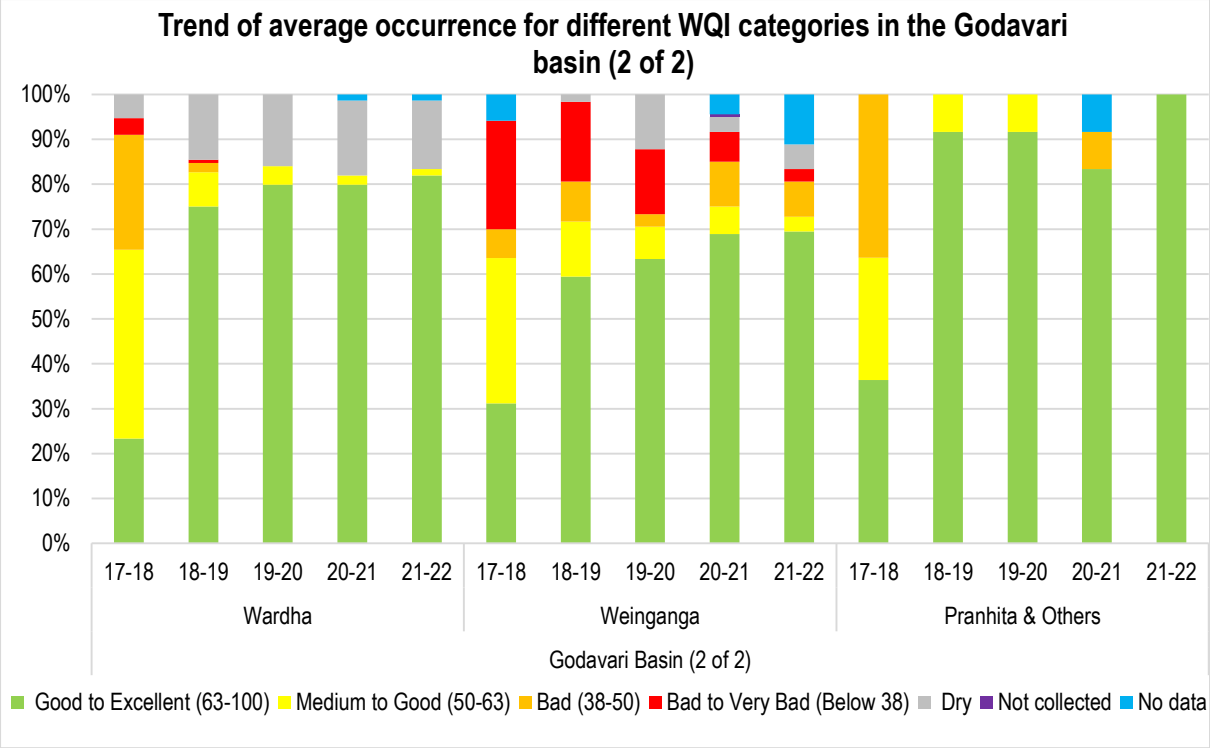
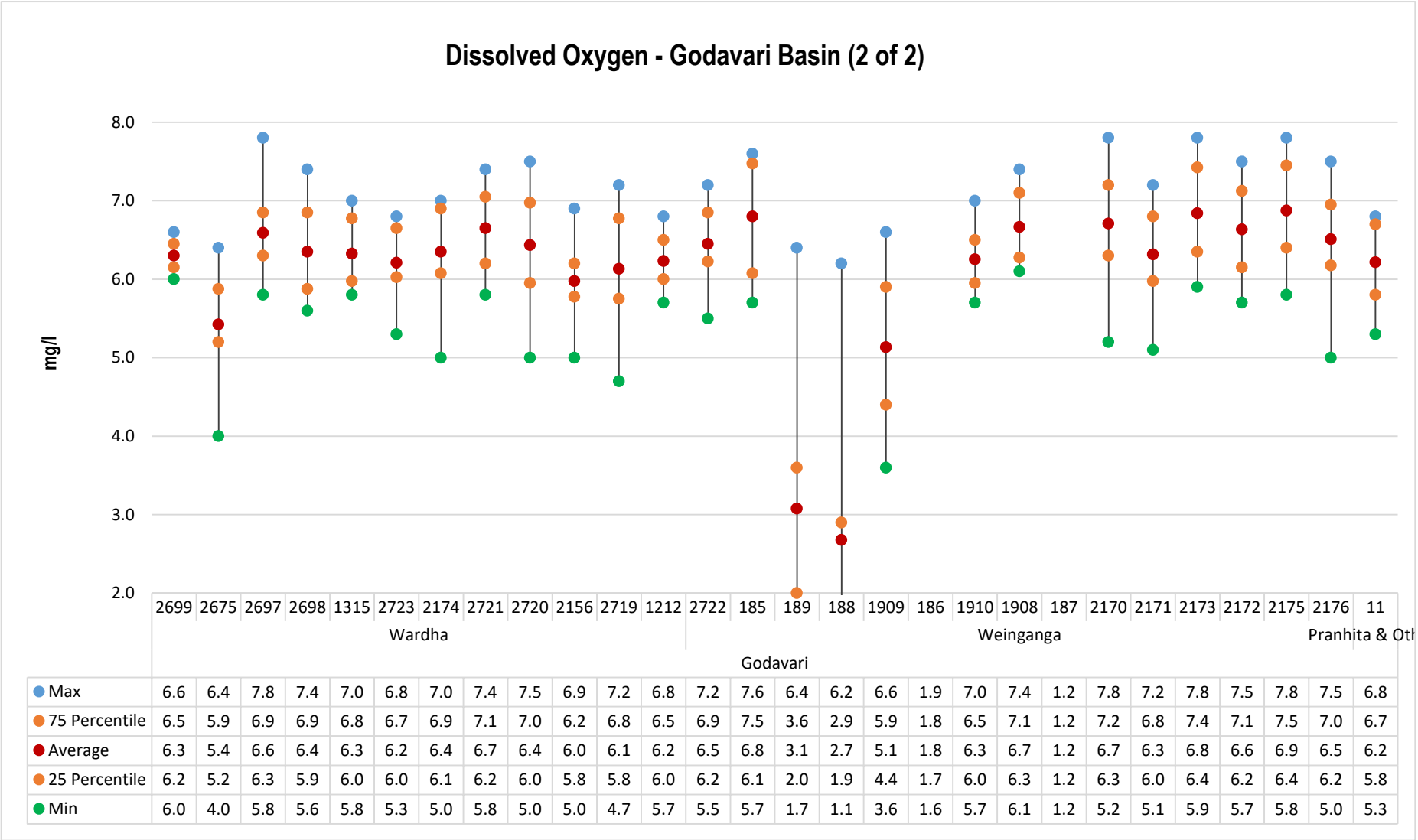


Figure No. 16: Trend of average occurrence for different WQI categories in the Godavari basin (2 of 2)

Interbasin analysis of the Godavari basin (2 of 2) for the last 5 consecutive years is illustrated graphically in Figure No. 16. In the Wardha sub-basin, the majority of the observations (81.94%) were recorded under the 'Good to Excellent' WQI category (In the previous year (2020-21), the share of this category observations was around 79.86%). About 15.28% of the observation were recorded as 'Dry' while a very small percentage of observations were recorded under the categories of 'Medium to Good' (1.39%) and 'No Data' (1.39%).

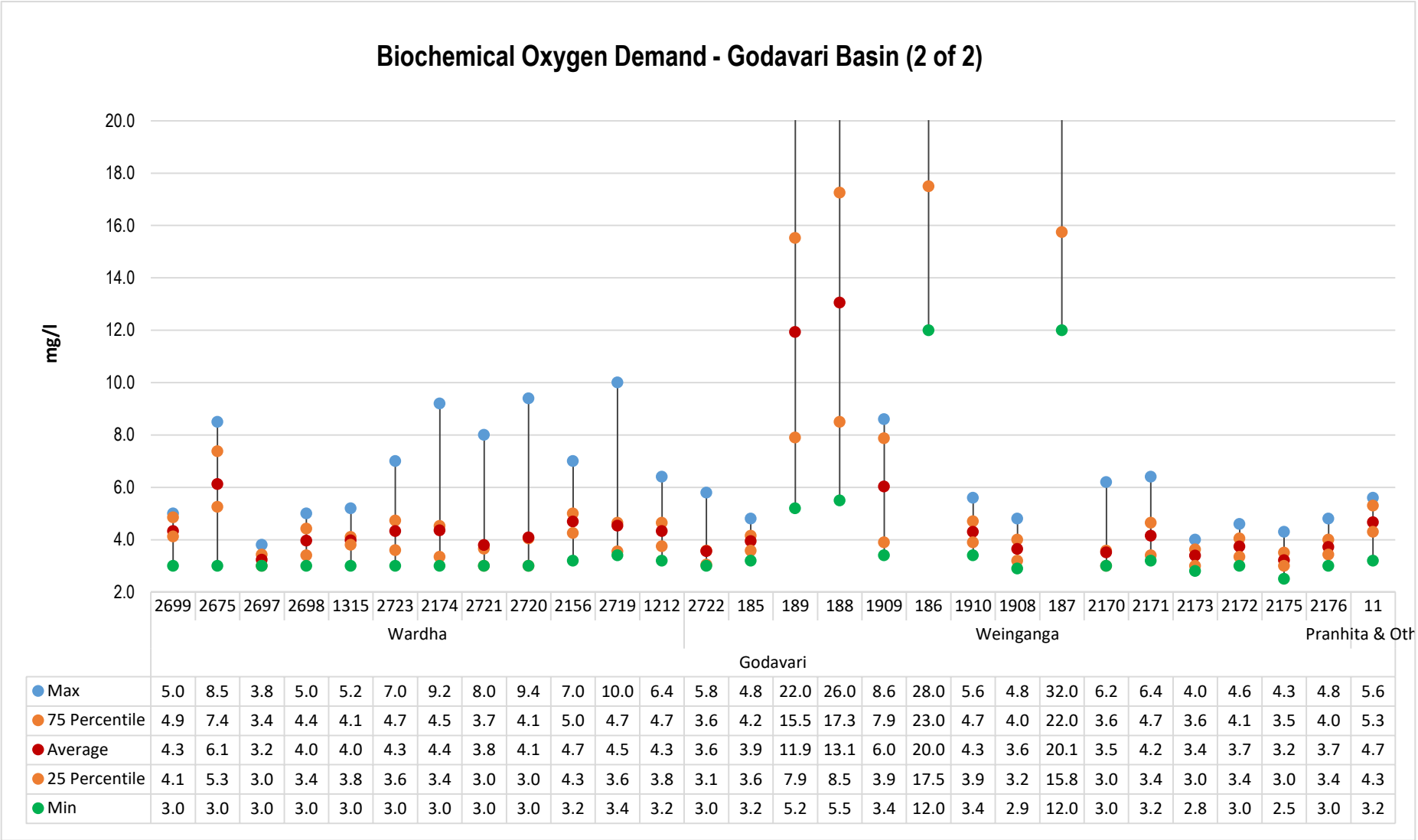
In the Weinganga sub-basin, about 69.44% of the observations were recorded under the 'Good to Excellent' category followed by 7.78% under the 'Bad', 5.56% under the 'Dry', 3.33% in the 'Medium to Good' and 2.78% in the 'Bad to Very Bad' WQI category. About 11% (11.11%) of the observations were placed under the 'No Data' category.

In the Pranhita and Others sub-basin, all 12 observations recorded in the year 2021-22 were found to be in the 'Good to Excellent' WQI category. As compared to the last year (2020-21), the share of the observations under this category witnessed an increase (from 83.33% to 100%).



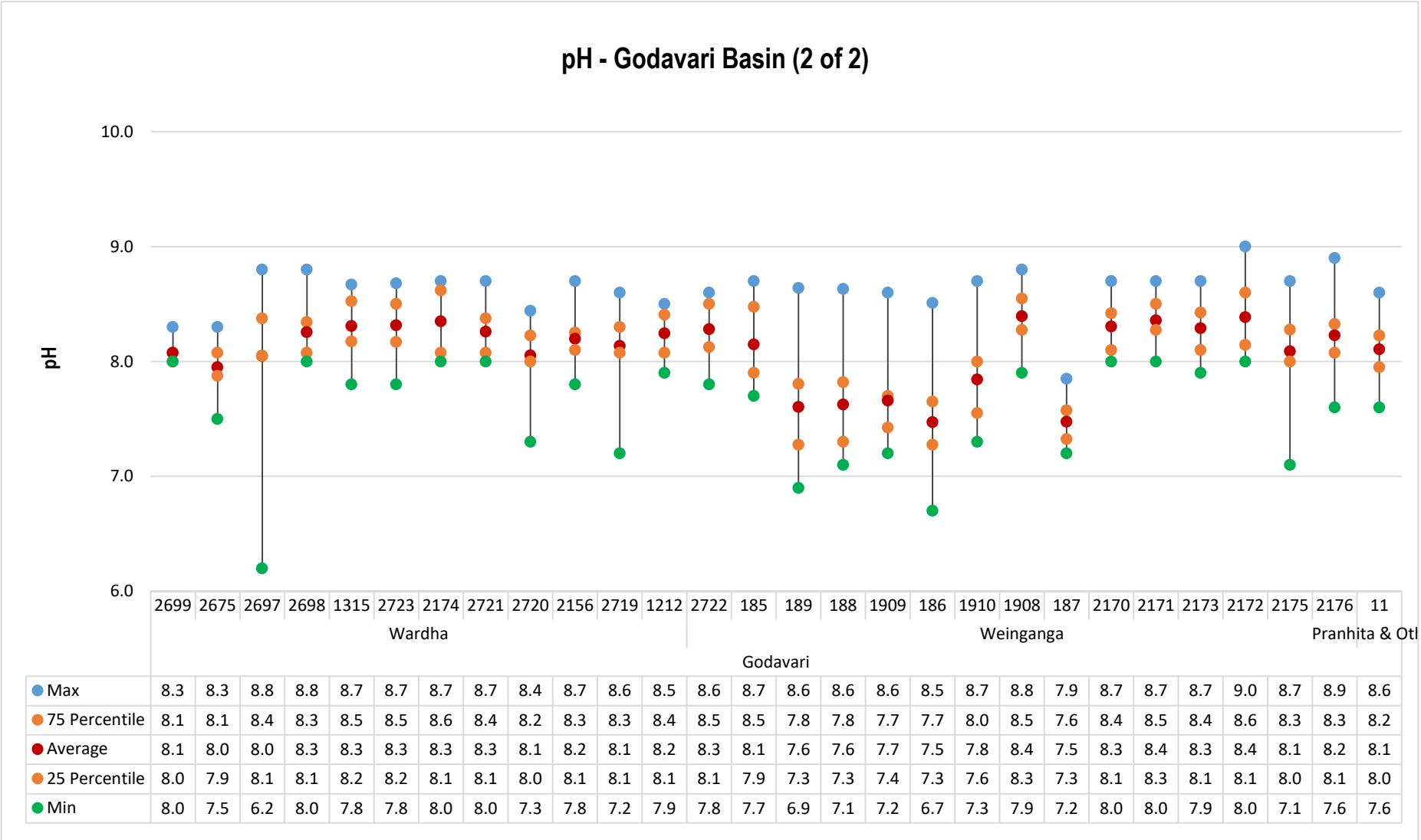
	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
Max	6.6	6.4	7.8	7.4	7.0	6.8	7.0	7.4	7.5	6.9	7.2	6.8	7.2	7.6	6.4	6.2	6.6	1.9	7.0	7.4	1.2	7.8	7.2	7.8	7.5	7.8	7.5	6.8
75 Percentile	6.5	5.9	6.9	6.9	6.8	6.7	6.9	7.1	7.0	6.2	6.8	6.5	6.9	7.5	3.6	2.9	5.9	1.8	6.5	7.1	1.2	7.2	6.8	7.4	7.1	7.5	7.0	6.7
Average	6.3	5.4	6.6	6.4	6.3	6.2	6.4	6.7	6.4	6.0	6.1	6.2	6.5	6.8	3.1	2.7	5.1	1.8	6.3	6.7	1.2	6.7	6.3	6.8	6.6	6.9	6.5	6.2
25 Percentile	6.2	5.2	6.3	5.9	6.0	6.0	6.1	6.2	6.0	5.8	5.8	6.0	6.2	6.1	2.0	1.9	4.4	1.7	6.0	6.3	1.2	6.3	6.0	6.4	6.2	6.4	6.2	5.8
Min	6.0	4.0	5.8	5.6	5.8	5.3	5.0	5.8	5.0	5.0	4.7	5.7	5.5	5.7	1.7	1.1	3.6	1.6	5.7	6.1	1.2	5.2	5.1	5.9	5.7	5.8	5.0	5.3

Figure No. 17: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Godavari basin (2 of 2)



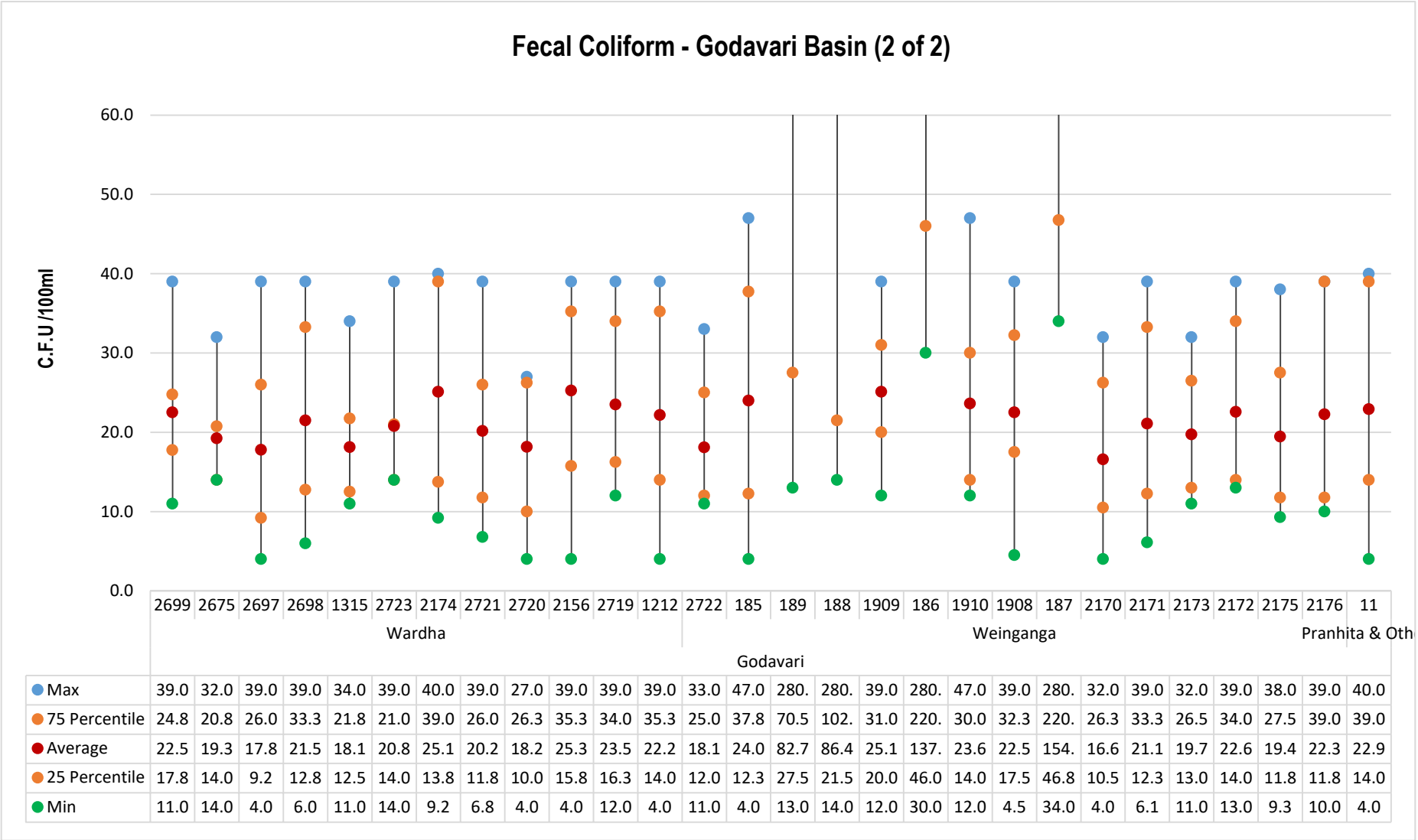
	2699	2675	2697	2698	1315	2723	2174	2721	2720	2156	2719	1212	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
Max	5.0	8.5	3.8	5.0	5.2	7.0	9.2	8.0	9.4	7.0	10.0	6.4	5.8	4.8	22.0	26.0	8.6	28.0	5.6	4.8	32.0	6.2	6.4	4.0	4.6	4.3	4.8	5.6
75 Percentile	4.9	7.4	3.4	4.4	4.1	4.7	4.5	3.7	4.1	5.0	4.7	4.7	3.6	4.2	15.5	17.3	7.9	23.0	4.7	4.0	22.0	3.6	4.7	3.6	4.1	3.5	4.0	5.3
Average	4.3	6.1	3.2	4.0	4.0	4.3	4.4	3.8	4.1	4.7	4.5	4.3	3.6	3.9	11.9	13.1	6.0	20.0	4.3	3.6	20.1	3.5	4.2	3.4	3.7	3.2	3.7	4.7
25 Percentile	4.1	5.3	3.0	3.4	3.8	3.6	3.4	3.0	3.0	4.3	3.6	3.8	3.1	3.6	7.9	8.5	3.9	17.5	3.9	3.2	15.8	3.0	3.4	3.0	3.4	3.0	3.4	4.3
Min	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.4	3.2	3.0	3.2	5.2	5.5	3.4	12.0	3.4	2.9	12.0	3.0	3.2	2.8	3.0	2.5	3.0	3.2

Figure No. 18: 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
	Wardha												Godavari						Weinganga									Pranhita & Otl	
Max	8.3	8.3	8.8	8.8	8.7	8.7	8.7	8.7	8.4	8.7	8.6	8.5	8.6	8.7	8.6	8.6	8.6	8.5	8.7	8.8	7.9	8.7	8.7	8.7	9.0	8.7	8.9	8.6
75 Percentile	8.1	8.1	8.4	8.3	8.5	8.5	8.6	8.4	8.2	8.3	8.3	8.4	8.5	8.5	7.8	7.8	7.7	7.7	8.0	8.5	7.6	8.4	8.5	8.4	8.6	8.3	8.3	8.2
Average	8.1	8.0	8.0	8.3	8.3	8.3	8.3	8.3	8.1	8.2	8.1	8.2	8.3	8.1	7.6	7.6	7.7	7.5	7.8	8.4	7.5	8.3	8.4	8.3	8.4	8.1	8.2	8.1
25 Percentile	8.0	7.9	8.1	8.1	8.2	8.2	8.1	8.1	8.0	8.1	8.1	8.1	8.1	7.9	7.3	7.3	7.4	7.3	7.6	8.3	7.3	8.1	8.3	8.1	8.1	8.0	8.1	8.0
Min	8.0	7.5	6.2	8.0	7.8	7.8	8.0	8.0	7.3	7.8	7.2	7.9	7.8	7.7	6.9	7.1	7.2	6.7	7.3	7.9	7.2	8.0	8.0	7.9	8.0	7.1	7.6	7.6

Figure No. 19: 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												Godavari						Weinganga									Pranhita & Oth	
Max	39.0	32.0	39.0	39.0	34.0	39.0	40.0	39.0	27.0	39.0	39.0	39.0	33.0	47.0	280.	280.	39.0	280.	47.0	39.0	280.	32.0	39.0	32.0	39.0	38.0	39.0	40.0
75 Percentile	24.8	20.8	26.0	33.3	21.8	21.0	39.0	26.0	26.3	35.3	34.0	35.3	25.0	37.8	70.5	102.	31.0	220.	30.0	32.3	220.	26.3	33.3	26.5	34.0	27.5	39.0	39.0
Average	22.5	19.3	17.8	21.5	18.1	20.8	25.1	20.2	18.2	25.3	23.5	22.2	18.1	24.0	82.7	86.4	25.1	137.	23.6	22.5	154.	16.6	21.1	19.7	22.6	19.4	22.3	22.9
25 Percentile	17.8	14.0	9.2	12.8	12.5	14.0	13.8	11.8	10.0	15.8	16.3	14.0	12.0	12.3	27.5	21.5	20.0	46.0	14.0	17.5	46.8	10.5	12.3	13.0	14.0	11.8	11.8	14.0
Min	11.0	14.0	4.0	6.0	11.0	14.0	9.2	6.8	4.0	4.0	12.0	4.0	11.0	4.0	13.0	14.0	12.0	30.0	12.0	4.5	34.0	4.0	6.1	11.0	13.0	9.3	10.0	4.0

Figure No. 20: 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	69	75	Dry	76	75	76	75	74	74	75
May	Dry	Dry	Dry	75	Dry	Dry	72	75	76	74	72	74
Jun	Dry	Dry	Dry	70	Dry	Dry	70	72	74	74	73	74
Jul	74	62	75	75	75	74	75	75	77	73	75	76
Aug	78	72	77	75	75	74	75	76	75	74	76	76
Sep	79	73	78	74	82	70	64	70	63	70	60	71
Oct	79	80	80	78	73	84	78	79	76	74	74	78
Nov	Dry	Dry	79	76	74	75	78	80	79	74	76	78
Dec	Dry	Dry	83	82	80	75	70	79	77	79	73	83
Jan	Dry	Dry	81	82	74	77	79	80	82	83	78	77
Feb	Dry	Dry	85	77	73	75	79	82	86	77	78	75
Mar	Dry	Dry	82	70	Dry	76	75	77	89	66	82	75
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	No data	Does not comply with WQI Calculation criteria (NA)

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	77	68	77	75	60	33	71	70	32	72	70	73	68	73	69	75
May	Dry	70	40	39	Dry	33	74	73	30	77	74	74	72	74	74	88
Jun	Dry	75	NA	NA	Dry	NA	Dry	71	NA	73	72	70	71	74	74	74
Jul	77	76	46	44	66	39	81	74	NA	74	74	75	75	76	75	74
Aug	76	79	39	40	66	NA	74	74	Dry	76	76	77	76	78	79	74
Sep	72	82	44	44	65	42	80	77	36	76	76	78	77	81	81	80
Oct	77	Dry	NA	67	81	NA	80	77	Dry	70	67	80	79	76	72	74
Nov	78	76	60	50	84	NA	80	77	NA	78	75	85	78	80	78	75
Dec	80	Dry	NA	Dry	NA	NA	81	82	NA	81	79	79	77	78	78	76
Jan	78	78	48	47	79	NA	79	79	NA	83	79	77	76	83	78	68
Feb	78	78	53	51	80	NA	82	80	NA	85	79	77	75	81	77	74
Mar	79	77	52	50	59	NA	78	77	NA	82	79	79	76	85	82	81
Station Code	2722	185	189	188	1909	186	1910	1908	187	2170	2171	2173	2172	2175	2176	11
Sub Basin	Weinganga															Pranhita & Others
Basin	Godavari															

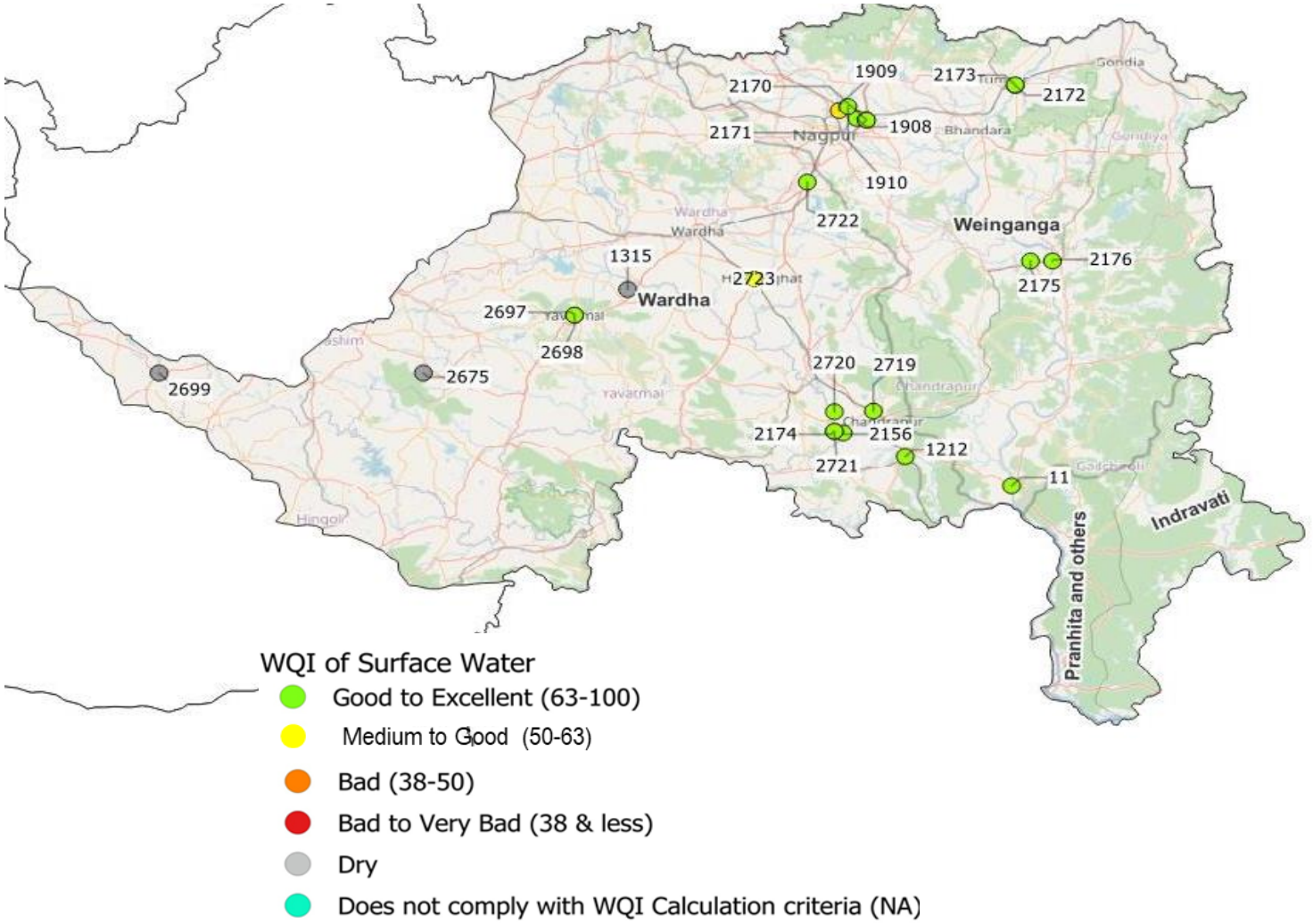
Legend

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

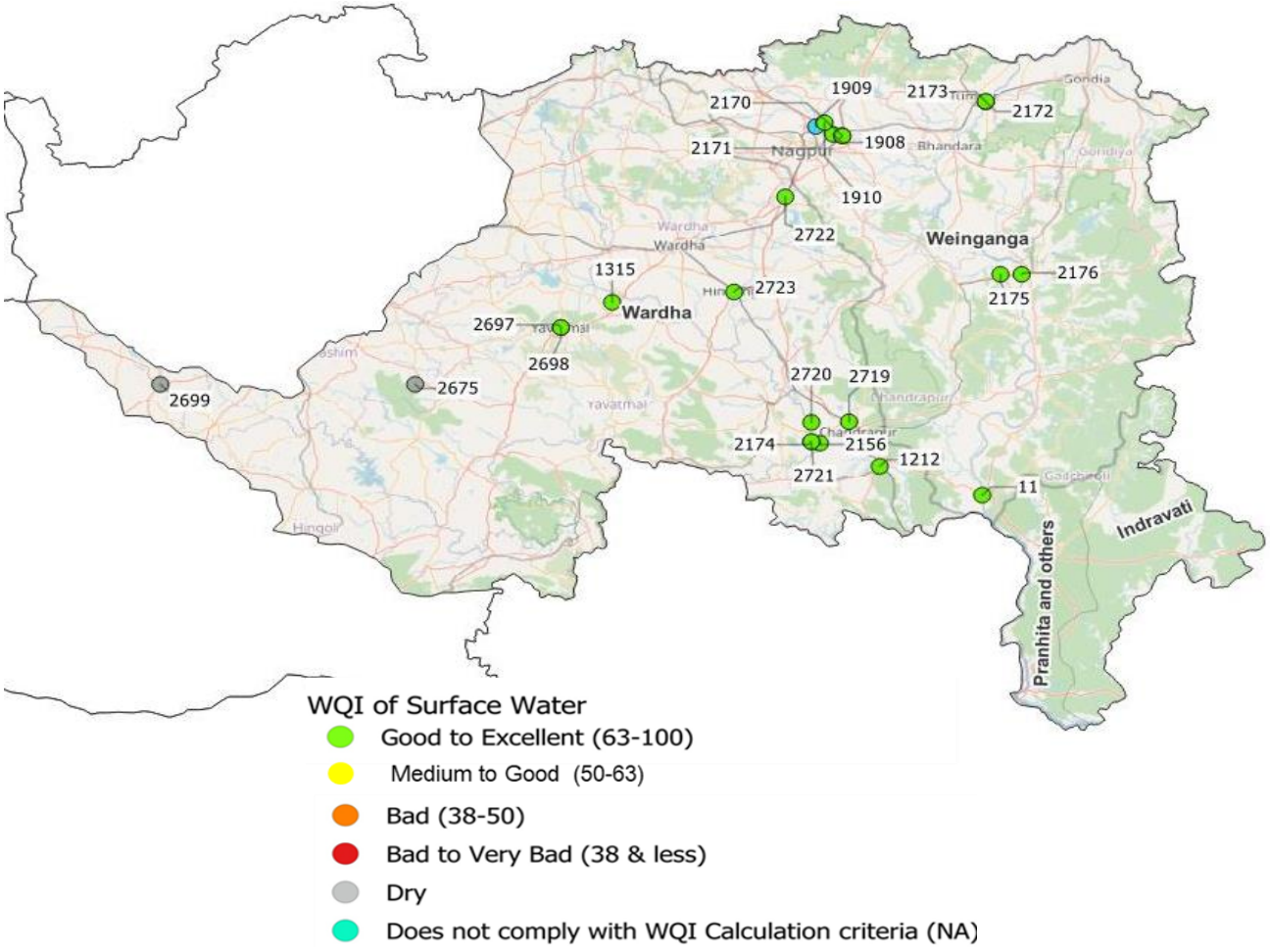
Table No. 19: Surface water quality monitoring stations in Godavari Basin (2 of 2)

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 SurfaceWQI at Godavari Basin (2 of 2) (April 2021)



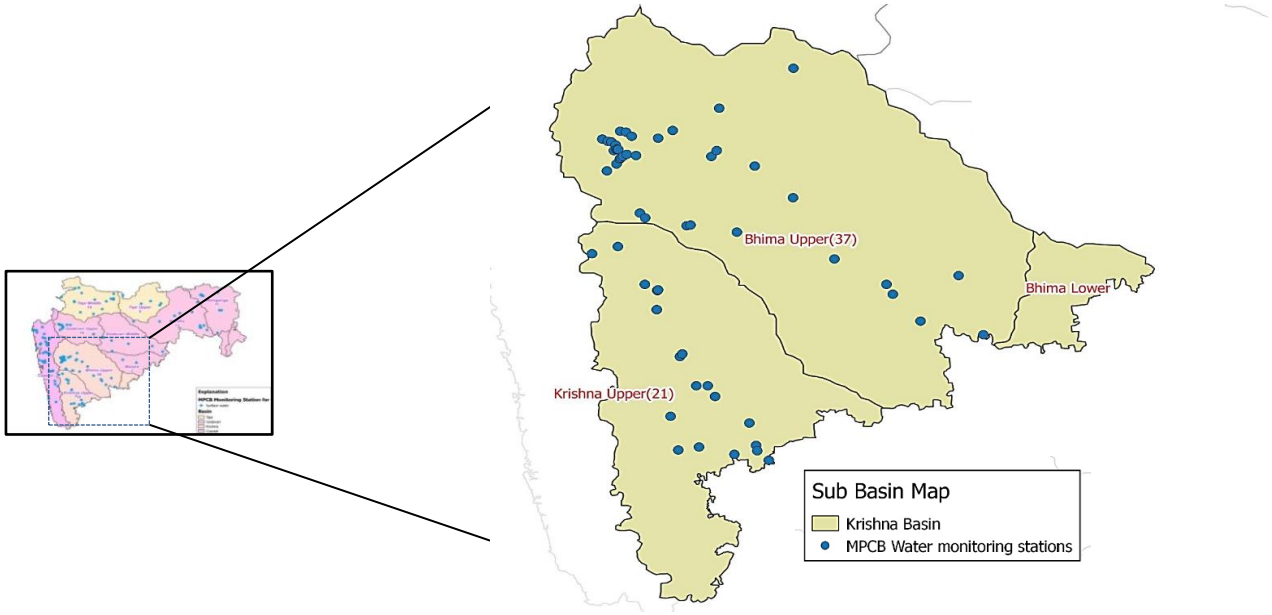
Spatial map of SurfaceWQI at Godavari Basin (2 of 2) (December 2021)



Krishna Basin

The Krishna is the second largest eastward draining interstate river in Peninsular India. It rises in the Mahadev range of the Western Ghats at an altitude of 1,337 m near Mahabaleshwar in Maharashtra State, about 64 km from the Arabian Sea. It flows for a distance of 305 km in Maharashtra, 483 km in Karnataka and 612 km in Andhra Pradesh before finally out falling into the Bay of Bengal. The length of the river is about 1,400 km[22].

Krishna Basin is further divided into Bhima Upper and Krishna Upper.



[22] http://117.252.14.242/rbis/basin%20maps/krishna_about.htm

Krishna Basin (Intra Basin analysis)

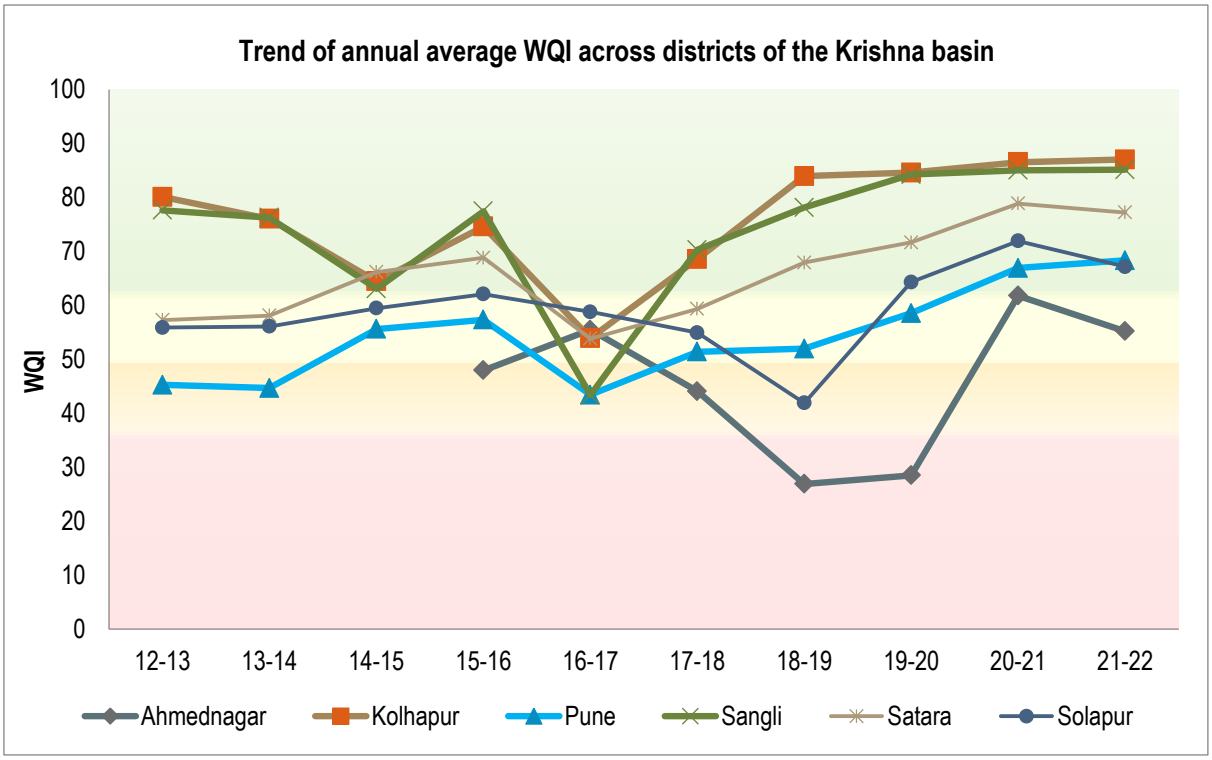


Figure No. 21: Trend of annual average WQI across districts of the Krishna basin

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.21 represents the intrabasin performance of the Krishna basin. Out of 6 districts coming under the Krishna basin, WQMs were installed in 3 districts namely Ahmednagar, Satara and Solapur recorded a decreasing trend in the annual average WQI whereas an increasing trend was recorded by WQMs installed in the remaining 3 districts namely Kolhapur, Pune and Sangli. It is important to note that the annual average WQI recorded by WQMS in Ahmednagar district was recorded under the 'Medium to Good' category this year as compared to 'Good to Excellent' in 2020-21. The value of its WQI is reduced from 61.8 (2020-21) to 55.21 in 2021-22.

WQMS in Satara and Solapur; though recorded a decreased 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 of Kolhapur, Pune and Sangli is concerned, the values are

increased by about 0.58%, 2.14%, and 0.11% respectively as compared to the previous year (2020-21).

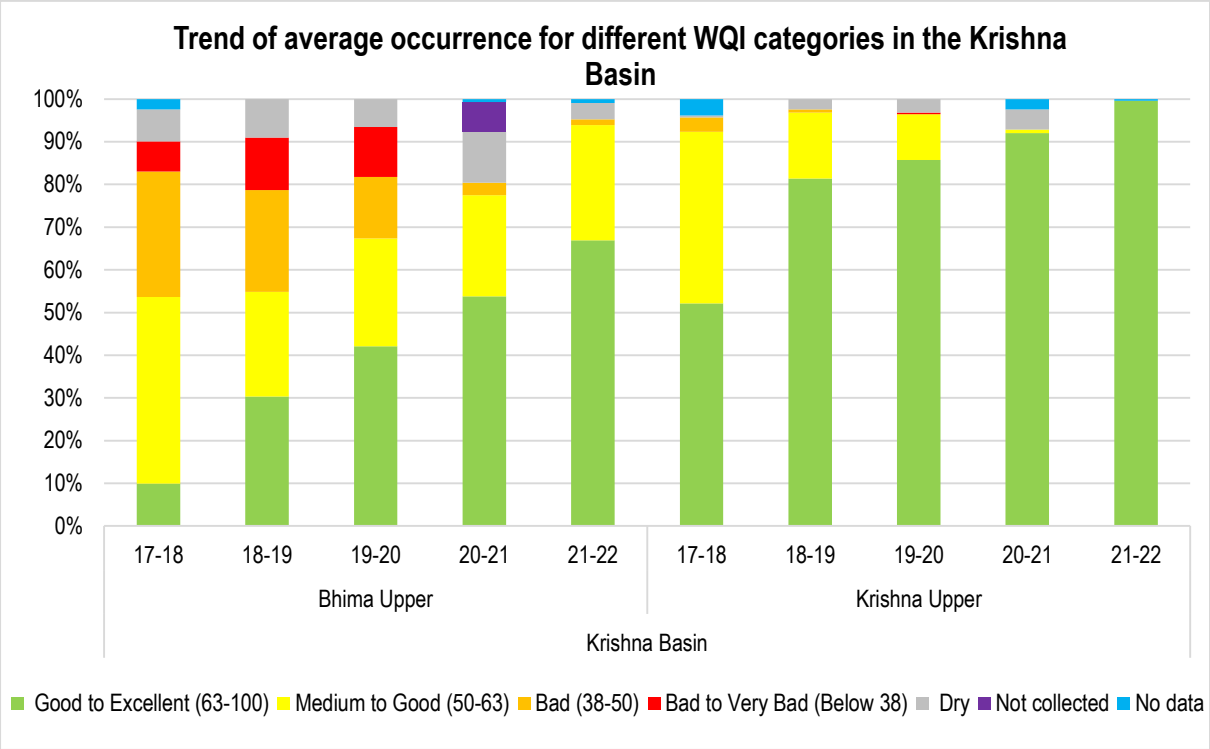
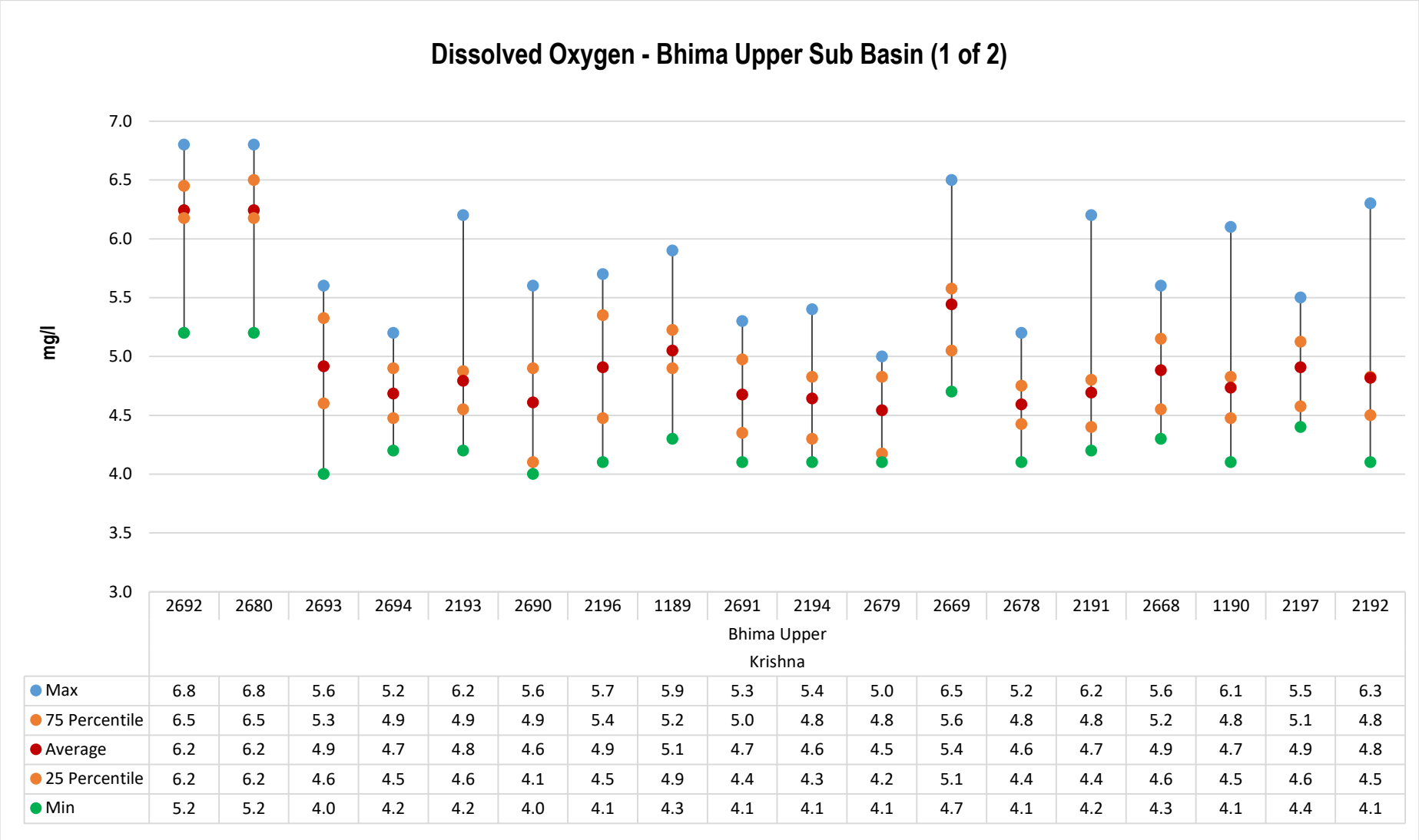


Figure No. 22: Trend of average occurrence for different WQI categories in the Krishna Basin

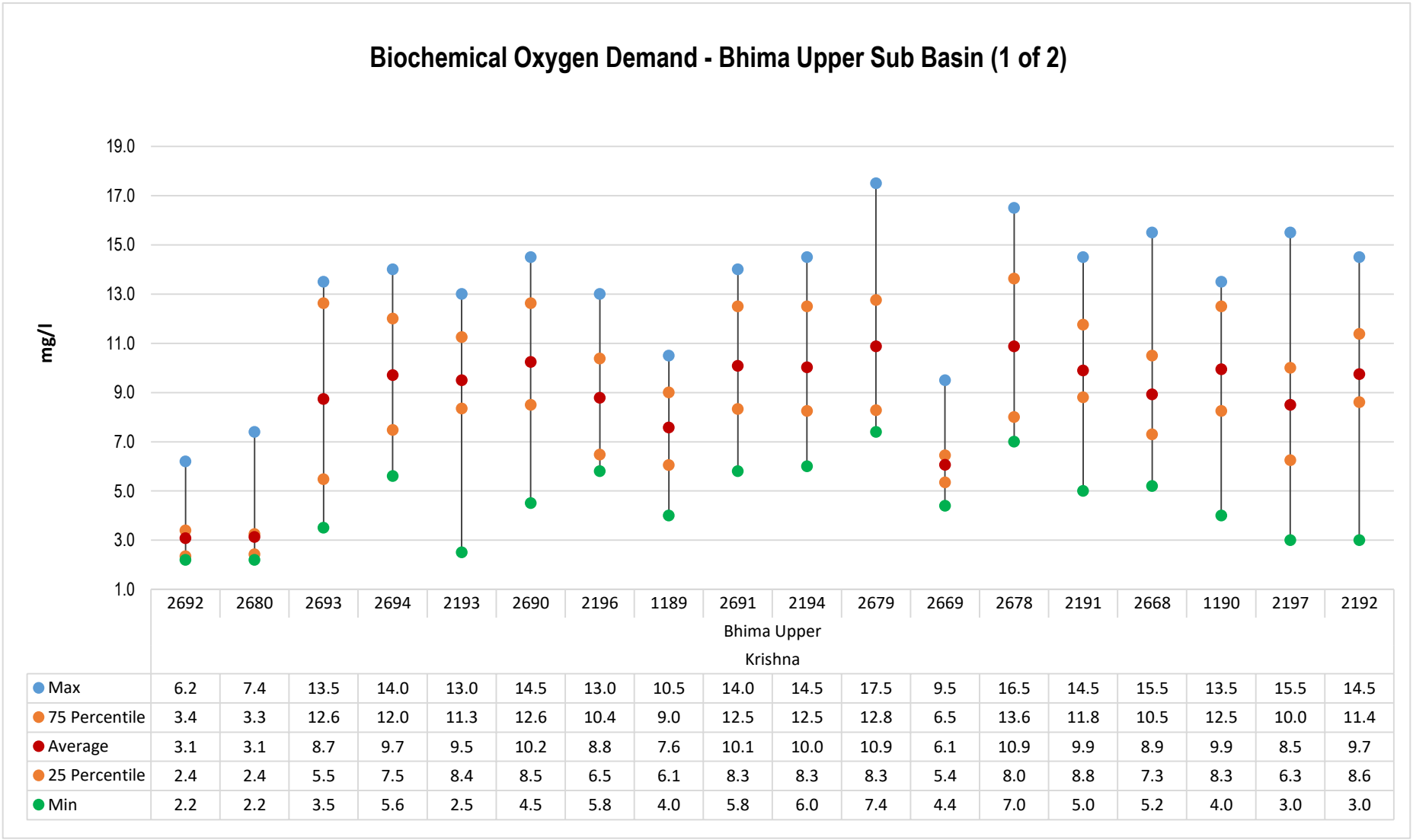
The interbasin analysis of the Krishna basin (Figure No. 22) shows an improvement in water quality in the year 2021-22. This is because both sub-basins; the Bhima Upper and the Krishna Upper recorded an increasing trend in the 'Good to Excellent' WQI observations. In the Bhima Upper, the percentage share has seen an increase from 53.83% to about 67% (66.89%) whereas the maximum observations (99.6%) from the Krishna Upper sub-basin were recorded under this category (rest 0.397% observations came under the 'No Data' category).

Apart from its 66.89% observations in the 'Good to Excellent' WQI category, about 27% of observations of the Bhima Upper' were recorded under the 'Medium to Good' category followed by 3.82% in the 'Dry', 1.35% in the 'Bad' and only about 0.9% in the 'No Data' categories.



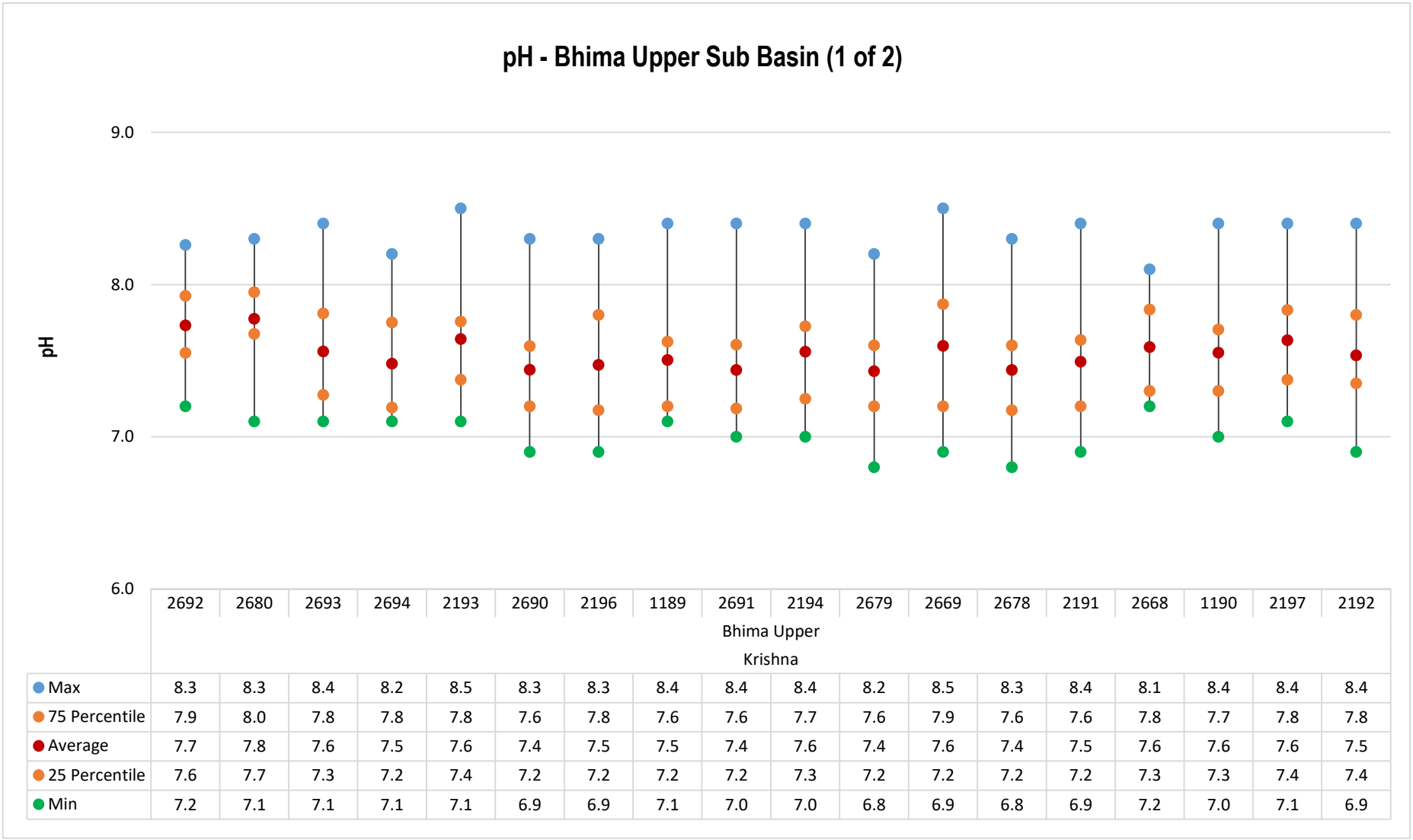
	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
	Bhima Upper																	
	Krishna																	
Max	6.8	6.8	5.6	5.2	6.2	5.6	5.7	5.9	5.3	5.4	5.0	6.5	5.2	6.2	5.6	6.1	5.5	6.3
75 Percentile	6.5	6.5	5.3	4.9	4.9	4.9	5.4	5.2	5.0	4.8	4.8	5.6	4.8	4.8	5.2	4.8	5.1	4.8
Average	6.2	6.2	4.9	4.7	4.8	4.6	4.9	5.1	4.7	4.6	4.5	5.4	4.6	4.7	4.9	4.7	4.9	4.8
25 Percentile	6.2	6.2	4.6	4.5	4.6	4.1	4.5	4.9	4.4	4.3	4.2	5.1	4.4	4.4	4.6	4.5	4.6	4.5
Min	5.2	5.2	4.0	4.2	4.2	4.0	4.1	4.3	4.1	4.1	4.1	4.7	4.1	4.2	4.3	4.1	4.4	4.1

Figure No. 23: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (1 of 2)



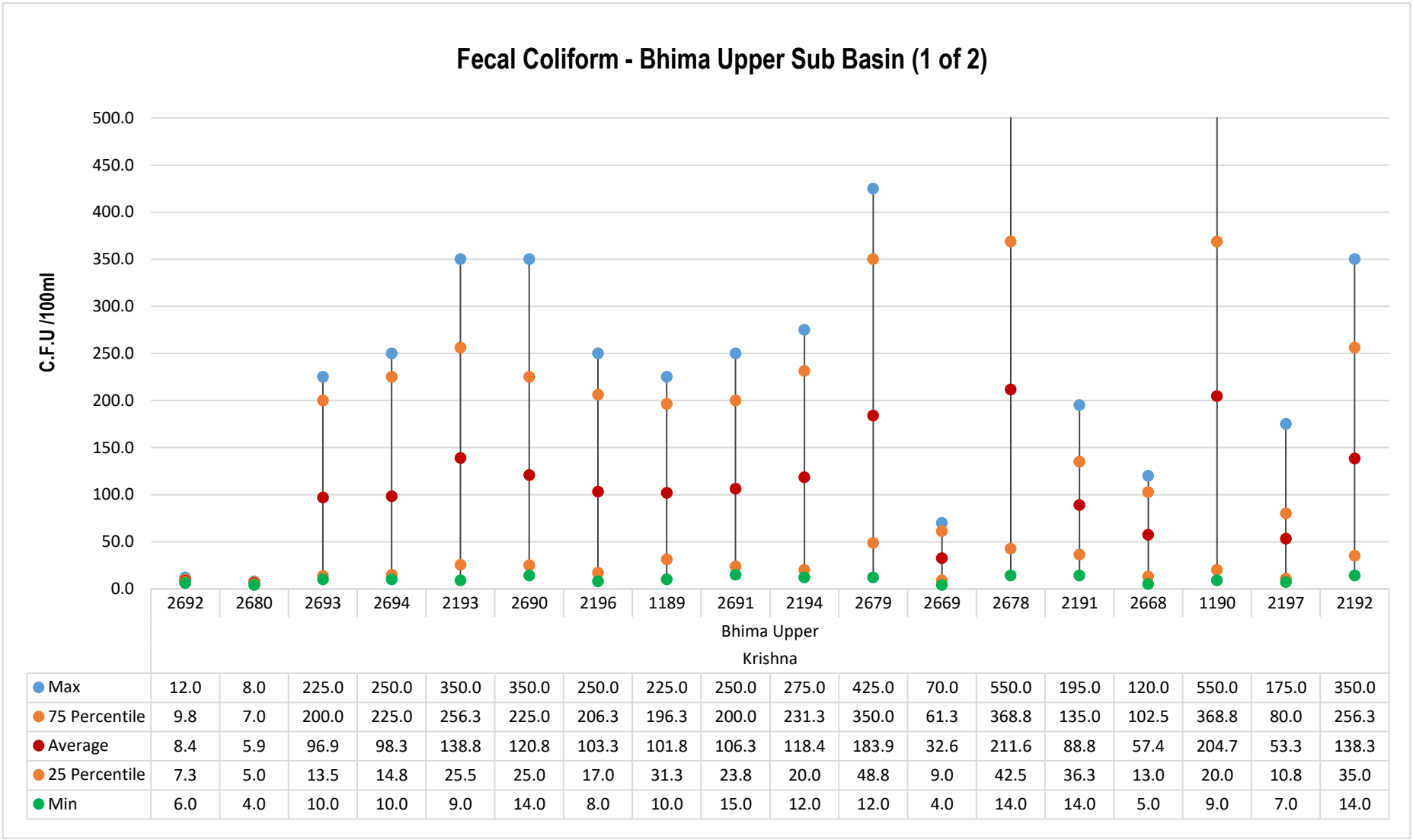
	2692	2680	2693	2694	2193	2690	2196	1189	2691	2194	2679	2669	2678	2191	2668	1190	2197	2192
Max	6.2	7.4	13.5	14.0	13.0	14.5	13.0	10.5	14.0	14.5	17.5	9.5	16.5	14.5	15.5	13.5	15.5	14.5
75 Percentile	3.4	3.3	12.6	12.0	11.3	12.6	10.4	9.0	12.5	12.5	12.8	6.5	13.6	11.8	10.5	12.5	10.0	11.4
Average	3.1	3.1	8.7	9.7	9.5	10.2	8.8	7.6	10.1	10.0	10.9	6.1	10.9	9.9	8.9	9.9	8.5	9.7
25 Percentile	2.4	2.4	5.5	7.5	8.4	8.5	6.5	6.1	8.3	8.3	8.3	5.4	8.0	8.8	7.3	8.3	6.3	8.6
Min	2.2	2.2	3.5	5.6	2.5	4.5	5.8	4.0	5.8	6.0	7.4	4.4	7.0	5.0	5.2	4.0	3.0	3.0

Figure No. 24: 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
	Bhima Upper																	
	Krishna																	
Max	8.3	8.3	8.4	8.2	8.5	8.3	8.3	8.4	8.4	8.4	8.2	8.5	8.3	8.4	8.1	8.4	8.4	8.4
75 Percentile	7.9	8.0	7.8	7.8	7.8	7.6	7.8	7.6	7.6	7.7	7.6	7.9	7.6	7.6	7.8	7.7	7.8	7.8
Average	7.7	7.8	7.6	7.5	7.6	7.4	7.5	7.5	7.4	7.6	7.4	7.6	7.4	7.5	7.6	7.6	7.6	7.5
25 Percentile	7.6	7.7	7.3	7.2	7.4	7.2	7.2	7.2	7.2	7.3	7.2	7.2	7.2	7.2	7.3	7.3	7.4	7.4
Min	7.2	7.1	7.1	7.1	7.1	6.9	6.9	7.1	7.0	7.0	6.8	6.9	6.8	6.9	7.2	7.0	7.1	6.9

Figure No. 25: 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	8.0	225.0	250.0	350.0	350.0	250.0	225.0	250.0	275.0	425.0	70.0	550.0	195.0	120.0	550.0	175.0	350.0
75 Percentile	9.8	7.0	200.0	225.0	256.3	225.0	206.3	196.3	200.0	231.3	350.0	61.3	368.8	135.0	102.5	368.8	80.0	256.3
Average	8.4	5.9	96.9	98.3	138.8	120.8	103.3	101.8	106.3	118.4	183.9	32.6	211.6	88.8	57.4	204.7	53.3	138.3
25 Percentile	7.3	5.0	13.5	14.8	25.5	25.0	17.0	31.3	23.8	20.0	48.8	9.0	42.5	36.3	13.0	20.0	10.8	35.0
Min	6.0	4.0	10.0	10.0	9.0	14.0	8.0	10.0	15.0	12.0	12.0	4.0	14.0	14.0	5.0	9.0	7.0	14.0

Figure No. 26: 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)

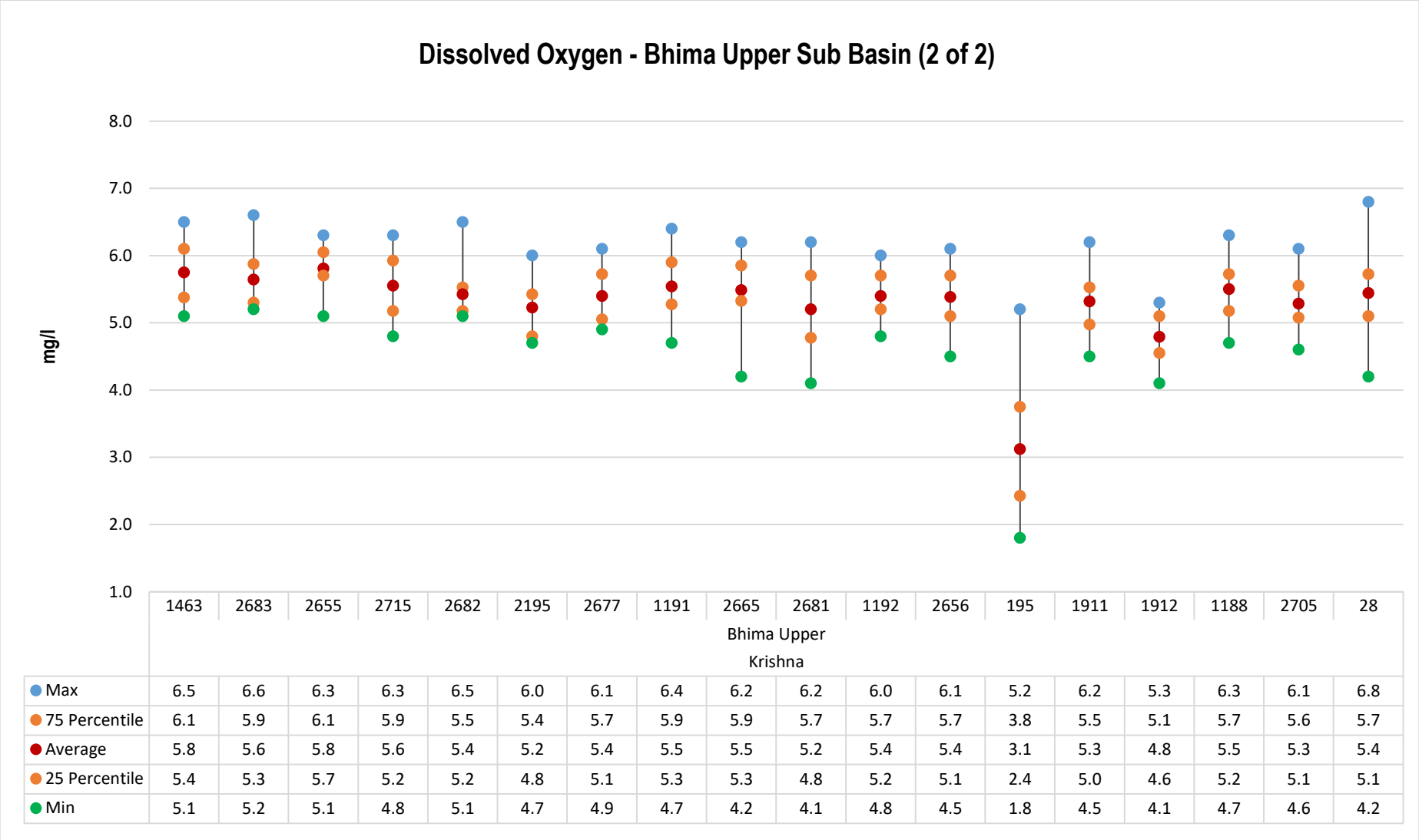
Apr	87	88	58	55	57	57	55	67	55	56	52	72	53	60	67	57	60	53
May	83	83	51	53	50	52	66	60	54	51	54	63	53	58	56	50	64	54
Jun	83	82	55	54	53	56	55	59	56	55	55	62	53	55	55	53	56	52
Jul	83	81	54	55	52	53	67	56	53	51	51	70	51	57	55	51	58	54
Aug	70	85	63	63	61	64	64	66	66	63	63	68	58	62	69	55	70	56
Sep	85	89	63	65	59	61	63	64	62	63	55	77	54	56	66	60	69	66
Oct	88	90	71	69	70	64	73	71	69	64	56	82	60	77	71	64	66	70
Nov	93	91	81	71	84	69	72	79	67	74	66	74	70	62	74	83	80	83
Dec	89	78	71	77	63	79	72	74	72	62	68	83	70	65	71	60	76	61
Jan	86	87	78	64	67	63	63	68	68	68	61	81	61	63	70	65	63	63
Feb	85	86	78	72	68	64	65	67	65	65	63	74	68	67	72	70	72	70
Mar	81	81	70	63	62	62	62	63	61	63	65	69	61	60	Dry	67	65	62
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	No data	Does not comply with WQI Calculation criteria (NA)

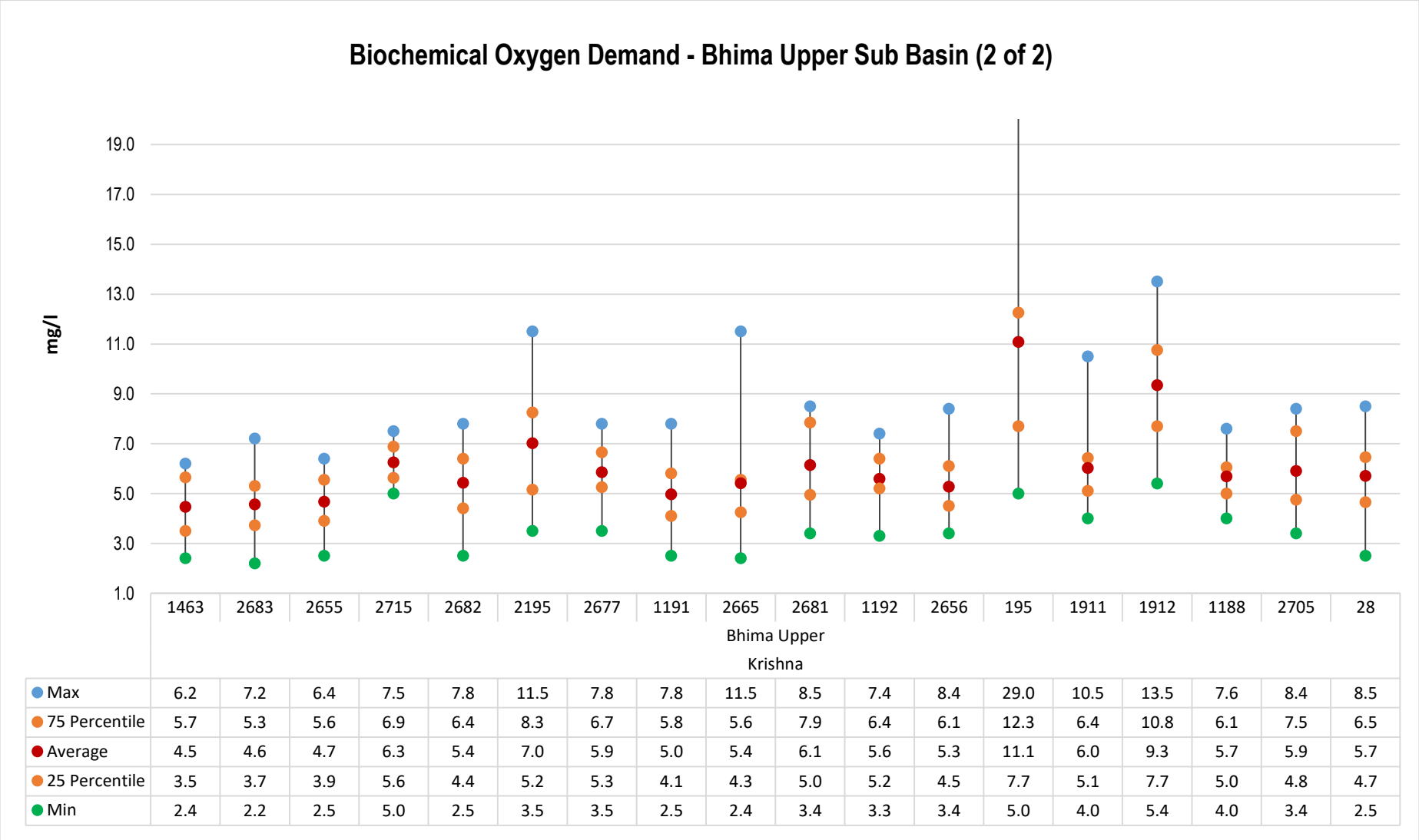
Table No. 20 : Surface water quality monitoring stations in Krishna Basin (1 of 2) Sub Basin –Bhima Upper (1 of 2)

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



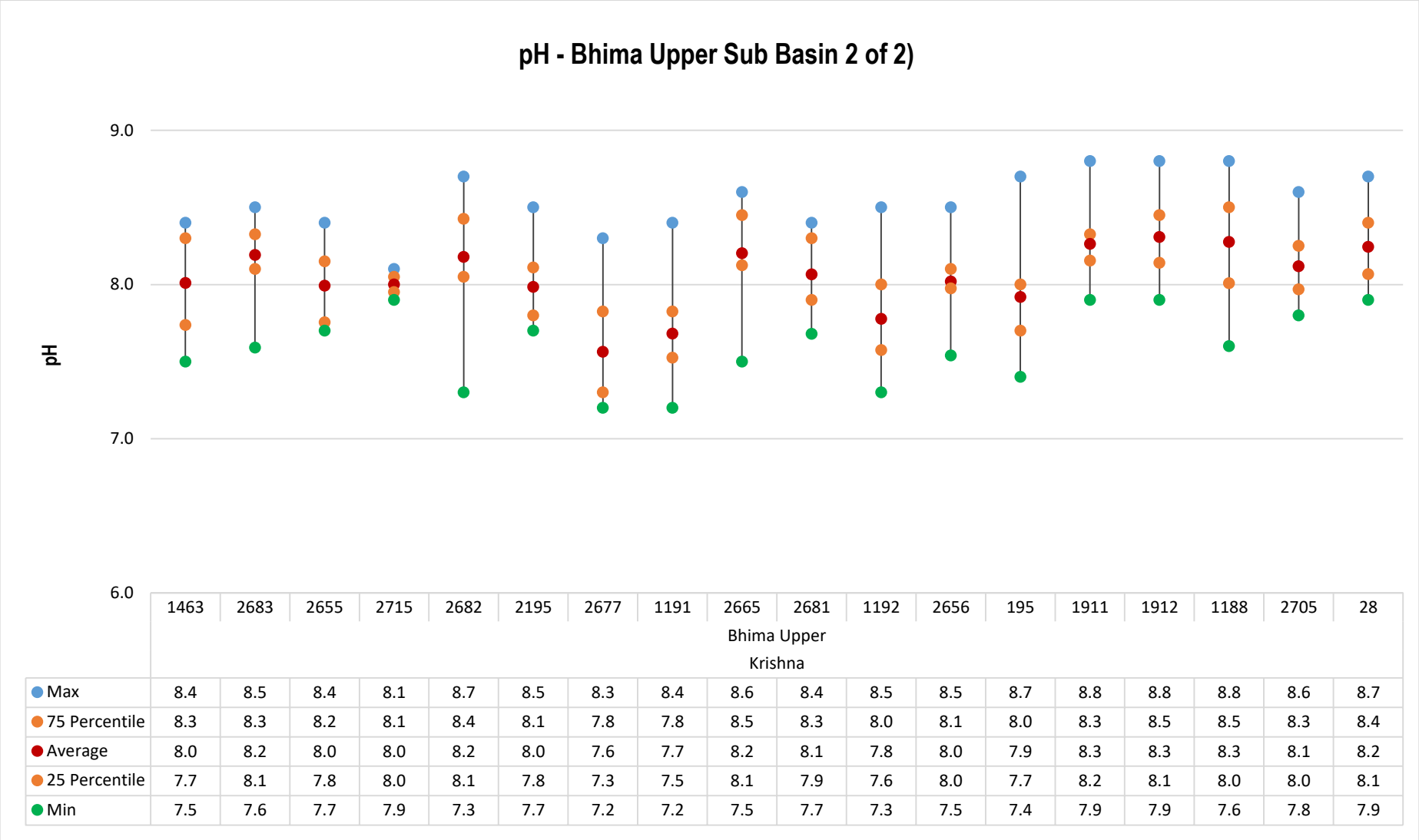
	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
Max	6.5	6.6	6.3	6.3	6.5	6.0	6.1	6.4	6.2	6.2	6.0	6.1	5.2	6.2	5.3	6.3	6.1	6.8
75 Percentile	6.1	5.9	6.1	5.9	5.5	5.4	5.7	5.9	5.9	5.7	5.7	5.7	3.8	5.5	5.1	5.7	5.6	5.7
Average	5.8	5.6	5.8	5.6	5.4	5.2	5.4	5.5	5.5	5.2	5.4	5.4	3.1	5.3	4.8	5.5	5.3	5.4
25 Percentile	5.4	5.3	5.7	5.2	5.2	4.8	5.1	5.3	5.3	4.8	5.2	5.1	2.4	5.0	4.6	5.2	5.1	5.1
Min	5.1	5.2	5.1	4.8	5.1	4.7	4.9	4.7	4.2	4.1	4.8	4.5	1.8	4.5	4.1	4.7	4.6	4.2

Figure No. 27: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Bhima upper sub basin -Krishna Basin (2 of 2)



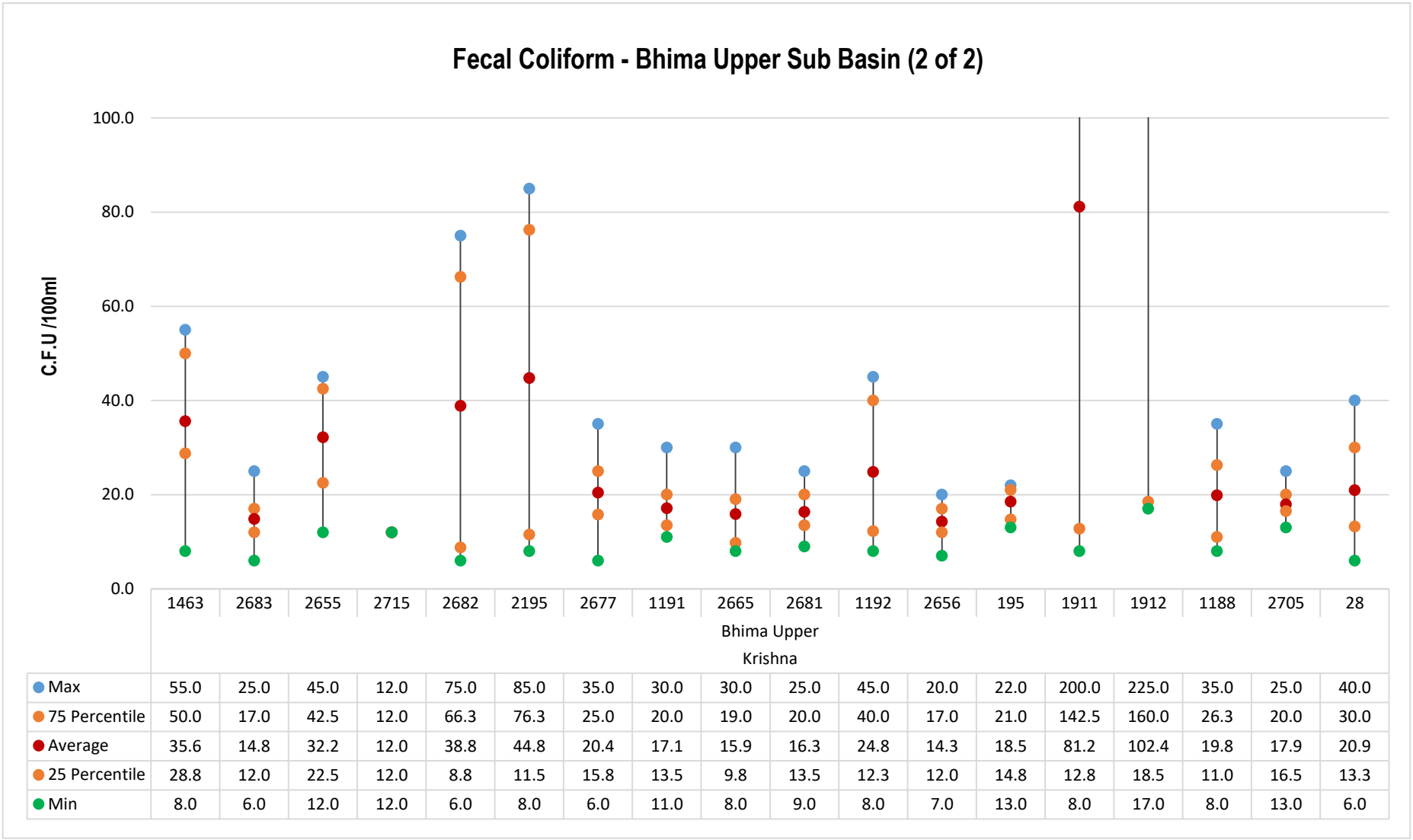
	1463	2683	2655	2715	2682	2195	2677	1191	2665	2681	1192	2656	195	1911	1912	1188	2705	28
Max	6.2	7.2	6.4	7.5	7.8	11.5	7.8	7.8	11.5	8.5	7.4	8.4	29.0	10.5	13.5	7.6	8.4	8.5
75 Percentile	5.7	5.3	5.6	6.9	6.4	8.3	6.7	5.8	5.6	7.9	6.4	6.1	12.3	6.4	10.8	6.1	7.5	6.5
Average	4.5	4.6	4.7	6.3	5.4	7.0	5.9	5.0	5.4	6.1	5.6	5.3	11.1	6.0	9.3	5.7	5.9	5.7
25 Percentile	3.5	3.7	3.9	5.6	4.4	5.2	5.3	4.1	4.3	5.0	5.2	4.5	7.7	5.1	7.7	5.0	4.8	4.7
Min	2.4	2.2	2.5	5.0	2.5	3.5	3.5	2.5	2.4	3.4	3.3	3.4	5.0	4.0	5.4	4.0	3.4	2.5

Figure No. 28: 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	8.4	8.5	8.4	8.1	8.7	8.5	8.3	8.4	8.6	8.4	8.5	8.5	8.7	8.8	8.8	8.8	8.6	8.7
75 Percentile	8.3	8.3	8.2	8.1	8.4	8.1	7.8	7.8	8.5	8.3	8.0	8.1	8.0	8.3	8.5	8.5	8.3	8.4
Average	8.0	8.2	8.0	8.0	8.2	8.0	7.6	7.7	8.2	8.1	7.8	8.0	7.9	8.3	8.3	8.3	8.1	8.2
25 Percentile	7.7	8.1	7.8	8.0	8.1	7.8	7.3	7.5	8.1	7.9	7.6	8.0	7.7	8.2	8.1	8.0	8.0	8.1
Min	7.5	7.6	7.7	7.9	7.3	7.7	7.2	7.2	7.5	7.7	7.3	7.5	7.4	7.9	7.9	7.6	7.8	7.9

Figure No. 29: 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	55.0	25.0	45.0	12.0	75.0	85.0	35.0	30.0	30.0	25.0	45.0	20.0	22.0	200.0	225.0	35.0	25.0	40.0
75 Percentile	50.0	17.0	42.5	12.0	66.3	76.3	25.0	20.0	19.0	20.0	40.0	17.0	21.0	142.5	160.0	26.3	20.0	30.0
Average	35.6	14.8	32.2	12.0	38.8	44.8	20.4	17.1	15.9	16.3	24.8	14.3	18.5	81.2	102.4	19.8	17.9	20.9
25 Percentile	28.8	12.0	22.5	12.0	8.8	11.5	15.8	13.5	9.8	13.5	12.3	12.0	14.8	12.8	18.5	11.0	16.5	13.3
Min	8.0	6.0	12.0	12.0	6.0	8.0	6.0	11.0	8.0	9.0	8.0	7.0	13.0	8.0	17.0	8.0	13.0	6.0

Figure No. 30: 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)

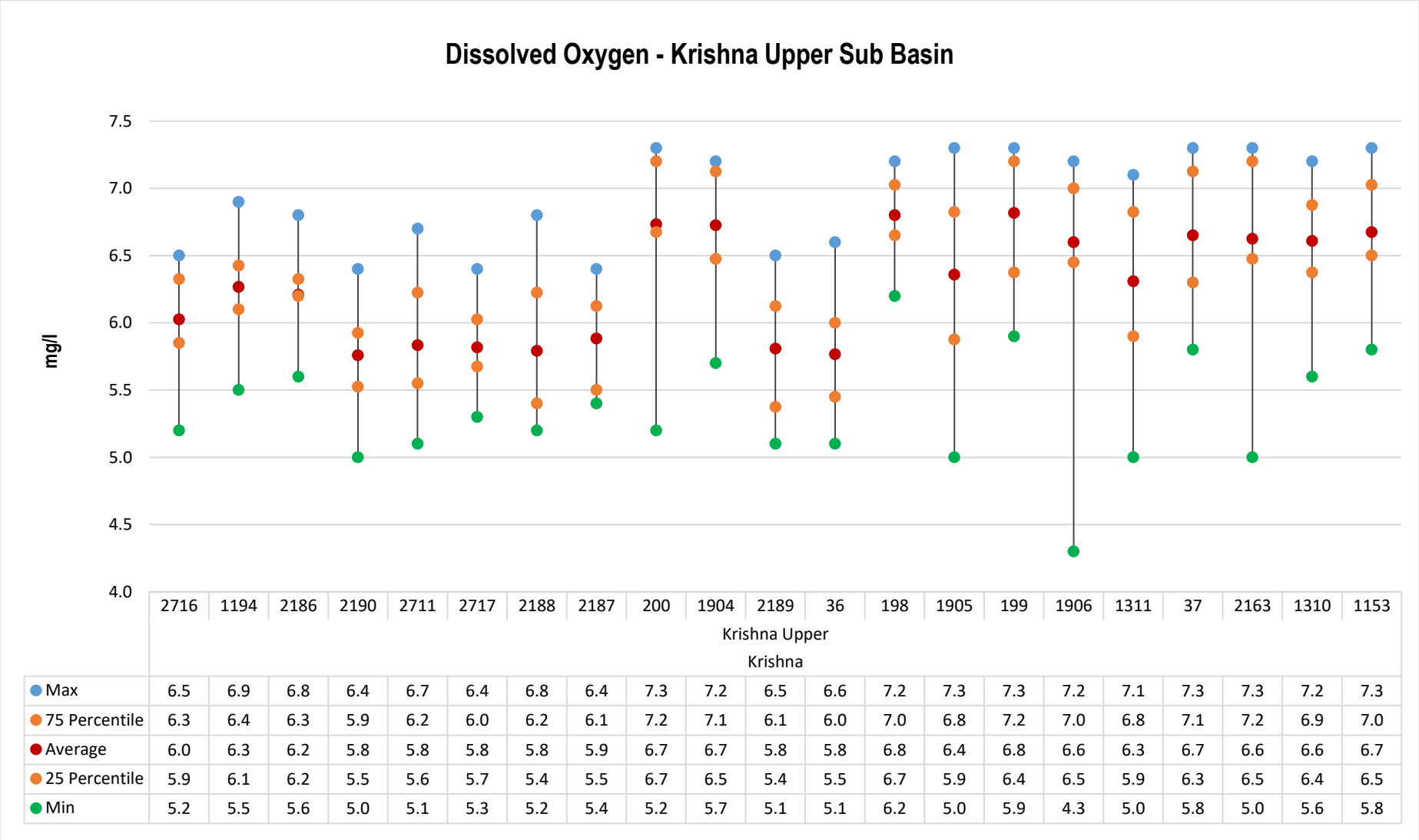
Apr	69	71	67	Dry	73	65	76	75	75	74	69	69	69	65	59	70	75	73
May	70	67	69	Dry	62	58	66	67	Dry	72	62	68	46	58	52	63	65	67
Jun	71	70	68	Dry	65	57	69	75	Dry	69	71	74	66	62	53	70	72	67
Jul	72	77	71	Dry	62	57	75	73	Dry	75	69	77	NA	52	49	67	66	69
Aug	71	77	79	Dry	68	69	77	80	78	78	71	78	47	66	62	69	76	73
Sep	66	76	77	Dry	67	64	81	70	Dry	74	72	72	47	64	54	74	77	70
Oct	79	71	72	78	75	76	76	80	76	67	80	NA	53	79	63	79	76	79
Nov	78	77	78	68	83	81	83	87	59	76	83	80	72	75	61	75	71	81
Dec	67	71	77	Dry	69	69	79	74	74	63	81	77	NA	71	69	76	65	78
Jan	75	76	78	Dry	68	72	74	81	68	66	77	69	48	64	53	72	68	60
Feb	85	82	76	Dry	72	74	70	78	71	65	73	76	48	72	65	66	60	58
Mar	79	72	Dry	Dry	74	70	66	72	78	63	71	70	56	70	Dry	66	72	66
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 of 2)																	
Basin	Krishna																	

Legend

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

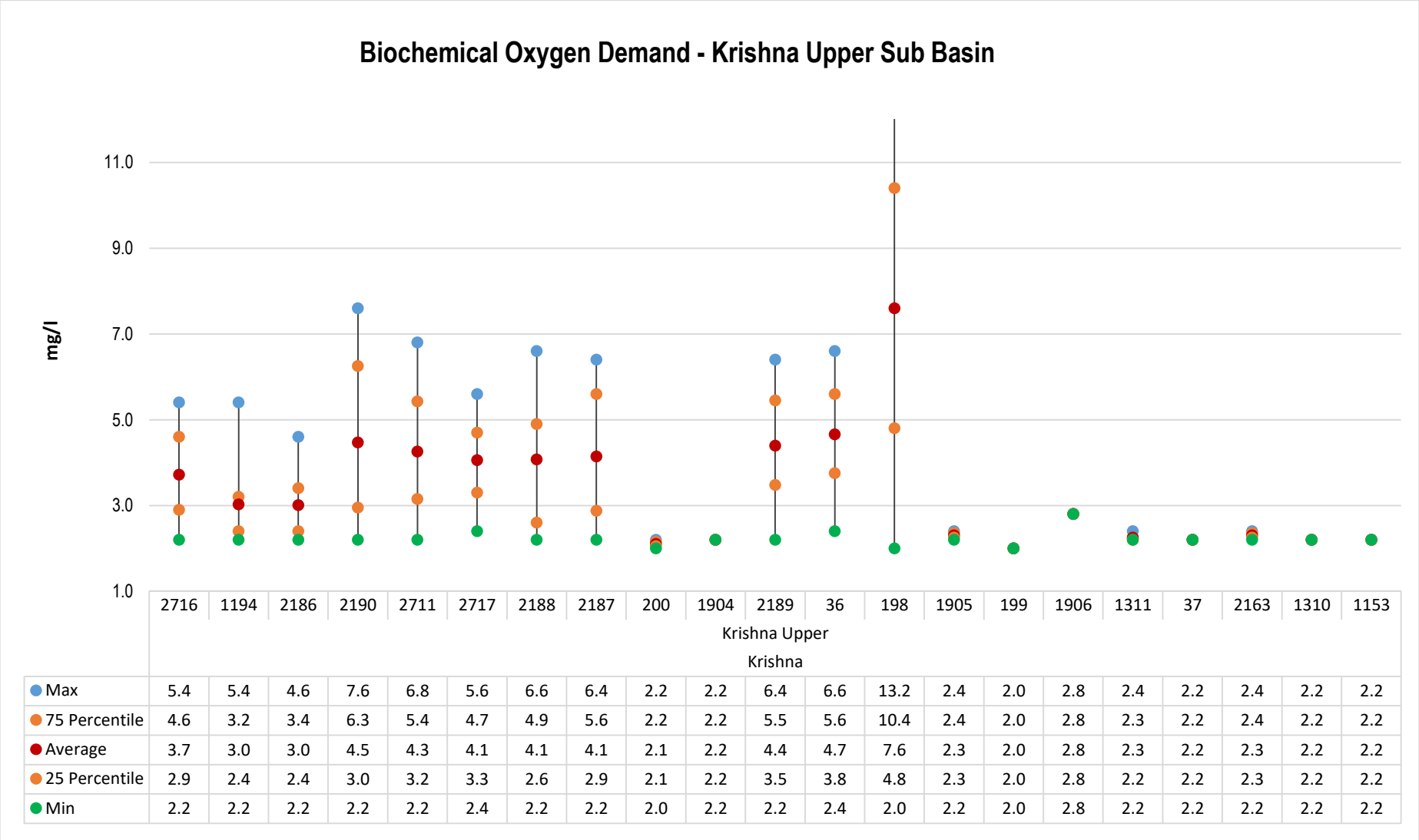
Table No. 21 : Surface water monitoring stations at Krishna Basin (1 of 2) Sub Basin Bhima Upper (2 of 2)

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



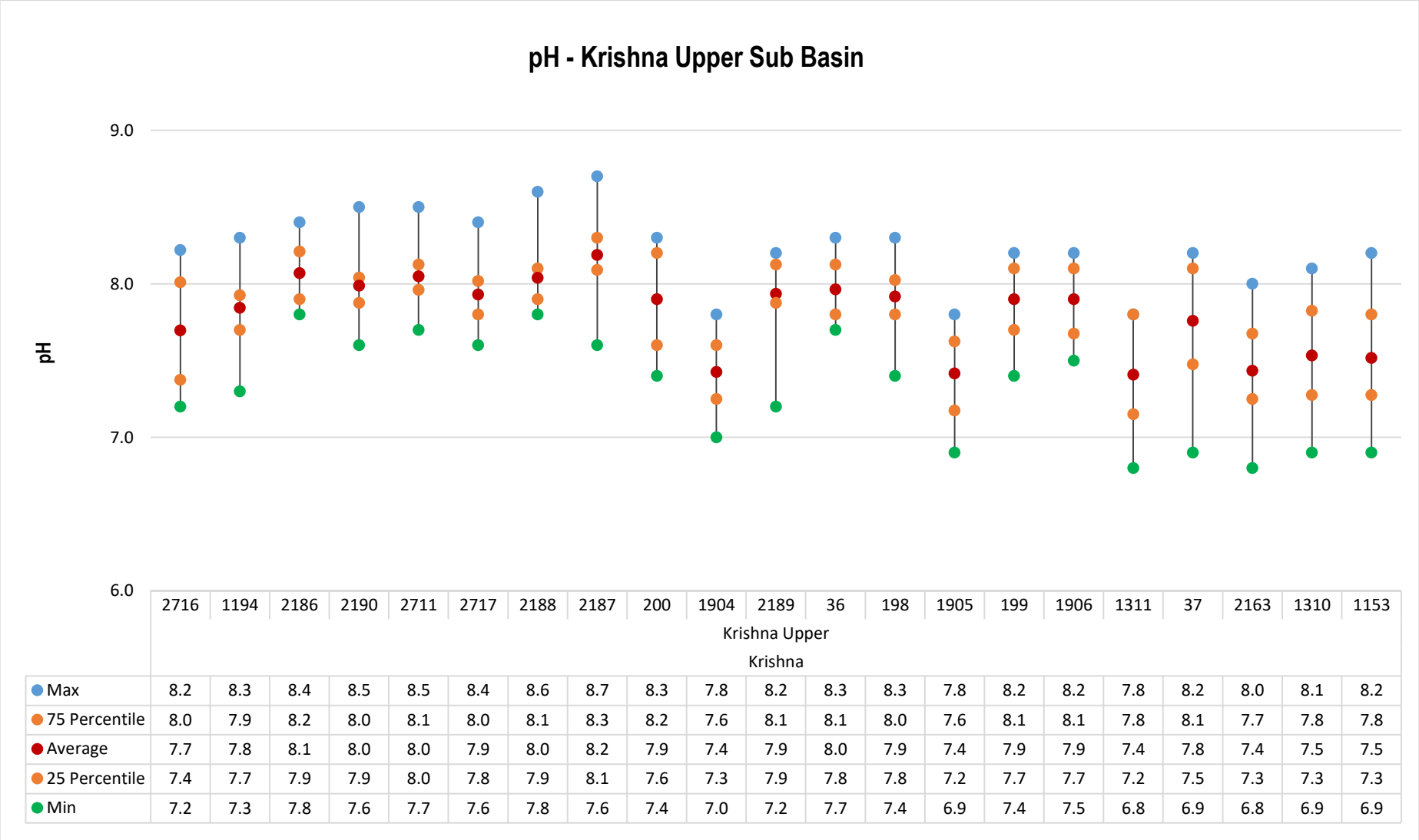
	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
	Krishna Upper Krishna																				
Max	6.5	6.9	6.8	6.4	6.7	6.4	6.8	6.4	7.3	7.2	6.5	6.6	7.2	7.3	7.3	7.2	7.1	7.3	7.3	7.2	7.3
75 Percentile	6.3	6.4	6.3	5.9	6.2	6.0	6.2	6.1	7.2	7.1	6.1	6.0	7.0	6.8	7.2	7.0	6.8	7.1	7.2	6.9	7.0
Average	6.0	6.3	6.2	5.8	5.8	5.8	5.8	5.9	6.7	6.7	5.8	5.8	6.8	6.4	6.8	6.6	6.3	6.7	6.6	6.6	6.7
25 Percentile	5.9	6.1	6.2	5.5	5.6	5.7	5.4	5.5	6.7	6.5	5.4	5.5	6.7	5.9	6.4	6.5	5.9	6.3	6.5	6.4	6.5
Min	5.2	5.5	5.6	5.0	5.1	5.3	5.2	5.4	5.2	5.7	5.1	5.1	6.2	5.0	5.9	4.3	5.0	5.8	5.0	5.6	5.8

Figure No. 31: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Krishna upper sub basin -Krishna Basin



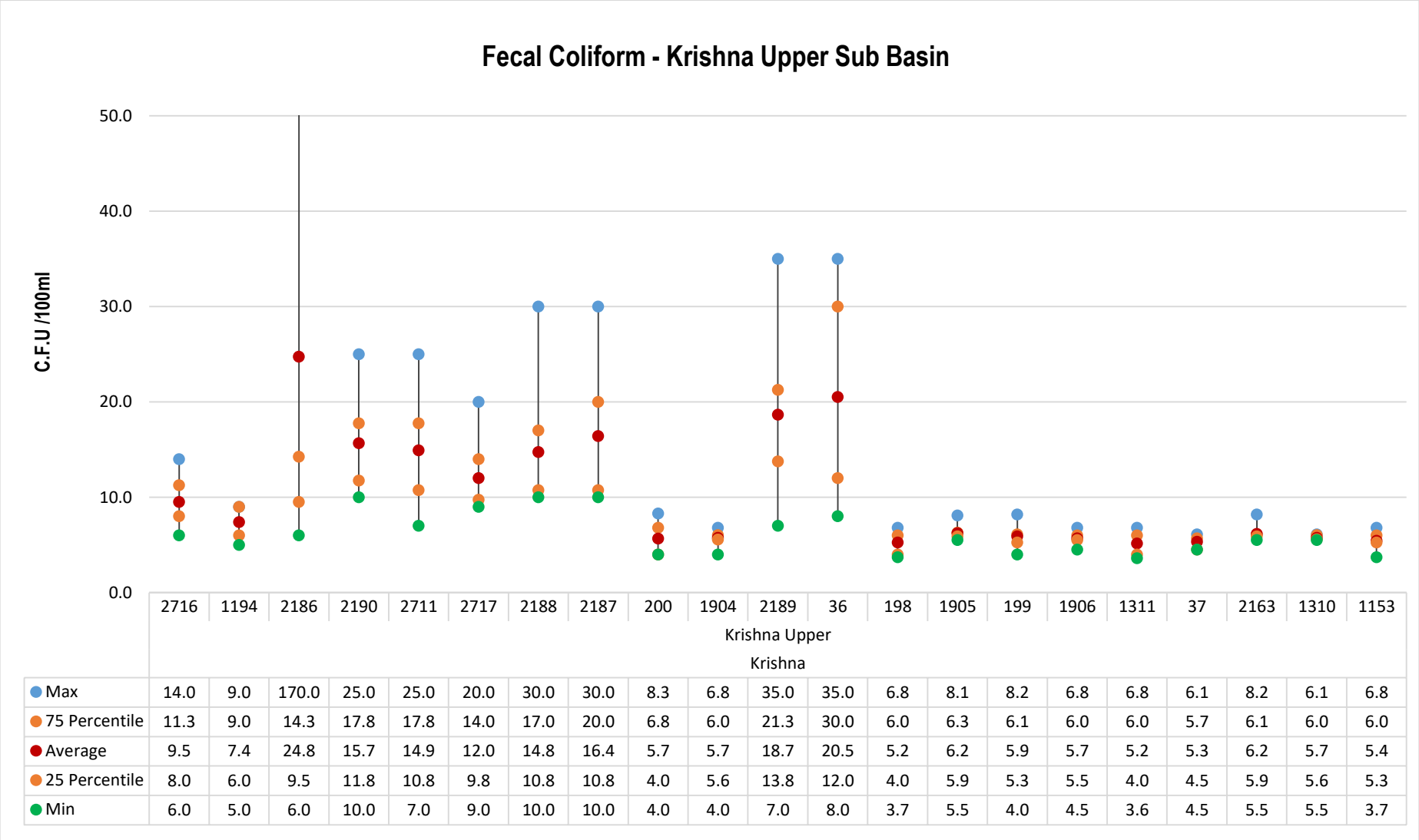
	2716	1194	2186	2190	2711	2717	2188	2187	200	1904	2189	36	198	1905	199	1906	1311	37	2163	1310	1153
Max	5.4	5.4	4.6	7.6	6.8	5.6	6.6	6.4	2.2	2.2	6.4	6.6	13.2	2.4	2.0	2.8	2.4	2.2	2.4	2.2	2.2
75 Percentile	4.6	3.2	3.4	6.3	5.4	4.7	4.9	5.6	2.2	2.2	5.5	5.6	10.4	2.4	2.0	2.8	2.3	2.2	2.4	2.2	2.2
Average	3.7	3.0	3.0	4.5	4.3	4.1	4.1	4.1	2.1	2.2	4.4	4.7	7.6	2.3	2.0	2.8	2.3	2.2	2.3	2.2	2.2
25 Percentile	2.9	2.4	2.4	3.0	3.2	3.3	2.6	2.9	2.1	2.2	3.5	3.8	4.8	2.3	2.0	2.8	2.2	2.2	2.3	2.2	2.2
Min	2.2	2.2	2.2	2.2	2.2	2.4	2.2	2.2	2.0	2.2	2.2	2.4	2.0	2.2	2.0	2.8	2.2	2.2	2.2	2.2	2.2

Figure No. 32: 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
	Krishna Upper																				
	Krishna																				
Max	8.2	8.3	8.4	8.5	8.5	8.4	8.6	8.7	8.3	7.8	8.2	8.3	8.3	7.8	8.2	8.2	7.8	8.2	8.0	8.1	8.2
75 Percentile	8.0	7.9	8.2	8.0	8.1	8.0	8.1	8.3	8.2	7.6	8.1	8.1	8.0	7.6	8.1	8.1	7.8	8.1	7.7	7.8	7.8
Average	7.7	7.8	8.1	8.0	8.0	7.9	8.0	8.2	7.9	7.4	7.9	8.0	7.9	7.4	7.9	7.9	7.4	7.8	7.4	7.5	7.5
25 Percentile	7.4	7.7	7.9	7.9	8.0	7.8	7.9	8.1	7.6	7.3	7.9	7.8	7.8	7.2	7.7	7.7	7.2	7.5	7.3	7.3	7.3
Min	7.2	7.3	7.8	7.6	7.7	7.6	7.8	7.6	7.4	7.0	7.2	7.7	7.4	6.9	7.4	7.5	6.8	6.9	6.8	6.9	6.9

Figure No. 33: 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	14.0	9.0	170.0	25.0	25.0	20.0	30.0	30.0	8.3	6.8	35.0	35.0	6.8	8.1	8.2	6.8	6.8	6.1	8.2	6.1	6.8
75 Percentile	11.3	9.0	14.3	17.8	17.8	14.0	17.0	20.0	6.8	6.0	21.3	30.0	6.0	6.3	6.1	6.0	6.0	5.7	6.1	6.0	6.0
Average	9.5	7.4	24.8	15.7	14.9	12.0	14.8	16.4	5.7	5.7	18.7	20.5	5.2	6.2	5.9	5.7	5.2	5.3	6.2	5.7	5.4
25 Percentile	8.0	6.0	9.5	11.8	10.8	9.8	10.8	10.8	4.0	5.6	13.8	12.0	4.0	5.9	5.3	5.5	4.0	4.5	5.9	5.6	5.3
Min	6.0	5.0	6.0	10.0	7.0	9.0	10.0	10.0	4.0	4.0	7.0	8.0	3.7	5.5	4.0	4.5	3.6	4.5	5.5	5.5	3.7

Figure No. 34: 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	76	84	76	71	78	76	75	79	85	89	74	70	86	88	84	84	84	88	88	87	88
May	77	87	78	64	68	76	70	72	88	85	74	72	86	85	86	86	88	85	87	87	87
Jun	75	88	81	71	77	78	72	72	84	88	70	74	86	87	84	88	91	88	90	88	87
Jul	75	89	74	72	73	75	79	69	85	89	76	73	87	89	86	87	86	87	86	88	90
Aug	80	82	77	79	76	77	76	73	86	87	77	73	86	86	87	88	87	88	85	87	87
Sep	87	85	85	83	73	80	75	72	84	87	74	75	84	89	85	85	92	88	88	90	91
Oct	89	NA	84	75	81	79	82	79	84	88	83	78	91	89	91	77	88	87	89	90	88
Nov	87	89	82	81	76	78	75	82	84	88	76	78	84	83	82	85	88	86	86	85	86
Dec	81	85	83	81	72	76	74	80	87	87	78	74	74	87	84	84	86	83	87	90	88
Jan	87	84	79	76	79	81	79	75	83	90	77	74	83	85	85	84	84	84	90	89	89
Feb	87	90	81	83	84	84	83	85	84	90	83	84	85	87	84	84	88	83	86	87	87
Mar	85	81	80	76	79	78	79	75	81	84	74	76	86	81	85	86	78	84	77	80	81
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																				

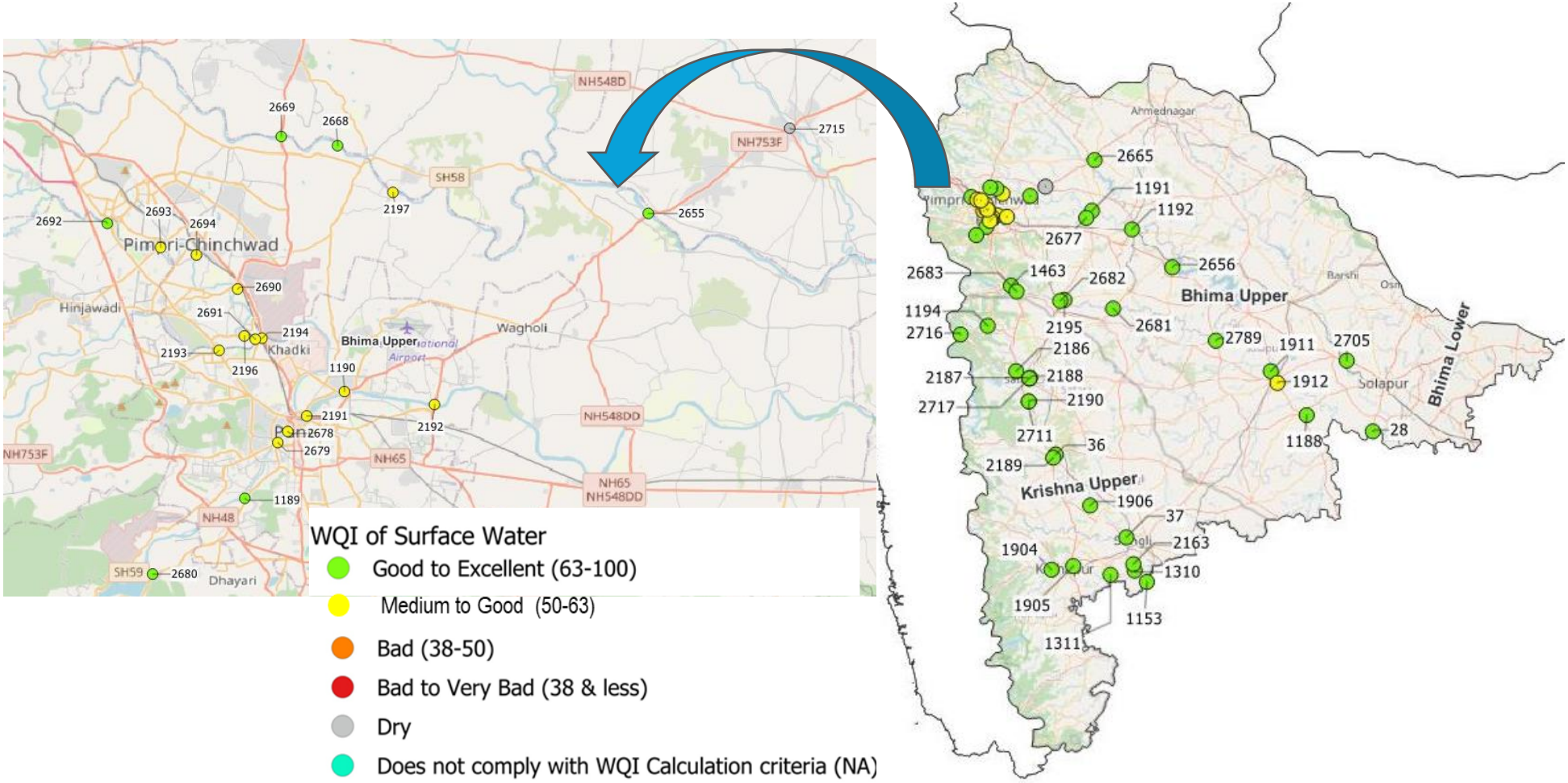
Legend

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

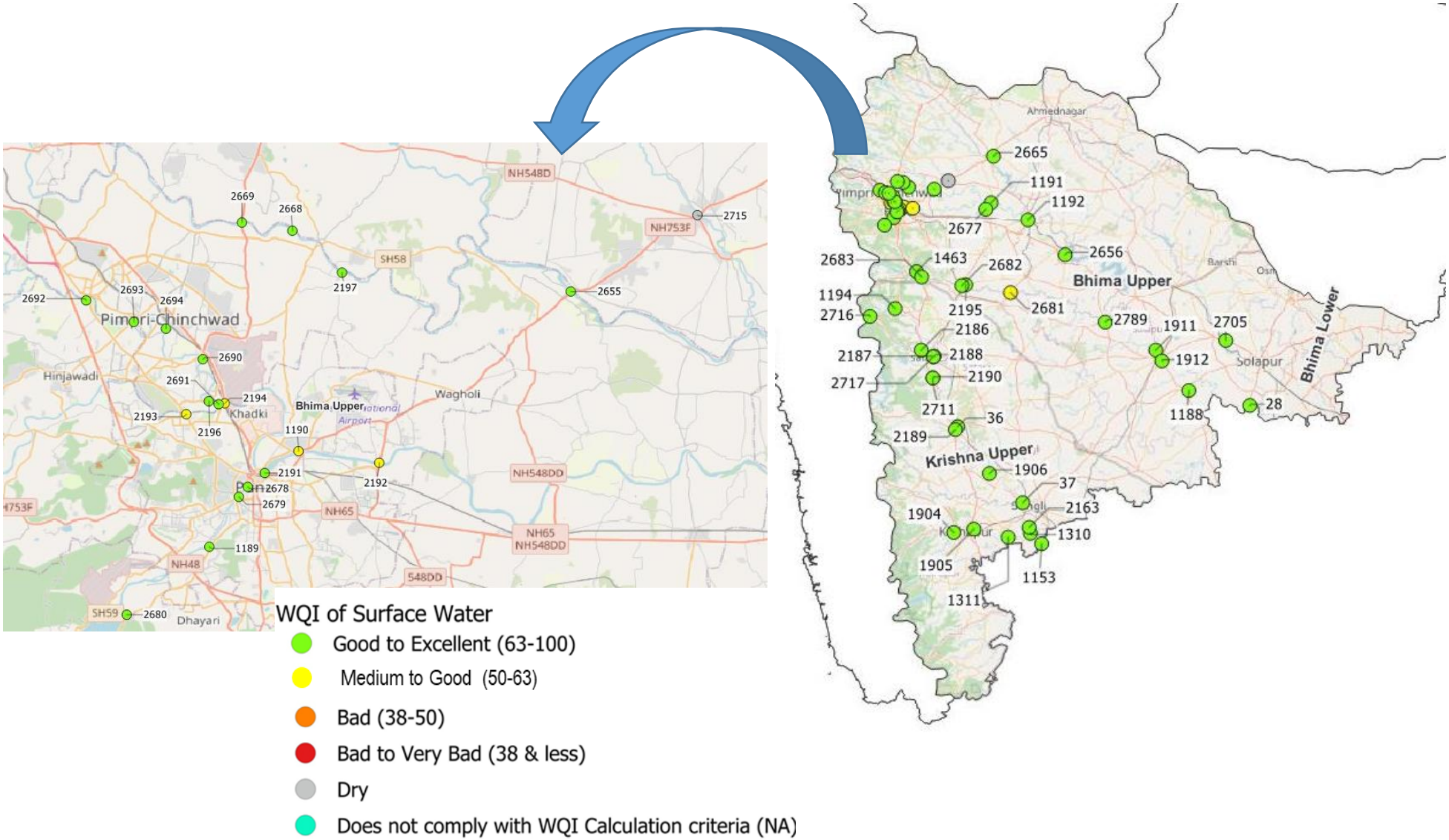
Table No. 22 : Surface water quality monitoring stations in Krishna Basin (2 of 2): Sub basin Krishna Upper

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 2021)

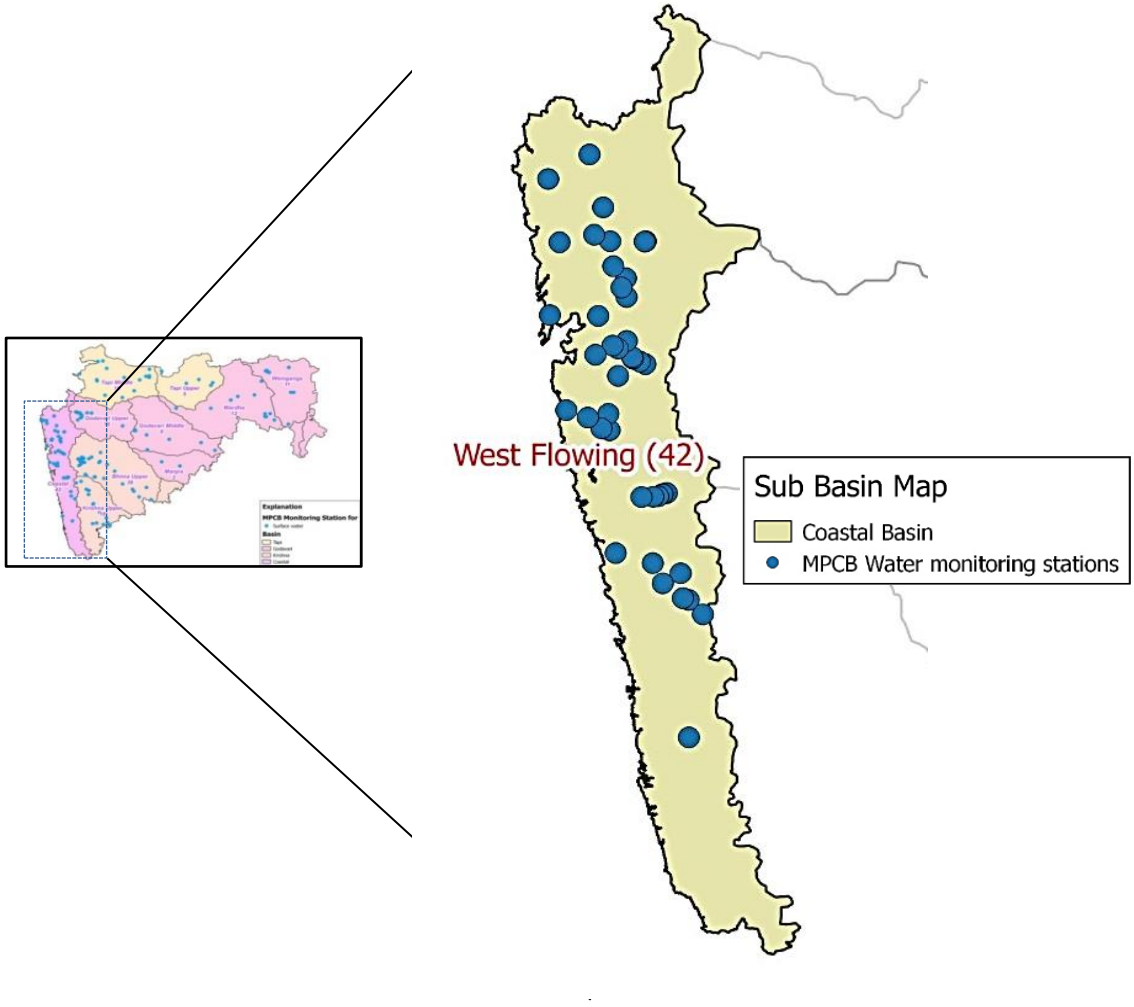


Spatial map of Surface WQI at Krishna Basin (December 2021)



West Flowing Rivers

The West Flowing Rivers Basin consists of all the small independent river basins of peninsular India lying to the South of Krishna Basin (except Cauvery Basin) draining into the Arabian Sea. The basin is located in the South West corner of peninsular India and covers the areas in the States of Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala [23].



[23] http://www.cwc.gov.in/sites/default/files/admin/West-Flowing-Rivers-Basin-Write-2008-09.pdf

West Flowing Rivers Basin (Intra Basin analysis)

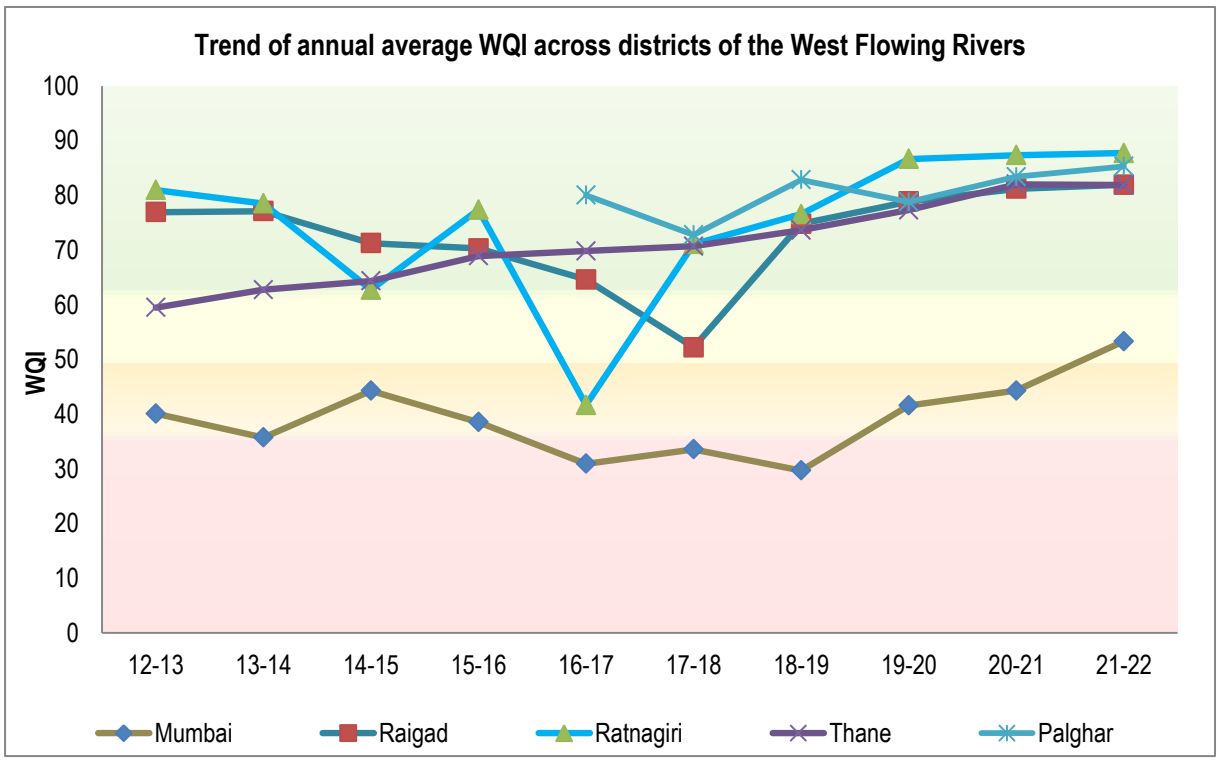


Figure No. 35: Trend of annual average WQI across districts of the West Flowing Rivers

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.

Figure No.35. It is important to note that the annual average WQI recorded by WQMS in the Mumbai district showed a sizable increase. The WQI value was increased by around 20.3% from 44.3 in 2020-21 to 53.32 in 2021-22. This brought the water quality from 'Bad' to 'Medium to Good' category (from polluted to non-polluted category). Apart from Mumbai, WQMS installed in districts namely Raigad, Ratnagiri and Palghar witnessed an increase in annual average WQI by about 0.9%, 0.45% and 2.28% respectively. Only 1 district (Thane) recorded a decrease in WQI value by just 0.15% (from 82.0 to 81.9).

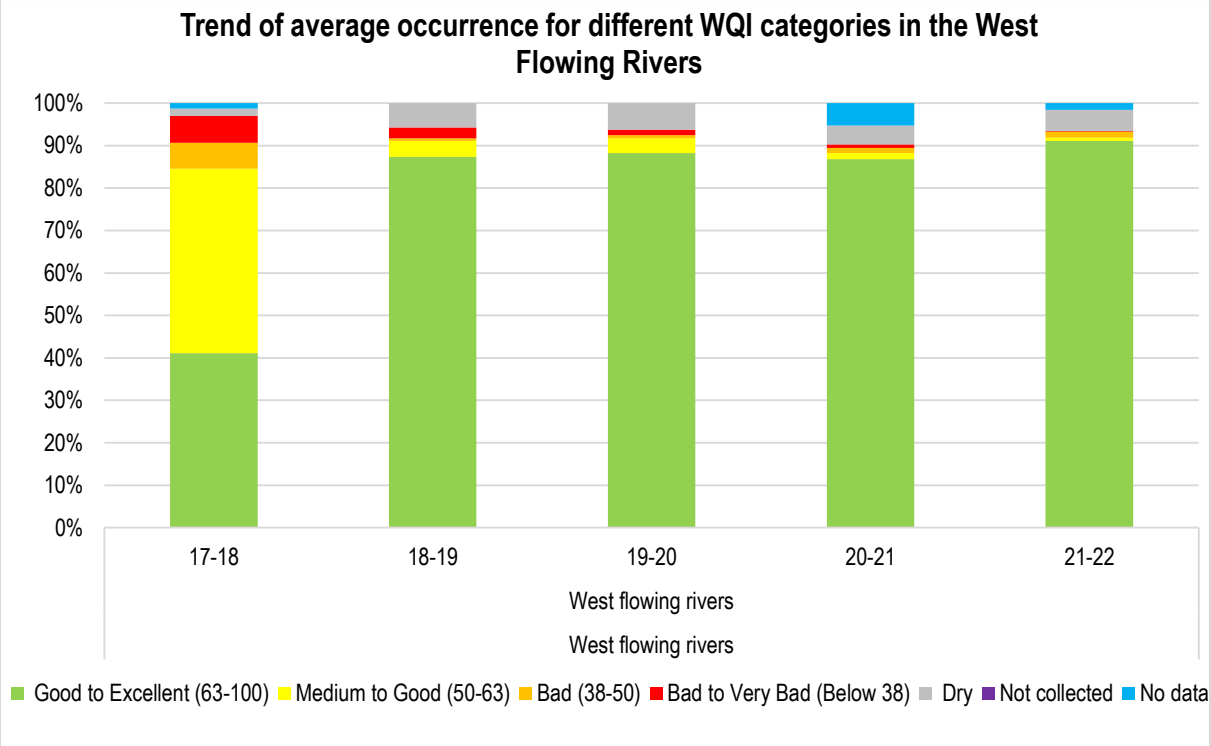
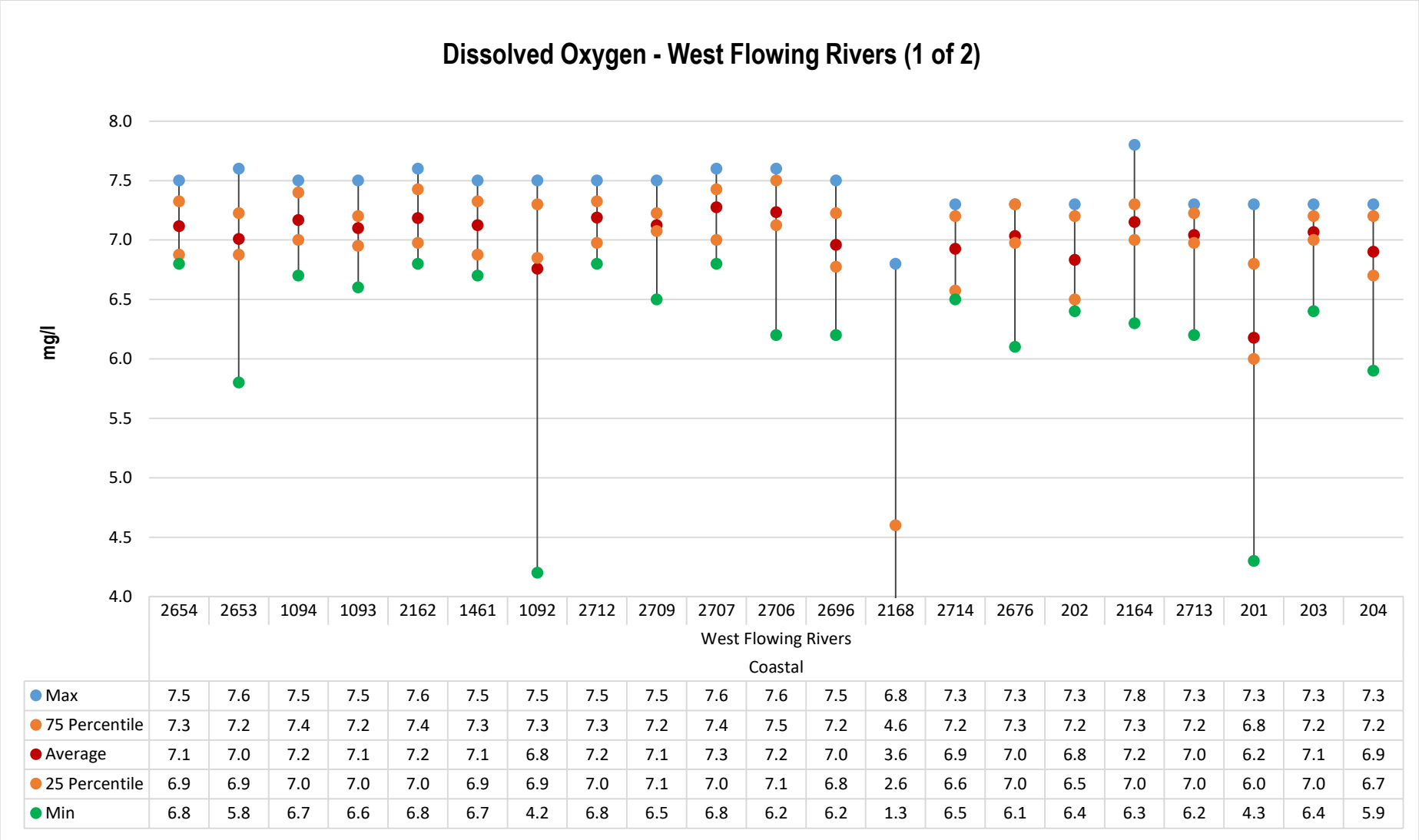


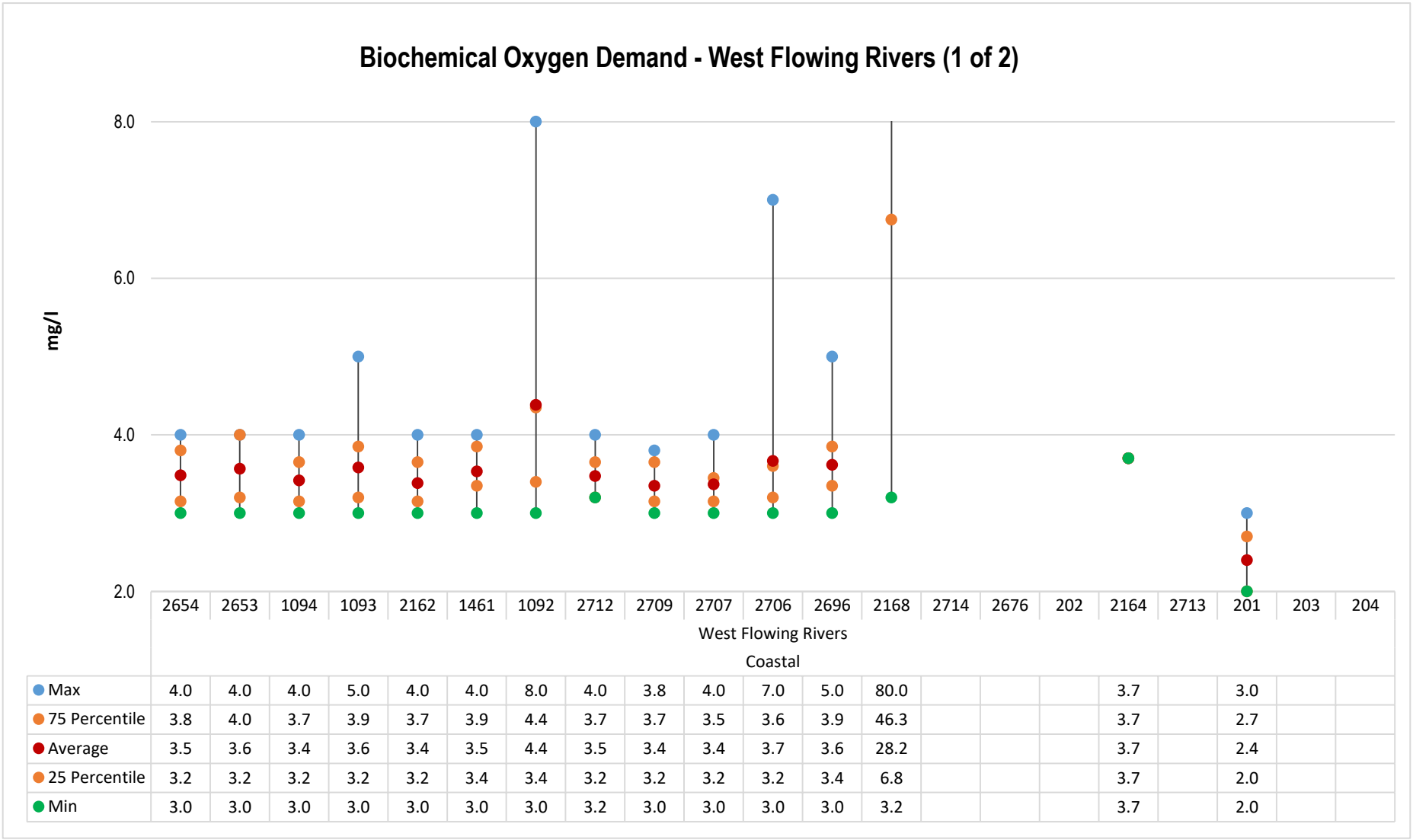
Figure No. 36: Trend of average occurrence for different WQI categories in the West Flowing Rivers

Figure No. 36 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 86.79% to 91.07%). The share of 'Bad' WQI category observations was recorded to be around 1.39% followed by 'Medium to Good' (0.79%) and 'Bad to Very Bad' (0.198%) category observations in the year 2021-22. About 4.96% of the total observations were recorded under the 'Dry' category whereas about 1.59% of observations were found coming under the 'No Data' category.



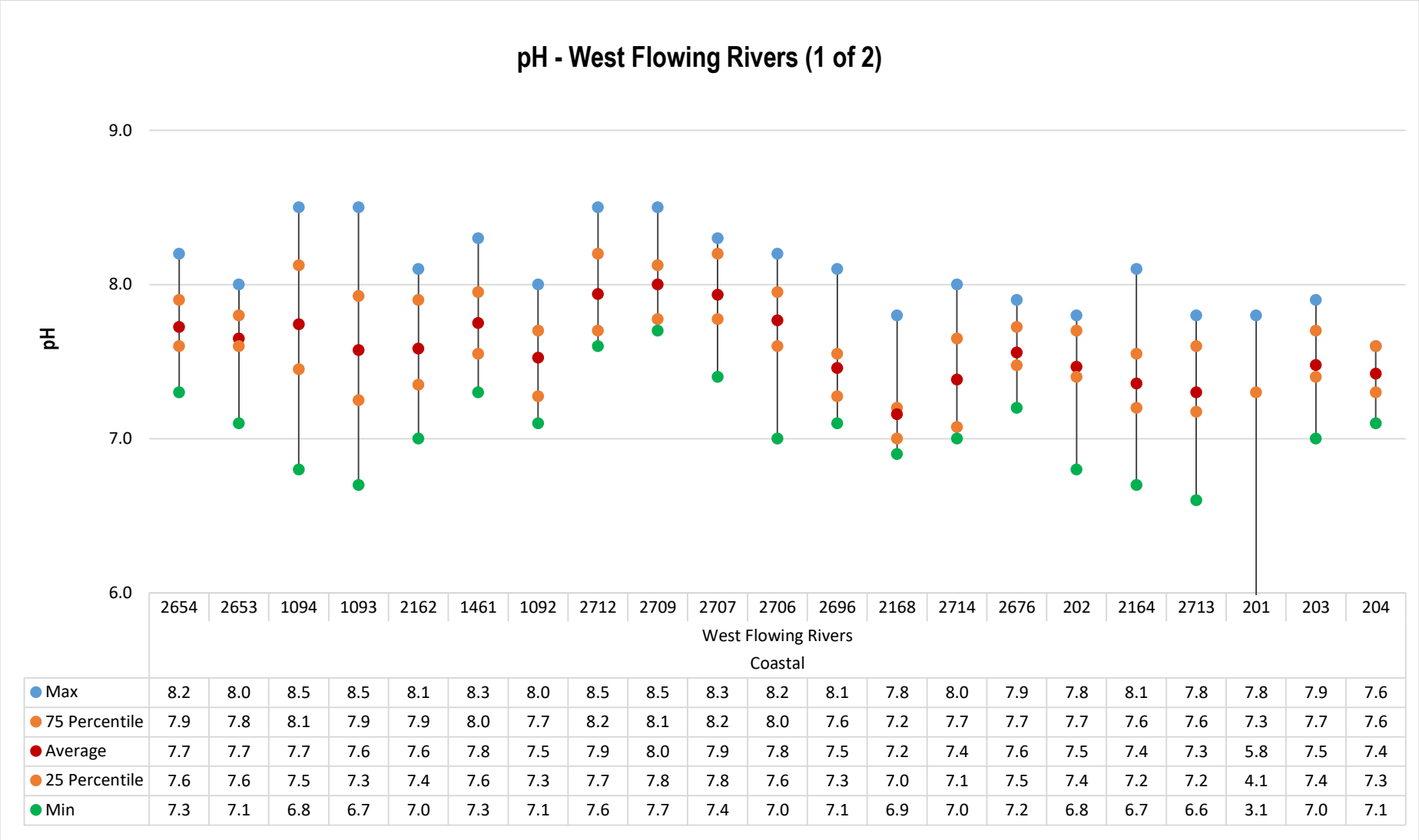
	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Max	7.5	7.6	7.5	7.5	7.6	7.5	7.5	7.5	7.5	7.6	7.6	7.5	6.8	7.3	7.3	7.3	7.8	7.3	7.3	7.3	7.3
75 Percentile	7.3	7.2	7.4	7.2	7.4	7.3	7.3	7.3	7.2	7.4	7.5	7.2	4.6	7.2	7.3	7.2	7.3	7.2	6.8	7.2	7.2
Average	7.1	7.0	7.2	7.1	7.2	7.1	6.8	7.2	7.1	7.3	7.2	7.0	3.6	6.9	7.0	6.8	7.2	7.0	6.2	7.1	6.9
25 Percentile	6.9	6.9	7.0	7.0	7.0	6.9	6.9	7.0	7.1	7.0	7.1	6.8	2.6	6.6	7.0	6.5	7.0	7.0	6.0	7.0	6.7
Min	6.8	5.8	6.7	6.6	6.8	6.7	4.2	6.8	6.5	6.8	6.2	6.2	1.3	6.5	6.1	6.4	6.3	6.2	4.3	6.4	5.9

Figure No. 37: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at West flowing rivers (Coastal basin) (1 of 2)



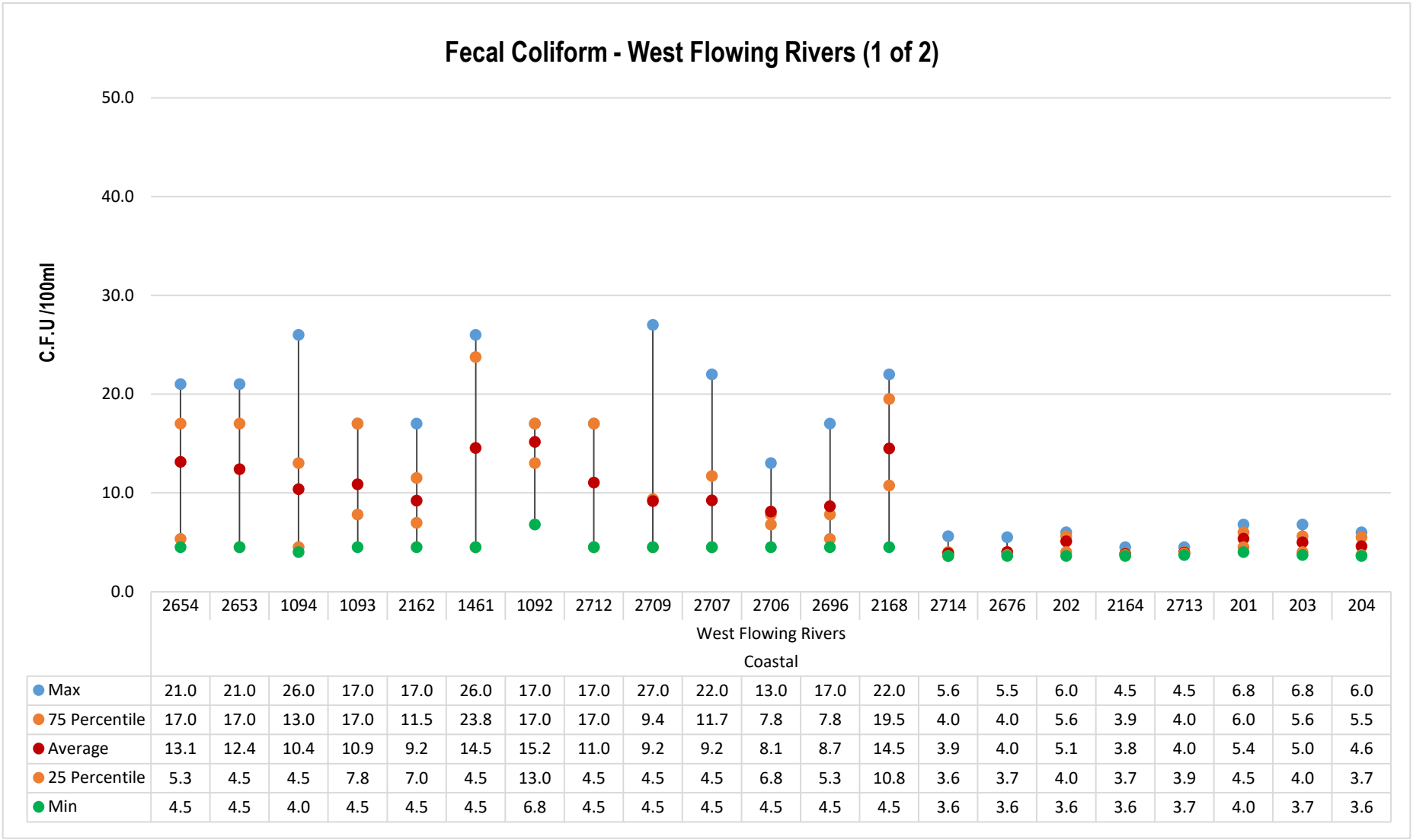
	2654	2653	1094	1093	2162	1461	1092	2712	2709	2707	2706	2696	2168	2714	2676	202	2164	2713	201	203	204
Max	4.0	4.0	4.0	5.0	4.0	4.0	8.0	4.0	3.8	4.0	7.0	5.0	80.0				3.7		3.0		
75 Percentile	3.8	4.0	3.7	3.9	3.7	3.9	4.4	3.7	3.7	3.5	3.6	3.9	46.3				3.7		2.7		
Average	3.5	3.6	3.4	3.6	3.4	3.5	4.4	3.5	3.4	3.4	3.7	3.6	28.2				3.7		2.4		
25 Percentile	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.2	3.2	3.2	3.2	3.4	6.8				3.7		2.0		
Min	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.0	3.0	3.0	3.0	3.2				3.7		2.0		

Figure No. 38: 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	8.0	8.5	8.5	8.1	8.3	8.0	8.5	8.5	8.3	8.2	8.1	7.8	8.0	7.9	7.8	8.1	7.8	7.8	7.9	7.6
75 Percentile	7.9	7.8	8.1	7.9	7.9	8.0	7.7	8.2	8.1	8.2	8.0	7.6	7.2	7.7	7.7	7.7	7.6	7.6	7.3	7.7	7.6
Average	7.7	7.7	7.7	7.6	7.6	7.8	7.5	7.9	8.0	7.9	7.8	7.5	7.2	7.4	7.6	7.5	7.4	7.3	5.8	7.5	7.4
25 Percentile	7.6	7.6	7.5	7.3	7.4	7.6	7.3	7.7	7.8	7.8	7.6	7.3	7.0	7.1	7.5	7.4	7.2	7.2	4.1	7.4	7.3
Min	7.3	7.1	6.8	6.7	7.0	7.3	7.1	7.6	7.7	7.4	7.0	7.1	6.9	7.0	7.2	6.8	6.7	6.6	3.1	7.0	7.1

Figure No. 39: 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	21.0	21.0	26.0	17.0	17.0	26.0	17.0	17.0	27.0	22.0	13.0	17.0	22.0	5.6	5.5	6.0	4.5	4.5	6.8	6.8	6.0
75 Percentile	17.0	17.0	13.0	17.0	11.5	23.8	17.0	17.0	9.4	11.7	7.8	7.8	19.5	4.0	4.0	5.6	3.9	4.0	6.0	5.6	5.5
Average	13.1	12.4	10.4	10.9	9.2	14.5	15.2	11.0	9.2	9.2	8.1	8.7	14.5	3.9	4.0	5.1	3.8	4.0	5.4	5.0	4.6
25 Percentile	5.3	4.5	4.5	7.8	7.0	4.5	13.0	4.5	4.5	4.5	6.8	5.3	10.8	3.6	3.7	4.0	3.7	3.9	4.5	4.0	3.7
Min	4.5	4.5	4.0	4.5	4.5	4.5	6.8	4.5	4.5	4.5	4.5	4.5	4.5	3.6	3.6	3.6	3.6	3.7	4.0	3.7	3.6

Figure No. 40: 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)

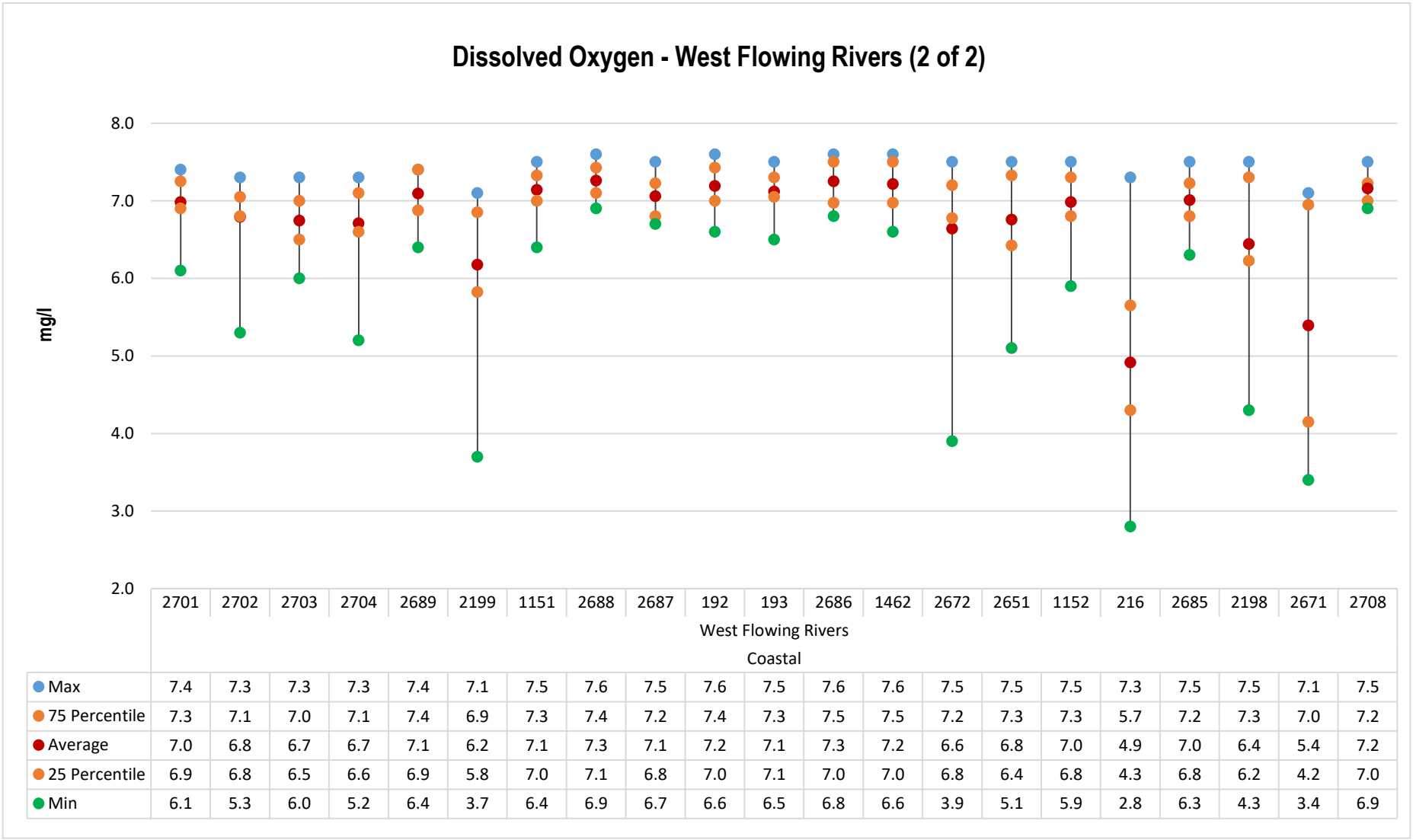
Apr	78	79	81	84	82	82	81	Dry	Dry	83	82	87	40	89	89	89	83	87	83	85	87
May	85	87	89	83	85	81	78	Dry	Dry	79	80	87	46	91	88	89	87	88	92	90	89
Jun	89	89	86	83	83	86	81	Dry	Dry	88	89	89	71	90	91	Dry	92	91	Dry	Dry	Dry
Jul	84	83	77	79	78	86	81	81	79	77	79	77	45	88	92	Dry	90	NA	Dry	Dry	Dry
Aug	88	88	83	84	87	87	66	84	82	85	84	88	44	89	87	Dry	87	88	Dry	Dry	Dry
Sep	84	84	87	88	85	84	83	83	84	86	83	90	76	92	89	90	92	91	65	90	90
Oct	81	78	75	78	77	77	80	80	79	77	87	83	27	91	90	89	88	86	75	91	91
Nov	83	84	82	83	83	80	82	80	80	76	80	85	37	88	87	88	89	90	76	88	91
Dec	80	81	81	78	82	82	82	81	82	81	80	84	68	87	89	85	91	89	78	87	89
Jan	81	81	82	91	85	79	84	80	82	84	83	82	25	90	85	88	91	90	87	87	87
Feb	80	83	80	81	84	76	82	77	84	84	84	87	25	85	88	86	88	88	89	88	88
Mar	81	80	84	90	86	78	75	Dry	Dry	84	79	84	26	89	89	88	87	88	91	85	86
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 Rivers (1 of 2)																				
Basin	Coastal																				

Legend

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

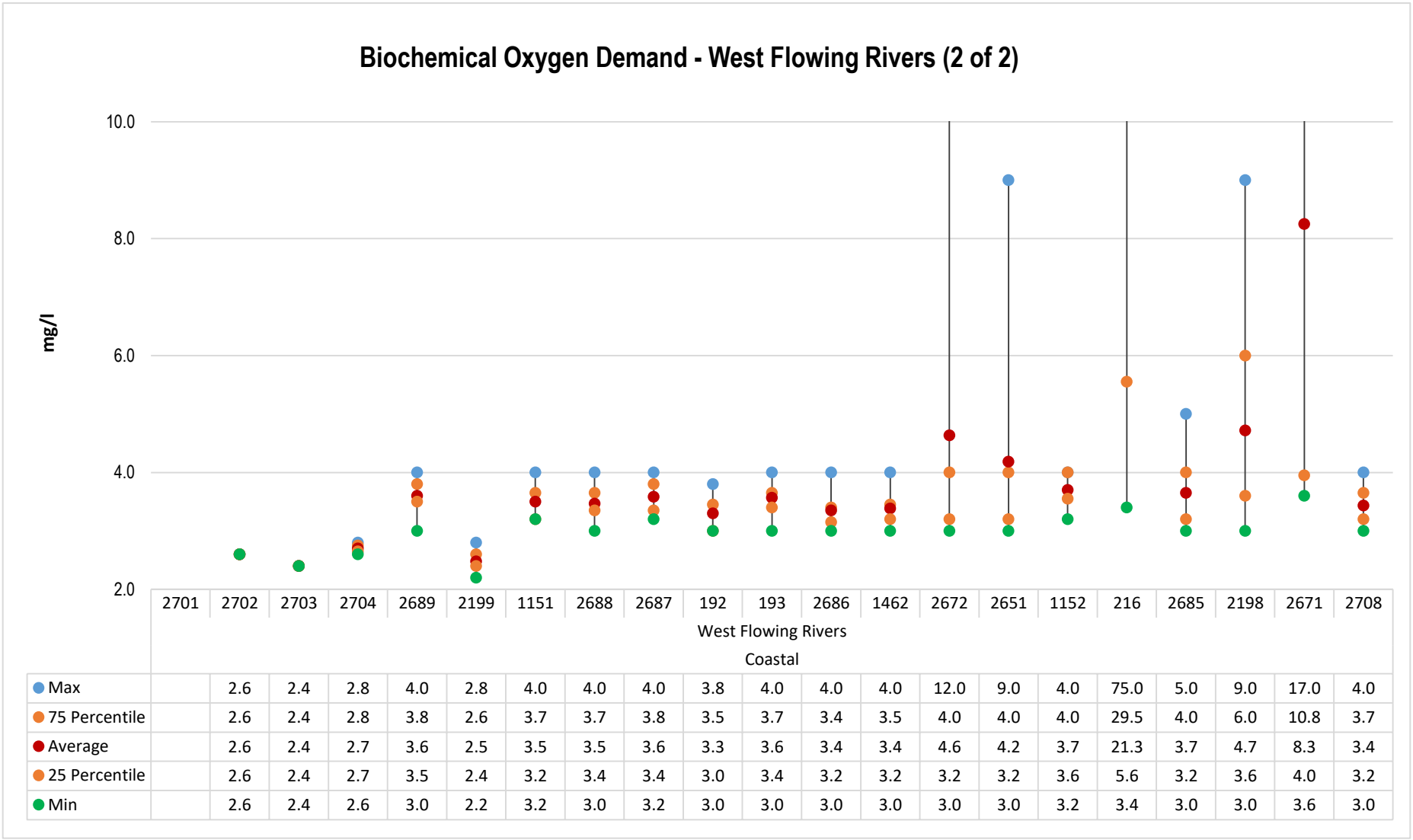
Table No. 23 : Surface water monitoring stations at West Flowing Rivers (1 of 2)

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



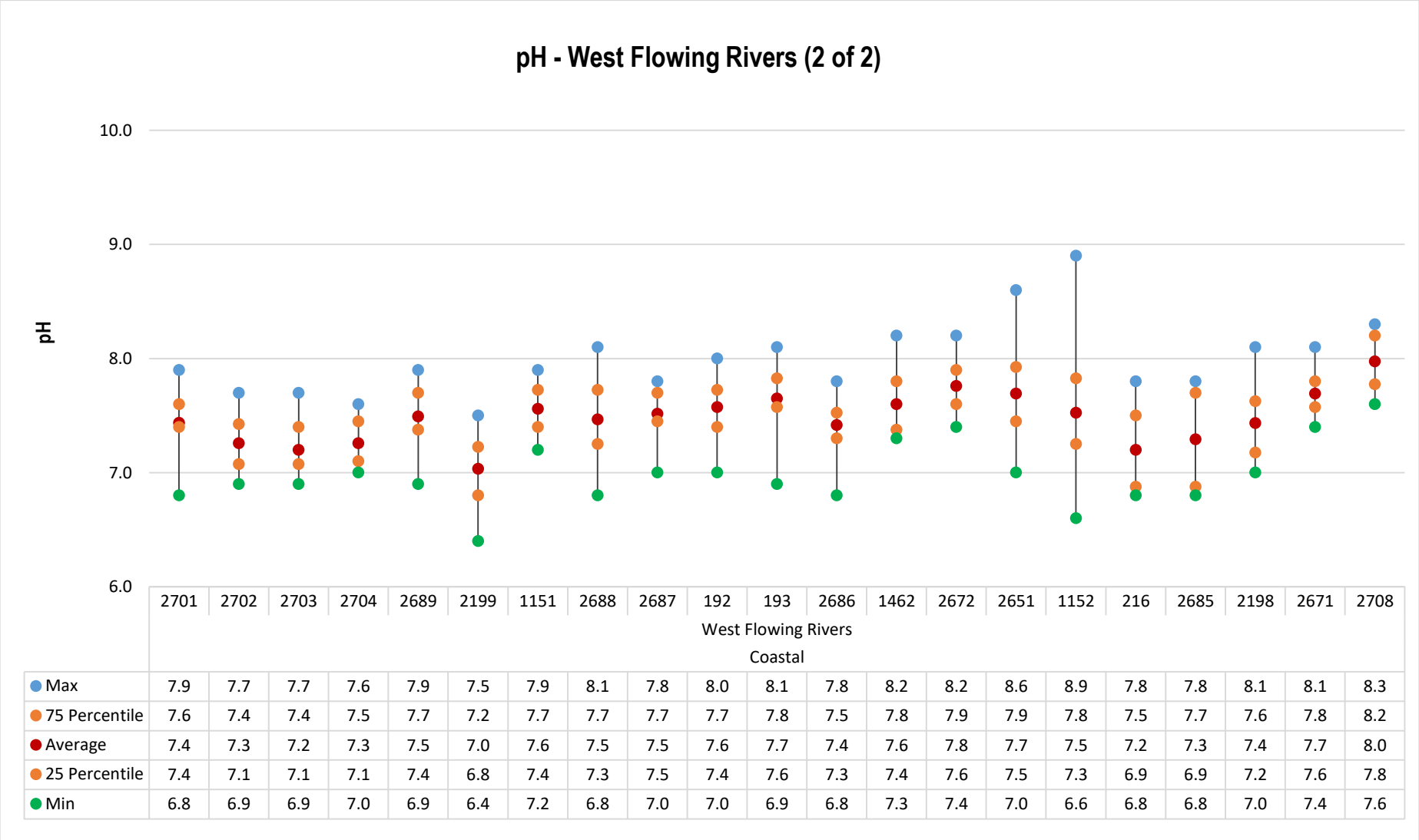
	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Max	7.4	7.3	7.3	7.3	7.4	7.1	7.5	7.6	7.5	7.6	7.5	7.6	7.6	7.5	7.5	7.5	7.3	7.5	7.5	7.1	7.5
75 Percentile	7.3	7.1	7.0	7.1	7.4	6.9	7.3	7.4	7.2	7.4	7.3	7.5	7.5	7.2	7.3	7.3	5.7	7.2	7.3	7.0	7.2
Average	7.0	6.8	6.7	6.7	7.1	6.2	7.1	7.3	7.1	7.2	7.1	7.3	7.2	6.6	6.8	7.0	4.9	7.0	6.4	5.4	7.2
25 Percentile	6.9	6.8	6.5	6.6	6.9	5.8	7.0	7.1	6.8	7.0	7.1	7.0	7.0	6.8	6.4	6.8	4.3	6.8	6.2	4.2	7.0
Min	6.1	5.3	6.0	5.2	6.4	3.7	6.4	6.9	6.7	6.6	6.5	6.8	6.6	3.9	5.1	5.9	2.8	6.3	4.3	3.4	6.9

Figure No. 41: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at West flowing rivers (Coastal basin) (2 of 2)



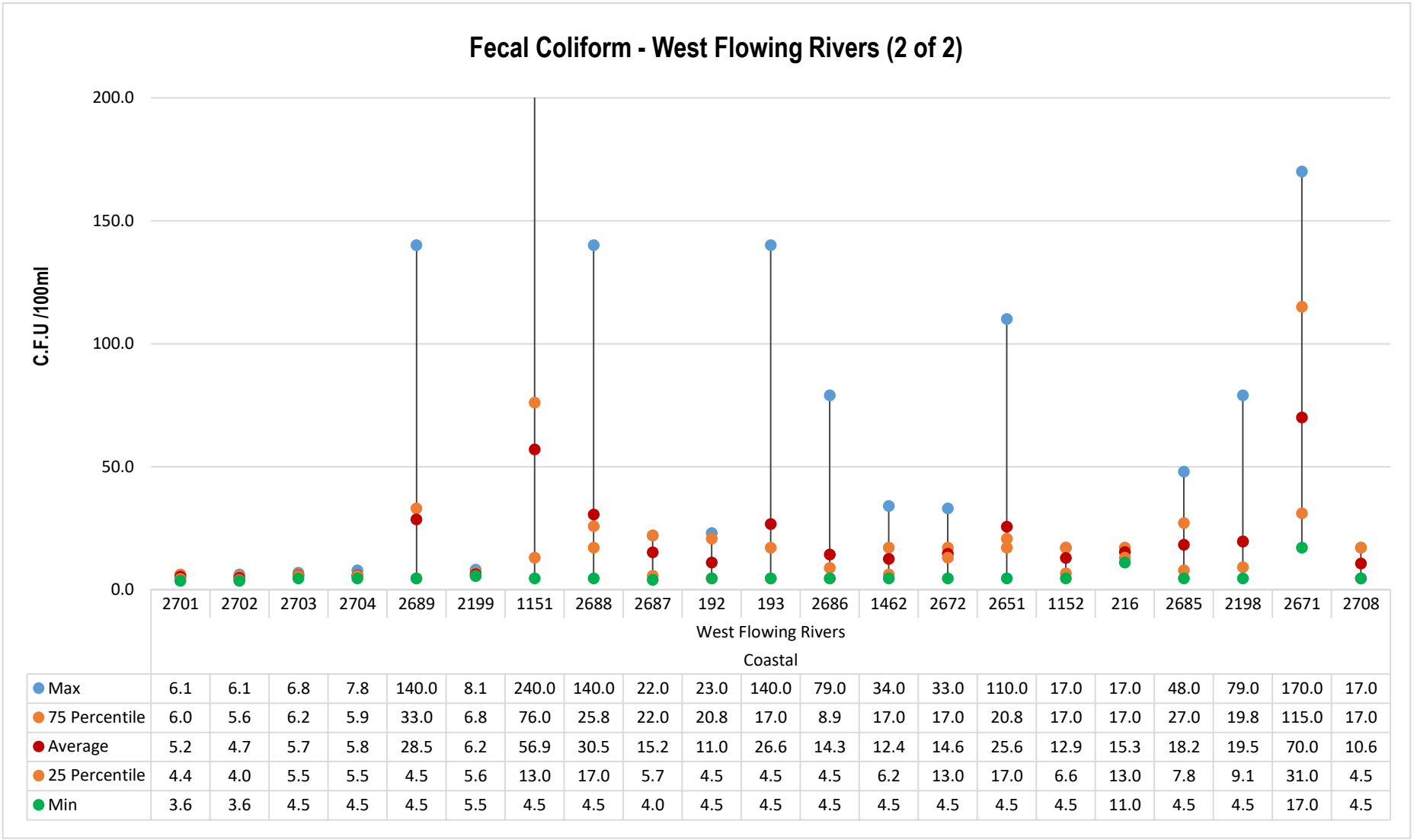
	2701	2702	2703	2704	2689	2199	1151	2688	2687	192	193	2686	1462	2672	2651	1152	216	2685	2198	2671	2708
Max		2.6	2.4	2.8	4.0	2.8	4.0	4.0	4.0	3.8	4.0	4.0	4.0	12.0	9.0	4.0	75.0	5.0	9.0	17.0	4.0
75 Percentile		2.6	2.4	2.8	3.8	2.6	3.7	3.7	3.8	3.5	3.7	3.4	3.5	4.0	4.0	4.0	29.5	4.0	6.0	10.8	3.7
Average		2.6	2.4	2.7	3.6	2.5	3.5	3.5	3.6	3.3	3.6	3.4	3.4	4.6	4.2	3.7	21.3	3.7	4.7	8.3	3.4
25 Percentile		2.6	2.4	2.7	3.5	2.4	3.2	3.4	3.4	3.0	3.4	3.2	3.2	3.2	3.2	3.6	5.6	3.2	3.6	4.0	3.2
Min		2.6	2.4	2.6	3.0	2.2	3.2	3.0	3.2	3.0	3.0	3.0	3.0	3.0	3.0	3.2	3.4	3.0	3.0	3.6	3.0

Figure No. 42: 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
	West Flowing Rivers																				
	Coastal																				
Max	7.9	7.7	7.7	7.6	7.9	7.5	7.9	8.1	7.8	8.0	8.1	7.8	8.2	8.2	8.6	8.9	7.8	7.8	8.1	8.1	8.3
75 Percentile	7.6	7.4	7.4	7.5	7.7	7.2	7.7	7.7	7.7	7.7	7.8	7.5	7.8	7.9	7.9	7.8	7.5	7.7	7.6	7.8	8.2
Average	7.4	7.3	7.2	7.3	7.5	7.0	7.6	7.5	7.5	7.6	7.7	7.4	7.6	7.8	7.7	7.5	7.2	7.3	7.4	7.7	8.0
25 Percentile	7.4	7.1	7.1	7.1	7.4	6.8	7.4	7.3	7.5	7.4	7.6	7.3	7.4	7.6	7.5	7.3	6.9	6.9	7.2	7.6	7.8
Min	6.8	6.9	6.9	7.0	6.9	6.4	7.2	6.8	7.0	7.0	6.9	6.8	7.3	7.4	7.0	6.6	6.8	6.8	7.0	7.4	7.6

Figure No. 43: 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	6.1	6.1	6.8	7.8	140.0	8.1	240.0	140.0	22.0	23.0	140.0	79.0	34.0	33.0	110.0	17.0	17.0	48.0	79.0	170.0	17.0
75 Percentile	6.0	5.6	6.2	5.9	33.0	6.8	76.0	25.8	22.0	20.8	17.0	8.9	17.0	17.0	20.8	17.0	17.0	27.0	19.8	115.0	17.0
Average	5.2	4.7	5.7	5.8	28.5	6.2	56.9	30.5	15.2	11.0	26.6	14.3	12.4	14.6	25.6	12.9	15.3	18.2	19.5	70.0	10.6
25 Percentile	4.4	4.0	5.5	5.5	4.5	5.6	13.0	17.0	5.7	4.5	4.5	4.5	6.2	13.0	17.0	6.6	13.0	7.8	9.1	31.0	4.5
Min	3.6	3.6	4.5	4.5	4.5	5.5	4.5	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	11.0	4.5	4.5	17.0	4.5

Figure No. 44: 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	89	88	89	86	80	87	78	77	80	80	88	84	79	84	79	84	NA	81	66	52	80
May	86	90	88	82	83	84	87	83	87	88	88	87	86	84	82	74	49	83	69	48	80
Jun	91	90	88	88	84	88	81	86	88	86	85	83	85	88	87	86	64	90	83	50	84
Jul	92	92	NA	93	84	89	82	84	84	84	85	84	84	58	84	88	72	84	80	81	76
Aug	89	88	87	88	87	86	88	90	86	86	87	86	87	87	82	88	69	90	88	88	85
Sep	Dry	87	90	90	83	90	83	83	84	85	87	83	85	88	85	86	81	86	87	67	84
Oct	86	89	89	89	83	78	75	73	81	82	79	80	80	80	72	82	79	79	69	78	80
Nov	88	91	89	87	74	70	71	79	81	89	72	75	82	80	80	78	NA	80	87	66	82
Dec	87	91	89	88	80	88	73	77	82	87	81	84	80	78	75	81	Dry	79	79	61	78
Jan	88	91	90	89	80	88	82	82	81	81	79	86	84	83	69	78	Dry	82	85	79	81
Feb	87	90	89	89	79	90	82	82	80	82	80	86	80	82	77	80	Dry	83	79	61	78
Mar	85	81	85	85	80	84	85	82	82	82	79	88	88	65	79	82	Dry	82	82	77	79
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 Rivers (2 of 2)																			
Basin	Coastal																			

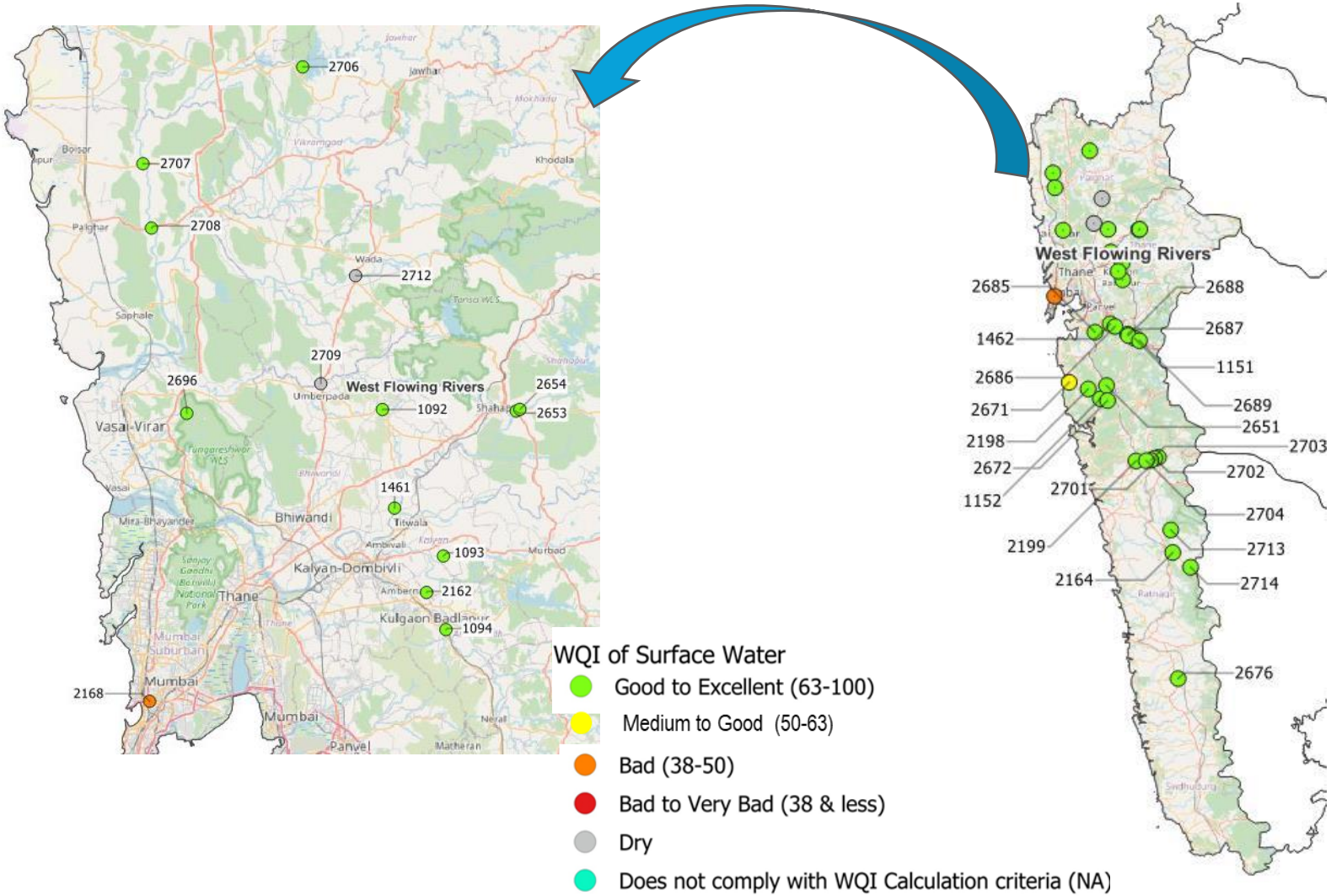
Legend

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

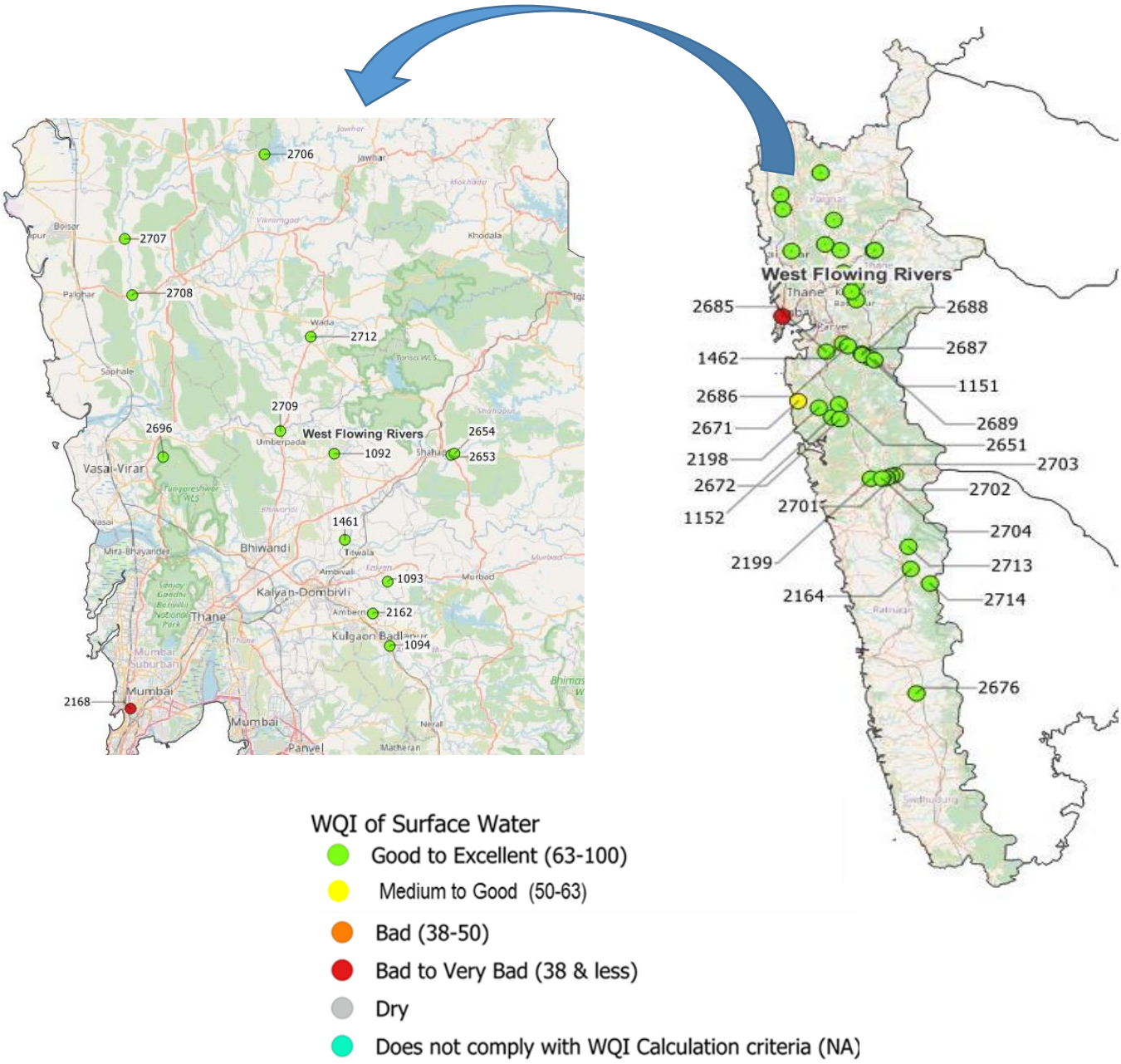
Table No. 24 : Surface water quality monitoring stations on West flowing rivers (2 of 2)

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	Kundalik	Kundalika near Salav Bridge (Saline Zone)	Salav	Roha	Raigad

Spatial map of Surface WQI at West Flowing Rivers (April 2021)

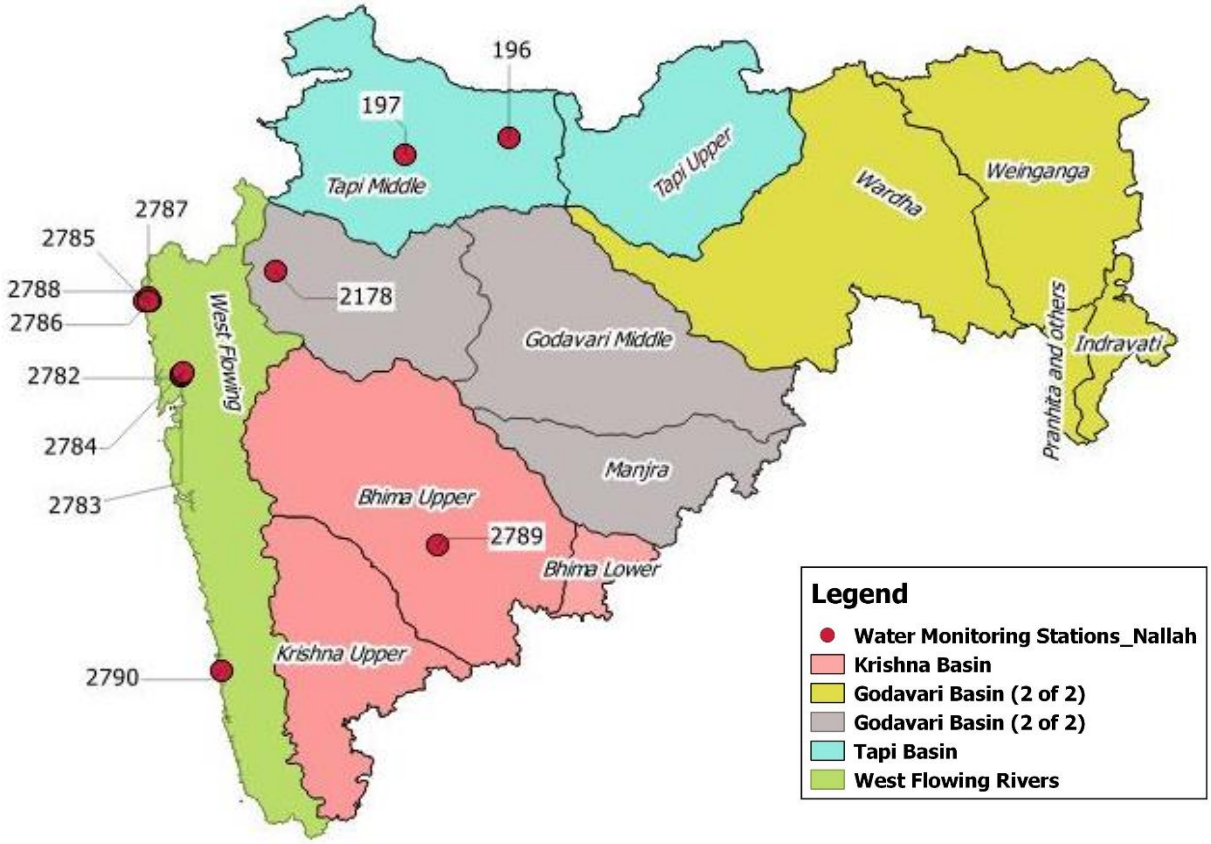


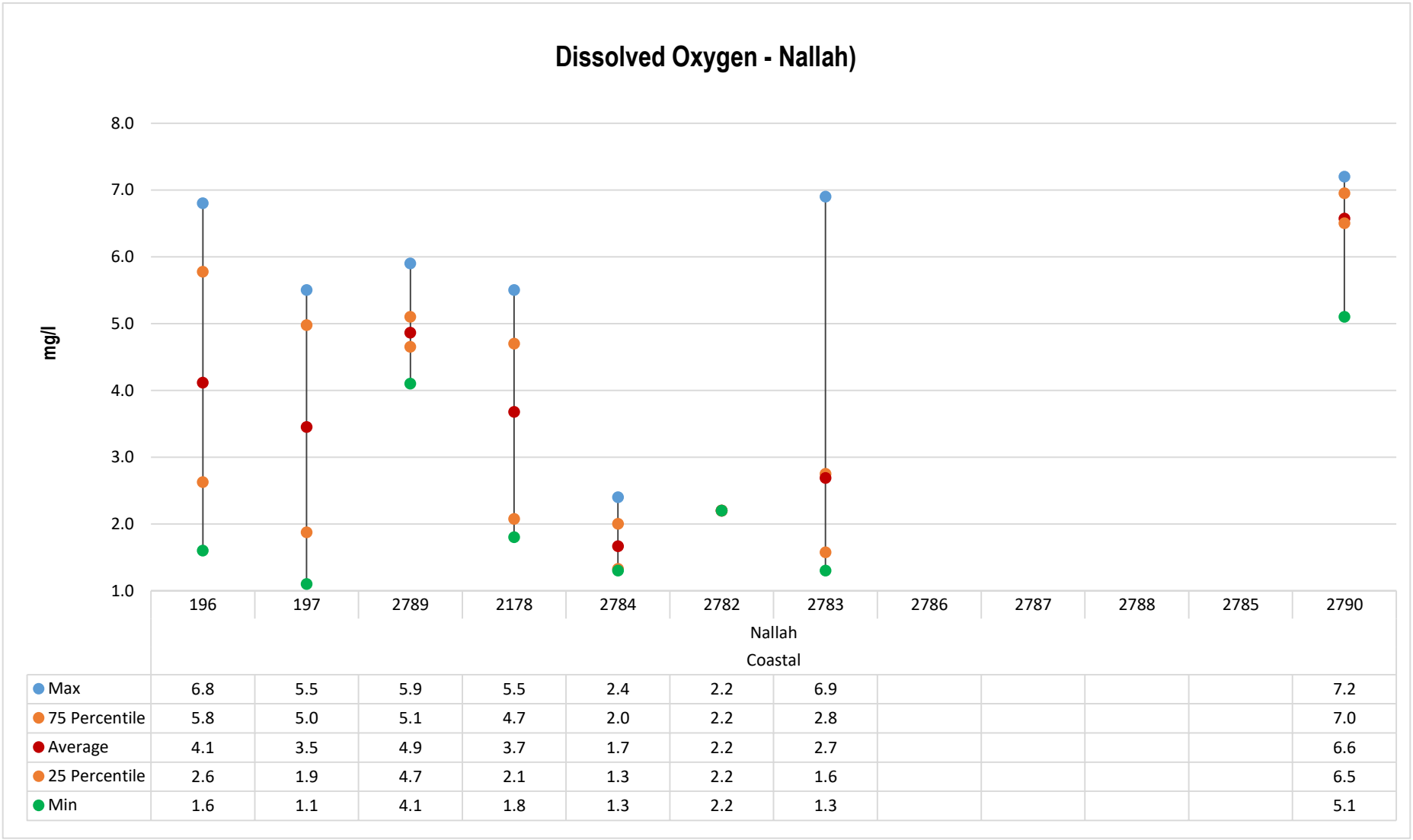
Spatial ma p of Surface WQI at West Flowing Rivers (December 2021)



Nallahs

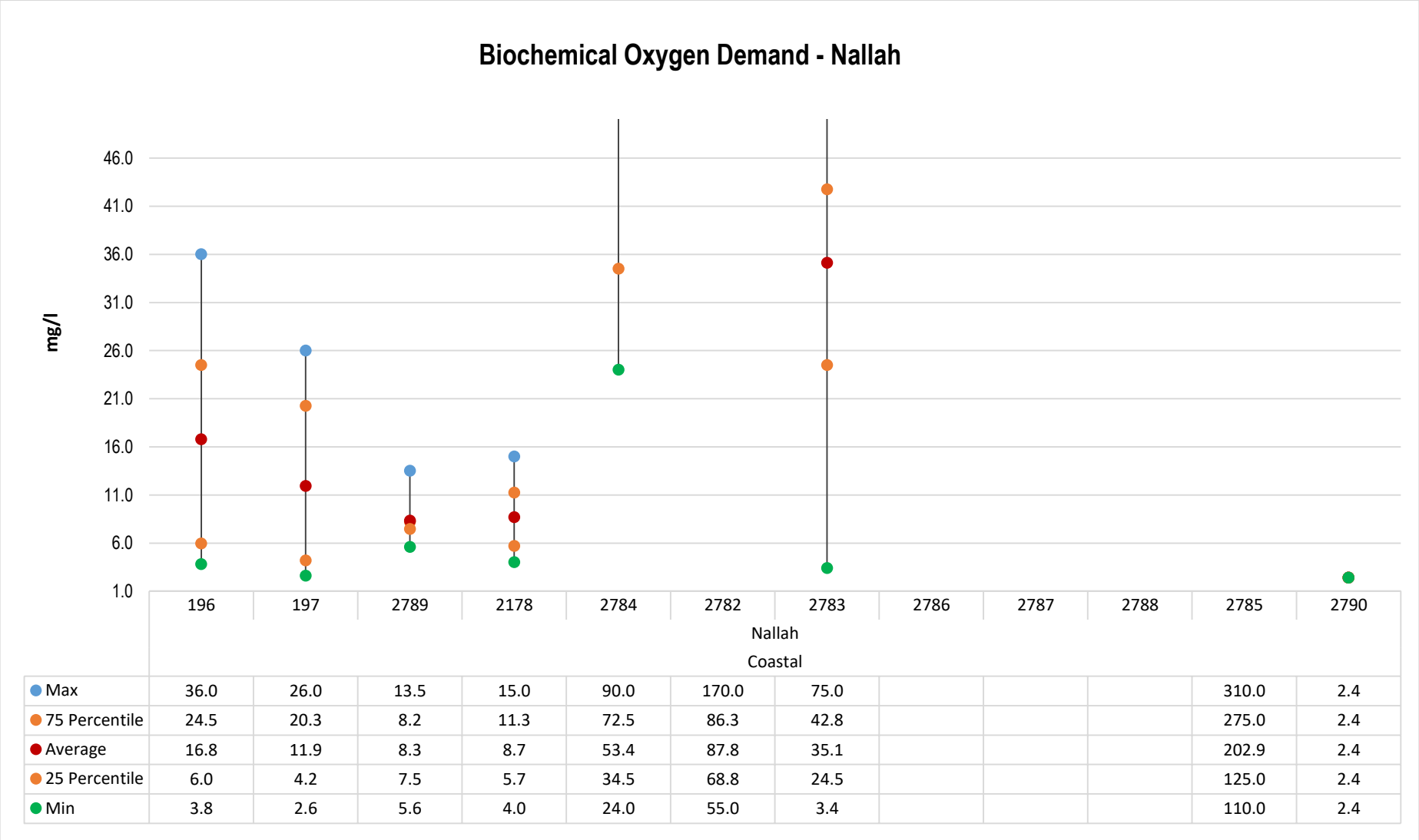
There are 12 water monitoring stations across nallahs in the state. The majority of nallahs of the coastal basin are located in Thane district.





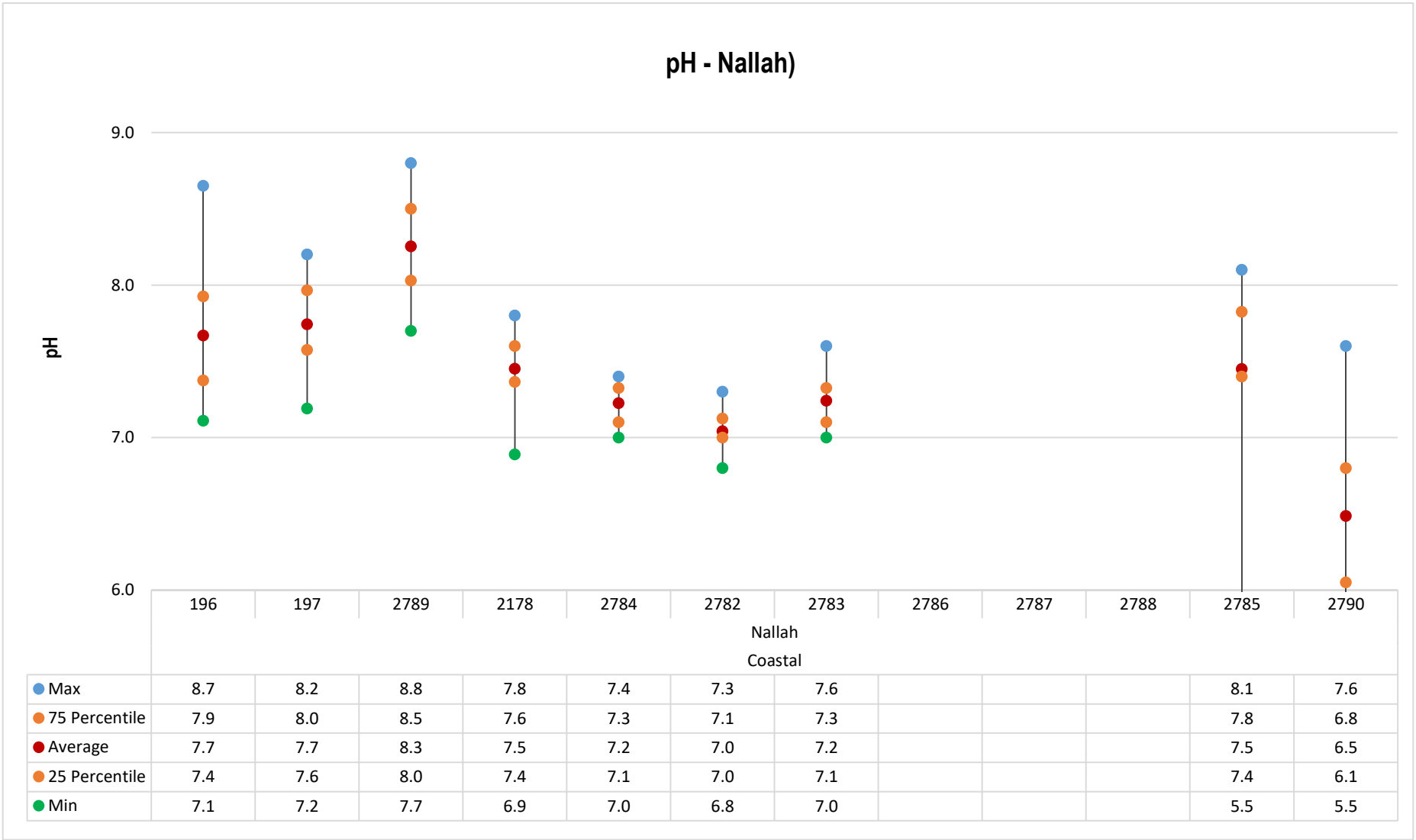
	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	6.8	5.5	5.9	5.5	2.4	2.2	6.9					7.2
75 Percentile	5.8	5.0	5.1	4.7	2.0	2.2	2.8					7.0
Average	4.1	3.5	4.9	3.7	1.7	2.2	2.7					6.6
25 Percentile	2.6	1.9	4.7	2.1	1.3	2.2	1.6					6.5
Min	1.6	1.1	4.1	1.8	1.3	2.2	1.3					5.1

Figure No. 45: Trend of Dissolved Oxygen (DO) levels recorded at WQMS at Nallah (Coastal basin)



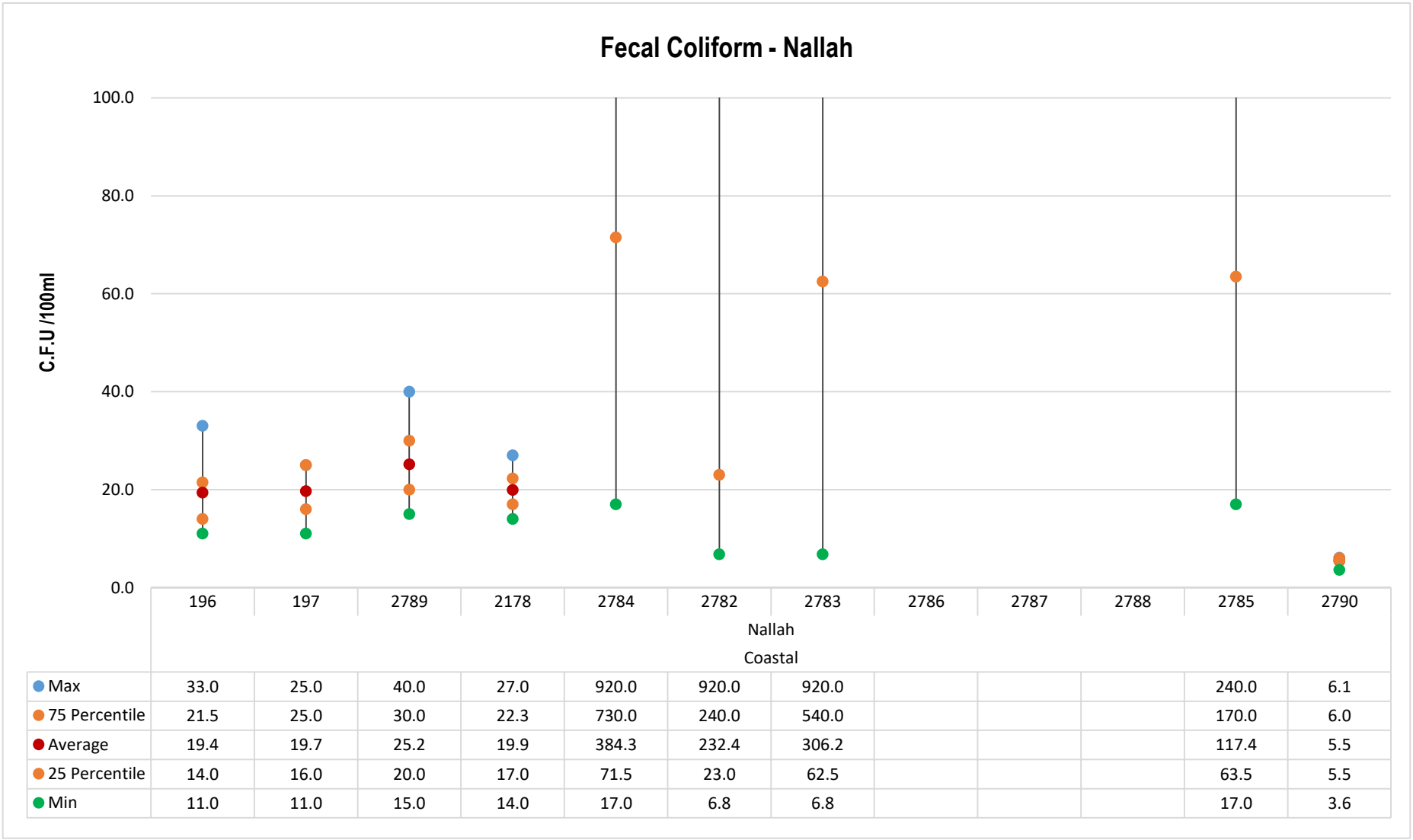
	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	36.0	26.0	13.5	15.0	90.0	170.0	75.0				310.0	2.4
75 Percentile	24.5	20.3	8.2	11.3	72.5	86.3	42.8				275.0	2.4
Average	16.8	11.9	8.3	8.7	53.4	87.8	35.1				202.9	2.4
25 Percentile	6.0	4.2	7.5	5.7	34.5	68.8	24.5				125.0	2.4
Min	3.8	2.6	5.6	4.0	24.0	55.0	3.4				110.0	2.4

Figure No. 46: 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	8.7	8.2	8.8	7.8	7.4	7.3	7.6				8.1	7.6
75 Percentile	7.9	8.0	8.5	7.6	7.3	7.1	7.3				7.8	6.8
Average	7.7	7.7	8.3	7.5	7.2	7.0	7.2				7.5	6.5
25 Percentile	7.4	7.6	8.0	7.4	7.1	7.0	7.1				7.4	6.1
Min	7.1	7.2	7.7	6.9	7.0	6.8	7.0				5.5	5.5

Figure No. 47: Trend of pH levels recorded at WQMS at Nallah (Coastal basin)



	196	197	2789	2178	2784	2782	2783	2786	2787	2788	2785	2790
Max	33.0	25.0	40.0	27.0	920.0	920.0	920.0				240.0	6.1
75 Percentile	21.5	25.0	30.0	22.3	730.0	240.0	540.0				170.0	6.0
Average	19.4	19.7	25.2	19.9	384.3	232.4	306.2				117.4	5.5
25 Percentile	14.0	16.0	20.0	17.0	71.5	23.0	62.5				63.5	5.5
Min	11.0	11.0	15.0	14.0	17.0	6.8	6.8				17.0	3.6

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

Water Quality Index for WQMS in Nallah (Coastal Basin)

Apr	82	NA	72	69	31	28	34	Dry	Dry	Dry	30	89
May	82	NA	74	62	31	35	38	Dry	Dry	Dry	34	89
Jun	42	41	47	Dry	40	35	47	Dry	Dry	Dry	32	Dry
Jul	NA	46	50	61	42	39	43	Dry	Dry	Dry	NA	Dry
Aug	71	45	69	59	42	37	78	Dry	Dry	Dry	30	Dry
Sep	72	76	49	65	38	35	52	Dry	Dry	Dry	29	Dry
Oct	62	78	68	74	48	44	34	Dry	Dry	Dry	22	Dry
Nov	53	73	64	63	33	31	30	Dry	Dry	Dry	31	85
Dec	NA	48	64	65	34	33	50	Dry	Dry	Dry	31	70
Jan	NA	66	56	53	27	26	29	Dry	Dry	Dry	41	NA
Feb	NA	61	48	65	28	26	30	Dry	Dry	Dry	39	81
Mar	NA	72	78	59	28	26	33	Dry	Dry	Dry	39	85
Station Code	196	197	2178	2789	2784	2782	2783	2786	2787	2788	2785	2790
Sub Basin	Nallah											
Basin	Coastal											

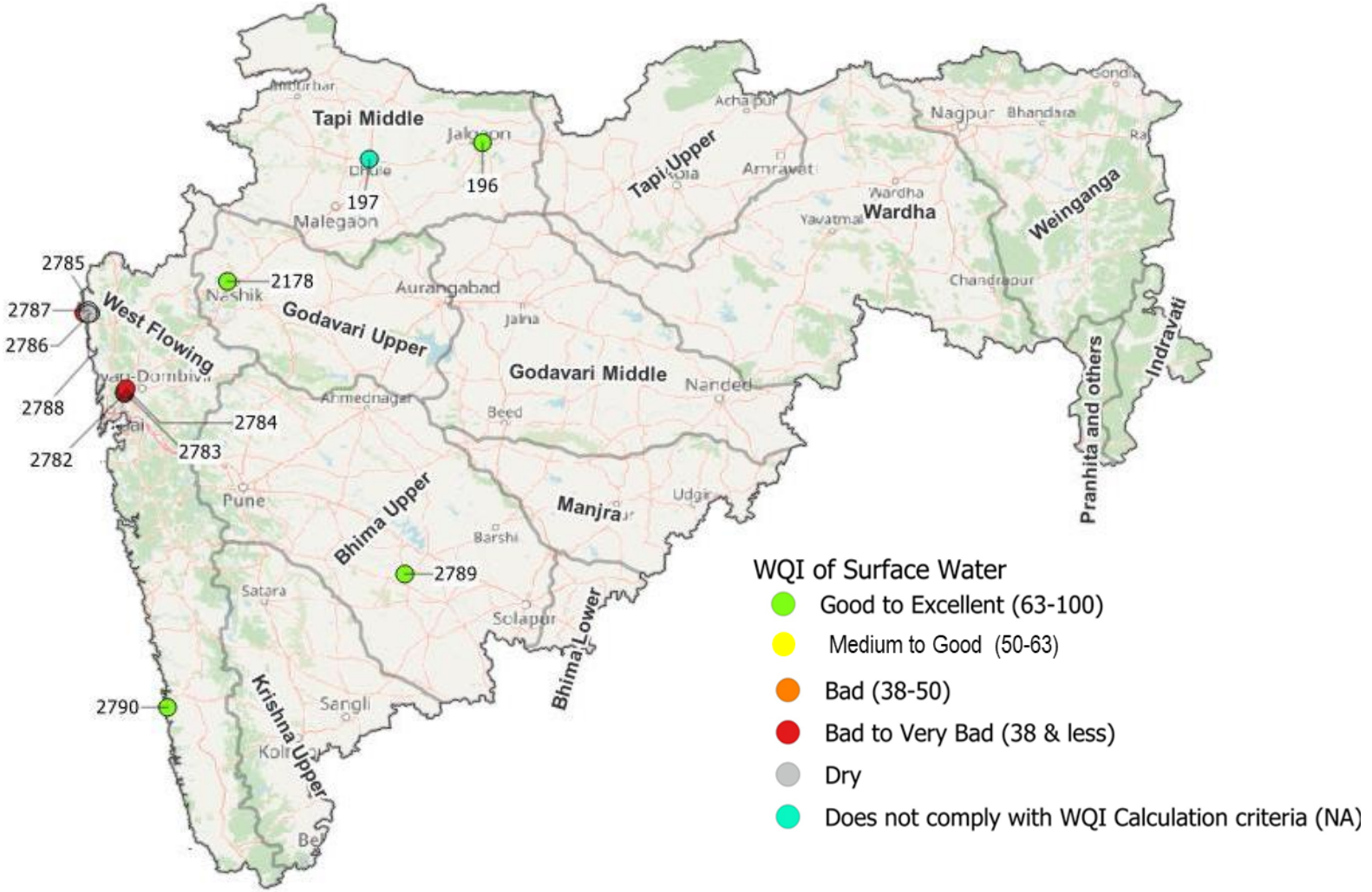
Legend

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

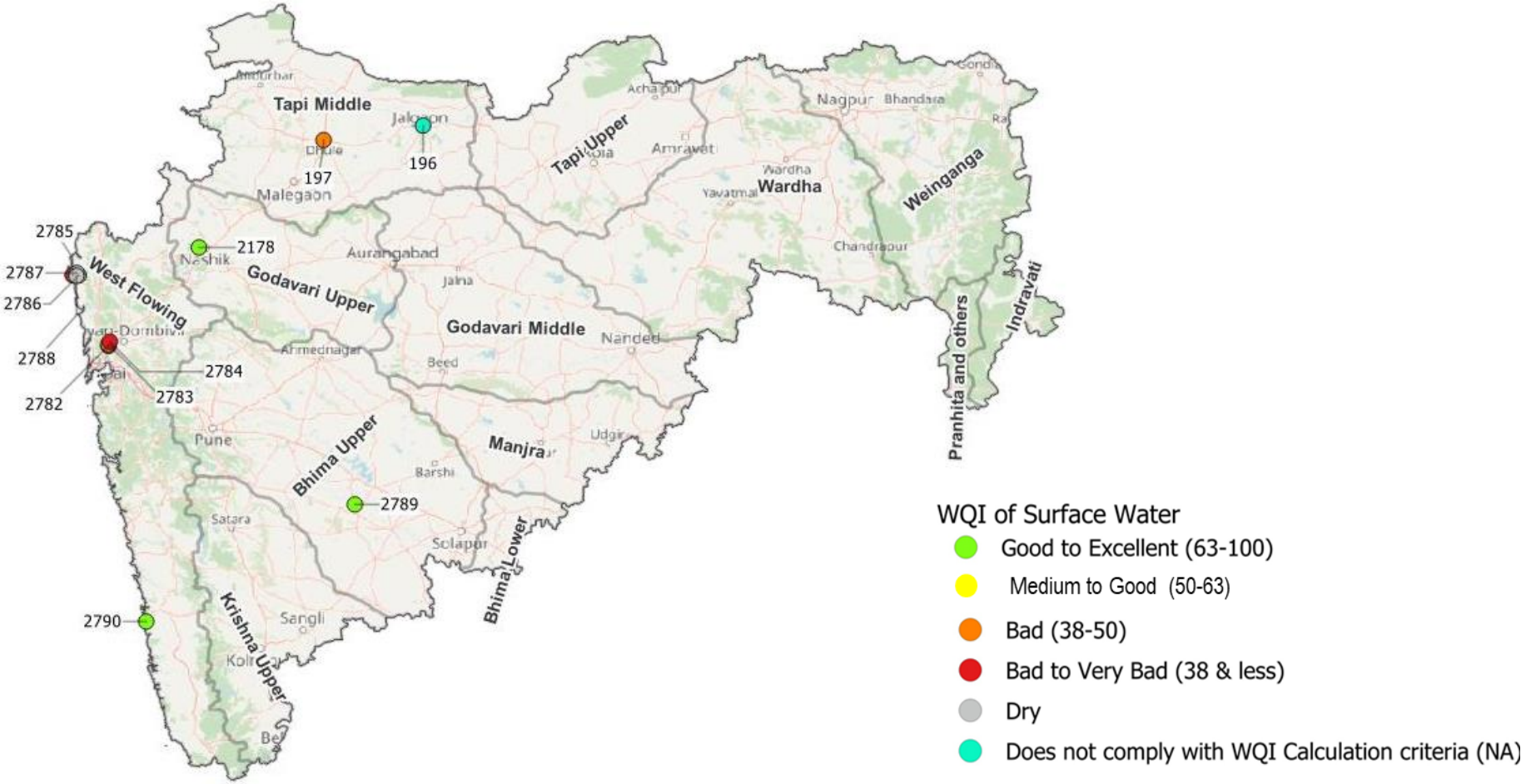
Table No. 25: : Surface water monitoring stations at Nallahs

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 2021)



Spat ial map of Surface WQI at Nallahs (December 2021)



Saline (Sea and Creek) Water Quality

The State of Maharashtra has 720 km of coastal length[24] which constitutes 7 districts namely Mumbai city, Mumbai suburban, Thane, palghar, Raigad, Ratnagiri and Sindhudurg.. Indian coastline, particularly Maharashtra has been blessed with different coastal ecosystems ranging from estuarine – Mangrove, sandy and rocky intertidal and biologically sensitive likes Coral[25]. These ecosystems are enriched with diversified flora and fauna.With diverse and rich coastline, marine fisheries also forms a source of livelihood, employment and food security.

Intense urbanization in pockets and enhanced industrialization have resulted in degradation directly or indirectly of marine environment through indiscriminate release of domestic and industrial effluents, reclamation, offshore constructions, movement of ships and loading and unloading of a variety of cargo at ports etc[26].In order to ensure the sustainable development and management of coastal areas and their resources, appropriate management strategies are needed.

MPCB has established a monitoring network of 45 monitoring stations (36 along sea/creek especially along the sensitive and pollution prone areas of state's coastline and 12 along the nallahs) across the state to keep check on the water quality on coastal zones. The following section presents the DO, FC, pH and BOD data recorded at the sea and creek WQMS in an illustrative manner.

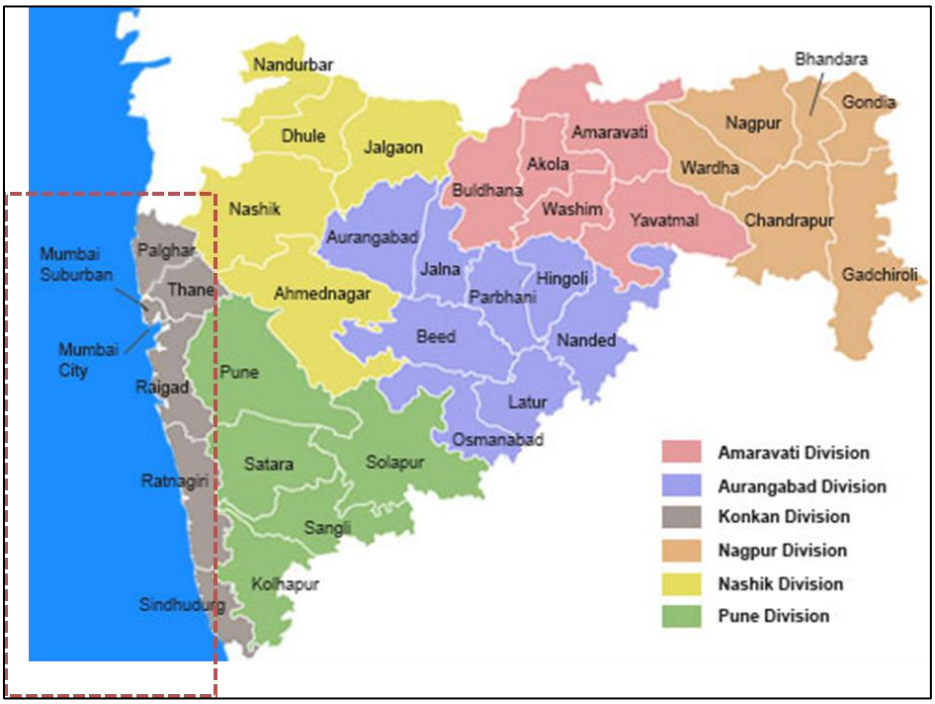


Figure No. 49 : Map representing Coastal areas of Mahrashtra

Source of Map: http://divcomkonkan.gov.in/Document/en/page/MapGallery.aspx

[24] https://www.annauniv.edu/iom/iomour/EIA's%20Maharashtra.php

[25] http://www.vpmthane.org/sci/faveo/ko7.pdf

[26] http://mahenvis.nic.in/pdf/Databank/coastal_MONITORING%20OF%20COASTAL%20MARINE%20AND%20ESTUARINE%20ECOLOGY.pdf

Coastal Basin (Sea/ Creek Water Samples)

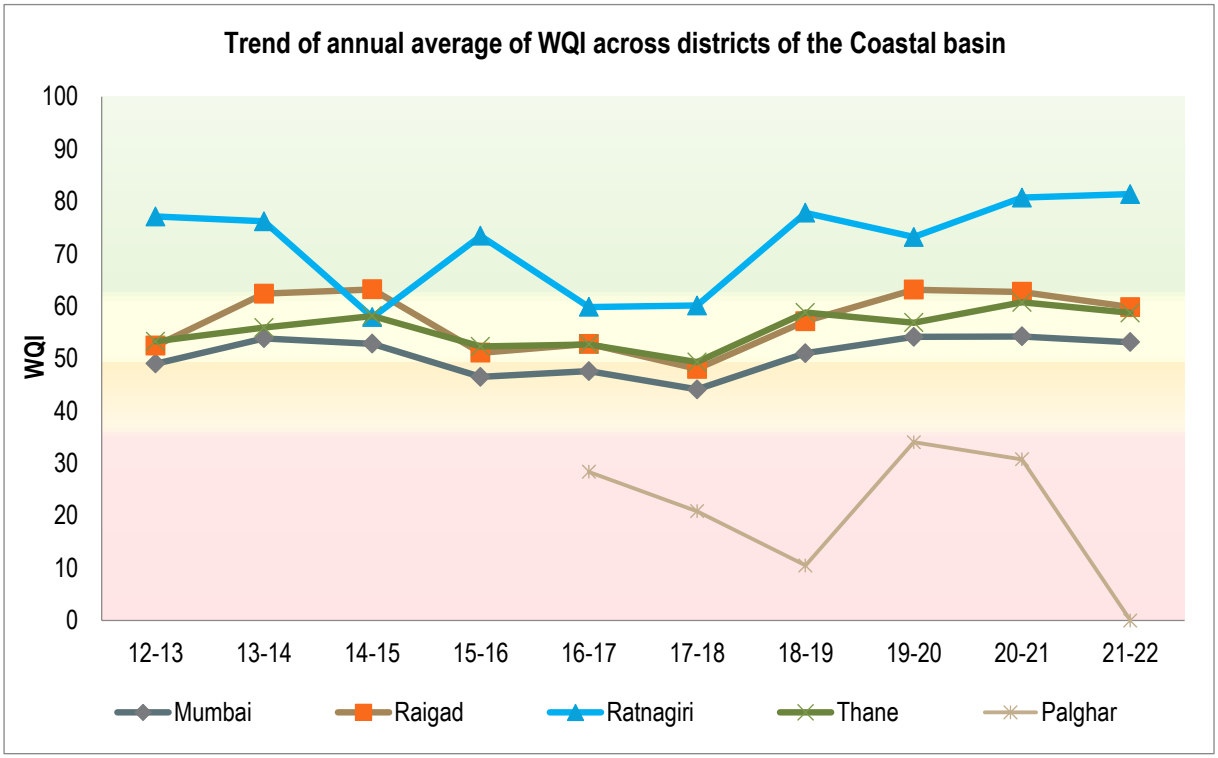


Figure No. 50: Trend of the annual average of WQI across districts of the Coastal basin

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 Figure No.50.Out of 5 districts, WQMS installed in Ratnagiri district recorded a decrease of about 0.81% (from 80.72 to 81.37) whereas a decreasing trend in annual average WQI values was recorded at Mumbai, Raigad and Thane. In 2021-22, no WQI was recorded for the Palghar district.

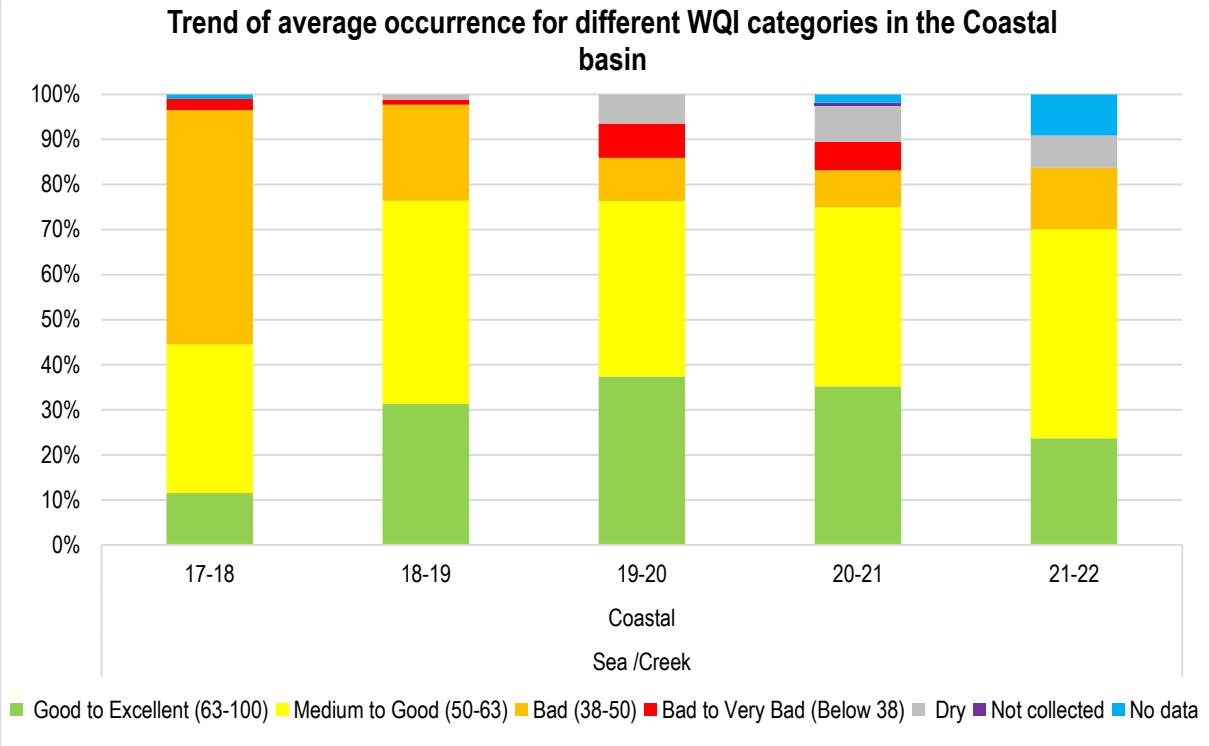
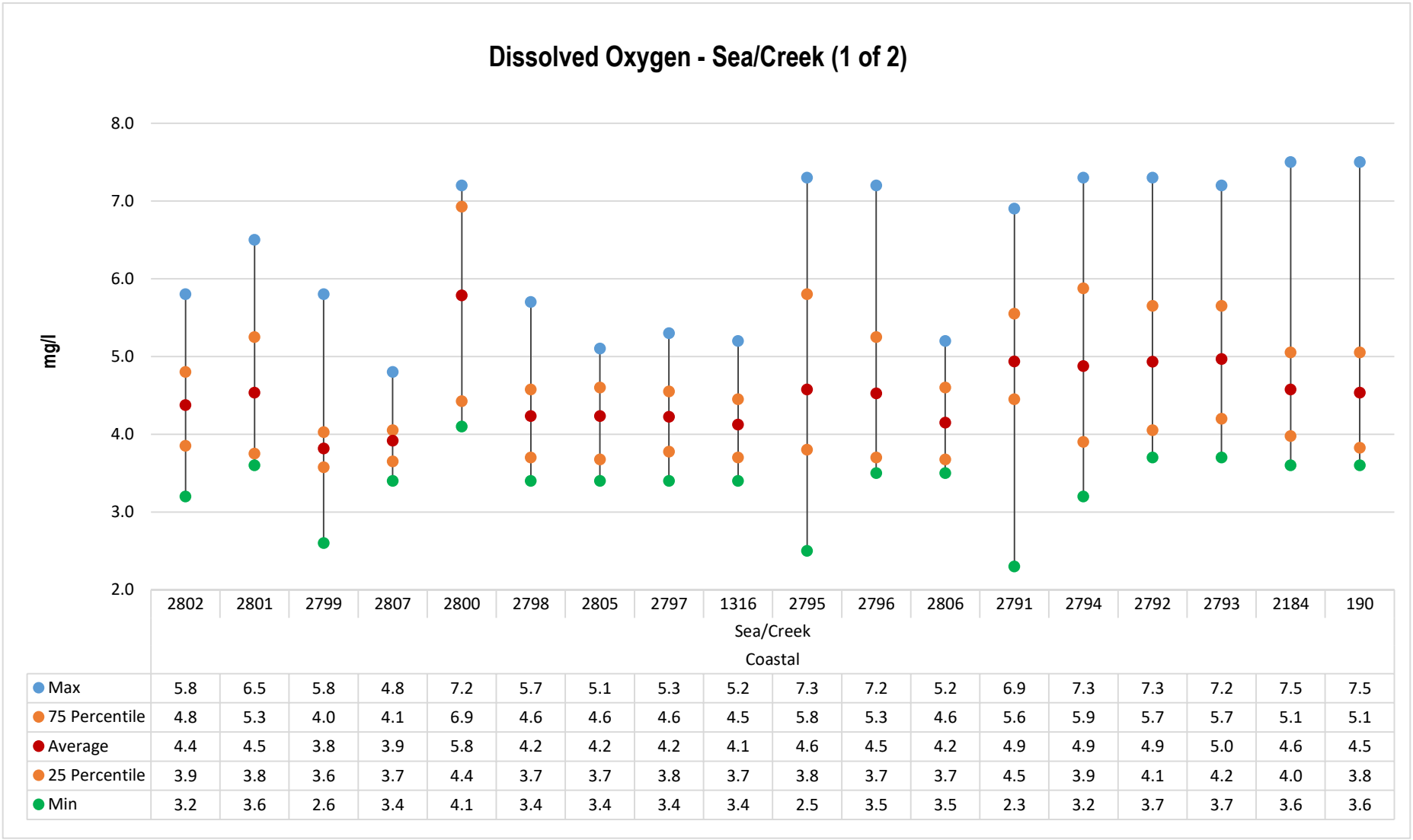


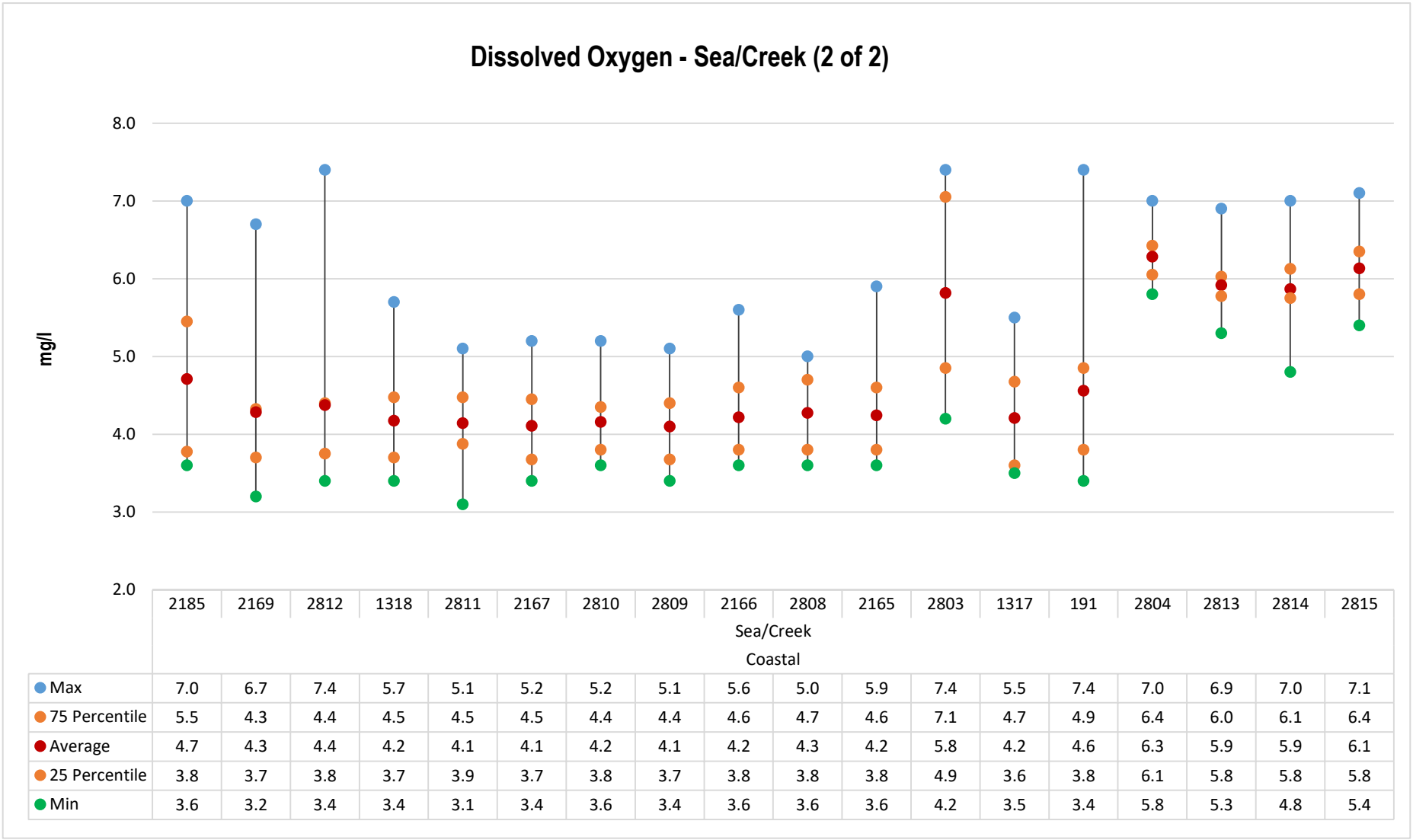
Figure No. 51: Trend of average occurrence for different WQI categories in the Coastal basin

The interbasin analysis of the Coastal basin is depicted in Figure No. 51. From this figure, it can be observed that the percentage share of 'Good to excellent' category observations has (from 35.18% to 23.67%) decreased in the year 2021-22 as compared to 2020-21. On the other hand, the percentage of 'Medium to Good' category observations has increased from 39.815% (2020-21) to 46.4% in 2021-22. A similar percent increase was observed in the case of the 'Bad' category (from 8.15% to 13.64%) and 'Dry' category observations (8.15% to 7.2%).



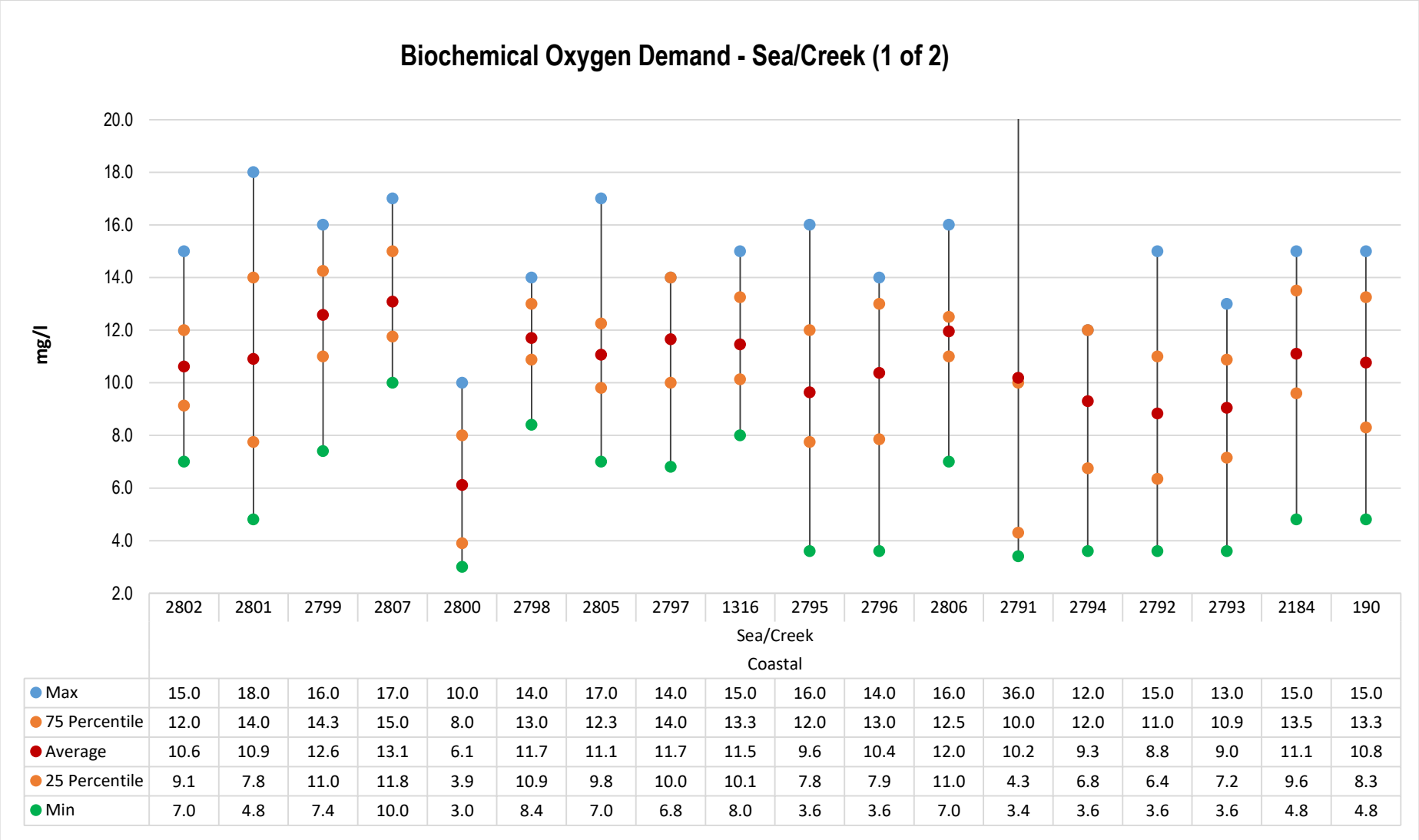
	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	5.8	6.5	5.8	4.8	7.2	5.7	5.1	5.3	5.2	7.3	7.2	5.2	6.9	7.3	7.3	7.2	7.5	7.5
75 Percentile	4.8	5.3	4.0	4.1	6.9	4.6	4.6	4.6	4.5	5.8	5.3	4.6	5.6	5.9	5.7	5.7	5.1	5.1
Average	4.4	4.5	3.8	3.9	5.8	4.2	4.2	4.2	4.1	4.6	4.5	4.2	4.9	4.9	4.9	5.0	4.6	4.5
25 Percentile	3.9	3.8	3.6	3.7	4.4	3.7	3.7	3.8	3.7	3.8	3.7	3.7	4.5	3.9	4.1	4.2	4.0	3.8
Min	3.2	3.6	2.6	3.4	4.1	3.4	3.4	3.4	3.4	2.5	3.5	3.5	2.3	3.2	3.7	3.7	3.6	3.6

Figure No. 52: Trend of Dissolved Oxygen (DO) levels recorded at WQMS monitoring sea and creek water (1 of 2)



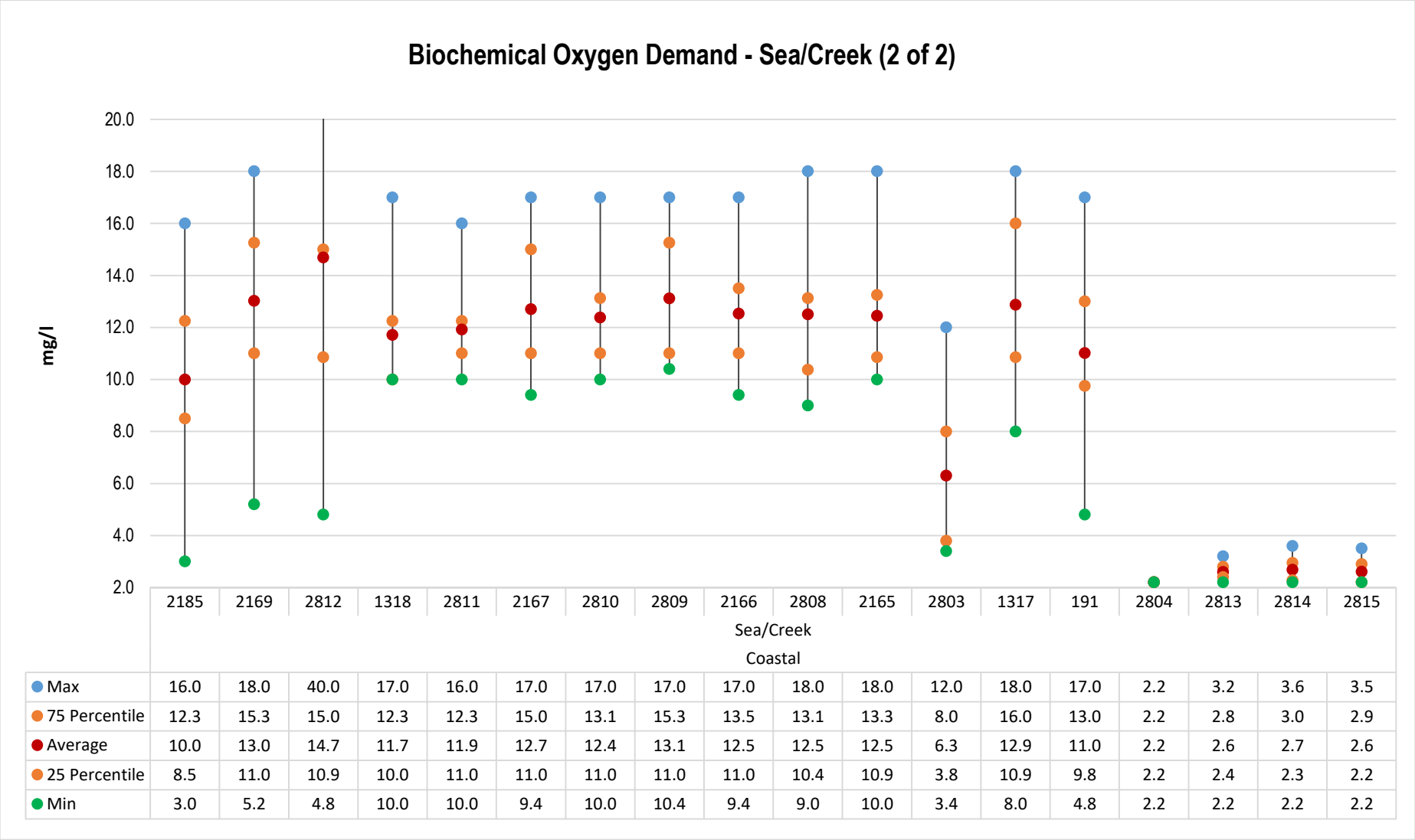
	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	7.0	6.7	7.4	5.7	5.1	5.2	5.2	5.1	5.6	5.0	5.9	7.4	5.5	7.4	7.0	6.9	7.0	7.1
75 Percentile	5.5	4.3	4.4	4.5	4.5	4.5	4.4	4.4	4.6	4.7	4.6	7.1	4.7	4.9	6.4	6.0	6.1	6.4
Average	4.7	4.3	4.4	4.2	4.1	4.1	4.2	4.1	4.2	4.3	4.2	5.8	4.2	4.6	6.3	5.9	5.9	6.1
25 Percentile	3.8	3.7	3.8	3.7	3.9	3.7	3.8	3.7	3.8	3.8	3.8	4.9	3.6	3.8	6.1	5.8	5.8	5.8
Min	3.6	3.2	3.4	3.4	3.1	3.4	3.6	3.4	3.6	3.6	3.6	4.2	3.5	3.4	5.8	5.3	4.8	5.4

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



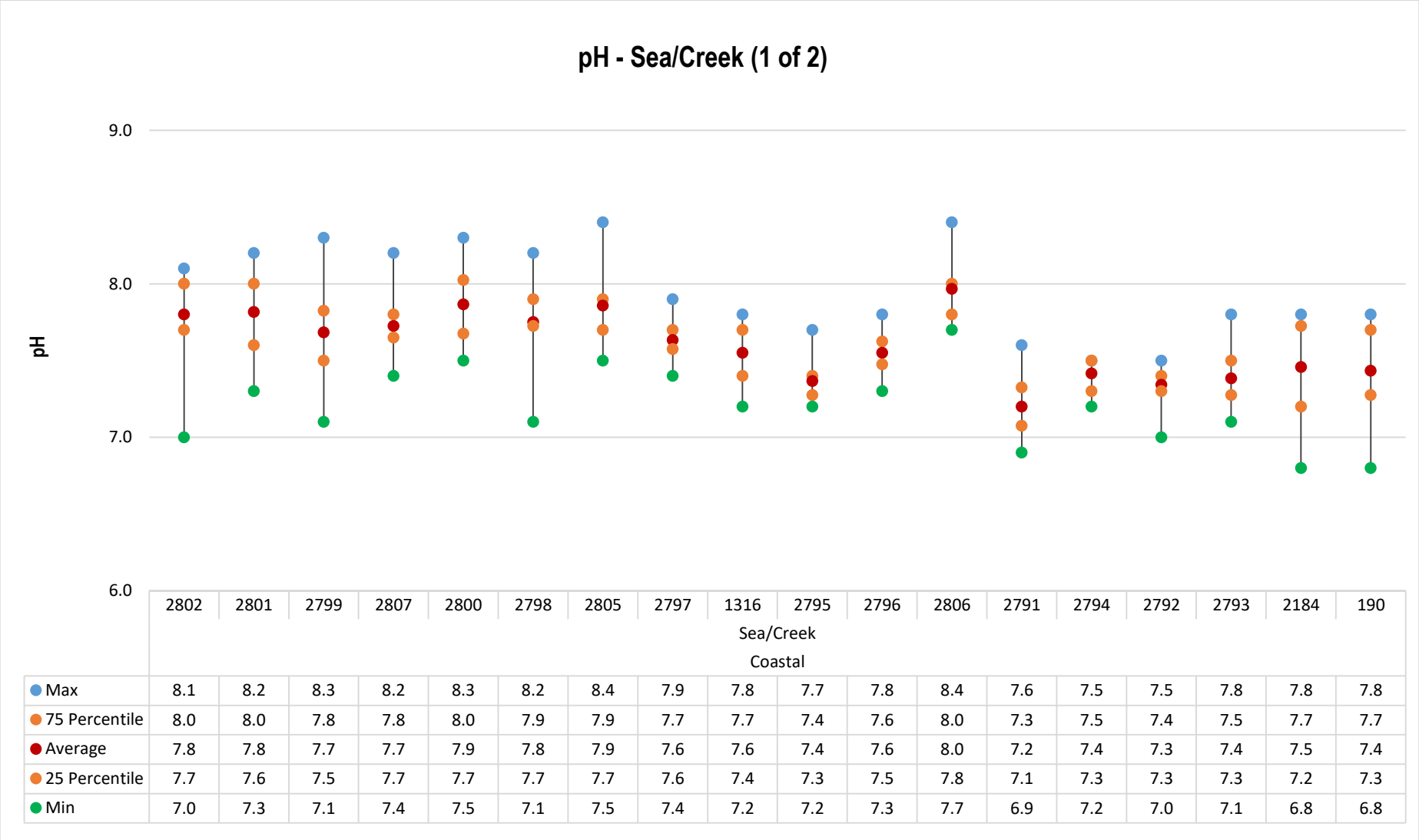
	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	15.0	18.0	16.0	17.0	10.0	14.0	17.0	14.0	15.0	16.0	14.0	16.0	36.0	12.0	15.0	13.0	15.0	15.0
75 Percentile	12.0	14.0	14.3	15.0	8.0	13.0	12.3	14.0	13.3	12.0	13.0	12.5	10.0	12.0	11.0	10.9	13.5	13.3
Average	10.6	10.9	12.6	13.1	6.1	11.7	11.1	11.7	11.5	9.6	10.4	12.0	10.2	9.3	8.8	9.0	11.1	10.8
25 Percentile	9.1	7.8	11.0	11.8	3.9	10.9	9.8	10.0	10.1	7.8	7.9	11.0	4.3	6.8	6.4	7.2	9.6	8.3
Min	7.0	4.8	7.4	10.0	3.0	8.4	7.0	6.8	8.0	3.6	3.6	7.0	3.4	3.6	3.6	3.6	4.8	4.8

Figure No. 54: Trend of Biological Oxygen Demand (BOD) levels recorded at WQMS monitoring sea and creek water (1 of 2)



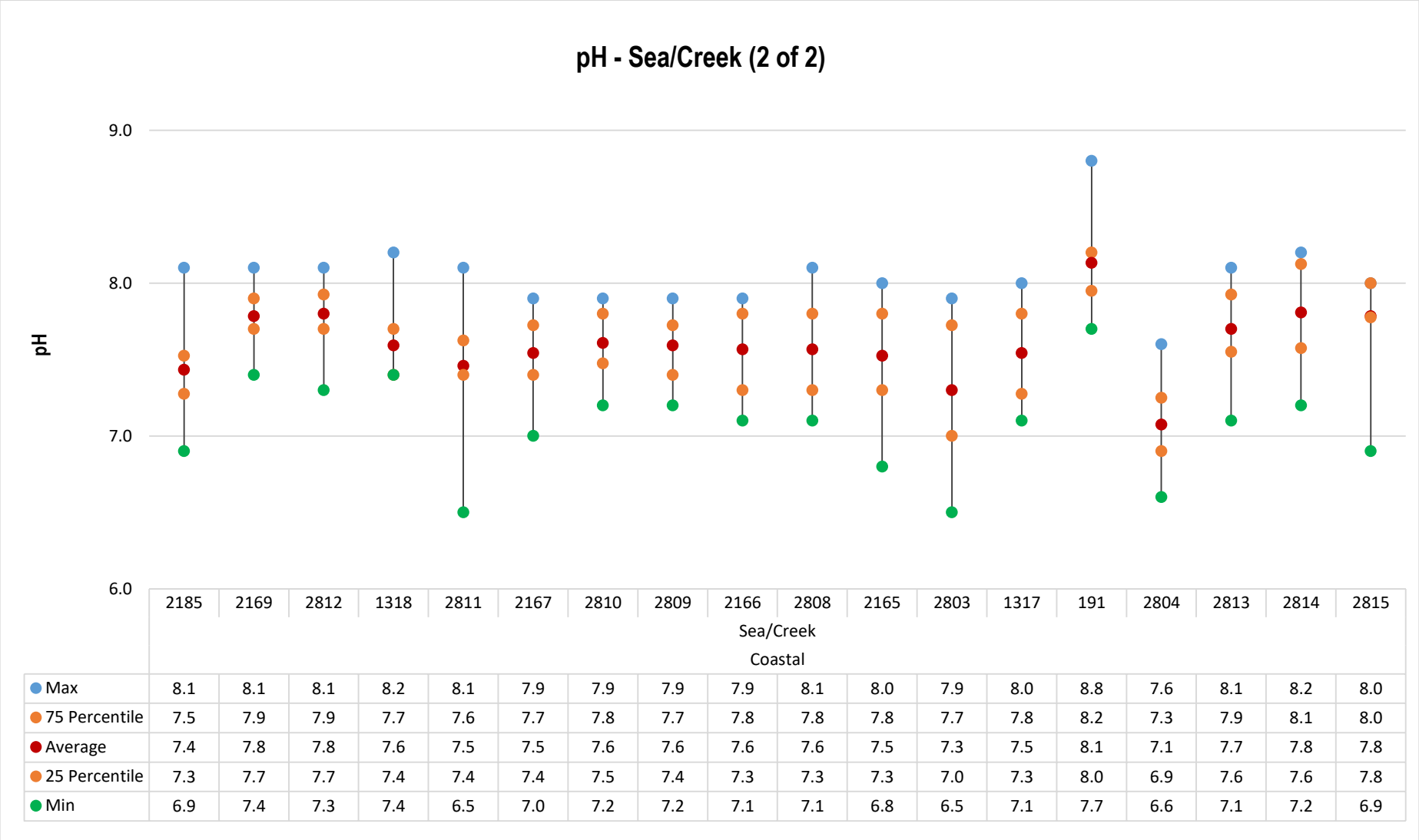
	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	16.0	18.0	40.0	17.0	16.0	17.0	17.0	17.0	17.0	18.0	18.0	12.0	18.0	17.0	2.2	3.2	3.6	3.5
75 Percentile	12.3	15.3	15.0	12.3	12.3	15.0	13.1	15.3	13.5	13.1	13.3	8.0	16.0	13.0	2.2	2.8	3.0	2.9
Average	10.0	13.0	14.7	11.7	11.9	12.7	12.4	13.1	12.5	12.5	12.5	6.3	12.9	11.0	2.2	2.6	2.7	2.6
25 Percentile	8.5	11.0	10.9	10.0	11.0	11.0	11.0	11.0	11.0	10.4	10.9	3.8	10.9	9.8	2.2	2.4	2.3	2.2
Min	3.0	5.2	4.8	10.0	10.0	9.4	10.0	10.4	9.4	9.0	10.0	3.4	8.0	4.8	2.2	2.2	2.2	2.2

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



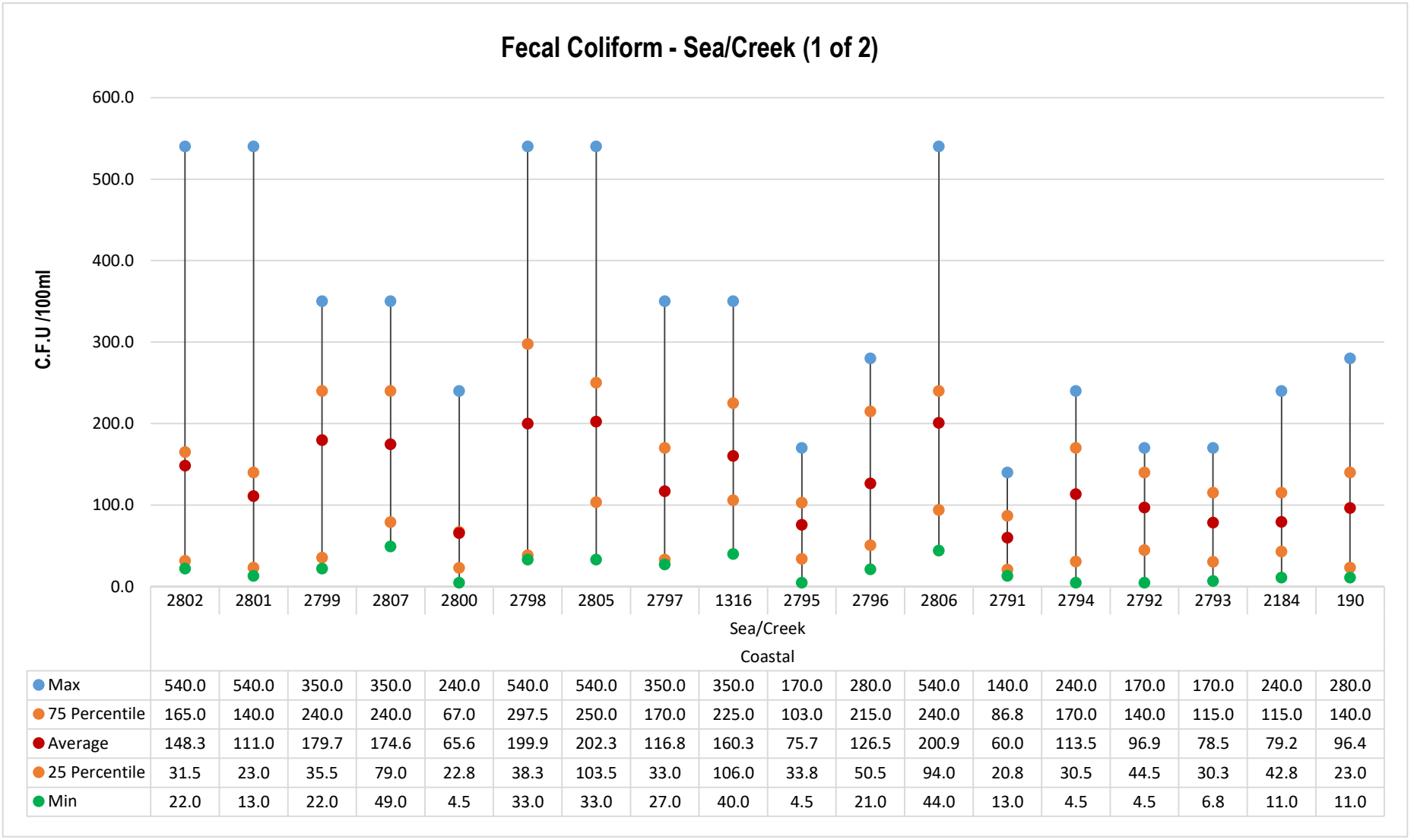
	2802	2801	2799	2807	2800	2798	2805	2797	1316	2795	2796	2806	2791	2794	2792	2793	2184	190
Max	8.1	8.2	8.3	8.2	8.3	8.2	8.4	7.9	7.8	7.7	7.8	8.4	7.6	7.5	7.5	7.8	7.8	7.8
75 Percentile	8.0	8.0	7.8	7.8	8.0	7.9	7.9	7.7	7.7	7.4	7.6	8.0	7.3	7.5	7.4	7.5	7.7	7.7
Average	7.8	7.8	7.7	7.7	7.9	7.8	7.9	7.6	7.6	7.4	7.6	8.0	7.2	7.4	7.3	7.4	7.5	7.4
25 Percentile	7.7	7.6	7.5	7.7	7.7	7.7	7.7	7.6	7.4	7.3	7.5	7.8	7.1	7.3	7.3	7.3	7.2	7.3
Min	7.0	7.3	7.1	7.4	7.5	7.1	7.5	7.4	7.2	7.2	7.3	7.7	6.9	7.2	7.0	7.1	6.8	6.8

Figure No. 56: Trend of pH levels recorded at WQMS monitoring sea and creek water (1 of 2)



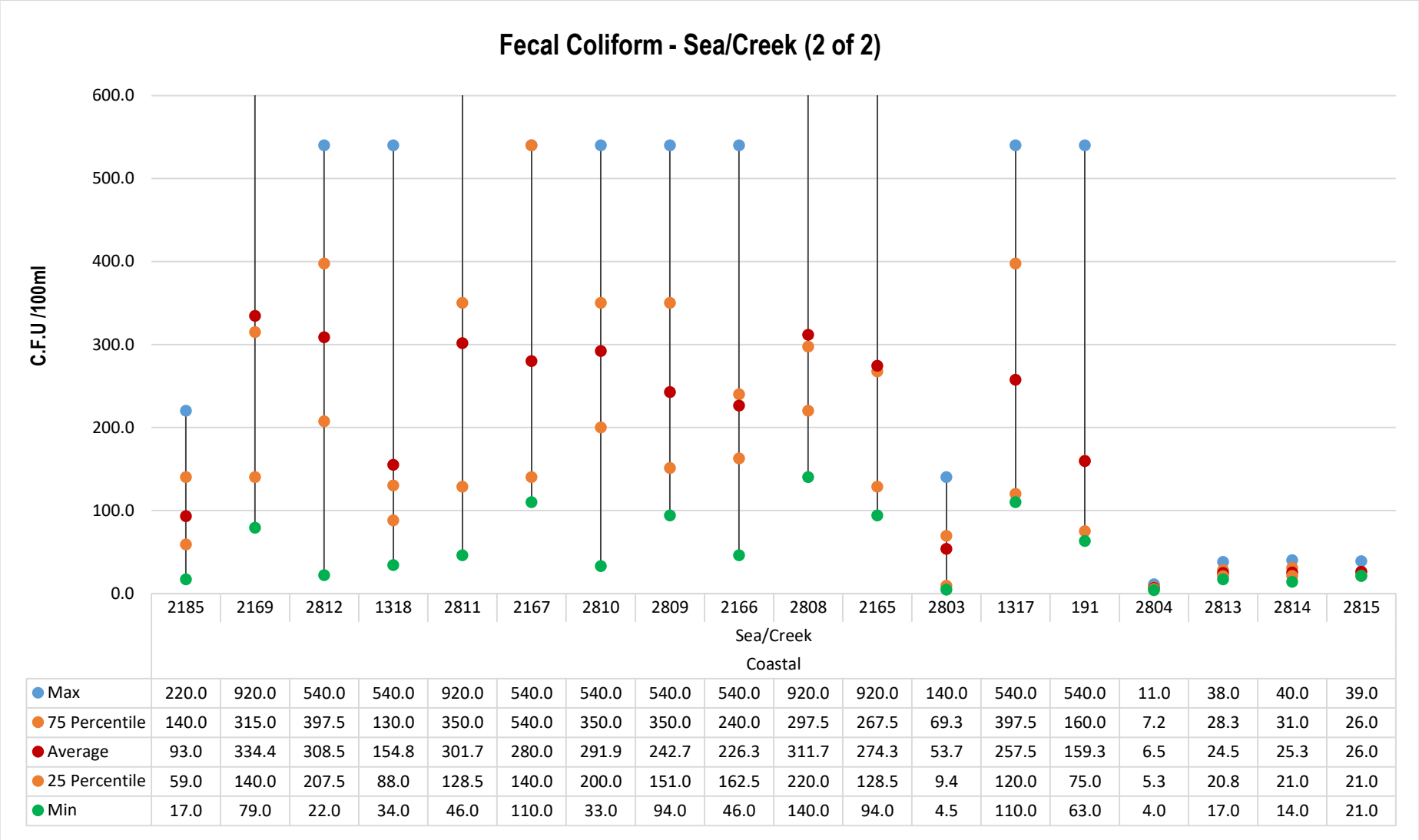
	2185	2169	2812	1318	2811	2167	2810	2809	2166	2808	2165	2803	1317	191	2804	2813	2814	2815
Max	8.1	8.1	8.1	8.2	8.1	7.9	7.9	7.9	7.9	8.1	8.0	7.9	8.0	8.8	7.6	8.1	8.2	8.0
75 Percentile	7.5	7.9	7.9	7.7	7.6	7.7	7.8	7.7	7.8	7.8	7.8	7.7	7.8	8.2	7.3	7.9	8.1	8.0
Average	7.4	7.8	7.8	7.6	7.5	7.5	7.6	7.6	7.6	7.6	7.5	7.3	7.5	8.1	7.1	7.7	7.8	7.8
25 Percentile	7.3	7.7	7.7	7.4	7.4	7.4	7.5	7.4	7.3	7.3	7.3	7.0	7.3	8.0	6.9	7.6	7.6	7.8
Min	6.9	7.4	7.3	7.4	6.5	7.0	7.2	7.2	7.1	7.1	6.8	6.5	7.1	7.7	6.6	7.1	7.2	6.9

Figure No. 57: 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	540.0	540.0	350.0	350.0	240.0	540.0	540.0	350.0	350.0	170.0	280.0	540.0	140.0	240.0	170.0	170.0	240.0	280.0
75 Percentile	165.0	140.0	240.0	240.0	67.0	297.5	250.0	170.0	225.0	103.0	215.0	240.0	86.8	170.0	140.0	115.0	115.0	140.0
Average	148.3	111.0	179.7	174.6	65.6	199.9	202.3	116.8	160.3	75.7	126.5	200.9	60.0	113.5	96.9	78.5	79.2	96.4
25 Percentile	31.5	23.0	35.5	79.0	22.8	38.3	103.5	33.0	106.0	33.8	50.5	94.0	20.8	30.5	44.5	30.3	42.8	23.0
Min	22.0	13.0	22.0	49.0	4.5	33.0	33.0	27.0	40.0	4.5	21.0	44.0	13.0	4.5	4.5	6.8	11.0	11.0

Figure No. 58: 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	220.0	920.0	540.0	540.0	920.0	540.0	540.0	540.0	540.0	920.0	920.0	140.0	540.0	540.0	11.0	38.0	40.0	39.0
75 Percentile	140.0	315.0	397.5	130.0	350.0	540.0	350.0	350.0	240.0	297.5	267.5	69.3	397.5	160.0	7.2	28.3	31.0	26.0
Average	93.0	334.4	308.5	154.8	301.7	280.0	291.9	242.7	226.3	311.7	274.3	53.7	257.5	159.3	6.5	24.5	25.3	26.0
25 Percentile	59.0	140.0	207.5	88.0	128.5	140.0	200.0	151.0	162.5	220.0	128.5	9.4	120.0	75.0	5.3	20.8	21.0	21.0
Min	17.0	79.0	22.0	34.0	46.0	110.0	33.0	94.0	46.0	140.0	94.0	4.5	110.0	63.0	4.0	17.0	14.0	21.0

Figure No. 59: 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	51	54	54	55	76	52	52	52	54	57	56	48	63	60	57	60	57	48
May	58	59	47	51	78	49	46	55	55	62	57	46	62	60	60	62	52	61
Jun	67	63	48	50	63	50	64	54	54	55	50	49	66	52	53	56	58	51
Jul	51	51	50	51	61	49	50	51	51	58	50	50	79	56	65	59	57	57
Aug	67	71	49	51	82	50	57	53	53	86	56	57	71	84	84	85	73	73
Sep	47	44	55	53	65	49	56	57	59	86	88	50	81	85	87	84	57	61
Oct	60	73	53	54	69	61	60	72	55	51	75	54	72	73	72	72	74	74
Nov	64	60	53	54	66	59	56	62	63	68	62	58	65	61	63	60	64	64
Dec	57	60	60	52	61	58	52	58	57	69	60	56	84	69	67	67	59	59
Jan	56	52	55	51	75	55	50	57	54	57	53	52	62	56	56	58	60	60
Feb	58	51	54	52	77	58	51	57	57	61	58	53	42	56	59	59	58	60
Mar	53	76	56	53	62	65	55	59	54	51	67	51	36	49	55	55	56	60
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	No data	Does not comply with WQI Calculation criteria (NA)

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	60	46	47	56	49	48	47	45	47	46	48	68	46	49	89	79	77	79
May	79	43	45	56	48	43	45	48	46	58	55	77	63	52	87	81	78	75
Jun	50	54	49	58	60	47	59	50	59	48	46	80	46	45	87	82	75	82
Jul	55	53	52	50	50	50	50	49	49	47	50	84	48	46	85	81	81	79
Aug	70	51	NA	54	56	53	52	53	55	55	54	85	54	57	86	84	82	80
Sep	59	46	44	53	53	53	53	51	59	59	57	83	57	47	90	78	79	82
Oct	70	70	69	58	52	56	54	56	60	51	48	75	50	69	83	78	78	78
Nov	65	62	63	58	57	58	57	58	61	57	64	61	60	61	89	79	79	82
Dec	64	58	54	57	60	61	61	57	59	60	58	61	60	51	84	74	76	77
Jan	54	50	49	55	53	55	51	56	50	54	55	61	52	56	87	77	78	76
Feb	57	50	49	57	49	54	55	59	55	55	57	61	57	55	89	79	77	80
Mar	63	46	46	52	47	52	48	53	50	50	52	66	52	60	91	77	76	80
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																	

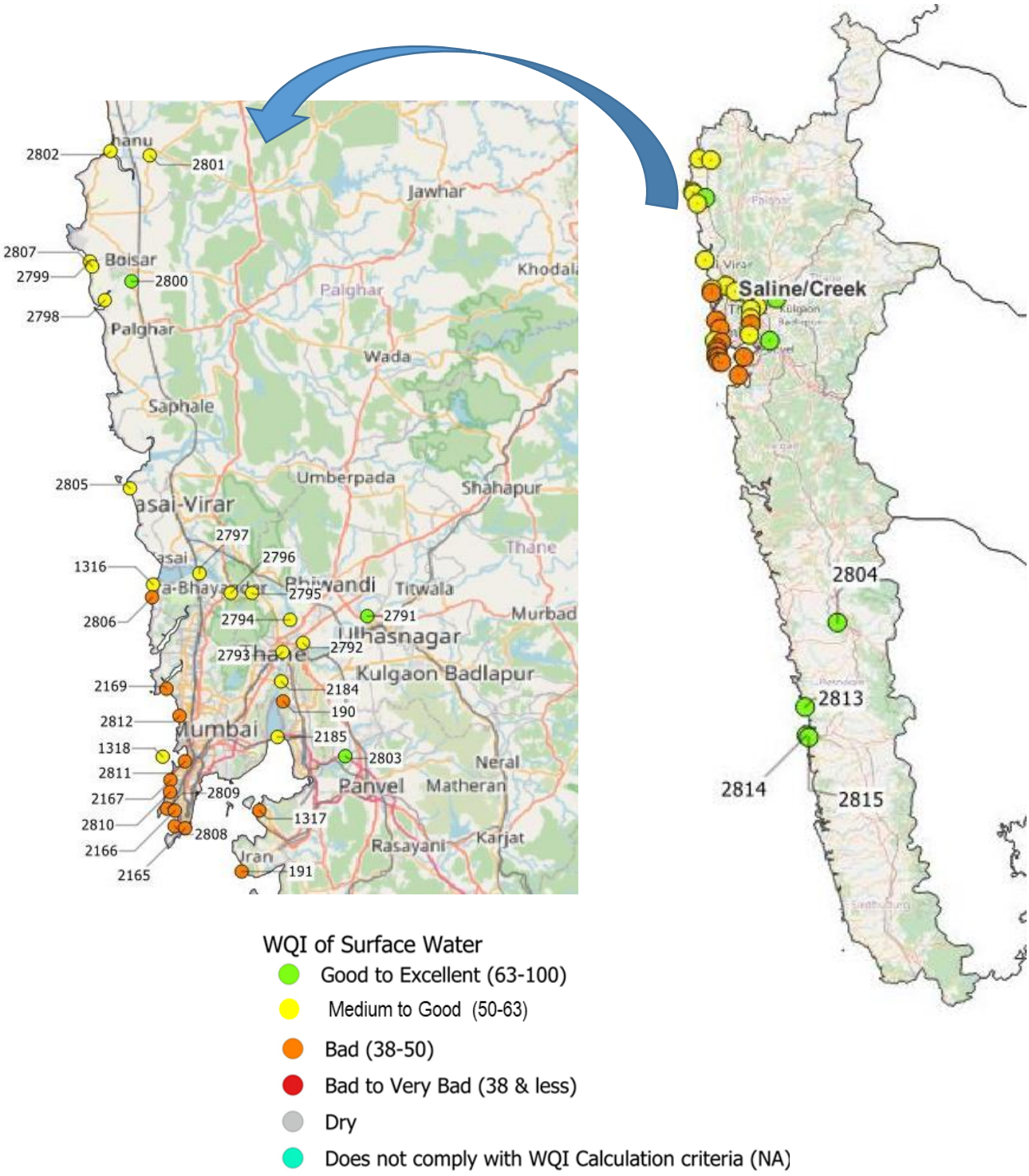
Legend

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

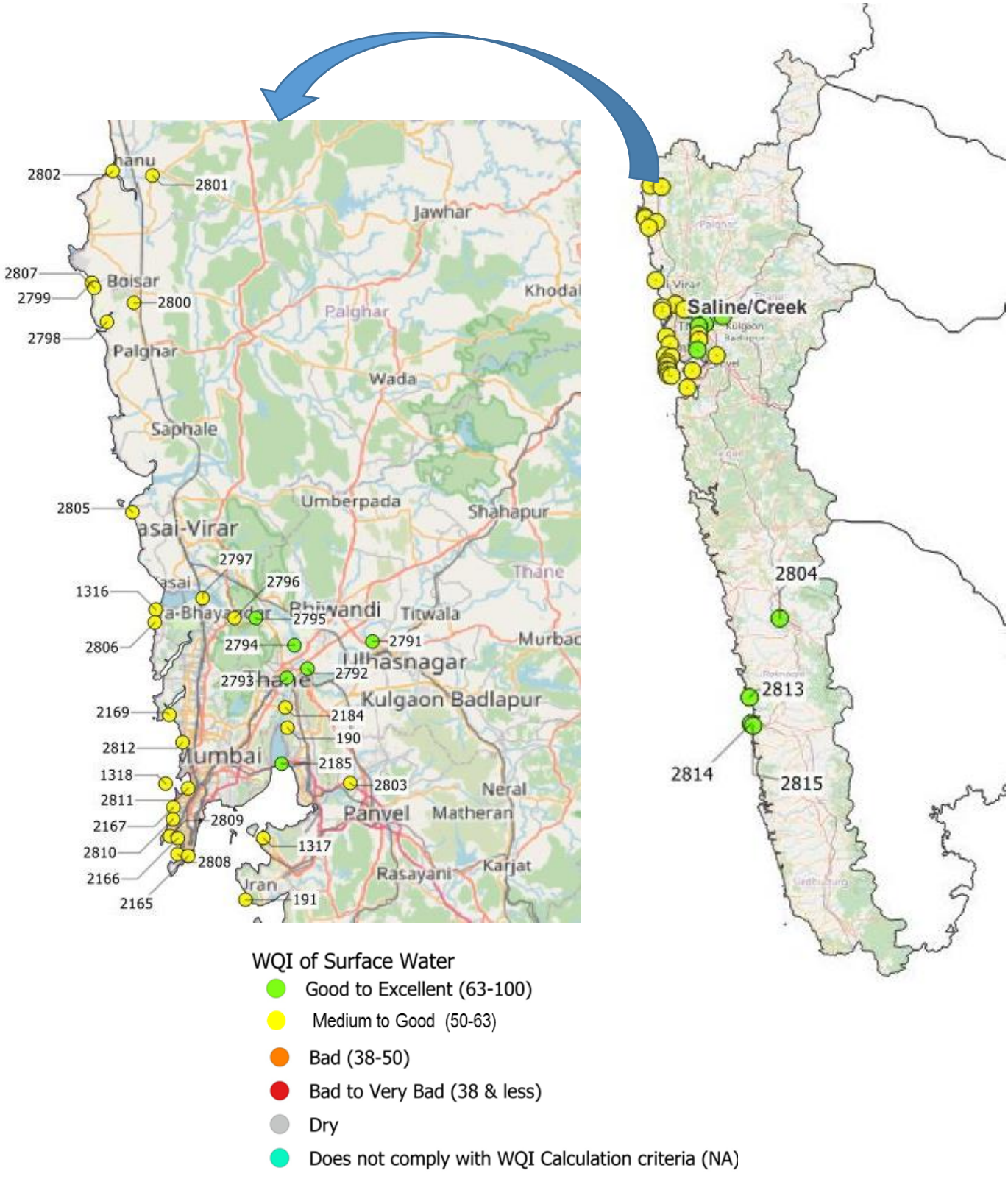
Table No. 27 : Surface water quality monitoring stations monitoring Sea/Creek water (2 of 2)

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 2021)



Spatial map of Surface WQI at Saline/Creek (December 2021)

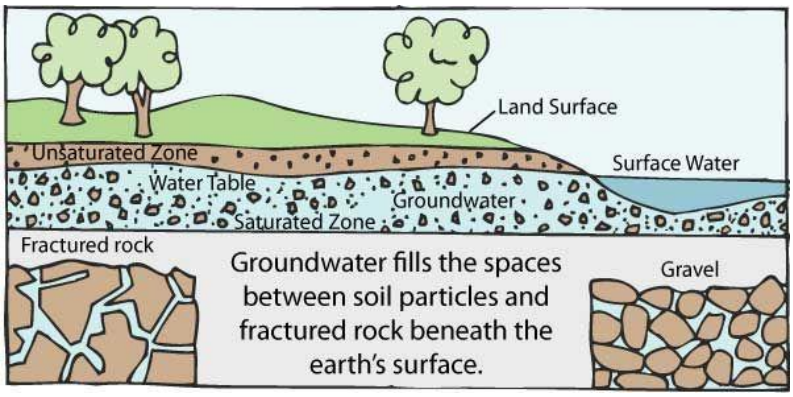


GROUND WATER QUALITY

Water that has travelled down from the soil surface and collected in the spaces between sediments and the cracks within rock is called groundwater. Groundwater fills in all the empty spaces underground, in what is called the saturated zone, until it reaches an impenetrable layer of rock. Groundwater is contained and flows through bodies of rock and sediment called aquifers[27].

In India, groundwater is an Important natural resource to meet the water requirements. About 85% of the our country's rural drinking water supply comes from ground water sources.

It is estimated that India has approximately 27 million wells and borewells, of which morethan half are borewells. There is a steady increase in the share of groundwater in irrigation over every decade. Therefore, conserving and managing groundwater is necessary owing to demand pressure[28].



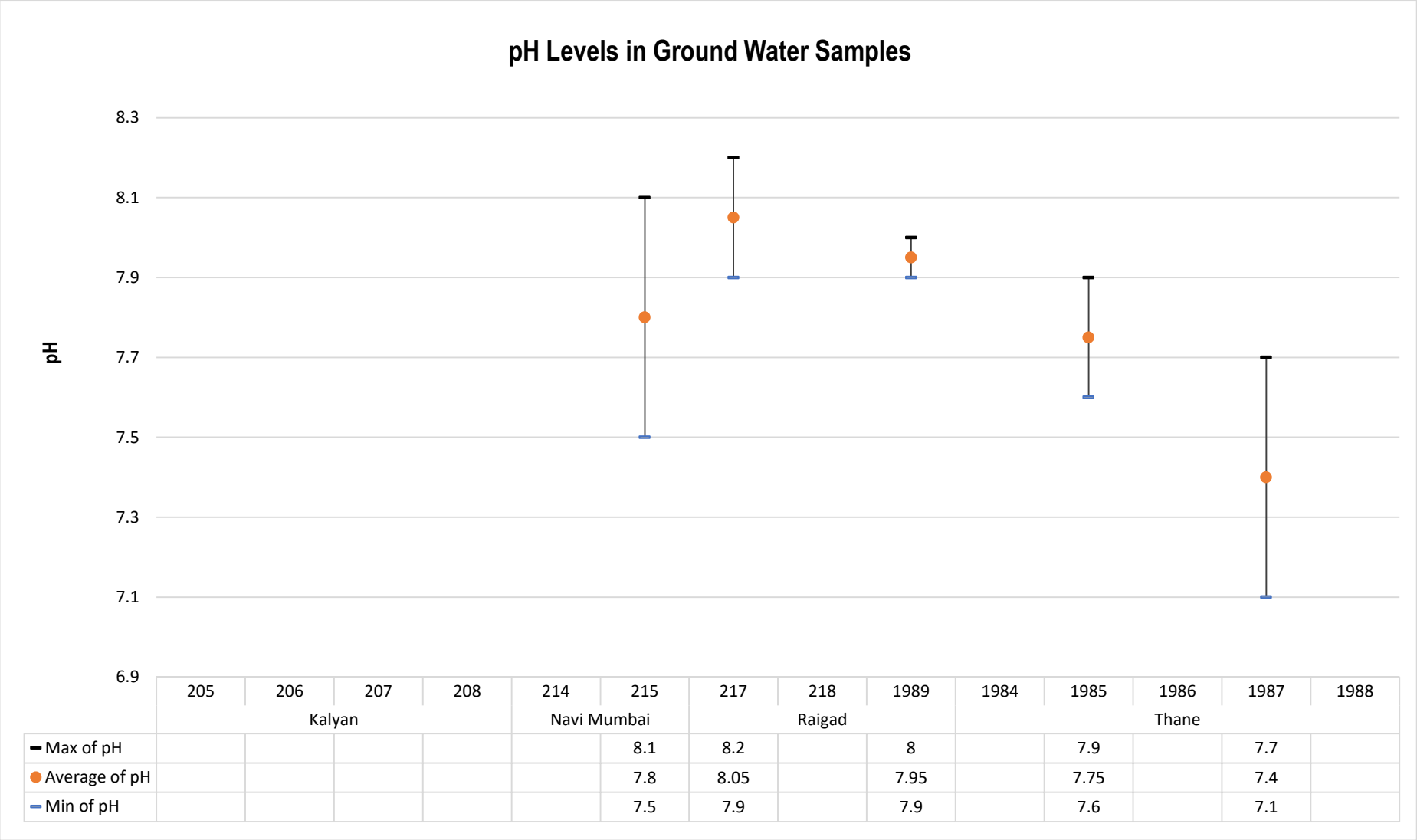
Picture No. 2: Picture explaining the concept of Groundwater Source:https://www.groundwater.org/getinformed/basics/groundwater.html

For monitoring the level of groundwater and to monitor 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 2021-22 are represented in the Table No.28

Table No. 28: List of Groundwater Quality Monitoring stations

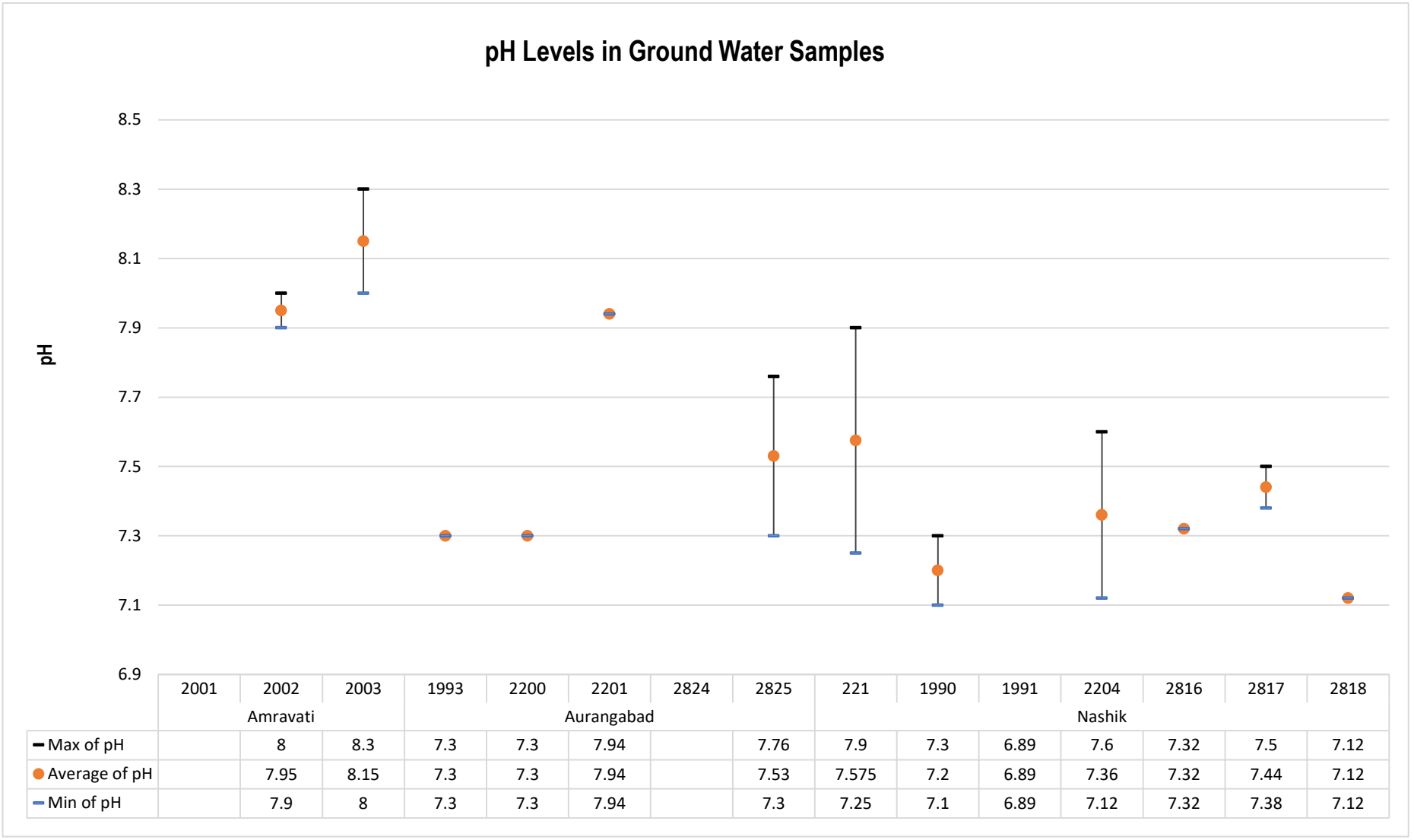
Water Quality monitoring stations	
Water Bodies	**2021-22**
Bore well	29
Dug well	35
Tube well	1
Hand pump	1
Total	**66**

[27] https://education.nationalgeographic.org/resource/groundwater.
[28] http://cgwb.gov.in/AQM/NAQUIM.html



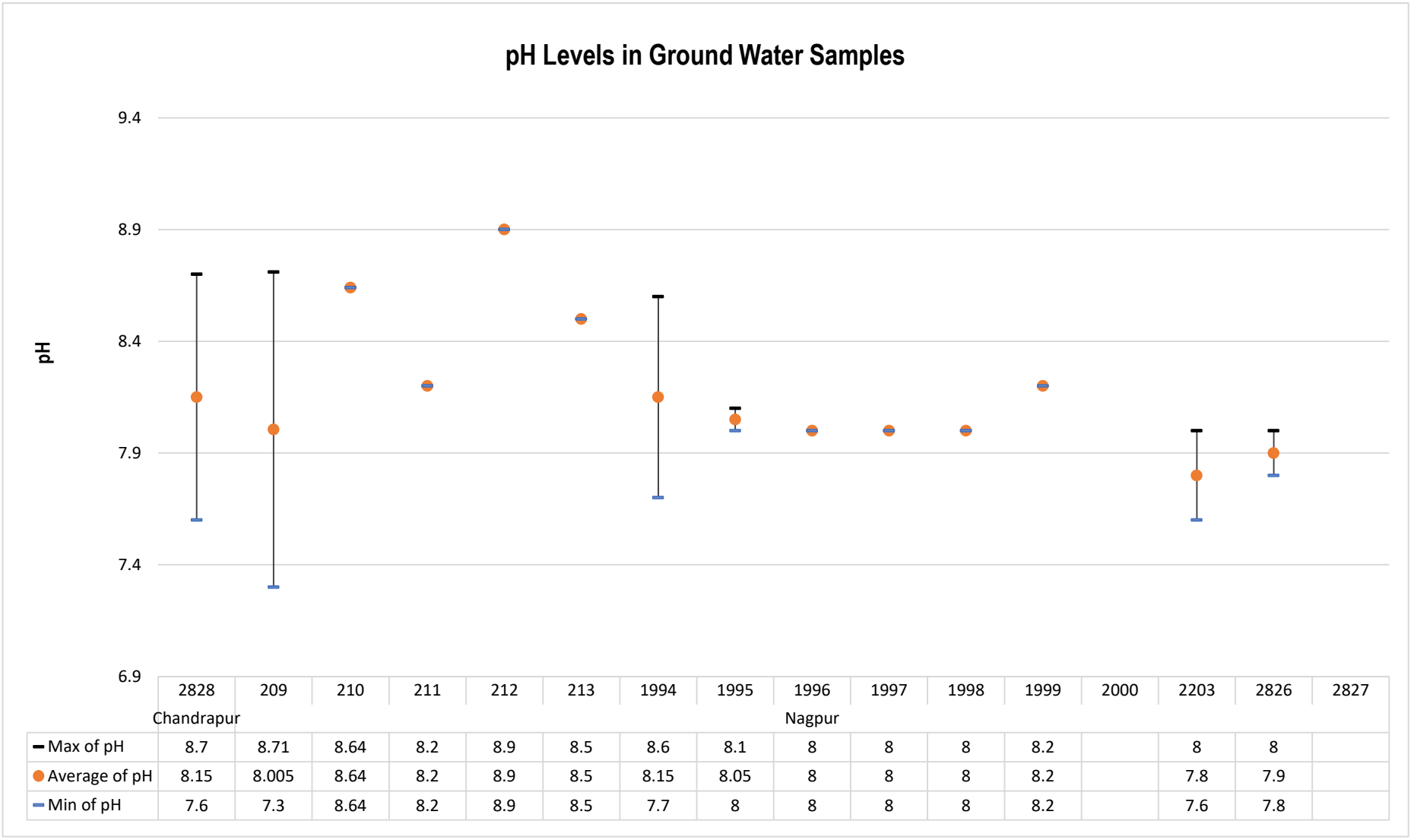
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of pH						8.1	8.2		8		7.9		7.7	
Average of pH						7.8	8.05		7.95		7.75		7.4	
Min of pH						7.5	7.9		7.9		7.6		7.1	

Figure No. 60: Parametric values of pH recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



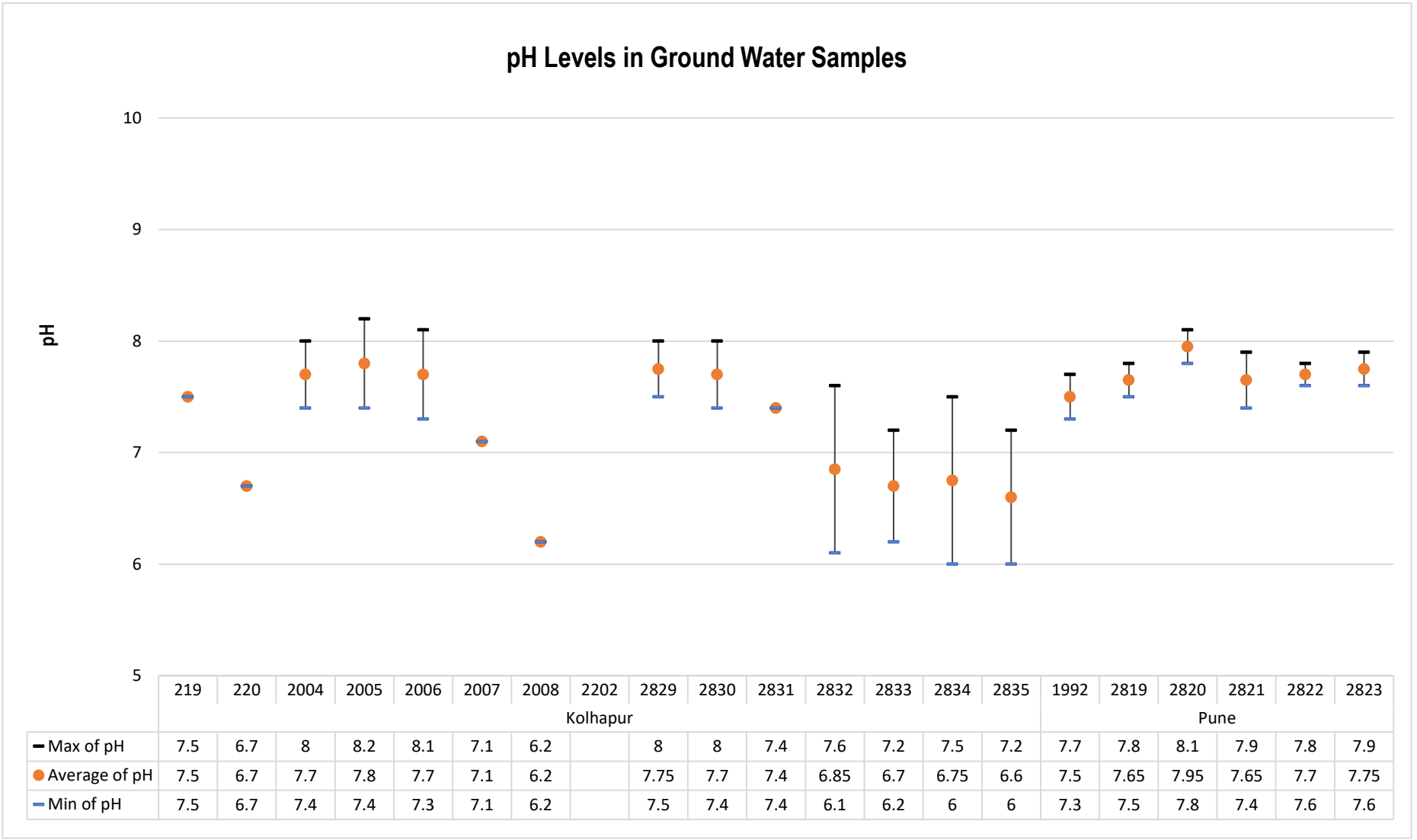
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad						Nashik			
Max of pH		8	8.3	7.3	7.3	7.94		7.76	7.9	7.3	6.89	7.6	7.32	7.5	7.12
Average of pH		7.95	8.15	7.3	7.3	7.94		7.53	7.575	7.2	6.89	7.36	7.32	7.44	7.12
Min of pH		7.9	8	7.3	7.3	7.94		7.3	7.25	7.1	6.89	7.12	7.32	7.38	7.12

Figure No. 61: Parametric values of pH recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



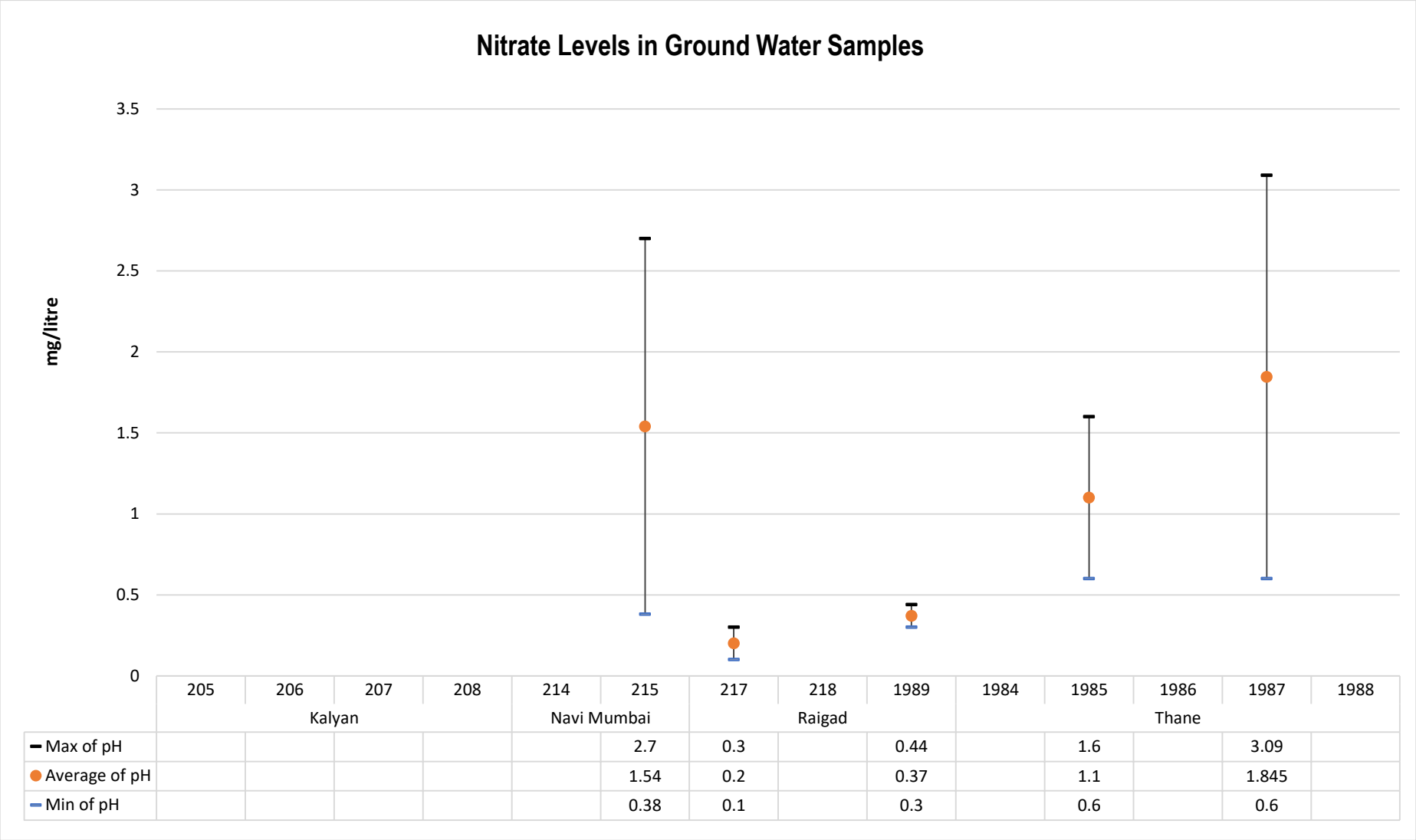
	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
	Chandrapur								Nagpur							
Max of pH	8.7	8.71	8.64	8.2	8.9	8.5	8.6	8.1	8	8	8	8.2		8	8	
Average of pH	8.15	8.005	8.64	8.2	8.9	8.5	8.15	8.05	8	8	8	8.2		7.8	7.9	
Min of pH	7.6	7.3	8.64	8.2	8.9	8.5	7.7	8	8	8	8	8.2		7.6	7.8	

Figure No. 62: Parametric values of pH recorded at WQMS monitoring ground water at Chandrapur and Nagpur



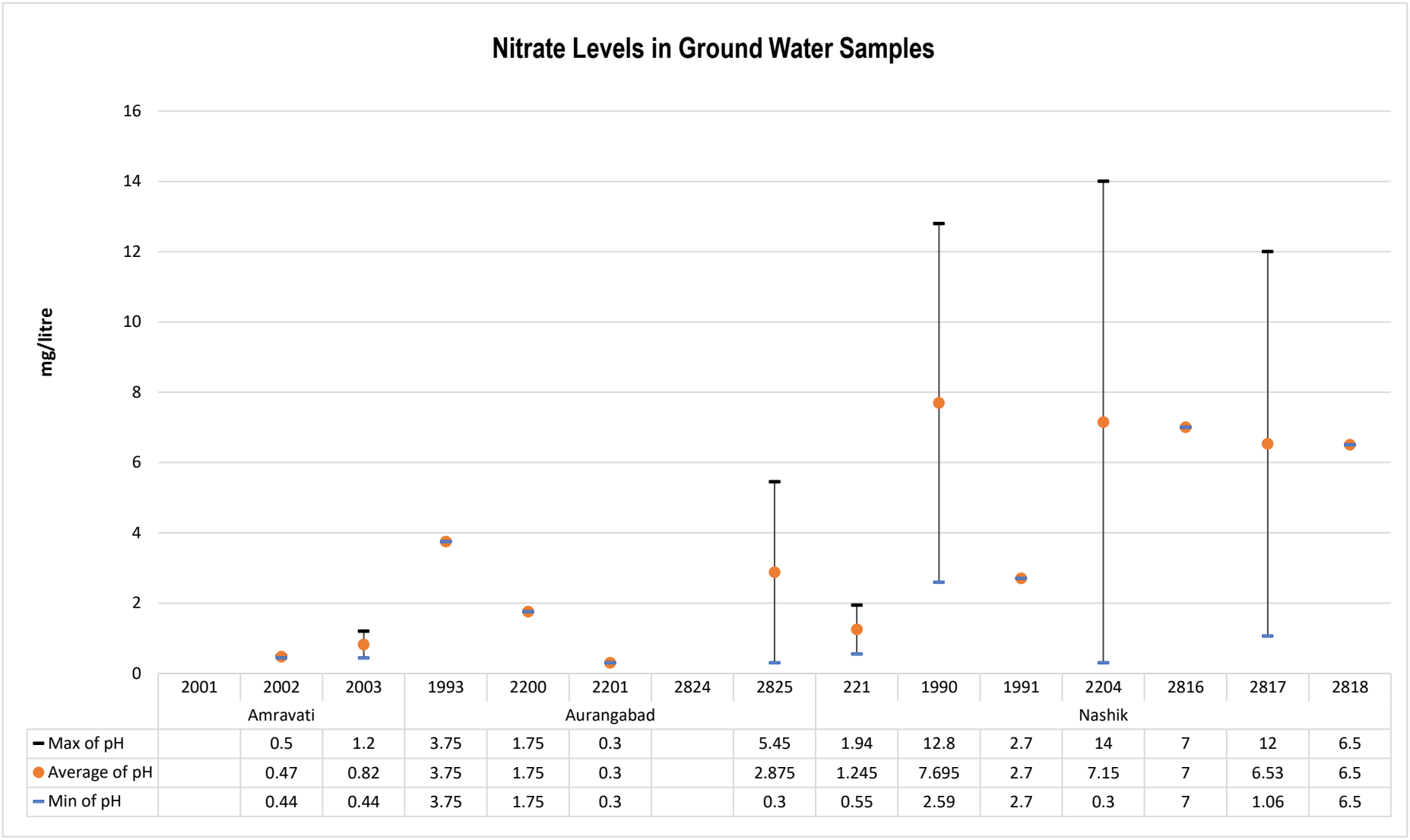
	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of pH	7.5	6.7	8	8.2	8.1	7.1	6.2		8	8	7.4	7.6	7.2	7.5	7.2	7.7	7.8	8.1	7.9	7.8	7.9
Average of pH	7.5	6.7	7.7	7.8	7.7	7.1	6.2		7.75	7.7	7.4	6.85	6.7	6.75	6.6	7.5	7.65	7.95	7.65	7.7	7.75
Min of pH	7.5	6.7	7.4	7.4	7.3	7.1	6.2		7.5	7.4	7.4	6.1	6.2	6	6	7.3	7.5	7.8	7.4	7.6	7.6

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



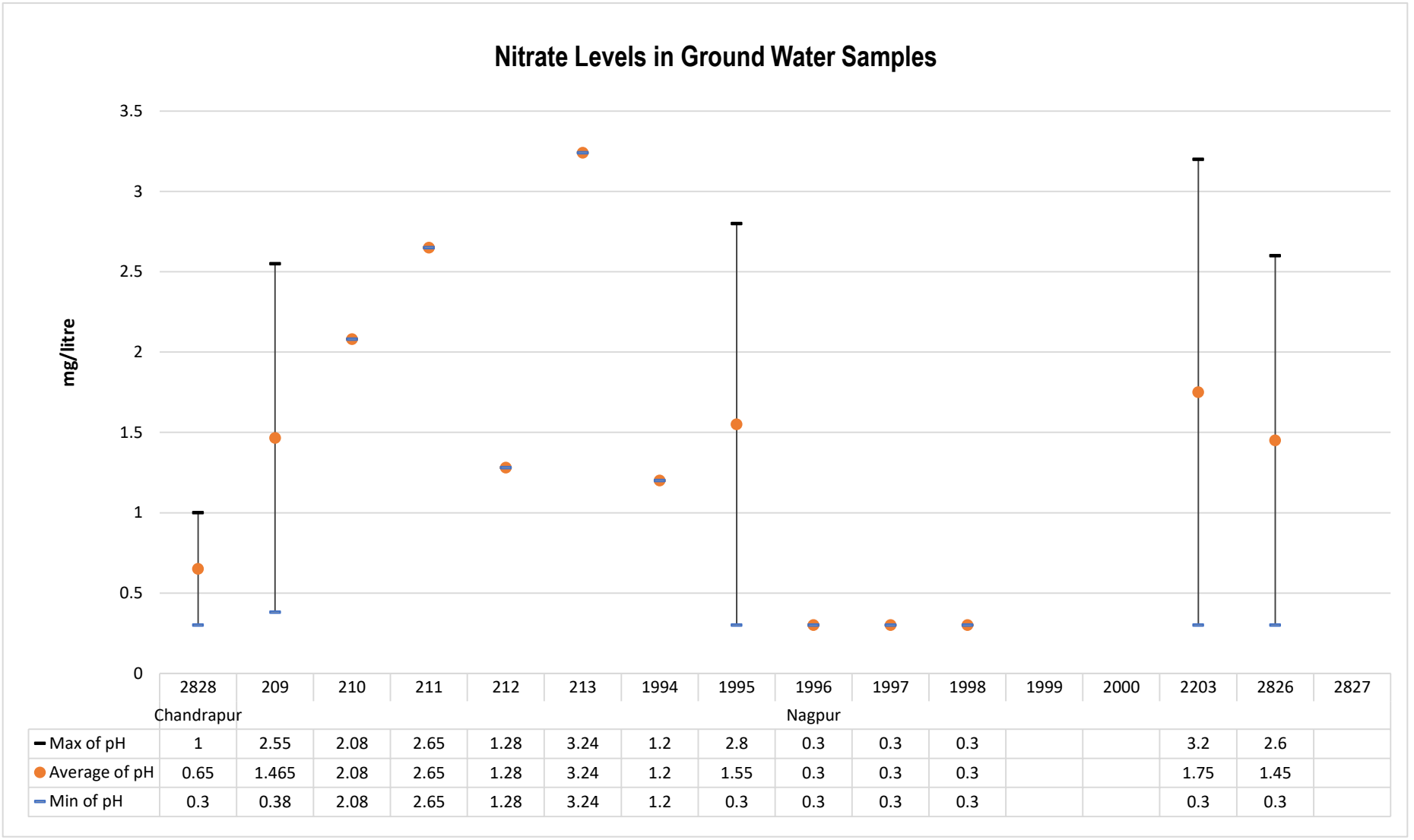
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of pH						2.7	0.3		0.44		1.6		3.09	
Average of pH						1.54	0.2		0.37		1.1		1.845	
Min of pH						0.38	0.1		0.3		0.6		0.6	

Figure No. 64: Parametric values of Nitrate recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



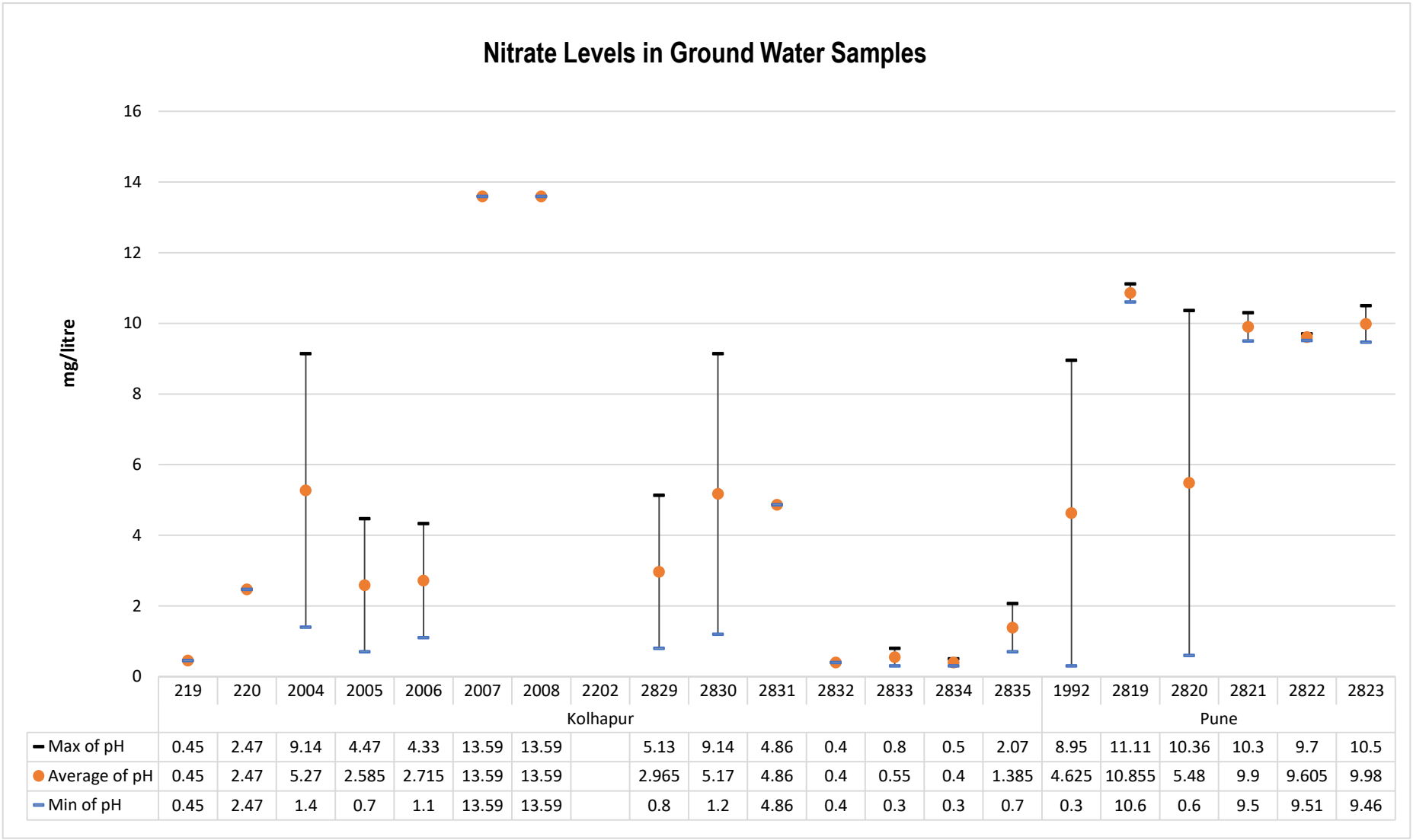
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad						Nashik			
Max of pH		0.5	1.2	3.75	1.75	0.3		5.45	1.94	12.8	2.7	14	7	12	6.5
Average of pH		0.47	0.82	3.75	1.75	0.3		2.875	1.245	7.695	2.7	7.15	7	6.53	6.5
Min of pH		0.44	0.44	3.75	1.75	0.3		0.3	0.55	2.59	2.7	0.3	7	1.06	6.5

Figure No. 65: Parametric values of Nitrate recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



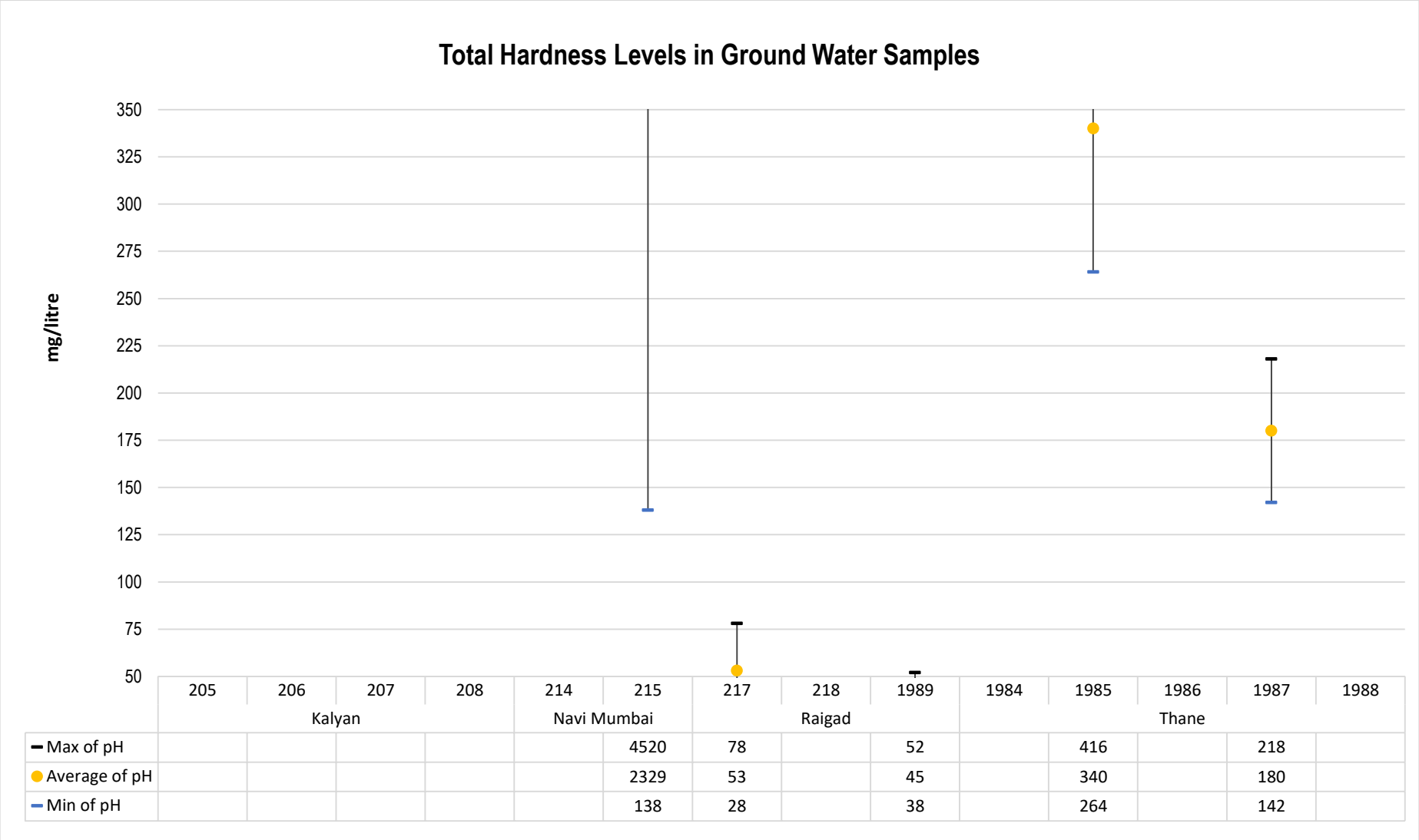
	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
	Chandrapur								Nagpur							
Max of pH	1	2.55	2.08	2.65	1.28	3.24	1.2	2.8	0.3	0.3	0.3			3.2	2.6	
Average of pH	0.65	1.465	2.08	2.65	1.28	3.24	1.2	1.55	0.3	0.3	0.3			1.75	1.45	
Min of pH	0.3	0.38	2.08	2.65	1.28	3.24	1.2	0.3	0.3	0.3	0.3			0.3	0.3	

Figure No. 66: Parametric values of Nitrate recorded at WQMS monitoring ground water at Chandrapur and Nagpur



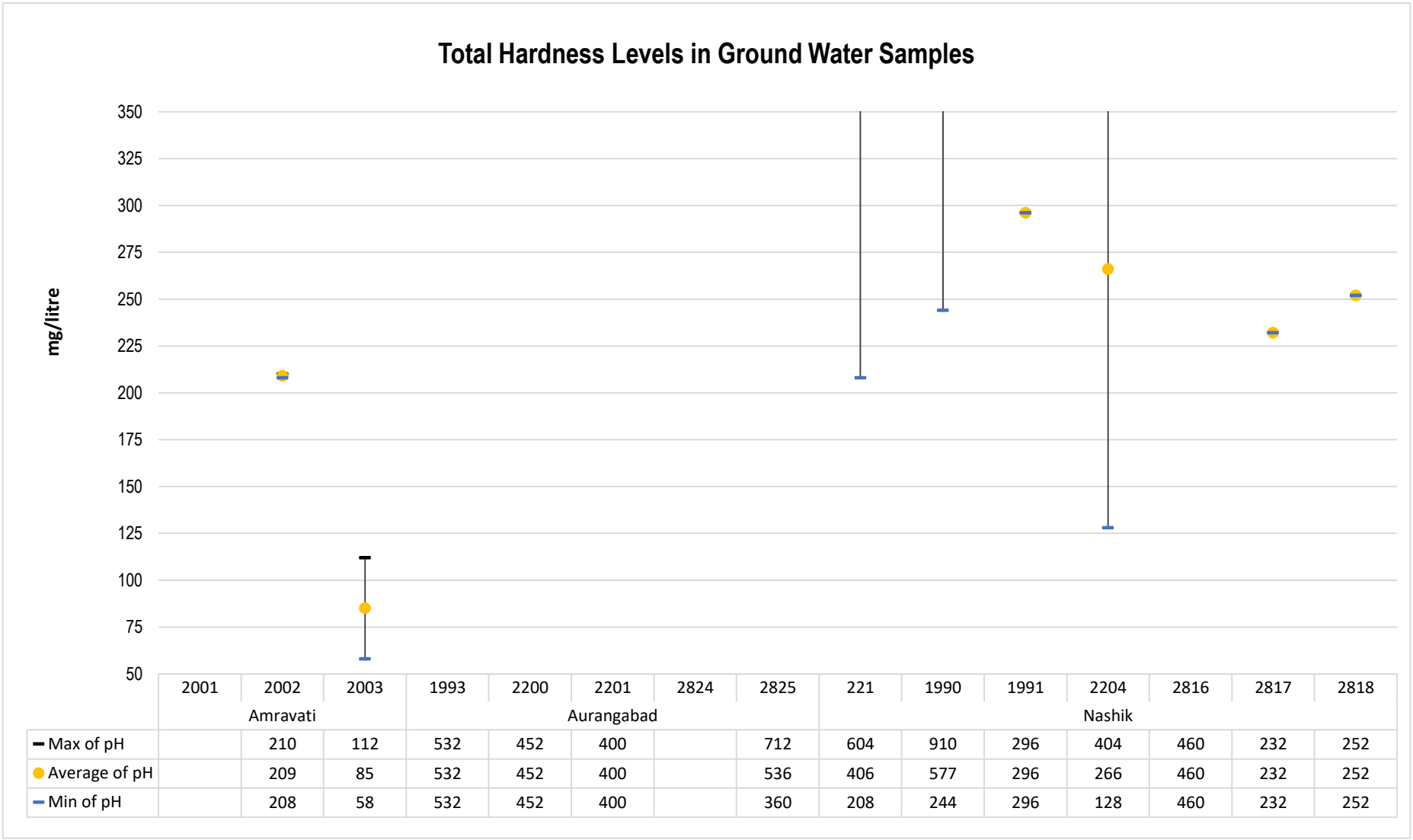
	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of pH	0.45	2.47	9.14	4.47	4.33	13.59	13.59		5.13	9.14	4.86	0.4	0.8	0.5	2.07	8.95	11.11	10.36	10.3	9.7	10.5
Average of pH	0.45	2.47	5.27	2.585	2.715	13.59	13.59		2.965	5.17	4.86	0.4	0.55	0.4	1.385	4.625	10.855	5.48	9.9	9.605	9.98
Min of pH	0.45	2.47	1.4	0.7	1.1	13.59	13.59		0.8	1.2	4.86	0.4	0.3	0.3	0.7	0.3	10.6	0.6	9.5	9.51	9.46

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



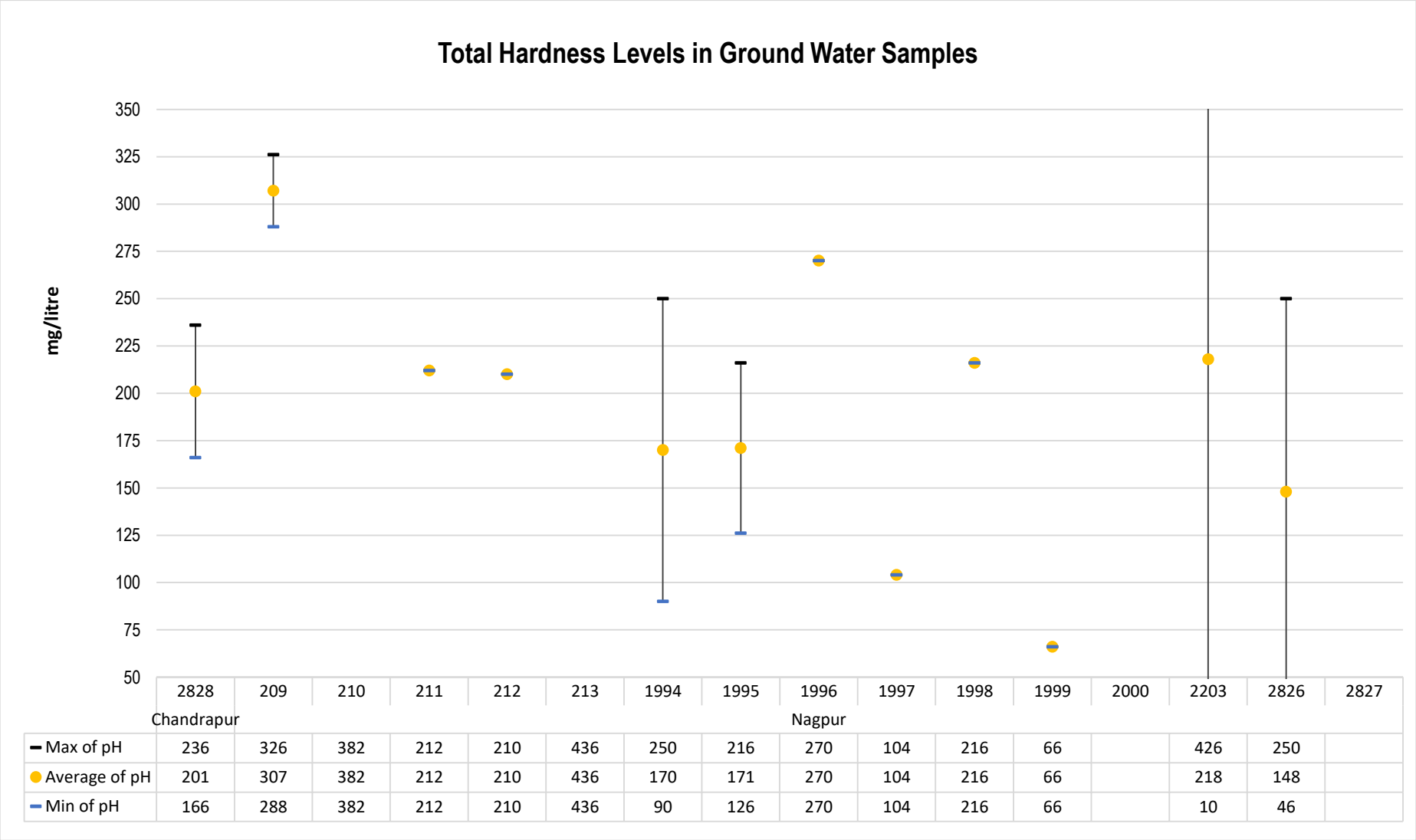
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of pH						4520	78		52		416		218	
Average of pH						2329	53		45		340		180	
Min of pH						138	28		38		264		142	

Figure No. 68: Parametric values of Hardness at CaCO3 recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



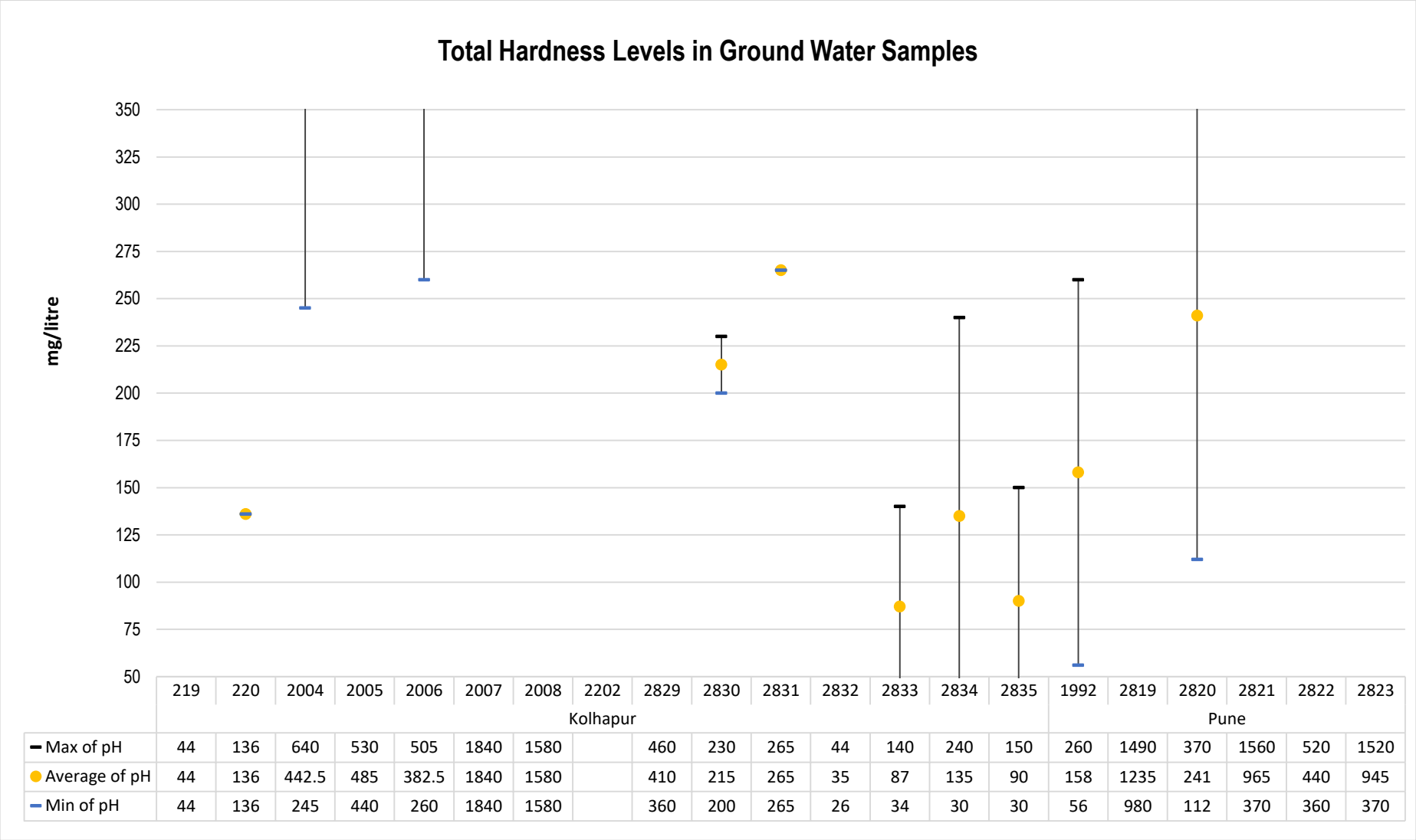
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad						Nashik			
Max of pH		210	112	532	452	400		712	604	910	296	404	460	232	252
Average of pH		209	85	532	452	400		536	406	577	296	266	460	232	252
Min of pH		208	58	532	452	400		360	208	244	296	128	460	232	252

Figure No. 69: Parametric values of Hardness at CaCO3 recorded at WQMS monitoring ground water at Amravati, Aurangabad and Nashik



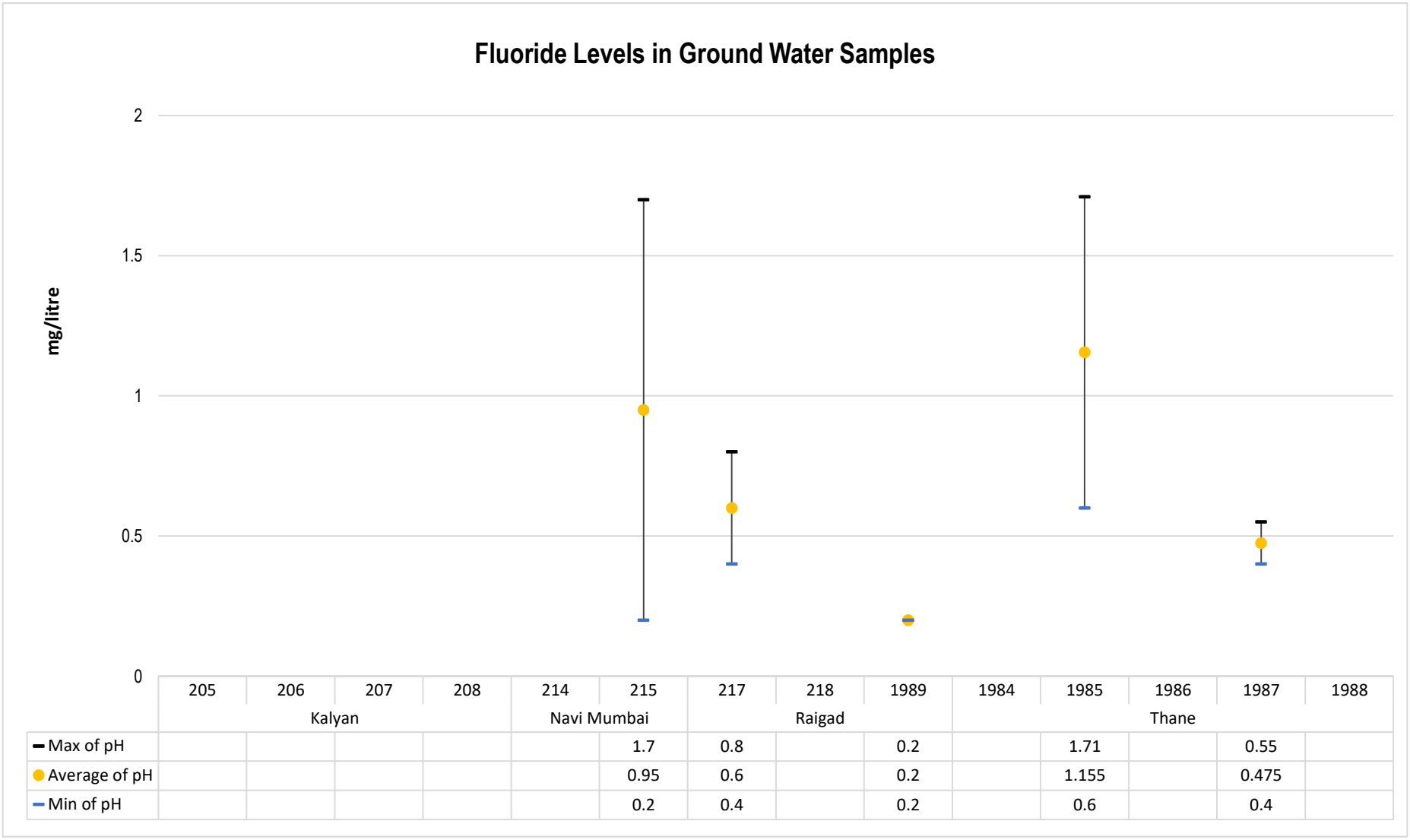
	2828	209	210	211	212	213	1994	1995	1996	1997	1998	1999	2000	2203	2826	2827
Max of pH	236	326	382	212	210	436	250	216	270	104	216	66		426	250	
Average of pH	201	307	382	212	210	436	170	171	270	104	216	66		218	148	
Min of pH	166	288	382	212	210	436	90	126	270	104	216	66		10	46	

Figure No. 70: Parametric values of Hardness at CaCO3 recorded at WQMS monitoring ground water at Chandrapur and Nagpur



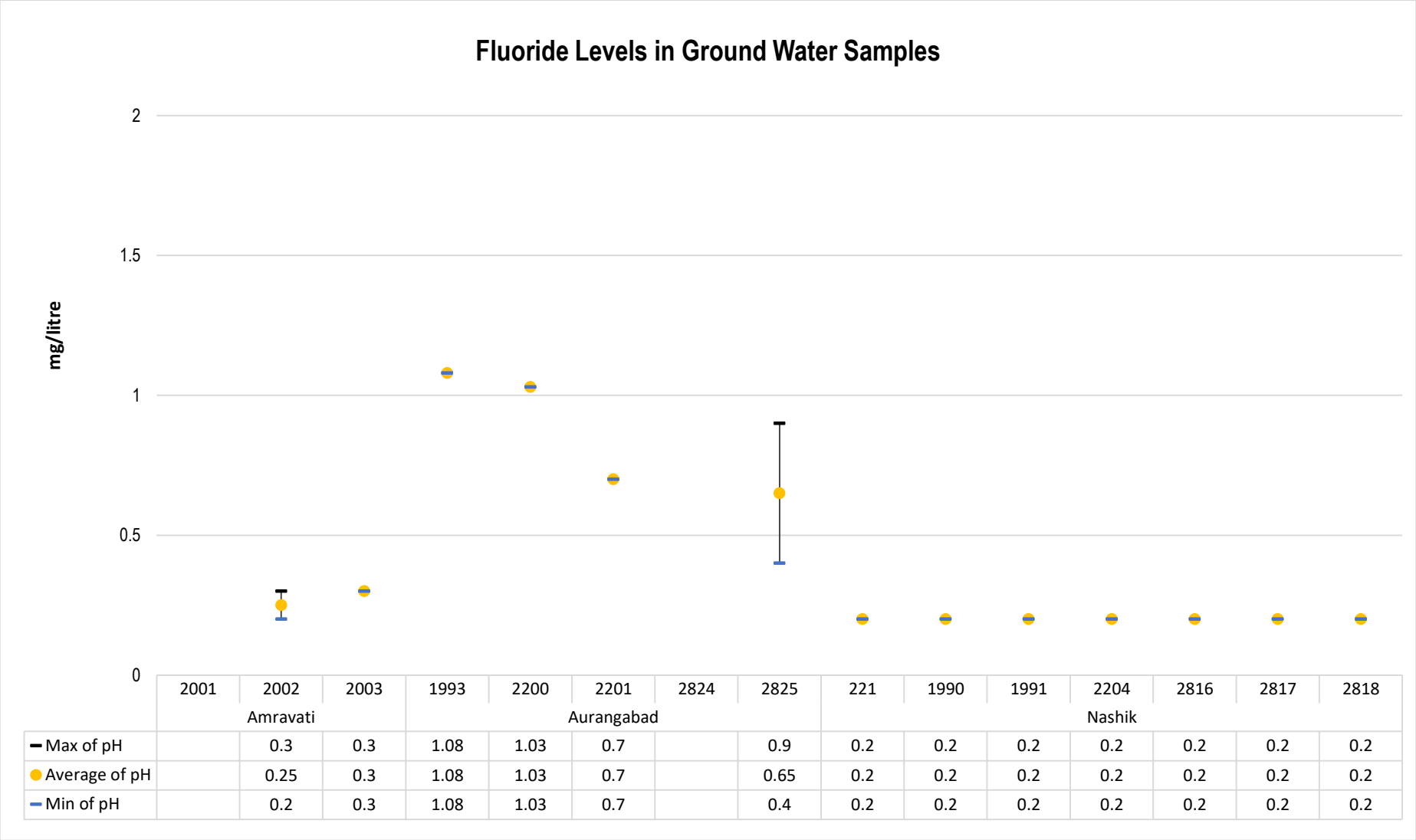
	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
	Kolhapur															Pune					
Max of pH	44	136	640	530	505	1840	1580		460	230	265	44	140	240	150	260	1490	370	1560	520	1520
Average of pH	44	136	442.5	485	382.5	1840	1580		410	215	265	35	87	135	90	158	1235	241	965	440	945
Min of pH	44	136	245	440	260	1840	1580		360	200	265	26	34	30	30	56	980	112	370	360	370

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



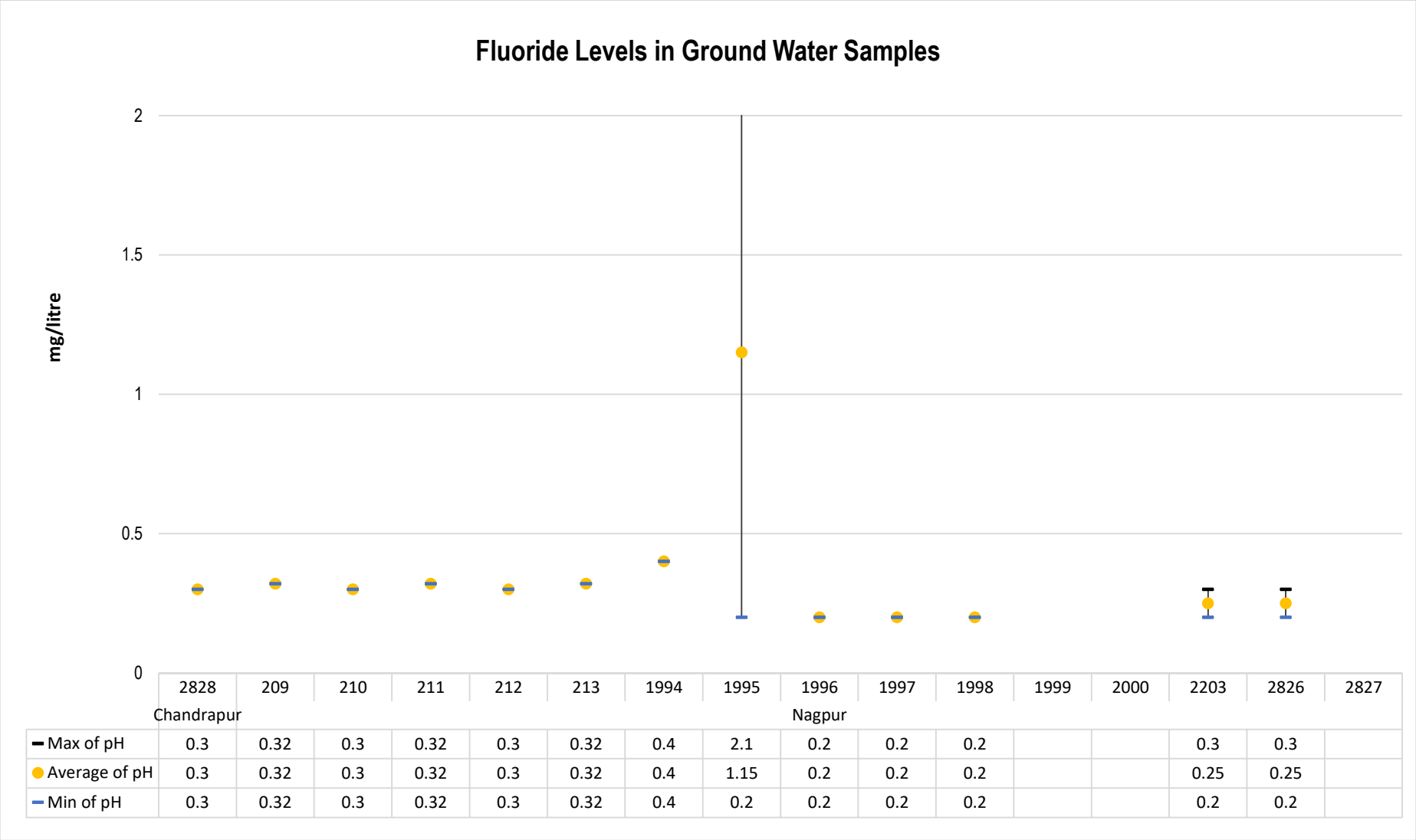
	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
	Kalyan				Navi Mumbai		Raigad			Thane				
Max of pH						1.7	0.8		0.2		1.71		0.55	
Average of pH						0.95	0.6		0.2		1.155		0.475	
Min of pH						0.2	0.4		0.2		0.6		0.4	

Figure No. 72: Parametric values of Fluoride recorded at WQMS monitoring ground water at Kalyan, Navi Mumbai, Raigad and Thane



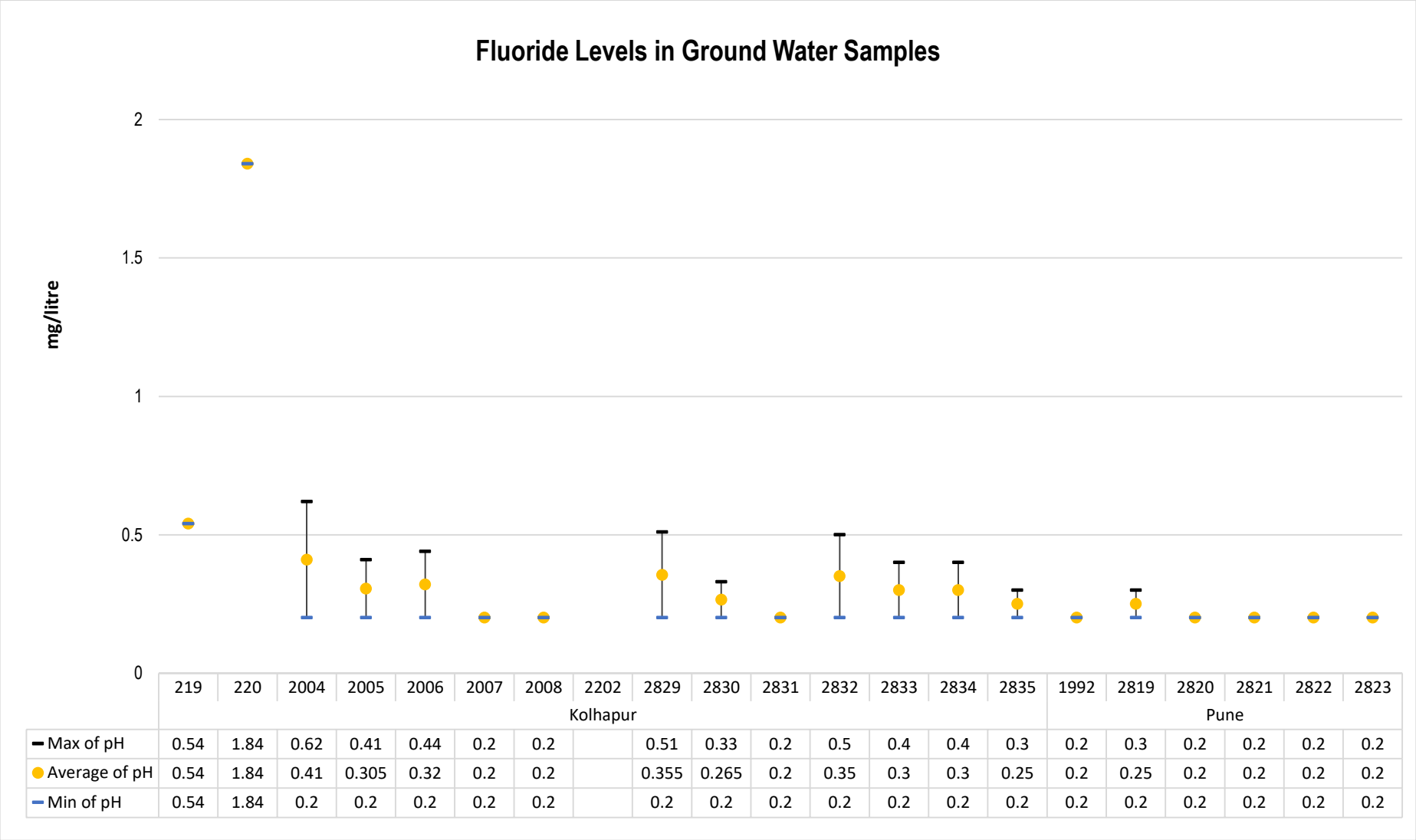
	2001	2002	2003	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
		Amravati				Aurangabad						Nashik			
Max of pH		0.3	0.3	1.08	1.03	0.7		0.9	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Average of pH		0.25	0.3	1.08	1.03	0.7		0.65	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Min of pH		0.2	0.3	1.08	1.03	0.7		0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Figure No. 73: Parametric values of Fluoride recorded at WQMS monitoring ground water at 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	0.3	0.32	0.3	0.32	0.3	0.32	0.4	2.1	0.2	0.2	0.2			0.3	0.3	
Average of pH	0.3	0.32	0.3	0.32	0.3	0.32	0.4	1.15	0.2	0.2	0.2			0.25	0.25	
Min of pH	0.3	0.32	0.3	0.32	0.3	0.32	0.4	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 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	0.54	1.84	0.62	0.41	0.44	0.2	0.2		0.51	0.33	0.2	0.5	0.4	0.4	0.3	0.2	0.3	0.2	0.2	0.2	0.2
Average of pH	0.54	1.84	0.41	0.305	0.32	0.2	0.2		0.355	0.265	0.2	0.35	0.3	0.3	0.25	0.2	0.25	0.2	0.2	0.2	0.2
Min of pH	0.54	1.84	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	0.2	0.2	0.2

Figure No. 75: 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.

April	Dry	Dry	Dry	Dry	Dry	2973.50	45.50	Dry	24.66	Dry	159.00	Dry	79.08	Dry
October	Dry	Dry	Dry	Dry	Dry	46.92	42.84	Dry	29.23	Dry	137.27	Dry	70.63	Dry
Station code	205	206	207	208	214	215	217	218	1989	1984	1985	1986	1987	1988
MPCB RO	Kalyan				Navi Mumbai		Raigad			Thane				

Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	Does not comply with WQI Calculation criteria (NA)

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

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
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.

April	Dry	77.63	Dry	Dry	160.00	Dry	243.24	75.59	90.50	85.90	125.93	138.97	89.45	87.00
October	Dry	90.43	NA	NA	Dry	Dry	NA	149.51	243.72	Dry	NA	Dry	NA	Dry
Station code	2001	2002	1993	2200	2201	2824	2825	221	1990	1991	2204	2816	2817	2818
MPCB RO	Amravati		Aurangabad					Nashik						

Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	Does not comply with WQI Calculation criteria (NA)

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

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
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
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.

April	82.75	78.07	75.65	73.12	73.08	60.09	72.28	87.11	Dry	Dry	Dry	Dry	Dry	41.74	46.11	Dry
October	NA	NA	96.04	Dry	Dry	Dry	Dry	NA	NA	55.08	NA	NA	Dry	128.92	75.42	Dry
Station code	1994	2828	209	210	211	212	213	1995	1996	1997	1998	1999	2000	2203	2826	2827
MPCB RO	Chandrapur		Nagpur													

Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	Does not comply with WQI Calculation criteria (NA)

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
SWMP	Nagpur	212	Grampanchayat Mhasala, Dugwell On Nalla At Mhasala, Taluka - Kamptee, District - Nagpur	Dug Well	Nagpur	Kamptee	Mhasala

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
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.

April	30.31	313.29	199.39	112.20	77.42	Dry	Dry	Dry	96.04	69.54	Dry	30.20	52.88	83.41	52.90	29.67	359.88	43.77	619.10	171.38	448.56
October	Dry	Dry	83.26	155.34	144.27	431.29	355.72	Dry	143.76	75.30	71.36	NA	NA	NA	NA	87.39	311.95	117.71	119.75	116.75	117.69
Station code	219	220	2004	2005	2006	2007	2008	2202	2829	2830	2831	2832	2833	2834	2835	1992	2819	2820	2821	2822	2823
MPCB RO	Kolhapur															Pune					

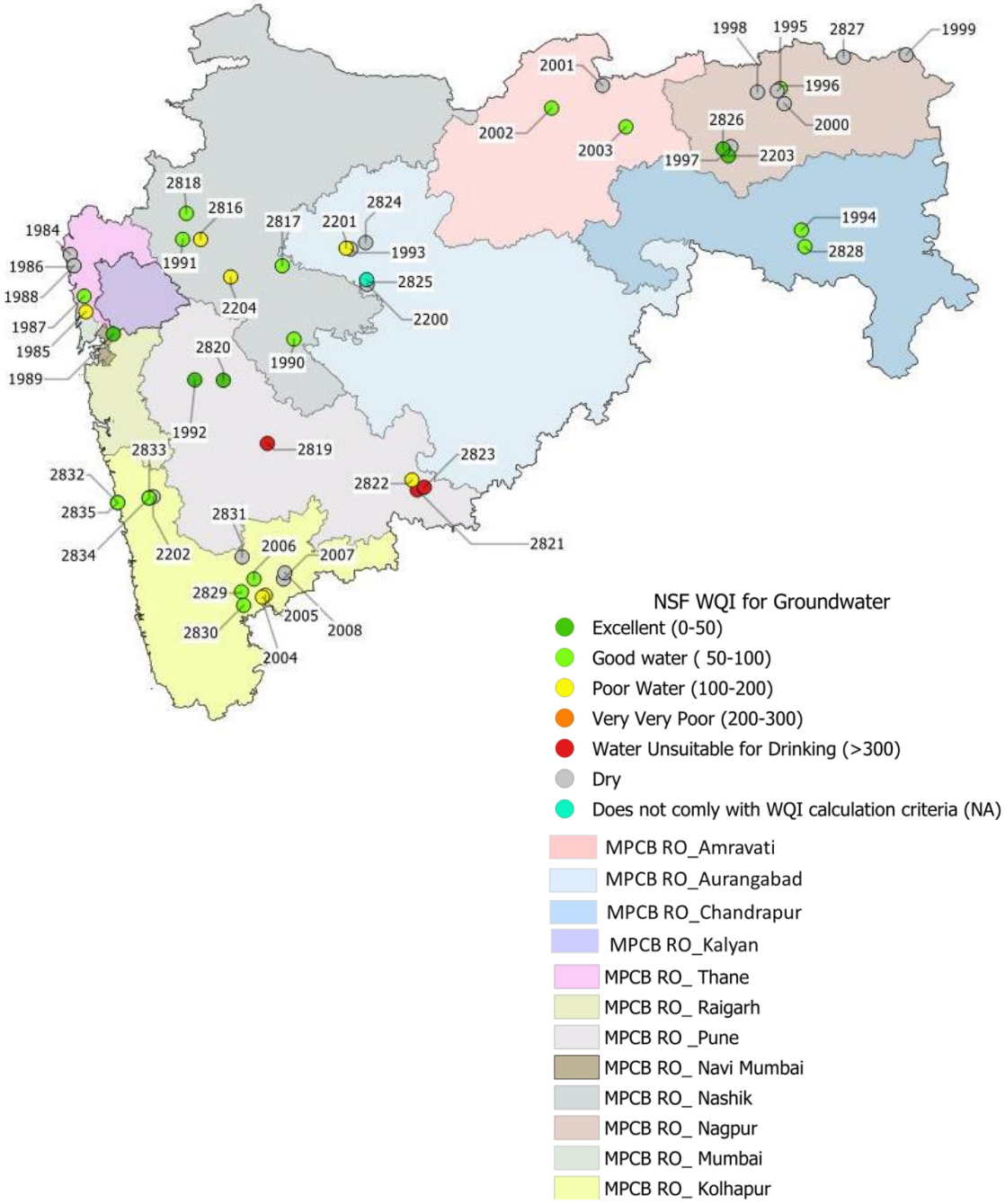
Legend

Excellent	Good	Poor	Very Poor	Not suitable for drinking	Dry	No data	Does not comply with WQI Calculation criteria (NA)

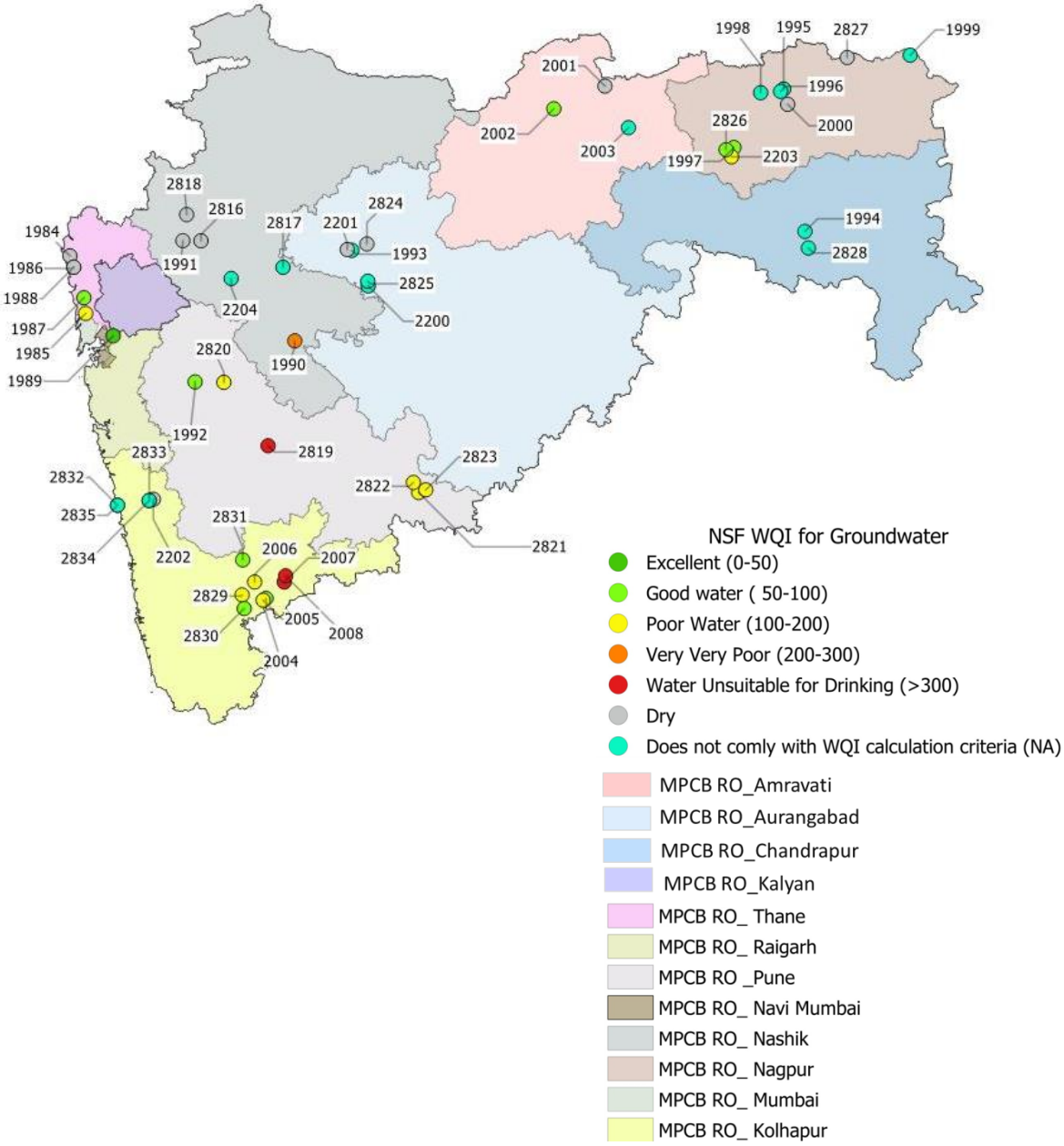
Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
SWMP	Kolhapur	219	Common well Water At Patwardhan, Lote, Taluka - Khed, District - Rantnagiri	Well water	Ratnagiri	Khed	Lote
SWMP	Kolhapur	220	Dugwell backside Excel India At Chalkewadi, Taluka - Khed, District - 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	Dug Well	Sangli	Miraj	Sambarwadi

Programme	Regional Office	Station code	Station name	Type of water	District	Taluka	Village
			Hali Rajput.	Water			
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 2021)



Spatial map for Groundwater WQI in Maharashtra (December 2021)



CONCLUSION

In order to monitor the water quality across the state, 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 NAMP & SAMP programme.

In 2021-22, there was a slight decrease in the total number of WQMS (surface water) having an annual average WQI recorded under the 'non polluted' as compared to 2020-21. It includes about 193 WQMS (84.64% of the total WQMS installed) as compared to 214 (93.85%) in the previous year (2020-21). Out of 193 WQMS, 150 WQMS recorded their annual average WQI under the 'Good to Excellent' whereas 43 WQMS recorded WQI under the 'Medium to Good' category. Out of the Polluted category, 19 and 11 WQMS recorded their annual average WQI under the 'Bad' and 'Bad to Very bad' categories respectively. In the current year, 5 WQMS were considered under the 'Dry' category as compared to 2 in the previous year 2020-2021.

In case of Priority ranking, it has been observed that the Mithi River has been consistently incuded 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 industrial settlements. In the year 2021-22, no river was placed in the Priority II (as compared to the Pawna River in 2020-21). In 2021-22, the total number of rivers placed under the Priority III, IV and V were 11, 15 and 22 respectively. It is important to note that 4 rivers (as compared to 2 in 2020-21) namely the Mor, the Panchganga, the Savitri and the Vashishti were included in the category of 'Less Polluted' (BOD less than 3mg/l).

In terms of Groundwater, 5 WQMS (2 WQMS each in Kolhapur & Raigad District and 1 in Nashik) out of 66 WQMS recorded 'Excellent' WQI Category followed by 23 WQMS recorded 'Good Water' whereas 2 WQMS were observed under 'Very Very Poor Water'. 6 WQMS (3 in Kolhapur, 2 in Pune and 1 in Navi Mumbai) recorded WQI under 'Water Unsuitable for Drinking' throughout the year and About 14 WQMS were recorded to be 'Dry' throughout the year followed by 5 WQMS which were observed as NA.

Annex –I –RO wise Summary of WQI in 2021-2022

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 2020-21 and presents the gist of the water quality index for the respective stations for months of April and December/October

RO – Amravati

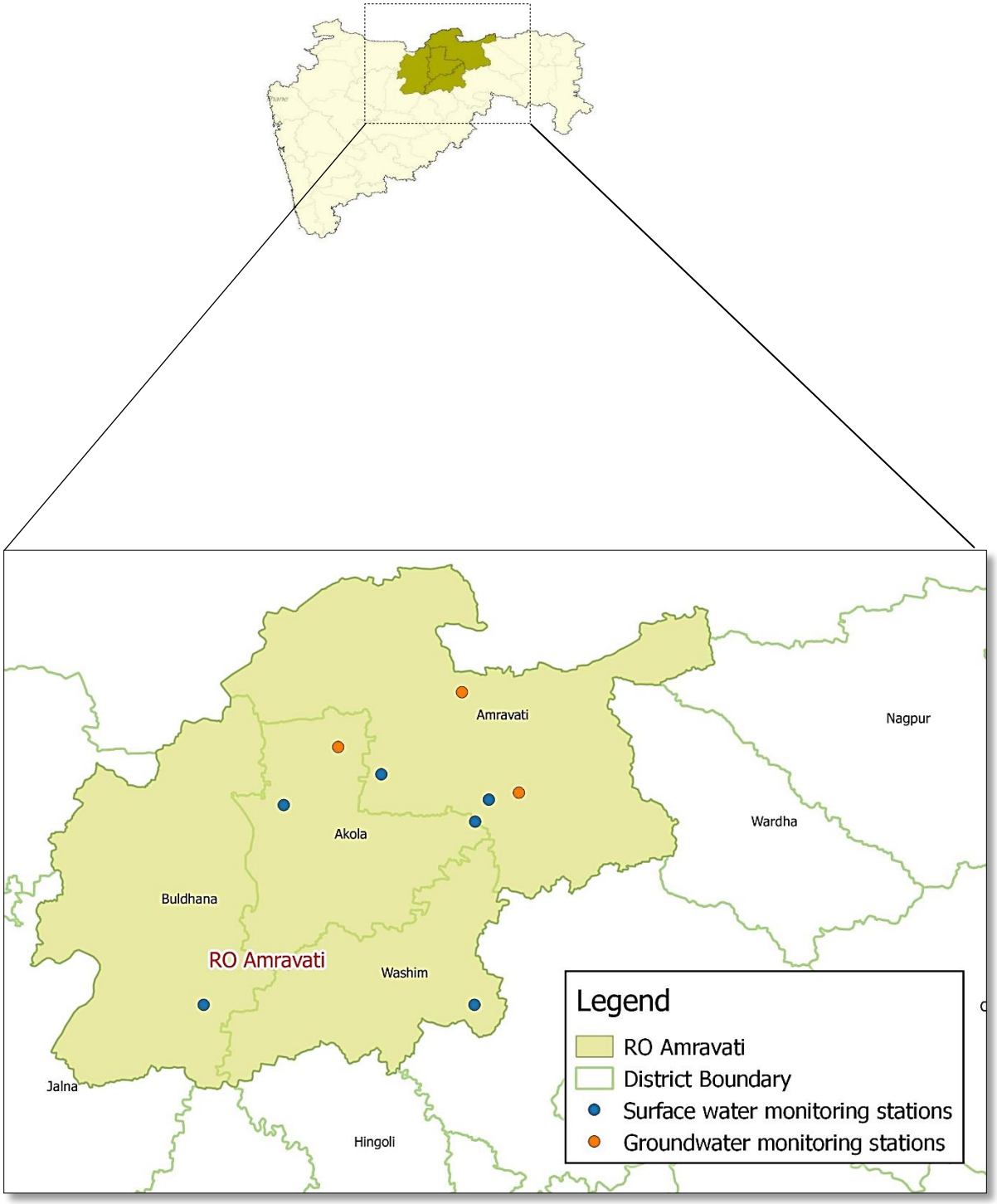

Amravati
Nagpur
Akola
Wardha
Buldhana
RO Amravati
Washim
Jalna
Hingoli
Legend
RO Amravati
District Boundary
Surface water monitoring stations
Groundwater monitoring stations

Table No. 29: Water quality Index for surface and ground water monitoring at Amravati-RO – 2021-22

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2700	Purna River near Achalpur-Amravati Road Bridge, Asegaon	Dry	Dry	76.38	Amravati	Chandur bazaar	Asegaon
	2695	Pedhi River near Road Bridge at Dadhi-Pedhi village	Dry	Dry	71.84	Amravati	Chandur Bazar	Asegaon
	1913	Purna River at Dhupeshwar at U/s of Malkapur Water works	Dry	Dry	75.32	Akola	Akola	Malkapur
	2155	Purna River at D/s of confluence of Morna & Purna at Andhura village	Dry	Dry	73.27	Akola	Balapur	Andura
	2699	Penganga River at Mehkar-Buldana Road Bridge	Dry	Dry	77.36	Buldana	Mehkar	Mehkar
	2675	Morna River at D/s of Railway Bridge	Dry	Dry	71.67	Akola	Akola	Akola
	2697	Penganga River near water supply scheme of Umarkhed MC	69.26	82.63	78.90	Yavatmal	Umarkhed	Belkhed
	2698	Penganga River D/s of Isapur Dam	75.07	82.23	75.71	Yavatmal	Pusad	Isapur
GW	2001	Tube well at water treatment plant of M.C.Achalpur near Post Office.	Dry	Dry	Dry	Amravati	Achalpur	Paratwada
	2002	Bore well Opp. Gajanan Maharaj Temple at Anjangaon road.	77.63	87.77	82.70	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

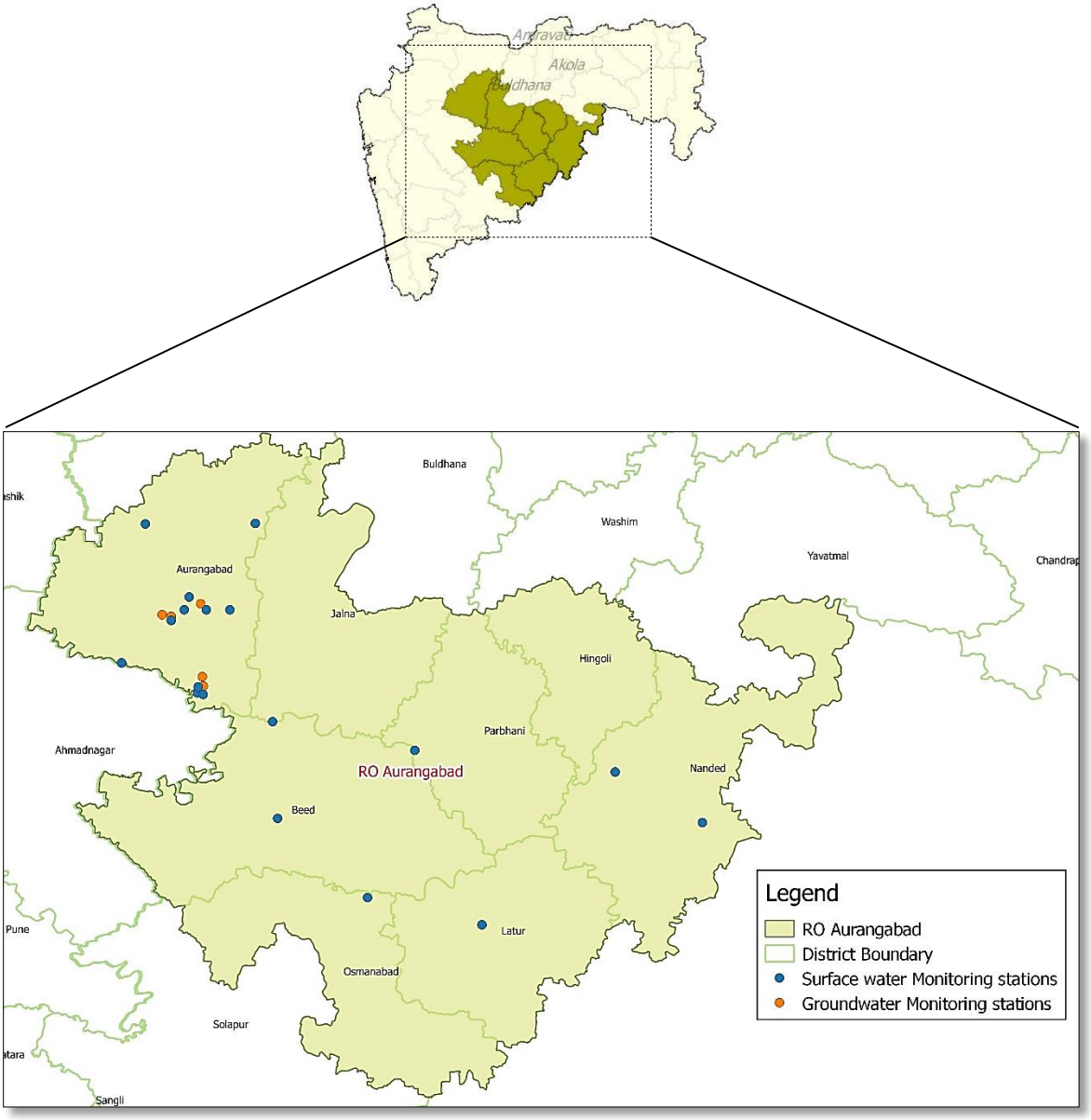


Table No. 30: Water quality Index for surface and ground water monitoring at Aurangabad-RO – 2021-22

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	NA	NA	NA	Aurangabad	Gangapur	Kaigaon
	178	Kannad - D/S of Kannad near Bridge	Dry	NA	NA	Aurangabad	Kannad	Kannad
	181	Aurangabad - Near Patoda Village	NA	NA	NA	Aurangabad	Aurangabad	Aurangabad
	180	Aurangabad - Near Holly cross bridge	NA	NA	NA	Aurangabad	Aurangabad	Aurangabad
	184	Aurangabad - Harsool Dam	NA	NA	NA	Aurangabad	Aurangabad	Aurangabad
	1312	Godavari river at Jaikwadi Dam, Paithan	NA	NA	NA	Aurangabad	Paithan	Paithan
	2158	Godavari River at Paithan U/s of Paithan Intake pump house	NA	NA	NA	Aurangabad	Paithan	Jayakwadi
	2159	Godavari River at D/s of Paithan at Pathegaon bridge	NA	NA	NA	Aurangabad	Paithan	Pathegaon
	182	Aurangabad - Near Chikhalthana Bridge	NA	Dry	NA	Aurangabad	Aurangabad	Aurangabad
	183	Aurangabad - At Sukhna Dam	NA	NA	NA	Aurangabad	Aurangabad	Aurangabad
	179	Sillod - D/S of Sillod near bridge at bhavan	Dry	NA	NA	Aurangabad	Sillod	Sillod
	2161	Godavari River at Jalna Intake water pump house Shahagad	Dry	NA	NA	Jalna	Ambad	Shahabad
	2657	Bindusara River at Beed, near Intake water pump house at Dam	Dry	NA	NA	Beed	Beed	Paligaon
	12	Godavari River at Dhalegaon	NA	NA	NA	Parbhani	Pathari	Dhalegaon
	1210	Godavari River at Intake of pump house	NA	NA	NA	Nanded	Nanded	Vishnupuri
	1209	Godavari River at Raher	NA	NA	NA	Nanded	Nayagaon	Raher
	2157	Godavari River at Latur Water intake near pump house	NA	NA	87.92	Osmanabad	Kalumb	Dhamegaon
	2673	Manjra River at D/s of Latur, near Latur-Nanded Bridge	Dry	NA	NA	Latur	Latur	Bhatkheda
GW	1993	Dug well at Pandarpur, Gangapur, Aurangabad	Dry	NA	NA	Aurangabad	Gangapur	Pandharpur
	2200	Bore Well at Katpur, Near Z.P.School	Dry	NA	NA	Aurangabad	Paithan	Katpur
	2201	Dug Well at Ranjangaon	160.00	Dry	160.00	Aurangabad	Gangapur	Ranjangaon
	2824	Dug Well at Naregaon	Dry	Dry	Dry	Aurangabad	Aurangabad	Naregaon
	2825	Bore Well at Wahegaon, near Zilla Parishet School	243.24	NA	243.24	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

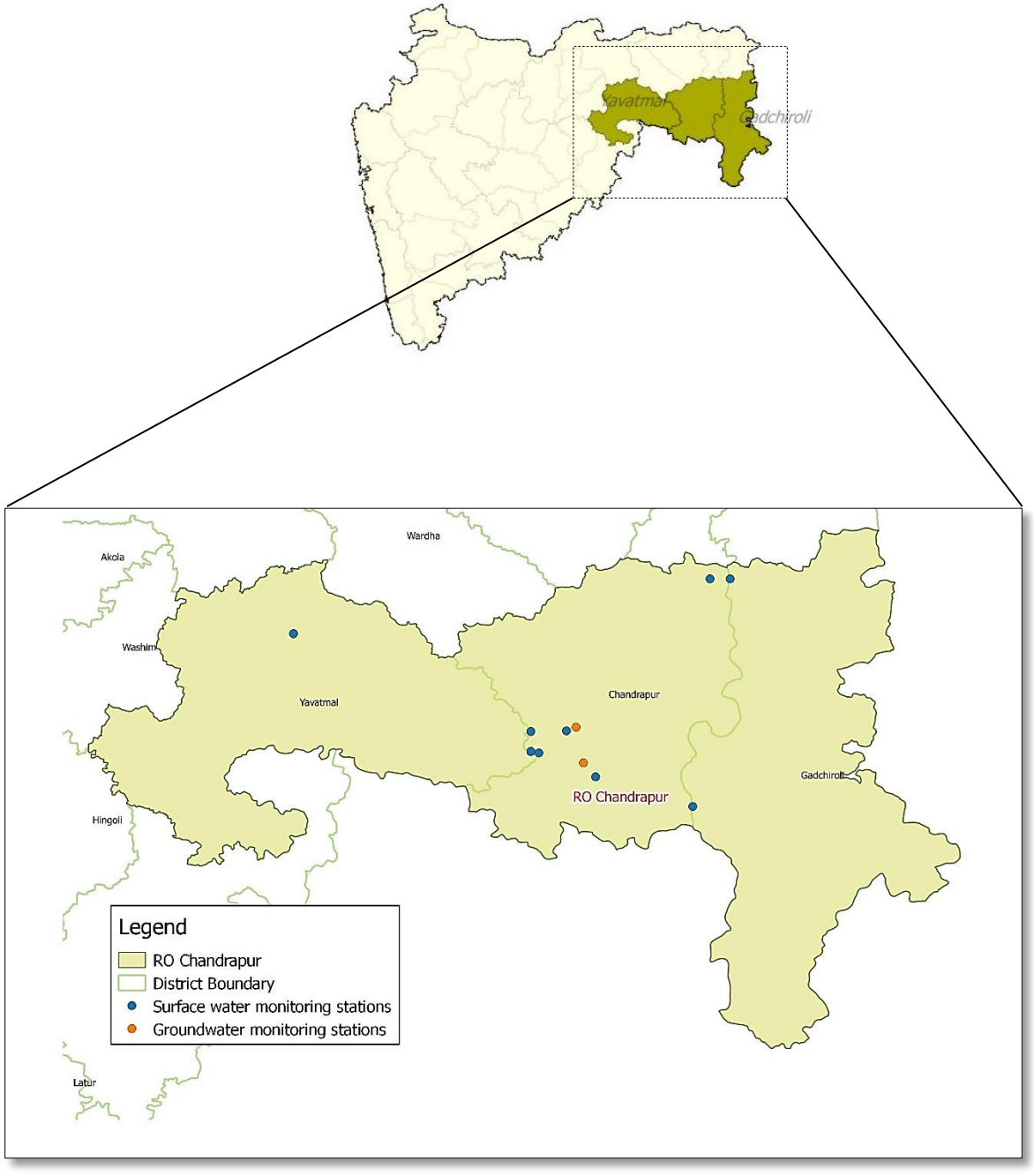


Table No. 31: Water quality Index for surface and ground water monitoring at Chandrapur RO – 2021-22

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2174	Wardha River at D/s of ACC Ghuggus	74.88	70.47	74.19	Chandrapur	Chandrapur	Ghuggus
	2721	Wardha River at U/s of ACC Ghuggus	75.68	79.04	76.71	Chandrapur	Chandrapur	Ghuggus
	2720	Wardha River at U/s of Erai River	75.40	76.80	77.48	Chandrapur	Chandrapur	Hadasti
	2156	Wardha River at confluence point of Penganga & Wardha	73.59	79.03	74.25	Yavatmal	Wani	Jugad
	2719	Wardha River at D/s of Erai River	74.44	73.41	74.27	Chandrapur	Chandrapur	Hadasti
	1212	Wardha river at Rajura bridge	74.65	83.32	76.06	Chandrapur	Chandrapur	Rajura
	2175	Wainganga at U/s of Gaurav Paper Mills near Jack Well	73.19	78.33	78.28	Chandrapur	Chandrapur	Bramhpuri
	2176	Wainganga River at D/s of Gaurav Paper Mills Near Jackwell	68.69	78.26	76.24	Chandrapur	Chandrapur	Bramhpuri
	11	Wainganga River at Ashti	74.84	76.41	76.09	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.	58.66	NA	58.66	Yavatmal	Yavatmal	Nehru Bal Udyan Azad Maidan
	1994	Dugwell At TPS Durgapur near Naseeb Kirana {} general Store.	82.75	NA	82.75	Chandrapur	Chandrapur	Durgapur
	2828	Dug Well near Jilla Parishad Primary School Visapur	78.07	NA	78.07	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

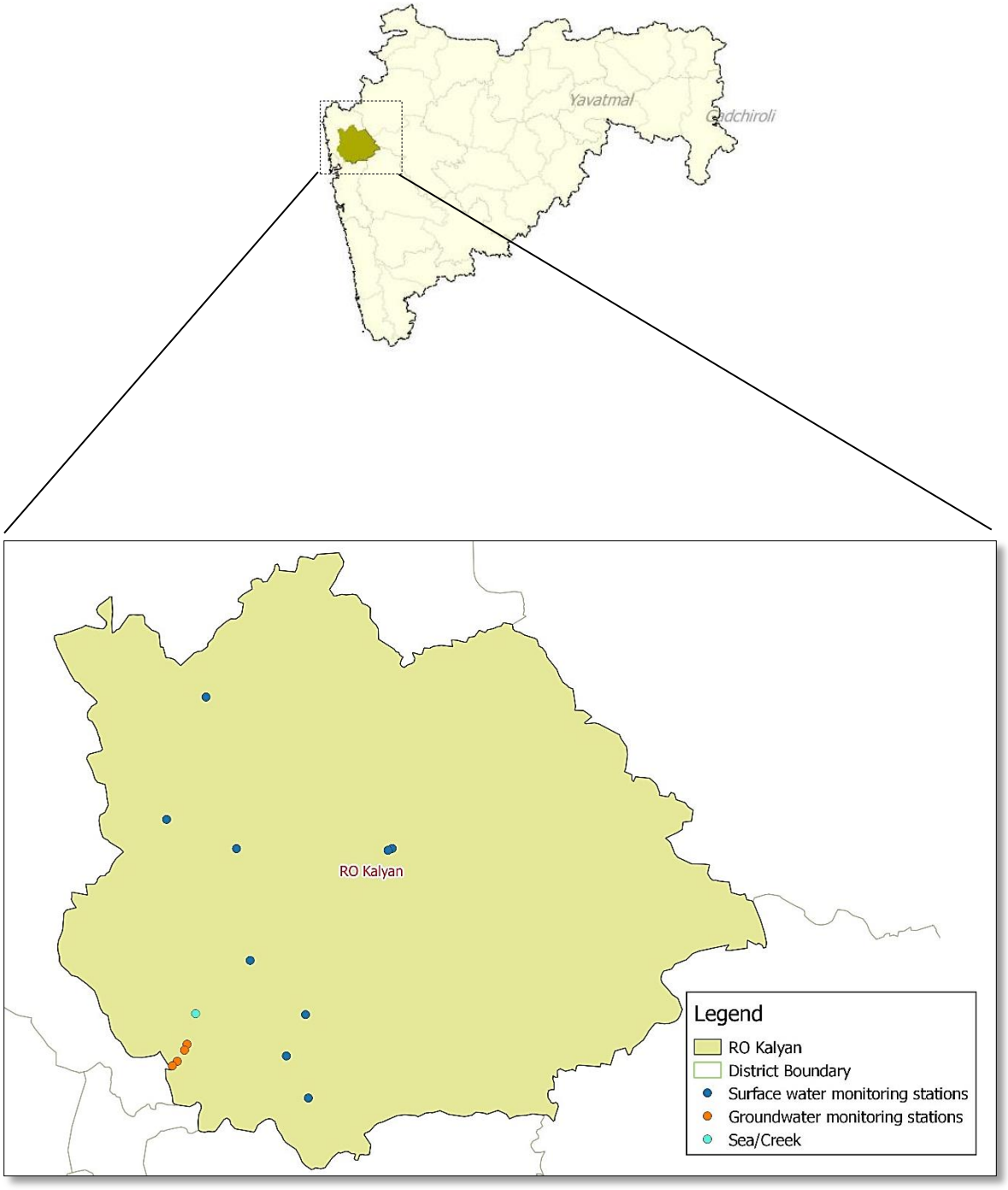

Yavatmal
RO Kalyan
Legend
RO Kalyan
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Sea/Creek

Table No. 32: Water quality Index for surface and ground water monitoring at Kalyan-RO – 2021-22

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	63.17	84.23	65.25	Thane	Kalyan	Kalyan
	2654	Bhatsa River at D/s of Liberty Oil Mills	77.82	79.83	82.76	Thane	Shahapur	Satne
	2653	Bhatsa River at D/s of Liberty Oil Mills	79.46	80.61	83.04	Thane	Shahapur	Satne
	1094	Ulhas River at U/s of Badlapur water works	80.83	80.96	82.27	Thane	Ambernath	Kulgaon
	1093	Ulhas river at U/s of NRC Bund	83.90	77.66	83.31	Thane	Kalyan	Mohane
	2162	Ulhas River at Jambhul water works	81.99	82.15	83.02	Thane	Ambernath	Jambhul
	1461	Bhatsa river at D/s of Pise Dam	81.84	81.86	81.58	Thane	Bhiwandi	Pise
	1092	Kalu River at Atale village	81.12	81.53	79.59	Thane	Kalyan	Atale
	2712	Vaitarna River near Road Bridge	Dry	80.54	80.77	Thane	Wada	Gandhare
	2709	Tansa River near road bridge	Dry	82.09	81.60	Thane	Wada	Dakewali
GW	205	Dug well opp. KAMA office, MIDC Ph-I, Dombivali	Dry	Dry	Dry	Kalyan	Dombivali	MIDC,Dombivali
	206	Dug well near Mamta Hospital, Milap Nagar, Dombivali	Dry	Dry	Dry	Kalyan	Dombivali	MIDC,Dombivali
	207	Dug well at pimpleshwar Temple, MIDC Ph-II, Dombivali	Dry	Dry	Dry	Kalyan	Dombivali	MIDC,Dombivali
	208	Dug well addjusent to M/S. Altra pure chem., Sr. No. 45, Hissa No. 3, MIDC Ph-II, Dombivali.	Dry	Dry	Dry	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

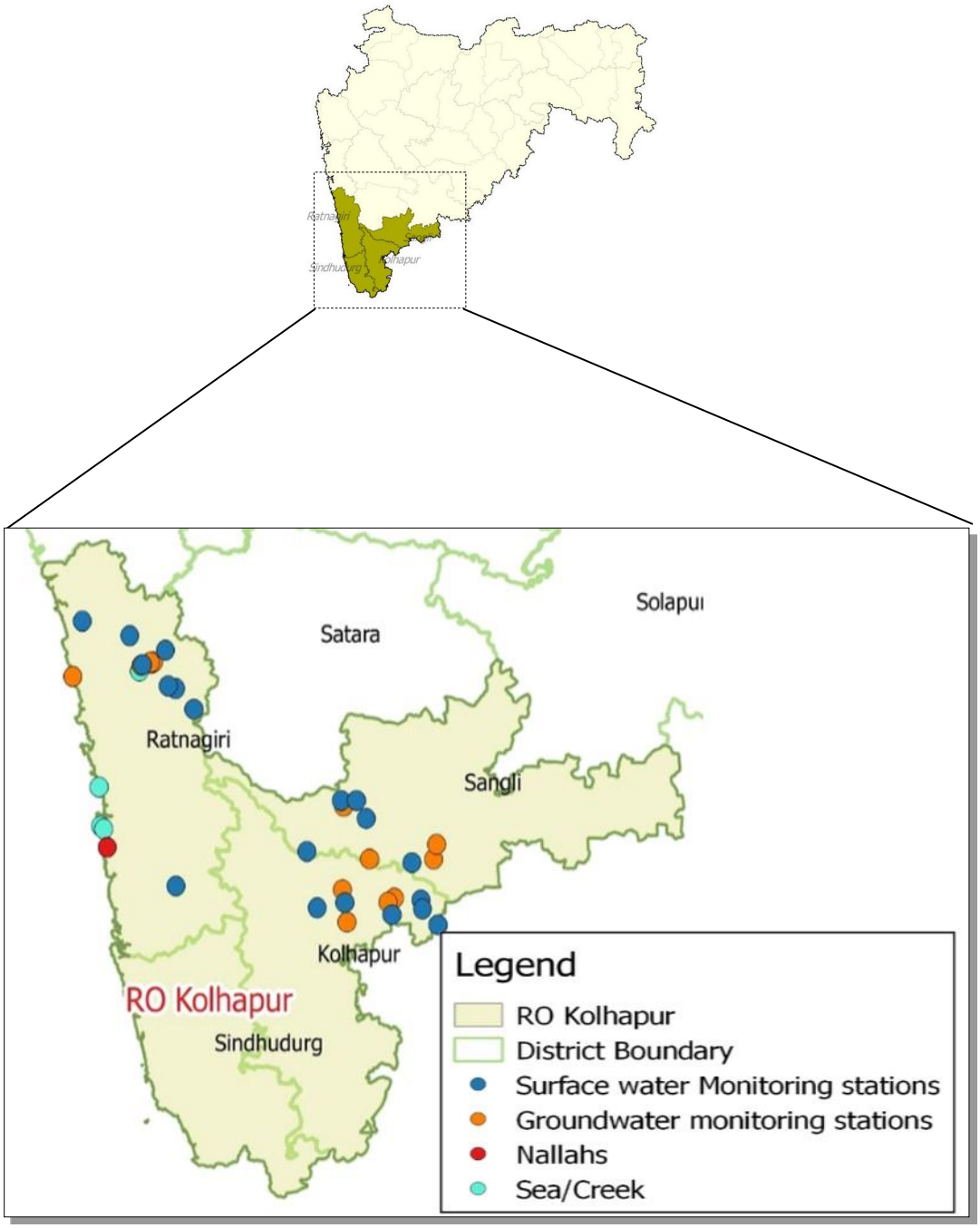

Satara
Solapur
Ratnagiri
Sangli
Kolhapur
RO Kolhapur
Sindhudurg
Legend
RO Kolhapur
District Boundary
Surface water Monitoring stations
Groundwater monitoring stations
Nallahs
Sea/Creek

Table No. 33: Water quality Index for surface and ground water monitoring at Kolhapur-RO – 2021-22

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	200	Mangle Bridge, Mangle, Taluka - Shirala, District - Sangli	85.43	86.53	84.70	Sangli	Shirala	Mangle
	1904	Panchganga River at U/s of Kolhapur town near Balinga Pumping Station	88.59	87.25	87.67	Kolhapur	Karvir	Balinga
	198	Bahe KT Weir, Bahe, Taluka - Walwa, District - Sangli	85.84	74.34	85.01	Sangli	Walwa	Bahe
	1905	Panchaganga river at D/s of Kolhapur town at Gandhi nagar near NH-4 bridge and MIDC intake well	88.07	86.93	86.25	Kolhapur	Kolhapur	Uchegaon
	199	Borgaon KT Weir, Borgaon, Taluka - Walwa, District - Sangli	83.56	84.27	85.30	Sangli	Walwa	Borgaon
	1906	Krishna river at Walwa, D/s of Islampur near Vithal Temple	84.12	83.73	84.75	Sangli	Walwa	Walwa
	1311	Panchganga River at Ichalkaranji near MIDC intake well	84.37	86.27	86.75	Kolhapur	Hatkanangale	Shiradhwad (Ichalkaranji ghat)
	37	Krishna River at Maighat, Sangli	88.32	83.26	85.91	Sangli	Miraj	Gawali gally
	2163	Panchganga River at Shirol near Shirol intake well	88.03	86.64	86.57	Kolhapur	Shirol	Shirol
	1310	Krishna River at Kurundwad	86.88	90.20	87.46	Kolhapur	Shirol	Narshingwadi, Kurundwad
	1153	Krishna River at Rajapur Weir	87.95	87.93	87.51	Kolhapur	Shirol	Rajapur
	2804	Karambavane Creek at Chiplun	88.88	84.27	87.28	Ratnagiri	Chiplun	Karambavane
	2813	Sea Water at Ganapatipule	79.20	73.75	79.16	Ratnagiri	Ratnagiri	Ganapatipule
	2814	Sea Water at Bhagwati Bunder, Ratnagiri near Ultra Tech Cement Jetty	76.57	76.36	78.07	Ratnagiri	Ratnagiri	Mirkarwada
	2815	Madvi Sea Water at Ratnagiri near Jodhale Maruti Temple	79.47	76.59	79.14	Ratnagiri	Ratnagiri	Madvigaon
	2714	Vashishti River at U/s of Pophali near Konphansawane Bridge	88.72	87.14	89.17	Ratnagiri	Chiplun	Pophali
	2676	Muchkundi River at Waked Ratnagiri near M/s Asahi India Glass	88.72	88.77	88.69	Ratnagiri	Lanja	Waked
	202	Vashisti River At Khadpoli, Taluka Chiplun, District - Ratnagiri	88.63	85.22	87.99	Ratnagiri	Chiplun	Khadpoli
	2164	Vashishti River at U/s of Three M Paper Mills near M/s Multifilms Plastic Pvt Ltd	83.07	90.98	88.82	Ratnagiri	Chiplun	Kherdi
	2713	Vashishti River at D/s of Three M Paper Mills near Chiplun water intake Jackwell	86.56	89.16	88.78	Ratnagiri	Chiplun	Kherdi
	201	Sonpatra River At Kotwali Village, Taluka - Khed, District - Ratnagiri	82.67	77.93	81.78	Ratnagiri	Khed	Kotwali
	203	Jagbudi River, D/S of Khed City, Taluka - Khed, District Ratnagiri	85.43	87.19	88.02	Ratnagiri	Khed	Khed City
	204	Jog river at Dapoli, Taluka Dapoli, District - Rantnagiri	87.14	89.46	88.75	Ratnagiri	Dapoli	Dapoli
	2790	Pimpal-Paneri Nalla at Ratnagiri near Finolex Industries	89.37	69.95	83.21	Ratnagiri	Ratnagiri	Yahganigaon

GW	219	Common well Water At Patwardhan, Lote, Taluka - Khed, District - Rantnagiri	30.31	Dry	30.31	Ratnagiri	Khed	Lote
	220	Dugwell backside Excel India At Chalkewadi, Taluka - Khed, District - Ratnagiri.	313.29	Dry	313.29	Ratnagiri	Khed	Chalkewadi
	2004	Bore well at Parvati Industrial Estate, Yadrav, Kolhapur	199.39	83.26	141.33	Kolhapur	Shirol	Yadrav
	2005	Bore well at Khanjirenagar, Kolhapur	112.20	155.34	133.77	Kolhapur	Hatkanangale	Khanjirenagar
	2006	Bore well at Shinoli near M/s Aqua Alloy Steel.	77.42	144.27	110.84	Kolhapur	Chandgad	Shinoli
	2007	Bore well at Savali, near Gram Panchayat office.	Dry	431.29	431.29	Sangli	Miraj	Savali
	2008	Dug well at Sambarwadi, owned by Shri. Kishan Hali Rajput.	Dry	355.72	355.72	Sangli	Miraj	Sambarwadi
	2202	Dug Well at Ghane Kunt, near Awashi, onwed by shri Rajendra Amre	Dry	Dry	Dry	Ratnagiri	Khed	Ghane Kunt
	2829	Bore Well at MIDC Shiroli near M/s. Pratibha Enterprises	96.04	143.76	119.90	Kolhapur	Hatkanangale	Shiroli
	2830	Bore Well at MIDC Gokul Shirgaon	69.54	75.30	72.42	Kolhapur	Karvir	Gokul-Shirgaon
	2831	Dug Well at Sakharali near MIDC Islampur near Krishna Milk Industry	Dry	71.36	71.36	Sangli	Walwa	Sakharali
	2832	Dug Well No.1 at Brahmanwadi-Anjanwel, owned by Shri Vaidya	30.20	NA	30.20	Ratnagiri	Guhagar	Anjanwel
	2833	Dug Well No.1 at Group Gram Panchayat at Arketwadi, near Masjid	52.88	NA	52.88	Ratnagiri	Khed	Arketwadi
	2834	Dug Well No.2 at Arketwadi	83.41	NA	83.41	Ratnagiri	Khed	Arketwadi
	2835	Dug Well No.2 at owned by Group Gram Panchayat, Brahmanwadi-Anjanwel	52.90	NA	52.90	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

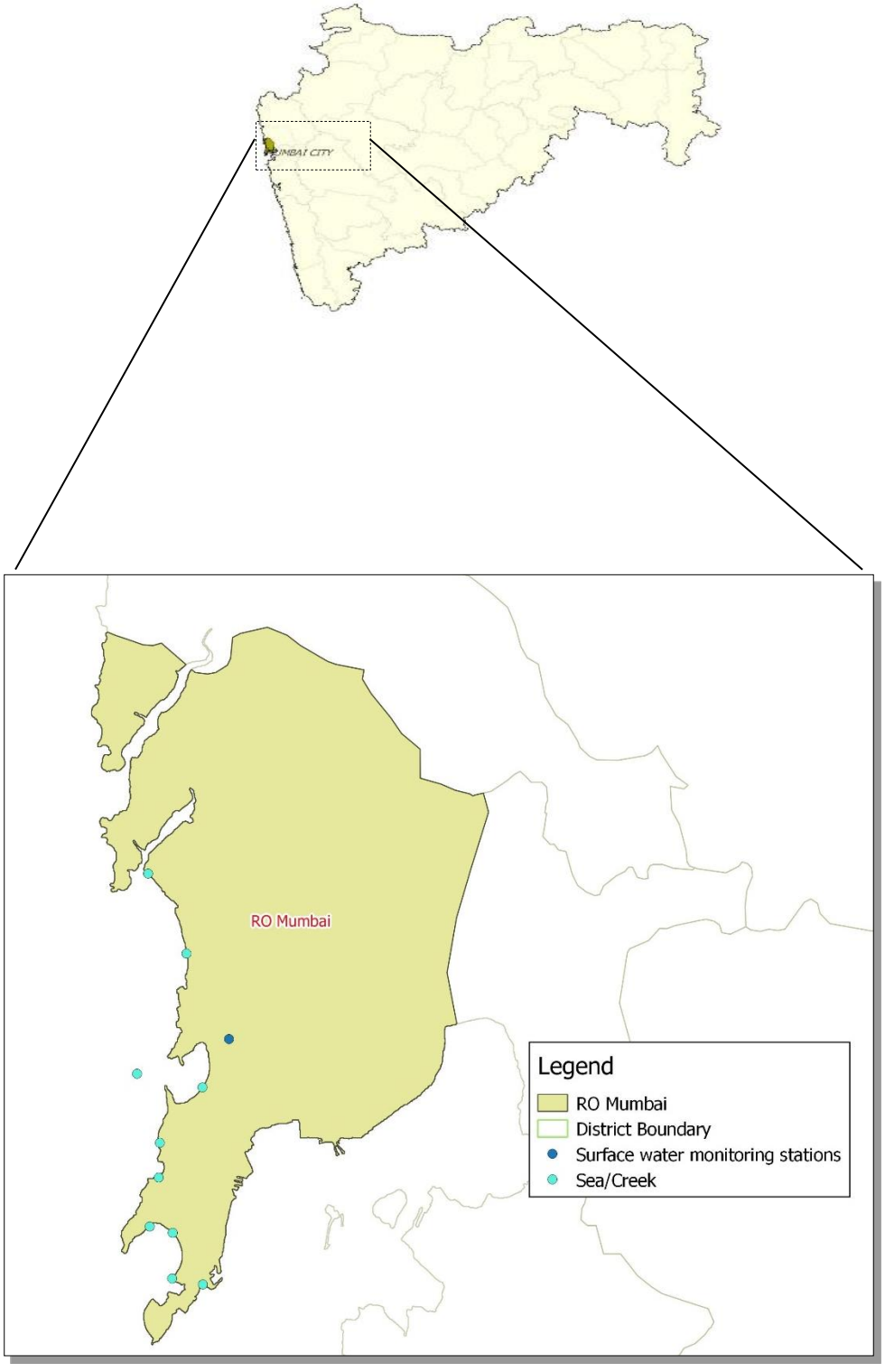

MUMBAI CITY
RO Mumbai
Legend
RO Mumbai
District Boundary
Surface water monitoring stations
Sea/Creek

Table No. 34: Water quality Index for surface and ground water monitoring at Mumbai-RO – 2021-22

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2169	Sea Water at Varsova Beach	46.46	57.84	52.32	Mumbai	Andheri	Versova
	2812	Sea Water at Juhu Beach	47.39	53.57	51.59	Mumbai	Santacruz	Juhugaon
	1318	Mahim creek at Mahim Bay	55.64	57.50	55.41	Mumbai	Bandra	Mahim
	2811	Sea Water at Shivaji Park (Dadar Choupathy)	49.26	60.46	52.98	Mumbai	Dadar	Dadar
	2167	Sea Water at Worli Seaface	48.31	61.40	52.62	Mumbai	Worli	Worli
	2810	Sea Water at Haj Ali	46.63	60.69	52.64	Mumbai	Worli	Worli
	2809	Sea Water at Malabar Hill	45.43	56.75	52.80	Mumbai	Mumbai	Walkeshwar
	2166	Sea Water at Charni Road Choupathy	46.63	58.60	54.02	Mumbai	Mumbai	Girgaon
	2808	Sea Water at Nariman Point	45.90	59.81	53.24	Mumbai	Colaba	Colaba
	2165	Sea Water at Gateway of India	47.52	57.51	53.55	Mumbai	Colaba	Colaba
	2168	Mithi River at near bridge	39.91	37	44.25	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

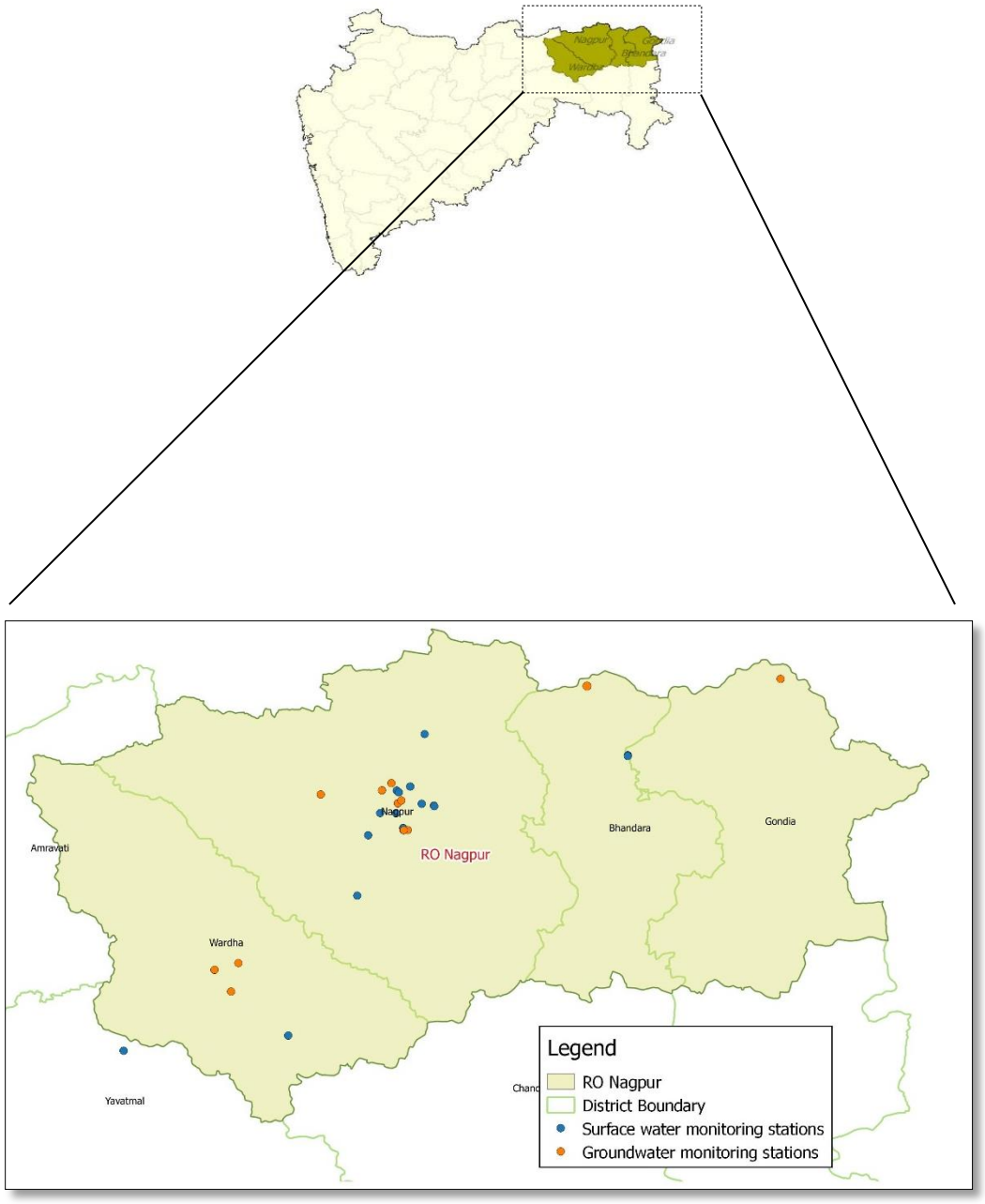

Nagpur
Gondia
Bhandara
Wardha
Nagpur
RO Nagpur
Amravati
Bhandara
Gondia
Wardha
Yavatmal
Legend
RO Nagpur
District Boundary
Surface water monitoring stations
Groundwater monitoring stations

Table No. 35: Water quality Index for surface and ground water monitoring at Nagpur-RO – 2021-22

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	1315	Wardha River at Pulgaon Railway Bridge	Dry	79.85	75.90	Wardha	wardha	Pulgaon
	2723	Wena River at D/s of Mohata Mills, near Bridge on Hinganghat-Wadner Road	75.52	74.95	75.64	Wardha	Hingang hat	Hinganghat
	2722	Wena River at U/s of Mohata Mills, nearby Brigde on Hinganghat Wadner Road	77.47	79.87	77.25	Wardha	Hingang hat	Hinganghat
	185	Nag River Near, Ambazari Lake, Nagpur	68.41	Dry	75.96	Nagpur	Nagpur	Nagpur
	189	Pill River Near, Mankapur on Koradi Road, Nagpur	76.62	NA	51.09	Nagpur	Nagpur	Nagpur
	188	Pill River Near, Wanjra Layout Kamptee Road, Nagpur	74.98	Dry	50.66	Nagpur	Nagpur	Nagpur
	1909	Kanhan river at D/s of Nagpur	60.19	NA	71.38	Nagpur	Kuhi	Agargaon
	186	Nag River Near, Bhandewadi Bridge, Nagpur	33.13	NA	36.77	Nagpur	Nagpur	Nagpur
	1910	Wainganga river after confluence with Kanhan river	70.71	81.21	78.07	Nagpur	Kuhi	Ambhora
	1908	Kolar river before confluence with Kanhan river at Waregaon Bridge	69.65	82.36	75.95	Nagpur	Kamptee	Waregaon
	187	Nag River Near, Asoli Bridge, Bhandara Road, Nagpur	31.83	NA	32.79	Nagpur	Nagpur	Nagpur
	2170	Kanhan River (Wainganga basin) at U/s of M/s Vidharba Paper Mill	71.92	80.65	77.16	Nagpur	Parseoni	Sinora
	2171	Kanhan River (Wainganga basin) at D/s of M/s Vidharbha Paper Mills	70.48	78.64	74.98	Nagpur	Parseoni	Sinora
	2173	Wainganga River at U/s of Ellora Paper Mills	73.27	79.08	77.14	Bandara	Tumsar	Tumsar
	2172	Wainganga River at D/s of Ellora Paper Mill	67.94	77.20	75.05	Bandara	Tumsar	Tumsar
GW	209	Bore well near Pardhi House, Bhandewadi, Nagpur	75.65	96.04	85.84	Nagpur	Nagpur	Bhandewadi
	210	Bore well near Dearao Kale House, Bhandewadi, Nagpur	73.12	Dry	73.12	Nagpur	Nagpur	Bhandewadi
	211	Grampanchayat Suradevi Intake well On Kolar River At Suradevi, Taluka - Kamptee, District -Nagpur	73.08	Dry	73.08	Nagpur	Kamptee	Suradevi
	212	Grampanchayat Mhasala, Dugwell On Nalla At Mhasala, Taluka - Kamptee, District - Nagpur	60.09	Dry	60.09	Nagpur	Kamptee	Mhasala

	213	Grampanchayat Kawtha, Dugwell At Kawtha, Taluka - Kamptee, District - Nagpur	72.28	Dry	72.28	Nagpur	Kamptee	Kawtha
	1995	Gram Panchayath Dug well , Near Balaji Gajbhiye House, Khaperkheda	87.11	NA	87.11	Nagpur	Saoner	Khaperkheda(Ward No.4)
	1996	Gram Panchayath Dug well , Near Jagadamba G M S Mandir Sahakari Sanstha	Dry	NA	NA	Nagpur	Kamptee	Koradi
	1997	Bore well near Primary Health Centre, Raipur(Hingna)	Dry	55.08	55.08	Nagpur	Hingna	Raipur
	1998	Gram Panchayat Dug well near Gram Panchayat Office, Brahmni	Dry	NA	NA	Nagpur	Kalmesh war	Brahmni
	1999	Borewell Near Gram Panchayat,Changera.	Dry	NA	NA	Gondia	Gondia	Changera
	2000	Dug well near Sarode Kirana Store, Bhandewadi, Nagpur	Dry	Dry	Dry	Nagpur	Nagpur	Bhandewadi
	2203	Hand Pump in the premises of Z.P.Primary School	41.74	126.25	83.99	Wardha	wardha	Bhugaon
	2826	Dug Well near Railway Station, Cottaon Market	46.11	75.42	60.77	Wardha	wardha	Wardha
	2827	Bore Well near Railway crossing at Dongi Buzurg	Dry	Dry	Dry	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

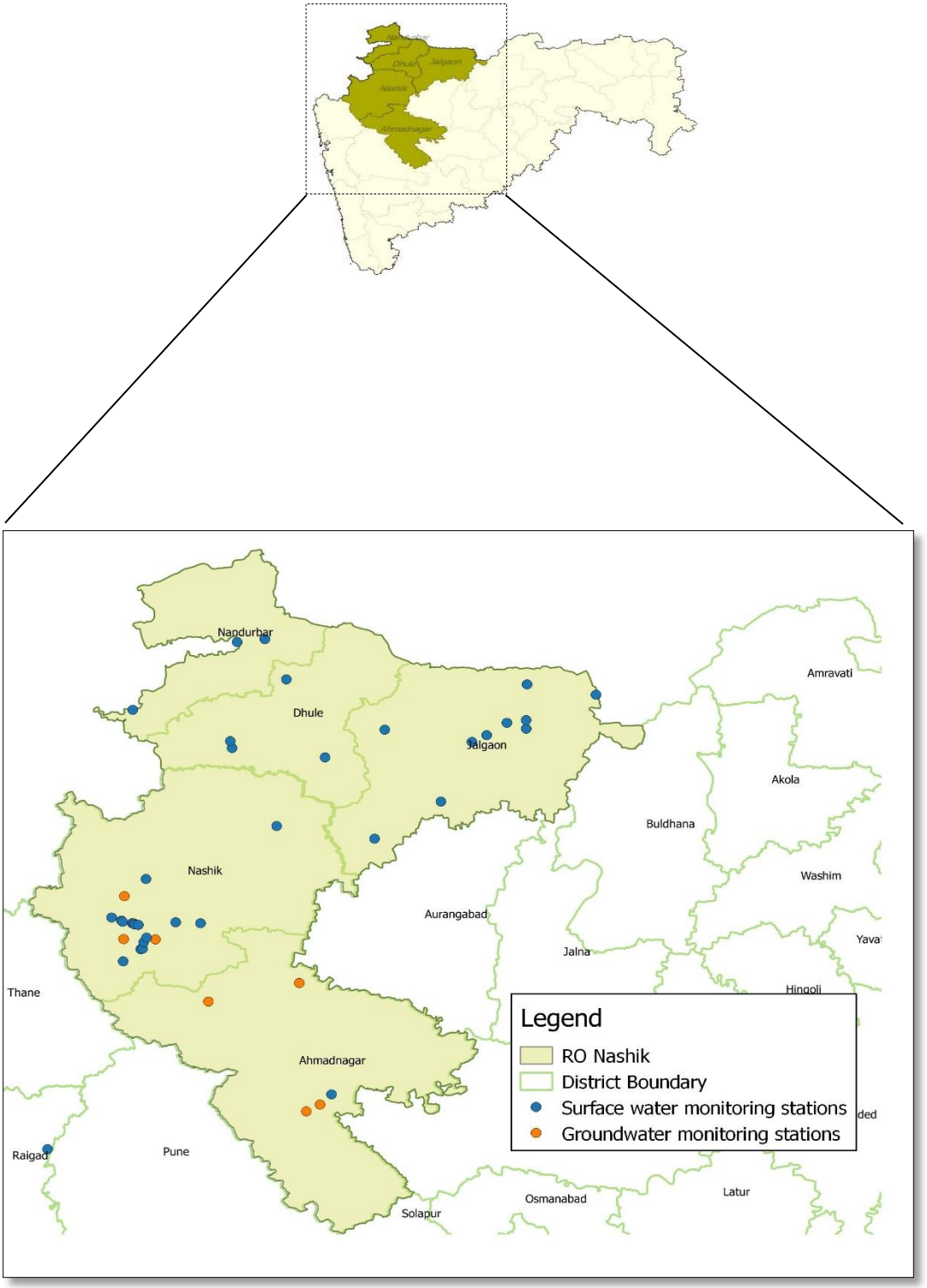

Dhule
Jalgaon
Nashik
Ahmadnagar
Nandurbar
Amravati
Akola
Buldhana
Washim
Aurangabad
Jalna
Yava
Hingoli
Thane
Pune
Raigad
Solapur
Osmanabad
Latur
Legend
RO Nashik
District Boundary
Surface water monitoring stations
Groundwater monitoring stations

Table No. 36: Water quality Index for surface and ground water monitoring at Nashik -RO – 2021-22

Type	Station code	Station Name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	1313	Tapi River at Ajnad	88.87	85.92	85.84	Jalgaon	Raver	Ajnad
	2659	Burai River before confluece to Tapi River	Dry	Dry	81.91	Dhule	Dhule	Mukudas
	1251	Tapi River at Bhusawal	Dry	84.27	84.33	Jalgaon	Bhusawal	Bhusawal Railway Colony
	2674	Mor River near Padalshe	Dry	Dry	85.18	Jalgaon	Jalgaon	Padalashe
	2718	Waghur River at Sakegaon before Confluence with Tapi River	Dry	81.46	82.88	Jalgaon	Jalgaon	Sakegaon
	1252	Girna river at Jalgaon at intake of Girna pump house	Dry	81.36	85.18	Jalgaon	Jalgaon	Girna pump house area
	2667	Hiwara River D/s of Pachora	Dry	79.43	83.15	Jalgaon	Jalgaon	Pachora
	2658	Bori River D/s of Amalner	Dry	Dry	82.26	Jalgaon	Jalgaon	Amalner
	2710	Titur River D/s of Chalisgaon	Dry	Dry	80.26	Jalgaon	Jalgaon	Chalisgaon
	2652	Amravati River D/s of Dondaicha	Dry	Dry	86.41	Dhule	Dhule	Dondaicha
	1253	Girna river at Malegaon at Malegaon road bridge	Dry	81.47	78.60	Nashik	Malegaon	Malegaon
	2666	Gomai River D/s of Shahada	Dry	Dry	83.51	Dhule	Dhule	Shahada
	1314	Tapi river at Ubad village near Gujrat border	90.61	86.96	85.26	Nandurbar	Shahada	Ubad
	2684	Panzara River near Panzarakan SSK Ltd	Dry	82.50	83.09	Dhule	Dhule	Panzare
	2670	Kan River near Sakri water works	Dry	85.65	83.10	Dhule	Dhule	Sakri
	1907	Rangavali river at D/s of Navapur near Rangavali bridge	Dry	86.41	84.71	Nandurbar	Navapur	Navapur
	195	Sina River Bridge At Burudgaon Road, A/P Ahmednagar, Taluka & District Ahmednagar	69.45	NA	55.21	Ahmednagar	Ahmednagar	Burudgaon
	1095	Godavari River at U/s of Gangapur Dam	89.19	88.44	87.22	Nashik	Nashik	Gangapur
	2177	Godavari River near Someshwar Temple	82.74	86.96	83.44	Nashik	Nashik	Someshwar
	2661	Darna River at Aswali (Darna Dam)	88.28	83.78	86.47	Nashik	Igatpuri	Aswali
	2179	Godavari River at Hanuman Ghat	Dry	82.03	80.89	Nashik	Nashik	Nashik city
	1096	Godavari River at Panchavati at Ramkund	85.52	83.13	82.16	Nashik	Nashik	Panchavati
	1211	Godavari River at Nashik D/s of near Amardham	82.14	82.85	80.38	Nashik	Nashik	Gadgebaba Maharaj Nagar
	2180	Godavari River at near Tapovan	76.56	83.16	77.19	Nashik	Nashik	Tapovan

	2181	Godavari River at Kapila -Godavari confluence point	82.24	81.02	77.81	Nashik	Nashik	Tapovan
	2662	Darna River at MES site Pumping station	87.00	85.68	84.59	Nashik	Nashik	Bhagur
	2663	Darna River at Bhagur Pumping station near Pandhurli Bridge	86.75	84.92	85.88	Nashik	Nashik	Bhagur
	2664	Darna River at Sansari	85.57	85.75	83.97	Nashik	Nashik	Sansari
	194	Kadwa River at Awankhed Village, Taluka - Dindori, District - Nashik	NA	Dry	80.64	Nashik	Dindori	Awankhed Village
	2660	Darna River at Chehedi pumping station	88.06	85.51	85.67	Nashik	Nashik	Chehedi
	2182	Godavari River at Saikheda	87.63	84.05	84.38	Nashik	Niphad	Saikheda
	2183	Godavari River at Nandur-Madhameshwar Dam	90.89	86.57	86.80	Nashik	Niphad	Nandur
	2689	Patalganga River at Gagangiri Maharaj Temple	80.02	79.90	81.52	Raigad	Khalapur	Khopoli
	2178	Chikhali Nalla Meets Godavari River	72.39	63.69	61.64	Nashik	Nashik	Chikhali
	196	Lowki Nalla At Khedi, Taluka & District - Jalgaon	82.29	NA	66.38	Jalgaon	Khedi	Khedi
	197	Moti Nalla before Confluence with Panjara river Dhule, Taluka & District - Dhule	NA	47.88	60.50	Dhule	Dhule	Dhule
GW	221	Well water of Bappaji, Akolner, Ahmadnagar, Nashik	75.59	149.51	112.55	Nashik	Ahmadnagar	Akolner
	1990	Bore well at BMW Site , Burudgaon	90.50	243.72	167.11	Ahmadnagar	Ahmednagar	Burudgaon
	1991	Bore well at MSW Site, Pathardi, Nashik	85.90	Dry	85.90	Nashik	Nashik	Pathardi
	2204	Dug well at Gunjalwadi, Sangamner near Primary Health Care Center.	125.93	NA	125.93	Ahmadnagar	Sangamner	Gunjalwadi
	2816	Dug Well of Mr. Sampat Walunj, near M/s. Mahajeet Clayton	138.97	Dry	138.97	Nashik	Nashik	Shinde village
	2817	Bore Well at Chitali near Wagh vasthi	89.45	NA	89.45	Ahmadnagar	Rahata	Chitali
	2818	Bore Well at M/s. Spectron Ethers Rasegaon near Siddeshwar Mahadev Mandir	87.00	Dry	43.5	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

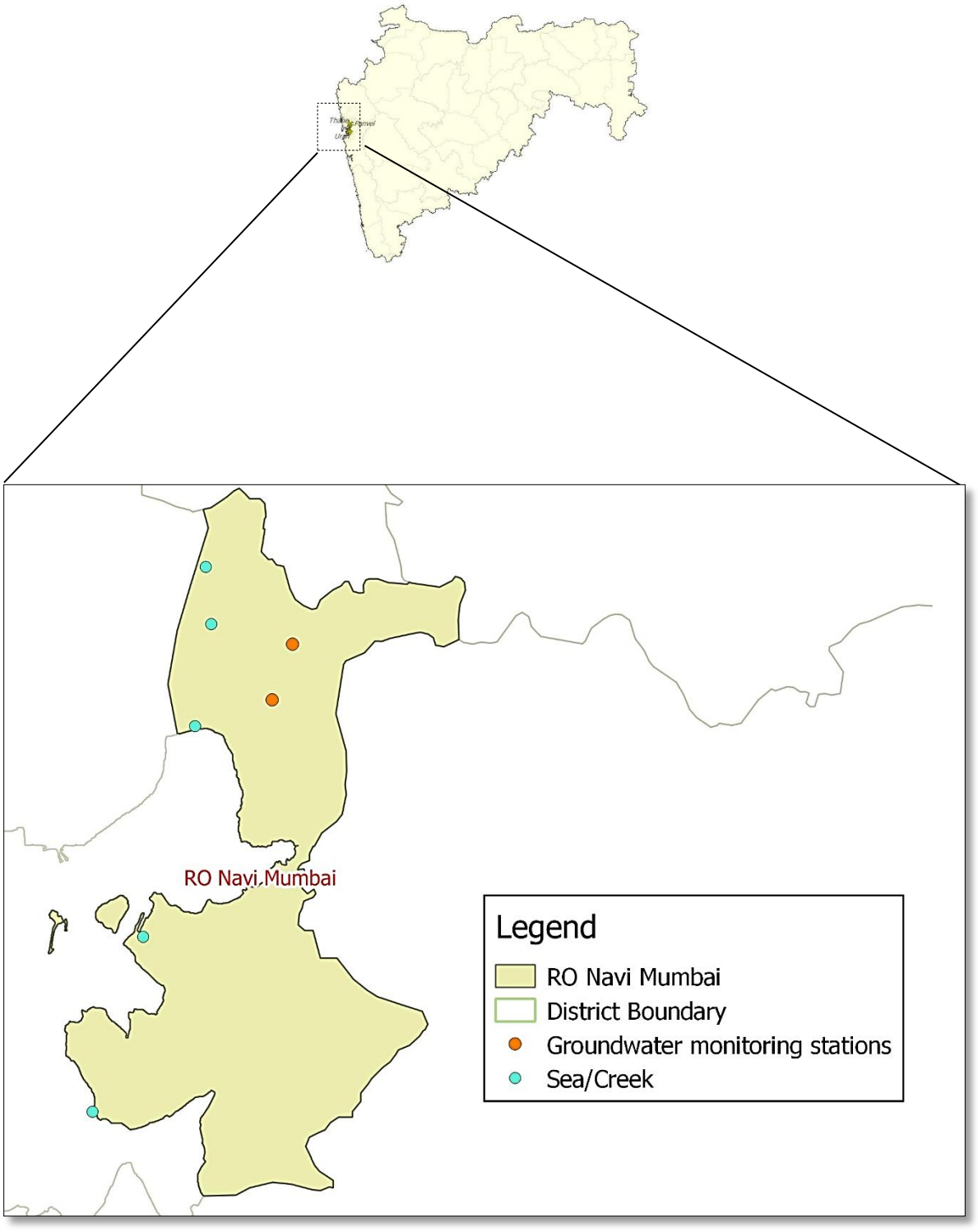


Table No. 37: Water quality Index for surface and ground water monitoring at Navi Mumbai-RO – 2021-22

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2184	Vashi Creek at Airoli Bridge	56.66	58.89	60.32	Thane	Thane	Airoli
	190	TTC Creek At Ghansoli Jetty	48.40	58.89	60.67	Thane	Thane	Ghansoli
	2185	Vashi Creek at Vashi Bridge	59.56	64.14	62.08	Thane	Thane	Vashi
	1317	Thane creek at Elephanta Island	45.61	60.20	53.77	Raigad	Uran	Gharapuri, Elephanta Island
	191	Arabian Sea behind ONGC Uran	48.87	51.40	53.96	Raigad	Uran	Uran
	216	Kasardi River near Ganesh Ghat	NA	Dry	68.95	Raigad	Panvel	Taloja
GW	214	Borewell at TTCWMA, Mahape	Dry	Dry	Dry	Thane	Thane	TTCWMA,Mahape
	215	Well water at Turbhe Store, Turbhe	2973.50	46.92	1510.21	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

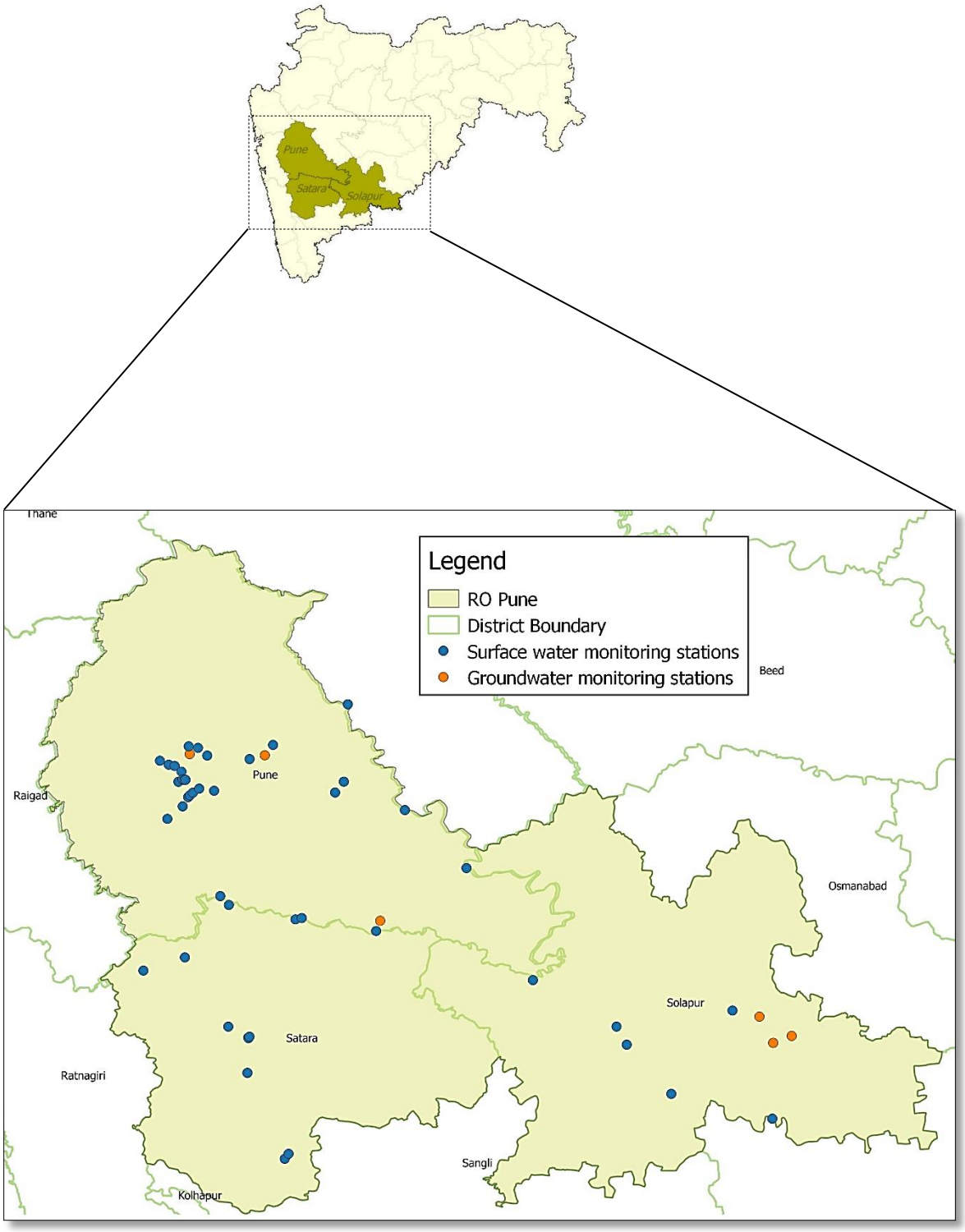

Pune
Satara
Solapur
Legend
RO Pune
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Thane
Beed
Raigad
Pune
Osmanabad
Solapur
Satara
Ratnagiri
Sangli
Kolhapur

Table No. 38: Water quality Index for surface and ground water monitoring at Pune-RO – 2021-22

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2692	Pawana River at Ravet Weir, Pune	86.57	88.53	84.55	Pune	Haweli	Ravet
	2680	Mutha River at Khadakvasla Dam Pune	87.91	77.82	85.21	Pune	Haweli	Kadakvasla
	2693	Pawana River at Chinchwadgaon, Pune	57.69	71.15	65.95	Pune	Haweli	Chinchwadgaon
	2694	Pawana River at Pimprigaon, Pune	55.22	77.18	63.44	Pune	Haweli	Pimprigaon
	2193	Mula River at Aundh Bridge -Aundgaon	56.58	62.90	62.16	Pune	Haweli	Aundhgaon
	2690	Pawana River at Kasarwadi Pune	56.83	78.65	61.91	Pune	Haweli	Kasarwadi
	2196	Pawana River at Sangavigaon, Pune	55.36	71.69	64.79	Pune	Haweli	Sangavigaon
	1189	Bhima river at Pune(Mutha river) at U/s of Vithalwadi near Sankar Mandir	67.18	73.52	66.21	Pune	Haweli	Vithalwadi
	2691	Pawana River at Dapodi Bridge at Pawana-Mulla Sangan Pune	54.95	71.80	62.29	Pune	Haweli	Dapodi
	2194	Mula River at Harrison Bridge near Mula -Pawana Sangam	56.02	61.99	61.31	Pune	Haweli	Bopodi
	2679	Mutha River at Deccan Bridge, Pune	52.49	68.16	59.21	Pune	Pune	Deccan
	2669	Indrayani River at U/s of Moshigaon, Pune	71.66	83.41	73.05	Pune	Haweli	Moshigaon
	2678	Mutha River near Veer Savarkar Bhavan	53.17	69.80	59.29	Pune	Pune	Pune M.C
	2191	Mutha River at Sangam Bridge Near Ganpathi Ghat	59.65	65.44	61.79	Pune	Pune	Shivaji Nagar
	2668	Indrayani River at D/s of Moshi village	66.69	71.18	65.99	Pune	Haveli	Moshi
	1190	Bhima river at D/s of Bundgarden, Pune	56.79	60.18	61.30	Pune	Haweli	Yerwada
	2197	Indrayani River at D/s of Alandigaon, Pune	60.00	75.79	66.53	Pune	Haweli	Alandigaon
	2192	Mula-Mutha River at Mundhwa Bridge	53.11	61.26	61.88	Pune	Haweli	Mundhawa
	1463	Nira river at Sarola bridge	69.10	67.06	73.53	Pune	Bhor	Sarola
	2683	Nira River at Shindewadi	71.35	71.41	74.07	Satara	Khandala	Shindewadi, Shirwal
	2655	Bhima River at Koregaon near Koregaon Bridge, Pune	67.17	76.55	73.87	Pune	Shirur	Koregaon
	2715	Vel River at Shikrapur, Pune	Dry	Dry	73.20	Pune	Shirur	Shikrapur
	2682	Nira River at U/s of Jubilant Organosis Pune	72.90	69.11	69.94	Pune	Baramati	Nira(Datta ghat)
	2195	Nira River at D/s of Jubilant Organosis Pune	65.25	68.62	67.61	Pune	Baramati	Nimbut
	2677	Mula-Mutha River at D/s of Theur, Pune	75.78	79.39	74.32	Pune	Haweli	Theur
	1191	Bhima river after confluence with Mula-Mutha at Pargaon near Vasant Bandara	74.77	73.54	67.5	Pune	Daund	Pargaon
	2665	Ghod River at Shirur, Pune	74.60	74.22	72.26	Pune	Shirur	Shirur
	2681	Nira River at Sangavi	73.69	62.84	70.13	Satara	Phaltan	Sangavi
	1192	Bhima river at Daund near Mahadev temple	68.65	80.84	73.10	Pune	Daund	Daund
	2656	Bhima River Backwater of Ujani Dam near raw water pump house	69.00	77.26	73.65	Pune	Indapur	Kumbargaon
	1911	Chandrabhaga river at U/s of Pandharpur town	64.79	70.84	66.51	Solapur	Pandarpur	Gursale
	1912	Chandrabhaga river at D/s of Pandharpur town near	58.86	69.31	58.30	Solapur	Pandarpur	Gopalpur

		Vishnupant Mandir						
	1188	Bhima River at Narshingpur near Sangam Bridge after confluence with Nira	70.29	76.13	70.67	Solapur	Malshiros	Narsingpur
	2705	Sina River near Laboti till naka Solapur	74.57	64.58	70.16	Solapur	Mohal	Laboti
	28	Bhima River at Takli	73.29	78.01	70.18	Solapur	South Solapur	Takali
	2716	Venna River at Mahabaleshwar	76.09	80.83	82.19	Satara	Mahabaleshwar	Mahabaleshwar
	1194	Krishna river at Dhom Dam	83.78	84.58	85.83	Satara	Mahabaleshwar	Wai
	2186	Venna River at Varya, Satara	76.33	82.60	80.02	Satara	Satara	Varye
	2190	Krishna River at Wai	70.95	81.15	76.10	Satara	Wai	Wai
	2711	Urmodi River at Nagthane Satara	78.47	72.00	76.44	Satara	Satara	Nagthane
	2717	Venna River at Mahuli	75.57	75.98	78.15	Satara	Satara	Mahuli
	2188	Krishna River at Krishna-Venna Sangam, Mahuli	74.69	74.23	76.44	Satara	Mahuli	Mahuli
	2187	Krishna River at Kshetra Mahuli Satara	78.93	79.68	75.85	Satara	Mahuli	Kshetra Mahuli
	2189	Koyna River at Karad	73.82	77.73	76.27	Satara	Karad	Karad
	36	Krishna River at Krishna Bridge, Karad	70.37	73.94	75.26	Satara	Karad	Karad
	2789	Nalla at D/s of Alkai Mandir, Solapur	69.13	64.67	63.09	Solapur	Malshiras	Aklai
GW	1992	Dug well at MSW Site,owned by Shri.Dattu Kondiba Borate at Borate Vasthi.	29.67	87.39	58.53	Pune	Haveli	Moshi
	2819	Dug Well Owned by Shri Deshmukh	359.88	311.95	335.91	Pune	Baramati	Malegaon
	2820	Dug Well Owned by Shri Shivaji Baban Darekar	43.77	117.71	80.74	Pune	Shirur	Sanaswadi
	2821	Bore Well at Bale Railway Station premises Owned by Shri Digambar Joshi	619.10	119.75	369.42	Solapur	North Solapur	Dahegaon
	2822	Bore Well near Chincholi	171.38	116.75	144.06	Solapur	Mohol	Chincholi
	2823	Bore Well at Shete Vasti near old Tuljapur Road	448.56	117.69	283.13	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

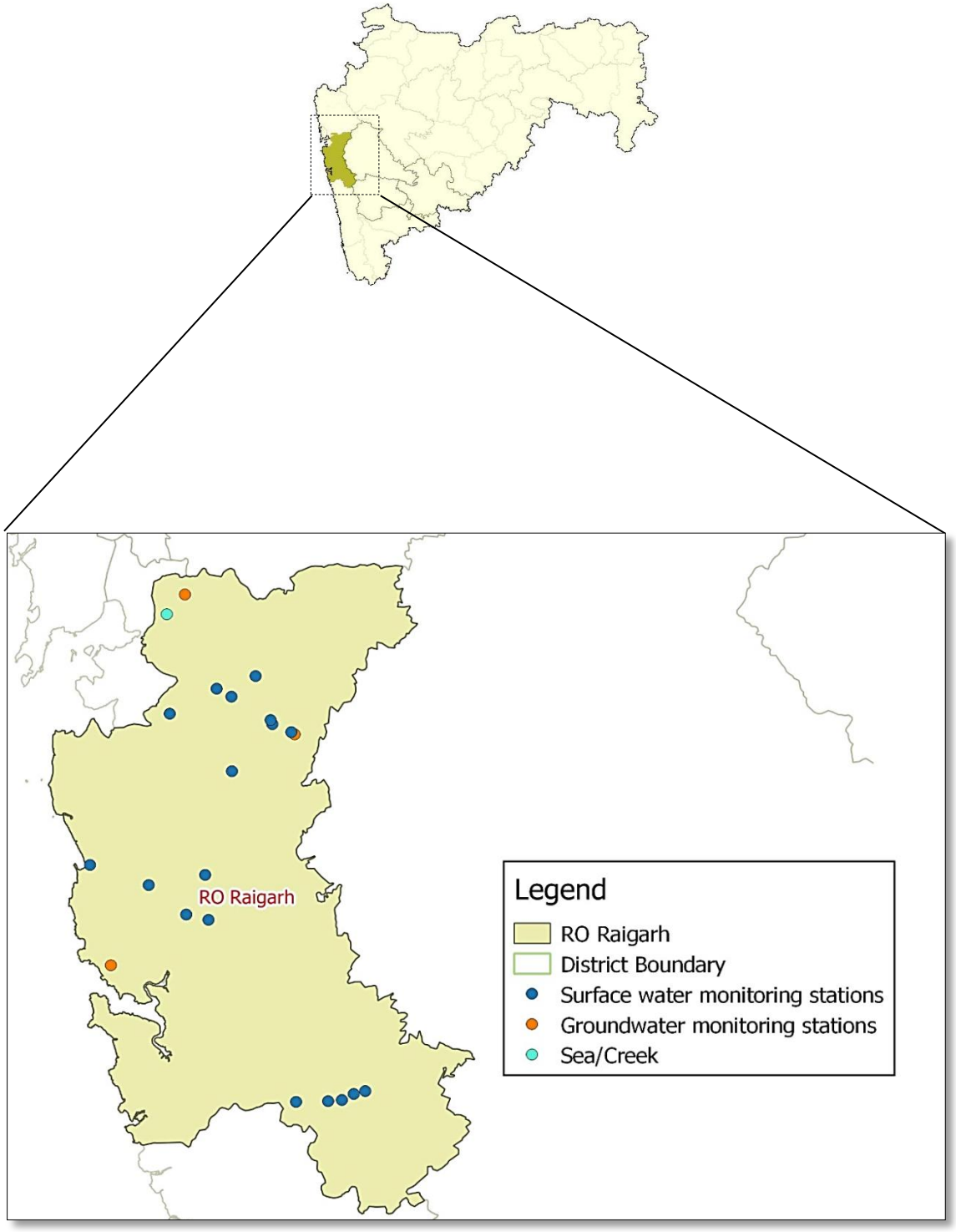

RO Raigarh
Legend
RO Raigarh
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Sea/Creek

Table No. 39: Water quality Index for surface and ground water monitoring at Raigad RO – 2021-22

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2803	Panvel Creek at Kopra Bridge	68.31	61.17	71.71	Raigad	Panvel	Kopra
	2701	Savitri River Jackwell at Upsa kendra	89.13	87.02	87.99	Raigad	Mahad	Nangalwadi
	2702	Savitri River at Shedav Doh	88.23	90.59	88.99	Raigad	Mahad	Shedav Dov
	2703	Savitri River at Dadli Bridge	88.68	89.01	88.30	Raigad	Mahad	Dadli
	2704	Savitri River at Muthavali village	85.76	88.33	87.80	Raigad	Mahad	Muthavali
	2199	Savitri River at Ovale village	86.59	87.93	85.15	Raigad	Mahad	Ovale
	1151	Patalganga River at Shilphata Bridge	78.41	73.37	80.68	Raigad	Khalapur	Khopoli
	2688	Patalganga River at Savroli Bridge	76.65	76.94	81.49	Raigad	Khalapur	Savroli
	2687	Patalganga River at Khalapur pumping house	79.99	81.83	83.02	Raigad	Khalapur	Khalapur
	192	Morbe Dam, Taluka - Khalapur, District - Raigad	80.18	86.87	84.25	Raigad	Khalapur	Khalapur
	193	Balganga River, Village Ransai, Taluka - Khalapur, District - Raigad	88.02	80.62	82.52	Raigad	Khalapur	Ransai
	2686	Patalganga River at Vyal pump house	83.92	84.04	83.88	Raigad	Khalapur	Vyal
	1462	Patalganga near intake of MIDC water works(Turade w/w)	79.43	79.92	83.35	Raigad	Khalapur	Turade
	2672	Kundalika River at Dhatav at Jackwell	83.78	78.25	79.75	Raigad	Roha	Dhatav
	2651	Amba River at D/s of Waken Bridge	79.24	74.64	79.34	Raigad	Roha	Waken Phata

	1152	Kundalika River at Roha Bridge	84.07	81.41	82.45	Raigad	Roha	Roha
	2685	Patalganga River at D/s of Kharpada Bridge	80.52	78.77	83.12	Raigad	Khalapur	Kharpada
	2198	Kundalika River at Are Khurd (Saline Zone)	65.82	78.53	79.42	Raigad	Roha	Are Khurd
	2671	Kundalik River near Salav Bridge (Saline Zone)	51.69	60.56	67.15	Raigad	Roha	Salav
GW	217	Borewell water at village Milgaon, Taluka - Khalapur, District - Raigad.	45.50	42.84	44.17	Raigad	Khalapur	Milgaon
	218	Borewell water near MSW site, Murud - Janjira.	Dry	Dry	Dry	Murud	Murud	Murud Janjira
	1989	Bore well at MWML Site at Taloja	24.66	29.23	26.94	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

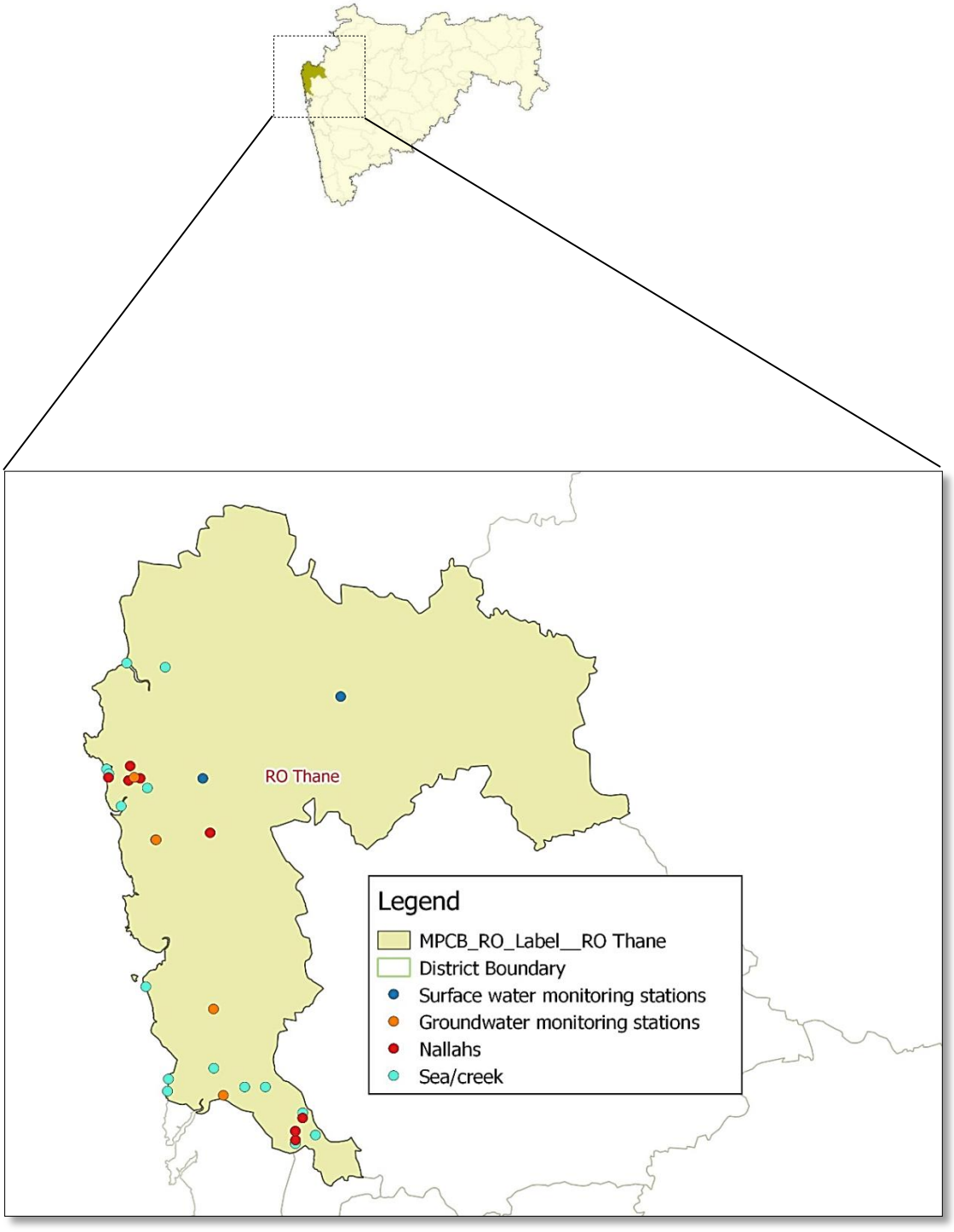

RO Thane
Legend
MPCB_RO_Label__RO Thane
District Boundary
Surface water monitoring stations
Groundwater monitoring stations
Nallahs
Sea/creek

Table No. 40: Water quality index for surface and ground water monitoring at Thane RO -2021-22

Type	Station code	Station name	April	Oct/ Dec	Avg WQI	District	Taluka	Village
SW	2802	Dahanu Creek at Dahanu Fort	51.14	57.06	57.49	Thane	Dahanu	Danugaon
	2801	Savta Creek	54.28	59.68	59.49	Thane	Dahanu	Savta
	2799	Dandi Creek	53.57	60.18	52.77	Thane	Palghar	Dandi
	2807	Navapur Sea	54.82	51.79	52.17	Thane	Palghar	Navapur
	2800	Sarwali Creek	76.47	61.40	69.72	Thane	Palghar	Sarwali
	2798	Kharekuran Murbe Creek	52.03	57.83	54.47	Thane	Palghar	Kharekuran
	2805	Arnala Sea	52.03	51.80	54.16	Thane	Vasai	Arnala
	2797	Bhayander Creek at D/s of Railway Bridge at Jasal Park Choupathy	51.53	58.20	57.05	Thane	Bhayander	Navghar
	1316	Bassein creek at Vasai Fort, Thane	53.80	56.87	55.41	Thane	Vasai	Bassein
	2795	Ulhas Creek at Gaimukh at Nagla Bunder on Ghod Bunder Road	56.56	69.17	63.34	Thane	Thane	Nagla
	2796	Ulhas Creek at Versova Bridge	55.56	60.22	60.98	Thane	Vasai	Versova
	2806	Uttan Sea at Bhayander	47.88	56.42	52.03	Thane	Bhayander	Uttan
	2794	Ulhas Creek at Kolshet Reti Bunder	59.70	68.90	63.41	Thane	Thane	Kolshet
	2792	Ulhas Creek at Mumbra Reti Bunder	57.45	67.38	64.88	Thane	Thane	Mumbra
	2793	Thane Creek at Kalwa Road Bridge	59.91	67.27	64.96	Thane	Thane	Kalwa
	2707	Surya River at MIDC pumping station	82.80	80.50	81.95	Thane	Palghar	Garvashet
	2706	Surya River U/s of Surya Dam	82.12	79.70	82.40	Thane	Vikramgad	Dhamni

	2696	Pelhar dam	86.61	84.38	85.34	Palghar	Vasai	Pelhar
	2708	Surya River at Intake of Vasai-Virar water scheme	79.70	78.45	80.70	Thane	Palghar	Masvan
	2784	Sandoz Nalla	31	34	35.1	Thane	Thane	Sandozbaug
	2782	Rabodi Nalla	28	33	32.91	Thane	Thane	Rabodi
	2783	Colour Chem Nalla	34	50	41.5	Thane	Thane	Majiwada
	2786	Tarapur MIDC Nalla, near sump No1	Dry	Dry	Dry	Palghar	Palghar	MIDC Tarapur
	2787	Tarapur MIDC Nalla	Dry	Dry	Dry	Palghar	Palghar	MIDC Tarapur
	2788	Tarapur MIDC Nalla near sump-III	Dry	Dry	Dry	Palghar	Palghar	MIDC Tarapur
	2785	BPT Navapur	30	31	29.8	Palghar	Palghar	Navapur
GW	1984	Bore well at M/s Tata Iron {} Steel Co. Ltd, S-76	Dry	Dry	Dry	Thane	Palghar	MIDC Tarapur, Industrial Estate, Tarapur
	1985	Dug well at 5 Star Industrial Estate	159.00	114.47	136.74	Thane	Mira-Bhayander	Kashimira
	1986	Bore well at Motapada	Dry	Dry	Dry	Thane	Dahanu	Motapada
	1987	Bore well at Vasai	79.08	63.30	71.19	Thane	Vasai	Gokhiware
	1988	Bore well at Gharatwadi, Palghar	Dry	Dry	Dry	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 2021-2022

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	Disposed
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
6	Court on its own motion v/s Union of India & Ors.	Suo Moto PIL (st) No. 10332/2021. Suo Moto PIL No.03/2021	Nagpur	Pollution of water due to immersion of PoP idols.	Pending

Sr. No.	Name of the Parties	Application /Appeal No.	Region	Subject matter	Status
7	Arif Nawaz M. M. Iraqi V/s State of Maharashtra & Ors.	Original Application No.320/2022. (PB)	Thane	natural flows of water arising from hills of Shilphata and Mhape to Desai Khadi (Creek). Village At - Shill, District –Thane.	Pending
8	Arif Nawaz M. M. Iraqi V/s State of Maharashtra & Ors.	Original Application No.105/2022. (PB)	Thane	water pollution and serious health hazard to the nearby residents of Ulhas River and Desai Creek in Mumbra and Diva Distt. Thane.	Pending
9	Nitin Shankar Deshpande v/s Union of India & Ors.	Original Application No.1069/2018	-	The issue for consideration is effluent discharge standards for STPs	Disposed

Annex –III- List of Polluted Stretches across Maharashtra

Prioritywise Polluted River Stretches (April 2021 - March 2022)						
	I	II	III	IV	V	Less polluted
	Mithi		Bhima	Amba	Bhatsa	Mor
			Chandrabhaga	Godavari	Bindusara	Panchaganga
			Ghod	Kanhan	Bori	Savitri
			Indrayani	Kalu	Darna	Vashishti
			Kundalika	Koyna	Gomai	
			Mula	Krishna	Girna	
			Mutha	Morna	Hiwara	
			Nira	Manjara	Kolar	
			Mula-Mutha	Pedhi	Kan	
			Pawna	Purna	Panzara	
			Wardha	Sina	Patalganga	
				Surya	Pelhar	
				Urmodi	Penganga	
				Vel	Rangavali	
				Wena	Tapi	
					Tansa	
					Titur	
					Ulhas	
					Vaitarna	
					Venna	
					Waghur	
					Wainganga	
Total	**1**	**0**	**11**	**15**	**22**	**4**

Source :MPCB

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Annex IV- Status Of Sewage Treatment Of Maharashtra

Municipal Corporations

Sr.No.	Name of Municipal Corporation	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
1	Ahmednagar Municipal Corporation	B	Ahmednagar	53	0	0	0
2	Amravati Municupal corporation	D	Amravati	93	74.5	12	12.9
3	Aurangabad Municipal Corporation	C	Aurangabad	96	211	80	83.3
4	Bhiwandi Municipal Corporation	A	Thane	90	30	13	14.4
5	Chandrapur Municipal Corporation	D	Chandrapur	36	70.5	36	100.0
6	Dhule Municipal Corporation	D	Dhule	48	0	0	0.0
7	Jalgaoan Municipal Corporation	D	Jalgaon	64	48	0	0.0
8	Kalyan Dombavli Municipal Corporation	C	Thane	216	100.5	83.5	38.7
9	Kolhapur Municipal Corporation	D	Kolhapur	104	93	52.88	50.8
10	Latur Municipal Corporation	D	Latur	48	0	0	0.0
11	Malegaon Municipal Corporation	D	Malegaon	67.2	0	0	0.0
12	Mira Bhainder Municipal corporation	D	Thane	125	115	94	75.2
13	Mumbai Municipal Corporation	A	Mumbai	2602.15	2723	1451	55.8
14	Nagpur Municipal corporation	A	Nagpur	520	403.5	370.5	71.3
15	Nanded Municipal Corporation	D	Nanded	70	132	58	82.9
16	Nashik Municipal Corporation	B	Nashik	346	392.5	319.1	92.2
17	Navi Mumbai Municipal Corporation	C	Thane	215	464	215	100.0
18	Panvel Municipal Corporation	D	Raigad	176.8	278	138.4	78.3
19	Parbhani Municipal Corporation	D	Parbhani	41.6	0	0	0.0
20	Pimpri Chinchwad Municipal Corporation	B	Pune	312	353	280.89	90.0
21	Pune Municipal Corporation	A	Pune	883	477	477	54.0
22	Sangli Municipal Corporation	D	Sangli	68	59.5	42.5	62.5
23	Solapur Municipal Corporation	D	Solapur	90	102.5	90	100.0

Sr.No.	Name of Municipal Corporation	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
24	Thane Municipal Corporation	B	Thane	320	259	158	49.4
25	Ulhasnagar Municipal corporation	D	Thane	75	67.7	67	89.3
26	Vasai Virar Municipal Corporation	C	Palghar	156.28	30	19	12.2

Municipal Councils

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
1	Achalpur Municipal Council	A	Amravati	8.5	0	0	0
2	Ahmedpur Municipal Council	B	Latur	1.8	0	0	0
3	Akkalkot Municipal Council	B	Solapur	4	0	0	0
4	Akot Municipal Council	B	Akola	7	0	0	0
5	Alandi Municipal Council	C	Pune	6.8	7.5	5.2	76.4
6	Alibag Municipal Council	C	Raigad	3.5	0	0	0
7	Amalner Municipal Council	B	Jalgaon	3.15	0	0	0
8	Ambad Municipal Council	C	Jalna	2.4	0	0	0
9	Ambarnath Municipal Council	A	Thane	53.63	54	23.5	43.81
10	Ambejogai Municipal Council	B	Beed	9	0	0	0
11	Amgaon Municipal Council	C	Gondia	0.65	0	0	0
12	Anjangaon Surji Municipal Council	B	Amravati	2.28	0	0	0
13	Armori Municipal Council	NP	Gadchiroli	0.3	0	0	0
14	Arni Municipal Council	C	Yavatmal	4.69	0	0	0
15	Arvi Municipal Council	B	Wardha	2.4	0	0	0
16	Ashta Municipal Council	C	Sangli	2.1	0	0	0
17	Ausa Municipal Council	C	Latur	3.6	0	0	0
18	Balapur Municipal Council	B	Akola	2	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
19	Ballarpur Municipal Council	B	Chandrapur	12.83	0	0	0
20	Baramati Municipal Council	A	Pune	15.79	11.5	11.5	72.83
21	Barshi Municipal Council	A	Solapur	8.76	10	8.76	0
22	Basmat Municipal Council	C	Hingoli	2.9	0	0	0
23	Beed Municipal Council	A	Beed	22	0	0	0
24	Bhadgaon Municipal Council	C	Jalgaon	9.5	0	0	0
25	Bhadravati Municipal Council	B	Chandrapur	2.1	0	0	0
26	Bhagur Municipal Council	C	Nashik	0.87	0	0	0
27	Bhandara Municipal Council	B	Bhandara	10	0	0	0
28	Bhokar Municipal Council	C	Nanded	2	0	0	0
29	Bhokardan Municipal Council	C	Jalna	1.2	0	0	0
30	Bhoom Municipal Council	C	Osmanabad	1.3	0	0	0
31	Bhor Municipal Council	C	Pune	0.9	0	0	0
32	Bhusawal Municipal Council	A	Jalgaon	11.4	0	0	0
33	Biloli Municipal Council	C	Nanded	0.8	0	0	0
34	Bramhapuri Municipal Council	C	Chandrapur	0.88	0	0	0
35	Buldhana Municipal Council	B	Buldhana	5	0	0	0
36	Butibori Municipal council	C	Nagpur	1	0	0	0
37	Chakan Municipal Council	C	Pune	4	0	0	0
38	Chalisgaon Municipal Council	B	Jalgaon	7.21	0	0	0
39	ChandurBazaar Municipal Council	C	Amravati	1.2	0	0	0
40	ChandurRailway Municipal Council	C	Amravati	1.8	0	0	0
41	Chandwad Municipal Council	C	Nashik	0.8	0	0	0
42	Chikhaldara Hill Station Municipal Council	C	Amravati	0.4	0	0	0
43	Chikhli Municipal Council	B	Buldhana	2.4	0	0	0
44	Chimur Municipal Council	C	Chandrapur	2.05	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
45	Chiplun Municipal Council	B	Ratnagiri	7	0	0	0
46	Chopda Municipal Council	B	Jalgaon	3.2	0	0	0
47	Dahanu Municipal Council	B	Palghar	4	0	0	0
48	Darwha Municipal Council	C	Yavatmal	F	0	0	0
49	Daryapur Municipal Council	C	Amravati	2	0	0	0
50	Daund Municipal Council	B	Pune	4.2	4.2	0	0
51	Deglur Municipal Council	B	Nanded	4.8	0	0	0
52	Deoli Municipal Council	C	Wardha	1.6	0	0	0
53	Desaiganj (Wadsa) Municipal Council	C	Gadchiroli	1.84	0	0	0
54	Deulgaon Raja Municipal Council	C	Buldhana	1.1	0	0	0
55	Devlali Pravara Municipal Council	C	Ahmednagar	2	0	0	0
56	Dhamangaon Municipal Council	C	Amravati	1.8	0	0	0
57	Dharangaon Municipal Council	C	Jalgaon	8.4	0	0	0
58	Dharmabad Municipal Council	C	Nanded	2	0	0	0
59	Dharur Municipal Council	C	Beed	0.36	0	0	0
60	Digras Municipal Council	B	Yavatmal	2.02	0	0	0
61	Dondaicha-Varwade Municipal Council	B	Dhule	6	0	0	0
62	Dudhani Municipal Council	C	Solapur	0.69	0	0	0
63	Erandol Municipal Council	C	Jalgaon	9.1	0	0	0
64	Faizpur Municipal Council	C	Jalgaon	1	0	0	0
65	Gadchandur Municipal Council	C	Chandrapur	1.44	0	0	0
66	Gadchiroli Municipal Council	B	Gadchiroli	4.8	0	0	0
67	Gadhinglaj Municipal Council	C	Kolhapur	2.4	0	0	0
68	Gangakhed Municipal Council	B	Parbhani	3	0	0	0
69	Gangapur Municipal Council	C	Aurangabad	1.5	0	0	0
70	Gevrai Municipal Council	C	Beed	3.6	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
71	Ghatanji Municipal Council	C	Yavatmal	1.16	0	0	0
72	Gondia Municipal Council	A	Gondia	11	0	0	0
73	Hadgaon Municipal Council	C	Nanded	0.96	0	0	0
74	Hingan Ghat Municipal Council	A	Wardha	8.28	10	5	60.3
75	Hingoli Municipal Council	A	Hingoli	7.2	0	0	0
76	Hupari Municipal Council	C	Kolhapur	2.25	0		0
77	Igatpuri Municipal Council	C	Nashik	4.2	0	0	0
78	Indapur Municipal Council	C	Pune	2.4	0	0	0
79	Islampur Municipal Council	B	Sangli	9	0	0	0
80	Jalgaon Jamod Municipal Council	C	Buldhana	0.63	0	0	0
81	Jalna Municipal Council	A	Jalna	15	0	0	0
82	Jamkhed Municipal Council	C	Ahmednagar	3	0	0	0
83	Jamner Municipal Council	B	Jalgaon	11	0	0	0
84	Jat Municipal Council	C	Sangli	1.5	0	0	0
85	Jawhar Municipal Council	C	Palghar	1.5	0	0	0
86	Jaysingpur Municipal Council	B	Kolhapur	4.64	0	0	0
87	Jejuri Municipal Council	C	Pune	2.4	0	0	0
88	Jintur Municipal Council	B	Parbhani	2.1	0	0	0
89	Junnar Municipal Council	C	Pune	2.2	0	0	0
90	Kagal Municipal Council	C	Kolhapur	2.4	0	0	0
91	Kalamb Municipal Council	C	Osmanabad	1.25	0	0	0
92	Kalamnuri Municipal Council	C	Hingoli	1.8	0	0	0
93	Kalmeshwar Municipal Council	C	Nagpur	4.5	0	0	0
94	Kamptee Municipal Council	B	Nagpur	7	0	0	0
95	Kandhar Municipal Council	C	Nanded	2.2	0	0	0
96	Kanhann Pimpari Municipal Council	C	Nagpur	1.56	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
97	Kannada Municipal Council	B	Aurangabad	2.4	0	0	0
98	Karad Municipal Council	B	Satara	11.24	12.5	11.24	100
99	Karanja Municipal Council	B	Washim	4	0	0	0
100	Karjat Municipal Council	C	Raigad	5.07	0	0	0
101	Karmala Municipal Council	C	Solapur	2	0	0	0
102	Katol Municipal Council	B	Nagpur	6	0	0	0
103	Khamgaon Municipal Council	B	Buldhana	4	0	0	0
104	Khapa Municipal Council	C	Nagpur	1.05	0	0	0
105	Khed Municipal Council	C	Ratnagiri	2.5	0	0	0
106	Khopoli Municipal Council	B	Raigad	11	0	0	0
107	Khuldabad Municipal Council	C	Aurangabad	0.9	0	0	0
108	Kinwat Municipal Council	C	Nanded	2.4	0	0	0
109	Kopargaon Municipal Council	B	Ahmednagar	7	0	0	0
110	Kulgaon-Badalapur Municipal Council	A	Thane	26.2	22	23.5	89.6
111	Kundalwadi Municipal Council	C	Nanded	0.8	0	0	0
112	Kurduvadi Municipal Council	C	Solapur	3.5	0	0	0
113	Kurundwad Municipal Council	C	Kolhapur	0.8	0	0	0
114	Loha Municipal Council	C	Nanded	1.2	0	0	0
115	Lonar Municipal Council	C	Buldhana	1	0	0	0
116	Lonavala Municipal Council	B	Pune	14.96	6	0	0
117	Mahabaleshwar Municipal Council	C	Satara	2.5	5	2.5	100
118	Mahad Municipal Council	C	Raigad	3.7	0	0	0
119	Maindargi Municipal Council	C	Solapur	0.69	0	0	0
120	Majalgaon Municipal Council	B	Beed	4	0	0	0
121	Malkapur - Buldhana Municipal Council	B	Buldhana	2.75	0	0	0
122	Malkapur Municipal Council	C	Kolhapur	0.2	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
123	Malkapur Municipal Council	NP	Satara	6.29	8	4	63.5
124	Malvan Municipal Council	C	Sindhudurg	1.5	0	0	0
125	Mangalwedha Municipal Council	C	Solapur	2.4	0	0	0
126	Mangrulpir Municipal Council	C	Washim	2.4	0	0	0
127	Manmad Municipal Council	B	Nashik	6	0	0	0
128	Manwath Municipal Council	C	Parbhani	1.8	0	0	0
129	Matheran Municipal Council	C	Raigad	0.47	0	0	0
130	Mehkar Municipal Council	B	Buldhana	2	0	0	0
131	Mhaswad Municipal Council	C	Satara	2.1	0	0	0
132	Mohapa Municipal Council	C	Nagpur	0.68	0	0	0
133	Mohol Municipal Council	C	Solapur				
134	Mool Municipal Council	C	Chandrapur	1.4	0	0	0
135	Morshi Municipal Council	C	Amravati	3.2	0	0	0
136	Mowad Municipal Council	C	Nagpur	7.4	0	0	0
137	Mudkhed Municipal Council	C	Nanded	0.92	0	0	0
138	Mukhed Municipal Council	C	Nanded	1.54	0	0	0
139	Murgud Municipal Council	C	Kolhapur	0.64	0	0	0
140	Murtizapur Municipal Council	B	Akola	2.4	0	0	0
141	Murud-Janjira Municipal Council	C	Raigad	2	0	0	0
142	Murum Municipal Council	C	Osmanabad	1.25	0	0	0
143	Nagbhid Municipal Council	C	Chandrapur	2.01	0	0	0
144	Naldurg Municipal Council	C	Osmanabad	1.2	0	0	0
145	Nandgaon Municipal Council	C	Nashik	1.2	0	0	0
146	Nandura Municipal Council	B	Buldhana	1.6	0	0	0
147	Nandurbar Municipal Council	A	Nandurbar	10.56	17.5	9.3	88
148	Narkhed Municipal Council	C	Nagpur	0.9	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
149	Navapur Municipal Council	C	Nandurbar	12	0	0	0
150	Nilanga Municipal Council	C	Latur	1.7	0	0	0
151	Omerga Municipal Council	C	Osmanabad	2.4	0	0	0
152	Osmanabad Municipal Council	A	Osmanabad	6.4	0	0	0
153	Pachora Municipal Council	B	Jalgaon	32	0	0	0
154	Paithan Municipal Council	B	Aurangabad	2.4	0	0	0
155	Palghar Municipal Council	B	Palghar	11	0	0	0
156	Palus Municipal Council	C	Sangli	2.5	0	0	0
157	Panchgani Municipal Council	C	Satara	1.45	2.5	1.45	100
158	Pandharkawada Municipal Council	C	Yavatmal	1.99	0	0	0
159	Pandharpur Municipal Council	B	Solapur	18.5	18	9.28	50.16
160	Panhala Municipal Council	C	Kolhapur	0.45	0	0	0
161	Paranda Municipal Council	C	Osmanabad	1	0	0	0
162	Parli Vaijinath Municipal Council	B	Beed	3.75	0	0	0
163	Parola Municipal Council	C	Jalgaon	3.49	0	0	0
164	Partur Municipal Council	C	Jalna	1.5	0	0	0
165	Pathardi Municipal Council	C	Ahmednagar	2.5	0	0	0
166	Pathri Municipal Council	C	Parbhani	1.5	0	0	0
167	Patur Municipal Council	C	Akola	1.1	0	0	0
168	Pavani Municipal Council	C	Bhandara	1.6	0	0	0
169	Pen Municipal Council	C	Raigad	9.2	0	0	0
170	Phaltan Municipal Council	B	Satara	3.6	0	0	0
171	Pulgaon Municipal Council	C	Wardha	1.8	0	0	0
172	Purna Municipal Council	C	Parbhani	1.75	0	0	0
173	Pusad Municipal Council	B	Yavatmal	4.02	0	0	0
174	Rahata Pimplas Municipal Council	C	Ahmednagar	2.5	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
175	Rahimatpur Municipal Council	C	Satara	0.8	0	0	0
176	Rahuri Municipal Council	C	Ahmednagar	2.5	0	0	0
177	Rajapur Municipal Council	C	Ratnagiri	2	0	0	0
178	Rajgurunagar Municipal Council	C	Pune	4	0	0	0
179	Rajura Municipal Council	C	Chandrapur	3.2	0	0	0
180	Ramtek Municipal Council	C	Nagpur	1.44	0	0	0
181	Ratnagiri Municipal Council	B	Ratnagiri	8.8	0	0	0
182	Raver Municipal Council	C	Jalgaon	11	0	0	0
183	Risod Municipal Council	C	Washim	1.6	0	0	0
184	Roha Municipal Council	C	Raigad	3.64	0	0	0
185	Sailu Municipal Council	B	Parbhani	2	0	0	0
186	Sakoli Municipal Council	C	Bhandara	1.1	0	0	0
187	Sangamner Municipal Council	B	Ahmednagar	5.5	0	0	0
188	Sangola Municipal Council	C	Solapur	4	0	0	0
189	Saswad Municipal Council	C	Pune	5.84	2	2	34.24
190	Satana Municipal Council	C	Nashik	1.47	0	0	0
191	Satara Municipal Council	A	Satara	22.016	0	0	0
192	Savda Municipal Council	C	Jalgaon	0.57	0	0	0
193	Savner Municipal Council	C	Nagpur	2	0	0	0
194	Sawantvadi Municipal Council	C	Sindhudurg	2.5	0	0	0
195	Shahada Municipal Council	B	Nandurbar	3.43	0	0	0
196	Shegaon Municipal Council	B	Buldhana	4.33	7	4	92.37
197	Shendurjana Ghat Municipal Council	C	Amravati	1.6	0	0	0
198	Shevgaon Municipal Council	C	Ahmednagar	2.7	0	0	0
199	Shirol Municipal Council	C	Kolhapur	2.5	0		0
200	Shirpur-Varwade Municipal Council	B	Dhule	9.75	12.5	6	61.53

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
201	Shirur Municipal Council	C	Pune	5.04	6	5.04	100
202	Shrirampur Municipal Council	B	Ahmednagar	10	0	0	0
203	Shrivardhan Municipal Council	C	Raigad	1.8	0	0	0
204	Sillod Municipal Council	B	Aurangabad	3	0	0	0
205	Sindi Municipal Council	C	Wardha	1	0	0	0
206	Sindkhed Raja Municipal Council	C	Buldhana	0.6	0	0	0
207	Sinnar Municipal Council	B	Nashik	4.3	0	0	0
208	Sonpeth Municipal Council	C	Parbhani	3.5	0	0	0
209	Srigonda Municipal Council	C	Ahmednagar	2.6	0	0	0
210	Talegaon Dhabade Municipal Council	B	Pune	8.5	0	0	0
211	Taloda Municipal Council	C	Nandurbar	2	0	0	0
212	Tasgaon Municipal Council	C	Sangli	2.63	0	0	0
213	Telhara Municipal Council	C	Akola	1	0	0	0
214	Tirora Municipal Council	C	Gondia	2	0	0	0
215	Trimbak Municipal Council	C	Nashik	4	1	1	25
216	Tuljapur Municipal Council	C	Osmanabad	1.9	0	0	0
217	Tumsar Municipal Council	B	Bhandara	3.5	0	0	0
218	Udgir Municipal Council	A	Latur	5.4	0	0	0
219	Umarkhed Municipal Council	B	Yavatmal	2.04	0	0	0
220	Umred Municipal Council	B	Nagpur	4.5	0	0	0
221	Umri Municipal Council	C	Nanded	0.96	0	0	0
222	Uran Municipal Council	C	Raigad	3.9	0	0	0
223	Vadgaon Municipal Council	C	Kolhapur	0.9	0	0	0
224	Vaijapur Municipal Council	B	Aurangabad	2.6	0	0	0
225	Varangaon Municipal Council	C	Jalgaon	3.8	0	0	0
226	Vengurla Municipal Council	C	Sindhudurg	2.5	0	0	0

Sr. No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
227	Vita Municipal Council	B	Sangli	4.87	0	0	0
228	Wadi Municipal Council	B	Nagpur	6.5	0	0	0
229	Wai Municipal Council	C	Satara	4.8	0	0	0
230	Wanadongari Municipal Council	C	Nagpur	4	0	0	0
231	Wani Municipal Council	B	Yavatmal	4.11	0	0	0
232	Wardha Municipal Council	A	Wardha	11	0	0	0
233	Warora Municipal Council	B	Chandrapur	4.5	0	0	0
234	Warud Municipal Council	B	Amravati	2.4	0	0	0
235	Washim Municipal Council	B	Washim	6.5	8	4	61.53
236	Yavatmal Municipal Council	A	Yavatmal	8.69	0	0	0
237	Yawal Municipal Council	C	Jalgaon	0.3	0	0	0
238	Yeola Municipal Council	B	Nashik	2.8	0	0	0

Nagar Panchyat

Sr No.	Name of Nagar Panchayat	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
1	Aheri Nagar Panchayat	NP	Gadchiroli	0.8	0	0	0
2	Ajara Nagarpanchayat	NP	Kolhapur	3	0		0
3	Akole Nagar Panchayat	NP	Ahmednagar	2.6	0	0	0
4	Ardhapur Nagar Panchayat	NP	Nanded	0.8	0	0	0
5	Arjuni Nagar Panchayat	NP	Gondia	0.65	0	0	0
6	Ashti Nagar Panchayat	NP	Beed	0.4	0	0	0
7	Ashti Nagar Panchayat	NP	Wardha	0.85	0	0	0
8	Aundha Nagnath Nagar Panchayat	NP	Hingoli	0.8	0	0	0
9	Babhulgaon Nagar Panchayat	NP	Yavatmal	0.93	0	0	0

Sr No.	Name of Nagar Panchayat	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
10	Badnapur Nagar Panchayat	NP	Jalna	0.4	0	0	0
11	Barshi Takali Nagar Panchayat	NP	Akola	0.2	0	0	0
12	Bhamragad Nagar Panchayat	NP	Gadchiroli	0.37	0	0	0
13	Bhatkuli Nagar Panchayat	NP	Amravati	0.35	0	0	0
14	Bhiwapur Nagar Panchayat	NP	Nagpur	1.2	0	0	0
15	Bodvad Nagar Panchayat	NP	Jalgaon	0.5	0	0	0
16	Chakur Nagar Panchayat	NP	Latur	0.4	0	0	0
17	Chamoshi Nagar Panchayat	NP	Gadchiroli	1.2	0	0	0
18	Chandgad Nagarpanchayat	NP	Kolhapur	1	0		0
19	Dahivadi Nagar Panchayat	NP	Satara	0.6	0	0	0
20	Dapoli Nagar Panchayat	NP	Ratnagiri	3	0	0	0
21	Daveri Nagar Panchayat	NP	Gondia	1.6	0	0	0
22	Devala Nagar Panchayat	NP	Nashik	0.5	0	0	0
23	Devani Nagar Panchayat	NP	Latur	0.3	0	0	0
24	Devgadjamsande Nagar Panchayat	NP	Sindhudurg	1.5	0	0	0
25	Devrukh Nagar Panchayat	NP	Ratnagiri	1.3	0	0	0
26	Dhadgaon Wadphalya-Roshmal Nagar Panchayat	NP	Nandurbar	1.2	0	0	0
27	Dhanki Nagar Panchayat	NP	Yavatmal	1.38	0	0	0
28	Dhanora Nagar Panchayat	NP	Gadchiroli	0.48	0	0	0
29	Dharani Nagar Panchayat	NP	Amravati	0.6	0	0	0
30	Dindori Nagar Panchayat	NP	Nashik	2.4	0	0	0
31	Etapalli Nagar Panchayat	NP	Gadchiroli	0.8	0	0	0
32	Ghansawangi Nagar Panchayat	NP	Jalna	0.24	0	0	0
33	Gondpimpri Nagar Panchayat	NP	Chandrapur	0.52	0	0	0
34	Goregaon Nagar Panchayat	NP	Gondia	0.4	0	0	0
35	Guhagar Nagar Panchayat	NP	Ratnagiri	0.6	0	0	0

Sr No.	Name of Nagar Panchayat	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
36	Hatkanangale Nagarpanchayat	NP	Kolhapur	1	0		0
37	Himayatnagar Nagar Panchayat	NP	Nanded	1.2	0	0	0
38	Hingana Nagar Panchayat	NP	Nagpur	0.6	0	0	0
39	Jalkot Nagar Panchayat	NP	Latur	0.3	0	0	0
40	Japharabad Nagar Panchayat	NP	Jalna	1	0	0	0
41	Jiwati Nagar Panchayat	NP	Chandrapur	1.19	0	0	0
42	Kadegaon Nagar Panchayat	NP	Sangli	1.5	0	0	0
43	Kalamb Nagar Panchayat	NP	Yavatmal	1.39	0	0	0
44	Kalawan Nagar Panchayat	NP	Nashik	2.4	0	0	0
45	Kankavli Nagar Panchayat	NP	Sindhudurg	1.2	0	0	0
46	Karanja Nagar Panchayat	NP	Wardha	0.9	0	0	0
47	Karjat Nagar Panchayat	NP	Ahmednagar	3	0	0	0
48	Kasai-Dodamarg Nagar Panchayat	NP	Sindhudurg	0.35	0	0	0
49	Kavathemahankal Nagar Panchayat	NP	Sangli	0.75	0	0	0
50	Kej Nagar Panchayat	NP	Beed	0.7	0	0	0
51	Khalapur Nagar Panchayat	NP	Raigad	1.6	0	0	0
52	Khanapur Nagar Panchayat	NP	Sangli	1	0	0	0
53	Khandala Nagar Panchayat	NP	Satara	0.8	0	0	0
54	Korchi Nagar Panchayat	NP	Gadchiroli	0.25	0	0	0
55	Koregaon Nagar Panchayat	NP	Satara	2.5	0	0	0
56	Korpana Nagar Panchayat	NP	Chandrapur	0.36	0	0	0
57	Kudal Nagar Panchayat	NP	Sindhudurg	1.8	0	0	0
58	Kuhi Nagar Panchayat	NP	Nagpur	0.7	0	0	0
59	Kurkheda Nagar Panchayat	NP	Gadchiroli	0.35	0	0	0
60	Lakhandur Nagar Panchayat	NP	Bhandara	0.9	0	0	0
61	Lakhani Nagar Panchayat	NP	Bhandara	0.9	0	0	0

Sr No.	Name of Nagar Panchayat	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
62	Lanja Nagar Panchayat	NP	Ratnagiri	1.5	0	0	0
63	Lohara Bu Nagar Panchayat	NP	Osmanabad	0.45	0	0	0
64	Lonand Nagar Panchayat	NP	Satara	0.7	0	0	0
65	Madha Nagar Panchayat	NP	Solapur				0
66	Mahadula Nagar Panchayat	NP	Nagpur	1.28	0	0	0
67	Mahagaon Nagar Panchayat	NP	Yavatmal	0.65	0	0	0
68	Mahur Nagar Panchayat	NP	Nanded	0.8	0	0	0
69	Malegaon Nagar Panchayat	NP	Washim	1.5	0	0	0
70	Malshiras Nagar Panchayat	NP	Solapur				0
71	Mandangad Nagar Panchayat	NP	Ratnagiri	0.33	0	0	0
72	Mangaon Nagar Panchayat	NP	Raigad	2.8	0	0	0
73	Manora Nagar Panchayat	NP	Washim	0.7	0	0	0
74	Mantha Nagar Panchayat	NP	Jalna	0.9	0	0	0
75	Maregaon Nagar Panchayat	NP	Yavatmal	0.68	0	0	0
76	Medha Nagar Panchayat	NP	Satara	0.44	0	0	0
77	Mhasala Nagar Panchayat	NP	Raigad	1.2	0	0	0
78	Mohadi Nagar Panchayat	NP	Bhandara	0.6	0	0	0
79	Mokhada Nagar Panchayat	NP	Palghar			0	
80	Motala Nagar Panchayat	NP	Buldhana	0.5	0	0	0
81	Mouda Nagar Panchayat	NP	Nagpur	1.1	0	0	0
82	Muktainagar Nagarpanchayat	NP	Jalgaon	0		0	0
83	Mulchera Nagar Panchayat	NP	Gadchiroli	0.08	0	0	0
84	Murbad Nagar Panchayat	NP	Thane	2	0	0	0
85	Nandgaon Khandeshwar Nagar Panchayat	NP	Amravati	0.5	0	0	0
86	Naygaon Nagar Panchayat	NP	Nanded	1.2	0	0	0
87	Nevasa Nagar Panchayat	NP	Ahmednagar	2.7	0	0	0

Sr No.	Name of Nagar Panchayat	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
88	Niphad Nagar Panchayat	NP	Nashik	1.6	0	0	0
89	Palam Nagar Panchayat	NP	Parbhani	0.5	0	0	0
90	Parner Nagar Panchayat	NP	Ahmednagar	2.5	0	0	0
91	Parshiwani Nagar Panchayat	NP	Nagpur	0.4	0	0	0
92	Patan Nagar Panchayat	NP	Satara	1	0	0	0
93	Patoda Nagar Panchayat	NP	Beed	0.8	0	0	0
94	Peth Nagar Panchayat	NP	Nashik	2.4	0	0	0
95	Phulambri Nagar Panchayat	NP	Aurangabad				
96	Poladpur Nagar Panchayat	NP	Raigad	0.64	0	0	0
97	Pombhurna Nagar Panchayat	NP	Chandrapur	0.72	0	0	0
98	Ralegaon Nagar Panchayat	NP	Yavatmal	1.25	0	0	0
99	Renapur Nagar Panchayat	NP	Latur	0.3	0	0	0
100	Sadak-Arjuni Nagar Panchayat	NP	Gondia	0.96	0	0	0
101	Sakri Nagar Panchayat	NP	Dhule	1.4	0	0	0
102	Salekasa Nagar Panchayat	NP	Gondia	0.96	0	0	0
103	Samudrapur Nagar Panchayat	NP	Wardha	0.5	0	0	0
104	Sangrampur Nagar Panchayat	NP	Buldhana	0.2	0	0	0
105	Sawali Nagar Panchayat	NP	Chandrapur	0.3	0	0	0
106	Selu Nagar Panchayat	NP	Wardha	0.8	0	0	0
107	Sengaon Nagar Panchayat	NP	Hingoli	0.15	0	0	0
108	Shahapur Nagar Panchayat	NP	Thane	0.5	0	0	0
109	Shendurni Nagarpanchayat	NP	Jalgaon	0		0	0
110	Shirala Nagar Panchayat	NP	Sangli	1.8	0	0	0
111	Shirdi Nagar Panchayat	NP	Ahmednagar	10	16	9	90
112	Shirur Anantpal Nagar Panchayat	NP	Latur	0.4	0	0	0
113	Shirur Kasar Nagar Panchayat	NP	Beed	0.3	0	0	0

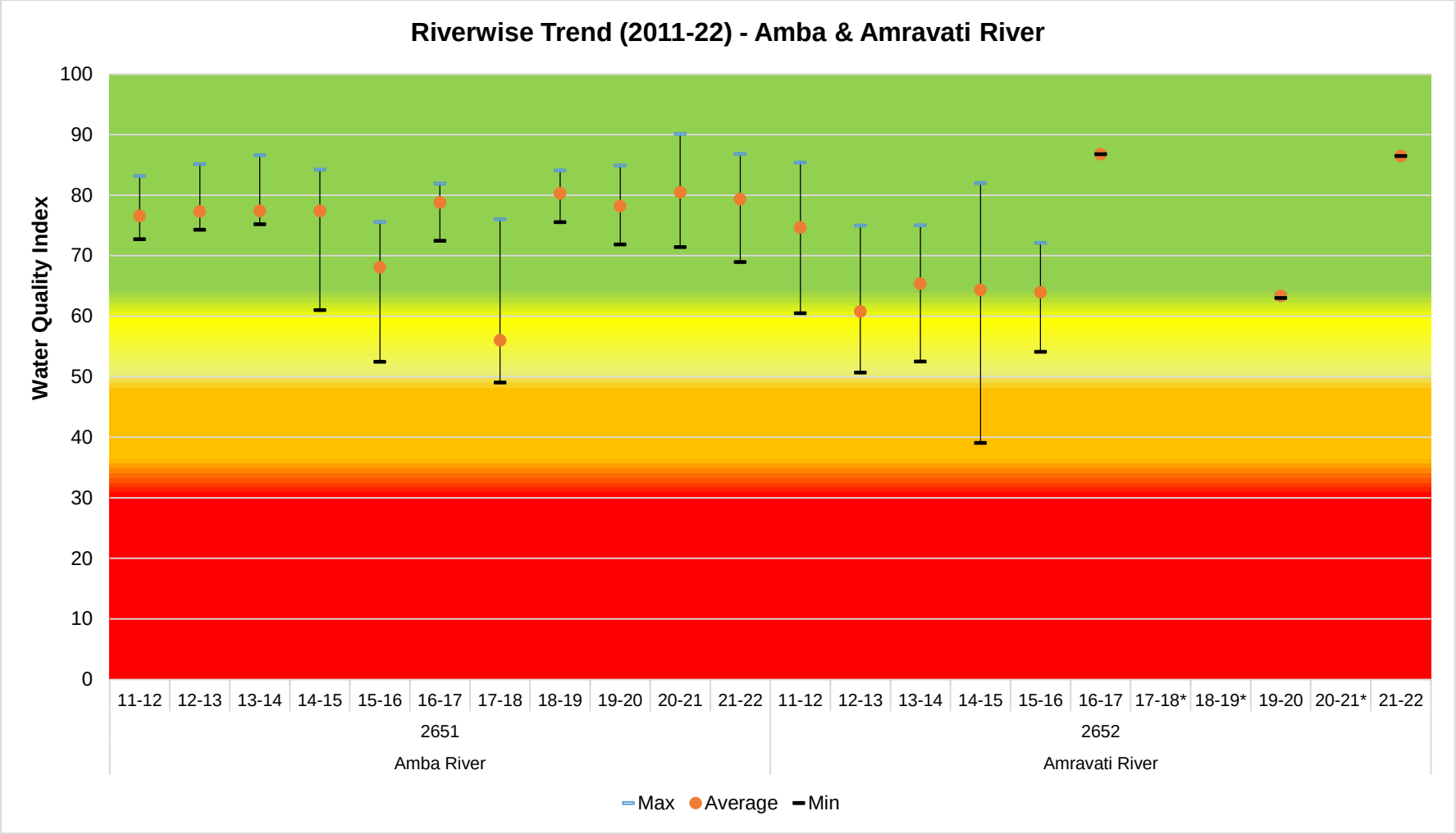
Sr No.	Name of Nagar Panchayat	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
114	Sindewahi Nagar Panchayat	NP	Chandrapur	0.4	0	0	0
115	Sindkheda Nagar Panchayat	NP	Dhule	1.6	0	0	0
116	Sironcha Nagar Panchayat	NP	Gadchiroli	0.8	0	0	0
117	Soyagaon Nagar Panchayat	NP	Aurangabad				
118	Surgana Nagar Panchayat	NP	Nashik	0.8	0	0	0
119	Tala Nagar Panchayat	NP	Raigad	0.75	0	0	0
120	Talasari Nagar Panchayat	NP	Palghar			0	
121	Tiwasa Nagar Panchayat	NP	Amravati	0.5	0	0	0
122	Vadgaon Nagarpanchayat	NP	Pune	2.2	0	0	0
123	Vaduj Nagar Panchayat	NP	Satara	2.1	0	0	0
124	Vaibhavwadi Nagar Panchayat	NP	Sindhudurg	0.25	0	0	0
125	Vikramgad Nagar Panchayat	NP	Palghar	1.4	0	0	0
126	Wada Nagar Panchayat	NP	Palghar	2	0	0	0
127	Wadwani Nagar Panchayat	NP	Beed	0.094	0	0	0
128	Washi Nagar Panchayat	NP	Osmanabad	0.8	0	0	0
129	Zari Jamni Nagar Panchayat	NP	Yavatmal	0.12	0	0	0

Cantonment

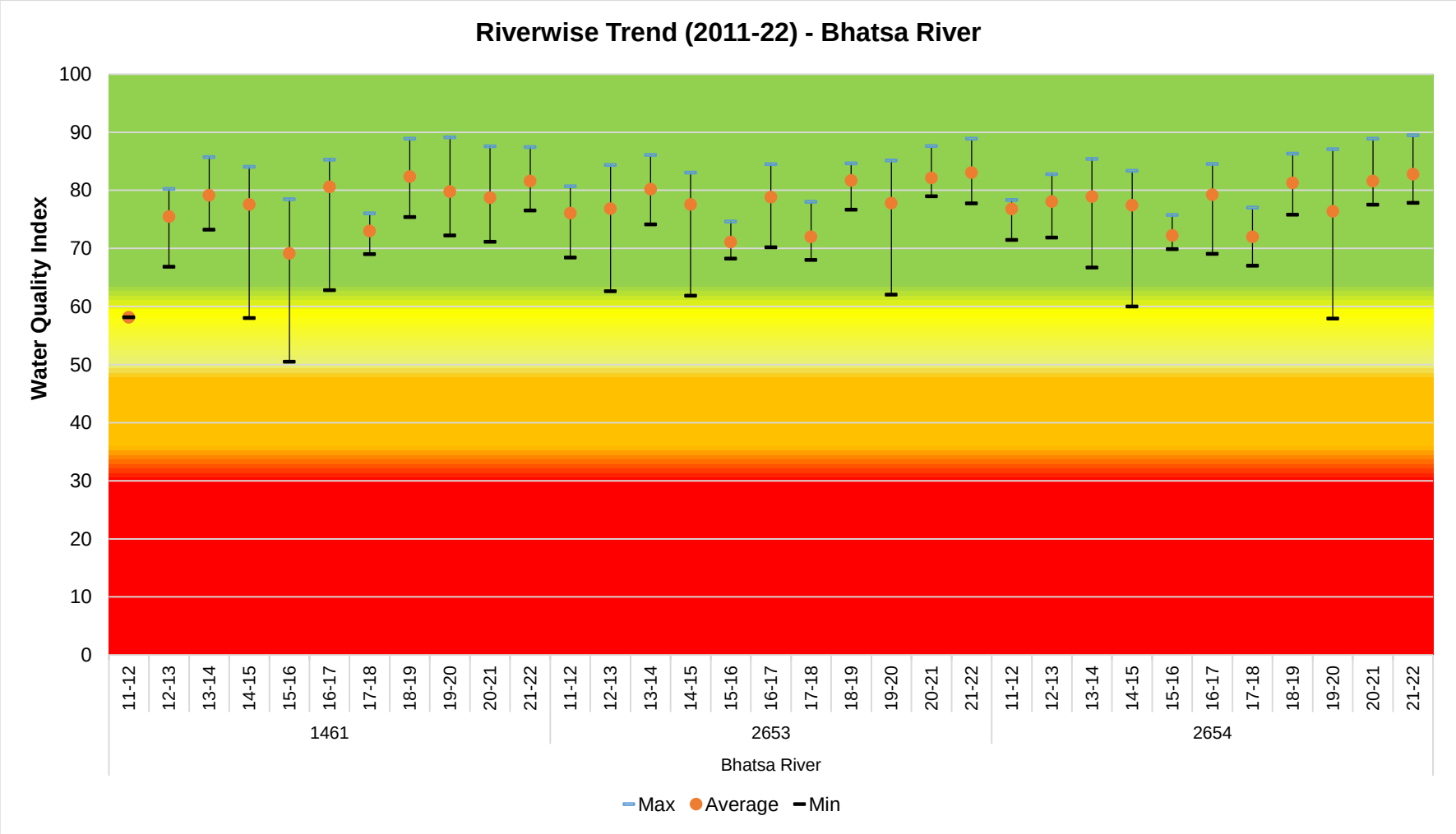
Sr.No.	Name of Municipal Council	Class	District	Sewage Generation MLD	Sewage Treatment Plant (STP) Installed Capacity	Sewage Treatment (MLD)	% of Sewage Treatment
1	Aurangabad Cantonment	Cantonment	Aurangabad	1.5	0	0	0.00
2	Bhinagar Cantonment	Cantonment	Ahmednagar	2	0	0	0.00
3	Dehu Cantonment	Cantonment	Pune	6	0	0	0.00
4	Devalali Cantonment	Cantonment	Nashik	0.74	0	0	0.00
5	Kamptee Cantonment	Cantonment	Nagpur	0	0	0	0.00
6	Khadki Cantonment	Cantonment	Pune	2.08	9.2	1.5	72.12
7	Pune Cantonment	Cantonment	Pune	22.8	20	9	39.47

Annex V- Data Sets Of Water Quality Monitored in 2021-2022

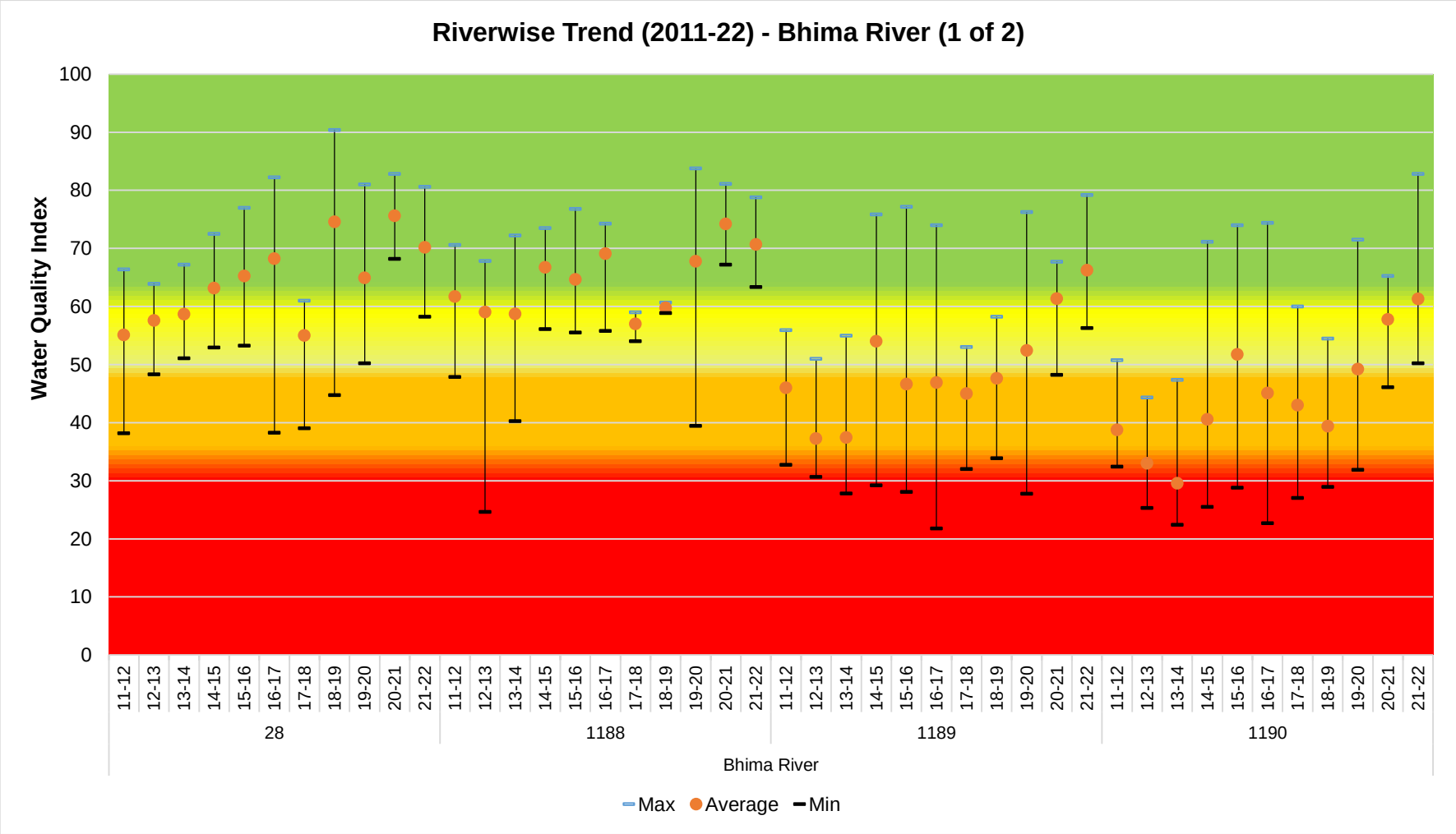
Annex VI - Riverwise Trend In WQI (2011-22)



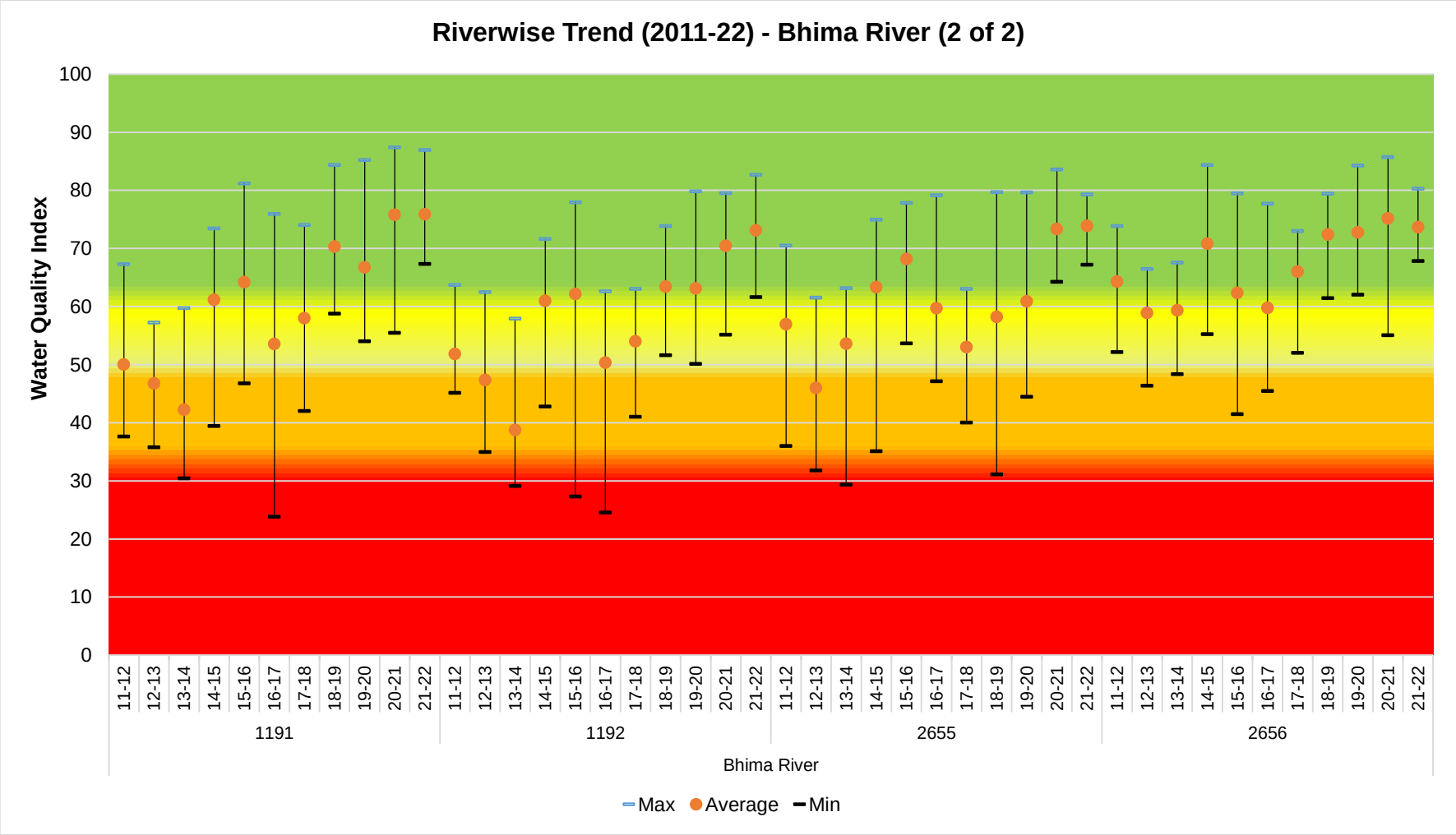
Note:* Stations are Dry/ No data available for respective year



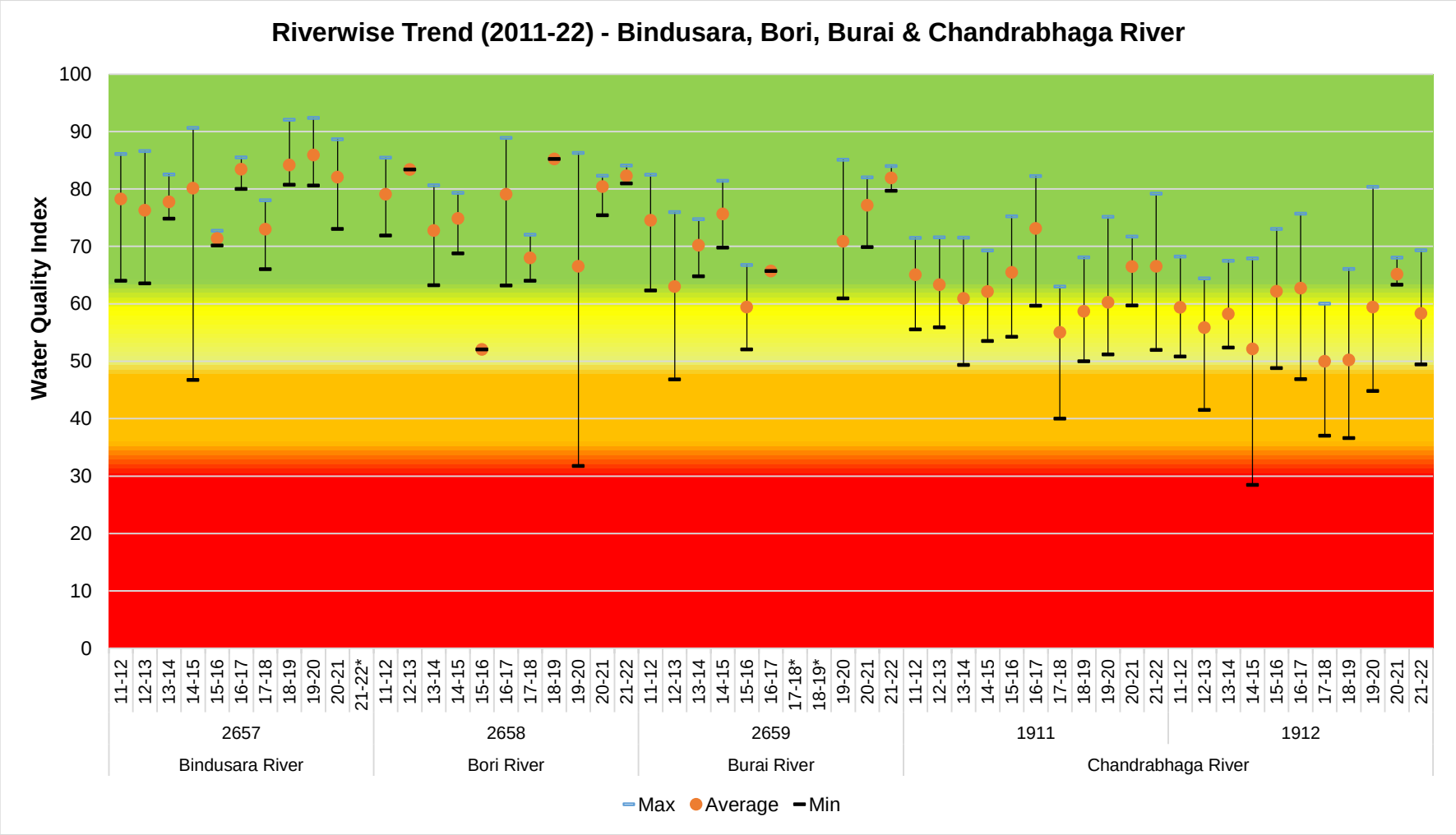
Note:* Stations are Dry/ No data available for respective year



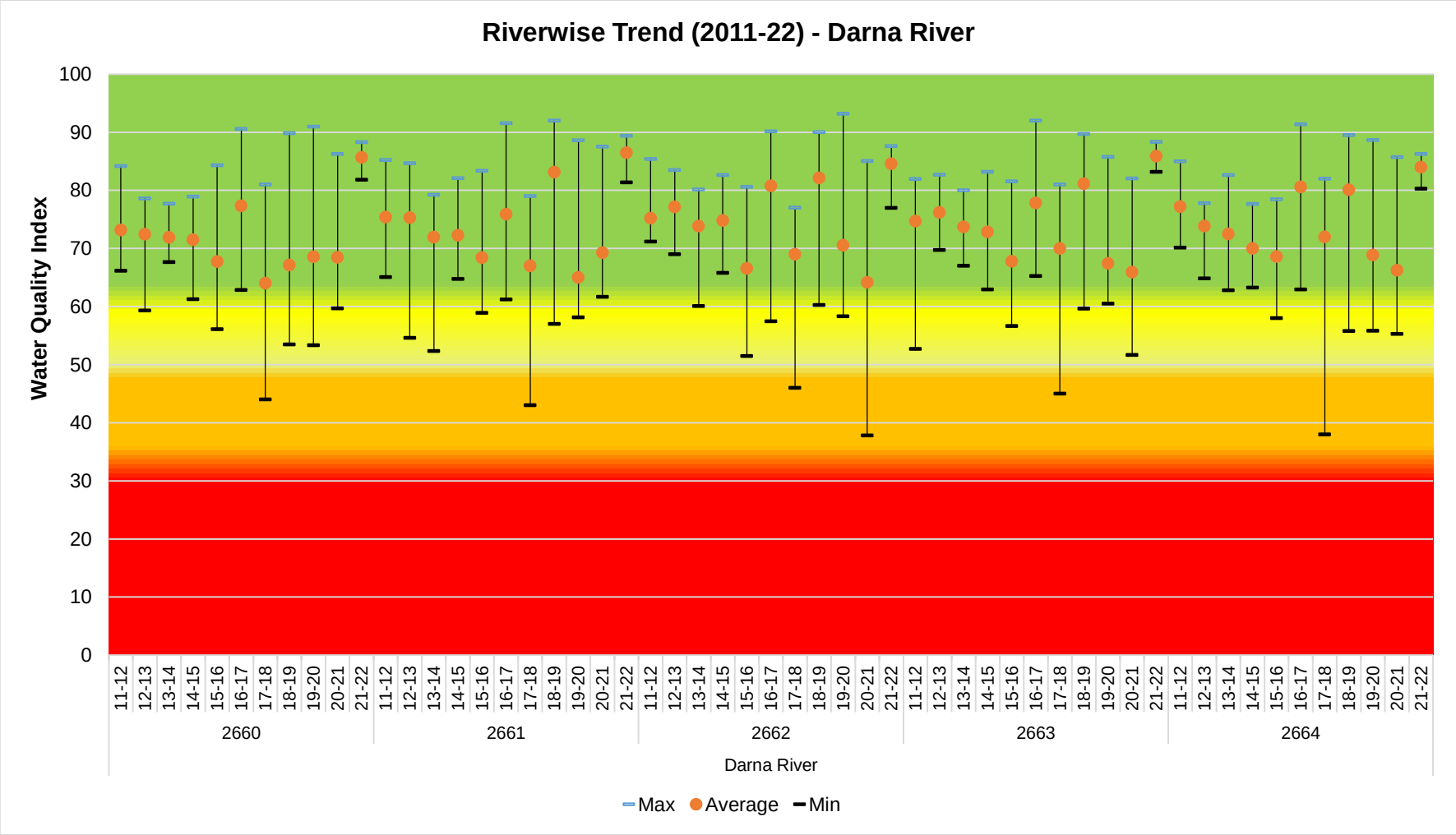
Note:* Stations are Dry/ No data available for respective year



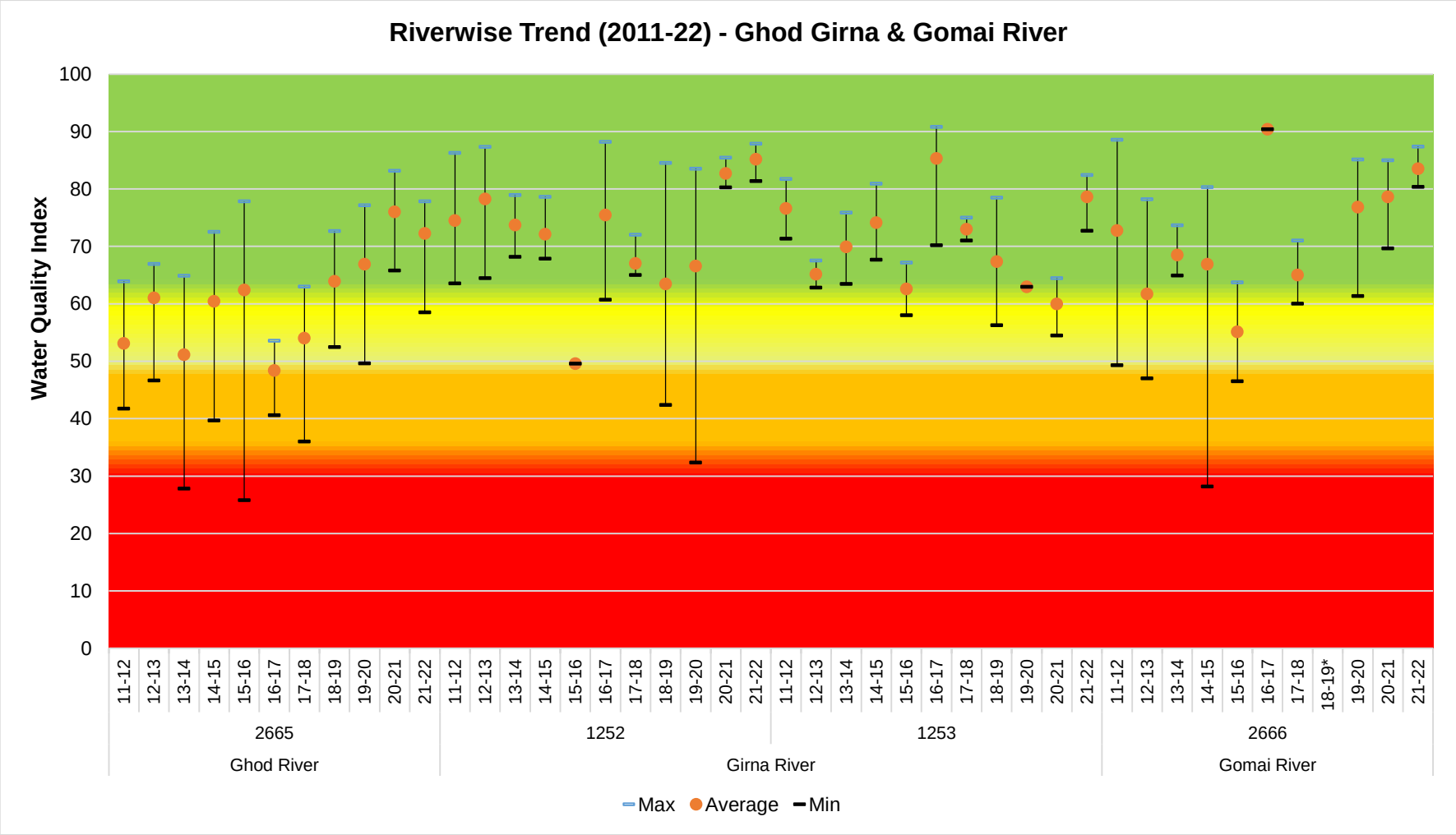
Note:* Stations are Dry/ No data available for respective year



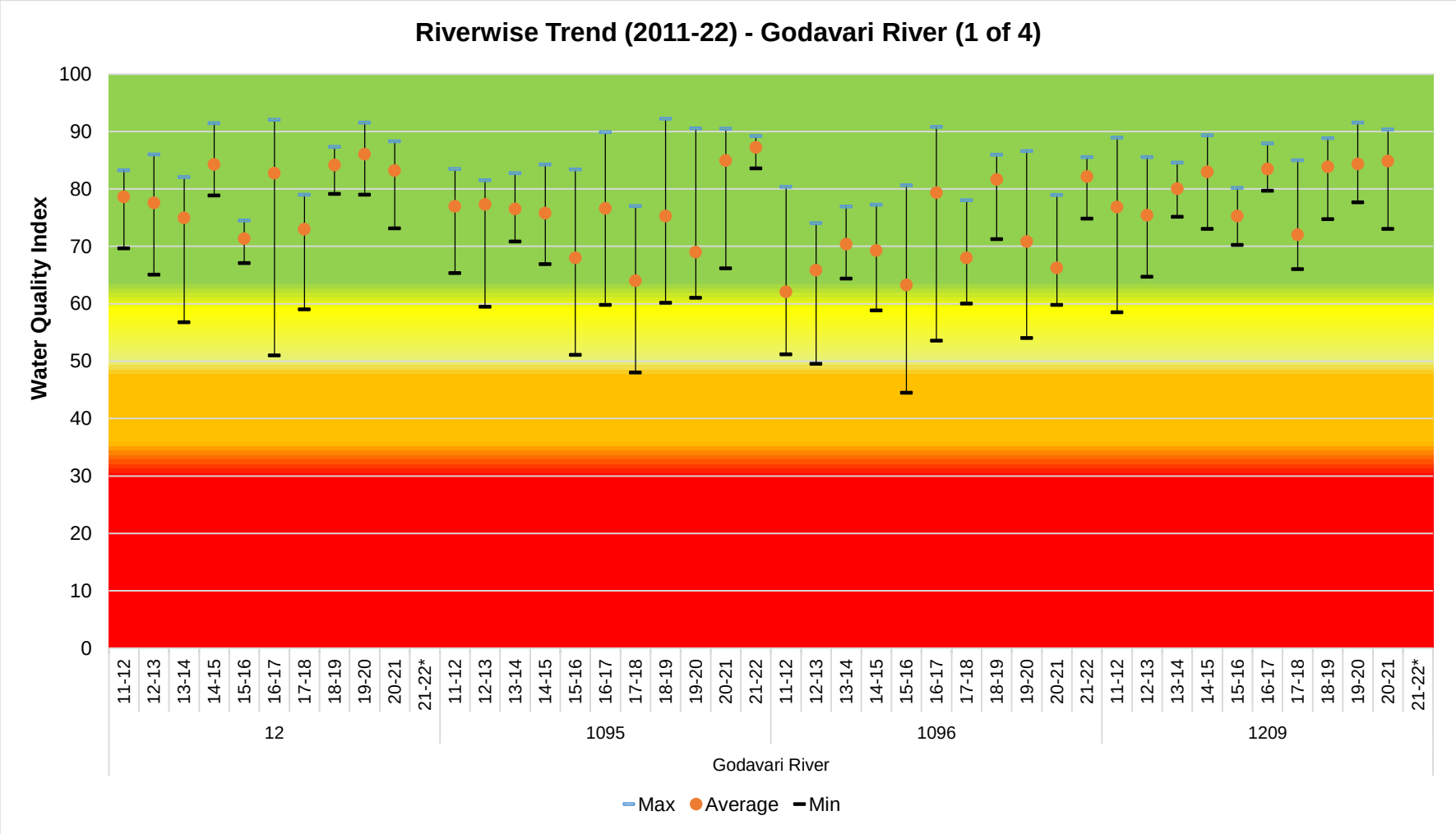
Note:* Stations are Dry/ No data available for respective year



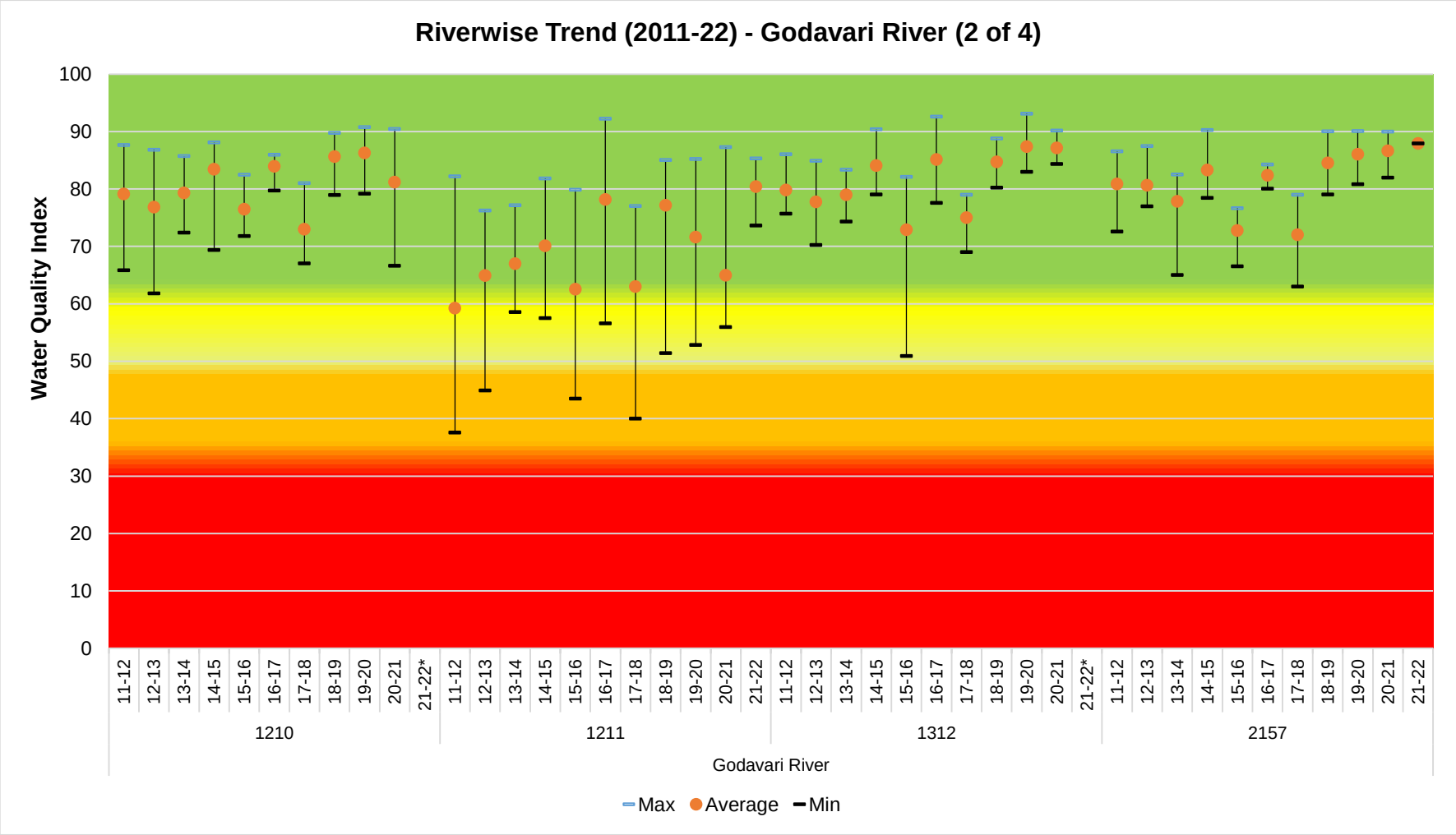
Note:* Stations are Dry/ No data available for respective year



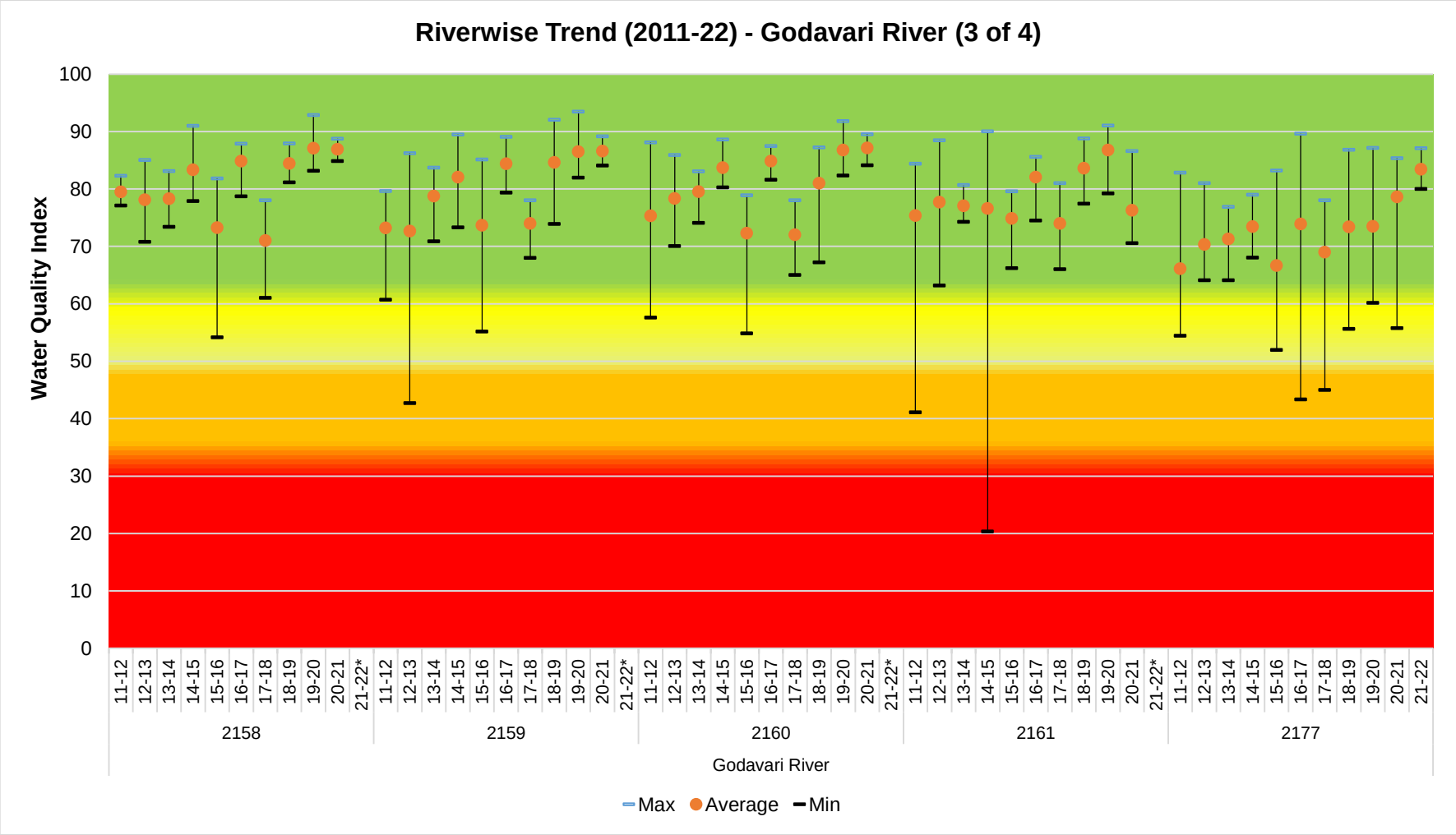
Note:* Stations are Dry/ No data available for respective year



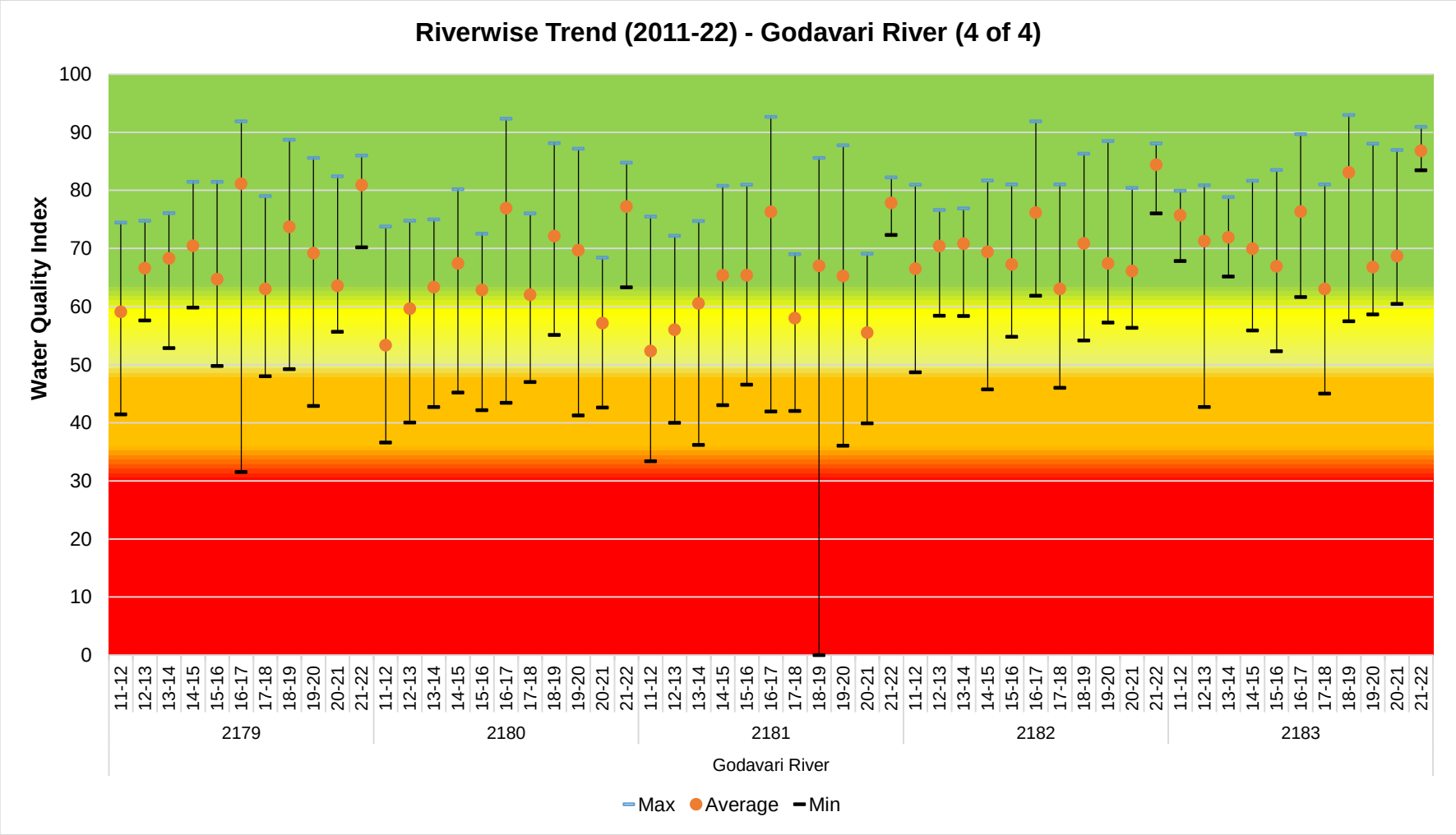
Note:* Stations are Dry/ No data available for respective year



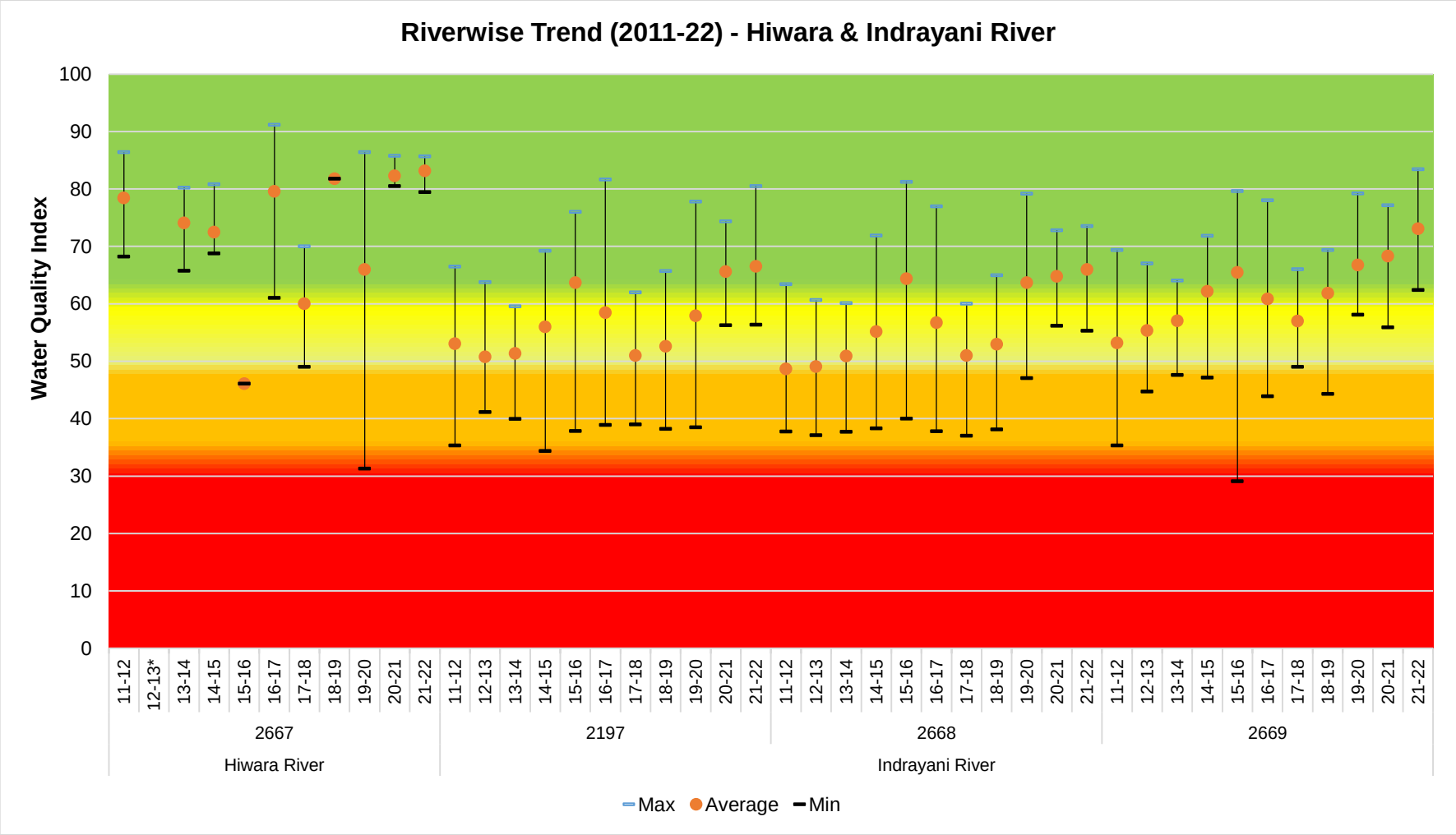
Note:* Stations are Dry/ No data available for respective year



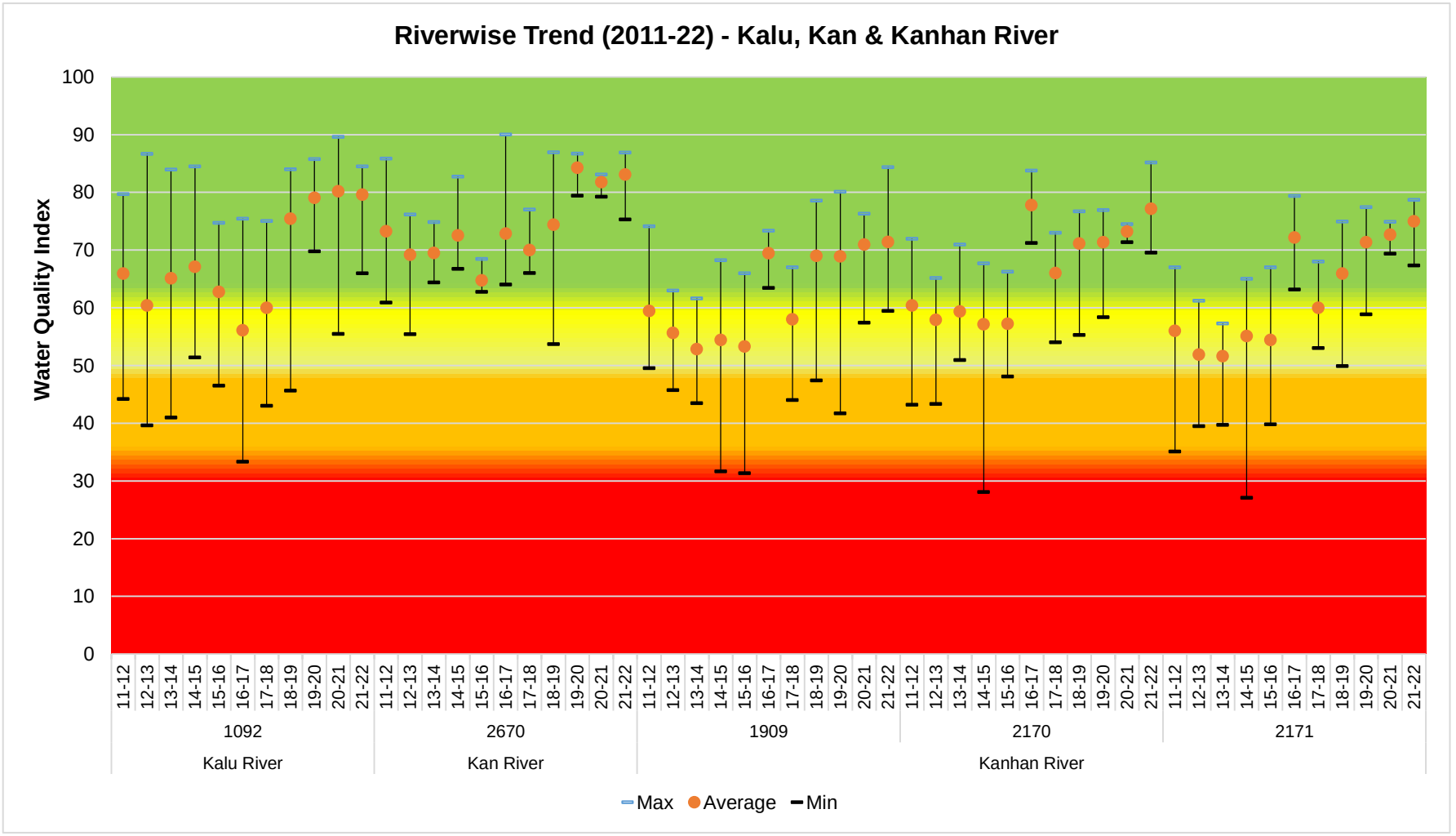
Note:* Stations are Dry/ No data available for respective year



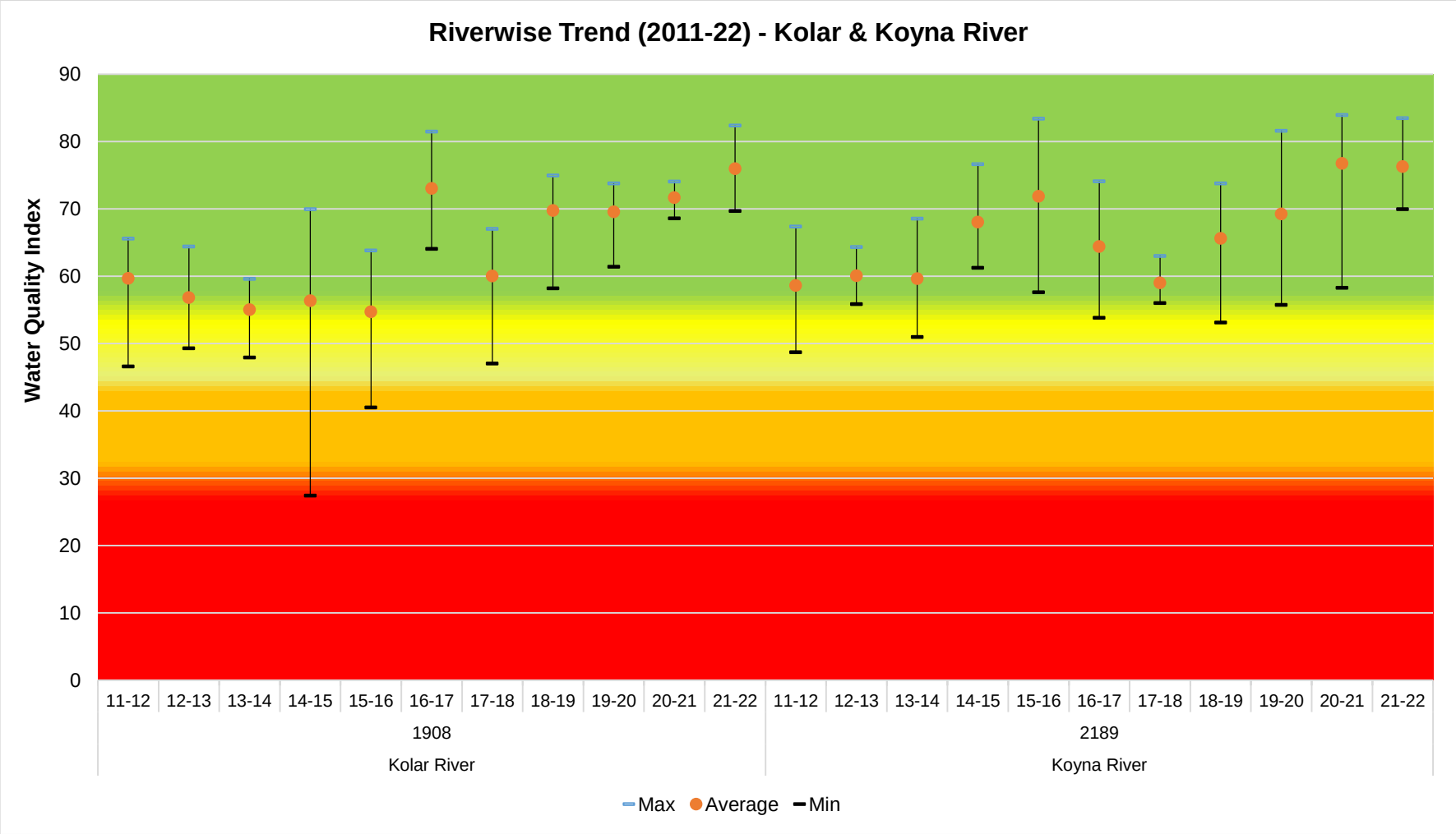
Note:* Stations are Dry/ No data available for respective year



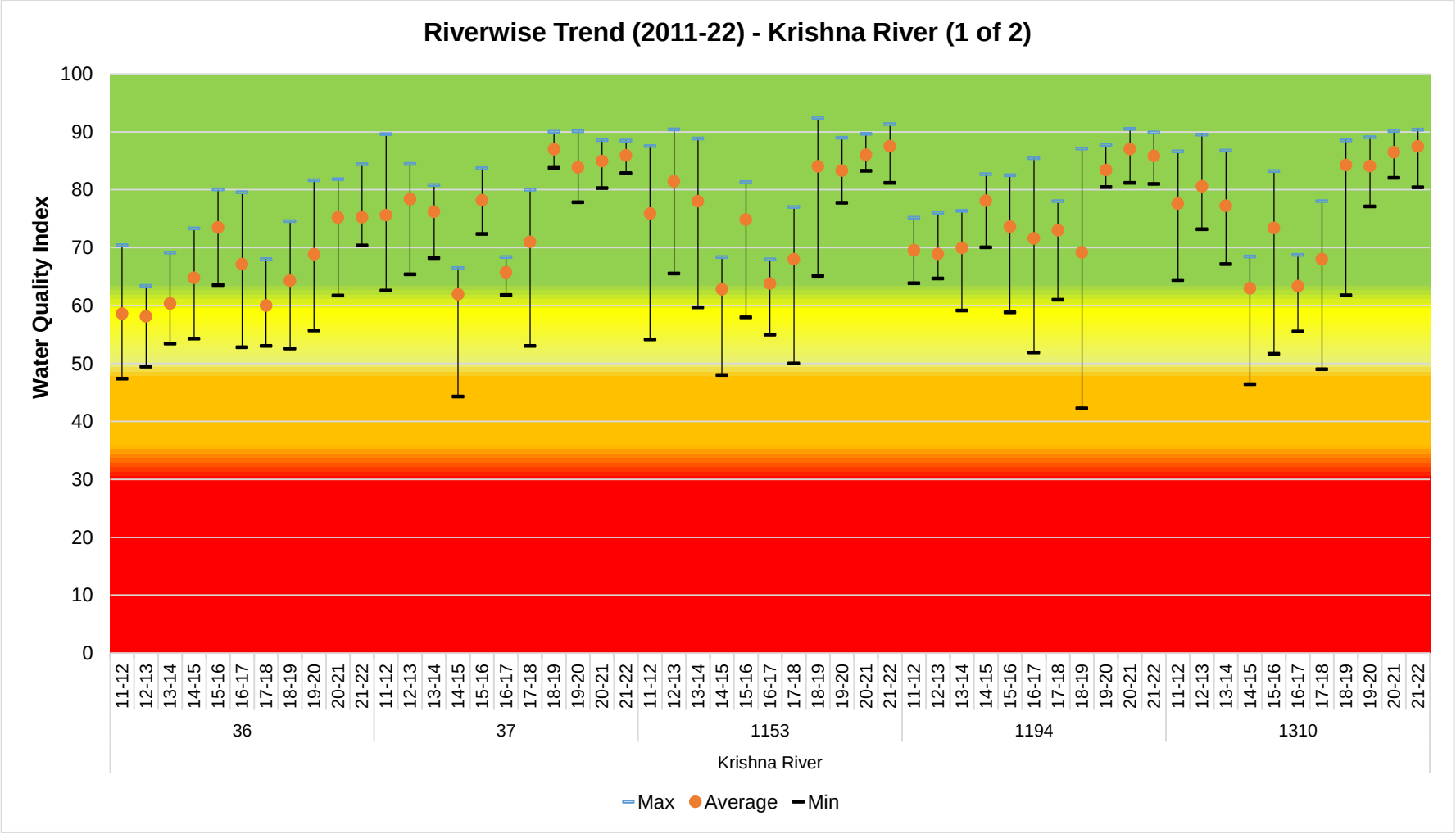
Note:* Stations are Dry/ No data available for respective year



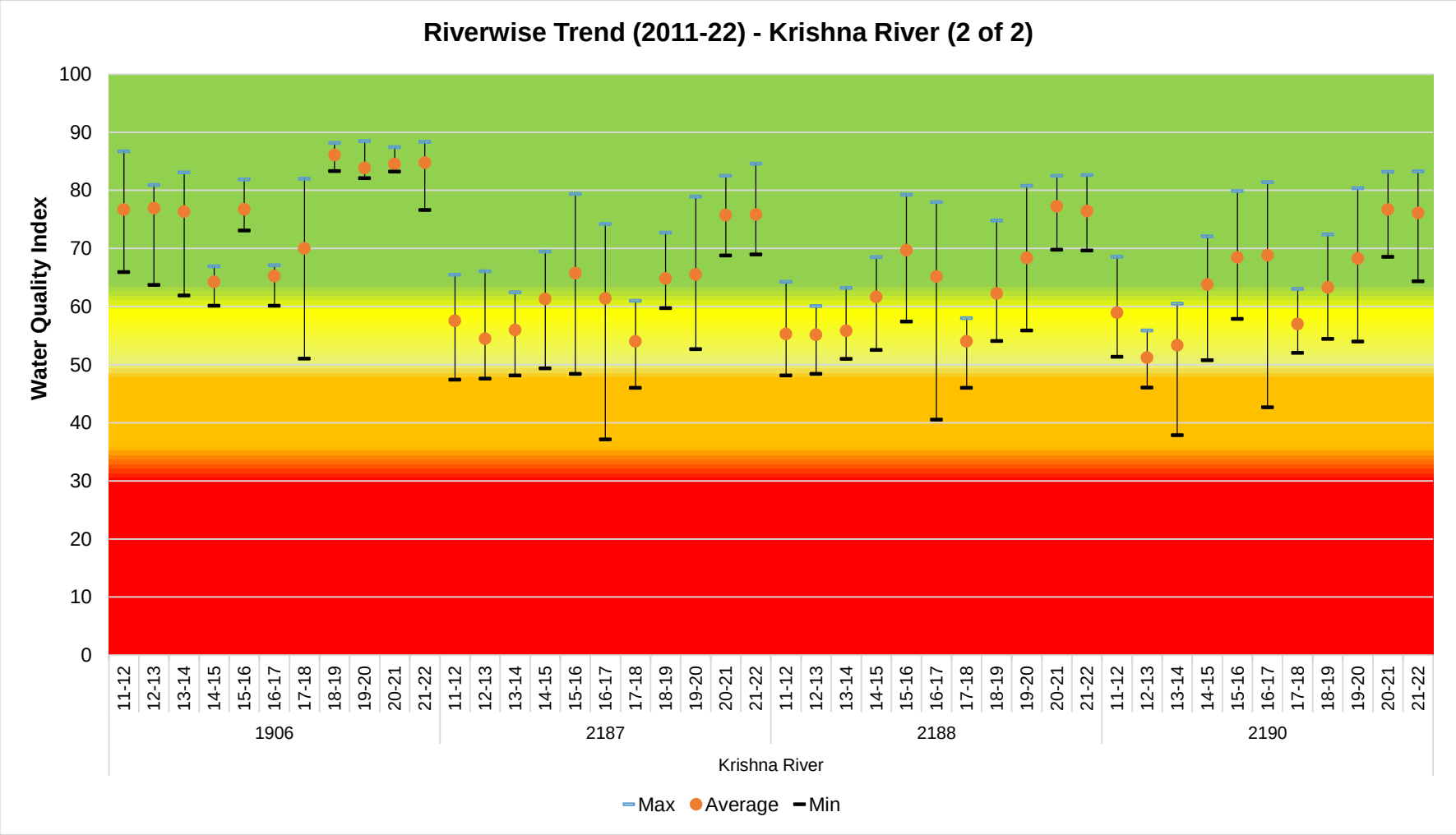
Note:* Stations are Dry/ No data available for respective year



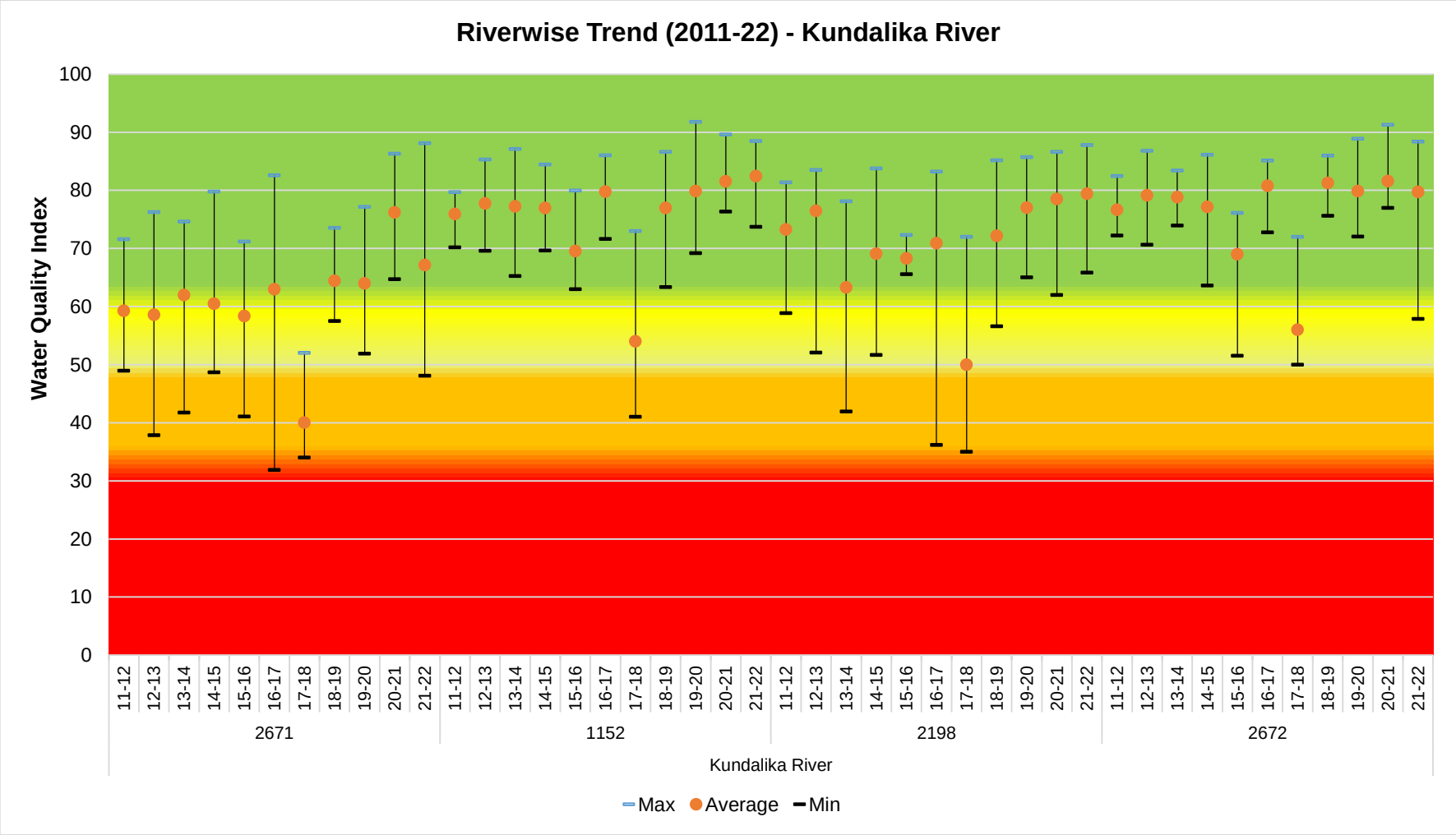
Note:* Stations are Dry/ No data available for respective year



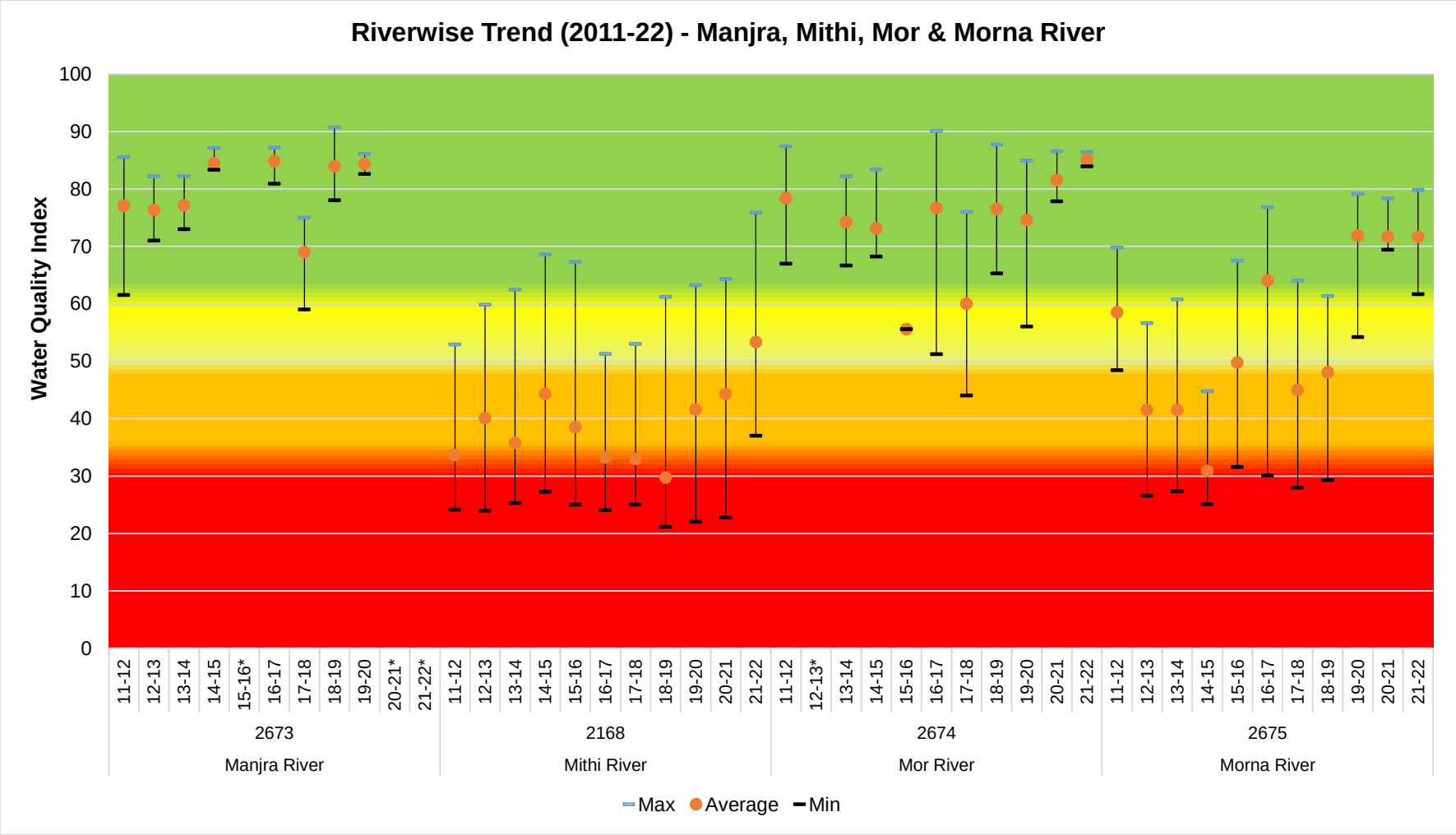
Note:* Stations are Dry/ No data available for respective year



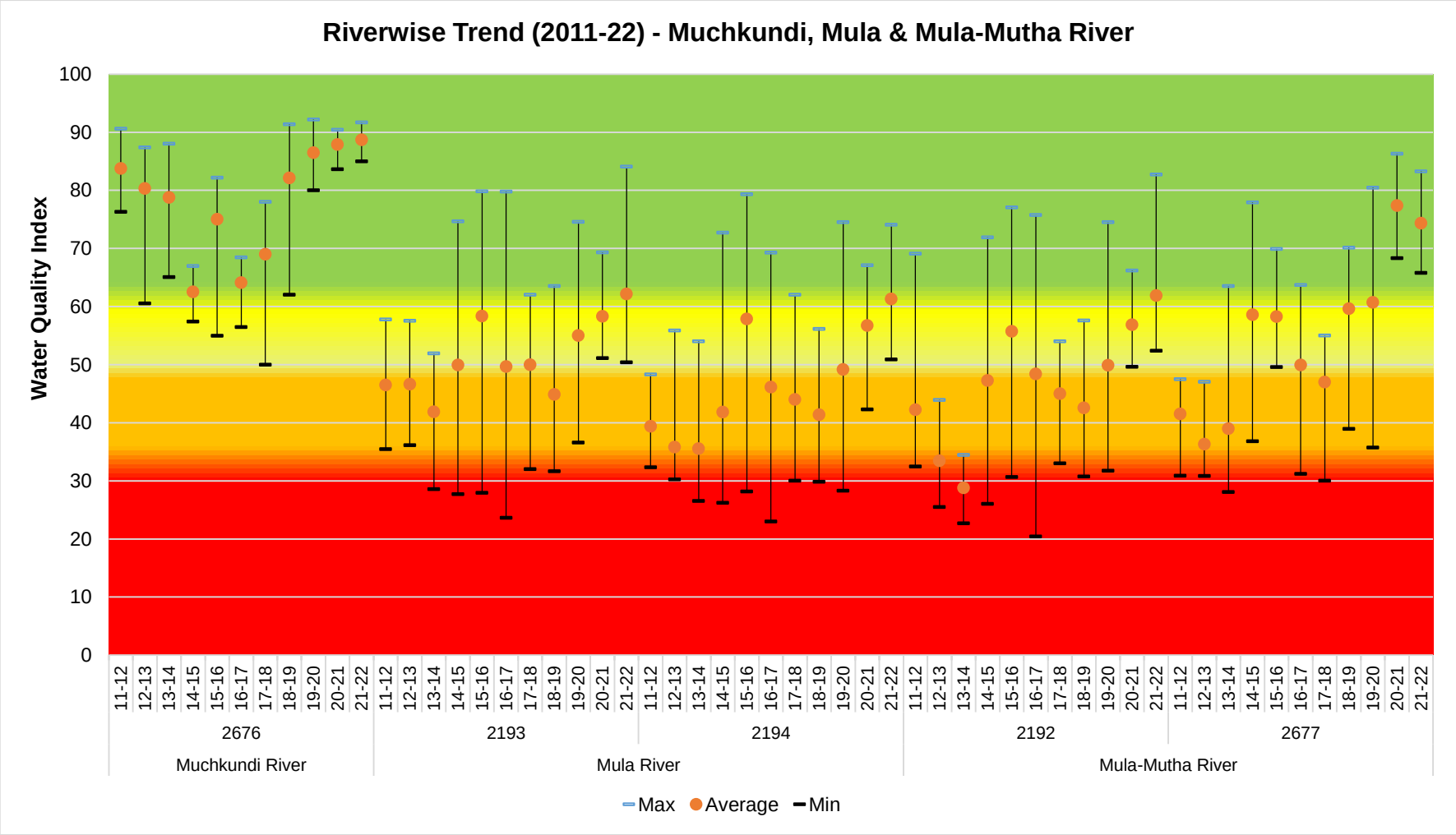
Note:* Stations are Dry/ No data available for respective year



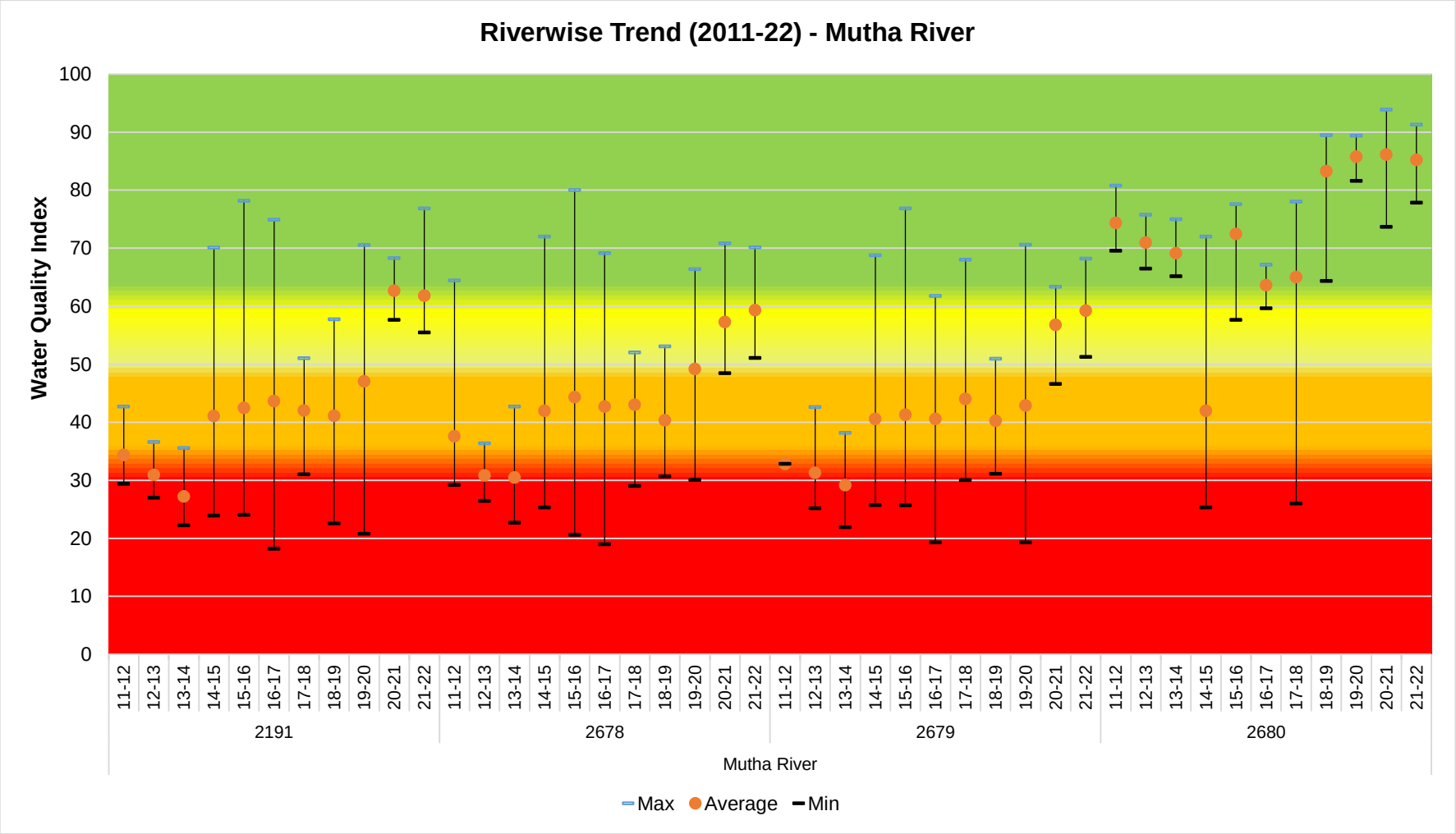
Note:* Stations are Dry/ No data available for respective year



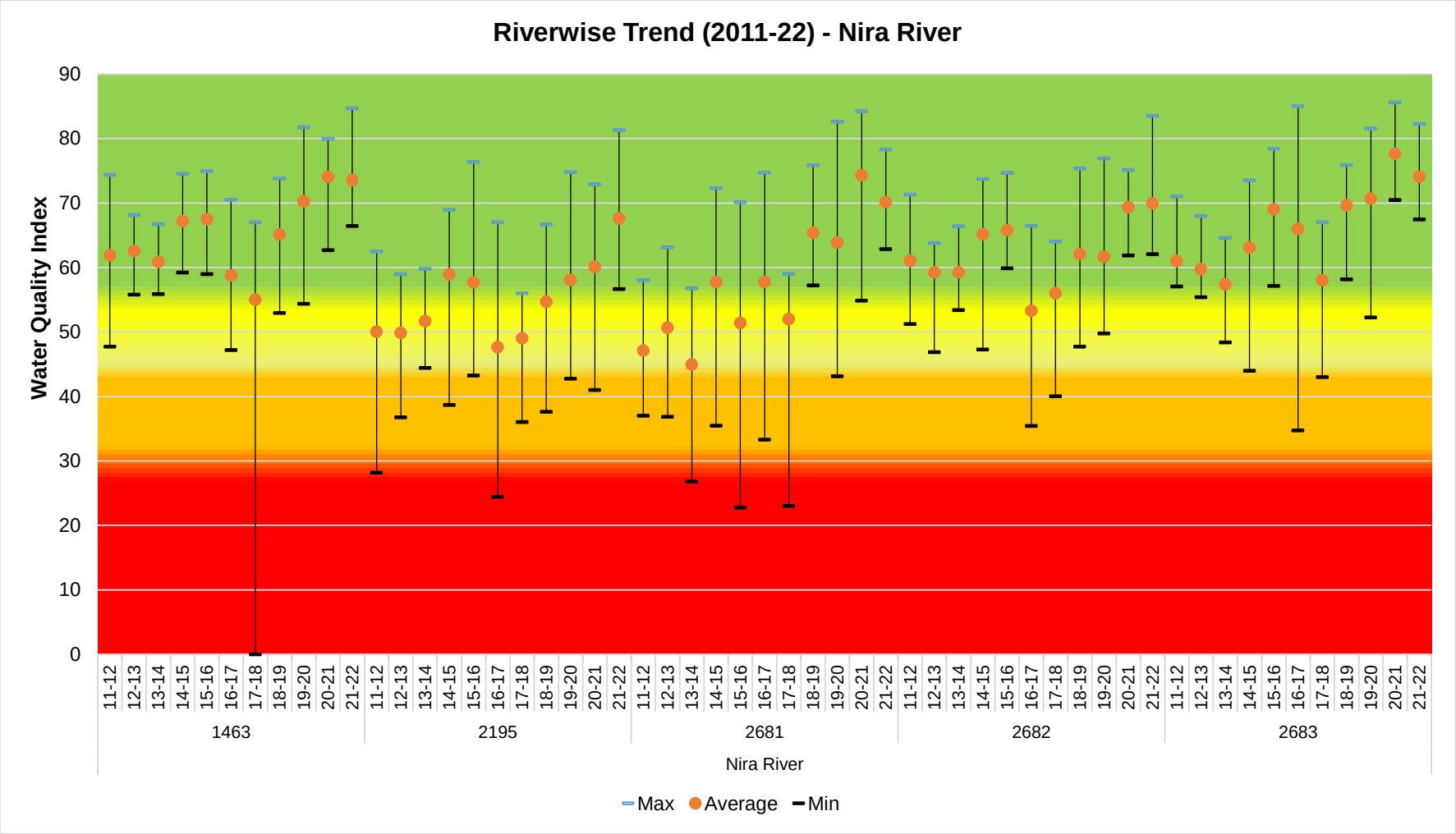
Note:* Stations are Dry/ No data available for respective year



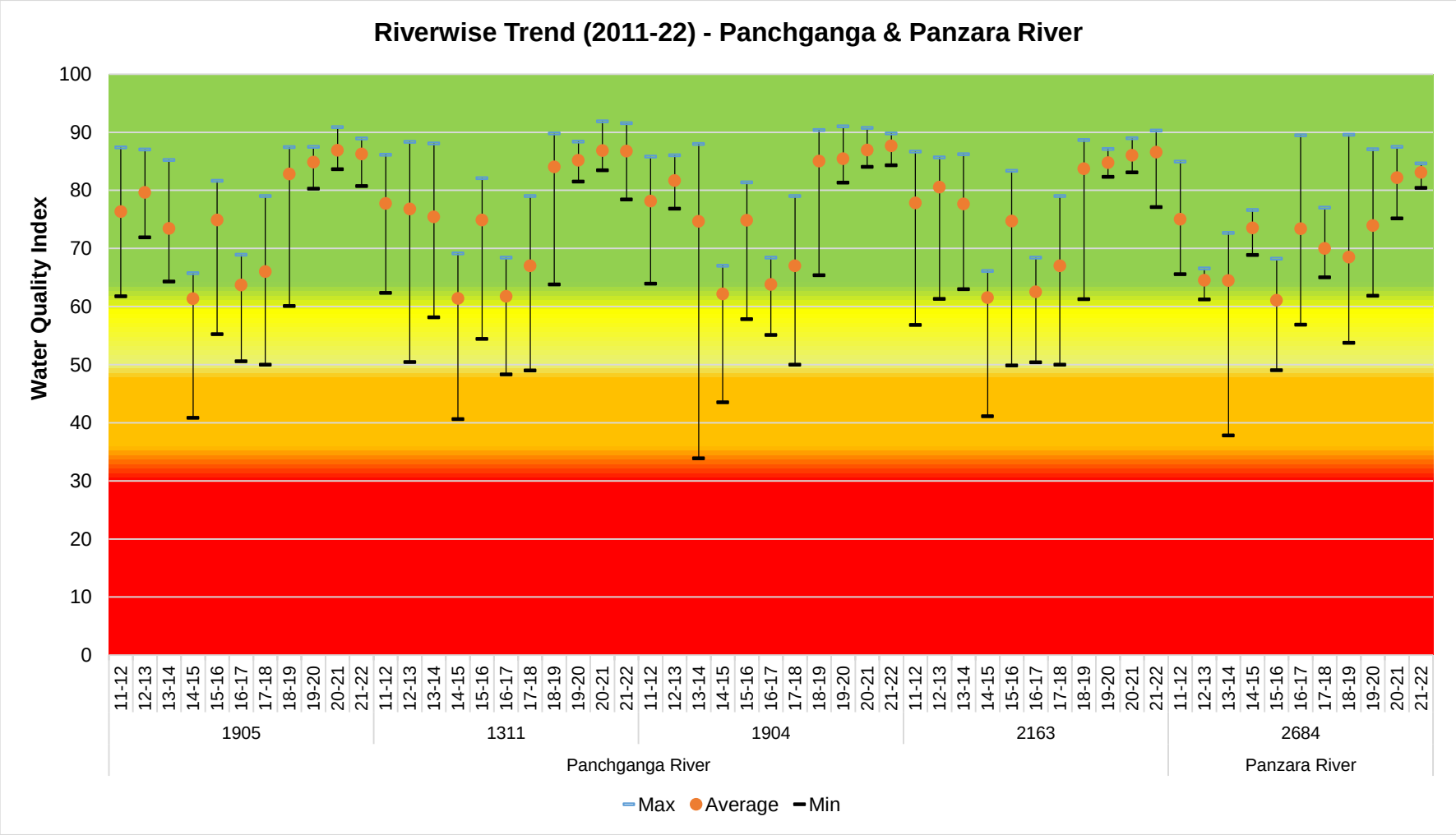
Note:* Stations are Dry/ No data available for respective year



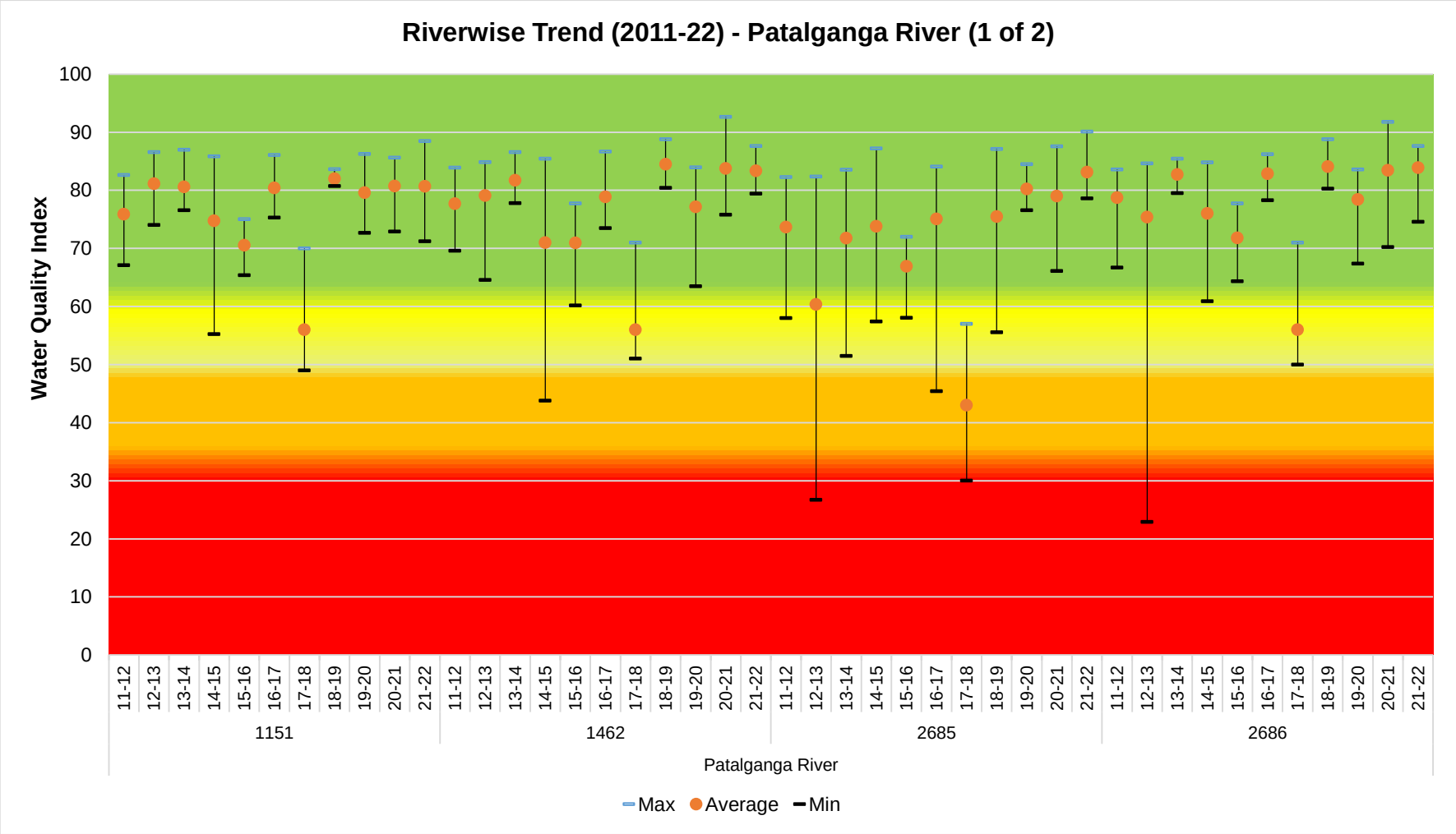
Note:* Stations are Dry/ No data available for respective year



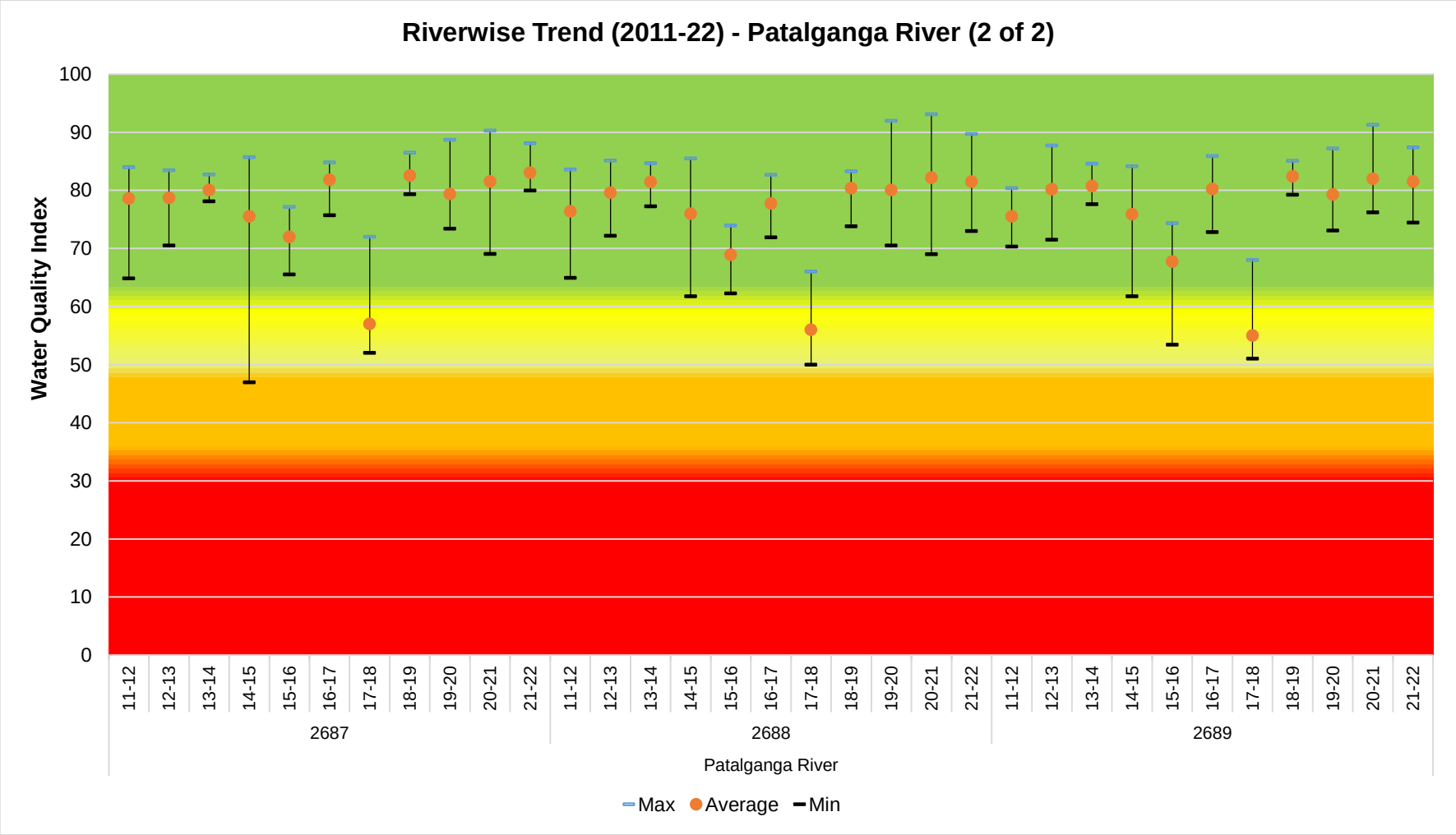
Note:* Stations are Dry/ No data available for respective year



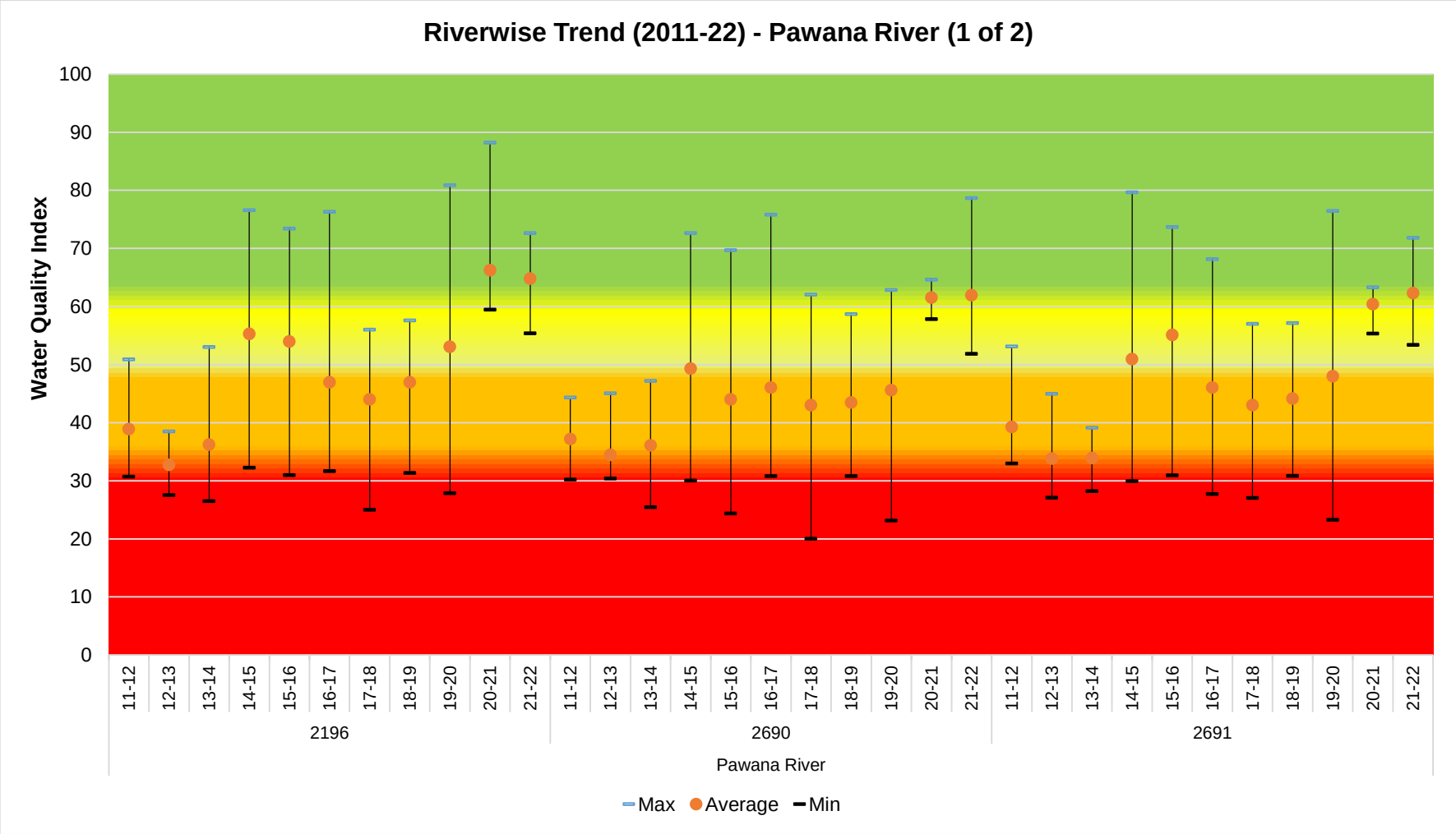
Note:* Stations are Dry/ No data available for respective year



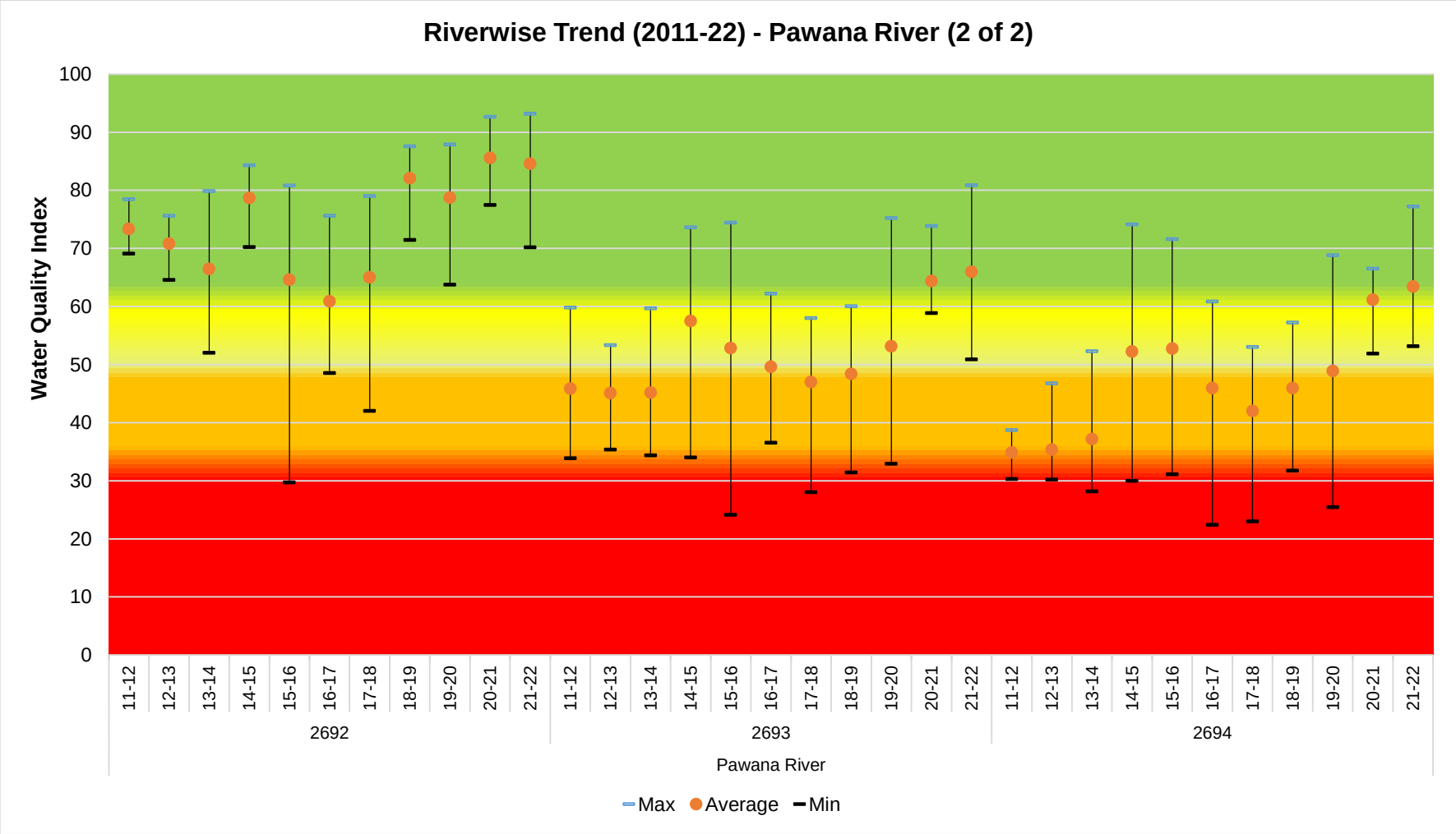
Note:* Stations are Dry/ No data available for respective year



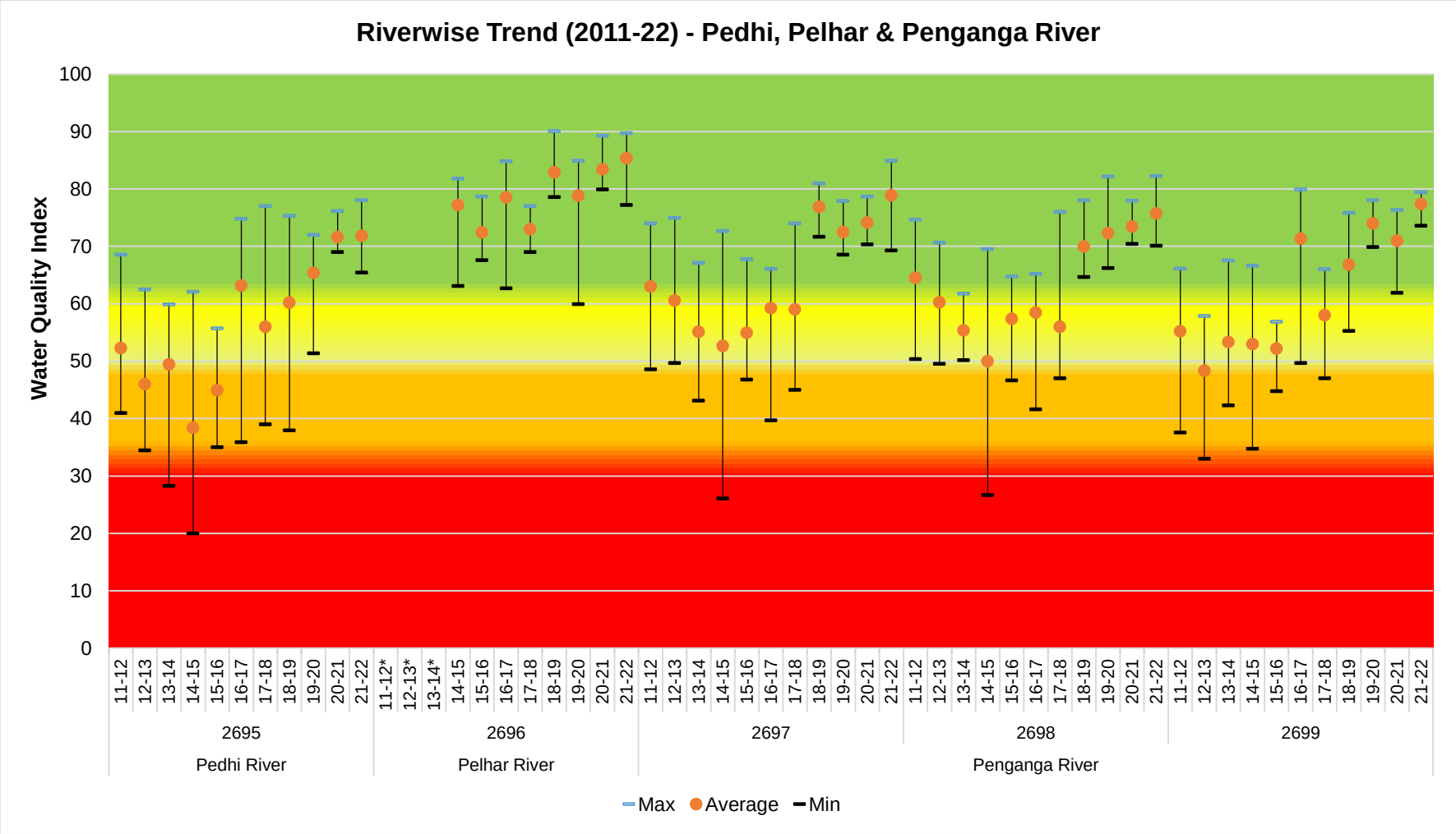
Note:* Stations are Dry/ No data available for respective year



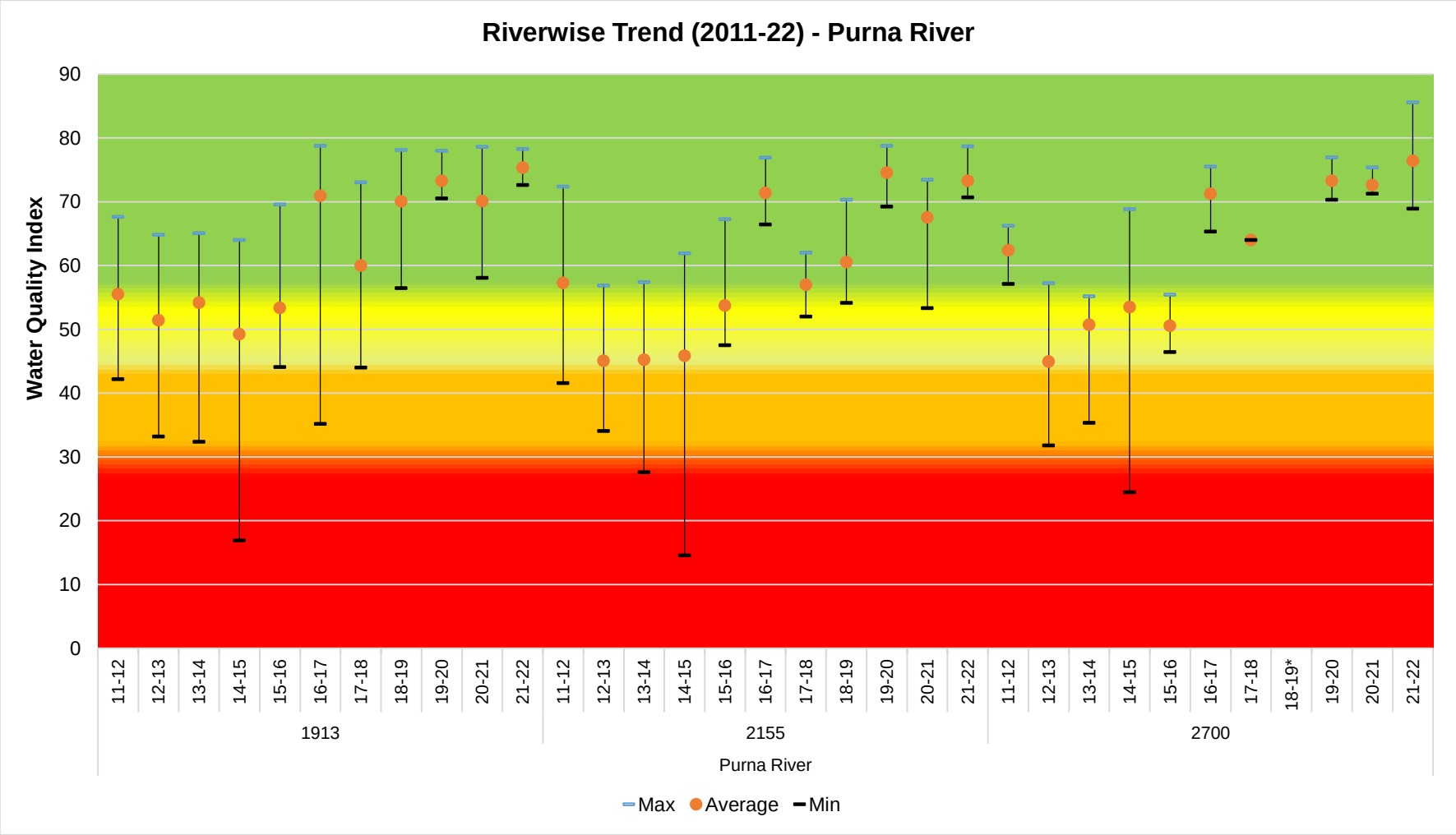
Note:* Stations are Dry/ No data available for respective year



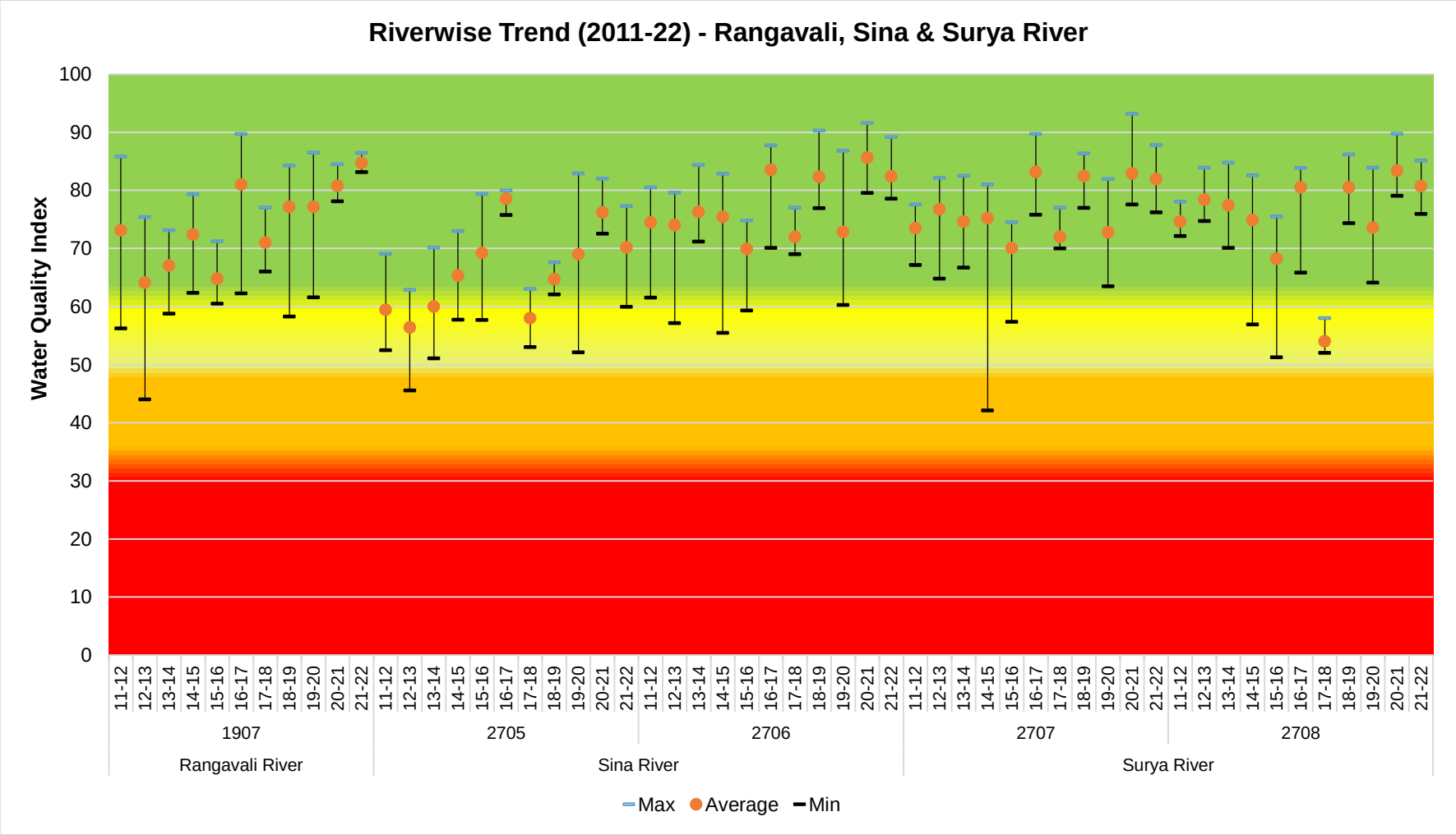
Note:* Stations are Dry/ No data available for respective year



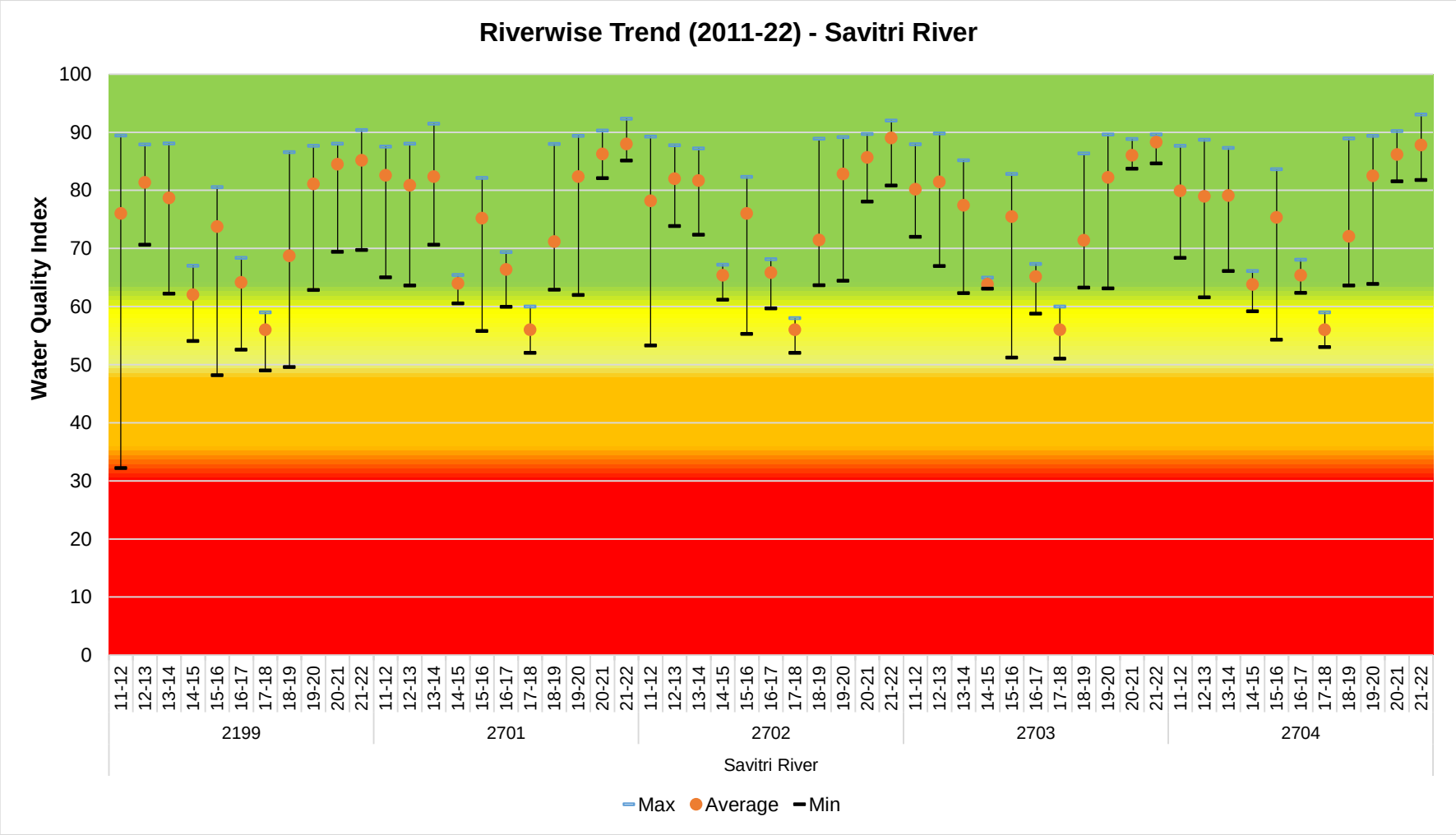
Note:* Stations are Dry/ No data available for respective year



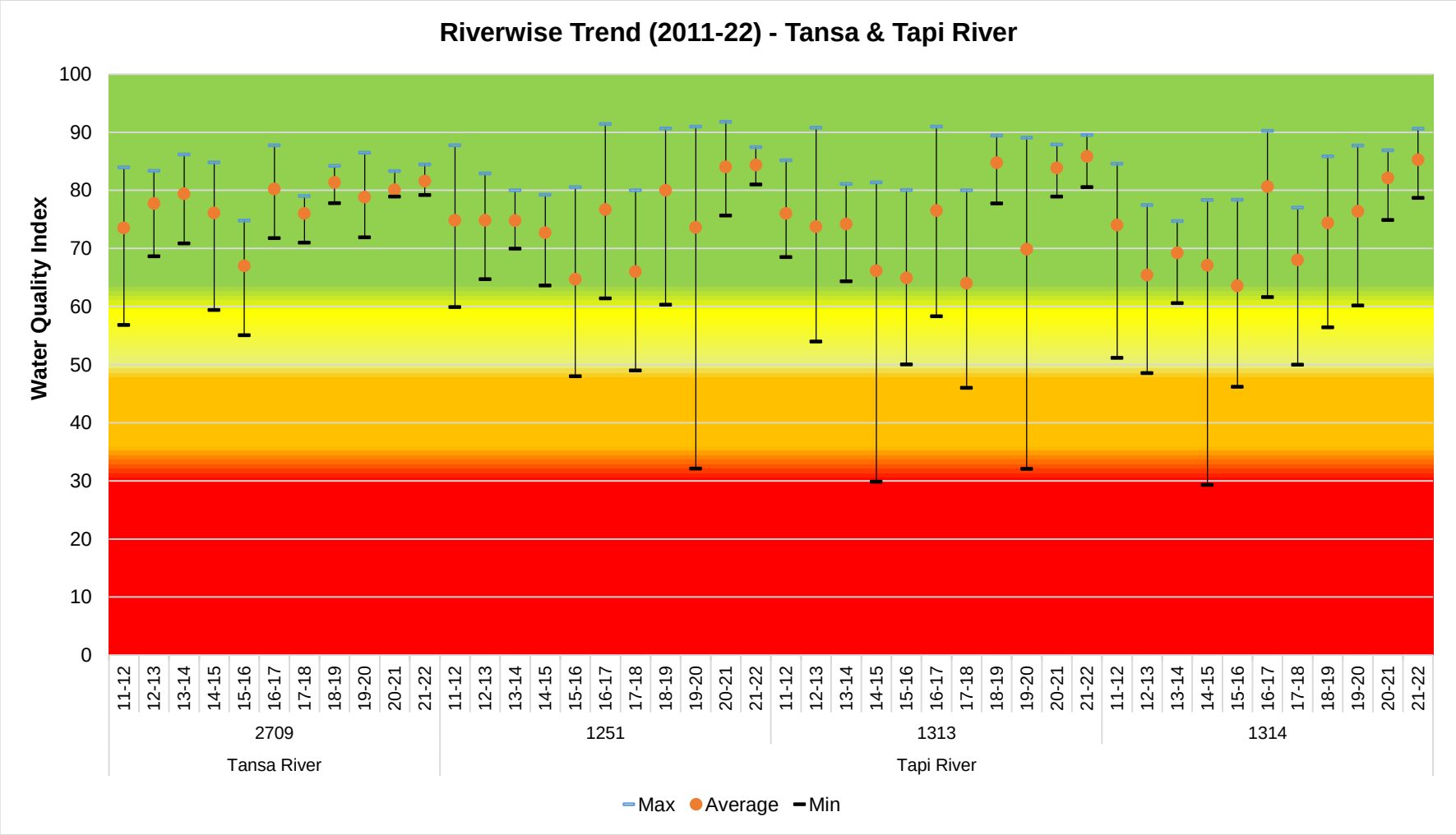
Note:* Stations are Dry/ No data available for respective year



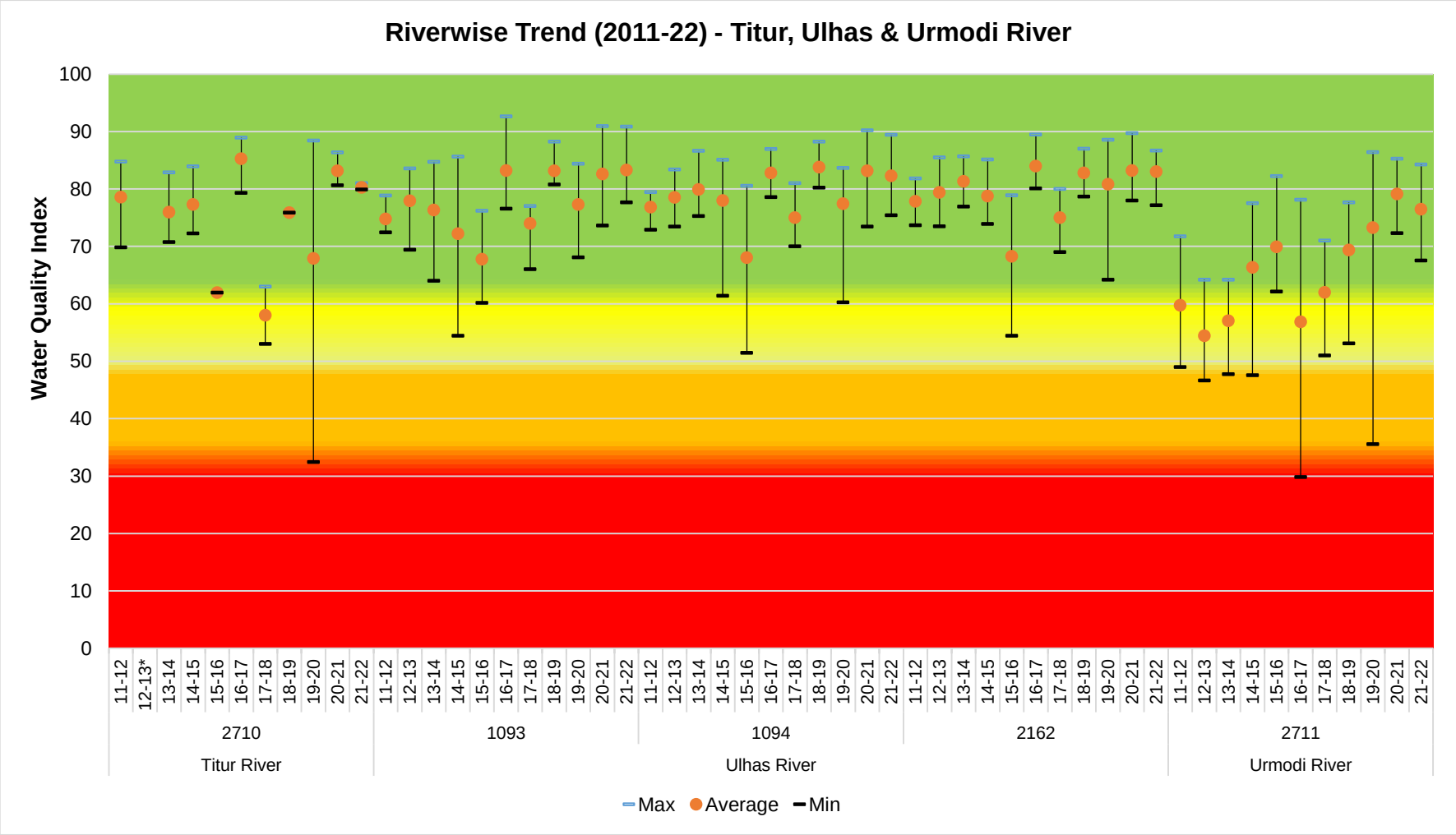
Note:* Stations are Dry/ No data available for respective year



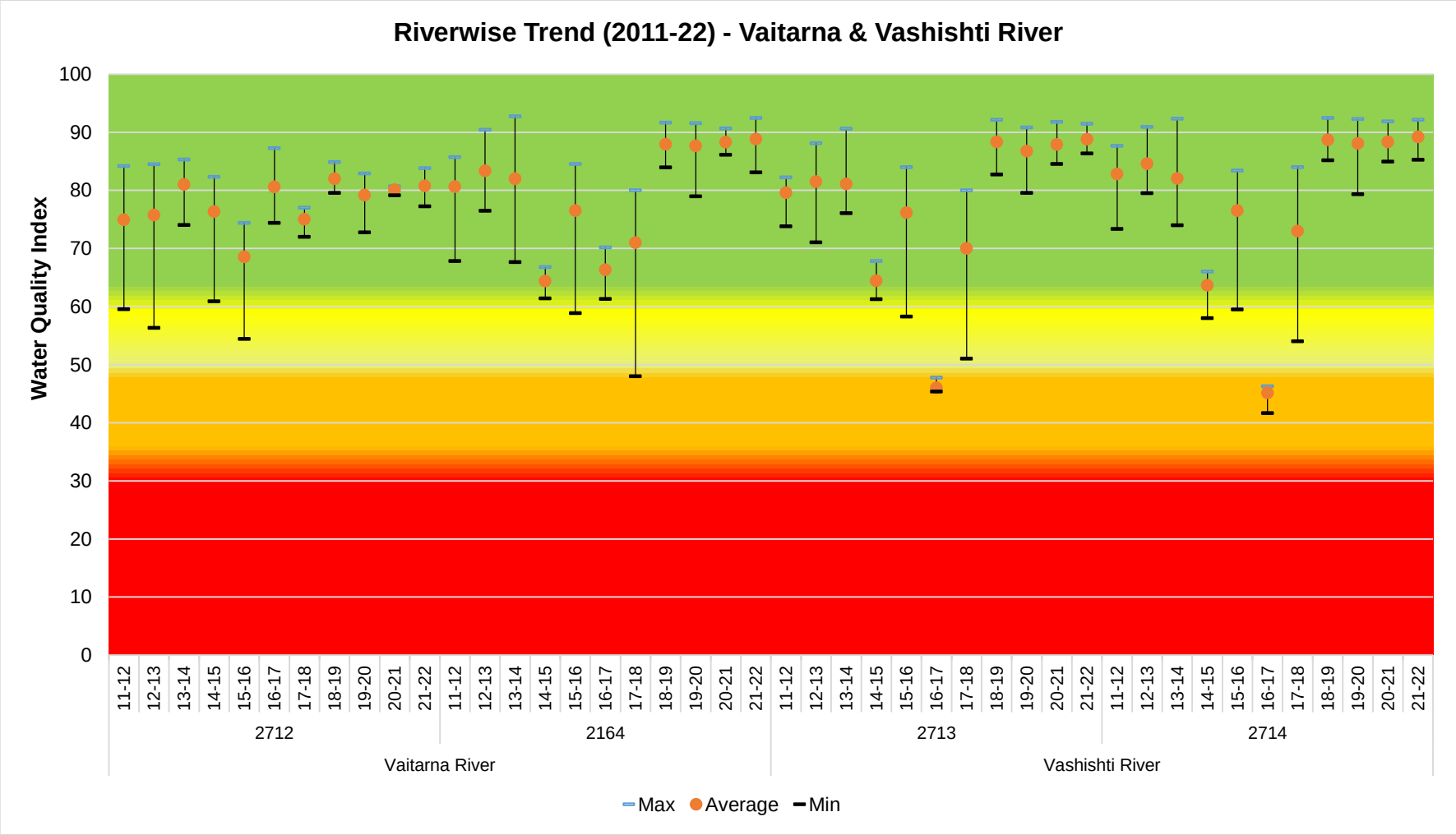
Note:* Stations are Dry/ No data available for respective year



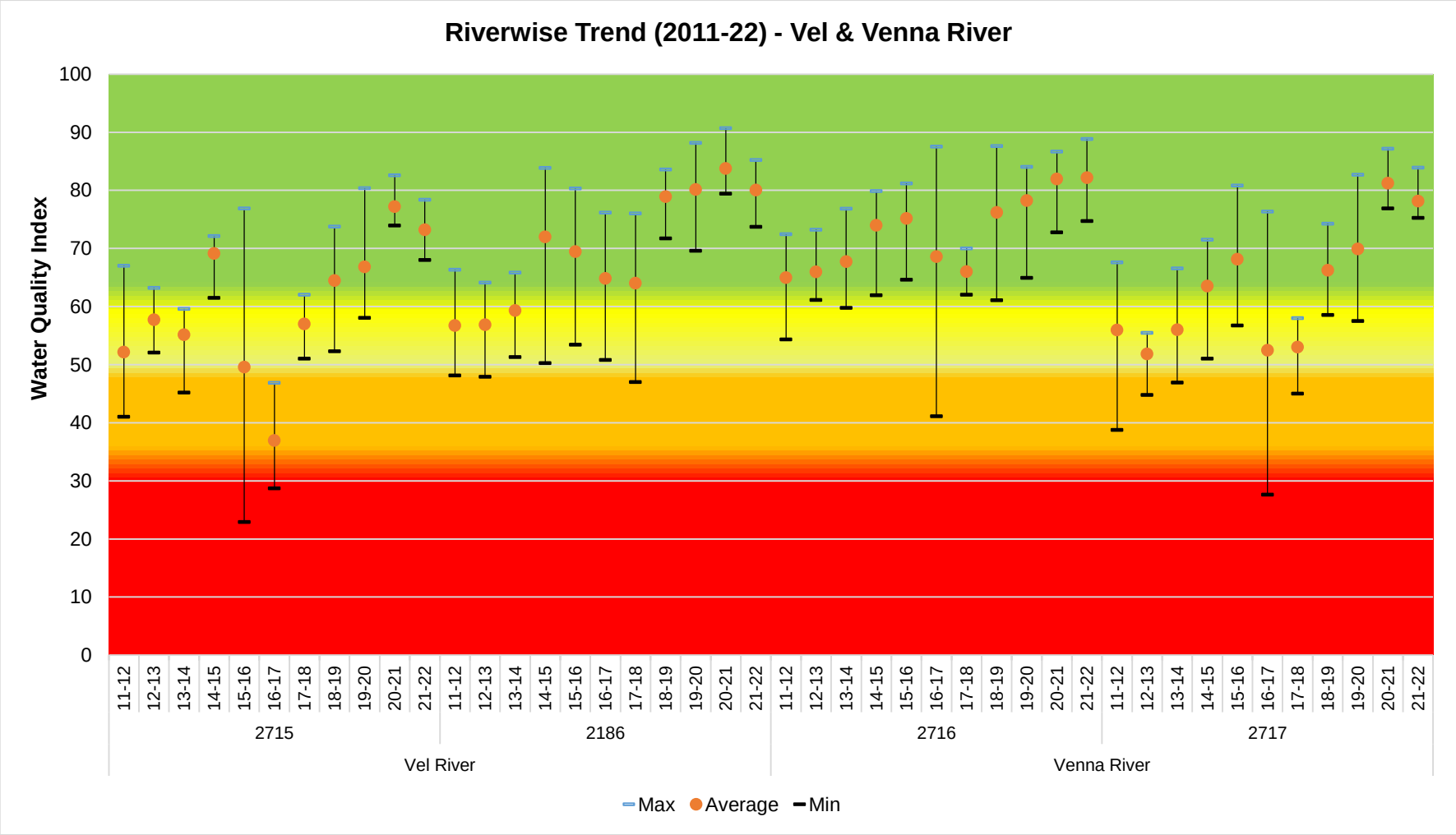
Note:* Stations are Dry/ No data available for respective year



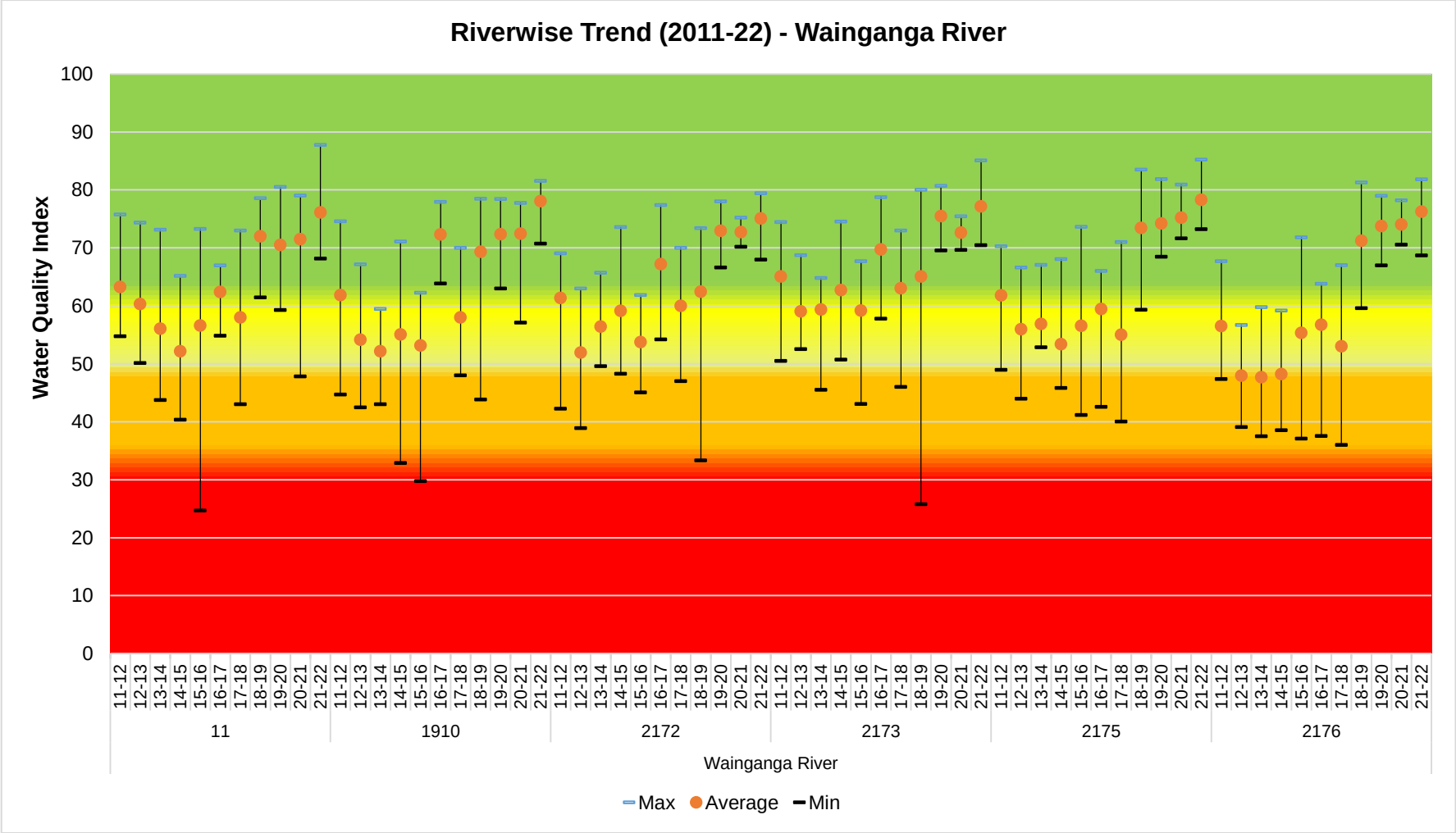
Note:* Stations are Dry/ No data available for respective year



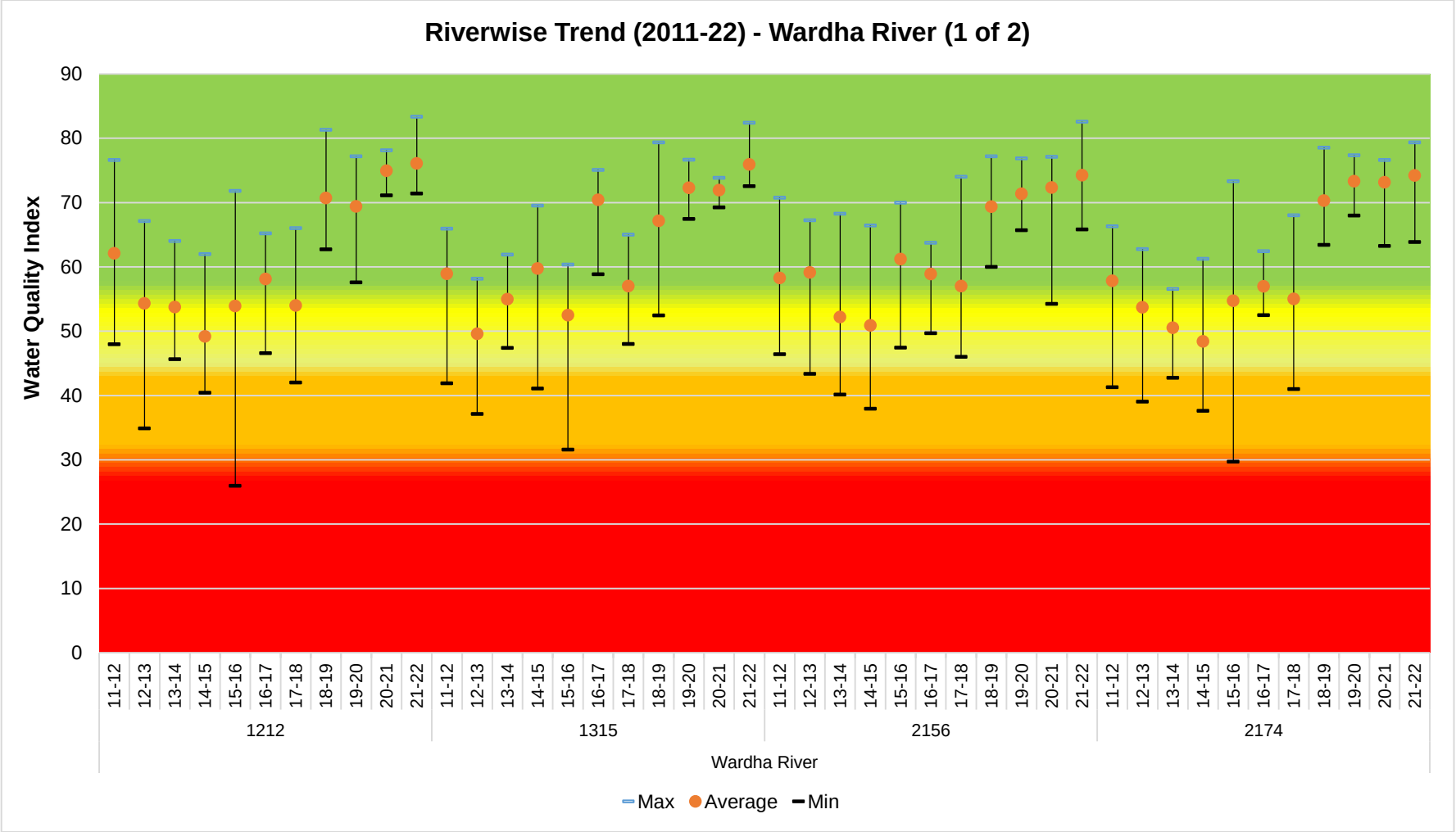
Note:* Stations are Dry/ No data available for respective year



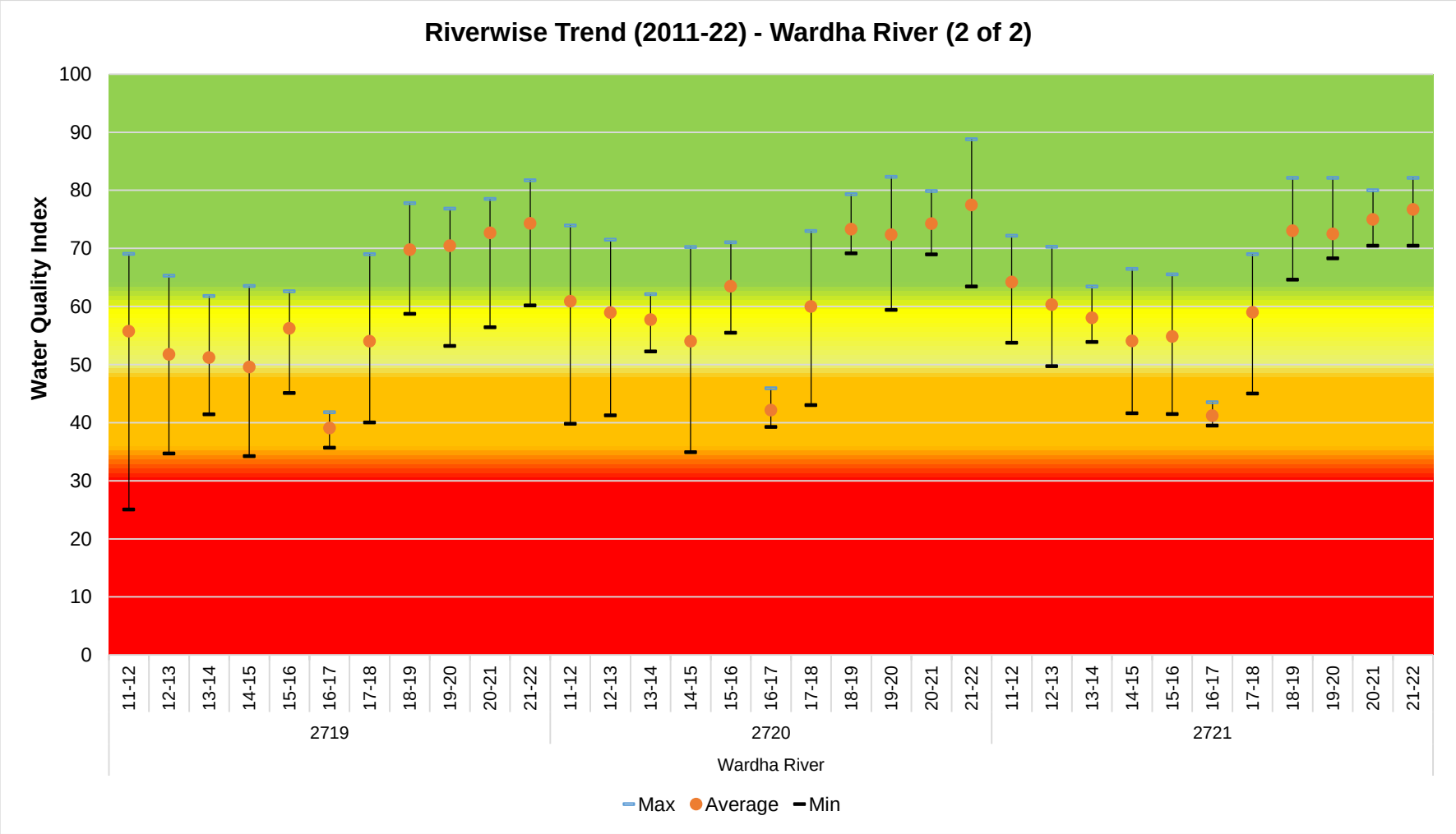
Note:* Stations are Dry/ No data available for respective year



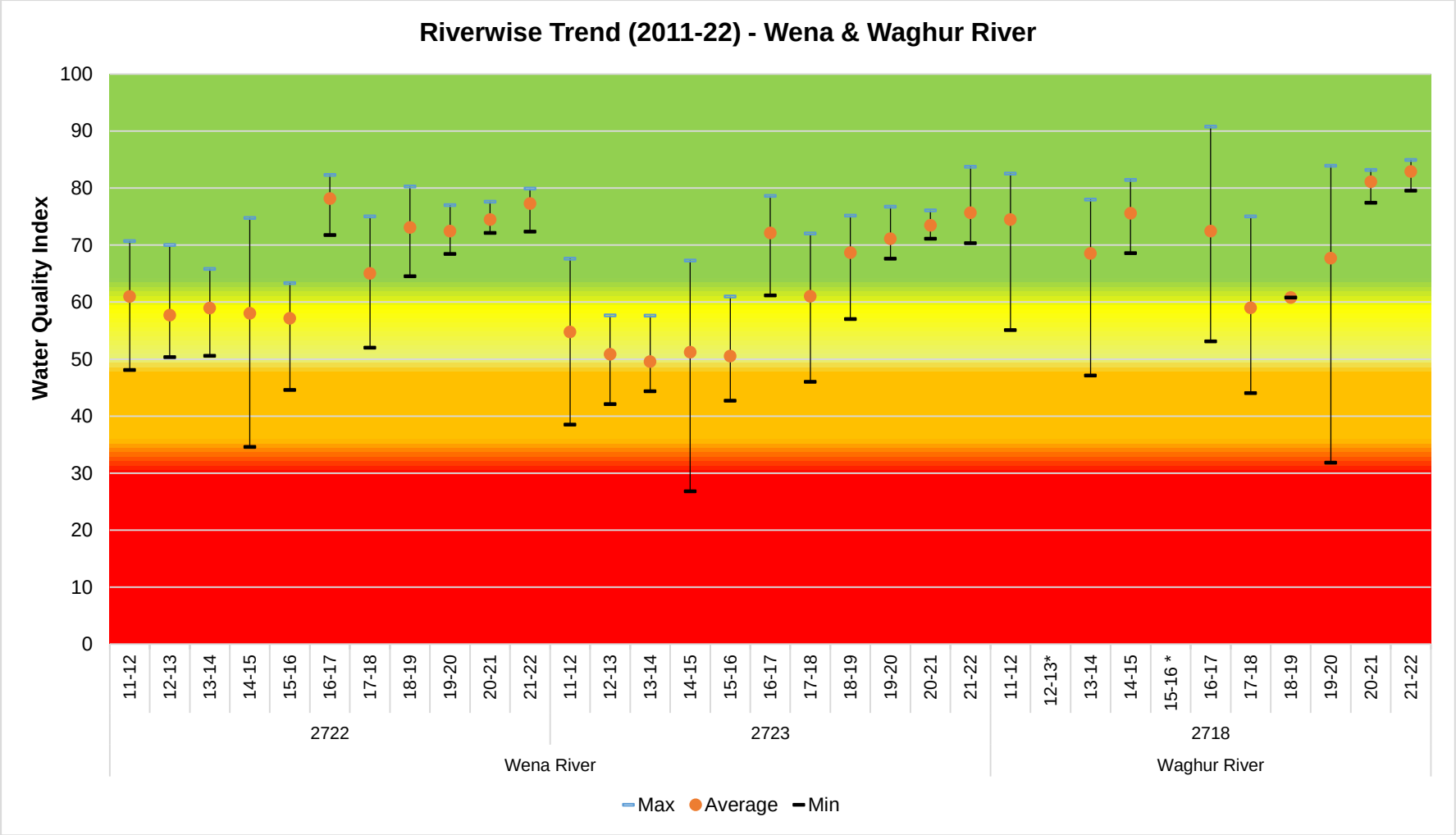
Note:* Stations are Dry/ No data available for respective year



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



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

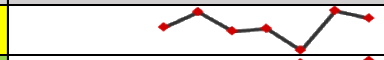
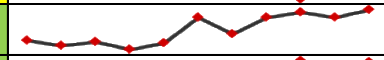
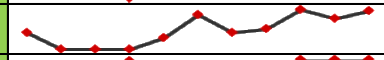
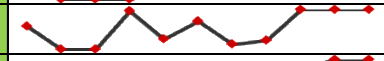
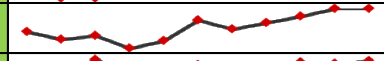
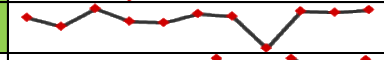
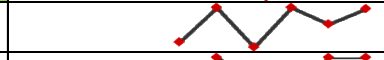
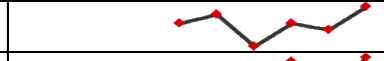
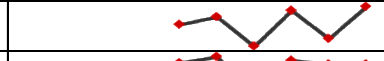
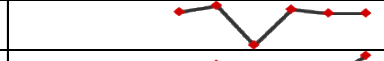


Note:* Stations are Dry/ No data available for respective year

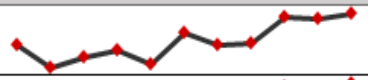
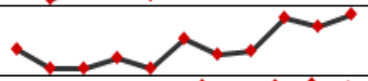
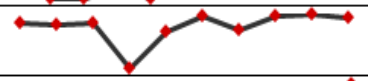
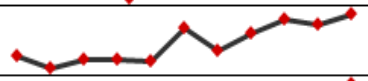
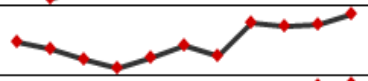
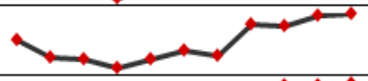
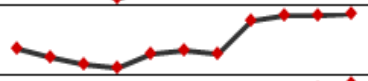
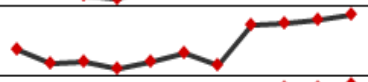
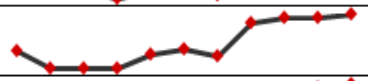
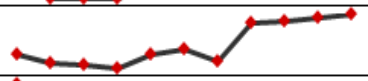
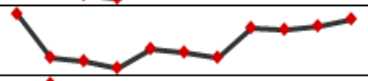
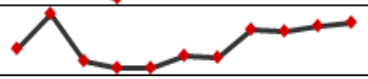
Annex VII Stationwise Trend In WQI (2011-22)

Surface water

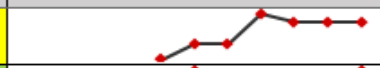
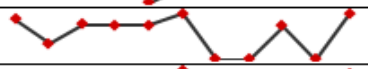
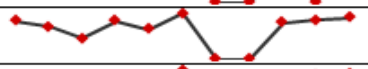
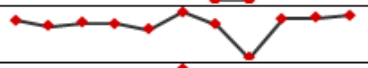
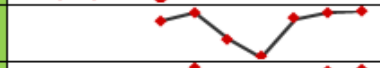
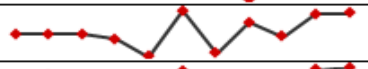
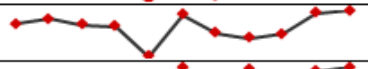
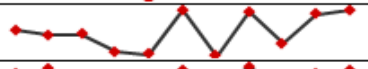
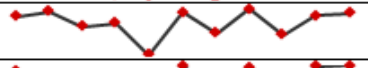
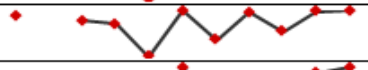
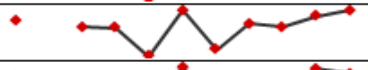
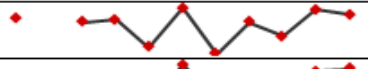
Ahmednagar, Akola, Amravati & Aurangabad District

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	Trend	Quality	CAGR %
Ahmednagar	195					48	60	44	46	29	62	55		Quality Improved	2.03
Akola	1913	55	51	54	49	53	70	59	70	73	70	75		Quality Improved	2.82
Akola	2155	57	46	45	46	54	70	57	61	75	68	73		Quality Improved	2.26
Akola	2675	59	41	41	71	50	63	46	48	72	72	72		Quality Improved	1.85
Amravati	2695	52	46	49	38	45	62	54	60	65	72	72		Quality Improved	2.94
Amravati	2700	62	45	81	53	51	70	64	Dry	73	73	76		Quality Improved	1.86
Aurangabad	178					68	82	66	82	75	82	NA		No Significant Change	0.00
Aurangabad	179						81	38	Dry	82	80	NA		No Significant Change	0.00
Aurangabad	180					60	67	42	60	55	73	NA		No Significant Change	0.00
Aurangabad	181					62	65	53	67	56	69	NA		No Significant Change	0.00
Aurangabad	182					63	68	40	65	62	62	NA		No Significant Change	0.00
Aurangabad	183					58	76	58	73	68	81	NA		No Significant Change	0.00
Aurangabad	184					66	81	64	66	80	81	NA		No Significant Change	0.00
Aurangabad	1312	80	78	79	85	73	85	75	85	87	87	NA		No Significant Change	0.00
Aurangabad	2158	79	79	78	83	73	85	70	84	87	87	NA		No Significant Change	0.00
Aurangabad	2159	73	73	79	83	74	84	73	85	87	87	NA		No Significant Change	0.00
Aurangabad	2160	75	78	80	84	72	85	72	81	87	87	NA		No Significant Change	0.00

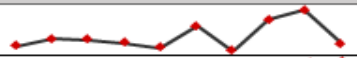
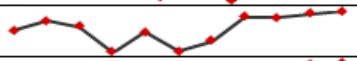
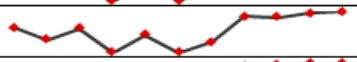
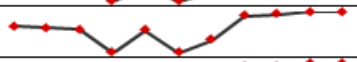
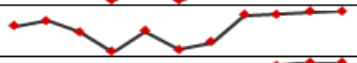
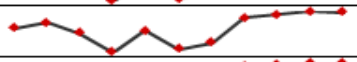
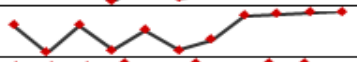
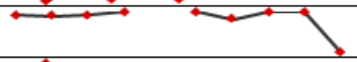
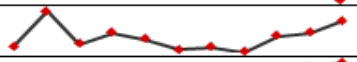
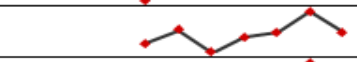
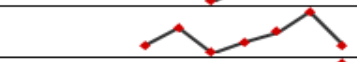
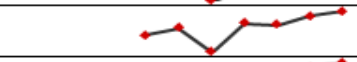
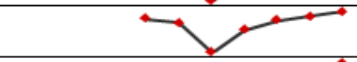
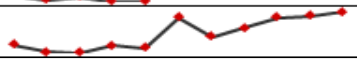
Bandara, Beed, Buldana & Chandrapur District

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	Trend	Quality	CAGR %
Bandara	2172	61	52	56	59	54	66	61	62	73	73	75		Quality Improved	1.85
Bandara	2173	65	59	59	63	59	69	64	65	75	73	77		Quality Improved	1.50
Beed	2657	78	76	78	41	71	83	73	84	86	82	NA		No Significant Change	0.00
Buldana	2699	55	48	53	53	52	70	58	67	74	71	77		Quality Improved	3.12
Chandrapur	11	63	61	56	52	57	62	57	72	70	71	76		Quality Improved	1.69
Chandrapur	1212	63	54	54	49	54	57	55	71	69	75	76		Quality Improved	1.75
Chandrapur	2174	58	54	51	48	55	57	55	70	73	73	74		Quality Improved	2.29
Chandrapur	2175	62	56	57	53	57	61	55	73	74	75	78		Quality Improved	2.16
Chandrapur	2176	57	48	48	48	55	58	54	71	74	74	76		Quality Improved	2.76
Chandrapur	2719	56	52	51	50	56	58	53	70	70	73	74		Quality Improved	2.65
Chandrapur	2720	80	59	58	54	63	61	59	73	72	74	77		No Significant Change	-0.31
Chandrapur	2721	64	81	58	55	55	60	59	73	73	75	77		Quality Improved	1.64

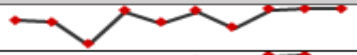
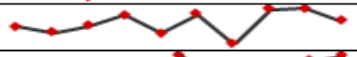
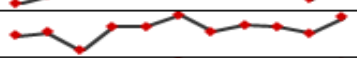
Dhule & Jalgaon District

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	Trend	Quality	CAGR %
Dhule	197					50	54	54	63	61	61	61		Quality Improved	2.90
Dhule	2652	75	31	65	64	64	87	No data	Dry	63	Dry	86		Quality Improved	1.34
Dhule	2659	75	63	40	76	59	90	No data	Dry	71	77	82		No Significant Change	0.86
Dhule	2666	73	62	69	67	55	90	65	Dry	77	79	84		Quality Improved	1.26
Dhule	2670	73	69	70	73	65	89	70	74	84	82	83		Quality Improved	1.15
Dhule	2684	75	65	64	74	62	87	70	69	74	82	83		No Significant Change	0.94
Jalgaon	196					59	65	45	32	61	65	66		Quality Improved	1.76
Jalgaon	1251	75	75	75	73	65	86	66	80	74	84	84		Quality Improved	1.09
Jalgaon	1252	74	78	74	73	50	81	67	63	67	83	85		Quality Improved	1.23
Jalgaon	1313	76	74	74	66	65	85	64	85	70	84	86		Quality Improved	1.09
Jalgaon	2658	80	83	73	75	53	83	68	85	67	80	82		No Significant Change	0.30
Jalgaon	2667	78		75	72	46	83	60	82	66	82	83		No Significant Change	0.53
Jalgaon	2674	78		74	74	56	86	60	77	75	82	85		No Significant Change	0.76
Jalgaon	2710	79		76	77	62	84	58	76	68	83	80		No Significant Change	0.20
Jalgaon	2718	74		69	76	51	86	59	61	68	81	83		No Significant Change	0.98

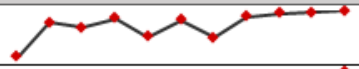
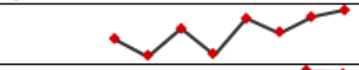
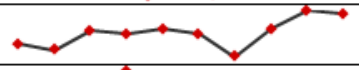
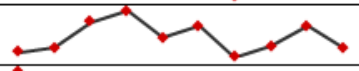
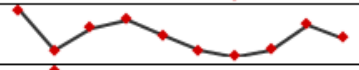
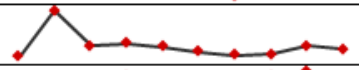
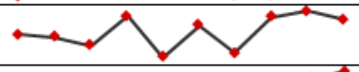
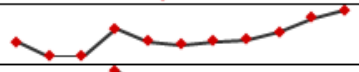
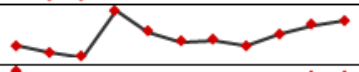
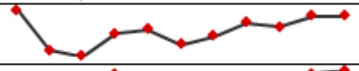
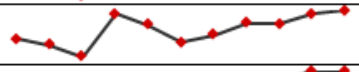
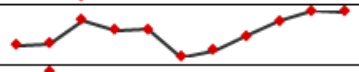
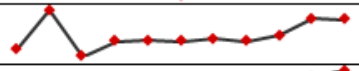
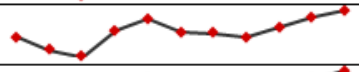
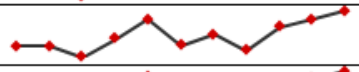
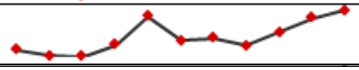
Jalna, Kolhapur, Latur, Mumbai & Nagpur District

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	Trend	Quality	CAGR %
Jalna	2161	75	78	77	77	75	82	74	84	87	76	NA		No Significant Change	0.00
Kolhapur	1153	76	81	78	63	75	63	69	84	83	86	88		Quality Improved	1.31
Kolhapur	1310	78	70	77	63	73	63	69	84	84	86	87		Quality Improved	1.09
Kolhapur	1311	78	77	75	61	75	61	69	84	85	87	87		Quality Improved	1.00
Kolhapur	1904	78	82	75	62	75	63	68	85	85	87	88		Quality Improved	1.05
Kolhapur	1905	76	80	73	61	75	63	67	83	85	87	86		Quality Improved	1.12
Kolhapur	2163	78	60	78	62	75	62	68	84	85	86	87		No Significant Change	0.97
Latur	2673	78	76	77	85		85	69	84	84	Dry	NA		No Significant Change	0.00
Mumbai	2168	34	61	36	44	39	32	34	30	42	44	53		Quality Improved	4.29
Nagpur	185					51	71	60	66	71	72	76		Quality Improved	5.86
Nagpur	186					32	38	28	35	37	46	37		Quality Improved	2.06
Nagpur	187					33	40	30	34	38	46	33		No Significant Change	-0.03
Nagpur	188					38	41	29	44	43	48	51		Quality Improved	4.34
Nagpur	189					47	45	31	42	47	48	51		Quality Improved	1.05
Nagpur	1908	60	57	55	56	55	72	60	70	70	72	76		Quality Improved	2.22
Nagpur	1909	59	56	53	54	53	69	60	69	69	71	71		Quality Improved	1.68
Nagpur	1910	62	54	52	55	53	72	59	69	72	72	78		Quality Improved	2.14
Nagpur	2170	60	58	59	57	57	77	66	71	71	73	77		Quality Improved	2.25
Nagpur	2171	56	52	52	56	54	72	61	66	71	73	75		Quality Improved	2.69

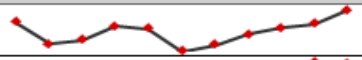
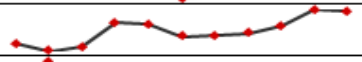
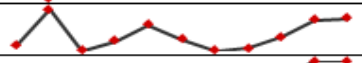
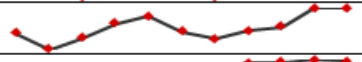
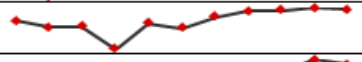
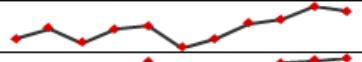
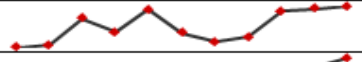
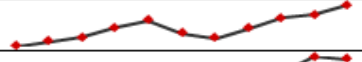
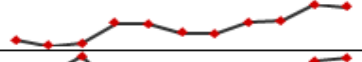
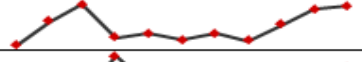
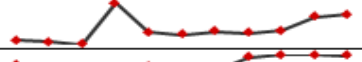
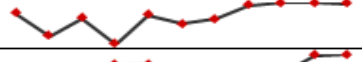
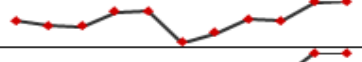
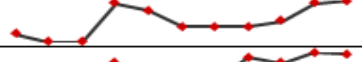
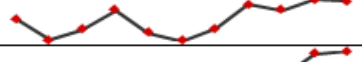
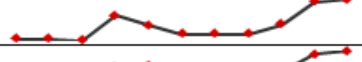
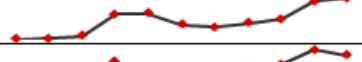
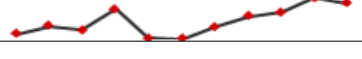
Nanded, Nandurbar & Nashik District

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	Trend	Quality	CAGR %
Nanded	1209	77	75	61	83	75	83	72	84	84	85	NA		No Significant Change	0.00
Nanded	1210	79	77	79	83	76	84	72	86	86	81	NA		No Significant Change	0.00
Nandurbar	1314	75	65	69	68	64	86	68	74	76	82	85		Quality Improved	1.23
Nandurbar	1907	73	65	67	72	65	88	71	77	77	81	85		Quality Improved	1.35
Nashik	194					62	88	55	79	Dry	73	81		Quality Improved	3.76
Nashik	1095	77	77	77	76	69	88	64	75	69	85	87		Quality Improved	1.15
Nashik	1096	63	66	70	69	63	80	68	82	71	66	82		Quality Improved	2.47
Nashik	1211	59	65	67	80	63	79	63	77	72	65	80		Quality Improved	2.81
Nashik	1253	77	65	70	74	63	84	73	67	63	60	79		No Significant Change	0.23
Nashik	2177	67	51	71	73	67	83	69	73	74	79	83		Quality Improved	2.03
Nashik	2178	49	54	51	68	59	72	59	67	76	62	62		Quality Improved	2.16
Nashik	2179	60	67	68	51	65	80	63	74	69	64	81		Quality Improved	2.79
Nashik	2180	53	60	63	67	63	80	62	72	70	57	77		Quality Improved	3.42
Nashik	2181	52	56	30	65	65	82	58	67	65	56	78		Quality Improved	3.67
Nashik	2182	66	60	51	69	67	87	70	71	67	66	84		Quality Improved	2.19
Nashik	2183	76	71	72	70	67	87	69	83	67	69	87		Quality Improved	1.24
Nashik	2660	73	72	72	71	68	89	72	67	69	68	86		Quality Improved	1.45
Nashik	2661	75	75	72	72	68	89	67	83	65	69	86		Quality Improved	1.26
Nashik	2662	75	77	74	75	67	88	69	82	71	64	85		Quality Improved	1.07
Nashik	2663	75	76	74	73	68	87	70	81	67	66	86		Quality Improved	1.28
Nashik	2664	77	74	72	70	69	88	72	80	69	66	84		No Significant Change	0.76

Osmanabad, Palghar, Parbhani & Pune 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	Trend	Quality	CAGR %
Osmanabad	2157	61	81	78	83	73	82	72	85	86	87	88		Quality Improved	3.40
Palghar	2696				77	72	80	73	83	79	83	85		Quality Improved	1.26
Palghar	2785	24	22	27	26	28	26	20	28	33	32	NA		No Significant Change	0.00
Palghar	2786	23	26	39	46	31	37	21	27	37	25	Dry		No Significant Change	0.00
Palghar	2787	43	24	35	39	31	24	22	25	37	30	Dry		No Significant Change	0.00
Palghar	2788	19	80	33	36	32	26	21	23	34	29	Dry		No Significant Change	0.00
Parbhani	12	79	78	75	84	71	81	73	84	86	83	NA		No Significant Change	0.00
Pune	1189	46	37	37	54	47	45	47	48	52	61	66		Quality Improved	3.37
Pune	1190	39	33	30	70	52	43	45	39	49	58	61		Quality Improved	4.26
Pune	1191	81	47	42	61	64	52	59	70	67	76	76		No Significant Change	-0.58
Pune	1192	52	47	39	70	62	49	55	63	63	70	73		Quality Improved	3.17
Pune	1463	62	63	71	67	67	58	60	65	70	74	74		Quality Improved	1.58
Pune	2191	34	71	27	41	42	41	43	41	47	63	62		Quality Improved	5.47
Pune	2192	42	33	29	47	56	46	46	43	50	57	62		Quality Improved	3.54
Pune	2193	46	47	42	50	58	47	52	45	55	58	62		Quality Improved	2.67
Pune	2194	39	36	36	42	58	44	46	41	49	57	61		Quality Improved	4.11

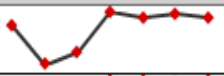
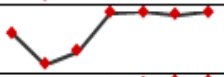
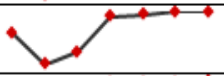
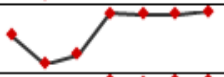
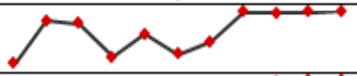
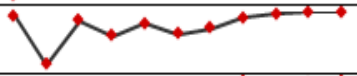
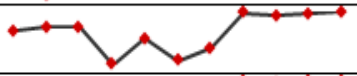
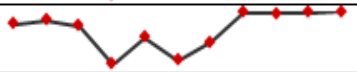
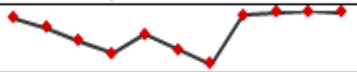
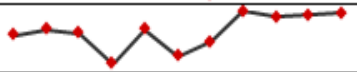
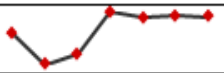
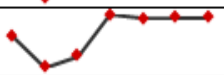
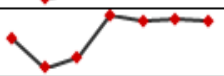
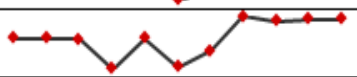
Pune District

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	Trend	Quality	CAGR %
Pune	2195	61	50	52	59	58	46	49	55	58	60	68		No Significant Change	0.94
Pune	2196	39	33	36	55	54	45	45	47	53	66	65		Quality Improved	4.75
Pune	2197	54	71	51	56	64	57	51	53	58	66	67		Quality Improved	1.99
Pune	2655	57	46	54	63	68	58	53	58	61	73	74		Quality Improved	2.39
Pune	2656	64	59	59	41	62	58	67	72	73	75	74		Quality Improved	1.24
Pune	2665	54	61	51	60	62	48	54	64	67	76	72		Quality Improved	2.73
Pune	2668	49	49	61	55	64	55	51	53	64	65	66		Quality Improved	2.81
Pune	2669	53	55	57	62	65	59	57	62	67	68	73		Quality Improved	2.93
Pune	2677	42	36	39	59	58	49	48	60	61	77	74		Quality Improved	5.43
Pune	2678	38	51	60	42	44	40	44	40	49	57	59		Quality Improved	4.24
Pune	2679	33	31	29	71	41	39	42	40	43	57	59		Quality Improved	5.52
Pune	2680	74	51	69	42	72	63	69	83	86	86	85		Quality Improved	1.25
Pune	2682	61	59	59	65	66	52	56	62	62	69	70		Quality Improved	1.19
Pune	2690	37	34	37	49	44	44	44	43	46	62	62		Quality Improved	4.75
Pune	2691	39	34	34	60	55	44	45	44	48	60	62		Quality Improved	4.28
Pune	2692	73	60	66	79	65	60	67	82	79	86	85		Quality Improved	1.30
Pune	2693	46	46	45	57	53	49	48	48	53	64	66		Quality Improved	3.36
Pune	2694	35	35	37	52	53	45	43	46	49	61	63		Quality Improved	5.59
Pune	2715	52	58	55	69	50	49	57	64	67	77	73		Quality Improved	3.13

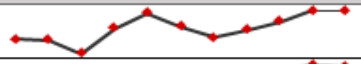
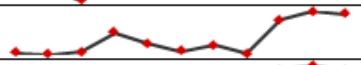
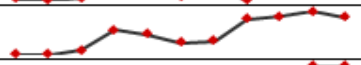
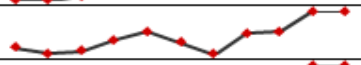
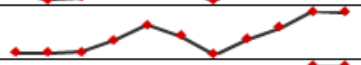
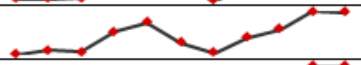
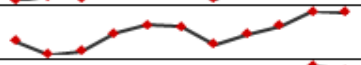
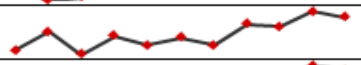
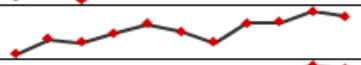
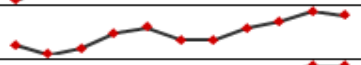
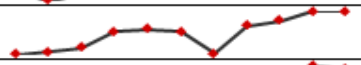
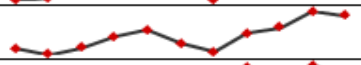
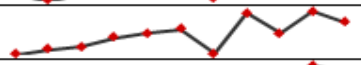
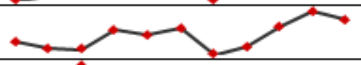
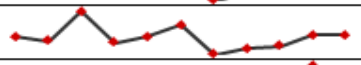
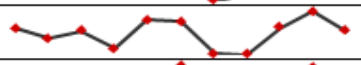
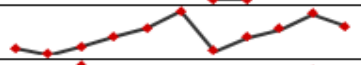
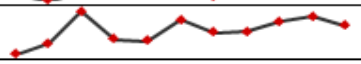
Raigad District

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	Trend	Quality	CAGR %
Raigad	192					72	83	55	80	80	80	84		Quality Improved	2.29
Raigad	193					71	81	56	80	82	82	83		Quality Improved	2.08
Raigad	216					65	62	34	62	72	59	69		No Significant Change	0.78
Raigad	1151	76	81	70	75	71	80	55	82	80	81	81		No Significant Change	0.56
Raigad	1152	76	78	77	77	70	79	53	77	80	82	82		No Significant Change	0.75
Raigad	1462	78	80	82	31	71	78	55	84	77	84	83		No Significant Change	0.64
Raigad	2198	73	76	63	70	68	70	48	72	77	79	79		No Significant Change	0.74
Raigad	2199	76	81	79	63	74	64	56	69	81	84	85		Quality Improved	1.02
Raigad	2651	77	78	80	77	69	78	54	80	78	80	79		No Significant Change	0.32
Raigad	2671	59	59	62	61	58	61	38	64	64	76	67		Quality Improved	1.14
Raigad	2672	77	79	79	77	69	80	55	81	80	82	80		No Significant Change	0.36
Raigad	2685	74	81	72	74	67	74	42	75	80	79	83		Quality Improved	1.11
Raigad	2686	79	75	83	76	72	83	54	84	78	83	84		No Significant Change	0.58
Raigad	2687	79	79	80	76	72	82	55	83	79	82	83		No Significant Change	0.49
Raigad	2688	76	80	81	76	69	77	55	80	80	82	81		No Significant Change	0.59
Raigad	2689	76	81	81	76	68	80	54	82	79	82	82		No Significant Change	0.70
Raigad	2701	83	40	82	64	75	66	56	71	82	86	88		No Significant Change	0.58
Raigad	2702	78	82	82	65	76	66	56	71	83	86	89		Quality Improved	1.18
Raigad	2703	50	81	77	64	75	65	56	71	82	86	88		Quality Improved	5.30
Raigad	2704	80	79	80	64	75	65	57	72	82	86	88		No Significant Change	0.86

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	Trend	Quality	CAGR %
Ratnagiri	201					79	65	69	84	82	83	82		No Significant Change	0.48
Ratnagiri	202					79	65	71	87	88	87	88		Quality Improved	1.57
Ratnagiri	203					79	66	71	86	87	88	88		Quality Improved	1.57
Ratnagiri	204					78	65	70	88	87	87	89		Quality Improved	1.86
Ratnagiri	2164	61	83	82	64	77	66	72	88	88	88	89		Quality Improved	3.48
Ratnagiri	2676	84	31	79	63	75	64	70	82	86	88	89		No Significant Change	0.52
Ratnagiri	2713	80	82	82	64	76	66	72	88	87	88	89		No Significant Change	1.00
Ratnagiri	2714	83	85	82	64	77	65	74	89	88	88	89		No Significant Change	0.67
Ratnagiri	2790	79	73	65	56	69	59	49	81	83	84	83		No Significant Change	0.44
Sangli	37	76	78	76	62	78	66	72	87	84	85	86		Quality Improved	1.17
Sangli	198					78	64	69	87	84	85	85		Quality Improved	1.31
Sangli	199					78	64	69	87	85	85	85		Quality Improved	1.35
Sangli	200					77	64	69	87	84	85	85		Quality Improved	1.34
Sangli	1906	77	77	76	64	77	65	72	86	84	85	85		No Significant Change	0.91

Satara and Solapur District

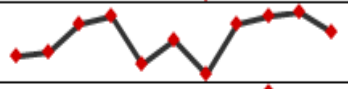
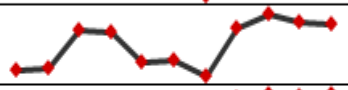
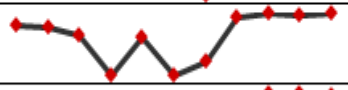
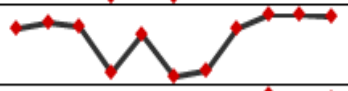
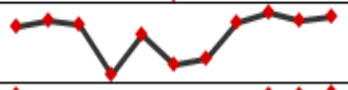
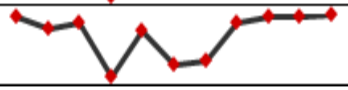
District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	Trend	Quality	CAGR %
Satara	36	59	58	51	65	73	66	60	64	69	75	75		Quality Improved	2.30
Satara	1194	70	69	70	78	74	70	73	69	83	87	86		Quality Improved	1.93
Satara	2186	57	57	59	72	69	64	65	79	80	84	80		Quality Improved	3.18
Satara	2187	58	54	56	61	66	60	54	65	66	76	76		Quality Improved	2.55
Satara	2188	55	55	56	62	70	64	54	62	68	77	76		Quality Improved	2.99
Satara	2189	59	60	60	68	72	64	59	66	69	77	76		Quality Improved	2.42
Satara	2190	59	51	53	64	68	68	57	63	68	77	76		Quality Improved	2.35
Satara	2681	48	60	45	58	51	56	51	65	64	74	70		Quality Improved	3.53
Satara	2683	50	60	57	64	69	64	58	70	71	78	74		Quality Improved	3.63
Satara	2711	60	54	58	66	70	63	62	69	73	79	76		Quality Improved	2.27
Satara	2716	65	66	68	74	75	74	65	76	78	82	82		Quality Improved	2.16
Satara	2717	56	52	56	64	68	59	53	66	70	81	78		Quality Improved	3.08
Solapur	28	55	58	59	63	65	67	56	75	65	76	70		Quality Improved	2.22
Solapur	1188	62	59	59	67	65	67	57	60	68	74	71		Quality Improved	1.24
Solapur	1911	65	63	80	62	65	72	56	59	60	66	67		No Significant Change	0.16
Solapur	1912	59	56	58	52	62	62	51	50	59	65	58		No Significant Change	-0.16
Solapur	2705	59	56	60	65	69	78	58	65	69	76	70		Quality Improved	1.52
Solapur	2789	30	43	80	47	46	70	55	56	68	74	63		Quality Improved	6.91

Thane, Wardha and Yavatmal District

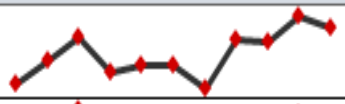
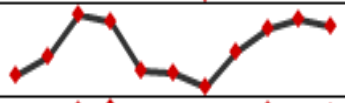
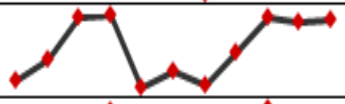
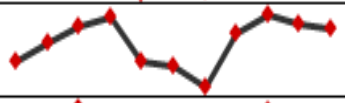
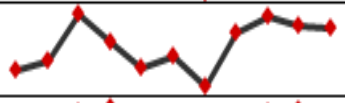
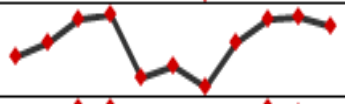
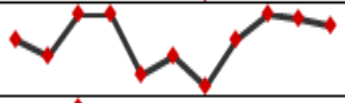
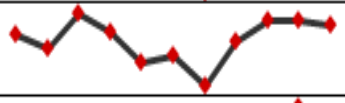
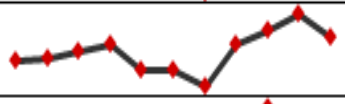
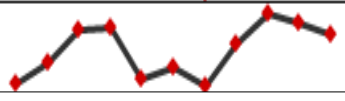
District	Station Code	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	Trend	Quality	CAGR %
Thane	1092	66	70	65	67	63	54	60	75	79	80	80		Quality Improved	1.73
Thane	1093	75	78	76	72	68	82	74	83	77	83	83		No Significant Change	0.99
Thane	1094	77	79	80	78	68	82	74	84	77	83	82		No Significant Change	0.63
Thane	1461	58	75	79	78	69	82	73	82	80	79	82		Quality Improved	3.13
Thane	2162	78	79	81	79	68	84	75	83	81	83	83		No Significant Change	0.59
Thane	2653	76	77	61	78	72	78	72	82	78	82	83		No Significant Change	0.75
Thane	2654	77	78	79	77	72	79	72	81	76	82	83		No Significant Change	0.68
Thane	2706	74	74	76	75	70	83	72	82	73	86	82		No Significant Change	0.93
Thane	2707	73	77	75	75	70	83	72	82	73	83	82		No Significant Change	1.00
Thane	2708	75	78	77	75	68	82	54	81	74	83	81		No Significant Change	0.71
Thane	2709	74	78	79	76	67	79	76	81	79	80	82		No Significant Change	0.95
Thane	2712	75	76	81	76	69	80	75	82	79	80	81		No Significant Change	0.69
Thane	2782	30	28	26	42	38	35	32	29	41	47	33		No Significant Change	0.99
Thane	2783	32	33	29	43	36	36	41	32	42	46	42		Quality Improved	2.35
Thane	2784	41	60	27	42	33	30	32	28	44	43	35		Quality Deteriorated	-1.32
Wardha	1315	59	50	55	60	52	70	57	67	72	72	76		Quality Improved	2.33
Wardha	2722	81	58	59	59	57	78	66	73	72	74	77		No Significant Change	-0.39
Wardha	2723	55	80	50	51	50	71	61	69	71	73	76		Quality Improved	2.99
Yavatmal	2156	58	59	52	51	61	58	57	69	71	72	74		Quality Improved	2.23
Yavatmal	2697	63	30	55	53	55	60	58	77	72	74	79		Quality Improved	2.07
Yavatmal	2698	64	21	55	50	57	59	55	70	72	73	76		Quality Improved	1.47

Saline water

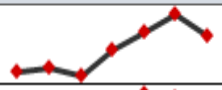
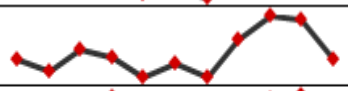
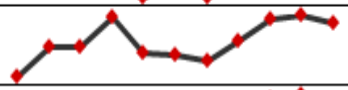
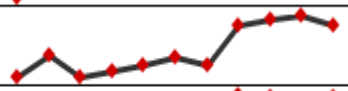
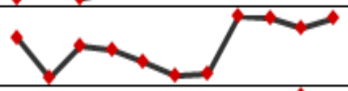
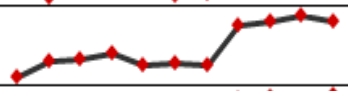
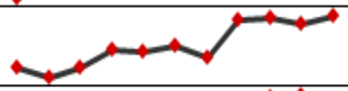
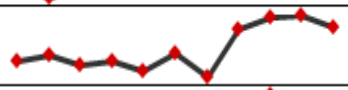
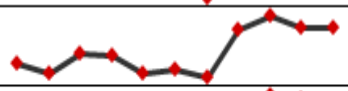
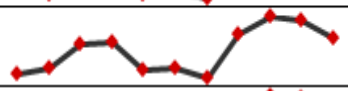
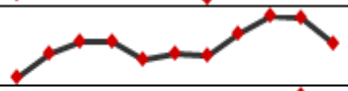
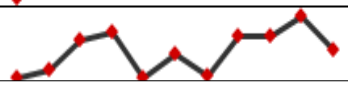
Raigad & Ratnagiri District

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	Trend	Quality	CAGR %
Raigad	191					48	48	46	54	56	54	54		Quality Improved	1.72
Raigad	1317	49	50	55	57	48	52	45	56	57	58	54		No Significant Change	0.82
Raigad	2803	55	55	70	69	58	58	52	71	76	73	72		Quality Improved	2.52
Ratnagiri	2804	82	82	79	63	77	64	69	85	87	86	87		No Significant Change	0.57
Ratnagiri	2813	75	77	76	62	74	60	62	75	80	80	79		No Significant Change	0.44
Ratnagiri	2814	74	76	75	54	71	59	61	75	80	77	78		No Significant Change	0.46
Ratnagiri	2815	78	73	76	53	72	58	60	75	78	78	79		No Significant Change	0.14

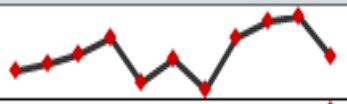
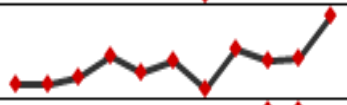
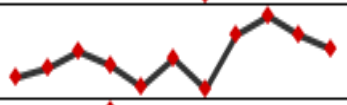
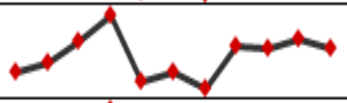
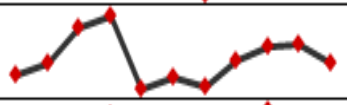
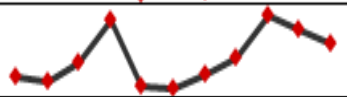
Mumbai District

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	Trend	Quality	CAGR %
Mumbai	1318	47	51	54	49	50	50	46	54	53	57	55		Quality Improved	1.50
Mumbai	2165	46	49	55	54	47	47	44	49	53	54	54		Quality Improved	1.38
Mumbai	2166	46	49	54	55	45	47	45	50	54	54	54		Quality Improved	1.49
Mumbai	2167	48	51	53	55	48	47	43	52	55	53	53		No Significant Change	0.92
Mumbai	2169	45	46	55	50	45	47	41	52	54	53	52		Quality Improved	1.46
Mumbai	2808	49	51	54	55	46	47	44	51	54	55	53		No Significant Change	0.80
Mumbai	2809	51	48	55	55	45	48	43	51	55	54	53		No Significant Change	0.39
Mumbai	2810	51	49	54	51	47	48	43	50	53	53	53		No Significant Change	0.30
Mumbai	2811	49	50	51	52	48	48	45	52	54	57	53		No Significant Change	0.65
Mumbai	2812	45	48	52	53	46	47	45	50	55	53	52		Quality Improved	1.28

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	Trend	Quality	CAGR %
Thane	190					52	53	51	57	62	66	61		Quality Improved	2.33
Thane	1316	55	53	57	56	52	55	52	60	65	64	55		No Significant Change	-0.01
Thane	2184	49	55	55	61	54	53	52	57	61	62	60		Quality Improved	1.98
Thane	2185	52	56	52	53	54	56	54	62	63	64	62		Quality Improved	1.66
Thane	2791	63	52	61	60	57	53	53	69	68	65	68		No Significant Change	0.72
Thane	2792	51	55	56	57	54	55	54	64	65	66	65		Quality Improved	2.13
Thane	2793	50	47	50	55	54	56	53	64	64	62	65		Quality Improved	2.36
Thane	2794	57	58	56	56	54	58	53	63	65	66	63		Quality Improved	1.04
Thane	2795	57	55	59	59	55	56	54	63	66	63	63		No Significant Change	0.97
Thane	2796	53	55	60	60	54	55	53	62	66	65	61		Quality Improved	1.20
Thane	2797	47	54	58	58	52	54	54	61	66	65	57		Quality Improved	1.87
Thane	2798	49	51	56	58	49	54	49	57	57	61	54		No Significant Change	0.90

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	Trend	Quality	CAGR %
Thane	2799	51	52	53	55	49	52	48	55	58	58	53		No Significant Change	0.37
Thane	2800	55	55	56	61	57	60	54	62	60	61	70		Quality Improved	2.20
Thane	2801	54	56	56	58	52	59	52	60	63	63	59		No Significant Change	0.97
Thane	2802	53	55	57	55	52	56	52	60	63	60	57		No Significant Change	0.67
Thane	2805	50	52	55	60	48	50	47	55	54	56	54		No Significant Change	0.74
Thane	2806	50	52	59	61	47	49	48	53	55	55	52		No Significant Change	0.37
Thane	2807	47	46	49	56	46	45	48	50	57	54	52		No Significant Change	0.95

Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

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