Water Quality Year Book

2015-16

YAMUNA BASIN

GOVEREMENT OF INDIA

Central Water Commission

NATIONAL RIVER WATER QUALITY LABORATORY

New Delhi

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Government of India
Ministry of Water Resources, RD & GR
CENTRAL WATER COMMISSION

WATER QUALITY YEAR BOOK
Yamuna Basin
2015-2016

Hydrological Observation Circle
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PREFACE

Water is essential for sustaining life and development. However, the variation in rainfall, rapid growth in population, increased urbanization, intensive use of fertilizers in agriculture, unplanned industrial growth, all have contributed in putting great stress on the availability of water both in terms of quantity and quality. Planning of water resources for the future development, thus, calls for careful monitoring of this precious resource both in qualitative and quantitative terms for various uses e.g. drinking, agricultural, recreational, industrial etc.

Lesser availability of fresh waters and entry of larger quantum of pollutants into the river systems in the recent past have put considerable strain on their self-assimilation capacity. The status of pollution and the effect of pollutants change with the seasonal flows. Evaluation of fitness of water for various uses, therefore, requires monitoring of water quality at various locations of the rivers.

Central Water Commission is maintaining a large network of Water Quality Monitoring stations maintained at the strategic points on all the important rivers in India. There are three categories of laboratories viz. Level I, Level II and Level III covering the water quality-monitoring network. Level I laboratories are established at the monitoring stations for highly time sensitive parameters such as dissolved oxygen, pH, electrical conductivity, total dissolved solids, colour, odour and temperature of water. Parameters, which can tolerate a time lag of 6-24 hours, are analyzed in Level II divisional laboratories. For this purpose, samples are transported under ice-cooled conditions to minimize physico-chemical and bio-chemical interaction between suspended and soluble matter. The level III laboratories are basically regional laboratories with more sophisticated equipment covering analysis parameters viz. toxic and trace element and pesticides, which can tolerate time lag, even if more than 24 hours, with chemical stabilization. The level III (Regional laboratory) have very sophisticated equipment supported by automation. At present there are 39 Level I, one Level II and one national level laboratory in Yamuna basin.

The present Water Quality Year Book 2015-2016 of Yamuna Basin is an outcome of sincere efforts made by the Dr Jakir Hussain, Research Officer & In charge of National River Water Quality Laboratory, New Delhi and Mrs. Anjali Chauhan Junior Computor, Upper Yamuna Division, New Delhi. I hope the present publication would be quite useful to various organizations.

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ACKNOWLEDGMENT

This publication is the outcome of the joint efforts put in by the staff at sites under the three divisions, who has collected the samples and followed the guidelines for collection, storage and transportation of samples. Thanks are due to the entire sub divisional officers who made the system smooth and guided the site staff. Thanks are also due to the laboratory staff in the divisions at Agra, Jaipur and at Delhi who analyzed the samples as per the prescribed methods

The water quality monitoring does not end with analysis of samples. There are always some anomalies in the results, which creep up inadvertently during analysis or calculations. Following the principles of chemistry, flow and local conditions, the variations in data, have to be substantiated, failing which, the source of errors have to be traced & errors are rectified by reconciliation. This is a demanding work before the final printout. I express my thanks to Mrs. Anjali Chauhan Upper Yamuna Division, New Delhi who made an enormous effort in giving the present shape of Water Quality Year Book 2015-2016.

Above all, I express my sincere thanks to Superintending Engineer, Hydrological Observation Circle, Ghaziabad for constructive guidance on different aspects of presentation of data.

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ABBREVIATIONS USED

^0C	Temperature in degree Celsius
BOD	Bio-Chemical Oxygen Demand
C/L	Central Line
$C_1 S^1$, $C_2 S_2$, $C_3 S_3$, $C_4 S_4$ etc.	Classification as per U.S. Salinity Hazards
Ca^{++}	Calcium ion
CD	Chambal Division
CO_3^{--}	Carbonate ion
COD	Chemical Oxygen Demand
D/S	Down Stream
DO	Dissolved oxygen
EC	Electrical Conductance
HCO_3^-	Bicarbonate ion
HOC	Hydrological Observation Circle
K	Temperature in Kelvin
K^+	Potassium ion
Km	Kilometer
LYD	Lower Yamuna Division
meq/l	Milli Equivalent/litre.
Mg^{++}	Magnesium ion
Na^+	Sodium ion
pH	Negative logarithm of Hydrogen ion concentration
ppm	Part Per Million i.e mg/l
Q	Discharge in Cumecs
RSC	Residual Sodium Carbonate
SAR	Sodium Adsorption Ratio
SP	Sodium Percentage
TOC	Total Organic Carbon
U/S	Up Stream
UYD	Upper Yamuna Division
WQ	Water Quality

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INTRODUCTION

For any nation to progress, it is imperative that its resources are optimally used with a goal on long-term utilization. Like other resources, the water resources also play a very vital role in the progress of a country. Proper planning should always precede the utilization and similarly, the monitoring of resources precedes the planning. India, in totality is blissfully endowed with large water resources of good potable surface water in the shape of large rivers and lakes. Inspite of their uneven distribution in time & space, these resources have greatly contributed to the development in India. Considerable tapping of river water resources has been done after the independence.

Central Water Commission, an apex organization under the Ministry of Water Resources has been working overtime in the monitoring and development of water resources. Many a great rivers have been tapped for hydel generation and increasing the irrigation potential.

At present, most of the good potential sites for storage of surface water have been utilized. With the increase in industries and population, environmental protection against pollution in natural water resources has become essential for optimum planning of water resources. The irony is that pollution increases when the quantity of available water decreases during lean summer seasons. The monitoring of surface water has become crucial during lean period also especially for assessment of the assimilation capacity of river.

In fact, Central Water Commission is monitoring the quality of surface flowing water for the last five decades. The data collected at different locations in the basin is brought out in the form of water quality yearbooks with facts and figures. In the federal democratic system of governance in India, the control of pollution of natural resources has been assigned to the Ministry of Environment and Forests which has set up Central and State Pollution Control Boards. On many occasions, the two organizations have worked in tandem with the exchange of data. More co-operations / between the two arms of the government is expected in future for better planning of water resources development and control of pollution therein.

THE RIVER YAMUNA

History & Mythology

The Yamuna and the Ganges are considered the most sacred rivers in India. Yamuna, according to the legends, was the daughter of Surya, the Sun God, and sister to Yama, the God of Death. Consequently, popular belief is that those who take a dip in its holy waters are not tormented by fears of death. The river yamuna is

intimately connected to Lord Krishna's pastimes. The Lord Krishna sanctified the River Yamuna from the beginning of His transcendenta l pastimes in the world. While His father Vasudeva was crossing the Yamuna with babyLord Krishna for a safe place at Gokul on the other bank of the river from Mathura, the Lord fell down in the river, and by the dust of His lotus feet the river at once became sanctified.

The Yamuna Basin - Basic features

Yamunotri, which is north of Haridwar in the Himalayan Mountains, is the source of the Yamuna. The river Yamuna, a major tributary of river Ganges, originates from the Yamunotri glacier near Banderpoonch peaks (38° 59' N 78° 27' E) in the Mussourie range of the lower Himalayas at an elevation of about 6387 meters above mean sea level in district Uttarkashi (Uttranchal).The track along the river bank is quite magnificient dominated by wide panorama of mountains . It is said that the temple of Yamunotri was built by Maharani Gularia of Jaipur in the last decade of the 19th century. In 1923, this was destroyed, with only the idols left, and was rebuild. It was once again damaged in 1982. A hot water pool at Yamunotri is used for the prepartion of "PRASAD". Normally, rice and potatos are cooked in cloth bags by dipping them in the hot water. In its first 170 km stretch, the tributaries Rishi Ganga Kunta, Hanuman Ganga, Tons and Giri join the main river.

The Tons, largest tributary of the Yamuna, has some magical spots in it's upper reaches. Forests of Alder and Blue pine lead to the famous Har-ki-Dun catchment area, source of another tributary, the Rupin. Har-ki-Dun is a spectacular valley high up, an amphitheatre ringed on three sides by spurs of the Great Himalaya. A wonderland with vast grassy alps that inspire a sense of solitude that only the high Himalaya can inspire. The Rupin makes a spectacularprecipitous descent through a narrow valley.

Fortunately the valley of the Tons has been protected, by whatever fates, from the surrounding human depredations.In the upper r eaches of the Tons river is situated the Gobind Pashu Vihar Sanctuary, a high altitude preserve and is approached from the Rupin valley near Natwar. Thisspectacular sanctuary, ringed by high peaks and hemmed in on three sides by ice fields and snow beds, this amphitheatre is the source of the Tons river and home to many high altitude bird species like snow cock, snow partridge and the Mond pheasant.

Another little known fact about the Yamuna is that it is the frontier of the Indian elephant. West of the Yamuna, there is no elephant in 900 Km of the western Himalaya or its foothills. The forests of the lowerYamuna offer ideal corridors for elephant movement and the principal forests to be found here are of Sal, Khair Sissoo trees and the Shivalik chir- pine forests.

Arising from the source, river Yamuna flows through a series of valleys for about 200 Kms, in lower Himalayas and emerges into Indo-Gangetic plains. In the upper reaches, the main valley is overlooked by numerous hanging valleys, carved by glaciers during the last ice ages. The gradient of the river is steep here and the entire geomorphology of the valley has been influenced by the passage of the river. In the upper stretch of 200 Km, it draws water from several major streams. The combined stream flows through the Shivalik range of hills of Himachal Pradesh and Uttaranchal states of India and enters into plains at Dak Pathar in Uttranchal where the river water is regulated through weir and diverted into canal for power generation. From Dak Pathar it flows through the famous Sikh religious place of Poanta Sahib. On the right side of the Yamuna basin is the Mussourie spur-along which, lies sprawled, the hill station of Mussourie. Flowing through Poanta Sahib it reaches Hathnikund/Tajewala in Yamuna Nagar district of Haryana state, where the river water is again diverted into Western Yamuna canal and Eastern Yamuna canal for irrigation. During dry season, no water is allowed to flow in the river downstream to Tajewala barrage and the river remains dry in some stretches between Tajewala & Delhi. The rivers regain water because of ground water accrual and contributions of feeding canal through Som nadi (seasonal stream) upstream of Kalanaur. It enters Delhi near Palla village after traversing a route of about 224 Km.

Distinguished Independent Segments of River Yamuna

SEGMENT		
Himalayan Segment	From origin to Tajewala Barrage	172 kms
Upper Segment	Tajewala Barrage to Wazirabad Barrage	224 kms
Delhi Segment	Wazirabad Barrage to Okhla Barrage	22 kms
Eutriphicated Segment	Okhla Barrage to Chambal Confluence	490 kms
Diluted Segment	Chambal Confluence to Ganga Confluence	468 kms

The river is again tapped at Wazirabad through a barrage for drinking water supply to Delhi. Generally, no water is allowed toflow beyond Wazirabad barrage in dry season, as the available water is not adequate to fulfill the demand of water supply of Delhi.

Whatever water flows in the downstream of Wazirabad barrage is the untreated or partially treated domestic and industrial wastewater contributed through several drains along with the water transported by Haryana Irrigation Department from Western Yamuna Canal (WYC) to Agra Canal via Nazafgarh Drain and the Yamuna. After 22 Km downstream of Wazirabad barrage there is another barrage, Okhla barrage, through which Yamuna water isdiverted into Agra Canal for

irrigation. No water is allowed to flow through barrage during dry season. Whatever water flows in the river beyond Okhla barrage is contributed through domestic and industrial wastewater generated from East Delhi, Noida and Sahibabad and joins the river through Shahdara drain. The Yamuna after receiving water through other important tributaries joins the river *Ganga* and the underground *Saraswati* at Prayag (Allahabad) after traversing about 950 Km. Thus, Yamuna river cannot be designated as continuous river particularly in dry seasons (almost 9 months), but can be segmented in five distinguished independent segments due to characteristic hydrological and ecological conditions. The catchments of Yamuna river system cover parts of Uttar Pradesh, Uttranchal, Himachal Pradesh, Haryana, Rajasthan, Madhya Pradesh & Delhi states.

There are 12 water quality stations Poanta, Kalanour, Mawi, Delhi, Mathura, Mohana, Agra, Auraiya, Etawah, Hamirpur, Rajapur andPratappur on river Yamuna.

Tributaries of River Yamuna

The tributaries of Yamuna account for 70.9% of the catchment area; the balance of 29.1% area directly drains into the Yamuna River or is occupied by simaller streams. Further, the catchment area of Yamuna amount to 40.2% of the area of Ganga Basin and 10.7% of the land area of India. The important tributaries of the Yamuna River are the Tons, the Chambal, The Hindon, The Sarda, The Betwa and the Ken. Other small tributaries of the Yamuna River include Rishiganga, the Uma, the Hanuman Ganga, the Giri, the Karan, the Sagar and the Rind. The main Yamuna and Tons are fed by glaciers, viz., the Bandar Punch Glacier and its branches and originates from the Great Himalayan range. Many smaller stream in the Yamuna basin. A brief description of the important t ributaries of the Yamuna River is given below.

The main tributaries of Yamuna along with location of major cities are depicted in **Fig. 1**. The first major city on its banks is Delhi followed by Mathura, Agra and Allahabad. Major projects on its tributaries are:

1. Gandhi Sagar in M. P. on Chambal.
2. Rana Pratap Sagar in Rajasthan on Chambal.
3. Mata Tila Dam in U. P. on Betwa.
4. Kota barrage in Rajasthan on Chambal.
5. Jawahar Sagar in Rajasthan on Chambal.

The Industrial town of Kota is first major settlement on the main Chambal River. Other prominent towns on the tributaries of Chambal and other minor rivers are :(a) Indore and Ujjain in Sipra basin. (b) Jaipur, Ajmer and Chittorgarh in Ba nas basin.

Tons River

The Tons is the longest tributary of the Yamuna River and its flows through Garhwal, the western part of the Himalayan state of Uttaranchal. The river originates at an elevation of 3900m and joins the Y amuna below Kalsi near Dehradun, Uttarakhand. Its source lies in the 20,720 ft (6,315 meters) high Bandarpunch mountain, and is one of the most major perennial Indian Himalayan rivers. It is th e biggest tributaries of the Yamuna. There is only one water quality station at Tuini on River Tons.

Giri River

The river Giri is an important tributary of the Yamun a River. It is the main source of water in the South-Eastern Himachal Pradesh. The Giri is famous in the Jubbal, Rohru hills that rises from Kupar peak just above Jubbal town after flowing across the heart of Shimla hills and then flows down in the southeastern direction dividing the Sirmaur district into equal parts that are known as Cis-Giri and Trans-Giri region and joins Yamuna upstream of Paonta below Mokkampur. There is only one water quality station at Yashwant Nagar on River Giri.

Hindon River

Hindon River is an important tributary of Yamuna Rive r. In fact, this river is sandwitch between two major rivers: Ganga on the left and Yamuna on the right. Hindon originates from upper Shiwalik (Lower Himalay as). It lies between the latitude $28^0$04′ to $35^0$05′ N and longitudes $77^0$08′ to $77^0$04′E. It is a purely rain fed river with catchment area of about 7,083sq. km. This river has a total run of about 400km. The width of Hindon River ranges from 20m to 160m. There is only one water quality station at Galeta on River Hindon.

Betwa River

The Betwa River is a tributary of Yamuna River. Its b asin extends from longitude 77^0 to 81^0 and latitude $23^0$8′ to $26^0$0′N. The Betwa River originates at an elevation of

470m in the Bhopla District in Madhya Pradesh. After traversing a distance of 590 km, the river joins the Yamuna River near Hamirpur at an elevation of 106,68m. The total catchment area of the Betwa River is 46,580 sq km of which 31,971 sq km (68.64%) lies in M.P. and 14,609 sq km (31.36%) lies in U.P. The basin is saucer shaped with sandstone hills around the perimeter. The river has 14 principle tributaries out of which 11 are completely in Madhya Pradesh and 3lies partly in Madhya Pradesh and partly in Uttar Pradesh. The Halali and Dhasan River are the important tributaries of the Betwa River. There are three water quality stations at Rajghat, Mohana and Sahijana on River Betwa.

Dhasan River

The Dhasan River is a right bank tributary of the Betwa River. The river originates in Begumganj tehsil of Raisen district in Madhya Pradesh state in central India. The river forms the southeastern boundary of the Lalitpur District of Uttar Pradesh state. Total length of the river is 365 km, out of which 240 km lies in Madhya Pradesh, 54 km common boundary between Madhya Pradesh and Uttar Pradesh and 71 km in Uttar Pradesh. The river was known as the Dasharna in ancient period. There is only one water quality station at Garroli on River Dhasan.

Ken River

Ken is an inter-state river, flowing through the state of Madhya Pradesh and Uttar Pradesh. Its basin lies between north latitudes $23^{0}20'$ and $25^{0}20'$ and east longitude of $78^{0}30'$ and $80^{0}32'$. The river originates near the village Ahirgawab in Jabalpur District of Madhya Pradesh at an altitude of 550m above near sea level and joins the Yamuna River, near Chilla village of U.P. at an elevation of about 95m. It forms the common boundary between Panna and Chattarpur district of M.P. and Banda district (U.P.). The river has a total length of 427km, out of which 292 km lies in M.P., 84 km in U.P. and 51km forms the common boundary. The total catchement area of the Ken river basin is 28,058 sq km, out of which 24,472 sq km lies in M.P. and the balance 3,386 sq km in Uttar Pradesh. The important tributaries of the Ken River are Sonar, Bearma, kopra, Bewas, Urmil, Mirhasan, Kutni, Kali,Gurne, Patan, Siameri, Chandrawal, Banne, etc, among others. The longest tributary is Sonar which is 227 km in length and lies wholly in M.P. The catchment area of the Sonar river is 12,620 sq km. There are two water quality station at Banda and Madla on River Ken.

Sipra River

The Sipra River is also call Ksipra (Markandeya). It flows in the state of Madhya Pradesh. The river is famous for the sanctity associated with it. According to the legend, the river has originated from the blood of Lord Vishnu. In the time of Mughal King Akbar, it was believed that the river used to flow with milk. Probably this means

that the region where it flowed was very prosperous. There is only one water quality station at Mahidpur and Ujjain on River Sipra.

Sind River

River Sind is one of the second largest right bank tributaries of Yamuna. It rises at a height of 543 m above sea level in Vidisha District of Madhya Pradesh. It flows generally in north- east direction for a distance of 415 km before joining Yamuna 20 km upstream of Auraiya. Important tributaries of Sind are Parwati and Kunwari on its left bank and Pahuj on the right bank. It is probably river Sindhu mentioned in epic Vishnu Purana. There are two water quality stations at Pachauli and Seondha on River Sind.

River Chambal

The Chambal River, called Charmanvati in ancient times, is the largest of the rivers flowing through Rajasthan state. This tributary of Yamuna is 960km long. The total area drained by the Chambal up to its confluence with the Yamuna is 143,219 sq km out of which 76,854 sq km lies in M.P. state, 65,264 sq km in Rajasthan state and 1,101 sq km in Uttar Pradesh. River Chambal, the biggest tributary of Yamuna rises in Vindhyan range near Mhow in Indore District of Madhya Pradesh at an elevation of 354 m at north latitude 22° 28' and east longitude 7 5° 40'. Chambal basin is bound on north by the ridge separating it from Luni and Yamuna basins, on the south by Vindhyan range and on the west by Aravali range, on east lies the ridge separating it from Kunwari and Sind rivers of Yamuna basin Chambal basin lies between north latitudes 22° 27' and 27° 20' and east longitudes 73 ° 20' and 79° 15'. Its total catchment area is 1,39,468 sq.km. It flows initially in north direction for a length of 320 km upto Madhya Pradesh, Rajasthan Border. In this reach Chamla, Siwan and Ratlam rivers join river Chambal from the left and Sipra and Chhoti Kalisindh from the right. The river then enters Rajasthan and after flowing for a distance of 38 km turns clockwise and takes a north easterly course. At 428 km from its origin, it receives its major tributary Kalisindh from the right near the village Laban and further 22 km below another tributary Mej from the left. The river continues to flow in north easterly direction for a further distance of 40 km when it is joined by another major right bank tributary Parwati near village Pali. Thus, the river flows in Madhya Pradesh for a length of 320 km. River Chambal then forms a common boundary between Madhya Pradesh and Rajasthan for a length of 251 km River Banas, a major left bank tributary joins Chambal in this reach near village Rameshwar. Thus, the river flows in Rajasthan for a length of 226 km The river then forms common boundary between Madhya Pradesh and Uttar Pradesh for 117 km and continues in northeasterly direction upto village Pinhat. It then gradually turns right and flows in south -

easterlydirection to enter in Uttar Pradesh, north west of village Chakar Nagar. After flowing for 46 km in Uttar Pradesh, the river outfal ls into Yamuna southeast of village Sehon in Etawah District of Uttar Pradesh. Topographically, out of total area of 1,39,468 sq km of the basin, about 3083 sq km around th e origin of the river can be classified as hilly and rest as plains. Three major dams and one barrage have been constructed on this river forming a series of hydrau lic structures known as Chambal Project. Gundhi Sagar is the first dam located on the boundary of Madhya Pradesh and Rajasthan. Rana Pratap Sagar is second dam located in Rawat Bhata (Rajasthan) 48 km downstream of Gandhi Sagar Dam. Jawahar Sagar Damis third, 22 km downstream of Rana Pratap Sagar Dam. Last one in the series isKota Barrage near Kota city which is 48 km downstream of Rana Pratap Sagar Dam. There are three water quality stations at Tal, Dholpur, and Udi on River Chambal.

Tributaries of Chambal River:

Kali Sindh:

It's originated in the northern slopes of Vindhya Hills. Flowing in the M.P., it enters in the Rajasthan near Bindha village in Jhalwara District. After flowing 145 km in Rajasthan its joins Chambal River near Nonera village of Kota District. The catchment area of the Kalisindh River is 7944km^2. There is one water quality station at Barod on River Kali Sindh.

Parwan River:

The Parwan River is the important tributaries of Kalisindh River. The Parwan originate in the Malwa Plateau and after flowing for about 186 km in M.P., its enter in Rajasthan near Kharibor village in Jhalwara District, its join Kali Sindh near Ramgarh village in Kota district. The catchment area of the Parwan River is 2892km^2. There are two water quality stations at Aklera and Sangod on River Parwan.

Parwati River:

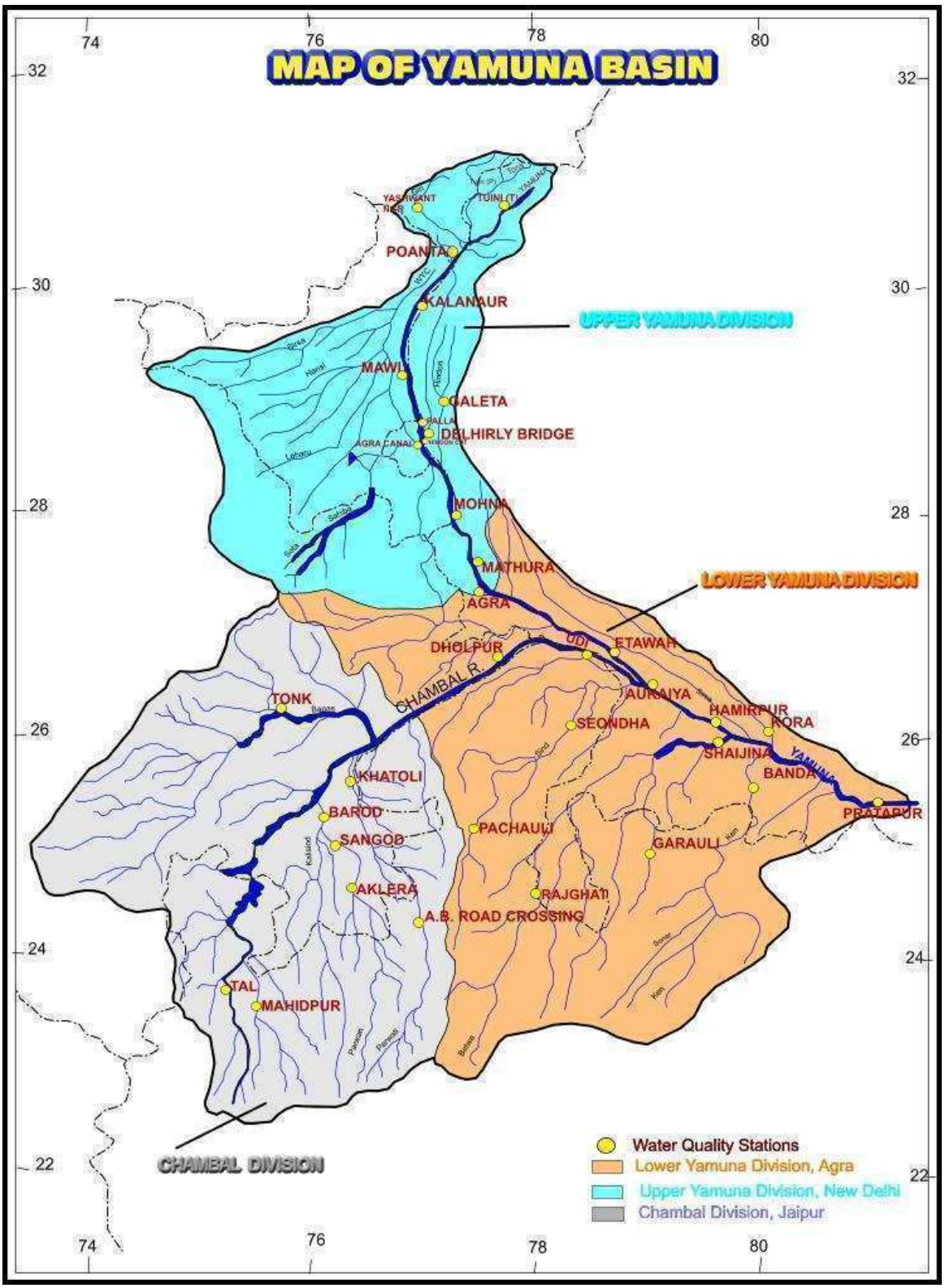
The Parwati River originates in the northern slopes of the Vindhyan hills in M.P. where it forms a boundary between MP and Rajasthan for about 18km, and then enters Rajasthan near Chatarpura village in Baran District. Therefore, it flows for about 83km in Rajasthan before again forming the boundary between MP and Rajasthan for a distance of about 58km up to Pali village in Kota District, where it joins the Chambal. The river catchment in Rajasthanis situated in Kota and Jhalawar District. Major tributaries of the Parwati River ara Lhasi, Berni, Bethli, Andheri, Retri, Dubraj, Bilas and Kunu. There are two water quality stations at A.B. Road Xing and Khatoli on River Parwati.

Banas River

The Banas River originates in the Khamnor hills of the Aravali range (about 5km from Kumbhalgarh) and flows along its entire length through Rajasthan.Banas is a major tributary of the Chambal River, the two rivers meeting near village Rameshwar in Khandar Block in Sawai Madhopur District. The total length of the river about 512km and the catchment area is 45,833km^2. The main tributaries of the Banas River are Berach and Menali on the right bank and Kothari, Khari, Dai, Dheel, Sohadara, Morel and Kalisil on the left bank.

The Banas River itself has many big tributaries. The Berach River originates in the hills northeast of Udaipur city. It flows northeast for about 157 km in Udaipur, Chittorgarh and Bhilwara district before joining Ba nas near Bigod village in Mandalgarh Tehsil of Bhilwara District. The catchment area of the river is 7502km^2, which lies between 70^{0}25′ and 75^{0}02′ east longitudes and 24^{0}29′ and 25^{0}14′ north latitudes. The Berch flow in a hilly region up to Badgaon reservoir and then through plains. This river receives flow from Ayar, Wagli Wagon, Gambhiri and Orai Rivers. There are two water quality station at Tonk and Baranwada on River Banas.

WATER QUALITY STATIONS IN YAMUNA BASIN



WATER QUALITY MONITORING

Water is essential for stream sustaining life and development. Its consumption has increased considerably causing strain in its unlimited availability. The plan for sustainable future development calls for careful monitoring of this precious resource in respect of its quantity and quality for different uses like drinking, washing, agriculture and industrial purposes. Rapid increases in population, urbanization, introduction of sewage system, intensive use of fertilizers, pesticides etc., in agriculture and growth of industries having contaminated effluents have led to increased pollutants entering the river system. Rivers have in built capacity to cleanse themselves waters by dilution and natural purification. However, reduced availability of fresh waters and greater pollutants entering the river has put considerable strain on this capacity. Evaluation for fitness of water for various uses requires monitoring of water quality at various locations of the rivers to know the adequacy of effluent treatment and effect of pollutants with seasonal changes in flow. Past data in water quality is also useful for krowing the changes over the years and arriving at the necessity of legislation, for effluent treatment and disposal, if required.

The Central Water Commission is involved in the assessment of quantity and quality of water in the major rivers including Yamuna. It has a network of water quality monitoring stations on Yamuna and its tributaries. These water quality stations are equipped with the requisite equipment meant for testing and collection of water samples. Water samples are collected in the specially designed samplers, which are suspended, from boat/cable-way or from the nearby bridge. Current meters and echo sounders are used for measurement of velocity and depth respectively to determine discharge in the river.

Two levels of Chemical laboratories are provided in the Yamuna basin. Level-I laboratories are established at the monitoring stations for measurement of highly sensitive parameters such as pH, electrical conductivity, colour, odour, dissolved oxygen and temperature. Parameters, which can tolerate a time lag of 6-24 hours, are analyzed in level-II and level III laboratory at Agra and Delhi. For this purpose samples are transported under ice cooled conditions to minimize physico-chemical and bio-chemical interaction between suspended and soluble matter. Various physico chemical parameters measured in level-I and Level-II and Level III laboratories along with methodology and equipment are given in Table-I A & B.

Table - I A : Laboratory Level-I

S. No.	PARAMETER	PROCEDURE	EQUIPMENT
1.	**Odour**	Smell	
2.	**Colour**	Visual comparison	Colour disc
3.	**Temperature**	Contact	Thermometer
4.	**pH**		pH meter
5.	**Electrical Conductivity**		Conductivity meter
6	**Dissolved Oxygen**	Titration (Winkler Method)	Glass apparatus

Table -I B: Level- II & Level III Laboratory

S. No.	PARAMETER	PROCEDURE	EQUIPMENT
1	**pH***	Electromotive force	pH Meter
2	**EC***	Electromotive force	EC Meter
3	**Calcium**	Titration	Digital Burette
4	**Magnesium**	Titration	Digital Burette
5	**Potassium**	Flame emission	Flame photometer
6	**Sodium**	Flame emission	Flame photometer
7	**Ammonia**	Colour development	Spectrophotometer
8	**Boron**	Colour development	Spectrophotometer
9	**Carbonate**	Titration	Digital Burette
10	**Bi-carbonate**	Titration	Digital Burette
11	**Chloride**	Titration	Digital Burette
12	**Sulphate**	Turbidity	Nephelometer
13	**Nitrate**	Colour development	Spectrophotometer
14	**Nitrate**	Colour development	Spectrophotometer
15	**Silicate**	Colour development	Spectrophotometer
16	**Phosphate**	Colour development	Spectrophotometer
17	**Fluoride**	Colour development	Spectrophotometer
18	**Arsenic****	Atomic Absorption	AAS
19	**Copper****	Atomic Absorption	AAS
20	**Cadmium****	Atomic Absorption	AAS
21	**Chromium****	Atomic Absorption	AAS
22	**Lead****	Atomic Absorption	AAS
23	**Iron****	Atomic Absorption	AAS
24	**Mercury****	Atomic Absorption	AAS
25	**Zinc****	Atomic Absorption	AAS
26	**B. O. D.**	Incubation	B. O. D. incubator
27	**Total Coliform**	MPN Method	-
28	**Fecal Coliform**	MPN Method	-

* pH and EC are also observed at Level I laboratory

** Trace & Toxic metals analysed in NRWQL, New Delhi

If the water contains floating algae particles, these are also trapped in the D.O. bottle during sampling. Algae contain chlorophyll and are able to synthesize oxygen from carbon dioxide in the presence of light. The oxygen so produced is not released immediately as it takes a large number of molecules to form a big enough bubble to be detached from the body of green matter. All such oxygen molecules attached to algae cannot be considered as dissolved in water, but when chemicals are added, this oxygen also passes in solution and behaves as dissolved oxygen. The results of such samples remain abnormal and invite immediate attention of a keen observer and so, such results should be qualified by nature of sample also.

Chemical indices such as hardness, sodium percentage, sodium adsorption ratio and residual sodium carbonate are calculated on the strength of concerned ions. The river water is also classified for salinity hazard on the basis of internationally accepted norms. To maximize the knowledge on the health of river system, variable frequency and scope of monitoring of water quality have been adopted depending upon the extent of point/non point sources of pollution in the water. Under normal sampling, samples are collected once in ten days at 0.6 depths from water surface.

METHODOLOGY OF SAMPLING

The river is a huge mass of flowing water under the gravity gradient. As its boundaries are static, there is considerable variation in velocity along the depth and across the width. Considering the homogeneity of flowing water quality with very minor variations along depth or cross section a representative sample should be the one, which is collected from the portion of river representing maximum flow. This could be taken as the point representing the reasonably high depth (need not be point of maximum depth) and possessing nearly the maximum velocity. However, all streams do not possess water containing nearly uniform water quality along its cross sections. This is due to the fact that the tributaries, which bring water of different quality, flow as twin streams separated by a thin imaginary layer for a considerable length especially in plains where turbulence is minimum. The waters of two streams completely mingle after travelling several kilometers (even up to 200 km.). All sampling points need not so much distance from each other due to various priorities. In such cases it would be advisable to collect 2-3 samples, each representing special quality or environment. The reaches such as those of city waterfronts are very sensitive. Confluence points storage or withdrawal points, fishery development zones etc, have temporal variation along the time of day or day of the months. A more exhaustive study may need daily sampling/hourly samplig/10 day sampling etc. Special sampling is required for longitudinal surveys, which are done three times a year to assess the pollution load and self-assimilation capacity of the stream.

In view of the above background, the water sample is collected for different purposes as described below:

1. For normal monitoring, a sample of 1 litre is collected at S.G line from that part of the channel, which represents maximum flow directly in the sampler bottle from the subsurface.
2. For DO-BOD estimation, the samples are collected in BOD bottles, which are kept in specially designed sampler, the stretch of which is shown here.
3. For special monitoring, the affected reaches. These samples are collected from the left, right and centre of the river to assess lateral migration of chemical /pollutants. Samples are collected from U/S and D/S part of the S.G line. D.O-BOD samples along normal samples are also collected at such location.
4. For longitudinal surveys, the samples are collected from the river in the affected reaches particularly, which have city drains inlets. The locations are selected before and after the joining of drains. The care is taken to ensure that there is reasonable mixing of wastewater with water such samples are analyzed for DO-BOD only.

METHODOLOGY FOR MEASUREMENT OF VARIOUS PARAMETERS

For the analysis of the physico-chemical and biological parameters, Standard Methods for Examination of Water and Wastewater, (APHA) were used. The methods used in the examination are listed below in table 2.

Table 2: Methodology for Measurement of Various Parameters

S. No.	Parameter	Analysis Techniques
1	**Temperature**	By 0-50°C Mercury Thermometer
2	**pH**	By Eutech pH meter (potentiometric)
3	**Electrical Conductivity**	By Eutech Conductivity meter
4	**Carbonate**	By Acid base titration using N/50 HCl Solution
5	**Bicarbonate**	By Acid base titration using N/50 HCl Solution
6	**Calcium**	By Complexometric titration
7	**Magnesium**	By Calculation Method
8	**Sodium**	By Flame photometer
9	**Potassium**	By Flame photometer
10	**Chloride**	By Argentometric Titration
11	**Sulphate**	By Nephelometry
12	**Nitrate (N)**	By Orion Ion Meter
13	**Nitrite (N)**	By UV Spectrophotometer (Varian CARY 100 Bio)
14	**Ammonia (N)**	By UV Spectrophotometer (Varian CARY 100 Bio)
15	**Fluoride**	By Orion Ion Meter
16	**Phosphate**	By UV Spectrophotometer (Varian CARY 100 Bio)
17	**Silicate**	By UV Spectrophotometer (Varian CARY 100 Bio)
18	**Boron**	By UV Spectrophotometer (Varian CARY 100 Bio)
19	**Arsenic**	Atomic Absorption Spectrophotometer (AAS)
20	**Cadmium**	
21	**Copper**	
22	**Chromium**	
23	**Lead**	
24	**Mercury**	
25	**Zinc**	
26	**Nickel**	
27	**Iron**	
28	**Dissolved Oxygen**	BY Dissolved Oxygen Meter
29	**COD**	By COD Digester
30	**BOD**	By Dilution method by incubating at 20°C for 5 days
31	**Total Coliform**	MPN method
32	**Faecal Coliform**	
33	**E.Coli**	

QUALITY CRITERIA

As it is a well-known fact that the sources of usable water on the earth are extremely limited, any kind of pollution in them will further reduce its availability. Polluted water cannot be utilized for drinking because of its inherent health risk. Water with high salt contents is not suitable for agriculture and most industries. The quality of water also interferes with the aesthetic and economic pursuits of water bodies by affecting marine and fresh water aquatic. However, the water, which is not suitable for irrigation, may be quite suitable for industrial cooling or fish growth. Every use of water requires a certain minimum quality of water with regards to the presence of dissolved and suspended materials of both chemical and biological nature. The desirable quality of water ensures no harm to the user.

The achievement for this minimum quality of water for diverse user has led to the formulation of water quality criteria, and water quality standards. *Water quality criteria can be considered as specific requirements on which a decision or judgment to support a particular use will be based* The criteria for the various uses are developed based on the experimental data, and our current knowledge of the health, ecology and other issues and assessing its overalleconomical effect are not a set of fixed values but subject to modification as the scientific data get updated and more and more knowledge is gathered.

The term standard applies to any definite principle or measure established by an authority by limiting concentration of constituents in water to ensure the safe use of water and safeguard the environment.

DRINKING WATER STANDARDS

In view of the direct consumption of water by human beings, the domestic water supply is considered to be most important use of water and drinking use has been given first priority on utilization of water re source in the National Water Policy. In India, agencies like the Bureau of Indian Standard s (BIS) and Indian Council of Medical Research (ICMR) have formulated drinking water standards. The World Health Organization (WHO) has also laid down drinki ng water standards, which are considered international standards. Values of the parameters covered in this water quality year book and given in table 3 are according to BIS 10500, 2012 (with versions).

Table 3. Indian Standard IS: 10500, 2012

S. No.	Substance Characteristic	Acceptable Limit	Undesirable effect outside the desirable limit	Permissible limit**
Essential Characteristics				
1	Colour, Hazen units, Max	5	Above 5, consumer acceptance decreases	15
2.	Odour	Agreeable	-	Agreeable
3.	Taste	Agreeable	-	Agreeable
4.	Turbidity NTU, Max	1	Above 5, consumer acceptance decreases	5
5.	pH Value	6.5 - 8.5	Beyond this range the water will effect the mucous membrane and/ or water supply system	No relaxation
6.	Total Hardness (as $CaCO_3$) mg/l, Max.	200	Encrustations in water supply structure and adverse effect on domestic use	600
7.	Iron (as Fe), mg/1, Max	0.3	Beyond this limit taste/appearance are affected, has adverse affect on domestic uses and water supply structures, and promotes iron bacteria	No relaxation
8.	Chlorides (as Cl), mg/1, Max	250	Beyond this limit taste, corrosion and palatability are affected	1000
9.	Residual free chlorine, mg/l, Minimum	0.2	-	1.0
Desirable Characteristics				
10.	Dissolved solids, mg/1, Max	500	Beyond this palatability decreases and may cause Gastro intestinal irritation	2000
11.	Calcium (as Ca) mg/l, Max.	75	Encrustations in water supply structure and adverse effect on domestic use	200
12.	Magnesium (as Mg) mg/1, Max	30	Encrustations in water supply structure and adverse effect on domestic use	100
13.	Copper (as Cu), mg/1, Max	0.05	Astringent taste, discoloration and corrosion of pipes, fitting and utensils will be caused beyond this	1.5
14.	Manganese (as Mn) mg/l, Max	0.1	Beyond this limit, taste/appearance are affected, has adverse effect on domestic use and water supply structure.	0.3
15.	Sulphates (as SO_4), mg/1, Max	200	Beyond this causes Gastro intestinal irritation when magnesium or sodium are present	400
16.	Nitrate (as NO_3) mg./l, Max.	45	Beyond this methaemoglobinemia takes place.	No relaxation
17.	Fluorides (as F), mg/1, Max	1	Fluoride may be kept as low as possible. High fluoride may cause fluorosis	1.5
18.	Ammonia (as total ammonia-N) mg/l	0.5		No relaxation
19.	Mercury (as Hg), mg/1, Max	0.001	Beyond this, the water becomes toxic	No relaxation
20.	Cadmium (as Cd), mg/1, Max	0.003	Beyond this, the water becomes toxic	No relaxation
21.	Selenium (as Se), mg/1, Max	0.01	Beyond this, the water becomes toxic	No relaxation
22.	Total Arsenic (as As), mg/1, Max	0.01	Beyond this, the water becomes toxic	No relaxation
23.	Cyanides (as CN), mg/1, Max	0.05	Beyond this, the water becomes toxic	No relaxation
24.	Lead (as Pb), mg/1, Max	0.01	Beyond this, the water becomes toxic	No relaxation
25.	Zinc (as Zn), mg/1, Max	5	Beyond this limit, it can cause astringent taste and an opalescence in water	15
26.	Anionic detergents (as MBAS), mg/1, Max	0.2	Beyond this limit, it can cause a light froth in water	1
27.	Total Chromium (as Cr), mg/1, Max	0.05	May be carcinogenic above this limit	No relaxation
28.	Polynuclear aromatic hydrocarbons (as PAH), mg/1, Max	-	May be carcinogenic	-
29.	Mineral oil, mg/1, Max	0.01	Beyond this limit, undesirable taste and odour after chlorination take place	0.03
30.	Pesticides mg/1, Max	Absent	Toxic	0.001
33.	Alkalinity mg/1, Max	200	Beyond this limit, taste becomes unpleasant	600
34.	Aluminum (as Al) mg/1, Max	0.03	Cumulative effect is reported to cause dementia	0.2
35.	Boron mg/1, Max	0.5	-	1.0

No sample should contain E. Coli in 100 ml.; No sample should contain more than 10 coliform organisms per 100 ml; and Coliform organisms should not be detectable in 100 ml of any two consecutive samples

***Desirable limit , **In absence of alternate source**

IRRIGATION STANDARDS

According to the solubility of various salts and distribution pattern of minerals in any area, the major cations in water are sodium, magnesium and calcium and the anions are bicarbonate, chloride and sulphate. Carbonates of calcium and magnesium have less solubility and lead to precipitation, thereby affecting the balance between the major cations. These components affect the soil properties and crop yield. Researchers have done different computations and some of these are discussed below. With regard to the quality of the water for irrigation, the major parameters of concern are salinity denoted by dissolved solids and conductivity, potentially toxic trace elements, and herbicides. The presence of sodium is also an important parameter, the excess quantities of which can deteriorate the soils. High value of sodium may also damage the sensitive crops because of sodium phytotoxicity. The sodium in waters can be denoted by sodium percentage and Sodium Absorption Ratio (SAR). The values of individual constituent are taken in milli equivalent/litre. Table 4 indicates the suitability of water with different constituent, for irrigation.

Table 4 Guidelines for evaluation of irrigation water quality

Class of Water	Sodium %	Electrical conductance	SAR	RSC meq/l
Excellent	<20	<250	<10	1.25
Good	20-40	250-750	10-18	1.25-2.0
Medium	40-60	750-2250	18-26	2.0-2.5
Bad	60-80	2250-4000	>26	2.5-3.0
Very Bad	>80	>4000	>26	>3.0

Classification on the basis of Electrical Conductance (EC)

Most of the salts dissociate in to cations and anions in water. The ions have mobility and provide electrical conductance in water. Electrical conductance is an indirect estimation of dissociated salts. The presence of ions and non-dissociated matter (generally quite small) affects the osmotic presence of water. The uptake of water by roots depends on the position difference in osmotic presence within the root and water surrounding it. If more soluble salts accumulate in the root zone, the plant experiences difficulty in extracting enough water from the salty water. This reduced water uptake by the plant can result in slow or stunted growth and early wilting, the symptoms similar under the condition of drought. Thus, electrical conductance of water can be gainfully used for predicting suitable of irrigation water for the hazards that it can cause to the crops. Therefore,United State Salinity Laboratory,

1954 proposed a classification based on EC value whereby water is classified into four classes from low salinity hazard to very high salinity hazard to the crops.

Classification on the basis of SAR

Sodium is an alkali metal, hence the higher concentration may cause alkali hazard. The alkali hazard involved in the use of water for irrigation is determined by the relative concentrations of sodium. Clay particles are silicates with humic substances showing matter good adsorption. The adsorption of divalent and trivalent ions encourages clay to form aggregates thereby increasing porosity of soil. When the rate of water infiltration into and through the soil is reduced to such an extent that root zone of the crop is not adequately supplied with water, the crop yield is reduced. If the proportion of sodium is high, the alkali hazard is high and conversely, if calcium and magnesium predominate, the hazard is low. Higher concentration of sodium as compared to calcium plus magnesium reduces the adsorption of polyvalent ions on clay, reducing porosity and causing permeability problem, which reduce water infiltration. Alkali hazard of the irrigation water expressed by computed SAR values.

Classification based on the Residual Sodium Carbonate (RSC)

According to Eaton, 1950 development of alkali soil (saline and non saline) may be expected when irrigation water contain $CO_3 + HCO_3$ higher than Ca + Mg. To consider this fact he introduced the concept of RSC. In water containing high concentration of bicarbonates and carbonate, there is a tendency of calcium and to some extent of magnesium to precipitate as carbonate.

$$Ca(HCO_3)_2 \longrightarrow CaCO_3\downarrow + H_2O + CO_2\uparrow$$

The precipitation of calcium and magnesium carbonates increases SAR of the water reducing concentration of Ca and Mg ions. This action takes place more with surface of soil as $Ca(HCO_3)_2$ and $Mg(HCO_3)_2$ are stable only in solution. Even $NaHCO_3$ decomposed under arid conditions and sunlight to form sodium carbonate. This loss of carbon dioxide from water raises pH of soil and also dismembers aggregates to reduce permeability. The irrigation water may be classified into three classes (safe- <1.25; marginal – 1.25 to 2.50; and unsafe - >2.50) on the basis of RSC. RSC increase the soil pH causing unsuitability of environment for function of various soil organisms seriously affecting the productivity.

Table 5 and 6 represent suitability of irrigation water according to SAR and EC

Table 5 - Suitability of Irrigation Water According to Electrical Conductance (Salinity Hazard)[5]

S. No	Electrical conductance (µmho/cm)		Category of Water	Suitability
	Grade	Range		
1	Low Salinity	<250	Excellent	It can be used for irrigation with most crops on most soils with little likelihood that soil salinity will develop. Some leaching is required, but this occurs under normal irrigation practices except in soil of extremely low permeability.
2	Medium Salinity	250 to 750	Good	It can be used if a moderate amount of leaching occurs. Plants with moderate salt tolerance can be grown in most cases without special practices for salinity control
3	High Salinity	750 to 2250	Fair	It cannot be used on soil with restricted drainage. Even with adequate drainage, special management for salinity control may be required and plants with good salt tolerance should be selected.
4	Very High Salinity	>2250	Poor	It is not suitable for irrigation under ordinary conditions but may be used occasionally under very special circumstances . The soil must be permeable, drainage must be adequate, irrigation water must be applied in excess to provide considerable leaching, and high salt-tolerant crops should be selected.

Table 6 - Suitability of Irrigation Water According to Sodium Adsorption Ratio (Sodium Hazard)[5]

S. No	Sodium Adsorption Ratio		Category of Water	Suitability
	Grade	Range		
1	Low Sodacity	<10	Excellent	It can be used for irrigation on almost all soils with little danger of the development of harmful levels of exchangeable sodium. However, sodium-sensitive crops such as stone- fruit trees and avocado may accumulate injurious concentrations of sodium.
2	Medium Sodacity	10 to 18	Good	It will present an appreciable sodium hazard in fine- textured soils having high CES, especially under low leaching conditions, unless gypsum is present in soil. This water may be used on coarse-textured or organic soils with good permeability.
3	High Sodacity	18 to 26	Fair	It may produce harmful levels of exchangeable sodium in most soils and will require special soil management-good drainage, high leaching, and organic matter additions. Gypsiferous soils may not develop harmful levels of exchangeable sodium from such waters. Chemical amendments may be required for replacement of exchangeable sodium, except that use of amendments may not be feasible with waters of very high salinity.
4	Very High Sodacity	>26	Poor	It is generally unsatisfactory for irrigation purposes except at low and perhaps medium salinity, where the solution of calcium from the soil or use of gypsum or other amendments may make the use of these waters feasible.

RIVER WATER QUALITY DATA
OF
UPPER YAMUNA DIVISION

TUINI

GENERAL PARTICULARS

Site	: ***TUINI***	Code	: **GYXOOM4**
State	: **Uttarakhand**	District	: **Dehradun**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **Upper Yamuna Division**	Sub-Division	: **SSD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **Tons**
Sub-Sub-Trib.	: **-**	Local River	: **Tons**
Drainage Area	: **3,362 Sq. Km.**		
Latitude	: **30'56'23"N**	Longitude	: **77'51'24" E**
Zero of Gauge	: **880 (m.s.l.)**	Bank	: **RIGHT BANK**

DETAILS OF OPERATION (OPENING DATE)

Gauge:	: **31.05.1976**
Discharge:	: **31.05.1976**
Sediment	: **-**
Water Quality	: **26.06.1976**
Wireless	: **20/05/1984**

Water Quality Datasheet for the Period : 2015-2016

Station Name : TUINI **Division : UYD, New Delhi**

Local River : TONS

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15		02/08/15		02/10/15		02/12/15		01/02/16		04/04/16	
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear		Clear		Clear		Clear		Clear		Clear	
3	Colour_Cod (-)		Colourless		Colourless		0.0		Colourless		Colourless		Colourless	
4	EC_GEN (µmho/cm)		110		101		177		100		113		108	
5	Odour_Code (-)		Odourless		Odourless		Odourless		Odourless		Odourless		Odourless	
6	pH_GEN (pH units)		8.10		7.13		8.31		7.54		7.18		6.81	
7	Temperature	°C	15.5		16.0		16.0		13.2		10.0		13.0	
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00		0.00		0.00		0.00		0.00		0.00	
9	Alk-Tot (as $CaCO_3$)		31.9		23.9		29.6		28.1		28.5		24.4	
10	Boron		1.16		0.02		0.20		0.05		0.00		0.01	
11	Calcium		10.40		11.45		19.86		11.36		11.96		10.88	
12	Chloride		9.44		7.60		7.42		20.59		12.10		10.53	
13	Carbonate		0.00		0.00		0.00		0.00		0.00		0.00	
14	Fluoride		0.01		0.00		0.01		0.02		0.28		0.17	
15	Iron		0.01		0.00		0.00		0.00		0.00		0.00	
16	Bicarbonate		38.33		28.73		35.52		33.67		34.16		29.28	
17	Potassium		1.86		1.92		1.92		1.85		0.89		1.62	
18	Magnesium		3.34		2.63		8.79		15.74		4.80		2.36	
19	Sodium		8.40		4.35		3.70		25.60		2.60		7.60	
20	Ammonia as N		0.16		0.01		0.13		0.06		0.07		0.14	
21	NO_2+NO_3 as N		2.96		2.12		10.55		1.77		5.22		3.49	
22	Nitrite as N		0.00		0.01		0.05		0.09		0.01		0.48	
23	Nitrate as N		2.96		2.11		10.50		1.68		5.21		3.01	
24	Tot. Phosphate as P		0.35		0.09		0.49		0.02		0.19		0.04	
25	Silicate as SiO_2		-		-		-		-		-		-	
26	Sulphate as SO_4		8.00		10.00		17.00		14.00		9.20		17.20	
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	0.55		1.46		1.05		1.00		1.14		1.26	
28	COD		11.0		14.0		9.0		8.5		12.0		6.9	
29	Dissolved Oxygen		7.80		7.50		7.80		7.40		6.80		6.50	
30	DO_SAT %	%	-		-		-		-		-		-	
31	Tota Coliform	MPN/100 ml	-		1700		800		800		1300		790	
32	Fecal Coliform		-		1300		200		200		20		130	
33	E. Coli		-		-		-		-		-		-	
TRACE & TOXIC														
34	Arsenic	(µg/L)	3.33		2.99		4.44		3.23		3.25		4.12	
35	Cadmium		0.57		0.44		0.14		0.12		0.18		0.22	
36	Chromium		0.90		0.17		0.61		6.39		1.14		0.01	
37	Copper		3.63		2.16		1.76		2.47		0.49		1.02	
38	Lead		1.16		0.06		0.76		1.75		0.40		0.28	
39	Nickel		3.62		2.95		2.61		0.38		0.55		0.77	
40	Zinc	mg/l	0.26		0.01		0.02		0.00		0.00		0.00	
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	26		117		50		28		30		27	
42	Tot-Hardness		40		40		86		94		50		37	
43	Na%	%	30		18		8		37		10		30	
44	RSC (-)		-0.17		-0.32		-1.14		-1.33		-0.44		-0.26	
45	SAR (-)		0.58		0.30		0.17		1.15		0.16		0.54	
46	PESTICIDES													

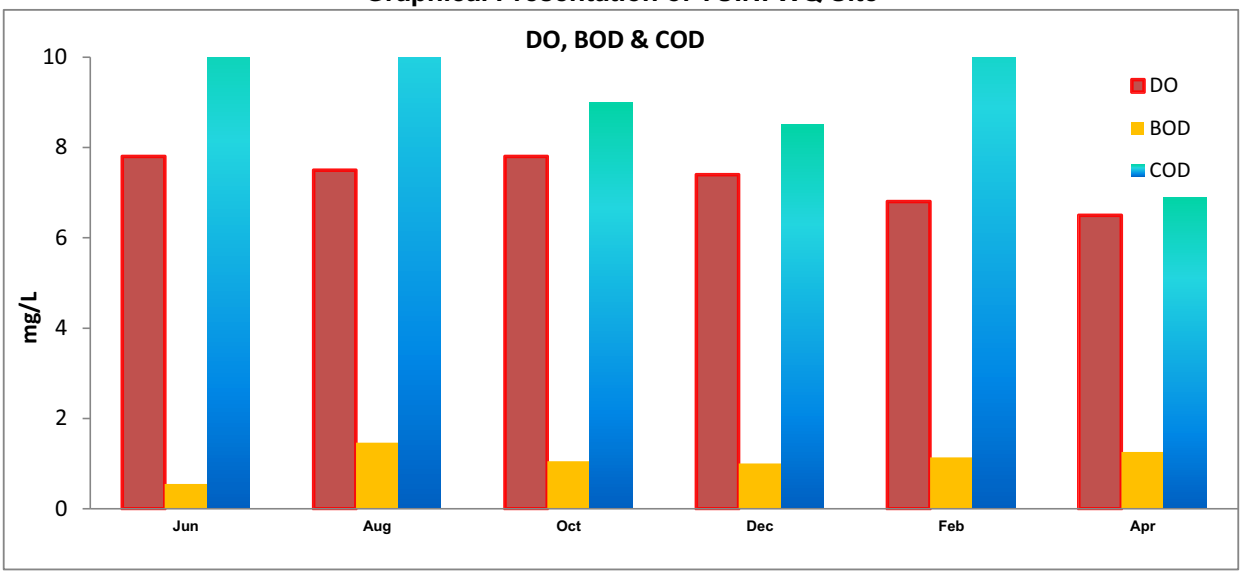
RIVER WATER SUMMARY - 2015-2016

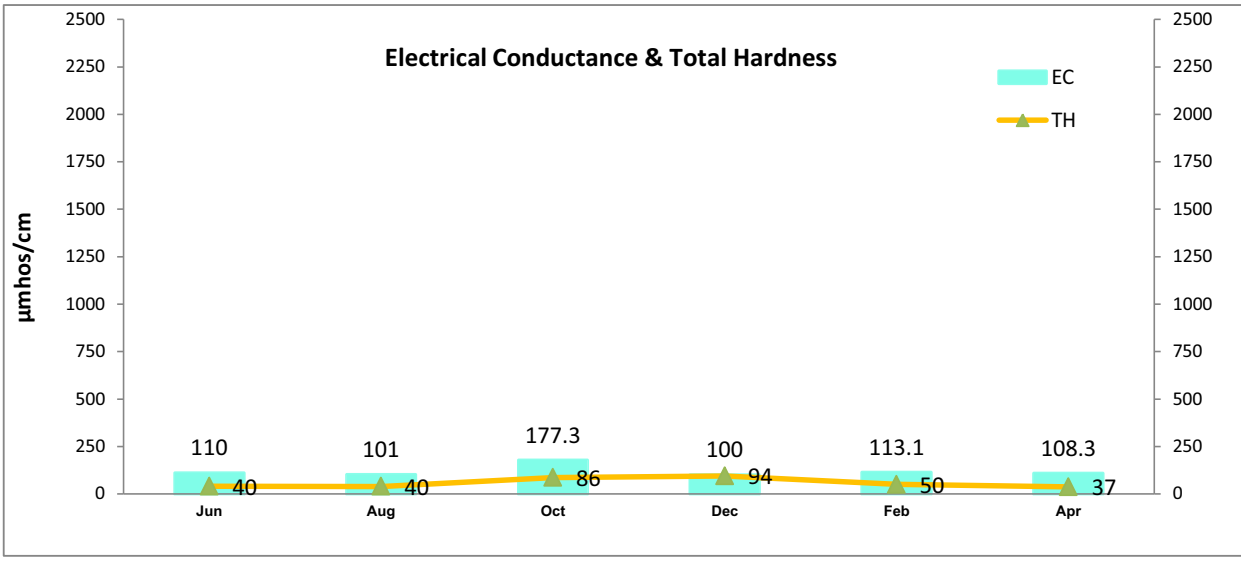
Station Name : TUINI **Division : UYD, New Delhi**

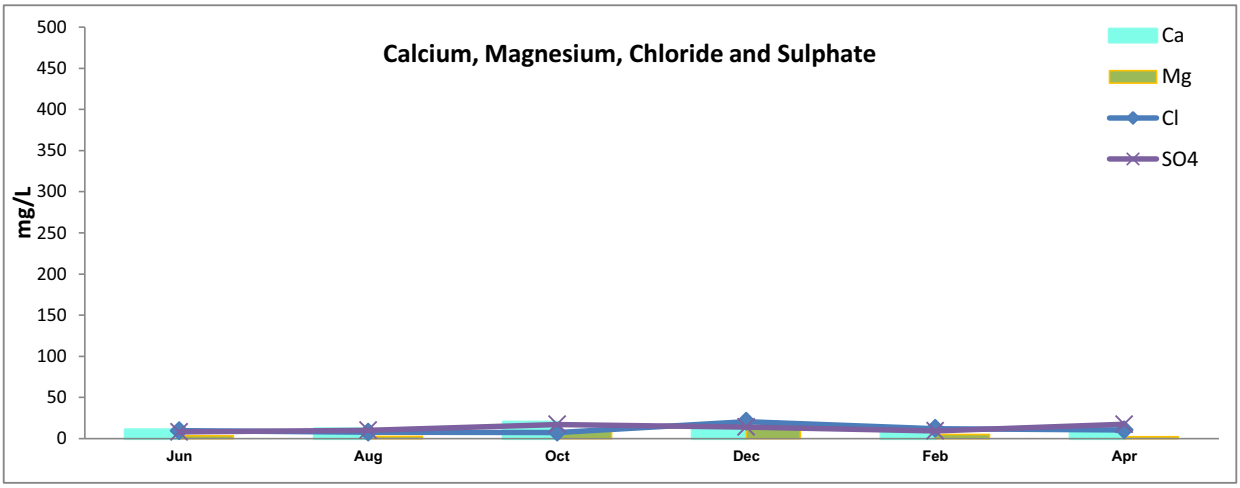
Local River : TONS

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	6	177	100	118	129	107	108
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	6	8.31	6.81	7.51	7.85	7.36	6.81
Temperature	6	16.0	10.0	14.0	15.8	11.6	13.0
CHEMICAL							
Alk-Phen (as $CaCO_3$)	6	0.00	0.00	0.0	0.00	0.00	0.00
Alk-Tot (as $CaCO_3$)	6	31.94	23.94	27.7	28.49	28.26	24.40
Boron	6	1.16	0.00	0.2	0.46	0.02	0.01
Calcium	6	19.86	10.40	12.7	13.90	11.66	10.88
Chloride	6	20.59	7.42	11.3	8.15	16.35	10.53
Carbonate	6	0.00	0.00	0.0	0.00	0.00	0.00
Fluoride	6	0.28	0.00	0.1	0.00	0.15	0.17
Iron	6	0.01	0.00	0.0	0.00	0.00	0.00
Bicarbonate	6	38.33	28.73	33.3	34.19	33.92	29.28
Potassium	6	1.92	0.89	1.7	1.90	1.37	1.62
Magnesium	6	15.74	2.36	6.3	4.92	10.27	2.36
Sodium	6	25.60	2.60	8.7	5.48	14.10	7.60
Ammonia as N	6	0.16	0.01	0.1	0.10	0.07	0.14
NO_2+NO_3 as N	6	10.55	1.77	4.4	5.21	3.50	3.49
Nitrite as N	6	0.48	0.00	0.1	0.02	0.05	0.48
Nitrate as N	6	10.50	1.68	4.2	5.19	3.45	3.01
Tot. Phosphate as P	6	0.49	0.02	0.2	0.31	0.10	0.04
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	6	17.20	8.00	12.6	11.67	11.60	17.20
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	6	1.5	0.6	1.1	1.0	1.1	1.3
COD	6	14.0	6.9	10.2	11.3	10.3	6.9
Dissolved Oxygen	6	7.80	6.50	7.30	7.70	7.1	6.5
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	5	1700	790	1078	1250	1050	790
Fecal Coliform	5	1300	20	370	750	110	130
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	6	4.44	2.99	3.56	3.59	3.24	4.12
Cadmium	6	0.57	0.12	0.28	0.38	0.15	0.22
Chromium	6	6.39	0.01	1.54	0.56	3.77	0.01
Copper	6	3.63	0.49	1.92	2.52	1.48	1.02
Lead	6	1.75	0.06	0.74	0.66	1.08	0.28
Nickel	6	3.62	0.38	1.81	3.06	0.47	0.77
Zinc	6	0.26	0.00	0.05	0.10	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	6	117	26	46	64	29	27
Tot-Hardness	6	94	37	58	55	72	37
Na%	6	37	8	22	19	23	30
RSC (-)	6	-0.17	-1.33	-0.6	-0.54	-0.88	-0.26
SAR (-)	6	1.15	0.16	0.5	0.35	0.65	0.54

Graphical Presentation of TUINI WQ Site







YASHWANT NAGAR

General Particulars

Site	: ***Y. Nagar***	Code	: **GYW00P5**
State	: **Himachal Pradesh**	District	: **Sirmaur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y. Div. New Delhi**	Sub-Division	: **YSD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **Giri**
Sub-Sub-Trib.	: **-**	Local River	: **Giri**
Drainage Area	: **1349 Sq. Km.**		
Latitude	: **30°53'11"N**	Longitude	: **77°12'07" E**
Zero of Gauge	: **890 (m.s.l.)**	Bank	: **Right**

Details of operation (Opening date)

Gauge:	: **28/05/1976**
Discharge:	: **28/05/1976**
Sediment	: **-**
Water Quality	: **28/05/1978**
Wireless	: **20/05/1984**

Water Quality Datasheet for the Period : 2015-2016

Station Name : YASHWANT NAGAR **Division : UYD, New Delhi**

Local River : GIRI

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15		03/08/15		05/10/15		01/12/15		01/02/16		01/04/16	
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear		Clear		Clear		Clear		Clear		Clear	
3	Colour_Cod (-)		Colourless		Colourless		0.0		Colourless		Colourless		Colourless	
4	EC_GEN (µmho/cm)		227		210		270		273		336		290	
5	Odour_Code (-)		Odourless		Odourless		Odourless		Odourless		Odourless		Odourless	
6	pH_GEN (pH units)		7.95		7.55		8.12		8.17		7.72		7.91	
7	Temperature	°C	20.0		23.0		19.0		10.0		5.0		15.0	
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00		0.00		1.60		1.01		0.00		6.00	
9	Alk-Tot (as $CaCO_3$)		80.5		50.2		50.3		63.6		54.8		85.2	
10	Boron		0.58		0.04		0.32		0.23		0.22		0.01	
11	Calcium		26.80		31.36		24.06		24.64		31.18		20.60	
12	Chloride		11.88		9.60		15.86		26.98		27.26		18.10	
13	Carbonate		0.00		0.00		1.92		1.21		0.00		7.20	
14	Fluoride		0.01		0.01		0.00		0.00		0.15		0.16	
15	Iron		0.0090		0.0004		0.0010		0.0010		0.0010		0.0010	
16	Bicarbonate		96.62		60.29		56.48		73.93		65.74		87.82	
17	Potassium		1.96		2.04		1.90		1.72		2.43		1.81	
18	Magnesium		8.68		2.16		11.58		22.17		12.71		18.14	
19	Sodium		16.00		9.85		10.01		4.76		14.90		5.78	
20	Ammonia as N		0.37		0.00		0.39		0.10		0.10		0.14	
21	NO_2+NO_3 as N		2.25		9.24		9.86		5.18		28.06		17.94	
22	Nitrite as N		0.00		0.12		0.04		0.00		0.06		12.61	
23	Nitrate as N		2.25		9.12		9.82		5.18		28.00		5.33	
24	Tot. Phosphate as P		1.00		1.08		0.54		0.13		0.29		0.06	
25	Silicate as SiO_2		-		-		-		-		-		-	
26	Sulphate as SO_4		20.00		16.00		34.70		43.40		50.40		22.20	
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	0.30		1.70		1.70		1.82		1.00		1.32	
28	COD		7.0		8.0		6.0		5.0		4.0		5.0	
29	Dissolved Oxygen		5.70		6.80		8.32		6.80		5.60		6.80	
30	DO_SAT %	%	-		-		-		-		-		-	
31	Tota Coliform	MPN/100 ml	-		2400		1200		2400		200		1000	
32	Fecal Coliform		-		200		400		200		20		200	
33	E. Coli		-		-		-		-		-		-	
TRACE & TOXIC														
34	Arsenic	(µg/L)	3.51		5.56		4.11		1.36		3.51		3.60	
35	Cadmium		1.37		1.95		0.07		3.43		0.58		0.39	
36	Chromium		1.87		1.42		2.34		0.88		0.31		0.24	
37	Copper		1.58		2.24		1.70		6.81		1.59		0.96	
38	Lead		1.27		0.77		1.12		0.97		0.24		0.01	
39	Nickel		6.26		2.13		3.29		2.76		0.66		0.88	
40	Zinc	mg/l	0.26		0.01		0.00		0.01		0.00		0.00	
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	67		196		60		62		78		52	
42	Tot-Hardness		103		87		108		154		131		127	
43	Na%	%	25		19		16		6		19		9	
44	RSC (-)		-0.48		-0.76		-1.18		-1.83		-1.54		-0.86	
45	SAR (-)		0.68		0.46		0.42		0.17		0.57		0.22	
46	PESTICIDES													

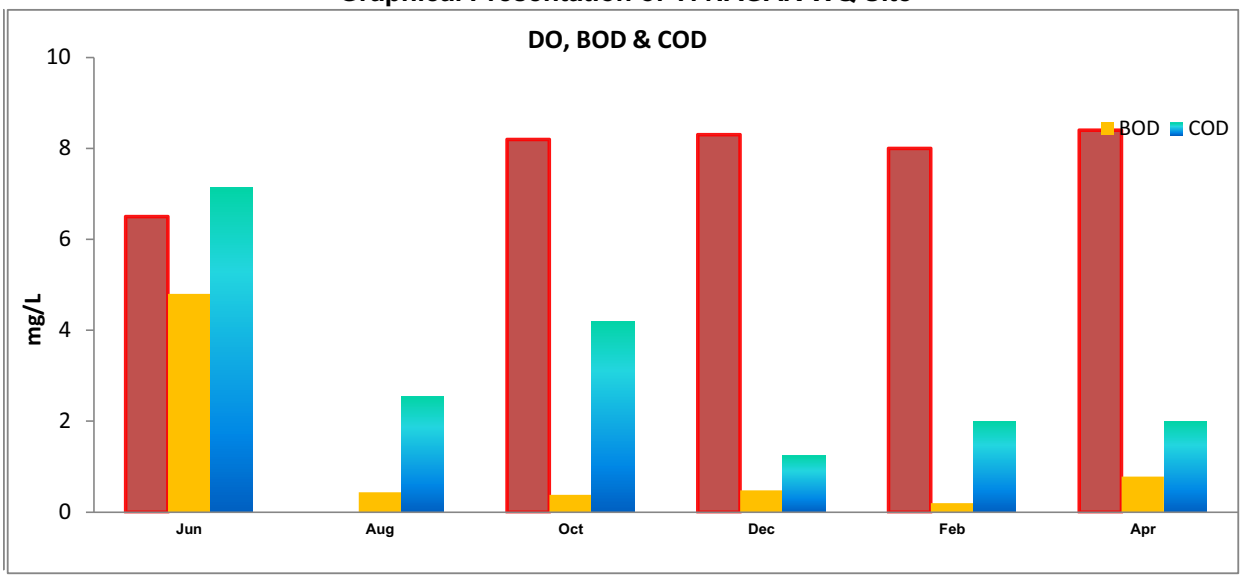
RIVER WATER SUMMARY - 2015-2016

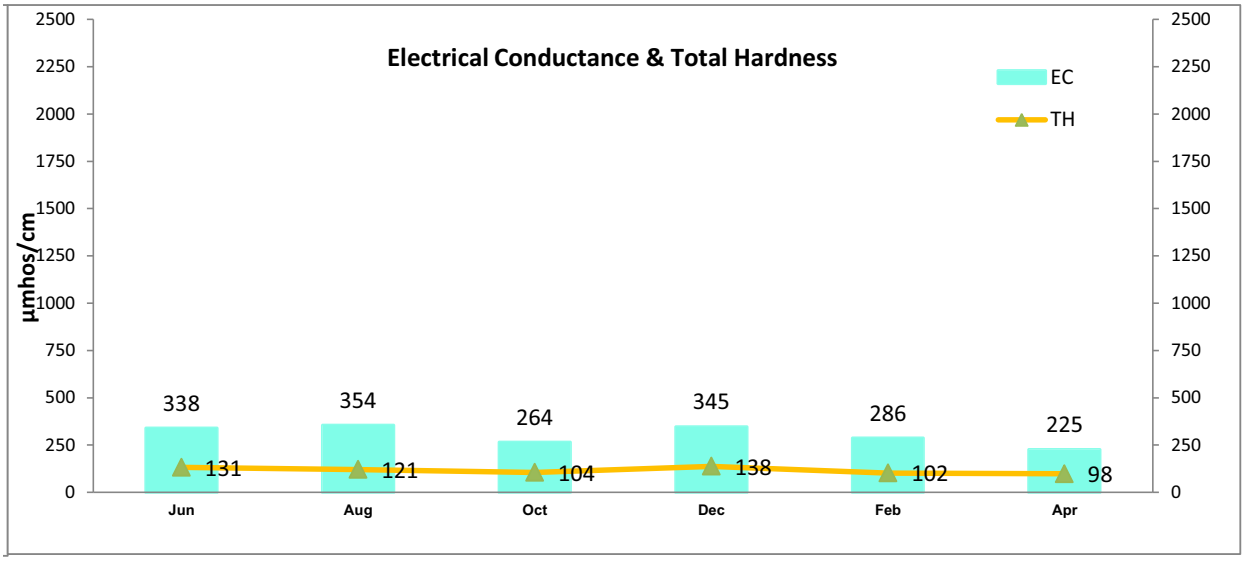
Station Name : YASHWANT NAGAR **Division : UYD, New Delhi**

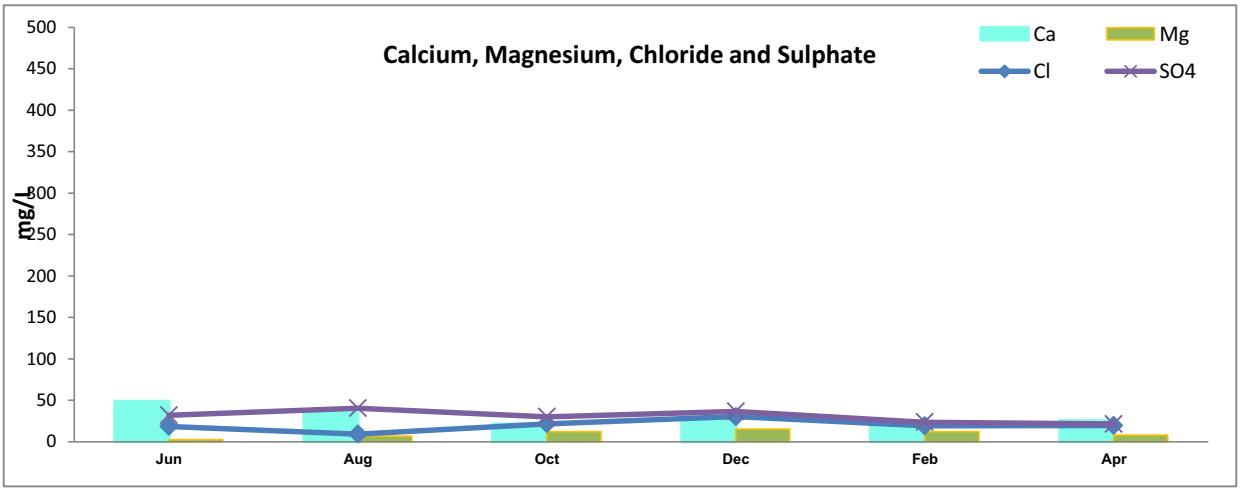
Local River : GIRI

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	6	336	210	268	236	305	290
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	6	8.17	7.55	7.9	7.87	7.95	7.91
Temperature	6	23.0	5.0	15.3	20.7	7.5	15.0
CHEMICAL							
Alk-Phen (as $CaCO_3$)	6	6.00	0.00	1.4	0.53	0.50	6.00
Alk-Tot (as $CaCO_3$)	6	85.18	50.24	64.1	60.34	59.20	85.18
Boron	6	0.58	0.01	0.2	0.31	0.22	0.01
Calcium	6	31.36	20.60	26.4	27.41	27.91	20.60
Chloride	6	27.26	9.60	18.3	12.45	27.12	18.10
Carbonate	6	7.20	0.00	1.7	0.64	0.61	7.20
Fluoride	6	0.16	0.00	0.1	0.01	0.08	0.16
Iron	6	0.01	0.00	0.0	0.00	0.00	0.00
Bicarbonate	6	96.62	56.48	73.5	71.13	69.84	87.82
Potassium	6	2.43	1.72	2.0	1.97	2.08	1.81
Magnesium	6	22.17	2.16	12.6	7.47	17.44	18.14
Sodium	6	16.00	4.76	10.2	11.95	9.83	5.78
Ammonia as N	6	0.39	0.00	0.2	0.25	0.10	0.14
NO_2+NO_3 as N	6	28.06	2.25	12.1	7.12	16.62	17.94
Nitrite as N	6	12.61	0.00	2.1	0.05	0.03	12.61
Nitrate as N	6	28.00	2.25	10.0	7.06	16.59	5.33
Tot. Phosphate as P	6	1.08	0.06	0.5	0.87	0.21	0.06
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	6	50.40	16.00	31.1	23.57	46.90	22.20
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	6	1.82	0.30	1.3	1.23	1.41	1.32
COD	6	8.0	4.0	5.8	7.0	4.5	5.0
Dissolved Oxygen	6	8.32	5.60	6.7	6.94	6.20	6.80
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	5	2400	200	1440	1800	1300	1000
Fecal Coliform	5	400	20	204	300	110	200
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	6	5.56	1.36	3.6	4.39	2.44	3.60
Cadmium	6	3.43	0.07	1.3	1.13	2.01	0.39
Chromium	6	2.34	0.24	1.2	1.88	0.60	0.24
Copper	6	6.81	0.96	2.5	1.84	4.20	0.96
Lead	6	1.27	0.01	0.7	1.05	0.61	0.01
Nickel	6	6.26	0.66	2.7	3.89	1.71	0.88
Zinc	6	0.26	0.00	0.0	0.09	0.01	0.00
CHEMICAL INDICES							
Ca-Hardness	6	196	52	86	108	70	52
Tot-Hardness	6	154	87	119	100	142	127
Na%	6	25	6	16	20	13	9
RSC (-)	6	-0.48	-1.83	-1.1	-0.81	-1.68	-0.86
SAR (-)	6	0.68	0.17	0.4	0.52	0.37	0.22

Graphical Presentation of Y. NAGAR WQ Site







POANTA

GENERAL PARTICULARS

Site	:***Poanta***	Code	: **GY000Y5**
State	: **Himachal Pradesh**	District	: **Sirmaur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **UYCR, Dehradun**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **10769 Sq Km.**		
Latitude	: **30°25'50"N**	Longitude	: **77°37'02"E**
Zero of Gauge	: **372 (M.S.L.)**	Bank	: **Left**

DETAILS OF OPERATION (OPENING DATE)

Gauge:	: **16/10/1978**
Discharge:	: **11/11/1978**
Sediment	: **-**
Water Quality	: **31/05/1978**
Wireless	: **22/04/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : POANTA **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		02/06/15		03/08/15		02/10/15		03/12/15		02/02/16		04/04/16	
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear		Cloudy		Clear		Clear		Clear		Clear	
3	Colour_Cod (-)		Colourless		Colourless		0.0		Colourless		Colourless		Colourless	
4	EC_GEN (µmho/cm)		370		160		366		363		361		274	
5	Odour_Code (-)		Odourless		Odourless		Odourless		Odourless		Odourless		Odourless	
6	pH_GEN (pH units)		7.50		7.58		8.43		8.06		7.85		7.86	
7	Temperature	°C	23.0		23.0		16.0		15.0		7.0		20.0	
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00		0.00		2.22		0.00		0.00		5.80	
9	Alk-Tot (as $CaCO_3$)		115.9		53.0		100.4		84.2		104.1		63.0	
10	Boron		0.80		0.02		0.43		0.05		0.10		0.07	
11	Calcium		38.40		22.89		34.92		25.12		46.20		23.44	
12	Chloride		26.30		7.40		26.23		26.27		30.40		12.43	
13	Carbonate		0.00		0.00		2.66		0.00		0.00		6.96	
14	Fluoride		0.00		0.01		0.01		0.01		0.20		0.19	
15	Iron		0.01		0.00		0.00		0.00		0.00		0.01	
16	Bicarbonate		139.07		63.58		115.11		101.01		124.90		61.72	
17	Potassium		2.10		2.18		2.64		2.15		1.02		2.12	
18	Magnesium		11.95		4.89		11.22		15.63		10.26		12.40	
19	Sodium		21.12		1.12		17.68		24.50		5.15		10.64	
20	Ammonia as N		0.26		0.01		1.18		0.10		0.04		0.16	
21	NO_2+NO_3 as N		4.61		2.34		2.00		4.82		15.74		3.49	
22	Nitrite as N		0.01		0.03		0.05		0.05		0.04		0.00	
23	Nitrate as N		4.60		2.31		1.95		4.77		15.70		3.49	
24	Tot. Phosphate as P		0.05		0.15		0.61		0.02		0.13		0.03	
25	Silicate as SiO_2		-		-		-		-		-		-	
26	Sulphate as SO_4		15.00		14.00		38.60		55.00		17.60		35.00	
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	1.63		1.86		1.08		1.10		1.66		1.13	
28	COD		6.0		7.0		7.0		8.0		8.0		5.0	
29	Dissolved Oxygen		5.60		5.00		7.30		6.50		5.80		6.10	
30	DO_SAT %	%	-		-		-		-		-		-	
31	Tota Coliform	MPN/100 ml	-		1700		1700		800		2200		1700	
32	Fecal Coliform		-		800		800		200		20		330	
33	E. Coli		-		-		-		-		-		-	
TRACE & TOXIC														
34	Arsenic	(µg/L)	3.35		3.94		3.49		3.41		3.53		3.77	
35	Cadmium		0.36		0.56		0.26		4.25		8.31		0.25	
36	Chromium		0.71		0.01		0.77		2.34		1.73		0.17	
37	Copper		1.66		0.96		2.96		4.85		2.86		0.38	
38	Lead		1.21		0.06		0.76		3.38		5.57		0.02	
39	Nickel		2.37		1.61		3.95		16.62		30.26		1.38	
40	Zinc	mg/l	0.26		0.01		0.01		0.00		0.00		0.00	
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	96		238		87		63		116		59	
42	Tot-Hardness		146		78		134		128		158		110	
43	Na%	%	24		3		22		29		7		17	
44	RSC (-)		-0.64		-0.51		-0.71		-0.90		-1.12		-0.96	
45	SAR (-)		0.76		0.06		0.66		0.94		0.18		0.44	
46	PESTICIDES													

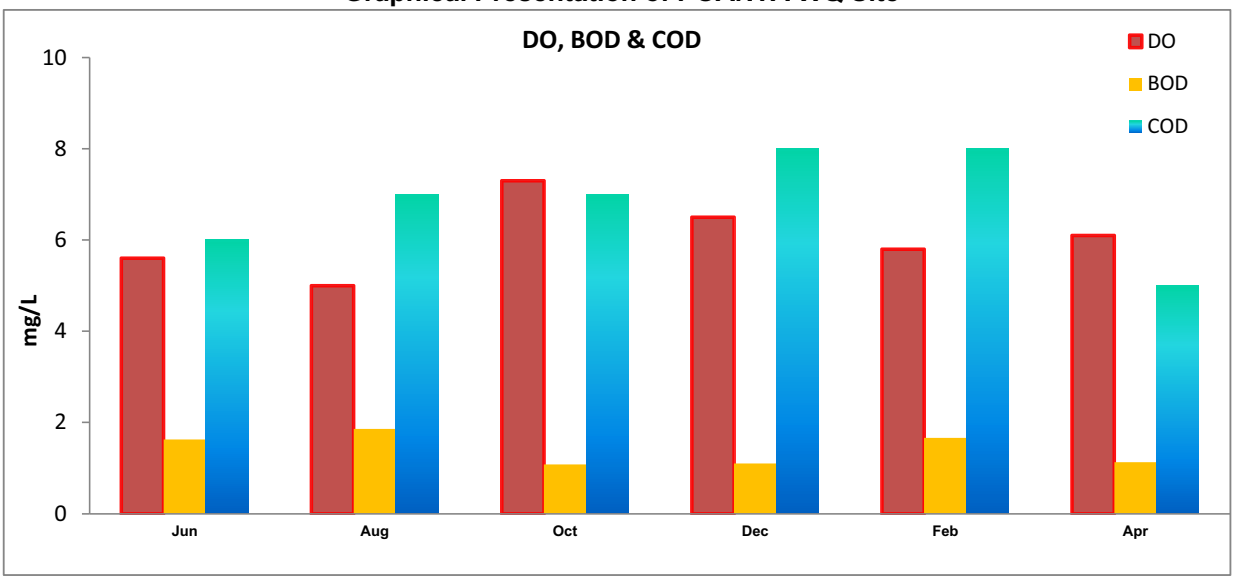
RIVER WATER SUMMARY - 2015-2016

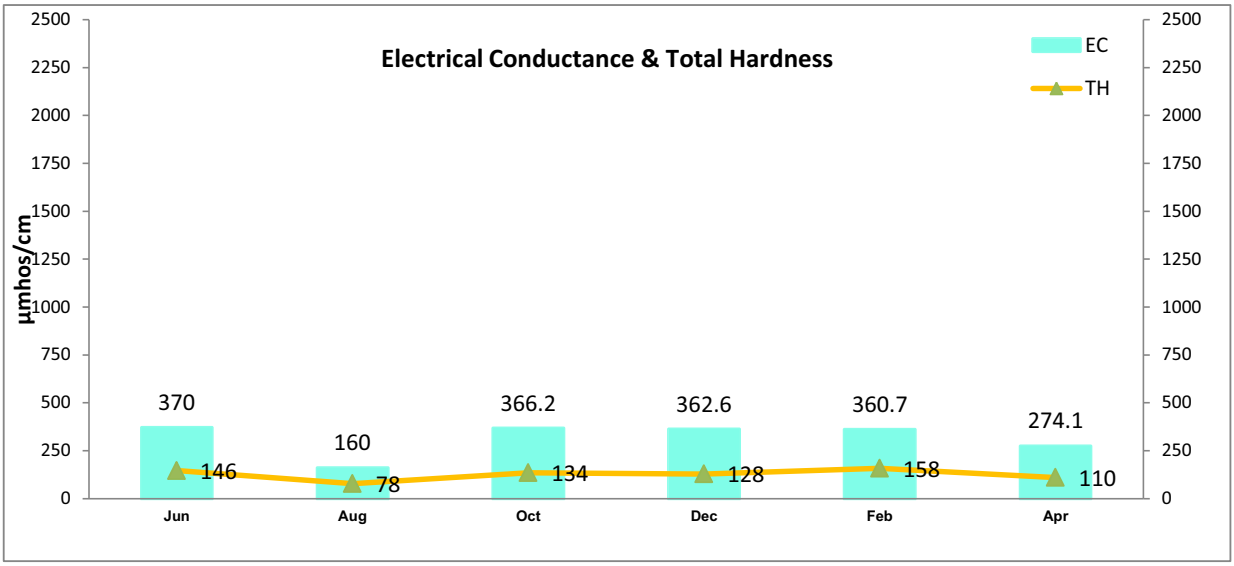
Station Name : POANTA **Division : UYD, New Delhi**

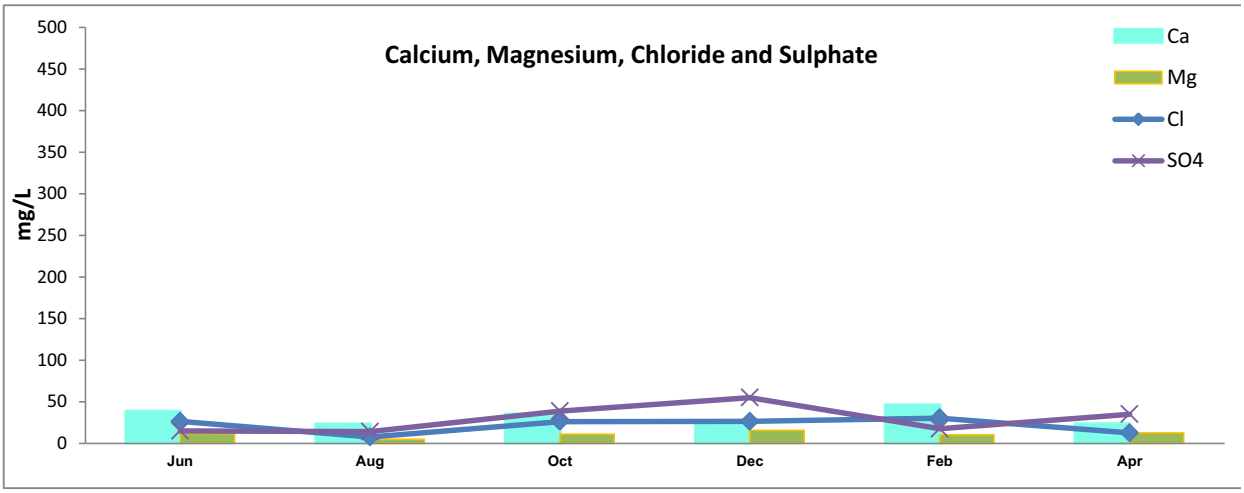
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	6	370	160	316	299	362	274
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	6	8.43	7.50	7.9	7.84	7.96	7.86
Temperature	6	23.0	7.0	17.3	20.7	11.0	20.0
CHEMICAL							
Alk-Phen (as $CaCO_3$)	6	5.80	0.00	1.3	0.74	0.00	5.80
Alk-Tot (as $CaCO_3$)	6	115.89	52.98	86.8	89.74	94.13	63.03
Boron	6	0.80	0.02	0.2	0.42	0.08	0.07
Calcium	6	46.20	22.89	31.8	32.07	35.66	23.44
Chloride	6	30.40	7.40	21.5	19.98	28.34	12.43
Carbonate	6	6.96	0.00	1.6	0.89	0.00	6.96
Fluoride	6	0.20	0.00	0.1	0.01	0.10	0.19
Iron	6	0.01	0.00	0.0	0.00	0.00	0.01
Bicarbonate	6	139.07	61.72	100.9	105.92	112.96	61.72
Potassium	6	2.64	1.02	2.0	2.31	1.59	2.12
Magnesium	6	15.63	4.89	11.1	9.35	12.95	12.40
Sodium	6	24.50	1.12	13.4	13.31	14.83	10.64
Ammonia as N	6	1.18	0.01	0.3	0.48	0.07	0.16
NO_2+NO_3 as N	6	15.74	2.00	5.5	2.98	10.28	3.49
Nitrite as N	6	0.05	0.00	0.0	0.03	0.05	0.00
Nitrate as N	6	15.70	1.95	5.5	2.95	10.24	3.49
Tot. Phosphate as P	6	0.61	0.02	0.2	0.27	0.07	0.03
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	6	55.00	14.00	29.2	22.53	36.30	35.00
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	6	1.86	1.08	1.41	1.52	1.38	1.13
COD	6	8.0	5.0	6.8	6.7	8.0	5.0
Dissolved Oxygen	6	7.30	5.00	6.05	5.97	6.2	6.1
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	5	2200	800	1620	1700	1500	1700
Fecal Coliform	5	800	20	430	800	110	330
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	6	3.94	3.35	3.6	3.59	3.47	3.77
Cadmium	6	8.31	0.25	2.3	0.39	6.28	0.25
Chromium	6	2.34	0.01	1.0	0.50	2.04	0.17
Copper	6	4.85	0.38	2.3	1.86	3.86	0.38
Lead	6	5.57	0.02	1.8	0.68	4.48	0.02
Nickel	6	30.26	1.38	9.4	2.64	23.44	1.38
Zinc	6	0.26	0.00	0.0	0.09	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	6	238	59	110	140	89	59
Tot-Hardness	6	158	78	126	119	143	110
Na%	6	29	3	17	16	18	17
RSC (-)	6	-0.51	-1.12	-0.8	-0.62	-1.01	-0.96
SAR (-)	6	0.94	0.06	0.5	0.49	0.56	0.44

Graphical Presentation of POANTA WQ Site







KALANAUR

General Particulars

Site	:***Kalanaur***	Code	: **GY000X8**
State	: **Uttar Pradesh**	District	: **Saharanpur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **YSD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **12639 Sq. Km.**		
Latitude	: **30°04'05"N**	Longitude	: **77°21'52"E**
Zero of Gauge	: **260 (m.s.l.)**	Bank	: **Right**

Details of operation (Opening date)

Gauge:	: **28/10/1975**
Discharge:	: **28/10/1975**
Sediment	: **-**
Water Quality	: **11/11/1978**
Wireless	: **19/09/1976**

Water Quality Datasheet for the Period : 2015-2016

Station Name : KALANAUR **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15		03/08/15		05/10/15		01/12/15		01/02/16		04/04/16	
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear		Clear		Clear		Clear		Clear		Clear	
3	Colour_Cod (-)		Colourless		Colourless		0.0		Colourless		Colourless		Colourless	
4	EC_GEN (µmho/cm)		201		230		321		324		404		274	
5	Odour_Code (-)		Odourless		Odourless		Odourless		Odourless		Odourless		Odourless	
6	pH_GEN (pH units)		7.80		7.74		8.44		8.16		8.04		7.86	
7	Temperature	°C	18.0		24.5		29.0		14.0		9.0		20.0	
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00		0.00		0.80		0.00		0.00		5.80	
9	Alk-Tot (as $CaCO_3$)		68.8		80.1		71.0		79.7		107.3		63.0	
10	Boron		0.42		0.04		0.08		0.21		0.02		0.07	
11	Calcium		21.80		34.81		33.54		39.20		45.48		23.44	
12	Chloride		11.88		6.60		22.65		14.20		29.65		12.43	
13	Carbonate		0.00		0.00		0.96		0.00		0.00		6.96	
14	Fluoride		0.002		0.003		0.006		0.007		0.229		0.194	
15	Iron		0.009		0.000		0.001		0.001		0.001		0.010	
16	Bicarbonate		82.52		96.08		83.24		95.69		128.80		61.72	
17	Potassium		0.90		2.84		3.31		2.88		4.75		2.12	
18	Magnesium		8.56		4.42		15.28		19.58		13.31		12.40	
19	Sodium		12.20		1.16		18.59		20.00		11.15		10.64	
20	Ammonia as N		0.18		0.01		0.19		0.09		0.08		0.16	
21	NO_2+NO_3 as N		2.05		3.02		5.73		3.26		9.38		3.49	
22	Nitrite as N		0.00		0.03		0.05		0.00		0.00		0.00	
23	Nitrate as N		2.05		2.99		5.68		3.26		9.38		3.49	
24	Tot. Phosphate as P		0.93		0.17		0.55		0.07		0.20		0.03	
25	Silicate as SiO_2		-		-		-		-		-		-	
26	Sulphate as SO_4		14.00		20.00		30.40		36.80		43.20		35.00	
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	1.93		1.44		1.12		1.50		1.54		1.13	
28	COD		14.0		11.0		9.0		11.0		13.0		5.0	
29	Dissolved Oxygen		6.30		5.60		6.20		5.65		5.90		6.10	
30	DO_SAT %	%	-		-		-		-		-		-	
31	Tota Coliform	MPN/100 ml	-		1400		800		1400		1300		1700	
32	Fecal Coliform		-		<200		200		200		200		330	
33	E. Coli		-		-		-		-		-		-	
TRACE & TOXIC														
34	Arsenic	(µg/L)	3.51		5.32		5.13		3.48		4.47		3.77	
35	Cadmium		0.59		8.10		0.05		0.14		0.17		0.25	
36	Chromium		1.17		1.36		2.53		0.80		2.99		0.17	
37	Copper		1.79		5.34		1.01		12.31		0.16		0.38	
38	Lead		0.98		0.21		0.74		1.06		0.09		0.02	
39	Nickel		4.19		0.09		2.87		0.46		0.09		1.38	
40	Zinc	mg/l	0.26		0.01		0.00		0.00		0.00		0.00	
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	55		165		84		98		114		59	
42	Tot-Hardness		90		105		148		180		169		110	
43	Na%	%	23		2		21		19		12		17	
44	RSC (-)		-0.45		-0.53		-1.55		-2.02		-1.27		-0.96	
45	SAR (-)		0.56		0.05		0.67		0.65		0.37		0.44	
46	PESTICIDES													

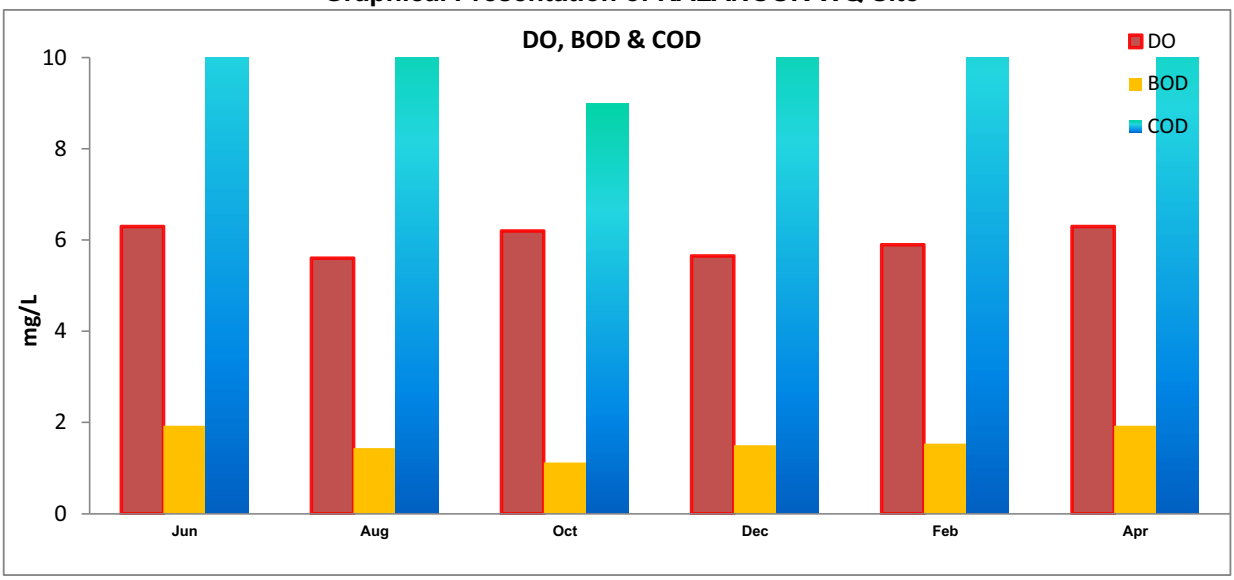
RIVER WATER SUMMARY - 2015-2016

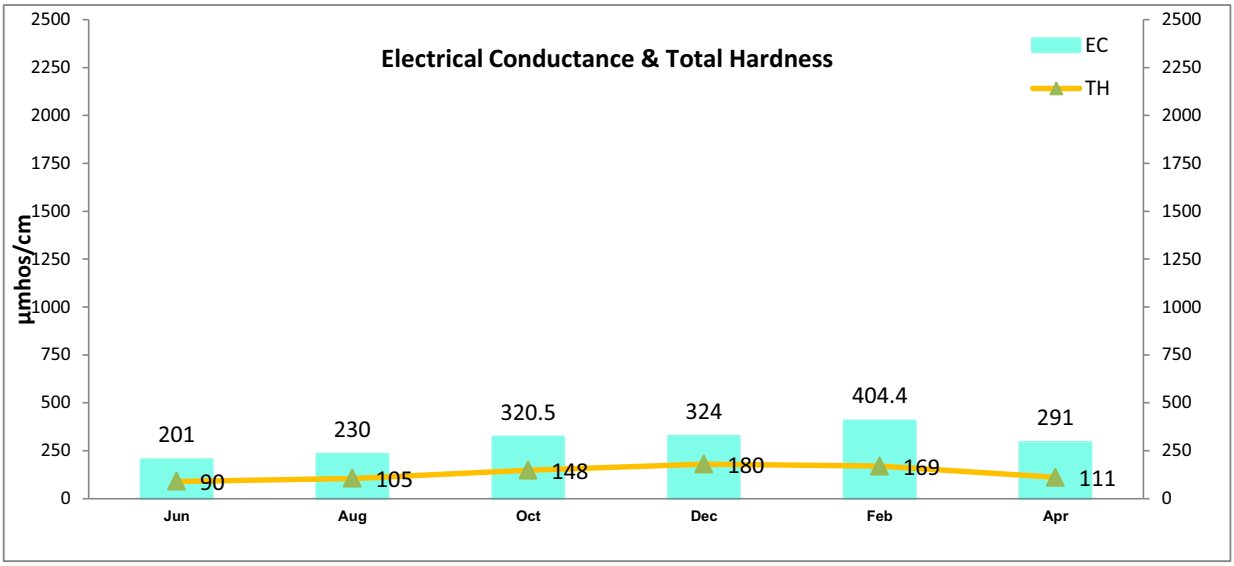
Station Name : KALANAUR **Division : UYD, New Delhi**

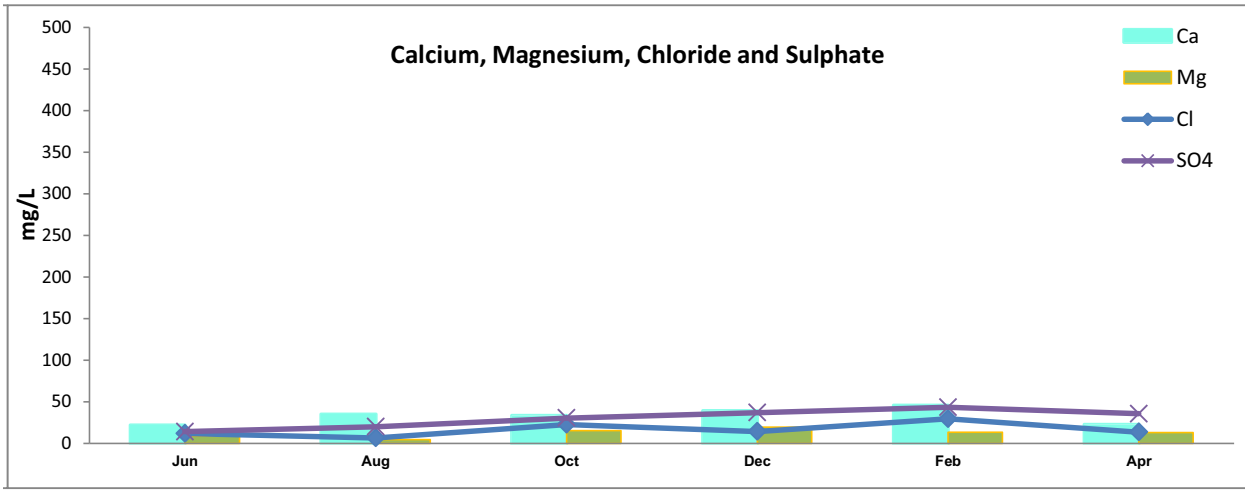
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	6	404	201	292	251	364	274
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	6	8.44	7.74	8.0	7.99	8.10	7.86
Temperature	6	29.0	9.0	19.1	23.8	11.5	20.0
CHEMICAL							
Alk-Phen (as $CaCO_3$)	6	5.80	0.00	1.1	0.27	0.00	5.80
Alk-Tot (as $CaCO_3$)	6	107.33	63.03	78.3	73.27	93.54	63.03
Boron	6	0.42	0.02	0.1	0.18	0.12	0.07
Calcium	6	45.48	21.80	33.0	30.05	42.34	23.44
Chloride	6	29.65	6.60	16.2	13.71	21.93	12.43
Carbonate	6	6.96	0.00	1.3	0.32	0.00	6.96
Fluoride	6	0.23	0.00	0.1	0.00	0.12	0.19
Iron	6	0.01	0.00	0.0	0.00	0.00	0.01
Bicarbonate	6	128.80	61.72	91.3	87.28	112.25	61.72
Potassium	6	4.75	0.90	2.8	2.35	3.82	2.12
Magnesium	6	19.58	4.42	12.3	9.42	16.45	12.40
Sodium	6	20.00	1.16	12.3	10.65	15.58	10.64
Ammonia as N	6	0.19	0.01	0.1	0.13	0.08	0.16
NO_2+NO_3 as N	6	9.38	2.05	4.5	3.60	6.32	3.49
Nitrite as N	6	0.05	0.00	0.0	0.03	0.00	0.00
Nitrate as N	6	9.38	2.05	4.5	3.57	6.32	3.49
Tot. Phosphate as P	6	0.93	0.03	0.3	0.55	0.14	0.03
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	6	43.20	14.00	29.9	21.47	40.00	35.00
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	6	1.93	1.12	1.4	1.50	1.52	1.13
COD	6	14.0	5.0	10.5	11.3	12.0	5.0
Dissolved Oxygen	6	6.30	5.60	6.0	6.03	5.8	6.1
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	5	1700	800	1320	1100	1350	1700
Fecal Coliform	4	330	200	233	200	200	330
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	6	5.32	3.48	4.3	4.65	3.98	3.77
Cadmium	6	8.10	0.05	1.5	2.91	0.16	0.25
Chromium	6	2.99	0.17	1.5	1.69	1.90	0.17
Copper	6	12.31	0.16	3.5	2.71	6.24	0.38
Lead	6	1.06	0.02	0.5	0.64	0.58	0.02
Nickel	6	4.19	0.09	1.5	2.38	0.28	1.38
Zinc	6	0.26	0.00	0.0	0.09	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	6	165	55	96	101	106	59
Tot-Hardness	6	180	90	134	114	174	110
Na%	6	23	2	16	15	16	17
RSC (-)	6	-0.45	-2.02	-1.1	-0.85	-1.65	-0.96
SAR (-)	6	0.67	0.05	0.5	0.42	0.51	0.44

Graphical Presentation of KALANOUR WQ Site







MAWI

General Particulars

Site	:***Mawi***	Code	: **GY000V8**
State	: **Uttar Pradesh**	District	: **Muzaffarnagar**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **YSD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **15622 Sq. Km.**		
Latitude	: **29°23'07" N**	Longitude	: **77°09'54" E**
Zero of Gauge	: **225 (m.s.l.)**	Bank	: **Left**

Details of operation (Opening date)

Gauge:	: **21/02/1975**
Discharge:	: **21/02/1975**
Sediment	: **12/12/1988**
Water Quality	: **12/12/1988**
Wireless	: **18/09/1976**

Water Quality Datasheet for the Period : 2015-2016

Station Name : MAWI **Code: GY000V8** **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	04/10/15	02/11/15	02/12/15	04/01/16	01/02/16	01/03/16	04/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Colourless											
4	EC_GEN (µmho/cm)		238	177	212	290	460	399	405	476	470	574	395	359
5	Odour_Code (-)		Odourless											
6	pH_GEN (pH units)		7.70	6.90	7.67	8.00	8.55	6.88	7.25	7.95	8.20	7.68	7.81	7.75
7	Temperature	°C	30.0	28.0	28.0	29.0	29.0	20.0	18.0	13.0	14.0	0.0	25.0	27.0
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	-	0.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	0.00	13.00	0.00
9	Alk-Tot (as $CaCO_3$)		-	50.2	78.9	86.8	166.3	85.4	87.6	147.3	109.0	107.3	115.3	111.7
10	Boron		0.02	0.08	0.11	0.08	0.49	0.00	0.05	0.01	0.04	0.00	BDL	-
11	Calcium		21.60	22.07	16.72	24.52	40.49	18.38	40.80	42.52	43.10	36.96	36.96	36.08
12	Chloride		17.82	9.50	10.39	15.10	13.51	68.56	30.53	29.61	47.47	88.27	24.85	18.10
13	Carbonate		0.00	0.00	0.00	0.00	2.88	0.00	0.00	0.00	0.00	0.00	15.60	0.00
14	Fluoride		0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.32	0.34	0.40	0.33	0.40
15	Iron		0.101	0.001	0.002	0.002	0.002	0.002	0.001	-	0.001	0.001	0.020	0.004
16	Bicarbonate		114.68	60.20	94.67	104.20	193.81	102.48	105.16	176.70	130.80	128.80	107.10	134.00
17	Potassium		0.90	1.16	3.69	3.68	5.43	5.77	8.16	3.68	12.20	10.39	6.46	10.01
18	Magnesium		9.10	3.99	14.11	11.11	23.83	35.12	25.53	18.70	18.50	33.22	15.24	12.81
19	Sodium		12.50	8.10	8.70	10.31	11.50	11.10	8.30	17.77	23.95	18.85	15.01	10.62
20	Ammonia as N		0.23	1.03	0.13	0.49	0.65	0.92	2.17	1.15	0.81	0.02	0.37	0.87
21	NO_2+NO_3 as N		2.14	3.97	1.93	7.62	3.87	1.12	1.39	-	13.09	4.96	4.28	1.85
22	Nitrite as N		0.04	0.07	0.14	0.00	0.27	0.05	0.02	1.87	0.69	0.05	0.03	0.32
23	Nitrate as N		2.10	3.90	1.79	7.62	3.60	1.07	1.37	4.13	12.40	4.91	4.25	1.53
24	Tot. Phosphate as P		0.46	1.62	0.37	0.64	0.43	0.30	0.66	0.21	0.34	0.18	0.49	0.50
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		14.00	10.00	21.00	35.00	33.80	42.90	38.60	48.80	54.40	47.80	39.40	36.40
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	8.40	10.52	3.11	3.08	4.15	4.50	5.40	16.47	5.92	3.49	6.39	15.53
28	COD		36	26	31	19	12	14	15	20	11	16	19	30
29	Dissolved Oxygen		3.80	3.65	4.44	3.56	6.40	5.60	4.70	3.50	4.30	5.40	3.90	2.33
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	3400	1300	4500	12000	3400	110000	28000	220000	49000	70000
32	Fecal Coliform		-	-	2700	400	1400	6000	1400	70000	3400	33000	17000	22000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	6.22	6.08	4.08	1.36	4.14	6.53	4.97	-	3.55	6.49	3.56	0.73
35	Cadmium		1.96	4.38	8.07	0.65	0.09	0.15	0.10	-	0.16	0.60	0.35	0.04
36	Chromium		2.22	2.42	0.89	0.39	0.86	2.05	4.71	-	0.19	0.76	0.40	4.50
37	Copper		4.84	3.22	5.28	0.65	2.61	2.38	2.27	-	0.56	3.03	1.38	1.05
38	Lead		1.03	0.39	0.25	0.65	0.75	1.15	2.07	-	0.22	0.16	0.10	0.37
39	Nickel		28.12	3.20	39.56	4.68	2.72	1.83	0.32	-	0.15	5.62	0.68	1.71
40	Zinc	mg/l	0.28	0.26	0.26	0.00	0.00	0.01	0.00	-	0.00	0.00	0.00	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	54	55	165	61	101	46	102	106	108	231	92	90
42	Tot-Hardness		92	72	101	108	201	192	208	184	185	231	156	144
43	Na%	%	23	19	15	17	11	11	8	17	21	14	17	13
44	RSC (-)		0.04	-0.45	-0.46	-0.44	-0.74	-2.17	-2.44	-0.79	-1.55	-2.50	-0.84	-0.67
45	SAR (-)		0.57	0.42	0.38	0.43	0.35	0.35	0.25	0.57	0.77	0.54	0.52	0.39
46	PESTICIDES													

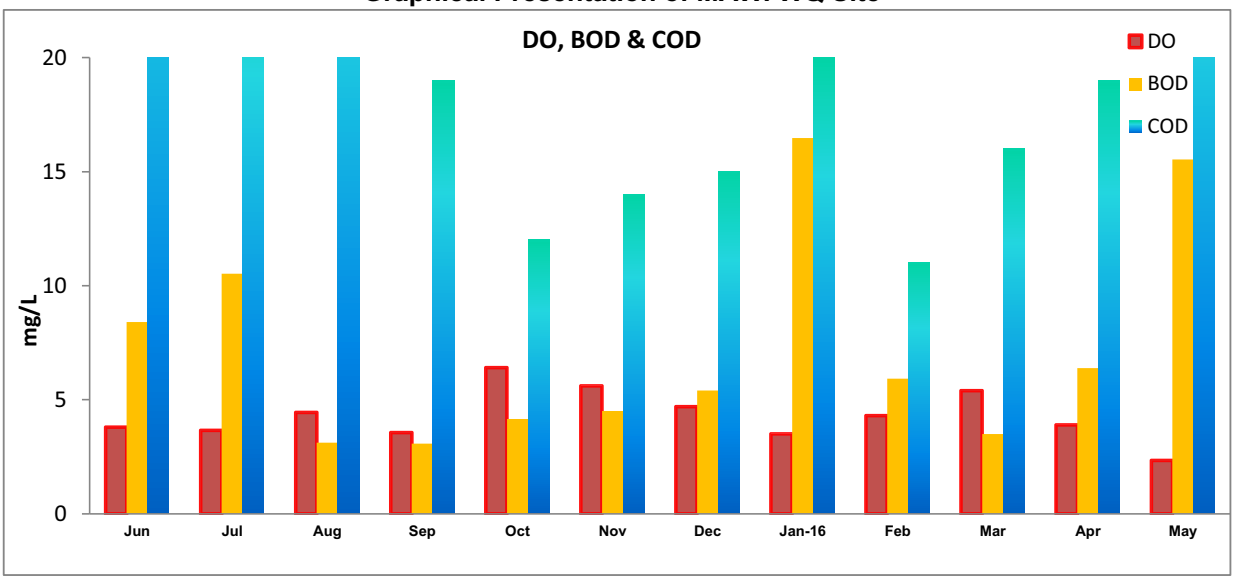
RIVER WATER SUMMARY - 2015-2016

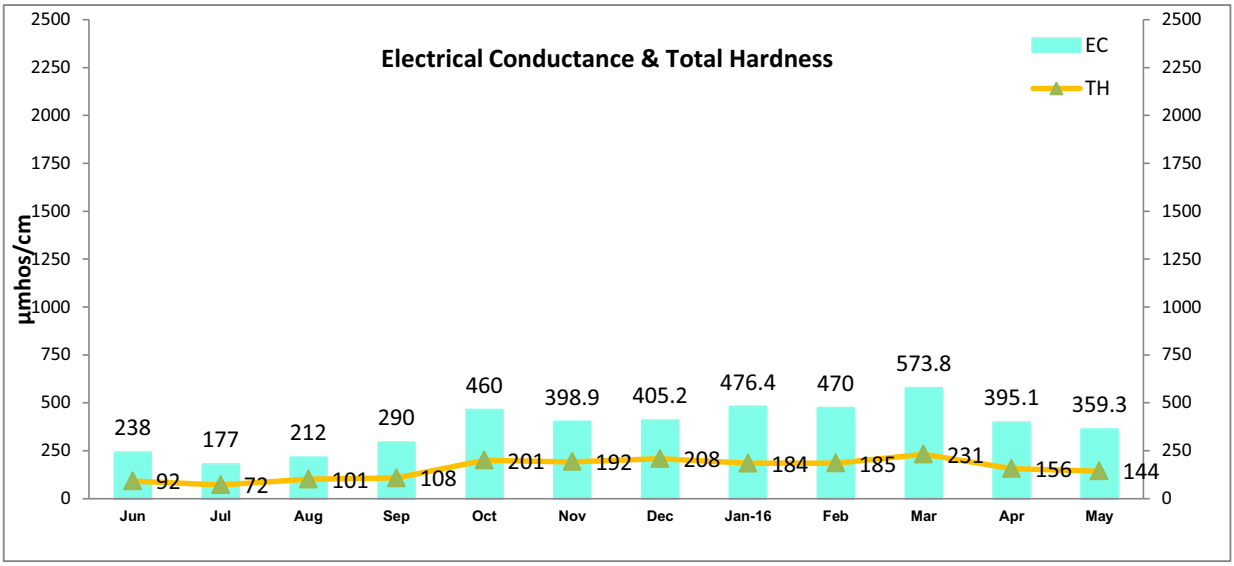
Station Name : MAWI **Division : UYD, New Delhi**

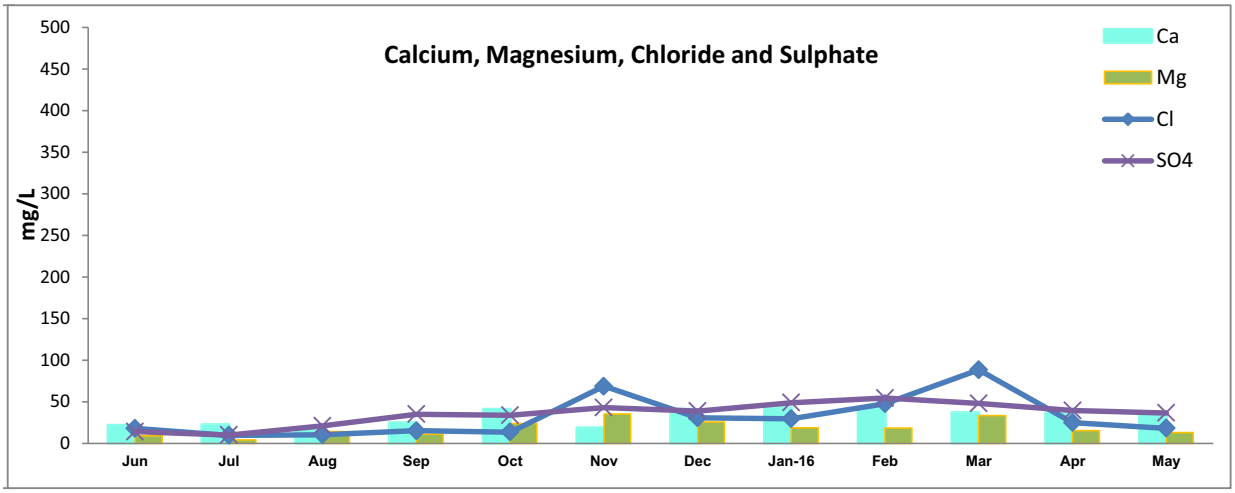
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	574	177	371	275	438	443
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.55	6.88	7.7	7.76	7.57	7.75
Temperature	12	30.00	0.00	21.8	28.80	16.25	17.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	11	13.00	0.00	1.4	0.60	0.00	4.33
Alk-Tot (as $CaCO_3$)	11	166.31	50.17	104.2	95.55	107.32	111.42
Boron	10	0.49	0.00	0.1	0.15	0.03	0.00
Calcium	12	43.10	16.72	31.7	25.08	36.20	36.67
Chloride	12	88.27	9.50	31.1	13.26	44.04	43.74
Carbonate	12	15.60	0.00	1.5	0.58	0.00	5.20
Fluoride	12	0.40	0.01	0.2	0.02	0.17	0.38
Iron	11	0.10	0.00	0.0	0.02	0.00	0.01
Bicarbonate	12	193.81	60.20	121.1	113.51	128.79	123.30
Potassium	12	12.20	0.90	6.0	2.97	7.45	8.95
Magnesium	12	35.12	3.99	18.4	12.43	24.46	20.42
Sodium	12	23.95	8.10	13.1	10.22	15.28	14.83
Ammonia as N	12	2.17	0.02	0.7	0.51	1.26	0.42
NO_2+NO_3 as N	11	13.09	1.12	4.2	3.91	5.20	3.70
Nitrite as N	12	1.87	0.00	0.3	0.10	0.66	0.13
Nitrate as N	12	12.40	1.07	4.1	3.80	4.74	3.56
Tot. Phosphate as P	12	1.62	0.18	0.5	0.70	0.38	0.39
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	54.40	10.00	35.2	22.76	46.18	41.20
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	16.47	3.08	7.2	5.85	8.07	8.47
COD	12	36.0	11.0	20.8	24.8	15.0	21.7
Dissolved Oxygen	12	6.40	2.33	4.3	4.37	4.5	3.9
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	10	220000	1300	50160	3067	38350	113000
Fecal Coliform	10	70000	400	15730	1500	20200	24000
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	6.53	0.73	4.34	4.38	5.02	3.59
Cadmium	11	8.07	0.04	1.50	3.03	0.14	0.33
Chromium	11	4.71	0.19	1.76	1.36	2.32	1.89
Copper	11	5.28	0.56	2.48	3.32	1.74	1.82
Lead	11	2.07	0.10	0.65	0.61	1.15	0.21
Nickel	11	39.56	0.15	8.05	15.66	0.77	2.67
Zinc	11	0.28	0.00	0.08	0.16	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	231	46	101	87	91	138
Tot-Hardness	12	231	72	156	115	193	177
Na%	12	23	8	15	17	14	15
RSC (-)	12	0.04	-2.50	-1.1	-0.41	-1.74	-1.34
SAR (-)	12	0.77	0.25	0.5	0.43	0.48	0.48

Graphical Presentation of MAWI WQ Site







PALLA

General Particulars

Site	:***PALLA***	Code	: **GY000P1**
State	: **Delhi**	District	: **Delhi**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **-**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **17324 Sq Km.**		
Latitude	: **28°49'46"N**	Longitude	: **77°13'27"E**
Zero of Gauge	: **206 (M.S.L.)**	Bank	: **Right**

Details of operation (Opening date)

Gauge:	: **01/05/1991**
Discharge:	: **01/05/1991**
Sediment	: **-**
Water Quality	: **01/12/2007**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : PALLA **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear											
3	Colour_Cod (-)		Colourless											
4	EC_GEN (µmho/cm)		2222	332	406	406	839	592	1779	1077	1313	589	1161	1096
5	Odour_Code (-)		Odourless											
6	pH_GEN (pH units)		8.65	7.64	7.84	8.10	8.25	8.09	7.77	7.92	8.29	8.16	8.09	8.87
7	Temperature	°C	29.0	29.4	28.5	28.5	27.5	22.7	13.5	10.0	10.0	14.0	21.0	26.0
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	2.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.80	0.00	2.42
9	Alk-Tot (as $CaCO_3$)		739.5	88.0	114.8	106.6	134.2	86.2	435.3	199.3	239.8	82.2	209.0	130.9
10	Boron		0.25	0.09	0.09	0.06	0.09	0.08	0.33	0.10	0.17	0.02	0.21	0.04
11	Calcium		48.00	31.92	9.80	36.82	40.91	38.32	104.32	61.92	53.05	32.56	65.92	53.76
12	Chloride		210.28	23.12	40.58	40.50	91.82	72.37	149.10	182.60	154.00	91.50	104.90	173.10
13	Carbonate		2.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.96	0.00	2.90
14	Fluoride		0.04	0.03	0.01	0.01	0.01	0.02	0.02	0.44	0.52	0.33	0.42	0.42
15	Iron		0.009	0.012	0.011	0.002	0.012	0.013	0.023	-	0.023	0.067	0.021	0.011
16	Bicarbonate		882.52	105.60	137.71	127.92	161.01	103.45	522.40	239.20	287.80	84.66	250.80	151.30
17	Potassium		2.20	2.25	4.59	4.66	6.57	4.00	25.02	10.80	14.35	6.73	21.50	5.44
18	Magnesium		138.71	9.80	29.92	8.54	27.58	27.76	68.16	30.90	35.64	22.26	46.46	42.85
19	Sodium		193.48	19.30	27.54	32.30	88.20	54.26	138.92	150.50	160.80	55.27	99.30	117.10
20	Ammonia as N		0.52	0.94	0.06	0.11	0.15	0.20	18.00	0.55	4.83	1.09	0.10	0.15
21	NO_2+NO_3 as N		14.35	4.11	4.05	11.71	13.51	7.25	9.15	19.48	34.06	9.08	15.40	5.37
22	Nitrite as N		0.65	0.01	0.14	0.01	3.31	0.17	4.07	0.58	0.86	2.24	0.00	1.00
23	Nitrate as N		13.70	4.10	3.91	11.70	10.20	7.08	5.08	18.90	33.20	6.84	15.40	4.37
24	Tot. Phosphate as P		0.26	1.64	2.17	0.51	0.57	0.76	3.25	1.96	2.15	0.53	0.85	0.25
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		38.00	30.00	42.00	44.00	102.30	86.00	20.20	95.80	155.00	69.00	186.60	145.20
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	5.23	2.50	1.95	1.46	1.70	10.30	11.60	9.95	10.43	3.19	8.23	10.52
28	COD		29	20	12	16	16	18	21	33	14	5	12	21
29	Dissolved Oxygen		5.80	5.60	6.60	7.30	7.40	4.30	3.40	4.60	5.20	6.70	5.40	4.70
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	400	1300	2500	*	200000	2600	2000	170000	130000	2200
32	Fecal Coliform		-	-	<200	400	400	*	400000	2100	0	22000	22000	1400
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	8.74	3.42	3.10	2.62	8.53	1.39	3.44	-	6.68	4.57	5.66	2.30
35	Cadmium		1.94	5.93	0.22	0.44	1.64	1.50	4.40	-	5.30	1.71	5.19	0.11
36	Chromium		1.30	4.95	16.09	0.15	1.15	1.26	4.55	-	0.15	1.85	2.55	7.67
37	Copper		2.62	3.68	1.02	2.43	2.22	1.86	3.70	-	15.68	1.81	1.70	2.99
38	Lead		1.37	0.70	0.68	0.16	1.07	0.44	1.51	-	3.46	0.63	3.95	1.55
39	Nickel		18.34	28.17	3.12	2.22	17.94	5.81	16.70	-	15.98	3.75	2.48	6.39
40	Zinc	mg/l	0.262	0.263	0.263	0.011	0.002	0.002	0.003	-	0.002	0.003	0.002	0.002
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	120	80	185	92	102	96	261	155	133	174	165	134
42	Tot-Hardness		698	121	149	128	217	212	545	284	281	174	359	313
43	Na%	%	38	25	28	34	46	35	34	52	54	40	36	44
44	RSC (-)		0.59	-0.68	-0.73	-0.46	-1.70	-2.53	-2.33	-1.75	-0.90	-1.86	-3.06	-3.68
45	SAR (-)		3.18	0.76	0.98	1.24	2.60	1.62	2.59	3.89	4.17	1.82	2.28	2.88
46	PESTICIDES													

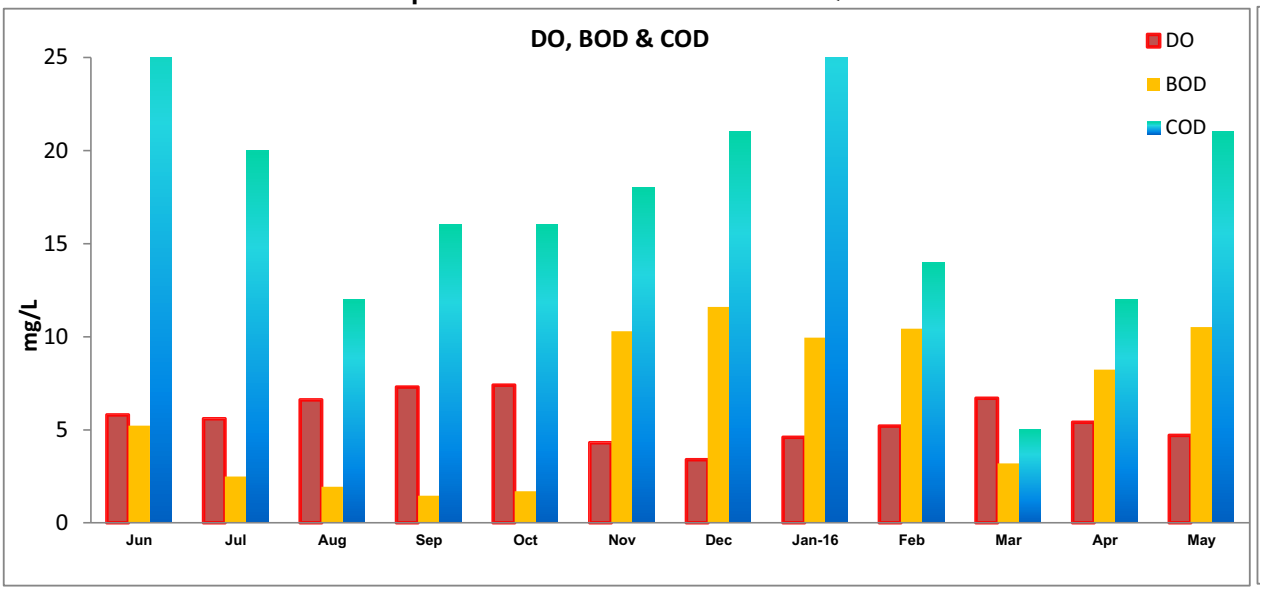
RIVER WATER SUMMARY - 2015-2016

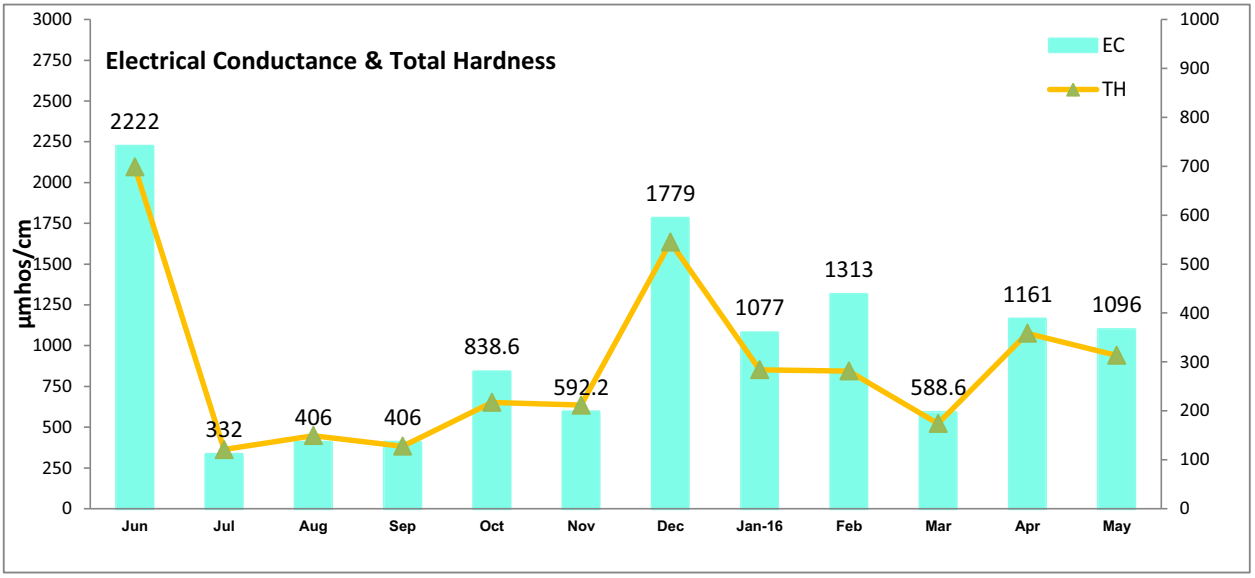
Station Name : PALLA **Division : UYD, New Delhi**

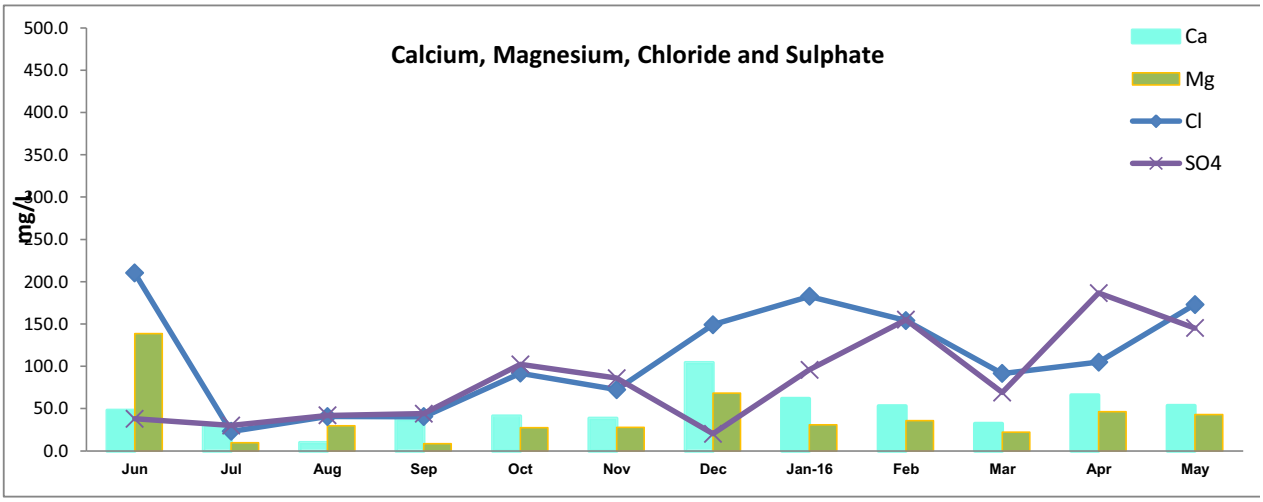
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2222	332	984	841	1190	949
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.87	7.64	8.1	8.10	8.02	8.37
Temperature	12	29.40	10.00	21.7	28.58	14.05	20.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	5.80	0.00	0.9	0.41	0.00	2.74
Alk-Tot (as $CaCO_3$)	12	739.50	82.15	213.8	236.61	240.18	140.69
Boron	12	0.33	0.02	0.1	0.12	0.17	0.09
Calcium	12	104.32	9.80	48.1	33.49	64.40	50.75
Chloride	12	210.28	23.12	111.2	81.26	139.52	123.17
Carbonate	12	6.96	0.00	1.0	0.49	0.00	3.29
Fluoride	12	0.52	0.01	0.2	0.02	0.25	0.39
Iron	11	0.07	0.00	0.0	0.01	0.02	0.03
Bicarbonate	12	882.52	84.66	254.5	282.95	288.21	162.25
Potassium	12	25.02	2.20	9.0	4.05	13.54	11.22
Magnesium	12	138.71	8.54	40.7	42.91	40.62	37.19
Sodium	12	193.48	19.30	94.7	72.16	126.12	90.56
Ammonia as N	12	18.00	0.06	2.2	0.36	5.89	0.45
NO_2+NO_3 as N	12	34.06	4.05	12.3	9.54	17.48	9.95
Nitrite as N	12	4.07	0.00	1.1	0.82	1.42	1.08
Nitrate as N	12	33.20	3.91	11.2	8.72	16.07	8.87
Tot. Phosphate as P	12	3.25	0.25	1.2	1.03	2.03	0.54
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	186.60	20.20	84.5	51.26	89.25	133.60
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	11.60	1.46	6.4	2.57	10.57	7.31
COD	12	33.0	5.0	18.1	18.6	21.5	12.7
Dissolved Oxygen	12	7.40	3.40	5.6	6.54	4.38	5.60
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	9	200000	400	56778	1400	68200	100733
Fecal Coliform	8	400000	0	56038	400	134033	15133
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	8.74	1.39	4.59	5.28	3.84	4.18
Cadmium	11	5.93	0.11	2.58	2.03	3.73	2.34
Chromium	11	16.09	0.15	3.79	4.73	1.99	4.02
Copper	11	15.68	1.02	3.61	2.39	7.08	2.17
Lead	11	3.95	0.16	1.41	0.80	1.80	2.04
Nickel	11	28.17	2.22	10.99	13.96	12.83	4.21
Zinc	11	0.26	0.00	0.07	0.16	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	261	80	141	116	161	158
Tot-Hardness	12	698	121	290	263	330	282
Na%	12	54	25	39	34	44	40
RSC (-)	12	0.59	-3.68	-1.6	-0.60	-1.88	-2.87
SAR (-)	12	4.17	0.76	2.3	1.75	3.07	2.33

Graphical Presentation of PALLA WQ Site







DELHI (Railway Bridge)

General Particulars

Site	:***Delhi (R.B)***	Code	: **GY000U1**
State	: **Delhi**	District	: **Delhi**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **Sahibi SD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **18552 Sq. Km.**		
Latitude	: **28°39'33"N**	Longitude	: **77°14'42"E**
Zero of Gauge	: **197 (m.s.l.)**	Bank	: **Right**

Details of operation (Opening date)

Gauge:	: **01/01/1963**
Discharge:	: **01/01/1963**
Sediment	: **23/03/1963**
Water Quality	: **01/05/1976**
Wireless	: **22/04/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : DELHI IST 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Greyish	L.Brown										
4	EC_GEN (µmho/cm)		1250	869	874	897	1460	1575	1432	1897	1960	2376	1020	1939
5	Odour_Code (-)		Rottanegg											
6	pH_GEN (pH units)		7.47	8.10	7.92	7.50	8.49	7.62	7.40	7.44	7.40	7.66	7.35	7.62
7	Temperature	°C	29.0	29.5	28.2	28.8	27.2	24.6	18.4	16.0	16.9	21.5	26.3	28.2
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00	0.00	0.00	4.00
9	Alk-Tot (as $CaCO_3$)		324.0	178.0	164.1	254.4	259.4	210.5	197.4	347.0	236.7	483.4	167.2	457.5
10	Boron		0.44	0.70	0.16	0.10	0.12	0.15	0.11	0.35	0.32	0.09	0.15	0.47
11	Calcium		72.00	51.67	48.92	69.40	75.36	57.92	62.56	56.00	63.34	94.48	76.96	76.03
12	Chloride		127.60	88.96	97.95	80.50	228.0	259.0	222.3	308.4	429.4	275.4	132.8	249.5
13	Carbonate		0.00	0.00	0.00	0.00	1.22	0.00	0.00	0.00	0.00	0.00	0.00	4.80
14	Fluoride		0.09	0.06	0.02	0.02	0.41	0.07	0.04	0.69	0.75	0.88	0.77	0.82
15	Iron		0.069	0.059	0.039	0.002	0.031	0.054	0.017	-	0.029	0.021	0.041	0.027
16	Bicarbonate		388.85	213.60	196.88	305.2	308.8	252.6	236.9	416.4	284.0	580.1	200.6	539.4
17	Potassium		6.40	14.00	10.02	22.25	16.00	13.60	14.03	19.92	26.70	22.65	3.95	18.75
18	Magnesium		46.70	20.26	21.73	18.11	30.71	53.60	52.22	63.93	57.98	62.69	53.18	55.53
19	Sodium		108.00	92.35	90.12	73.60	179.68	164.38	145.64	248.7	267.6	253.5	45.4	233.4
20	Ammonia as N		15.70	16.11	0.94	0.45	17.40	33.70	15.30	30.80	38.50	28.20	26.10	26.00
21	NO_2+NO_3 as N		5.32	7.45	5.08	21.67	9.01	6.53	3.94	15.40	34.22	34.32	9.36	9.84
22	Nitrite as N		0.02	0.05	0.14	0.01	0.05	0.06	0.16	0.20	0.12	0.02	1.39	0.05
23	Nitrate as N		5.30	7.40	4.94	21.66	8.96	6.47	3.78	15.20	34.10	34.30	7.97	9.79
24	Tot. Phosphate as P		0.74	5.25	0.97	1.84	1.15	6.95	3.17	9.36	11.75	10.19	8.22	6.52
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		100.00	80.00	70.00	75.00	103.50	160.80	118.80	158.80	170.40	210.40	144.20	137.40
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	22.13	25.79	22.65	10.70	22.62	36.40	31.30	24.43	52.10	38.03	75.84	50.54
28	COD		68.0	36.0	46.0	61.0	55.0	67.0	65.0	63.0	42.0	87.0	51.0	56.0
29	Dissolved Oxygen		0.00	0.83	3.93	3.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	3300000	300000	940000	940000	2500000	1700000	3500000	3500000	1700000	1700000
32	Fecal Coliform		-	-	400000	100000	45000	15000	500000	700000	400000	490000	330000	330000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	2.61	3.71	3.09	3.79	6.29	3.09	3.26	-	3.07	4.49	3.69	0.30
35	Cadmium		6.84	11.58	0.53	7.91	4.92	5.43	0.54	-	0.48	9.54	0.42	0.00
36	Chromium		2.25	4.86	1.47	0.54	2.67	3.38	1.84	-	0.89	1.82	0.17	4.11
37	Copper		4.01	6.76	0.68	4.98	3.72	3.13	2.76	-	1.48	3.40	3.53	2.29
38	Lead		1.03	0.81	0.71	0.19	0.65	0.06	1.15	-	0.30	6.93	0.28	3.53
39	Nickel		78.23	33.56	5.06	4.65	31.71	16.76	0.66	-	1.21	65.36	0.14	53.47
40	Zinc	mg/l	0.26	0.27	0.26	0.01	0.00	0.00	0.01	-	0.01	0.00	0.00	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	180	129	798	173	188	145	156	140	158	498	192	190
42	Tot-Hardness		375	214	213	249	316	368	374	407	400	498	414	422
43	Na%	%	38	46	46	37	54	48	45	56	57	51	19	53
44	RSC (-)		-1.12	-0.77	-1.03	0.02	-1.22	-3.22	-3.60	-1.30	-3.34	-0.44	-4.99	0.57
45	SAR (-)		2.43	2.75	2.69	2.03	4.39	3.72	3.27	5.36	5.82	4.94	0.97	4.94
46	PESTICIDES													

RIVER WATER SUMMARY - 2015-2016

Station Name : DELHI IST 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2376	869	1462	1070	1716	1778
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.49	7.35	7.7	7.90	7.47	7.54
Temperature	12	29.50	16.00	24.6	28.54	18.98	25.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	4.00	0.00	0.4	0.20	0.00	1.33
Alk-Tot (as $CaCO_3$)	12	483.42	164.07	273.3	235.97	247.90	369.36
Boron	12	0.70	0.09	0.3	0.30	0.23	0.23
Calcium	12	94.48	48.92	67.1	63.47	59.96	82.49
Chloride	12	429.40	80.50	208.3	124.60	304.77	219.23
Carbonate	12	4.80	0.00	0.5	0.24	0.00	1.60
Fluoride	12	0.88	0.02	0.4	0.12	0.39	0.82
Iron	11	0.07	0.00	0.0	0.04	0.03	0.03
Bicarbonate	12	580.10	196.88	326.9	282.68	297.48	440.03
Potassium	12	26.70	3.95	15.7	13.73	18.56	15.12
Magnesium	12	63.93	18.11	44.7	27.50	56.93	57.13
Sodium	12	267.60	45.43	158.5	108.75	206.58	177.44
Ammonia as N	12	38.50	0.45	20.8	10.12	29.58	26.77
NO_2+NO_3 as N	12	34.32	3.94	13.5	9.70	15.02	17.84
Nitrite as N	12	1.39	0.01	0.2	0.05	0.13	0.49
Nitrate as N	12	34.30	3.78	13.3	9.65	14.89	17.35
Tot. Phosphate as P	12	11.75	0.74	5.5	1.99	7.81	8.31
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	210.40	70.00	127.4	85.70	152.20	164.00
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	75.84	10.70	34.4	20.78	36.06	54.80
COD	12	87.0	36.0	58.1	53.2	59.3	64.7
Dissolved Oxygen	12	3.93	0.00	0.7	1.68	0.00	0.00
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	10	3500000	300000	2008000	1513333	2160000	2300000
Fecal Coliform	10	700000	15000	331000	181667	403750	383333
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	6.29	0.30	3.4	3.90	3.14	2.83
Cadmium	11	11.58	0.00	4.4	6.36	2.15	3.32
Chromium	11	4.86	0.17	2.2	2.36	2.04	2.03
Copper	11	6.76	0.68	3.3	4.03	2.46	3.07
Lead	11	6.93	0.06	1.4	0.68	0.50	3.58
Nickel	11	78.23	0.14	26.4	30.64	6.21	39.66
Zinc	11	0.27	0.00	0.1	0.16	0.01	0.00
CHEMICAL INDICES							
Ca-Hardness	12	798	129	246	294	150	293
Tot-Hardness	12	498	213	354	273	387	444
Na%	12	57	19	46	44	51	41
RSC (-)	12	0.57	-4.99	-1.7	-0.82	-2.87	-1.62
SAR (-)	12	5.82	0.97	3.6	2.86	4.55	3.62

Water Quality Datasheet for the Period : 2015-2016

Station Name : DELHI 2nd 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		11/06/15	13/07/15	11/08/15	11/09/15	12/10/15	12/11/15	11/12/15	11/01/16	11/02/16	11/03/16	11/04/16	11/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Cloudy	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Grey	L.Brown										
4	EC_GEN (µmho/cm)		760	530	575	460	1565	1775	1632	2043	2056	1532	1675	2052
5	Odour_Code (-)		Rottanegg											
6	pH_GEN (pH units)		8.00	8.20	7.91	7.90	7.86	7.40	7.35	7.38	7.28	7.48	7.29	7.78
7	Temperature	°C	31.0	26.1	28.5	29.2	27.2	21.1	18.6	16.3	17.4	22.9	24.5	28.3
CHEMICAL														
8	Alk-Phen ($as\ CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Alk-Tot ($as\ CaCO_3$)		172.9	90.9	82.6	137.5	381.5	238.9	96.3	474.8	329.8	187.9	258.6	316.2
10	Boron		0.13	0.73	0.20	0.08	0.11	0.11	0.06	0.04	0.11	0.07	0.75	0.47
11	Calcium		37.20	35.36	39.36	44.38	77.92	71.25	67.36	45.60	88.32	57.28	57.76	75.62
12	Chloride		88.40	47.52	53.97	55.60	136.12	236.9	263.8	281.2	346.6	315.9	250.9	374.5
13	Carbonate		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Fluoride		0.05	0.04	0.05	0.03	0.05	0.06	0.48	0.77	0.79	0.70	0.70	0.83
15	Iron		0.010	0.035	0.012	0.013	0.041	0.021	0.031	-	0.013	0.041	0.051	0.023
16	Bicarbonate		207.44	109.03	99.06	165.00	457.9	286.7	115.5	569.7	395.7	225.5	310.3	379.4
17	Potassium		9.60	15.00	6.12	3.80	17.88	17.84	17.08	19.90	17.80	15.10	11.70	19.60
18	Magnesium		20.73	9.12	11.48	17.76	58.67	50.10	56.54	62.40	50.88	52.42	51.84	53.35
19	Sodium		86.00	45.25	53.38	13.12	140.40	205.3	174.6	253.2	257.2	174.1	203.0	258.4
20	Ammonia as N		9.68	0.11	0.22	0.67	18.60	0.45	24.90	26.50	27.80	19.20	21.20	26.50
21	NO_2+NO_3 as N		6.79	6.89	6.28	15.00	5.90	5.88	9.81	16.39	22.48	4.54	37.04	9.89
22	Nitrite as N		0.19	0.66	0.07	0.00	0.03	0.08	0.20	0.19	0.18	0.09	28.65	0.20
23	Nitrate as N		6.60	6.23	6.21	15.00	5.87	5.80	9.61	16.20	22.30	4.45	8.39	9.69
24	Tot. Phosphate as P		2.64	0.11	5.98	0.77	0.04	2.24	6.60	10.36	8.56	8.22	5.02	10.05
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		60.00	65.00	62.50	69.00	174.00	138.00	140.40	136.40	165.80	108.80	131.40	147.20
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	237.39	24.50	15.60	10.00	19.15	18.20	28.56	64.40	41.00	27.36	39.70	44.97
28	COD		48.0	42.0	48.0	62.0	34.0	35.0	45.0	55.0	67.0	31.0	72.0	137.0
29	Dissolved Oxygen		0.00	0.00	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	1100000	490000	520000	1000000	1700000	1400000	1100000	2200000	1400000	-
32	Fecal Coliform		-	-	140000	220000	150000	50000	800000	260000	270000	270000	390000	-
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	4.35	5.85	4.63	7.12	3.21	4.08	1.58	-	6.05	3.29	6.60	0.68
35	Cadmium		0.39	2.11	0.65	0.65	5.63	6.72	4.40	-	4.51	5.22	7.25	0.10
36	Chromium		1.01	1.77	1.93	0.37	4.80	1.87	0.43	-	0.73	2.40	2.09	2.33
37	Copper		3.01	2.54	0.21	3.12	3.28	4.63	2.27	-	2.13	2.24	3.43	5.37
38	Lead		1.05	1.21	0.04	0.32	0.40	0.64	2.49	-	2.44	2.76	4.22	5.71
39	Nickel		3.12	0.98	1.87	0.38	27.77	31.59	16.82	-	9.61	1.97	10.37	48.67
40	Zinc	mg/l	0.263	0.264	0.010	0.010	0.003	0.003	0.002	-	0.002	0.020	0.002	0.001
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	93	88	498	111	195	178	168	114	221	362	144	189
42	Tot-Hardness		179	126	146	185	439	387	404	374	433	362	361	412
43	Na%	%	49	40	43	13	40	52	47	58	55	50	54	56
44	RSC (-)		-0.19	-0.74	-1.30	-0.99	-1.28	-3.04	-6.19	1.86	-2.17	-3.54	-2.12	-2.01
45	SAR (-)		2.79	1.75	1.92	0.42	2.91	4.54	3.78	5.69	5.38	3.98	4.65	5.54
46	PESTICIDES													

RIVER WATER SUMMARY - 2015-2016

Station Name : DELHI 2nd 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2056	460	1388	778	1877	1753
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.20	7.28	7.7	7.97	7.35	7.52
Temperature	12	31.00	16.30	24.3	28.40	18.35	25.23
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	0.00	0.00	0.0	0.00	0.00	0.00
Alk-Tot (as $CaCO_3$)	12	474.75	82.55	230.6	173.06	284.92	254.22
Boron	12	0.75	0.04	0.2	0.25	0.08	0.43
Calcium	12	88.32	35.36	58.1	46.84	68.13	63.55
Chloride	12	374.50	47.52	204.3	76.32	282.12	313.77
Carbonate	12	0.00	0.00	0.0	0.00	0.00	0.00
Fluoride	12	0.83	0.03	0.4	0.04	0.53	0.74
Iron	11	0.05	0.01	0.0	0.02	0.02	0.04
Bicarbonate	12	569.70	99.06	276.8	207.68	341.91	305.07
Potassium	12	19.90	3.80	14.3	10.48	18.16	15.47
Magnesium	12	62.40	9.12	41.3	23.55	54.98	52.54
Sodium	12	258.40	13.12	155.3	67.63	222.58	211.83
Ammonia as N	12	27.80	0.11	14.7	5.86	19.91	22.30
NO_2+NO_3 as N	12	37.04	4.54	12.2	8.17	13.64	17.15
Nitrite as N	12	28.65	0.00	2.5	0.19	0.16	9.64
Nitrate as N	12	22.30	4.45	9.7	7.98	13.48	7.51
Tot. Phosphate as P	12	10.36	0.04	5.0	1.91	6.94	7.76
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	174.00	60.00	116.5	86.10	145.15	129.13
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	237.39	10.00	47.6	61.33	38.04	37.34
COD	12	137.0	31.0	56.3	46.8	50.5	80.0
Dissolved Oxygen	12	1.20	0.00	0.1	0.24	0.00	0.00
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	9	2200000	490000	1212222	703333	1300000	1800000
Fecal Coliform	9	800000	50000	283333	170000	345000	330000
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	7.12	0.68	4.3	5.03	3.90	3.52
Cadmium	11	7.25	0.10	3.4	1.89	5.21	4.19
Chromium	11	4.80	0.37	1.8	1.98	1.01	2.27
Copper	11	5.37	0.21	2.9	2.43	3.01	3.68
Lead	11	5.71	0.04	1.9	0.60	1.86	4.23
Nickel	11	48.67	0.38	13.9	6.82	19.34	20.34
Zinc	11	0.26	0.00	0.1	0.11	0.00	0.01
CHEMICAL INDICES							
Ca-Hardness	12	498	88	197	197	170	232
Tot-Hardness	12	439	126	317	215	400	378
Na%	12	58	13	46	37	53	53
RSC (-)	12	1.86	-6.19	-1.8	-0.90	-2.38	-2.55
SAR (-)	12	5.69	0.42	3.6	1.96	4.85	4.72

Water Quality Datasheet for the Period : 2015-2016

Station Name : DELHI 3rd 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		22/06/15	21/07/15	21/08/15	21/09/15	21/10/15	23/11/15	21/12/15	21/01/16	22/02/16	21/03/16	21/04/16	21/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Cloudy	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Grey	L.Brown										
4	EC_GEN (µmho/cm)		930	800	620	890	1398	1964	1785	1879	1797	1968	1718	2007
5	Odour_Code (-)		Odourless											
6	pH_GEN (pH units)		8.00	7.58	8.41	7.80	7.78	7.58	7.53	7.39	7.44	7.30	7.43	7.55
7	Temperature	°C	30.0	28.7	28.2	30.1	26.6	19.6	14.7	13.8	18.6	23.3	27.2	31.2
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Alk-Tot (as $CaCO_3$)		220.9	170.9	128.5	246.0	204.6	159.6	194.8	364.4	256.6	403.3	335.4	322.3
10	Boron		0.38	0.38	0.18	0.11	0.13	0.10	0.29	0.20	0.25	1.24	0.76	0.47
11	Calcium		65.20	41.76	40.00	82.13	47.50	74.56	67.20	79.97	67.36	89.76	65.60	79.46
12	Chloride		98.00	89.80	82.20	66.10	110.70	333.0	197.1	275.1	299.6	263.2	222.4	352.6
13	Carbonate		0.00	0.00	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Fluoride		0.03	0.04	0.03	0.04	0.06	0.07	0.54	1.03	0.65	0.81	0.75	0.87
15	Iron		0.0290	0.0100	0.034	0.001	0.001	0.020	0.001	-	0.011	0.032	0.045	0.070
16	Bicarbonate		265.02	205.1	152.2	295.2	245.5	191.5	233.7	437.3	307.9	484.0	402.5	386.8
17	Potassium		6.80	12.95	9.90	3.95	10.95	19.22	17.96	13.70	13.10	19.25	11.49	19.70
18	Magnesium		18.87	12.09	12.60	51.70	43.21	65.66	69.79	47.99	47.31	55.50	42.34	50.71
19	Sodium		90.12	93.30	55.30	13.81	171.25	219.34	197.34	238.9	221.1	226.3	217.8	263.0
20	Ammonia as N		13.37	0.41	1.94	0.23	7.54	43.70	29.50	22.50	17.60	24.10	19.90	28.10
21	NO_2+NO_3 as N		5.62	9.26	8.93	9.66	5.46	7.32	13.46	14.30	41.71	14.17	11.59	13.71
22	Nitrite as N		0.22	0.15	0.34	0.04	0.05	0.25	0.16	0.10	27.31	0.07	0.09	0.21
23	Nitrate as N		5.40	9.11	8.59	9.62	5.41	7.07	13.30	14.20	14.40	14.10	11.50	13.50
24	Tot. Phosphate as P		4.69	0.22	0.00	1.18	5.78	0.52	5.18	5.00	2.96	7.30	6.32	6.53
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		65.00	62.00	60.00	95.00	210.00	173.20	168.40	187.40	192.00	190.60	166.20	149.80
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	35.04	23.88	24.60	3.60	25.50	21.30	22.20	50.50	30.20	74.77	48.50	31.94
28	COD		61.0	29.0	32.0	92.0	43.0	46.0	56.0	39.0	61.0	87.0	89.0	148.0
29	Dissolved Oxygen		0.00	0.00	0.00	3.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	2400000	56000	490000	1200000	2000000	2800000	2200000	5400000	940000	2200000
32	Fecal Coliform		-	-	340000	7800	140000	54000	700000	270000	400000	400000	320000	400000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	5.34	4.23	2.80	0.09	3.50	3.97	5.30	-	7.83	4.92	5.37	0.64
35	Cadmium		0.35	0.40	0.41	0.36	11.28	7.62	5.06	-	4.79	7.78	6.82	0.09
36	Chromium		2.68	0.36	0.42	3.21	4.71	3.34	0.63	-	2.83	0.10	2.42	9.79
37	Copper		1.41	1.26	0.59	0.26	6.36	8.43	3.89	-	2.40	4.82	1.65	5.62
38	Lead		1.04	0.50	0.02	0.47	0.51	1.33	3.14	-	2.92	4.81	6.02	6.80
39	Nickel		3.27	1.81	2.79	0.38	33.16	73.68	15.32	-	27.00	1.18	0.89	97.72
40	Zinc	mg/l	0.263	0.278	0.010	0.007	0.005	0.003	0.003	-	0.002	0.002	0.003	0.001
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	163	104	518	205	119	186	168	200	168	456	164	199
42	Tot-Hardness		242	155	153	421	299	460	459	400	366	456	341	410
43	Na%	%	44	54	42	7	54	50	47	55	56	51	57	57
44	RSC (-)		-0.49	0.27	-0.52	-3.58	-1.95	-6.06	-5.34	-0.83	-2.26	-1.18	-0.21	-1.86
45	SAR (-)		2.52	3.26	1.95	0.29	4.31	4.45	4.01	5.19	5.03	4.61	5.13	5.65
46	PESTICIDES													

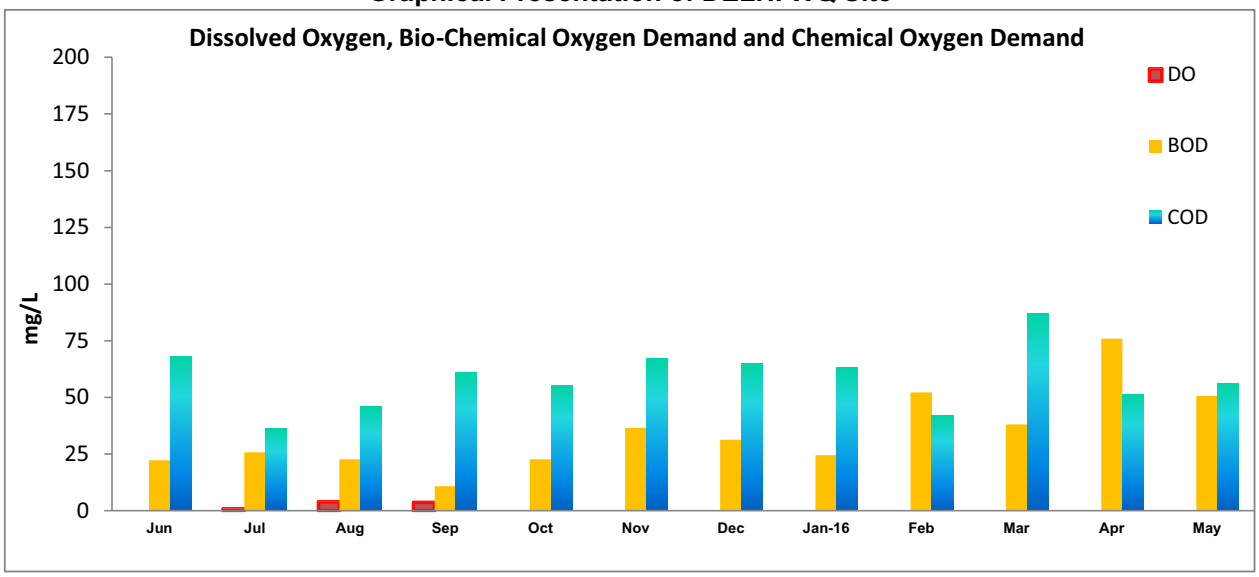
RIVER WATER SUMMARY - 2015-2016

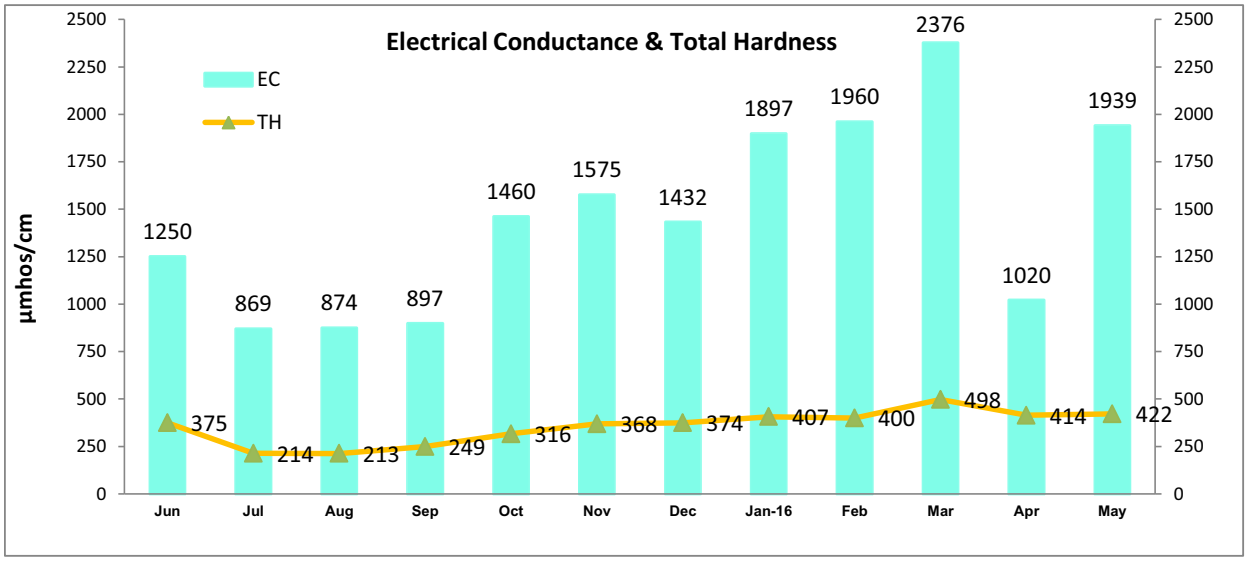
Station Name : DELHI 3rd 10 DAYS **Division : UYD, New Delhi**

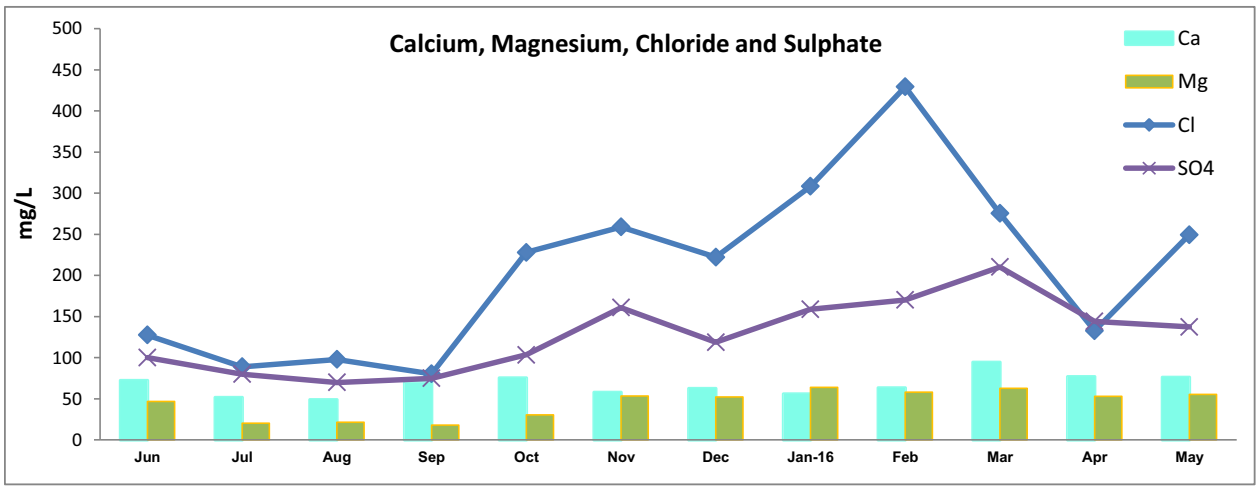
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2007	620	1480	928	1856	1898
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.41	7.30	7.6	7.91	7.49	7.43
Temperature	12	31.20	13.80	24.3	28.72	16.68	27.23
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	0.80	0.00	0.1	0.16	0.00	0.00
Alk-Tot (as $CaCO_3$)	12	403.33	128.46	250.6	194.15	243.85	353.69
Boron	12	1.24	0.10	0.4	0.24	0.21	0.82
Calcium	12	89.76	40.00	66.7	55.32	72.27	78.27
Chloride	12	352.60	66.10	199.2	89.36	276.21	279.40
Carbonate	12	0.96	0.00	0.1	0.19	0.00	0.00
Fluoride	12	1.03	0.03	0.4	0.04	0.57	0.81
Iron	11	0.07	0.00	0.0	0.02	0.01	0.05
Bicarbonate	12	484.00	152.23	300.6	232.60	292.62	424.43
Potassium	12	19.70	3.95	13.2	8.91	16.00	16.81
Magnesium	12	69.79	12.09	43.1	27.69	57.69	49.52
Sodium	12	263.00	13.81	167.3	84.76	219.17	235.70
Ammonia as N	12	43.70	0.23	17.4	4.70	28.33	24.03
NO_2+NO_3 as N	12	41.71	5.46	12.9	7.79	19.20	13.16
Nitrite as N	12	27.31	0.04	2.4	0.16	6.95	0.12
Nitrate as N	12	14.40	5.40	10.5	7.63	12.24	13.03
Tot. Phosphate as P	12	7.30	0.00	3.8	2.37	3.42	6.72
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	210.00	60.00	143.3	98.40	180.25	168.87
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	74.77	3.60	32.7	22.52	31.05	51.74
COD	12	148.0	29.0	65.3	51.4	50.5	108.0
Dissolved Oxygen	12	3.70	0.00	0.3	0.74	0.00	0.00
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	10	5400000	56000	1968600	982000	2050000	2846667
Fecal Coliform	10	700000	7800	303180	162600	356000	373333
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	7.83	0.09	4.0	3.19	5.70	3.64
Cadmium	11	11.28	0.09	4.1	2.56	5.82	4.90
Chromium	11	9.79	0.10	2.8	2.28	2.27	4.10
Copper	11	8.43	0.26	3.3	1.98	4.91	4.03
Lead	11	6.80	0.02	2.5	0.51	2.46	5.88
Nickel	11	97.72	0.38	23.4	8.28	38.67	33.26
Zinc	11	0.28	0.00	0.1	0.11	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	518	104	221	222	181	273
Tot-Hardness	12	460	153	347	254	421	402
Na%	12	57	7	48	40	52	55
RSC (-)	12	0.27	-6.06	-2.0	-1.25	-3.62	-1.08
SAR (-)	12	5.65	0.29	3.9	2.47	4.67	5.13

Graphical Presentation of DELHI WQ Site







AGRA CANNAL

Water Quality Datasheet for the Period : 2015-2016

Station Name : AGRA CANNAL **Division : UYD, New Delhi**

River Water Analysis

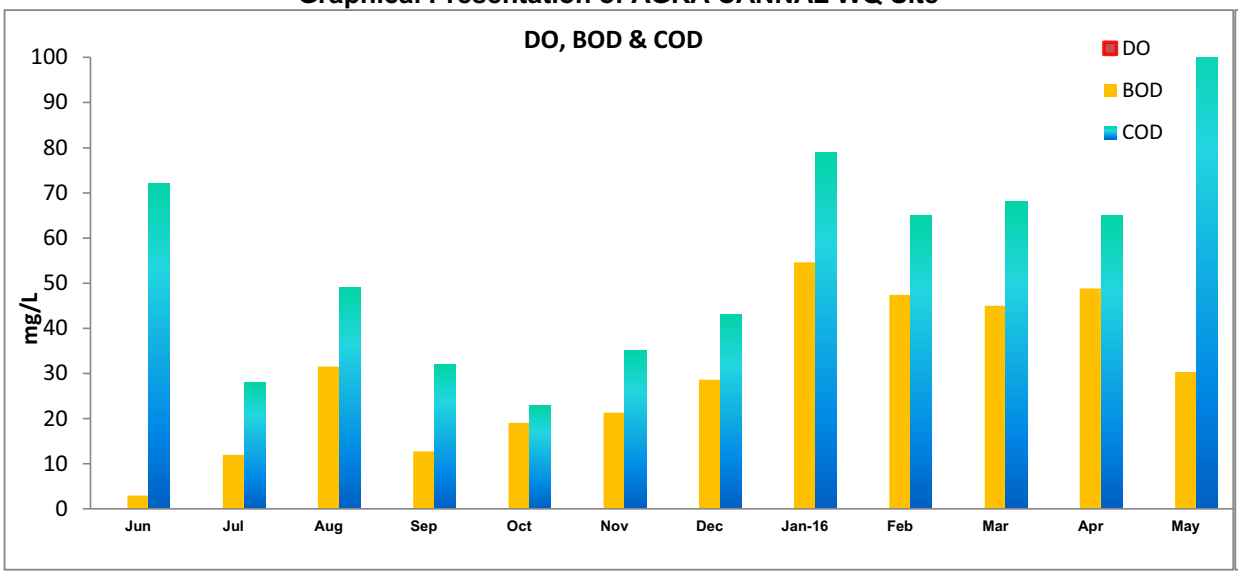
S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Cloudy	Cloudy		Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Colourles	Colourless			L. Brownish Black					Colourless		
4	EC_GEN (µmho/cm)		1337	546	645	820	963	1520	1215	983	1058	1253	1506	1515
5	Odour_Code (-)		Odourless				Rottanegg					Odourless		
6	pH_GEN (pH units)		7.64	8.00	7.88	7.70	8.45	7.66	7.39	7.36	7.34	7.92	7.42	7.53
7	Temperature	°C			30.5	31.1	29.9	24.6	18.1	16.7	18.5		26.3	28.1
CHEMICAL														
8	Alk-Phen ($as\ CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	2.39	0.00	0.00	0.00	0.00	0.00	0.00	3.50
9	Alk-Tot ($as\ CaCO_3$)		352.3	139.2	132.7	136.9	110.8	205.8	141.5	226.6	163.9	303.3	208.1	324.9
10	Boron		0.26	0.71	0.28	0.07	0.32	0.10	0.38	0.13	0.30	0.03	0.33	0.11
11	Calcium		81.20	45.82	42.81	26.50	65.08	66.81	40.00	51.20	47.67	52.80	63.36	46.46
12	Chloride		123.34	36.44	68.56	90.10	159.36	205.7	182.82	125.50	199.70	137.40	301.80	225.7
13	Carbonate		0.00	0.00	0.00	0.00	2.87	0.00	0.00	0.00	0.00	0.00	0.00	4.20
14	Fluoride		0.05	0.03	0.03	0.02	0.02	0.06	0.03	0.42	0.47	0.55	0.64	0.66
15	Iron		0.0090	0.009	0.005	0.000	0.0010	0.002	0.0010	-	0.1000	0.0140	0.004	0.0010
16	Bicarbonate		422.75	167.04	159.20	164.25	127.27	246.9	169.82	271.90	196.70	364.0	249.7	381.50
17	Potassium		12.20	10.00	8.90	9.10	14.72	11.28	13.57	18.80	20.13	17.90	20.80	18.55
18	Magnesium		50.51	9.22	14.77	16.61	19.19	45.41	41.95	31.46	32.13	41.38	44.06	63.59
19	Sodium		116.00	42.25	62.05	82.45	106.44	166.32	121.88	102.40	116.10	147.20	171.70	168.80
20	Ammonia as N		19.30	11.34	4.62	0.06	5.77	35.60	13.40	12.80	19.90	13.20	22.10	20.30
21	NO_2+NO_3 as N		5.92	7.44	3.26	14.84	21.03	5.83	3.42	12.20	13.56	7.72	6.01	4.60
22	Nitrite as N		0.03	1.75	0.11	0.03	13.90	0.02	0.10	4.98	0.06	0.02	0.20	0.07
23	Nitrate as N		5.89	5.69	3.15	14.81	7.13	5.81	3.32	7.22	13.50	7.70	5.81	4.53
24	Tot. Phosphate as P		0.75	3.49	0.05	2.05	0.99	4.92	2.22	2.30	4.54	4.03	7.81	6.27
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		110.00	50.00	55.00	56.00	66.40	161.60	109.40	91.60	94.00	103.40	104.80	100.80
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	3.00	12.00	31.55	12.75	19.05	21.30	28.60	54.66	47.40	45.02	48.84	30.35
28	COD		72	28	49	32	23	35	43	79	65	68	65	108
29	Dissolved Oxygen		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	-	-	-	940000	-	-	-	-	-	-
32	Fecal Coliform		-	-	-	-	-	15000	-	-	-	-	-	-
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	6.27	6.94	2.93	6.23	6.06	6.07	3.86	-	6.54	6.08	5.28	1.09
35	Cadmium		2.95	7.28	0.48	6.28	2.65	4.94	0.71	-	3.68	3.80	4.77	0.03
36	Chromium		2.17	1.57	0.31	0.82	2.02	2.37	0.81	-	0.27	2.87	3.51	9.83
37	Copper		3.44	3.18	0.76	1.98	3.04	3.61	3.25	-	34.25	2.93	3.19	3.15
38	Lead		1.77	0.37	0.65	0.63	1.47	0.27	0.88	-	1.85	1.66	3.31	0.26
39	Nickel		36.30	51.37	1.17	10.26	35.90	19.66	0.08	-	13.01	34.57	0.59	18.12
40	Zinc	mg/l	0.26	0.26	0.26	0.01	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	203	115	617	66	163	167	100	128	119	305	158	116
42	Tot-Hardness		414	153	169	136	243	356	275	259	253	305	342	381
43	Na%	%	37	36	43	55	47	49	48	44	48	49	50	48
44	RSC (-)		-1.34	-0.32	-0.76	-0.02	-2.67	-3.08	-2.71	-0.72	-1.84	-0.12	-2.75	-1.23
45	SAR (-)		2.48	1.49	2.08	3.08	2.97	3.83	3.20	2.77	3.17	3.67	4.04	3.76
46	PESTICIDES													

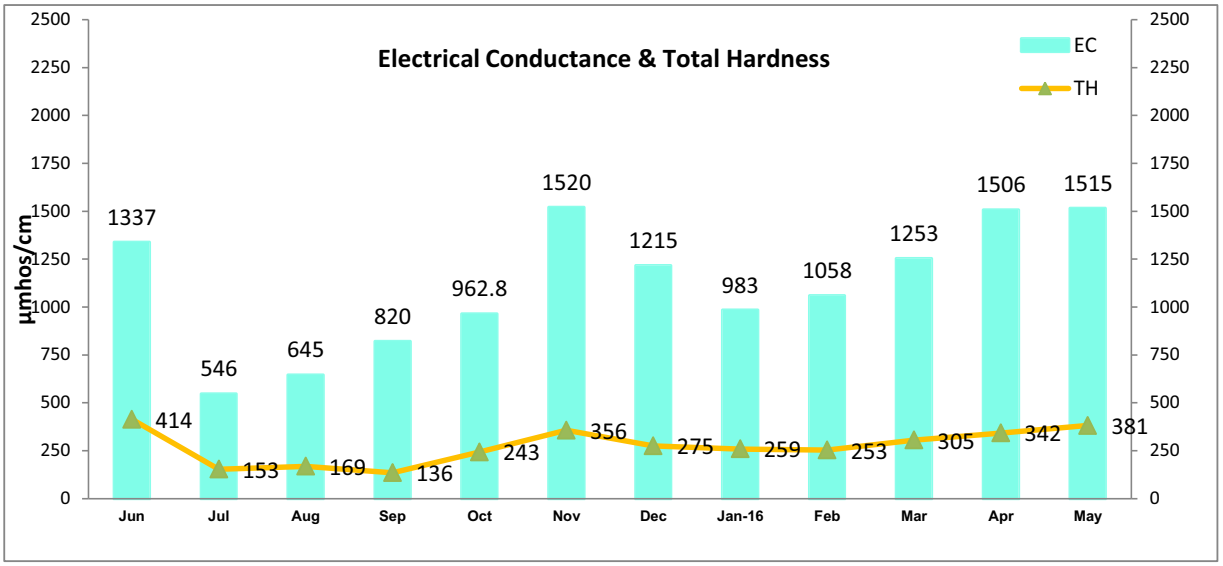
RIVER WATER SUMMARY - 2015-2016

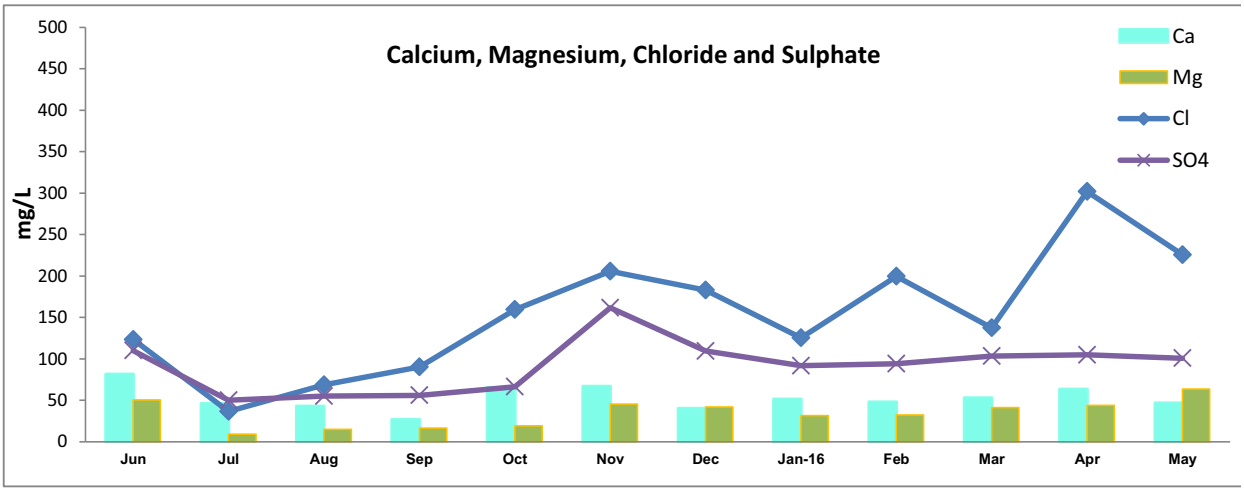
Station Name : AGRA CANNAL **Division : UYD, New Delhi**

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	1520	546	1113	862	1194	1425
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.45	7.34	7.7	7.93	7.44	7.62
Temperature	-	-	-	-	-	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	3.50	0.00	0.5	0.48	0.00	1.17
Alk-Tot (as $CaCO_3$)	12	352.29	110.84	203.8	174.38	184.45	278.78
Boron	12	0.71	0.03	0.3	0.33	0.23	0.16
Calcium	12	81.20	26.50	52.5	52.28	51.42	54.21
Chloride	12	301.80	36.44	154.7	95.56	178.43	221.63
Carbonate	12	4.20	0.00	0.6	0.57	0.00	1.40
Fluoride	12	0.66	0.02	0.2	0.03	0.25	0.62
Iron	11	0.10	0.00	0.0	0.00	0.03	0.01
Bicarbonate	12	422.75	127.27	243.4	208.10	221.34	331.73
Potassium	12	20.80	8.90	14.7	10.98	15.95	19.08
Magnesium	12	63.59	9.22	34.2	22.06	37.74	49.68
Sodium	12	171.70	42.25	117.0	81.84	126.68	162.57
Ammonia as N	12	35.60	0.06	14.9	8.22	20.43	18.53
NO_2+NO_3 as N	12	21.03	3.26	8.8	10.50	8.76	6.11
Nitrite as N	12	13.90	0.02	1.8	3.16	1.29	0.10
Nitrate as N	12	14.81	3.15	7.0	7.33	7.46	6.01
Tot. Phosphate as P	12	7.81	0.05	3.3	1.46	3.49	6.04
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	161.60	50.00	91.9	67.48	114.15	103.00
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	54.66	3.00	29.5	15.67	37.99	41.40
COD	12	108.0	23.0	55.6	40.8	55.5	80.3
Dissolved Oxygen	-	-	-	-	-	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	1	940000	940000	940000	-	940000	-
Fecal Coliform	1	15000	15000	15000	-	15000	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	6.94	1.09	5.2	5.69	5.49	4.15
Cadmium	11	7.28	0.03	3.4	3.93	3.11	2.86
Chromium	11	9.83	0.27	2.4	1.38	1.15	5.40
Copper	11	34.25	0.76	5.7	2.48	13.70	3.09
Lead	11	3.31	0.26	1.2	0.98	1.00	1.74
Nickel	11	51.37	0.08	20.1	27.00	10.92	17.76
Zinc	11	0.26	0.00	0.1	0.16	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	617	66	188	233	129	193
Tot-Hardness	12	414	136	274	223	286	343
Na%	12	55	36	46	43	47	49
RSC (-)	12	-0.02	-3.08	-1.5	-1.02	-2.09	-1.37
SAR (-)	12	4.04	1.49	3.0	2.42	3.24	3.82

Graphical Presentation of AGRA CANNAL WQ Site







HINDON CUT

Water Quality Datasheet for the Period : 2015-2016

Station Name : HINDON CUT **Division : UYD, New Delhi**

River Water Analysis

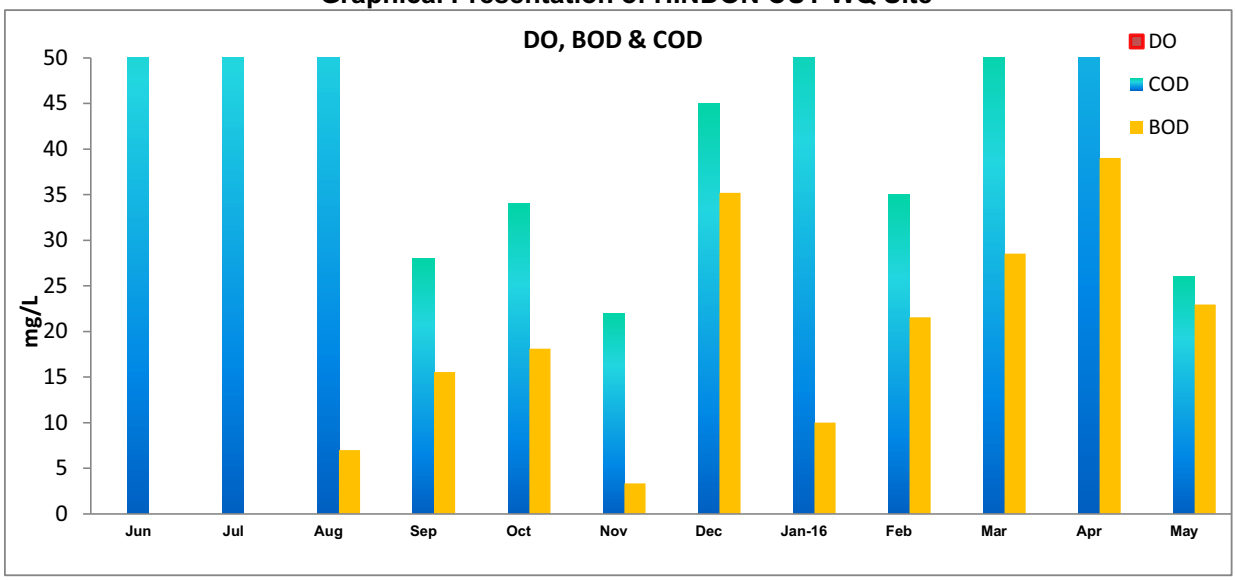
S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Colourless											
4	EC_GEN (µmho/cm)		1311	311	1865	660	2317	649	447	365	395	382	1110	605
5	Odour_Code (-)		Odourless											
6	pH_GEN (pH units)		7.75	8.10	8.12	7.70	8.45	7.70	7.24	7.27	7.37	7.61	7.29	7.43
7	Temperature	°C	29.8	29.3	31.1	31.2	29.2	25.1	18.3	16.9	18.4	22.7	26.2	28.1
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	1.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Alk-Tot (as $CaCO_3$)		321.2	96.1	440.4	135.2	441.0	150.3	106.5	97.7	94.8	119.3	237.3	213.5
10	Boron		0.19	0.68	0.21	0.09	0.26	0.02	0.11	0.01	0.27	0.01	0.74	0.01
11	Calcium		70.40	35.71	75.26	35.09	135.05	52.10	28.48	30.40	29.71	34.08	46.72	38.02
12	Chloride		147.20	19.40	221.68	82.20	389.6	121.88	37.98	38.16	52.25	23.80	233.2	69.90
13	Carbonate		0.00	0.00	0.00	0.00	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Fluoride		0.07	0.05	0.03	0.02	0.32	0.02	0.01	0.29	0.36	0.31	0.34	0.36
15	Iron		0.009	0.003	0.010	0.003	0.001	0.001	0.002	-	0.003	0.020	0.138	0.011
16	Bicarbonate		385.44	115.36	528.5	162.22	525.41	180.36	127.85	117.20	113.70	143.20	284.7	256.2
17	Potassium		21.40	6.73	31.15	15.55	33.92	7.92	15.80	6.91	4.69	4.08	16.10	18.26
18	Magnesium		34.09	7.80	35.93	13.50	56.83	56.08	33.60	11.01	12.29	9.57	26.50	29.95
19	Sodium		136.84	14.52	236.5	74.40	232.8	50.35	26.65	20.38	29.16	17.07	155.90	44.43
20	Ammonia as N		2.64	8.93	22.14	0.99	52.90	11.40	5.46	2.50	5.56	3.56	8.94	5.87
21	NO_2+NO_3 as N		6.17	7.63	9.37	17.62	19.88	2.12	0.70	7.79	1.83	1.40	1.58	1.88
22	Nitrite as N		0.20	1.50	0.13	0.04	0.28	0.17	0.10	6.34	0.03	0.16	0.03	0.78
23	Nitrate as N		5.97	6.13	9.24	17.58	19.60	1.95	0.60	1.45	1.80	1.24	1.55	1.10
24	Tot. Phosphate as P		0.72	3.01	16.78	2.26	0.41	2.02	1.18	0.45	2.47	1.37	2.26	2.38
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		95.00	25.00	80.00	64.00	73.50	49.00	30.40	37.00	29.40	35.00	31.00	36.40
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	*	*	7.00	15.55	18.12	-	35.20	10.01	21.55	28.54	39.03	22.95
28	COD		64.0	66.0	72.0	28.0	34.0	-	45.0	55.0	35.0	52.0	100.0	26.0
29	Dissolved Oxygen		0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	-	-	-	-	-	-	-	-	-	-
32	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	3.70	5.80	2.91	3.00	5.82	3.13	8.75	-	3.89	5.11	5.99	1.92
35	Cadmium		0.56	1.12	0.28	10.58	8.80	2.52	4.19	-	2.62	0.48	0.95	0.03
36	Chromium		0.92	1.82	0.50	4.11	1.96	26.87	3.53	-	2.79	1.08	1.16	6.26
37	Copper		3.36	3.94	2.73	5.56	21.03	3.30	8.02	-	4.77	1.40	2.68	3.11
38	Lead		1.06	0.47	0.60	0.19	0.91	0.67	1.05	-	1.34	0.31	0.63	0.46
39	Nickel		4.35	6.25	2.42	7.32	82.09	6.86	1.92	-	13.30	1.57	1.48	5.73
40	Zinc	mg/l	0.27	0.02	0.26	0.01	0.00	0.00	0.00	-	0.00	0.00	0.01	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	176	89	417	88	338	130	71	76	74	125	117	95
42	Tot-Hardness		318	122	338	144	575	364	211	122	126	125	227	220
43	Na%	%	46	19	58	50	45	23	20	25	33	22	58	28
44	RSC (-)		-0.04	-0.54	1.91	-0.22	-2.81	-4.32	-2.13	-0.52	-0.65	-0.15	0.12	-0.20
45	SAR (-)		3.34	0.57	5.59	2.70	4.22	1.15	0.80	0.80	1.13	0.66	4.50	1.30
46	PESTICIDES													

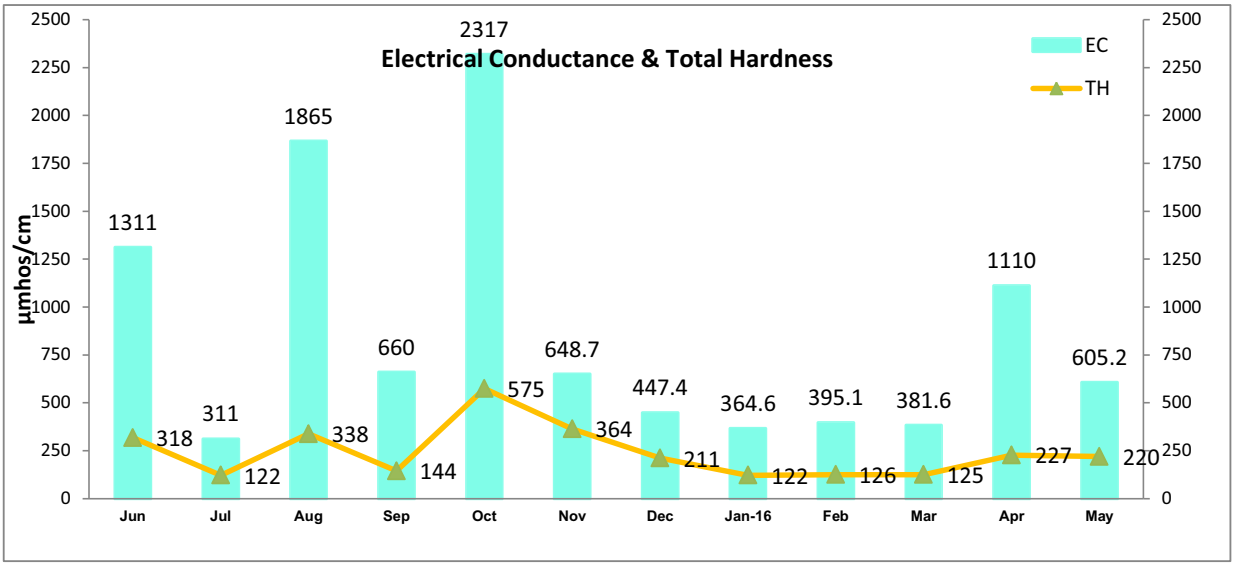
RIVER WATER SUMMARY - 2015-2016

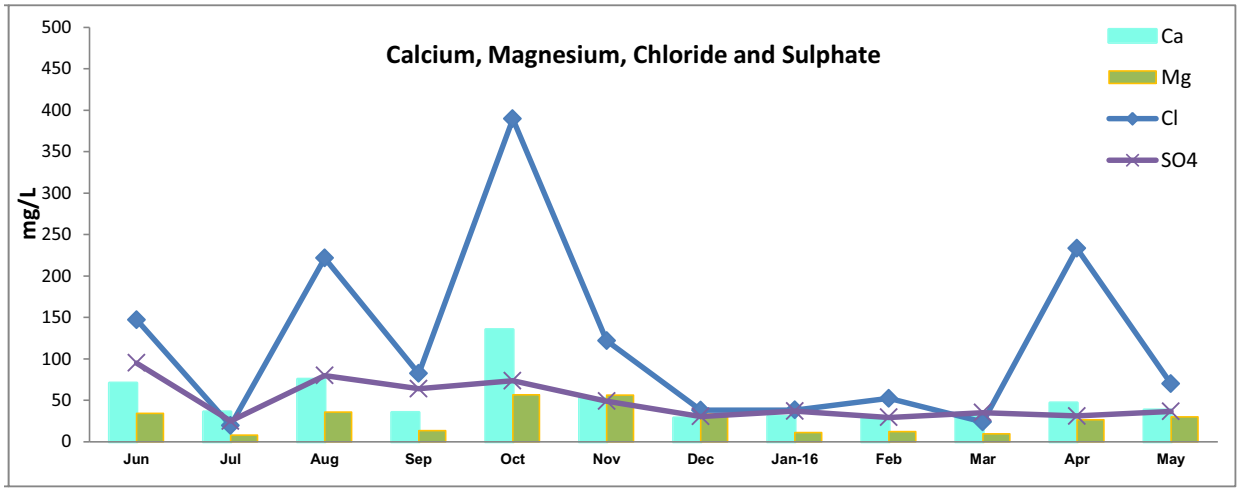
Station Name : HINDON CUT **Division : UYD, New Delhi**

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2317	311	868	1293	464	699
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.45	7.24	7.7	8.02	7.40	7.44
Temperature	-	-	-	-	-	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	1.56	0.00	0.1	0.31	0.00	0.00
Alk-Tot (as $CaCO_3$)	12	440.96	94.75	204.4	286.77	112.31	190.03
Boron	12	0.74	0.01	0.2	0.28	0.10	0.26
Calcium	12	135.05	28.48	50.9	70.30	35.17	39.61
Chloride	12	389.55	19.40	119.8	172.01	62.57	108.97
Carbonate	12	1.87	0.00	0.2	0.37	0.00	0.00
Fluoride	12	0.36	0.01	0.2	0.10	0.17	0.33
Iron	11	0.14	0.00	0.0	0.01	0.00	0.06
Bicarbonate	12	528.46	113.70	245.0	343.38	134.78	228.03
Potassium	12	33.92	4.08	15.2	21.75	8.83	12.81
Magnesium	12	56.83	7.80	27.3	29.63	28.25	22.01
Sodium	12	236.45	14.52	86.6	139.00	31.64	72.47
Ammonia as N	12	52.90	0.99	10.9	17.52	6.23	6.12
NO_2+NO_3 as N	12	19.88	0.70	6.5	12.13	3.11	1.62
Nitrite as N	12	6.34	0.03	0.8	0.43	1.66	0.32
Nitrate as N	12	19.60	0.60	5.7	11.70	1.45	1.30
Tot. Phosphate as P	12	16.78	0.41	2.9	4.64	1.53	2.01
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	95.00	25.00	48.8	67.50	36.45	34.13
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	9	39.03	7.00	22.0	13.56	22.25	30.17
COD	11	100.0	26.0	52.5	52.8	45.0	59.3
Dissolved Oxygen	-	-	-	-	-	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	8.75	1.92	4.5	4.25	5.26	4.34
Cadmium	11	10.58	0.03	2.9	4.27	3.11	0.49
Chromium	11	26.87	0.50	4.6	1.86	11.06	2.83
Copper	11	21.03	1.40	5.4	7.32	5.36	2.40
Lead	11	1.34	0.19	0.7	0.65	1.02	0.47
Nickel	11	82.09	1.48	12.1	20.49	7.36	2.93
Zinc	11	0.27	0.00	0.1	0.11	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	417	71	150	222	88	112
Tot-Hardness	12	575	122	241	299	206	191
Na%	12	58	19	36	44	25	36
RSC (-)	12	1.91	-4.32	-0.8	-0.34	-1.90	-0.08
SAR (-)	12	5.59	0.57	2.2	3.28	0.97	2.15

Graphical Presentation of HINDON CUT WQ Site







MOHANA

General Particulars

Site	:***Mohana***	Code	: **GY000T1**
State	: **Haryana**	District	: **Faridabad**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Yamuna**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **LYSD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **27670 Sq. Km.**		
Latitude	: **28°14'58"N**	Longitude	: **77°28'12"E**
Zero of Gauge	: **185 (m.s.l.)**	Bank	: **Right**

Details of operation (Opening date)

Gauge:	: **11/01/1983**
Discharge:	: **11/01/1983**
Sediment	: **11/01/1983**
Water Quality	: **11/01/1983**
Wireless	: **20/09/1981**

Water Quality Datasheet for the Period : 2015-2016

Station Name : MOHANA **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		1/6/15	1/7/15	1/8/15	1/9/15	1/10/15	2/11/15	1/12/15	1/1/16	1/2/16	1/3/16	1/4/16	2/5/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		L. Black		Colourless									
4	EC_GEN (µmho/cm)		1435	1490	806	895	1650	1701	1880	1463	1412	1475	1007	1310
5	Odour_Code (-)		Odourless				Rottanegg					Odourless		
6	pH_GEN (pH units)		7.72	7.90	8.07	8.00	8.55	7.59	7.90	7.51	7.60	7.77	7.30	7.77
7	Temperature	°C	29.5	31.0	31.0	31.7	29.2	23.0	20.2	12.0	15.5	17.9	22.2	26.1
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	2.08	0.00	0.00	0.00	0.00	0.00	31.00	12.00
9	Alk-Tot (as $CaCO_3$)		351.1	387.3	200.0	212.7	367.5	301.8	246.2	341.7	215.5	211.9	158.6	317.2
10	Boron		0.67	0.27	0.08	0.09	0.14	0.15	0.30	0.11	0.19	0.12	0.18	0.18
11	Calcium		68.80	90.38	50.65	50.68	94.63	70.76	78.08	43.20	52.40	56.96	68.96	62.24
12	Chloride		207.30	198.52	89.95	105.20	234.5	270.9	301.8	220.1	283.2	249.1	220.5	149.2
13	Carbonate		0.00	0.00	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	37.20	14.40
14	Fluoride		0.09	0.07	0.03	0.03	0.03	0.05	0.05	0.55	0.51	0.53	0.57	0.45
15	Iron		0.0290	0.039	0.019	0.023	0.011	0.011	0.023	-	0.043	0.067	0.1230	0.0401
16	Bicarbonate		421.32	464.8	240.0	255.2	436.0	362.2	295.5	410.0	258.6	254.3	115.90	351.80
17	Potassium		11.14	12.10	9.00	18.60	22.40	22.36	23.56	13.80	20.90	15.90	4.67	13.85
18	Magnesium		32.45	18.64	15.61	17.34	35.06	63.62	48.48	57.79	39.28	41.38	50.40	38.61
19	Sodium		178.00	191.30	86.27	95.65	198.84	105.21	215.34	179.20	199.40	162.30	42.61	143.90
20	Ammonia as N		23.70	13.12	1.09	0.10	24.90	15.60	12.00	22.60	29.30	19.50	20.50	15.30
21	NO_2+NO_3 as N		5.59	5.23	4.88	29.49	11.98	27.75	6.87	16.85	12.06	12.59	14.80	4.72
22	Nitrite as N		0.05	0.03	0.27	0.01	0.38	3.75	0.18	4.85	0.06	0.69	0.00	0.29
23	Nitrate as N		5.54	5.20	4.61	29.48	11.60	24.00	6.69	12.00	12.00	11.90	14.80	4.43
24	Tot. Phosphate as P		0.83	3.18	0.03	1.77	1.74	9.75	4.08	7.59	8.66	6.70	7.21	5.01
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		75.00	60.00	52.00	70.00	74.30	81.20	110.00	79.80	85.20	156.30	66.40	106.80
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	11.92	19.96	1.61	2.36	3.54	12.75	23.35	7.79	9.44	38.73	42.22	24.46
28	COD		33.0	56.0	29.0	29.0	12.0	30.0	35.0	28.0	37.0	57.0	59.0	36.0
29	Dissolved Oxygen		3.90	5.60	7.00	6.90	3.80	4.00	4.40	4.10	3.80	4.00	1.80	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	50000	1300	45000	45000	500000	28000	39000	540000	33000	280000
32	Fecal Coliform		-	-	14000	800	2000	2000	100000	2600	14000	170000	13000	34000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	8.88	4.50	4.92	2.71	8.67	4.81	3.30	-	3.23	5.19	7.04	4.39
35	Cadmium		5.40	8.91	0.49	4.93	5.10	6.47	6.16	-	7.14	4.99	5.42	0.03
36	Chromium		1.41	1.29	2.28	4.20	1.26	1.68	2.08	-	6.08	1.20	0.67	27.20
37	Copper		3.72	6.18	0.51	2.48	3.32	6.65	3.84	-	3.11	3.73	2.14	2.59
38	Lead		1.63	0.81	0.48	0.30	1.33	0.34	1.20	-	4.48	2.90	5.01	0.12
39	Nickel		34.91	40.76	2.07	8.98	34.51	25.17	21.80	-	6.58	55.97	0.27	17.03
40	Zinc	mg/l	0.26	0.26	0.26	0.01	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	172	226	715	127	237	177	195	108	131	315	172	156
42	Tot-Hardness		307	304	192	199	383	442	397	349	295	315	383	317
43	Na%	%	55	57	48	48	51	33	52	52	57	51	19	48
44	RSC (-)		0.76	1.55	0.10	0.20	-0.42	-2.90	-3.10	-0.25	-1.65	-2.13	-4.51	-0.08
45	SAR (-)		4.42	4.77	2.71	2.95	4.42	2.18	4.70	4.17	5.05	3.98	0.95	3.52
46	PESTICIDES													

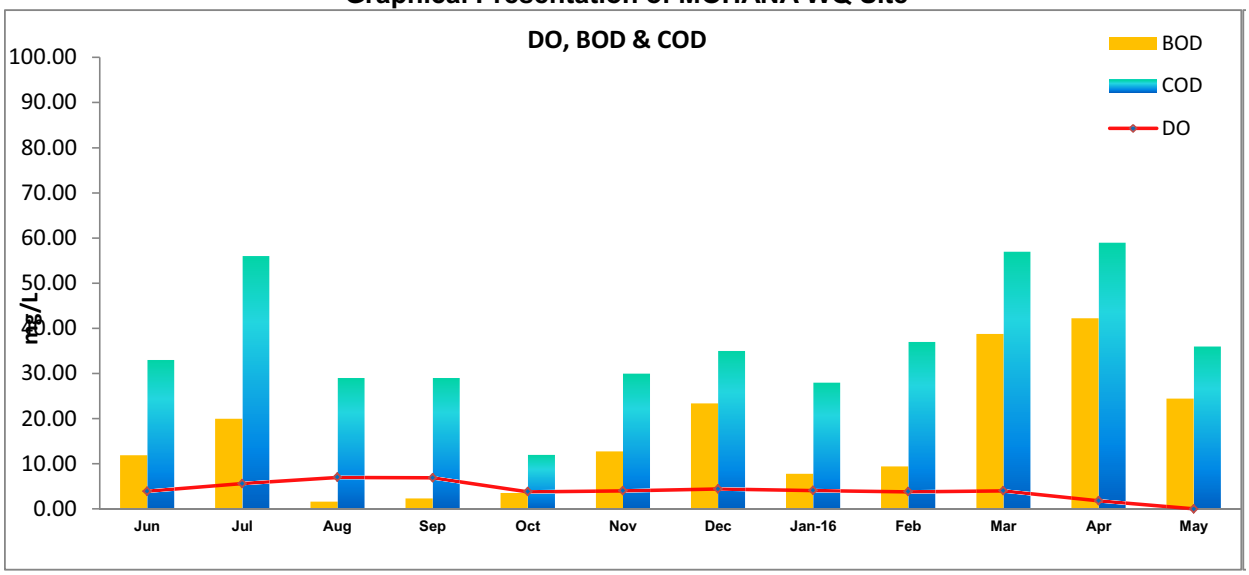
RIVER WATER SUMMARY - 2015-2016

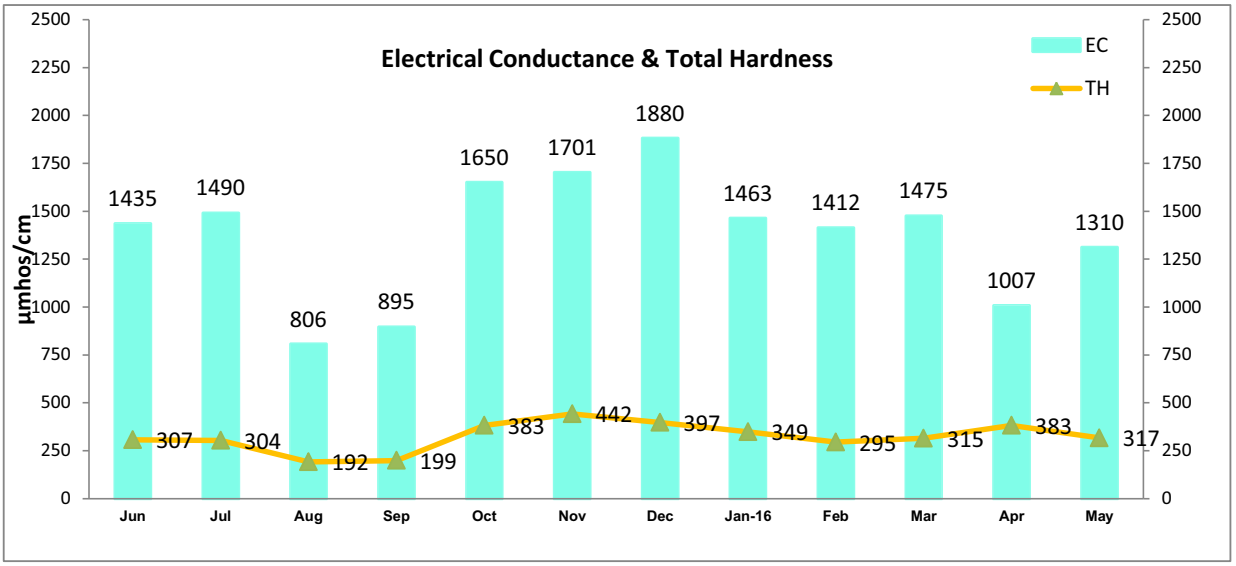
Station Name : MOHANA **Division : UYD, New Delhi**

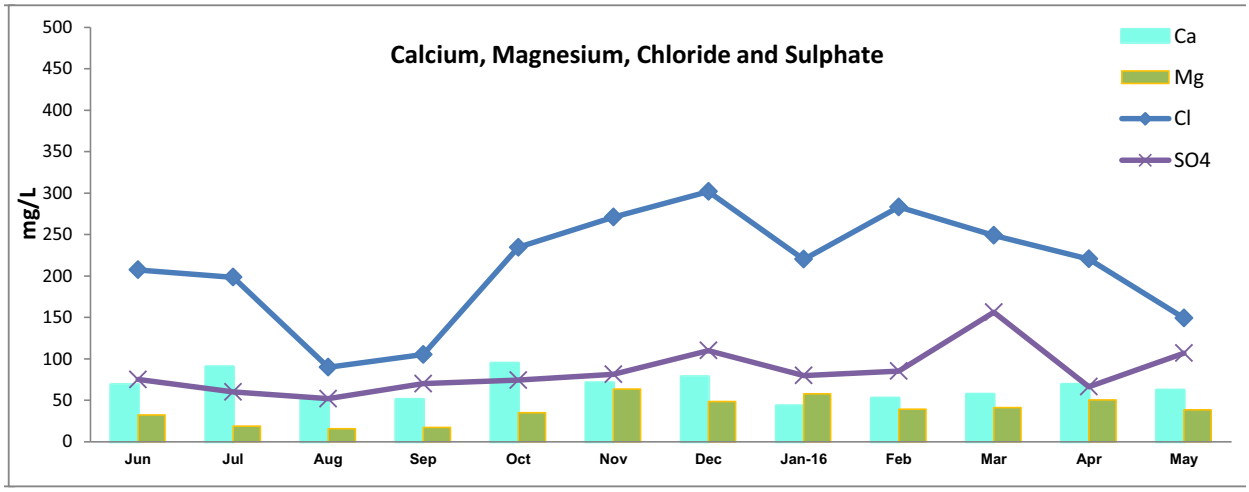
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	1880	806	1377	1255	1614	1264
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.55	7.30	7.8	8.05	7.65	7.61
Temperature	12	31.70	12.00	24.1	30.48	17.68	22.07
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	31.00	0.00	3.8	0.42	0.00	14.33
Alk-Tot (as $CaCO_3$)	12	387.33	158.58	276.0	303.72	276.30	229.22
Boron	12	0.67	0.08	0.2	0.25	0.19	0.16
Calcium	12	94.63	43.20	65.6	71.03	61.11	62.72
Chloride	12	301.75	89.95	210.8	167.09	268.98	206.27
Carbonate	12	37.20	0.00	4.5	0.50	0.00	17.20
Fluoride	12	0.57	0.03	0.2	0.05	0.29	0.52
Iron	11	0.12	0.01	0.0	0.02	0.03	0.08
Bicarbonate	12	464.80	115.90	322.1	363.46	331.56	240.67
Potassium	12	23.56	4.67	15.7	14.65	20.16	11.47
Magnesium	12	63.62	15.61	38.2	23.82	52.29	43.46
Sodium	12	215.34	42.61	149.8	150.01	174.79	116.27
Ammonia as N	12	29.30	0.10	16.5	12.58	19.88	18.43
NO_2+NO_3 as N	12	29.49	4.72	12.7	11.43	15.88	10.70
Nitrite as N	12	4.85	0.00	0.9	0.15	2.21	0.33
Nitrate as N	12	29.48	4.43	11.9	11.29	13.67	10.38
Tot. Phosphate as P	12	9.75	0.03	4.7	1.51	7.52	6.31
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	156.30	52.00	84.8	66.26	89.05	109.83
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	42.22	1.61	16.5	7.88	13.33	35.14
COD	12	59.0	12.0	36.8	31.8	32.5	50.7
Dissolved Oxygen	12	7.00	0.00	4.1	5.44	4.08	1.93
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	10	540000	1300	156130	32100	153000	284333
Fecal Coliform	10	170000	800	35240	5600	29650	72333
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	8.88	2.71	5.2	5.94	3.78	5.54
Cadmium	11	8.91	0.03	5.0	4.96	6.59	3.48
Chromium	11	27.20	0.67	4.5	2.09	3.28	9.69
Copper	11	6.65	0.51	3.5	3.24	4.53	2.82
Lead	11	5.01	0.12	1.7	0.91	2.01	2.68
Nickel	11	55.97	0.27	22.6	24.25	17.85	24.42
Zinc	11	0.26	0.00	0.1	0.16	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	715	108	228	295	153	214
Tot-Hardness	12	442	192	323	277	371	338
Na%	12	57	19	48	52	48	40
RSC (-)	12	1.55	-4.51	-1.0	0.44	-1.98	-2.24
SAR (-)	12	5.05	0.95	3.7	3.85	4.02	2.81

Graphical Presentation of MOHANA WQ Site







MATHURA

General Particulars

Site	:***Mathura***	Code	: **GYW00P5**
State	: **Himachal Pradesh**	District	: **Sirmaur**
Division	: **Upper Yamuna Division**	Sub-Division	: **SSD, New Delhi**
River Basin	: **Yamuna**	Tributary	: **Giri**
Sub Tributary	: **-**	Drainage Area	: **1349 Sq. Km.**
Latitude	: **30°53'11"N**	Longitude	: **77°12'24" E**
Zero of Gauge	: **-**	Bank	: **-**

Details of operation (Opening date)

Gauge:	: **28/05/1976**
Discharge:	: **28/05/1976**
Sediment	: **-**
Water Quality	:

Water Quality Datasheet for the Period : 2015-2016

Station Name : MATHURA 1ST 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		Colourless											
4	EC_GEN (µmho/cm)		1453	1206	546	835	1925	1418	557	1491	1564	1546	1255	1505
5	Odour_Code (-)		Odourless											
6	pH_GEN (pH units)		7.88	7.90	7.88	8.10	8.53	7.97	7.78	7.42	7.73	8.15	7.71	8.13
7	Temperature	°C	31.0	30.6	30.0	31.5	29.0	24.5	15.0	16.6	17.0		26.5	30.5
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	3.75	0.00	0.00	0.00	0.00	7.20	0.00	11.50
9	Alk-Tot (as $CaCO_3$)		425.7	254.9	138.6	190.2	315.5	206.9	82.1	295.8	290.8	343.8	150.1	355.8
10	Boron		0.53	0.65	0.12	0.08	0.13	0.17	0.30	0.11	0.33	0.11	0.00	0.17
11	Calcium		110.40	68.26	42.65	56.55	105.43	64.36	33.44	60.96	60.40	65.12	55.76	53.76
12	Chloride		119.18	153.40	41.17	95.60	215.44	228.54	71.35	247.30	224.90	191.50	267.00	187.00
13	Carbonate		0.00	0.00	0.00	0.00	4.50	0.00	0.00	0.00	0.00	8.64	0.00	13.80
14	Fluoride		0.07	0.03	0.01	0.02	0.04	0.04	0.01	0.50	0.54	0.61	0.48	0.54
15	Iron		0.0190	0.0324	0.0290	0.0036	0.0110	0.0210	0.2010	-	0.0010	0.0025	0.0450	0.0220
16	Bicarbonate		510.86	305.84	166.29	228.20	369.62	248.29	98.57	355.00	348.90	395.30	180.10	399.40
17	Potassium		12.00	10.96	7.77	9.30	19.80	11.00	5.47	15.32	19.10	21.05	3.24	16.70
18	Magnesium		35.73	25.87	10.16	18.37	38.66	43.30	49.06	42.70	45.15	41.95	35.14	55.76
19	Sodium		128.00	147.04	48.63	81.55	232.80	160.28	40.58	197.80	202.20	176.70	170.10	173.30
20	Ammonia as N		2.49	1.67	0.96	0.08	0.44	11.30	0.04	16.80	25.30	17.50	10.20	10.60
21	NO_2+NO_3 as N		12.92	16.80	13.72	31.53	63.02	8.10	6.03	11.76	23.06	14.86	5.72	17.70
22	Nitrite as N		3.47	2.80	3.41	0.01	2.12	0.73	0.04	0.06	0.06	8.58	0.00	9.65
23	Nitrate as N		9.45	14.00	10.31	31.52	60.90	7.37	5.99	11.70	23.00	6.28	5.72	8.05
24	Tot. Phosphate as P		0.61	4.55	1.34	1.26	1.29	6.84	0.37	6.21	8.10	6.10	4.30	5.76
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		90.00	75.00	44.00	77.00	115.40	128.00	79.60	90.80	177.00	132.20	82.60	98.60
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	7.42	4.70	8.95	13.64	15.82	18.80	6.84	64.49	19.55	26.08	10.89	32.15
28	COD		39.0	32.0	22.0	16.0	32.0	39.0	19.0	95.0	24.0	44.0	23.0	65.0
29	Dissolved Oxygen		4.70	4.30	4.22	4.55	4.20	4.20	3.70	1.01	2.40	1.70	2.20	2.10
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	170000	130000	55000	49000	800	220000	110000	27000	220000	70000
32	Fecal Coliform		-	-	110000	27000	7000	4500	200	110000	22000	13000	17000	22000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	6.50	8.32	3.09	2.35	2.40	7.32	6.81	-	3.19	6.82	8.34	8.39
35	Cadmium		5.22	1.10	0.25	1.29	6.54	5.16	2.15	-	0.32	4.99	3.77	0.10
36	Chromium		2.82	0.90	0.77	1.26	2.10	0.73	6.25	-	0.55	1.09	0.66	1.37
37	Copper		4.12	1.72	0.89	0.98	3.61	2.93	34.30	-	0.73	3.02	2.65	3.14
38	Lead		0.95	0.81	0.42	0.98	0.73	0.32	1.47	-	0.29	3.45	3.67	2.97
39	Nickel		32.11	8.35	2.99	1.69	77.83	32.18	41.03	-	0.92	11.69	0.79	30.48
40	Zinc	mg/l	0.26	0.26	0.26	0.01	0.00	0.00	0.04	-	0.00	0.00	0.00	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	276	171	816	141	264	161	84	152	151	338	139	134
42	Tot-Hardness		425	279	149	218	425	341	288	330	339	338	286	367
43	Na%	%	39	52	40	44	53	50	23	55	55	51	56	49
44	RSC (-)		-0.12	-0.56	-0.25	-0.62	-2.28	-2.76	-4.14	-0.79	-1.06	0.02	-2.76	-0.33
45	SAR (-)		2.70	3.83	1.73	2.40	4.91	3.77	1.04	4.73	4.77	4.18	4.37	3.93
46	PESTICIDES													

RIVER WATER SUMMARY - 2015-2016

Station Name : MATHURA Ist 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	1925	546	1275	1193	1258	1435
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.53	7.42	7.9	8.06	7.73	8.00
Temperature	11	31.50	15.00	25.7	30.42	18.28	28.50
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	11.50	0.00	1.9	0.75	0.00	6.23
Alk-Tot (as $CaCO_3$)	12	425.72	82.14	254.2	264.97	218.91	283.24
Boron	12	0.65	0.00	0.2	0.30	0.23	0.09
Calcium	12	110.40	33.44	64.8	76.66	54.79	58.21
Chloride	12	267.00	41.17	170.2	124.96	193.02	215.17
Carbonate	12	13.80	0.00	2.2	0.90	0.00	7.48
Fluoride	12	0.61	0.01	0.2	0.03	0.28	0.54
Iron	11	0.20	0.00	0.0	0.02	0.07	0.02
Bicarbonate	12	510.86	98.57	300.5	316.16	262.69	324.93
Potassium	12	21.05	3.24	12.6	11.97	12.72	13.66
Magnesium	12	55.76	10.16	36.8	25.76	45.05	44.28
Sodium	12	232.80	40.58	146.6	127.60	150.22	173.37
Ammonia as N	12	25.30	0.04	8.1	1.13	13.36	12.77
NO_2+NO_3 as N	12	63.02	5.72	18.8	27.60	12.24	12.76
Nitrite as N	12	9.65	0.00	2.6	2.36	0.22	6.08
Nitrate as N	12	60.90	5.72	16.2	25.24	12.02	6.68
Tot. Phosphate as P	12	8.10	0.37	3.9	1.81	5.38	5.39
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	177.00	44.00	99.2	80.28	118.85	104.47
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20^{o}C	12	64.49	4.70	19.1	10.11	27.42	23.04
COD	12	95.0	16.0	37.5	28.2	44.3	44.0
Dissolved Oxygen	12	4.70	1.01	3.3	4.39	2.83	2.00
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	10	220000	800	105180	118333	-	-
Fecal Coliform	10	110000	200	33270	48000	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	8.39	2.35	5.8	4.53	5.77	7.85
Cadmium	11	6.54	0.10	2.8	2.88	2.55	2.95
Chromium	11	6.25	0.55	1.7	1.57	2.51	1.04
Copper	11	34.30	0.73	5.3	2.26	12.65	2.94
Lead	11	3.67	0.29	1.5	0.78	0.69	3.36
Nickel	11	77.83	0.79	21.8	24.59	24.71	14.32
Zinc	11	0.26	0.00	0.1	0.16	0.01	0.00
CHEMICAL INDICES							
Ca-Hardness	12	816	84	236	334	137	204
Tot-Hardness	12	425	149	315	299	325	330
Na%	12	56	23	47	45	46	52
RSC (-)	12	0.02	-4.14	-1.3	-0.77	-2.19	-1.02
SAR (-)	12	4.91	1.04	3.5	3.12	3.58	4.16

Water Quality Datasheet for the Period : 2015-2016

Station Name : MATHURA 2nd 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		11/06/15	13/07/15	11/08/15	11/09/15	12/10/15	12/11/15	11/12/15	11/01/16	11/02/16	11/03/16	11/04/16	11/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		L.Brown	Colourless										
4	EC_GEN (µmho/cm)		1130	999	726	530	1822	1875	1376	1462	1496	1312	1581	1388
5	Odour_Code (-)		Rottanegg	Odourless										
6	pH_GEN (pH units)		7.90	7.90	7.98	7.90	8.51	7.98	7.74	7.80	7.69	7.86	7.74	7.43
7	Temperature	°C	32.0	29.5	30.5	31.5	29.0	25.0	20.0	17.5	17.5	24.5	27.0	29.5
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	2.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Alk-Tot (as $CaCO_3$)		234.7	188.8	115.0	137.5	358.1	273.9	78.9	286.1	282.6	238.7	382.8	316.2
10	Boron		0.30	0.64	0.17	0.10	0.44	0.04	0.29	0.11	0.10	0.09	BDL	0.19
11	Calcium		56.00	65.88	51.72	56.68	80.22	77.99	57.36	30.56	60.32	59.36	41.76	55.72
12	Chloride		120.00	110.87	71.96	60.10	250.51	244.97	222.58	220.10	247.40	229.00	210.80	184.40
13	Carbonate		0.00	0.00	0.00	0.00	2.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Fluoride		0.03	0.02	0.05	0.03	0.04	0.05	0.37	0.51	0.57	0.56	0.59	0.49
15	Iron		0.0090	0.0080	0.0004	0.0052	0.0030	0.0450	0.0470	-	0.0013	0.0044	0.0340	0.0390
16	Bicarbonate		281.58	226.50	137.98	165.00	423.95	328.71	94.70	343.30	339.10	286.40	459.30	379.40
17	Potassium		10.80	9.60	10.53	1.90	21.40	23.30	15.68	13.65	11.50	17.40	15.37	14.05
18	Magnesium		28.57	22.54	15.67	19.31	48.36	61.78	47.04	54.14	46.46	41.57	47.04	34.49
19	Sodium		124.00	105.00	70.52	16.20	232.80	250.80	140.82	193.30	176.20	151.70	198.60	187.10
20	Ammonia as N		1.37	0.93	1.93	0.12	8.63	0.35	4.93	18.20	18.90	11.80	1.02	4.21
21	NO_2+NO_3 as N		14.97	18.81	14.08	16.44	18.19	6.85	47.88	9.23	18.09	4.97	7.76	39.06
22	Nitrite as N		2.57	1.71	0.88	0.14	4.09	0.22	5.28	0.07	5.19	0.11	0.32	5.46
23	Nitrate as N		12.40	17.10	13.20	16.30	14.10	6.63	42.60	9.16	12.90	4.86	7.44	33.60
24	Tot. Phosphate as P		3.65	1.29	0.87	0.61	0.18	4.29	4.00	8.12	6.22	4.77	6.33	3.84
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		90.00	78.00	65.00	89.00	155.60	130.40	94.00	93.60	91.20	83.20	101.60	73.00
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	19.18	6.50	25.44	2.75	6.02	16.50	8.56	11.30	22.50	12.03	25.47	19.70
28	COD		26.0	48.0	37.0	52.0	22.0	23.0	34.0	32.0	49.0	29.0	47.0	39.0
29	Dissolved Oxygen		3.30	4.55	2.10	4.15	4.10	4.80	5.10	2.10	2.00	1.30	2.01	1.50
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	50000	23000	25000	55000	170000	130000	70000	130000	79000	-
32	Fecal Coliform		-	-	17000	7800	12000	30000	50000	27000	21000	22000	26000	-
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	4.32	5.61	3.61	6.12	4.29	2.98	3.61	-	4.42	3.28	1.40	0.45
35	Cadmium		0.37	8.26	0.63	0.70	8.61	6.26	6.55	-	2.56	4.07	5.27	0.34
36	Chromium		2.49	1.71	1.74	1.29	1.14	1.75	0.84	-	0.67	0.58	0.43	5.74
37	Copper		2.10	20.53	0.90	5.64	5.78	3.49	3.22	-	3.75	1.98	2.00	7.75
38	Lead		1.42	0.65	0.42	0.65	0.51	1.07	3.23	-	1.05	1.71	3.98	1.70
39	Nickel		3.69	20.32	2.29	0.65	40.36	38.09	22.98	-	3.04	1.24	1.58	17.60
40	Zinc	mg/l	0.26	0.26	0.01	0.01	0.00	0.01	0.00	-	0.01	0.00	0.00	0.00
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	140	165	669	142	201	195	143	76	151	322	104	139
42	Tot-Hardness		259	259	195	222	402	453	340	302	345	322	301	283
43	Na%	%	50	46	42	14	54	53	46	57	52	49	57	57
44	RSC (-)		-0.56	-1.46	-1.63	-1.74	-1.00	-3.66	-5.24	-0.41	-1.33	-1.74	1.52	0.56
45	SAR (-)		3.35	2.84	2.20	0.47	5.05	5.13	3.32	4.84	4.13	3.68	4.98	4.84
46	PESTICIDES													

RIVER WATER SUMMARY - 2015-2016

Station Name : MATHURA IInd 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	1875	530	1308	1041	1552	1427
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.51	7.43	7.9	8.04	7.80	7.68
Temperature	12	32.00	17.50	26.1	30.50	20.00	27.00
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	2.40	0.00	0.2	0.48	0.00	0.00
Alk-Tot (as $CaCO_3$)	12	382.75	78.92	241.1	206.80	230.38	312.53
Boron	11	0.64	0.04	0.2	0.33	0.13	0.14
Calcium	12	80.22	30.56	57.8	62.10	56.56	52.28
Chloride	12	250.51	60.10	181.1	122.69	233.76	208.07
Carbonate	12	2.88	0.00	0.2	0.58	0.00	0.00
Fluoride	12	0.59	0.02	0.3	0.04	0.37	0.55
Iron	11	0.05	0.00	0.0	0.01	0.03	0.03
Bicarbonate	12	459.30	94.70	288.8	247.00	276.45	375.03
Potassium	12	23.30	1.90	13.8	10.85	16.03	15.61
Magnesium	12	61.78	15.67	38.9	26.89	52.36	41.03
Sodium	12	250.80	16.20	153.9	109.70	190.28	179.13
Ammonia as N	12	18.90	0.12	6.0	2.60	10.60	5.68
NO_2+NO_3 as N	12	47.88	4.97	18.0	16.50	20.51	17.26
Nitrite as N	12	5.46	0.07	2.2	1.88	2.69	1.96
Nitrate as N	12	42.60	4.86	15.9	14.62	17.82	15.30
Tot. Phosphate as P	12	8.12	0.18	3.7	1.32	5.66	4.98
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	155.60	65.00	95.4	95.52	102.30	85.93
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	25.47	2.75	14.7	11.98	14.72	19.07
COD	12	52.0	22.0	36.5	37.0	34.5	38.3
Dissolved Oxygen	12	5.10	1.30	3.1	3.64	3.50	1.60
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	9	170000	23000	81333	32667	-	-
Fecal Coliform	9	50000	7800	23644	12267	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	6.12	0.45	3.6	4.79	3.67	1.71
Cadmium	11	8.61	0.34	4.0	3.71	5.12	3.23
Chromium	11	5.74	0.43	1.7	1.67	1.09	2.25
Copper	11	20.53	0.90	5.2	6.99	3.49	3.91
Lead	11	3.98	0.42	1.5	0.73	1.78	2.46
Nickel	11	40.36	0.65	13.8	13.46	21.37	6.81
Zinc	11	0.26	0.00	0.1	0.11	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	669	76	204	263	141	188
Tot-Hardness	12	453	195	307	267	360	302
Na%	12	57	14	48	41	52	55
RSC (-)	12	1.52	-5.24	-1.4	-1.28	-2.66	0.11
SAR (-)	12	5.13	0.47	3.7	2.78	4.35	4.50

Water Quality Datasheet for the Period : 2015-2016

Station Name : MATHURA 3rd 10 DAYS **Division : UYD, New Delhi**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		22/06/15	21/07/15	21/08/15	21/09/15	21/10/15	23/11/15	22/12/15	21/01/16	22/02/16	21/03/16	21/04/16	21/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	Colour_Cod (-)		L.Brown	Colourless										
4	EC_GEN (µmho/cm)		1190	620	710	930	1614	2175	1444	1576	1422	1352	1335	1669
5	Odour_Code (-)		Odourless											
6	pH_GEN (pH units)		7.80	8.29	7.80	8.00	8.00	7.90	7.90	7.75	7.82	7.65	7.92	8.32
7	Temperature	°C	31.0	30.0	29.0	31.5	30.0	24.5	14.6	14.5	20.2	26.5	29.0	32.5
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Alk-Tot (as $CaCO_3$)		248.9	110.1	121.5	239.7	247.1	200.9	320.2	338.7	229.5	216.3	241.1	285.7
10	Boron		BDL	0.71	0.19	0.12	0.19	0.37	0.28	0.25	0.08	BDL	0.08	0.19
11	Calcium		91.00	41.44	52.00	95.20	56.63	100.00	48.80	47.01	52.00	61.92	65.92	67.38
12	Chloride		128.88	55.84	90.60	65.20	99.98	473.36	174.06	230.50	265.60	255.60	206.30	302.90
13	Carbonate		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Fluoride		0.02	0.07	0.04	0.03	0.06	0.05	0.53	1.07	0.58	0.56	0.54	0.58
15	Iron		0.0100	0.0014	0.0014	0.0024	0.0042	0.0023	0.0016	-	0.0010	0.0220	0.0045	0.0160
16	Bicarbonate		298.65	132.16	145.78	287.60	296.46	241.07	384.29	406.40	275.40	259.60	289.30	342.80
17	Potassium		12.00	9.50	12.63	2.15	18.20	23.94	15.64	25.75	12.80	18.10	10.37	20.90
18	Magnesium		25.36	12.86	15.00	26.74	54.24	104.16	53.95	49.07	36.75	38.88	35.42	47.00
19	Sodium		124.00	55.00	82.53	60.53	214.30	267.42	171.22	191.40	181.90	147.80	159.30	205.60
20	Ammonia as N		0.98	0.46	0.88	0.05	5.85	37.00	23.00	25.50	18.40	16.70	12.00	8.07
21	NO_2+NO_3 as N		9.92	4.29	16.58	22.20	15.76	7.35	10.84	12.35	23.94	5.15	16.27	25.94
22	Nitrite as N		1.72	0.27	0.26	2.80	0.06	0.09	0.14	0.25	12.74	0.02	10.75	5.44
23	Nitrate as N		8.20	4.02	16.32	19.40	15.70	7.26	10.70	12.10	11.20	5.13	5.52	20.50
24	Tot. Phosphate as P		2.39	0.21	0.49	1.09	8.26	0.29	4.39	8.77	7.84	6.07	6.23	3.14
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		95.00	85.00	90.00	80.00	217.20	186.00	106.60	112.00	87.80	82.40	101.40	88.00
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	20.16	6.80	17.50	14.73	20.05	15.60	4.62	20.20	19.00	10.23	21.62	57.32
28	COD		39.0	56.0	18.0	40.0	45.0	34.0	22.0	25.0	35.0	44.0	39.0	98.0
29	Dissolved Oxygen		2.00	4.20	5.10	3.90	4.30	2.80	4.60	2.50	2.20	2.44	1.50	1.30
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	340000	520000	79000	60000	180000	49000	84000	220000	49000	2800000
32	Fecal Coliform		-	-	140000	240000	14000	18000	45000	17000	22000	27000	22000	390000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	3.52	3.28	2.80	0.36	6.73	7.40	6.27	-	8.76	7.91	9.90	8.18
35	Cadmium		0.63	0.28	0.37	0.97	6.98	7.31	4.77	-	4.91	3.95	4.17	0.09
36	Chromium		16.49	0.52	1.12	1.26	1.42	1.71	1.27	-	0.37	1.79	0.48	7.80
37	Copper		1.92	2.46	0.38	8.64	2.78	4.35	3.05	-	3.04	2.14	2.22	4.62
38	Lead		1.24	0.50	0.27	1.26	0.07	1.27	2.50	-	3.18	2.31	3.09	7.23
39	Nickel		4.32	3.15	4.86	0.92	50.97	53.81	19.03	-	13.42	0.11	0.69	7.07
40	Zinc	mg/l	0.2628	0.2654	0.0103	0.0021	0.0025	0.0020	0.0022	-	0.0020	0.0027	0.0031	0.0021
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	228	104	586	238	142	250	122	118	130	317	165	168
42	Tot-Hardness		333	157	193	350	368	684	347	322	283	317	313	364
43	Na%	%	44	41	46	27	54	45	50	54	57	49	52	53
44	RSC (-)		-1.77	-0.98	-1.46	-2.27	-2.49	-9.73	-0.64	0.22	-1.15	-2.08	-1.51	-1.67
45	SAR (-)		2.95	1.91	2.59	1.41	4.86	4.45	4.00	4.64	4.70	3.61	3.92	4.68
46	PESTICIDES													

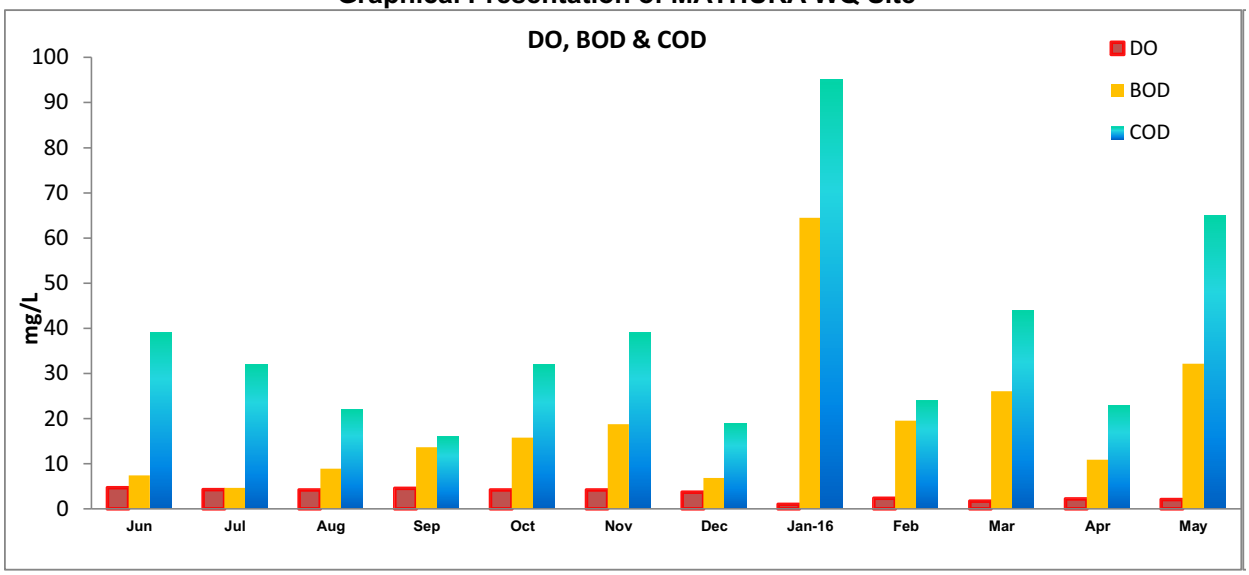
RIVER WATER SUMMARY - 2015-2016

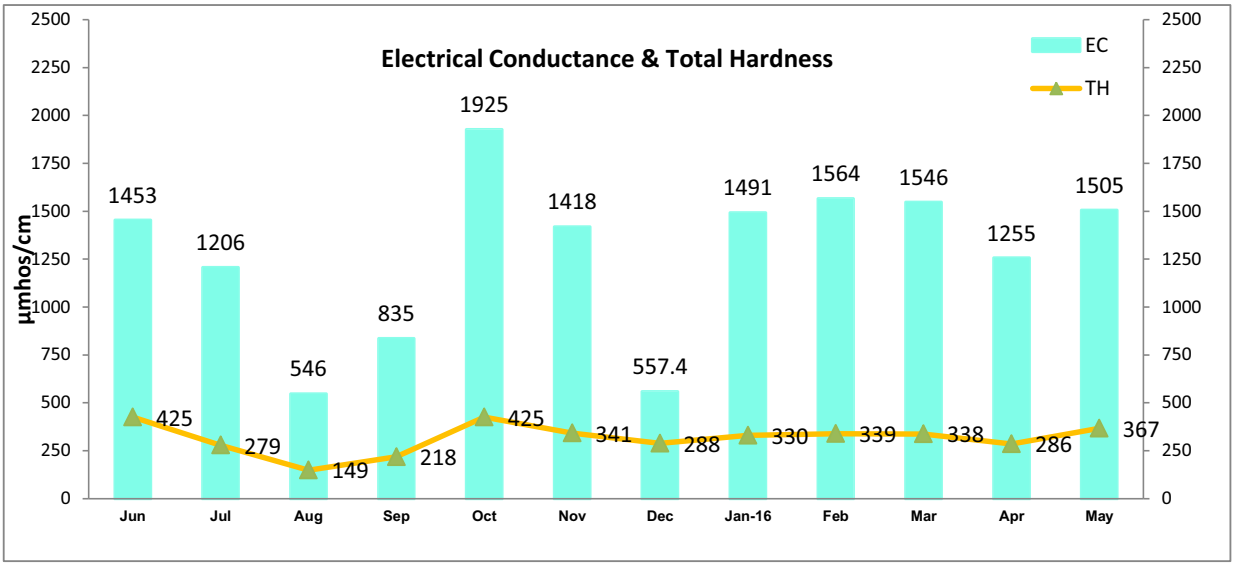
Station Name : MATHURA 3rd 10 DAYS **Division : UYD, New Delhi**

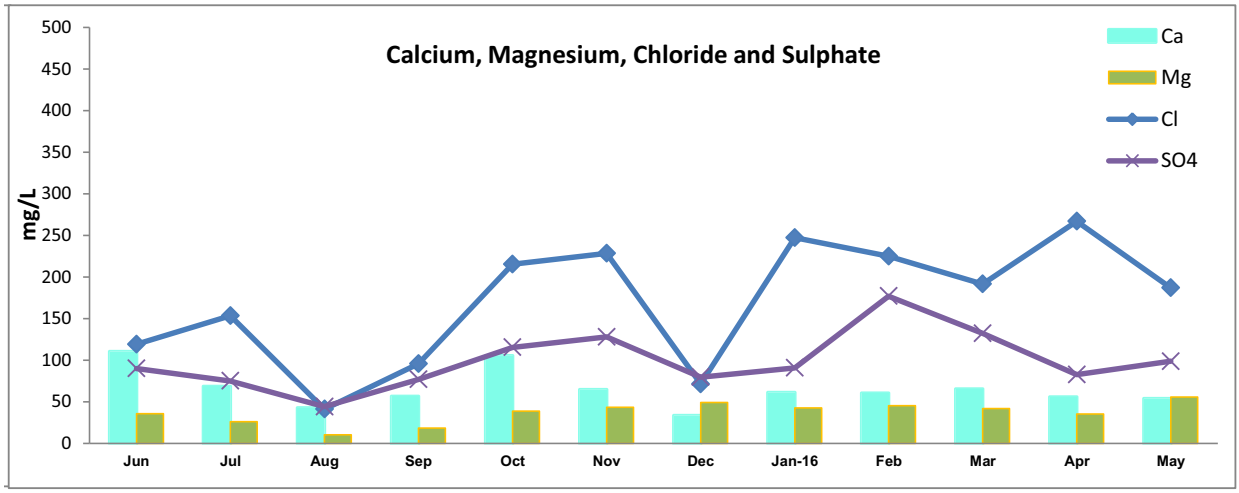
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2175	620	1336	1013	1654	1452
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.32	7.65	7.9	7.98	7.84	7.96
Temperature	12	32.50	14.50	26.1	30.30	18.45	29.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	0.00	0.00	0.0	0.00	0.00	0.00
Alk-Tot (as $CaCO_3$)	12	338.67	110.13	233.3	193.44	272.33	247.69
Boron	10	0.71	0.08	0.2	0.30	0.24	0.14
Calcium	12	100.00	41.44	64.9	67.25	61.95	65.07
Chloride	12	473.36	55.84	195.7	88.10	285.88	254.93
Carbonate	12	0.00	0.00	0.0	0.00	0.00	0.00
Fluoride	12	1.07	0.02	0.3	0.04	0.56	0.56
Iron	11	0.02	0.00	0.0	0.00	0.00	0.01
Bicarbonate	12	406.40	132.16	280.0	232.13	326.79	297.23
Potassium	12	25.75	2.15	15.2	10.90	19.53	16.46
Magnesium	12	104.16	12.86	41.6	26.84	60.98	40.43
Sodium	12	267.42	55.00	155.1	107.27	202.99	170.90
Ammonia as N	12	37.00	0.05	12.4	1.65	25.98	12.26
NO_2+NO_3 as N	12	25.94	4.29	14.2	13.75	13.62	15.79
Nitrite as N	12	12.74	0.02	2.9	1.02	3.31	5.40
Nitrate as N	12	20.50	4.02	11.3	12.73	10.32	10.38
Tot. Phosphate as P	12	8.77	0.21	4.1	2.49	5.32	5.15
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	217.20	80.00	111.0	113.44	123.10	90.60
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	57.32	4.62	19.0	15.85	14.86	29.72
COD	12	98.0	18.0	41.3	39.6	29.0	60.3
Dissolved Oxygen	12	5.10	1.30	3.1	3.90	3.03	1.75
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	10	2800000	49000	438100	313000	-	-
Fecal Coliform	10	390000	14000	93500	131333	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	9.90	0.36	5.9	3.34	7.48	8.66
Cadmium	11	7.31	0.09	3.1	1.85	5.66	2.74
Chromium	11	16.49	0.37	3.1	4.16	1.12	3.36
Copper	11	8.64	0.38	3.2	3.24	3.48	2.99
Lead	11	7.23	0.07	2.1	0.67	2.32	4.21
Nickel	11	53.81	0.11	14.4	12.84	28.75	2.62
Zinc	11	0.27	0.00	0.1	0.11	0.00	0.00
CHEMICAL INDICES							
Ca-Hardness	12	586	104	214	259	155	217
Tot-Hardness	12	684	157	336	280	409	331
Na%	12	57	27	48	43	52	51
RSC (-)	12	0.22	-9.73	-2.1	-1.79	-2.82	-1.75
SAR (-)	12	4.86	1.41	3.6	2.74	4.45	4.07

Graphical Presentation of MATHURA WQ Site







GALETA

GENERAL PARTICULARS

Site	: ***Galeta***	Code	: **GYS00N3**
State	: **Uttar Pradesh**	District	: **Meerut**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Division	: **U.Y.D. New Delhi**	Sub-Division	: **L.Y.SD, New Delhi**
Tributary	: **Yamuna**	Sub Tributary	: **Hindan**
Sub-Sub-Trib.	: **-**	Local River	: **Hindan**
Drainage Area	: **4841 Sq. Km.**		
Latitude	: **29°04'32"N**	Longitude	: **77°28'12"E**
Zero of Gauge	: **209 (m.s.l.)**	Bank	: **Right**

DETAILS OF OPERATION (OPENING DATE)

Gauge:	: **23/10/1970**
Discharge:	: **23/10/1970**
Sediment	: **-**
Water Quality	: **01/12/1976**

Water Quality Datasheet for the Period : 2015-2016

Station Name : GALETA **Division : UYD, New Delhi**

Local River : HINDON

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	03/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather		Clear		Cloudy	Clear								
3	Colour_Cod (-)		L.Black	Colourless										
4	EC_GEN (µmho/cm)		1308	1111	1113	610	1077	1405	1467	1358	1956	1717	1328	2268
5	Odour_Code (-)		Sewage		Muddy	Rottanegg		Muddy	Odorless	Muddy		Odourless		
6	pH_GEN (pH units)		7.91	7.35	8.20	7.70	8.43	7.98	7.68	7.22	7.54	8.06	7.68	8.02
7	Temperature	°C	26.5	26.5	23.5	24.0	25.0	17.5	22.0	6.0	13.8	18.0	19.0	27.0
CHEMICAL														
8	Alk-Phen (as $CaCO_3$)	mg/l	0.00	0.00	0.00	0.00	2.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Alk-Tot (as $CaCO_3$)		399.8	327.3	421.2	177.1	213.5	302.7	208.3	434.7	496.2	454.3	304.6	213.5
10	Boron		0.89	0.47	0.30	0.12	0.19	0.27	0.21	0.38	0.23	0.13	0.35	0.01
11	Calcium		99.00	65.10	81.22	39.26	82.13	78.15	62.40	49.60	89.78	99.36	75.80	38.02
12	Chloride		120.68	109.76	54.33	70.60	105.08	125.69	223.29	134.90	214.70	137.20	170.10	69.90
13	Carbonate		0.00	0.00	0.00	0.00	3.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	Fluoride		0.16	0.05	0.04	0.02	0.22	0.03	0.03	0.43	0.43	0.47	0.44	0.36
15	Iron		0.009	0.001	0.006	0.000	0.093	0.115	0.001	-	0.002	0.154	0.125	0.441
16	Bicarbonate		479.74	392.80	505.38	212.52	249.79	363.26	249.97	521.60	595.40	545.10	365.50	256.20
17	Potassium		47.80	30.70	45.35	25.35	19.28	8.07	16.04	48.10	53.50	23.40	13.30	18.26
18	Magnesium		32.40	34.33	25.96	16.49	23.44	55.16	45.98	66.51	65.62	67.20	48.00	29.95
19	Sodium		100.00	92.50	73.50	62.70	98.64	105.50	146.40	109.80	188.70	145.20	129.90	44.43
20	Ammonia as N		10.50	17.40	19.36	0.08	9.03	23.00	17.40	6.78	40.40	15.40	19.30	5.87
21	NO_2+NO_3 as N		4.67	7.52	4.01	24.30	12.71	4.80	4.40	17.07	20.51	9.33	6.56	1.88
22	Nitrite as N		0.03	0.10	0.09	0.04	0.51	0.10	0.38	0.77	0.31	0.23	0.25	0.78
23	Nitrate as N		4.64	7.42	3.92	24.26	12.20	4.70	4.02	16.30	20.20	9.10	6.31	1.10
24	Tot. Phosphate as P		1.20	5.37	5.93	1.89	1.42	6.34	3.35	2.02	4.12	5.59	2.53	2.38
25	Silicate as SiO_2		-	-	-	-	-	-	-	-	-	-	-	-
26	Sulphate as SO_4		70.00	40.00	5.00	35.00	107.00	70.20	87.60	98.80	187.00	211.80	114.00	36.40
BIOLOGICAL/BACTERIOLOGICAL														
27	BOD5-20°C	mg/l	96.38	25.66	67.00	28.90	27.50	47.20	46.00	60.13	57.60	54.56	82.21	22.95
28	COD		106	92	84	42	65	78	67	92	84	93	106	26
29	Dissolved Oxygen		1.20	1.11	1.30	0.90	0.70	2.01	2.10	1.70	1.20	1.30	1.44	0.00
30	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
31	Tota Coliform	MPN/100 ml	-	-	-	170000	450000	450000	100000	1100000	1700000	320000	1300000	700000
32	Fecal Coliform		-	-	-	27000	20000	20000	20000	940000	220000	78000	270000	260000
33	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
34	Arsenic	(µg/L)	6.03	2.19	3.00	2.64	6.01	9.05	3.79	-	1.20	4.57	5.38	5.03
35	Cadmium		9.10	6.00	5.09	0.64	1.66	1.85	9.17	-	4.58	2.29	4.96	0.18
36	Chromium		2.11	1.85	4.55	0.04	2.07	8.10	1.82	-	1.24	2.58	0.19	3.58
37	Copper		21.43	3.11	2.78	0.46	4.44	14.04	17.10	-	2.82	5.51	7.43	11.76
38	Lead		1.21	0.47	0.14	0.21	0.73	0.68	1.02	-	2.24	4.67	3.87	7.40
39	Nickel		82.49	20.31	26.97	0.97	27.72	32.28	4.47	-	15.78	16.97	0.23	14.44
40	Zinc	mg/l	0.26	0.26	0.26	0.01	0.02	0.06	0.01	-	0.00	0.00	0.00	0.08
CHEMICAL INDICES														
41	Ca-Hardness	mg/l	248	163	1046	98	205	195	156	124	224	529	190	95
42	Tot-Hardness		383	306	311	167	303	425	348	401	498	529	390	220
43	Na%	%	33	37	30	41	40	34	46	34	42	36	41	28
44	RSC (-)		0.21	0.32	2.06	0.15	-1.86	-2.55	-2.85	0.53	-0.20	-1.63	-1.80	-0.20
45	SAR (-)		2.22	2.30	1.81	2.11	2.46	2.22	3.41	2.38	3.68	2.75	2.86	1.30
46	PESTICIDES													

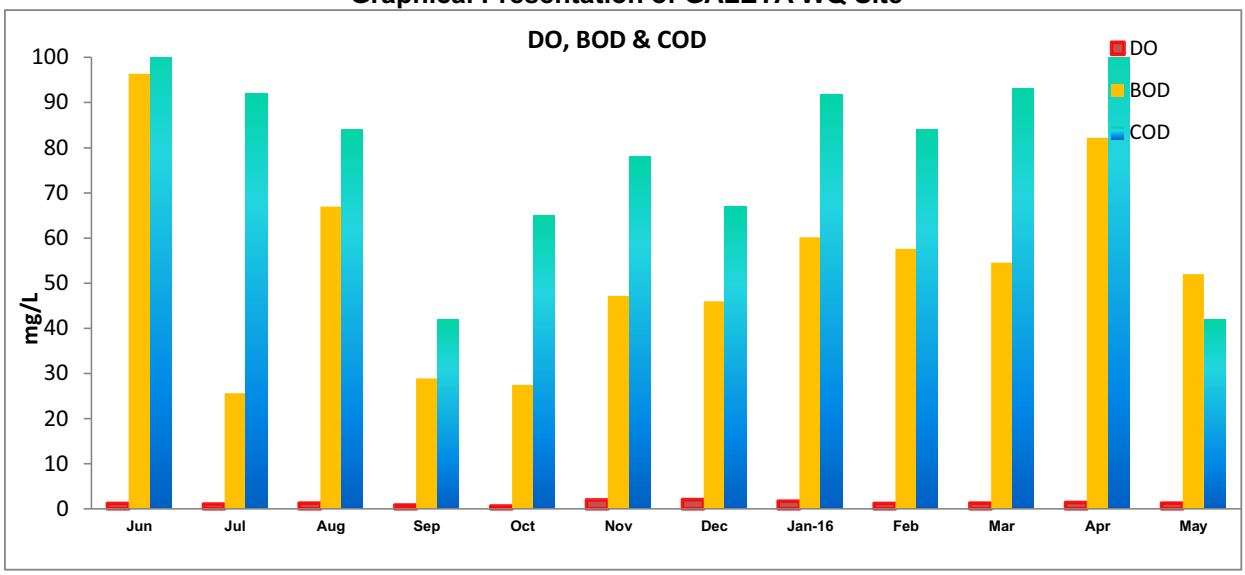
RIVER WATER SUMMARY - 2015-2016

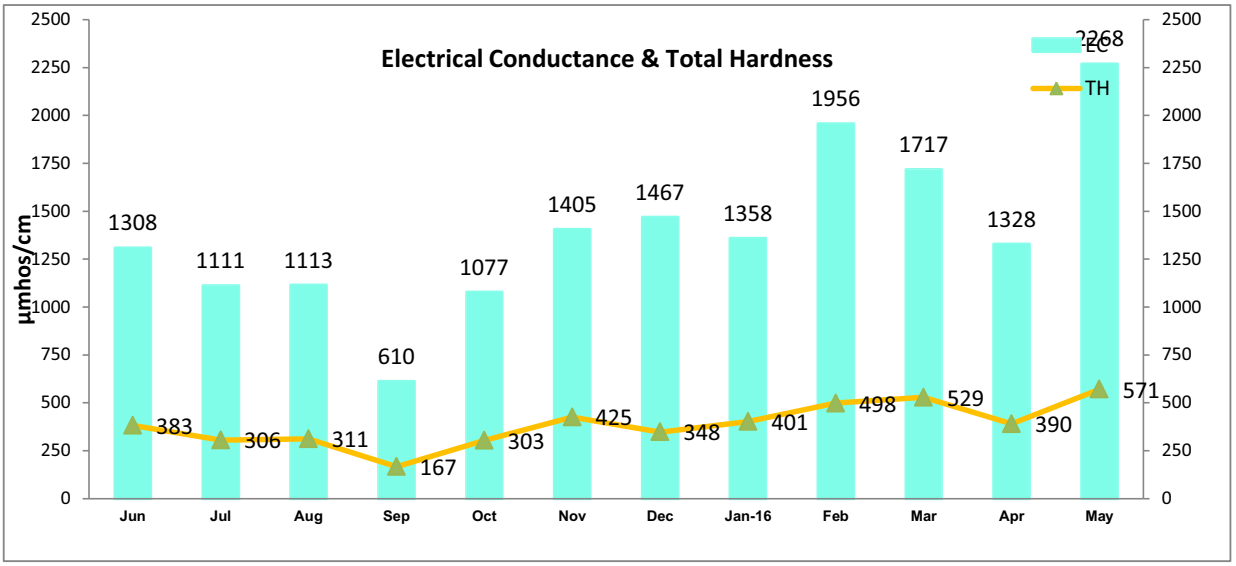
Station Name : GALETA **Division : UYD, New Delhi**

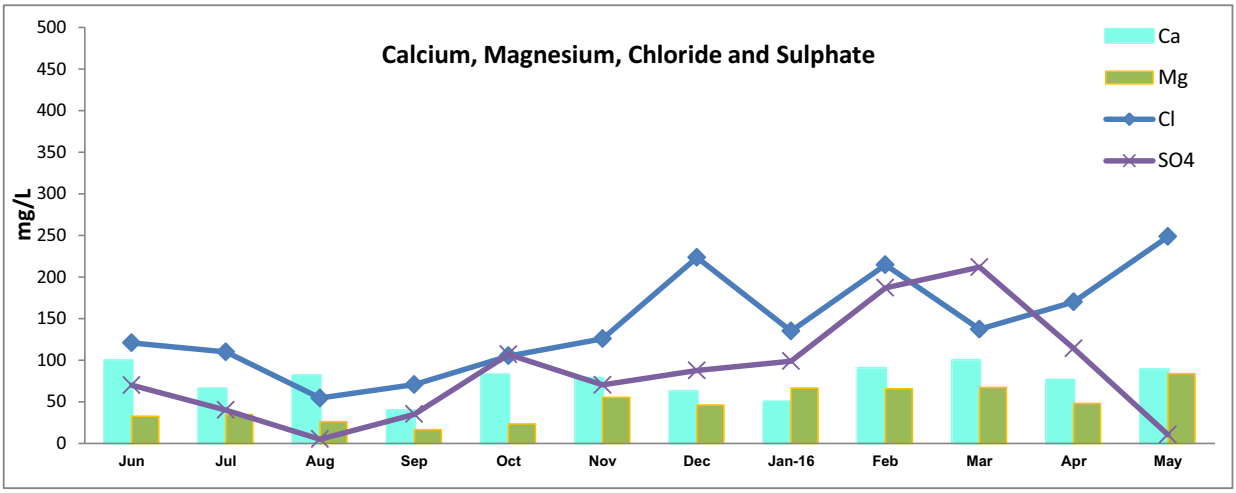
Local River : HINDON

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	12	2268	610	1393	1044	1547	1771
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	12	8.43	7.22	7.8	7.92	7.61	7.92
Temperature	12	27.00	6.00	20.7	25.10	14.83	21.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	2.68	0.00	0.2	0.54	0.00	0.00
Alk-Tot (as $CaCO_3$)	12	496.17	177.10	329.4	307.78	360.46	324.11
Boron	12	0.89	0.01	0.3	0.40	0.27	0.16
Calcium	12	99.36	38.02	71.7	73.34	69.98	71.06
Chloride	12	223.29	54.33	128.0	92.09	174.65	125.73
Carbonate	12	3.22	0.00	0.3	0.64	0.00	0.00
Fluoride	12	0.47	0.02	0.2	0.10	0.23	0.42
Iron	11	0.44	0.00	0.1	0.02	0.04	0.24
Bicarbonate	12	595.40	212.52	394.8	368.05	432.56	388.93
Potassium	12	53.50	8.07	29.1	33.70	31.43	18.32
Magnesium	12	67.20	16.49	42.6	26.52	58.32	48.38
Sodium	12	188.70	44.43	108.1	85.47	137.60	106.51
Ammonia as N	12	40.40	0.08	15.4	11.27	21.90	13.52
NO_2+NO_3 as N	12	24.30	1.88	9.8	10.64	11.70	5.92
Nitrite as N	12	0.78	0.03	0.3	0.15	0.39	0.42
Nitrate as N	12	24.26	1.10	9.5	10.49	11.31	5.50
Tot. Phosphate as P	12	6.34	1.20	3.5	3.16	3.96	3.50
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	211.80	5.00	88.6	51.40	110.90	120.73
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	96.38	22.95	51.3	49.09	52.73	53.24
COD	12	106.0	26.0	77.9	77.8	80.2	75.0
Dissolved Oxygen	12	2.10	0.00	1.2	1.04	-	0.91
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	9	1700000	100000	698889	310000	-	-
Fecal Coliform	9	940000	20000	206111	23500	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	11	9.05	1.20	4.4	3.97	4.68	4.99
Cadmium	11	9.17	0.18	4.1	4.50	5.20	2.48
Chromium	11	8.10	0.04	2.6	2.12	3.72	2.12
Copper	11	21.43	0.46	8.3	6.44	11.32	8.23
Lead	11	7.40	0.14	2.1	0.55	1.31	5.31
Nickel	11	82.49	0.23	22.1	31.69	17.51	10.55
Zinc	11	0.26	0.00	0.1	0.16	0.02	0.03
CHEMICAL INDICES							
Ca-Hardness	12	1046	95	273	352	175	271
Tot-Hardness	12	529	167	357	294	418	379
Na%	12	46	28	37	36	39	35
RSC (-)	12	2.06	-2.85	-0.7	0.18	-1.27	-1.21
SAR (-)	12	3.68	1.30	2.5	2.18	2.92	2.30

Graphical Presentation of GALETA WQ Site







RIVER WATER QUALITY DATA
OF
LOWER YAMUNA DIVISION

AGRA

General Particulars

Site	:***AGRA (Poiyaghat***)	Code	: **GY000N7**
State	: **Uttar Pradesh**	District	: **Agra**
Division	: **L.Y. D., Agra**	Sub-Division	: **LY SD-II Agra**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Drainage Area	: **49052 Sq. Km.**	Bank	: **Right**
Latitude	: **27°16'00"N**	Longitude	: **78°02'00" E**
Zero of Gauge	: **146.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **09/01/1976**
Discharge:	: **09/01/1976**
Sediment	: **13/08/1976**
Water Quality	: **01/10/1976**
Wireless	: **04/06/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : AGRA 1st 10 DAYS **Division : LYD, Agra**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		02/06/15	01/07/15	01/08/15	02/09/15	01/10/15	02/11/15	02/12/15	02/01/16	02/02/16	02/03/16	02/04/16	03/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		70 H	95 H	L.Brown	80 H	80 H	80 H	5 H	80H	90H	12H	85H	90H
4	EC_GEN (µmho/cm)		1451	1504	632	867	1652	1595	1835	1628	1704	1426	1364	1570
5	Odour_Code (-)		Odour free											
6	pH_GEN (pH units)		9.00	8.70	7.50	7.80	8.30	7.50	6.90	7.50	6.70	8.40	7.50	9.10
7	Temperture	°C	31.0	32.0	31.5	33.0	30.0	26.0	21.5	16.0	18.5	24.0	28.0	30.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	19.40	12.90	0.00	0.00	111.80	0.00	11.20	14.90	22.20	33.60	26.90	25.60
10	Alk-Tot (as CaCO3)		272.0	250.0	118.0	152.0	265.0	266.0	163.0	319.0	283.0	221.0	213.0	269.0
11	Boron		0.28	0.34	0.30	0.23	0.27	0.17	0.32	0.20	0.23	0.36	0.36	0.32
12	Calcium		45.00	61.00	61.00	48.00	55.00	43.00	16.00	64.00	64.00	56.00	35.00	24.00
13	Chloride		261.60	263.80	86.60	131.40	303.90	250.30	90.50	275.50	281.20	230.40	218.70	275.50
14	Carbonate		23.40	15.60	0.00	0.00	134.70	0.00	13.50	18.00	26.70	40.50	32.40	30.90
15	Fluoride		0.49	1.22	0.29	0.00	0.41	0.30	0.32	0.42	1.12	0.63	0.70	0.74
16	Iron		0.10	0.03	0.00	0.05	0.28	0.11	0.20	0.06	0.20	0.20	0.14	0.16
17	Bicarbonate		284.00	273.00	144.00	185.00	49.00	324.00	171.00	353.00	290.00	187.00	194.00	265.00
18	Potassium		813.30	22.70	8.20	10.60	18.80	20.30	26.20	20.30	19.90	16.40	19.20	18.80
19	Magnesium		54.10	39.00	5.80	25.40	50.80	54.40	25.30	36.90	38.90	36.90	48.60	61.20
20	Sodium		194.60	205.60	58.00	91.10	220.80	186.50	226.10	198.00	194.80	176.00	188.60	153.40
21	Ammonia as N		0.37	2.59	0.06	0.54	0.42	6.80	13.80	12.03	21.96	6.87	1.49	0.22
22	NO2+NO3 as N		6.48	4.00	5.03	10.79	11.86	3.55		2.49	0.53	1.54	0.77	4.59
23	Nitrite as N		0.37	1.62	2.83	1.91	2.38	1.43	0.38	0.19	0.21	0.05	0.65	1.97
24	Nitrate as N		0.68	2.34	2.24	0.86	1.92	2.17	0.96	2.30	0.32	0.38	0.13	2.62
25	Tot. Phosphate as P		0.76	1.44	0.14	0.28	1.04	1.09	1.16	2.60	3.40	2.20	1.54	1.42
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		86.60	125.80	55.20	69.10	174.90	114.70	56.00	142.60	184.80	137.80	128.60	129.90
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	3.00	2.00	4.00	4.00	5.20	5.00	3.00	3.00	15.00	4.00	7.00	7.00
29	COD		8.32	13.30	18.70	17.00	31.90	23.60	26.82	28.90	31.90	11.10	20.40	28.70
30	Dissolved Oxygen		6.80	6.20	6.00	5.40	5.20	5.90	7.00	5.40	2.35	4.40	6.30	6.30
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	1.64	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.50	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	36.37	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.72	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.76	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	0.47	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	112	153	153	121	137	108	40	160	160	140	88	60
41	Tot-Hardness		337	315	177	226	349	335	145	314	322	294	291	315
42	Na% (%)	%	24	57	40	45	57	53	73	56	55	55	57	50
43	RSC (-)		0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.10	0.00	0.00	0.00	0.00
44	SAR (-)		4.60	5.10	1.90	2.60	5.20	4.50	8.20	4.90	4.70	4.50	4.80	3.80
45	PESTICIDES		-	-	-	-	-	-	-	-	-	-	-	-

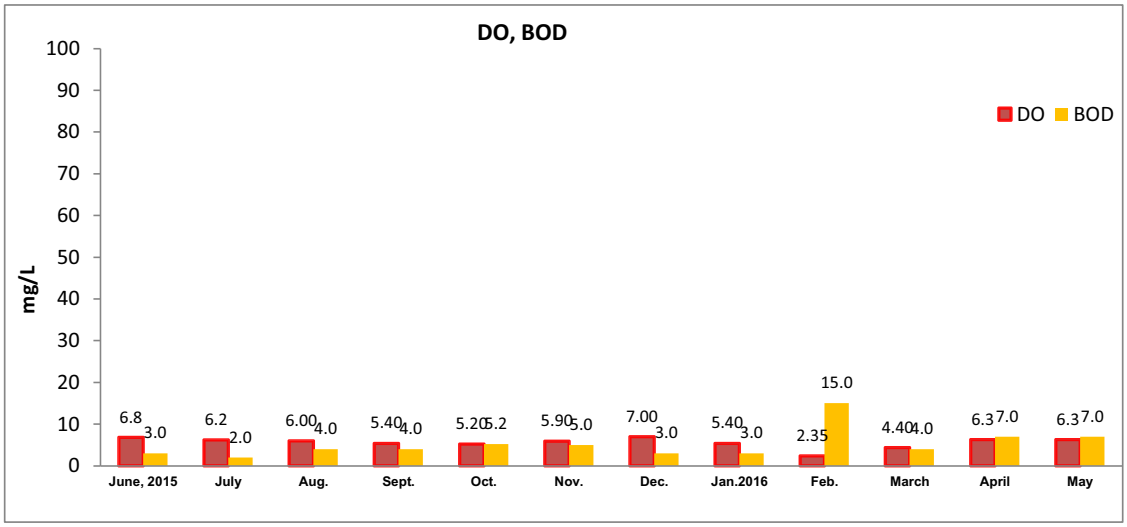
RIVER WATER SUMMARY - 2015-2016

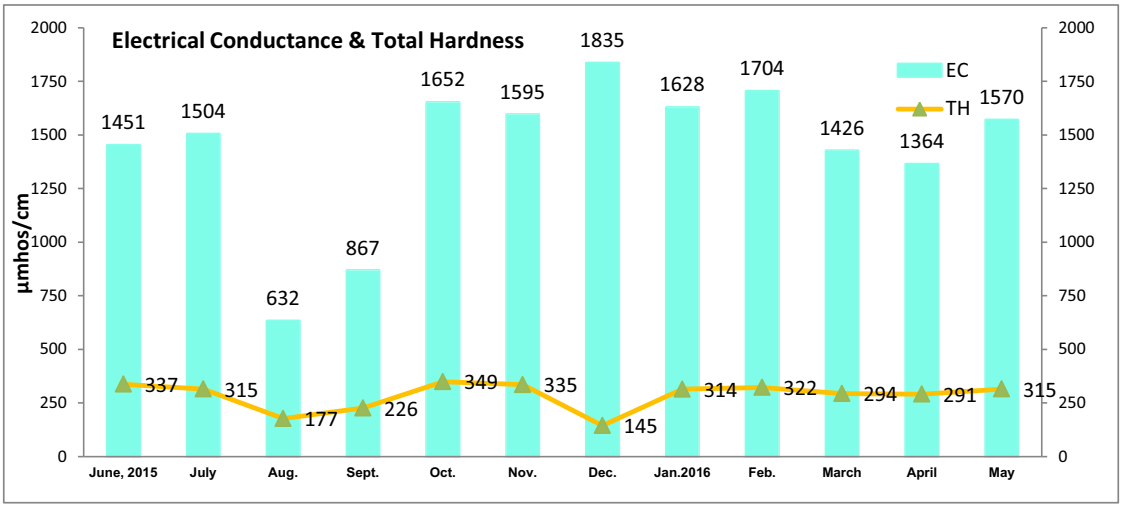
Station Name : AGRA 1ST 10 DAYS **Division : UYD, New Delhi**

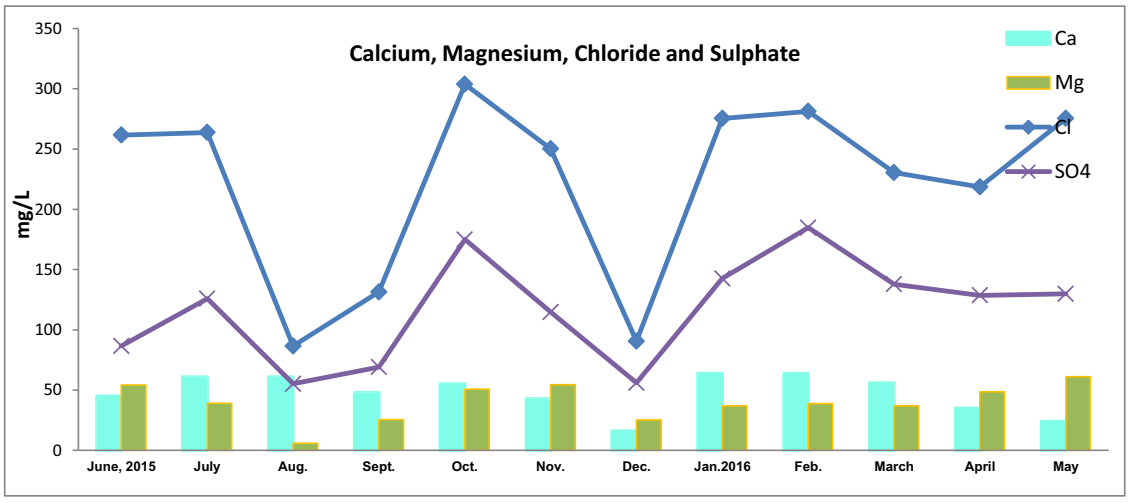
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	1835	632	1436	1221	1691	1453
Odour_Code (-)							
pH_GEN (pH units)	12	9.10	6.70	7.91	8.26	7.15	8.33
Temperture	12	33.00	16.00	26.79	31.50	20.50	27.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	111.80	0.00	23.21	28.82	12.08	28.70
Alk-Tot (as $CaCO_3$)	12	319.00	118.00	232.58	211.40	257.75	234.33
Boron	12	0.36	0.17	0.28	0.28	0.23	0.35
Calcium	12	64.00	16.00	47.67	54.00	46.75	38.33
Chloride	12	303.90	86.60	222.45	209.46	224.38	241.53
Carbonate	12	134.70	0.00	27.98	34.74	14.55	34.60
Fluoride	12	1.22	0.00	0.55	0.48	0.54	0.69
Iron	12	0.28	0.00	0.13	0.09	0.14	0.17
Bicarbonate	12	353.00	49.00	226.58	187.00	284.50	215.33
Potassium	12	813.30	8.20	84.56	174.72	21.68	18.13
Magnesium	12	61.20	5.80	39.78	35.02	38.88	48.90
Sodium	12	226.10	58.00	174.46	154.02	201.35	172.67
Ammonia as N	12	21.96	0.06	5.60	0.80	13.65	2.86
NO_2+NO_3 as N	11	11.86	0.53	4.69	7.63	2.19	2.30
Nitrite as N	12	2.83	0.05	1.17	1.82	0.55	0.89
Nitrate as N	12	2.62	0.13	1.41	1.61	1.44	1.04
Tot. Phosphate as P	12	3.40	0.14	1.42	0.73	2.06	1.72
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	184.80	55.20	117.17	102.32	124.53	132.10
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	15.00	2.00	5.18	3.64	6.50	6.00
COD	12	31.90	8.32	21.72	17.84	27.81	20.07
Dissolved Oxygen	12	7.00	2.35	5.60	5.92	5.16	5.67
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	1.64	1.64	1.64	-	-	1.64
Cadmium	1	0.50	0.50	0.50	-	-	0.50
Chromium	1	36.37	36.37	36.37	-	-	36.37
Copper	1	1.72	1.72	1.72	-	-	1.72
Lead	1	0.76	0.76	0.76	-	-	0.76
Nickel	1	0.47	0.47	0.47	-	-	0.47
Zinc	1	0.01	0.01	0.01	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	160	40	119	135	117	96
Tot-Hardness	12	349	145	285	281	279	300
Na%	12	73	24	52	45	59	54
RSC (-)	12	0.40	0.00	0.04	0.00	0.13	0.00
SAR (-)	12	8.20	1.90	4.57	3.88	5.58	4.37

Graphical Presentation of AGRA WQ Site







ETAWAH

General Particulars

Site	:***ETAWAH***	Code	: **GY000J7**
State	: **Uttar Pradesh**	District	: **Etawah**
Division	: **L.Y. D., Agra**	Sub-Division	: **LY SD-II Agra**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **98715 Sq. Km.**	Bank	: **Right**
Latitude	: **26°45'00"N**	Longitude	: **78°59'00" E**
Zero of Gauge	: **114.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **01/05/1959**
Discharge:	: **01/05/1959**
Sediment	: **11/09/1961**
Water Quality	: **01/01/1972**
Wireless	: **28/10/1977**

Water Quality Datasheet for the Period : 2015-2016

Station Name : ETAWAH **Division : LYD, Agra**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		50 H	55 H	50 H	50 H	45 H	45 H	45 H	45H	45H	50H	55H	50H
4	EC_GEN (µmho/cm)		1258	1453	683	749	1563	1109	1948	1493	1658	1710	1311	1649
5	Odour_Code (-)		Odour free											
6	pH_GEN (pH units)		8.80	8.60	7.30	7.80	8.10	7.70	6.80	8.10	6.80	8.60	7.50	9.30
7	Temperture	°C	30.0	29.0	27.0	29.0	29.0	24.0	24.0	15.0	11.0	14.0	23.0	26.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	18.20	16.20	0.00	0.00	152.60	8.00	216.90	21.20	18.90	21.20	20.40	23.20
10	Alk-Tot (as CaCO3)		188.0	252.0	122.0	127.0	347.0	183.0	748.0	218.0	247.0	268.0	201.0	247.0
11	Boron		0.25	0.22	0.16	0.12	0.41	0.10	0.32	1.14	0.38	0.45	1.04	0.38
12	Calcium		41.00	43.00	45.00	45.00	34.00	37.00	61.00	38.00	54.00	106.00	37.00	27.00
13	Chloride		223.30	246.00	92.30	106.50	279.00	171.10	329.10	95.90	275.50	289.00	207.00	300.70
14	Carbonate		21.90	19.50	0.00	0.00	183.90	9.60	261.30	25.50	22.80	25.50	24.60	27.90
15	Fluoride		0.55	1.27	0.65	0.02	0.41	0.08	0.38	0.00	1.14	0.87	0.65	0.86
16	Iron		0.01	0.01	0.00	0.01	0.10	0.26	0.04	0.11	0.01	0.46	0.12	0.15
17	Bicarbonate		185.00	267.00	149.00	154.00	49.00	203.00	382.00	214.00	255.00	275.00	195.00	245.00
18	Potassium		19.20	333.90	9.40	9.40	21.90	16.80	27.40	17.60	20.30	8.60	19.60	2.20
19	Magnesium		32.10	45.90	16.60	21.50	45.90	39.90	64.20	34.00	44.70	15.60	46.70	56.40
20	Sodium		167.90	13.10	62.60	77.70	213.70	136.60	254.20	175.00	201.00	213.00	170.90	175.30
21	Ammonia as N		0.29	0.22	0.14	0.01	0.46	0.18	3.93	4.10	14.25	7.92	0.84	0.08
22	NO2+NO3 as N		0.70	1.71	2.48	6.47	2.15	3.01	4.02	1.36	1.67	1.07	1.58	0.12
23	Nitrite as N		0.09	0.28	0.14	0.30	0.55	1.65	1.50	0.55	0.51	0.47	1.15	0.68
24	Nitrate as N		0.56	1.43	2.34	2.48	1.60	2.87	3.88	3.42	1.16	0.60	0.43	0.00
25	Tot. Phosphate as P		0.52	0.44	0.16	0.21	0.22	0.59	1.00	0.46	2.32	2.94	1.10	0.56
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		85.30	116.20	58.60	68.60	113.80	95.00	109.90	66.70	194.90	150.20	139.70	122.90
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	10.00	12.00	5.00	6.20	11.00	16.00	19.00	24.00	12.00	14.00	18.00	14.00
29	COD		24.16	36.60	8.30	12.80	19.20	38.30	59.60	72.40	55.30	59.60	76.60	80.90
30	Dissolved Oxygen		2.00	3.60	5.10	4.40	4.80	4.20	1.95	2.50	2.70	2.50	2.50	2.10
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	2.39	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.44	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	13.68	-
36	Copper		-	-	-	-	-	-	-	-	-	-	3.62	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.83	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	4.67	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.02	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	103	109	113	113	85	0	7	96	0	0	0	68
41	Tot-Hardness		237	300	182	202	276	4	5	238	5	5	4	303
42	Na% (%)	%	58	4	41	44	61			60				56
43	RSC (-)		0.00	0.00	0.00	0.00	1.50			0.00				0.00
44	SAR (-)		4.80	0.30	2.00	2.40	5.60			5.00				4.40
45	PESTICIDES													

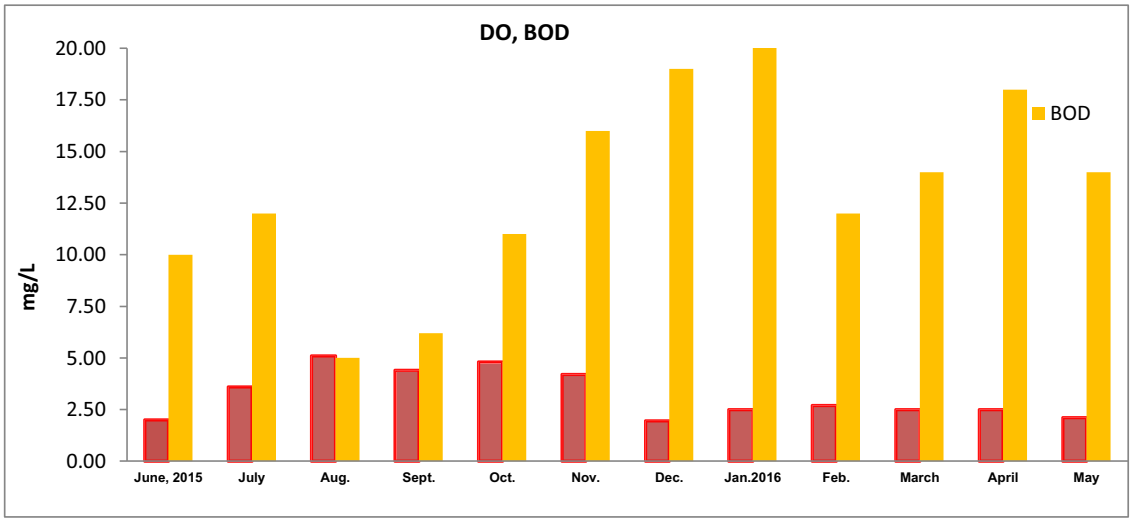
RIVER WATER SUMMARY - 2015-2016

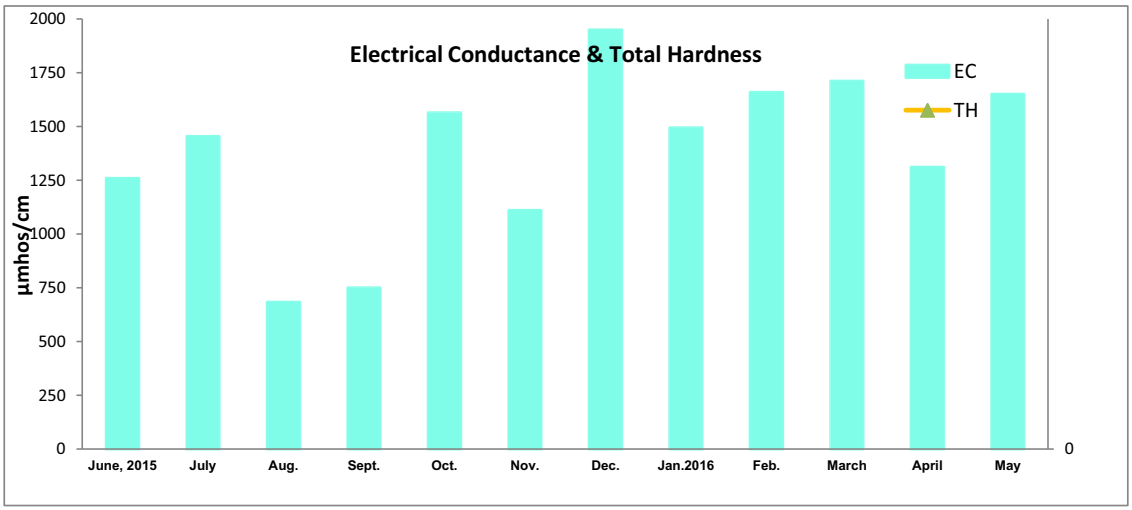
Station Name : ETAWAH **Division : UYD, New Delhi**

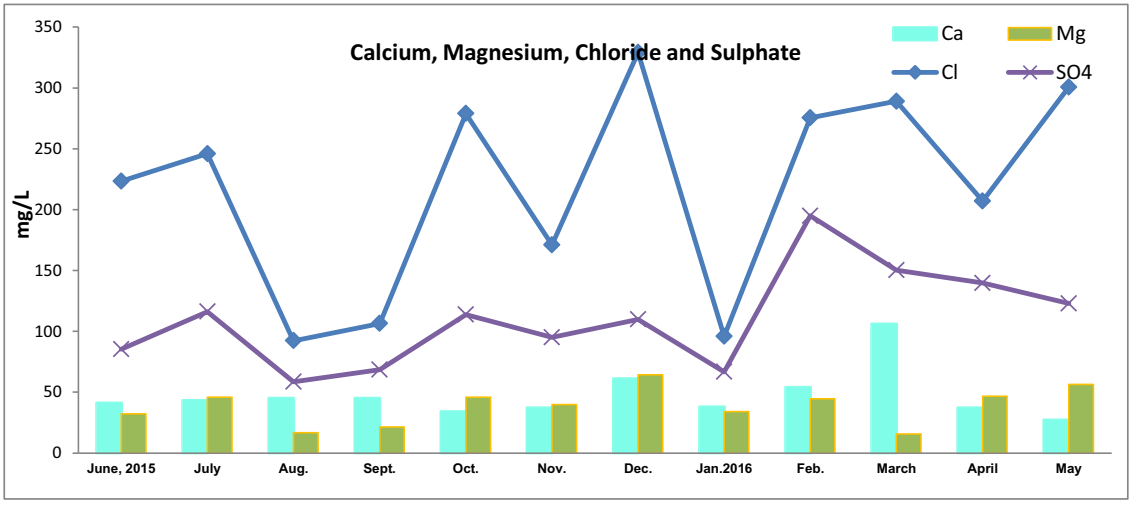
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	1948	683	1382	1141	1552	1557
Odour_Code (-)							
pH_GEN (pH units)	12	9.30	6.80	7.95	8.12	7.35	8.47
Temperture	12	30.00	11.00	23.42	28.80	18.50	21.00
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	216.90	0.00	43.07	37.40	66.25	21.60
Alk-Tot (as $CaCO_3$)	12	748.00	122.00	262.33	207.20	349.00	238.67
Boron	12	1.14	0.10	0.41	0.23	0.49	0.62
Calcium	12	106.00	27.00	47.33	41.60	47.50	56.67
Chloride	12	329.10	92.30	217.95	189.42	217.90	265.57
Carbonate	12	261.30	0.00	51.88	45.06	79.80	26.00
Fluoride	12	1.27	0.00	0.57	0.58	0.40	0.79
Iron	12	0.46	0.00	0.11	0.03	0.11	0.24
Bicarbonate	12	382.00	49.00	214.42	160.80	263.50	238.33
Potassium	12	333.90	2.20	42.19	78.76	20.53	10.13
Magnesium	12	64.20	15.60	38.63	32.40	45.70	39.57
Sodium	12	254.20	13.10	155.08	107.00	191.70	186.40
Ammonia as N	12	14.25	0.01	2.70	0.22	5.62	2.95
NO_2+NO_3 as N	12	6.47	0.12	2.20	2.70	2.52	0.92
Nitrite as N	12	1.65	0.09	0.66	0.27	1.05	0.77
Nitrate as N	12	3.88	0.00	1.73	1.68	2.83	0.34
Tot. Phosphate as P	12	2.94	0.16	0.88	0.31	1.09	1.53
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	194.90	58.60	110.15	88.50	116.63	137.60
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	24.00	5.00	13.43	8.84	17.75	15.33
COD	12	80.90	8.30	45.31	20.21	56.40	72.37
Dissolved Oxygen	12	5.10	1.95	3.20	3.98	2.84	2.37
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	2.39	2.39	2.39	-	-	2.39
Cadmium	1	0.44	0.44	0.44	-	-	0.44
Chromium	1	13.68	13.68	13.68	-	-	13.68
Copper	1	3.62	3.62	3.62	-	-	3.62
Lead	1	0.83	0.83	0.83	-	-	0.83
Nickel	1	4.67	4.67	4.67	-	-	4.67
Zinc	1	0.02	0.02	0.02	-	-	0.02
CHEMICAL INDICES							
Ca-Hardness	12	113	0	58	105	26	23
Tot-Hardness	12	303	4	147	239	63	104
Na%	7	61	4	46	42	60	56
RSC (-)	7	1.50	0.00	0.21	0.30	0.00	0.00
SAR (-)	7	5.60	0.30	3.50	3.02	5.00	4.40

Graphical Presentation of ETAWAH WQ Site







AURAIYA

General Particulars

Site	: ***AURAIYA***	Code	: **GY000H3**
State	: **Uttar Pradesh**	District	: **Auraiya**
Division	: **L.Y. D., Agra**	Sub-Division	: **L.Y.SD III, Hamirpur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **261331 Sq. Km.**	Bank	: **Left**
Latitude	: **26°26'00"N**	Longitude	: **79°25'00" E**
Zero of Gauge	: **99.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **21/02/1976**
Discharge:	: **21/02/1976**
Sediment	: **20/05/1979**
Water Quality	: **01/01/1981**
Wireless	: **28/10/1977**

Water Quality Datasheet for the Period : 2015-2016

Station Name : AURAIYA | **Division : LYD, Agra**

Local River : YAMUNA | **Sub-Division : LYSD -II, Agra**

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown
4	EC_GEN (µmho/cm)		1093	1079	341	444	581	939	870	740	760	885	730	1050
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		8.30	8.50	7.50	8.00	8.10	8.20	7.00	8.00	6.80	8.30	8.70	9.00
7	Temperture	°C	28.0	26.0	26.0	26.0	26.0	25.0	24.0	21.0	18.0	21.0	24.0	26.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	16.70	24.70	0.00	6.50	67.70	123.80	13.20	32.60	13.20	20.20	20.40	14.40
10	Alk-Tot (as CaCO3)		211.0	207.0	100.0	121.0	176.0	428.0	217.0	177.0	198.0	195.0	190.0	215.0
11	Boron		0.08	0.22	0.14	0.07	0.43	0.17	0.12	0.10	0.26	0.16	1.22	1.12
12	Calcium		30.00	34.00	31.00	35.00	26.00	21.00	42.00	21.00	45.00	45.00	43.00	11.00
13	Chloride		169.30	159.00	36.60	43.70	69.20	125.00	107.90	84.10	84.10	97.60	209.10	150.50
14	Carbonate		20.10	29.70	0.00	7.80	81.60	149.10	15.90	39.30	15.90	24.30	24.60	17.40
15	Fluoride		0.53	1.24	0.53	0.00	0.28	0.12	0.12	0.13	0.99	0.57	0.68	0.80
16	Iron		0.02	0.00	0.00	0.03	0.04	0.04	0.65	0.01	0.20	0.15	0.09	0.08
17	Bicarbonate		217.00	192.00	122.00	131.00	49.00	219.00	232.00	136.00	209.00	188.00	181.00	227.00
18	Potassium		15.20	14.50	3.90	5.10	6.30	9.80	8.60	6.60	6.30	5.90	10.90	13.70
19	Magnesium		35.10	32.20	10.70	17.60	20.50	43.70	30.10	36.00	23.30	25.30	30.10	43.70
20	Sodium		150.00	153.20	23.50	36.10	59.30	100.70	93.60	89.90	81.70	94.50	109.90	135.70
21	Ammonia as N		0.55	0.14	0.00	0.02	0.12	0.14	0.11	0.67	0.97	0.52	0.79	0.14
22	NO2+NO3 as N		2.72	0.32	0.43	0.98	1.25	2.56	2.06	0.88	1.41	1.88	4.13	
23	Nitrite as N		0.09	0.06	0.01	0.01	0.04	0.61	0.16	0.04	0.25	0.44	1.38	0.01
24	Nitrate as N		0.78	0.27	0.43	1.16	0.70	2.00	1.92	0.84	1.16	1.44	2.75	0.00
25	Tot. Phosphate as P		0.13	0.16	0.02	0.10	0.01	0.26	0.36	0.03	0.38	0.81	0.78	0.02
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		66.60	108.00	27.80	39.80	44.20	73.00	72.00	85.40	84.50	106.10	82.10	95.50
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	2.00	3.00	1.00	2.80	3.40	1.30	1.70	1.50	1.40	3.30	2.50	3.80
29	COD		15.40	27.00	12.50	12.80	12.80	27.70	21.10	14.90	4.30	17.00	19.60	20.40
30	Dissolved Oxygen		7.00	7.20	7.20	7.00	7.00	7.20	7.20	7.00	7.00	7.20	7.10	7.10
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	9.72	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.41	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	9.65	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.61	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.82	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	12.37	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.02	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	74	85	77	89	65	52	104	52	112	112	108	28
41	Tot-Hardness		220	219	121	162	150	234	230	202	209	217	234	210
42	Na% (%)	%	58	59	29	32	45	47	46	48	45	48	49	57
43	RSC (-)		0.00	0.00	0.00	0.00	0.50	3.90	0.00	0.00	0.00	0.00	0.00	0.10
44	SAR (-)		4.40	4.50	0.90	1.20	2.10	2.90	2.70	2.80	2.50	2.80	3.10	4.10
45	PESTICIDES		-	-	-	-	-	-	-	-	-	-	-	-

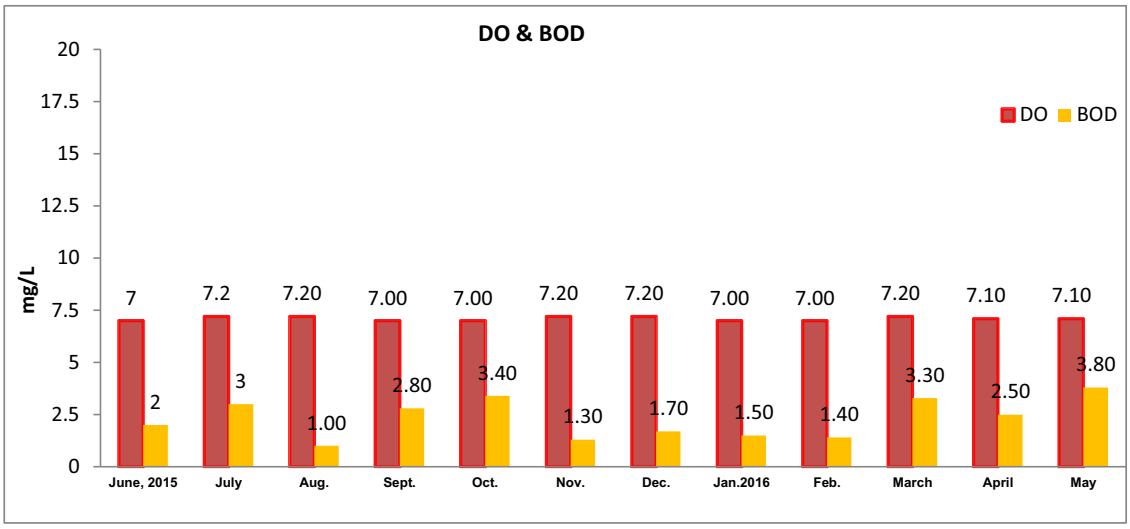
RIVER WATER SUMMARY - 2015-2016

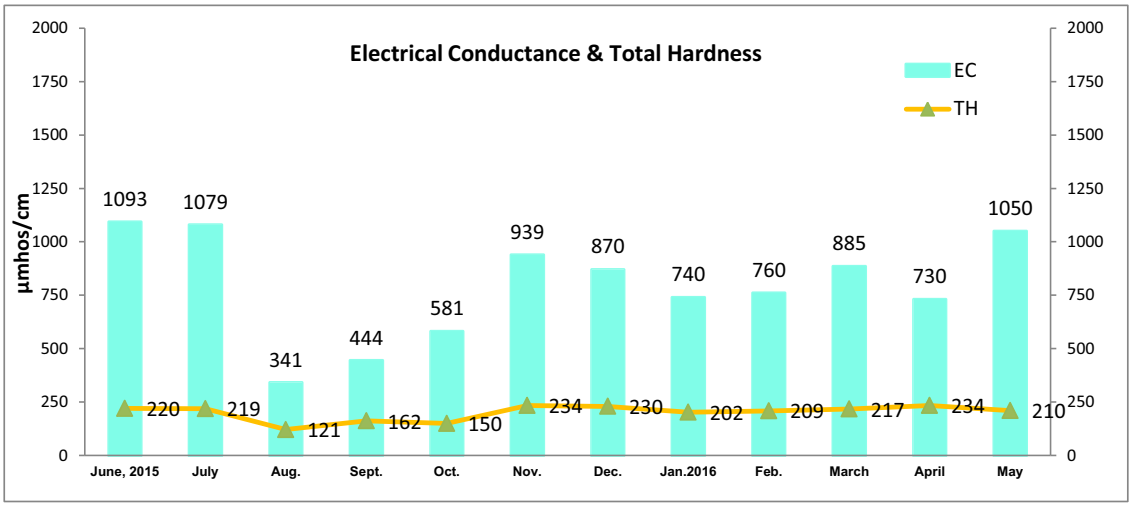
Station Name : AURAIYA **Division : UYD, New Delhi**

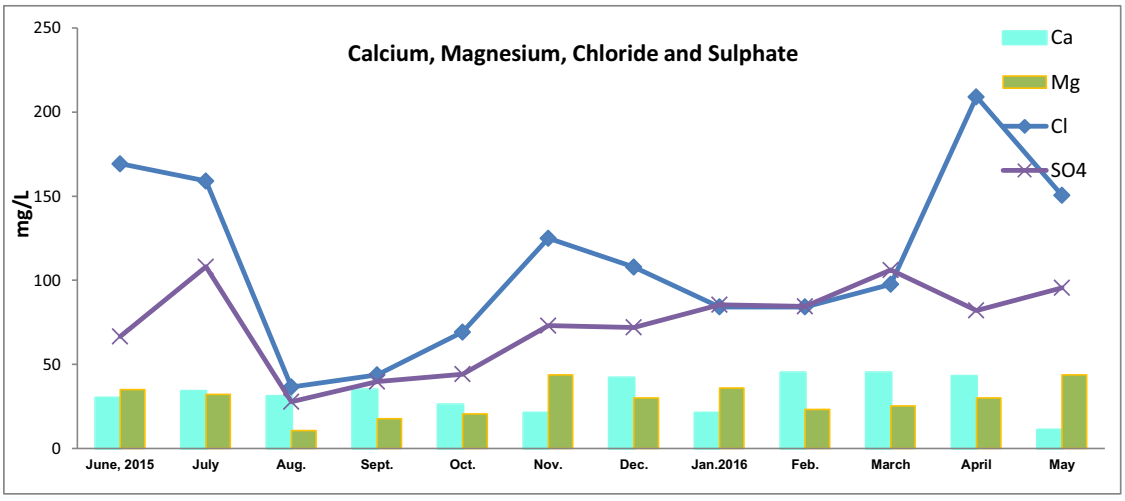
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	1093	341	793	708	827	888
Odour_Code (-)							
pH_GEN (pH units)	12	9.00	6.80	8.03	8.08	7.50	8.67
Temperture	12	28.00	18.00	24.25	26.40	22.00	23.67
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	123.80	0.00	29.45	23.12	45.70	18.33
Alk-Tot (as $CaCO_3$)	12	428.00	100.00	202.92	163.00	255.00	200.00
Boron	12	1.22	0.07	0.34	0.19	0.16	0.83
Calcium	12	45.00	11.00	32.00	31.20	32.25	33.00
Chloride	12	209.10	36.60	111.34	95.56	100.28	152.40
Carbonate	12	149.10	0.00	35.48	27.84	55.05	22.10
Fluoride	12	1.24	0.00	0.50	0.52	0.34	0.68
Iron	12	0.65	0.00	0.11	0.02	0.23	0.11
Bicarbonate	12	232.00	49.00	175.25	142.20	199.00	198.67
Potassium	12	15.20	3.90	8.90	9.00	7.83	10.17
Magnesium	12	43.70	10.70	29.03	23.22	33.28	33.03
Sodium	12	153.20	23.50	94.01	84.42	91.48	113.37
Ammonia as N	12	0.97	0.00	0.35	0.17	0.47	0.48
NO_2+NO_3 as N	11	4.13	0.32	1.69	1.14	1.73	3.01
Nitrite as N	12	1.38	0.01	0.26	0.04	0.27	0.61
Nitrate as N	12	2.75	0.00	1.12	0.67	1.48	1.40
Tot. Phosphate as P	12	0.81	0.01	0.25	0.08	0.26	0.54
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	108.00	27.80	73.75	57.28	78.73	94.57
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	3.80	1.00	2.31	2.44	1.48	3.20
COD	12	27.70	4.30	17.13	16.10	17.00	19.00
Dissolved Oxygen	12	7.20	7.00	7.10	7.08	7.10	7.13
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	9.72	9.72	9.72	-	-	9.72
Cadmium	1	0.41	0.41	0.41	-	-	0.41
Chromium	1	9.65	9.65	9.65	-	-	9.65
Copper	1	1.61	1.61	1.61	-	-	1.61
Lead	1	0.82	0.82	0.82	-	-	0.82
Nickel	1	12.37	12.37	12.37	-	-	12.37
Zinc	1	0.02	0.02	0.02	-	-	0.02
CHEMICAL INDICES							
Ca-Hardness	12	112	28	80	78	80	83
Tot-Hardness	12	234	121	201	174	219	220
Na%	12	59	29	47	45	47	51
RSC (-)	12	3.90	0.00	0.38	0.10	0.98	0.03
SAR (-)	12	4.50	0.90	2.83	2.62	2.73	3.33

Graphical Presentation of AURIYA WQ Site







RAJAPUR

General Particulars

Site	: **Rajapur**	Code	: **GYOOOB7**
State	: **Uttar Pradesh**	District	: **Chitrakoot**
Division	: **L.Y. D., Agra**	Sub-Division	: **-**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Yamuna**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **364552 Sq. Km.**	Bank	: **Left**
Latitude	: **25°23'23"N**	Longitude	: **81°09'15" E**
Zero of Gauge	: **-**		

Water Quality Datasheet for the Period : 2015-2016

Station Name : RAJAPUR **Division : LYD, Agra**

Local River : Yamuna

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Green	Green	Brown	L.Brown	Clear	Green	Green	L.Brown	L.Brown	L.Brown	Green	L.Brown
4	EC_GEN (µmho/cm)		820	735	145	340	428	661	810	809	690	604	947	824
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		8.10	8.10	7.50	7.90	8.40	8.40	7.10	8.10	6.90	7.20	7.70	8.70
7	Temperture	°C	29.0	30.0	27.5	28.0	28.5	24.5	22.5	16.0	17.0	21.0	23.5	28.0
CHEMICAL											-			
9	Alk-Phen (as CaCO3)	mg/l	17.70	17.20	0.00	0.00	68.20	8.70	14.90	22.40	14.40	20.90	20.90	22.40
10	Alk-Tot (as CaCO3)		191.0	226.0	83.0	111.0	177.0	179.0	234.0	222.0	193.00	216.0	202.0	199.0
11	Boron		0.15	0.07	0.12	0.07	0.10	0.10	0.16	0.06	0.18	0.21	0.20	0.16
12	Calcium		28.00	27.00	24.00	31.00	48.00	6.00	11.00	29.00	30.00	19.00	18.00	13.00
13	Chloride		109.70	81.30	17.40	26.60	36.60	77.00	96.20	89.80	78.10	78.10	80.20	97.60
14	Carbonate		21.30	20.70	0.00	0.00	82.20	10.50	18.00	27.00	17.40	25.20	25.20	27.00
15	Fluoride		0.48	0.63	0.25	0.03	0.32	0.16	0.16	0.65	0.82	0.54	0.53	0.65
16	Iron		0.02	0.00	0.06	0.04	0.02	0.05	0.07	0.00	0.00	0.05	0.05	1.50
17	Bicarbonate		190.00	233.00	101.00	135.00	49.00	196.00	248.00	215.00	199.00	212.00	195.00	187.00
18	Potassium		9.80	9.00	2.70	4.30	4.30	5.90	7.40	8.20	5.50	3.50	6.30	8.60
19	Magnesium		30.00	30.30	7.80	11.80	1.90	37.90	48.60	39.90	25.30	39.90	38.90	37.90
20	Sodium		104.00	86.90	10.40	23.70	37.30	70.80	86.70	91.50	78.90	82.60	92.00	99.80
21	Ammonia as N		0.25	0.18	0.00	0.06	0.11	0.06	0.08	0.13	0.06	0.10	0.02	0.21
22	NO2+NO3 as N			0.03	0.48	0.97	0.39	0.00	0.70	1.26	0.18	0.59		
23	Nitrite as N		0.00	0.03	0.02	0.01	0.03	0.00	0.04	0.02	0.06	0.04	0.01	0.00
24	Nitrate as N		0.06	0.00	0.46	0.97	0.36	0.00	0.66	1.25	0.13	0.55	0.00	0.00
25	Tot. Phosphate as P		0.08	0.05	0.03	0.04	0.00	0.00	0.10	0.23	0.05	0.24	0.20	0.04
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		57.20	49.00	1.40	25.90	33.10	53.80	68.00	53.80	98.90	80.20	84.10	88.90
BIOLOGICAL/BACTERIOLOGICAL											-			
28	BOD5-20°C	mg/l	2.50	1.60	0.40	0.20	0.20	3.50	2.38	1.10	2.40	2.40	3.80	2.80
29	COD		2.10	16.60	8.30	10.60	10.60	8.50	12.80	44.70	6.40	29.80	14.90	17.00
30	Dissolved Oxygen		6.95	6.50	6.20	6.20	6.00	7.40	5.95	6.85	5.80	5.90	5.10	5.30
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC											-			
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	8.61	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.44	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	6.03	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.52	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.84	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	1.44	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES											-			
40	Ca-Hardness	mg/l	70	69	60	77	121	16.00	28	72	76.00	48	44	32
41	Tot-Hardness		195	195	92	126	129	174.00	231	238	181.00	214	206	190
42	Na% (%)	%	52	48	19	28	38	46.00	44	45	48.00	45	49	52
43	RSC (-)		0.00	0.70	0.00	0.00	1.00	0.10	0.10	0.00	0.30	0.10	0.00	0.20
44	SAR (-)		3.30	2.70	0.50	0.90	1.40	2.30	2.50	2.60	2.60	2.50	2.80	3.20
45	PESTICIDES		-	-	-	-	-	-	-	-	-	-	-	-

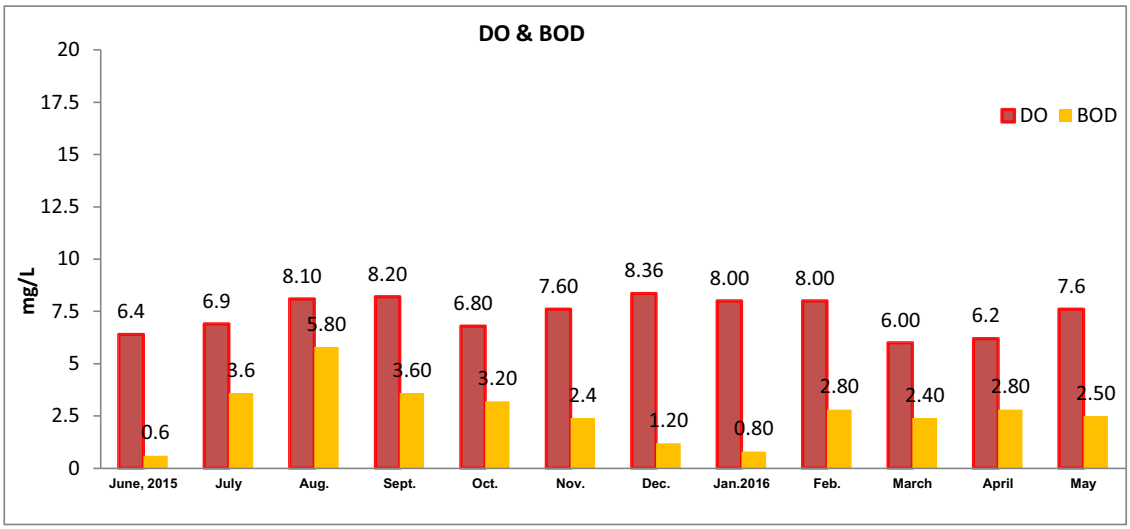
RIVER WATER SUMMARY - 2015-2016

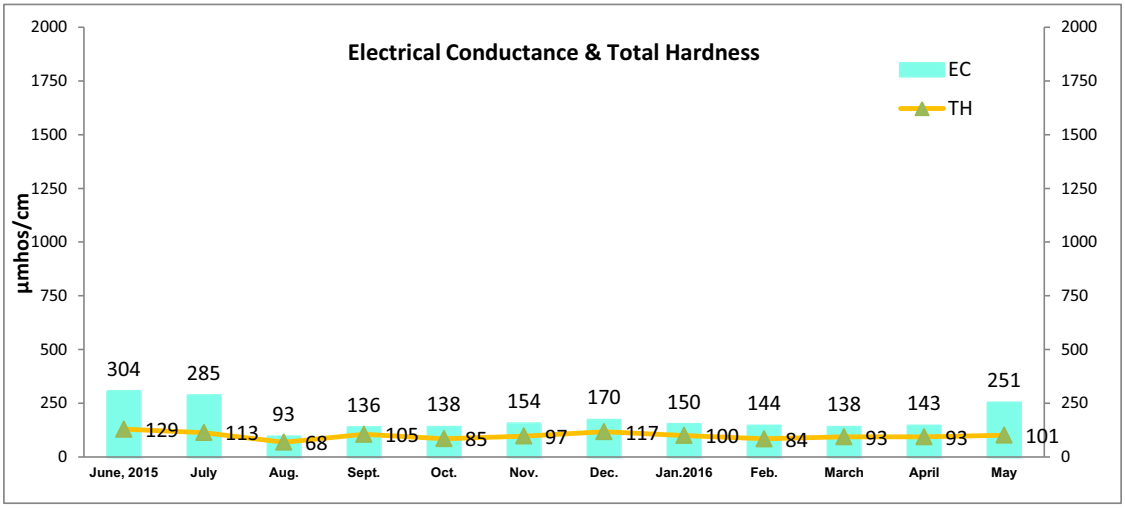
Station Name : RAJAPUR **Division : UYD, New Delhi**

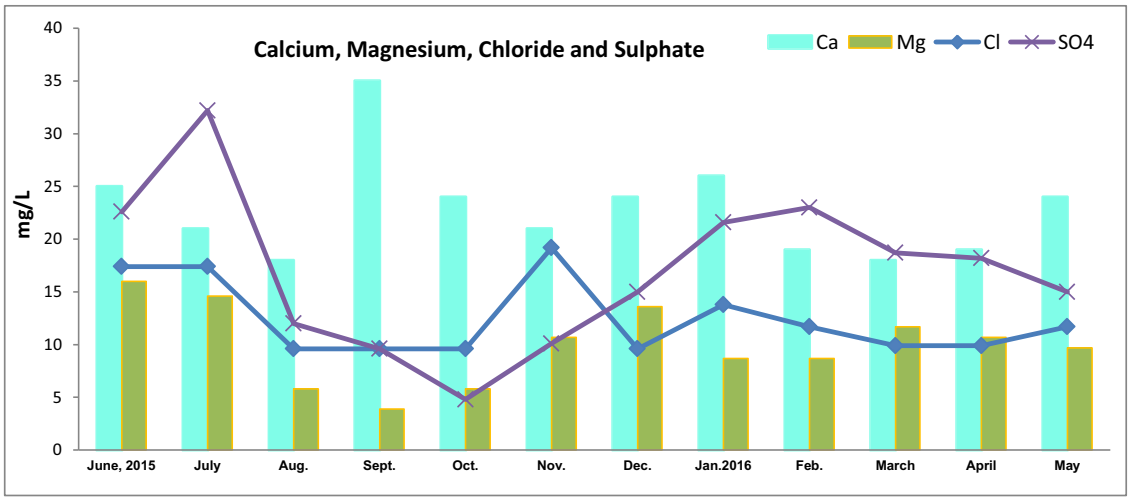
Local River : Yamuna

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	947	145	651	493.60	742.50	792
Odour_Code (-)							
pH_GEN (pH units)	12	8.70	6.90	7.8	8.00	7.63	7.87
Temperture	12	30.00	16.00	24.6	28.60	20.00	24.17
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	68.20	0.00	19.0	20.62	15.10	21.40
Alk-Tot (as $CaCO_3$)	12	234.00	83.00	186.1	157.60	207.00	205.67
Boron	12	0.21	0.06	0.1	0.10	0.13	0.19
Calcium	12	48.00	6.00	23.7	31.60	19.00	16.67
Chloride	12	109.70	17.40	72.4	54.32	85.28	85.30
Carbonate	12	82.20	0.00	22.9	24.84	18.23	25.80
Fluoride	12	0.82	0.03	0.4	0.34	0.45	0.57
Iron	12	1.50	0.00	0.2	0.03	0.03	0.53
Bicarbonate	12	248.00	49.00	180.0	141.60	214.50	198.00
Potassium	12	9.80	2.70	6.3	6.02	6.75	6.13
Magnesium	12	48.60	1.90	29.2	16.36	37.93	38.90
Sodium	12	104.00	10.40	72.1	52.46	81.98	91.47
Ammonia as N	12	0.25	0.00	0.1	0.12	0.08	0.11
NO_2+NO_3 as N	9	1.26	0.00	0.5	0.47	0.54	0.59
Nitrite as N	12	0.06	0.00	0.0	0.02	0.03	0.02
Nitrate as N	12	1.25	0.00	0.4	0.37	0.51	0.18
Tot. Phosphate as P	12	0.24	0.00	0.1	0.04	0.10	0.16
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	98.90	1.40	57.9	33.32	68.63	84.40
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	3.80	0.20	1.9	0.98	2.35	3.00
COD	12	44.70	2.10	15.2	9.64	18.10	20.57
Dissolved Oxygen	12	7.40	5.10	6.2	6.37	6.50	5.43
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli		-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	8.61	8.61	8.6	-	-	8.61
Cadmium	1	0.44	0.44	0.4	-	-	0.44
Chromium	1	6.03	6.03	6.0	-	-	6.03
Copper	1	1.52	1.52	1.5	-	-	1.52
Lead	1	0.84	0.84	0.8	-	-	0.84
Nickel	1	1.44	1.44	1.4	-	-	1.44
Zinc	1	0.01	0.01	0.0	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	121	16	59	79	48	41
Tot-Hardness	12	238	92	181	147	206	203
Na%	12	52	19	43	37	46	49
RSC (-)	12	1.00	0.00	0.21	0	0	0.10
SAR (-)	12	3.30	0.50	2.28	2	3	2.83

Graphical Presentation of RAJAPUR WQ Site







HAMIRPUR

General Particulars

Site	: ***HAMIRPUR***	Code	: **GY000E9**
State	: **Uttar Pradesh**	District	: **Hamirpur**
Division	: **L.Y. D., Agra**	Sub-Division	: **L.Y.SD III, Hamirpur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **276789 Sq. Km.**	Bank	: **Left**
Latitude	: **22°52'00"N**	Longitude	: **80°09'00" E**
Zero of Gauge	: **88.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **01/04/1959**
Discharge:	: **01/04/1959**
Sediment	: **-**
Water Quality	: **01/04/1981**
Wireless	: **16/03/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : HAMIRPUR **Division : LYD, Agra**

Local River : YAMUNA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Brown	Brown	Brown	Brown	Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
4	EC_GEN (µmho/cm)		894	1131	308	427	403	794	869	811	714	749	902	1052
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		7.90	8.30	7.50	7.90	8.10	8.30	7.00	8.00	6.90	8.80	8.40	8.70
7	Temperture	°C	30.0	28.9	27.0	27.5	27.0	24.0	20.0	16.0	18.0	20.0	21.5	30.5
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	21.40	21.70	0.00	0.00	68.50	13.90	17.70	21.70	14.40	22.40	23.70	22.90
10	Alk-Tot (as CaCO3)		195.0	251.0	103.0	127.0	178.0	183.0	233.0	214.0	193.0	210.0	213.0	218.0
11	Boron		0.06	0.14	0.14	0.07	0.43	0.10	0.15	0.12	0.18	0.17	0.79	1.01
12	Calcium		30.00	26.00	31.00	35.00	45.00	22.00	29.00	27.00	43.00	40.00	30.00	10.00
13	Chloride		121.10	137.70	28.80	43.70	48.30	101.90	104.00	91.90	78.10	91.90	109.30	146.60
14	Carbonate		25.80	26.10	0.00	0.00	82.50	16.80	21.30	26.10	17.40	27.00	28.50	27.60
15	Fluoride		0.42	0.74	0.25	0.00	5.70	0.06	0.19	0.00	0.82	0.44	0.70	0.65
16	Iron		0.10	0.00	0.02	0.00	0.04	0.02	0.50	0.00	0.23	0.35	0.079	0.40
17	Bicarbonate		185.00	253.00	126.00	154.00	49.00	188.00	240.00	208.00	199.00	201.00	202.00	209.00
18	Potassium		10.60	12.50	3.50	4.70	5.10	7.40	8.20	7.40	5.90	5.90	8.20	221.30
19	Magnesium		31.10	41.90	10.70	15.70	8.70	34.00	40.80	39.90	23.30	29.20	36.00	49.60
20	Sodium		115.20	147.00	19.10	35.40	45.30	87.60	92.70	93.60	74.30	94.80	108.10	6.70
21	Ammonia as N		0.55	0.14	0.00	0.06	2.39	0.06	0.28	0.73	0.06	0.22	0.18	0.20
22	NO2+NO3 as N		1.06	0.07	0.36	0.98	0.96	0.46	1.55	1.15	0.18	1.64	0.78	
23	Nitrite as N		0.97	0.01	0.01	0.01	0.41	0.03	0.28	0.05	0.06	0.08	0.03	0.19
24	Nitrate as N		0.10	0.06	0.35	0.97	0.55	0.43	1.28	1.11	0.13	1.56	0.76	0.00
25	Tot. Phosphate as P		0.13	0.11	0.04	0.08	0.10	0.00	0.30	0.24	0.26	0.48	0.58	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		62.40	99.80	12.50	39.80	44.20	70.10	73.00	77.80	76.30	89.30	106.10	106.90
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	2.60	2.00	1.20	3.60	3.00	2.00	6.00	1.70	4.10	5.20	4.20	6.80
29	COD		2.10	16.60	10.40	6.40	4.30	14.90	14.90	34.00	25.50	17.00	21.10	27.70
30	Dissolved Oxygen		6.50	7.50	7.50	7.50	7.00	6.50	6.50	6.50	6.50	6.50	6.00	6.80
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	8.28	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.43	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	6.59	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.63	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.59	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	8.67	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	74	65	77	89	113	56	72	68	108	100	76	24
41	Tot-Hardness		204	239	121	154	149	198	242	234	205	222	226	231
42	Na% (%)	%	54	56	25	33	39	48	45	46	43	48	50	3
43	RSC (-)		0.00	0.30	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	SAR (-)		3.50	4.20	0.80	1.20	1.60	2.70	2.60	2.70	2.30	2.80	3.10	0.20
45	PESTICIDES													

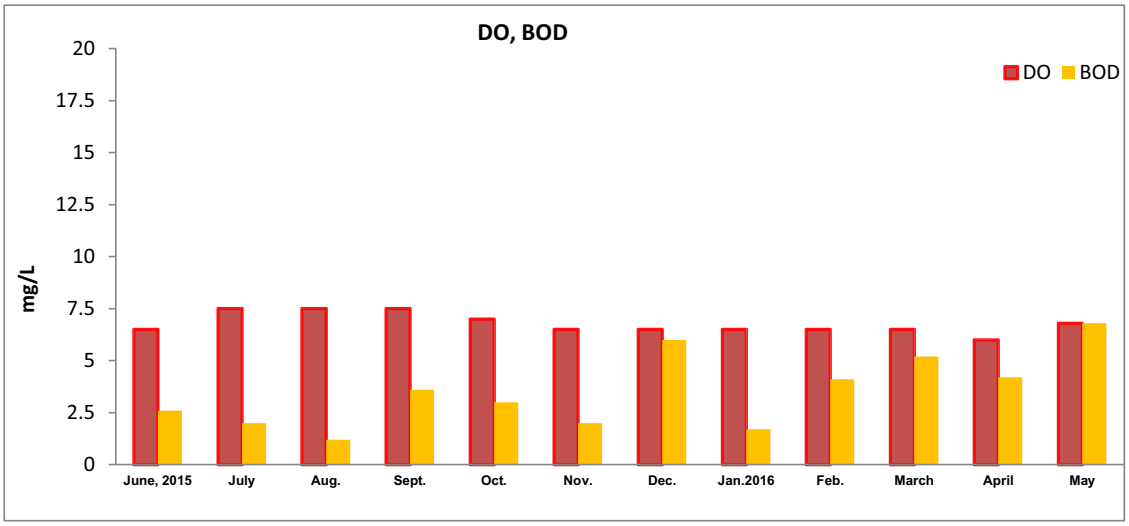
RIVER WATER SUMMARY - 2015-2016

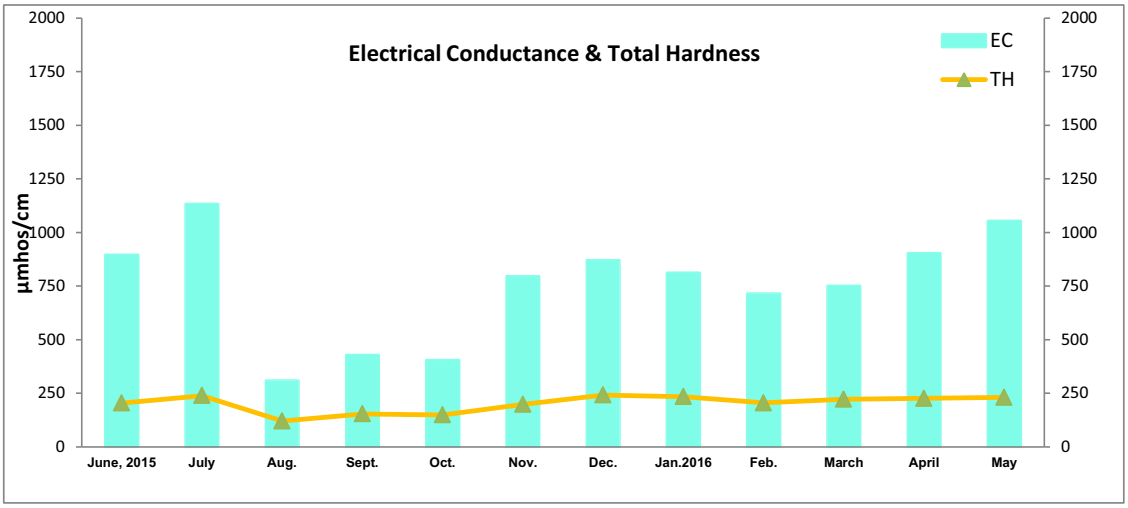
Station Name : HAMIRPUR **Division : UYD, New Delhi**

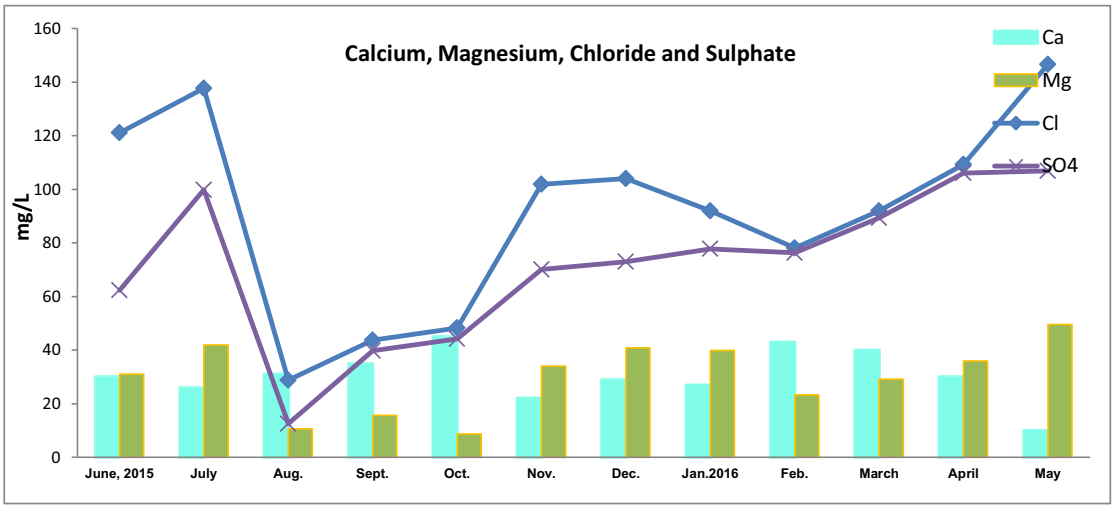
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	1131	308	755	633	797	901
Odour_Code (-)							
pH_GEN (pH units)	12	8.80	6.90	7.98	7.94	7.55	8.63
Temperture	12	30.50	16.00	24.20	28.08	19.50	24.00
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	68.50	0.00	20.69	22.32	16.93	23.00
Alk-Tot (as $CaCO_3$)	12	251.00	103.00	193.17	170.80	205.75	213.67
Boron	12	1.01	0.06	0.28	0.17	0.14	0.66
Calcium	12	45.00	10.00	30.67	33.40	30.25	26.67
Chloride	12	146.60	28.80	91.94	75.92	93.98	115.93
Carbonate	12	82.50	0.00	24.93	26.88	20.40	27.70
Fluoride	12	5.70	0.00	0.83	1.42	0.27	0.60
Iron	12	0.50	0.00	0.14	0.03	0.19	0.28
Bicarbonate	12	253.00	49.00	184.50	153.40	208.75	204.00
Potassium	12	221.30	3.50	25.06	7.28	7.23	78.47
Magnesium	12	49.60	8.70	30.08	21.62	34.50	38.27
Sodium	12	147.00	6.70	76.65	72.40	87.05	69.87
Ammonia as N	12	2.39	0.00	0.41	0.63	0.28	0.20
NO_2+NO_3 as N	11	1.64	0.07	0.84	0.69	0.84	1.21
Nitrite as N	12	0.97	0.01	0.18	0.28	0.11	0.10
Nitrate as N	12	1.56	0.00	0.61	0.41	0.74	0.77
Tot. Phosphate as P	12	0.58	0.00	0.19	0.09	0.20	0.35
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	106.90	12.50	71.52	51.74	74.30	100.77
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	6.80	1.20	3.53	2.48	3.45	5.40
COD	12	34.00	2.10	16.24	7.96	22.33	21.93
Dissolved Oxygen	12	7.50	6.00	6.78	7.20	6.50	6.43
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	8.28	8.28	8.28	-	-	8.28
Cadmium	1	0.43	0.43	0.43	-	-	0.43
Chromium	1	6.59	6.59	6.59	-	-	6.59
Copper	1	1.63	1.63	1.63	-	-	1.63
Lead	1	0.59	0.59	0.59	-	-	0.59
Nickel	1	8.67	8.67	8.67	-	-	8.67
Zinc	1	0.01	0.01	0.01	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	113	24	77	84	76	67
Tot-Hardness	12	242	121	202	173	220	226
Na%	12	56	3	41	41	46	34
RSC (-)	12	0.60	0.00	0.08	0.18	0.00	0.00
SAR (-)	12	4.20	0.20	2.31	2.26	2.58	2.03

Graphical Presentation of HAMIRPUR WQ Site







PRATAPPUR

General Particulars

Site	: **PRATAPPUR**	Code	: **GY000A8**
State	: **Uttar Pradesh**	District	: **Allahabad**
Division	: **L.Y. D., Agra**	Sub-Division	: **Ken SD, Banda**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Yamuna**
Drainage Area	: **366522 Sq. Km.**	Bank	: **Right**
Latitude	: **25°22'00"N**	Longitude	: **81°40'00" E**
Zero of Gauge	: **70.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **01/04/1959**
Discharge:	: **01/04/1959**
Sediment	: **22/01/1963**
Water Quality	: **01/01/1983**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : PRATAPPUR 1ST 10 DAYS **Division : LYD, Agra**

Local River : YAMUNA **Sub-Division : LYSD -II, Agra**

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Green	Clear	L.Brown	Brown	Clear	L.Brown	L.Brown	L.Brown	Clear	L.Brown	L.Brown	L.Brown
4	EC_GEN (µmho/cm)		782	726	138	315	411	613	675	809	678	736	755	831
5	Odour_Code (-)		Odour free											
6	pH_GEN (pH units)		8.20	8.30	7.40	7.80	8.20	8.20	7.30	8.00	6.90	9.10	8.50	8.80
7	Temperture	°C	32.5	30.0	28.0	27.0	27.0	24.0	24.0	15.0	16.0	22.0	23.0	25.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	19.70	19.70	0.00	0.00	9.00	11.20	11.20	21.20	10.50	22.20	28.10	19.70
10	Alk-Tot (as CaCO3)		185.0	208.0	90.0	105.0	145.0	179.0	163.0	218.0	177.0	212.0	192.0	197.0
11	Boron		0.18	0.11	0.11	1.94	0.30	0.11	0.10	0.14	0.20	0.20	0.79	0.86
12	Calcium		25.00	32.00	10.00	32.00	29.00	19.00	16.00	38.00	24.00	26.00	13.00	14.00
13	Chloride		101.90	96.90	17.40	19.20	36.60	71.40	90.50	95.90	80.20	76.30	88.00	105.40
14	Carbonate		23.70	23.70	0.00	0.00	10.80	13.50	13.50	25.50	12.60	26.70	33.90	23.70
15	Fluoride		0.25	1.22	0.67	0.00	0.19	0.08	0.19	0.29	0.70	0.53	0.53	0.70
16	Iron		0.10	0.01	0.00	0.07	0.20	0.09	0.13	0.00	0.00	0.02	0.12	0.10
17	Bicarbonate		178.00	205.00	109.00	128.00	154.00	191.00	171.00	214.00	190.00	204.00	165.00	192.00
18	Potassium		9.80	9.00	2.70	3.90	4.30	5.90	26.20	7.80	5.90	5.10	6.60	8.20
19	Magnesium		30.00	26.40	16.60	12.80	15.70	30.10	25.30	34.00	26.20	36.90	40.80	37.90
20	Sodium		94.50	88.80	9.40	21.20	35.20	68.50	85.60	91.50	84.40	77.50	95.20	100.30
21	Ammonia as N		0.29	0.06	0.00	0.08	0.10	0.14	0.42	0.62	0.00	0.22	0.10	0.07
22	NO2+NO3 as N		0.01	0.00	0.40	0.73	0.50	0.01		1.36	0.03	0.39		
23	Nitrite as N		0.00	0.00	0.36	0.72	0.06	0.01	0.01	0.01	0.00	0.06	0.00	0.00
24	Nitrate as N		0.01	0.00	0.04	0.01	0.45	0.02	0.02	1.35	0.00	0.34	0.08	0.00
25	Tot. Phosphate as P		0.07	0.09	0.04	0.06	0.00	0.01	0.01	0.22	0.02	0.21	0.20	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		52.50	56.20	1.20	5.30	31.20	43.20	37.80	66.70	81.60	76.80	90.20	69.90
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	0.20	1.40	2.00	0.20	2.20	3.50	1.60	2.30	2.20	3.60	3.80	3.60
29	COD		6.60	8.70	4.20	8.50	4.30	6.40	7.02	7.40	6.20	5.80	9.20	7.00
30	Dissolved Oxygen		6.20	6.70	7.20	7.00	6.20	6.80	5.80	5.60	6.80	6.00	5.88	6.10
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	1.33	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.52	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	16.27	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.80	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.93	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	2.58	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	62	81	24	81	73	48	40	96	60	64	32	36
41	Tot-Hardness		187	190	93	134	138	174	145	238	169	218	202	194
42	Na% (%)	%	51	49	18	25	35	45	51	45	51	43	50	52
43	RSC (-)		0.00	0.40	0.00	0.00	0.20	0.10	0.40	0.00	0.20	0.00	0.00	0.10
44	SAR (-)		3.00	2.80	0.40	0.80	1.30	2.30	3.10	2.60	2.80	2.30	2.90	3.10
45	PESTICIDES													

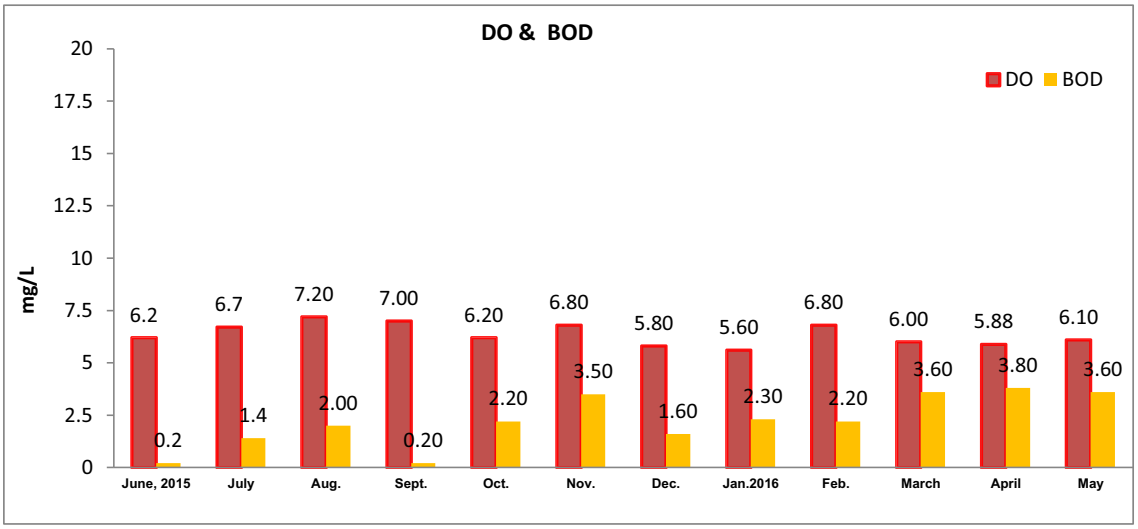
RIVER WATER SUMMARY - 2015-2016

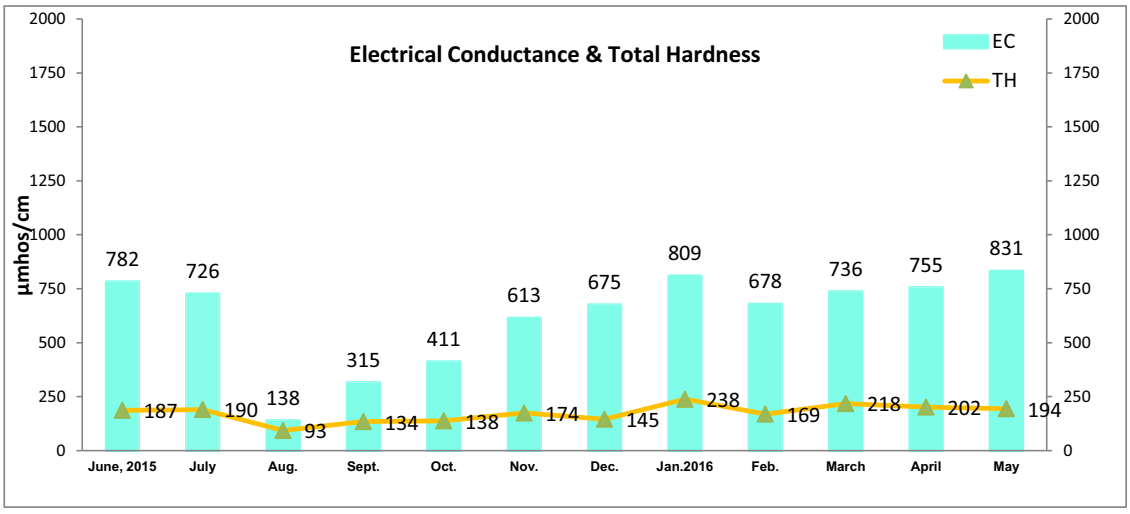
Station Name : PRATAPPUR IST 10 DAYS **Division : UYD, New Delhi**

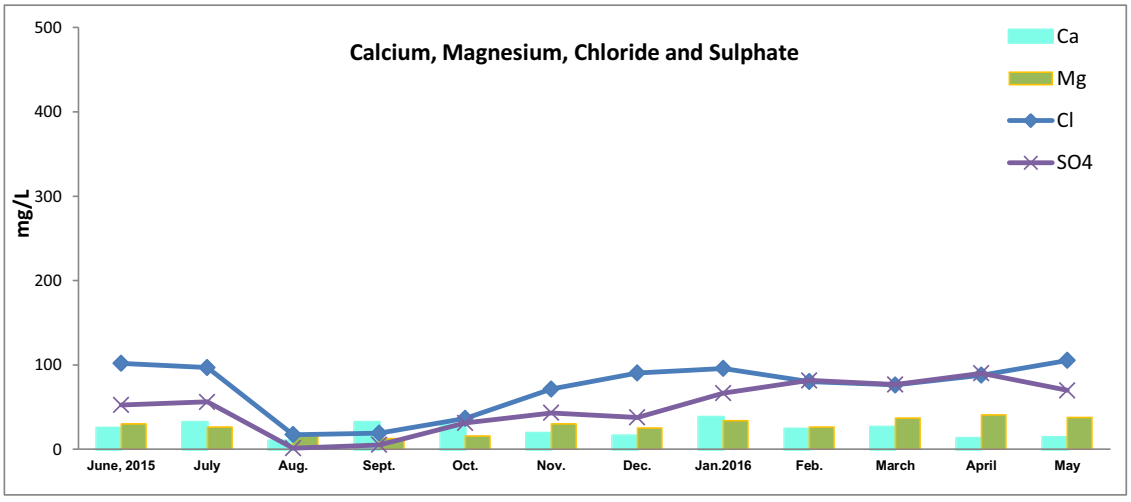
Local River : YAMUNA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	831	138	622	474	694	774
Odour_Code (-)							
pH_GEN (pH units)	12	9.10	6.90	8.06	7.98	7.60	8.80
Temperture	12	32.50	15.00	24.46	28.90	19.75	23.33
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	28.10	0.00	14.38	9.68	13.53	23.33
Alk-Tot (as $CaCO_3$)	12	218.00	90.00	172.58	146.60	184.25	200.33
Boron	12	1.94	0.10	0.42	0.53	0.14	0.62
Calcium	12	38.00	10.00	23.17	25.60	24.25	17.67
Chloride	12	105.40	17.40	73.31	54.40	84.50	89.90
Carbonate	12	33.90	0.00	17.30	11.64	16.28	28.10
Fluoride	12	1.22	0.00	0.45	0.47	0.32	0.59
Iron	12	0.20	0.00	0.07	0.07	0.06	0.08
Bicarbonate	12	214.00	109.00	175.08	154.80	191.50	187.00
Potassium	12	26.20	2.70	7.95	5.94	11.45	6.63
Magnesium	12	40.80	12.80	27.73	20.30	28.90	38.53
Sodium	12	100.30	9.40	71.01	49.82	82.50	91.00
Ammonia as N	12	0.62	0.00	0.18	0.11	0.30	0.13
NO_2+NO_3 as N	9	1.36	0.00	0.38	0.33	0.47	0.39
Nitrite as N	12	0.72	0.00	0.10	0.23	0.01	0.02
Nitrate as N	12	1.35	0.00	0.19	0.10	0.35	0.14
Tot. Phosphate as P	12	0.22	0.00	0.08	0.05	0.07	0.14
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	90.20	1.20	51.05	29.28	57.33	78.97
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	3.80	0.20	2.22	1.20	2.40	3.67
COD	12	9.20	4.20	6.78	6.46	6.76	7.33
Dissolved Oxygen	12	7.20	5.60	6.36	6.66	6.25	5.99
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	1.33	1.33	1.33	-	-	1.33
Cadmium	1	0.52	0.52	0.52	-	-	0.52
Chromium	1	16.27	16.27	16.27	-	-	16.27
Copper	1	1.80	1.80	1.80	-	-	1.80
Lead	1	0.93	0.93	0.93	-	-	0.93
Nickel	1	2.58	2.58	2.58	-	-	2.58
Zinc	1	0.01	0.01	0.01	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	96	24	58	64	61	44
Tot-Hardness	12	238	93	174	148	182	205
Na%	12	52	18	43	36	48	48
RSC (-)	12	0.40	0.00	0.12	0.12	0.18	0.03
SAR (-)	12	3.10	0.40	2.28	1.66	2.70	2.77

Graphical Presentation of PRATAPPUR WQ Site







DHOLPUR

General Particulars

Site	: **DHOLPUR**	Code	: **GYP00F4**
State	: **Rajasthan**	District	: **Dhaulpur**
Division	: **L.Y. D., Agra**	Sub-Division	: **LYSD-II, Agra**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **-**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Chambal**
Drainage Area	: **138123 Sq. Km.**	Bank	: **Left**
Latitude	: **26°39'00"N**	Longitude	: **77°54'00" E**
Zero of Gauge	: **115.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **16/01/1976**
Discharge:	: **27/01/1976**
Sediment	: **18/11/1978**
Water Quality	: **01/12/1976**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : DHOLPUR **Division : LYD, Agra**

Local River : CHAMBAL

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Clear	L.Brown	L.Brown	L.Brown	L.Brown	L.Brown	Clear	Clear	Clear	Clear	Clear	Clear
4	EC_GEN (µmho/cm)		634	501	406	388	443	510	619	595	583	587	608	648
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		7.80	8.30	7.70	8.00	8.40	8.00	7.30	8.20	6.90	8.70	8.30	8.50
7	Temperture	°C	30.0	29.0	28.0	30.0	29.0	25.0	21.0	16.0	18.0	22.0	26.0	28.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	31.60	18.40	5.00	81.20	71.20	11.20	15.20	28.10	16.40	12.50	17.20	28.40
10	Alk-Tot (as CaCO3)		176.0	138.0	133.0	284.0	183.0	155.0	178.0	155.0	159.0	139.0	157.0	168.0
11	Boron		0.18	0.11	0.14	0.14	0.05	0.07	0.14	0.07	0.13	0.20	0.79	0.65
12	Calcium		30.00	47.00	26.00	26.00	18.00	16.00	16.00	11.00	27.00	16.00	13.00	19.00
13	Chloride		55.70	40.80	32.70	28.40	30.90	36.60	51.80	49.00	54.70	46.90	49.00	46.90
14	Carbonate		38.10	22.20	6.00	97.80	85.80	13.50	18.30	33.90	19.80	15.00	20.70	34.20
15	Fluoride		0.32	0.65	0.48	0.08	0.19	0.00	0.19	0.00	0.93	0.44	0.82	0.55
16	Iron		0.010	0.030	0.030	0.040	0.010	0.013	0.040	0.020	0.012	0.023	0.026	0.100
17	Bicarbonate		137.00	123.00	149.00	148.00	49.00	161.00	180.00	120.00	154.00	139.00	149.00	135.00
18	Potassium		6.30	5.50	3.50	3.50	3.50	3.90	4.30	5.10	3.50	1.20	3.90	4.30
19	Magnesium		26.00	9.70	21.50	21.50	28.30	30.10	33.00	37.90	25.30	31.10	32.10	26.20
20	Sodium		70.40	46.20	26.90	25.80	33.60	42.80	66.00	64.60	63.70	65.80	74.10	87.90
21	Ammonia as N		0.42	0.00	0.00	0.06	0.01	0.03	0.00	0.01	0.00	0.06	0.01	0.01
22	NO2+NO3 as N		0.13	0.07	0.35	2.03	1.34	0.52		0.32	0.67	0.52	0.01	
23	Nitrite as N		0.01	0.01	0.00	0.76	0.03	0.01	0.00	0.00	0.01	0.01	0.00	0.00
24	Nitrate as N		0.13	0.06	0.35	1.28	1.32	0.50	0.24	0.32	0.66	0.50	0.01	0.00
25	Tot. Phosphate as P		0.05	0.02	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		61.60	70.10	25.90	27.40	44.20	58.10	86.00	85.40	98.90	81.10	94.60	80.60
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	2.80	3.80	0.60	0.40	2.80	3.00	3.00	3.10	4.20	3.20	3.40	3.80
29	COD		4.16	14.60	6.20	10.60	8.50	6.40	12.80	21.30	6.40	17.00	23.40	17.00
30	Dissolved Oxygen		5.20	7.80	6.00	4.00	5.40	6.00	7.00	6.00	6.60	7.00	5.10	4.60
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	4.02	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.34	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	5.49	-
36	Copper		-	-	-	-	-	-	-	-	-	-	0.71	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.39	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	3.87	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.02	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	74	117	65	65	45	40	40	28	68	40	32	48
41	Tot-Hardness		182	157	154	154	162	166	178	186	173	170	166	157
42	Na% (%)	%	45	38	27	26	31	36	44	42	44	46	49	54
43	RSC (-)		0.00	0.00	0.00	2.60	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.20
44	SAR (-)		2.30	1.60	0.90	0.90	1.20	1.50	2.20	2.10	2.10	2.20	2.50	3.10
45	PESTICIDES													

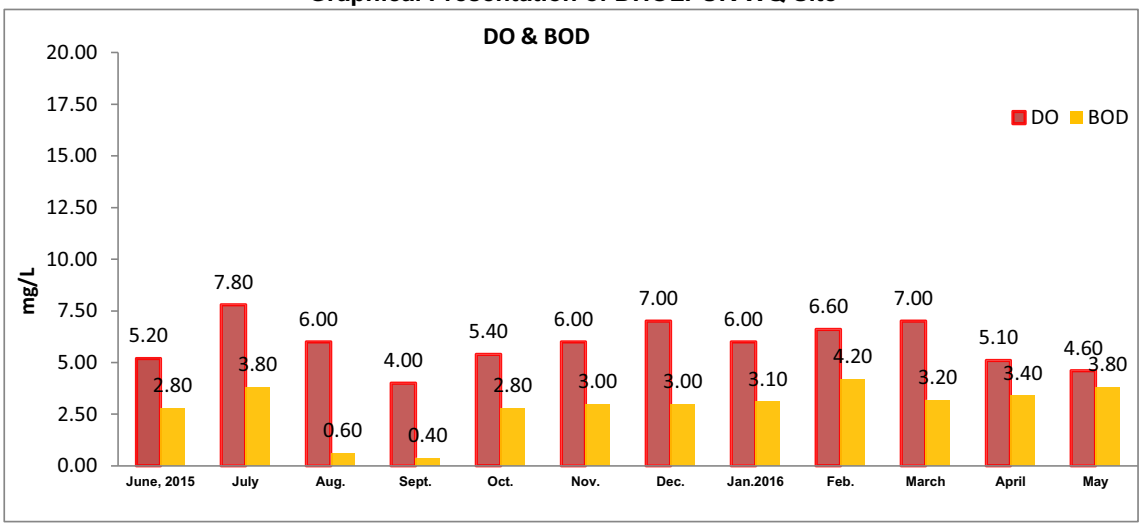
RIVER WATER SUMMARY - 2015-2016

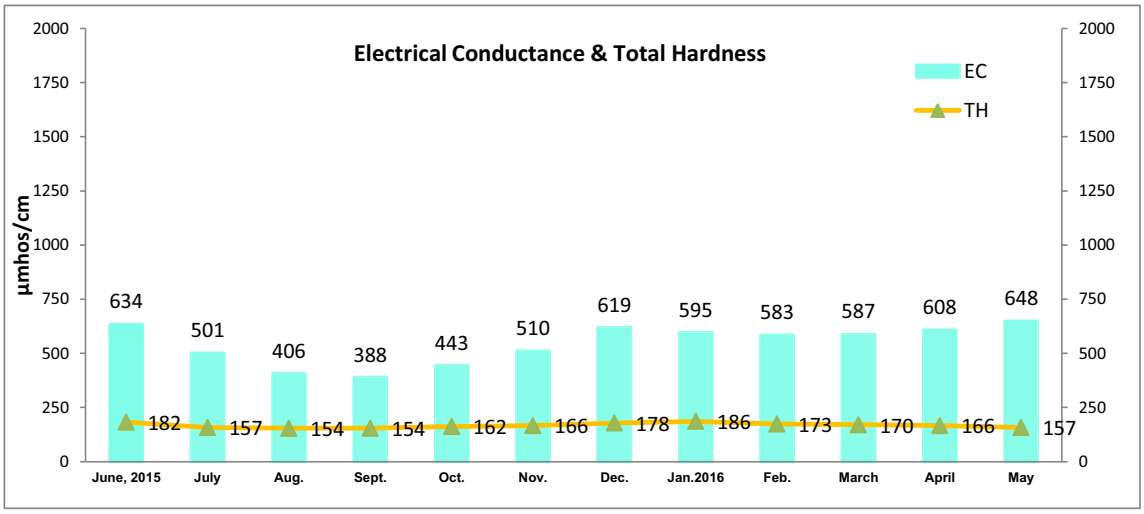
Station Name : DHOLPUR **Division : UYD, New Delhi**

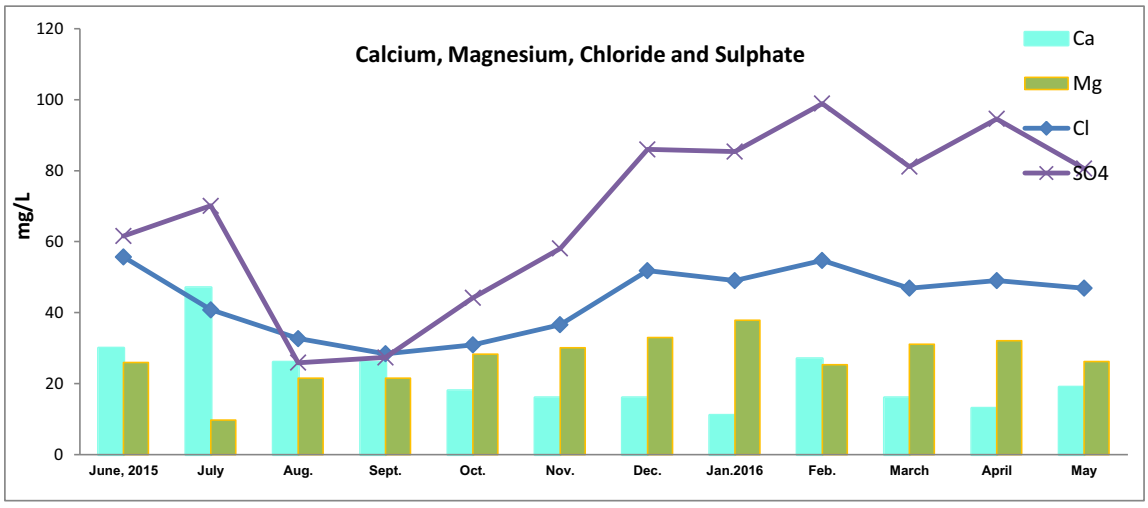
Local River : CHAMBAL

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	648	388	544	474	577	614
Odour_Code (-)							
pH_GEN (pH units)	12	8.70	6.90	8.01	8.04	7.60	8.50
Temperture	12	30.0	16.0	25.17	29.2	20.0	25.3
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	81.20	5.00	28.03	41.48	17.73	19.37
Alk-Tot (as $CaCO_3$)	12	284.00	133.00	168.75	182.80	161.75	154.67
Boron	12	0.79	0.05	0.22	0.12	0.10	0.55
Calcium	12	47.00	11.00	22.08	29.40	17.50	16.00
Chloride	12	55.70	28.40	43.62	37.70	48.03	47.60
Carbonate	12	97.80	6.00	33.78	49.98	21.38	23.30
Fluoride	12	0.93	0.00	0.39	0.34	0.28	0.60
Iron	12	0.10	0.01	0.03	0.02	0.02	0.05
Bicarbonate	12	180.00	49.00	137.00	121.20	153.75	141.00
Potassium	12	6.30	1.20	4.04	4.46	4.20	3.13
Magnesium	12	37.90	9.70	26.89	21.40	31.58	29.80
Sodium	12	87.90	25.80	55.65	40.58	59.28	75.93
Ammonia as N	12	0.42	0.00	0.05	0.10	0.01	0.03
NO_2+NO_3 as N	10	2.03	0.01	0.60	0.78	0.50	0.27
Nitrite as N	12	0.76	0.00	0.07	0.16	0.01	0.00
Nitrate as N	12	1.32	0.00	0.45	0.63	0.43	0.17
Tot. Phosphate as P	12	0.07	0.00	0.02	0.02	0.00	0.02
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	98.90	25.90	67.83	45.84	82.10	85.43
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	4.20	0.40	2.84	2.08	3.33	3.47
COD	12	23.40	4.16	12.36	8.81	11.73	19.13
Dissolved Oxygen	12	7.80	4.00	5.89	5.68	6.40	5.57
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	4.02	4.02	4.02	-	-	4.02
Cadmium	1	0.34	0.34	0.34	-	-	-
Chromium	1	5.49	5.49	5.49	-	-	-
Copper	1	0.71	0.71	0.71	-	-	-
Lead	1	0.39	0.39	0.39	-	-	-
Nickel	1	3.87	3.87	3.87	-	-	-
Zinc	1	0.02	0.02	0.02	-	-	-
CHEMICAL INDICES							
Ca-Hardness	12	117	28	55	73	44	40
Tot-Hardness	12	186	154	167	162	176	164
Na%	12	54	26	40	33	42	50
RSC (-)	12	2.60	0.00	0.27	0.60	0.00	0.07
SAR (-)	12	3.10	0.90	1.88	1.38	1.98	2.60

Graphical Presentation of DHOLPUR WQ Site







UDI

General Particulars

Site	: **UDI**	Code	: **GYP00B6**
State	: **Uttar Pradesh**	District	: **Etawah**
Division	: **L.Y. D., Agra**	Sub-Division	: **LYSD-II, Agra**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Chambal**
Drainage Area	: **149972 Sq. Km.**	Bank	: **Left**
Latitude	: **26°42'00"N**	Longitude	: **78°56'00" E**
Zero of Gauge	: **102.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **21/06/1959**
Discharge:	: **21/06/1959**
Sediment	: **11/09/1961**
Water Quality	: **01/01/1972**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : UDI **Division : LYD, Agra**

Local River : CHAMBAL

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Clear	L.Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
4	EC_GEN (µmho/cm)		674	604	301	379	422	511	500	590	583	586	758	660
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		7.70	8.30	7.60	8.10	8.30	8.10	7.50	8.20	6.90	9.20	7.60	8.60
7	Temperture	°C	30.0	26.0	26.0	28.0	26.0	19.0	16.0	14.0	17.0	22.0	25.0	28.5
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	20.20	6.20	58.30	4.00	8.50	8.00	13.90	13.90	32.60	15.90	39.30	16.90
10	Alk-Tot (as CaCO3)		168.0	177.0	209.0	133.0	143.0	158.0	164.0	160.0	153.0	155.0	188.0	163.0
11	Boron		0.22	0.29	0.07	0.29	0.05	0.07	0.12	0.09	0.14	0.19	0.79	0.94
12	Calcium		28.00	13.00	29.00	31.00	29.00	21.00	14.00	10.00	11.00	14.00	11.00	22.00
13	Chloride		65.30	54.30	27.00	26.60	30.90	44.40	38.30	52.90	46.90	49.00	70.30	58.60
14	Carbonate		24.30	7.50	70.20	4.80	10.20	9.60	16.80	16.80	39.30	19.20	47.40	20.40
15	Fluoride		0.46	0.93	0.38	0.17	0.19	0.00	0.19	0.00	0.70	0.40	0.40	0.65
16	Iron		0.010	0.000	0.000	0.035	0.010	0.020	0.450	0.021	0.023	0.025	0.276	0.030
17	Bicarbonate		156.00	200.00	112.00	153.00	153.00	173.00	166.00	161.00	106.00	150.00	133.00	157.00
18	Potassium		5.50	6.30	3.10	3.50	3.50	4.30	3.90	4.30	3.50	1.20	3.90	4.30
19	Magnesium		25.00	30.30	10.70	17.60	18.60	26.20	31.10	36.00	36.00	33.00	51.50	23.30
20	Sodium		81.00	69.00	18.40	24.60	31.30	46.90	46.20	69.90	58.40	65.80	79.10	89.90
21	Ammonia as N		0.000	0.05	0.00	0.10	0.06	0.08	0.04	0.01	0.00	0.00	0.00	0.01
22	NO2+NO3 as N			0.00	0.36	1.89	1.26	0.18		0.21	0.39	0.49	0.85	
23	Nitrite as N		0.000	0.005	0.000	0.760	0.040	0.010	0.000	0.010	0.060	0.060	0.000	0.000
24	Nitrate as N		0.02	0.00	0.36	1.13	1.22	0.17	0.20	0.20	0.34	0.43	0.85	0.00
25	Tot. Phosphate as P		0.05	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		71.00	73.00	12.50	24.00	38.90	48.50	50.00	93.60	83.00	88.30	101.30	121.90
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	0.40	4.00	0.80	0.40	2.40	4.30	2.40	2.30	4.40	2.40	3.60	3.60
29	COD		6.20	16.60	6.20	14.90	6.40	6.40	17.00	19.20	6.40	12.80	17.00	17.00
30	Dissolved Oxygen		6.00	8.90	8.50	7.00	7.40	6.70	7.10	6.10	7.70	8.60	5.90	6.40
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	4.52	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.26	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	4.37	-
36	Copper		-	-	-	-	-	-	-	-	-	-	0.81	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.45	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	0.88	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	70	32	73	77	73	52	36	24	28	36	28	56
41	Tot-Hardness		174	158	117	150	150	161	166	174	178	174	243	153
42	Na% (%)	%	49	48	25	26	31	38	37	46	41	45	41	55
43	RSC (-)		0.00	0.40	1.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20
44	SAR (-)		2.70	2.40	0.70	0.90	1.10	1.60	1.60	2.30	1.90	2.20	2.20	3.20
45	PESTICIDES													

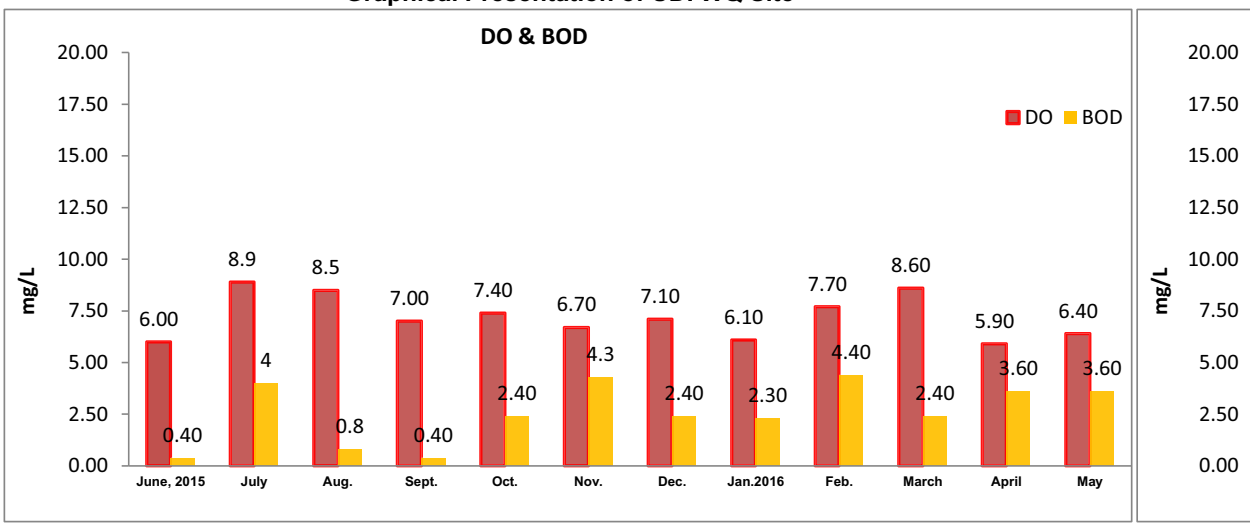
RIVER WATER SUMMARY - 2015-2016

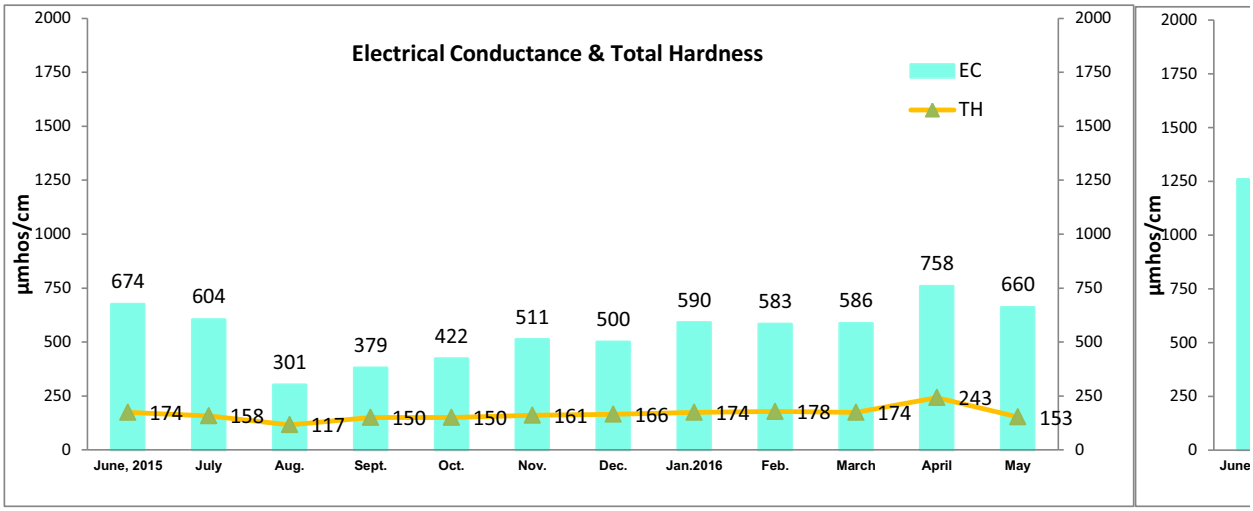
Station Name : UDI **Division : UYD, New Delhi**

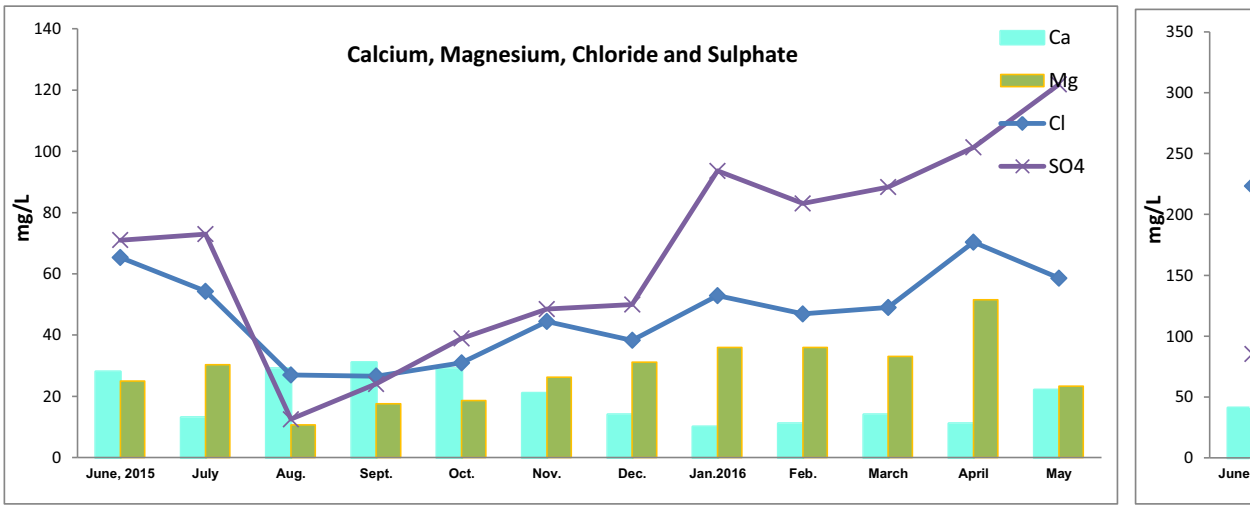
Local River : CHAMBAL

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	758	301	547	476	546	668
Odour_Code (-)							
pH_GEN (pH units)	12	9.20	6.90	8.01	8.00	7.68	8.47
Temperture	12	30.00	14.00	23.13	27.20	16.50	25.17
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	58.30	4.00	19.81	19.44	17.10	24.03
Alk-Tot (as $CaCO_3$)	12	209.00	133.00	164.25	166.00	158.75	168.67
Boron	12	0.94	0.05	0.27	0.18	0.11	0.64
Calcium	12	31.00	10.00	19.42	26.00	14.00	15.67
Chloride	12	70.30	26.60	47.04	40.82	45.63	59.30
Carbonate	12	70.20	4.80	23.88	23.40	20.63	29.00
Fluoride	12	0.93	0.00	0.37	0.43	0.22	0.48
Iron	12	0.45	0.00	0.08	0.01	0.13	0.11
Bicarbonate	12	200.00	106.00	151.67	154.80	151.50	146.67
Potassium	12	6.30	1.20	3.94	4.38	4.00	3.13
Magnesium	12	51.50	10.70	28.28	20.44	32.33	35.93
Sodium	12	89.90	18.40	56.71	44.86	55.35	78.27
Ammonia as N	12	0.10	0.00	0.03	0.04	0.03	0.00
NO_2+NO_3 as N	9	1.89	0.00	0.63	0.88	0.26	0.67
Nitrite as N	12	0.76	0.00	0.08	0.16	0.02	0.02
Nitrate as N	12	1.22	0.00	0.41	0.55	0.23	0.43
Tot. Phosphate as P	12	0.05	0.00	0.01	0.02	0.00	0.00
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	121.90	12.50	67.17	43.88	68.78	103.83
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	4.40	0.40	2.58	1.60	3.35	3.20
COD	12	19.20	6.20	12.18	10.06	12.25	15.60
Dissolved Oxygen	12	8.90	5.90	7.19	7.56	6.90	6.97
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	4.52	4.52	4.52	-	-	4.52
Cadmium	1	0.26	0.26	0.26	-	-	0.26
Chromium	1	4.37	4.37	4.37	-	-	4.37
Copper	1	0.81	0.81	0.81	-	-	0.81
Lead	1	0.45	0.45	0.45	-	-	0.45
Nickel	1	0.88	0.88	0.88	-	-	0.88
Zinc	1	0.01	0.01	0.01	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	77	24	49	65	35	40
Tot-Hardness	12	243	117	167	150	170	190
Na%	12	55	25	40	36	41	47
RSC (-)	12	1.80	0.00	0.20	0.44	0.00	0.07
SAR (-)	12	3.20	0.70	1.90	1.56	1.85	2.53

Graphical Presentation of UDI WQ Site







SHAHIJINA

General Particulars

Site	: **SHAHIJINA**	Code	: **GYK00A6**
State	: **Uttar Pradesh**	District	: **Hamirpur**
Division	: **L.Y. D., Agra**	Sub-Division	: **LYSD-III, Hamirpur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Betwa**
Sub-Sub-Trib.	: **-**	Local River	: **Betwa**
Drainage Area	: **44023 Sq. Km.**	Bank	: **Right**
Latitude	: **25°57'00"N**	Longitude	: **80°09'00" E**
Zero of Gauge	: **88.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **08/06/1959**
Discharge:	: **08/06/1959**
Sediment	: **28/07/1961**
Water Quality	: **12/01/1964**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : SHAHIJINA **Division : LYD, Agra**

Local River : BETWA **Sub-Division : LYSD -II, Agra**

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-15	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Clear	Clear	L.Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
4	EC_GEN (µmho/cm)		514	504	407	323	424	494	525	450	491	465	473	524
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		8.00	8.00	7.70	8.00	8.50	8.00	6.90	8.30	6.80	8.70	8.10	8.30
7	Temperture	°C	30.0	27.0	26.0	26.5	26.0	24.0	21.0	16.0	18.0	20.0	21.5	30.5
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	27.40	25.10	4.50	7.20	7.20	12.50	15.20	15.90	22.90	25.60	21.70	15.20
10	Alk-Tot (as CaCO3)		200.0	187.0	137.0	133.0	194.0	213.0	220.0	200.0	210.0	184.0	200.0	201.0
11	Boron		0.15	0.29	0.14	0.01	0.01	0.01	0.10	0.00	0.10	0.07	0.12	0.16
12	Calcium		20.00	32.00	26.00	29.00	19.00	11.00	11.00	8.00	35.00	18.00	11.00	14.00
13	Chloride		30.90	34.80	28.80	17.00	19.20	28.80	28.80	27.30	27.30	25.60	25.60	29.50
14	Carbonate		33.00	30.30	5.40	8.70	8.70	15.00	18.30	19.20	27.60	30.90	26.10	18.30
15	Fluoride		0.51	1.14	0.42	0.00	0.32	0.03	0.10	0.00	1.01	0.23	0.40	0.65
16	Iron		0.14	0.04	0.00	0.00	0.10	0.02	0.28	0.00	0.00	0.06	0.95	0.50
17	Bicarbonate		176.00	166.00	156.00	144.00	218.00	229.00	231.00	204.00	200.00	161.00	191.00	208.00
18	Potassium		3.50	4.30	3.50	3.50	3.50	3.10	3.10	2.70	2.70	1.20	2.30	3.50
19	Magnesium		25.00	16.60	21.50	14.70	23.40	32.10	34.00	31.10	15.60	24.30	29.20	26.20
20	Sodium		61.20	41.40	23.20	21.20	35.00	46.90	53.10	53.60	51.50	52.90	55.00	60.00
21	Ammonia as N		1.10	0.80	0.00	0.10	0.36	0.28	0.14	0.15	1.85	0.60	0.00	0.52
22	NO2+NO3 as N		1.33	0.71	2.41	1.38	1.05	0.64		0.22	0.07	0.22	0.18	0.20
23	Nitrite as N		0.04	0.15	0.03	0.03	0.05	0.03	0.11	0.02	0.03	0.07	0.03	0.07
24	Nitrate as N		0.08	0.56	2.38	0.28	0.36	0.62	0.70	0.22	0.04	0.15	0.15	0.13
25	Tot. Phosphate as P		0.10	0.17	0.01	0.01	0.01	0.00	0.00	0.00	0.20	0.10	0.10	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		12.30	2.90	9.10	2.40	8.20	14.90	18.00	18.70	33.10	19.70	10.10	6.00
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	2.40	5.20	6.80	2.80	4.40	3.40	2.00	4.00	3.80	3.40	2.80	2.80
29	COD		6.24	18.70	2.10	6.40	4.30	8.50	9.80	11.30	6.90	8.50	13.40	17.00
30	Dissolved Oxygen		7.50	6.50	6.50	7.00	6.00	6.00	6.00	6.50	6.50	6.00	6.30	6.50
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	3.55	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.36	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	0.06	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.85	-
37	Lead		-	-	-	-	-	-	-	-	-	-	1.45	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	1.23	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.02	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	50	81	65	73	49	28	28	20	88	44	28	36
41	Tot-Hardness		154	150	154	134	146	162	170	150	153	145	150	145
42	Na% (%)	%	46	37	24	25	34	38	40	43	42	44	44	47
43	RSC (-)		0.90	0.80	0.00	0.00	1.00	1.10	1.00	1.00	1.20	0.80	1.00	1.10
44	SAR (-)		2.20	1.50	0.80	0.80	1.30	1.60	1.80	1.90	1.80	1.90	2.00	2.20
45	PESTICIDES		-	-	-	-	-	-	-	-	-	-	-	-

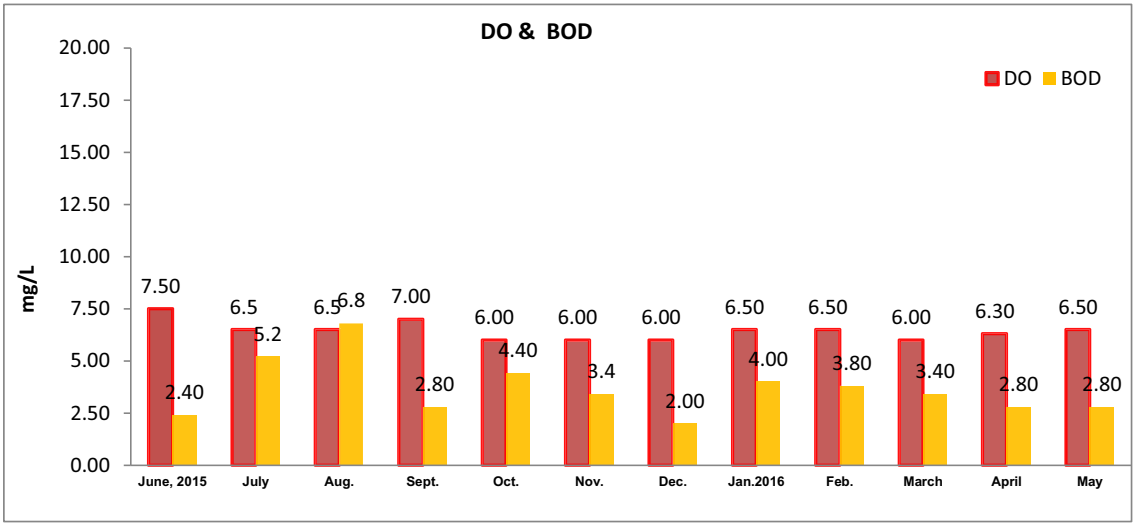
RIVER WATER SUMMARY - 2015-2016

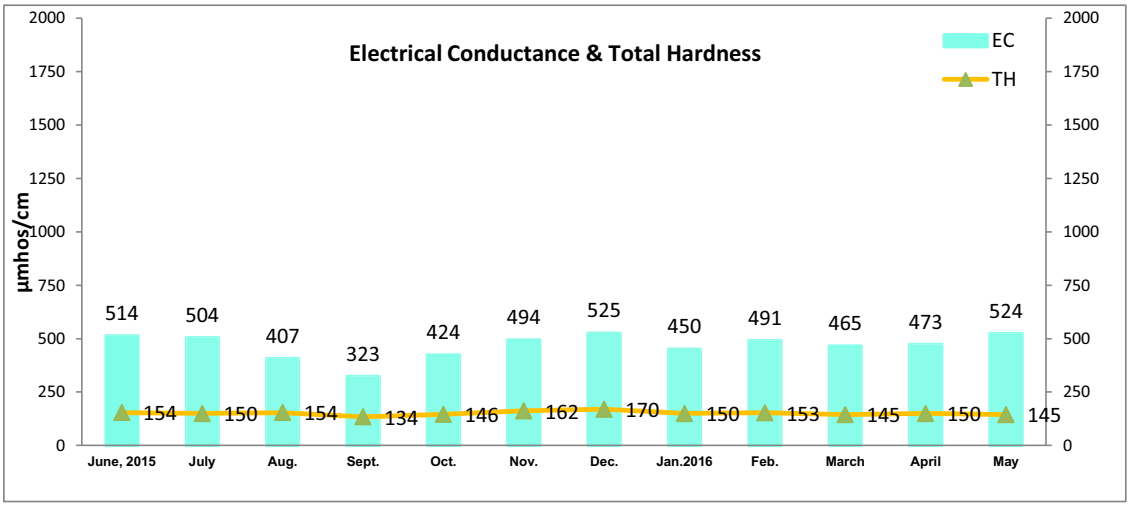
Station Name : SHAHJINA **Division : UYD, New Delhi**

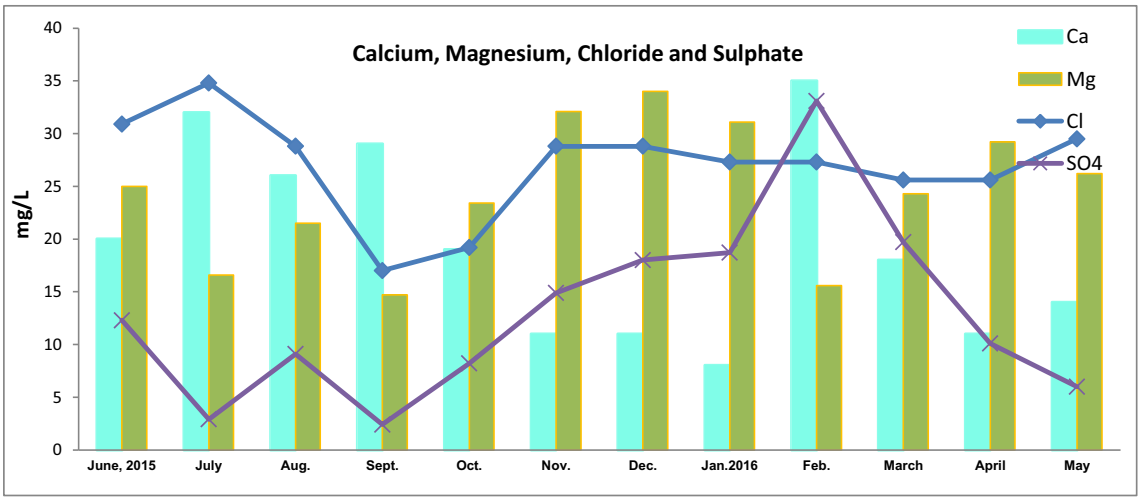
Local River : BETWA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	525	323	466	434	490	487
Odour_Code (-)							
pH_GEN (pH units)	12	8.70	6.80	7.94	8.04	7.50	8.37
Temperture	12	30.50	16.00	23.88	27.10	19.75	24.00
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	27.40	4.50	16.70	14.28	16.63	20.83
Alk-Tot (as $CaCO_3$)	12	220.00	133.00	189.92	170.20	210.75	195.00
Boron	12	0.29	0.00	0.10	0.12	0.05	0.12
Calcium	12	35.00	8.00	19.50	25.20	16.25	14.33
Chloride	12	34.80	17.00	26.97	26.14	28.05	26.90
Carbonate	12	33.00	5.40	20.13	17.22	20.03	25.10
Fluoride	12	1.14	0.00	0.40	0.48	0.28	0.43
Iron	12	0.95	0.00	0.17	0.06	0.08	0.50
Bicarbonate	12	231.00	144.00	190.33	172.00	216.00	186.67
Potassium	12	4.30	1.20	3.08	3.66	2.90	2.33
Magnesium	12	34.00	14.70	24.48	20.24	28.20	26.57
Sodium	12	61.20	21.20	46.25	36.40	51.28	55.97
Ammonia as N	12	1.85	0.00	0.49	0.47	0.61	0.37
NO_2+NO_3 as N	11	2.41	0.07	0.76	1.38	0.31	0.20
Nitrite as N	12	0.15	0.02	0.06	0.06	0.05	0.06
Nitrate as N	12	2.38	0.04	0.47	0.73	0.40	0.14
Tot. Phosphate as P	12	0.20	0.00	0.06	0.06	0.05	0.07
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	33.10	2.40	12.95	6.98	21.18	11.93
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	6.80	2.00	3.65	4.32	3.30	3.00
COD	12	18.70	2.10	9.43	7.55	9.13	12.97
Dissolved Oxygen	12	7.50	6.00	6.44	6.70	6.25	6.27
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	3.55	3.55	3.55	-	-	3.55
Cadmium	1	0.36	0.36	0.36	-	-	0.36
Chromium	1	0.06	0.06	0.06	-	-	0.06
Copper	1	1.85	1.85	1.85	-	-	1.85
Lead	1	1.45	1.45	1.45	-	-	1.45
Nickel	1	1.23	1.23	1.23	-	-	1.23
Zinc	1	0.02	0.02	0.02	-	-	0.02
CHEMICAL INDICES							
Ca-Hardness	12	88	20	49	64	41	36
Tot-Hardness	12	170	134	151	148	159	147
Na%	12	47	24	39	33	41	45
RSC (-)	12	1.20	0.00	0.83	0.54	1.08	0.97
SAR (-)	12	2.20	0.80	1.65	1.32	1.78	2.03

Graphical Presentation of SAHIJANA WQ Site







RAJGHAT

GENERAL PARTICULARS

Site	:***RAJGHAT***	Code	: **GYK00P1**
State	: **Uttar Pradesh**	District	: **Lalitpur**
Division	: **L.Y. D., Agra**	Sub-Division	: **-**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Betwa**
Drainage Area	: **16540 Sq. Km.**	Bank	:
Latitude	: **24°50'00"N**	Longitude	: **78°12'00" E**

DETAILS OF OPERATION (OPENING DATE)

Gauge:	: **-**
Discharge:	: **21/11/1970**
Sediment	: **01/01/1978**
Water Quality	: **01/08/1992**

Water Quality Datasheet for the Period : 2015-2016

Station Name : RAJGHAT | **Division : LYD, Agra**

Local River : BETWA | **Sub-Division : LYSD -II, Agra**

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Brown	L.Brown	Brown	L.Brown	L.Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
4	EC_GEN (µmho/cm)		336	123	163	158	158	163	168	176	185	284	272	396
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		8.10	7.40	7.60	7.80	8.20	8.20	7.10	8.20	6.80	8.60	8.30	8.40
7	Temperture	°C	30.0	30.0	27.0	28.5	28.0	27.0	27.0	25.5	22.5	25.0	27.5	30.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	13.40	4.50	4.50	0.00	48.80	16.40	11.00	17.20	13.90	22.40	27.60	13.70
10	Alk-Tot (as CaCO3)		133.0	73.0	108.0	99.0	138.0	92.0	104.0	100.0	112.0	110.0	98.0	120.0
11	Boron		0.02	0.11	0.03	0.00	0.00	0.02	0.04	0.00	0.09	0.02	1.15	0.29
12	Calcium		31.00	18.00	24.00	29.00	34.00	29.00	26.00	19.00	32.00	26.00	24.00	18.00
13	Chloride		23.10	19.50	19.20	15.30	9.60	13.50	13.50	15.60	17.80	15.60	17.80	17.80
14	Carbonate		16.20	5.40	5.40	0.00	58.80	19.80	13.20	20.70	16.80	27.00	33.30	16.50
15	Fluoride		0.34	0.48	0.56	0.00	0.25	0.00	0.04	0.19	0.44	0.00	0.44	0.15
16	Iron		0.11	0.15	0.03	0.01	0.00	0.06	0.01	0.02	0.12	0.11	0.11	0.07
17	Bicarbonate		129.00	78.00	120.00	121.00	49.00	71.00	100.00	80.00	102.00	79.00	52.00	112.00
18	Potassium		3.10	2.00	3.10	3.10	2.70	2.70	2.70	3.10	2.30	1.20	2.30	2.70
19	Magnesium		15.10	5.80	10.70	7.80	3.90	16.50	11.70	16.50	8.70	15.60	14.60	20.40
20	Sodium		19.30	10.40	13.60	12.70	10.80	36.80	12.70	13.80	13.60	15.00	16.30	17.30
21	Ammonia as N		0.00	1.03	0.00	0.00	0.02	0.01	0.01	0.03	0.00	0.00	0.00	0.02
22	NO2+NO3 as N		0.14	0.71	0.30	0.47	0.43	0.00	0.00	0.03	0.01	0.01	0.08	0.02
23	Nitrite as N		0.06	0.02	0.01	0.01	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00
24	Nitrate as N		0.08	0.69	0.29	0.46	0.41	0.00	0.00	0.03	0.00	0.00	0.08	0.02
25	Tot. Phosphate as P		0.04	0.03	0.02	0.02	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		1.20	8.20	5.30	1.00	1.00	1.00	2.00	1.00	18.20	11.50	8.20	3.00
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	2.00	1.00	1.60	2.80	2.80	1.60	2.60	3.00	2.60	3.20	4.00	3.20
29	COD		8.10	10.40	4.20	4.30	4.30	4.30	4.30	12.80	6.40	5.50	9.40	7.30
30	Dissolved Oxygen		6.20	6.70	7.40	6.40	6.40	8.50	7.40	5.00	6.10	6.70	6.23	5.40
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	4.16	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.25	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	3.07	-
36	Copper		-	-	-	-	-	-	-	-	-	-	1.05	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.19	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	0.79	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	79	44	60	73	85	72	64	48	80	64	60	44
41	Tot-Hardness		141	68	105	105	101	141	113	117	116	129	121	129
42	Na% (%)	%	23	24	21	20	18	36	19	20	20	20	22	22
43	RSC (-)		0.00	0.10	0.10	0.00	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	SAR (-)		0.70	0.50	0.60	0.50	0.50	1.40	0.50	0.60	0.50	0.60	0.60	0.70
45	PESTICIDES													

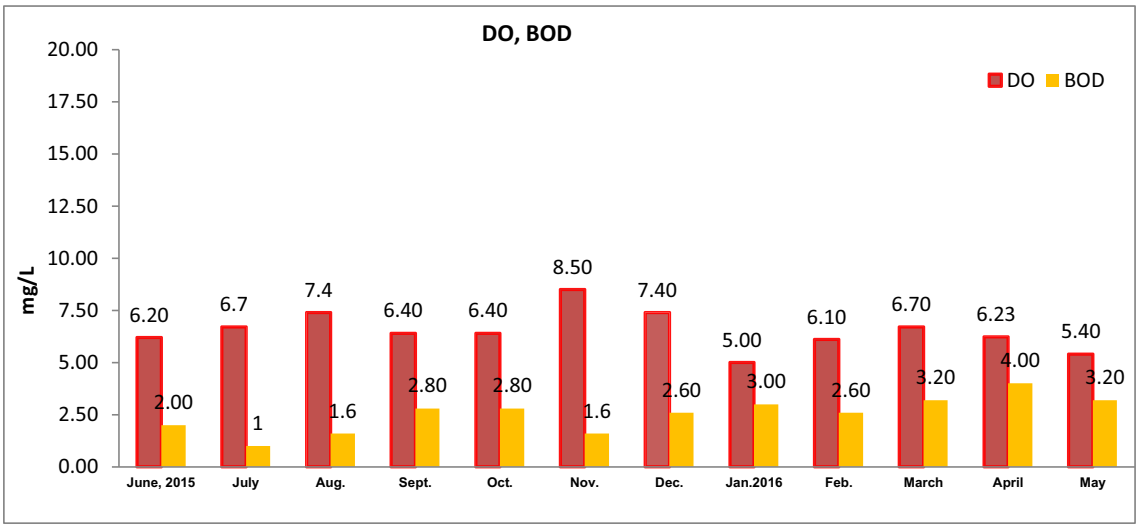
RIVER WATER SUMMARY - 2015-2016

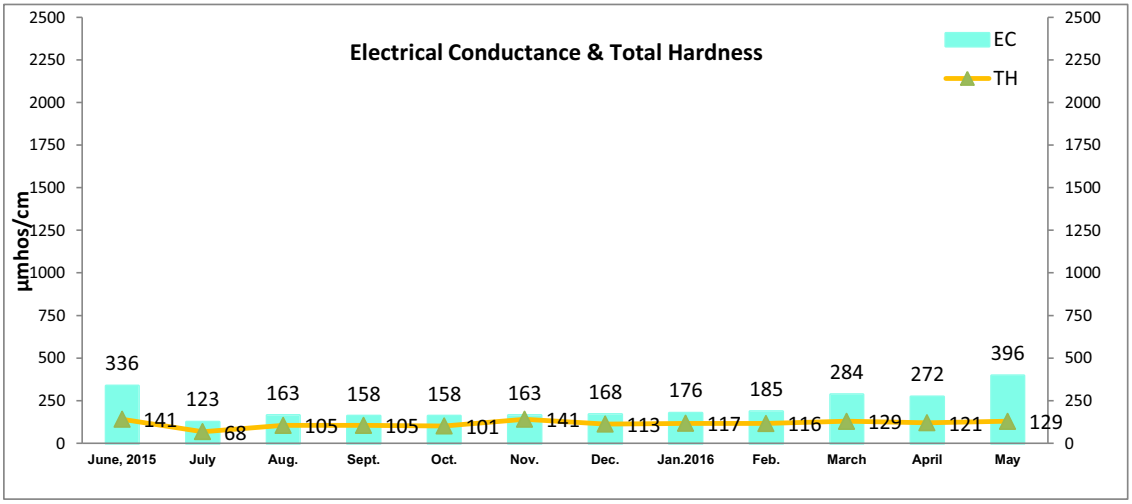
Station Name : RAJGHAT **Division : UYD, New Delhi**

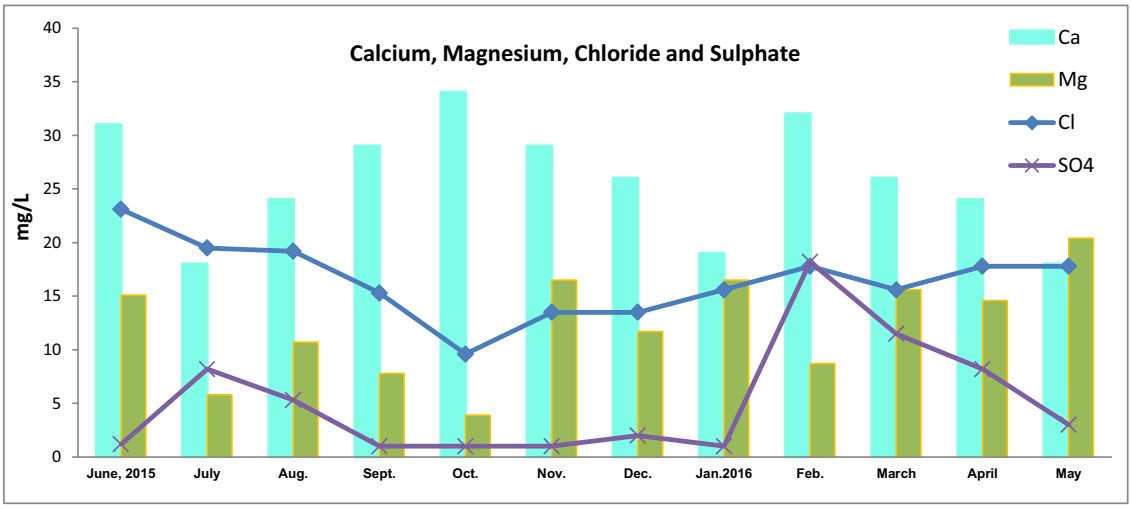
Local River : BETWA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	396	123	215	188	173	317
Odour_Code (-)							
pH_GEN (pH units)	12	8.60	6.80	7.89	7.82	7.58	8.43
Temperture	12	30.00	22.50	27.33	28.70	25.50	27.50
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	48.80	0.00	16.12	14.24	14.63	21.23
Alk-Tot (as $CaCO_3$)	12	138.00	73.00	107.25	110.20	102.00	109.33
Boron	12	1.15	0.00	0.15	0.03	0.04	0.49
Calcium	12	34.00	18.00	25.83	27.20	26.50	22.67
Chloride	12	23.10	9.60	16.53	17.34	15.10	17.07
Carbonate	12	58.80	0.00	19.43	17.16	17.63	25.60
Fluoride	12	0.56	0.00	0.24	0.33	0.17	0.20
Iron	12	0.15	0.00	0.07	0.06	0.05	0.10
Bicarbonate	12	129.00	49.00	91.08	99.40	88.25	81.00
Potassium	12	3.10	1.20	2.58	2.80	2.70	2.07
Magnesium	12	20.40	3.90	12.28	8.66	13.35	16.87
Sodium	12	36.80	10.40	16.03	13.36	19.23	16.20
Ammonia as N	12	1.03	0.00	0.09	0.21	0.01	0.01
NO_2+NO_3 as N	12	0.71	0.00	0.18	0.41	0.01	0.04
Nitrite as N	12	0.06	0.00	0.01	0.02	0.00	0.00
Nitrate as N	12	0.69	0.00	0.17	0.39	0.01	0.03
Tot. Phosphate as P	12	0.04	0.00	0.01	0.02	0.00	0.00
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	18.20	1.00	5.13	3.34	5.55	7.57
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	4.00	1.00	2.53	2.04	2.45	3.47
COD	12	12.80	4.20	6.78	6.26	6.95	7.40
Dissolved Oxygen	12	8.50	5.00	6.54	6.62	6.75	6.11
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	4.16	4.16	4.16	-	-	4.16
Cadmium	1	0.25	0.25	0.25	-	-	0.25
Chromium	1	3.07	3.07	3.07	-	-	3.07
Copper	1	1.05	1.05	1.05	-	-	1.05
Lead	1	0.19	0.19	0.19	-	-	0.19
Nickel	1	0.79	0.79	0.79	-	-	0.79
Zinc	1	0.01	0.01	0.01	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	85	44	64	68	66	56
Tot-Hardness	12	141	68	116	104	122	126
Na%	12	36	18	22	21	24	21
RSC (-)	12	0.80	0.00	0.08	0.20	0.00	0.00
SAR (-)	12	1.40	0.50	0.64	0.56	0.75	0.63

Graphical Presentation of RAJGHAT WQ Site







MOHANA

General Particulars

Site	: **MOHANA**	Code	: **GYKOOF6**
State	: **Uttar Pradesh**	District	: **Jalaun**
Division	: **L.Y. D., Agra**	Sub-Division	: **-**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Betwa**
Sub-Sub-Trib.	: **-**	Local River	: **Betwa**
Drainage Area	: **41054 Sq. Km.**	Bank	: **Left**
Latitude	: **25°42'00"N**	Longitude	: **79°22'10" E**
Zero of Gauge	: **-**		

Water Quality Datasheet for the Period : 2015-2016

Station Name : MOHANA **Division : LYD, Agra**

Local River : Betwa

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		1/6/15	1/7/15	1/8/15	1/9/15	1/10/15	2/11/15	1/12/15	1/1/16	1/2/16	1/3/16	1/4/16	2/5/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Clear											
4	EC_GEN (µmho/cm)		364	440	271	279	378	402	409	402	373	395	385	396
5	Odour_Code (-)		Odour free											
6	pH_GEN (pH units)		8.2	8.0	7.6	7.9	8.5	8.2	7.1	8.3	6.9	8.7	8.1	8.4
7	Temperture	°C	31.0	29.0	30.0	32.0	29.0	24.0	22.5	17.0	20.5	22.0	26.0	27.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	85.40	17.20	8.50	2.50	8.50	10.00	34.60	16.40	15.90	19.20	20.20	13.90
10	Alk-Tot (as CaCO3)		274.0	185.0	96.0	117.0	171.0	173.0	166.0	173.0	166.00	171.0	158.0	161.0
11	Boron		0.28	0.34	0.30	0.23	0.27	0.17	0.32	0.20	0.23	0.36	0.36	0.32
12	Calcium		25.00	27.00	31.00	29.00	31.00	29.00	16.00	14.00	230.00	19.00	18.00	14.00
13	Chloride		24.90	25.20	19.20	15.30	19.20	23.10	19.20	19.50	17.80	21.70	21.70	21.70
14	Carbonate		102.90	20.70	10.20	3.00	10.20	12.00	41.70	19.80	19.20	23.10	24.30	16.80
15	Fluoride		0.34	1.14	0.53	0.00	0.40	0.02	0.06	0.33	0.68	0.27	0.48	0.67
16	Iron		0.04	0.03	0.02	0.01	0.25	0.05	0.04	0.06	0.03	0.01	0.02	0.16
17	Bicarbonate		125.00	183.00	96.00	136.00	188.00	187.00	117.00	170.00	163.00	161.00	143.00	162.00
18	Potassium		3.10	3.10	3.10	3.50	2.70	2.70	2.70	3.10	2.30	1.20	2.30	2.30
19	Magnesium		15.10	16.60	10.70	12.80	13.70	16.50	23.30	23.30	12.20	23.30	17.50	20.40
20	Sodium		37.30	43.00	15.00	16.10	31.10	36.80	40.30	44.40	35.40	39.60	43.20	35.70
21	Ammonia as N		1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	NO2+NO3 as N		0.00	0.01	0.29	0.37	0.22	0.00	0.00	0.13	0.00	0.00	0.00	0.00
23	Nitrite as N		0.000	0.000	0.010	0.005	0.020	0.000	0.000	0.000	0.00	0.000	0.000	0.000
24	Nitrate as N		0.00	0.01	0.28	0.36	0.20	0.00	0.00	0.13	0.00	0.00	0.00	0.00
25	Tot. Phosphate as P		0.020	0.010	0.020	0.020	0.000	0.000	0.000	0.000	0.00	0.030	0.000	0.000
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		9.00	1.90	7.20	1.40	1.00	1.90	1.00	6.20	18.20	8.20	3.80	4.00
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	1.60	2.40	3.20	1.60	0.40	2.00	2.40	1.80	3.80	2.80	2.00	1.80
29	COD		4.20	10.40	6.20	19.80	4.30	4.30	10.60	17.00	14.90	8.50	14.90	4.30
30	Dissolved Oxygen		7.60	7.40	6.80	6.80	7.40	8.00	7.80	7.80	7.80	8.00	8.20	7.60
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	4.09	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.24	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	1.51	-
36	Copper		-	-	-	-	-	-	-	-	-	-	0.53	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.16	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	0.64	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	62	69	77	73	77	72	40	36	575	48	44	36
41	Tot-Hardness		125	138	121	126	134	141	137	133	626	145	117	121
42	Na% (%)	%	39	40	21	21	33	36	39	42	11	37	44	39
43	RSC (-)		3.00	1.00	0.00	0.00	0.80	0.70	0.60	0.80	0	0.50	0.80	0.80
44	SAR (-)		1.50	1.60	0.60	0.60	1.20	1.40	1.50	1.70	1	1.40	1.70	1.40
45	PESTICIDES		-	-	-	-	-	-	-	-	-	-	-	-

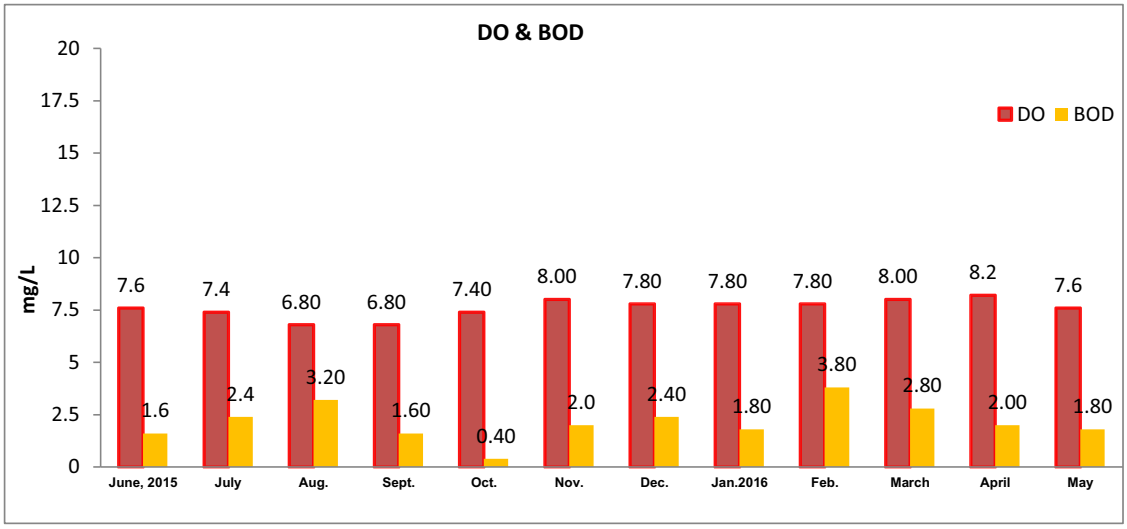
RIVER WATER SUMMARY - 2015-2016

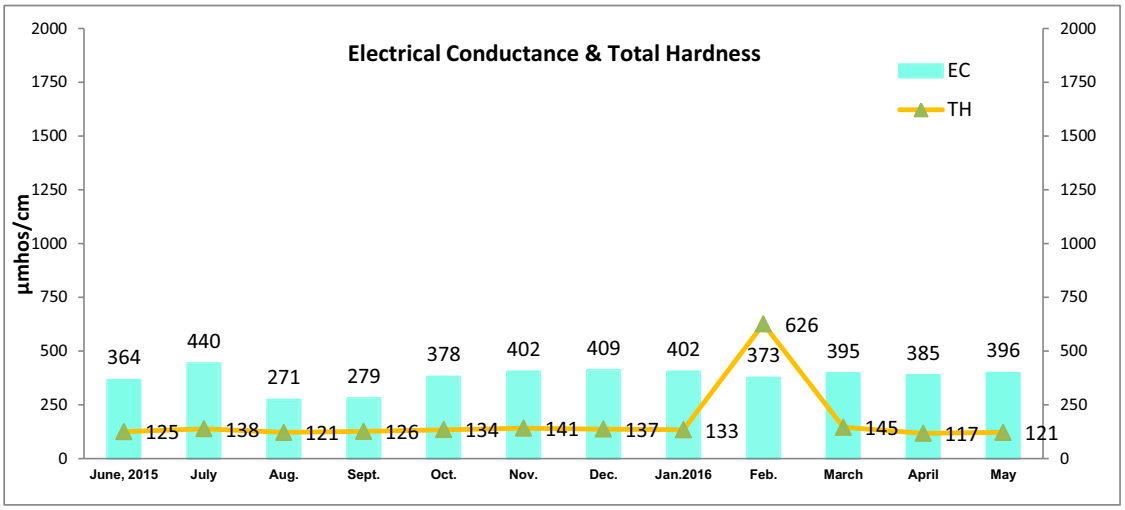
Station Name : MOHANA **Division : UYD, New Delhi**

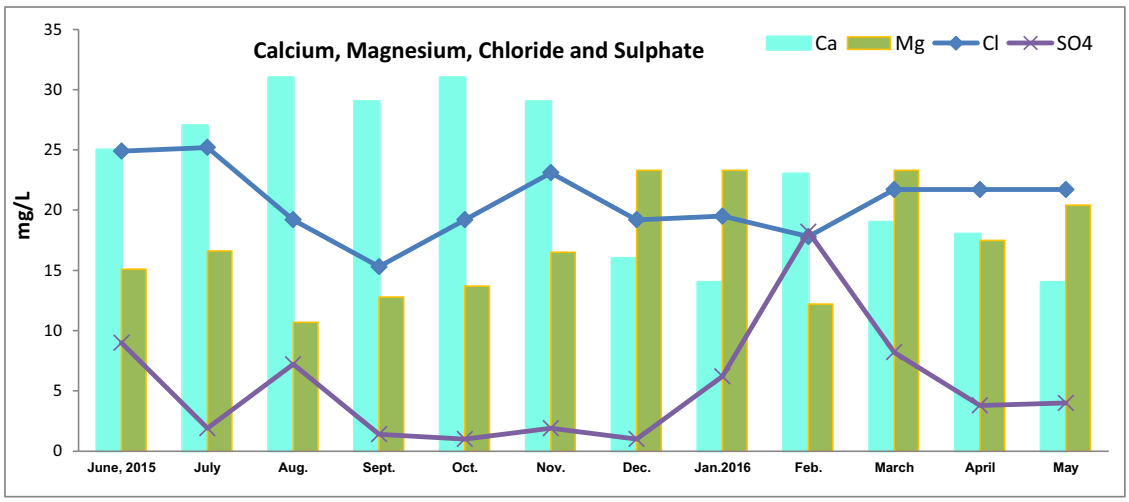
Local River : Betwa

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	440	271	375	346	397	392
Odour_Code (-)							
pH_GEN (pH units)	12	8.70	6.90	7.99	8.04	7.63	8.40
Temperture	12	32.0	17.0	25.8	30.2	21.0	25.0
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	85.40	2.50	21.0	24.42	19.23	17.77
Alk-Tot (as $CaCO_3$)	12	274.00	96.00	167.6	168.60	169.50	163.33
Boron	12	0.36	0.17	0.3	0.28	0.23	0.35
Calcium	12	230.00	14.00	40.3	28.60	72.25	17.00
Chloride	12	25.20	15.30	20.7	20.76	19.90	21.70
Carbonate	12	102.90	3.00	25.3	29.40	23.18	21.40
Fluoride	12	1.14	0.00	0.4	0.48	0.27	0.47
Iron	12	0.25	0.01	0.1	0.07	0.04	0.06
Bicarbonate	12	188.00	96.00	152.6	145.60	159.25	155.33
Potassium	12	3.50	1.20	2.7	3.10	2.70	1.93
Magnesium	12	23.30	10.70	17.1	13.78	18.83	20.40
Sodium	12	44.40	15.00	34.8	28.50	39.23	39.50
Ammonia as N	12	1.10	0.00	0.1	0.22	0.00	0.00
NO_2+NO_3 as N	12	0.37	0.00	0.1	0.18	0.03	0.00
Nitrite as N	12	0.02	0.00	0.0	0.01	0.00	0.00
Nitrate as N	12	0.36	0.00	0.1	0.17	0.03	0.00
Tot. Phosphate as P	12	0.03	0.00	0.0	0.01	0.00	0.01
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	18.20	1.00	5.3	4.10	6.83	5.33
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	3.80	0.40	2.2	1.84	2.50	2.20
COD	12	19.80	4.20	10.0	8.98	11.70	9.23
Dissolved Oxygen	12	8.20	6.80	7.6	7.20	7.85	7.93
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	4.09	4.09	4.1	-	-	4.09
Cadmium	1	0.24	0.24	0.2	-	-	0.24
Chromium	1	1.51	1.51	1.5	-	-	1.51
Copper	1	0.53	0.53	0.5	-	-	0.53
Lead	1	0.16	0.16	0.2	-	-	0.16
Nickel	1	0.64	0.64	0.6	-	-	0.64
Zinc	1	0.01	0.01	0.0	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	12	575	36	101	71.60	180.75	43
Tot-Hardness	12	626	117	172	128.80	259.25	128
Na%	12	44	11	34	30.80	32.00	40
RSC (-)	12	3.00	0.00	0.75	0.96	0.53	0.70
SAR (-)	12	1.70	0.60	1.27	1.10	1.30	1.50

Graphical Presentation of MOHANA WQ Site







PACHAULI

Water Quality Datasheet for the Period : 2015-2016

Station Name : PACHAULI **Division : LYD, Agra**

Local River : SIND

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection			01/07/15	01/08/15	01/09/15	01/10/15	02/11/15						
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)			Clear	Clear	Clear	Clear	Clear						
4	EC_GEN (µmho/cm)			150	161	480	510	835						
5	Odour_Code (-)			Odour free	Odour free	Odour free	Odour free	Odour free						
6	pH_GEN (pH units)			7.90	7.80	8.10	8.40	8.30						
7	Temperture	°C		27.5	26.5	26.5	26.5	21.5						
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l		24.70	2.50	13.20	96.40	12.90						
10	Alk-Tot (as CaCO3)			195.0	109.0	202.0	234.0	228.0						
11	Boron			0.11	0.02	1.87	0.36	0.08						
12	Calcium			26.00	27.00	16.00	24.00	32.00						
13	Chloride			15.60	13.50	24.90	21.30	30.90						
14	Carbonate			29.70	3.00	15.90	116.10	15.60						
15	Fluoride			1.25	0.53	0.02	0.29	0.00						
16	Iron			0.40	0.01	0.00	0.01	0.00	-	-	-	-	-	-
17	Bicarbonate			178.00	127.00	214.00	49.00	246.00						
18	Potassium			4.30	2.70	3.50	3.10	3.50						
19	Magnesium			8.70	10.70	40.10	25.40	30.10						
20	Sodium			40.50	10.60	30.60	38.20	39.80						
21	Ammonia as N			0.20	0.00	0.06	0.02	0.03						
22	NO2+NO3 as N			0.66	0.22	2.47	2.34	1.85						
23	Nitrite as N			0.15	0.00	0.83	0.28	0.01						
24	Nitrate as N			0.50	0.22	1.64	2.06	1.84						
25	Tot. Phosphate as P			0.04	0.00	0.01	0.00	0.00						
26	Silicate as SiO2			-	-	-	-	-						
27	Sulphate as SO4			9.10	1.40	2.90	1.90	1.90						
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l		2.00	2.40	1.20	2.60	3.20						
29	COD			10.40	2.10	6.40	4.30	9.20						
30	Dissolved Oxygen			7.60	5.50	8.50	6.30	6.20						
31	DO_SAT %	%		-	-	-	-	-						
33	Tota Coliform	MPN/1ml		-	-	-	-	-						
34	Fecal Coliform			-	-	-	-	-						
35	E. Coli			-	-	-	-	-						
TRACE & TOXIC														
33	Arsenic	(µg/L)		-	-	-	-	-						
34	Cadmium			-	-	-	-	-						
35	Chromium			-	-	-	-	-						
36	Copper			-	-	-	-	-						
37	Lead			-	-	-	-	-						
38	Nickel			-	-	-	-	-						
39	Zinc			-	-	-	-	-						
CHEMICAL INDICES														
40	Ca-Hardness	mg/l		65	69	40	61	80						
41	Tot-Hardness			101	113	207	166	206						
42	Na% (%)	%		45	17	24	33	29						
43	RSC (-)			1.90	0.00	0.00	1.40	0.50						
44	SAR (-)			1.80	0.40	0.90	1.30	1.20						
45	PESTICIDES													

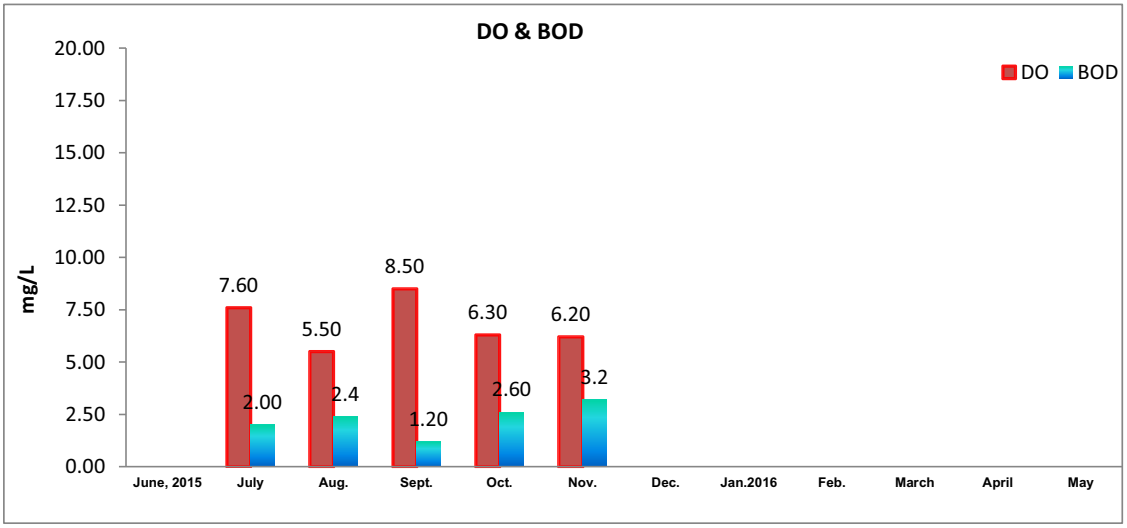
RIVER WATER SUMMARY - 2015-2016

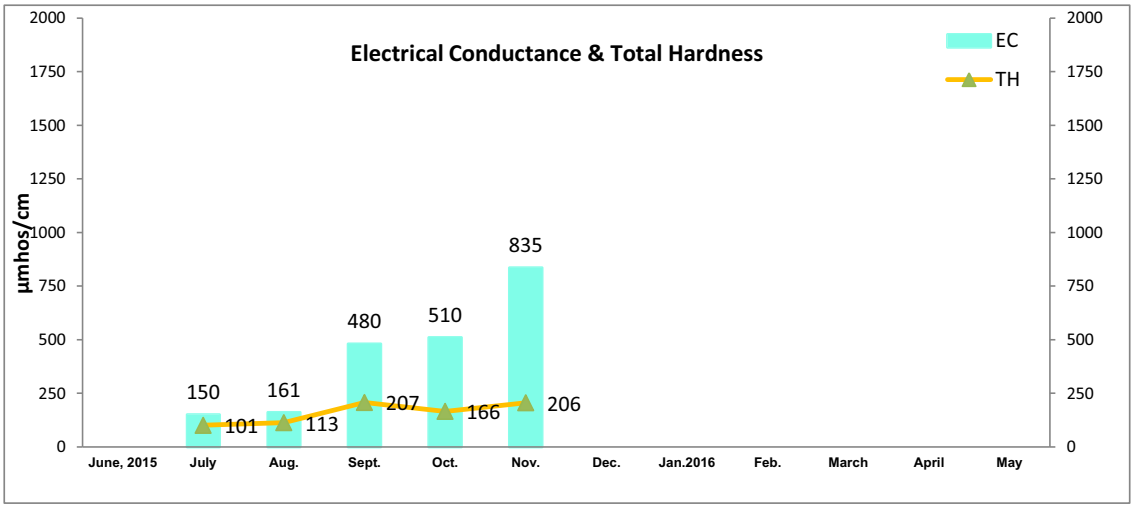
Station Name : PACHAULI **Division : UYD, New Delhi**

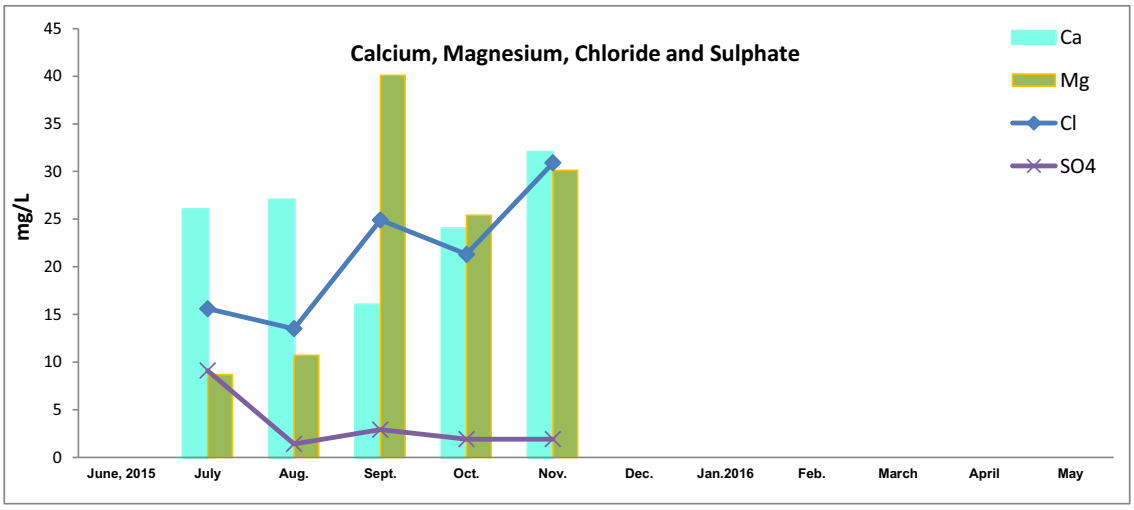
Local River : SIND

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	5	835	150	427	325	835	-
Odour_Code (-)							
pH_GEN (pH units)	5	8.40	7.80	8.10	8.05	8.30	-
Temperture	5	27.50	21.50	25.70	26.75	21.50	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	5	96.40	2.50	29.94	34.20	12.90	-
Alk-Tot (as $CaCO_3$)	5	234.00	109.00	193.60	185.00	228.00	-
Boron	5	1.87	0.02	0.49	0.59	0.08	-
Calcium	5	32.00	16.00	25.00	23.25	32.00	-
Chloride	5	30.90	13.50	21.24	18.83	30.90	-
Carbonate	5	116.10	3.00	36.06	41.18	15.60	-
Fluoride	5	1.25	0.00	0.42	0.52	0.00	-
Iron	5	0.40	0.00	0.08	0.10	0.00	-
Bicarbonate	5	246.00	49.00	162.80	142.00	246.00	-
Potassium	5	4.30	2.70	3.42	3.40	3.50	-
Magnesium	5	40.10	8.70	23.00	21.23	30.10	-
Sodium	5	40.50	10.60	31.94	29.98	39.80	-
Ammonia as N	5	0.20	0.00	0.06	0.07	0.03	-
NO_2+NO_3 as N	5	2.47	0.22	1.51	1.42	1.85	-
Nitrite as N	5	0.83	0.00	0.25	0.32	0.01	-
Nitrate as N	5	2.06	0.22	1.25	1.11	1.84	-
Tot. Phosphate as P	5	0.04	0.00	0.01	0.01	0.00	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	5	9.10	1.40	3.44	3.83	1.90	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	5	3.20	1.20	2.28	2.05	3.20	-
COD	5	10.40	2.10	6.48	5.80	9.20	-
Dissolved Oxygen	5	8.50	5.50	6.82	6.98	6.20	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
CHEMICAL INDICES							
Ca-Hardness	5	80	40	63	59	80	-
Tot-Hardness	5	207	101	159	147	206	-
Na%	5	45	17	30	30	29	-
RSC (-)	5	1.90	0.00	0.76	0.83	0.50	-
SAR (-)	5	1.80	0.40	1.12	1.10	1.20	-

Graphical Presentation of PACHAULI WQ Site







SEONDHA

General Particulars

Site	: ***SEONDHA***	Code	: **GYN00D8**
State	: **Madhya Pradesh**	District	: **Datia**
Division	: **L.Y. D., Agra**	Sub-Division	: **Sindh Betwa SD, Jhansi**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **-**
Sub-Sub-Trib.	: **-**	Local River	: **Sind**
Drainage Area	: **16701 Sq. Km.**	Bank	: **Right**
Latitude	: **26°00'00"N**	Longitude	: **78°56'00" E**
Zero of Gauge	: **128.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **18/09/1959**
Discharge:	: **18/09/1959**
Sediment	: **15/02/1962**
Water Quality	: **01/05/1972**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : SEONDHA **Division : LYD, Agra**

Local River : SIND **Sub-Division : Sindh Betwa , Jhansi**

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		01/06/15	01/07/15	01/08/15	01/09/15	01/10/15	02/11/15	01/12/15	01/01/16	01/02/16	01/03/16	01/04/16	
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)				L.Brown									
4	EC_GEN (µmho/cm)				307	352	343	410	443	379	351	366	329	
5	Odour_Code (-)				Odour free									
6	pH_GEN (pH units)				7.70	7.90	8.70	8.60	7.30	8.40	7.00	9.00	8.30	
7	Temperture	°C			27.0	27.0	27.0	25.0	21.0	14.0	17.0	19.0	24.0	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l			3.70	11.70	59.00	6.50	15.70	12.00	21.70	24.40	20.20	
10	Alk-Tot (as CaCO3)				109.0	127.0	159.0	120.0	181.0	154.0	139.0	134.0	127.0	
11	Boron				0.07	0.54	0.04	0.02	0.08	0.00	0.08	0.06	0.22	
12	Calcium				27.00	32.00	18.00	24.00	18.00	19.00	30.00	24.00	16.00	
13	Chloride				21.30	24.90	27.00	19.20	30.90	25.60	21.70	25.60	21.70	
14	Carbonate				4.50	14.10	71.10	7.80	18.90	14.40	26.10	29.40	24.30	
15	Fluoride				0.74	0.00	0.66	0.71	0.08	0.67	1.24	0.49	0.57	
16	Iron				0.03	0.12	0.03	0.16	0.02	0.01	0.15	0.16	0.16	
17	Bicarbonate				124.00	126.00	49.00	131.00	182.00	158.00	117.00	104.00	105.00	
18	Potassium				3.10	3.50	3.10	3.10	3.50	3.10	2.70	1.20	2.00	
19	Magnesium				8.70	9.70	10.80	5.80	22.40	20.40	13.60	13.60	17.50	
20	Sodium				25.50	37.50	38.20	44.60	47.20	39.30	32.70	39.30	34.50	
21	Ammonia as N				0.01	0.01	0.00	0.00	0.03	0.00	0.00	0.00	0.00	
22	NO2+NO3 as N				0.20	0.73	0.15	0.01	0.14	0.04			0.00	
23	Nitrite as N				0.000	0.720	0.000	0.010	0.140	0.000	0.000	0.000	0.000	
24	Nitrate as N				0.20	0.01	0.15	0.00	0.00	0.04	0.00	0.00	0.00	
25	Tot. Phosphate as P				0.030	0.025	0.000	0.000	0.000	0.000	0.002	0.002	0.000	
26	Silicate as SiO2				-	-	-	-	-	-	-	-	-	
27	Sulphate as SO4				1.90	5.30	1.90	2.90	6.00	8.60	18.70	5.80	1.40	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l			3.40	0.40	1.90	3.20	2.40	2.60	3.00	2.40	1.80	
29	COD				4.20	6.40	8.50	12.00	10.00	11.30	8.50	8.60	6.40	
30	Dissolved Oxygen				6.90	5.30	4.00	6.00	5.60	5.60	5.00	6.80	6.90	
31	DO_SAT %	%			-	-	-	-	-	-	-	-	-	
33	Tota Coliform	MPN/1ml			-	-	-	-	-	-	-	-	-	
34	Fecal Coliform				-	-	-	-	-	-	-	-	-	
35	E. Coli				-	-	-	-	-	-	-	-	-	
TRACE & TOXIC														
33	Arsenic	(µg/L)			-	-	-	-	-	-	-	-	4.53	
34	Cadmium				-	-	-	-	-	-	-	-	0.37	
35	Chromium				-	-	-	-	-	-	-	-	1.02	
36	Copper				-	-	-	-	-	-	-	-	0.88	
37	Lead				-	-	-	-	-	-	-	-	0.30	
38	Nickel				-	-	-	-	-	-	-	-	0.64	
39	Zinc				-	-	-	-	-	-	-	-	0.01	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l			69	81	45	60	44	48	76	60	40	
41	Tot-Hardness				105	121	90	84	137	133	133	117	113	
42	Na% (%)	%			34	40	47	52	42	39	34	42	40	
43	RSC (-)				0.10	0.10	1.40	0.70	0.90	0.40	0.10	0.40	0.30	
44	SAR (-)				1.10	1.50	1.80	2.10	1.80	1.50	1.20	1.60	1.40	
45	PESTICIDES				-	-	-	-	-	-	-	-	-	

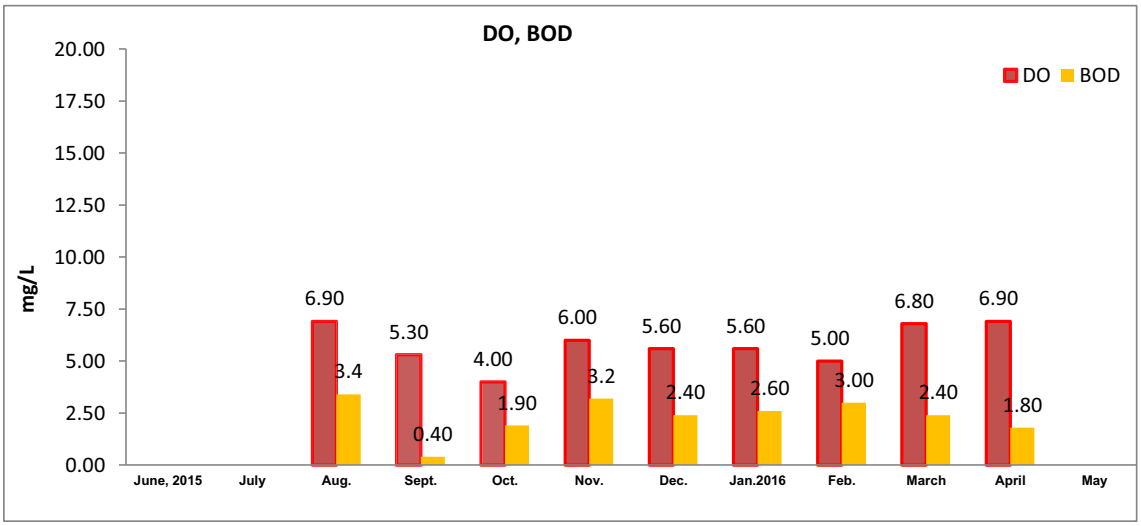
RIVER WATER SUMMARY - 2015-2016

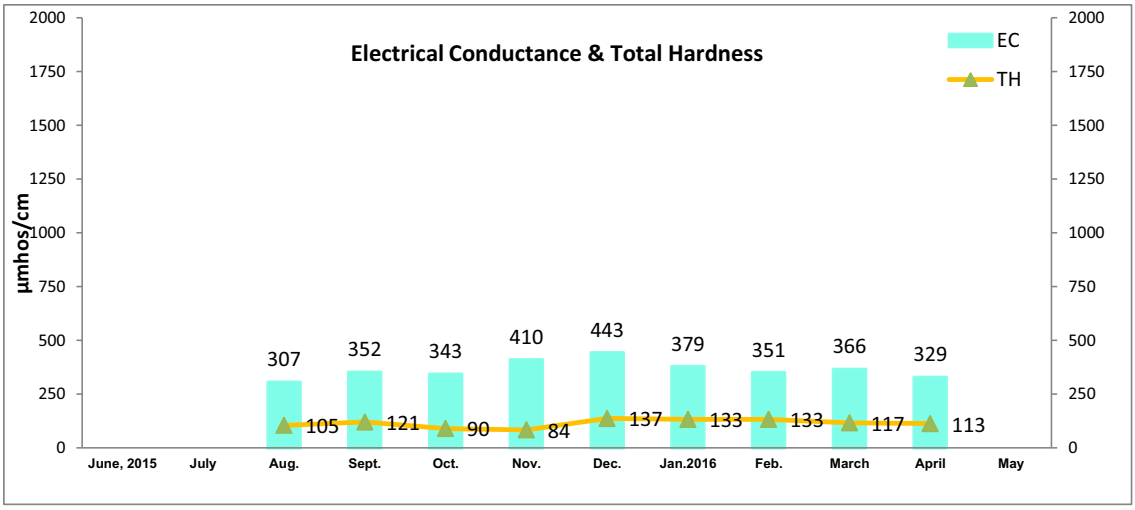
Station Name : SEONDHA **Division : UYD, New Delhi**

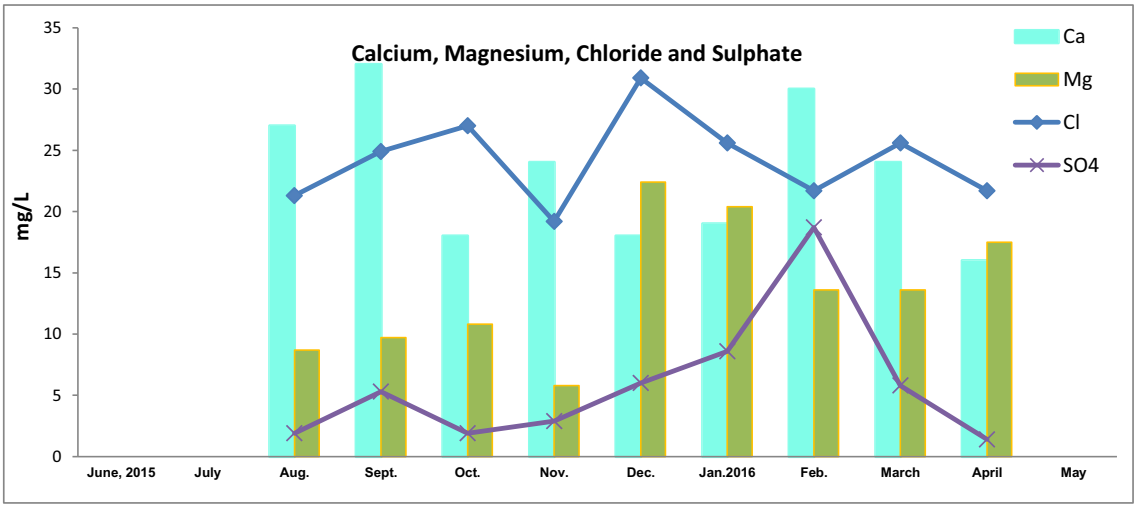
Local River : SIND

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	9	443	307	364	334	396	348
Odour_Code (-)							
pH_GEN (pH units)	9	9.00	7.00	8.10	8.10	7.83	8.65
Temperture	9	27.00	14.00	22.33	27.00	19.25	21.50
CHEMICAL							
Alk-Phen (as $CaCO_3$)	9	59.00	3.70	19.43	24.80	13.98	22.30
Alk-Tot (as $CaCO_3$)	9	181.00	109.00	138.89	131.67	148.50	130.50
Boron	9	0.54	0.00	0.12	0.22	0.05	0.14
Calcium	9	32.00	16.00	23.11	25.67	22.75	20.00
Chloride	9	30.90	19.20	24.21	24.40	24.35	23.65
Carbonate	9	71.10	4.50	23.40	29.90	16.80	26.85
Fluoride	9	1.24	0.00	0.57	0.47	0.68	0.53
Iron	9	0.16	0.01	0.09	0.06	0.08	0.16
Bicarbonate	9	182.00	49.00	121.78	99.67	147.00	104.50
Potassium	9	3.50	1.20	2.81	3.23	3.10	1.60
Magnesium	9	22.40	5.80	13.61	9.73	15.55	15.55
Sodium	9	47.20	25.50	37.64	33.73	40.95	36.90
Ammonia as N	9	0.03	0.00	0.01	0.01	0.01	0.00
NO_2+NO_3 as N	7	0.73	0.00	0.18	0.36	0.06	0.00
Nitrite as N	9	0.72	0.00	0.10	0.24	0.04	0.00
Nitrate as N	9	0.20	0.00	0.04	0.12	0.01	0.00
Tot. Phosphate as P	9	0.03	0.00	0.01	0.02	0.00	0.00
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	9	18.70	1.40	5.83	3.03	9.05	3.60
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	9	3.40	0.40	2.34	1.90	2.80	2.10
COD	9	12.00	4.20	8.43	6.37	10.45	7.50
Dissolved Oxygen	9	6.90	4.00	5.79	5.40	5.55	6.85
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli							
TRACE & TOXIC							
Arsenic	1	4.53	4.53	4.53	-	-	4.53
Cadmium	1	0.37	0.37	0.37	-	-	0.37
Chromium	1	1.02	1.02	1.02	-	-	1.02
Copper	1	0.88	0.88	0.88	-	-	0.88
Lead	1	0.30	0.30	0.30	-	-	0.30
Nickel	1	0.64	0.64	0.64	-	-	0.64
Zinc	1	0.01	0.01	0.01	-	-	0.01
CHEMICAL INDICES							
Ca-Hardness	9	81	40	58	65	57	50
Tot-Hardness	9	137	84	115	105	122	115
Na%	9	52	34	41	40	42	41
RSC (-)	9	1.40	0.10	0.49	0.53	0.53	0.35
SAR (-)	9	2.10	1.10	1.56	1.47	1.65	1.50

Graphical Presentation of SEONDHA WQ Site







BANDA

General Particulars

Site	: **BANDA**	Code	: **GYH00G3**
State	: **Uttar Pradesh**	District	: **Banda**
Division	: **L.Y. D., Agra**	Sub-Division	: **LYSD-II, Agra**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Ken**
Sub-Sub-Trib.	: **-**	Local River	: **Ken**
Drainage Area	: **27616 Sq. Km.**	Bank	: **Left**
Latitude	: **25°29'00"N**	Longitude	: **80°18'00" E**
Zero of Gauge	: **89.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **05/04/1959**
Discharge:	: **05/04/1959**
Sediment	: **01/01/1961**
Water Quality	: **01/01/1972**
Wireless	: **21/06/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : BANDA **Division : LYD, Agra**

Local River : KEN

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection				01/08/15			02/11/15			01/02/16			02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)				Clear			Clear			L.Brown			L.Brown
4	EC_GEN (µmho/cm)				141			289			375			607
5	Odour_Code (-)				Odour free			Odour free						
6	pH_GEN (pH units)				8.00			8.30			6.90			8.90
7	Temperture	°C			27.0			26.5			8.5			25.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l			0.00			6.50			23.20			14.90
10	Alk-Tot (as CaCO3)				88.0			120.0			144.0			211.0
11	Boron				0.04			0.00			0.10			0.65
12	Calcium				27.00			22.00			24.00			46.00
13	Chloride				13.50			19.20			21.70			45.10
14	Carbonate				0.00			7.80			27.90			18.00
15	Fluoride				0.08			0.08			0.97			0.78
16	Iron				0.40			0.01			0.01		0.11	0.10
17	Bicarbonate				107.00			131.00			118.00			221.00
18	Potassium				2.70			2.70			2.30			7.00
19	Magnesium				5.80			11.70			20.40			8.70
20	Sodium				8.50			23.70			35.40			63.90
21	Ammonia as N				0.00			0.98			2.11			4.45
22	NO2+NO3 as N				0.31			0.00						
23	Nitrite as N				0.03			0.00			0.03			0.12
24	Nitrate as N				0.28			0.00			0.00			0.00
25	Tot. Phosphate as P				0.03			0.06			0.20			8.27
26	Silicate as SiO2				-			-			-			-
27	Sulphate as SO4				9.60			2.90			23.50			22.00
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l			3.80			2.80			3.00			2.60
29	COD				6.20			8.50			31.90			48.90
30	Dissolved Oxygen				6.50			7.00			5.70			7.90
31	DO_SAT %	%			-			-			-			-
33	Tota Coliform	MPN/1ml			-			-			-			-
34	Fecal Coliform				-			-			-			-
35	E. Coli				-			-			-			-
TRACE & TOXIC														
33	Arsenic	(µg/L)			-			-			-		4.52	-
34	Cadmium				-			-			-		1.18	-
35	Chromium				-			-			-		0.74	-
36	Copper				-			-			-		1.02	-
37	Lead				-			-			-		0.65	-
38	Nickel				-			-			-		0.38	-
39	Zinc				-			-			-		0.04	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l			69			56			60			116
41	Tot-Hardness				93			105			145			152
42	Na% (%)	%			16			32			34			46
43	RSC (-)				0.00			0.30			0.00			1.20
44	SAR (-)				0.40			1.00			1.30			2.30
45	PESTICIDES				-			-			-			-

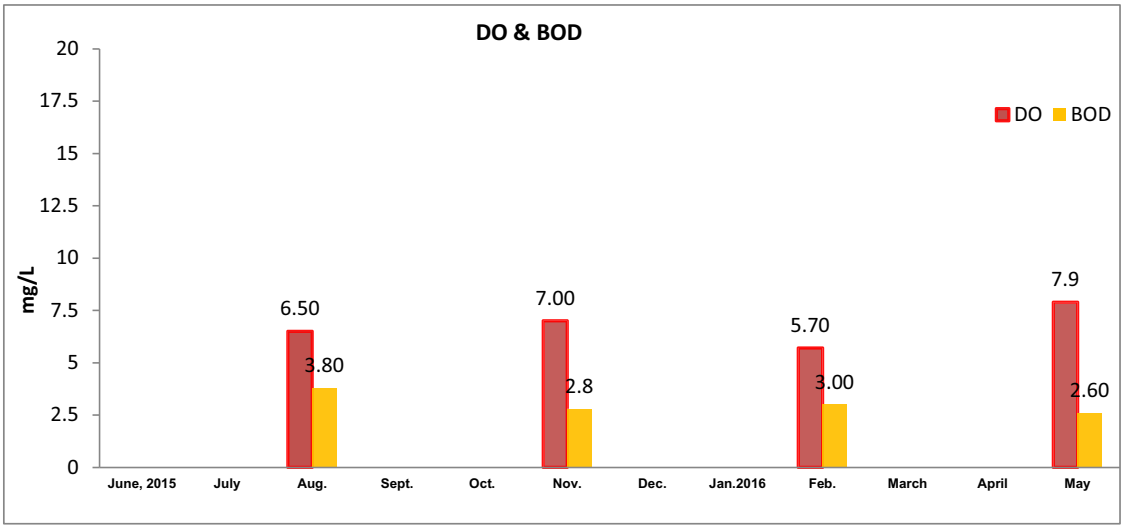
RIVER WATER SUMMARY - 2015-2016

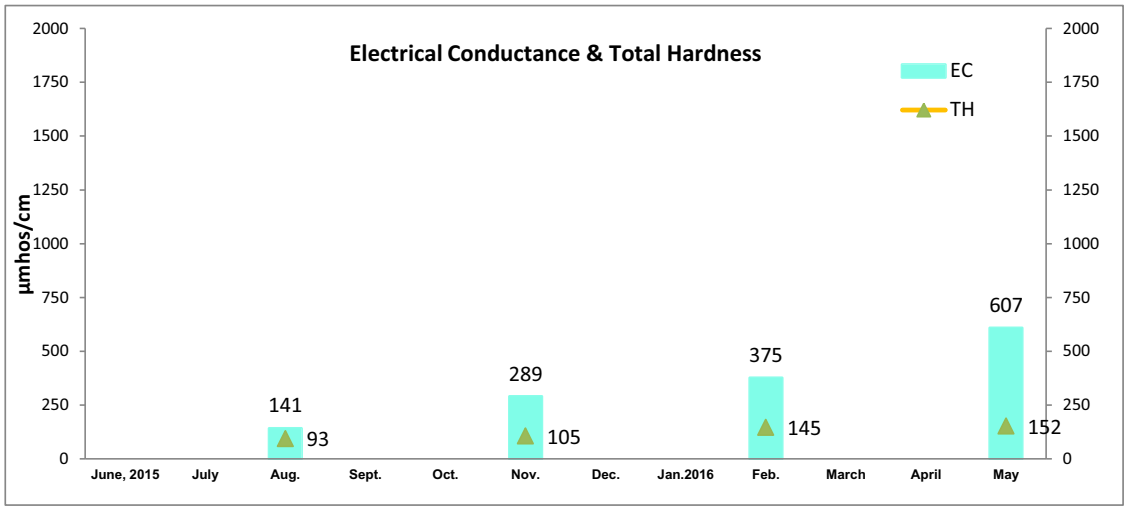
Station Name : BANDA **Division : UYD, New Delhi**

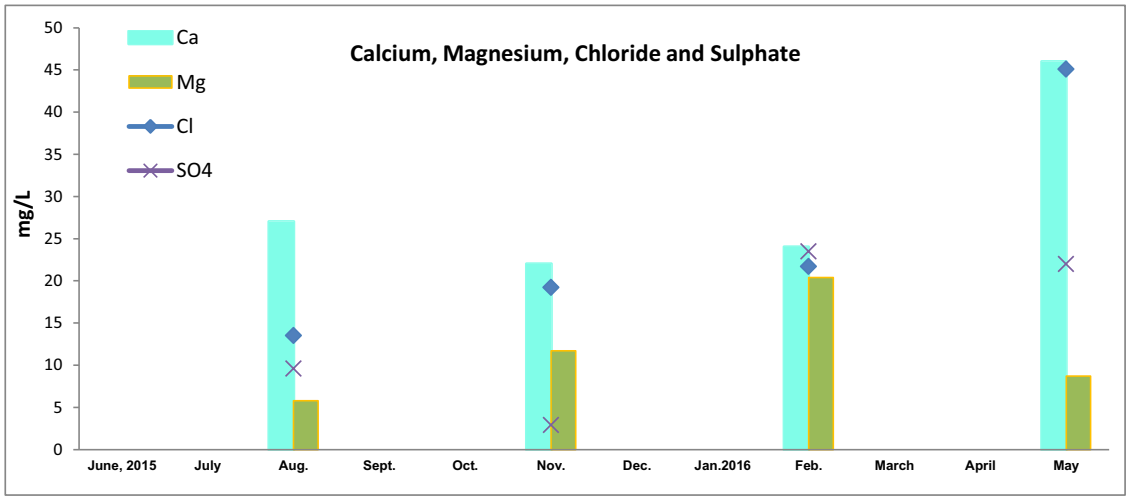
Local River : KEN

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	4	607	141	353	141	332	607
Odour_Code (-)							
pH_GEN (pH units)	4	8.90	6.90	8.03	8.00	7.60	8.90
Temperture	4	27.0	8.5	21.75	27.0	17.5	25.0
CHEMICAL							
Alk-Phen (as $CaCO_3$)	4	23.20	0.00	11.15	0.00	14.85	14.90
Alk-Tot (as $CaCO_3$)	4	211.00	88.00	140.75	88.00	132.00	211.00
Boron	4	0.65	0.00	0.20	0.04	0.05	0.65
Calcium	4	46.00	22.00	29.75	27.00	23.00	46.00
Chloride	4	45.10	13.50	24.88	13.50	20.45	45.10
Carbonate	4	27.90	0.00	13.43	0.00	17.85	18.00
Fluoride	4	0.97	0.08	0.48	0.08	0.53	0.78
Iron	5	0.40	0.01	0.13	0.40	0.01	0.10
Bicarbonate	4	221.00	107.00	144.25	107.00	124.50	221.00
Potassium	4	7.00	2.30	3.68	2.70	2.50	7.00
Magnesium	4	20.40	5.80	11.65	5.80	16.05	8.70
Sodium	4	63.90	8.50	32.88	8.50	29.55	63.90
Ammonia as N	4	4.45	0.00	1.89	0.00	1.55	4.45
NO_2+NO_3 as N	2	0.31	0.00	0.16	0.31	0.00	-
Nitrite as N	4	0.12	0.00	0.05	0.03	0.02	0.12
Nitrate as N	4	0.28	0.00	0.07	0.28	0.00	0.00
Tot. Phosphate as P	4	8.27	0.03	2.14	0.03	0.13	8.27
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	4	23.50	2.90	14.50	9.60	13.20	22.00
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	4	3.80	2.60	3.05	3.80	2.90	2.60
COD	4	48.90	6.20	23.88	6.20	20.20	48.90
Dissolved Oxygen	4	7.90	5.70	6.78	6.50	6.35	7.90
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	4.52	4.52	4.52	-	-	4.52
Cadmium	1	1.18	1.18	1.18	-	-	-
Chromium	1	0.74	0.74	0.74	-	-	-
Copper	1	1.02	1.02	1.02	-	-	-
Lead	1	0.65	0.65	0.65	-	-	-
Nickel	1	0.38	0.38	0.38	-	-	-
Zinc	1	0.04	0.04	0.04	-	-	-
CHEMICAL INDICES							
Ca-Hardness	4	116	56	75	69	58	116
Tot-Hardness	4	152	93	124	93	125	152
Na%	4	46	16	32	16	33	46
RSC (-)	4	1.20	0.00	0.38	0.00	0.15	1.20
SAR (-)	4	2.30	0.40	1.25	0.40	1.15	2.30

Graphical Presentation of BANDA WQ Site







MADLA

General Particulars

Site	: **MADLA**	Code	: **GYHOOQ3**
State	: **Madhya Pradesh**	District	: **Panna**
Division	: **L.Y. D., Agra**	Sub-Division	: **-**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Ken**
Sub-Sub-Trib.	: **-**	Local River	: **Ken**
Drainage Area	: **22069 Sq. Km.**	Bank	: **Left**
Latitude	: **24°44'00"N**	Longitude	: **80°00'24" E**
Zero of Gauge	: **-**		

Water Quality Datasheet for the Period : 2015-2016

Station Name : MADLA **Division : LYD, Agra**

Local River : Ken

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		02/06/14	01/07/14	01/08/14	01/09/14	01/10/14	01/11/14	01/12/14	01/01/15	02/02/15	02/03/15	01/04/15	01/05/15
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)		Clear	Clear	L.Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
4	EC_GEN (µmho/cm)		304	285	93	136	138	154	170	150	144	138	143	251
5	Odour_Code (-)		Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free	Odour free
6	pH_GEN (pH units)		8.30	8.20	7.30	8.10	8.30	8.40	7.30	7.90	7.20	9.80	8.60	8.80
7	Temperture	°C	31.5	30.0	30.0	30.0	30.0	28.0	26.0	16.0	18.0	20.0	26.0	32.0
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	16.70	17.40	3.70	4.00	56.30	13.20	8.00	14.90	22.20	10.50	16.40	14.90
10	Alk-Tot (as CaCO3)		103.0	99.0	66.0	85.0	153.0	94.0	109.0	85.0	73.0	79.0	71.0	87.0
11	Boron		0.07	0.24	0.00	0.54	0.00	0.01	0.01	0.04	0.04	0.00	0.00	0.02
12	Calcium		25.00	21.00	18.00	35.00	24.00	21.00	24.00	26.00	19.00	18.00	19.00	24.00
13	Chloride		17.40	17.40	9.60	9.60	9.60	19.20	9.60	13.80	11.70	9.90	9.90	11.70
14	Carbonate		20.10	21.00	4.50	4.80	67.80	15.90	9.60	18.00	26.70	12.60	19.80	18.00
15	Fluoride		0.27	0.44	0.12	0.00	0.20	0.00	0.01	0.00	0.64	0.10	0.70	0.40
16	Iron		0.04	0.07	0.06	0.01	0.03	0.09	0.06	0.08	0.03	0.06	0.07	0.73
17	Bicarbonate		85.00	78.00	71.00	93.00	49.00	82.00	113.00	67.00	35.00	70.00	46.00	70.00
18	Potassium		2.70	3.10	2.30	2.30	2.30	2.30	2.30	2.30	1.60	1.60	2.00	2.30
19	Magnesium		16.00	14.60	5.80	3.90	5.80	10.70	13.60	8.70	8.70	11.70	10.70	9.70
20	Sodium		18.40	17.50	4.80	9.20	8.10	10.40	11.70	12.70	12.20	13.30	14.50	15.20
21	Ammonia as N		0.02	0.00	0.00	0.09	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00
22	NO2+NO3 as N		0.00	0.00	0.36	1.16	0.17	0.00	0.06				0.08	
23	Nitrite as N		0.000	0.000	0.020	0.025	0.001	0.000	0.200	0.000	0.000	0.000	0.000	0.000
24	Nitrate as N		0.00	0.00	0.35	0.27	0.15	0.00	0.00	0.06	0.00	0.00	0.08	0.00
25	Tot. Phosphate as P		0.06	0.04	0.09	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00
26	Silicate as SiO2		-	-	-	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		22.60	32.20	12.00	9.60	4.80	10.10	15.00	21.60	23.00	18.70	18.20	15.00
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	0.60	3.60	5.80	3.60	3.20	2.40	1.20	0.80	2.80	2.40	2.80	2.50
29	COD		6.20	8.30	12.10	6.40	8.50	10.60	2.10	14.90	8.50	10.60	6.40	6.40
30	Dissolved Oxygen		6.40	6.90	8.10	8.20	6.80	7.60	8.36	8.00	8.00	6.00	6.20	7.60
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	-	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	-	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	-	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	-	-	-	-	-	-	-	-	3.62	-
34	Cadmium		-	-	-	-	-	-	-	-	-	-	0.21	-
35	Chromium		-	-	-	-	-	-	-	-	-	-	0.50	-
36	Copper		-	-	-	-	-	-	-	-	-	-	0.66	-
37	Lead		-	-	-	-	-	-	-	-	-	-	0.10	-
38	Nickel		-	-	-	-	-	-	-	-	-	-	0.23	-
39	Zinc		-	-	-	-	-	-	-	-	-	-	0.01	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	62	52	44	89	61	52	60	64	48	44	48	60
41	Tot-Hardness		129	113	68	105	85	97	117	100	84	93	93	101
42	Na% (%)	%	23	25	13	16	17	19	18	21	24	24	25	24
43	RSC (-)		0.00	0.00	0.00	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
44	SAR (-)		0.70	0.70	0.30	0.40	0.40	0.50	0.50	0.60	0.60	0.60	0.70	0.70
45	PESTICIDES		-	-	-	-	-	-	-	-	-	-	-	-

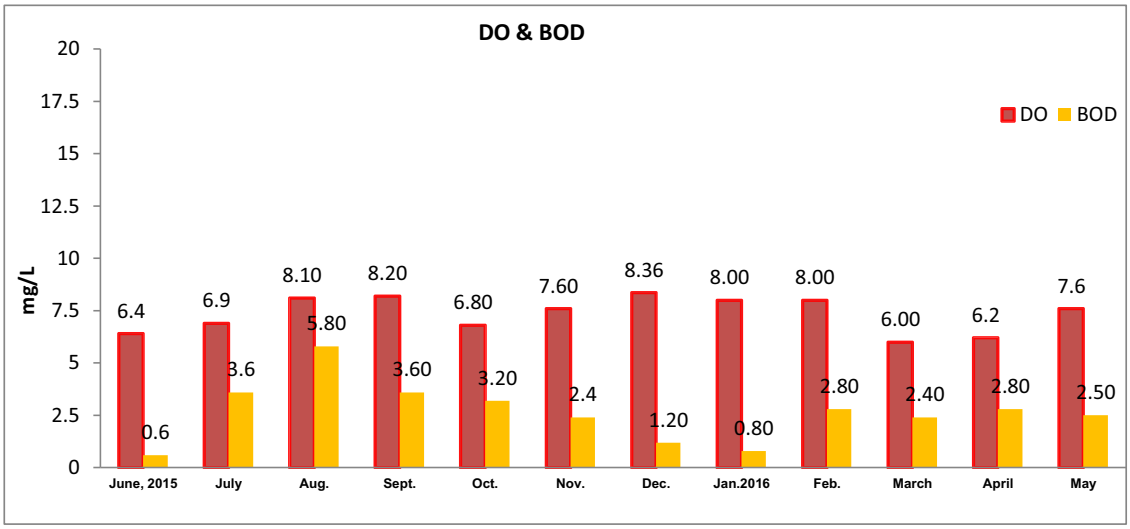
RIVER WATER SUMMARY - 2015-2016

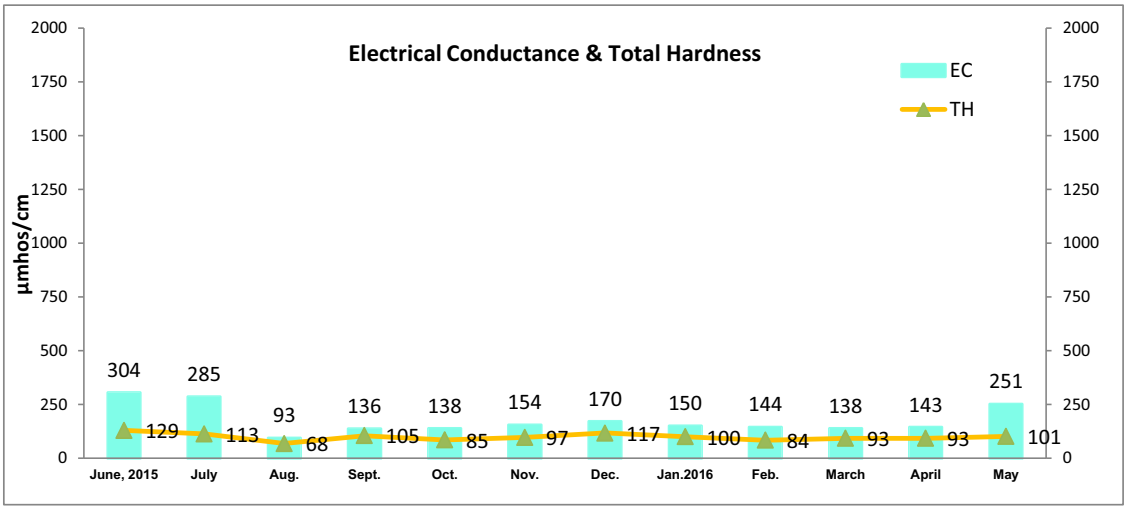
Station Name : MADLA **Division : UYD, New Delhi**

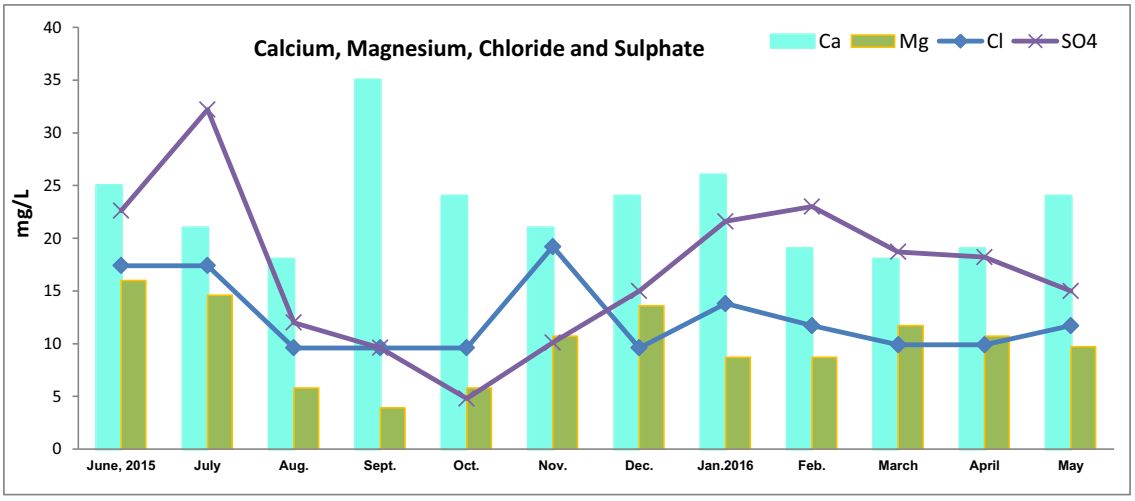
Local River : Ken

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	12	304	93	176	191.20	154.50	177
Odour_Code (-)							
pH_GEN (pH units)	12	9.80	7.20	8.2	8.04	7.70	9.07
Temperture	12	32.00	16.00	26.5	30.30	22.00	26.00
CHEMICAL							
Alk-Phen (as $CaCO_3$)	12	56.30	3.70	16.5	19.62	14.58	13.93
Alk-Tot (as $CaCO_3$)	12	153.00	66.00	92.0	101.20	90.25	79.00
Boron	12	0.54	0.00	0.1	0.17	0.02	0.01
Calcium	12	35.00	18.00	22.8	24.60	22.50	20.33
Chloride	12	19.20	9.60	12.5	12.72	13.58	10.50
Carbonate	12	67.80	4.50	19.9	23.64	17.55	16.80
Fluoride	12	0.70	0.00	0.2	0.21	0.16	0.40
Iron	12	0.73	0.01	0.1	0.04	0.06	0.29
Bicarbonate	12	113.00	35.00	71.6	75.20	74.25	62.00
Potassium	12	3.10	1.60	2.3	2.54	2.13	1.97
Magnesium	12	16.00	3.90	10.0	9.22	10.43	10.70
Sodium	12	18.40	4.80	12.3	11.60	11.75	14.33
Ammonia as N	12	0.09	0.00	0.0	0.02	0.02	0.00
NO_2+NO_3 as N	8	1.16	0.00	0.2	0.34	0.03	0.08
Nitrite as N	12	0.20	0.00	0.0	0.01	0.05	0.00
Nitrate as N	12	0.35	0.00	0.1	0.15	0.02	0.03
Tot. Phosphate as P	12	0.09	0.00	0.0	0.04	0.00	0.00
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	12	32.20	4.80	16.9	16.24	17.43	17.30
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	12	5.80	0.60	2.6	3.36	1.80	2.57
COD	12	14.90	2.10	8.4	8.30	9.03	7.80
Dissolved Oxygen	12	8.36	6.00	7.3	7.28	7.99	6.60
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	3.62	3.62	3.6	-	-	3.62
Cadmium	1	0.21	0.21	0.2	-	-	0.21
Chromium	1	0.50	0.50	0.5	-	-	0.50
Copper	1	0.66	0.66	0.7	-	-	0.66
Lead	1	0.10	0.10	0.1	-	-	0.10
Nickel	1	0.23	0.23	0.2	-	-	0.23
Zinc	1	0.01	0.01	0.0	-	-	0.01
CHEMICAL INDICES							-
Ca-Hardness	12	89	44	57	61.60	56.00	51
Tot-Hardness	12	129	68	99	100.00	99.50	96
Na%	12	25	13	21	18.80	20.50	24
RSC (-)	12	1.40	0.00	0.12	0.28	0.00	0.00
SAR (-)	12	0.70	0.30	0.56	0.50	0.55	0.67

Graphical Presentation of MADLA WQ Site







GARRAULI

General Particulars

Site	: **GARRAULI**	Code	: **GYK20G7**
State	: **Madhya Pradesh**	District	: **Chhatarpur**
Division	: **L.Y. D., Agra**	Sub-Division	: **Sindh Betwa SD, Jhansi**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Betwa**
Sub-Sub-Trib.	: **Dhasan**	Local River	: **Dhasan**
Drainage Area	: **840 Sq. Km.**	Bank	: **Left**
Latitude	: **25°40'00"N**	Longitude	: **79°20'00" E**
Zero of Gauge	: **195.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **01/05/1982**
Discharge:	: **01/07/1982**
Sediment	: **01/11/1983**
Water Quality	: **01/03/1983**
Wireless	: **30/06/1983**

Water Quality Datasheet for the Period : 2015-2016

Station Name : GARRAULI **Division : LYD, Agra**

Local River : DHASAN

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection				01/08/15			02/11/15						
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)				L.Brown			Clear						
4	EC_GEN (µmho/cm)				143			304						
5	Odour_Code (-)				Odour free			Odour free						
6	pH_GEN (pH units)				7.70			8.20						
7	Temperture	°C			25.0			24.5						
CHEMICAL														
9	Alk-Phen (as $CaCO_3$)	mg/l			3.00			79.70						
10	Alk-Tot (as $CaCO_3$)				88.0			272.0						
11	Boron				0.07			0.04						
12	Calcium				29.00			16.00						
13	Chloride				15.30			13.50						
14	Carbonate				3.60			96.00						
15	Fluoride				0.30			0.19						
16	Iron				0.10			0.00						
17	Bicarbonate				99.00			137.00						
18	Potassium				2.70			3.50						
19	Magnesium				8.70			19.40						
20	Sodium				7.10			17.00						
21	Ammonia as N				0.04			0.03						
22	NO_2+NO_3 as N				0.73			0.17						
23	Nitrite as N				0.000			0.000						
24	Nitrate as N				0.73			0.17						
25	Tot. Phosphate as P				0.01			0.23						
26	Silicate as SiO_2				-			-						
27	Sulphate as SO_4				2.40			11.00						
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l			1.20			1.40						
29	COD				4.20			12.80						
30	Dissolved Oxygen				9.4			10.1						
31	DO_SAT %	%			-			-						
33	Tota Coliform	MPN/1ml			-			-						
34	Fecal Coliform				-			-						
35	E. Coli				-			-						
TRACE & TOXIC														
33	Arsenic	(µg/L)			-			-						
34	Cadmium				-			-						
35	Chromium				-			-						
36	Copper				-			-						
37	Lead				-			-						
38	Nickel				-			-						
39	Zinc				-			-						
CHEMICAL INDICES														
40	Ca-Hardness	mg/l			73			40						
41	Tot-Hardness				109			121						
42	Na%	%			12			23						
43	RSC (-)				0.00			3.00						
44	SAR (-)				0.30			0.70						
45	PESTICIDES				-			-						

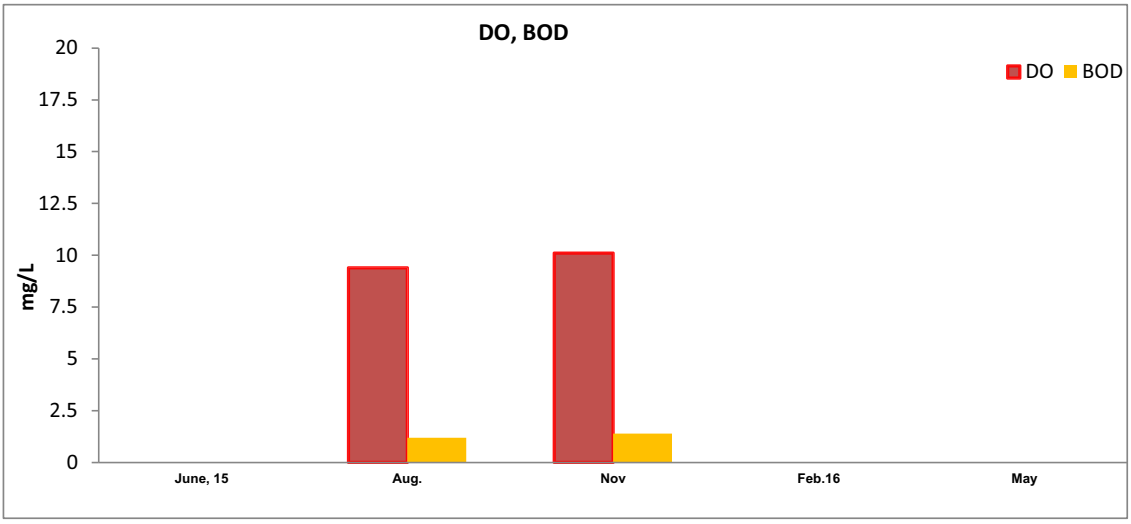
RIVER WATER SUMMARY - 2015-2016

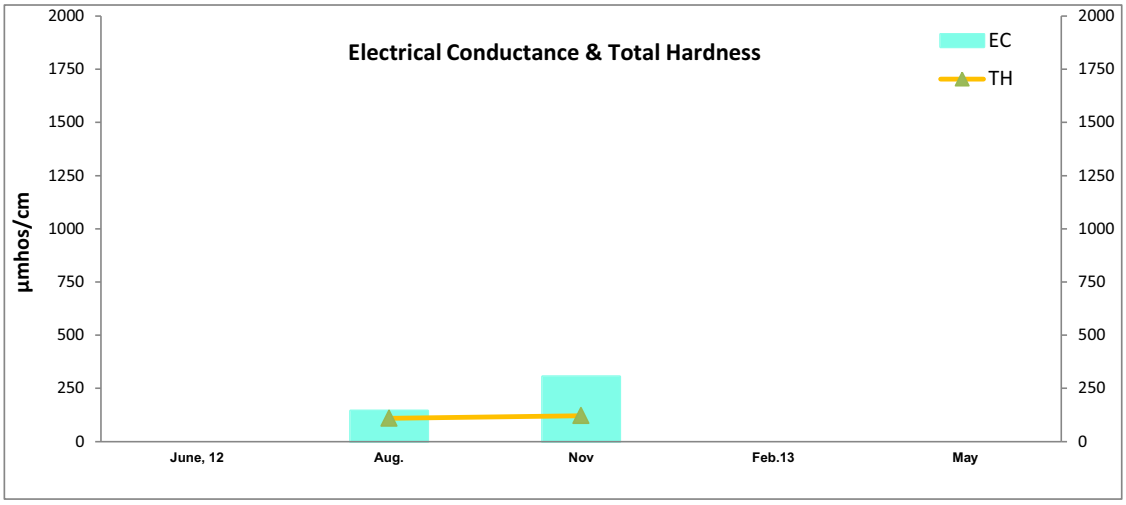
Station Name : GARRAULI **Division : UYD, New Delhi**

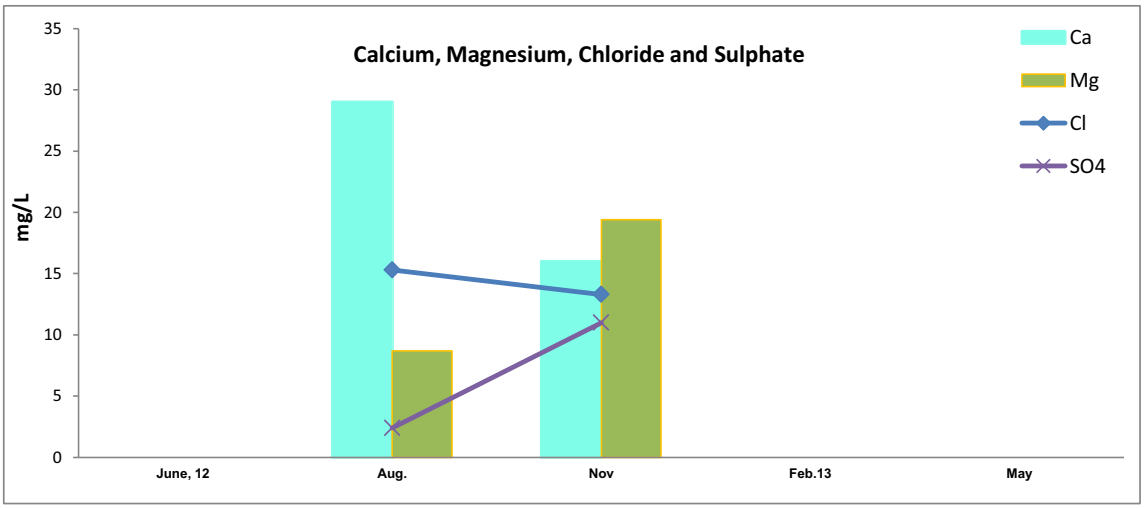
Local River : DHASAN

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	2	304	143	224	143	304	-
Odour_Code (-)		-	-	-	-	-	-
pH_GEN (pH units)	2	8.20	7.70	7.95	7.70	8.20	-
Temperture	2	25.0	24.5	24.8	25.0	24.5	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	2	79.70	3.00	41.35	3.00	79.70	-
Alk-Tot (as $CaCO_3$)	2	272.00	88.00	180.00	88.00	272.00	-
Boron	2	0.07	0.04	0.06	0.07	0.04	-
Calcium	2	29.00	16.00	22.50	29.00	16.00	-
Chloride	2	15.30	13.50	14.40	15.30	13.50	-
Carbonate	2	96.00	3.60	49.80	3.60	96.00	-
Fluoride	2	0.30	0.19	0.25	0.30	0.19	-
Iron	2	0.10	0.00	0.05	0.10	0.00	-
Bicarbonate	2	137.00	99.00	118.00	99.00	137.00	-
Potassium	2	3.50	2.70	3.10	2.70	3.50	-
Magnesium	2	19.40	8.70	14.05	8.70	19.40	-
Sodium	2	17.00	7.10	12.05	7.10	17.00	-
Ammonia as N	2	0.04	0.03	0.04	0.04	0.03	-
NO_2+NO_3 as N	2	0.73	0.17	0.45	0.73	0.17	-
Nitrite as N	2	0.00	0.00	0.00	0.00	0.00	-
Nitrate as N	2	0.73	0.17	0.45	0.73	0.17	-
Tot. Phosphate as P	2	0.23	0.01	0.12	0.01	0.23	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	2	11.00	2.40	6.70	2.40	11.00	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	2	1.40	1.20	1.30	1.20	1.40	-
COD	2	12.80	4.20	8.50	4.20	12.80	-
Dissolved Oxygen	2	10.10	9.40	9.75	9.40	10.10	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	-	-	-	-	-	-	-
Cadmium	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-
Copper	-	-	-	-	-	-	-
Lead	-	-	-	-	-	-	-
Nickel	-	-	-	-	-	-	-
Zinc	-	-	-	-	-	-	-
CHEMICAL INDICES							
Ca-Hardness	2	73	40	57	73	40	-
Tot-Hardness	2	121	109	115	109	121	-
Na%	2	23	12	18	12	23	-
RSC (-)	2	3.00	0.00	1.50	0.00	3.00	-
SAR (-)	2	0.70	0.30	0.50	0.30	0.70	-

Graphical Presentation of GARROLI WQ Site







KORA

General Particulars

Site	: **KORA**	Code	: **GYI00A3**
State	: **Uttar Pradesh**	District	: **Fatehpur**
Division	: **L. Yamuna Div. Agra**	Sub-Division	: **LY SD- III, Hamirpur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Rind**
Sub-Sub-Trib.	: **-**	Local River	: **Rind**
Drainage Area	: **4245 Sq. Km.**	Bank	: **Left**
Latitude	: **26°07'00"N**	Longitude	: **80°25'00" E**
Zero of Gauge	: **102.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **18/07/1970**
Discharge:	: **18/07/1970**
Sediment	: **-**
Water Quality	: **01/01/1981**

Water Quality Datasheet for the Period : 2015-2016

Station Name : KORA **Division : LYD, Agra**

Local River : RIND

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection				01/08/15			02/11/15			01/02/16			02/05/16
PHYSICAL														
1	Q (cumec)													
2	Weather													
3	Colour_Cod (-)				L. Brown			Clear			Clear			Clear
4	EC_GEN (µmho/cm)				367			280			167			396
5	Odour_Code (-)				Odour free			Odour free			Odour free			Odour free
6	pH_GEN (pH units)				7.80			8.60			7.30			7.30
7	Temperture	°C			31.5			25.0			15.5			26.5
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l			8.50			62.00			24.20			22.90
10	Alk-Tot (as CaCO3)				146.0			199.0			87.0			144.0
11	Boron				0.02			0.01			0.04			0.65
12	Calcium				31.00			19.00			21.00			24.00
13	Chloride				15.30			23.10			9.90			21.70
14	Carbonate				10.20			74.70			29.10			27.60
15	Fluoride				1.03			0.00			0.91			0.63
16	Iron				0.10			0.20			0.10		0.136	0.30
17	Bicarbonate				157.00			91.00			47.00			120.00
18	Potassium				5.50			4.70			4.30			14.50
19	Magnesium				6.80			13.60			17.50			16.50
20	Sodium				36.10			19.30			15.60			25.80
21	Ammonia as N				0.08			0.04			0.00			0.12
22	NO2+NO3 as N				1.47									0.03
23	Nitrite as N				0.020			0.000			0.000			0.010
24	Nitrate as N				0.50			0.02			0.00			0.01
25	Tot. Phosphate as P				0.09			0.06			0.01			0.01
26	Silicate as SiO2				-			-			-			-
27	Sulphate as SO4				4.00			2.00			4.00			3.00
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l			3.20			2.80			1.40			1.50
29	COD				8.30			8.50			6.40			29.80
30	Dissolved Oxygen				7.50			7.50			7.50			6.80
31	DO_SAT %	%			-			-			-			-
33	Tota Coliform	MPN/1ml			-			-			-			-
34	Fecal Coliform				-			-			-			-
35	E. Coli				-			-			-			-
TRACE & TOXIC														
33	Arsenic	(µg/L)			-			-			-		3.28	-
34	Cadmium				-			-			-		0.28	-
35	Chromium				-			-			-		8.91	-
36	Copper				-			-			-		0.60	-
37	Lead				-			-			-		0.32	-
38	Nickel				-			-			-		0.99	-
39	Zinc				-			-			-		0.02	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l			77			48			52			60
41	Tot-Hardness				105			105			125			129
42	Na% (%)	%			41			28			21			28
43	RSC (-)				0.80			1.90			0.00			0.30
44	SAR (-)				1.50			0.80			0.60			1.00
45	PESTICIDES				-			-			-			-

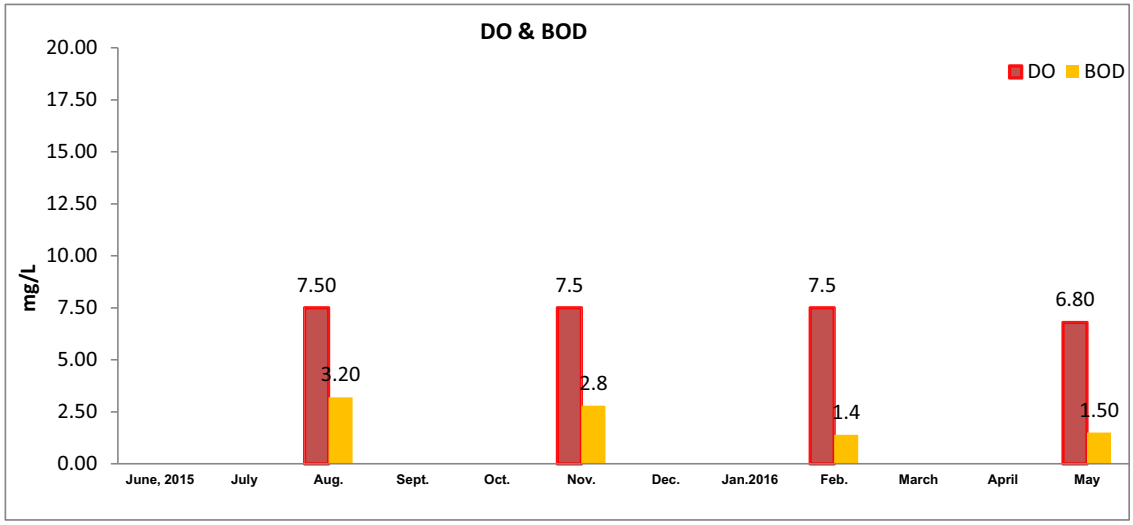
RIVER WATER SUMMARY - 2015-2016

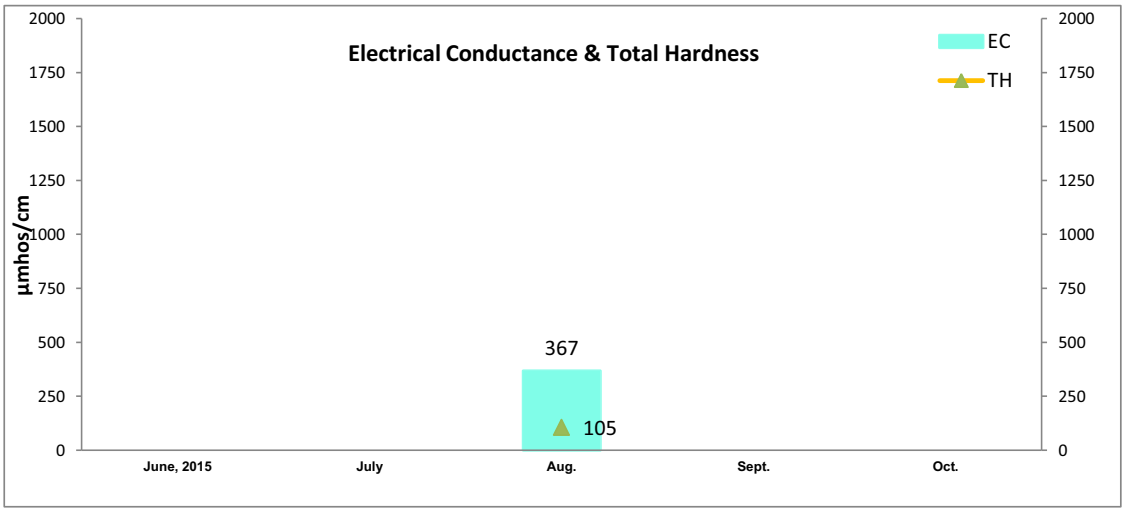
Station Name : KORA **Division : UYD, New Delhi**

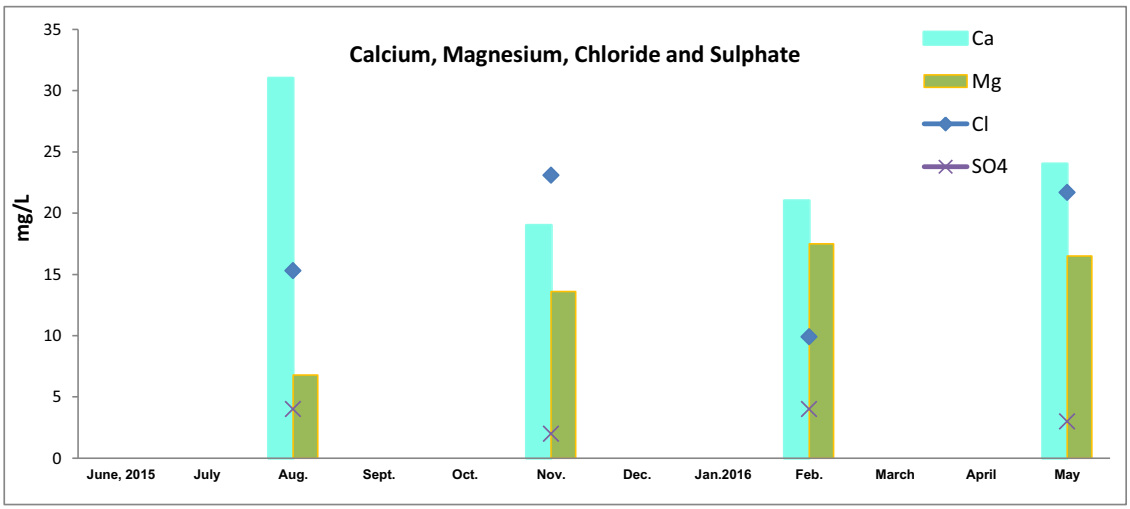
Local River : RIND

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather							
Colour_Cod (-)							
EC_GEN (µmho/cm)	4	396	167	303	367	224	396
Odour_Code (-)							
pH_GEN (pH units)	4	8.60	7.30	7.75	7.80	7.95	7.30
Temperture	4	31.5	15.5	24.63	31.5	20.3	26.5
CHEMICAL							
Alk-Phen (as $CaCO_3$)	4	62.00	8.50	29.40	8.50	43.10	22.90
Alk-Tot (as $CaCO_3$)	4	199.00	87.00	144.00	146.00	143.00	144.00
Boron	4	0.65	0.01	0.18	0.02	0.03	0.65
Calcium	4	31.00	19.00	23.75	31.00	20.00	24.00
Chloride	4	23.10	9.90	17.50	15.30	16.50	21.70
Carbonate	4	74.70	10.20	35.40	10.20	51.90	27.60
Fluoride	4	1.03	0.00	0.64	1.03	0.46	0.63
Iron	5	0.30	0.10	0.17	0.10	0.15	0.22
Bicarbonate	4	157.00	47.00	103.75	157.00	69.00	120.00
Potassium	4	14.50	4.30	7.25	5.50	4.50	14.50
Magnesium	4	17.50	6.80	13.60	6.80	15.55	16.50
Sodium	4	36.10	15.60	24.20	36.10	17.45	25.80
Ammonia as N	4	0.12	0.00	0.06	0.08	0.02	0.12
NO_2+NO_3 as N	2	1.47	0.03	0.75	1.47	-	0.03
Nitrite as N	4	0.02	0.00	0.01	0.02	0.00	0.01
Nitrate as N	4	0.50	0.00	0.13	0.50	0.01	0.01
Tot. Phosphate as P	4	0.09	0.01	0.04	0.09	0.03	0.01
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	4	4.00	2.00	3.25	4.00	3.00	3.00
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	4	3.20	1.40	2.23	3.20	2.10	1.50
COD	4	29.80	6.40	13.25	8.30	7.45	29.80
Dissolved Oxygen	4	7.50	6.80	7.33	7.50	7.50	6.80
DO_SAT %							
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	3.28	3.28	3.28	-	-	3.28
Cadmium	1	0.28	0.28	0.28	-	-	0.28
Chromium	1	8.91	8.91	8.91	-	-	8.91
Copper	1	0.60	0.60	0.60	-	-	0.60
Lead	1	0.32	0.32	0.32	-	-	0.32
Nickel	1	0.99	0.99	0.99	-	-	0.99
Zinc	1	0.02	0.02	0.02	-	-	0.02
CHEMICAL INDICES							
Ca-Hardness	4	77	48	59	77	50	60
Tot-Hardness	4	129	105	116	105	115	129
Na%	4	41	21	30	41	25	28
RSC (-)	4	1.90	0.00	0.8	0.80	0.95	0.30
SAR (-)	4	1.50	0.60	1.0	1.50	0.70	1.00

Graphical Presentation of KORA WQ Site







RIVER WATER QUALITY DATA
OF
CHAMBAL DIVISION

AB ROAD XING

General Particulars

Site	: **A.B. Road Xing**	Code	: **GYP4OM4**
State	: **Madhya Pradesh**	District	: **Guna**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **U Chambal SD, Indore**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Parwati**
Sub-Sub-Trib.	: **-**	Local River	: **Chambal**
Drainage Area	: **5669 Sq. Km.**	Bank	: **Left**
Latitude	: **24°22'00"N**	Longitude	: **75°05'00" E**
Zero of Gauge	: **383.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **16/01/1976**
Discharge:	: **16/01/1976**
Sediment	: **16/09/1978**
Water Quality	: **02/01/1978**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : A B ROAD Xing **Division : Chambal D., Jaipur**

Local River : PARVATI

River Water Analysis

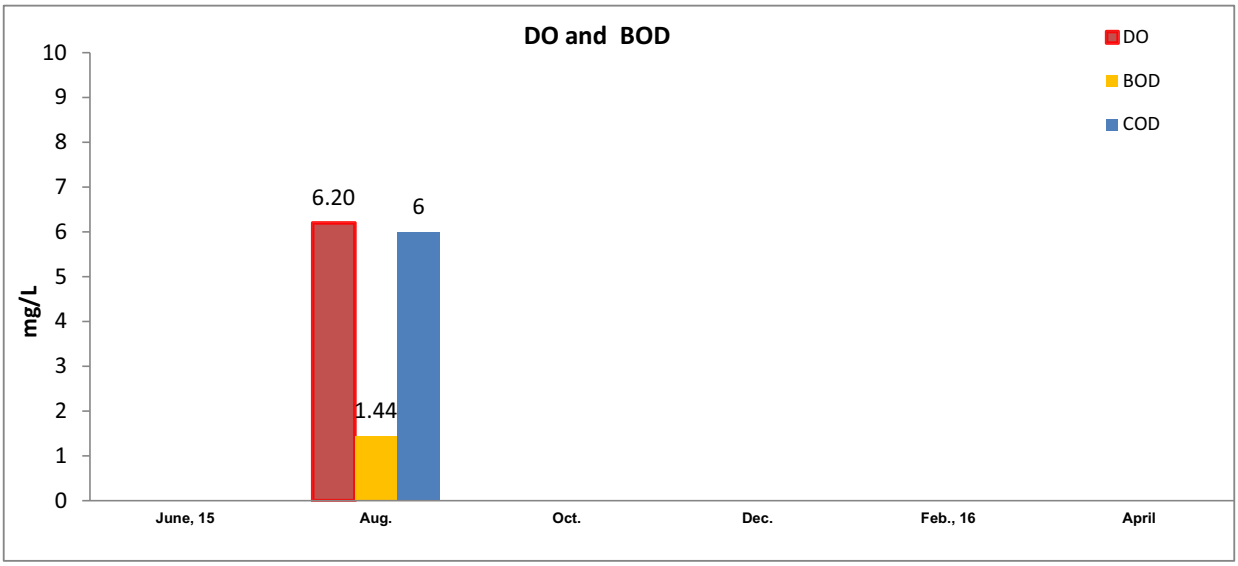
S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		R.Dry		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		-		-		-		-	
3	Colour_Cod (-)		-		Colourless		-		-		-		-	
4	EC_GEN (µmho/cm)		-		398		-		-		-		-	
5	Odour_Code (-)		-		Odourless		-		-		-		-	
6	pH_GEN (pH units)		-		8.00		-		-		-		-	
7	Temperture	°C	-		21.4		-		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		-		-		-		-	
10	Alk-Tot (as CaCO3)		-		156.6		-		-		-		-	
11	Boron		-		0.00		-		-		-		-	
12	Calcium		-		55.04		-		-		-		-	
13	Chloride		-		10.79		-		-		-		-	
14	Carbonate		-		0.00		-		-		-		-	
15	Fluoride		-		0.01		-		-		-		-	
16	Iron		-		0.09		-		-		-		-	
17	Bicarbonate		-		187.93		-		-		-		-	
18	Potassium		-		2.28		-		-		-		-	
19	Magnesium		-		11.66		-		-		-		-	
20	Sodium		-		8.82		-		-		-		-	
21	Ammonia as N		-		0.00		-		-		-		-	
22	NO2+NO3 as N				7.47		-							
23	Nitrite as N		-		0.06		-		-		-		-	
24	Nitrate as N		-		7.41		-		-		-		-	
25	Tot. Phosphate as P		-		0.32		-		-		-		-	
26	Silicate as SiO2		-		0.00		-		-		-		-	
27	Sulphate as SO4		-		6.00		-		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.44		-		-		-		-	
29	COD		-		6.0		-		-		-		-	
30	Dissolved Oxygen		-		6.20		-		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		-		-		-		-		-	
34	Fecal Coliform		-		-		-		-		-		-	
35	E. Coli		-		397		-		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		5.51		-		-		-		-	
34	Cadmium		-		0.96		-		-		-		-	
35	Chromium		-		1.47		-		-		-		-	
36	Copper		-		3.64		-		-		-		-	
37	Lead		-		0.03		-		-		-		-	
38	Nickel		-		0.29		-		-		-		-	
39	Zinc		-		0.01		-		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		239		-		-		-		-	
41	Tot-Hardness		-		186		-		-		-		-	
42	Na% (%)	%	-		9		-		-		-		-	
43	RSC (-)		-		-0.64		-		-		-		-	
44	SAR (-)		-		0.28		-		-		-		-	
45	PESTICIDES													

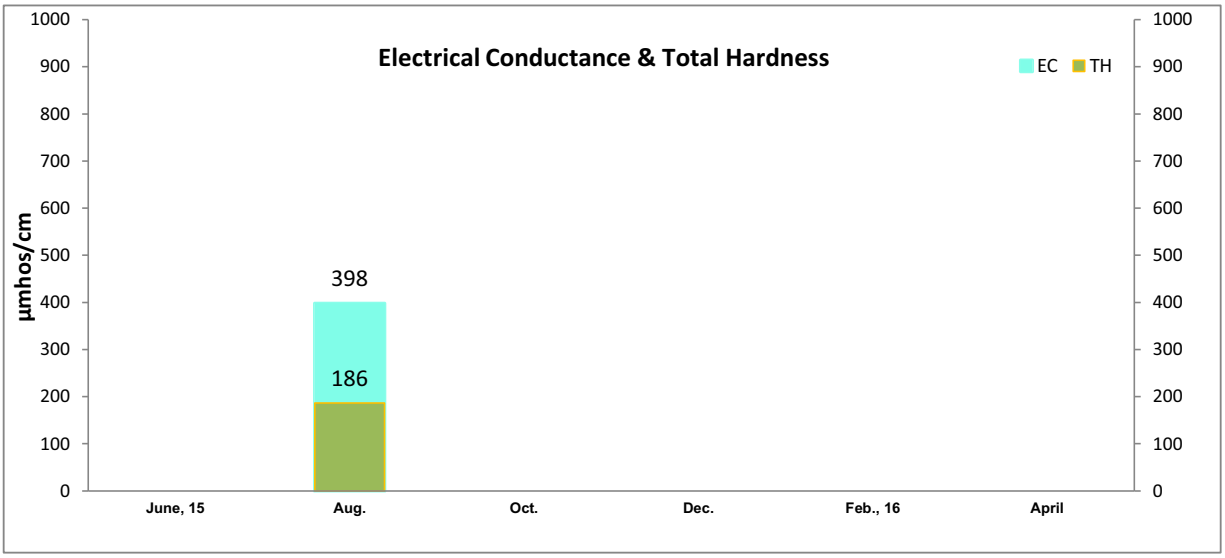
RIVER WATER SUMMARY - 2015-2016

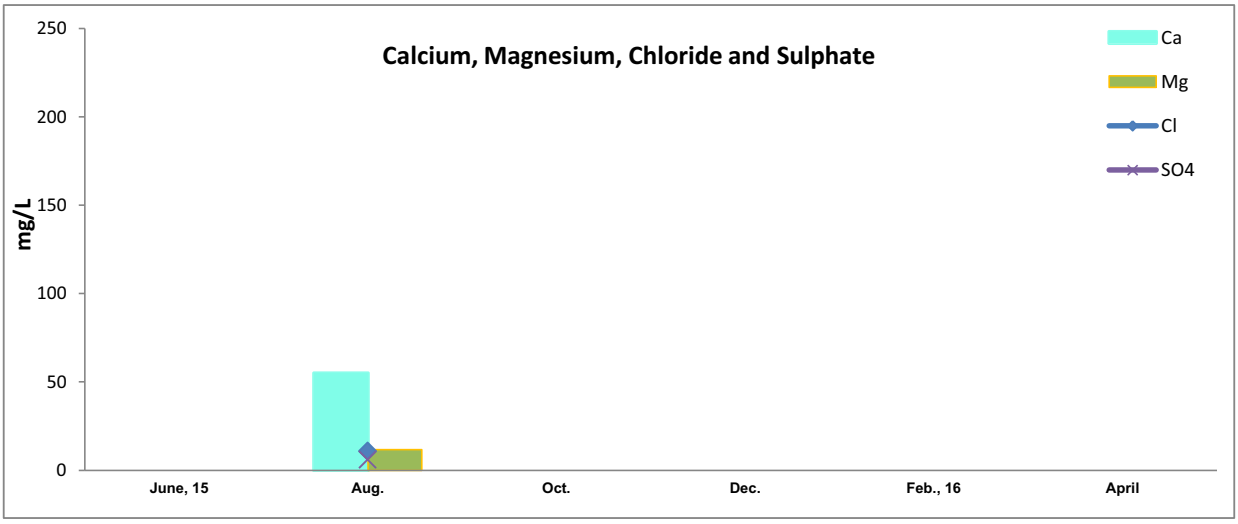
Station Name : A B ROAD Xing **Division : Chambal D., Jaipur**

Local River : PARVATI

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	1	398	398	398	398	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	1	8.00	8.00	8.0	8.00	-	-
Temperture	1	21.4	21.4	21.4	21.4	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	1	156.61	156.61	156.61	156.61	-	-
Boron	1	0.00	0.00	0.00	0.00	-	-
Calcium	1	55.04	55.04	55.04	55.04	-	-
Chloride	1	10.79	10.79	10.79	10.79	-	-
Carbonate	1	0.00	0.00	0.00	0.00	-	-
Fluoride	1	0.01	0.01	0.01	0.01	-	-
Iron	1	0.09	0.09	0.09	0.09	-	-
Bicarbonate	1	187.93	187.93	187.93	187.93	-	-
Potassium	1	2.28	2.28	2.28	2.28	-	-
Magnesium	1	11.66	11.66	11.66	11.66	-	-
Sodium	1	8.82	8.82	8.82	8.82	-	-
Ammonia as N	1	0.00	0.00	0.00	0.00	-	-
NO_2+NO_3 as N	1	7.47	7.47	7.47	7.47	-	-
Nitrite as N	1	0.06	0.06	0.06	0.06	-	-
Nitrate as N	1	7.41	7.41	7.41	7.41	-	-
Tot. Phosphate as P	1	0.32	0.32	0.32	0.32	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	1	6.00	6.00	6.00	6.00	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	1	1.44	1.44	1.44	1.44	-	-
COD	1	6.0	6.0	6.0	6.0	-	-
Dissolved Oxygen	1	6.20	6.20	6.20	6.20	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	5.51	5.51	5.51	5.51	-	-
Cadmium	1	0.96	0.96	0.96	0.96	-	-
Chromium	1	1.47	1.47	1.47	1.47	-	-
Copper	1	3.64	3.64	3.64	3.64	-	-
Lead	1	0.03	0.03	0.03	0.03	-	-
Nickel	1	0.29	0.29	0.29	0.29	-	-
Zinc	1	0.01	0.01	0.01	0.01	-	-
CHEMICAL INDICES							
Ca-Hardness	1	239	239	239	239	-	-
Tot-Hardness	1	186	186	186	186	-	-
Na%	1	9	9	9	9	-	-
RSC (-)	1	-0.64	-0.64	-0.6	-0.64	-	-
SAR (-)	1	0.28	0.28	0.3	0.28	-	-


DO and BOD
DO
BOD
COD
mg/L
10
9
8
7
6
5
4
3
2
1
0
6.20
6
1.44
June, 15
Aug.
Oct.
Dec.
Feb., 16
April


Electrical Conductance & Total Hardness
EC
TH
µmhos/cm
1000
900
800
700
600
500
400
300
200
100
0
398
186
June, 15
Aug.
Oct.
Dec.
Feb., 16
April


Calcium, Magnesium, Chloride and Sulphate
Ca
Mg
Cl
SO4
mg/L
250
200
150
100
50
0
June, 15
Aug.
Oct.
Dec.
Feb., 16
April

KHATOLI

General Particulars

Site	:***Khatoli***	Code	: **GYP40B4**
State	: **Rajasthan**	District	: **Kota**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **Kota**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Parwati**	Local River	: **Parwati**
Drainage Area	: **15148 Sq. Km.**	Bank	: **Left**
Latitude	: **25°41'00"N**	Longitude	: **76°29'00"E**
Zero of Gauge	: **187.00M**		

Details of operation (Opening date)

Gauge:	: **11/01/1971**
Discharge:	: **11/01/1971**
Sediment	: **18/07/1978**
Water Quality	: **01/12/1978**
Wireless	: **23/05/1997**

Water Quality Datasheet for the Period : 2015-2016

Station Name : KHATOLI **Division : Chambal D., Jaipur**

Local River : PARWATI

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		05/10/15		01/12/15		01/02/16		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		Clear		Clear		Clear		-	
3	Colour_Cod (-)		-		Colourless		Colourless		Colourless		Colourless		-	
4	EC_GEN (µmho/cm)		-		301		539		526		516		-	
5	Odour_Code (-)		-		Odourless		Odourless		Odourless		Odourless		-	
6	pH_GEN (pH units)		-		7.91		8.54		8.28		8.13		-	
7	Temperture	°C	-		20.7		20.1		11.3		9.8		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		1.60		0.00		0.00		-	
10	Alk-Tot (as CaCO3)		-		93.1		114.5		100.4		102.9		-	
11	Boron		-		0.18		0.10		0.23		0.08		-	
12	Calcium		-		42.81		45.91		31.68		29.71		-	
13	Chloride		-		12.39		34.18		47.21		46.35		-	
14	Carbonate		-		0.00		1.92		0.00		0.00		-	
15	Fluoride		-		0.01		0.01		0.02		0.40		-	
16	Iron		-		0.00		0.00		0.00		0.00		-	
17	Bicarbonate		-		111.77		133.58		120.53		123.50		-	
18	Potassium		-		2.73		2.84		3.86		4.00		-	
19	Magnesium		-		7.62		20.48		24.28		15.76		-	
20	Sodium		-		9.90		37.25		50.85		56.60		-	
21	Ammonia as N		-		0.02		0.20		0.15		0.11		-	
22	NO2+NO3 as N				11.35		17.20		4.49		21.80		-	
23	Nitrite as N		-		0.02		0.10		0.00		0.00		-	
24	Nitrate as N		-		11.33		17.10		4.49		21.80		-	
25	Tot. Phosphate as P		-		0.30		1.17		0.00		0.15		-	
26	Silicate as SiO2		-		0.00		0.00		0.00		0.00		-	
27	Sulphate as SO4		-		11.00		34.70		56.60		75.00		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.71		1.95		1.77		1.68		-	
29	COD		-		11.0		9.0		7.0		3.0		-	
30	Dissolved Oxygen		-		7.60		7.92		6.70		6.54		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		1100		750		2400		1300		-	
34	Fecal Coliform		-		200		200		400		450		-	
35	E. Coli		-		98		107		82		442		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		1.90		3.30		4.37		3.90		-	
34	Cadmium		-		5.84		0.29		0.12		0.24		-	
35	Chromium		-		1.50		1.02		6.46		1.11		-	
36	Copper		-		2.81		1.39		14.66		1.26		-	
37	Lead		-		0.03		0.68		1.28		0.03		-	
38	Nickel		-		10.31		3.79		0.32		1.01		-	
39	Zinc		-		0.01		0.00		0.00		0.00		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		181		115		79		74		-	
41	Tot-Hardness		-		139		200		180		140		-	
42	Na% (%)	%	-		13		28		37		46		-	
43	RSC (-)		-		-0.94		-1.75		-1.63		-0.77		-	
44	SAR (-)		-		0.37		1.14		1.65		2.08		-	
45	PESTICIDES													

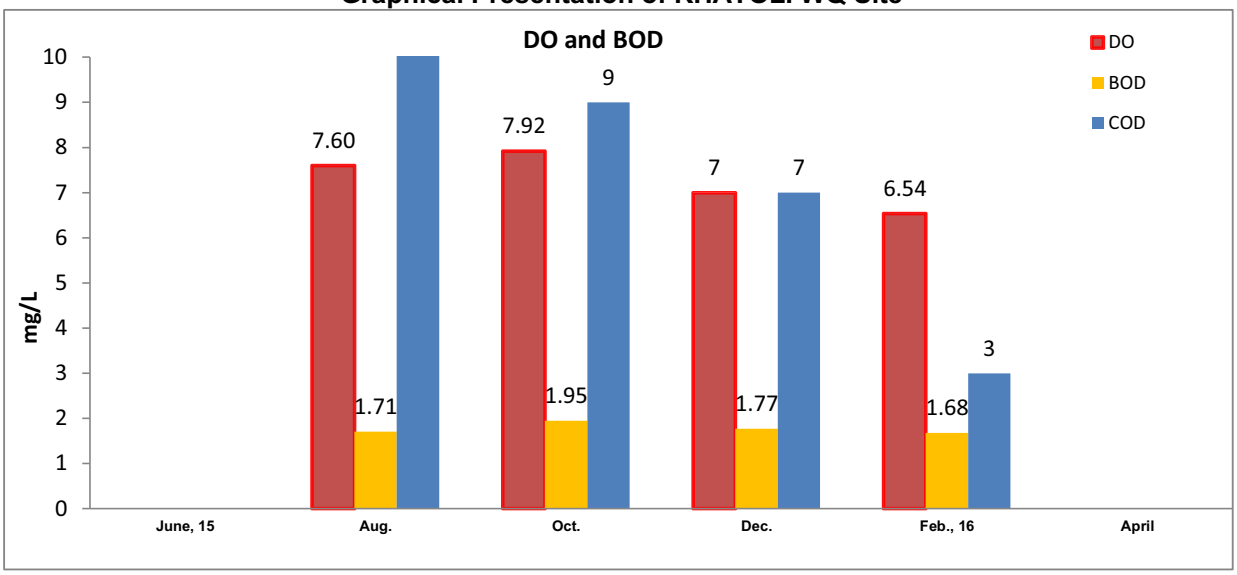
RIVER WATER SUMMARY - 2015-2016

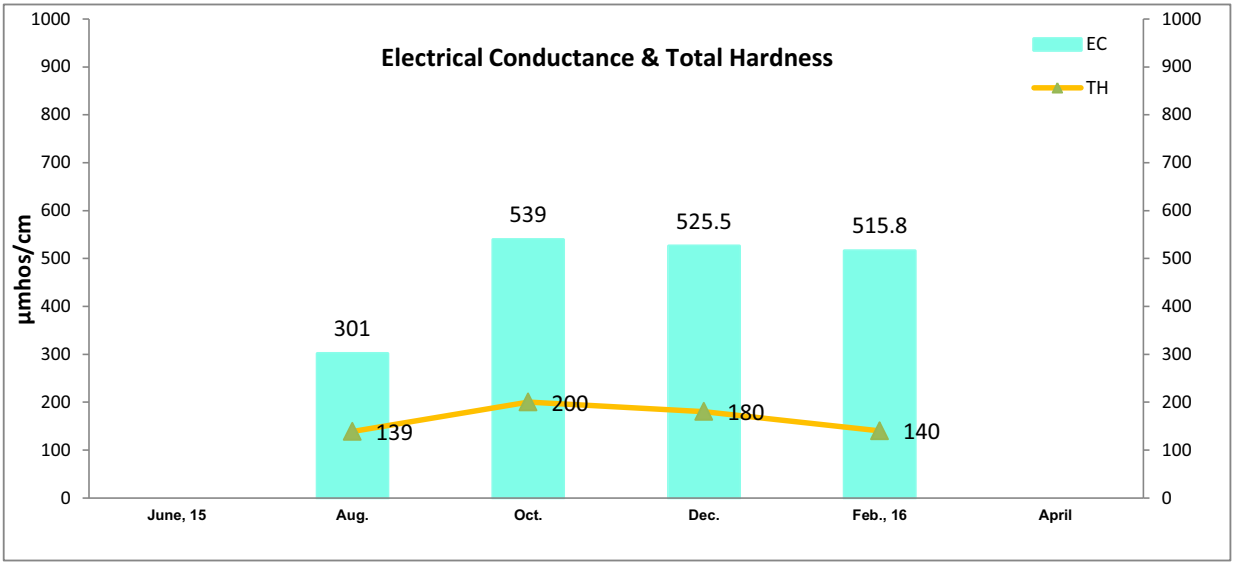
Station Name : KHATOLI **Division : Chambal D., Jaipur**

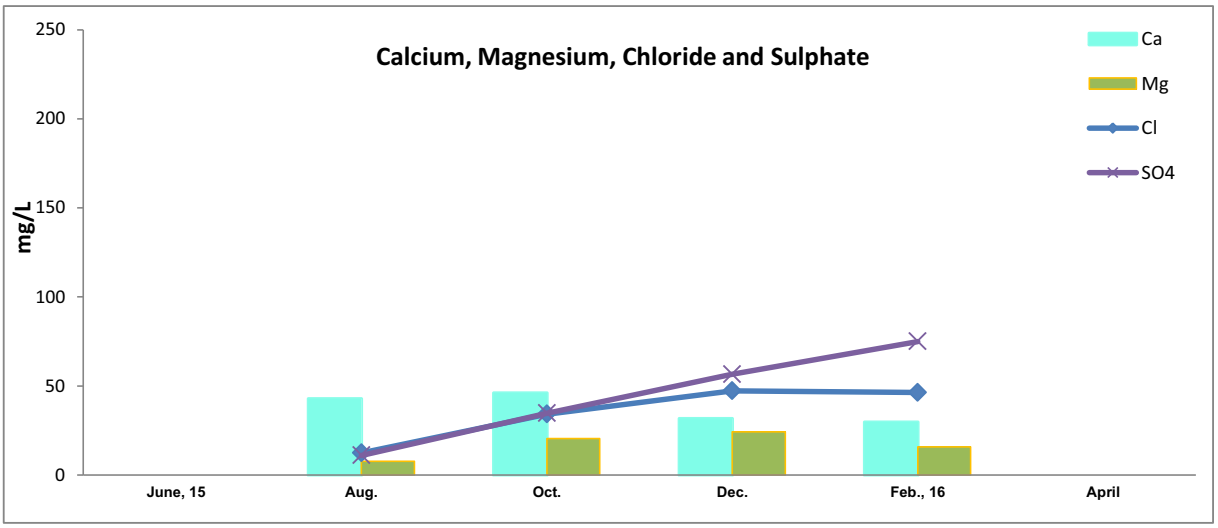
Local River : PARWATI

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	4	539	301	470	420	521	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	4	8.54	7.91	8.2	8.23	8.21	-
Temperture	4	20.70	9.80	15.5	20.40	10.55	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	4	1.60	0.00	0.40	0.80	0.00	-
Alk-Tot (as $CaCO_3$)	4	114.52	93.14	102.75	103.83	101.68	-
Boron	4	0.23	0.08	0.15	0.14	0.16	-
Calcium	4	45.91	29.71	37.53	44.36	30.70	-
Chloride	4	47.21	12.39	35.03	23.29	46.78	-
Carbonate	4	1.92	0.00	0.48	0.96	0.00	-
Fluoride	4	0.40	0.01	0.11	0.01	0.21	-
Iron	4	0.00	0.00	0.00	0.00	0.00	-
Bicarbonate	4	133.58	111.77	122.35	122.68	122.02	-
Potassium	4	4.00	2.73	3.36	2.79	3.93	-
Magnesium	4	24.28	7.62	17.04	14.05	20.02	-
Sodium	4	56.60	9.90	38.65	23.58	53.73	-
Ammonia as N	4	0.20	0.02	0.12	0.11	0.13	-
NO_2+NO_3 as N	4	21.80	4.49	13.71	14.27	13.15	-
Nitrite as N	4	0.10	0.00	0.03	0.06	0.00	-
Nitrate as N	4	21.80	4.49	13.68	14.22	13.15	-
Tot. Phosphate as P	4	1.17	0.00	0.40	0.73	0.07	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	4	75.00	11.00	44.33	22.85	65.80	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	4	1.95	1.68	1.78	1.83	1.73	-
COD	4	11.0	3.0	7.5	10.0	5.0	-
Dissolved Oxygen	4	7.92	6.54	7.19	7.76	6.62	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	4	4.37	1.90	3.4	2.60	4.14	-
Cadmium	4	5.84	0.12	1.6	3.06	0.18	-
Chromium	4	6.46	1.02	2.5	1.26	3.79	-
Copper	4	14.66	1.26	5.0	2.10	7.96	-
Lead	4	1.28	0.03	0.5	0.36	0.66	-
Nickel	4	10.31	0.32	3.9	7.05	0.67	-
Zinc	4	0.01	0.00	0.0	0.01	0.00	-
CHEMICAL INDICES							
Ca-Hardness	4	181	74	112	148	77	-
Tot-Hardness	4	200	139	165	169	160	-
Na%	4	46	13	31	21	42	-
RSC (-)	4	-0.77	-1.75	-1.27	-1.35	-1.20	-
SAR (-)	4	2.08	0.37	1.31	0.76	1.86	-

Graphical Presentation of KHATOLI WQ Site







AKLERA

GENERAL PARTICULARS

Site	:***Aklera***	Code	: **GYP61P7**
State	: **Rajasthan**	District	: **Jhalawar**
Division	: **Chambal Division, Jaipur**	Sub-Division	: **Kota**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Kalisind**	Local River	: **Parwan**
Drainage Area	: **6050 Sq. Km.**	Bank	: **Left**
Latitude	: **24°25'00"N**	Longitude	: **76°35'00"E**
Zero of Gauge	: **298.00M**		

DETAILS OF OPERATION (OPENING DATE)

Gauge:	: **02/08/1976**
Discharge:	: **03/08/1976**
Sediment	: **13/11/1976**
Water Quality	: **02/01/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : AKLERA **Division : Chambal D., Jaipur**

Local River : PARWAN

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		05/10/15		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		Clear		-		-		-	
3	Colour_Cod (-)		-		Colourless		Colourless		-		-		-	
4	EC_GEN (µmho/cm)		-		396		449		-		-		-	
5	Odour_Code (-)		-		Odourless		Odourless		-		-		-	
6	pH_GEN (pH units)		-		8.06		8.56		-		-		-	
7	Temperture	°C	-		21.4		20.0		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		-		-		-		-	
10	Alk-Tot (as CaCO3)		-		132.4		-		-		-		-	
11	Boron		-		0.19		0.22		-		-		-	
12	Calcium		-		57.08		42.08		-		-		-	
13	Chloride		-		13.39		25.93		-		-		-	
14	Carbonate		-		0.00		1.92		-		-		-	
15	Fluoride		-		0.01		0.01		-		-		-	
16	Iron		-		0.00		0.00		-		-		-	
17	Bicarbonate		-		158.87		94.37		-		-		-	
18	Potassium		-		2.73		2.39		-		-		-	
19	Magnesium		-		10.63		21.09		-		-		-	
20	Sodium		-		10.71		23.44		-		-		-	
21	Ammonia as N		-		1.06		0.17		-		-		-	
22	NO2+NO3 as N				13.22		-							
23	Nitrite as N		-		0.02		0.15		-		-		-	
24	Nitrate as N		-		13.20		24.00		-		-		-	
25	Tot. Phosphate as P		-		0.20		0.56		-		-		-	
26	Silicate as SiO2		-		0.00		0.00		-		-		-	
27	Sulphate as SO4		-		11.50		19.60		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.94		1.72		-		-		-	
29	COD		-		12.0		5.0		-		-		-	
30	Dissolved Oxygen		-		5.50		7.60		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		400		1200		-		-		-	
34	Fecal Coliform		-		400		400		-		-		-	
35	E. Coli		-		219		221		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		8.17		8.17		-		-		-	
34	Cadmium		-		4.40		4.40		-		-		-	
35	Chromium		-		0.66		0.66		-		-		-	
36	Copper		-		2.52		2.52		-		-		-	
37	Lead		-		0.63		0.63		-		-		-	
38	Nickel		-		12.36		12.36		-		-		-	
39	Zinc		-		0.010		0.010		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		238		105		-		-		-	
41	Tot-Hardness		-		187		193		-		-		-	
42	Na% (%)	%	-		11		21		-		-		-	
43	RSC (-)		-		-1.14		-2.25		-		-		-	
44	SAR (-)		-		0.34		0.73		-		-		-	
45	PESTICIDES													

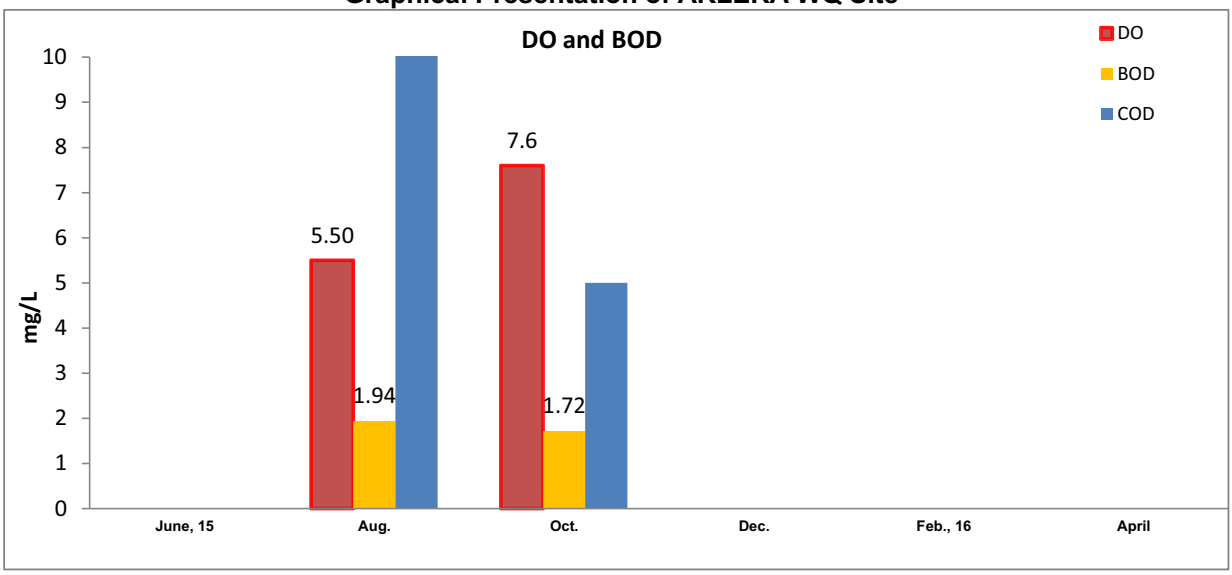
RIVER WATER SUMMARY - 2015-2016

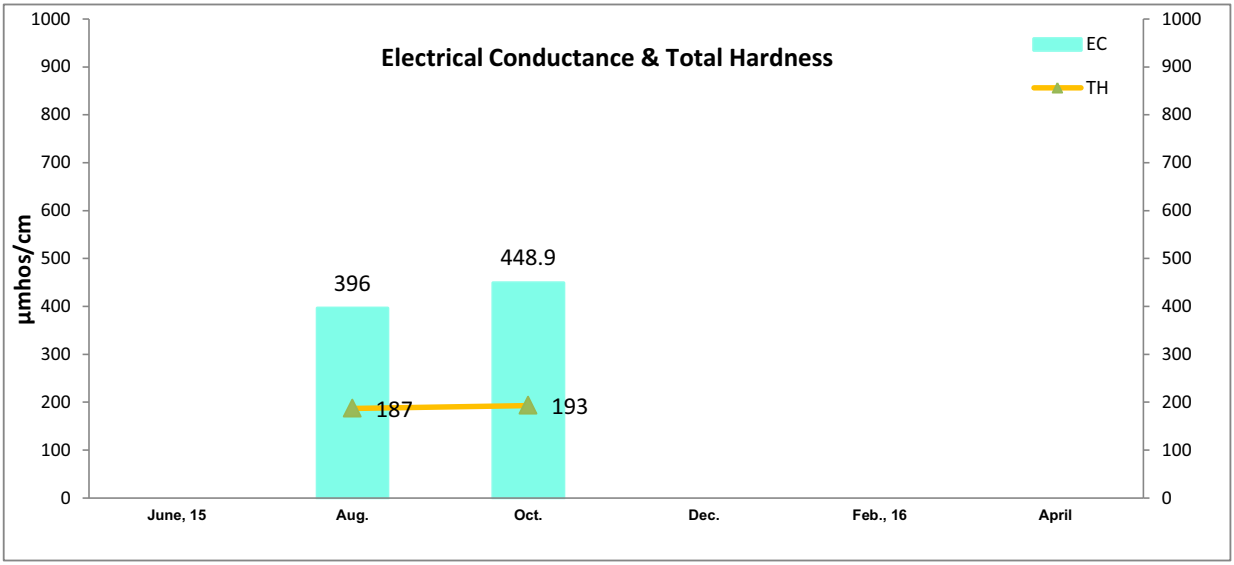
Station Name : AKLERA **Division : Chambal D., Jaipur**

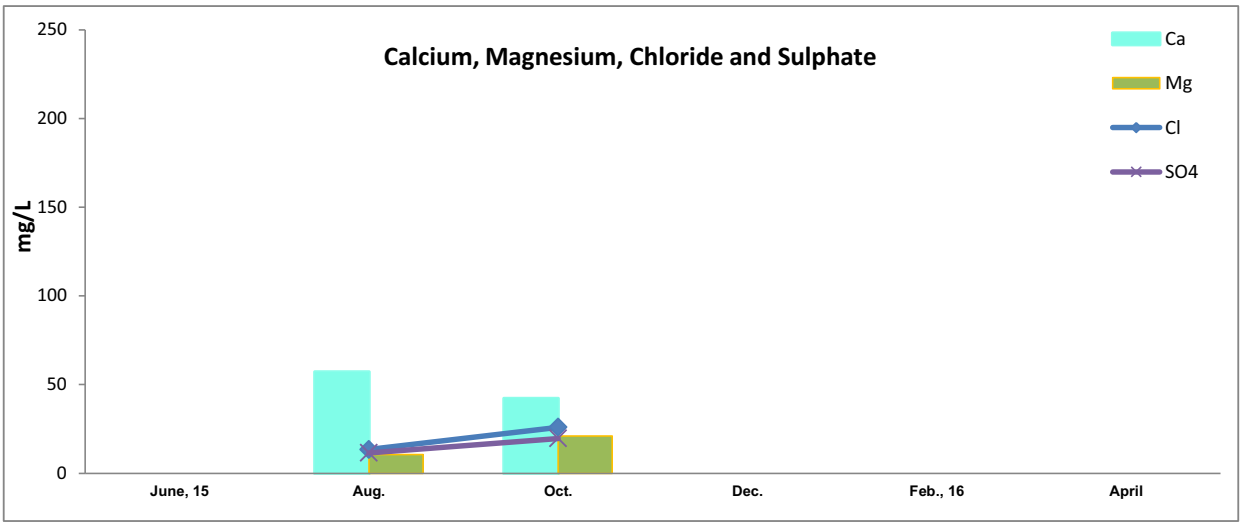
Local River : PARWAN

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	2	449	396	422	422	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	2	8.56	8.06	8.3	8.31	-	-
Temperture	2	21.4	20.0	20.7	20.7	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	1	132.39	132.39	132.39	132.39	-	-
Boron	2	0.22	0.19	0.20	0.20	-	-
Calcium	2	57.08	42.08	49.58	49.58	-	-
Chloride	2	25.93	13.39	19.66	19.66	-	-
Carbonate	2	1.92	0.00	0.96	0.96	-	-
Fluoride	2	0.01	0.01	0.01	0.01	-	-
Iron	2	0.00	0.00	0.00	0.00	-	-
Bicarbonate	2	158.87	94.37	126.62	126.62	-	-
Potassium	2	2.73	2.39	2.56	2.56	-	-
Magnesium	2	21.09	10.63	15.86	15.86	-	-
Sodium	2	23.44	10.71	17.08	17.08	-	-
Ammonia as N	2	1.06	0.17	0.61	0.61	-	-
NO_2+NO_3 as N	1	13.22	13.22	13.22	13.22	-	-
Nitrite as N	2	0.15	0.02	0.08	0.08	-	-
Nitrate as N	2	24.00	13.20	18.60	18.60	-	-
Tot. Phosphate as P	2	0.56	0.20	0.38	0.38	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	2	19.60	11.50	15.55	15.55	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	2	1.94	1.72	1.83	1.83	-	-
COD	2	12.0	5.0	8.5	8.5	-	-
Dissolved Oxygen	2	7.60	5.50	6.55	6.55	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	2	8.17	8.17	8.17	8.17	-	-
Cadmium	2	4.40	4.40	4.40	4.40	-	-
Chromium	2	0.66	0.66	0.66	0.66	-	-
Copper	2	2.52	2.52	2.52	2.52	-	-
Lead	2	0.63	0.63	0.63	0.63	-	-
Nickel	2	12.36	12.36	12.36	12.36	-	-
Zinc	2	0.01	0.01	0.01	0.01	-	-
CHEMICAL INDICES							
Ca-Hardness	2	238	105	171	171	-	-
Tot-Hardness	2	193	187	190	190	-	-
Na%	2	21	11	16	16	-	-
RSC (-)	2	-1.14	-2.25	-1.69	-1.69	-	-
SAR (-)	2	0.73	0.34	0.54	0.54	-	-

Graphical Presentation of AKLERA WQ Site







SANGOD

General Particulars

Site	:***Sangod***	Code	: **GYP61D3**
State	: **Rajasthan**	District	: **Kota**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **Kota**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Parwan**	Local River	: **Parwan**
Drainage Area	: **9288 Sq. Km.**	Bank	: **Left**
Latitude	: **24°58'00"N**	Longitude	: **76°17'00"E**
Zero of Gauge	: **235.000M (GTS)**	Bank	: **Left Bank**

Details of operation (Opening date)

Gauge:	: **26/10/1970**
Discharge:	: **26/10/1970**
Sediment	: **-**
Water Quality	: **01/01/1978**

Water Quality Datasheet for the Period : 2015-2016

Station Name : SANGOD **Division : Chambal D., Jaipur**

Local River : PARWAN

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		R.Dry		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		-		-		-		-	
3	Colour_Cod (-)		-		Colourless		-		-		-		-	
4	EC_GEN (µmho/cm)		-		271		-		-		-		-	
5	Odour_Code (-)		-		Odourless		-		-		-		-	
6	pH_GEN (pH units)		-		7.95		-		-		-		-	
7	Temperture	°C	-		22.0		-		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		-		-		-		-	
10	Alk-Tot (as CaCO3)		-		102.4		-		-		-		-	
11	Boron		-		0.12		-		-		-		-	
12	Calcium		-		41.86		-		-		-		-	
13	Chloride		-		8.79		-		-		-		-	
14	Carbonate		-		0.00		-		-		-		-	
15	Fluoride		-		0.01		-		-		-		-	
16	Iron		-		0.00		-		-		-		-	
17	Bicarbonate		-		122.82		-		-		-		-	
18	Potassium		-		1.98		-		-		-		-	
19	Magnesium		-		6.11		-		-		-		-	
20	Sodium		-		4.35		-		-		-		-	
21	Ammonia as N		-		0.03		-		-		-		-	
22	NO2+NO3 as N				6.46		-							
23	Nitrite as N		-		0.11		-		-		-		-	
24	Nitrate as N		-		6.35		-		-		-		-	
25	Tot. Phosphate as P		-		0.26		-		-		-		-	
26	Silicate as SiO2		-		0.00		-		-		-		-	
27	Sulphate as SO4		-		2.50		-		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.56		-		-		-		-	
29	COD		-		9.0		-		-		-		-	
30	Dissolved Oxygen		-		6.30		-		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		200		-		-		-		-	
34	Fecal Coliform		-		<200		-		-		-		-	
35	E. Coli		-		315		-		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		5.79		-		-		-		-	
34	Cadmium		-		4.22		-		-		-		-	
35	Chromium		-		2.07		-		-		-		-	
36	Copper		-		2.92		-		-		-		-	
37	Lead		-		0.05		-		-		-		-	
38	Nickel		-		0.99		-		-		-		-	
39	Zinc		-		0.01		-		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		163		-		-		-		-	
41	Tot-Hardness		-		130		-		-		-		-	
42	Na% (%)	%	-		7		-		-		-		-	
43	RSC (-)		-		-0.59		-		-		-		-	
44	SAR (-)		-		0.17		-		-		-		-	
45	PESTICIDES													

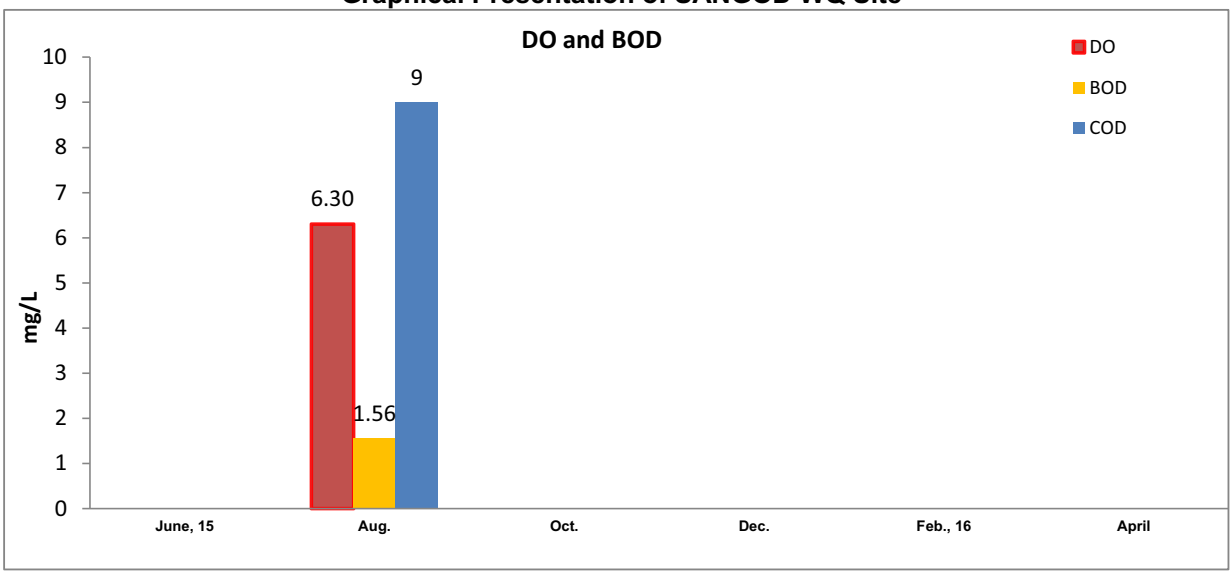
RIVER WATER SUMMARY - 2015-2016

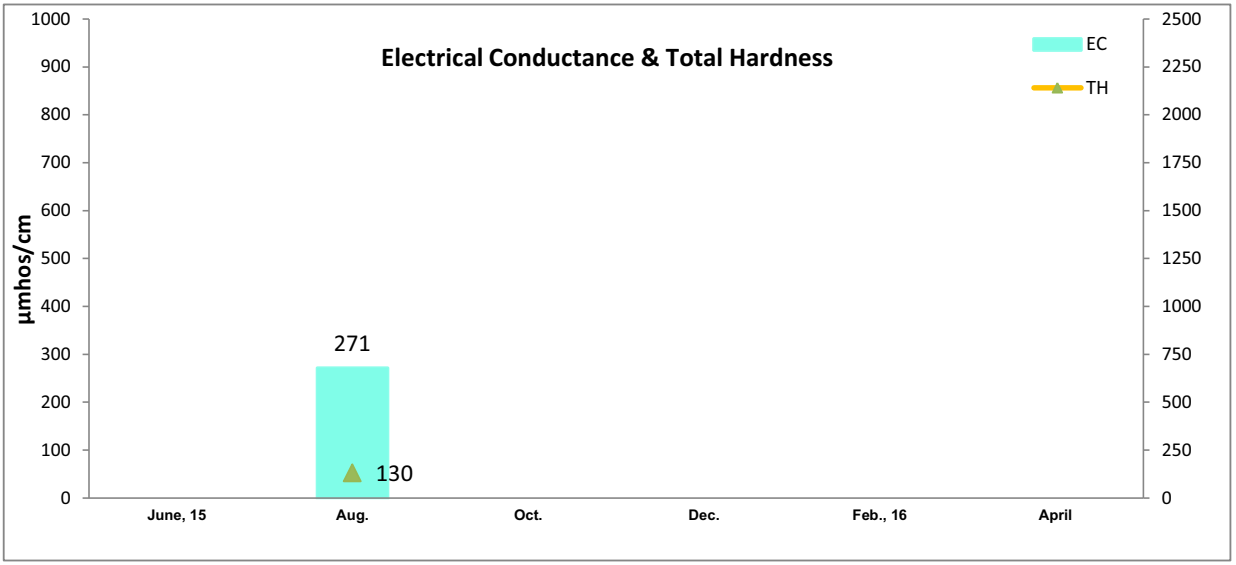
Station Name : SANGOD **Division : Chambal D., Jaipur**

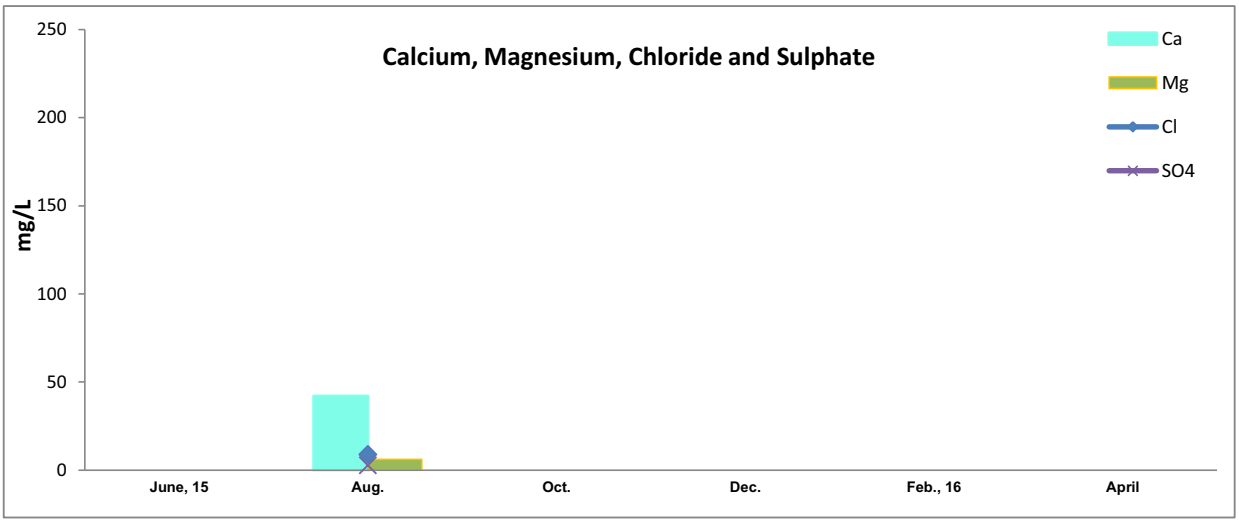
Local River : PARWAN

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	1	271	271	271	271	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	1	7.95	7.95	7.95	7.95	-	-
Temperture	1	22.00	22.00	22.00	22.00	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	1	102.35	102.35	102.35	102.35	-	-
Boron	1	0.12	0.12	0.12	0.12	-	-
Calcium	1	41.86	41.86	41.86	41.86	-	-
Chloride	1	8.79	8.79	8.79	8.79	-	-
Carbonate	1	0.00	0.00	0.00	0.00	-	-
Fluoride	1	0.01	0.01	0.01	0.01	-	-
Iron	1	0.00	0.00	0.00	0.00	-	-
Bicarbonate	1	122.82	122.82	122.82	122.82	-	-
Potassium	1	1.98	1.98	1.98	1.98	-	-
Magnesium	1	6.11	6.11	6.11	6.11	-	-
Sodium	1	4.35	4.35	4.35	4.35	-	-
Ammonia as N	1	0.03	0.03	0.03	0.03	-	-
NO_2+NO_3 as N	1	6.46	6.46	6.46	6.46	-	-
Nitrite as N	1	0.11	0.11	0.11	0.11	-	-
Nitrate as N	1	6.35	6.35	6.35	6.35	-	-
Tot. Phosphate as P	1	0.26	0.26	0.26	0.26	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	1	2.50	2.50	2.50	2.50	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	1	1.56	1.56	1.56	1.56	-	-
COD	1	9.0	9.0	9.0	9.0	-	-
Dissolved Oxygen	1	6.30	6.30	6.30	6.30	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	1	200	200	200	200	-	-
Fecal Coliform	1	<200	<200	<200	<200	-	-
E. Coli	1	315.00	315.00	315.00	315.00	-	-
TRACE & TOXIC							
Arsenic	1	5.79	5.79	5.8	5.79	-	-
Cadmium	1	4.22	4.22	4.2	4.22	-	-
Chromium	1	2.07	2.07	2.1	2.07	-	-
Copper	1	2.92	2.92	2.9	2.92	-	-
Lead	1	0.05	0.05	0.0	0.05	-	-
Nickel	1	0.99	0.99	1.0	0.99	-	-
Zinc	1	0.01	0.01	0.0	0.01	-	-
CHEMICAL INDICES							
Ca-Hardness	1	163	163	163	163	-	-
Tot-Hardness	1	130	130	130	130	-	-
Na%	1	7	7	7	7	-	-
RSC (-)	1	-0.59	-0.59	-0.59	-0.59	-	-
SAR (-)	1	0.17	0.17	0.17	0.17	-	-

Graphical Presentation of SANGOD WQ Site







TONK

General Particulars

Site	: **TONK**	Code	: **GYP30G8**
State	: **Rajasthan**	District	: **Tonk**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **L.C.SD, Jaipur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Banas**	Local River	: **Banas**
Drainage Area	: **39614 Sq. Km.**	Bank	: **Right**
Latitude	: **26°12'00"N**	Longitude	: **75°47'00" E**
Zero of Gauge	: **253.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **24/11/1970**
Discharge:	: **24/11/1970**
Sediment	: **01/08/1992**
Water Quality	: **01/04/1992**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : TONK **Division : Chambal D., Jaipur**

Local River : Banas

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		R.Dry		R.Dry		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		-		-		-		-		-	
3	Colour_Cod (-)		-		-		-		-		-		-	
4	EC_GEN (µmho/cm)		-		-		-		-		-		-	
5	Odour_Code (-)		-		-		-		-		-		-	
6	pH_GEN (pH units)		-		-		-		-		-		-	
7	Temperture	°C	-		-		-		-		-		-	
CHEMICAL														
9	Alk-Phen (as $CaCO_3$)	mg/l	-		-		-		-		-		-	
10	Alk-Tot (as $CaCO_3$)		-		-		-		-		-		-	
11	Boron		-		-		-		-		-		-	
12	Calcium		-		-		-		-		-		-	
13	Chloride		-		-		-		-		-		-	
14	Carbonate		-		-		-		-		-		-	
15	Fluoride		-		-		-		-		-		-	
16	Iron		-		-		-		-		-		-	
17	Bicarbonate		-		-		-		-		-		-	
18	Potassium		-		-		-		-		-		-	
19	Magnesium		-		-		-		-		-		-	
20	Sodium		-		-		-		-		-		-	
21	Ammonia as N		-		-		-		-		-		-	
22	NO_2+NO_3 as N		-		-		-		-		-		-	
23	Nitrite as N		-		-		-		-		-		-	
24	Nitrate as N		-		-		-		-		-		-	
25	Tot. Phosphate as P		-		-		-		-		-		-	
26	Silicate as SiO_2		-		-		-		-		-		-	
27	Sulphate as SO_4		-		-		-		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		-		-		-		-		-	
29	COD		-		-		-		-		-		-	
30	Dissolved Oxygen		-		-		-		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		-		-		-		-		-	
34	Fecal Coliform		-		-		-		-		-		-	
35	E. Coli		-		-		-		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		-		-		-		-		-	
34	Cadmium		-		-		-		-		-		-	
35	Chromium		-		-		-		-		-		-	
36	Copper		-		-		-		-		-		-	
37	Lead		-		-		-		-		-		-	
38	Nickel		-		-		-		-		-		-	
39	Zinc		-		-		-		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		-		-		-		-		-	
41	Tot-Hardness		-		-		-		-		-		-	
42	Na%	%	-		-		-		-		-		-	
43	RSC (-)		-		-		-		-		-		-	
44	SAR (-)		-		-		-		-		-		-	
45	PESTICIDES													

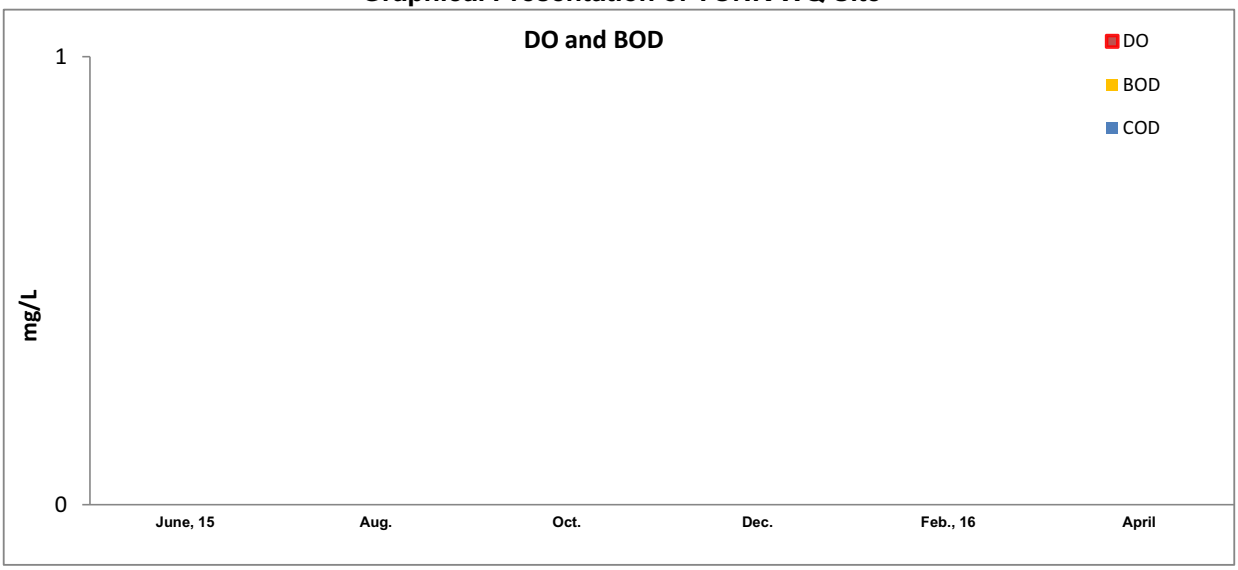
RIVER WATER SUMMARY - 2015-2016

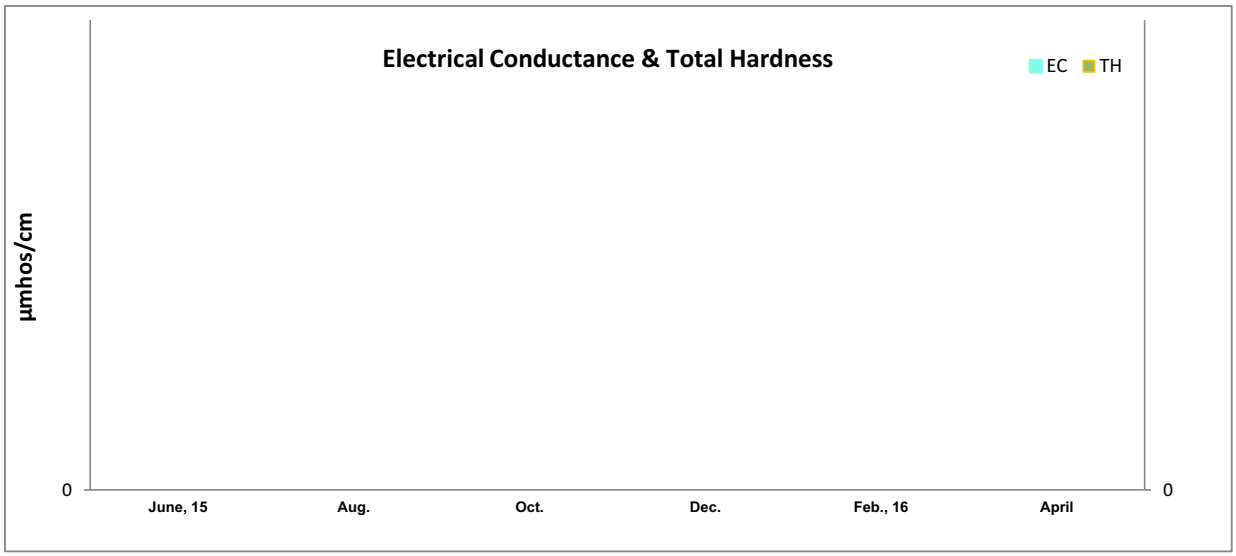
Station Name : TONK **Division : Chambal D., Jaipur**

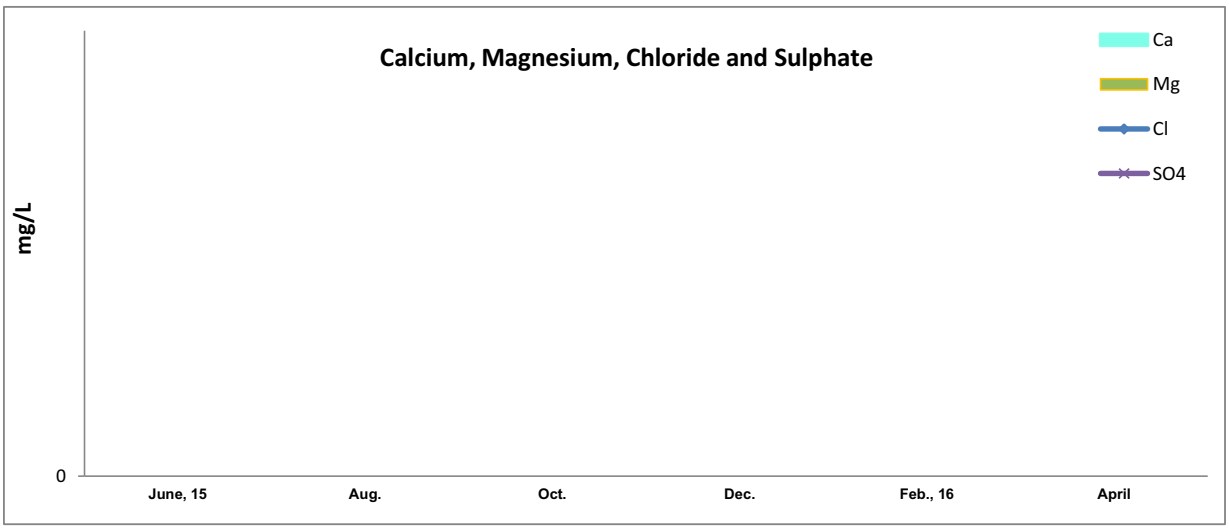
Local River : Banas

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	0	-	-	-	-	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	0	-	-	-	-	-	-
Temperture	0	-	-	-	-	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	0	-	-	-	-	-	-
Alk-Tot (as $CaCO_3$)	0	-	-	-	-	-	-
Boron	0	-	-	-	-	-	-
Calcium	0	-	-	-	-	-	-
Chloride	0	-	-	-	-	-	-
Carbonate	0	-	-	-	-	-	-
Fluoride	0	-	-	-	-	-	-
Iron	0	-	-	-	-	-	-
Bicarbonate	0	-	-	-	-	-	-
Potassium	0	-	-	-	-	-	-
Magnesium	0	-	-	-	-	-	-
Sodium	0	-	-	-	-	-	-
Ammonia as N	0	-	-	-	-	-	-
NO_2+NO_3 as N	0	-	-	-	-	-	-
Nitrite as N	0	-	-	-	-	-	-
Nitrate as N	0	-	-	-	-	-	-
Tot. Phosphate as P	0	-	-	-	-	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	0	-	-	-	-	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	0	-	-	-	-	-	-
COD	0	-	-	-	-	-	-
Dissolved Oxygen	0	-	-	-	-	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	0	-	-	-	-	-	-
Cadmium	0	-	-	-	-	-	-
Chromium	0	-	-	-	-	-	-
Copper	0	-	-	-	-	-	-
Lead	0	-	-	-	-	-	-
Nickel	0	-	-	-	-	-	-
Zinc	0	-	-	-	-	-	-
CHEMICAL INDICES							
Ca-Hardness	0	-	-	-	-	-	-
Tot-Hardness	0	-	-	-	-	-	-
Na%	0	-	-	-	-	-	-
RSC (-)	0	-	-	-	-	-	-
SAR (-)	0	-	-	-	-	-	-

Graphical Presentation of TONK WQ Site







BARANWADA

General Particulars

Site	:**Baranwada**	Code	: **GYP30A6**
State	: **Rajasthan**	District	: **Sawai-madhopur**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **-**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Banas**	Local River	: **Banas**
Drainage Area	: **50524 Sq. Km.**	Bank	: **Left**
Latitude	: **26°00'00"N**	Longitude	: **76°40'00"E**
Zero of Gauge	: **-**	Bank	: **Left Bank**

Water Quality Datasheet for the Period : 2015-2016

Station Name : BARANWADA **Division : Chambal D., Jaipur**

Local River : Banas

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		00/01/00		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		Clear		-		-		-	
3	Colour_Cod (-)		-		Colourless		Colourless		-		-		-	
4	EC_GEN (µmho/cm)		-		429		546		-		-		-	
5	Odour_Code (-)		-		Odourless		Odourless		-		-		-	
6	pH_GEN (pH units)		-		8.02		8.65		-		-		-	
7	Temperture	°C	-		21.0		19.9		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		0.00		-		-		-	
10	Alk-Tot (as CaCO3)		-		128.7		157.8		-		-		-	
11	Boron		-		0.05		0.09		-		-		-	
12	Calcium		-		31.09		37.84		-		-		-	
13	Chloride		-		29.98		50.77		-		-		-	
14	Carbonate		-		0.00		0.00		-		-		-	
15	Fluoride		-		0.00		0.01		-		-		-	
16	Iron		-		0.00		0.00		-		-		-	
17	Bicarbonate		-		154.44		189.40		-		-		-	
18	Potassium		-		3.36		3.75		-		-		-	
19	Magnesium		-		17.35		10.93		-		-		-	
20	Sodium		-		33.35		48.20		-		-		-	
21	Ammonia as N		-		0.04		0.16		-		-		-	
22	NO2+NO3 as N				2.76		5.06							
23	Nitrite as N		-		0.01		0.02		-		-		-	
24	Nitrate as N		-		2.75		5.04		-		-		-	
25	Tot. Phosphate as P		-		0.43		0.85		-		-		-	
26	Silicate as SiO2		-		0.00		0.00		-		-		-	
27	Sulphate as SO4		-		16.00		18.00		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.39		1.26		-		-		-	
29	COD		-		9.0		6.0		-		-		-	
30	Dissolved Oxygen		-		6.00		7.76		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		1700		1100		-		-		-	
34	Fecal Coliform		-		<200		200		-		-		-	
35	E. Coli		-		249		509		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		3.64		3.30		-		-		-	
34	Cadmium		-		0.61		1.07		-		-		-	
35	Chromium		-		0.26		1.72		-		-		-	
36	Copper		-		1.81		1.18		-		-		-	
37	Lead		-		0.05		0.97		-		-		-	
38	Nickel		-		1.72		5.86		-		-		-	
39	Zinc		-		0.01		0.00		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		257		95		-		-		-	
41	Tot-Hardness		-		150		140		-		-		-	
42	Na% (%)	%	-		32		42		-		-		-	
43	RSC (-)		-		-0.47		0.30		-		-		-	
44	SAR (-)		-		1.18		1.77		-		-		-	
45	PESTICIDES													

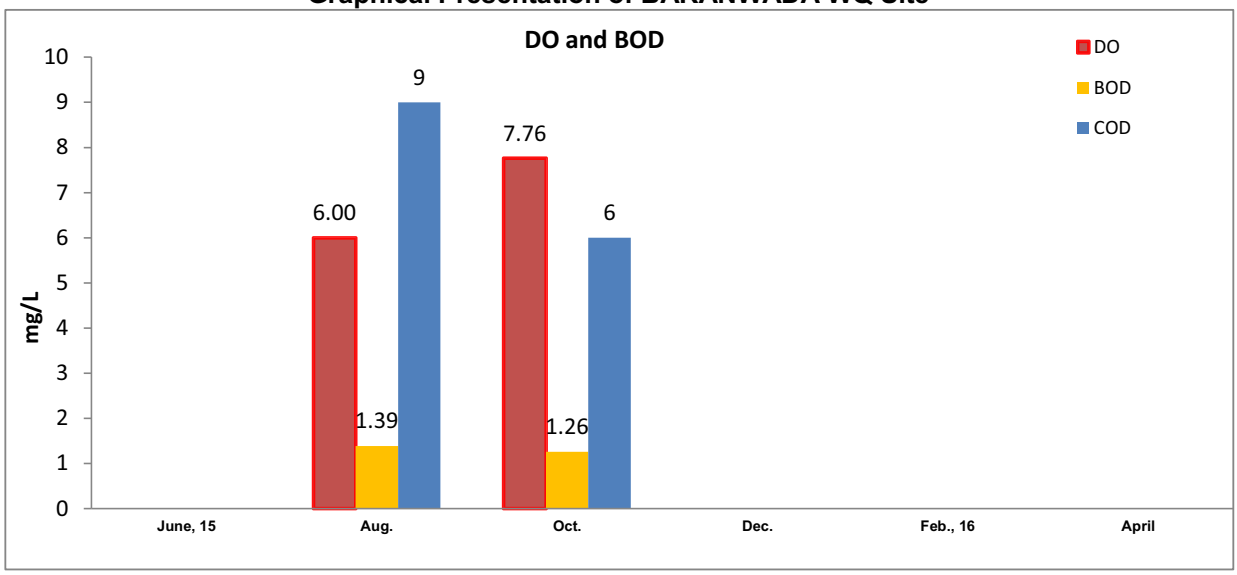
RIVER WATER SUMMARY - 2015-2016

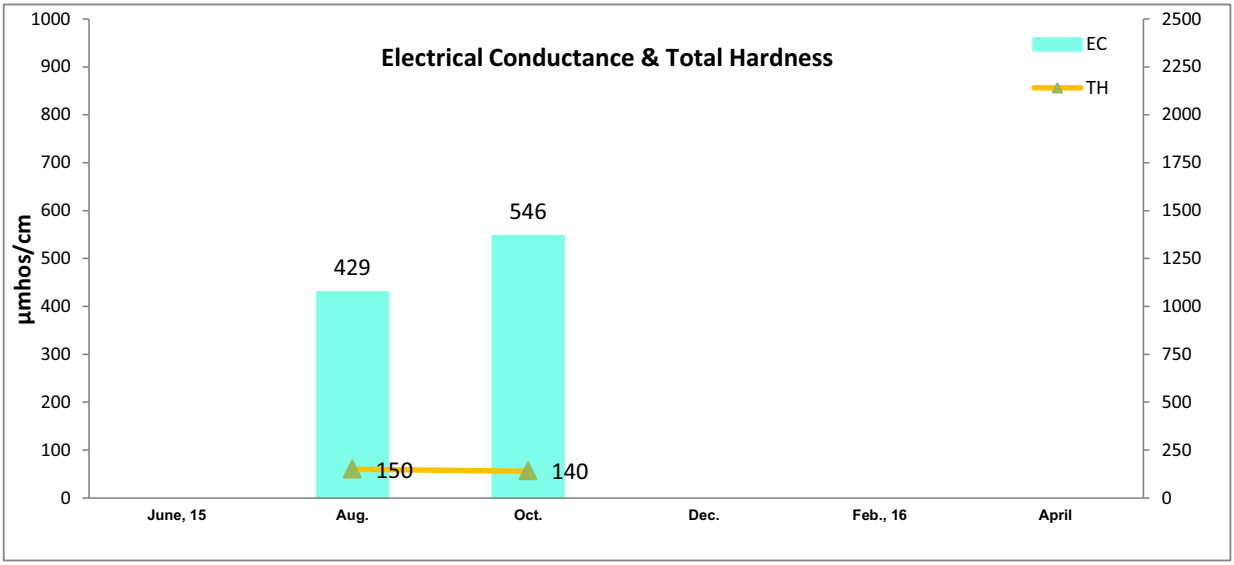
Station Name : BARANWADA **Division : Chambal D., Jaipur**

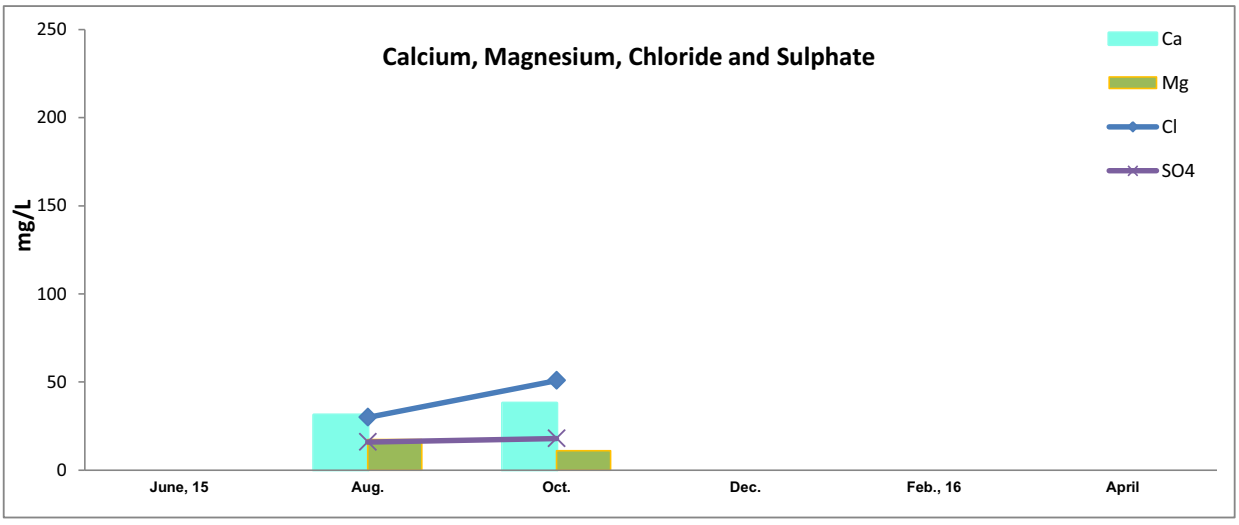
Local River : BANAS

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	2	546	429	488	488	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	2	8.65	8.02	8.34	8.34	-	-
Temperture	2	21.00	19.90	20.45	20.45	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	2	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	2	157.83	128.70	143.27	143.27	-	-
Boron	2	0.09	0.05	0.07	0.07	-	-
Calcium	2	37.84	31.09	34.47	34.47	-	-
Chloride	2	50.77	29.98	40.38	40.38	-	-
Carbonate	2	0.00	0.00	0.00	0.00	-	-
Fluoride	2	0.01	0.00	0.01	0.01	-	-
Iron	2	0.00	0.00	0.00	0.00	-	-
Bicarbonate	2	189.40	154.44	171.92	171.92	-	-
Potassium	2	3.75	3.36	3.56	3.56	-	-
Magnesium	2	17.35	10.93	14.14	14.14	-	-
Sodium	2	48.20	33.35	40.78	40.78	-	-
Ammonia as N	2	0.16	0.04	0.10	0.10	-	-
NO_2+NO_3 as N	2	5.06	2.76	3.91	3.91	-	-
Nitrite as N	2	0.02	0.01	0.01	0.01	-	-
Nitrate as N	2	5.04	2.75	3.90	3.90	-	-
Tot. Phosphate as P	2	0.85	0.43	0.64	0.64	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	2	18.00	16.00	17.00	17.00	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	2	1.39	1.26	1.33	1.33	-	-
COD	2	9.0	6.0	7.5	7.5	-	-
Dissolved Oxygen	2	7.76	6.00	6.88	6.88	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	2	1700	1100	1400	1400	-	-
Fecal Coliform	1	200	200	200	200	-	-
E. Coli	2	509	249	379	379	-	-
TRACE & TOXIC							
Arsenic	2	3.64	3.30	3.5	3.47	-	-
Cadmium	2	1.07	0.61	0.8	0.84	-	-
Chromium	2	1.72	0.26	1.0	0.99	-	-
Copper	2	1.81	1.18	1.5	1.50	-	-
Lead	2	0.97	0.05	0.5	0.51	-	-
Nickel	2	5.86	1.72	3.8	3.79	-	-
Zinc	2	0.01	0.00	0.0	0.01	-	-
CHEMICAL INDICES							
Ca-Hardness	2	257	95	176	176	-	-
Tot-Hardness	2	150	140	145	145	-	-
Na%	2	42	32	37	37	-	-
RSC (-)	2	0.30	-0.47	-0.08	-0.08	-	-
SAR (-)	2	1.77	1.18	1.48	1.48	-	-

Graphical Presentation of BARANWADA WQ Site







BAROD

General Particulars

Site	:***Barod***	Code	: **GYP60B2**
State	: **Rajasthan**	District	: **Kota**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **Kota**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Kalisind**	Local River	: **Kalisind**
Drainage Area	: **24713 Sq. Km.**	Bank	: **Left**
Latitude	: **25°23'00"N**	Longitude	: **76°20'00"E**
Zero of Gauge	: **197.00M**	Bank	: **Left Bank**

Details of operation (Opening date)

Gauge:	: **05/09/1970**
Discharge:	: **01/11/1970**
Sediment	: **02/05/1979**
Water Quality	: **02/01/1978**
Wireless	: **23/05/1997**

Water Quality Datasheet for the Period : 2015-2016

Station Name : BAROD **Division : Chambal D., Jaipur**

Local River : KALI SINDH

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		05/10/15		01/12/15		01/02/16		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		Clear		Clear		Clear		-	
3	Colour_Cod (-)		-		Colourless		Colourless		Colourless		Colourless		-	
4	EC_GEN (µmho/cm)		-		320		495		512		512		-	
5	Odour_Code (-)		-		Odourless		Odourless		Odourless		Odourless		-	
6	pH_GEN (pH units)		-		7.88		8.56		8.32		8.17		-	
7	Temperture	°C	-		21.7		19.7		12.3		10.6		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		0.00		0.00		0.00		-	
10	Alk-Tot (as CaCO3)		-		121.3		83.0		103.3		96.9		-	
11	Boron		-		0.09		0.01		0.01		0.11		-	
12	Calcium		-		43.90		42.02		33.60		34.28		-	
13	Chloride		-		10.39		35.25		44.02		41.24		-	
14	Carbonate		-		0.00		0.00		0.00		0.00		-	
15	Fluoride		-		0.01		0.01		0.03		0.45		-	
16	Iron		-		0.00		0.00		0.00		0.00		-	
17	Bicarbonate		-		145.54		99.55		123.95		116.30		-	
18	Potassium		-		2.46		3.05		3.48		3.47		-	
19	Magnesium		-		8.65		18.87		36.86		16.05		-	
20	Sodium		-		8.55		33.33		46.18		45.44		-	
21	Ammonia as N		-		0.01		0.22		0.20		0.07		-	
22	NO2+NO3 as N				9.17		23.02		5.85		26.41		-	
23	Nitrite as N		-		0.02		0.12		0.00		0.01		-	
24	Nitrate as N		-		9.15		22.90		5.85		26.40		-	
25	Tot. Phosphate as P		-		0.11		0.55		0.03		0.21		-	
26	Silicate as SiO2		-		0.00		0.00		0.00		0.00		-	
27	Sulphate as SO4		-		10.00		28.30		39.00		75.20		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.46		1.46		1.20		1.68		-	
29	COD		-		8.0		8.0		6.0		4.0		-	
30	Dissolved Oxygen		-		6.70		7.39		6.80		6.00		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		400		2100		800		450		-	
34	Fecal Coliform		-		400		400		200		200		-	
35	E. Coli		-		115		465		100		513		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		8.03		3.12		4.68		4.40		-	
34	Cadmium		-		0.94		0.27		0.48		0.75		-	
35	Chromium		-		0.55		0.75		0.48		0.54		-	
36	Copper		-		1.42		3.23		2.09		0.86		-	
37	Lead		-		0.37		0.86		1.53		0.12		-	
38	Nickel		-		0.98		3.22		0.66		0.89		-	
39	Zinc		-		0.010		0.002		0.002		0.003		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		192		105		84		86		-	
41	Tot-Hardness		-		146		184		238		153		-	
42	Na% (%)	%	-		11		28		29		39		-	
43	RSC (-)		-		-0.53		-2.04		-2.72		-1.14		-	
44	SAR (-)		-		0.31		1.07		1.30		1.60		-	
45	PESTICIDES													

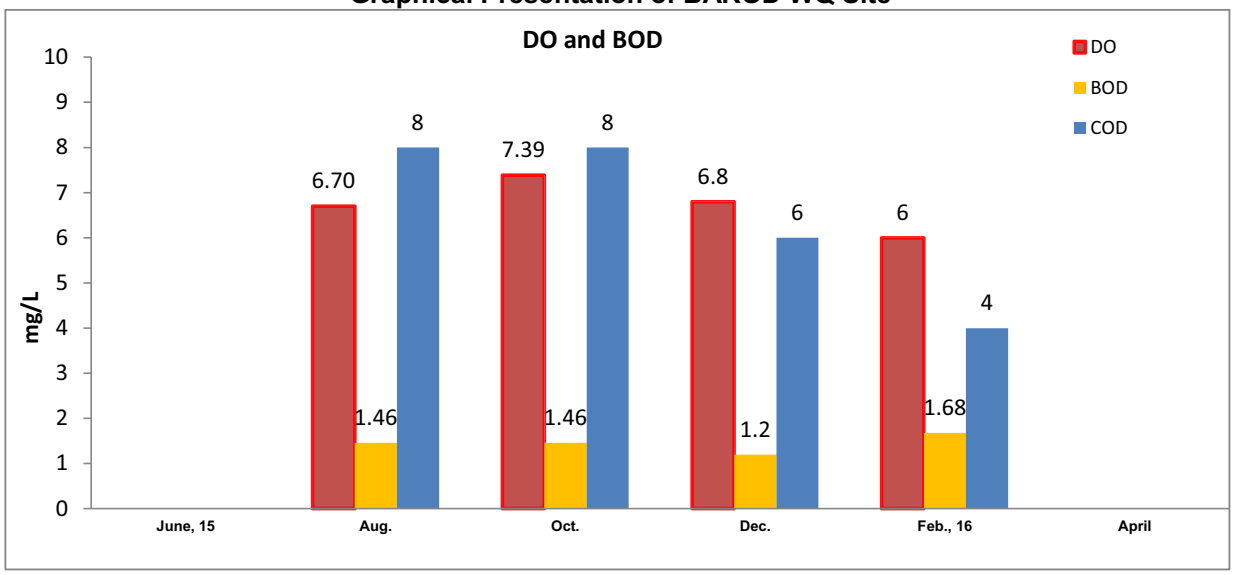
RIVER WATER SUMMARY - 2015-2016

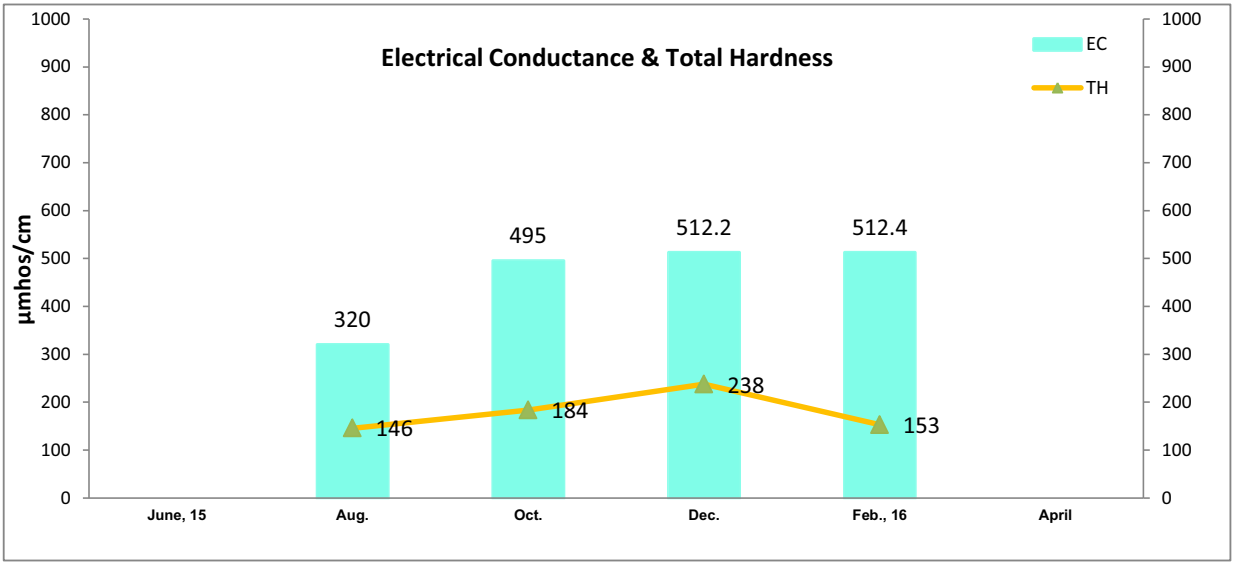
Station Name : BAROD **Division : Chambal D., Jaipur**

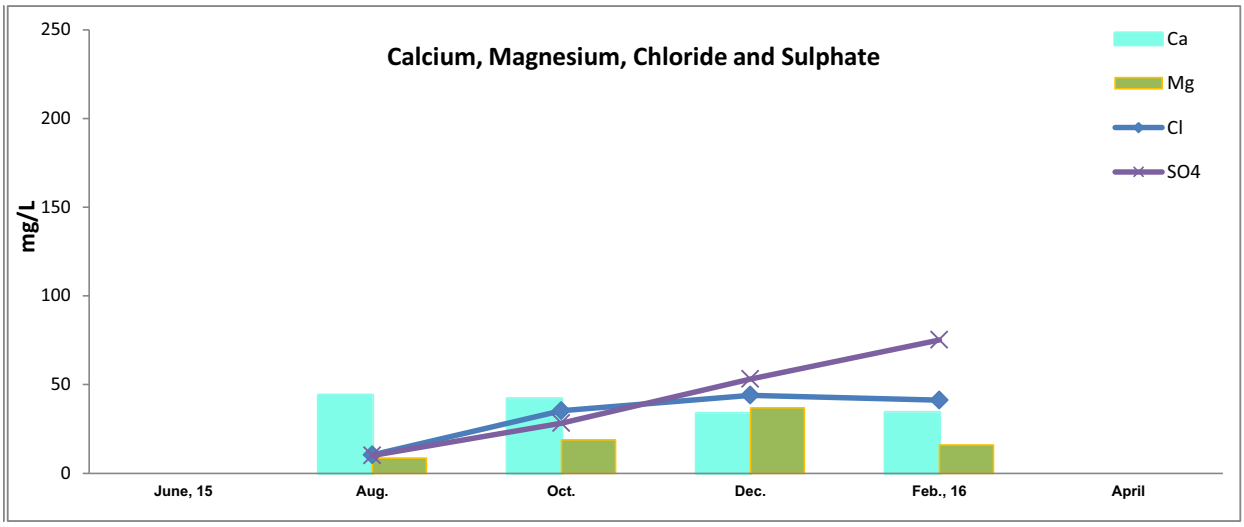
Local River : KALI SINDH

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	4	512	320	460	408	512	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	4	8.56	7.88	8.2	8.22	8.25	-
Temperture	4	21.7	10.6	16.1	20.7	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	4	0.00	0.00	0.00	0.00	0.00	-
Alk-Tot (as $CaCO_3$)	4	121.28	82.96	101.11	102.12	100.10	-
Boron	4	0.11	0.01	0.05	0.05	0.06	-
Calcium	4	43.90	33.60	38.45	42.96	33.94	-
Chloride	4	44.02	10.39	32.73	22.82	42.63	-
Carbonate	4	0.00	0.00	0.00	0.00	0.00	-
Fluoride	4	0.45	0.01	0.12	0.01	0.24	-
Iron	4	0.00	0.00	0.00	0.00	0.00	-
Bicarbonate	4	145.54	99.55	121.34	122.55	120.13	-
Potassium	4	3.48	2.46	3.12	2.76	3.48	-
Magnesium	4	36.86	8.65	20.11	13.76	26.46	-
Sodium	4	46.18	8.55	33.38	20.94	45.81	-
Ammonia as N	4	0.22	0.01	0.12	0.11	0.13	-
NO_2+NO_3 as N	4	26.41	5.85	16.11	16.10	16.13	-
Nitrite as N	4	0.12	0.00	0.04	0.07	0.01	-
Nitrate as N	4	26.40	5.85	16.08	16.03	16.13	-
Tot. Phosphate as P	4	0.55	0.03	0.23	0.33	0.12	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	4	75.20	10.00	38.13	19.15	57.10	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	4	1.68	1.20	1.45	1.46	1.44	-
COD	4	8.0	4.0	6.5	8.0	5.0	-
Dissolved Oxygen	4	7.39	6.00	6.72	7.05	6.40	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	4	8.03	3.12	5.1	5.58	4.54	-
Cadmium	4	0.94	0.27	0.6	0.60	0.62	-
Chromium	4	0.75	0.48	0.6	0.65	0.51	-
Copper	4	3.23	0.86	1.9	2.33	1.48	-
Lead	4	1.53	0.12	0.7	0.62	0.83	-
Nickel	4	3.22	0.66	1.4	2.10	0.78	-
Zinc	4	0.01	0.00	0.0	0.01	0.00	-
CHEMICAL INDICES							
Ca-Hardness	4	192	84	117	149	85	-
Tot-Hardness	4	238	146	180	165	195	-
Na%	4	39	11	27	19	34	-
RSC (-)	4	-0.53	-2.72	-1.61	-1.29	-1.93	-
SAR (-)	4	1.60	0.31	1.07	0.69	1.45	-

Graphical Presentation of BAROD WQ Site







CHITTORGARH

GENERAL PARTICULARS

Site	:**Chittorgarh**	Code	: **GYP39B8**
State	: **Rajasthan**	District	: **Chittorgarh**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **Udaipur**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Banas**	Local River	: **Gambhiri**
Drainage Area	: **1445 Sq. Km.**	Bank	: **Left**
Latitude	: **24°52'00"N**	Longitude	: **74°38'08"E**
Zero of Gauge	: **-**	Bank	: **Left Bank**

Water Quality Datasheet for the Period : 2015-2016

Station Name : CHITTORGARH **Division : Chambal D., Jaipur**

Local River : Gambhiri

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		R.Dry		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		-		-		-		-	
3	Colour_Cod (-)		-		Colourless		-		-		-		-	
4	EC_GEN (µmho/cm)		-		350		-		-		-		-	
5	Odour_Code (-)		-		Odourless		-		-		-		-	
6	pH_GEN (pH units)		-		7.59		-		-		-		-	
7	Temperture	°C	-		23.0		-		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.84		-		-		-		-	
10	Alk-Tot (as CaCO3)		-		114.4		-		-		-		-	
11	Boron		-		0.02		-		-		-		-	
12	Calcium		-		35.00		-		-		-		-	
13	Chloride		-		14.50		-		-		-		-	
14	Carbonate		-		1.01		-		-		-		-	
15	Fluoride		-		0.03		-		-		-		-	
16	Iron		-		0.001		-		-		-		-	
17	Bicarbonate		-		135.20		-		-		-		-	
18	Potassium		-		2.71		-		-		-		-	
19	Magnesium		-		15.30		-		-		-		-	
20	Sodium		-		11.52		-		-		-		-	
21	Ammonia as N		-		4.09		-		-		-		-	
22	NO2+NO3 as N		-		7.61		-		-		-		-	
23	Nitrite as N		-		0.01		-		-		-		-	
24	Nitrate as N		-		7.60		-		-		-		-	
25	Tot. Phosphate as P		-		0.00		-		-		-		-	
26	Silicate as SiO2		-		0.00		-		-		-		-	
27	Sulphate as SO4		-		20.00		-		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		0.85		-		-		-		-	
29	COD		-		8.0		-		-		-		-	
30	Dissolved Oxygen		-		6.70		-		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		400		-		-		-		-	
34	Fecal Coliform		-		200		-		-		-		-	
35	E. Coli		-		238		-		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		2.81		-		-		-		-	
34	Cadmium		-		0.38		-		-		-		-	
35	Chromium		-		15.74		-		-		-		-	
36	Copper		-		0.72		-		-		-		-	
37	Lead		-		0.24		-		-		-		-	
38	Nickel		-		2.92		-		-		-		-	
39	Zinc		-		0.01		-		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		210		-		-		-		-	
41	Tot-Hardness		-		151		-		-		-		-	
42	Na% (%)	%	-		14		-		-		-		-	
43	RSC (-)		-		-0.77		-		-		-		-	
44	SAR (-)		-		0.41		-		-		-		-	
45	PESTICIDES													

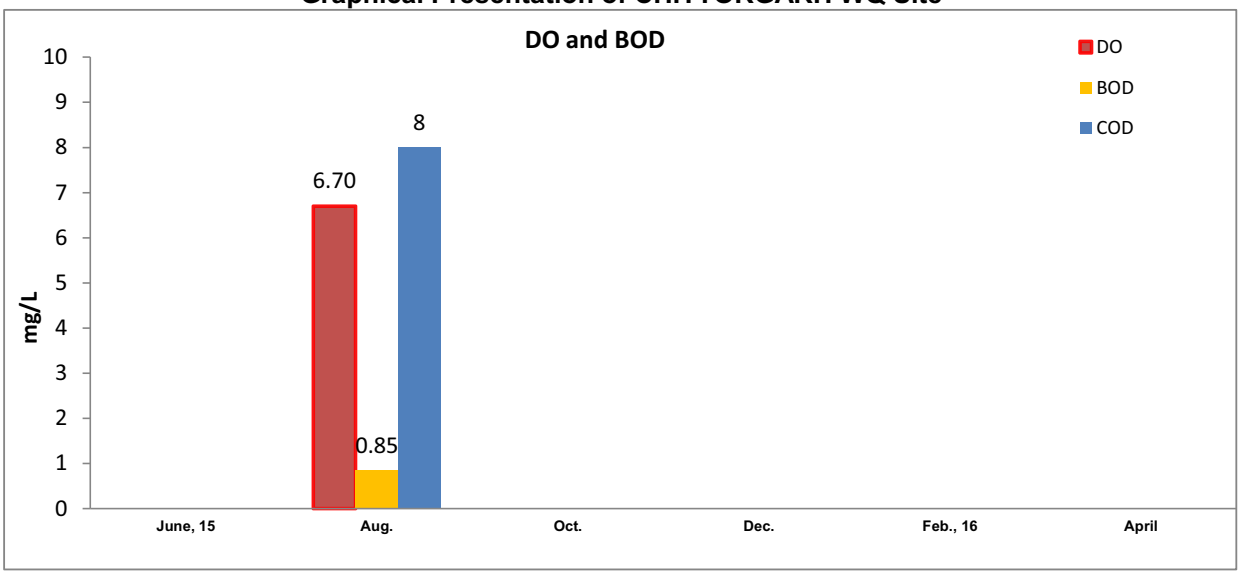
RIVER WATER SUMMARY - 2015-2016

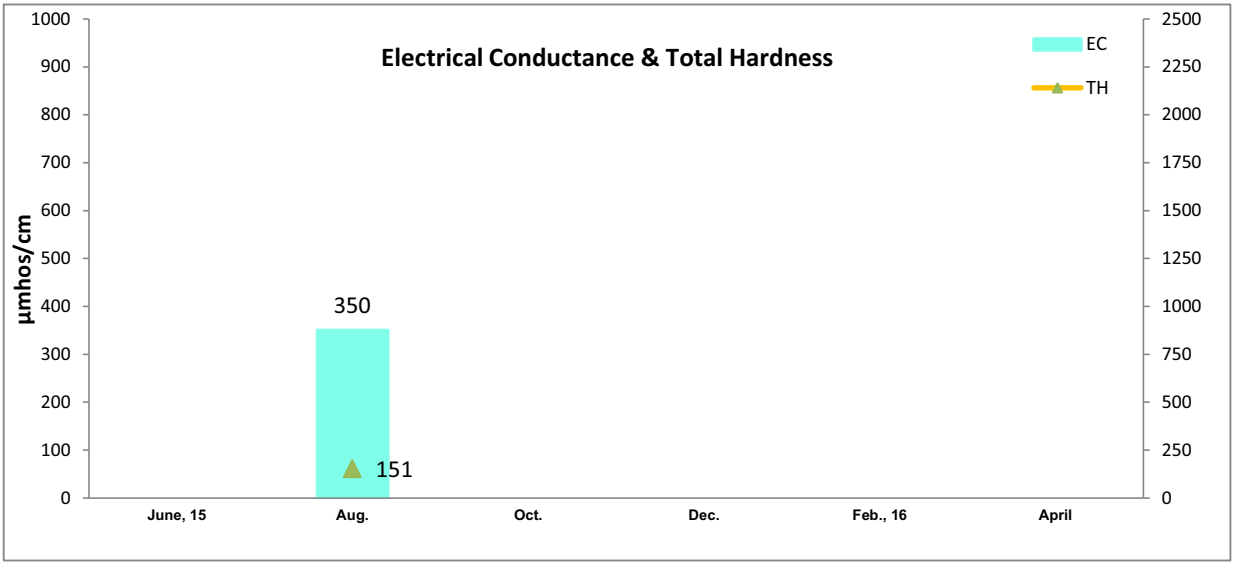
Station Name : CHITTORGARH **Division : Chambal D., Jaipur**

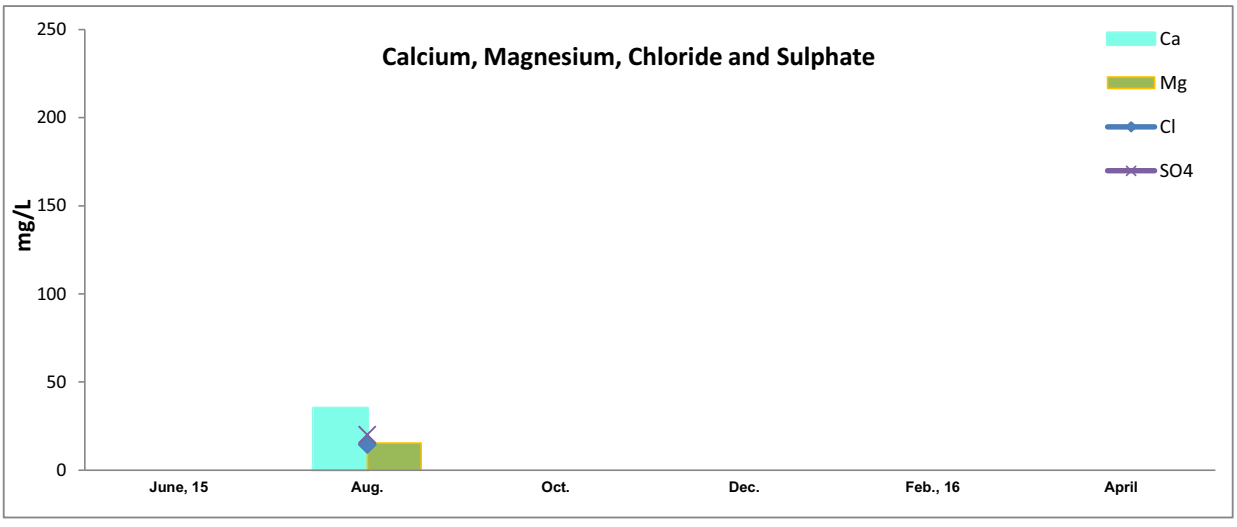
Local River :Gambhiri

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	1	350	350	350	350	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	1	7.59	7.59	7.59	7.59	-	-
Temperture	1	23.00	23.00	23.00	23.00	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.84	0.84	0.84	0.84	-	-
Alk-Tot (as $CaCO_3$)	1	114.35	114.35	114.35	114.35	-	-
Boron	1	0.02	0.02	0.02	0.02	-	-
Calcium	1	35.00	35.00	35.00	35.00	-	-
Chloride	1	14.50	14.50	14.50	14.50	-	-
Carbonate	1	1.01	1.01	1.01	1.01	-	-
Fluoride	1	0.03	0.03	0.03	0.03	-	-
Iron	1	0.00	0.00	0.00	0.00	-	-
Bicarbonate	1	135.20	135.20	135.20	135.20	-	-
Potassium	1	2.71	2.71	2.71	2.71	-	-
Magnesium	1	15.30	15.30	15.30	15.30	-	-
Sodium	1	11.52	11.52	11.52	11.52	-	-
Ammonia as N	1	4.09	4.09	4.09	4.09	-	-
NO_2+NO_3 as N	1	7.61	7.61	7.61	7.61	-	-
Nitrite as N	1	0.01	0.01	0.01	0.01	-	-
Nitrate as N	1	7.60	7.60	7.60	7.60	-	-
Tot. Phosphate as P	1	0.00	0.00	0.00	0.00	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	1	20.00	20.00	20.00	20.00	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	1	0.85	0.85	0.85	0.85	-	-
COD	1	8.00	8.00	8.00	8.00	-	-
Dissolved Oxygen	1	6.70	6.70	6.70	6.70	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	1	400	400	400	400	-	-
Fecal Coliform	1	200	200	200	200	-	-
E. Coli	1	238	238	238	238	-	-
TRACE & TOXIC							
Arsenic	1	2.81	2.81	2.8	2.81	-	-
Cadmium	1	0.38	0.38	0.4	0.38	-	-
Chromium	1	15.74	15.74	15.7	15.74	-	-
Copper	1	0.72	0.72	0.7	0.72	-	-
Lead	1	0.24	0.24	0.2	0.24	-	-
Nickel	1	2.92	2.92	2.9	2.92	-	-
Zinc	1	0.01	0.01	0.0	0.01	-	-
CHEMICAL INDICES							
Ca-Hardness	1	210	210	210	210	-	-
Tot-Hardness	1	151	151	151	151	-	-
Na%	1	14	14	14	14	-	-
RSC (-)	1	-0.77	-0.77	-0.77	-0.77	-	-
SAR (-)	1	0.41	0.41	0.41	0.41	-	-

Graphical Presentation of CHITTORGARH WQ Site







MAHIDPUR

General Particulars

Site	: **MAHIDPUR**	Code	: **GYP8OI5**
State	: **Madhya Pradesh**	District	: **Ujjin**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **U Chambal SD, Indore**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Spira**
Sub-Sub-Trib.	: **Chambal**	Local River	: **Chambal**
Drainage Area	: **4430 Sq. Km.**	Bank	: **Left**
Latitude	: **23°29'00"N**	Longitude	: **75°36'00" E**
Zero of Gauge	: **442.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **15/01/1976**
Discharge:	: **15/01/1976**
Sediment	: **25/09/1978**
Water Quality	: **02/01/1978**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : MAHIDPUR **Division : Chambal D., Jaipur**

Local River : SIPRA

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		01/08/15		R.Dry		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		-		-		-		-	
3	Colour_Cod (-)		-		Colourless		-		-		-		-	
4	EC_GEN (µmho/cm)		-		558		-		-		-		-	
5	Odour_Code (-)		-		Odourless		-		-		-		-	
6	pH_GEN (pH units)		-		8.02		-		-		-		-	
7	Temperture	°C	-		22.1		-		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/L	-		0.00		-		-		-		-	
10	Alk-Tot (as CaCO3)		-		170.0		-		-		-		-	
11	Boron		-		0.01		-		-		-		-	
12	Calcium		-		57.70		-		-		-		-	
13	Chloride		-		33.38		-		-		-		-	
14	Carbonate		-		0.00		-		-		-		-	
15	Fluoride		-		0.02		-		-		-		-	
16	Iron		-		0.06		-		-		-		-	
17	Bicarbonate		-		203.94		-		-		-		-	
18	Potassium		-		5.28		-		-		-		-	
19	Magnesium		-		16.08		-		-		-		-	
20	Sodium		-		28.49		-		-		-		-	
21	Ammonia as N		-		1.09		-		-		-		-	
22	NO2+NO3 as N				12.57		-							
23	Nitrite as N		-		0.65		-		-		-		-	
24	Nitrate as N		-		11.92		-		-		-		-	
25	Tot. Phosphate as P		-		0.42		-		-		-		-	
26	Silicate as SiO2		-		0.00		-		-		-		-	
27	Sulphate as SO4		-		30.00		-		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/L	-		1.50		-		-		-		-	
29	COD		-		6.0		-		-		-		-	
30	Dissolved Oxygen		-		6.40		-		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		-		-		-		-		-	
34	Fecal Coliform		-		-		-		-		-		-	
35	E. Coli		-		148		-		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		3.29		-		-		-		-	
34	Cadmium		-		10.74		-		-		-		-	
35	Chromium		-		4.46		-		-		-		-	
36	Copper		-		5.86		-		-		-		-	
37	Lead		-		0.25		-		-		-		-	
38	Nickel		-		32.36		-		-		-		-	
39	Zinc		-		0.27		-		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/L	-		335		-		-		-		-	
41	Tot-Hardness		-		211		-		-		-		-	
42	Na% (%)	%	-		22		-		-		-		-	
43	RSC (-)		-		-0.88		-		-		-		-	
44	SAR (-)		-		0.85		-		-		-		-	
45	PESTICIDES													

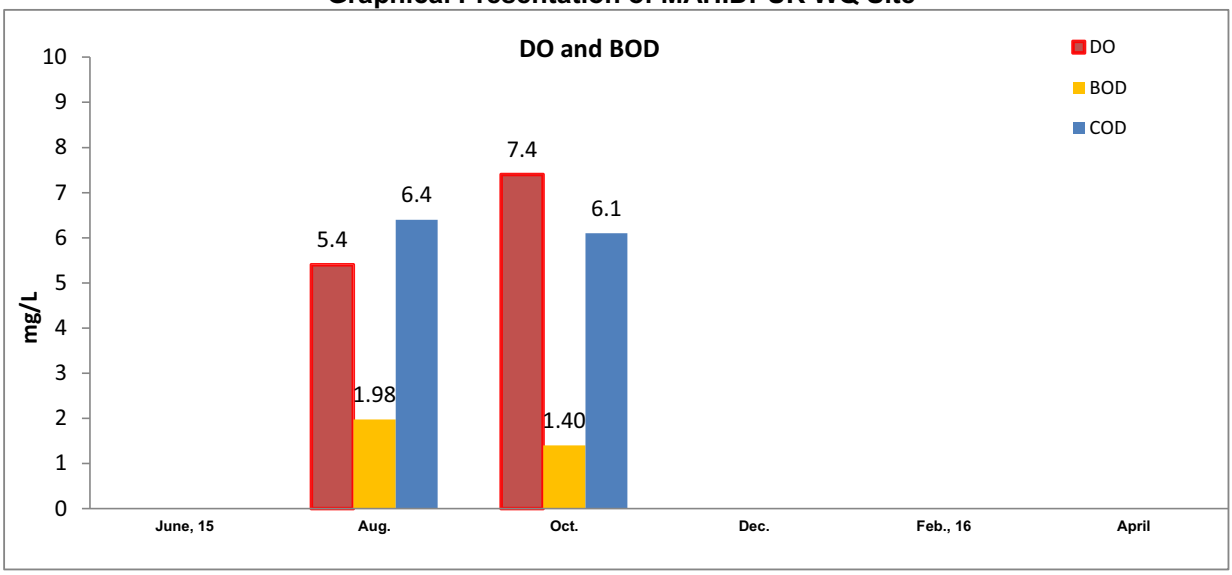
RIVER WATER SUMMARY - 2015-2016

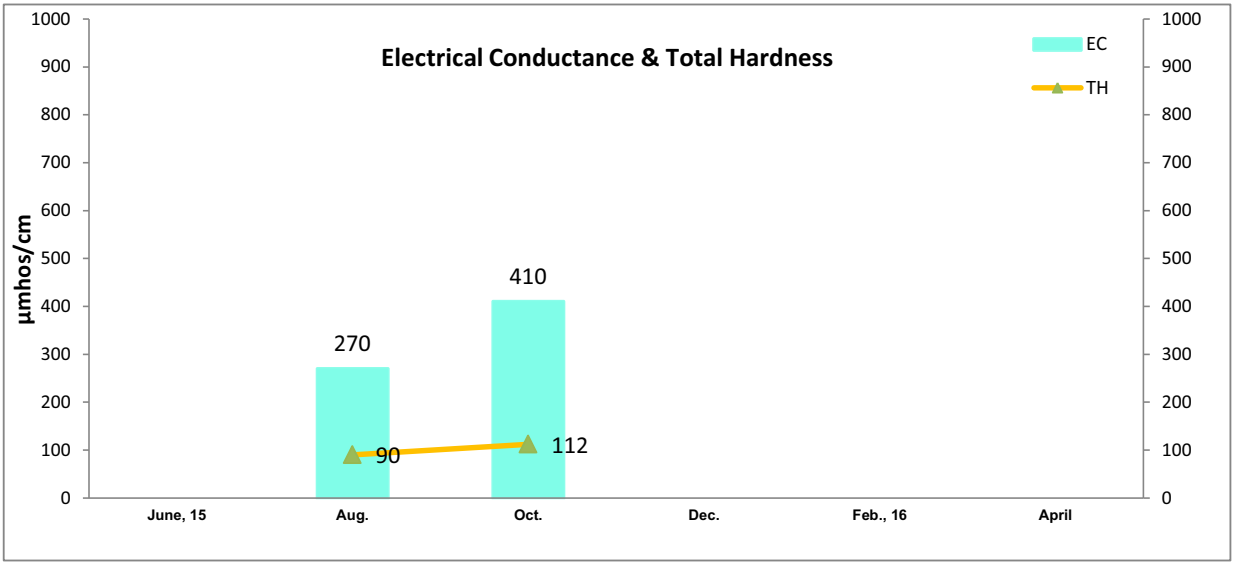
Station Name : MAHIDPUR **Division : Chambal D., Jaipur**

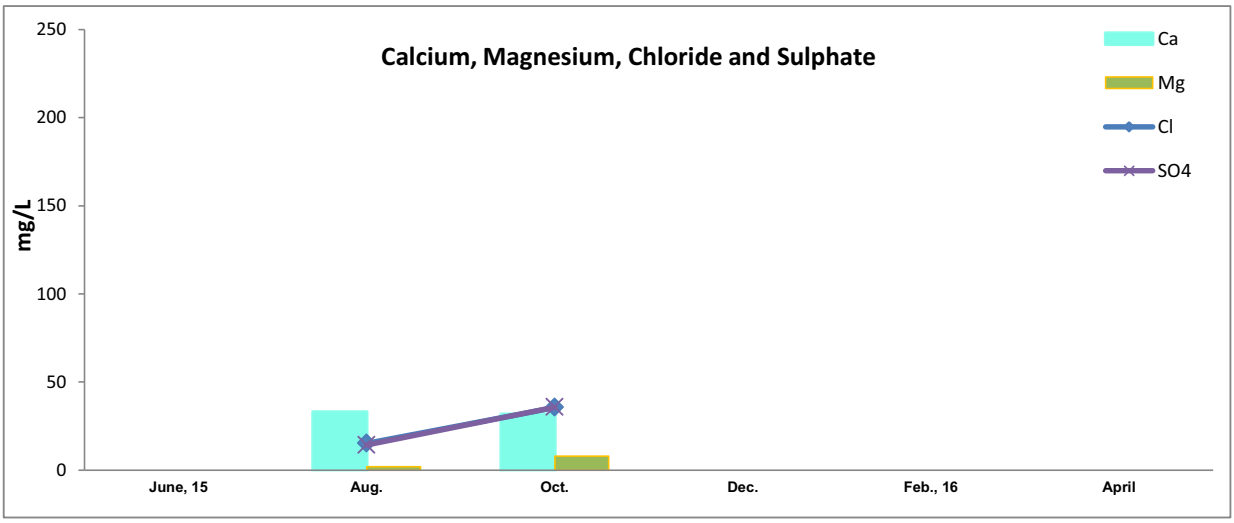
Local River : SIPRA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	1	558	558	558	558	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	1	8.02	8.02	8.0	8.02	-	-
Temperture	1	22.10	22.10	22.1	22.10	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	1	169.95	169.95	169.95	169.95	-	-
Boron	1	0.01	0.01	0.01	0.01	-	-
Calcium	1	57.70	57.70	57.70	57.70	-	-
Chloride	1	33.38	33.38	33.38	33.38	-	-
Carbonate	1	0.00	0.00	0.00	0.00	-	-
Fluoride	1	0.02	0.02	0.02	0.02	-	-
Iron	1	0.06	0.06	0.06	0.06	-	-
Bicarbonate	1	203.94	203.94	203.94	203.94	-	-
Potassium	1	5.28	5.28	5.28	5.28	-	-
Magnesium	1	16.08	16.08	16.08	16.08	-	-
Sodium	1	28.49	28.49	28.49	28.49	-	-
Ammonia as N	1	1.09	1.09	1.09	1.09	-	-
NO_2+NO_3 as N	1	12.57	12.57	12.57	12.57	-	-
Nitrite as N	1	0.65	0.65	0.65	0.65	-	-
Nitrate as N	1	11.92	11.92	11.92	11.92	-	-
Tot. Phosphate as P	1	0.42	0.42	0.42	0.42	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	1	30.00	30.00	30.00	30.00	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	1	1.50	1.50	1.50	1.50	-	-
COD	1	6.0	6.0	6.0	6.0	-	-
Dissolved Oxygen	1	6.40	6.40	6.40	6.40	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	3.29	3.29	3.3	3.29	-	-
Cadmium	1	10.74	10.74	10.7	10.74	-	-
Chromium	1	4.46	4.46	4.5	4.46	-	-
Copper	1	5.86	5.86	5.9	5.86	-	-
Lead	1	0.25	0.25	0.3	0.25	-	-
Nickel	1	32.36	32.36	32.4	32.36	-	-
Zinc	1	0.27	0.27	0.3	0.27	-	-
CHEMICAL INDICES							
Ca-Hardness	1	335	335	335	335	-	-
Tot-Hardness	1	211	211	211	211	-	-
Na%	1	22	22	22	22	-	-
RSC (-)	1	-0.88	-0.88	-0.88	-0.88	-	-
SAR (-)	1	0.85	0.85	0.85	0.85	-	-

Graphical Presentation of MAHIDPUR WQ Site







UJJAIN

General Particulars

Site	: **Ujjain**	Code	: **GYP30A6**
State	: **Rajasthan**	District	: **Ujjain**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **-**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Shipra**	Local River	: **Shipra**
Drainage Area	: **2070 Sq. Km.**	Bank	: **Left**
Latitude	: **23°10'06"N**	Longitude	: **75°46'16"E**
Zero of Gauge	: **-**	Bank	: **Left Bank**

Water Quality Datasheet for the Period : 2015-2016

Station Name : UJJAIN **Division : Chambal D., Jaipur**

Local River : Shipra

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry		03/08/15		R.Dry		R. Dry		R. Dry		R. Dry	
PHYSICAL														
1	Q (cumec)													
2	Weather		-		Clear		-		-		-		-	
3	Colour_Cod (-)		-		Colourless		-		-		-		-	
4	EC_GEN (µmho/cm)		-		900		-		-		-		-	
5	Odour_Code (-)		-		Odourless		-		-		-		-	
6	pH_GEN (pH units)		-		8.23		-		-		-		-	
7	Temperture	°C	-		22.0		-		-		-		-	
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-		0.00		-		-		-		-	
10	Alk-Tot (as CaCO3)		-		215.1		-		-		-		-	
11	Boron		-		0.01		-		-		-		-	
12	Calcium		-		84.20		-		-		-		-	
13	Chloride		-		82.96		-		-		-		-	
14	Carbonate		-		0.00		-		-		-		-	
15	Fluoride		-		0.02		-		-		-		-	
16	Iron		-		0.00		-		-		-		-	
17	Bicarbonate		-		258.11		-		-		-		-	
18	Potassium		-		8.60		-		-		-		-	
19	Magnesium		-		17.97		-		-		-		-	
20	Sodium		-		75.80		-		-		-		-	
21	Ammonia as N		-		0.34		-		-		-		-	
22	NO2+NO3 as N				22.09		-							
23	Nitrite as N		-		1.99		-		-		-		-	
24	Nitrate as N		-		20.10		-		-		-		-	
25	Tot. Phosphate as P		-		0.73		-		-		-		-	
26	Silicate as SiO2		-		0.00		-		-		-		-	
27	Sulphate as SO4		-		42.00		-		-		-		-	
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-		1.61		-		-		-		-	
29	COD		-		13.0		-		-		-		-	
30	Dissolved Oxygen		-		7.10		-		-		-		-	
31	DO_SAT %	%	-		-		-		-		-		-	
33	Tota Coliform	MPN/1ml	-		2600		-		-		-		-	
34	Fecal Coliform		-		800		-		-		-		-	
35	E. Coli		-		416		-		-		-		-	
TRACE & TOXIC														
33	Arsenic	(µg/L)	-		3.90		-		-		-		-	
34	Cadmium		-		0.47		-		-		-		-	
35	Chromium		-		2.09		-		-		-		-	
36	Copper		-		1.20		-		-		-		-	
37	Lead		-		0.86		-		-		-		-	
38	Nickel		-		2.49		-		-		-		-	
39	Zinc		-		0.26		-		-		-		-	
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-		540		-		-		-		-	
41	Tot-Hardness		-		285		-		-		-		-	
42	Na% (%)	%	-		36		-		-		-		-	
43	RSC (-)		-		-1.48		-		-		-		-	
44	SAR (-)		-		1.95		-		-		-		-	
45	PESTICIDES													

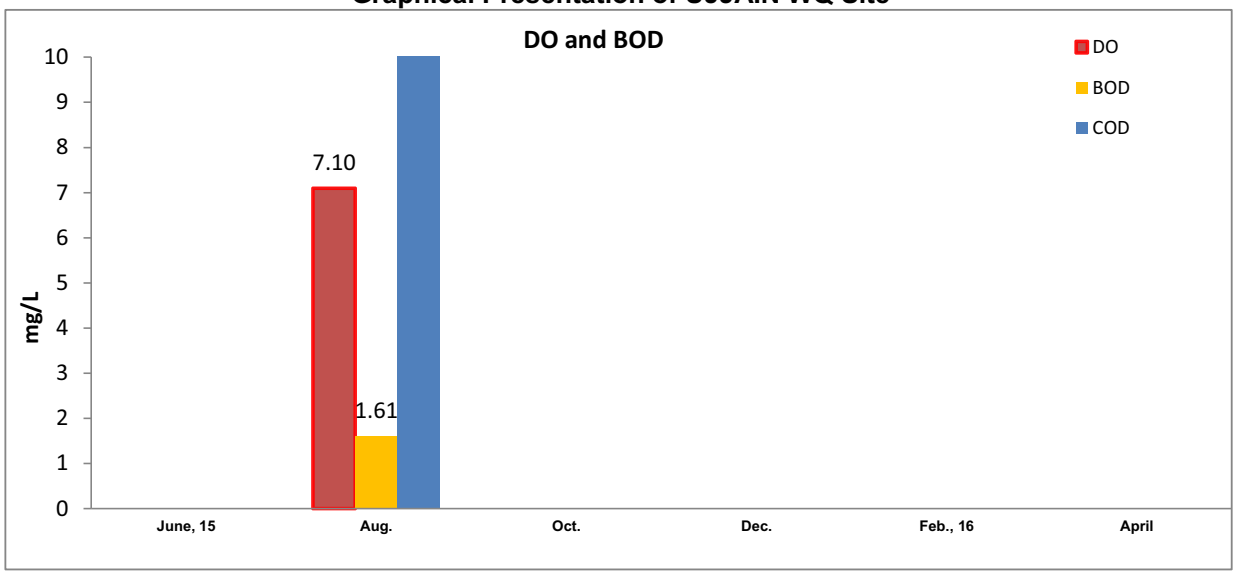
RIVER WATER SUMMARY - 2015-2016

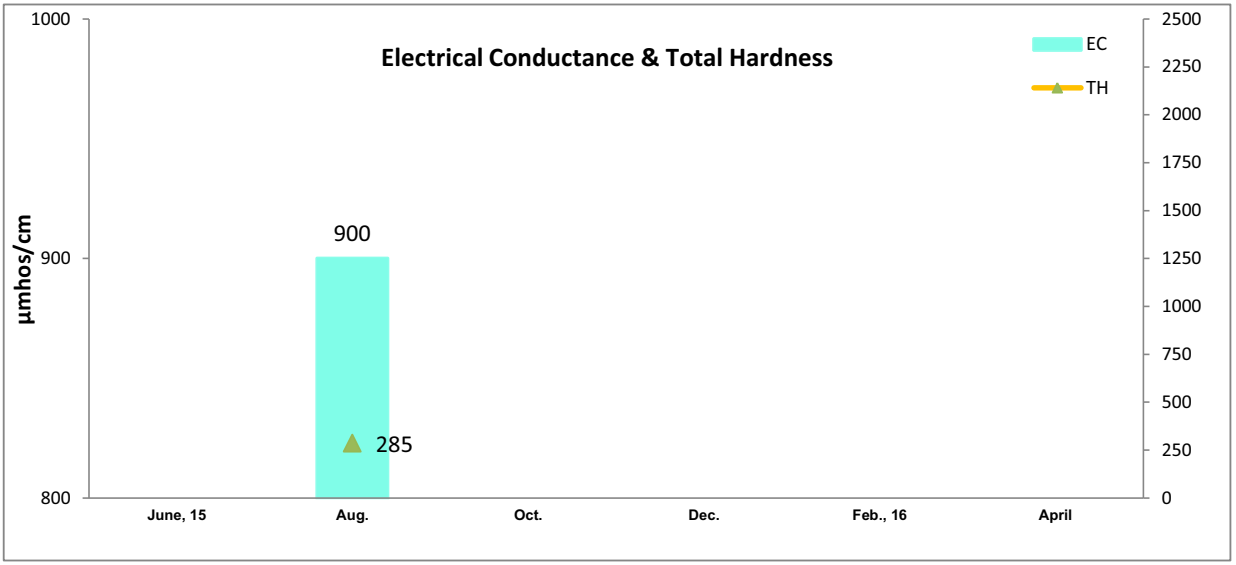
Station Name : UJJAIN **Division : Chambal D., Jaipur**

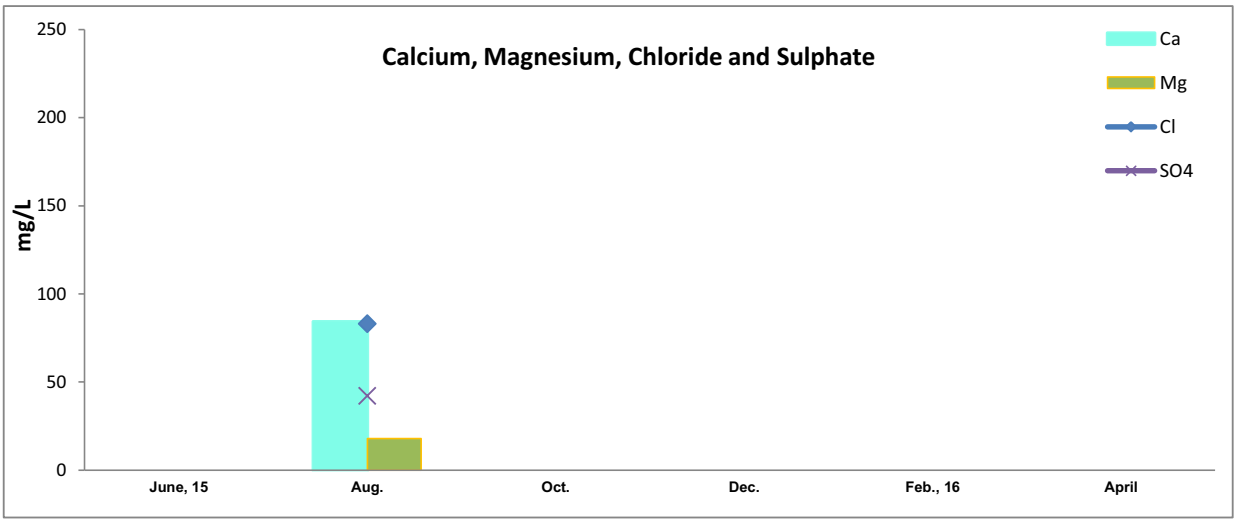
Local River : SHIPRA

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	1	900	900	900	900	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	1	8.23	8.23	8.23	8.23	-	-
Temperture	1	22.00	22.00	22.00	22.00	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	1	215.09	215.09	215.09	215.09	-	-
Boron	1	0.01	0.01	0.01	0.01	-	-
Calcium	1	84.20	84.20	84.20	84.20	-	-
Chloride	1	82.96	82.96	82.96	82.96	-	-
Carbonate	1	0.00	0.00	0.00	0.00	-	-
Fluoride	1	0.02	0.02	0.02	0.02	-	-
Iron	1	0.00	0.00	0.00	0.00	-	-
Bicarbonate	1	258.11	258.11	258.11	258.11	-	-
Potassium	1	8.60	8.60	8.60	8.60	-	-
Magnesium	1	17.97	17.97	17.97	17.97	-	-
Sodium	1	75.80	75.80	75.80	75.80	-	-
Ammonia as N	1	0.34	0.34	0.34	0.34	-	-
NO_2+NO_3 as N	1	22.09	22.09	22.09	22.09	-	-
Nitrite as N	1	1.99	1.99	1.99	1.99	-	-
Nitrate as N	1	20.10	20.10	20.10	20.10	-	-
Tot. Phosphate as P	1	0.73	0.73	0.73	0.73	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	1	42.00	42.00	42.00	42.00	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	1	1.61	1.61	1.61	1.61	-	-
COD	1	13.0	13.0	13.0	13.0	-	-
Dissolved Oxygen	1	7.10	7.10	7.10	7.10	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	3.90	3.90	3.9	3.90	-	-
Cadmium	1	0.47	0.47	0.5	0.47	-	-
Chromium	1	2.09	2.09	2.1	2.09	-	-
Copper	1	1.20	1.20	1.2	1.20	-	-
Lead	1	0.86	0.86	0.9	0.86	-	-
Nickel	1	2.49	2.49	2.5	2.49	-	-
Zinc	1	0.26	0.26	0.3	0.26	-	-
CHEMICAL INDICES							
Ca-Hardness	1	540	540	540	540	-	-
Tot-Hardness	1	285	285	285	285	-	-
Na%	1	36	36	36	36	-	-
RSC (-)	1	-1.48	-1.48	-1.48	-1.48	-	-
SAR (-)	1	1.95	1.95	1.95	1.95	-	-

Graphical Presentation of UJJAIN WQ Site







TAL

General Particulars

Site	: **TAL**	Code	: **GYP00V7**
State	: **Madhya Pradesh**	District	: **Ratlam**
Division	: **Chambal Div., Jaipur**	Sub-Division	: **U Chambal SD, Indore**
River Basin	: **Ganga-Brahm-Meghna**	Independent River	: **Ganga**
Tributary	: **Yamuna**	Sub Tributary	: **Chambal**
Sub-Sub-Trib.	: **Chambal**	Local River	: **Chambal**
Drainage Area	: **4270 Sq. Km.**	Bank	: **Left**
Latitude	: **23°43'00"N**	Longitude	: **75°21'00" E**
Zero of Gauge	: **424.000(m.s.l)**		

Details of operation (Opening date)

Gauge:	: **18/01/1976**
Discharge:	: **18/01/1976**
Sediment	: **03/09/1979**
Water Quality	: **02/08/1979**
Wireless	: **-**

Water Quality Datasheet for the Period : 2015-2016

Station Name : TAL **Division : Chambal D., Jaipur**

Local River : CHAMBAL

River Water Analysis

S.No	Parameters	Unit	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan-16	Feb	Mar	Apr	May
	Date of Collection		R. Dry	R. Dry	03/08/15	R.Dry	R.Dry	R. Dry	R. Dry	R. Dry	R. Dry	R.Dry	R. Dry	R. Dry
PHYSICAL														
1	Q (cumec)													
2	Weather		-	-	Clear	-	-	-	-	-	-	-	-	-
3	Colour_Cod (-)		-	-	Colourless	-	-	-	-	-	-	-	-	-
4	EC_GEN (µmho/cm)		-	-	568	-	-	-	-	-	-	-	-	-
5	Odour_Code (-)		-	-	Odourless	-	-	-	-	-	-	-	-	-
6	pH_GEN (pH units)		-	-	7.98	-	-	-	-	-	-	-	-	-
7	Temperture	°C	-	-	23.5	-	-	-	-	-	-	-	-	-
CHEMICAL														
9	Alk-Phen (as CaCO3)	mg/l	-	-	0.00	-	-	-	-	-	-	-	-	-
10	Alk-Tot (as CaCO3)		-	-	131.5	-	-	-	-	-	-	-	-	-
11	Boron		-	-	0.11	-	-	-	-	-	-	-	-	-
12	Calcium		-	-	44.88	-	-	-	-	-	-	-	-	-
13	Chloride		-	-	32.18	-	-	-	-	-	-	-	-	-
14	Carbonate		-	-	0.00	-	-	-	-	-	-	-	-	-
15	Fluoride		-	-	0.01	-	-	-	-	-	-	-	-	-
16	Iron		-	-	0.01	-	-	-	-	-	-	-	-	-
17	Bicarbonate		-	-	157.78	-	-	-	-	-	-	-	-	-
18	Potassium		-	-	4.32	-	-	-	-	-	-	-	-	-
19	Magnesium		-	-	20.87	-	-	-	-	-	-	-	-	-
20	Sodium		-	-	35.99	-	-	-	-	-	-	-	-	-
21	Ammonia as N		-	-	0.07	-	-	-	-	-	-	-	-	-
22	NO2+NO3 as N		-	-	8.10	-	-	-	-	-	-	-	-	-
23	Nitrite as N		-	-	0.11	-	-	-	-	-	-	-	-	-
24	Nitrate as N		-	-	7.99	-	-	-	-	-	-	-	-	-
25	Tot. Phosphate as P		-	-	0.07	-	-	-	-	-	-	-	-	-
26	Silicate as SiO2		-	-	0.00	-	-	-	-	-	-	-	-	-
27	Sulphate as SO4		-	-	64.00	-	-	-	-	-	-	-	-	-
BIOLOGICAL/BACTERIOLOGICAL														
28	BOD5-20°C	mg/l	-	-	1.55	-	-	-	-	-	-	-	-	-
29	COD		-	-	7.0	-	-	-	-	-	-	-	-	-
30	Dissolved Oxygen		-	-	5.60	-	-	-	-	-	-	-	-	-
31	DO_SAT %	%	-	-	-	-	-	-	-	-	-	-	-	-
33	Tota Coliform	MPN/1ml	-	-	200	-	-	-	-	-	-	-	-	-
34	Fecal Coliform		-	-	200	-	-	-	-	-	-	-	-	-
35	E. Coli		-	-	295	-	-	-	-	-	-	-	-	-
TRACE & TOXIC														
33	Arsenic	(µg/L)	-	-	6.52	-	-	-	-	-	-	-	-	-
34	Cadmium		-	-	6.44	-	-	-	-	-	-	-	-	-
35	Chromium		-	-	1.17	-	-	-	-	-	-	-	-	-
36	Copper		-	-	2.28	-	-	-	-	-	-	-	-	-
37	Lead		-	-	0.19	-	-	-	-	-	-	-	-	-
38	Nickel		-	-	50.17	-	-	-	-	-	-	-	-	-
39	Zinc		-	-	0.26	-	-	-	-	-	-	-	-	-
CHEMICAL INDICES														
40	Ca-Hardness	mg/l	-	-	341	-	-	-	-	-	-	-	-	-
41	Tot-Hardness		-	-	199	-	-	-	-	-	-	-	-	-
42	Na% (%)	%	-	-	28	-	-	-	-	-	-	-	-	-
43	RSC (-)		-	-	-1.4	-	-	-	-	-	-	-	-	-
44	SAR (-)		-	-	1.1	-	-	-	-	-	-	-	-	-
45	PESTICIDES													

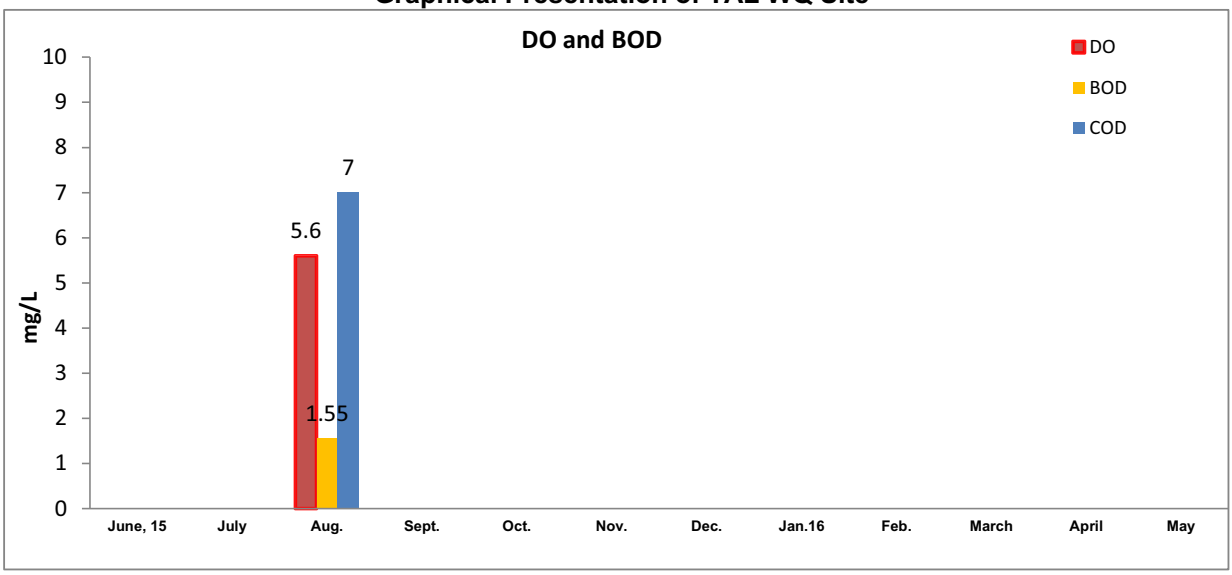
RIVER WATER SUMMARY - 2015-2016

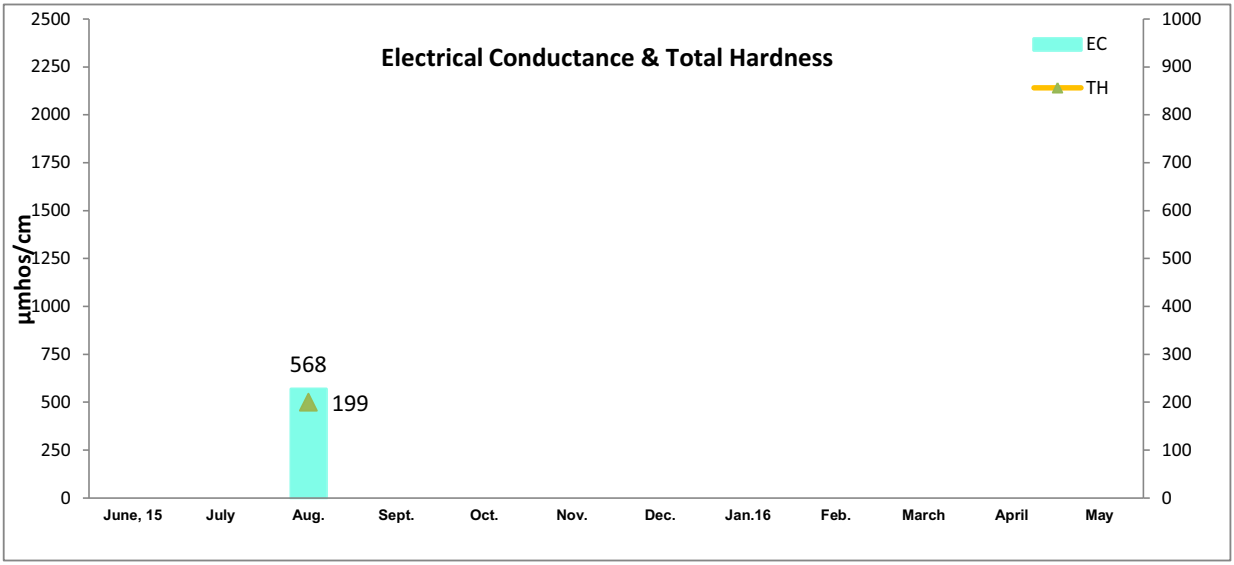
Station Name : TAL **Division : Chambal D., Jaipur**

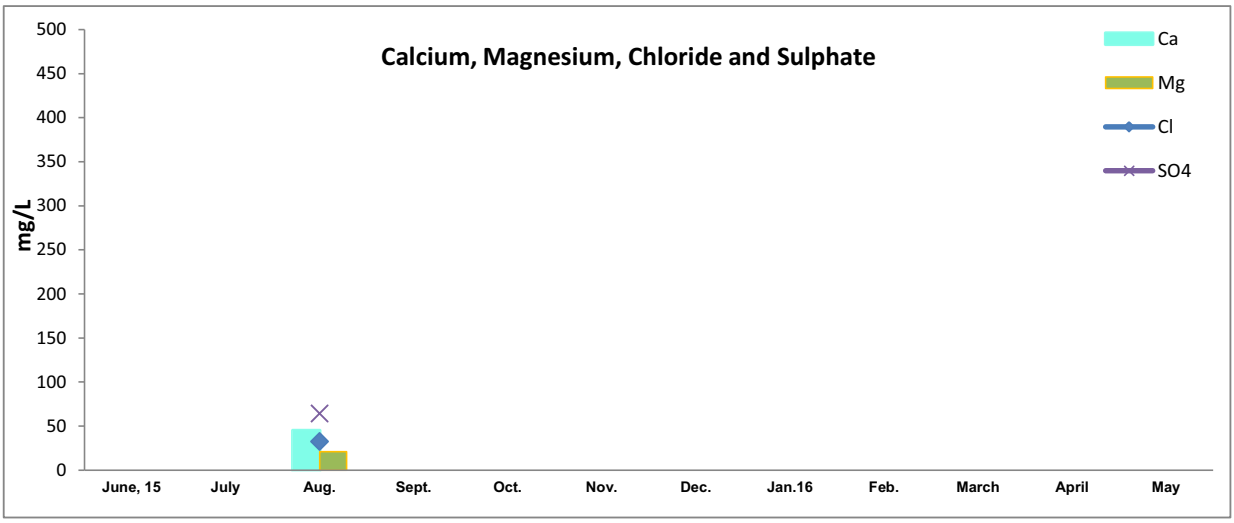
Local River : CHAMBAL

Parameters	Number of Observation	Maxmium	Minimum	Mean	Flood (Jun-Oct)	Winter (Nov-Feb)	Summer (Mar-May)
PHYSICAL							
Q (cumec)							
Weather	-	-	-	-	-	-	-
Colour_Cod (-)	-	-	-	-	-	-	-
EC_GEN (µmho/cm)	1	568	568	568	568	-	-
Odour_Code (-)	-	-	-	-	-	-	-
pH_GEN (pH units)	1	7.98	7.98	7.98	7.98	-	-
Temperture	1	23.50	23.50	23.50	23.50	-	-
CHEMICAL							
Alk-Phen (as $CaCO_3$)	1	0.00	0.00	0.00	0.00	-	-
Alk-Tot (as $CaCO_3$)	1	131.48	131.48	131.48	131.48	-	-
Boron	1	0.11	0.11	0.11	0.11	-	-
Calcium	1	44.88	44.88	44.88	44.88	-	-
Chloride	1	32.18	32.18	32.18	32.18	-	-
Carbonate	1	0.00	0.00	0.00	0.00	-	-
Fluoride	1	0.01	0.01	0.01	0.01	-	-
Iron	1	0.01	0.01	0.01	0.01	-	-
Bicarbonate	1	157.78	157.78	157.78	157.78	-	-
Potassium	1	4.32	4.32	4.32	4.32	-	-
Magnesium	1	20.87	20.87	20.87	20.87	-	-
Sodium	1	35.99	35.99	35.99	35.99	-	-
Ammonia as N	1	0.07	0.07	0.07	0.07	-	-
NO_2+NO_3 as N	1	8.10	8.10	8.10	8.10	-	-
Nitrite as N	1	0.11	0.11	0.11	0.11	-	-
Nitrate as N	1	7.99	7.99	7.99	7.99	-	-
Tot. Phosphate as P	1	0.07	0.07	0.07	0.07	-	-
Silicate as SiO_2	-	-	-	-	-	-	-
Sulphate as SO_4	1	64.00	64.00	64.00	64.00	-	-
BIOLOGICAL/BACTERIOLOGICAL							
BOD5-20°C	1	1.55	1.55	1.55	1.55	-	-
COD	1	7.0	7.0	7.0	7.0	-	-
Dissolved Oxygen	1	5.60	5.60	5.60	5.60	-	-
DO_SAT %	-	-	-	-	-	-	-
Tota Coliform	-	-	-	-	-	-	-
Fecal Coliform	-	-	-	-	-	-	-
E. Coli	-	-	-	-	-	-	-
TRACE & TOXIC							
Arsenic	1	6.52	6.52	6.5	6.52	-	-
Cadmium	1	6.44	6.44	6.4	6.44	-	-
Chromium	1	1.17	1.17	1.2	1.17	-	-
Copper	1	2.28	2.28	2.3	2.28	-	-
Lead	1	0.19	0.19	0.2	0.19	-	-
Nickel	1	50.17	50.17	50.2	50.17	-	-
Zinc	1	0.26	0.26	0.3	0.26	-	-
CHEMICAL INDICES							
Ca-Hardness	1	341	341	341	341	-	-
Tot-Hardness	1	199	199	199	199	-	-
Na%	1	28	28	28	28	-	-
RSC (-)	1	-1.40	-1.40	-1.40	-1.40	-	-
SAR (-)	1	1.11	1.11	1.11	1.11	-	-

Graphical Presentation of TAL WQ Site







CENTRAL WATER COMMISSION

Ministry of Water Resources,
River Development and Ganga Rejuvenation
New Delhi