

केवल सरकारी उपयोग हेतु
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जल गुणवत्ता वर्ष पुस्तिका WATER QUALITY YEAR BOOK

जून 2016- मई 2017

June 2016- May 2017

गंगा बेसिन GANGA BASIN

जलविज्ञानीय प्रेक्षण परिमण्डल
HYDROLOGICAL OBSERVATION CIRCLE

केन्द्रीय जल आयोग
CENTRAL WATER COMMISSION

वाराणसी
VARANASI

PREFACE

Water being a prime natural resource and basic human need, the National Water Policy lays stress on planning and development of water resources on a national perspective. The prime requisite of water resources planning is indeed an efficient information system on the quantity and quality of this time and space variable precious natural asset.

The Central Water Commission in its capacity as an premiere technical organisation in the field of water resources development endeavours the gigantic task of collection and compilation of Water Quality data incorporating the quality and quantity of available waters in various basins of the country. The Water Quality Books of various river basins of the country are being published by Central Water Commission in order to make its effective and efficient use.

The present volume contains information on various water quality parameters measured at Water quality stations of Ganga Basin(Main Stem) under the jurisdiction of Upper Ganga Basin Organisation, CWC, Lucknow for the year 2016-2017 using SWDES.

The valuable guidance and inspiration of Shri Pradeep Kumar, Member, RM, CWC, New Delhi and Shri S.K. Sibal, chief Engineer, Upper Ganga Basin Organisation, CWC, Lucknow is gratefully acknowledged.

I would like to place on record the special contribution made by officers and staff of Himlayan Ganga Division, Dehradun, Middle Ganga Division-2, Lucknow, Middle Ganga Division-III, Varanasi and Hydrological Observation Circle, Varanasi in compilation of information and publication of the report in present form.

It is hoped that this publication will be found useful by the planners, managers and users in the field of water resources.

September, 2017

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1.INTRODUCTION

1.1. Scope

Rapidly increasing population, rising standard of living, exponential growth of industrialized and urbanization have exposed the Water Resources in general and rivers in particular to various form of degradation. It is therefore necessary to keep vigilant watch on quality of available fresh waters whose major sources in our country are rivers.

1.2. Source of Information

Two Divisions of Hydrological Observation Circle, Central Water Commission, Dehradun namely Himalayan Ganga Division, Dehradun and Middle Ganga Division No.-II, Lucknow and one Division of Hydrological Observation Circle, Central Water Commission, Varanasi namely Middle Ganga Division No.-III, Varanasi are conducting observations at 17 sites on Ganga (Main Stem).

Out of these 4 sites are maintained by Middle Ganga Division No.-III, Varanasi. 6 sites are maintained by Middle Ganga Division No.-II, Lucknow and 7 sites are maintained by Himalaya Ganga Division, Dehradun.

The finalised Water quality data for the year 2015-2016 is presented in the book. The details of the sites are given in Table I and location given in index Map of Ganga (Main stem).

T A B L E

S.No.	Name of Site	Station Code
Himalayan Ganga Division, Dehradun		
1.	Uttarkashi on Bhagirathi	GG100K4
2.	Tehri (shifted to Koteshwar) on Bhagirathi	GG100E2
3.	Rudraprayag on Alaknanda	GG200G5
4.	Srinagar on Alaknanda	GG200D5
5.	Deoprayag on Ganga	GG000Z9
6.	Rishikesh on Ganga	GG000Y4
7.	Haridwar on Ganga	GG000X7
Middle Ganga Division No. II, Lucknow		
8.	Garhmukteshwar on Ganga	GG000T2
9.	Kachlabridge on Ganga	GG000P1
10.	Fatehgarh on Ganga	GG000K6
11.	Ankinghat on Ganga	GG000I7

12.	Kanpur on Ganga	GG000G7
13.	Bhithaura on Ganga	GG000E7
14.	Shahzadpur on Ganga	GG000B7
15.	Allahabad on Ganga	GG000Z9
16.	Mirzapur on Ganga	GG000X9
17.	Varanasi on Ganga	GG000W3

1.3. Observation Technique

Water samples from all the Water Quality stations are collected on 1st working day of the month and transported to divisional laboratory where systematic analysis is conducted for the determination of constituents like pH, Specific Conductance, Potassium (as K⁺), Sodium (as Na⁺), Calcium (as Ca⁺⁺), Magnesium (as Mg⁺⁺), Iron (as Fe⁺⁺), Nitrogen Ammonical (as NH₄-N), Carbonate (as CO₃⁻⁻), Bicarbonate (as HCO₃⁻), Chloride (as Cl⁻), Fluoride (as F⁻), Sulphate (as SO₄⁻⁻), Nitrate (as NO₃⁻), Nitrite (as NO₂⁻), Phosphate (as PO₄⁻⁻⁻), Silica (as SiO₂) and Boron (as B).

pH and Specific Conductance are determined by digital pH meter and conductivity meter. Cl⁻, CO₃⁻⁻, HCO₃⁻, Ca⁺⁺ and Mg⁺⁺ are estimated by titration method. SO₄⁻⁻ is estimated by turbidimetric method with the help of Nephelometer. Na⁺ and K⁺ estimation is done by the method of flame emission with the help of Flame photometer and rest by the method of colorimetric estimation with the help of U-V Spectrophotometer.

In addition to the above, Dissolved Oxygen is also estimated. Biochemical Oxygen Demand, Chemical Oxygen Demand and Microbiological Parameters such as Total Coliform & Fecal Coliform are determined for selected sites.

2. WATER QUALITY DATA

2.1 Explanatory Notes

The explanatory notes, described hereunder, are designed to assist in the interpretation of various parameters contained in the data presented subsequently.

- i) The water samples are collected at a regular frequency of once in a month usually on the 1st working day from the main flowing portion of the stream.
- ii) Dissolved Oxygen is measured at the site laboratory within an hour of collection of samples.
- iii) The other water quality parameters are analysed at the divisional

laboratory.

iv) Chemical Indices, namely, Hardness Number, Sodium Percentage, Sodium Adsorption Ratio and Residual Sodium Carbonate are calculated as follows :

a. Hardness Number (HAR) is calculated by adding the total Ca^{++} and Mg^{++} in the sample expressed as equivalent parts of CaCO_3 .

b. Sodium Percentage (S.P.) is given by

$$\text{S.P.} = (\text{Na}^+ \times 100) / (\text{Ca}^{++} + \text{Mg}^{++} + \text{Na}^+ + \text{K}^+)$$

Ionic concentrations being in meq/litre.

c. Sodium Adsorption Ratio (S.A.R.) is given by

$$\text{S.A.R.} = \text{Na}^+ / \{(\text{Ca}^{++} + \text{Mg}^{++})/2\}^{1/2}$$

Where the ionic concentration being in meq/litre.

d. Residual Sodium Carbonate (R.S.C.) is given by

$$\text{R.S.C.} = (\text{CO}_3^{--} + \text{HCO}_3^-) - (\text{Ca}^{++} + \text{Mg}^{++})$$

Where concentration of all the ions being in meq/litre.

v) Water year ranges from June 1st of one calendar year to May 31st of the next calendar year and covers one complete hydrological cycle.

vi) The gauging station code number is a unique seven column alpha-numeric reference number which facilitates storage and retrieval of water quality data in data banks. The first column is identifier of either an integral river basin or for convenience, a region having several contiguous river catchments. This is followed by a column which identifies an independent river system which either have one or more outlets to the sea or crosses international border to enter another country. The third, fourth and fifth column spaces denote first, second and third order tributaries respectively from the mouth upstream. The sixth and seventh column spaces indicate the location of the gauging station in one of the 225 slots earmarked on the river. The blank column spaces are filled by zero.

2.2 Method of Presentation

In the succeeding pages, station-wise water quality data and its trend is presented. History sheet, water quality data and water quality analysis tables are annexed separately.

History sheet gives concise description of the water quality observation station. The water quality analysis tables are given season-wise (flood, winter, summer) for the river water. The samples of water quality analysis are collected once a month as already mentioned in para 2.1 above.

3. WATER QUALITY TOLERANCE AND CLASSIFICATION

As per ISI-IS: 2296-1982, the tolerance limits of parameters are specified as per classified use of water (Table 1,2,3,4,5 Annexed) depending on various uses of water. The following classifications have been adopted in India

Classification	Type of use
Class A	Drinking water source without conventional treatment but After disinfection.
Class B	Outdoor bathing.
Class C	Drinking water source with conventional treatment followed by disinfection.
Class D	Fish culture and wild life propagation .
Class E	Irrigation , Industrial cooling or controlled waste disposal.

TABLE-1

TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – A

S. No.	Characteristic	Tolerance
(i)	pH value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l, ((Min))	6.0
(iii)	Bio-chemical Oxygen Demand ((Max))	2.0
(iv)	Total Coliform Organisms, MPN/100 ml,((Max))	50
(v)	Colour, Hazen units, ((Max))	10
(vi)	Odour	unobjectionable
(Vii)	Taste	Agreeable taste
(viii)	Total Dissolved Solids, mg/l, (Max)	500
(ix)	Total Hardness (as CaCO ₃), mg/l ,(Max)	300
(x)	Calcium Hardness (as CaCO ₃), mg/l, (Max)	200
(xi)	Magnesium (as CaCO ₃), mg/l,(Max)	100
(xii)	Copper (as Cu), mg/l, (Max)	1.5
(xiii)	Iron (as Fe), mg/l,(Max)	0.3
(xiv)	Manganese (as Mn), mg/l,(Max)	0.5
(xv)	Chlorides (as Cl), mg/l,(Max)	250
(xvi)	Sulphate (as SO ₄), mg/l ,(Max)	400
(xvii)	Nitrates (as NO ₂), mg/l,(Max)	20
(xviii)	Fluorides (as F,) mg/l,(Max)	1.5
(xix)	Phenolic compounds(as C ₆ H ₅ OH), mg/l,(Max)	0.002
(xx)	Mercury (as Hg), mg/l ,(Max)	0.001
(xxi)	Cadmium (as Cd), mg/l,(Max)	0.01
(xxii)	Selenium (as Se), mg/l ,(Max)	0.01
(xxiii)	Arsenic (as As), mg/l,(Max)	0.05
(xxiv)	Cyanides (as CN), mg/l, (Max)	0.05
(xxv)	Lead (as Pb), mg/l, (Max)	0.1
(xxvi)	Zinc (as Zn), mg/l, (Max)	15
(xxvii)	Chromium (asCr ⁶⁺), mg/l,(Max)	0.05
(xxviii)	Anionic detergents, (as MBAS), mg/l ,(Max) .	0.2
(xxix)	Poly-nuclear aromatic hydrocarbons (PAH),	0.2
(xxx)	(Min)eral oil, mg/l ,(Max)	0.01
(xxxi)	Barium (as Ba), mg/l ,(Max)	1.0
(xxxii)	Silver (as Ag), mg/l (Max)	0.05
(xxxiii)	Pesticides	Absent
(xxxiv)	Alpha emitters, µc/ml, (Max)	10 ⁻⁹
(xxxv)	Beta emitters, µc/ml, (Max)	10 ⁻⁸

TABLE- 2

TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – B

S. No.	Characteristic	Tolerance
(i)	pH Value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l,(Min)	5.0
(iii)	Biochemical Oxygen Demand (5 days at 20 °C), (Max)	3.0
(iv)	Total Coliform Organisms, MPN/100 ml, (Max)	500
(v)	Fluorides (as F)<mg/l, (Max)	1.5
(vi)	Colour, Hazen units, (Max)	300
(vii)	Cyanides (as CN), mg/l, (Max)	0.05
(viii)	Arsenic (as As), mg/l, (Max)	0.2
(ix)	Phenolic Compounds (as C ₆ H ₅ OH) mg/l, (Max)	0.005
(x)	Chromium (as Cr ⁶⁺), mg/l, (Max)	1.0
(xi)	Anionic detergents (as MBAS), mg/l, (Max)	1.0
(xii)	Alpha emitters, µc/ml, (Max)	10 ⁻⁸

TABLE- 3

TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS – C

S. No.	Characteristic	Tolerance
(i)	pH Value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l (Min)	4.0
(iii)	Biochemical Oxygen Demand	3.0
(iv)	Total coliform organisms, MPN/100 ml, (Max)	5000
(v)	Colour, Hazen units, (Max)	300
(vi)	Fluorides (as F), mg/l, (Max)	1.5
(vii)	Cadmium (as Cd), mg/l, (Max)	0.01
(viii)	Chlorides (as Cl), mg/l, (Max)	600
(ix)	Chromium (as Cr ⁶⁺), mg/l, (Max)	0.05
(x)	Cyanides (as CN), mg/l, (Max)	0.05
(xi)	Total Dissolved Solids, mg/l, (Max)	1500
(xii)	Selenium (as Se), mg/l, (Max)	0.05
(xiii)	Sulphates (as SO ₄), mg/l, (Max)	400
(xiv)	Lead (as Pb), mg/l, (Max)	0.1
(xv)	Copper (as Cu), mg/l, (Max)	1.5
(xvi)	Arsenic (as As), mg/l, (Max)	0.2
(xvii)	Iron (as Fe), mg/l, (Max)	50
(xviii)	Phenolic compounds (as C ₆ H ₅ OH), mg/l, (Max)	0.005
(xix)	Zinc (as Zn), mg/l, (Max)	15
(xx)	Insecticides, mg/l, (Max)	Absent
(xxi)	Anionic detergents (as MBAS), mg/l, (Max)	1.0
(xxii)	Oils and grease, mg/l, (Max)	0.1
(xxiii)	Nitrates (as NO ₃), mg/l, (Max)	50
(xxiv)	Alpha emitters, µc/mg, (Max)	10 ⁻⁹
(xxv)	Beta emitters, µc/ml, (Max)	10 ⁻⁸

TABLE-4

TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS -D

S. No.	Characteristic	Tolerance
(i)	pH value	6.5 to 8.5
(ii)	Dissolved Oxygen, mg/l, (Min).	4.0
(iii)	Free Ammonia (as N), mg/l, (Max).	1.2
(iv)	Electrical Conductance at 25 °C, μ S, (Max)	1000
(v)	Free Carbon Dioxide (as CO ₂),mg/l, (Max)	6.0
(vi)	Oils and Grease, mg/l, (Max)	0.1
(vii)	Alpha emitters, μ c/ml, (Max)	10^{-9}
(viii)	Beta emitters, μ c/ml, (Max)	10^{-8}

TABLE- 5

TOLERANCE LIMITS FOR INLAND SURFACE WATERS, CLASS -E

S. No.	Characteristic	Tolerance
(i)	pH value	6.0 to 8.5
(ii)	Electrical Conductance at 25°C, μ S, (Max)	2250
(iii)	Sodium Adsorption Ratio, (Max)	26
(iv)	Boron (as B), mg/l, (Max)	2.0
(v)	Total Dissolved Solids, (inorganic), mg/l, (Max)	2100
(vi)	Sulphates (as SO ₄), mg/l, (Max)	1000
(vii)	Chlorides (as Cl), Mg/l, (Max)	600
(viii)	Sodium Percentage, (Max)	60
(ix)	Alpha emitters, μ c/ml, (Max)	10 ⁻⁹
(x)	Beta emitters, μ c/ml, (Max)	10 ⁻⁸

4.0 TREND ANALYSIS / SCENARIO IN GANGA BASIN

The Ganga basin spreads over a total area of 10,86,000 Sq.km in India, Tibet (China), Nepal and Bangladesh. The major part of the geographical area of the Ganga basin lies in India and it is the biggest river basin in the country draining an area of 8,61,452 Sq.km, slightly more than one-fourth (26.3 %) of the total geographical area of the country. In India, it covers states eleven states viz; Uttar Pradesh, Madhya Pradesh, Rajasthan, Bihar, West Bengal, Uttarakhand, Jharkhand, Haryana, Chhattisgarh, Himachal Pradesh and Delhi. The basin is bounded by the Himalayas on the north, by the Aravalli on the west, by the Vindhya and Chottanagpur plateau on the south and by the Brahmaputra Ridge on the east. The Great Desert of Rajasthan and the Aravalli hills form the ridge between the Indus and Ganga drainage system.

The Ganga is the 20th longest river in the Asia and the 41st longest in the world (Source: Philips World Atlas). The headwaters region of Ganga is the Himalayas dotted by number of mighty tributaries. The Bhagirathi river that rises from the Gangotri glacier near Gomukh at an elevation of about 7,010 m above mean sea level in the Uttarkashi district of Uttarakhand is considered as the source of Ganga river. It descends down the valley up to Devprayag where after joining another hill stream Alaknanda, it is called Ganga. Flowing downhill, the river is joined by a number of streams, such as the Mandakini, the Dhuli Ganga and the Pindar. The total length of river Ganga (measured along the Bhagirathi and the Hooghly) up to its outfall into Bay of Bengal is 2,525 km with 631 km navigable length.

The Ganga and its tributaries have formed a large flat and fertile plain in North India. The availability of abundant water resources, fertile soil, and suitable climate have given rise

to a highly developed agriculture based civilization and one of the most densely populated regions of the world. The major part of basin in Indian territory is covered with agricultural land accounting to 65.57 percent of the total basin area and 3.47 percent of the basin is covered by water bodies; supporting about 43 percent of its population (448.3 million as per 2001 census). The seasonality of flow in rivers in the basin is so acute and it causes floods, particularly in the portions of Bihar and West Bengal and led to the annual flood hazards and river bank erosion. Also the Himalayas in Uttarakhand and part of Himachal Pradesh falling in the basin experience snow falls.

Ganga has been a cradle of human civilization since time immemorial. Millions depend on this great River for physical and spiritual sustenance. It is a life-line, a symbol of purity and virtue for countless people of India. But due to rapid industrialization, increase in urban population, change in lifestyle, use of artificial fertilizer has led to deterioration in water quality of holy river Ganga. At certain stretches the river water is grossly polluted mostly due to industrial and municipal sewage discharge in the river Ganga.

Two Divisions of Hydrological Observation Circle, Central Water Commission, Dehradun namely Himalayan Ganga Division, Dehradun and Middle Ganga Division No.-II, Lucknow and one Division of Hydrological Observation Circle, Central Water Commission, Varanasi namely Middle Ganga Division No.-III, Varanasi are conducting observations at 17 sites on Ganga. Out of these 4 sites are maintained by Middle Ganga Division No.-III, Varanasi, 6 sites are maintained by Middle Ganga Division No.-II, Lucknow and 7 sites are maintained by Himalaya Ganga Division, Dehradun

Major river: River Ganga (main stem) is the major river of the Ganga basin in which Himalayan Ganga Division, Dehradun and Middle Ganga Division -2, Lucknow has established a network of Three and Six Water quality monitoring station in Ganga basin respectively. Middle Ganga Division-3, Varanasi has established a network of Four Water quality monitoring station. The monitoring of surface water is done on monthly basis and water samples are analysed for physico-chemical and bacteriological parameters apart from the field observations.

W.Q. Network : Details of water quality station in Ganga basin are tabulated below.

S.No.	Name of Site	River	Classification
Himalayan Ganga division, Dehradun			
1	Deoprayag	Ganga	Base
2	Rishikesh	Ganga	Trend
3	Haridwar	Ganga	Trend

Middle Ganga division-2, lucknow			
4	Garmukteshwar	Ganga	Trend
5	Kachlabridge	Ganga	Trend
6	Fatehgarh	Ganga	Trend
7	Ankinghat	Ganga	Trend
8	Kanpur	Ganga	Flux
9	Bhitaure	Ganga	Trend
Middle Ganga division-3, Varanasi			
10	Shahzadpur	Ganga	Trend
11	Allahabad	Ganga	Flux
12	Mirzapur	Ganga	Flux
13	Varanasi	Ganga	Flux

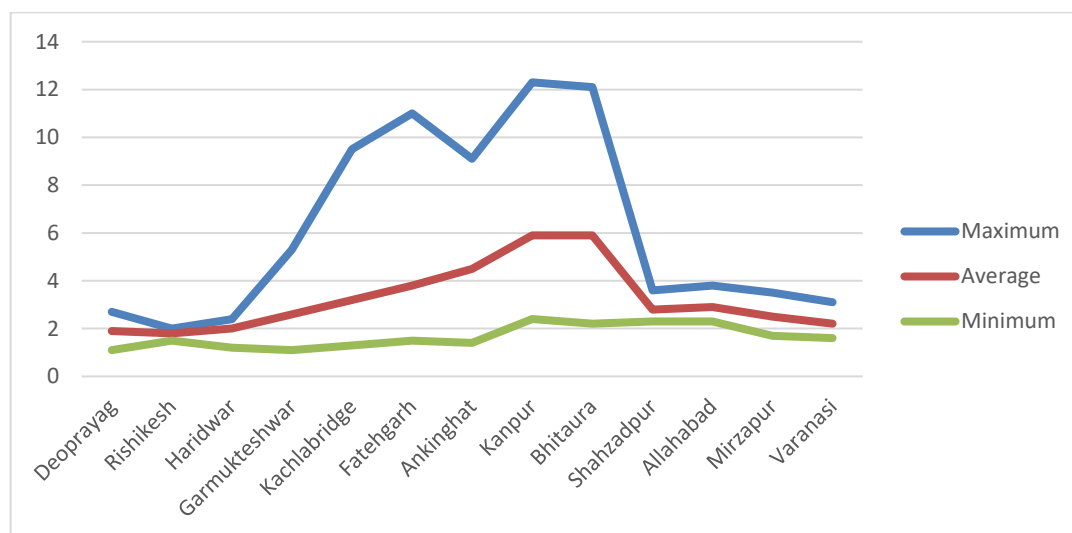
Analysis : To study the water quality / scenario in river Ganga, BOD, DO, fluoride, TDS , Faecal Coliform and Total Coliform parameters have been considered. Average value of these parameter for the period since inception(Inception to May 2016), last 10 years (Jun 2006 to May 2016) and last one year (Jun 2015 to May 2016) has been depicted in tables and figures depicted on the next pages.

4.1 River : GANGA (MAIN STEM) (River 1) :

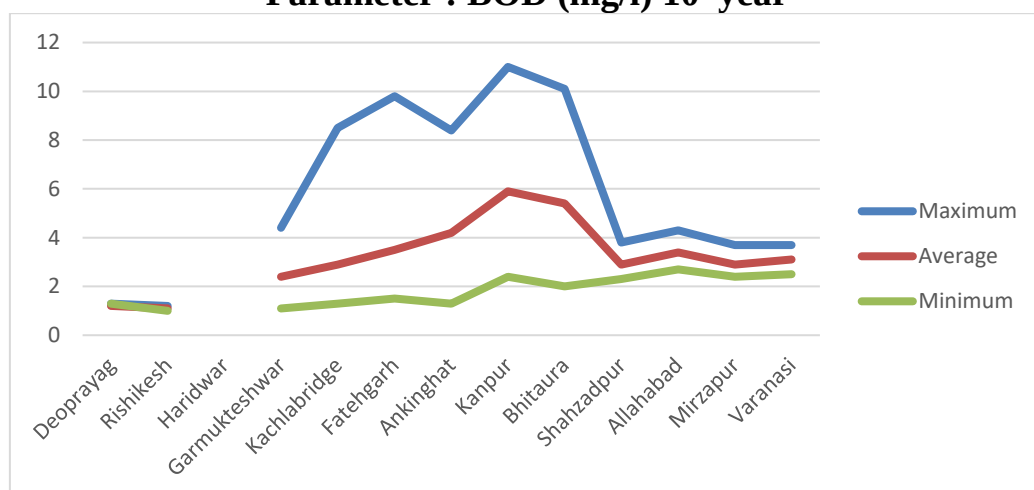
4.1.1 BOD in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year
Deoprayag	Nov-1988	2.7	1.3	4.9	1.1	1.3	1.3	1.9	1.2	2.8
Rishikesh	Oct-1986	2.0	1.2	3.4	1.5	1.0	0.8	1.8	1.1	1.8
Haridwar	June-2014	2.4	-	3.2	1.2	-	0.8	2.0	-	1.6
Garmukteshwar	Feb-2010	5.3	4.4	11.7	1.1	1.1	1.0	2.6	2.4	4.4
Kachlabridge	Feb-2010	9.5	8.5	16.5	1.3	1.3	1.3	3.2	2.9	5.2
Fatehgarh	Feb-2010	11.0	9.8	19.6	1.5	1.5	1.4	3.8	3.5	6.2
Ankinghat	Feb-2010	9.1	8.4	13.7	1.4	1.3	2.0	4.5	4.2	6.8
Kanpur	June-1990	12.3	11.0	18.7	2.4	2.4	1.6	5.9	5.9	7.4
Bhithaura	Mar-2010	12.1	10.1	25.9	2.2	2.0	3.5	5.9	5.4	9.3
Shahzadpur	Dec-1996	3.6	3.8	4.2	2.3	2.3	1.6	2.8	2.9	2.7
Allahabad	June-1987	3.8	4.3	4.5	2.3	2.7	1.6	2.9	3.4	2.6
Mirzapur	Nov-1986	3.5	3.7	3.9	1.7	2.4	1.6	2.5	2.9	2.6
Varanasi	June-1987	3.1	3.7	3.5	1.6	2.5	1.7	2.2	3.1	2.5

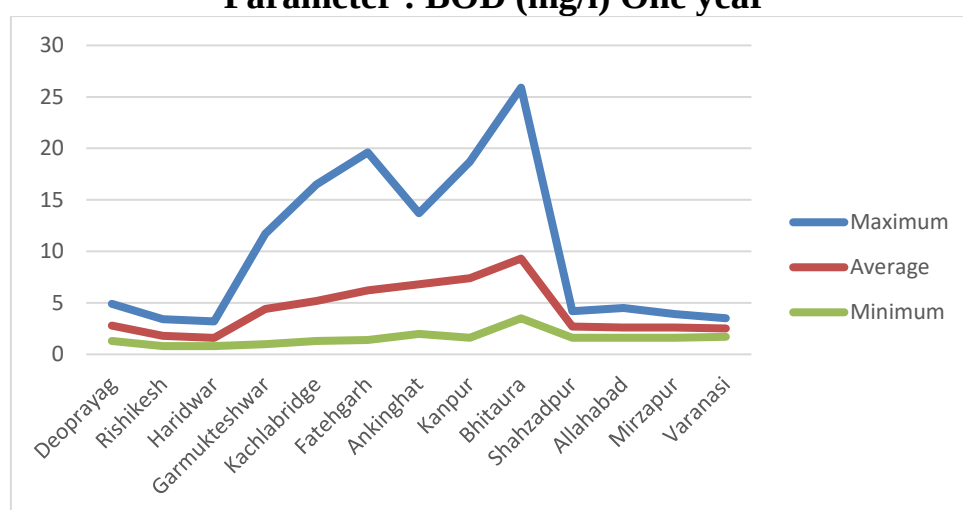
Parameter : BOD (mg/l) since inception



Parameter : BOD (mg/l) 10 year



Parameter : BOD (mg/l) One year

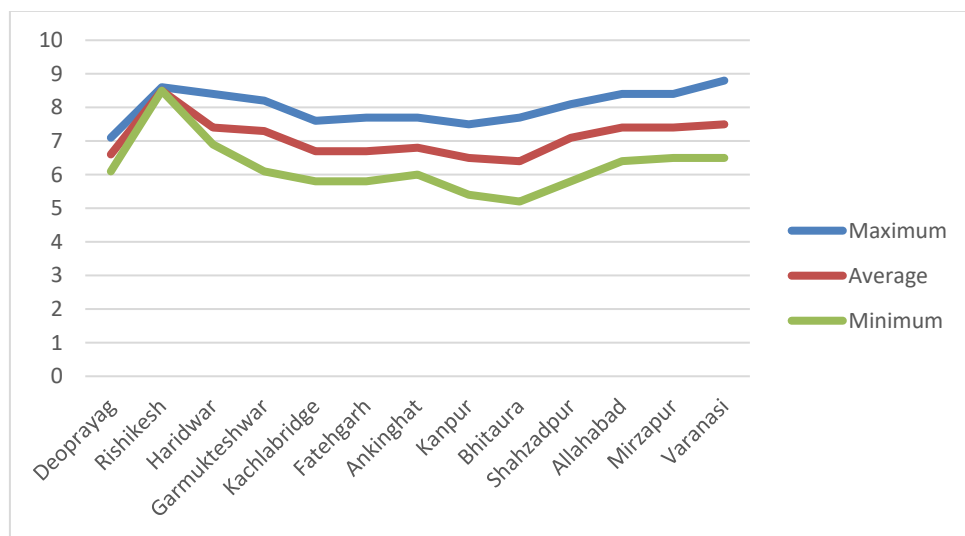


4.1.2 DO in mg/l

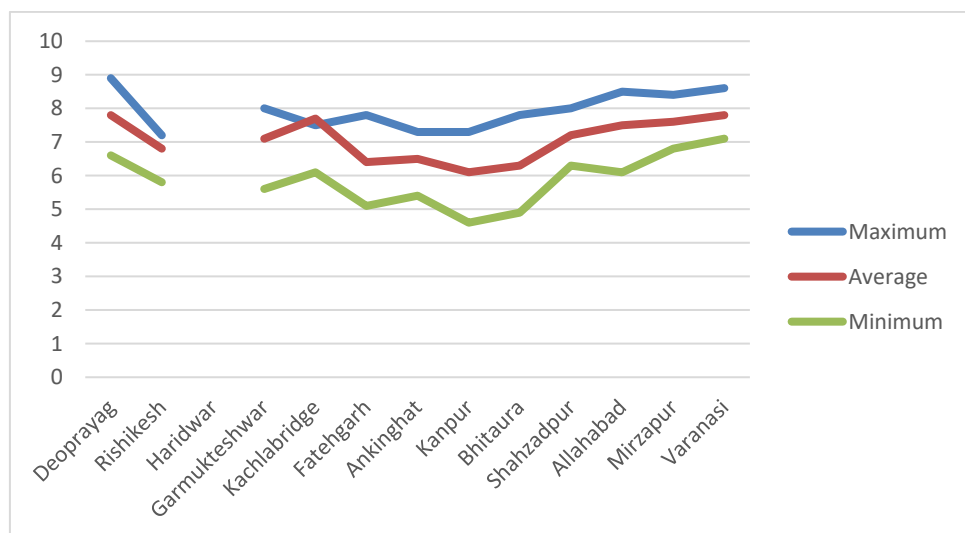
Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year
Deoprayag	Nov-1983	7.1	8.9	9.7	6.1	6.6	7.4	6.6	7.8	8.6
Rishikesh	Oct-1984	8.6	7.2	8.9	8.5	5.8	6.2	8.5	6.8	7.5
Haridwar	June-2014	8.4	-	9.6	6.9	-	7.0	7.4	-	8.1
Garmukteshwar	Jan-1990	8.2	8.0	6.9	6.1	5.6	3.7	7.3	7.1	5.7
Kachlabridge	Aug-2002	7.6	7.5	7.8	5.8	6.1	3.9	6.7	7.7	5.3
Fatehgarh	June-1990	7.7	7.8	6.9	5.8	5.1	2.0	6.7	6.4	4.7

Ankinghat	April-1996	7.7	7.3	7.9	6.0	5.4	2.9	6.8	6.5	4.9
Kanpur	June-1990	7.5	7.3	7.5	5.4	4.6	1.0	6.5	6.1	4.4
Bhithaura	June-1990	7.7	7.8	5.9	5.2	4.9	0.8	6.4	6.3	3.5
Shahzadpur	June-1986	8.1	8.0	8.2	5.8	6.3	6.3	7.1	7.2	6.9
Allahabad	June-1987	8.4	8.5	8.1	6.4	6.1	5.1	7.4	7.5	6.9
Mirzapur	June-1987	8.4	8.4	8.0	6.5	6.8	5.7	7.4	7.6	6.8
Varanasi	June-1987	8.8	8.6	7.8	6.5	7.1	6.3	7.5	7.8	7.0

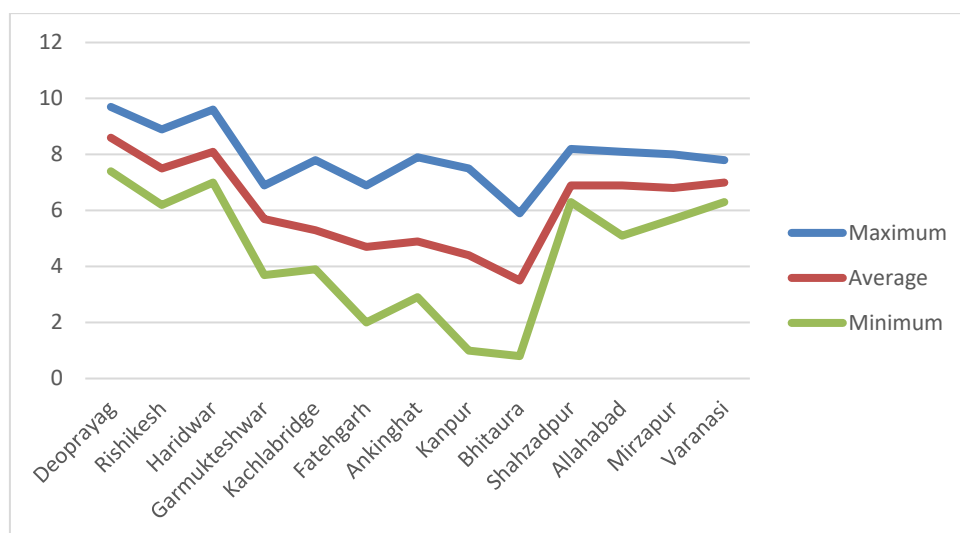
Parameter : DO (mg/l) since inception



Parameter : DO (mg/l) 10 year



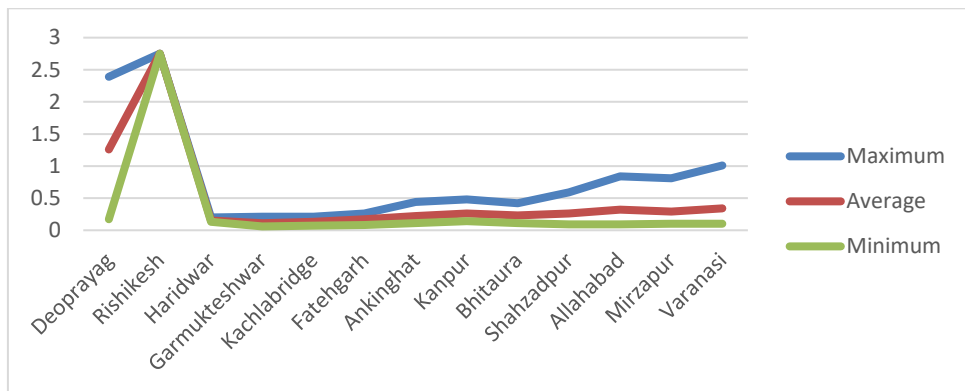
Parameter : DO (mg/l) One year



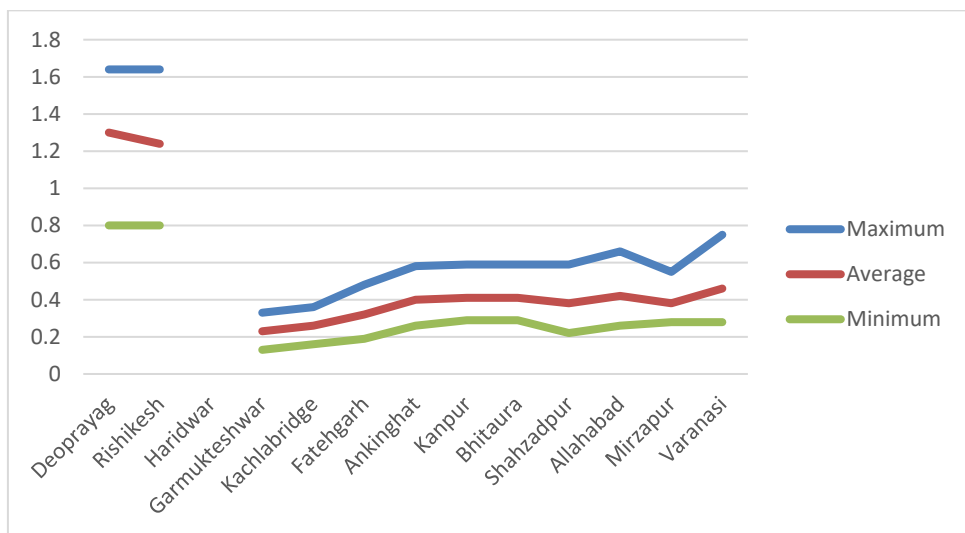
4.1.3 Fluoride in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year
Deoprayag	Nov-1988	2.39	1.64	0.25	0.17	0.8	0.11	1.26	1.3	0.16
Rishikesh	Oct-1987	2.75	1.64	0.35	2.75	0.8	0.13	2.75	1.24	0.2
Haridwar	June-2014	0.2	-	0.26	0.13	-	0.08	0.15	-	0.19
Garmukteshwar	June-1993	0.21	0.33	0.40	0.06	0.13	0.28	0.11	.23	0.36
Kachlabridge	May-1993	0.21	0.36	0.29	0.07	0.16	0.15	0.13	.26	0.21
Fatehgarh	May-1993	0.26	0.48	0.42	0.08	0.19	0.21	0.17	.32	0.31
Ankinghat	May-1993	0.44	0.58	0.57	0.11	0.26	0.30	.22	.40	0.41
Kanpur	May-1993	0.48	0.59	0.55	0.14	0.29	0.34	0.26	.41	0.44
Bhिताura	May-1993	0.42	0.59	0.76	0.11	0.29	0.32	0.23	.41	0.45
Shahzadpur	June-1986	0.59	0.59	0.47	0.09	0.22	0.35	0.26	0.38	0.40
Allahabad	June-1980	0.84	0.66	0.59	0.09	0.26	0.28	0.32	0.42	0.38
Mirzapur	Jan-1981	0.81	0.55	0.42	0.10	0.28	0.31	0.29	0.38	0.35
Varanasi	Jan-1981	1.01	0.75	0.52	0.10	0.28	0.33	0.34	0.46	0.39

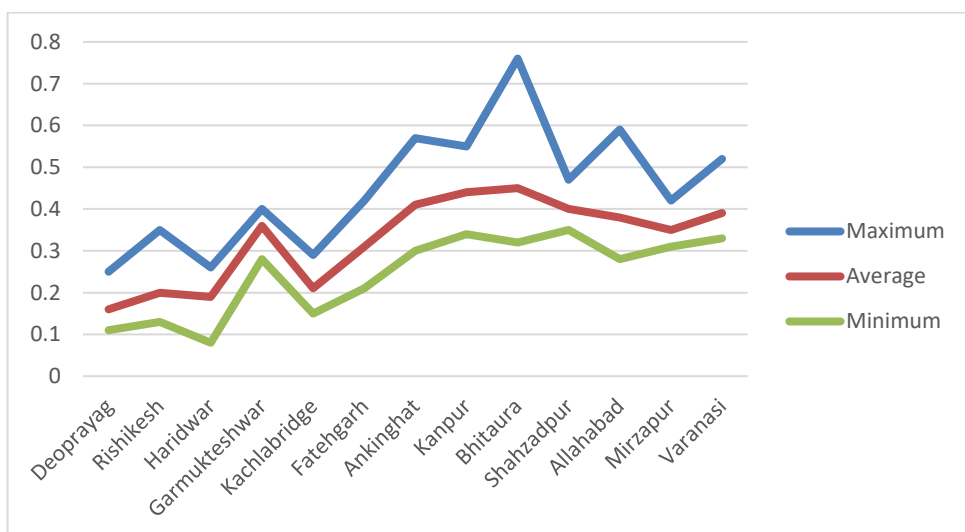
Parameter : Fluoride (mg/l) since inception



Parameter : Fluoride (mg/l) 10 year



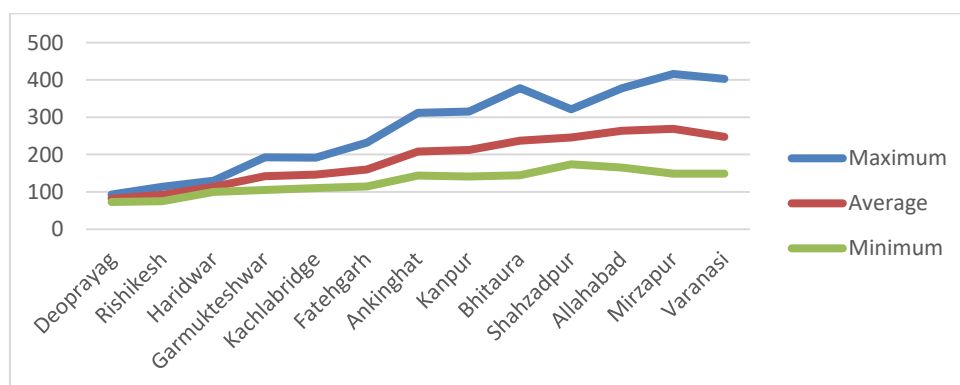
Parameter : Fluoride (mg/l) One year



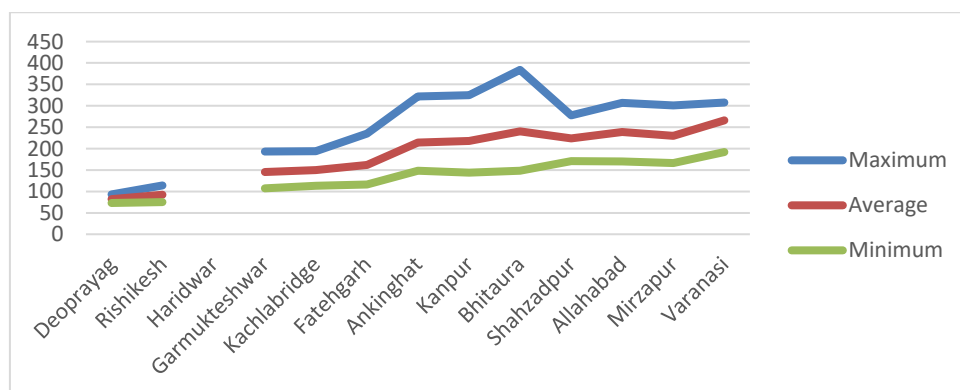
4.1.4 TDS in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year
Deoprayag	Nov-2011	93	93	160	73	73	85	82	82	118
Rishikesh	Oct-2011	114	114	210	75	75	120	92	92	158
Haridwar	June-2014	130	-	200	100	-	95	114	-	135
Garmukteshwar	June-2008	193	193	195	105	107	89	142	145	123
Kachlabridge	June-2008	192	194	169	146	113	84	110	150	121
Fatehgarh	June-2008	232	235	214	115	116	109	160	162	147
Ankinghat	June-2008	312	322	235	144	148	105	208	214	156
Kanpur	June-2008	315	325	228	141	144	110	212	218	169
Bhithaura	June-2008	378	384	330	145	148	123	237	240	212
Shahzadpur	June-2009	321	278	306	174	171	110	246	224	205
Allahabad	June-2009	378	307	357	165	170	112	264	239	226
Mirzapur	June-2009	416	301	385	149	166	153	269	230	251
Varanasi	June-2009	403	308	345	149	192	159	248	266	238

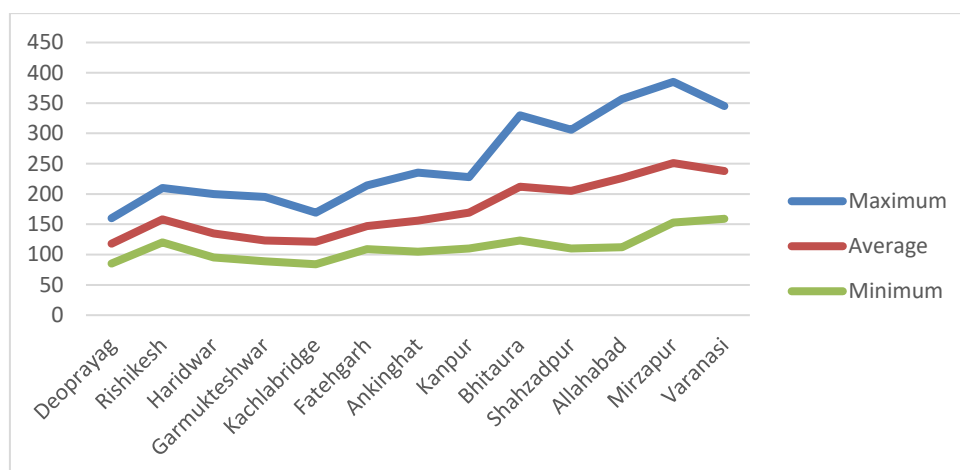
Parameter : TDS (mg/l) since inception



Parameter :TDS (mg/l) 10 year



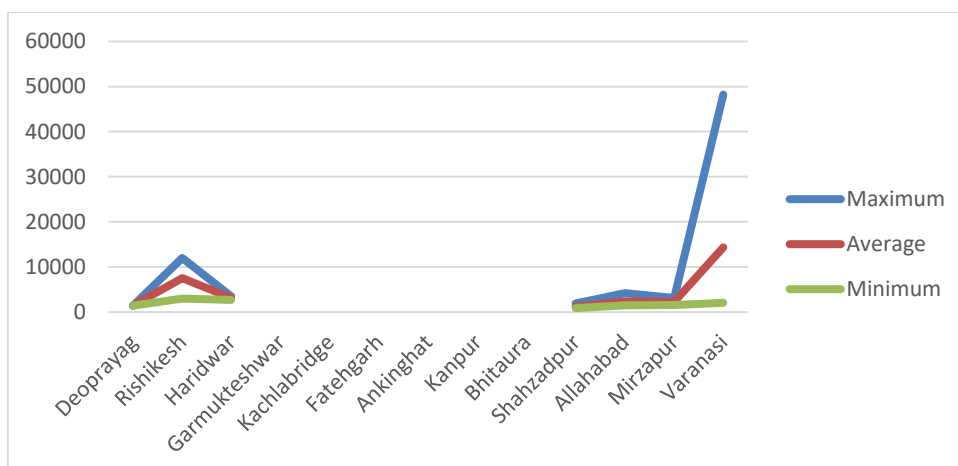
Parameter : TDS (mg/l) One year



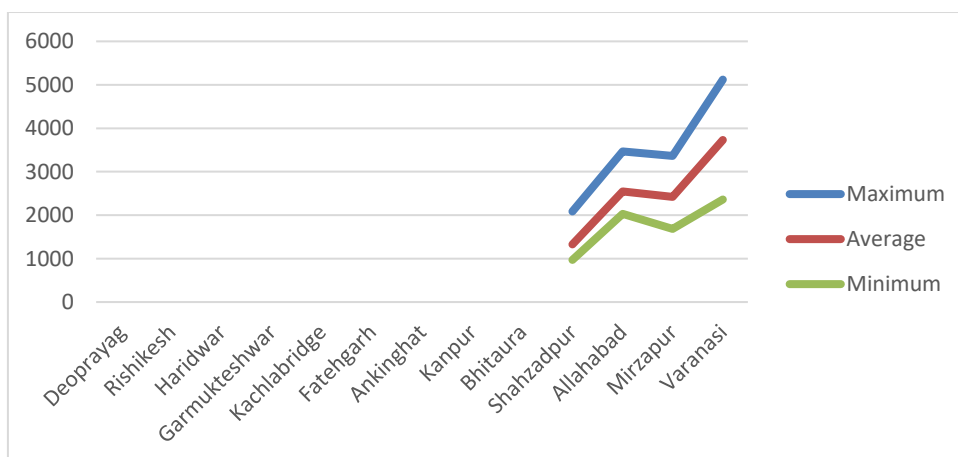
4.1.5 Faecal coliform in MPN/100ml

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year
Deoprayag	July-2015	1400	-	3500	1400	-	600	1400	-	1633
Rishikesh	Feb-2015	12000	-	2600	3000	-	650	7500	-	1563
Haridwar	Apr-2015	3500	-	2800	2700	-	700	3100	-	1675
Garh	-	-	-	-	-	-	-	-	-	-
Kachlabridge	-	-	-	-	-	-	-	-	-	-
Fatehgarh	-	-	-	-	-	-	-	-	-	-
Ankinghat	-	-	-	-	-	-	-	-	-	-
Kanpur	-	-	-	-	-	-	-	-	-	-
Bhithaura	-	-	-	-	-	-	-	-	-	-
Shahzadpur	Jun-2006	1941	2085	2500	882	970	1500	1213	1327	1967
Allahabad	Nov-1995	4207	3470	3600	1486	2030	1700	2352	2548	2308
Mirzapur	Jan-2007	3145	3360	2800	1573	1680	1500	2274	2420	1908
Varanasi	Mar-1995	48204	5120	4000	2058	2360	1600	14353	3730	2533

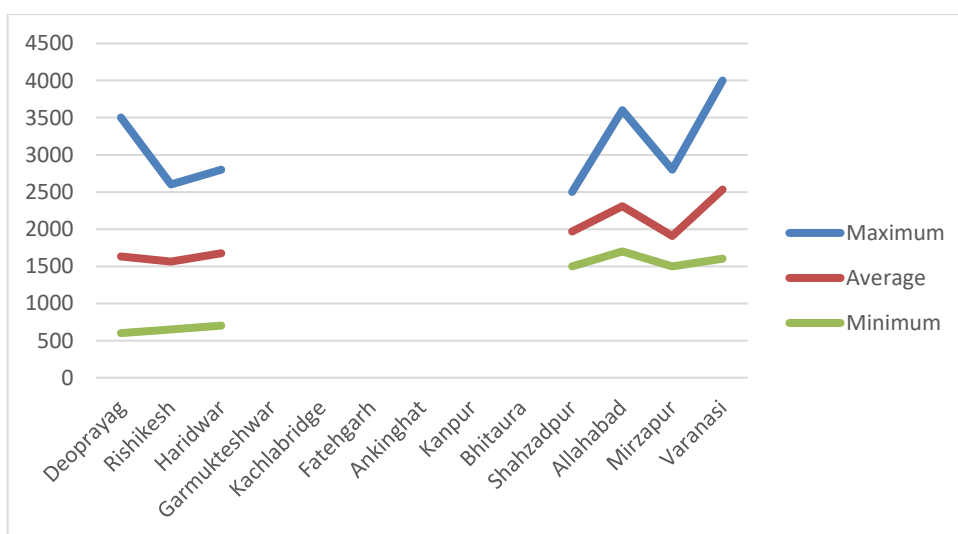
Parameter : Fcol (MPN/100 ml) since inception



Parameter : Fcol(MPN/100 ml) 10 year



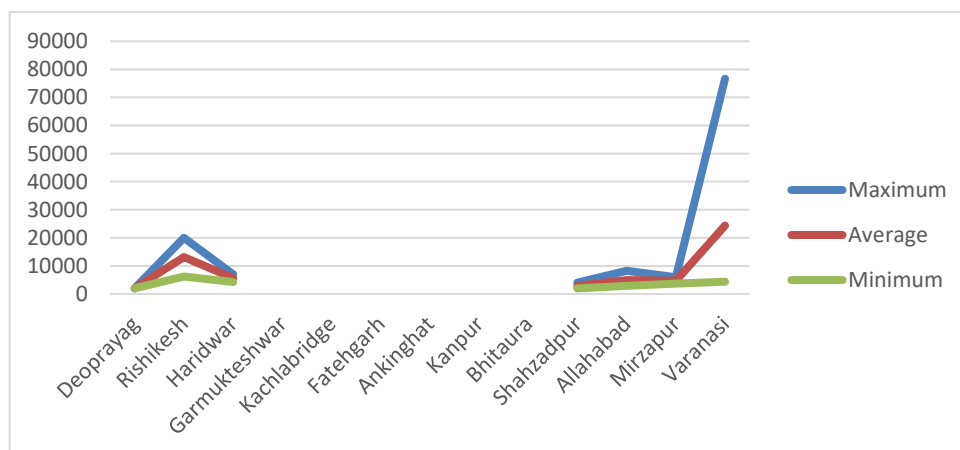
Parameter : Fcol(MPN/100 ml) One year



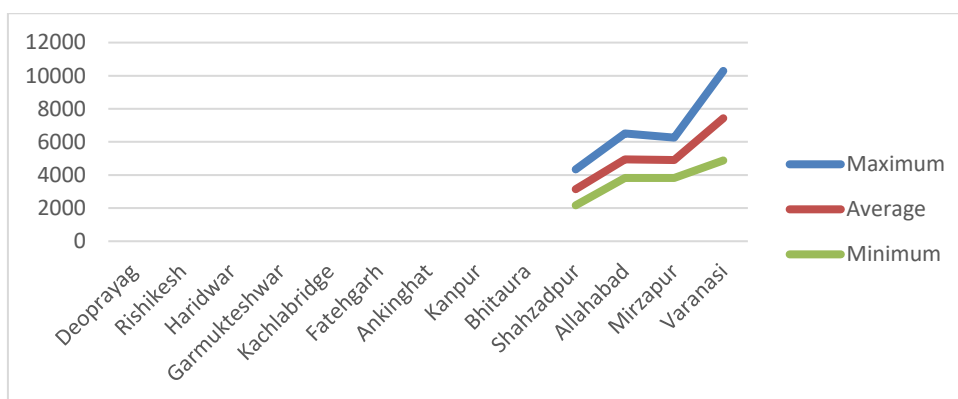
4.1.6 Total coliform in MPN/100ml

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year	Since inception	Past 10 year	Current year
Deoprayag	July-2015	2000	-	3600	2000	-	900	2000	-	1958
Rishikesh	Feb-2015	20000	-	5800	6200	-	1000	13100	-	2317
Haridwar	April-2015	7000	-	4000	4200	-	900	5600	-	2383
Garh	-	-	-	8000	-	-	2200	-	-	4980
Kachlabridge	-	-	-	7500	-	-	2000	-	-	4500
Fatehgarh	-	-	-	15000	-	-	1800	-	-	5530
Ankinghat	-	-	-	11000	-	-	1800	-	-	6300
Kanpur	-	-	-	15000	-	-	5400	-	-	9633
Bhithaura	-	-	-	7500	-	-	2200	-	-	5022
Shahzadpur	June-2006	4055	4340	6200	2009	2170	3500	2922	3145	4958
Allahabad	Nov-1995	8277	6520	8300	2916	3830	4600	4896	4954	6000
Mirzapur	Jan-2007	5918	6250	5800	3636	3820	4000	4656	4898	4700
Varanasi	Mar-1995	76661	10290	8800	4398	4880	4900	24354	7430	6383

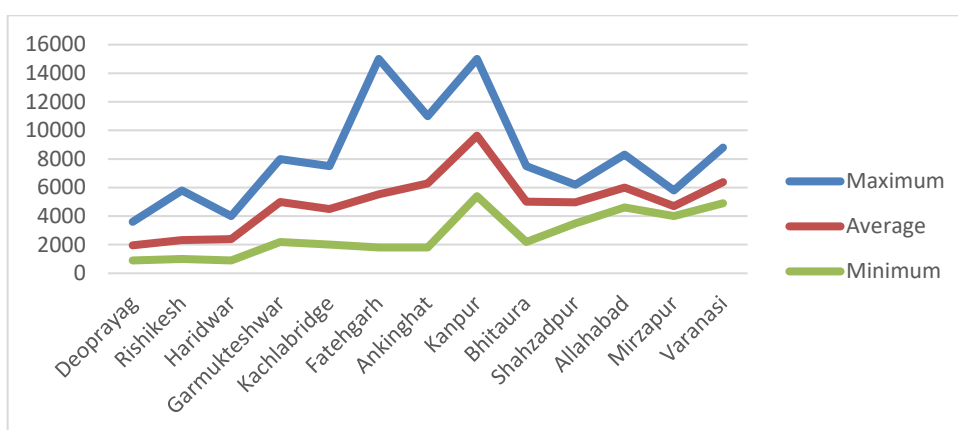
Parameter : Tcol(MPN/100 ml) since inception



Parameter : Tcol(MPN/100 ml) 10 year



Parameter : Tcol(MPN/100 ml)One year



4.2 River : ALAKNANDA (River 2) : The Alaknanda is considered to rise at the confluence and foot of the Satopanth and Bhagirath Kharak glaciers in Uttarakhand, though the Saraswati River tributary flowing from Mana Pass is longer; the two meet at Mana, India, 21 km from Tibet. Three km below Mana the Alaknanda flows past the Hindu pilgrimage centre of Badrinath. It meets the Bhagirathi River at Devprayag after flowing for approximately 190 km through the Alaknanda valley. Its main tributaries are the Mandakini, Nandakini, and Pindar rivers

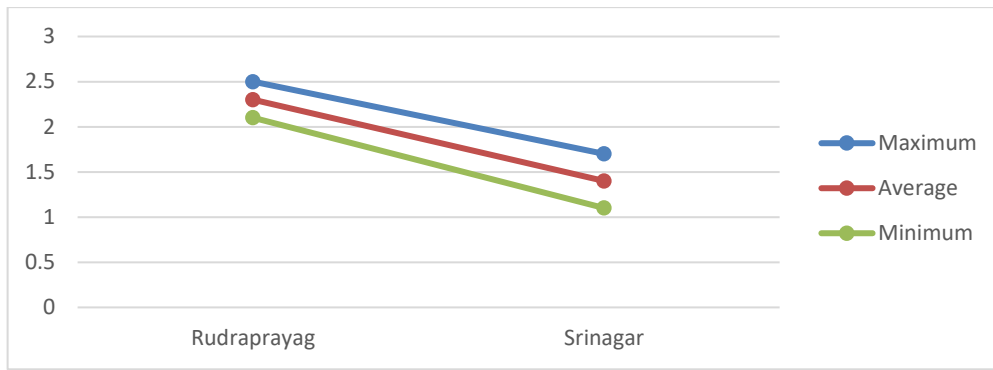
W.Q. Network :

S.No.	Name of Site	River	Class
1	Rudraprayag	Alaknanda	Base
2	Srinagar	Alaknanda	Trend

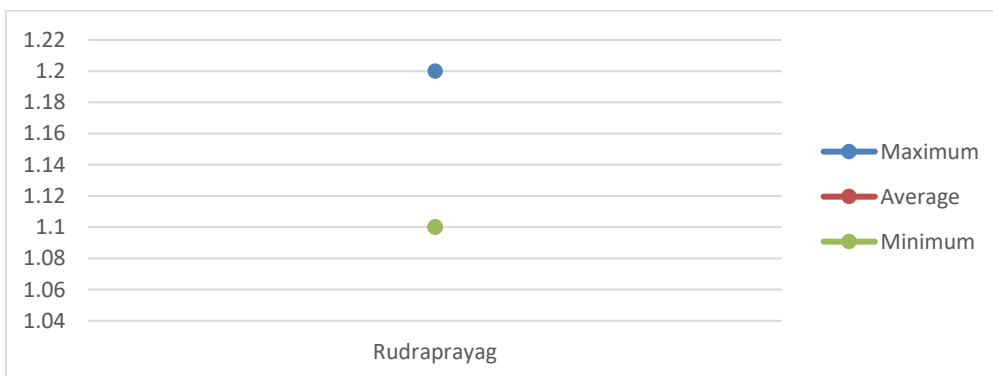
4.2.1 BOD in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Rudraprayag	15-05-1988	2.5	1.2	2.9	2.1	1.1	0.8	2.3	1.1	1.8
Srinagar	01-06-2014	1.7	NA	2.7	1.1	NA	1.2	1.4	NA	1.8

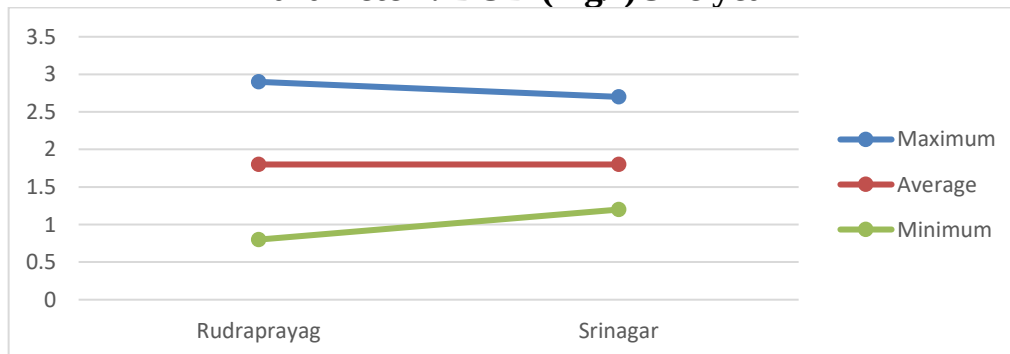
Parameter : BOD (mg/l)since inception



Parameter : BOD (mg/l)10 year



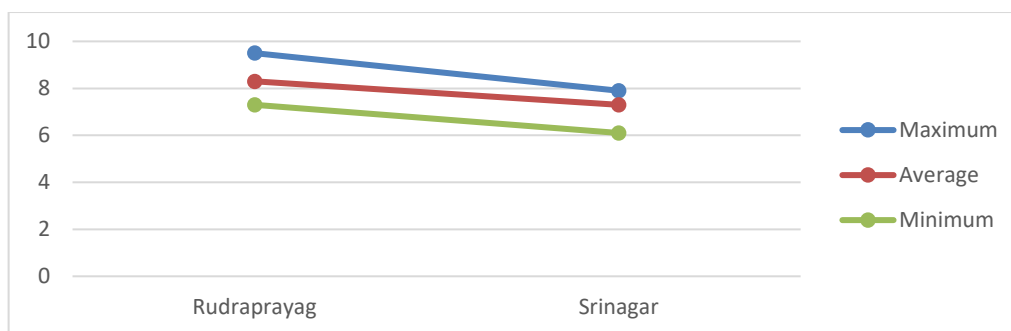
Parameter : BOD (mg/l)One year



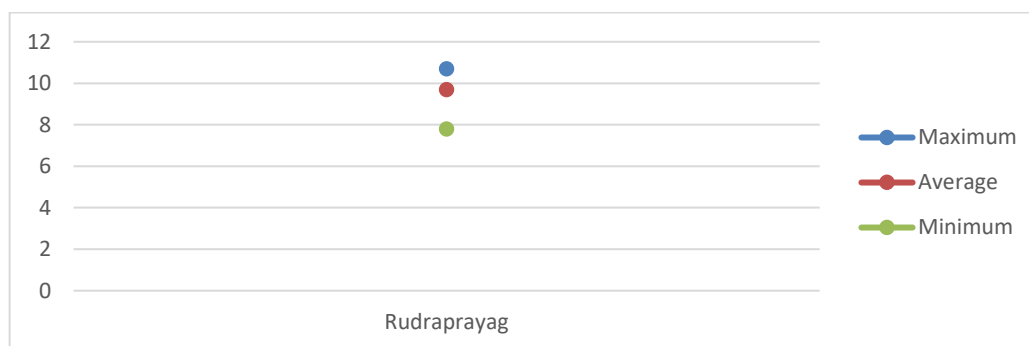
4.2.2 DO in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Rudraprayag	15-05-1984	9.5	10.7	8.8	7.3	7.5	6.5	8.3	9.7	7.8
Srinagar	01-06-2014	7.9	NA	8.6	6.1	NA	6.4	7.3	NA	7.6

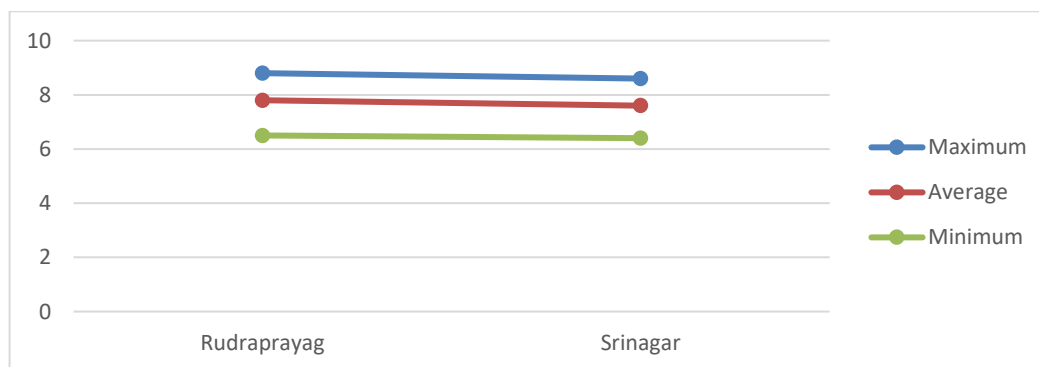
Parameter : DO (mg/l) since inception



Parameter : DO (mg/l) 10 Year



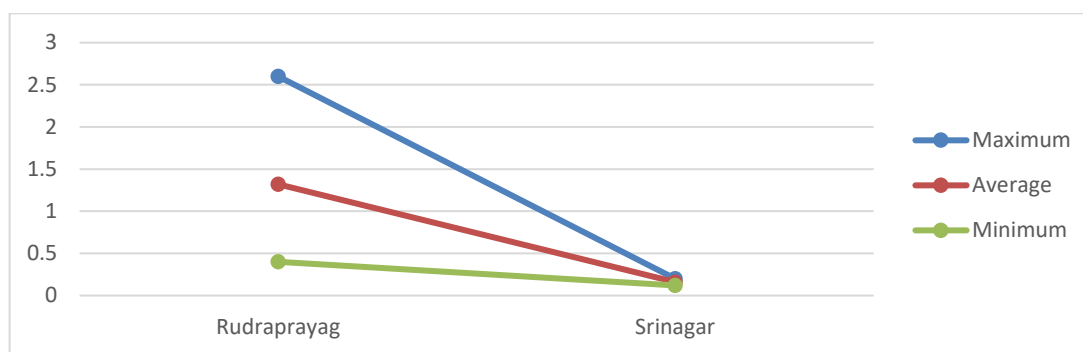
Parameter : DO (mg/l) One year



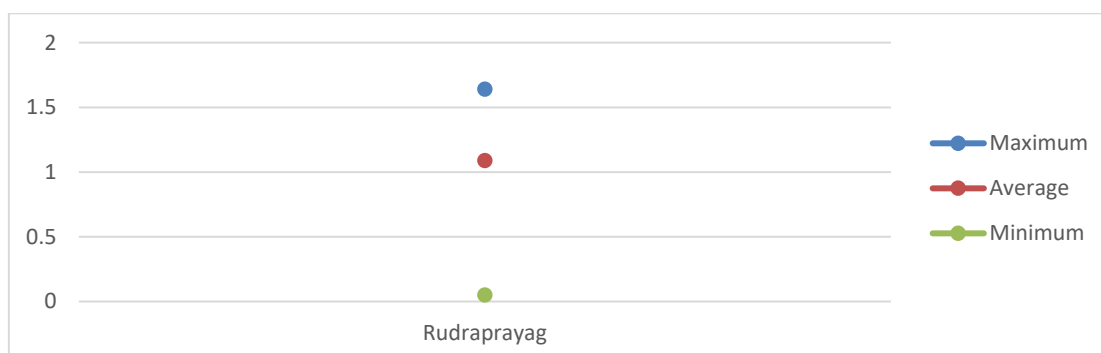
4.2.3 Fluoride in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Rudraprayag	15-05-1987	2.6	1.64	0.25	0.4	0.05	0.11	1.32	1.09	0.17
Srinagar	01-06-2014	0.2	NA	0.3	0.12	NA	0.14	0.16	NA	0.21

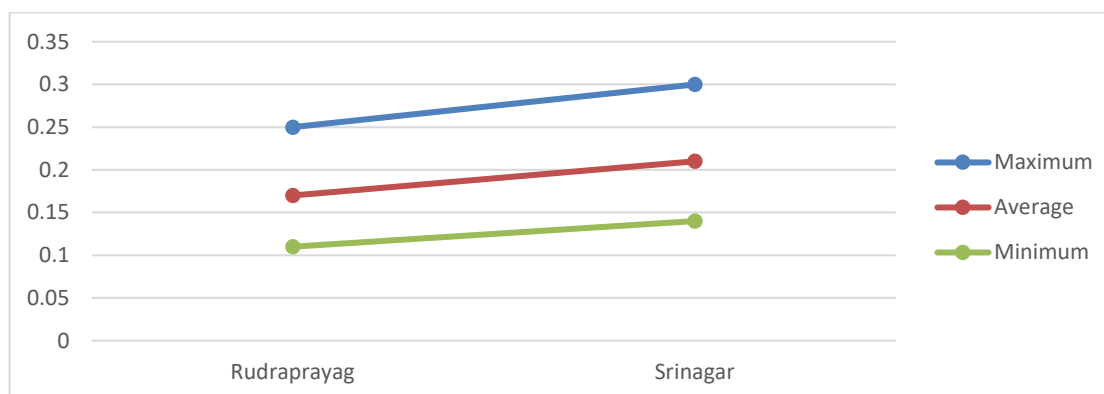
Parameter : Fluoride (mg/l) since inception



Parameter : Fluoride (mg/l)10 Year



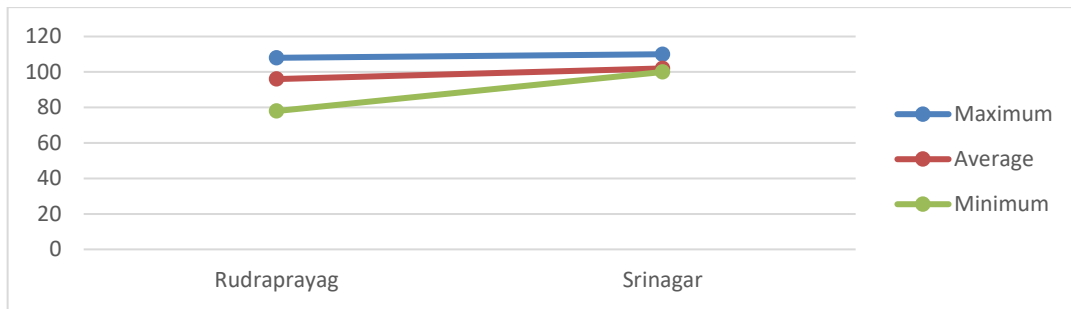
Parameter : Fluoride (mg/l)One year



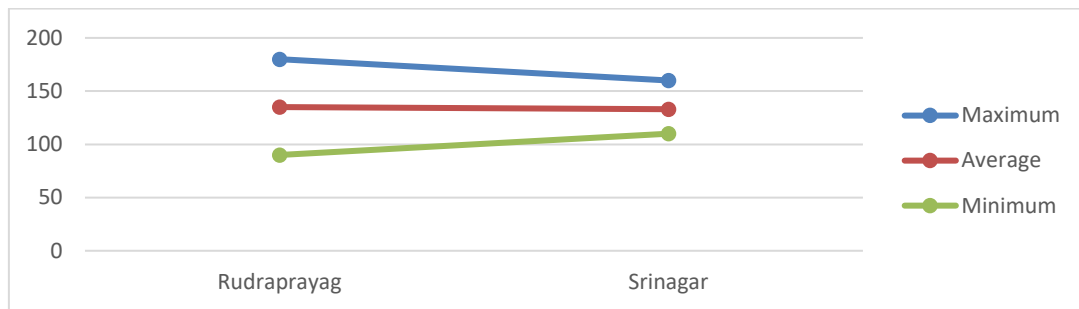
4.2.4 TDS in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Rudraprayag	15-05-2011	108	NA	180	78	NA	90	96	NA	135
Srinagar	01-06-2014	110	NA	160	100	NA	110	102	NA	133

Parameter : TDS (mg/l)since inception



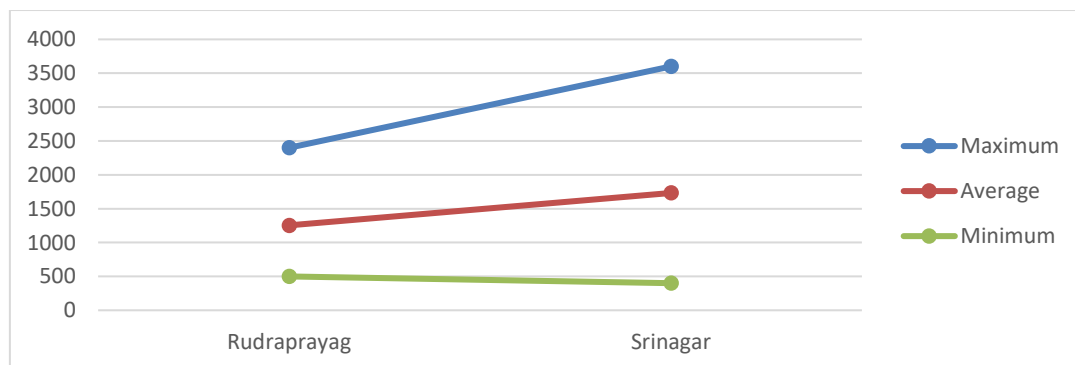
Parameter : TDS (mg/l)One year



4.2.5 Faecal coliform in MPN/100ml

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Rudraprayag	June 2015	NA	NA	2400	NA	NA	500	NA	NA	1254
Srinagar	June 2015	NA	NA	3600	NA	NA	400	NA	NA	1732

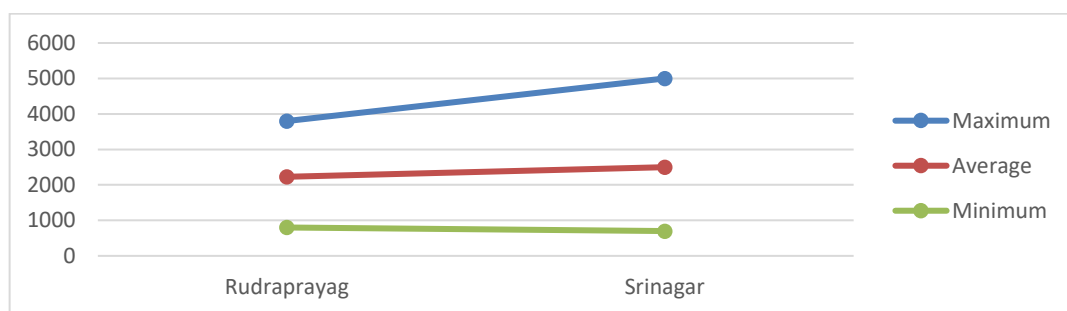
Parameter : Faecal coliform (MPN/100 ml) One year



4.2.6 Total coliform in MPN/100ml

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Rudraprayag	June 2015	NA	NA	3800	NA	NA	800	NA	NA	2229
Srinagar	June 2015	NA	NA	5000	NA	NA	700	NA	NA	2500

Parameter : Tcol(MPN/100 ml) One year



4.3 River : BHAGIRATHI (River 3) : Bhagirathi is a turbulent Himalayan river in the Indian state of Uttarakhand, and one of the two headstreams of the Ganges. The Bhagirathi is considered the source stream of the Ganges and confluent with river Alaknanda at Deoprayag.

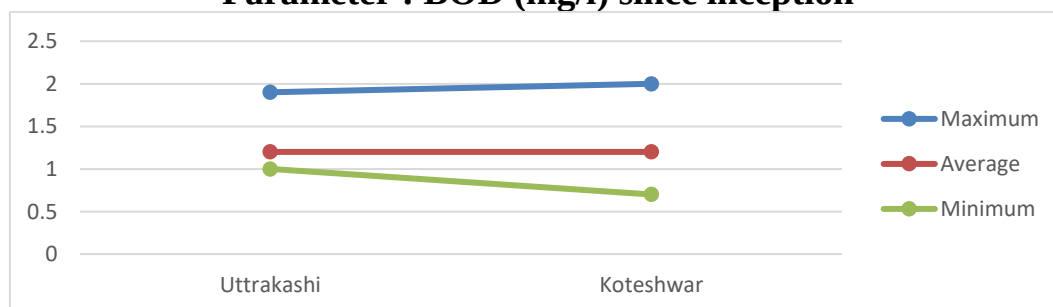
W.Q. Network :

S.No.	Name of Site	River	Class
1	Uttarakshi	Bhagirathi	Base
2	koteswar	Bhagirathi	Base

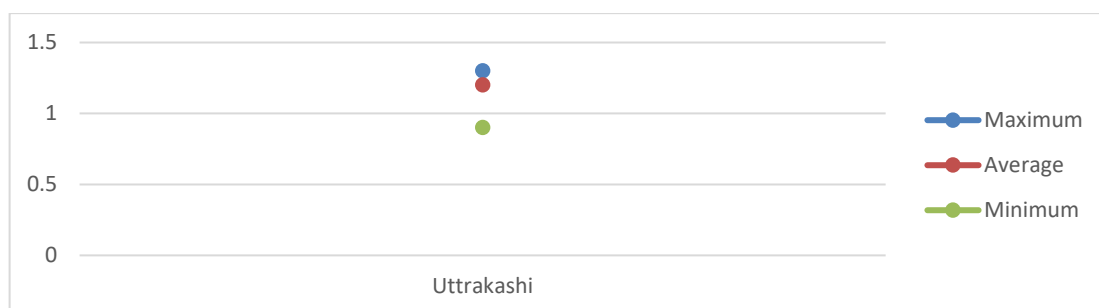
4.2.1 BOD in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Uttarakshi	01-06-1990	1.9	1.3	2.9	1.0	0.9	0.8	1.2	1.2	1.6
koteswar	03-07-2011	2.0	NA	3.4	0.7	NA	0.8	1.2	NA	1.7

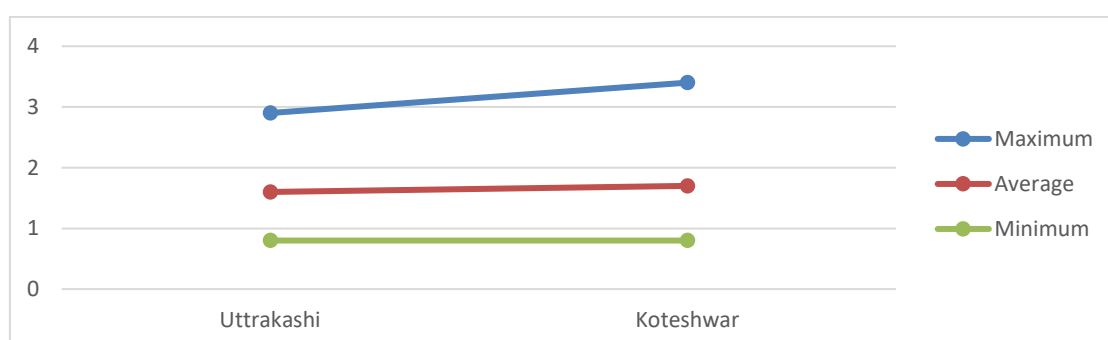
Parameter : BOD (mg/l) since inception



Parameter : Parameter : BOD (mg/l) 10 year



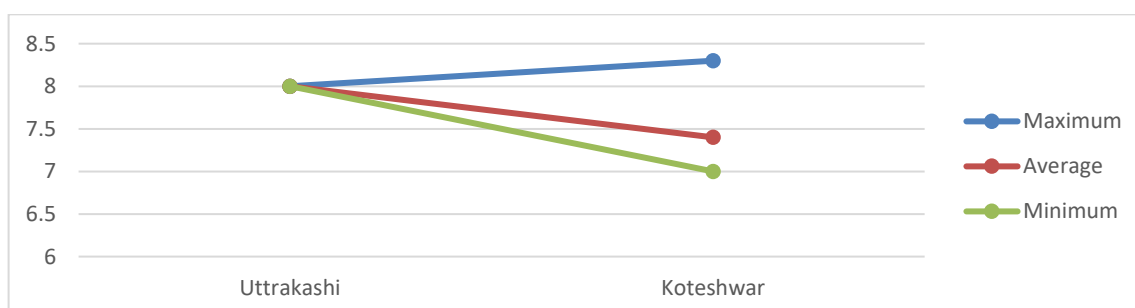
Parameter : BOD (mg/l) One year



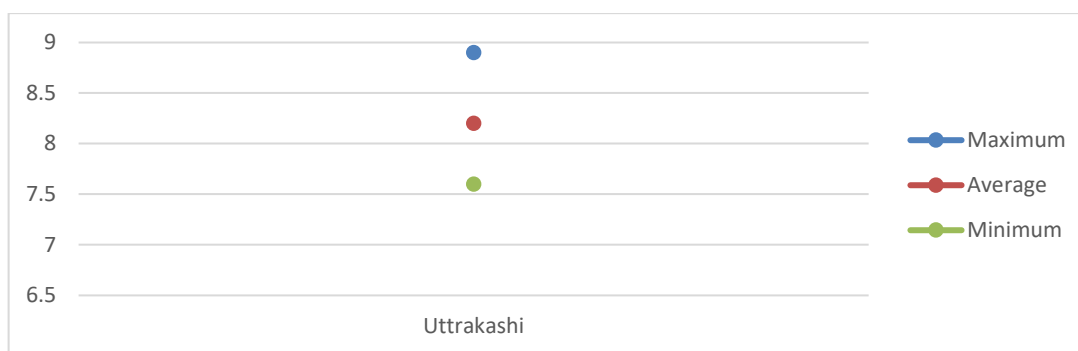
4.2.2 DO in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Uttrakashi	01-06-1989	8.0	8.9	8.9	8.0	7.6	6.4	8.0	8.2	7.9
koteswar	03-07-2011	8.3	NA	9.7	7.0	NA	6.4	7.4	NA	7.4

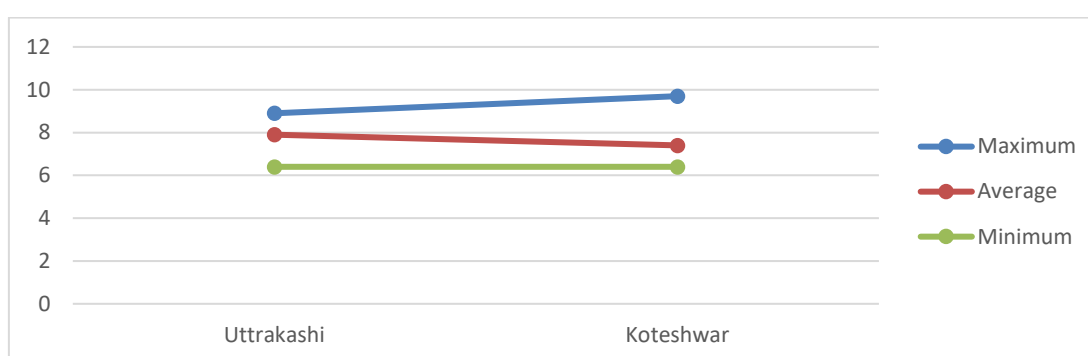
Parameter : DO (mg/l) since inception



Parameter : DO (mg/l) 10 Year



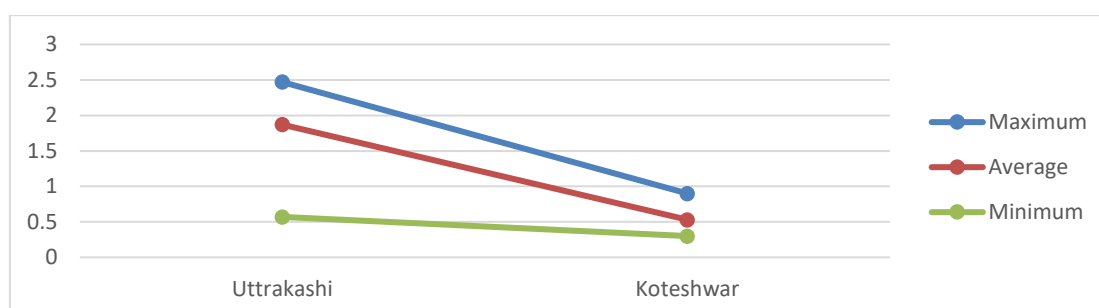
Parameter : DO (mg/l) One year



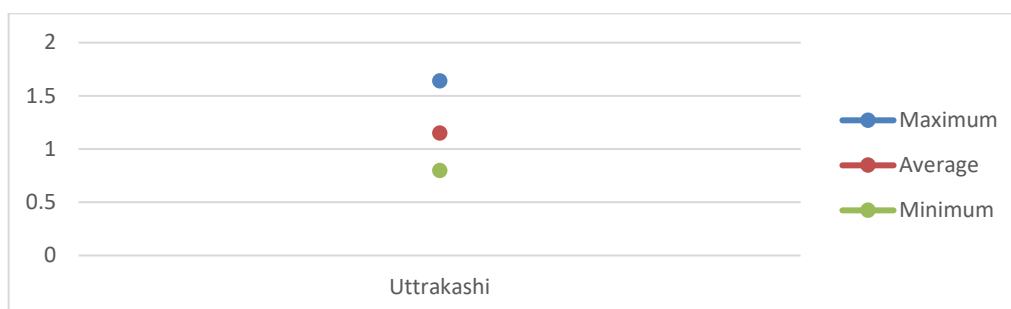
4.2.3 Fluoride in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Uttrakashi	01-06-1989	2.47	1.64	0.28	0.57	0.8	0.08	1.87	1.15	0.18
koteswar	03-07-2011	0.9	NA	0.32	0.3	NA	0.1	0.53	NA	0.2

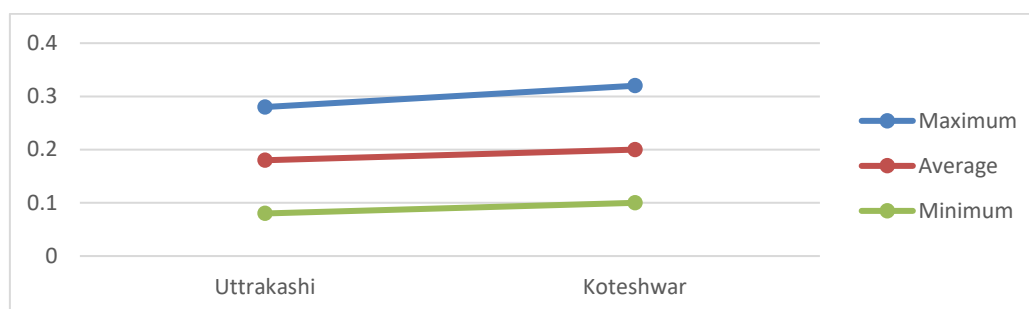
Parameter : Fluoride (mg/l) since inception



Parameter : Fluoride (mg/l) 10 Year



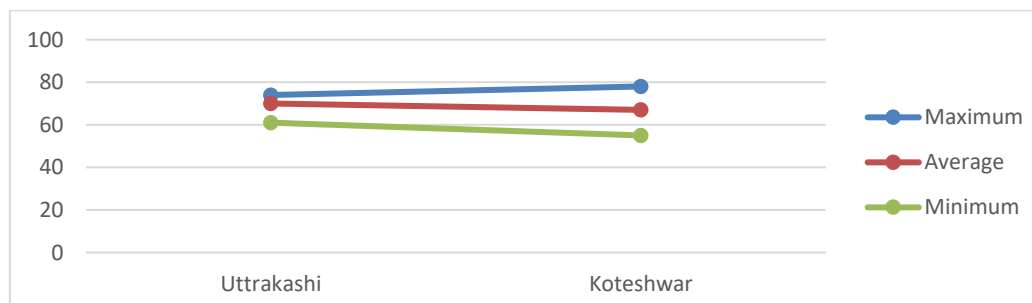
Parameter : Fluoride (mg/l) One year



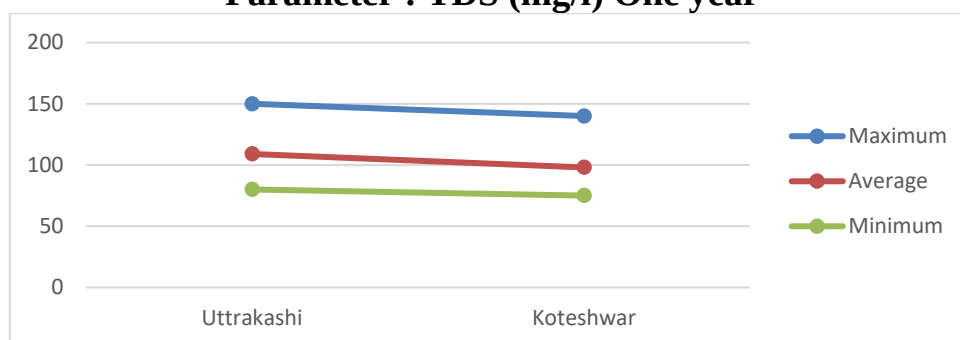
4.2.4 TDS in mg/l

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Uttrakashi	01-06-2011	74	NA	150	61	NA	80	70	NA	109
koteswar	03-07-2011	78	NA	140	55	NA	75	67	NA	98

Parameter : TDS (mg/l) since inception



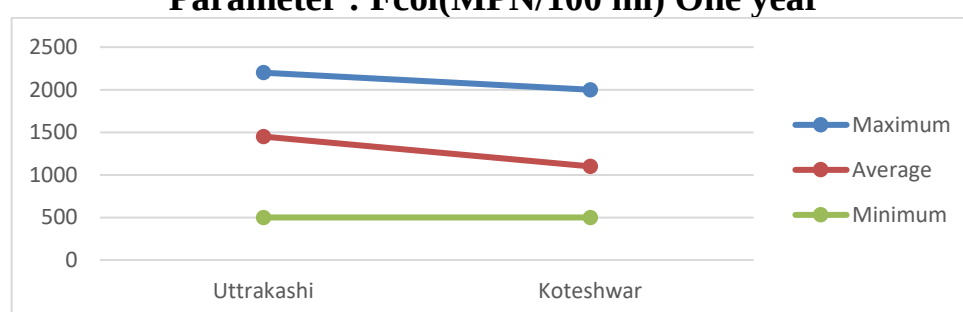
Parameter : TDS (mg/l) One year



4.2.5 Fecal coliform in MPN/100ml

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Uttrakashi	01-06-2015	NA	NA	2200	NA	NA	500	NA	NA	1450
koteswar	20-08-2015	NA	NA	2000	NA	NA	500	NA	NA	1100

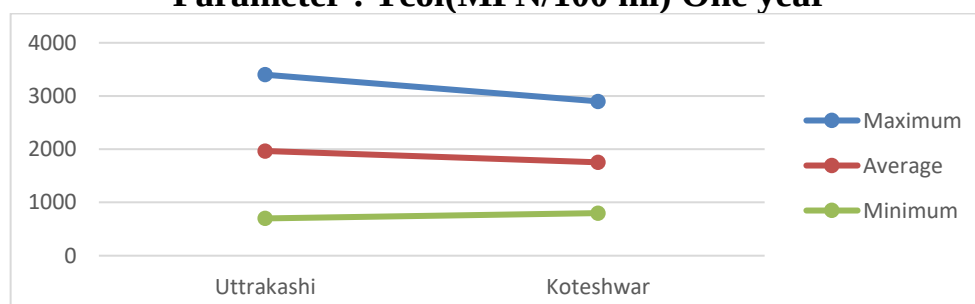
Parameter : Fcol(MPN/100 ml) One year



4.2.6 Total coliform in MPN/100ml

Site Name (From U/S to D/S)	Inception Date	Avg. of Yearly Maximum			Avg. of Yearly Minimum			Annual Average		
		Since inception	10 year	One year	Since inception	10 year	One year	Since inception	10 year	One year
Uttrakashi	01-06-2015	NA	NA	3400	NA	NA	700	NA	NA	1967
koteswar	20-08-2015	NA	NA	2900	NA	NA	800	NA	NA	1754

Parameter : Tcol(MPN/100 ml) One year



5. General Remark / Conclusion about W.Q. trend –

River 1 Ganga(Main Stem) :

- The annual average BOD value since date of inception of the parameter observation, ranges from 1.8 mg/l at Rishikesh to 5.9 mg/l at Kanpur and more or less the same trend is observed during the last 10 years annual average values at all the sites. However during the current year 2016-17, the annual average values are appreciably high in comparison to past 10 years annual average data for the stations at Deoprayag, Rishikesh, Garhmukteshwar, Kachla Bridge, Fatehgarh, Ankinghat, Kanpur and Bhithaura, which may be due to poor monsoon and consequently low flows in the river. The average values are more than 3.0 mg/l for all stations from Garhmukteshwar to Bhithaura and all other station where it is below 3.0 mg/l. However the minimum observed values at all the sites are below 3.0 mg/l for all the sites except Bhithaura. High BOD values in the range of 20-25 mg/l has been observed for stations from Kachlabridge to Bhithaura.
- The average D.O values in general is above 6.0 mg/l for all stations on long term basis. However during the past 10 years there is declining trend in DO for the river stretch from Garhmukteshwar to Bhithaura. Again during the current year the average values of DO are less in comparison to long term/past 10 year values for the stretch from Garhmukteshwar to Bhithaura.
- The fluoride values are well below the tolerance limit of 1.5 mg/l for all the stations on all occasions.
- The TDS average values ranges from 121 to 251 mg/l and is well within the limit of 500 mg/l for Class A waters.
- The total coliform concentration in the river is very high and on an average it is about 5000 MPN/100 ml along the river from Rishikesh to Varanasi. At Deoprayag the average total coliform is around 2000 MPN/100 ml. The problem is more aggravated during the initial period of monsoon and during peak summer season.
- The faecal coliform on an average is about 2000 MPN/100 ml for the river except Deoprayag where it is on an average around 1400 MPN/100 ml. Open defaecation, animal carcass, cattle wallowing etc. are some of the prime reasons for increased F. Coli values.

River 2 -Alaknanda :

- The BOD values at the stations on this river is less than 2.0 mg/l and the D.O values on average is more than 7.0 mg/l throughout the year and the waters qualifies as Class A waters from DO and BOD point of view.
- Average fluoride value ranged 0.1 to 0.8 mg/l and is safe for human consumption with respect to the tolerance limit of 1.5 mg/l.

- Average TDS value are around 100 mg/l which is within the tolerance limit of 500 mg/l for Class A water.

River 3 Bhagirathi :

- Average BOD value is around 1.5 mg/l and D.O values are more than 7.0 mg/l for both the stations at Uttarkashi and Koteswar and classify under Class A waters.
- The Fluoride values ranges in between 0.08 to 0.92 mg/l which is well below the tolerance limit of 1.5 mg/l.
- The TDS values on average is around 90 mg/l.
- The Total coliform and Faecal coliform at the two stations ranges from 1700-2000 MPN/100 ml and 1000 – 1500 MPN/100 ml respectively with higher values being observed at Uttarkashi.

The total and Faecal coliforms in the whole stretch of river from Uttarkashi to Varanasi is a matter of concern as its presence can cause health issue amongst people using river water specially for bathing and other rituals. The BOD values in middle stretch of river Ganga from Garhmukteswar to Varanasi during summer season is very high and proper measures are required to control the high BOD values.

History Sheet

Data

HISTORY SHEET

		Water Year	: 2016-2017
Site	: Uttarkashi	Code	: GG100K4
State	: Uttarakhand	District	Uttarkashi
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: Bhagirathi-I	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Bhagirathi-I
Division	: HGD,Dehradun	Sub-Division	: Bhagirathi Sub Division,Tehri
Drainage Area	: 4555 Sq. Km.	Bank	:
Latitude	: 30°45'00"	Longitude	: 78°20'00"
	Opening Date	Closing Date	
Gauge	: 7/15/1971		
Discharge	: 7/15/1971		
Sediment	: 6/12/1989		
Water Quality	: 6/1/1989		

Water Quality Datasheet for the period : 2016-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water Analysis

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	B	A	A	A
	PHYSICAL													
1	Q (cumec)	113.7	381.3	711.3	305.1	155.6	55.97	44.62	33.07	30.21	30.21		51.15	73.79
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Clear	Dark Green	Clear	Clear	Clear		Clear	Clear	Clear
3	EC_FLD (μmho/cm)	146	135	138	142	152	145	164	165	152		210	200	152
4	EC_GEN (μmho/cm)	141	120	120	125	147	154	160	159	144		202	194	146
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_FLD (pH units)	7.4	7.1	7.2	7.8	7.4	7.5	7.4	7.4	7.5		7.6	7.1	7.4
7	pH_GEN (pH units)	7.4	7.2	7.4	7.4	7.5	7.6	7.5	7.8	7.5		7.6	7.3	7.4
8	TDS (mg/L)	90	100	80	90	110	100	110	110	100		140	150	130
9	Temp (deg C)	12.0	12.0	11.5	11.0	11.0	10.5	8.5	7.0	6.0		7.0	7.5	7.0
	CHEMICAL													
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	60	48	56	60	72	76	80	76	72		88	72	68
3	B (mg/L)	0.08	0.14	0.12	0.18	0.27	0.16	0.20	0.25	0.10		0.15	0.06	0.10
4	Ca (mg/L)	27	22	25	27	33	34	36	30	30		37	28	26
5	Cl (mg/L)	8.0	10.0	8.0	14.0	16.0	18.0	19.2	20.0	18.0		24.0	18.0	16.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
7	F (mg/L)	0.12	0.16	0.12	0.16	0.25	0.19	0.08	0.28	0.14		0.25	0.18	0.20
8	Fe (mg/L)			0.0				0.0						
9	HCO3 (mg/L)	73	59	68	73	88	93	98	93	88		107	88	83
10	K (mg/L)	5.0	3.0	4.0	3.6	4.5	5.0	4.2	2.5	2.8		4.1	2.3	3.5
11	Mg (mg/L)	15.6	12.1	12.3	13.2	15.4	16.2	15.2	12.2	10.2		11.0	10.3	14.4
12	Na (mg/L)	10.0	8.0	8.0	9.3	11.0	12.0	13.2	10.5	9.3		11.3	10.5	10.2
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.31	0.42	0.38	0.77	0.85	0.48	0.40	0.50	0.46		0.80	0.67	0.42
15	NO2-N (mgN/L)	0.17	0.18	0.22	0.32	0.35	0.18	0.24	0.18	0.26		0.35	0.42	0.25
16	NO3-N (mgN/L)	0.14	0.24	0.16	0.45	0.50	0.30	0.16	0.32	0.20		0.45	0.25	0.17
17	P-Tot (mgP/L)	0.100	0.140	0.080	0.140	0.175	0.140	0.095	0.072	0.085		0.107	0.025	0.016
18	SO4 (mg/L)	24.0	26.0	22.0	26.4	32.5	34.0	27.4	28.5	25.3		30.2	23.0	20.9
	BIOLOGICAL/BACTERIOLOGICAL													

Water Quality Datasheet for the period : 2016-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water Analysis

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	B	A	A	A
1	BOD3-27 (mg/L)	0.8	2.9	1.3	2.0	2.9	1.4	1.2	1.2	1.9		1.0	1.7	1.3
2	COD (mg/L)	5.0	14.3	9.1	10.0	12.1	9.5	8.8	8.6	10.8		5.3	9.9	6.0
3	DO (mg/L)	6.8	6.4	7.5	7.8	8.2	7.8	8.9	8.8	8.0		8.6	8.7	7.1
4	DO_SAT% (%)	63	59	68	70	74	69							
5	FCol-MPN (MPN/100mL)	1900	2200	2000	1600	1800	1900	1600	1100	700		700	500	1400
6	Tcol-MPN (MPN/100mL)	2500	3400	2800	2100	2300	2300	2100	1400	900		1000	700	2100
	TRACE & TOXIC													
1	As (µg/L)			1.00				4.67						
2	Cd (µg/L)			0.09				0.04						
3	Cr (µg/L)			60.08				2.00						
4	Cu (µg/L)			9.35				1.56						
5	Ni (µg/L)			1.20				1.00						
6	Pb (µg/L)			1.41				1.00						
7	Zn (µg/L)			1.20				82.10						
	CHEMICAL INDICES													
1	HAR_Ca (mgCaCO3/L)	67	56	63	68	82	85	91	76	74		92	69	64
2	HAR_Total (mgCaCO3/L)	132	106	114	123	146	153	154	127	116		138	112	124
3	Na% (%)	14	14	13	14	14	14	15	15	14		15	17	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
5	SAR (-)	0.4	0.3	0.3	0.4	0.4	0.4	0.5	0.4	0.4		0.4	0.4	0.4
	PESTICIDES													

Water Quality Summary for the period : 2016-2017

Station Name : Uttarkashi (GG100K4)

Division : HGD,Dehradun

Local River : Bhagirathi-I

River Water Summary

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	334	813.1	21.13	162.4
2	EC_FLD (µmho/cm)	12	210	135	158
3	EC_GEN (µmho/cm)	12	202	120	151
4	pH_FLD (pH units)	12	7.8	7.1	7.4
5	pH_GEN (pH units)	12	7.8	7.2	7.4
6	TDS (mg/L)	12	150	80	109
7	Temp (deg C)	12	12.0	6.0	9.3
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	88	48	69
3	B (mg/L)	12	0.27	0.06	0.15
4	Ca (mg/L)	12	37	22	30
5	Cl (mg/L)	12	24.0	8.0	15.8
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.28	0.08	0.18
8	Fe (mg/L)	2	0.0	0.0	0
9	HCO3 (mg/L)	12	107	59	84
10	K (mg/L)	12	5.0	2.3	3.7
11	Mg (mg/L)	12	16.2	10.2	13.2
12	Na (mg/L)	12	13.2	8.0	10.3
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.85	0.31	0.54
15	NO2-N (mgN/L)	12	0.42	0.17	0.26
16	NO3-N (mgN/L)	12	0.50	0.14	0.28
17	P-Tot (mgP/L)	12	0.175	0.016	0.098
18	SO4 (mg/L)	12	34.0	20.9	26.7
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.9	0.8	1.6
2	COD (mg/L)	12	14.3	5.0	9.1
3	DO (mg/L)	12	8.9	6.4	7.9
4	DO_SAT% (%)	6	74	59	67
5	FCol-MPN (MPN/100mL)	12	2200	500	1450
6	Tcol-MPN (MPN/100mL)	12	3400	700	1967
	TRACE & TOXIC				
1	As (µg/L)	2	4.67	1.00	2.84
2	Cd (µg/L)	2	0.09	0.04	0.07
3	Cr (µg/L)	2	60.08	2.00	31.04
4	Cu (µg/L)	2	9.35	1.56	5.46
5	Ni (µg/L)	2	1.20	1.00	1.1
6	Pb (µg/L)	2	1.41	1.00	1.2
7	Zn (µg/L)	2	82.10	1.20	41.65
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	92	56	74
2	HAR_Total (mgCaCO3/L)	12	154	106	129
3	Na% (%)	12	17	13	14
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.5	0.3	0.4
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	241.3	280.8	172.5	301.3	303.8	263.6	231.5	189.9	266.0	432.6	325.5	457.4	429.5	406.8	333.4
2	EC_FLD (µmho/cm)	149	120	108	114	114	193	120	137	119		100		140	129	143
3	EC_GEN (µmho/cm)	149	120	108	114	114	193	120	137	119	133	128	151	133	123	131
4	pH_FLD (pH units)	8.2	8.0	8.1	7.7	8.0	8.1	7.5	7.0	8.2	7.9	7.9		7.6	7.6	7.4
5	pH_GEN (pH units)	8.2	8.0	8.1	7.7	8.0	8.1	7.5	7.0	8.2	7.9	7.7	7.8	7.7	7.8	7.4
6	TDS (mg/L)										70	68	98	90	84	94
7	Temp (deg C)	12.7	13.6	14.6	14.3	13.2	13.0	12.2	12.7	12.6	13.1	12.5	12.4	11.4	11.0	11.5
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	59	59	55	44	60	57		63	45	50	28	40	48	50	59
2	B (mg/L)				0.14	0.10	0.12				0.60	0.15	0.11	0.10	0.10	0.16
3	Ca (mg/L)	23	19	26	22	25	23	22	14	8	12	9	15	15	22	27
4	Cl (mg/L)	7.4	8.4	8.4	9.3	8.8	9.5	7.6	8.8	6.4	8.3	4.8	9.8	10.0	16.4	11.2
5	F (mg/L)	0.09	0.11	0.15	0.57	0.65	1.40	0.58	0.78	0.66	0.54	0.26	0.31	0.15	0.13	0.16
6	Fe (mg/L)	0.2	0.2	0.2			0.9	0.9	0.8	0.8						0.0
7	HCO3 (mg/L)	72	72	67	54	73	70	75	77	55	61	35	49	58	61	72
8	K (mg/L)	0.0	0.0	0.0	0.3	0.1	0.3	0.4	0.6	0.6	0.6		5.1	5.4	5.2	4.0
9	Mg (mg/L)	15.9	13.8	17.1	18.3	16.1	14.9	14.9	11.5	6.9	8.4	6.5	2.5	5.0	15.0	13.7
10	Na (mg/L)	0.9	1.1	0.8	2.2	2.1	2.9	3.0	3.0	3.2	3.3		6.5	6.6	7.1	9.3
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00		0.00			0.19	0.11	0.05	0.05
12	NO2+NO3 (mg N/L)	0.17	0.15	0.12			0.34	0.38	0.36	0.37			0.13	0.09	0.58	0.55
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00			0.03	0.03	0.31	0.25
14	NO3-N (mgN/L)	0.17	0.15	0.12			0.34	0.38	0.36	0.37			0.10	0.06	0.26	0.30
15	o-PO4-P (mg P/L)	0.298	0.554	0.393			0.610	0.393	0.265	0.424						
16	P-Tot (mgP/L)				0.554	0.393					0.739	0.262	0.019	0.119	0.063	0.127
17	SiO2 (mg/L)	18.4	16.7		36.0	19.4	44.0	39.2	39.2	34.8			4.1			
18	SO4 (mg/L)	6.1	5.2	5.9	5.5	7.5	8.6	7.0	7.0	8.2	9.5	10.6	16.3	30.2	22.0	26.2
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.4	1.2	1.3	1.2	1.8	2.0

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2	COD (mg/L)														9.4	10.1
3	DO (mg/L)	8.1	8.7	6.6	8.3	8.2	8.0	8.5	7.5	7.6	7.6	6.8	6.9	7.8	8.2	7.3
4	DO_SAT% (%)	76	83	64	80	78	76	79	71	72	72	64	64	71	74	67
5	FCol-MPN (MPN/100mL)															1900
6	Tcol-MPN (MPN/100mL)															2620
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.02													
2	As (µg/L)															1.00
3	Cd (µg/L)															0.09
4	Cr (µg/L)															60.08
5	Cu (µg/L)															9.35
6	Ni (µg/L)															1.20
7	Pb (µg/L)															1.41
8	Zn (µg/L)															1.20
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	58	47	66	54	62	57	55	36	21	29	24	38	39	54	67
2	HAR_Total (mgCaCO3/L)	125	105	137	130	129	119	117	84	49	64	51	49	60	117	124
3	Na% (%)	1	2	1	4	3	5	5	8	13	10		20	18	11	14
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2		0.4	0.4	0.3	0.4
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	6.935	7.400	6.330	8.600	3.590	5.328	4.913	4.415	47.38	41.95	41.54	11.49	40.78	37.33	38.82
2	EC_FLD (µmho/cm)	131	103	104	107	142	195	126	135	108	133			148	157	157
3	EC_GEN (µmho/cm)	131	103	104	107	142	195	126	135	108	134	156	145	140	153	154
4	pH_FLD (pH units)	8.2	8.0	8.0	7.9	8.1	8.1	8.1	7.7	8.3	7.6			7.8	7.9	7.4
5	pH_GEN (pH units)	8.2	8.0	8.0	7.9	8.1	8.1	8.1	7.7	8.3	7.6	7.6	8.0	8.0	8.0	7.6
6	TDS (mg/L)										71	86	98	100	95	105
7	Temp (deg C)	10.4	8.4	10.1	8.4	9.1	7.0	8.6	9.1	8.8	9.3	8.9	8.0	6.3	8.8	8.0
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	54	58	59	58	57	69		57	39	31	50	54	51	57	76
2	B (mg/L)					0.13	0.11				0.16	0.30	0.13	0.11	0.12	0.18
3	Ca (mg/L)	20	19	21	22	28	25	25	8	11	12	14	21	18	34	33
4	Cl (mg/L)	8.3	8.8	9.8	9.4	12.5	11.8	8.5	6.3	7.8	4.5	6.5	8.8	8.5	14.5	18.8
5	F (mg/L)	0.27	0.19	0.24	0.57	1.46	1.01	0.92	0.92	0.72	0.64	0.75	0.23	0.10	0.12	0.17
6	Fe (mg/L)	0.3	0.3	0.3			0.7	0.8	0.9	1.0				0.4		0.0
7	HCO3 (mg/L)	66	71	72	71	69	84	84	70	48	38	62	66	63	70	93
8	K (mg/L)	0.0	0.3	0.4	0.3	0.2	0.5	0.5	0.7	0.6	0.8	3.2	4.9	5.8	5.0	3.6
9	Mg (mg/L)	16.2	12.8	14.1	14.4	17.0	15.7	15.7	13.9	8.6	10.3	5.1	3.2	7.5	16.1	13.4
10	Na (mg/L)	1.2	1.4	1.6	2.8	2.6	3.0	3.0	3.2	3.3	4.1	3.7	7.3	6.2	7.4	11.2
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.20	0.09	0.05	0.05
12	NO2+NO3 (mg N/L)	0.13	0.19	0.28			0.47	0.37	0.47	0.48		0.24	0.11	0.13	0.34	0.46
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.10	0.03	0.03	0.22	0.21
14	NO3-N (mgN/L)	0.13	0.19	0.28			0.47	0.37	0.47	0.48		0.15	0.08	0.10	0.13	0.25
15	o-PO4-P (mg P/L)	0.610	0.692	0.452			0.692	0.419	0.447	0.568						
16	P-Tot (mgP/L)				0.692	0.331					0.773	0.390	0.233	0.089	0.127	0.098
17	SiO2 (mg/L)	20.5	16.5		42.0	20.8	40.0	42.0	36.5	35.5		9.7				
18	SO4 (mg/L)	6.0	6.0	6.6	7.7	7.8	8.6	7.8	8.4	8.8	8.9	13.3	18.1	25.6	22.3	28.8
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.0	1.0	1.3	1.4	1.4

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
2	COD (mg/L)													6.9	6.5	9.4
3	DO (mg/L)	9.4	9.5	8.4	8.2	8.7	8.1	8.5	8.0	8.0	8.1	8.2	8.6	9.2	8.0	8.4
4	DO_SAT% (%)	84		73	74	77	71	78	70	71	68	73	70		74	69
5	FCol-MPN (MPN/100mL)															1325
6	Tcol-MPN (MPN/100mL)															1675
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.00	0.00												
2	As (µg/L)														1.00	4.67
3	Cd (µg/L)													0.61	0.01	0.04
4	Cr (µg/L)													27.36	2.00	2.00
5	Cu (µg/L)													12.08	1.00	1.56
6	Ni (µg/L)													4.85	1.00	1.00
7	Pb (µg/L)													8.26	1.00	1.00
8	Zn (µg/L)													0.10	0.20	82.10
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	49	47	52	54	69	61	61	19	28	31	34	52	46	86	82
2	HAR_Total (mgCaCO3/L)	117	101	110	114	139	127	127	77	64	73	55	66	77	153	137
3	Na% (%)	2	3	3	5	4	5	5	8	10	11	13	18	14	9	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.3	0.3	0.4
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Summer Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	14.00	5.613	8.650	15.09	11.24	4.583	3.043	13.40	52.50	45.03	52.91	24.60	56.70	37.50	62.47
2	EC_FLD (µmho/cm)	130	109	111	116	173	161	152	149	125	141			127	199	187
3	EC_GEN (µmho/cm)	130	109	111	116	173	161	152	149	125	127	145	184	121	199	181
4	pH_FLD (pH units)	8.1	8.1	7.7	7.9	8.0	8.0	7.6	8.0	8.3	7.8			7.9	8.1	7.3
5	pH_GEN (pH units)	8.1	8.1	7.7	7.9	8.0	8.0	7.6	8.0	8.3	7.8	7.7	8.0	8.1	8.3	7.4
6	TDS (mg/L)										67	93	123	80	130	140
7	Temp (deg C)	10.8	14.3	12.7	12.0	11.5	11.0	11.7	14.3	11.7	10.7	11.5	9.3	9.3	10.7	7.2
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	64	67	45	60	56	76		59	39	32	43	54	61	71	76
2	B (mg/L)					0.13	0.10				0.20	0.14	0.13	0.11	0.08	0.10
3	Ca (mg/L)	24	26	21	26	27	26	21	8	14	18	16	18	16	29	30
4	Cl (mg/L)	10.0	9.7	11.7	9.6	13.0	14.7	12.7	7.3	8.0	5.5	18.0	8.3	10.0	14.0	19.3
5	F (mg/L)	0.26	0.22	0.52	0.53	1.64	1.00	0.95	0.79	0.79	0.45	0.33	0.22	0.11	0.14	0.21
6	Fe (mg/L)	0.4	0.5	0.8			1.2	0.9	1.0	1.0					0.0	
7	HCO3 (mg/L)	78	81	55	73	68	93	89	72	47	39	52	65	75	86	93
8	K (mg/L)	0.1	0.1	0.4	0.1	0.3	0.4	0.5	0.8	0.7		3.0	5.6	3.4	6.0	3.3
9	Mg (mg/L)	19.9	17.4	18.8	16.8	17.1	17.1	13.9	10.8	10.8	12.3	2.4	3.8	3.9	11.7	11.9
10	Na (mg/L)	1.5	1.6	2.1	2.8	3.0	3.3	3.4	3.5	3.3		4.6	8.4	10.4	10.0	10.6
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.17	0.08	0.05	0.05
12	NO2+NO3 (mg N/L)	0.22	0.27	0.45			0.50	0.40	0.47	0.50		0.25	0.11	0.33	0.36	0.63
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.07	0.03	0.15	0.24	0.34
14	NO3-N (mgN/L)	0.22	0.27	0.45			0.50	0.40	0.47	0.50		0.18	0.07	0.19	0.12	0.29
15	o-PO4-P (mg P/L)	3.210	0.816	0.255			0.816	0.255	0.541	0.489						
16	P-Tot (mgP/L)				0.816	0.255					0.237	0.080	0.463	0.054	0.121	0.049
17	SiO2 (mg/L)	23.3	22.0		49.3	22.0	46.7	42.7	38.0	36.7		4.3				
18	SO4 (mg/L)	7.3	6.8	6.2	8.6	9.2	8.7	8.4	9.2	9.7	11.0	21.4	24.7	14.7	23.0	24.7
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.1	1.0	1.0	2.1	1.7	1.3

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Uttarkashi (GG100K4)

Local River : Bhagirathi-I

River Water

Division : HGD,Dehradun

Sub-Division : Bhagirathi Sub Division,Tehri

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2	COD (mg/L)													18.1	7.7	7.1
3	DO (mg/L)	9.3	9.1	8.6	8.2	8.8	8.6	8.5	8.4	8.1	8.2	7.8	9.4	8.1	7.1	8.1
4	DO_SAT% (%)	84	88	84	76	84	82	78	81	74	73	72	82	68	60	
5	FCol-MPN (MPN/100mL)														1500	867
6	Tcol-MPN (MPN/100mL)														4000	1267
	TRACE & TOXIC															
1	Al (mg/L)	0.04	0.00													
2	As (µg/L)														1.00	
3	Cd (µg/L)														0.01	
4	Cr (µg/L)														2.00	
5	Cu (µg/L)														1.00	
6	Ni (µg/L)														1.00	
7	Pb (µg/L)														1.00	
8	Zn (µg/L)														0.10	
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	60	66	52	65	68	66	52	20	34	45	41	45	40	72	75
2	HAR_Total (mgCaCO3/L)	143	138	130	135	139	137	110	65	79	96	51	60	56	121	125
3	Na% (%)	2	2	3	4	5	5	6	11	8		16	22	27	15	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
5	SAR (-)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2		0.3	0.5	0.6	0.4	0.4
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: KOTESWAR	Code	: GG100E
State	: Uttarakhand	District	Tehri-Garhwal
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: Bhagirathi-I	Sub Tributary	: -
Sub-Sub Tributary	:	Local River	:
Division	: Himalayan Ganga Div., Dehradun	Sub-Division	: Bhagirath SD, Tehri
Drainage Area	: 7413 Sq. Km.	Bank	: Right
Latitude	: 30°19'51"	Longitude	: 78°29'18"
	Opening Date	Closing Date	
Gauge	: 7/3/2011		
Discharge	: 7/3/2011		
Sediment	: 7/3/2011		
Water Quality	: 7/3/2011		

Water Quality Datasheet for the period : 2016-2017

Station Name : KOTESWAR (GG100E)

Division : Himalayan Ganga Div., Dehradun

Local River :

River Water Analysis

Sub-Division : Bhagirath SD, Tehri

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	B	A	A	A	A	A
	PHYSICAL													
1	Q (cumec)	180.9	169.5	529.2	178.1	180.1	181.2	182.2	182.2	181.4	156.0	156.6	178.9	179.4
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear		Clear	Clear	Clear	Clear	Clear
3	EC_FLD (μmho/cm)	185	152	152	135	135	138	126		110	120	138	156	172
4	EC_GEN (μmho/cm)	178	140	140	120	130	138	120		106	114	130	150	164
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_FLD (pH units)	7.2	7.1	7.3	6.5	7.7	7.8	7.6		7.3	7.9	7.2	7.2	7.2
7	pH_GEN (pH units)	6.9	7.3	7.4	7.4	7.7	7.7	7.7		7.4	7.8	7.3	7.4	7.4
8	TDS (mg/L)	120	90	90	90	100	90	90		80	75	100	110	140
9	Temp (deg C)	17.5	17.5	18.0	18.0	18.0	18.5	17.0		17.0	16.0	16.0	16.5	16.5
	CHEMICAL													
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	68	56	60	56	62	68	64		56	60	68	88	92
3	B (mg/L)	0.06	0.10	0.10	0.16	0.22	0.25	0.18		0.20	0.10	0.15	0.20	0.15
4	Ca (mg/L)	25	21	19	16	18	21	15		25	30	34	30	33
5	Cl (mg/L)	10.0	8.0	10.0	14.0	16.0	18.0	16.0		18.5	20.0	24.0	20.0	22.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.14	0.22	0.18	0.26	0.28	0.32	0.28		0.10	0.16	0.18	0.15	0.17
8	Fe (mg/L)			0.0				0.0					0.1	
9	HCO3 (mg/L)	83	68	73	68	76	83	78		68	73	83	107	112
10	K (mg/L)	7.0	4.0	4.0	3.0	4.5	5.8	4.2		3.2	2.5	2.8	3.5	4.1
11	Mg (mg/L)	11.3	9.2	8.4	10.7	11.6	12.4	10.3		11.0	9.2	10.5	14.5	16.1
12	Na (mg/L)	14.0	10.0	12.0	10.0	10.8	15.5	12.4		10.5	9.5	10.8	12.0	14.3
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.39	0.46	0.44	0.42	0.49	0.65	0.36		0.39	0.35	0.42	0.43	0.36
15	NO2-N (mgN/L)	0.24	0.20	0.26	0.18	0.22	0.35	0.16		0.14	0.20	0.17	0.15	0.26
16	NO3-N (mgN/L)	0.15	0.26	0.18	0.24	0.27	0.30	0.20		0.25	0.15	0.25	0.28	0.10
17	P-Tot (mgP/L)	0.080	0.180	0.150	0.060	0.064	0.126	0.095		0.065	0.026	0.030	0.055	0.040
18	SO4 (mg/L)	22.0	16.0	18.0	16.5	17.8	19.5	18.3		21.4	26.5	30.2	26.5	27.8
	BIOLOGICAL/BACTERIOLOGICAL													

Water Quality Datasheet for the period : 2016-2017

Station Name : KOTESWAR (GG100E)

Local River :

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirath SD, Tehri

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	B	A	A	A	A	A
1	BOD3-27 (mg/L)	1.4	1.7	1.9	3.4	1.0	2.6	0.9		1.0	2.1	1.2	2.3	0.8
2	COD (mg/L)	7.1	10.2	11.2	17.0	6.4	12.5	5.1		5.2	11.9	7.6	13.4	4.1
3	DO (mg/L)	6.9	6.5	9.4	7.1	7.7	7.2	7.3		7.4	6.4	8.6	7.4	7.0
4	DO_SAT% (%)	72	67	99	75	81	76	75		76	65	87	75	71
5	Fcol-MPN (MPN/100mL)	900	1100	1500	1800	2000	1800	800		700	600	500	600	900
6	Tcol-MPN (MPN/100mL)	2200	2400	2900	2200	2400	2200	1400		1100	1000	800	850	1600
	TRACE & TOXIC													
1	As (µg/L)			3.93				1.00					9.00	
2	Cd (µg/L)			0.09				0.04					0.01	
3	Cr (µg/L)			25.18				2.00					8.00	
4	Cu (µg/L)			17.23				1.50					6.00	
5	Ni (µg/L)			1.00				1.00					1.00	
6	Pb (µg/L)			1.00				2.85					1.00	
7	Zn (µg/L)			0.35				83.10					64.00	
	CHEMICAL INDICES													
1	HAR_Ca (mgCaCO3/L)	62	52	48	41	44	52	38		61	76	84	76	83
2	HAR_Total (mgCaCO3/L)	109	90	83	85	93	104	81		107	114	128	136	150
3	Na% (%)	21	19	23	20	19	23	24		17	15	15	16	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.6	0.5	0.6	0.5	0.5	0.7	0.6		0.4	0.4	0.4	0.4	0.5
	PESTICIDES													

Water Quality Summary for the period : 2016-2017

Station Name : KOTESWAR (GG100E)

Division : Himalayan Ganga Div., Dehradun

Local River :

River Water Summary

Sub-Division : Bhagirath SD, Tehri

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	539.3	10.39	220.3
2	EC_FLD (µmho/cm)	12	185	110	143
3	EC_GEN (µmho/cm)	12	178	106	136
4	pH_FLD (pH units)	12	7.9	6.5	7.3
5	pH_GEN (pH units)	12	7.8	6.9	7.4
6	TDS (mg/L)	12	140	75	98
7	Temp (deg C)	12	18.5	16.0	17.2
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	92	56	66
3	B (mg/L)	12	0.25	0.06	0.16
4	Ca (mg/L)	12	34	15	24
5	Cl (mg/L)	12	24.0	8.0	16.4
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.32	0.10	0.2
8	Fe (mg/L)	3	0.1	0.0	0.1
9	HCO3 (mg/L)	12	112	68	81
10	K (mg/L)	12	7.0	2.5	4
11	Mg (mg/L)	12	16.1	8.4	11.3
12	Na (mg/L)	12	15.5	9.5	11.8
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.65	0.35	0.43
15	NO2-N (mgN/L)	12	0.35	0.14	0.21
16	NO3-N (mgN/L)	12	0.30	0.10	0.22
17	P-Tot (mgP/L)	12	0.180	0.026	0.081
18	SO4 (mg/L)	12	30.2	16.0	21.7
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	3.4	0.8	1.7
2	COD (mg/L)	12	17.0	4.1	9.3
3	DO (mg/L)	12	9.4	6.4	7.4
4	DO_SAT% (%)	12	99	65	77
5	FCol-MPN (MPN/100mL)	12	2000	500	1100
6	Tcol-MPN (MPN/100mL)	12	2900	800	1754
	TRACE & TOXIC				
1	As (µg/L)	3	9.00	1.00	4.64
2	Cd (µg/L)	3	0.09	0.01	0.05
3	Cr (µg/L)	3	25.18	2.00	11.73
4	Cu (µg/L)	3	17.23	1.50	8.24
5	Ni (µg/L)	3	1.00	1.00	1
6	Pb (µg/L)	3	2.85	1.00	1.62
7	Zn (µg/L)	3	83.10	0.35	49.15
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	84	38	60
2	HAR_Total (mgCaCO3/L)	12	150	81	107
3	Na% (%)	12	24	15	19
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.7	0.4	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2011-2017

Station Name : KOTESWAR (GG100E)

Local River :

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirath SD, Tehri

S.No	Parameters	Flood						Winter						Summer					
		Jun - Oct						Nov - Feb						Mar - May					
		2011	2012	2013	2014	2015	2016	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2012	2013	2014	2015	2016	2017
	PHYSICAL																		
1	Q (cumec)	551.6	212.7	487.1	286.4	284.9	247.6	134.6	239.6	206.1	178.0	181.4	176.6	190.9	202.5	260.3	220.4	181.5	171.6
2	EC_FLD (µmho/cm)				137	135	152				104	139	124				131	155	155
3	EC_GEN (µmho/cm)	146	143	136	132	130	142	112	124	110	97	132	120	118	163	124	125	149	148
4	pH_FLD (pH units)				7.4	7.6	7.1		7.4		7.8	7.8	7.6				7.7	8.3	7.2
5	pH_GEN (pH units)	7.9	7.8	7.8	7.7	7.7	7.3	7.6	7.6	7.9	7.9	8.0	7.6	7.7	7.7	8.0	8.0	8.3	7.3
6	TDS (mg/L)	77	76	88	94	87	98	59	68	75	63	93	84	62	104	87	83	110	117
7	Temp (deg C)	16.4	15.8	17.0	17.7	17.2	17.8	15.0	15.1	14.5	15.6	14.6	17.1	15.0	15.0	15.2	16.5	16.2	16.3
	CHEMICAL																		
1	ALK-TOT (mgCaCO3/L)	39	23	41	59	55	60	30	46	41	55	56	62	34	46	44	52	59	83
2	B (mg/L)	0.61	0.15	0.09	0.10	0.06	0.13	0.82	0.28	0.11	0.09	0.09	0.18	0.39	0.09	0.11	0.11	0.11	0.17
3	Ca (mg/L)	13	11	15	16	24	20	12	10	15	17	32	23	21	16	16	15	25	32
4	Cl (mg/L)	8.1	4.4	8.6	8.6	17.6	11.6	6.6	6.5	7.8	8.3	15.0	18.1	5.8	14.0	8.7	9.3	11.3	22.1
5	F (mg/L)	0.78	0.30	0.20	0.13	0.15	0.22	0.42	0.59	0.18	0.11	0.15	0.21	0.31	0.13	0.15	0.13	0.15	0.17
6	Fe (mg/L)				0.0		0.0				1.1		0.0					0.0	0.1
7	HCO3 (mg/L)	47	28	50	72	67	74	36	56	49	67	68	76	41	56	54	63	72	101
8	K (mg/L)	0.7		5.6	5.5	5.8	4.5	1.3	3.4	4.3	6.4	5.5	3.9		2.6	4.6	3.1	7.3	3.5
9	Mg (mg/L)	10.7	7.8	2.3	5.0	12.7	10.2	9.3	6.0	4.0	5.8	15.9	10.7	13.1	2.2	3.3	4.2	14.0	13.7
10	Na (mg/L)	3.9		5.9	5.9	15.6	11.4	4.0	3.5	6.9	6.3	14.8	12.0		3.1	7.8	9.4	15.7	12.4
11	NH3-N (mg N/L)			0.12	0.10	0.05	0.05			0.15	0.09	0.05	0.05			0.15	0.07	0.05	0.05
12	NO2+NO3 (mg N/L)			0.10	0.08	0.48	0.44		0.21	0.08	0.15	0.40	0.44		0.17	0.08	0.32	0.45	0.40
13	NO2-N (mgN/L)			0.03	0.03	0.34	0.22		0.09	0.03	0.04	0.28	0.21		0.04	0.03	0.14	0.29	0.19
14	NO3-N (mgN/L)			0.08	0.05	0.14	0.22		0.12	0.06	0.11	0.13	0.23		0.12	0.05	0.18	0.15	0.21
15	P-Tot (mgP/L)	0.044	0.192	0.029	0.132	0.074	0.107	0.640	0.320	0.208	0.087	0.085	0.078	0.091	0.070	0.360	0.036	0.107	0.042
16	SiO2 (mg/L)			2.8					7.8						5.6				
17	SO4 (mg/L)	10.8	11.2	11.5	23.0	17.8	18.1	10.0	12.3	13.3	25.1	18.0	21.4	10.8	13.0	17.8	11.3	20.7	28.2
	BIOLOGICAL/BACTERIOLOGICAL																		
1	BOD3-27 (mg/L)	1.4	1.1	1.2	1.2	2.2	1.9	1.0	1.0	1.1	1.4	1.1	1.7	0.9	1.1	1.1	1.2	1.5	1.4
2	COD (mg/L)					10.8	10.4				8.2	5.8	8.7				10.5	7.7	8.3

Water Quality Seasonal Average for the period: 2011-2017

Station Name : KOTESWAR (GG100E)

Local River :

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirath SD, Tehri

S.No	Parameters	Flood						Winter						Summer					
		Jun - Oct						Nov - Feb						Mar - May					
		2011	2012	2013	2014	2015	2016	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2012	2013	2014	2015	2016	2017
3	DO (mg/L)	7.7	6.5	6.9	7.1	7.3	7.5	7.3	7.4	7.7	8.2	6.9	7.1	7.2	7.3	8.0	7.0	6.5	7.6
4	DO_SAT% (%)	78	65	72	74	76	79	72	73	75	82	67	73	72	73	79	71	66	77
5	FCol-MPN (MPN/100mL)						1460						975					700	667
6	Tcol-MPN (MPN/100mL)						2420						1425					2200	1083
	TRACE & TOXIC																		
1	As (µg/L)						3.93					1.00	1.00					1.00	9.00
2	Cd (µg/L)						0.09				0.24	0.01	0.04					0.01	0.01
3	Cr (µg/L)						25.18				35.49	2.00	2.00					2.00	8.00
4	Cu (µg/L)						17.23				13.85	1.00	1.50					1.00	6.00
5	Ni (µg/L)						1.00				13.83	1.00	1.00						1.00
6	Pb (µg/L)						1.00				15.45	1.00	2.85					1.00	1.00
7	Zn (µg/L)						0.35				0.10	0.19	83.10					0.10	64.00
	CHEMICAL INDICES																		
1	HAR_Ca (mgCaCO3/L)	33	29	38	41	59	50	29	25	37	43	79	57	53	40	39	37	63	81
2	HAR_Total (mgCaCO3/L)	78	61	47	61	112	92	68	50	54	66	145	101	108	49	53	55	121	138
3	Na% (%)	10		19	16	22	20	11	15	20	16	18	20		12	23	26	21	16
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.2		0.4	0.3	0.6	0.5	0.2	0.2	0.4	0.3	0.5	0.5		0.2	0.5	0.6	0.6	0.5
	PESTICIDES																		

HISTORY SHEET

		Water Year	: 2016-2017
Site	: Rudraprayag	Code	: GG200G5
State	: Uttarakhand	District	Rudraprayag
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: Alaknanda	Sub Tributary	:
Sub-Sub Tributary	:	Local River	:
Division	: HGD,Dehradun	Sub-Division	: Alaknanda Sub Div,Srinagar
Drainage Area	: 9031 Sq. Km.	Bank	:
Latitude	: 31°17'20"	Longitude	: 78°59'00"
	Opening Date	Closing Date	
Gauge	: 2/9/1971		
Discharge	: 2/9/1971		
Sediment	: 9/22/1987		
Water Quality	: 5/15/1976		

Water Quality Datasheet for the period : 2016-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water Analysis

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	01/06/2016	01/07/2016	02/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A	
	PHYSICAL													
1	Q (cumec)	228.1	2893	1665	982.5	412.6	197.1	115.5	88.77	36.71	69.74	89.63	206.1	
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Clear	Light Brown	Clear	Dark Green	Clear	Clear	Clear	Clear	
3	EC_FLD (µmho/cm)	195	236	145	167	180	185	210	188	187	258	248	215	
4	EC_GEN (µmho/cm)	188	221	130	157	176	196	205	188	178	250	240	208	
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_FLD (pH units)	7.3	7.0	7.4	7.5	7.4	7.2	7.5	7.7	7.7	8.0	7.3	7.4	
7	pH_GEN (pH units)	7.4	7.0	7.5	7.3	7.6	7.6	7.6	7.8	7.6	7.8	7.4	7.5	
8	TDS (mg/L)	120	120	90	110	120	130	140	130	120	180	180	180	
9	Temp (deg C)	18.0	19.0	19.0	17.0	17.0	12.0	11.0	9.0	8.0	11.0	15.0	16.0	
	CHEMICAL													
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	ALK-TOT (mgCaCO3/L)	84	88	68	84	98	108	112	104	80	112	108	96	
3	B (mg/L)	0.12	0.14	0.16	0.18	0.16	0.20	0.16	0.20	0.17	0.20	0.25	0.10	
4	Ca (mg/L)	38	40	29	27	39	42	40	34	37	38	35	32	
5	Cl (mg/L)	16.0	18.0	14.0	17.0	20.0	24.0	28.0	26.0	16.0	18.0	16.0	14.0	
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	F (mg/L)	0.11	0.18	0.14	0.16	0.24	0.18	0.25	0.18	0.15	0.17	0.15	0.18	
8	Fe (mg/L)			0.0				0.0	0.0			0.1		
9	HCO3 (mg/L)	102	107	83	102	120	132	137	127	98	137	132	117	
10	K (mg/L)	7.0	6.0	4.0	3.6	6.0	7.0	9.4	5.4	3.6	7.5	4.0	3.4	
11	Mg (mg/L)	12.2	15.2	11.4	13.2	16.3	18.2	15.3	17.2	15.1	17.1	14.8	12.7	
12	Na (mg/L)	16.0	14.0	11.0	9.3	16.0	18.0	19.5	14.5	12.2	16.2	11.7	10.1	
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
14	NO2+NO3 (mg N/L)	0.22	0.40	0.38	0.46	0.62	0.66	0.62	0.59	0.33	0.48	0.45	0.47	
15	NO2-N (mgN/L)	0.14	0.18	0.12	0.16	0.40	0.48	0.35	0.27	0.18	0.28	0.30	0.40	
16	NO3-N (mgN/L)	0.08	0.22	0.26	0.30	0.22	0.18	0.27	0.32	0.15	0.20	0.15	0.07	
17	P-Tot (mgP/L)	0.130	0.160	0.080	0.100	0.051	0.042	0.068	0.050	0.085	0.197	0.095	0.050	
18	SO4 (mg/L)	26.0	26.0	22.0	27.2	32.0	35.5	32.6	30.7	26.3	36.5	28.2	24.5	
	BIOLOGICAL/BACTERIOLOGICAL													

Water Quality Datasheet for the period : 2016-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water Analysis

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	01/06/2016	01/07/2016	02/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A	
1	BOD3-27 (mg/L)	1.0	2.7	1.4	1.2	2.1	1.9	1.7	1.0	1.9	0.8	2.9	2.8	
2	COD (mg/L)	6.2	12.9	9.3	8.5	10.8	10.0	10.3	5.4	10.7	4.9	14.2	12.2	
3	DO (mg/L)	6.5	6.7	7.5	7.4	7.9	8.2	8.8	8.3	8.3	8.4	8.4	7.5	
4	DO_SAT% (%)	69	72	80	76	82	76	79			76	83	75	
5	FCOI-MPN (MPN/100mL)	700	900	1800	1800	2400	1700	1800	900	500	600	750	1200	
6	Tcol-MPN (MPN/100mL)	2600	2900	3800	3800	3200	2300	2400	1200	800	900	1050	1800	
	TRACE & TOXIC													
1	As (µg/L)			1.00				1.16	1.00			9.00		
2	Cd (µg/L)			0.10				0.05	0.10			0.01		
3	Cr (µg/L)			13.56				2.00	13.56			5.00		
4	Cu (µg/L)							1.00	2.09			1.00		
5	Ni (µg/L)			1.00				1.00	1.00			1.00		
6	Pb (µg/L)			1.00				1.00	1.00			1.00		
7	Zn (µg/L)			0.19				50.40	0.19			21.00		
	CHEMICAL INDICES													
1	HAR_Ca (mgCaCO3/L)	96	100	71	68	98	104	99	85	93	96	88	79	
2	HAR_Total (mgCaCO3/L)	147	164	119	123	166	180	163	156	156	167	149	132	
3	Na% (%)	18	15	16	14	17	17	20	16	14	17	14	14	
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	SAR (-)	0.6	0.5	0.4	0.4	0.5	0.6	0.7	0.5	0.4	0.5	0.4	0.4	
	PESTICIDES													

Water Quality Summary for the period : 2016-2017

Station Name : Rudraprayag (GG200G5)

Division : HGD,Dehradun

Local River :

River Water Summary

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	3091	36.71	447.4
2	EC_FLD (µmho/cm)	12	258	145	201
3	EC_GEN (µmho/cm)	12	250	130	195
4	pH_FLD (pH units)	12	8.0	7.0	7.4
5	pH_GEN (pH units)	12	7.8	7.0	7.5
6	TDS (mg/L)	12	180	90	135
7	Temp (deg C)	12	19.0	8.0	14.3
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	112	68	95
3	B (mg/L)	12	0.25	0.10	0.17
4	Ca (mg/L)	12	42	27	36
5	Cl (mg/L)	12	28.0	14.0	18.9
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.25	0.11	0.17
8	Fe (mg/L)	4	0.1	0.0	0.1
9	HCO3 (mg/L)	12	137	83	116
10	K (mg/L)	12	9.4	3.4	5.6
11	Mg (mg/L)	12	18.2	11.4	14.9
12	Na (mg/L)	12	19.5	9.3	14
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.66	0.22	0.47
15	NO2-N (mgN/L)	12	0.48	0.12	0.27
16	NO3-N (mgN/L)	12	0.32	0.07	0.2
17	P-Tot (mgP/L)	12	0.197	0.042	0.092
18	SO4 (mg/L)	12	36.5	22.0	29
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.9	0.8	1.8
2	COD (mg/L)	12	14.2	4.9	9.6
3	DO (mg/L)	12	8.8	6.5	7.8
4	DO_SAT% (%)	10	83	69	77
5	FCol-MPN (MPN/100mL)	12	2400	500	1254
6	Tcol-MPN (MPN/100mL)	12	3800	800	2229
	TRACE & TOXIC				
1	As (µg/L)	4	9.00	1.00	3.04
2	Cd (µg/L)	4	0.10	0.01	0.07
3	Cr (µg/L)	4	13.56	2.00	8.53
4	Cu (µg/L)	3	2.09	1.00	1.36
5	Ni (µg/L)	4	1.00	1.00	1
6	Pb (µg/L)	4	1.00	1.00	1
7	Zn (µg/L)	4	50.40	0.19	17.95
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	104	68	90
2	HAR_Total (mgCaCO3/L)	12	180	119	152
3	Na% (%)	12	20	14	16
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.7	0.4	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	689.1	869.7	650.1	1052	713.3	888.5	944.2	479.8	960.4	1231	819.9	1845	784.6	1006	1207
2	EC_FLD (µmho/cm)	160	117	109	148	125	151	157	173	289				149	151	185
3	EC_GEN (µmho/cm)	160	117	109	148	125	151	157	173	289	178	165	174	145	147	174
4	pH_FLD (pH units)	8.1	8.0	8.1	7.9	7.9	8.0	7.4	7.4	7.9	8.3	7.7		7.8	7.7	7.3
5	pH_GEN (pH units)	8.1	8.0	8.1	7.9	7.9	8.0	7.4	7.4	7.9	8.3	7.9	7.9	8.0	7.9	7.4
6	TDS (mg/L)										94	88	112	96	102	112
7	Temp (deg C)	15.6	15.3	17.1	16.2	17.1	17.3	16.5	16.6	17.0	15.0	16.8	16.8	17.7	16.8	18.0
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	59	54	57	43	53	55		61	41	31	26	60	56	71	84
2	B (mg/L)				0.12	0.11	0.09				0.12	0.17	0.12	0.11	0.11	0.15
3	Ca (mg/L)	23	20	25	22	25	22	20	16	8	11	11	22	18	31	35
4	Cl (mg/L)	7.0	8.6	8.7	9.6	7.6	8.4	7.8	7.4	6.8	8.0	4.8	10.2	9.6	13.6	17.0
5	F (mg/L)	0.05	0.17	0.18	0.47		1.45	0.58	0.58	0.49	0.65	0.32	0.25	0.16	3.30	0.17
6	Fe (mg/L)	0.2	0.2	0.2			0.8	0.9	0.7	0.8						0.0
7	HCO3 (mg/L)	72	66	69	52	65	67	76	74	50	38	32	74	68	87	103
8	K (mg/L)	0.0	0.1	0.1	0.3	0.1	0.3	0.3	0.5	0.6	0.7		4.8	5.5	5.8	5.3
9	Mg (mg/L)	15.3	13.6	16.5	14.6	15.7	14.6	13.4	12.3	9.8	10.0	8.2	3.1	4.4	19.9	13.6
10	Na (mg/L)	0.9	3.6	1.1	2.3	2.1	2.5	3.0	2.9	3.3	3.6		6.6	7.0	10.8	13.3
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.12	0.43	0.05	0.05
12	NO2+NO3 (mg N/L)	0.13	0.20	0.19			0.29	0.36	0.36	0.36			0.15	0.10	0.48	0.42
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00			0.04	0.03	0.38	0.20
14	NO3-N (mgN/L)	0.13	0.20	0.19			0.29	0.36	0.36	0.36			0.11	0.07	0.10	0.22
15	o-PO4-P (mg P/L)	0.265	0.552	0.523			0.552	0.523	0.265	0.393						
16	P-Tot (mgP/L)				0.552	0.523					0.080	0.222	0.043	0.136	0.108	0.104
17	SiO2 (mg/L)	16.4	16.7		36.8	18.2	41.2	37.6	37.2	34.8			2.8			
18	SO4 (mg/L)	6.2	6.0	6.2	5.5	7.2	7.8	7.3	7.2	7.5	9.2	10.9	13.3	24.2	24.2	26.6
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	1.2	1.2	1.2	1.3	1.2	1.2	1.3	1.2	1.5	1.1	1.2	1.3	1.4	1.7

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
2	COD (mg/L)														7.7	9.5
3	DO (mg/L)	7.5	7.7	8.1	8.0	9.2	8.8	9.0	7.8	7.4	7.2	6.6	7.3	7.6	7.8	7.2
4	DO_SAT% (%)	75	77	84	81	95	92	92	80	76	71	68	75	80	80	76
5	FCol-MPN (MPN/100mL)															1520
6	Tcol-MPN (MPN/100mL)															3260
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.02													
2	As (µg/L)															1.00
3	Cd (µg/L)															0.10
4	Cr (µg/L)															13.56
5	Cu (µg/L)															
6	Ni (µg/L)															1.00
7	Pb (µg/L)															1.00
8	Zn (µg/L)															0.19
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	58	51	63	55	62	54	51	40	21	28	27	54	45	78	87
2	HAR_Total (mgCaCO3/L)	121	107	132	115	127	115	107	91	62	69	61	67	64	161	144
3	Na% (%)	2	6	2	4	3	4	6	7	10	10		16	18	12	16
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2		0.3	0.4	0.4	0.5
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	103.3	149.4	115.3	151.4	103.7	129.8	135.0	129.0	240.0	163.4	133.5	281.3	124.5	138.4	109.5
2	EC_FLD (µmho/cm)	124	103	103	133	144	171	187	179	186	188			169	171	193
3	EC_GEN (µmho/cm)	124	103	103	133	144	171	187	179	186	188	175	183	163	167	192
4	pH_FLD (pH units)	8.2	8.1	8.0	8.0	8.1	8.1	8.0	7.9	7.9	7.5			8.0	7.8	7.5
5	pH_GEN (pH units)	8.2	8.1	8.0	8.0	8.1	8.1	8.0	7.9	7.9	7.5	7.7	8.1	8.3	7.9	7.7
6	TDS (mg/L)										99	96	123	108	113	130
7	Temp (deg C)	10.5	10.4	10.9	7.3	10.8	10.0	10.1	10.0	11.0	8.7	9.8	11.0	11.5	11.3	10.0
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	54	51	62	51	54	62		52	34	31	61	74	64	67	101
2	B (mg/L)					0.12	0.09				0.10	0.23	0.14	0.12	0.13	0.18
3	Ca (mg/L)	21	20	19	21	26	22	15	8	12	13	16	28	19	36	38
4	Cl (mg/L)	8.3	9.5	10.0	9.8	10.3	11.0	8.3	5.3	7.8	7.9	7.8	9.8	8.5	14.5	23.5
5	F (mg/L)	0.25	0.19	0.24	0.66		1.25	0.84	0.72	0.76	0.70	0.58	0.24	0.11	0.13	0.19
6	Fe (mg/L)	0.3	0.3	0.3			0.6	0.7	0.9	1.0				0.6		0.0
7	HCO3 (mg/L)	66	62	76	62	66	76	85	63	41	38	74	90	78	82	123
8	K (mg/L)	0.2	0.4	0.4	0.4	0.1	0.4	0.5	0.7	0.6	0.7	3.6	4.9	6.2	5.5	6.3
9	Mg (mg/L)	17.0	13.6	13.6	14.1	16.5	14.9	11.0	14.9	8.9	10.1	6.6	3.5	5.0	19.5	16.4
10	Na (mg/L)	1.2	1.5	1.4	2.6	2.6	2.8	3.1	3.3	3.3	4.1	4.4	7.9	6.4	12.3	16.0
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.19	0.08	1.29	0.05
12	NO2+NO3 (mg N/L)	0.13	0.23	0.30			0.43	0.47	0.48	0.47		0.17	0.14	0.15	0.33	0.55
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.07	0.04	0.04	0.20	0.32
14	NO3-N (mgN/L)	0.13	0.23	0.30			0.43	0.47	0.48	0.47		0.10	0.10	0.11	0.12	0.23
15	o-PO4-P (mg P/L)	0.568	0.651	0.426			0.651	0.426	0.488	0.651						
16	P-Tot (mgP/L)				0.651	0.427					0.147	0.275	0.228	0.120	0.130	0.061
17	SiO2 (mg/L)	18.0	17.5		44.5	20.0	39.0	39.5	34.5	35.0		7.5				
18	SO4 (mg/L)	6.0	6.2	6.5	7.2	8.0	8.0	8.0	8.0	8.6	9.1	14.4	17.7	26.6	24.8	31.3
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	1.2	1.2	1.2	1.3	1.1	1.2	1.2	1.2	1.0	1.0	1.2	1.8	2.5	1.6

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
2	COD (mg/L)													11.7	9.7	9.1
3	DO (mg/L)	9.6	9.5	10.3	9.2	9.9	10.5	8.3	8.1	7.8	7.7	8.2	8.5	8.7	8.6	8.4
4	DO_SAT% (%)	88	86	94	76	91	97	78	73	72	63	78	79	80	77	78
5	FCol-MPN (MPN/100mL)															1225
6	Tcol-MPN (MPN/100mL)															1675
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.00													
2	As (µg/L)															1.08
3	Cd (µg/L)													0.11		0.08
4	Cr (µg/L)													29.45		7.78
5	Cu (µg/L)													11.88		1.54
6	Ni (µg/L)													6.49		1.00
7	Pb (µg/L)													13.08		1.00
8	Zn (µg/L)													0.10		25.30
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	53	49	48	53	64	56	39	19	31	32	40	69	48	89	95
2	HAR_Total (mgCaCO3/L)	123	106	105	112	132	118	84	81	68	74	68	84	69	170	164
3	Na% (%)	2	3	3	5	4	5	7	8	9	11	13	16	15	13	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
5	SAR (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.3	0.4	0.5
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	127.3	107.7	122.7	157.7	140.3	92.36	89.40	127.4	155.2	137.1	81.89	114.0	178.2	89.65	121.8
2	EC_FLD (µmho/cm)	129	109	143	135	187	137	188	191	206	173			175	231	240
3	EC_GEN (µmho/cm)	129	109	143	135	187	137	188	191	206	176	171	182	170	230	233
4	pH_FLD (pH units)	8.1	8.1	7.9	8.0	8.0	8.0	7.7	8.0	8.1	8.0			8.0	8.2	7.6
5	pH_GEN (pH units)	8.1	8.1	7.9	8.0	8.0	8.0	7.7	8.0	8.1	7.7	7.9	8.1	8.3	8.2	7.6
6	TDS (mg/L)										93	109	120	107	157	180
7	Temp (deg C)	14.0	15.3	14.3	13.0	14.7	12.8	12.7	14.7	12.7	13.7	14.5	13.0	12.3	16.0	14.0
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	65	60	53	56	56	68		60	35	35	63	75	95	92	105
2	B (mg/L)					0.13	0.07				0.24	0.19	0.13	0.22	0.15	0.18
3	Ca (mg/L)	26	27	17	26	25	26	20	9	14	13	23	26	22	37	35
4	Cl (mg/L)	9.3	10.7	14.7	9.7	11.3	13.7	12.0	7.0	7.7	6.5	20.0	9.7	9.3	13.3	16.0
5	F (mg/L)	0.27	0.25	0.65	0.76		0.30	0.73	0.73	0.79	0.35	0.40	0.21	0.19	0.14	0.17
6	Fe (mg/L)	0.4	0.5	0.9			1.0	0.8	1.0	1.0					0.4	0.1
7	HCO3 (mg/L)	80	73	65	68	68	83	88	73	42	43	76	91	115	112	129
8	K (mg/L)	0.4	0.3	0.3	0.4	0.2	0.3	0.5	0.7	0.6		2.9	6.0	3.1	8.3	5.0
9	Mg (mg/L)	20.5	17.4	15.7	17.1	17.1	16.7	13.2	15.7	10.1	10.0	4.1	4.2	7.2	13.3	14.8
10	Na (mg/L)	1.3	1.8	2.1	2.5	2.7	3.1	3.2	3.6	3.3		3.6	8.7	8.4	16.7	12.7
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.15	0.09	0.05	0.05
12	NO2+NO3 (mg N/L)	0.25	0.30	0.43			0.40	0.38	0.47	0.47		0.20	0.12	0.39	0.33	0.47
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.07	0.04	0.17	0.17	0.33
14	NO3-N (mgN/L)	0.25	0.30	0.43			0.40	0.38	0.47	0.47		0.14	0.08	0.22	0.16	0.14
15	o-PO4-P (mg P/L)	0.761	0.872	0.300			0.872	0.300	0.651	0.541						
16	P-Tot (mgP/L)				0.871	0.300					0.213	0.105	0.463	0.044	0.167	0.114
17	SiO2 (mg/L)	22.0	21.3		48.0	21.7	43.3	42.0	38.0	34.7		3.2				
18	SO4 (mg/L)	7.3	7.7	5.9	8.7	8.7	8.4	8.9	8.9	8.7	12.4	18.4	25.1	18.3	27.3	29.7
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)	1.1	1.3	1.2	1.3	1.1	1.1	1.2	1.2	1.2	1.0	1.1	1.1	1.4	1.8	2.2

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Rudraprayag (GG200G5)

Local River :

River Water

Division : HGD,Dehradun

Sub-Division : Alaknanda Sub Div,Srinagar

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
2	COD (mg/L)													13.5	9.4	10.4
3	DO (mg/L)	8.4	9.7	9.1	9.1	10.5	9.9	8.7	8.1	7.9	7.7	7.6	9.2	8.3	6.8	8.1
4	DO_SAT% (%)	81	97	89	89	103	93	87	80	75	74	75	87	77	69	78
5	FCol-MPN (MPN/100mL)															850
6	Tcol-MPN (MPN/100mL)															1250
	TRACE & TOXIC															
1	Al (mg/L)	0.05	0.00													
2	As (µg/L)														1.00	9.00
3	Cd (µg/L)														0.01	0.01
4	Cr (µg/L)														2.00	5.00
5	Cu (µg/L)														1.00	1.00
6	Ni (µg/L)														1.00	1.00
7	Pb (µg/L)														1.00	1.00
8	Zn (µg/L)														0.10	21.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	66	67	42	65	62	66	50	22	36	33	58	65	55	92	87
2	HAR_Total (mgCaCO3/L)	152	140	107	136	133	136	105	87	78	75	75	82	85	148	149
3	Na% (%)	2	3	4	4	4	5	6	8	8		9	18	17	19	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
5	SAR (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2		0.2	0.4	0.4	0.6	0.5
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: SRINAGAR	Code	: GG200D5
State	: Uttarakhand	District	Pauri
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: Alaknanda	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Alaknanda
Division	: Himalayan Ganga Div., Dehradun	Sub-Division	: Alaknanda Sub Div, Srinagar
Drainage Area	: 11332 Sq. Km.	Bank	: Left
Latitude	: 30°13'00"	Longitude	: 78°45'00"
	Opening Date	Closing Date	
Gauge	: 6/6/1973		
Discharge	: 6/1/2014		
Sediment	: 6/1/2014		
Water Quality	: 6/1/2014		

Water Quality Datasheet for the period : 2016-2017

Station Name : SRINAGAR (GG200D5)

Local River : Alaknanda

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Alaknanda Sub Div, Srinagar

S.No	Parameters	05/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	210	187	182	178	190	215	202	195	180	232	222	210
4	EC_GEN (µmho/cm)	190	179	170	173	184	200	195	188	172	227	215	198
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_FLD (pH units)	7.3	6.9	7.3	7.4	7.4	7.7	7.6	7.7	7.8	7.3	7.4	7.5
7	pH_GEN (pH units)	7.4	7.0	7.5	7.4	7.5	7.5	7.6	7.8	7.7	7.5	7.4	7.5
8	TDS (mg/L)	120	120	110	120	130	140	130	130	120	160	160	160
9	Temp (deg C)	19.0	18.0	18.0	18.0	18.0	13.5	10.0	10.0	10.0	13.0	15.0	15.5
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	112	104	100	104	109	116	112	108	112	112	108	104
3	B (mg/L)	0.06	0.08	0.06	0.15	0.18	0.22	0.14	0.16	0.08	0.11	0.15	0.12
4	Ca (mg/L)	28	24	23	24	26	29	27	29	29	38	29	28
5	Cl (mg/L)	14.0	16.0	14.0	16.0	20.0	22.0	20.0	18.0	20.0	26.0	20.0	18.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.22	0.26	0.18	0.25	0.30	0.25	0.16	0.28	0.15	0.20	0.16	0.14
8	Fe (mg/L)							0.0				0.1	
9	HCO3 (mg/L)	137	127	122	127	133	142	137	132	137	137	132	127
10	K (mg/L)	3.0	4.0	5.0	6.0	5.5	6.1	4.4	3.8	2.6	3.5	4.0	3.8
11	Mg (mg/L)	22.2	20.2	18.3	19.5	22.5	24.5	22.5	23.6	22.5	28.3	20.2	18.6
12	Na (mg/L)	14.0	12.0	19.0	19.3	24.1	18.0	14.3	12.7	9.0	10.5	12.0	11.1
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.74	0.62	0.58	0.63	0.42	0.50	0.41	0.42	0.40	0.48	0.12	0.09
15	NO2-N (mgN/L)	0.32	0.28	0.30	0.28	0.15	0.18	0.15	0.18	0.24	0.30	0.05	0.03
16	NO3-N (mgN/L)	0.42	0.34	0.28	0.35	0.27	0.32	0.26	0.24	0.16	0.18	0.07	0.06
17	P-Tot (mgP/L)	0.080	0.140	0.060	0.100	0.130	0.095	0.060	0.072	0.065	0.074	0.125	0.070
18	SO4 (mg/L)	24.0	22.0	21.0	24.0	29.0	31.5	33.8	32.6	22.6	32.3	30.2	28.1
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : SRINAGAR (GG200D5)

Local River : Alaknanda

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Alaknanda Sub Div, Srinagar

S.No	Parameters	05/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	1.4	2.7	1.5	2.4	1.9	2.2	1.9	1.2	1.7	1.7	2.1	1.5
2	COD (mg/L)	7.2	12.8	8.7	13.7	9.4	11.7	11.4	5.5	9.8	9.9	11.3	10.0
3	DO (mg/L)	6.7	6.4	6.6	7.5	7.7	7.5	8.6	8.5	7.8	8.6	8.2	7.3
4	DO_SAT% (%)	73	67	70	79	81	71	76	75	69	82	81	72
5	FCol-MPN (MPN/100mL)		2000	3600	2800	3000	2200	2000	900	400	600	550	1000
6	Tcol-MPN (MPN/100mL)		3800	5000	3700	3900	2700	2500	1300	700	900	800	2200
	TRACE & TOXIC												
1	As (µg/L)							1.56				10.00	
2	Cd (µg/L)							0.05				3.00	
3	Cr (µg/L)							2.00				2.00	
4	Cu (µg/L)							1.00				1.00	
5	Ni (µg/L)							1.00				1.00	
6	Pb (µg/L)							1.00				1.00	
7	Zn (µg/L)							11.00				30.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	70	61	57	59	66	72	68	73	72	94	73	69
2	HAR_Total (mgCaCO3/L)	163	145	133	140	160	174	162	171	165	212	157	146
3	Na% (%)	16	15	23	22	24	18	16	14	10	10	14	14
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.5	0.4	0.7	0.7	0.8	0.6	0.5	0.4	0.3	0.3	0.4	0.4
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : SRINAGAR (GG200D5)

Division : Himalayan Ganga Div., Dehradun

Local River : Alaknanda

River Water Summary

Sub-Division : Alaknanda Sub Div, Srinagar

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	232	178	200
3	EC_GEN (µmho/cm)	12	227	170	191
4	pH_FLD (pH units)	12	7.8	6.9	7.4
5	pH_GEN (pH units)	12	7.8	7.0	7.5
6	TDS (mg/L)	12	160	110	133
7	Temp (deg C)	12	19.0	10.0	14.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	116	100	108
3	B (mg/L)	12	0.22	0.06	0.13
4	Ca (mg/L)	12	38	23	28
5	Cl (mg/L)	12	26.0	14.0	18.7
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.30	0.14	0.21
8	Fe (mg/L)	2	0.1	0.0	0.1
9	HCO3 (mg/L)	12	142	122	132
10	K (mg/L)	12	6.1	2.6	4.3
11	Mg (mg/L)	12	28.3	18.3	21.9
12	Na (mg/L)	12	24.1	9.0	14.7
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.74	0.09	0.45
15	NO2-N (mgN/L)	12	0.32	0.03	0.21
16	NO3-N (mgN/L)	12	0.42	0.06	0.25
17	P-Tot (mgP/L)	12	0.140	0.060	0.089
18	SO4 (mg/L)	12	33.8	21.0	27.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.7	1.2	1.8
2	COD (mg/L)	12	13.7	5.5	10.1
3	DO (mg/L)	12	8.6	6.4	7.6
4	DO_SAT% (%)	12	82	67	75
5	FCol-MPN (MPN/100mL)	11	3600	400	1732
6	Tcol-MPN (MPN/100mL)	11	5000	700	2500
	TRACE & TOXIC				
1	As (µg/L)	2	10.00	1.56	5.78
2	Cd (µg/L)	2	3.00	0.05	1.53
3	Cr (µg/L)	2	2.00	2.00	2
4	Cu (µg/L)	2	1.00	1.00	1
5	Ni (µg/L)	2	1.00	1.00	1
6	Pb (µg/L)	2	1.00	1.00	1
7	Zn (µg/L)	2	30.00	11.00	20.5
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	94	57	69
2	HAR_Total (mgCaCO3/L)	12	212	133	161
3	Na% (%)	12	24	10	16
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.8	0.3	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2014-2017

Station Name : SRINAGAR (GG200D5)

Division : Himalayan Ganga Div., Dehradun

Local River : Alaknanda

River Water

Sub-Division : Alaknanda Sub Div, Srinagar

S.No	Parameters	Flood			Winter			Summer		
		Jun - Oct			Nov - Feb			Mar - May		
		2014	2015	2016	2014-2015	2015-2016	2016-2017	2015	2016	2017
	PHYSICAL									
1	Q (cumec)									
2	EC_FLD (µmho/cm)	150		189	166		198			221
3	EC_GEN (µmho/cm)	144	173	179	161		189			213
4	pH_FLD (pH units)	7.8		7.3	8.0		7.7			7.4
5	pH_GEN (pH units)	8.0	8.8	7.4	8.1		7.7			7.4
6	TDS (mg/L)	100	120	120	110		130			160
7	Temp (deg C)	17.6	19.0	18.2	15.0		10.9			14.5
	CHEMICAL									
1	ALK-TOT (mgCaCO3/L)	55	96	106	55		112			108
2	B (mg/L)	0.10	0.04	0.11	0.10		0.15			0.13
3	Ca (mg/L)	18	38	25	18		28			31
4	Cl (mg/L)	11.2	12.0	16.0	12.0		20.0			21.3
5	F (mg/L)	0.17	0.10	0.24	0.12		0.21			0.17
6	Fe (mg/L)				0.7		0.0			0.1
7	HCO3 (mg/L)	68	117	129	67		137			132
8	K (mg/L)	5.2	6.0	4.7	5.7		4.2			3.8
9	Mg (mg/L)	4.5	32.1	20.5	5.0		23.3			22.3
10	Na (mg/L)	7.2	18.0	17.7	6.4		13.5			11.2
11	NH3-N (mg N/L)	0.11	0.05	0.05	0.09		0.05			0.05
12	NO2+NO3 (mg N/L)	0.09	0.27	0.60	0.10		0.43			0.23
13	NO2-N (mgN/L)	0.03	0.26	0.27	0.03		0.19			0.13
14	NO3-N (mgN/L)	0.06	0.01	0.33	0.07		0.24			0.10
15	P-Tot (mgP/L)	0.121	0.040	0.102	0.122		0.073			0.090
16	SO4 (mg/L)	24.4	18.0	24.0	25.0		30.1			30.2
	BIOLOGICAL/BACTERIOLOGICAL									
1	BOD3-27 (mg/L)	1.4	1.2	2.0	1.5		1.7			1.7
2	COD (mg/L)		9.0	10.4			9.6			10.4
3	DO (mg/L)	7.3	6.7	7.0	7.3		8.0			8.0
4	DO_SAT% (%)	77	72	74	72		73			78
5	FCol-MPN (MPN/100mL)			2850			1375			717
6	Tcol-MPN (MPN/100mL)			4100			1800			1300
	TRACE & TOXIC									
1	As (µg/L)						1.56			10.00
2	Cd (µg/L)				0.14		0.05			3.00
3	Cr (µg/L)				20.82		2.00			2.00
4	Cu (µg/L)				5.85		1.00			1.00
5	Ni (µg/L)				2.69		1.00			1.00
6	Pb (µg/L)				8.32		1.00			1.00
7	Zn (µg/L)				0.10		11.00			30.00
	CHEMICAL INDICES									
1	HAR_Ca (mgCaCO3/L)	46	96	63	45		71			79
2	HAR_Total (mgCaCO3/L)	64	230	148	66		168			172
3	Na% (%)	18	14	20	16		14			12
4	SAR (-)	0.4	0.5	0.6	0.3		0.5			0.4
	PESTICIDES									

HISTORY SHEET

		Water Year	: 2016-2017
Site	: DEOPRAYAG	Code	: GG000Z9
State	: Uttarakhand	District	Tehri-Garhwal
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Ganga
Division	: Himalayan Ganga Div., Dehradun	Sub-Division	: Bhagirathi Sub Division, Tehri
Drainage Area	: 19600 Sq. Km.	Bank	: Left
Latitude	: 30°08'00"	Longitude	: 78°36'00"
	Opening Date	Closing Date	
Gauge	: 3/6/1972		
Discharge	: 3/6/1972		
Sediment	: 11/5/1974		
Water Quality	: 11/9/1976		

Water Quality Datasheet for the period : 2016-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)	516.7	1270	2397	1157	679.8	415.3	262.6	206.9	217.4	544.4	165.0	341.5
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	198	170	182	175	168	160	172	135	138	152	165	205
4	EC_GEN (µmho/cm)	191	159	170	167	165	170	166	128	126	148	158	194
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_FLD (pH units)	6.8	7.2	7.4	7.2	7.7	7.0	7.6	7.4	8.0	7.8	7.3	7.8
7	pH_GEN (pH units)	7.0	7.4	7.6	7.5	7.8	7.8	7.7	7.5	7.9	8.0	7.5	7.8
8	TDS (mg/L)	130	110	110	120	120	120	120	90	85	130	120	160
9	Temp (deg C)	18.5	20.0	18.5	19.0	19.0	16.5	15.5	10.0	16.0	15.0	16.0	15.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	102	80	88	84	80	84	80	76	68	80	84	96
3	B (mg/L)	0.08	0.06	0.18	0.25	0.22	0.18	0.12	0.06	0.08	0.10	0.08	0.06
4	Ca (mg/L)	38	29	31	31	29	30	29	26	28	33	34	38
5	Cl (mg/L)	24.0	8.0	16.0	14.0	12.0	16.0	14.3	22.0	18.0	22.0	24.0	26.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.11	0.16	0.12	0.14	0.12	0.16	0.14	0.15	0.18	0.20	0.25	0.18
8	Fe (mg/L)	0.0		0.0				0.0				0.1	
9	HCO3 (mg/L)	124	98	107	102	98	102	98	93	83	98	102	117
10	K (mg/L)	11.0	5.0	6.0	4.5	5.0	5.2	3.8	3.2	4.5	5.0	4.0	6.5
11	Mg (mg/L)	17.6	12.1	13.2	12.9	11.7	13.5	11.3	9.3	12.5	13.3	12.7	13.7
12	Na (mg/L)	19.0	14.0	15.0	14.7	12.2	11.5	9.7	13.5	11.0	12.5	13.4	15.4
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.40	0.60	0.80	0.60	0.52	0.60	0.44	0.45	0.61	0.75	0.62	0.42
15	NO2-N (mgN/L)	0.22	0.28	0.46	0.36	0.22	0.32	0.26	0.28	0.36	0.45	0.34	0.25
16	NO3-N (mgN/L)	0.18	0.32	0.34	0.24	0.30	0.28	0.18	0.17	0.25	0.30	0.28	0.17
17	Org-N (mgN/L)	0.0				0.3							
18	P-Tot (mgP/L)	0.140	0.240	0.160	0.180	0.164	0.066	0.055	0.048	0.045	0.052	0.055	0.062
19	SiO2 (mg/L)	0.0											

Water Quality Datasheet for the period : 2016-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
20	SO4 (mg/L)	19.0	14.0	18.0	19.5	21.0	22.2	21.5	24.5	22.0	26.2	27.8	32.2
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	3.7	4.9	2.7	3.4	2.3	1.8	2.5	2.3	2.4	1.3	1.9	4.3
2	COD (mg/L)	14.0	22.8	13.0	16.7	10.5	11.2	12.4	12.1	12.6	8.1	10.8	25.2
3	DO (mg/L)	8.1	8.3	8.9	7.4	7.8	7.8	8.6	9.6	9.2	9.7	9.5	7.9
4	DO_SAT% (%)	86	91	94	80	84	79	85	85	93	96	96	78
5	FCol-MPN (MPN/100mL)	3500	1900	2300	2000	2800	1600	1100	900	600	800	700	1400
6	Tcol-MPN (MPN/100mL)	2000	3200	3600	2600	2400	2000	1500	1200	900	1200	900	2000
	TRACE & TOXIC												
1	As (µg/L)			1.00				2.04				1.00	
2	Cd (µg/L)			0.11				0.05				1.00	
3	Cr (µg/L)			20.49				2.00				5.00	
4	Cu (µg/L)			1.00				2.67				8.00	
5	Ni (µg/L)			1.00				1.04				1.00	
6	Pb (µg/L)			1.00				2.77				2.00	
7	Zn (µg/L)			1.20				51.50				24.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	96	73	78	77	73	76	71	66	71	81	85	96
2	HAR_Total (mgCaCO3/L)	169	123	133	130	122	132	118	105	123	137	138	153
3	Na% (%)	19	19	19	19	17	15	15	21	16	16	17	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.6	0.5	0.6	0.6	0.5	0.4	0.4	0.6	0.4	0.5	0.5	0.5
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : DEOPRAYAG (GG00029)

Division : Himalayan Ganga Div., Dehradun

Local River : Ganga

River Water Summary

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	3015	165.0	697.2
2	EC_FLD (µmho/cm)	12	205	135	168
3	EC_GEN (µmho/cm)	12	194	126	162
4	pH_FLD (pH units)	12	8.0	6.8	7.4
5	pH_GEN (pH units)	12	8.0	7.0	7.6
6	TDS (mg/L)	12	160	85	118
7	Temp (deg C)	12	20.0	10.0	16.6
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	102	68	83
3	B (mg/L)	12	0.25	0.06	0.12
4	Ca (mg/L)	12	38	26	31
5	Cl (mg/L)	12	26.5	8.0	18.1
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.25	0.11	0.16
8	Fe (mg/L)	4	0.1	0.0	0.1
9	HCO3 (mg/L)	12	124	83	102
10	K (mg/L)	12	11.0	3.2	5.3
11	Mg (mg/L)	12	17.6	9.3	12.8
12	Na (mg/L)	12	19.0	9.7	13.5
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.80	0.40	0.57
15	NO2-N (mgN/L)	12	0.46	0.22	0.32
16	NO3-N (mgN/L)	12	0.34	0.17	0.25
17	Org-N (mgN/L)	2	0.3	0.0	0.1
18	P-Tot (mgP/L)	12	0.240	0.045	0.106
19	SiO2 (mg/L)	1	0.0	0.0	0
20	SO4 (mg/L)	12	32.2	14.0	22.3
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	4.9	1.3	2.8
2	COD (mg/L)	12	25.2	8.1	14.1
3	DO (mg/L)	12	9.7	7.4	8.6
4	DO_SAT% (%)	12	96	78	87
5	FCol-MPN (MPN/100mL)	12	3500	600	1633
6	Tcol-MPN (MPN/100mL)	12	3600	900	1958
	TRACE & TOXIC				
1	As (µg/L)	3	2.04	1.00	1.35
2	Cd (µg/L)	3	1.00	0.05	0.39
3	Cr (µg/L)	3	20.49	2.00	9.16
4	Cu (µg/L)	3	8.00	1.00	3.89
5	Ni (µg/L)	3	1.04	1.00	1.01
6	Pb (µg/L)	3	2.77	1.00	1.92
7	Zn (µg/L)	3	51.50	1.20	25.57
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	96	66	79
2	HAR_Total (mgCaCO3/L)	12	169	105	132
3	Na% (%)	12	21	15	18
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.6	0.4	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	1285	1212	995.2	1278	974.9	1128	1043	528.4	1140	1404	1011	1315	922.0	960.2	1204
2	EC_FLD (µmho/cm)	157	118	110	146	140	165	127	166	150				151	154	179
3	EC_GEN (µmho/cm)	157	118	110	146	140	165	127	166	150	167	168	183	147	150	170
4	pH_FLD (pH units)	8.2	8.0	8.1	8.0	8.0	8.0	7.6	6.8	7.6	8.2	7.3		7.8	7.6	7.3
5	pH_GEN (pH units)	8.2	8.0	8.1	8.0	8.0	8.0	7.6	6.8	7.6	8.2	7.8	7.8	7.9	7.8	7.5
6	TDS (mg/L)										88	89	119	106	106	118
7	Temp (deg C)	16.6	16.5	18.9	17.8	17.3	18.0	17.6	16.5	17.8	17.7	17.4	17.8	18.6	18.7	19.0
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	57	58	54	39	56	55		59	41	30	24	57	69	71	87
2	B (mg/L)				0.10	0.12	0.12				0.10	0.11	0.09	0.12	0.06	0.16
3	Ca (mg/L)	23	21	25	21	77	22	20	14	7	11	9	20	18	30	32
4	Cl (mg/L)	5.7	8.2	8.4	8.3	8.0	8.4	7.6	6.4	5.4	4.1	3.9	9.2	9.8	16.4	14.8
5	F (mg/L)	0.04	0.14	0.18	0.56	0.65	1.54	0.57	0.66	0.58	0.06	0.14	0.22	0.16	0.10	0.13
6	Fe (mg/L)	0.0	0.2	0.1			0.8	0.9	0.8	0.8				18.6		0.0
7	HCO3 (mg/L)	69	70	65	48	68	67	76	72	50	37	29	70	84	87	106
8	K (mg/L)	0.0	0.0	0.0	0.2	0.1	0.3	0.3	0.5	0.6	1.3		4.6	5.1	5.1	6.3
9	Mg (mg/L)	15.9	14.2	16.3	15.3	15.7	14.9	13.6	11.9	8.2	9.8	6.6	2.4	5.8	15.4	13.5
10	Na (mg/L)	0.8	1.0	0.7	2.3	2.1	2.6	3.1	2.9	3.2	5.3		5.2	7.9	14.8	15.0
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.22	0.11	0.05	0.05
12	NO2+NO3 (mg N/L)	0.13	0.10	0.10			0.34	0.38	0.38	0.36			0.12	0.12	0.57	0.58
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00			0.03	0.04	0.36	0.31
14	NO3-N (mgN/L)	0.13	0.10	0.10			0.34	0.38	0.38	0.36			0.09	0.08	0.21	0.28
15	o-PO4-P (mg P/L)	0.265	0.426	0.424			0.457	0.424	0.231	0.488						
16	Org-N (mgN/L)															0.1
17	P-Tot (mgP/L)				0.426	0.454					0.048	0.206	0.018	0.127	0.062	0.177
18	SiO2 (mg/L)	16.8	14.7		38.4	18.6	41.6	38.4	38.0	35.2			4.9			0.0
19	SO4 (mg/L)	6.0	5.3	5.6	5.2	7.3	7.9	7.2	7.2	7.3	10.0	10.7	12.1	26.2	19.4	18.3
	BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	BOD3-27 (mg/L)	1.1	1.2	1.1	1.1	1.0	1.2	1.2	1.3	1.2	1.5	1.1	1.3	1.4	2.9	3.4
2	COD (mg/L)														11.5	15.4
3	DO (mg/L)	7.2	7.9	6.8	6.5	7.2	7.3	7.7	7.7	7.6	7.7	6.9	6.5	7.4	8.5	8.1
4	DO_SAT% (%)	73	81	73	68	74	77	80	78	80	80	71	69	79	90	87
5	FCol-MPN (MPN/100mL)															2500
6	Tcol-MPN (MPN/100mL)															2760
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.02	0.00						0.00						
2	As (µg/L)															1.00
3	Cd (µg/L)															0.11
4	Cr (µg/L)															20.49
5	Cu (µg/L)															1.00
6	Ni (µg/L)															1.00
7	Pb (µg/L)															1.00
8	Zn (µg/L)															1.20
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	58	52	63	52	192	54	51	35	18	27	22	50	45	75	79
2	HAR_Total (mgCaCO3/L)	124	111	131	116	257	116	107	85	52	68	49	60	69	139	136
3	Na% (%)	1	2	1	4	2	5	6	7	12	14		15	19	18	19
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.3		0.3	0.4	0.6	0.6
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	186.0	228.4	221.6	163.0	278.9	380.9	379.8	263.4	308.3	286.1	514.0	487.7	496.9	344.7	275.6
2	EC_FLD (µmho/cm)	129	100	104	139	161	198	149	133	117	140			132	140	151
3	EC_GEN (µmho/cm)	129	100	104	139	161	198	149	133	117	194	140	173	128	135	148
4	pH_FLD (pH units)	8.1	8.0	8.0	8.1	8.0	8.1	7.9	7.8	7.9	7.6			7.9	7.7	7.5
5	pH_GEN (pH units)	8.1	8.0	8.0	8.1	8.0	8.1	7.9	7.8	7.9	7.8	7.5	8.1	8.1	7.9	7.7
6	TDS (mg/L)										79	77	118	88	105	104
7	Temp (deg C)	12.5	10.3	12.6	12.9	14.4	12.9	13.0	12.1	12.4	13.8	14.3	13.5	15.2	15.5	14.5
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	54	53	58	53	54	66		53	33	31	44	61	66	74	77
2	B (mg/L)					0.13	0.11				0.08	0.17	0.12	0.11	0.06	0.11
3	Ca (mg/L)	20	21	20	23	27	23	18	7	11	11	14	24	19	37	28
4	Cl (mg/L)	7.8	8.8	10.5	9.1	11.0	9.5	8.3	4.8	7.0	2.9	7.0	8.5	9.3	16.0	17.6
5	F (mg/L)	0.27	0.18	0.19	0.66	1.52	1.25	0.97	0.80	0.72	0.10	0.52	0.24	0.12	0.14	0.16
6	Fe (mg/L)	0.2	0.3	0.2			0.7	0.7	0.9	0.9				2.6	0.0	0.0
7	HCO3 (mg/L)	66	65	71	65	66	81	88	65	40	38	54	74	80	90	94
8	K (mg/L)	0.0	0.3	0.2	0.4	0.2	0.4	0.4	0.6	0.6	1.9	5.9	4.5	5.6	4.4	4.2
9	Mg (mg/L)	16.5	14.1	14.4	15.2	17.2	16.0	11.8	14.1	8.9	10.1	6.0	4.1	7.2	13.9	11.6
10	Na (mg/L)	0.9	1.2	1.3	2.6	2.6	2.9	2.9	3.2	3.2	4.2	4.1	7.7	8.1	19.0	11.4
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.22	0.10	0.05	0.05
12	NO2+NO3 (mg N/L)	0.12	0.23	0.25			0.43	0.41	0.43	0.47		0.16	0.13	0.10	0.50	0.53
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.09	0.04	0.03	0.28	0.30
14	NO3-N (mgN/L)	0.12	0.23	0.25			0.43	0.41	0.43	0.47		0.07	0.10	0.12	0.21	0.22
15	o-PO4-P (mg P/L)	0.568	0.610	0.468			0.610	0.460	0.447	0.610				0.110		
16	Org-N (mgN/L)															
17	P-Tot (mgP/L)				0.610	0.468					0.013	0.158	0.217	0.114	0.052	0.054
18	SiO2 (mg/L)	19.5	15.5		43.0	20.0	40.0	40.5	36.0	35.5		8.7				
19	SO4 (mg/L)	6.0	5.9	6.5	7.4	7.8	8.4	8.0	7.6	8.4	10.5	12.3	15.3	27.7	20.3	22.6
	BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
1	BOD3-27 (mg/L)	1.1	1.1	1.2	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.2	1.2	1.7	2.0	2.2
2	COD (mg/L)													12.1	8.4	12.1
3	DO (mg/L)	7.9	9.1	8.0	7.2	7.1	8.5	7.8	7.8	7.8	7.8	7.9	7.9	8.2	8.9	8.8
4	DO_SAT% (%)	75	83	75	68	69	80	74	72	74	75	77	75	81	89	85
5	FCol-MPN (MPN/100mL)															1050
6	Tcol-MPN (MPN/100mL)															1400
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.00													
2	As (µg/L)														1.00	2.04
3	Cd (µg/L)													0.50	0.01	0.05
4	Cr (µg/L)													126.14	2.00	2.00
5	Cu (µg/L)													26.45	1.00	2.67
6	Ni (µg/L)													70.19	1.00	1.04
7	Pb (µg/L)													4.62	1.00	2.77
8	Zn (µg/L)													0.10	1.00	51.50
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	51	53	50	58	68	57	44	18	27	28	35	59	48	92	71
2	HAR_Total (mgCaCO3/L)	119	111	109	121	140	123	93	77	64	71	60	76	77	150	119
3	Na% (%)	2	2	2	5	4	5	6	8	10	12	14	17	17	21	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.4	0.7	0.5
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	235.5	164.5	225.5	144.1	250.3	240.1	442.8	201.8	388.9	343.4	435.2	478.7	620.0	362.9	350.3
2	EC_FLD (µmho/cm)	129	110	150	136	193	133	162	155	138	164			145	161	174
3	EC_GEN (µmho/cm)	129	110	150	136	193	133	162	155	138	144	153	144	141	180	167
4	pH_FLD (pH units)	8.1	8.1	7.9	8.0	8.0	8.0	7.3	8.9	8.1	7.7			7.8	8.1	7.6
5	pH_GEN (pH units)	8.1	8.1	7.9	8.0	8.0	8.0	7.3	8.9	8.1	7.9	7.8	8.0	8.0	8.2	7.7
6	TDS (mg/L)										76	94	97	90	127	137
7	Temp (deg C)	14.0	16.3	15.5	16.5	16.8	16.2	14.7	12.3	15.3	15.0	15.0	15.5	16.5	18.0	15.3
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	64	64	43	57	56	68		57	36	30	46	62	53	71	87
2	B (mg/L)					0.14	0.13				0.07	0.29	0.13	0.18	0.07	0.08
3	Ca (mg/L)	26	28	20	27	22	27	19	9	14	22	20	19	16	37	35
4	Cl (mg/L)	9.0	11.0	9.8	8.7	12.0	14.0	12.0	6.0	6.7	4.0	12.0	10.0	10.0	14.7	24.2
5	F (mg/L)	0.26	0.22	0.57	0.76	1.64	0.80	0.79	0.68	0.73	0.14	0.21	0.22	0.08	0.13	0.21
6	Fe (mg/L)	0.3	0.4	0.6			1.0	0.9	0.9	1.0					0.0	0.1
7	HCO3 (mg/L)	78	78	52	70	68	83	89	70	44	37	59	76	65	87	106
8	K (mg/L)	0.0	0.0	0.4	0.6	0.2	0.3	0.5	0.7	0.7		3.7	5.2	4.0	7.7	5.2
9	Mg (mg/L)	19.9	18.8	15.7	17.5	17.4	16.7	12.6	12.9	10.8	8.6	3.1	4.4	7.5	13.7	13.2
10	Na (mg/L)	1.1	1.4	1.8	2.6	2.7	3.0	3.2	3.5	3.3		3.9	8.7	10.2	20.3	13.8
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.18	0.15	0.05	0.05
12	NO2+NO3 (mg N/L)	0.25	0.27	0.39			0.41	0.43	0.43	0.43		0.23	0.13	0.37	0.43	0.60
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.08	0.04	0.19	0.21	0.35
14	NO3-N (mgN/L)	0.25	0.27	0.39			0.41	0.43	0.43	0.43		0.15	0.09	0.20	0.22	0.25
15	o-PO4-P (mg P/L)	0.596	0.816	0.265			0.816	0.265	0.596	0.489				0.060		
16	Org-N (mgN/L)															
17	P-Tot (mgP/L)				0.761	0.265					0.031	0.087	0.360	0.052	0.103	0.056
18	SiO2 (mg/L)	21.3	21.3		46.7	21.7	44.0	41.3	39.3	36.0		6.3				
19	SO4 (mg/L)	7.2	6.5	6.2	8.6	8.5	8.8	8.4	8.4	9.2	12.6	13.9	24.8	13.7	24.0	28.7
	BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : DEOPRAYAG (GG00029)

Local River : Ganga

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Bhagirathi Sub Division, Tehri

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	1.2	1.2	1.2	1.1	1.1	1.3	1.3	1.2	1.2	1.1	1.1	1.2	1.6	2.2	2.5
2	COD (mg/L)													14.3	10.5	14.7
3	DO (mg/L)	8.3	8.5	8.2	7.7	7.2	7.4	7.7	7.7	7.7	7.8	7.4	8.9	6.9	8.6	9.0
4	DO_SAT% (%)	80	86	82	78	74	75	76	71	76	77	73	89	70	90	90
5	FCol-MPN (MPN/100mL)														2000	967
6	Tcol-MPN (MPN/100mL)														1400	1367
	TRACE & TOXIC															
1	Al (mg/L)	0.01	0.00													
2	As (µg/L)														1.00	1.00
3	Cd (µg/L)														0.01	1.00
4	Cr (µg/L)														2.00	5.00
5	Cu (µg/L)														1.00	8.00
6	Ni (µg/L)															1.00
7	Pb (µg/L)														1.00	2.00
8	Zn (µg/L)														0.10	24.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	65	70	50	68	54	67	49	22	34	55	50	48	41	94	87
2	HAR_Total (mgCaCO3/L)	147	149	115	141	127	136	101	75	79	91	63	67	72	150	143
3	Na% (%)	2	2	3	4	5	5	6	9	8		11	21	22	22	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2		0.2	0.5	0.5	0.7	0.5
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: RISHIKESH	Code	: GG000Y4
State	: Uttarakhand	District	Dehradun
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: GANGA
Division	: Himalayan Ganga Div., Dehradun	Sub-Division	: Upper Ganga Sub Divi, Haridwar
Drainage Area	: 21794 Sq. Km.	Bank	: Right
Latitude	: 30°05'00"	Longitude	: 78°17'00"
	Opening Date	Closing Date	
Gauge	: 12/1/1970		
Discharge	: 12/5/1970		
Sediment	: 10/23/1971		
Water Quality	: 10/20/1971		

Water Quality Datasheet for the period : 2016-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)	485.2	948.7	2223	1229	616.3	320.5	262.1	266.7	275.3	282.9	286.8	295.4
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	215	305	325	248	170	165	170	210	195	216	225	212
4	EC_GEN (µmho/cm)	210	282	317	243	167	173	168	204	182	212	221	205
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_FLD (pH units)	7.3	7.0	7.4	7.6	7.8	7.3	7.9	7.3	7.7	8.0	7.4	7.8
7	pH_GEN (pH units)	7.4	7.3	7.7	7.5	7.8	7.9	8.0	7.4	7.6	8.0	7.5	8.0
8	TDS (mg/L)	140	200	210	180	130	120	130	140	140	160	160	180
9	Temp (deg C)	20.0	21.0	24.5	23.0	20.0	17.1	15.8	17.5	12.5	13.0	16.5	18.9
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	95	128	144	116	92	96	84	124	108	124	116	112
3	B (mg/L)	0.10	0.08	0.14	0.12	0.10	0.14	0.08	0.05	0.06	0.08	0.12	0.08
4	Ca (mg/L)	38	42	45	31	24	32	28	35	31	35	37	34
5	Cl (mg/L)	14.0	18.0	20.0	16.0	12.8	16.0	17.0	26.0	20.0	24.0	22.0	16.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.13	0.16	0.22	0.26	0.18	0.20	0.14	0.16	0.20	0.35	0.27	0.16
8	Fe (mg/L)	0.0		0.0				0.1				0.1	
9	HCO3 (mg/L)	116	156	176	142	112	117	102	151	132	151	142	137
10	K (mg/L)	7.0	9.0	10.2	6.9	5.6	5.5	4.2	5.1	4.3	6.0	5.0	4.2
11	Mg (mg/L)	18.7	22.1	24.1	18.5	15.8	14.1	9.5	18.5	17.4	19.1	18.7	16.6
12	Na (mg/L)	11.0	14.0	16.0	14.5	10.9	15.2	12.9	16.5	14.0	17.4	14.0	11.3
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.25	0.33	0.60	0.54	0.41	0.40	0.40	0.46	0.28	0.55	0.45	0.86
15	NO2-N (mgN/L)	0.19	0.15	0.28	0.24	0.16	0.18	0.14	0.16	0.10	0.25	0.18	0.40
16	NO3-N (mgN/L)	0.06	0.18	0.32	0.30	0.25	0.22	0.26	0.30	0.18	0.30	0.27	0.46
17	Org-N (mgN/L)	0.1											
18	P-Tot (mgP/L)	0.180	0.220	0.140	0.070	0.042	0.046	0.038	0.045	0.037	0.045	0.038	
19	SiO2 (mg/L)	0.0											

Water Quality Datasheet for the period : 2016-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	03/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	05/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
20	SO4 (mg/L)	22.0	30.0	34.0	28.5	21.5	21.2	17.7	28.2	26.0	31.2	30.2	27.5
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	3.3	3.4	3.2	0.8	1.0	1.4	0.8	1.0	2.5	1.6	1.2	1.5
2	COD (mg/L)	13.1	16.1	15.8	6.5	7.1	7.2	4.8	5.3	13.1	9.5	8.3	9.9
3	DO (mg/L)	7.3	6.2	6.6	6.9	7.2	7.9	7.7	8.0	7.8	8.9	8.4	7.5
4	DO_SAT% (%)	80	69	78	80	79	82	76	82	72	84	85	79
5	FCol-MPN (MPN/100mL)	2600	2100	2600	2200	1600	1900	1400	1000	800	1000	900	650
6	Tcol-MPN (MPN/100mL)	5800	3400	3100	2800	2400	2600	1900	1300	1000	1400	1100	1000
	TRACE & TOXIC												
1	As (µg/L)			2.70				3.34				7.00	
2	Cd (µg/L)			0.10				0.02				0.01	
3	Cr (µg/L)			29.32				8.20				10.00	
4	Cu (µg/L)			2.59				1.71				2.00	
5	Ni (µg/L)			1.24				1.00				1.00	
6	Pb (µg/L)			1.00				1.00				2.00	
7	Zn (µg/L)			0.34				0.18				39.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	95	106	113	77	60	81	70	86	78	88	91	84
2	HAR_Total (mgCaCO3/L)	173	198	214	154	126	139	110	163	151	168	169	153
3	Na% (%)	12	13	13	16	15	19	20	18	16	18	15	13
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.4	0.5	0.5	0.4	0.6	0.5	0.6	0.5	0.6	0.5	0.4
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : RISHIKESH (GG000Y4)

Division : Himalayan Ganga Div., Dehradun

Local River : GANGA

River Water Summary

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	3223	158.1	656.1
2	EC_FLD (µmho/cm)	12	325	165	221
3	EC_GEN (µmho/cm)	12	317	167	215
4	pH_FLD (pH units)	12	8.0	7.0	7.5
5	pH_GEN (pH units)	12	8.0	7.3	7.7
6	TDS (mg/L)	12	210	120	158
7	Temp (deg C)	12	24.5	12.5	18.3
	CHEMICAL				
1	ALK-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	144	84	112
3	B (mg/L)	12	0.14	0.05	0.1
4	Ca (mg/L)	12	45	24	34
5	Cl (mg/L)	12	26.0	12.8	18.5
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.35	0.13	0.2
8	Fe (mg/L)	4	0.1	0.0	0.1
9	HCO3 (mg/L)	12	176	102	136
10	K (mg/L)	12	10.2	4.2	6.1
11	Mg (mg/L)	12	24.1	9.5	17.8
12	Na (mg/L)	12	17.4	10.9	14
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.86	0.25	0.46
15	NO2-N (mgN/L)	12	0.40	0.10	0.2
16	NO3-N (mgN/L)	12	0.46	0.06	0.26
17	Org-N (mgN/L)	1	0.1	0.1	0.1
18	P-Tot (mgP/L)	11	0.220	0.037	0.082
19	SiO2 (mg/L)	1	0.0	0.0	0
20	SO4 (mg/L)	12	34.0	17.7	26.5
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	3.4	0.8	1.8
2	COD (mg/L)	12	16.1	4.8	9.7
3	DO (mg/L)	12	8.9	6.2	7.5
4	DO_SAT% (%)	12	85	69	79
5	FCol-MPN (MPN/100mL)	12	2600	650	1563
6	Tcol-MPN (MPN/100mL)	12	5800	1000	2317
	TRACE & TOXIC				
1	As (µg/L)	3	7.00	2.70	4.35
2	Cd (µg/L)	3	0.10	0.01	0.04
3	Cr (µg/L)	3	29.32	8.20	15.84
4	Cu (µg/L)	3	2.59	1.71	2.1
5	Ni (µg/L)	3	1.24	1.00	1.08
6	Pb (µg/L)	3	2.00	1.00	1.33
7	Zn (µg/L)	3	39.00	0.18	13.17
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	113	60	86
2	HAR_Total (mgCaCO3/L)	12	214	110	160
3	Na% (%)	12	20	12	16
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.6	0.4	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	1284	1714	1072	1318	1284	1719	1581	779.0	1594	1650	870.8	1852	794.4	854.5	1101
2	EC_FLD (µmho/cm)	128	130	140	156	140	130	201	194	198		165		191	249	253
3	EC_GEN (µmho/cm)	128	130	140	156	140	130	201	194	198	174	190	244	186	243	244
4	pH_FLD (pH units)	8.1	7.8	8.0	8.0	8.0	7.9	8.1	7.7	8.4	8.1	8.1		7.8	7.6	7.4
5	pH_GEN (pH units)	8.1	7.8	8.0	8.0	8.0	7.9	8.1	7.7	8.4	8.1	7.9	7.9	8.1	7.8	7.5
6	TDS (mg/L)										92	101	155	132	179	172
7	Temp (deg C)	14.5	9.6	18.5	17.9	19.0	19.7	20.0	19.5	20.0	19.6	20.5	21.2	20.9	19.5	21.7
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	62	66	65	45	61	62		66	43	31	23	75	69	97	115
2	B (mg/L)				0.04	0.10	0.11				0.08	0.11	0.11	0.12	0.05	0.11
3	Ca (mg/L)	25	22	26	31	123	24	23	15	9	11	9	27	20	41	36
4	Cl (mg/L)	8.8	9.8	10.2	9.3	9.0	9.8	9.4	7.8	7.0	6.6	4.1	9.6	10.4	17.2	16.2
5	F (mg/L)	0.08	0.12	0.24	0.47	0.50	1.38	0.58	0.84	0.63	0.17	0.19	0.28	0.19	0.15	0.19
6	Fe (mg/L)	0.2	0.4	0.3			0.9	1.1	1.0	0.9						0.0
7	HCO3 (mg/L)	76	80	79	55	75	75	76	80	53	38	28	91	84	118	140
8	K (mg/L)	0.2	0.3	0.2	0.4	0.2	0.3	0.3	0.5	0.6	2.1		4.6	5.2	5.0	7.8
9	Mg (mg/L)	17.1	15.3	17.4	22.1	16.6	15.2	15.1	11.9	10.4	8.6	6.7	3.7	5.0	18.3	19.8
10	Na (mg/L)	1.0	1.4	1.2	2.5	2.6	2.9	3.1	2.9	3.2	10.1		5.4	7.9	14.3	13.3
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.15	0.18	0.05	0.05
12	NO2+NO3 (mg N/L)	0.24	0.26	0.24			0.43	0.42	0.39	0.38			0.14	0.13	0.66	0.43
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00			0.03	0.04	0.30	0.20
14	NO3-N (mgN/L)	0.24	0.26	0.24			0.43	0.42	0.39	0.38			0.11	0.08	0.35	0.22
15	o-PO4-P (mg P/L)	0.393	0.717	0.585			0.717	0.585	0.393	0.651						
16	Org-N (mgN/L)															0.1
17	P-Tot (mgP/L)				0.717	0.585					0.019	0.244	0.024	0.132	0.049	0.130
18	SiO2 (mg/L)	20.0	19.3		39.2	19.6	41.6	41.6	39.6	36.0			4.7			0.0
19	SO4 (mg/L)	6.9	6.1	6.8	5.9	8.1	7.9	7.8	6.9	7.6	10.0	10.3	15.5	30.0	22.2	27.2
	BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	BOD3-27 (mg/L)	1.1	1.2	1.1	1.2	1.2	1.1	1.2	1.2	1.2	1.4	1.2	1.5	1.7	12.5	2.4
2	COD (mg/L)														28.9	11.7
3	DO (mg/L)	6.0	5.9	6.7	6.4	6.7	6.3	6.5	7.0	6.9	8.0	6.5	6.4	7.4	6.3	6.8
4	DO_SAT% (%)	59	54	71	68	72	69	72	77	76	87	72	71	82	68	77
5	FCol-MPN (MPN/100mL)															2220
6	Tcol-MPN (MPN/100mL)															3500
	TRACE & TOXIC															
1	Al (mg/L)	0.00	0.04													
2	As (µg/L)															2.70
3	Cd (µg/L)															0.10
4	Cr (µg/L)															29.32
5	Cu (µg/L)															2.59
6	Ni (µg/L)															1.24
7	Pb (µg/L)															1.00
8	Zn (µg/L)															0.34
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	62	55	65	78	308	61	58	38	22	28	23	68	51	104	90
2	HAR_Total (mgCaCO3/L)	133	119	137	170	377	124	121	88	65	64	51	83	71	180	173
3	Na% (%)	2	2	2	3	1	5	5	7	10	25		12	18	14	14
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.6		0.3	0.4	0.5	0.4
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	206.9	249.8	240.7	207.1	223.7	304.3	286.0	232.4	476.2	359.5	224.8	334.2	264.2	240.4	280.0
2	EC_FLD (µmho/cm)	199	158	126	146	161	144	174	123	184	210			165	155	185
3	EC_GEN (µmho/cm)	199	158	126	146	161	144	174	123	184	196	177	258	160	150	182
4	pH_FLD (pH units)	8.2	7.4	8.1	8.1	8.1	8.0	8.3	7.8	8.2	7.5			7.9	8.0	7.5
5	pH_GEN (pH units)	8.2	7.4	8.1	8.1	8.1	8.0	8.3	7.8	8.2	7.5	7.8	8.1	8.1	8.2	7.7
6	TDS (mg/L)										104	97	178	120	110	133
7	Temp (deg C)	11.0	10.1	12.9	13.8	12.8	14.1	14.9	14.4	13.6	14.5	15.6	15.6	14.8	15.3	15.7
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	58	62	69	60	59	66	64	53	29	27	39	93	70	89	103
2	B (mg/L)					0.13	0.10				0.09	0.22	0.14	0.11	0.04	0.08
3	Ca (mg/L)	22	21	21	24	118	24	18	8	12	10	23	34	21	32	32
4	Cl (mg/L)	9.5	10.5	11.0	10.5	12.0	11.0	9.0	5.5	7.8	7.1	8.0	10.3	11.3	17.0	19.8
5	F (mg/L)	0.25	0.19	0.31	0.47	1.46	1.25	0.92	0.92	0.72	0.05	0.26	0.28	0.14	0.14	0.18
6	Fe (mg/L)	0.4	0.4	0.5			0.7	0.9	1.0	1.0				3.7	0.0	0.1
7	HCO3 (mg/L)	71	76	84	73	72	81	85	65	35	33	47	114	85	109	126
8	K (mg/L)	0.4	0.4	0.4	0.6	0.2	0.4	0.5	0.6	0.6	1.5	3.2	5.2	6.3	5.1	4.8
9	Mg (mg/L)	17.8	14.1	14.6	15.2	17.8	16.0	12.6	15.2	9.1	7.5	9.9	4.9	5.4	19.8	14.9
10	Na (mg/L)	1.2	1.7	1.6	3.0	2.9	3.1	3.3	3.1	3.3	11.2	3.9	8.0	8.0	11.3	14.6
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00		0.00			0.33	0.10	0.05	0.05
12	NO2+NO3 (mg N/L)	0.18	0.31	0.35			0.52	0.47	0.48	0.33		0.24	0.17	0.27	0.40	0.38
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.12	0.04	0.14	0.13	0.15
14	NO3-N (mgN/L)	0.18	0.31	0.35			0.52	0.47	0.48	0.33		0.12	0.13	0.13	0.26	0.24
15	o-PO4-P (mg P/L)	0.775	0.855	0.362			0.858	0.431	0.610	0.816						
16	Org-N (mgN/L)															
17	P-Tot (mgP/L)				0.858	0.483					0.014	0.190	0.259	0.124	0.084	0.042
18	SiO2 (mg/L)	22.5	19.5		45.0	21.3	39.5	44.0	36.0	37.0		7.8				
19	SO4 (mg/L)	6.9	6.6	6.8	10.5	8.2	8.2	8.4	7.8	9.2	10.4	13.9	19.4	28.4	23.5	23.3
	BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
1	BOD3-27 (mg/L)	1.0	1.2	1.2	1.2	1.2	1.1	1.3	1.2	1.2	1.5	1.1	1.4	1.7	1.3	1.4
2	COD (mg/L)													10.4	6.2	7.6
3	DO (mg/L)	6.5	6.5	6.8	6.6	7.2	7.1	7.2	7.3	7.1	7.5	7.7	7.7	8.7	8.4	7.8
4	DO_SAT% (%)	62	58	64	64	69	69	71	71	68	73	77	77	85	83	78
5	FCol-MPN (MPN/100mL)															1275
6	Tcol-MPN (MPN/100mL)															1700
	TRACE & TOXIC															
1	Al (mg/L)	0.02	0.00	0.00												
2	As (µg/L)														1.00	3.34
3	Cd (µg/L)													0.39	0.01	0.02
4	Cr (µg/L)													211.40	2.00	8.20
5	Cu (µg/L)													6.12	1.00	1.71
6	Ni (µg/L)													1.00	1.00	1.00
7	Pb (µg/L)													10.76	1.00	1.00
8	Zn (µg/L)													1.00	0.10	0.18
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	56	53	53	59	295	60	45	20	30	25	56	86	54	81	79
2	HAR_Total (mgCaCO3/L)	130	111	114	122	369	127	97	83	68	56	98	106	76	164	141
3	Na% (%)	2	3	3	5	2	5	7	8	9	29	6	14	17	13	18
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.7	0.1	0.3	0.4	0.4	0.5
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	346.6	175.2	264.1	142.9	304.9	381.0	352.2	317.9	524.5	260.0	276.7	286.1	422.0	280.3	288.4
2	EC_FLD (µmho/cm)	185	167	168	150	161	145	181	155	195	201			159	245	218
3	EC_GEN (µmho/cm)	185	167	168	150	161	145	181	155	195	144	184	153	153	243	213
4	pH_FLD (pH units)	8.1	7.7	8.0	8.0	8.0	8.1	8.0	7.9	8.2	8.1			7.9	7.9	7.7
5	pH_GEN (pH units)	8.1	7.7	8.0	8.0	8.0	8.1	8.0	7.9	8.2	7.8	7.8	8.2	8.2	8.1	7.8
6	TDS (mg/L)										76	118	103	97	177	167
7	Temp (deg C)	9.0	16.2	15.7	17.5	16.7	16.8	16.3	17.3	16.7	16.5	18.2	16.9	16.0	17.5	16.1
	CHEMICAL															
1	ALK-TOT (mgCaCO3/L)	68	73	56	67	61	69		57	37	24	55	63	72	103	117
2	B (mg/L)					0.14	0.12				0.09	0.15	0.15	0.15	0.10	0.09
3	Ca (mg/L)	27	27	30	28	123	28	20	8	13	13	18	23	17	43	35
4	Cl (mg/L)	11.3	12.0	12.3	10.8	13.7	14.3	13.7	7.0	7.3	5.1	19.5	10.7	10.0	14.7	20.7
5	F (mg/L)	0.25	0.22	0.65	0.76	1.48	1.00	1.18	0.90	0.79	0.09	0.29	0.27	0.15	0.14	0.26
6	Fe (mg/L)	0.5	0.5	1.0			1.0	0.9	1.0	1.0						0.1
7	HCO3 (mg/L)	83	89	68	81	75	85	93	70	46	29	65	76	88	125	143
8	K (mg/L)	0.4	0.4	0.4	0.4	0.3	0.3	0.6	0.7	0.6		2.9	4.8	3.2	7.3	5.1
9	Mg (mg/L)	20.5	18.8	21.2	17.1	17.4	17.8	13.6	16.7	10.1	8.3	5.4	4.5	7.8	16.9	18.1
10	Na (mg/L)	1.7	1.9	2.1	3.0	3.2	3.2	3.2	3.5	3.3		3.7	8.6	8.4	12.0	14.2
11	NH3-N (mg N/L)	0.00	0.00	0.00				0.00					0.17	0.09	0.05	0.05
12	NO2+NO3 (mg N/L)	0.30	0.33	0.50			0.47	0.40	0.50	0.47		0.21	0.14	0.44	0.38	0.62
13	NO2-N (mgN/L)	0.00	0.00	0.00			0.00	0.00	0.00	0.00		0.06	0.05	0.15	0.17	0.28
14	NO3-N (mgN/L)	0.30	0.33	0.50			0.47	0.40	0.50	0.47		0.15	0.10	0.29	0.21	0.34
15	o-PO4-P (mg P/L)	0.982	0.982	0.344			0.982	0.334	0.706	0.541						
16	Org-N (mgN/L)															
17	P-Tot (mgP/L)				0.982	0.345					0.084	0.135	0.447	0.030	0.150	0.042
18	SiO2 (mg/L)	24.0	24.0		44.7	22.7	43.3	45.3	39.3	35.3		5.1				
19	SO4 (mg/L)	8.0	8.0	6.7	13.8	8.9	8.7	8.7	8.7	9.2	11.0	16.9	28.2	15.0	22.3	29.6
	BIOLOGICAL/BACTERIOLOGICAL															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : RISHIKESH (GG000Y4)

Local River : GANGA

River Water

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub Divi, Haridwar

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	1.1	1.2	1.2	1.3	1.1	1.1	1.3	1.2	1.2	1.0	1.2	1.4	2.1	2.7	1.5
2	COD (mg/L)													16.7	9.3	9.2
3	DO (mg/L)	6.5	6.8	6.7	6.6	7.0	7.0	7.2	7.2	7.1	7.9	7.0	8.6	8.2	6.2	8.2
4	DO_SAT% (%)		69	67	68	72	72	73	75	73	81	74	88	83	64	83
5	FCol-MPN (MPN/100mL)														7500	850
6	Tcol-MPN (MPN/100mL)														13100	1167
	TRACE & TOXIC															
1	Al (mg/L)	0.07	0.02													
2	As (µg/L)														1.00	7.00
3	Cd (µg/L)														0.01	0.01
4	Cr (µg/L)														2.00	10.00
5	Cu (µg/L)														1.00	2.00
6	Ni (µg/L)														1.00	1.00
7	Pb (µg/L)														1.00	2.00
8	Zn (µg/L)														0.10	39.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	67	67	75	71	307	69	50	20	33	33	46	57	43	107	88
2	HAR_Total (mgCaCO3/L)	153	146	163	142	379	143	107	90	75	68	69	76	75	177	163
3	Na% (%)	2	3	3	4	2	5	6	8	9		10	19	19	12	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2		0.2	0.4	0.4	0.4	0.5
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: HARIDWAR	Code	: GG000X7
State	: Uttarakhand	District	Haridwar
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Ganga
Division	: Himalayan Ganga Div., Dehradun	Sub-Division	: Upper Ganga Sub-Div., Haridwar
Drainage Area	: 23029 Sq. Km.	Bank	: Right
Latitude	: 29°52'00"	Longitude	: 78°14'00"
	Opening Date	Closing Date	
Gauge	: 6/1/1972		
Discharge	: 6/1/2014		
Sediment	: 6/1/2014		
Water Quality	: 6/1/2014		

Water Quality Datasheet for the period : 2016-2017

Station Name : HARIDWAR (GG000X7)

Local River : Ganga

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub-Div., Haridwar

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Clear	Green	Clear	Clear	Clear	Clear	Clear	Light Brown
3	EC_FLD (µmho/cm)	205	178	214	210	210	190	171	150	142	165	280	212
4	EC_GEN (µmho/cm)	197	167	200	192	200	222	167	141	135	165	274	203
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_FLD (pH units)	7.3	6.8	7.3	7.2	7.5	7.1	7.4	7.7	7.7	7.7	7.2	7.5
7	pH_GEN (pH units)	7.4	7.1	7.5	7.5	7.5	7.6	7.5	7.9	7.7	8.0	7.3	7.4
8	TDS (mg/L)	130	130	120	130	140	150	120	100	95		200	170
9	Temp (deg C)	21.0	22.0	25.0	20.0	21.0	17.5	16.0	18.0	12.0	17.0	17.0	19.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	76	64	76	72	76	80	60	64	68	80	84	72
3	B (mg/L)	0.10	0.06	0.18	0.14	0.12	0.16	0.11	0.15	0.20	0.30	0.25	0.10
4	Ca (mg/L)	29	24	29	28	29	32	24	34	29	35	30	24
5	Cl (mg/L)	16.0	12.2	14.0	12.0	24.0	25.0	20.0	22.0	20.0	24.0	16.0	18.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.14	0.08	0.22	0.15	0.22	0.25	0.18	0.20	0.18	0.26	0.18	0.17
8	Fe (mg/L)			0.0				0.0				0.1	
9	HCO3 (mg/L)	93	78	93	88	93	98	73	78	83	98	102	88
10	K (mg/L)	6.0	5.0	6.0	5.9	6.4	6.2	5.7	3.5	3.0	5.2	3.5	2.7
11	Mg (mg/L)	14.6	10.1	12.2	10.9	12.5	14.1	10.3	15.5	11.3	11.7	12.8	10.3
12	Na (mg/L)	18.0	14.2	17.0	18.2	19.0	20.1	15.1	10.3	10.5	11.8	10.6	11.5
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.50	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.28	0.40	0.56	0.42	0.30	0.44	0.35	0.57	0.37	0.62	0.28	0.28
15	NO2-N (mgN/L)	0.10	0.16	0.26	0.18	0.22	0.26	0.15	0.25	0.17	0.27	0.20	0.18
16	NO3-N (mgN/L)	0.18	0.24	0.30	0.24	0.08	0.18	0.20	0.32	0.20	0.35	0.08	0.10
17	P-Tot (mgP/L)	0.150	0.140	0.170	0.080	0.105	0.082	0.052	0.075	0.082	0.105	0.150	0.072
18	SO4 (mg/L)	23.0	18.3	22.0	22.0	23.0	24.5	30.6	30.5	28.4	35.6	32.0	24.8
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : HARIDWAR (GG000X7)

Local River : Ganga

River Water Analysis

Division : Himalayan Ganga Div., Dehradun

Sub-Division : Upper Ganga Sub-Div., Haridwar

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	1.6	3.2	2.4	1.4	1.5	1.2	1.7	0.8	1.7	1.2	1.4	1.5
2	COD (mg/L)	8.2	17.0	12.1	7.2	8.8	8.0	10.4	4.9	9.9	5.8	9.8	9.9
3	DO (mg/L)	8.0	8.2	8.2	7.0	8.1	8.1	8.3	8.5	8.0	9.6	7.9	7.2
4	DO_SAT% (%)	89	93	99	77	91	84	84	89	74	99	82	78
5	FCol-MPN (MPN/100mL)	2400	2100	2400	2600	2800	2100	1500	1000	700	900	800	800
6	Tcol-MPN (MPN/100mL)	4000	3600	3700	3500	3700	2500	1800	1400	900	1300	1000	1200
	TRACE & TOXIC												
1	As (µg/L)			1.00				1.36				3.00	
2	Cd (µg/L)			0.09				1.00				1.00	
3	Cr (µg/L)			18.24				2.00				3.00	
4	Cu (µg/L)			2.96				1.00				1.00	
5	Ni (µg/L)			1.00				1.00				1.00	
6	Pb (µg/L)			1.38				1.00				1.00	
7	Zn (µg/L)			3.40				41.20				28.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	73	60	73	70	74	79	60	85	71	87	74	59
2	HAR_Total (mgCaCO3/L)	134	103	124	116	126	138	103	150	118	136	127	102
3	Na% (%)	22	22	22	24	24	23	23	13	16	15	15	19
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.4	0.4	0.4	0.4	0.5
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : HARIDWAR (GG000X7)

Division : Himalayan Ganga Div., Dehradun

Local River : Ganga

River Water Summary

Sub-Division : Upper Ganga Sub-Div., Haridwar

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	280	142	194
3	EC_GEN (µmho/cm)	12	274	135	189
4	pH_FLD (pH units)	12	7.7	6.8	7.4
5	pH_GEN (pH units)	12	8.0	7.1	7.5
6	TDS (mg/L)	11	200	95	135
7	Temp (deg C)	12	25.0	12.0	18.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	84	60	73
3	B (mg/L)	12	0.30	0.06	0.16
4	Ca (mg/L)	12	35	24	29
5	Cl (mg/L)	12	25.0	12.0	18.6
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.26	0.08	0.19
8	Fe (mg/L)	3	0.1	0.0	0.1
9	HCO3 (mg/L)	12	102	73	89
10	K (mg/L)	12	6.4	2.7	4.9
11	Mg (mg/L)	12	15.5	10.1	12.2
12	Na (mg/L)	12	20.1	10.3	14.7
13	NH3-N (mg N/L)	12	0.50	0.05	0.09
14	NO2+NO3 (mg N/L)	12	0.62	0.28	0.41
15	NO2-N (mgN/L)	12	0.27	0.10	0.2
16	NO3-N (mgN/L)	12	0.35	0.08	0.21
17	P-Tot (mgP/L)	12	0.170	0.052	0.105
18	SO4 (mg/L)	12	35.6	18.3	26.2
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	3.2	0.8	1.6
2	COD (mg/L)	12	17.0	4.9	9.3
3	DO (mg/L)	12	9.6	7.0	8.1
4	DO_SAT% (%)	12	99	74	87
5	FCol-MPN (MPN/100mL)	12	2800	700	1675
6	Tcol-MPN (MPN/100mL)	12	4000	900	2383
	TRACE & TOXIC				
1	As (µg/L)	3	3.00	1.00	1.79
2	Cd (µg/L)	3	1.00	0.09	0.7
3	Cr (µg/L)	3	18.24	2.00	7.75
4	Cu (µg/L)	3	2.96	1.00	1.65
5	Ni (µg/L)	3	1.00	1.00	1
6	Pb (µg/L)	3	1.38	1.00	1.13
7	Zn (µg/L)	3	41.20	3.40	24.2
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	87	59	72
2	HAR_Total (mgCaCO3/L)	12	150	102	123
3	Na% (%)	12	24	13	20
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.7	0.4	0.6
	PESTICIDES				

Water Quality Seasonal Average for the period: 2014-2017

Station Name : HARIDWAR (GG000X7)

Division : Himalayan Ganga Div., Dehradun

Local River : Ganga

River Water

Sub-Division : Upper Ganga Sub-Div., Haridwar

S.No	Parameters	Flood			Winter			Summer		
		Jun - Oct			Nov - Feb			Mar - May		
		2014	2015	2016	2014-2015	2015-2016	2016-2017	2015	2016	2017
	PHYSICAL									
1	Q (cumec)									
2	EC_FLD (μmho/cm)	167	178	203	165	169	163	192	181	219
3	EC_GEN (μmho/cm)	162	174	191	160	164	166	187	191	214
4	pH_FLD (pH units)	7.7	7.8	7.2	8.0	7.7	7.5	8.0	8.1	7.4
5	pH_GEN (pH units)	7.9	8.0	7.4	8.2	7.9	7.6	8.3	8.2	7.6
6	TDS (mg/L)	114	110	130	107	105	116	120	138	185
7	Temp (deg C)	19.4	22.5	21.8	15.3	15.8	15.9	17.0	18.2	17.7
	CHEMICAL									
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	74	66	73	76	67	68	79	76	79
3	B (mg/L)	0.13	0.13	0.12	0.13	0.14	0.16	0.19	0.15	0.22
4	Ca (mg/L)	21	32	28	24	40	29	22	25	29
5	Cl (mg/L)	11.6	14.4	15.6	12.0	14.0	21.8	8.7	13.3	19.3
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.17	0.15	0.16	0.13	0.20	0.20	0.14	0.18	0.20
8	Fe (mg/L)			0.0	1.2		0.0			0.1
9	HCO3 (mg/L)	90	81	89	93	82	83	96	93	96
10	K (mg/L)	5.6	5.5	5.9	7.0	6.9	4.6	2.7	8.0	3.8
11	Mg (mg/L)	5.9	15.4	12.1	6.8	18.3	12.8	5.9	17.5	11.6
12	Na (mg/L)	8.2	11.6	17.3	7.9	14.8	14.0	8.1	18.7	11.3
13	NH3-N (mg N/L)	0.12	0.05	0.05	0.10	0.05	0.16	0.07	1.70	0.05
14	NO2+NO3 (mg N/L)	0.13	0.41	0.39	0.31	0.36	0.43	0.28	0.34	0.39
15	NO2-N (mgN/L)	0.04	0.21	0.18	0.09	0.21	0.21	0.12	0.20	0.22
16	NO3-N (mgN/L)	0.09	0.19	0.21	0.22	0.15	0.23	0.16	0.14	0.18
17	P-Tot (mgP/L)	0.133	0.100	0.129	0.129	0.143	0.073	0.069	0.143	0.109
18	SiO2 (mg/L)		0.2							
19	SO4 (mg/L)	26.3	24.4	21.7	28.1	28.0	28.5	21.8	26.3	30.8
	BIOLOGICAL/BACTERIOLOGICAL									
1	BOD3-27 (mg/L)	2.2	1.7	2.0	2.0	1.8	1.3	1.9	2.2	1.4
2	COD (mg/L)		9.5	10.7	14.3	7.5	8.3	15.8	8.5	8.5
3	DO (mg/L)	7.2	8.5	7.9	7.8	8.2	8.2	7.4	7.5	8.2
4	DO_SAT% (%)	78	97	90	78	82	83	76	80	86
5	FCol-MPN (MPN/100mL)			2460			1325		3100	833
6	Tcol-MPN (MPN/100mL)			3700			1650		5600	1167
	TRACE & TOXIC									
1	As (μg/L)			1.00			1.36		1.00	3.00
2	Cd (μg/L)			0.09	0.02		1.00		0.01	1.00
3	Cr (μg/L)			18.24	52.46		2.00		2.00	3.00
4	Cu (μg/L)			2.96	1.45		1.00		1.00	1.00
5	Ni (μg/L)			1.00	23.10		1.00		1.00	1.00
6	Pb (μg/L)			1.38	10.31		1.00		1.00	1.00
7	Zn (μg/L)			3.40	0.10		41.20		0.10	28.00
	CHEMICAL INDICES									
1	HAR_Ca (mgCaCO3/L)	53	80	70	59	100	74	55	62	74
2	HAR_Total (mgCaCO3/L)	77	145	120	87	176	127	79	134	122
3	Na% (%)	18	14	23	15	15	19	18	22	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.4	0.4	0.7	0.4	0.5	0.5	0.4	0.7	0.4
	PESTICIDES									

HISTORY SHEET

		Water Year	: 2016-2017
Site	: GARH Mukteshwar	Code	: GG000T2
State	: Uttar Pradesh	District	Ghaziabad
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: GANGA
Division	: M Ganga Div. II, Lucknow	Sub-Division	: M Ganga UR Ganga SD, Moradabad
Drainage Area	: 29709 Sq. Km.	Bank	: Right
Latitude	: 28°48'00"	Longitude	: 78°07'30"
	Opening Date	Closing Date	
Gauge	: 4/1/1967		
Discharge	: 4/1/1967		
Sediment	: 3/25/1968		
Water Quality	: 11/21/1980		

Water Quality Datasheet for the period : 2016-2017

Station Name : GARHMUKTESHWAR (GGOOOT2)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Brown	Light Brown	Brown	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Brown	Light Brown	Light Brown
3	EC_GEN (μmho/cm)	171	142	159	181	210	177	200	200	180	181	324	258
4	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
5	pH_FLD (pH units)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6	pH_GEN (pH units)	8.3	8.1	7.9	7.9	7.9	7.7	7.5	8.0	8.0	8.2	8.2	7.9
7	TDS (mg/L)	109	89	101	107	132	111	120	129	110	113	195	157
8	Temp (deg C)	24.0	25.0	21.5	23.5	26.0	20.0	15.0	11.0	10.0	12.5	21.5	24.0
9	Turb (NTU)	0.7	4.6	1.4	5.2	2.8	2.0	1.4	1.6	1.8	1.2	1.2	1.5
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	72	56	60	62	73	62	93	106	112	125	117	124
3	B (mg/L)	0.03	0.21	0.24	0.27	0.31	0.27	0.32	0.33	0.30	0.31	0.32	0.30
4	Ca (mg/L)	20	25	25	22	32	25	25	26	27	34	34	26
5	Cl (mg/L)	7.5	9.9	4.3	15.3	11.4	13.1	13.5	6.0	8.0	12.0	13.8	9.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.36	0.32	0.34	0.36	0.40	0.36	0.38	0.38	0.35	0.37	0.38	0.28
8	Fe (mg/L)			0.4				0.4				1.5	
9	HCO3 (mg/L)	88	68	73	75	89	75	113	129	136	152	142	151
10	K (mg/L)	4.7	4.3	5.5	6.6	7.4	7.0	7.8	7.8	8.5	8.7	16.0	5.0
11	Mg (mg/L)	12.9	4.4	11.9	5.8	8.7	10.0	11.9	12.4	13.1	8.0	12.9	6.2
12	Na (mg/L)	6.0	6.4	3.2	8.1	8.5	7.8	9.0	4.6	5.1	9.0	9.9	6.2
13	NH3-N (mg N/L)	0.60	0.49	0.52	0.53	0.58	0.62	0.67	0.69	0.69	0.86	0.73	0.60
14	NO2+NO3 (mg N/L)	0.76	0.62	0.74	0.77	0.82	0.70	6.22	0.78	0.75	0.76	1.16	0.84
15	NO2-N (mgN/L)	0.39	0.32	0.35	0.37	0.41	0.33	5.80	0.36	0.34	0.35	0.44	0.32
16	NO3-N (mgN/L)	0.37	0.30	0.39	0.40	0.41	0.37	0.42	0.42	0.41	0.41	0.72	0.52
17	P-Tot (mgP/L)	0.460	0.400	0.450	0.480	0.510	0.480	0.520	0.510	0.460	0.480	0.570	0.520
18	SO4 (mg/L)	15.8	14.9	15.4	18.2	18.7	17.3	24.5	25.0	23.0	16.0	32.2	24.2
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : GARHMUKTESHWAR (GGOOOT2)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	4.7	1.0	4.0	2.7	2.4	3.1	6.3	2.0	10.6	11.7	2.3	2.0
2	COD (mg/L)	9.0	5.0	8.0	10.0	6.0	6.0	9.0	5.0	17.0	18.0	5.0	5.0
3	DO (mg/L)	4.5	6.1	5.1	5.9	5.9	5.9	4.5	6.3	6.9	5.5	3.7	5.5
4	DO_SAT% (%)	54	74	57	69	72	65	45	57	61	51	42	65
5	FCol-MPN (MPN/100mL)			1500	5000	6000	4000	1400	1200	2000	6000	1500	1500
6	Tcol-MPN (MPN/100mL)			4000	7000	8000	6000	3200	3500	4000	8000	3900	2200
	TRACE & TOXIC												
1	As (µg/L)			5.05				1.97				14.00	
2	Cd (µg/L)			0.10				0.02				0.00	
3	Cr (µg/L)			2.92				3.05				8.00	
4	Cu (µg/L)			3.21				4.42				20.00	
5	Ni (µg/L)			1.61				-				161.00	
6	Pb (µg/L)			0.13				0.61				1.00	
7	Zn (µg/L)			1.61				8.90				7.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	50	63	62	54	80	64	62	65	68	84	85	65
2	HAR_Total (mgCaCO3/L)	103	81	112	78	116	105	111	117	123	117	139	90
3	Na% (%)	11	14	6	17	13	13	14	7	8	13	12	12
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.7
5	SAR (-)	0.3	0.3	0.1	0.4	0.3	0.3	0.4	0.2	0.2	0.4	0.4	0.3
	PESTICIDES												

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Summary for the period : 2016-2017

Station Name : GARHMUKTESHWAR (GGOOT2)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

River Water Summary Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_GEN (µmho/cm)	12	324	142	199
3	pH_FLD (pH units)	12	7.5	7.5	7.5
4	pH_GEN (pH units)	12	8.3	7.5	8
5	TDS (mg/L)	12	195	89	123
6	Temp (deg C)	12	26.0	10.0	19.5
7	Turb (NTU)	12	5.2	0.7	2.1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	125	56	88
3	B (mg/L)	12	0.33	0.03	0.27
4	Ca (mg/L)	12	34	20	27
5	Cl (mg/L)	12	15.3	4.3	10.3
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.40	0.28	0.36
8	Fe (mg/L)	3	1.5	0.4	0.8
9	HCO3 (mg/L)	12	152	68	108
10	K (mg/L)	12	16.0	4.3	7.5
11	Mg (mg/L)	12	13.1	4.4	9.8
12	Na (mg/L)	12	9.9	3.2	7
13	NH3-N (mg N/L)	12	0.86	0.49	0.63
14	NO2+NO3 (mg N/L)	12	6.22	0.62	1.24
15	NO2-N (mgN/L)	12	5.80	0.32	0.81
16	NO3-N (mgN/L)	12	0.72	0.30	0.43
17	P-Tot (mgP/L)	12	0.570	0.400	0.487
18	SO4 (mg/L)	12	32.2	14.9	20.4
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	11.7	1.0	4.4
2	COD (mg/L)	12	18.0	5.0	8.6
3	DO (mg/L)	12	6.9	3.7	5.5
4	DO_SAT% (%)	12	74	42	59
5	FCol-MPN (MPN/100mL)	10	6000	1200	3010
6	Tcol-MPN (MPN/100mL)	10	8000	2200	4980
	TRACE & TOXIC				
1	As (µg/L)	3	14.00	1.97	7.01
2	Cd (µg/L)	2	0.10	0.02	0.06
3	Cr (µg/L)	3	8.00	2.92	4.66
4	Cu (µg/L)	3	20.00	3.21	9.21
5	Ni (µg/L)	2	161.00	1.61	81.31
6	Pb (µg/L)	1	1.00	1.00	1
7	Zn (µg/L)	3	8.90	1.61	5.84
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	85	50	67
2	HAR_Total (mgCaCO3/L)	12	139	78	108
3	Na% (%)	12	17	6	12
4	RSC (-)	12	0.7	0.0	0.1
5	SAR (-)	12	0.4	0.1	0.3
	PESTICIDES				

Water Quality Seasonal Average for the period: 2006-2017

Station Name : GARHMUKTESHWAR (GGOOOT2)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters	Flood											Winter						
		Jun - Oct											Nov - Feb						
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
	PHYSICAL																		
1	Q (cumec)	665.9	1011	916.5	382.4	1605	1551	810.8	1348	500.7	438.7		149.5	290.0	185.4	142.0	236.3	249.6	491.9
2	EC_GEN (µmho/cm)	194	184	206	206	228	213	248	276	224	212	173	300	210	228	205	230	233	218
3	pH_FLD (pH units)	7.4	7.3	7.2	7.3	7.2	7.3	7.5	7.4	7.4	7.5	7.5	7.3	7.3	7.5	7.5	7.5	7.6	7.5
4	pH_GEN (pH units)	7.9	7.9	7.4	7.8	7.8	7.9	8.3	8.0	7.9	8.2	8.0	8.0	7.3	7.5	8.0	7.7	8.0	7.9
5	TDS (mg/L)			127	127	136	134	152	165	149	126	108			119	123	153	143	131
6	Temp (deg C)	21.5	20.7	20.9	24.2	23.8	21.6	25.5	22.9	26.1	25.0	24.0	12.6	13.0	12.8	13.5	14.4	17.3	16.3
7	Turb (NTU)				9.1	4.2	3.6	5.0	7.8	2.9		2.9				1.2	1.5	2.1	3.6
	CHEMICAL																		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0		0.0	0.0	13.4	0.0	2.4	1.6	0.0			0.0			4.0	0.0
2	ALK-TOT (mgCaCO3/L)	136	212	71		94	92	120	108	121	60	64			82			120	114
3	B (mg/L)	0.02	0.00	0.04								0.21	0.02	0.01	0.07			0.06	0.04
4	Ca (mg/L)	24	25	23	21	19	20	23	37	34	21	25	31	28	24	21	21	23	31
5	Cl (mg/L)	7.3	9.7	10.8	8.1	8.4	11.3	12.0	13.6	11.6	7.6	9.7	16.5	11.4	11.3	8.5	12.1	15.0	11.9
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	13.0	0.0	2.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0
7	F (mg/L)	0.10	0.10	0.19	0.19	0.12	0.21	0.22	0.34	0.12	0.37	0.36	0.24	0.17	0.23	0.18	0.12	0.23	0.24
8	Fe (mg/L)	0.0	0.0	0.1	0.0	0.0						0.4	0.1	0.1	0.0	0.0	0.0		0.0
9	HCO3 (mg/L)	94	111	87	97	118	112	113	150	142	69	79	165	102	100	85	122	139	139
10	K (mg/L)	2.7	3.1	2.3	1.7	2.0	2.3	2.0	2.6	1.9	5.6	5.7	3.8	3.3	2.5	2.1	2.5	2.7	2.1
11	Mg (mg/L)	10.9	11.5	10.3	10.3	11.3	11.1	16.1	18.5	18.8	7.0	8.7	20.1	12.8	12.6	10.8	11.1	16.0	18.0
12	Na (mg/L)	6.7	6.6	4.0	4.6	6.0	6.9	8.4	9.2	7.4	5.1	6.4	9.0	6.3	5.3	4.7	7.8	9.8	8.5
13	NH3-N (mg N/L)				0.00	0.00	0.10	0.09	0.08	0.00	0.47	0.54				0.00	0.02	0.14	0.00
14	NO2+NO3 (mg N/L)	0.17	0.17	0.20	0.24	0.18	3.62	5.93	9.39	8.06	7.50	0.74	0.34	0.19	0.31	0.22	0.19	4.80	5.19
15	NO2-N (mgN/L)	0.02	0.02	0.07	0.07	0.05	0.14	0.18	0.40	0.15	0.35	0.37	0.03	0.03	0.13	0.05	0.05	1.52	0.22
16	NO3-N (mgN/L)	0.15	0.15	0.13	0.17	0.13	3.47	5.74	9.00	7.90	7.15	0.37	0.31	0.16	0.18	0.16	0.14	3.28	4.97
17	o-PO4-P (mg P/L)	0.019	0.060	0.023	0.029	0.039	0.112	0.087	0.074	0.045	0.186		0.031	0.021	0.034	0.034	0.054	0.320	0.078
18	P-Tot (mgP/L)											0.460							
19	SiO2 (mg/L)	5.6	5.1	2.6									6.1	4.6	2.7				
20	SO4 (mg/L)	10.9	10.4	8.6	8.2	4.2	2.3	5.9	9.4	9.6	9.6	16.6	14.4	9.2	10.4	7.4	3.2	4.1	5.5

Water Quality Seasonal Average for the period: 2006-2017

Station Name : GARHMUKTESHWAR (GGOOOT2)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters	Flood											Winter							
		Jun - Oct											Nov - Feb							
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	
	BIOLOGICAL/BACTERIOLOGICAL																			
1	BOD3-27 (mg/L)					2.2	1.0	1.1	1.3	1.1	7.6	3.0				2.4	0.9	1.2	1.2	
2	COD (mg/L)					10.5	4.0	6.0	3.4	3.4	11.8	7.6						5.0	5.8	
3	DO (mg/L)	7.3	7.2	6.9	8.0	7.5	7.1	7.1	6.0	7.7	5.1	5.5	8.1	7.7	7.7	7.9	7.3	7.1	7.1	
4	DO_SAT% (%)	82	81	77	96	89	81	87	69	95	61	65	82	74	73	78	81	73	72	
5	FCol-MPN (MPN/100mL)											4167								
6	Tcol-MPN (MPN/100mL)											6333								
	TRACE & TOXIC																			
1	Al (mg/L)		2.70																0.00	
2	As (µg/L)											5.05								
3	Cd (µg/L)											0.10								
4	Cr (µg/L)											2.92								
5	Cu (µg/L)											3.21								
6	Ni (µg/L)											1.61								
7	Pb (µg/L)																			
8	Zn (µg/L)											1.61								
	CHEMICAL INDICES																			
1	HAR_Ca (mgCaCO3/L)	59	62	57	53	47	49	58	92	84	52	62	76	70	61	53	52	58	77	
2	HAR_Total (mgCaCO3/L)	105	110	100	96	95	95	125	169	162	81	98	160	123	114	98	98	125	153	
3	Na% (%)	12	11	8	9	12	13	12	10	9	12	12	11	10	9	9	15	14	11	
4	RSC (-)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	
5	SAR (-)	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.3	0.4	0.3	
	PESTICIDES																			

Water Quality Seasonal Average for the period: 2006-2017

Station Name : GARHMUKTESHWAR (GGOOOT2)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters					Summer										
		2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	374.1	232.2	294.6		138.2	189.6	162.3	118.6	254.5	269.7	352.3	239.8	301.1	220.5	
2	EC_GEN (µmho/cm)	250	318	183	189	253	220	253	263	247	260	267	340	285	197	254
3	pH_FLD (pH units)	7.5	7.5	7.5	7.5	7.2	7.1	7.5	7.3	7.4	7.5	7.5	7.5	7.5	7.5	7.5
4	pH_GEN (pH units)	8.2	8.1	8.0	7.8	7.6	7.7	7.4	8.0	7.9	8.2	8.3	8.2	8.4	8.3	8.1
5	TDS (mg/L)	155	178	116	118			142	161	165	157	162	210	162	123	155
6	Temp (deg C)	15.6	16.0	14.3	14.0	14.8	18.3	17.3	20.0	19.2	19.2	18.2	19.3	17.0	18.7	19.3
7	Turb (NTU)	2.0			1.7				0.7	2.3	3.4	3.2	1.5			1.3
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	3.0	7.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	3.0	4.0	12.0	6.6	0.0
2	ALK-TOT (mgCaCO3/L)	133	122	52	93	232	160	94		108	120	120	151	124	79	122
3	B (mg/L)	0.06	0.80	0.24	0.31	0.02	0.02	0.08	0.06	0.08	0.04	0.06	0.10		0.29	0.31
4	Ca (mg/L)	38	37	20	26	30	26	27	23	22	24	37	44	32	25	31
5	Cl (mg/L)	14.5	18.0	8.6	10.2	13.3	10.1	12.7	10.6	14.0	14.0	14.0	15.3	14.0	8.8	11.6
6	CO3 (mg/L)	3.6	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	2.4	4.8	7.2	8.0	0.0
7	F (mg/L)	0.28	0.40	0.42	0.37	0.13	0.24	0.27	0.18	0.15	0.18	0.31	0.17	0.41	0.41	0.34
8	Fe (mg/L)				0.4	0.0	0.1	0.0	0.0	0.0						1.5
9	HCO3 (mg/L)	155	132	63	113	138	91	115	115	127	142	137	174	124	80	148
10	K (mg/L)	2.9	48.4	5.2	7.8	4.2	3.1	2.5	2.9	2.9	2.1	2.6	3.0	4.7	5.1	9.9
11	Mg (mg/L)	20.9	17.0	6.4	11.8	14.8	11.3	13.1	13.0	11.3	16.8	16.8	22.7	16.5	11.5	9.0
12	Na (mg/L)	9.8	12.9	5.2	6.6	8.4	6.2	5.9	6.9	8.5	9.8	9.7	10.3	7.4	5.8	8.4
13	NH3-N (mg N/L)	0.00	0.12	2.12	0.67			0.00	0.00	0.09	0.12	0.00	0.00	0.48	0.66	0.73
14	NO2+NO3 (mg N/L)	10.32	8.50	6.03	2.11	0.21	0.18	0.36	0.26	0.30	6.51	8.04	12.26	7.69	6.44	0.92
15	NO2-N (mgN/L)	0.19	0.30	0.36	1.71	0.02	0.03	0.13	0.08	0.11	0.12	0.38	0.16	0.34	0.42	0.37
16	NO3-N (mgN/L)	10.12	8.20	5.67	0.40	0.18	0.15	0.23	0.18	0.19	6.40	7.66	12.10	7.36	6.03	0.55
17	o-PO4-P (mg P/L)	0.062	0.132	0.176		0.021	0.034	0.041	0.055	0.083	0.079	0.062	0.041	0.258	0.176	
18	P-Tot (mgP/L)				0.492									0.024		0.523
19	SiO2 (mg/L)					5.4	4.3	2.7								
20	SO4 (mg/L)	12.5	35.5	11.0	22.4	11.8	8.8	10.7	8.3	3.2	3.8	8.5	10.7	29.5	20.0	24.1

Water Quality Seasonal Average for the period: 2006-2017

Station Name : GARHMUKTESHWAR (GGOOOT2)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga UR Ganga SD, Moradabad

S.No	Parameters					Summer										
		2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	BIOLOGICAL/BACTERIOL															
1	BOD3-27 (mg/L)	1.2	2.4	7.2	5.5				2.8	1.3	1.5	1.4	1.5	2.3	4.8	5.3
2	COD (mg/L)	3.3	5.5	12.0	9.3					10.5	6.0	4.3	4.0	5.0	13.3	9.3
3	DO (mg/L)	7.0	5.0	6.7	5.9	8.0	7.8	8.5	7.7	7.3	7.1	7.1	7.6	5.7	5.3	4.9
4	DO_SAT% (%)	70	50	64	57	79	83	89	84	86	76	75	83	59	55	53
5	FCol-MPN (MPN/100mL)				2150											3000
6	Tcol-MPN (MPN/100mL)				4175											4700
	TRACE & TOXIC															
1	Al (mg/L)															
2	As (µg/L)				1.97									2.50		14.00
3	Cd (µg/L)				0.02									8.00		
4	Cr (µg/L)				3.05									44.48		8.00
5	Cu (µg/L)				4.42									7.23		20.00
6	Ni (µg/L)													4.33		161.00
7	Pb (µg/L)													1.57		1.00
8	Zn (µg/L)				8.90									15.90		7.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	96	94	49	64	75	65	67	57	55	59	94	110	80	64	78
2	HAR_Total (mgCaCO3/L)	183	164	76	114	136	112	122	112	102	129	164	205	148	111	115
3	Na% (%)	10	12	12	11	11	11	9	12	15	14	11	10	10	10	13
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.3
5	SAR (-)	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.3	0.2	0.3
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: KACHLABRIDGE	Code	: GG000PI
State	: Uttar Pradesh	District	Budaun
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: GANGA
Division	: M Ganga Div. II, Lucknow	Sub-Division	: M Ganga LR Ganga SD, Bareilly
Drainage Area	: 34446 Sq. Km.	Bank	: Left
Latitude	: 27°56'00"	Longitude	: 78°52'30"
	Opening Date	Closing Date	
Gauge	: 12/10/1971		
Discharge	: 12/10/1971		
Sediment	: 4/17/1972		
Water Quality	: 1/1/1974		

Water Quality Datasheet for the period : 2016-2017

Station Name : KACHLABRIDGE (GGOOPI)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Other	Light Brown	Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_GEN (umho/cm)	192	182	181	164	220	180	210	180	130	195	281	240
4	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
5	pH_FLD (pH units)	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.0
6	pH_GEN (pH units)	8.4	8.0	8.2	7.9	8.1	7.9	7.7	8.1	8.0	8.1	8.1	7.8
7	TDS (mg/L)	120	113	113	102	140	113	124	110	84	122	169	147
8	Temp (deg C)	25.0	23.0	25.0	27.0	28.0	21.0	18.0	10.0	13.0	17.0	22.0	23.0
9	Turb (NTU)	0.9	5.9	1.6	5.5	0.4	0.7	0.6	0.5	0.4	0.7	0.5	0.7
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	64	68	64	64	89	61	83	116	101	132	117	124
3	B (mg/L)	0.03	0.26	0.26	0.22	0.30	0.28	0.31	0.29	0.23	0.29	0.30	0.32
4	Ca (mg/L)	21	25	30	21	28	26	28	28	30	35	34	31
5	Cl (mg/L)	7.1	9.9	5.7	5.7	12.8	9.6	7.8	7.8	6.2	9.2	9.2	10.0
6	CO3 (mg/L)	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.23	0.21	0.19	0.19	0.25	0.19	0.17	0.15	0.15	0.21	0.29	0.24
8	Fe (mg/L)			0.3				0.3				0.3	
9	HCO3 (mg/L)	59	83	78	78	109	74	101	142	123	161	142	151
10	K (mg/L)	5.9	5.5	5.5	5.1	5.9	5.1	5.9	8.2	7.8	8.9	10.6	9.0
11	Mg (mg/L)	12.4	5.8	7.7	5.8	6.0	8.3	14.2	14.7	11.9	11.8	13.7	11.4
12	Na (mg/L)	5.1	6.2	4.4	4.1	7.1	6.0	6.0	5.8	4.6	6.0	6.9	6.0
13	NH3-N (mg N/L)	0.62	0.60	0.58	0.67	0.60	0.65	0.66	0.62	0.53	7.72	0.65	0.60
14	NO2+NO3 (mg N/L)	0.86	0.79	0.77	0.57	1.26	1.04	1.03	0.97	0.82	1.07	0.94	0.86
15	NO2-N (mgN/L)	0.40	0.36	0.36	0.17	0.84	0.66	0.62	0.58	0.46	0.49	0.30	0.36
16	NO3-N (mgN/L)	0.46	0.43	0.41	0.40	0.42	0.38	0.41	0.39	0.36	0.58	0.64	0.50
17	P-Tot (mgP/L)	0.400	0.350	0.340	0.300	0.390	0.340	0.390	0.350	0.300	0.380	0.470	0.400
18	SO4 (mg/L)	13.0	12.0	12.0	10.1	9.1	8.6	17.3	16.8	16.1	15.0	25.0	20.0
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : KACHLABRIDGE (GG000PI)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	12.8	3.9	1.9	2.3	2.4	1.3	3.9	2.3	16.5	7.6	3.2	3.9
2	COD (mg/L)	18.0	11.0	5.0	6.0	6.0	5.0	5.0	5.0	20.0	12.0	6.0	7.0
3	DO (mg/L)	3.9	4.5	5.1	5.3	5.1	6.3	5.9	5.9	7.5	4.9	4.3	5.5
4	DO_SAT% (%)	47	53	62	66	65	70	62	52	71	51	49	64
5	FCol-MPN (MPN/100mL)			1200	2500	3000	4000	2100	4000	4000	5000	1500	1500
6	Tcol-MPN (MPN/100mL)			2000	5000	4000	5000	4000	7500	5000	6500	2000	4000
	TRACE & TOXIC												
1	As (µg/L)			3.16				1.05				9.00	
2	Cd (µg/L)			0.14				0.09				0.00	
3	Cr (µg/L)			155.04				0.93				8.00	
4	Cu (µg/L)			1.14				8.89				4.00	
5	Ni (µg/L)			1.46				-				137.00	
6	Pb (µg/L)			0.00				1.27				1.00	
7	Zn (µg/L)			1.46				52.50				52.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	52	63	76	52	71	65	70	69	75	87	86	78
2	HAR_Total (mgCaCO3/L)	103	87	107	76	95	99	129	130	125	136	143	125
3	Na% (%)	9	13	8	10	13	11	9	8	7	8	9	9
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.3	0.2
	PESTICIDES												

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Summary for the period : 2016-2017

Station Name : KACHLABRIDGE (GG000PI)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

River Water Summary

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_GEN (µmho/cm)	12	281	130	196
3	pH_FLD (pH units)	12	7.5	7.0	7.5
4	pH_GEN (pH units)	12	8.4	7.7	8
5	TDS (mg/L)	12	169	84	121
6	Temp (deg C)	12	28.0	10.0	21
7	Turb (NTU)	12	5.9	0.4	1.5
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	8.0	0.0	0.7
2	ALK-TOT (mgCaCO3/L)	12	132	61	90
3	B (mg/L)	12	0.32	0.03	0.26
4	Ca (mg/L)	12	35	21	28
5	Cl (mg/L)	12	12.8	5.7	8.4
6	CO3 (mg/L)	12	9.6	0.0	0.8
7	F (mg/L)	12	0.29	0.15	0.21
8	Fe (mg/L)	3	0.3	0.3	0.3
9	HCO3 (mg/L)	12	161	59	108
10	K (mg/L)	12	10.6	5.1	6.9
11	Mg (mg/L)	12	14.7	5.8	10.3
12	Na (mg/L)	12	7.1	4.1	5.7
13	NH3-N (mg N/L)	12	7.72	0.53	1.21
14	NO2+NO3 (mg N/L)	12	1.26	0.57	0.92
15	NO2-N (mgN/L)	12	0.84	0.17	0.47
16	NO3-N (mgN/L)	12	0.64	0.36	0.45
17	P-Tot (mgP/L)	12	0.470	0.300	0.367
18	SO4 (mg/L)	12	25.0	8.6	14.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	16.5	1.3	5.2
2	COD (mg/L)	12	20.0	5.0	8.8
3	DO (mg/L)	12	7.5	3.9	5.3
4	DO_SAT% (%)	12	71	47	59
5	FCol-MPN (MPN/100mL)	10	5000	1200	2880
6	Tcol-MPN (MPN/100mL)	10	7500	2000	4500
	TRACE & TOXIC				
1	As (µg/L)	3	9.00	1.05	4.4
2	Cd (µg/L)	2	0.14	0.00	0.12
3	Cr (µg/L)	2	155.04	8.00	81.52
4	Cu (µg/L)	3	8.89	1.14	4.68
5	Ni (µg/L)	2	137.00	1.46	69.23
6	Pb (µg/L)	2	1.27	1.00	1.13
7	Zn (µg/L)	3	52.50	1.46	35.32
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	87	52	70
2	HAR_Total (mgCaCO3/L)	12	143	76	113
3	Na% (%)	12	13	7	9
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.3	0.2	0.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GG000PI)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	PHYSICAL																	
1	Q (cumec)	543.0	1244	1619	134.9	1475	1320	870.4	2119	727.9	948.2		98.08	85.80	115.0	65.11	200.4	222.7
2	EC_GEN (μmho/cm)	288	190	248	240	252	214	222	226	256	222	188	265	238	278	205	250	228
3	pH_FLD (pH units)	7.9	7.4	7.8	8.0	7.9	7.8	7.5	7.3	7.9	7.5	7.5	8.0	7.6	8.0	7.6	7.8	8.1
4	pH_GEN (pH units)	7.9	8.0	8.0	8.1	8.0	7.9	8.1	7.8	8.2	8.2	8.1	8.0	7.6	7.8	7.8	8.0	8.1
5	TDS (mg/L)			146	147	154	131	144	136	154	133	118			168	124	159	155
6	Temp (deg C)	30.9	30.7	30.2	30.2	29.7	29.6	28.8	28.0	27.0	27.1	25.6	21.8	18.9	20.2	17.6	19.4	18.4
7	Turb (NTU)				8.1	8.8	3.5	6.8	7.1	3.7		2.9				0.9	2.8	2.4
	CHEMICAL																	
1	Alk-Phen (mgCaCO3/L)		0.0	3.2	0.0	0.0	0.0	2.7	0.0	3.2	1.6	1.6	0.0	0.0	0.0		15.9	5.3
2	ALK-TOT (mgCaCO3/L)		98	136	120	153	123	117	108	104	67	70	232	188	135		188	121
3	B (mg/L)	0.02	0.00	0.03								0.21	0.02	0.01	0.09			0.10
4	Ca (mg/L)	33	30	32	29	34	28	24	32	31	32	25	34	33	34	29	34	21
5	Cl (mg/L)	18.0	11.2	15.1	16.0	14.3	10.8	11.6	13.6	12.0	8.7	8.2	14.5	16.0	19.0	13.9	12.5	10.9
6	CO3 (mg/L)	0.0	0.0	3.8	0.0	3.8	0.0	1.9	0.0	3.8	1.9	1.9	0.0	0.0	0.0	0.0	4.8	4.8
7	F (mg/L)	0.18	0.19	0.26	0.27	0.22	0.19	0.26	0.35	0.33	0.16	0.21	0.21	0.29	0.30	0.19	0.19	0.22
8	Fe (mg/L)	0.1	0.1	0.0	0.0	0.0						0.3	0.1	0.1	0.0	0.0	0.0	
9	HCO3 (mg/L)	139	120	158	140	183	149	139	132	119	78	81	135	118	165	132	196	138
10	K (mg/L)	4.7	4.2	3.3	4.5	6.8	3.8	2.7	3.0	2.7	3.9	5.6	6.1	3.0	5.0	4.2	5.5	2.9
11	Mg (mg/L)	17.3	14.7	19.6	17.5	18.3	16.5	16.7	17.5	16.5	8.4	7.5	17.1	19.6	20.7	16.2	18.3	16.8
12	Na (mg/L)	10.4	4.7	8.3	9.2	9.3	6.4	8.2	9.2	7.7	5.3	5.4	11.7	3.6	10.6	8.4	7.8	7.4
13	NH3-N (mg N/L)				0.00	0.00	0.00	0.00	0.00	0.10	0.74	0.61				0.00	0.00	0.00
14	NO2+NO3 (mg N/L)	0.45	0.39	0.22	0.25	0.26	3.18	5.07	7.97	9.51	8.98	0.85	0.35	0.38	0.23	0.22	0.26	3.30
15	NO2-N (mgN/L)	0.03	0.04	0.01	0.05	0.06	0.07	0.19	0.23	0.93	0.32	0.43	0.03	0.03	0.04	0.04	0.07	0.08
16	NO3-N (mgN/L)	0.42	0.35	0.21	0.20	0.20	3.11	4.88	7.73	8.58	8.66	0.42	0.32	0.35	0.19	0.18	0.19	3.22
17	o-PO4-P (mg P/L)	0.116	0.025	0.017	0.041	0.050	0.052	0.107	0.107	0.122	0.161	0.356	0.031	0.036	0.041	0.028	0.049	0.062
18	SiO2 (mg/L)	6.6	4.6	3.5									6.0	4.8	3.5			
19	SO4 (mg/L)	16.1	10.2	9.9	12.3	10.4	2.5	6.9	12.2	13.2	25.9	11.2	14.5	10.1	12.2	12.1	5.5	3.6
	BIOLOGICAL/BACTERIOLOGICAL																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOPI)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood Jun - Oct											Winter Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
1	BOD3-27 (mg/L)					2.0	1.3	1.4	1.4	1.7	9.6	4.7				3.4	2.2	1.2
2	COD (mg/L)					9.0	6.6	7.8	4.0	4.6	13.8	9.2						6.5
3	DO (mg/L)	6.2	7.1	7.5	7.8	7.6	8.1	6.9	6.3	6.4	5.3	4.8	6.8	7.5	7.8	8.5	8.0	8.4
4	DO_SAT% (%)	82	94	99	102	100	106	89	80	80	66	59	76	80	85	89	87	89
5	Fcol-MPN (MPN/100mL)											2233						
6	Tcol-MPN (MPN/100mL)											3667						
	TRACE & TOXIC																	
1	As (µg/L)											3.16						
2	Cd (µg/L)											0.14						
3	Cr (µg/L)											155.04						
4	Cu (µg/L)											1.14						
5	Ni (µg/L)											1.46						
6	Pb (µg/L)																	
7	Zn (µg/L)											1.46						
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	82	74	81	71	84	71	61	81	78	79	62	86	82	85	72	86	54
2	HAR_Total (mgCaCO3/L)	154	135	162	144	161	134	131	154	147	114	94	157	163	171	140	162	123
3	Na% (%)	12	6	10	12	11	9	12	11	10	9	10	13	5	12	11	9	11
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0
5	SAR (-)	0.4	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.4	0.1	0.4	0.3	0.3	0.3
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOPI)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																
1	Q (cumec)	150.4	286.8	179.3	340.5		64.48	36.37	40.29	25.26	124.5	46.62	109.4	97.03	108.4	114.0	
2	EC_GEN (µmho/cm)	220	215	310	196	175	290	287	333	310	233	277	280	287	265	199	239
3	pH_FLD (pH units)	7.5	7.4	7.5	7.4	7.5	8.2	8.0	8.0	7.7	8.0	7.5	7.5	8.3	7.5	8.3	7.3
4	pH_GEN (pH units)	7.9	8.3	8.4	8.1	7.9	8.0	8.0	7.9	8.2	8.3	8.2	8.4	8.3	8.8	8.1	8.0
5	TDS (mg/L)	133	129	182	121	108			193	192	137	170	169	180	149	126	146
6	Temp (deg C)	17.9	18.1	15.3	15.0	15.5	25.7	24.3	24.8	25.5	25.2	23.8	23.2	22.0	21.5	16.3	20.7
7	Turb (NTU)	6.7	2.9			0.6				1.8	2.4	2.8	4.3	2.8			0.6
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)	0.0	4.0	12.0	2.0	0.0	0.0	0.0	0.0		0.0	0.0	4.6	9.3	8.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	106	107	117	77	90	232	197	128		148	144	121	131	88	86	124
3	B (mg/L)	0.04	0.08	0.12	0.27	0.28	0.01	0.02	0.11	0.20	0.06	0.06	0.08	0.10	0.31	0.30	0.30
4	Ca (mg/L)	27	33	38	31	28	37	36	33	34	33	26	37	38	32	27	33
5	Cl (mg/L)	10.6	12.5	14.0	7.8	7.9	14.0	18.0	22.0	18.0	10.6	17.3	17.3	16.0	14.0	8.8	9.5
6	CO3 (mg/L)	0.0	4.8	14.4	2.4	0.0	0.0	0.0	6.4	4.8	9.6	0.0	5.6	11.2	9.6	3.2	0.0
7	F (mg/L)	0.29	0.33	0.35	0.16	0.17	0.23	0.33	0.34	0.28	0.13	0.30	0.41	0.42	0.30	0.22	0.24
8	Fe (mg/L)					0.3	0.0	0.1	0.0	0.0	0.0						0.3
9	HCO3 (mg/L)	129	121	114	89	110	143	120	161	163	185	174	137	137	88	89	151
10	K (mg/L)	2.8	3.1	5.5	5.0	6.7	7.3	4.4	5.9	5.5	4.4	3.1	3.5	3.5	5.5	5.7	9.5
11	Mg (mg/L)	17.8	17.5	21.0	9.0	12.3	20.0	21.3	21.7	19.2	16.5	18.9	22.0	21.0	10.3	10.2	12.3
12	Na (mg/L)	7.3	8.8	9.0	5.6	5.6	12.6	4.1	11.7	10.8	6.1	10.9	12.3	11.0	8.9	6.4	6.3
13	NH3-N (mg N/L)	0.00	0.00	0.00	0.69	0.61			0.00	0.00	0.00	0.00	0.00	0.00	0.86	0.50	2.99
14	NO2+NO3 (mg N/L)	5.30	9.75	11.23	7.39	0.97	0.42	0.40	0.29	0.35	0.19	4.72	8.37	11.03	10.83	7.40	0.96
15	NO2-N (mgN/L)	0.26	0.29	0.35	0.39	0.58	0.05	0.06	0.06	0.12	0.05	0.15	0.43	0.43	0.25	0.40	0.38
16	NO3-N (mgN/L)	5.04	9.46	10.88	7.01	0.38	0.37	0.34	0.23	0.23	0.14	4.58	7.94	10.60	10.58	7.01	0.57
17	o-PO4-P (mg P/L)	0.085	0.078	0.155	0.127	0.345	0.034	0.034	0.069	0.059	0.038	0.079	0.121	0.138	0.145	0.248	0.417
18	SiO2 (mg/L)						7.6	4.4	3.3								
19	SO4 (mg/L)	9.1	14.0	16.2	23.4	14.7	13.4	9.6	14.4	16.6	4.2	6.7	16.6	16.0	21.8	13.3	20.0
	BIOLOGICAL/BACTERIOLO																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOPI)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	1.5	1.7	2.2	5.4	6.0				3.4	2.0	1.4	1.4	1.8	10.4	5.2	4.9
2	COD (mg/L)	9.3	4.5	3.0	10.5	8.8					17.5	5.3	4.7	5.0	13.0	11.3	8.3
3	DO (mg/L)	7.4	6.3	5.5	7.1	6.4	7.1	7.3	7.5	7.4	7.9	7.1	7.6	6.3	4.7	5.7	4.9
4	DO_SAT% (%)	78	66	56	70	64	87	87	90	89	95	83	88	72	53	57	55
5	FCol-MPN (MPN/100mL)					3525											2667
6	Tcol-MPN (MPN/100mL)					5375											4167
	TRACE & TOXIC																
1	As (µg/L)					1.05									3.07		9.00
2	Cd (µg/L)					0.09											
3	Cr (µg/L)														14.56		8.00
4	Cu (µg/L)					8.89									16.22		4.00
5	Ni (µg/L)														5.20		137.00
6	Pb (µg/L)					1.27									1.44		1.00
7	Zn (µg/L)					52.50									13.20		52.00
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	68	82	96	79	70	92	89	82	86	82	66	92	96	80	67	83
2	HAR_Total (mgCaCO3/L)	142	155	183	116	121	175	178	188	166	150	145	183	183	122	110	135
3	Na% (%)	10	11	9	9	9	13	5	12	12	8	14	12	11	13	11	9
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.3	0.3	0.3	0.2	0.2	0.4	0.1	0.4	0.4	0.2	0.4	0.4	0.4	0.4	0.3	0.2
	PESTICIDES																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOPI)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood											Winter						
		Jun - Oct											Nov - Feb						
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
	PHYSICAL																		
1	EC_GEN (µmho/cm)	2070	1454	1568									1348	1360	1273	1010	1380	1200	1280
2	pH_FLD (pH units)		7.9	8.3										8.0	7.5	8.0	7.5	8.5	7.0
3	pH_GEN (pH units)	7.8	7.9	7.9									8.1	8.0	7.9	7.9	7.6	7.8	8.6
4	TDS (mg/L)			946											768	610	833	730	770
5	Temp (deg C)	30.0	30.8	26.2									21.7	22.9	24.3	26.5	29.0	29.0	30.0
6	Turb (NTU)															20.4	16.2	11.3	6.2
	CHEMICAL																		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	4.8									4.0	0.0	0.0	0.0	0.0	0.0	
2	ALK-TOT (mgCaCO3/L)	872	872	373									698	808	310	324	300	276	
3	B (mg/L)	0.00	0.04	0.02									0.00	0.03	0.05	0.10	0.16	0.16	0.14
4	Ca (mg/L)	58	62	61									49	60	61	69	64	60	64
5	Cl (mg/L)	35.6	30.9	100.5									25.6	22.5	101.6	130.3	180.3	204.1	210.2
6	CO3 (mg/L)	0.0	0.0	5.8									4.8	0.0	0.0	0.0	0.0	0.0	12.0
7	F (mg/L)	0.43	0.49	0.59									0.32	0.28	0.22	0.28	0.30	0.34	0.36
8	Fe (mg/L)	0.1	0.2	0.1									0.1	0.2	0.1				
9	HCO3 (mg/L)	429	532	443									421	493	397	395	366	337	332
10	K (mg/L)	22.2	24.6	22.1									15.7	23.8	19.9	22.7	21.5	17.2	16.8
11	Mg (mg/L)	47.9	36.1	30.3									33.3	31.0	31.7	36.1	34.1	31.0	32.0
12	Na (mg/L)	79.0	79.7	72.4									53.5	79.7	70.9	82.3	94.5	130.4	138.9
13	NH3-N (mg N/L)															0.21	0.21	0.20	0.25
14	NO2+NO3 (mg N/L)	3.42	2.40	2.65									2.37	2.23	2.14	2.93	7.10	3.07	3.51
15	NO2-N (mgN/L)	0.06	0.04	0.12									0.03	0.03	0.04	0.10	0.10	2.77	0.29
16	NO3-N (mgN/L)	3.36	2.36	2.53									2.34	2.20	2.09	2.83	7.01	0.29	3.22
17	o-PO4-P (mg P/L)	0.194	0.103	0.052									0.137	0.072	0.031	0.083	0.093	0.093	0.093
18	SiO2 (mg/L)	11.4	10.0	9.9									8.5	9.0	7.2				
19	SO4 (mg/L)	22.4	20.5	19.1									16.9	18.7	15.5	20.2	29.8	25.0	20.2
	BIOLOGICAL/BACTERIOLOGICAL																		
1	COD (mg/L)																	21.0	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOOPI)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood											Winter						
		Jun - Oct											Nov - Feb						
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
	TRACE & TOXIC																		
	CHEMICAL INDICES																		
1	HAR_Ca (mgCaCO3/L)	145	156	152									122	149	154	172	159	151	159
2	HAR_Total (mgCaCO3/L)	345	306	279									260	278	286	322	301	280	292
3	Na% (%)	32	34	34									29	36	33	34	39	49	49
4	RSC (-)	1.3	2.6	1.9									1.9	2.5	0.8	0.1	0.0	0.0	0.0
5	SAR (-)	1.9	2.0	1.9									1.4	2.1	1.8	2.0	2.4	3.4	3.5
	PESTICIDES																		

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOPI)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters					Summer										
						Mar - May										
		2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	EC_GEN (µmho/cm)	1150	1090			1447	1853	1633	1730	1440	1300	1510	1430	1400		
2	pH_FLD (pH units)	8.5					8.0	7.7	7.5	6.5	8.0	8.0	7.0			
3	pH_GEN (pH units)	8.2	8.6			8.0	8.3	8.0	8.3	9.1	8.2	8.2	8.3	8.9		
4	TDS (mg/L)	690	610					997	1040	870	790	910	860	800		
5	Temp (deg C)	29.0				25.7	25.2	27.7	30.0	29.0	30.5	27.0	28.0			
6	Turb (NTU)	6.6							32.3	16.6	5.1	10.2	5.5			
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)		59.8			0.0	0.0		39.8		0.0		0.0	39.8		
2	ALK-TOT (mgCaCO3/L)		300			700	856		400		296		464	436		
3	B (mg/L)	0.16	0.16			0.07	0.06	0.16	0.18	0.20	0.18	0.20	0.20	0.91		
4	Ca (mg/L)	77	84			55	64	69	72	67	76	105	103	76		
5	Cl (mg/L)	176.1	173.9			32.0	32.1	135.5	206.3	250.3	232.2	248.9	256.3	188.1		
6	CO3 (mg/L)	0.0	72.0			0.0	0.0	0.0	48.0	48.0	0.0	0.0	0.0	48.0		
7	F (mg/L)	0.36	0.70			0.34	0.44	0.39	0.36	0.40	0.40	0.47	0.40	0.36		
8	Fe (mg/L)					0.1	0.2	0.2								
9	HCO3 (mg/L)	390	220			439	522	483	390	395	361	425	566	434		
10	K (mg/L)	17.6	68.0			20.3	27.2	26.2	26.6	24.6	19.2	22.3	21.9	140.8		
11	Mg (mg/L)	43.3	46.4			37.5	34.1	37.8	39.2	36.1	25.8	39.2	67.1	44.3		
12	Na (mg/L)	110.9	61.0			70.2	87.1	84.2	119.6	160.1	151.1	181.7	162.1	119.6		
13	NH3-N (mg N/L)	0.25	0.41						0.27	0.25	0.15	0.41	0.39	0.41		
14	NO2+NO3 (mg N/L)	7.44	7.42			2.42	3.87	3.48	4.10	3.78	3.99	9.05	9.46	9.77		
15	NO2-N (mgN/L)	0.29	0.41			0.03	0.06	0.13	0.15	0.14	0.34	0.50	0.50	0.80		
16	NO3-N (mgN/L)	7.15	7.01			2.39	3.81	3.35	3.95	3.64	3.64	8.55	8.97	8.97		
17	o-PO4-P (mg P/L)	0.134	0.217			0.179	0.096	0.062	0.114	0.134	0.217	0.196	0.227	0.258		
18	SiO2 (mg/L)					9.1	15.3	10.9								
19	SO4 (mg/L)	36.0	36.0			19.8	25.9	22.7	35.0	39.8	27.8	42.2	39.8	68.2		
	BIOLOGICAL/BACTERIOLOG															
1	COD (mg/L)									90.0	75.0					

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KACHLABRIDGE (GGOOOPI)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters					Summer										
						Mar - May										
		2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	194	211			137	161	174	181	168	189	263	258	189		
2	HAR_Total (mgCaCO3/L)	374	404			293	303	331	344	318	296	426	537	374		
3	Na% (%)	38	21			32	36	34	41	50	51	47	39	32		
4	RSC (-)	0.0	0.0			1.4	2.5	1.3	1.2	1.8	0.0	0.0	0.0	1.3		
5	SAR (-)	2.5	1.3			1.8	2.2	2.0	2.8	3.9	3.8	3.8	3.1	2.7		
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: FATEHGARH	Code	: GG000K6
State	: Uttar Pradesh	District	Farrukhabad
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: GANGA
Division	: M Ganga Div. II, Lucknow	Sub-Division	: M Ganga LR Ganga SD, Bareilly
Drainage Area	: 40096 Sq. Km.	Bank	: Left
Latitude	: 27°24'00"	Longitude	: 79°37'45"
	Opening Date	Closing Date	
Gauge	: 11/14/1971		
Discharge	: 11/14/1971		
Sediment	: 1/23/1976		
Water Quality	: 7/1/1976		

Water Quality Datasheet for the period : 2016-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_GEN (µmho/cm)	240	210	176	183	250	300	220	240	180	210	313	351
4	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
5	pH_FLD (pH units)	8.5	7.0	7.0	7.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
6	pH_GEN (pH units)	8.3	8.3	8.2	7.9	7.8	8.0	7.6	7.8	7.4	8.1	8.1	8.1
7	TDS (mg/L)	150	126	109	114	160	180	130	150	110	130	188	214
8	Temp (deg C)	26.0	26.0	24.0	23.5	23.0	22.5	21.0	17.0	17.0	19.0	23.0	26.0
9	Turb (NTU)	0.8	1.7	1.4	1.6	1.9	0.8	0.6	0.4	0.5	0.6	0.6	0.8
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	72	80	68	64	89	106	106	120	120	144	118	148
3	B (mg/L)	0.03	0.27	0.23	0.24	0.33	0.29	0.26	0.28	0.22	0.24	0.27	0.30
4	Ca (mg/L)	20	30	27	20	29	29	28	27	30	40	35	38
5	Cl (mg/L)	12.1	19.9	3.9	6.4	13.5	16.7	18.5	13.8	10.8	8.6	12.1	14.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.30	0.27	0.21	0.25	0.30	0.36	0.32	0.32	0.27	0.29	0.38	0.42
8	Fe (mg/L)			0.4				0.4				0.2	
9	HCO3 (mg/L)	88	98	83	78	109	129	129	146	146	176	143	181
10	K (mg/L)	6.3	5.9	4.7	5.9	7.0	8.6	7.8	8.2	8.0	8.4	10.9	9.0
11	Mg (mg/L)	19.6	5.1	8.5	8.5	6.4	17.4	15.1	14.7	12.5	11.6	10.3	11.4
12	Na (mg/L)	6.9	12.0	3.2	3.9	7.6	9.0	10.8	9.7	8.3	5.0	9.0	9.5
13	NH3-N (mg N/L)	0.69	0.63	0.56	0.60	0.67	0.58	0.52	0.53	0.49	7.16	0.60	0.64
14	NO2+NO3 (mg N/L)	1.13	0.99	0.96	0.98	0.83	0.97	0.81	0.83	0.71	0.77	0.81	0.88
15	NO2-N (mgN/L)	0.47	0.43	0.39	0.39	0.28	0.37	0.32	0.33	0.29	0.34	0.29	0.32
16	NO3-N (mgN/L)	0.66	0.56	0.57	0.59	0.55	0.60	0.49	0.50	0.42	0.43	0.52	0.56
17	P-Tot (mgP/L)	0.500	0.420	0.320	0.330	0.900	0.800	0.690	0.730	0.560	0.580	0.620	0.660
18	SO4 (mg/L)	22.1	18.2	14.4	16.3	14.9	17.3	23.5	25.0	23.7	21.0	26.9	28.0
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	7.9	2.0	2.3	4.7	4.7	1.4	10.2	2.2	19.6	9.6	5.9	4.0
2	COD (mg/L)	16.0	8.0	6.0	8.0	8.0	5.0	15.0	5.0	23.0	15.0	10.0	8.0
3	DO (mg/L)	2.0	4.7	5.3	5.9	5.7	4.1	4.5	6.9	5.1	4.3	2.9	4.9
4	DO_SAT% (%)	24	58	63	69	66	47	51	71	53	46	34	60
5	FCol-MPN (MPN/100mL)			200	2000	3500	2000	2700	2000	2000	1500	2000	2500
6	Tcol-MPN (MPN/100mL)			1800	3500	5000	5000	7000	15000	8000	3000	4000	3000
	TRACE & TOXIC												
1	As (µg/L)			1.73				2.01				13.00	
2	Cd (µg/L)			0.10				0.02				0.00	
3	Cr (µg/L)			3.42				0.43				3.00	
4	Cu (µg/L)			22.31				5.66				1.00	
5	Ni (µg/L)			0.47				-				20.00	
6	Pb (µg/L)			0.00				1.35				1.00	
7	Zn (µg/L)			0.47				10.20				3.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	49	76	68	49	73	73	70	67	74	99	88	95
2	HAR_Total (mgCaCO3/L)	131	97	103	84	100	145	132	128	126	147	131	142
3	Na% (%)	10	20	6	9	13	11	14	13	12	6	12	12
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
5	SAR (-)	0.3	0.5	0.1	0.2	0.3	0.3	0.4	0.4	0.3	0.2	0.3	0.3
	PESTICIDES												

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Datasheet for the period : 2016-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

Well Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	11/1/2016 B	9/1/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_GEN (μmho/cm)	1390	1147
3	Odour_Code (-)	odour free	odour free
4	pH_FLD (pH units)	8.0	8.0
5	pH_GEN (pH units)	8.2	7.3
6	TDS (mg/L)	870	690
7	Temp (deg C)	25.0	25.0
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	578	520
3	B (mg/L)	0.43	0.36
4	Ca (mg/L)	48	41
5	Cl (mg/L)	215.0	198.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.41	0.36
8	HCO3 (mg/L)	705	634
9	K (mg/L)	110.8	96.7
10	Mg (mg/L)	78.4	68.1
11	Na (mg/L)	160.3	141.4
12	NH3-N (mg N/L)	0.45	0.40
13	NO2+NO3 (mg N/L)	1.12	0.95
14	NO2-N (mgN/L)	0.72	0.60
15	NO3-N (mgN/L)	0.40	0.35
16	P-Tot (mgP/L)	0.530	0.440
17	SO4 (mg/L)	70.8	61.6
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	120	103
2	HAR_Total (mgCaCO3/L)	447	387
3	Na% (%)	37	38
4	RSC (-)	2.7	2.7
5	SAR (-)	3.3	3.1
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : FATEHGARH (GG000K6)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

River Water Summary

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_GEN (μmho/cm)	12	351	176	239
3	pH_FLD (pH units)	12	8.5	7.0	7.2
4	pH_GEN (pH units)	12	8.3	7.4	8
5	TDS (mg/L)	12	214	109	147
6	Temp (deg C)	12	26.0	17.0	22.3
7	Turb (NTU)	12	1.9	0.4	1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	148	64	103
3	B (mg/L)	12	0.33	0.03	0.25
4	Ca (mg/L)	12	40	20	29
5	Cl (mg/L)	12	19.9	3.9	12.5
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.42	0.21	0.31
8	Fe (mg/L)	3	0.4	0.2	0.3
9	HCO3 (mg/L)	12	181	78	125
10	K (mg/L)	12	10.9	4.7	7.6
11	Mg (mg/L)	12	19.6	5.1	11.7
12	Na (mg/L)	12	12.0	3.2	7.9
13	NH3-N (mg N/L)	12	7.16	0.49	1.14
14	NO2+NO3 (mg N/L)	12	1.13	0.71	0.89
15	NO2-N (mgN/L)	12	0.47	0.28	0.35
16	NO3-N (mgN/L)	12	0.66	0.42	0.54
17	P-Tot (mgP/L)	12	0.900	0.320	0.593
18	SO4 (mg/L)	12	28.0	14.4	20.9
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	19.6	1.4	6.2
2	COD (mg/L)	12	23.0	5.0	10.6
3	DO (mg/L)	12	6.9	2.0	4.7
4	DO_SAT% (%)	12	71	24	54
5	FCol-MPN (MPN/100mL)	10	3500	200	2040
6	Tcol-MPN (MPN/100mL)	10	15000	1800	5530
	TRACE & TOXIC				
1	As (μg/L)	3	13.00	1.73	5.58
2	Cd (μg/L)	2	0.10	0.02	0.06
3	Cr (μg/L)	2	3.42	0.43	2.28
4	Cu (μg/L)	3	22.31	1.00	9.66
5	Ni (μg/L)	1	20.00	0.47	10.24
6	Pb (μg/L)	2	1.35	0.00	0.78
7	Zn (μg/L)	3	10.20	0.47	4.56
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	99	49	73
2	HAR_Total (mgCaCO3/L)	12	147	84	122
3	Na% (%)	12	20	6	12
4	RSC (-)	12	0.1	0.0	0
5	SAR (-)	12	0.5	0.1	0.3
	PESTICIDES				

Water Quality Summary for the period : 2016-2017

Station Name : FATEHGARH (GG00OK6)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

Well Water Summary

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_GEN (µmho/cm)	2	1390	1147	1269
2	pH_FLD (pH units)	2	8.0	8.0	8.0
3	pH_GEN (pH units)	2	8.2	7.3	7.7
4	TDS (mg/L)	2	870	690	780
5	Temp (deg C)	2	25.0	25.0	25.0
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	2	578	520	549
3	B (mg/L)	2	0.43	0.36	0.40
4	Ca (mg/L)	2	48	41	45
5	Cl (mg/L)	2	215.0	198.0	206.5
6	CO3 (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.41	0.36	0.39
8	HCO3 (mg/L)	2	705	634	670
9	K (mg/L)	2	110.8	96.7	103.8
10	Mg (mg/L)	2	78.4	68.1	73.3
11	Na (mg/L)	2	160.3	141.4	150.8
12	NH3-N (mg N/L)	2	0.45	0.40	0.42
13	NO2+NO3 (mg N/L)	2	1.12	0.95	1.04
14	NO2-N (mgN/L)	2	0.72	0.60	0.66
15	NO3-N (mgN/L)	2	0.40	0.35	0.38
16	P-Tot (mgP/L)	2	0.530	0.440	0.485
17	SO4 (mg/L)	2	70.8	61.6	66.2
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	2	120	103	112
2	HAR_Total (mgCaCO3/L)	2	447	387	417
3	Na% (%)	2	38	37	38
4	RSC (-)	2	2.7	2.7	2.7
5	SAR (-)	2	3.3	3.1	3.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood Jun - Oct															
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
	PHYSICAL																
1	Q (cumec)	859.1	795.5	884.1	92.62	1389	1847	594.1	1179	459.2	657.6		104.6	83.78	90.15	66.38	206.7
2	EC_GEN (µmho/cm)	286	200	264	262	322	210	238	244	282	244	212	275	273	260	198	283
3	pH_FLD (pH units)	8.5	8.1	7.7	8.1	8.8	7.8	7.5	7.3	7.0	7.2	7.4	8.5	8.3	8.0	8.0	8.4
4	pH_GEN (pH units)	7.8	8.0	7.8	8.0	8.0	7.9	8.3	7.7	8.2	8.3	8.1	8.2	7.8	8.0	8.1	8.0
5	TDS (mg/L)			161	160	195	130	145	148	169	145	132			161	119	169
6	Temp (deg C)	29.3	26.3	28.8	29.2	29.2	26.5	26.8	27.5	28.0	28.4	24.5	18.3	17.3	18.3	18.1	17.3
7	Turb (NTU)				6.5	4.4	3.8	5.9	9.5	4.6		1.5				1.0	2.4
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)		0.0	3.2		0.0	0.0	5.5	0.0	2.4	5.6	0.0	0.0	0.0	0.0		0.0
2	ALK-TOT (mgCaCO3/L)		88	160		172	141	124	119	110	76	75	216	200	147		180
3	B (mg/L)	0.02	0.00	0.03								0.22	0.02	0.01	0.09		
4	Ca (mg/L)	32	29	37	32	34	30	21	34	35	31	25	35	36	36	25	35
5	Cl (mg/L)	16.8	11.6	18.3	21.0	22.8	12.4	12.8	14.0	12.4	10.1	11.1	13.9	16.0	23.0	10.3	24.6
6	CO3 (mg/L)	0.0	0.0	3.8	2.9	2.9	0.0	5.3	0.0	2.9	6.7	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.19	0.35	0.30	0.36	0.37	0.21	0.26	0.23	0.20	0.41	0.27	0.25	0.46	0.39	0.27	0.29
8	Fe (mg/L)	0.1	0.1	0.1	0.0	0.0						0.4	0.1	0.1	0.0	0.0	0.0
9	HCO3 (mg/L)	151	121	187	165	219	180	132	145	128	79	91	128	126	179	155	224
10	K (mg/L)	5.7	4.2	4.3	9.5	7.2	3.4	2.7	3.0	2.7	4.4	5.9	8.3	4.3	4.8	5.3	7.2
11	Mg (mg/L)	16.3	16.5	24.1	24.1	21.8	17.1	16.3	18.0	17.3	15.6	9.6	17.0	19.3	25.2	21.1	22.2
12	Na (mg/L)	10.9	5.3	11.5	14.1	14.8	7.6	9.0	9.4	8.0	6.4	6.7	11.2	4.9	15.8	6.2	15.5
13	NH3-N (mg N/L)				0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.63				0.02	0.00
14	NO2+NO3 (mg N/L)	0.53	0.38	0.33	0.40	0.45	3.35	4.04	6.46	9.80	13.84	0.98	0.24	0.43	0.44	0.34	0.62
15	NO2-N (mgN/L)	0.10	0.04	0.03	0.07	0.07	0.10	0.17	0.15	0.30	0.27	0.39	0.03	0.04	0.09	0.06	0.24
16	NO3-N (mgN/L)	0.43	0.33	0.31	0.33	0.38	3.25	3.87	6.31	9.50	13.56	0.59	0.21	0.39	0.35	0.29	0.38
17	o-PO4-P (mg P/L)	0.019	0.031	0.017	0.091	0.058	0.076	0.068	0.081	0.103	0.192	0.494	0.031	0.039	0.078	0.049	0.256
18	SiO2 (mg/L)	6.8	4.7	4.5									6.1	5.3	5.1		
19	SO4 (mg/L)	18.3	12.2	11.5	16.5	13.5	6.3	6.0	10.5	13.8	21.4	17.2	15.6	10.1	16.7	15.5	8.0
	BIOLOGICAL/BACTERIOLOGICAL																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood															
		Jun - Oct															
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
1	BOD3-27 (mg/L)					3.7	1.1	1.5	1.3	1.4	8.4	4.3				3.5	2.9
2	COD (mg/L)					12.5	4.2	8.4	4.0	4.6	12.0	9.2					
3	DO (mg/L)	7.1	6.4	7.2	6.2	5.3	6.9	6.7	7.6	7.4	5.4	4.7	6.2	6.7	7.5	5.0	5.1
4	DO_SAT% (%)	93	79	93	81	69	85	84	96	94	69	56	66	69	79	53	53
5	FCol-MPN (MPN/100mL)											1900					
6	Tcol-MPN (MPN/100mL)											3433					
	TRACE & TOXIC																
1	As (µg/L)											1.73					
2	Cd (µg/L)											0.10					
3	Cr (µg/L)											3.42					
4	Cu (µg/L)											22.31					
5	Ni (µg/L)																
6	Pb (µg/L)																
7	Zn (µg/L)											0.47					
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	81	73	94	79	84	75	53	84	87	77	63	88	89	89	63	88
2	HAR_Total (mgCaCO3/L)	149	142	194	180	175	146	121	159	159	143	103	159	170	194	151	181
3	Na% (%)	13	7	11	14	15	10	14	11	10	9	12	13	6	15	8	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
5	SAR (-)	0.4	0.2	0.4	0.5	0.5	0.3	0.4	0.3	0.3	0.2	0.3	0.4	0.2	0.5	0.2	0.5
	PESTICIDES																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Winter						Summer										
		Nov - Feb						Mar - May										
		2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																	
1	Q (cumec)	150.3	98.20	284.6	195.7	196.1		56.61	38.31	23.42	14.88	120.7	49.89	75.41	148.8	157.0	155.3	
2	EC_GEN (µmho/cm)	250	228	255	288	280	235	333	313	340	347	270	293	263	337	343	247	291
3	pH_FLD (pH units)	8.1	7.6	7.0	7.3	7.4	7.0	7.9	8.1	8.0	8.2	8.5	7.5	7.7	7.0	7.3	7.2	7.0
4	pH_GEN (pH units)	8.2	7.9	8.2	8.3	8.1	7.7	8.3	8.1	8.0	8.4	8.4	8.1	8.4	8.3	8.7	8.3	8.1
5	TDS (mg/L)	157	138	153	161	172	143			212	208	160	180	159	202	186	153	177
6	Temp (deg C)	19.5	19.4	18.5	22.3	21.1	19.4	24.3	24.2	22.5	23.7	24.7	22.0	19.3	20.7	22.8	23.8	22.7
7	Turb (NTU)	2.6	6.6	3.1			0.6				1.7	2.0	2.8	4.1	4.3			0.7
	CHEMICAL																	
1	Alk-Phen (mgCaCO3/L)	4.0	0.0	0.0	10.6	0.0	0.0	0.0		0.0		0.0	0.0	7.0	12.0	13.3	6.0	0.0
2	ALK-TOT (mgCaCO3/L)	151	109	129	135	58	113	240		152		184	160	126	140	119	80	137
3	B (mg/L)	0.04	0.08	0.08	0.10	0.29	0.26	0.02	0.03	0.15	0.18	0.12	0.10	0.08	0.10	0.19	0.36	0.27
4	Ca (mg/L)	30	28	37	39	27	28	38	42	36	35	37	33	37	42	33	25	38
5	Cl (mg/L)	14.5	11.5	16.0	11.4	12.0	14.9	16.6	20.0	31.4	22.6	22.0	17.3	14.7	19.3	26.0	10.6	11.6
6	CO3 (mg/L)	3.6	0.0	3.6	15.6	0.0	0.0	0.0	0.0	0.0	11.2	8.0	6.4	5.6	14.4	16.0	8.0	0.0
7	F (mg/L)	0.29	0.19	0.26	0.24	0.40	0.32	0.29	0.36	0.49	0.53	0.30	0.32	0.20	0.30	0.44	0.34	0.36
8	Fe (mg/L)						0.4	0.0	0.1	0.0	0.0	0.0						0.2
9	HCO3 (mg/L)	176	133	145	116	71	138	138	130	185	189	229	177	140	142	112	80	167
10	K (mg/L)	3.5	2.3	3.2	4.1	2.3	8.2	8.0	5.1	5.9	8.1	6.0	3.4	3.0	3.5	4.7	4.8	9.4
11	Mg (mg/L)	18.8	17.3	19.3	15.7	19.9	14.9	18.9	23.4	26.1	24.7	21.3	18.5	18.9	21.7	18.9	17.2	11.1
12	Na (mg/L)	10.2	7.6	11.0	7.9	7.5	9.4	12.8	5.9	18.9	13.7	13.8	11.2	10.2	13.0	16.1	7.9	7.8
13	NH3-N (mg N/L)	0.00	0.00	0.00	0.18	0.82	0.53			0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.73	2.80
14	NO2+NO3 (mg N/L)	3.49	4.71	9.22	10.08	11.76	0.83	0.38	0.46	0.51	0.60	0.40	4.94	5.69	11.31	14.80	10.39	0.82
15	NO2-N (mgN/L)	0.12	0.23	0.14	0.27	0.51	0.33	0.05	0.06	0.11	0.14	0.07	0.13	0.23	0.19	0.32	0.49	0.32
16	NO3-N (mgN/L)	3.36	4.48	9.07	9.81	11.24	0.50	0.34	0.40	0.40	0.45	0.33	4.81	5.46	11.12	14.48	9.90	0.50
17	o-PO4-P (mg P/L)	0.039	0.085	0.078	0.145	0.181	0.695	0.038	0.041	0.145	0.079	0.048	0.072	0.072	0.114	0.296	0.179	0.620
18	SiO2 (mg/L)							6.2	4.7	5.7								
19	SO4 (mg/L)	5.2	9.4	13.9	15.0	47.9	22.4	16.2	9.9	18.4	22.6	8.5	6.9	9.4	21.9	21.6	28.2	25.3
	BIOLOGICAL/BACTERIOLOGICAL																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Winter						Summer										
		Nov - Feb						Mar - May										
		2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	1.0	1.3	1.6	7.7	5.1	8.3				4.7	4.0	1.6	1.4	1.8	10.2	6.3	6.5
2	COD (mg/L)	7.0	9.0	4.3	7.5	9.5	12.0					26.0	6.0	4.3	5.0	14.3	12.7	11.0
3	DO (mg/L)	7.0	6.8	6.3	5.1	6.8	5.1	7.1	7.1	7.4	6.1	6.3	6.7	7.2	6.7	4.8	4.4	4.0
4	DO_SAT% (%)	76	74	67	59	76	55	85	85	85	72	76	76	78	74	55	52	47
5	FCol-MPN (MPN/100mL)						2175											2000
6	Tcol-MPN (MPN/100mL)						8750											3333
	TRACE & TOXIC																	
1	As (µg/L)						2.01									2.88		13.00
2	Cd (µg/L)						0.02											
3	Cr (µg/L)															4.61		3.00
4	Cu (µg/L)						5.66									3.84		1.00
5	Ni (µg/L)															4.01		20.00
6	Pb (µg/L)						1.35									1.37		1.00
7	Zn (µg/L)						10.20									11.90		3.00
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	75	70	91	98	68	71	95	106	90	87	93	82	92	105	83	63	94
2	HAR_Total (mgCaCO3/L)	154	142	172	165	151	133	173	204	199	190	182	159	170	195	162	134	140
3	Na% (%)	12	10	12	9	10	13	13	6	17	13	14	13	11	12	16	11	10
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.3	0.4	0.3	0.3	0.4	0.4	0.2	0.6	0.4	0.4	0.4	0.3	0.4	0.5	0.3	0.3
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	PHYSICAL																	
1	EC_GEN (µmho/cm)	4440	3320	2602									3550	2825	1665	1350	1100	2100
2	pH_FLD (pH units)		8.0	8.0										8.0	8.0	8.0	8.0	8.0
3	pH_GEN (pH units)	7.8	7.9	7.7									8.0	7.9	7.9	7.9	8.1	7.9
4	TDS (mg/L)			1564											1008	890	875	1250
5	Temp (deg C)	25.7	25.2	26.1									22.0	20.9	21.1	23.5	24.0	24.0
6	Turb (NTU)															2.5	7.5	6.6
	CHEMICAL																	
1	Alk-Phen (mgCaCO3/L)	0.0		6.4									0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	1150		438									783	888	436	340	308	520
3	B (mg/L)	0.49	0.13	0.10									0.44	0.10	0.06	0.08	0.00	0.22
4	Ca (mg/L)	73	73	72									59	72	68	67	64	105
5	Cl (mg/L)	93.4	92.5	223.0									73.0	83.6	191.7	124.3	144.1	280.5
6	CO3 (mg/L)	1.9	0.0	7.7									0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.67	0.63	0.57									0.67	0.56	0.39	0.49	0.46	0.61
8	Fe (mg/L)	0.3	0.3	0.2									0.3	0.3	0.1			
9	HCO3 (mg/L)	604	500	518									477	538	532	415	376	634
10	K (mg/L)	29.6	37.7	30.8									18.9	35.6	23.9	27.8	21.5	28.5
11	Mg (mg/L)	60.3	49.9	49.3									43.3	49.3	46.9	45.3	44.3	72.2
12	Na (mg/L)	225.0	194.1	152.8									164.3	182.7	132.0	94.3	94.5	181.2
13	NH3-N (mg N/L)															0.17	0.17	0.34
14	NO2+NO3 (mg N/L)	6.78	3.63	6.04									12.96	2.99	1.73	2.30	2.02	4.65
15	NO2-N (mgN/L)	0.08	0.10	0.07									0.07	0.08	0.04	0.12	0.10	0.40
16	NO3-N (mgN/L)	6.70	3.53	5.96									12.89	2.91	1.69	2.17	1.92	4.25
17	o-PO4-P (mg P/L)	0.188	0.163	0.097									0.178	0.127	0.212	0.134	0.114	0.165
18	SiO2 (mg/L)	18.6	17.6	15.0									16.2	15.6	9.6			
19	SO4 (mg/L)	126.5	109.3	75.8									106.7	99.6	63.0	48.0	40.3	40.3
	TRACE & TOXIC																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	181	182	180									148	181	170	168	159	263
2	HAR_Total (mgCaCO3/L)	433	390	385									329	386	366	356	344	563
3	Na% (%)	51	49	44									50	48	42	35	36	40
4	RSC (-)	1.5	0.5	1.1									1.3	1.2	1.5	0.0	0.0	0.0
5	SAR (-)	4.7	4.3	3.4									4.0	4.1	3.0	2.2	2.2	3.3
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																
1	EC_GEN (µmho/cm)	1900	1810	2000	1310	1390	3967	3667	1940	1480	1440	2100	2100	1990	1900	1510	1147
2	pH_FLD (pH units)	8.0	7.0		8.0	8.0		7.8	8.2	8.0	8.0	8.5	8.5	7.0		7.0	8.0
3	pH_GEN (pH units)	8.1	8.3	8.4	8.2	8.2	8.0	7.9	8.1	8.3	9.0	7.9	8.5	8.3	9.0	8.7	7.3
4	TDS (mg/L)	1150	1090	1140	790	870			1237	890	875	1250	1260	1200	1200	920	690
5	Temp (deg C)	25.0	25.0		24.0		23.5	23.5	23.0	24.0	25.5	26.5	22.5	24.0		25.0	25.0
6	Turb (NTU)	7.4	6.8							8.5	4.3	6.6	7.2	6.0			
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)			51.8	0.0	0.0	4.0		21.9	0.0		0.0	0.0	23.9	39.8	43.8	0.0
2	ALK-TOT (mgCaCO3/L)			440	288	578	1115		502	336		560	636	456	340	356	520
3	B (mg/L)	0.20	0.20	0.18	0.47	0.43	0.72	0.11	0.11	0.15	0.18	0.26	0.26	0.20	0.66	0.52	0.36
4	Ca (mg/L)	100	112	112	50	48	71	77	74	69	77	105	157	115	64	68	41
5	Cl (mg/L)	250.3	290.4	332.3	220.1	215.0	85.4	92.8	188.3	160.1	264.5	302.5	338.0	328.4	226.5	291.1	198.0
6	CO3 (mg/L)	0.0	24.0	62.4	0.0	0.0	4.8	0.0	17.6	0.0	38.4	0.0	0.0	28.8	48.0	52.8	0.0
7	F (mg/L)	0.59	0.59	0.99	0.76	0.41	0.90	0.85	0.58	0.55	0.51	0.70	0.74	0.70	1.04	0.47	0.36
8	Fe (mg/L)						0.3	0.3	0.3								
9	HCO3 (mg/L)	639	444	410	351	705	675	577	560	410	488	683	776	498	317	327	634
10	K (mg/L)	25.8	18.4	63.3	120.8	110.8	37.4	41.3	27.4	27.8	26.2	31.7	23.9	23.5	75.5	131.0	96.7
11	Mg (mg/L)	70.1	44.3	49.5	34.0	78.4	48.8	52.2	51.2	46.4	46.4	72.2	75.3	46.4	42.3	69.5	68.1
12	Na (mg/L)	170.4	185.6	194.6	148.1	160.3	192.1	191.1	134.4	94.3	167.7	196.6	228.6	208.8	157.8	178.5	141.4
13	NH3-N (mg N/L)	0.34	0.41	0.55	0.44	0.45				0.22	0.25	0.51	0.60	0.51	0.48	0.51	0.40
14	NO2+NO3 (mg N/L)	5.81	8.37	8.40	8.06	1.12	17.08	3.92	2.82	2.81	5.90	5.84	10.40	10.59	10.34	1.35	0.95
15	NO2-N (mgN/L)	0.34	0.39	0.55	0.77	0.72	0.11	0.11	0.14	0.15	0.15	0.10	0.59	0.50	0.95	0.84	0.60
16	NO3-N (mgN/L)	5.46	7.99	7.85	7.29	0.40	16.97	3.81	2.68	2.66	5.74	5.74	9.81	10.09	9.39	0.50	0.35
17	o-PO4-P (mg P/L)	0.165	0.093	0.186	0.176	0.530	0.231	0.148	0.489	1.550	0.165	0.196	0.165	0.196	0.238	0.207	0.440
18	SiO2 (mg/L)						17.9	20.4	13.6								
19	SO4 (mg/L)	30.2	32.2	46.1	70.6	70.8	122.6	108.2	65.9	59.5	59.5	48.0	39.8	37.9	61.4	80.2	61.6
	TRACE & TOXIC																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : FATEHGARH (GG000K6)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga LR Ganga SD, Bareilly

S.No	Parameters	Summer															
		Mar - May															
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	250	280	280	125	120	176	192	185	172	194	263	392	288	159	170	103
2	HAR_Total (mgCaCO3/L)	542	464	486	266	447	380	410	398	365	387	563	705	481	335	460	387
3	Na% (%)	39	45	43	43	37	50	47	40	34	47	42	40	47	44	38	38
4	RSC (-)	0.0	0.0	0.0	0.5	2.7	3.7	1.3	1.9	0.0	1.6	0.0	0.0	0.0	0.1	0.0	2.7
5	SAR (-)	3.2	3.8	3.9	4.0	3.3	4.3	4.1	2.9	2.2	3.7	3.6	3.8	4.2	3.8	3.6	3.1
	PESTICIDES																

HISTORY SHEET

		Water Year	: 2016-2017
Site	: ANKINGHAT	Code	: GG000I7
State	: Uttar Pradesh	District	Kanpur (Rural)
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: GANGA
Division	: M Ganga Div. II, Lucknow	Sub-Division	: M Ganga SD, Kanpur
Drainage Area	: 82209 Sq. Km.	Bank	: Right
Latitude	: 26°55'00"	Longitude	: 80°05'00"
	Opening Date	Closing Date	
Gauge	: 5/14/1968		
Discharge	: 5/14/1968		
Sediment	: 4/11/1977		
Water Quality	: 2/1/1974		

Water Quality Datasheet for the period : 2016-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Clear	Brown	Brown	Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_GEN (umho/cm)	270	167	195	210	270	260	230	250	260	330	391	204
4	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
5	pH_FLD (pH units)	7.0	7.0	7.0	7.0	7.0	7.5	7.5	8.5	7.0	7.0	7.0	7.5
6	pH_GEN (pH units)	8.4	8.1	7.9	8.1	8.0	8.1	7.8	7.1	7.8	8.0	8.1	8.0
7	TDS (mg/L)	165	105	121	131	170	160	140	153	162	200	235	126
8	Temp (deg C)	23.5	24.0	24.0	26.0	25.5	22.0	20.0	16.0	12.0	21.0	23.5	22.5
9	Turb (NTU)	0.8	1.0	5.5	4.8	6.4	2.0	0.8	0.6	0.8	0.9	0.7	1.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	88	48	56	76	90	93	140	168	132	201	120	136
3	B (mg/L)	0.02	0.18	0.17	0.21	0.28	0.26	0.23	0.27	0.29	0.33	0.34	0.20
4	Ca (mg/L)	21	28	29	28	37	29	23	30	30	47	39	29
5	Cl (mg/L)	16.0	6.0	5.7	13.8	15.6	15.6	13.5	16.0	18.0	23.4	40.1	15.0
6	CO3 (mg/L)	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.40	0.30	0.36	0.38	0.46	0.42	0.40	0.38	0.41	0.44	0.57	0.36
8	Fe (mg/L)			0.3				0.3				0.2	
9	HCO3 (mg/L)	88	59	68	93	110	113	170	205	161	245	146	166
10	K (mg/L)	5.1	4.3	4.7	5.1	7.0	7.0	14.9	7.0	7.4	9.0	19.6	5.1
11	Mg (mg/L)	22.0	4.0	6.3	15.2	8.1	19.1	18.7	24.2	15.9	21.3	13.9	7.2
12	Na (mg/L)	11.0	4.4	4.4	10.4	11.0	10.8	9.0	9.7	10.4	14.0	25.1	10.1
13	NH3-N (mg N/L)	0.74	0.60	0.65	0.66	0.73	0.69	0.65	0.55	0.58	0.69	0.74	0.60
14	NO2+NO3 (mg N/L)	1.21	1.01	1.01	1.09	0.91	0.89	7.22	0.86	0.91	1.30	1.65	0.96
15	NO2-N (mgN/L)	0.59	0.51	0.55	0.59	0.36	0.37	0.36	0.36	0.40	0.44	0.35	0.44
16	NO3-N (mgN/L)	0.62	0.50	0.46	0.50	0.55	0.52	6.87	0.50	0.51	0.86	1.30	0.52
17	P-Tot (mgP/L)	0.570	0.014	0.490	0.520	0.560	0.540	0.490	0.530	0.550	0.610	0.750	0.510
18	SO4 (mg/L)	45.6	19.2	21.1	22.1	24.5	24.0	24.5	26.4	26.7	20.0	40.8	21.0
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	6.2	2.0	3.5	13.7	5.9	2.3	10.6	2.9	11.8	13.7	5.9	3.2
2	COD (mg/L)	16.0	8.0	7.0	26.0	14.0	5.0	14.0	7.0	17.0	19.0	10.0	11.0
3	DO (mg/L)	2.9	4.9	6.1	5.1	4.5	5.1	4.3	7.8	6.9	3.7	2.9	3.9
4	DO_SAT% (%)	34	58	72	63	55	58	47	79	64	42	34	45
5	FCol-MPN (MPN/100mL)			200	1800	5000	3000	3300	3000	5000	8000	2800	*
6	Tcol-MPN (MPN/100mL)			1800	8000	6000	4000	5400	4500	8000	11000	8000	*
	TRACE & TOXIC												
1	As (µg/L)			3.95				8.40				15.00	
2	Cd (µg/L)			0.10				0.02				0.00	
3	Cr (µg/L)			1.13				0.51				2.00	
4	Cu (µg/L)			0.56				7.29				4.00	
5	Ni (µg/L)			2.29				0.22				22.00	
6	Pb (µg/L)			0.71				1.28				1.00	
7	Zn (µg/L)			2.29				8.60				3.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	54	69	72	70	93	72	57	76	75	117	98	73
2	HAR_Total (mgCaCO3/L)	145	86	98	133	127	151	134	176	141	206	155	103
3	Na% (%)	14	9	8	14	15	13	11	10	13	12	23	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.7
5	SAR (-)	0.4	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.9	0.4
	PESTICIDES												

* Samples received late.

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Datasheet for the period : 2016-2017

Station Name : ANKINGHAT (GGOOOI7)

Local River : GANGA

Well Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	11/1/2016 B	5/1/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_GEN (μmho/cm)	700	740
3	Odour_Code (-)	odour free	odour free
4	pH_FLD (pH units)	8.0	8.0
5	pH_GEN (pH units)	7.7	7.9
6	TDS (mg/L)	420	447
7	Temp (deg C)	25.0	25.0
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	336	344
3	B (mg/L)	0.51	0.54
4	Ca (mg/L)	67	71
5	Cl (mg/L)	60.0	63.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.47	0.52
8	HCO3 (mg/L)	410	420
9	K (mg/L)	22.8	23.6
10	Mg (mg/L)	27.9	31.0
11	Na (mg/L)	45.1	48.6
12	NH3-N (mg N/L)	0.20	0.23
13	NO2+NO3 (mg N/L)	1.10	1.17
14	NO2-N (mgN/L)	0.59	0.62
15	NO3-N (mgN/L)	0.51	0.55
16	P-Tot (mgP/L)	0.540	0.580
17	SO4 (mg/L)	20.1	22.4
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	168	176
2	HAR_Total (mgCaCO3/L)	284	305
3	Na% (%)	24	24
4	RSC (-)	1.1	0.8
5	SAR (-)	1.2	1.2
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : ANKINGHAT (GG00017)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

River Water Summary

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_GEN (µmho/cm)	12	391	167	253
3	pH_FLD (pH units)	12	8.5	7.0	7.3
4	pH_GEN (pH units)	12	8.4	7.1	7.9
5	TDS (mg/L)	12	235	105	156
6	Temp (deg C)	12	26.0	12.0	21.7
7	Turb (NTU)	12	6.4	0.6	2.1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	8.0	0.0	0.7
2	ALK-TOT (mgCaCO3/L)	12	201	48	112
3	B (mg/L)	12	0.34	0.02	0.23
4	Ca (mg/L)	12	47	21	31
5	Cl (mg/L)	12	40.1	5.7	16.6
6	CO3 (mg/L)	12	9.6	0.0	0.8
7	F (mg/L)	12	0.57	0.30	0.41
8	Fe (mg/L)	3	0.3	0.2	0.3
9	HCO3 (mg/L)	12	245	59	135
10	K (mg/L)	12	19.6	4.3	8
11	Mg (mg/L)	12	24.2	4.0	14.7
12	Na (mg/L)	12	25.1	4.4	10.8
13	NH3-N (mg N/L)	12	0.74	0.55	0.66
14	NO2+NO3 (mg N/L)	12	7.22	0.86	1.59
15	NO2-N (mgN/L)	12	0.59	0.35	0.44
16	NO3-N (mgN/L)	12	6.87	0.46	1.14
17	P-Tot (mgP/L)	12	0.750	0.014	0.511
18	SO4 (mg/L)	12	45.6	19.2	26.3
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	13.7	2.0	6.8
2	COD (mg/L)	12	26.0	5.0	12.8
3	DO (mg/L)	12	7.8	2.9	4.9
4	DO_SAT% (%)	12	79	34	54
5	FCol-MPN (MPN/100mL)	9	8000	200	3567
6	Tcol-MPN (MPN/100mL)	9	11000	1800	6300
	TRACE & TOXIC				
1	As (µg/L)	3	15.00	3.95	9.12
2	Cd (µg/L)	2	0.10	0.00	0.04
3	Cr (µg/L)	1	2.00	0.51	1.21
4	Cu (µg/L)	3	7.29	4.00	5.63
5	Ni (µg/L)	2	22.00	0.22	8.17
6	Pb (µg/L)	2	1.28	0.71	1.00
7	Zn (µg/L)	3	8.60	2.29	4.63
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	117	54	77
2	HAR_Total (mgCaCO3/L)	12	206	86	138
3	Na% (%)	12	23	8	13
4	RSC (-)	12	0.7	0.0	0.1
5	SAR (-)	12	0.9	0.2	0.4
	PESTICIDES				

Water Quality Summary for the period : 2016-2017

Station Name : ANKINGHAT (GG00017)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

Well Water Summary

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_GEN (µmho/cm)	2	740	700	720
2	pH_FLD (pH units)	2	8.0	8.0	8.0
3	pH_GEN (pH units)	2	7.9	7.7	7.8
4	TDS (mg/L)	2	447	420	434
5	Temp (deg C)	2	25.0	25.0	25.0
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	2	344	336	340
3	B (mg/L)	2	0.54	0.51	0.53
4	Ca (mg/L)	2	71	67	69
5	Cl (mg/L)	2	63.0	60.0	61.5
6	CO3 (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.52	0.47	0.49
8	HCO3 (mg/L)	2	420	410	415
9	K (mg/L)	2	23.6	22.8	23.2
10	Mg (mg/L)	2	31.0	27.9	29.4
11	Na (mg/L)	2	48.6	45.1	46.8
12	NH3-N (mg N/L)	2	0.23	0.20	0.22
13	NO2+NO3 (mg N/L)	2	1.17	1.10	1.13
14	NO2-N (mgN/L)	2	0.62	0.59	0.60
15	NO3-N (mgN/L)	2	0.55	0.51	0.53
16	P-Tot (mgP/L)	2	0.580	0.540	0.560
17	SO4 (mg/L)	2	22.4	20.1	21.3
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	2	176	168	172
2	HAR_Total (mgCaCO3/L)	2	305	284	295
3	Na% (%)	2	24	24	24
4	RSC (-)	2	1.1	0.8	0.9
5	SAR (-)	2	1.2	1.2	1.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter						
		Jun - Oct											Nov - Feb						
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	
	PHYSICAL																		
1	Q (cumec)	956.4	1315	1653	260.4	3745	2405	2045	3346	755.3	1259		148.0	228.4	310.9	258.4	556.6	310.0	
2	EC_GEN (μmho/cm)	374	296	300	354	362	258	308	332	310	266	222	380	418	373	313	350	350	
3	pH_FLD (pH units)	7.5	7.8	7.5	7.3	7.5	7.7	7.7	8.0	9.2	7.4	7.0	7.5	7.5	7.5	7.5	7.4	7.5	
4	pH_GEN (pH units)	8.0	7.9	7.8	8.1	8.1	8.2	8.5	7.9	8.5	8.3	8.1	8.0	7.7	8.1	8.3	8.1	8.0	
5	TDS (mg/L)			183	210	217	157	189	200	191	156	138			229	188	214	214	
6	Temp (deg C)	29.5	27.8	27.3	27.6	27.6	28.5	29.7	26.6	27.9	26.3	24.6	18.1	17.1	17.3	16.3	17.4	16.5	
7	Turb (NTU)				7.0	21.9	2.3	6.9	12.6	4.8		3.7				2.5	3.0	3.2	
	CHEMICAL																		
1	Alk-Phen (mgCaCO3/L)	4.8		0.0		0.0	0.0	13.4	0.0	14.3	2.4	1.6	0.0		0.0		0.0	10.6	
2	ALK-TOT (mgCaCO3/L)	271		105		120	105	136	164	142	80	72	223		138		136	136	
3	B (mg/L)	0.00	0.02	0.03							0.00	0.17	0.00	0.08	0.09		0.00	0.12	
4	Ca (mg/L)	34	38	31	36	29	21	30	48	41	31	29	36	41	33	34	28	27	
5	Cl (mg/L)	16.4	15.5	20.0	19.5	22.4	16.0	15.6	17.6	18.5	10.4	11.4	17.0	22.5	23.5	14.5	25.6	17.4	
6	CO3 (mg/L)	5.8	0.0	0.0	3.8	3.8	2.9	13.0	0.0	17.3	2.9	1.9	0.0	0.0	0.0	13.2	2.4	9.6	
7	F (mg/L)	0.22	0.26	0.50	0.54	0.38	0.26	0.27	0.34	0.41	0.47	0.38	0.24	0.48	0.58	0.50	0.35	0.37	
8	Fe (mg/L)	0.1	0.1	0.2	0.2	0.0						0.3	0.1	0.2	0.1	0.2	0.0		
9	HCO3 (mg/L)	159	146	144	182	183	127	141	204	139	92	83	155	203	168	183	167	150	
10	K (mg/L)	8.8	6.7	9.0	5.5	8.4	4.8	2.9	3.2	5.9	5.0	5.2	11.4	9.8	11.1	6.2	7.7	4.5	
11	Mg (mg/L)	18.5	18.0	18.4	20.4	16.5	12.8	18.2	26.0	20.2	13.2	11.1	20.1	22.7	20.3	19.1	15.5	18.0	
12	Na (mg/L)	22.6	11.6	14.7	11.9	14.5	10.3	11.0	11.2	12.3	6.1	8.2	25.9	20.4	17.4	9.7	15.7	11.8	
13	NH3-N (mg N/L)				0.00	0.00	0.01	0.00	0.00	0.00	0.82	0.68				0.02	0.00	0.00	
14	NO2+NO3 (mg N/L)	0.58	0.83	1.31	1.74	1.48	2.96	5.94	11.24	9.57	9.54	1.05	0.88	0.92	1.53	1.66	1.40	6.05	
15	NO2-N (mgN/L)	0.05	0.04	0.03	0.08	0.10	0.07	0.14	0.31	0.38	0.40	0.52	0.04	0.07	0.08	0.07	0.09	0.17	
16	NO3-N (mgN/L)	0.53	0.78	1.28	1.66	1.38	2.89	5.80	10.93	9.19	9.14	0.53	0.84	0.85	1.44	1.59	1.31	5.89	
17	o-PO4-P (mg P/L)	0.072	0.050	0.021	0.095	0.074	0.143	0.074	0.095	0.093	0.244	0.431	0.057	0.057	0.065	0.067	0.129	0.111	
18	SiO2 (mg/L)	7.0	5.6	6.6									6.3	6.8	7.0				
19	SO4 (mg/L)	21.9	19.0	23.0	33.5	16.3	5.6	6.2	14.2	15.2	16.9	26.5	24.0	22.0	33.0	28.2	9.5	7.3	
	BIOLOGICAL/BACTERIOLOGICAL																		

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
1	BOD3-27 (mg/L)					2.4	2.4	1.6	3.7	4.2	10.7	6.3				5.5	1.9	1.3
2	COD (mg/L)					11.5	6.2	7.2	21.6	22.0	13.8	14.2						8.0
3	DO (mg/L)	7.6	7.1	6.9	7.3	6.7	6.6	6.6	6.4	6.0	4.7	4.7	7.6	6.8	7.2	6.9	6.9	6.6
4	DO_SAT% (%)	100	90	87	92	85	85	86	79	77	58	56	80	70	75	70	71	68
5	FCol-MPN (MPN/100mL)											2333						
6	Tcol-MPN (MPN/100mL)											5267						
	TRACE & TOXIC																	
1	As (µg/L)											3.95						
2	Cd (µg/L)											0.10						
3	Cr (µg/L)																	
4	Cu (µg/L)											5.60						
5	Ni (µg/L)											2.29						
6	Pb (µg/L)																	
7	Zn (µg/L)											2.29						
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	85	95	78	89	73	52	75	120	102	77	71	90	103	82	85	70	67
2	HAR_Total (mgCaCO3/L)	162	170	155	174	142	106	151	228	187	131	118	174	198	166	164	134	142
3	Na% (%)	21	12	16	12	17	17	13	9	12	8	12	23	18	17	11	19	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0
5	SAR (-)	0.8	0.4	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.2	0.3	0.9	0.6	0.6	0.3	0.6	0.4
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																
1	Q (cumec)	443.6	285.6	359.2	328.3		149.6	79.56	110.1	89.44	178.6	106.8	173.3	230.6	360.3	151.3	
2	EC_GEN (µmho/cm)	333	318	420	325	250	423	530	530	590	420	477	410	463	323	313	308
3	pH_FLD (pH units)	8.4	8.8	8.1	7.4	7.6	7.5	7.5	7.5	7.3	7.9	7.5	8.5	9.3	7.8	7.5	7.2
4	pH_GEN (pH units)	8.3	8.5	8.5	8.3	7.7	8.1	8.0	8.2	8.2	8.1	8.3	8.4	8.4	8.7	8.1	8.0
5	TDS (mg/L)	206	191	225	193	154			322	358	253	288	248	283	188	193	187
6	Temp (deg C)	19.6	15.6	15.5	20.3	17.5	24.7	23.2	22.5	22.8	22.0	22.5	19.7	20.2	20.3	23.7	22.3
7	Turb (NTU)	5.5	4.7			1.1				5.7	1.5	4.9	4.3	3.6			0.9
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)	2.7	12.0	11.5	4.0	0.0	0.0		10.0		0.0	10.0	9.0	15.9	15.9	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	160	165	145	99	133	267		184		142	186	166	244	124	94	152
3	B (mg/L)	0.08	0.08	0.11	0.25	0.26	0.00	0.09	0.13	0.20	0.10	0.10	0.12	0.12	0.30	0.24	0.29
4	Ca (mg/L)	42	48	45	43	28	41	42	41	36	30	36	48	69	36	33	38
5	Cl (mg/L)	16.0	18.0	34.2	9.5	15.8	18.0	26.6	29.3	26.7	28.8	21.4	16.0	28.0	24.0	14.7	26.2
6	CO3 (mg/L)	2.4	15.6	13.8	4.8	0.0	0.0	0.0	8.0	14.4	0.0	17.6	7.2	20.8	19.2	0.0	0.0
7	F (mg/L)	0.31	0.36	0.40	0.54	0.40	0.23	0.66	0.69	0.61	0.41	0.35	0.32	0.53	0.31	0.46	0.46
8	Fe (mg/L)					0.3	0.1	0.2	0.2	0.3	0.0						0.2
9	HCO3 (mg/L)	188	176	149	111	162	163	207	211	200	179	197	195	241	112	114	186
10	K (mg/L)	2.9	3.1	6.5	3.0	9.1	9.9	11.5	11.3	10.2	7.4	4.6	3.3	6.9	7.3	5.1	11.2
11	Mg (mg/L)	24.8	24.0	21.9	16.5	19.5	22.7	24.7	24.0	21.7	16.2	22.7	26.4	32.0	15.8	19.3	14.1
12	Na (mg/L)	11.2	12.4	21.4	5.6	9.9	20.2	24.5	20.2	16.2	17.9	14.0	11.6	18.5	16.1	9.2	16.4
13	NH3-N (mg N/L)	0.00	0.00	0.26	0.86	0.62			0.00	0.00	0.13	0.00	0.00	0.00	0.77	0.65	0.68
14	NO2+NO3 (mg N/L)	8.26	12.66	12.89	10.29	2.47	0.96	1.85	1.99	2.22	1.53	6.31	9.22	13.53	10.88	9.97	1.30
15	NO2-N (mgN/L)	0.34	0.29	0.42	0.65	0.37	0.04	0.09	0.12	0.13	0.07	0.15	0.40	0.50	0.41	0.66	0.41
16	NO3-N (mgN/L)	7.92	12.37	12.47	9.63	2.10	0.92	1.76	1.87	2.09	1.46	6.17	8.83	13.03	10.46	9.31	0.89
17	o-PO4-P (mg P/L)	0.132	0.101	0.233	0.227	0.528	0.059	0.072	0.107	0.103	0.162	0.103	0.107	0.138	0.269	0.403	0.623
18	SiO2 (mg/L)						6.5	7.8	5.2								
19	SO4 (mg/L)	10.3	17.2	29.2	43.0	25.4	22.4	25.6	39.7	31.7	9.4	7.7	10.1	20.8	21.3	44.0	27.3
	BIOLOGICAL/BACTERIOLOGI																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	1.8	4.0	2.9	14.1	6.9				2.5	1.4	2.5	1.9	4.6	8.0	10.2	7.6
2	COD (mg/L)	8.5	17.5	9.0	17.8	10.8					10.5	8.7	13.0	26.0	17.3	21.3	13.3
3	DO (mg/L)	6.4	5.5	6.6	4.9	6.0	7.5	6.9	7.4	6.8	7.2	6.4	5.9	6.5	5.2	2.8	3.5
4	DO_SAT% (%)	70	60	68	54	62	90	80	85	79	82	74	63	71	56	33	40
5	FCol-MPN (MPN/100mL)					3575											5400
6	Tcol-MPN (MPN/100mL)					5475											9500
	TRACE & TOXIC																
1	As (µg/L)					8.40									3.66		15.00
2	Cd (µg/L)					0.02											
3	Cr (µg/L)														4.51		2.00
4	Cu (µg/L)					7.29									8.08		4.00
5	Ni (µg/L)														4.21		22.00
6	Pb (µg/L)					1.28									1.31		1.00
7	Zn (µg/L)					8.60									30.50		3.00
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	105	119	112	109	70	103	105	102	91	75	89	119	172	90	82	96
2	HAR_Total (mgCaCO3/L)	209	219	203	177	151	198	208	202	181	142	183	229	305	156	163	155
3	Na% (%)	10	11	18	6	12	18	19	17	15	21	14	10	11	17	11	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2	0.0	0.0	0.0	0.0	0.2
5	SAR (-)	0.3	0.4	0.7	0.2	0.4	0.6	0.7	0.6	0.5	0.7	0.5	0.3	0.5	0.6	0.3	0.6
	PESTICIDES																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter							
		Jun - Oct											Nov - Feb							
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
	PHYSICAL																			
1	EC_GEN (µmho/cm)															1620	1770	1400	1530	540
2	pH_FLD (pH units)															8.0	8.0	8.5	8.5	8.0
3	pH_GEN (pH units)															8.4	7.5	7.0	8.3	8.2
4	TDS (mg/L)															980	1075	850	920	324
5	Temp (deg C)															23.5	25.0	24.0	25.0	22.5
6	Turb (NTU)															3.1	4.2	5.1	4.8	7.4
	CHEMICAL																			
1	Alk-Phen (mgCaCO3/L)															39.8	0.0	0.0		
2	ALK-TOT (mgCaCO3/L)															508	368	340		
3	B (mg/L)															0.12	0.00	0.08	0.12	0.06
4	Ca (mg/L)															86	89	60	126	84
5	Cl (mg/L)															214.4	246.4	276.5	336.5	130.3
6	CO3 (mg/L)															48.0	0.0	0.0	0.0	0.0
7	F (mg/L)															0.49	0.63	0.59	0.65	0.28
8	HCO3 (mg/L)															522	449	415	763	390
9	K (mg/L)															34.8	39.1	35.6	33.6	15.6
10	Mg (mg/L)															62.9	63.9	46.4	78.4	33.0
11	Na (mg/L)															137.1	158.5	178.0	225.2	83.7
12	NH3-N (mg N/L)															0.25	0.17	0.20	0.25	0.10
13	NO2+NO3 (mg N/L)															5.21	6.05	4.20	4.77	5.56
14	NO2-N (mgN/L)															0.15	0.18	0.29	0.29	0.10
15	NO3-N (mgN/L)															5.06	5.87	3.91	4.48	5.46
16	o-PO4-P (mg P/L)															0.093	0.134	0.062	0.093	0.093
17	P-Tot (mgP/L)																			
18	SO4 (mg/L)															80.6	119.0	80.6	13.9	8.2
	BIOLOGICAL/BACTERIOLOGICAL																			
1	COD (mg/L)																43.0	21.0		
	TRACE & TOXIC																			

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG000I7)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter							
		Jun - Oct											Nov - Feb							
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
	CHEMICAL INDICES																			
1	HAR_Ca (mgCaCO3/L)															215	224	151	314	211
2	HAR_Total (mgCaCO3/L)															477	490	344	641	348
3	Na% (%)															37	39	50	42	33
4	RSC (-)															0.7	0.0	0.0	0.0	0.0
5	SAR (-)															2.7	3.1	4.2	3.9	2.0
	PESTICIDES																			

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG00017)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Summer													
		Mar - May													
		2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL														
1	EC_GEN (µmho/cm)	790	750	700				1750	1900	1080	920	790	840	700	740
2	pH_FLD (pH units)		8.5	8.0				8.0	7.5	8.0	8.0	8.0		8.0	8.0
3	pH_GEN (pH units)	8.4	8.6	7.7				8.4	8.9	8.5	8.4	8.2	9.2	8.5	7.8
4	TDS (mg/L)	440	450	420				1060	1150	650	555	480	504	430	447
5	Temp (deg C)		23.0					23.5	26.0	25.0	25.0	23.0		22.0	25.0
6	Turb (NTU)							3.5	4.3	3.0	8.2	8.0			
	CHEMICAL														
1	Alk-Phen (mgCaCO3/L)	71.7	27.9	0.0				31.9	23.9		0.0	0.0	31.9	28.6	0.0
2	ALK-TOT (mgCaCO3/L)	300	276	336				496	576		372	472	328	266	344
3	B (mg/L)	0.09	0.65	0.51				0.20	0.10	0.10	0.08	0.10	0.69	0.59	0.54
4	Ca (mg/L)	81	58	67				88	98	81	101	100	65	52	71
5	Cl (mg/L)	124.3	78.1	60.0				230.0	320.6	214.4	236.4	202.4	81.3	95.8	63.0
6	CO3 (mg/L)	86.4	33.6	0.0				38.4	28.8	24.0	0.0	0.0	38.4	34.5	0.0
7	F (mg/L)	0.91	0.55	0.47				0.59	0.70	0.42	0.44	0.40	0.63	0.51	0.52
8	HCO3 (mg/L)	190	268	410				527	644	498	454	576	322	254	420
9	K (mg/L)	19.2	26.2	22.8				36.4	41.8	28.5	23.1	20.3	27.4	25.4	23.6
10	Mg (mg/L)	62.0	20.7	27.9				63.9	67.1	59.8	38.2	65.0	24.8	19.6	31.0
11	Na (mg/L)	32.9	55.4	45.1				140.5	207.0	138.7	156.4	129.5	61.6	50.4	48.6
12	NH3-N (mg N/L)	0.35	0.27	0.20				0.21	0.25	0.10	0.10	0.25	0.35	0.22	0.23
13	NO2+NO3 (mg N/L)	5.78	8.78	1.10				5.84	6.33	3.14	7.06	7.44	9.99	1.18	1.17
14	NO2-N (mgN/L)	0.46	0.65	0.59				0.17	0.21	0.19	0.19	0.29	0.75	0.63	0.62
15	NO3-N (mgN/L)	5.32	8.13	0.51				5.67	6.12	2.94	6.87	7.15	9.25	0.55	0.55
16	o-PO4-P (mg P/L)	0.155	0.165					0.114	0.165	0.021	0.062	0.165	0.238	0.186	
17	P-Tot (mgP/L)			0.540											0.580
18	SO4 (mg/L)	9.1	22.1	20.1				99.8	159.4	40.3	10.1	13.9	29.8	21.1	22.4
	BIOLOGICAL/BACTERIOLOGI														
1	COD (mg/L)								43.0	25.0					
	TRACE & TOXIC														

Water Quality Seasonal Average for the period: 2006-2017

Station Name : ANKINGHAT (GG000I7)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Summer													
		Mar - May													
		2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	CHEMICAL INDICES														
1	HAR_Ca (mgCaCO3/L)	202	145	168				220	245	202	254	250	164	129	176
2	HAR_Total (mgCaCO3/L)	460	231	284				486	524	451	412	520	267	211	305
3	Na% (%)	13	31	24				37	44	38	44	34	31	31	24
4	RSC (-)	0.0	0.9	1.1				0.3	1.1	0.0	0.0	0.0	1.3	1.1	0.8
5	SAR (-)	0.7	1.6	1.2				2.8	3.9	2.9	3.4	2.5	1.6	1.5	1.2
	PESTICIDES														

HISTORY SHEET

		Water Year	: 2016-2017
Site	: KANPUR	Code	: GG000G7
State	: Uttar Pradesh	District	Unnao
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Ganga
Division	: M Ganga Div. II, Lucknow	Sub-Division	: M Ganga SD, Kanpur
Drainage Area	: 87650 Sq. Km.	Bank	: Left
Latitude	: 26°26'00"	Longitude	: 80°23'00"
	Opening Date	Closing Date	
Gauge	: 5/1/1959		
Discharge	: 5/1/1959		
Sediment	: 7/21/1961		
Water Quality	: 2/1/1970		

Water Quality Datasheet for the period : 2016-2017

Station Name : KANPUR (GG00G7)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Light Brown
3	EC_GEN (µmho/cm)	330	191	188	230	250	280	270	240	240	350	380	340
4	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
5	pH_FLD (pH units)	8.5	8.5	8.5	7.5	7.5	7.5	7.5	8.5	8.0	8.5	8.5	8.0
6	pH_GEN (pH units)	8.5	8.3	8.2	7.9	8.1	8.3	7.9	7.2	8.1	7.9	7.9	8.2
7	TDS (mg/L)	206	110	114	142	160	170	170	151	156	210	228	206
8	Temp (deg C)	26.0	27.5	25.0	25.0	25.0	24.0	15.5	13.0	11.5	19.0	24.0	25.5
9	Turb (NTU)	7.2	6.8	7.8	8.0	6.6	7.4	6.2	4.4	3.2	1.2	2.6	2.3
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	104	68	64	76	94	99	118	164	136	212	140	200
3	B (mg/L)	0.32	0.28	0.27	0.30	0.34	0.38	0.36	0.33	0.32	0.34	0.38	0.34
4	Ca (mg/L)	23	24	28	21	34	29	28	30	36	52	36	25
5	Cl (mg/L)	24.5	9.9	13.8	12.8	19.9	14.4	18.1	12.1	14.6	23.4	23.1	21.0
6	CO3 (mg/L)	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.48	0.34	0.34	0.40	0.44	0.47	0.46	0.42	0.42	0.46	0.55	0.52
8	Fe (mg/L)			0.5				0.5				0.2	
9	HCO3 (mg/L)	107	83	78	93	114	121	143	200	166	259	171	244
10	K (mg/L)	6.3	5.1	4.7	9.0	9.8	11.8	11.3	10.9	11.2	12.5	24.6	12.4
11	Mg (mg/L)	26.9	9.2	7.5	11.9	13.4	21.0	19.6	25.0	17.6	21.7	14.5	17.5
12	Na (mg/L)	15.2	6.9	9.9	9.2	12.2	13.9	12.9	9.0	8.5	14.0	16.1	15.8
13	NH3-N (mg N/L)	0.76	0.63	0.60	0.72	0.74	0.71	0.70	0.65	0.64	0.74	0.79	0.74
14	NO2+NO3 (mg N/L)	1.31	8.45	1.15	1.25	1.00	1.15	1.11	1.06	1.04	1.29	1.84	1.26
15	NO2-N (mgN/L)	0.68	0.61	0.57	0.62	0.35	0.44	0.43	0.39	0.38	0.41	0.39	0.40
16	NO3-N (mgN/L)	0.63	7.85	0.58	0.63	0.65	0.71	0.68	0.67	0.66	0.88	1.45	0.86
17	P-Tot (mgP/L)	0.640	0.016	0.460	0.560	0.590	0.680	0.620	0.580	0.570	0.600	0.730	0.610
18	SO4 (mg/L)	28.8	20.6	20.2	25.4	25.9	27.5	38.4	37.9	37.5	32.0	48.0	28.0
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : KANPUR (GG00OG7)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	7.8	3.9	4.7	7.9	7.9	1.6	2.2	2.6	9.4	15.8	18.7	6.4
2	COD (mg/L)	18.0	16.0	10.0	14.0	12.0	6.0	5.0	5.0	14.0	22.0	34.0	12.0
3	DO (mg/L)	4.1	4.5	4.3	4.7	4.1	5.3	6.3	7.5	6.3	1.0	1.2	3.3
4	DO_SAT% (%)	51	57	52	57	50	63	62	71	57	11	14	40
5	FCol-MPN (MPN/100mL)			900	9000	10000	4000	3200	12000	5000	4000	3600	*
6	Tcol-MPN (MPN/100mL)			12800	13000	14000	6000	6000	15000	8500	6000	5400	*
	TRACE & TOXIC												
1	As (µg/L)			2.71				8.67				15.00	
2	Cd (µg/L)			0.10				0.41				0.00	
3	Cu (µg/L)			5.60				9.85				4.00	
4	Ni (µg/L)			5.94				-				21.00	
5	Pb (µg/L)			0.08				1.04				1.00	
6	Zn (µg/L)			5.94				12.30				4.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	58	60	71	54	86	72	71	75	89	131	89	63
2	HAR_Total (mgCaCO3/L)	169	98	102	103	142	160	153	179	163	221	149	136
3	Na% (%)	16	13	17	15	15	15	14	9	10	11	16	19
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
5	SAR (-)	0.5	0.3	0.4	0.4	0.4	0.5	0.5	0.3	0.3	0.4	0.6	0.6
	PESTICIDES												

* Samples received late.

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Datasheet for the period : 2016-2017

Station Name : KANPUR (GG00OG7)

Local River : Ganga

Well Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	11/1/2016 B	5/1/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_GEN (μmho/cm)	1750	2285
3	Odour_Code (-)	odour free	odour free
4	pH_FLD (pH units)	8.0	8.0
5	pH_GEN (pH units)	7.8	7.7
6	TDS (mg/L)	1100	1346
7	Temp (deg C)	25.0	25.0
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	312	380
3	B (mg/L)	0.69	0.78
4	Ca (mg/L)	69	88
5	Cl (mg/L)	253.0	294.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.58	0.66
8	HCO3 (mg/L)	381	464
9	K (mg/L)	47.8	56.2
10	Mg (mg/L)	53.7	67.1
11	Na (mg/L)	190.7	214.0
12	NH3-N (mg N/L)	0.24	0.30
13	NO2+NO3 (mg N/L)	1.32	1.52
14	NO2-N (mgN/L)	0.85	0.94
15	NO3-N (mgN/L)	0.47	0.58
16	P-Tot (mgP/L)	0.550	0.700
17	SO4 (mg/L)	40.5	58.0
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	172	219
2	HAR_Total (mgCaCO3/L)	396	499
3	Na% (%)	48	45
4	RSC (-)	0.0	0.0
5	SAR (-)	4.2	4.2
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : KANPUR (GG00OG7)

Division : M Ganga Div. II, Lucknow

Local River : Ganga

River Water Summary

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_GEN (µmho/cm)	12	380	188	274
3	pH_FLD (pH units)	12	8.5	7.5	8.1
4	pH_GEN (pH units)	12	8.5	7.2	8
5	TDS (mg/L)	12	228	110	169
6	Temp (deg C)	12	27.5	11.5	21.8
7	Turb (NTU)	12	8.0	1.2	5.3
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	8.0	0.0	0.7
2	ALK-TOT (mgCaCO3/L)	12	212	64	123
3	B (mg/L)	12	0.38	0.27	0.33
4	Ca (mg/L)	12	52	21	31
5	Cl (mg/L)	12	24.5	9.9	17.3
6	CO3 (mg/L)	12	9.6	0.0	0.8
7	F (mg/L)	12	0.55	0.34	0.44
8	Fe (mg/L)	3	0.5	0.2	0.4
9	HCO3 (mg/L)	12	259	78	148
10	K (mg/L)	12	24.6	4.7	10.8
11	Mg (mg/L)	12	26.9	7.5	17.1
12	Na (mg/L)	12	16.1	6.9	12
13	NH3-N (mg N/L)	12	0.79	0.60	0.7
14	NO2+NO3 (mg N/L)	12	8.45	1.00	1.82
15	NO2-N (mgN/L)	12	0.68	0.35	0.47
16	NO3-N (mgN/L)	12	7.85	0.58	1.35
17	P-Tot (mgP/L)	12	0.730	0.016	0.555
18	SO4 (mg/L)	12	48.0	20.2	30.9
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	18.7	1.6	7.4
2	COD (mg/L)	12	34.0	5.0	14
3	DO (mg/L)	12	7.5	1.0	4.4
4	DO_SAT% (%)	12	71	11	49
5	FCol-MPN (MPN/100mL)	9	12000	900	5744
6	Tcol-MPN (MPN/100mL)	9	15000	5400	9633
	TRACE & TOXIC				
1	As (µg/L)	3	15.00	2.71	8.79
2	Cd (µg/L)	2	0.41	0.00	0.17
3	Cu (µg/L)	3	9.85	4.00	6.48
4	Ni (µg/L)	2	21.00	5.94	13.47
5	Pb (µg/L)	2	1.04	0.08	0.71
6	Zn (µg/L)	3	12.30	4.00	7.41
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	131	54	76
2	HAR_Total (mgCaCO3/L)	12	221	98	148
3	Na% (%)	12	19	9	14
4	RSC (-)	12	1.3	0.0	0.1
5	SAR (-)	12	0.6	0.3	0.4
	PESTICIDES				

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Summary for the period : 2016-2017

Station Name : KANPUR (GG00OG7)

Division : M Ganga Div. II, Lucknow

Local River : Ganga

Well Water Summary

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_GEN (µmho/cm)	2	2285	1750	2018
2	pH_FLD (pH units)	2	8.0	8.0	8.0
3	pH_GEN (pH units)	2	7.8	7.7	7.7
4	TDS (mg/L)	2	1346	1100	1223
5	Temp (deg C)	2	25.0	25.0	25.0
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	2	380	312	346
3	B (mg/L)	2	0.78	0.69	0.73
4	Ca (mg/L)	2	88	69	78
5	Cl (mg/L)	2	294.0	253.0	273.5
6	CO3 (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.66	0.58	0.62
8	HCO3 (mg/L)	2	464	381	422
9	K (mg/L)	2	56.2	47.8	52.0
10	Mg (mg/L)	2	67.1	53.7	60.4
11	Na (mg/L)	2	214.0	190.7	202.3
12	NH3-N (mg N/L)	2	0.30	0.24	0.27
13	NO2+NO3 (mg N/L)	2	1.52	1.32	1.42
14	NO2-N (mgN/L)	2	0.94	0.85	0.90
15	NO3-N (mgN/L)	2	0.58	0.47	0.52
16	P-Tot (mgP/L)	2	0.700	0.550	0.625
17	SO4 (mg/L)	2	58.0	40.5	49.3
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	2	219	172	196
2	HAR_Total (mgCaCO3/L)	2	499	396	447
3	Na% (%)	2	48	45	46
4	RSC (-)	2	0.0	0.0	0.0
5	SAR (-)	2	4.2	4.2	4.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG00G7)

Local River : Ganga

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood															
		Jun - Oct															
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
	PHYSICAL																
1	Q (cumec)	805.0	1032	2269	410.3	5743	3119	2237	3696	705.2	880.7		190.1	248.9	363.6	305.7	663.2
2	EC_GEN (µmho/cm)	386	326	318	338	388	276	320	310	326	294	238	393	413	380	325	368
3	pH_FLD (pH units)	8.8	8.5	8.5	8.8	8.6	8.5	9.0	8.5	8.6	7.7	8.1	8.5	8.6	8.5	8.8	8.4
4	pH_GEN (pH units)	8.1	7.9	7.8	8.2	8.1	8.1	8.5	7.9	8.5	8.3	8.2	8.3	7.9	8.1	8.1	8.1
5	TDS (mg/L)			198	209	234	171	196	187	198	171	146			228	196	224
6	Temp (deg C)	32.6	32.0	31.6	32.1	30.9	30.2	30.7	30.8	27.6	26.3	25.7	21.5	20.8	21.0	20.0	21.9
7	Turb (NTU)				14.5	11.0	3.4	7.3	11.4	4.6		7.3				2.2	3.4
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)	3.2	0.0	0.0		0.0	0.0	11.3	0.0	12.0	4.8	1.6	3.0	0.0	4.0		0.0
2	ALK-TOT (mgCaCO3/L)	261	275	122		165	165	156	135	142	87	81	266	330	119		192
3	B (mg/L)	0.12	0.12	0.06								0.30	0.10	0.10	0.10		
4	Ca (mg/L)	40	36	33	37	35	34	32	45	48	34	26	39	43	33	36	36
5	Cl (mg/L)	21.9	16.8	18.7	19.6	21.2	13.1	14.8	16.5	17.2	12.0	16.2	23.5	25.6	19.0	19.0	22.0
6	CO3 (mg/L)	3.8	0.0	0.0	2.9	3.8	3.8	13.8	0.0	14.4	5.8	1.9	3.6	0.0	4.8	4.8	3.6
7	F (mg/L)	0.24	0.32	0.48	0.59	0.47	0.23	0.23	0.36	0.37	0.46	0.40	0.27	0.44	0.55	0.58	0.32
8	Fe (mg/L)	0.2	0.2	0.1	0.1	0.0						0.5	0.1	0.2	0.1	0.2	0.0
9	HCO3 (mg/L)	155	168	149	157	208	208	156	179	144	95	95	159	201	135	182	229
10	K (mg/L)	8.1	7.4	5.6	6.3	8.2	4.5	3.0	3.0	5.7	5.5	7.0	15.2	10.3	5.7	6.8	7.1
11	Mg (mg/L)	22.5	19.8	17.9	20.8	20.0	20.8	20.0	23.1	20.4	12.8	13.8	20.9	23.7	19.5	21.7	22.9
12	Na (mg/L)	27.5	16.4	11.7	10.7	13.6	8.2	10.3	10.8	11.6	7.7	10.7	24.0	22.1	11.2	11.5	13.9
13	NH3-N (mg N/L)				0.14	0.15	0.01	0.00	0.00	0.00	0.83	0.69				0.14	0.00
14	NO2+NO3 (mg N/L)	0.77	1.10	0.89	1.28	1.40	3.15	5.90	9.97	11.00	10.24	2.63	1.06	0.93	1.10	1.27	1.25
15	NO2-N (mgN/L)	0.05	0.06	0.04	0.11	0.09	0.06	0.94	0.30	0.35	0.32	0.56	0.04	0.08	0.08	0.10	0.10
16	NO3-N (mgN/L)	0.71	1.04	0.86	1.16	1.31	3.08	4.95	9.67	10.65	9.92	2.07	1.02	0.84	1.02	1.17	1.15
17	o-PO4-P (mg P/L)	0.079	0.058	0.029	0.079	0.124	0.120	0.074	0.087	0.093	0.209	0.453	0.067	0.057	0.049	0.080	0.160
18	SiO2 (mg/L)	7.9	5.9	4.3									7.1	7.1	5.1		
19	SO4 (mg/L)	23.8	22.6	16.6	17.6	12.8	4.1	5.4	15.0	16.2	17.4	24.2	25.7	24.6	19.9	17.3	7.7
	BIOLOGICAL/BACTERIOLOGICAL																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG00OG7)

Local River : Ganga

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood															
		Jun - Oct															
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
1	BOD3-27 (mg/L)	5.1	5.2	4.7	4.7	5.3	5.7	4.0	4.7	4.4	10.2	6.4	4.9	5.2	4.3	5.1	3.0
2	COD (mg/L)					4.0	16.6	22.2	30.0	24.8	15.4	14.0					
3	DO (mg/L)	7.2	6.2	7.2	6.9	5.3	6.0	5.6	6.0	5.3	4.9	4.4	7.4	7.2	7.3	6.7	7.1
4	DO_SAT% (%)	99	84	98	94	71	79	75	80	67	61	53	84	80	82	73	81
5	FCol-MPN (MPN/100mL)											6633					
6	Tcol-MPN (MPN/100mL)											13267					
	TRACE & TOXIC																
1	As (µg/L)											2.71					
2	Cd (µg/L)											0.10					
3	Cr (µg/L)																
4	Cu (µg/L)											5.60					
5	Ni (µg/L)											5.94					
6	Pb (µg/L)																
7	Zn (µg/L)											5.94					
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	100	91	82	92	88	85	79	114	121	86	65	97	108	83	89	89
2	HAR_Total (mgCaCO3/L)	193	174	156	179	171	172	163	210	206	139	123	184	206	164	179	185
3	Na% (%)	22	16	13	11	14	9	12	10	10	10	15	21	18	12	12	14
4	RSC (-)	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
5	SAR (-)	0.8	0.5	0.4	0.3	0.5	0.3	0.3	0.3	0.3	0.3	0.4	0.8	0.7	0.4	0.4	0.4
	PESTICIDES																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG00G7)

Local River : Ganga

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Winter						Summer										
		Nov - Feb						Mar - May										
		2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																	
1	Q (cumec)	406.1	453.6	353.4	260.7	184.2		196.9	111.7	109.3	110.0	258.3	171.9	215.7	240.7	225.2	106.5	
2	EC_GEN (μmho/cm)	405	335	330	418	320	258	447	513	480	580	420	463	397	453	320	300	357
3	pH_FLD (pH units)	8.3	8.8	8.9	8.3	7.6	7.9	8.5	9.0	8.7	9.0	9.0	8.7	8.3	9.0	8.2	8.5	8.3
4	pH_GEN (pH units)	8.0	8.1	8.4	8.4	8.4	7.9	8.0	7.8	8.3	8.6	8.5	8.3	8.4	8.6	8.6	8.3	8.0
5	TDS (mg/L)	248	202	198	232	196	162			285	352	257	282	239	275	188	184	215
6	Temp (deg C)	18.8	18.6	19.0	14.8	16.0	16.0	27.7	26.7	26.7	27.7	24.5	24.0	25.3	22.3	21.2	21.7	22.8
7	Turb (NTU)	2.5	4.2	4.4			5.3				3.1	2.2	4.1	4.0	4.6			2.0
	CHEMICAL																	
1	Alk-Phen (mgCaCO3/L)	10.0	2.5	8.0	16.9	7.0	0.0	0.0	0.0	8.0		17.9	13.3	5.3	15.9	10.6	5.5	0.0
2	ALK-TOT (mgCaCO3/L)	177	156	180	147	97	129	291	341	130		246	197	156	222	115	82	184
3	B (mg/L)	0.14	0.12	0.10	0.13	0.35	0.35	0.11	0.11	0.11	0.20	0.12	0.10	0.16	0.12	0.33	0.32	0.35
4	Ca (mg/L)	35	44	48	43	41	31	42	46	38	41	42	37	46	64	33	31	38
5	Cl (mg/L)	13.0	18.5	21.4	30.4	9.5	14.8	24.0	27.9	24.0	25.2	25.3	20.0	16.0	27.5	27.3	16.7	22.5
6	CO3 (mg/L)	12.0	3.0	9.6	20.4	8.4	0.0	0.0	0.0	6.4	12.8	20.8	16.0	6.4	19.2	12.8	6.6	0.0
7	F (mg/L)	0.24	0.31	0.33	0.40	0.52	0.44	0.35	0.65	0.63	0.75	0.40	0.27	0.35	0.48	0.37	0.44	0.51
8	Fe (mg/L)						0.5	0.1	0.2	0.1	0.3	0.0						0.2
9	HCO3 (mg/L)	192	184	200	138	101	158	177	208	150	224	259	208	177	221	114	86	224
10	K (mg/L)	3.4	3.4	3.9	5.9	4.8	11.3	12.6	10.8	6.5	10.0	8.6	3.4	3.1	6.6	6.5	5.6	16.5
11	Mg (mg/L)	22.2	25.0	24.0	23.5	15.5	20.8	21.3	25.5	21.0	23.4	24.1	23.4	24.4	29.9	18.9	12.3	17.9
12	Na (mg/L)	9.1	13.0	14.7	18.9	6.1	11.1	25.3	22.8	12.9	16.6	15.0	13.2	11.5	18.6	18.4	10.0	15.3
13	NH3-N (mg N/L)	0.00	0.00	0.00	0.27	0.81	0.67			0.17	0.25	0.07	0.00	0.00	0.00	0.86	0.57	0.76
14	NO2+NO3 (mg N/L)	5.67	9.07	11.75	12.45	10.25	1.09	1.51	0.99	1.32	1.87	1.57	6.67	9.78	14.30	10.24	9.25	1.46
15	NO2-N (mgN/L)	0.10	0.34	0.29	0.30	0.58	0.41	0.05	0.08	0.10	0.16	0.12	2.87	0.29	0.43	0.15	0.63	0.40
16	NO3-N (mgN/L)	5.57	8.72	11.45	12.16	9.67	0.68	1.46	0.91	1.21	1.71	1.44	3.80	9.48	13.87	10.09	8.62	1.06
17	o-PO4-P (mg P/L)	0.106	0.132	0.310	0.225	0.191	0.612	0.086	0.069	0.072	0.172	0.193	0.103	0.072	0.138	0.251	0.362	0.647
18	SiO2 (mg/L)							8.3	7.4	5.1								
19	SO4 (mg/L)	5.5	10.3	15.0	28.0	39.2	35.3	28.3	24.8	22.7	22.1	7.0	6.4	11.0	20.8	27.0	28.6	36.0
	BIOLOGICAL/BACTERIOLOGIC																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG00G7)

Local River : Ganga

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Winter						Summer										
		Nov - Feb						Mar - May										
		2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	BOD3-27 (mg/L)	3.6	3.6	4.2	3.3	12.6	3.9	4.7	5.6	6.1	7.6	6.3	4.2	3.3	4.4	10.3	10.9	13.6
2	COD (mg/L)	11.9	17.5	17.5	8.5	18.5	7.5					36.5	32.7	16.3	25.3	19.0	19.7	22.7
3	DO (mg/L)	5.5	5.4	6.3	6.5	5.8	6.3	7.4	7.0	6.7	5.4	6.7	5.7	3.5	5.9	5.7	4.0	1.8
4	DO_SAT% (%)	59	61	68	64	59	63	94	87	83	67	79	68	43	68	63	46	22
5	FCol-MPN (MPN/100mL)						6050											3800
6	Tcol-MPN (MPN/100mL)						8875											5700
	TRACE & TOXIC																	
1	As (µg/L)						8.67									3.24		15.00
2	Cd (µg/L)						0.41											
3	Cr (µg/L)															3.87		
4	Cu (µg/L)						9.85									6.68		4.00
5	Ni (µg/L)															5.07		21.00
6	Pb (µg/L)						1.04									1.78		1.00
7	Zn (µg/L)						12.30									13.70		4.00
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	87	110	120	108	103	77	106	115	96	102	106	92	115	161	83	78	94
2	HAR_Total (mgCaCO3/L)	180	214	220	205	168	164	195	221	183	200	207	189	216	285	162	130	169
3	Na% (%)	10	12	12	16	7	12	21	18	13	15	13	13	10	12	19	14	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.2	0.0	0.0	0.0	0.0	0.4
5	SAR (-)	0.3	0.4	0.4	0.6	0.2	0.4	0.8	0.7	0.4	0.5	0.5	0.4	0.3	0.5	0.6	0.4	0.5
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG000G7)

Local River : Ganga

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter						
		Jun - Oct											Nov - Feb						
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
	PHYSICAL																		
1	EC_GEN (µmho/cm)	2090	1928	2284									1570	1720	1950	1452	1900	2600	1790
2	pH_FLD (pH units)	7.5	7.5	7.4									7.5	7.5	7.0	8.5	8.5	8.5	8.5
3	pH_GEN (pH units)	7.8	7.8	7.7									7.9	7.6	7.9	7.8	7.9	7.1	7.4
4	TDS (mg/L)			1370											1060	870	1150	1570	1080
5	Temp (deg C)	23.3	25.7	25.6									24.0	23.5	24.1	26.0	27.5	26.5	25.0
6	Turb (NTU)															9.7	2.0	3.2	7.6
	CHEMICAL																		
1	Alk-Phen (mgCaCO3/L)	2.4	0.0	0.0									0.0	0.0	0.0	0.0	0.0	0.0	
2	ALK-TOT (mgCaCO3/L)	560	871	368									464	798	362	280	188	504	
3	B (mg/L)	0.09	0.09	0.15									0.08	0.13	0.17	0.20	0.00	0.16	0.10
4	Ca (mg/L)	75	51	43									58	40	45	46	55	65	50
5	Cl (mg/L)	91.3	79.3	189.9									69.0	59.1	181.8	76.0	138.1	250.3	112.2
6	CO3 (mg/L)	2.9	0.0	0.0									0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.64	0.36	0.63									0.28	0.38	0.60	0.65	0.80	0.95	0.61
8	Fe (mg/L)	2.6	0.2	0.2									0.2	0.2	0.2				
9	HCO3 (mg/L)	677	531	444									566	486	442	342	229	615	439
10	K (mg/L)	30.2	28.9	27.3									23.4	24.1	26.7	25.0	31.7	39.9	17.6
11	Mg (mg/L)	66.0	39.4	39.3									42.3	34.3	42.8	45.3	49.5	83.5	65.0
12	Na (mg/L)	202.5	177.5	136.3									158.5	139.6	124.0	47.2	88.8	163.5	80.7
13	NH3-N (mg N/L)															0.17	0.34	0.34	0.10
14	NO2+NO3 (mg N/L)	6.33	4.61	4.51									4.35	3.67	4.14	4.73	4.75	7.93	4.12
15	NO2-N (mgN/L)	0.16	0.07	0.08									0.08	0.05	0.12	0.10	0.14	0.29	0.19
16	NO3-N (mgN/L)	6.17	4.53	4.44									4.27	3.62	4.02	4.64	4.61	7.64	3.92
17	o-PO4-P (mg P/L)	0.242	0.132	0.132									0.207	0.062	0.059	0.072	0.114	0.165	0.062
18	SiO2 (mg/L)	19.9	14.1	14.9									14.0	11.6	15.6				
19	SO4 (mg/L)	79.6	62.9	71.7									57.0	57.0	65.8	48.0	159.4	159.4	45.1
	TRACE & TOXIC																		
	CHEMICAL INDICES																		

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GGOOOG7)

Local River : Ganga

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter						
		Jun - Oct											Nov - Feb						
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
1	HAR_Ca (mgCaCO3/L)	188	127	108									144	100	113	116	138	164	125
2	HAR_Total (mgCaCO3/L)	463	291	272									320	243	291	305	344	511	395
3	Na% (%)	47	54	49									50	53	46	23	34	39	30
4	RSC (-)	2.2	2.9	1.9									2.9	3.1	1.5	0.0	0.0	0.0	0.0
5	SAR (-)	4.1	4.5	3.6									3.9	3.9	3.2	1.2	2.1	3.2	1.8
	PESTICIDES																		

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG000G7)

Local River : Ganga

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters					Summer										
		2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	EC_GEN (µmho/cm)	1770	1800	1660	1750	1970	2333	2043	1450	2000	2300	2000	1990	2000	1180	2285
2	pH_FLD (pH units)	7.5		9.0	8.0	7.5	7.5	7.7	8.5	8.5	8.0	8.5	8.5		9.0	8.0
3	pH_GEN (pH units)	8.3	8.5	8.4	7.8	7.9	7.9	7.8	8.1	8.0	8.0	8.1	8.2	8.9	8.7	7.7
4	TDS (mg/L)	1060	1000	1010	1100			1220	870	1215	1390	1210	1200	1100	719	1346
5	Temp (deg C)	22.5		21.0		24.0	24.5	25.0	26.0	26.0	26.0	25.0	23.0		22.0	25.0
6	Turb (NTU)	6.5							1.1	2.1	3.5	7.9	7.2			
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)		79.7	39.8	0.0	0.0	2.7	21.9	0.0	0.0	0.0	0.0	0.0	47.8	32.6	0.0
2	ALK-TOT (mgCaCO3/L)		500	360	312	500	840	444	288	350	480	408	544	444	302	380
3	B (mg/L)	0.10	0.12	0.75	0.69	0.13	0.13	0.17	0.24	0.10	0.10	0.14	0.14	1.00	0.62	0.78
4	Ca (mg/L)	107	74	65	69	57	46	49	52	58	60	119	126	77	55	88
5	Cl (mg/L)	136.3	262.3	252.0	253.0	82.1	69.3	197.6	90.2	168.3	162.2	148.0	192.4	263.4	287.5	294.0
6	CO3 (mg/L)	0.0	96.0	48.0	0.0	0.0	3.2	17.6	0.0	0.0	0.0	0.0	0.0	57.6	39.3	0.0
7	F (mg/L)	0.53	0.70	0.48	0.58	0.54	0.80	0.72	0.72	0.86	0.70	0.72	0.70	0.67	0.40	0.66
8	Fe (mg/L)					0.2	0.3	0.3								
9	HCO3 (mg/L)	449	415	342	381	610	509	521	351	427	586	498	664	425	288	464
10	K (mg/L)	14.9	48.1	7.9	47.8	28.7	28.5	30.9	27.8	32.5	27.0	20.7	18.4	55.1	41.1	56.2
11	Mg (mg/L)	42.3	39.2	54.7	53.7	44.3	38.2	52.2	47.4	51.5	79.3	49.5	70.1	72.2	46.4	67.1
12	Na (mg/L)	88.3	259.9	180.7	190.7	190.4	145.8	138.6	55.2	96.1	102.3	98.7	125.8	206.3	160.5	214.0
13	NH3-N (mg N/L)	0.20	0.51	0.38	0.24				0.29	0.41	1.97	0.25	0.39	0.44	0.29	0.30
14	NO2+NO3 (mg N/L)	6.78	6.83	1.31	1.32	5.05	18.77	4.04	4.16	5.91	5.61	7.81	9.32	10.02	1.18	1.52
15	NO2-N (mgN/L)	0.19	0.39	0.85	0.85	0.10	0.08	0.15	0.14	0.15	0.29	0.39	0.50	0.91	0.77	0.94
16	NO3-N (mgN/L)	6.59	6.45	0.46	0.47	4.96	18.69	3.89	4.02	5.76	5.32	7.43	8.83	9.11	0.41	0.58
17	o-PO4-P (mg P/L)	0.062	0.124	0.500	0.550	0.165	0.093	0.127	0.083	0.134	0.930	0.134	0.134	0.186	0.134	0.700
18	SiO2 (mg/L)					13.9	16.1	17.7								
19	SO4 (mg/L)	48.0	21.1	22.5	40.5	61.1	76.6	64.0	140.2	119.0	121.0	61.9	30.2	28.8	27.8	58.0
	TRACE & TOXIC															
	CHEMICAL INDICES															

Water Quality Seasonal Average for the period: 2006-2017

Station Name : KANPUR (GG00OG7)

Local River : Ganga

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Summer														
		Mar - May														
		2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	HAR_Ca (mgCaCO3/L)	267	185	163	172	142	116	122	129	146	151	297	314	194	138	219
2	HAR_Total (mgCaCO3/L)	443	349	391	396	327	275	340	326	361	481	503	606	494	331	499
3	Na% (%)	30	58	50	48	53	51	45	25	34	30	29	30	44	48	45
4	RSC (-)	0.0	3.1	0.0	0.0	3.5	3.0	2.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.8	6.1	4.0	4.2	4.6	3.8	3.3	1.3	2.2	2.0	1.9	2.2	4.1	3.9	4.2
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: BHITAURA	Code	: GG000E7
State	: Uttar Pradesh	District	Fatehpur
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: GANGA
Division	: M Ganga Div. II, Lucknow	Sub-Division	: M Ganga SD, Kanpur
Drainage Area	: 90400 Sq. Km.	Bank	: Right
Latitude	: 26°02'30"	Longitude	: 80°50'00"
	Opening Date	Closing Date	
Gauge	: 2/21/1971		
Discharge	: 2/21/1971		
Sediment	: 2/28/1977		
Water Quality	: 6/1/1976		

Water Quality Datasheet for the period : 2016-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Light Brown	Light Brown	Brown	Brown	Clear	Light Brown	Light Brown	Brown	Clear	Light Brown	Light Brown	Clear
3	EC_GEN (µmho/cm)	550	290	200	230	270	300	290	380	290	350	480	526
4	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
5	pH_FLD (pH units)	7.5	7.5	7.5	7.5	7.5	7.5	8.5	8.5	7.0	7.5	7.5	7.5
6	pH_GEN (pH units)	8.0	8.1	8.1	8.0	7.8	8.0	7.8	8.1	7.6	7.8	7.9	8.2
7	TDS (mg/L)	330	178	123	143	170	180	178	238	181	218	288	319
8	Temp (deg C)	31.0	31.0	31.0	31.0	30.0	22.0	21.0	15.0	16.0	21.0	25.0	26.0
9	Turb (NTU)	1.8	2.0	4.8	5.0	0.7	0.8	1.4	4.2	0.5	3.6	1.2	1.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	132	88	72	88	98	100	164	184	148	184	145	200
3	B (mg/L)	0.03	0.29	0.26	0.30	0.36	0.40	0.35	0.45	0.58	0.60	0.62	0.66
4	Ca (mg/L)	26	36	28	30	29	25	28	28	32	42	37	46
5	Cl (mg/L)	48.6	22.0	12.4	16.3	15.6	18.8	17.0	30.2	20.0	40.6	40.1	43.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.49	0.38	0.32	0.34	0.38	0.40	0.38	0.44	0.38	0.41	0.72	0.76
8	Fe (mg/L)			0.5				0.5				0.3	
9	HCO3 (mg/L)	161	107	88	107	119	121	200	224	180	224	177	244
10	K (mg/L)	10.2	15.6	7.0	12.5	14.1	15.2	18.8	25.0	22.8	23.6	25.0	26.8
11	Mg (mg/L)	21.6	6.7	9.2	11.9	10.8	20.4	16.9	24.7	21.3	18.2	21.6	23.7
12	Na (mg/L)	29.9	12.4	9.4	10.1	11.0	12.0	12.4	18.6	14.7	22.0	26.9	28.1
13	NH3-N (mg N/L)	0.81	0.67	0.58	0.62	0.56	0.62	0.60	0.70	0.61	0.72	0.79	0.81
14	NO2+NO3 (mg N/L)	1.38	1.21	0.95	0.98	0.84	0.95	0.91	1.10	0.92	1.09	1.66	1.76
15	NO2-N (mgN/L)	0.72	0.62	0.46	0.47	0.28	0.36	0.35	0.40	0.36	0.40	0.43	0.46
16	NO3-N (mgN/L)	0.66	0.59	0.49	0.51	0.56	0.59	0.56	0.70	0.56	0.69	1.23	1.30
17	P-Tot (mgP/L)	0.480	0.013	0.300	0.360	0.410	0.450	0.420	0.500	0.390	0.450	0.600	0.710
18	SO4 (mg/L)	37.0	21.1	19.7	21.1	23.0	22.6	20.2	25.0	23.2	25.7	38.4	42.0
	BIOLOGICAL/BACTERIOLOGICAL												

Water Quality Datasheet for the period : 2016-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

River Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/5/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
1	BOD3-27 (mg/L)	25.9	11.8	5.9	7.8	7.8	3.9	13.0	6.2	3.5	12.5	9.8	3.8
2	COD (mg/L)	31.0	23.0	15.0	15.0	12.0	8.0	20.0	10.0	6.0	16.0	17.0	6.0
3	DO (mg/L)	0.8	3.5	4.3	4.1	3.1	4.9	4.9	5.9	3.9	2.0	2.7	2.2
4	DO_SAT% (%)	10	48	58	55	42	56	55	58	40	22	33	27
5	FCol-MPN (MPN/100mL)			2000	3000	4000	2000	2300	5000	3500	1500	1000	*
6	Tcol-MPN (MPN/100mL)			7500	4000	6000	5000	6000	7000	5000	2500	2200	*
	TRACE & TOXIC												
1	As (µg/L)			1.24				6.78				9.00	
2	Cd (µg/L)			0.15				1.08				0.00	
3	Cr (µg/L)			2.43				0.47				5.00	
4	Cu (µg/L)			5.00				7.15				3.00	
5	Ni (µg/L)			7.98				0.07				23.00	
6	Pb (µg/L)			0.98				1.42				2.00	
7	Zn (µg/L)			7.98				11.80				12.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	66	91	69	75	74	63	70	71	80	105	94	116
2	HAR_Total (mgCaCO3/L)	156	118	107	125	119	148	140	173	169	180	184	215
3	Na% (%)	28	16	15	14	15	14	14	17	14	19	21	20
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.1	0.0	0.0
5	SAR (-)	1.0	0.5	0.4	0.4	0.4	0.4	0.5	0.6	0.5	0.7	0.9	0.8
	PESTICIDES												

* Samples received late.

Note - Analysis of Total & Faecal coliform started w.e.f.01.08.2016

Water Quality Datasheet for the period : 2016-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

Well Water Analysis

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	11/1/2016 B	5/1/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_GEN (μmho/cm)	740	810
3	Odour_Code (-)	odour free	odour free
4	pH_FLD (pH units)	8.0	8.0
5	pH_GEN (pH units)	7.8	7.7
6	TDS (mg/L)	454	494
7	Temp (deg C)	25.5	25.5
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	148	160
3	B (mg/L)	0.33	0.38
4	Ca (mg/L)	21	28
5	Cl (mg/L)	70.0	78.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.90	0.94
8	HCO3 (mg/L)	181	195
9	K (mg/L)	14.1	16.4
10	Mg (mg/L)	35.1	39.2
11	Na (mg/L)	47.4	50.6
12	NH3-N (mg N/L)	0.44	0.48
13	NO2+NO3 (mg N/L)	1.12	1.20
14	NO2-N (mgN/L)	0.59	0.62
15	NO3-N (mgN/L)	0.53	0.58
16	P-Tot (mgP/L)	0.900	0.960
17	SO4 (mg/L)	28.1	32.2
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	52	69
2	HAR_Total (mgCaCO3/L)	198	232
3	Na% (%)	33	30
4	RSC (-)	0.0	0.0
5	SAR (-)	1.5	1.5
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : BHITAURA (GG000E7)

Division : M Ganga Div. II, Lucknow

Local River : GANGA

River Water Summary

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_GEN (µmho/cm)	12	550	200	346
3	pH_FLD (pH units)	12	8.5	7.0	7.6
4	pH_GEN (pH units)	12	8.2	7.6	7.9
5	TDS (mg/L)	12	330	123	212
6	Temp (deg C)	12	31.0	15.0	25
7	Turb (NTU)	12	5.0	0.5	2.2
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	200	72	133
3	B (mg/L)	12	0.66	0.03	0.41
4	Ca (mg/L)	12	46	25	32
5	Cl (mg/L)	12	48.6	12.4	27.1
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.76	0.32	0.45
8	Fe (mg/L)	3	0.5	0.3	0.4
9	HCO3 (mg/L)	12	244	88	163
10	K (mg/L)	12	26.8	7.0	18.1
11	Mg (mg/L)	12	24.7	6.7	17.3
12	Na (mg/L)	12	29.9	9.4	17.3
13	NH3-N (mg N/L)	12	0.81	0.56	0.67
14	NO2+NO3 (mg N/L)	12	1.76	0.84	1.14
15	NO2-N (mgN/L)	12	0.72	0.28	0.44
16	NO3-N (mgN/L)	12	1.30	0.49	0.7
17	P-Tot (mgP/L)	12	0.710	0.013	0.424
18	SO4 (mg/L)	12	42.0	19.7	26.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	25.9	3.5	9.3
2	COD (mg/L)	12	31.0	6.0	14.9
3	DO (mg/L)	12	5.9	0.8	3.5
4	DO_SAT% (%)	12	58	10	42
5	FCol-MPN (MPN/100mL)	9	5000	1000	2700
6	Tcol-MPN (MPN/100mL)	9	7500	2200	5022
	TRACE & TOXIC				
1	As (µg/L)	3	9.00	1.24	5.67
2	Cd (µg/L)	2	1.08	0.00	0.41
3	Cr (µg/L)	2	5.00	0.47	2.63
4	Cu (µg/L)	3	7.15	3.00	5.05
5	Ni (µg/L)	2	23.00	0.07	10.35
6	Pb (µg/L)	2	2.00	0.98	1.47
7	Zn (µg/L)	3	12.00	7.98	10.59
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	116	63	81
2	HAR_Total (mgCaCO3/L)	12	215	107	153
3	Na% (%)	12	28	14	17
4	RSC (-)	12	0.5	0.0	0.1
5	SAR (-)	12	1.0	0.4	0.6
	PESTICIDES				

Station Name : BHITAURA (GG000E7)
Local River : GANGA

Division : M Ganga Div. II, Lucknow
Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_GEN (μmho/cm)	2	810	740	775
2	pH_FLD (pH units)	2	8.0	8.0	8.0
3	pH_GEN (pH units)	2	7.8	7.7	7.8
4	TDS (mg/L)	2	494	454	474
5	Temp (deg C)	5	25.5	25.5	25.5
	CHEMICAL				
1	Alk-Phen (mgCaCO ₃ /L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	2	160	148	154
3	B (mg/L)	2	0.38	0.33	0.36
4	Ca (mg/L)	2	28	21	24
5	Cl (mg/L)	2	78.0	70.0	74.0
6	CO ₃ (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.94	0.90	0.92
8	HCO ₃ (mg/L)	2	195	181	188
9	K (mg/L)	2	16.4	14.1	15.3
10	Mg (mg/L)	2	39.2	35.1	37.2
11	Na (mg/L)	2	50.6	47.4	49.0
12	NH ₃ -N (mg N/L)	2	0.48	0.44	0.46
13	NO ₂ +NO ₃ (mg N/L)	2	1.20	1.12	1.16
14	NO ₂ -N (mgN/L)	2	0.62	0.59	0.60
15	NO ₃ -N (mgN/L)	2	0.58	0.53	0.55
16	P-Tot (mgP/L)	2	0.960	0.900	0.930
17	SO ₄ (mg/L)	2	32.2	28.1	30.2
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO ₃ /L)	2	69	52	60
2	HAR_Total (mgCaCO ₃ /L)	2	232	198	215
3	Na% (%)	2	33	30	32
4	RSC (-)	2	0.0	0.0	0.0
5	SAR (-)	2	1.5	1.5	1.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	PHYSICAL																	
1	Q (cumec)	959.7	1055	2416	486.8	7010	3759	2261	3980	864.8	1038		289.6	353.8	452.7	441.4	695.8	411.4
2	EC_FLD (μmho/cm)																	
3	EC_GEN (μmho/cm)	398	360	418	406	478	256	368	310	360	356	308	428	440	423	328	370	393
4	pH_FLD (pH units)		7.5	7.3	7.6	7.1	7.5	7.4	7.8	8.4	7.4	7.5	7.8	7.8	7.4	7.5	7.3	7.4
5	pH_GEN (pH units)	7.8	7.9	8.0	8.0	8.2	8.1	8.6	7.9	8.4	8.2	8.0	8.0	8.0	8.1	8.2	8.0	8.3
6	TDS (mg/L)			255	244	288	154	224	186	219	213	189			255	198	224	239
7	Temp (deg C)	30.6	29.8	29.6	27.0	29.4	28.0	30.1	30.6	31.7	30.0	30.8	19.8	19.0	21.0	15.9	18.0	19.3
8	Turb (NTU)				22.9	12.4	4.6	5.8	11.5	4.1		2.9				2.1	2.0	2.6
	CHEMICAL																	
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0		6.4	5.0	10.4	0.0	5.6	0.0	0.0	3.0	2.7	0.0		0.0	8.0
2	ALK-TOT (mgCaCO3/L)	263	245	162		182	134	146	141	126	79	96	302	352	174		168	163
3	B (mg/L)	0.05	0.05	0.05								0.25	0.07	0.07	0.09			0.14
4	Ca (mg/L)	34	40	43	46	35	28	30	42	40	32	30	43	41	43	46	31	31
5	Cl (mg/L)	17.6	18.7	20.7	29.3	30.0	18.0	20.7	16.8	23.6	21.2	23.0	21.6	24.1	24.8	29.0	32.6	19.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	7.7	4.8	12.5	0.0	6.7	0.0	0.0	3.6	2.4	0.0	8.4	0.0	7.2
7	F (mg/L)	0.25	0.30	0.43	0.56	0.49	0.27	0.37	0.28	0.37	0.25	0.38	0.29	0.50	0.40	0.50	0.38	0.38
8	Fe (mg/L)	0.2	0.2	0.2	0.3							0.5	0.3	0.3	0.3	0.3		
9	HCO3 (mg/L)	160	150	197	244	207	161	152	172	140	97	117	181	211	212	257	181	185
10	K (mg/L)	8.5	8.5	9.3	10.2	9.8	4.1	3.7	7.4	6.0	5.4	11.9	14.4	11.7	9.0	9.8	8.6	3.4
11	Mg (mg/L)	18.8	21.7	23.0	28.7	19.6	15.9	20.2	20.8	19.8	15.2	12.1	24.0	23.2	26.6	26.1	16.3	20.8
12	Na (mg/L)	22.2	19.4	15.0	17.2	20.6	11.6	14.1	11.0	15.7	14.7	14.6	27.4	22.7	17.7	16.6	20.5	13.4
13	NH3-N (mg N/L)				0.13	0.21	0.09	0.17	0.26	0.45	0.80	0.65				0.11	0.12	0.20
14	NO2+NO3 (mg N/L)	2.18	1.81	1.06	1.20	1.77	3.20	7.81	9.75	11.86	13.82	1.07	1.34	2.08	0.83	1.22	1.49	9.72
15	NO2-N (mgN/L)	0.06	0.05	0.05	0.13	0.12	0.06	0.27	0.33	0.46	0.54	0.51	0.04	0.09	0.09	0.09	0.12	0.22
16	NO3-N (mgN/L)	2.12	1.76	1.01	1.07	1.65	3.14	7.54	9.42	11.41	13.28	0.56	1.30	2.00	0.74	1.13	1.36	9.49
17	o-PO4-P (mg P/L)	0.095	0.068	0.081	0.093	0.124	0.114	0.095	0.095	0.116	0.209	0.313	0.098	0.075	0.096	0.075	0.116	0.150
18	SiO2 (mg/L)	8.0	7.2	6.0									7.6	7.8	7.4			
19	SO4 (mg/L)	23.8	27.0	19.7	24.4	18.9	4.3	8.4	11.7	14.4	18.9	24.4	31.7	26.8	23.8	21.4	9.4	7.0

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood																Winter
		Jun - Oct																Nov - Feb
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	BIOLOGICAL/BACTERIOLOGICAL																	
1	BOD3-27 (mg/L)					4.0	2.6	3.6	4.1	4.8	12.6	11.8					2.6	3.7
2	COD (mg/L)					11.5	7.6	11.0	28.8	22.4	17.6	19.2						9.4
3	DO (mg/L)	6.7	7.1	6.8	7.2	5.7	5.8	6.5	5.5	5.4	4.7	3.2	7.2	7.4	6.7	7.1	7.4	6.5
4	DO_SAT% (%)	90	93	89	90	75	74	86	74	73	62	43	78	79	75	71	78	71
5	FCol-MPN (MPN/100mL)											3000						
6	Tcol-MPN (MPN/100mL)											5833						
	TRACE & TOXIC																	
1	As (µg/L)											1.24						
2	Cd (µg/L)											0.15						
3	Cr (µg/L)											2.43						
4	Cu (µg/L)											5.00						
5	Ni (µg/L)											7.98						
6	Pb (µg/L)																	
7	Zn (µg/L)											7.98						
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	84	100	107	116	87	70	74	104	100	81	75	107	102	109	114	76	78
2	HAR_Total (mgCaCO3/L)	162	190	202	236	169	136	158	191	182	145	125	206	198	219	223	144	165
3	Na% (%)	21	17	13	13	21	15	16	11	15	16	18	21	19	14	13	22	15
4	RSC (-)	0.0	0.0	0.0	0.1	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0
5	SAR (-)	0.8	0.6	0.5	0.5	0.7	0.4	0.5	0.3	0.5	0.5	0.6	0.8	0.7	0.5	0.5	0.7	0.5
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																
1	Q (cumec)	486.3	463.2	273.4	216.8		256.7	138.2	180.6	107.0	308.4	178.0	169.0	262.0	210.0	80.86	
2	EC_FLD (µmho/cm)			490													
3	EC_GEN (µmho/cm)	348	340	415	380	315	410	617	567	573	417	520	420	497	390	497	452
4	pH_FLD (pH units)	7.8	8.1	8.0	7.6	7.9	8.0	7.8	8.0	7.3	7.0	7.2	8.0	7.8	8.2	7.3	7.5
5	pH_GEN (pH units)	8.2	8.4	8.3	8.2	7.9	8.0	8.0	8.1	8.4	8.2	8.2	8.5	8.2	8.6	8.0	8.0
6	TDS (mg/L)	210	204	225	232	194			348	350	252	317	252	300	212	300	275
7	Temp (deg C)	19.6	18.8	20.1	20.5	18.5	25.0	23.5	22.2	22.5	22.5	22.2	25.7	24.2	22.7	24.7	24.0
8	Turb (NTU)	5.4	4.3			1.7				3.3	1.6	3.0	4.8	3.2			1.9
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)	2.5	12.0	12.9	3.0	0.0	0.0	0.0	8.0		0.0	5.3	4.6	6.0	15.9	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	157	173	167	100	149	284	376	222		176	203	159	252	140	100	176
3	B (mg/L)	0.12	0.10	0.85	0.18	0.44	0.06	0.04	0.19	0.20	0.12	0.16	0.16	0.14	0.21	0.38	0.63
4	Ca (mg/L)	44	48	52	40	28	43	54	52	49	34	40	46	71	37	35	42
5	Cl (mg/L)	19.0	20.4	32.0	12.9	21.5	16.7	27.9	30.1	32.1	33.4	26.7	17.3	35.4	31.8	27.3	41.2
6	CO3 (mg/L)	3.0	14.4	15.6	3.6	0.0	0.0	0.0	6.4	14.4	0.0	6.4	5.6	4.8	16.0	0.0	0.0
7	F (mg/L)	0.35	0.31	0.52	0.32	0.40	0.27	0.72	0.56	0.68	0.43	0.49	0.34	0.47	0.30	0.44	0.63
8	Fe (mg/L)					0.5	0.2	0.3	0.4	0.4							0.3
9	HCO3 (mg/L)	185	182	172	115	182	168	229	265	283	197	234	182	278	111	120	215
10	K (mg/L)	3.5	4.3	7.1	4.5	20.5	11.7	13.4	11.6	12.0	8.6	6.0	3.1	6.8	6.9	8.8	25.1
11	Mg (mg/L)	25.8	25.0	22.9	19.9	20.8	21.3	27.2	31.6	28.6	18.2	27.5	24.8	33.7	18.9	22.9	21.2
12	Na (mg/L)	13.3	14.3	20.5	7.1	14.4	24.8	24.8	21.8	20.4	20.9	17.0	12.3	22.5	22.0	16.4	25.7
13	NH3-N (mg N/L)	0.15	0.29	0.29	0.83	0.63			0.21	0.13	0.17	0.28	0.25	0.43	0.74	0.89	0.77
14	NO2+NO3 (mg N/L)	8.44	12.81	14.16	12.38	0.97	1.70	2.10	1.25	1.65	1.82	11.54	9.80	16.55	15.54	10.97	1.50
15	NO2-N (mgN/L)	0.38	0.27	0.43	0.65	0.37	0.05	0.10	0.13	0.12	0.41	0.33	0.46	0.53	0.50	0.72	0.43
16	NO3-N (mgN/L)	8.06	12.54	13.73	11.73	0.60	1.65	2.00	1.12	1.53	1.40	11.21	9.34	16.02	15.04	10.26	1.07
17	o-PO4-P (mg P/L)	0.150	0.132	0.279	0.209	0.440	0.100	0.096	0.103	0.072	0.124	0.162	0.131	0.172	0.427	0.214	0.587
18	SiO2 (mg/L)						6.7	8.3	8.7								
19	SO4 (mg/L)	12.0	16.4	30.2	38.2	22.7	31.2	27.4	29.1	26.1	10.1	9.8	10.7	22.1	37.9	43.7	35.4

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

River Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	BIOLOGICAL/BACTERIOLO																
1	BOD3-27 (mg/L)	2.5	3.5	3.6	14.9	6.7				4.1	5.9	3.8	2.1	4.8	8.5	13.8	8.7
2	COD (mg/L)	8.0	14.5	11.0	20.5	11.0					29.0	10.7	14.7	26.3	18.7	22.7	13.0
3	DO (mg/L)	6.8	4.6	6.1	5.1	4.9	8.4	8.3	7.4	6.7	7.0	6.5	6.1	6.2	5.0	2.1	2.3
4	DO_SAT% (%)	76	50	68	57	52	102	98	85	77	80	74	74	74	57	25	27
5	FCol-MPN (MPN/100mL)					3200											1250
6	Tcol-MPN (MPN/100mL)					5750											2350
	TRACE & TOXIC																
1	As (µg/L)					6.78									8.02		9.00
2	Cd (µg/L)					1.08											
3	Cr (µg/L)														10.96		5.00
4	Cu (µg/L)					7.15									6.25		3.00
5	Ni (µg/L)														5.85		23.00
6	Pb (µg/L)					1.42									1.61		2.00
7	Zn (µg/L)					11.80									8.20		12.00
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	111	119	130	101	71	107	135	130	123	85	100	115	176	92	86	105
2	HAR_Total (mgCaCO3/L)	218	224	226	184	157	246	248	262	242	160	215	218	317	170	182	193
3	Na% (%)	12	12	17	8	15	20	17	15	15	21	14	11	13	21	15	20
4	RSC (-)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.4	0.6	0.2	0.5	0.8	0.7	0.6	0.6	0.7	0.5	0.4	0.5	0.7	0.5	0.8
	PESTICIDES																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	PHYSICAL																	
1	EC_GEN (µmho/cm)	982	822	844									828	798	663	620	920	1030
2	pH_FLD (pH units)		8.3	8.2										8.3	7.5	8.5	8.5	8.5
3	pH_GEN (pH units)	8.0	7.9	8.0									8.0	8.0	8.1	8.5	8.2	7.4
4	TDS (mg/L)			509											399	380	550	620
5	Temp (deg C)	26.3	26.0	26.0									24.3	23.8	24.9	25.0	24.0	24.0
6	Turb (NTU)															3.0	5.6	1.2
	CHEMICAL																	
1	Alk-Phen (mgCaCO3/L)	2.4	0.0	4.8									0.0	0.0	0.0	47.8	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	784	621	304									690	630	293	392	184	392
3	B (mg/L)	0.08	0.08	0.04									0.04	0.04	0.07	0.16	0.16	0.18
4	Ca (mg/L)	62	49	42									50	40	44	48	55	65
5	Cl (mg/L)	38.8	56.4	40.8									42.5	39.1	42.1	56.1	236.4	288.3
6	CO3 (mg/L)	2.9	0.0	5.8									0.0	0.0	0.0	57.6	0.0	0.0
7	F (mg/L)	0.67	0.45	0.35									0.27	0.32	0.31	0.46	0.61	0.68
8	Fe (mg/L)	0.2	0.2	0.1									0.1	0.1	0.1			
9	HCO3 (mg/L)	475	379	359									421	384	357	361	224	478
10	K (mg/L)	24.8	22.7	19.9									22.5	21.0	14.9	21.1	34.4	42.6
11	Mg (mg/L)	52.1	35.5	34.3									36.4	31.5	34.5	37.2	49.5	55.6
12	Na (mg/L)	69.0	73.6	29.2									55.5	68.3	31.6	38.2	152.3	185.6
13	NH3-N (mg N/L)															0.17	0.34	0.34
14	NO2+NO3 (mg N/L)	1.02	1.46	1.32									0.96	1.21	1.26	3.68	7.10	10.00
15	NO2-N (mgN/L)	0.07	0.06	0.03									0.04	0.05	0.10	0.14	0.14	0.40
16	NO3-N (mgN/L)	0.95	1.41	1.29									0.91	1.17	1.17	3.55	6.96	9.60
17	o-PO4-P (mg P/L)	0.149	0.081	0.062									0.233	0.028	0.052	0.083	0.114	0.196
18	SiO2 (mg/L)	16.2	12.3	13.7									11.3	9.4	10.4			
19	SO4 (mg/L)	31.0	31.5	27.2									25.2	29.6	10.4	9.6	159.4	80.6
	TRACE & TOXIC																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Flood											Winter					
		Jun - Oct											Nov - Feb					
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012
	CHEMICAL INDICES																	
1	HAR_Ca (mgCaCO3/L)	154	122	106									126	100	111	121	138	164
2	HAR_Total (mgCaCO3/L)	371	270	249									277	231	254	275	344	395
3	Na% (%)	28	35	19									29	37	20	22	46	47
4	RSC (-)	1.2	0.9	1.1									1.4	1.7	0.8	2.4	0.0	0.0
5	SAR (-)	1.6	2.0	0.8									1.5	2.0	0.9	1.0	3.6	4.1
	PESTICIDES																	

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters						Summer										
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL																
1	EC_GEN (µmho/cm)	800	750	830	770	740	837	1040	863		920	870	930	920	880	960	810
2	pH_FLD (pH units)	8.0	8.0		8.0	8.0		8.5	8.7		8.5	9.5	8.5	8.0		7.5	8.0
3	pH_GEN (pH units)	8.1	8.5	8.4	8.6	7.8	8.2	8.1	8.0		8.2	8.2	8.0	8.5	8.9	7.9	7.7
4	TDS (mg/L)	490	450	460	468	454			512		550	540	560	550	520	586	494
5	Temp (deg C)	25.0	28.0		27.0		24.0	24.7	24.3		24.0	26.0	27.0	26.0		27.0	25.5
6	Turb (NTU)	3.8	5.0								5.6	2.9	5.5	7.0			
	CHEMICAL																
1	Alk-Phen (mgCaCO3/L)			64.2	31.9	0.0	10.6	4.0	15.9		0.0	0.0	0.0	23.9	35.9	38.3	0.0
2	ALK-TOT (mgCaCO3/L)			189	160	148	691	632	324			312	332	351	224	233	160
3	B (mg/L)	0.12	0.10	0.13	0.25	0.33	0.10	0.10	0.17		0.20	0.16	0.14	0.14	0.29	0.36	0.38
4	Ca (mg/L)	57	76	52	15	21	57	42	50		62	60	81	100	19	24	28
5	Cl (mg/L)	202.4	160.1	110.1	80.2	70.0	64.1	43.3	56.8		270.5	238.2	236.1	250.3	81.3	145.6	78.0
6	CO3 (mg/L)	0.0	19.2	77.4	38.4	0.0	12.8	4.8	12.8		0.0	0.0	0.0	28.8	43.2	46.2	0.0
7	F (mg/L)	0.49	7.60	1.10	1.05	0.90	0.58	0.52	0.46		0.65	0.59	0.63	0.80	1.39	1.06	0.94
8	Fe (mg/L)						0.1	0.2	0.2								
9	HCO3 (mg/L)	366	346	73	117	181	408	381	369		459	381	405	370	185	190	195
10	K (mg/L)	32.1	19.9	12.9	5.1	14.1	23.5	24.8	17.9		39.5	38.3	39.5	24.2	6.3	15.6	16.4
11	Mg (mg/L)	44.3	42.3	14.5	31.0	35.1	41.6	33.7	38.2		52.6	51.5	45.3	37.2	35.1	50.5	39.2
12	Na (mg/L)	134.3	105.3	86.9	54.3	47.4	71.8	66.9	41.0		171.8	155.0	161.5	160.1	61.2	77.3	50.6
13	NH3-N (mg N/L)	0.25	0.25	0.53	0.51	0.44					0.41	0.29	0.41	0.51	0.48	0.53	0.48
14	NO2+NO3 (mg N/L)	7.20	8.70	7.32	7.53	1.12	1.36	1.44	3.36		8.52	8.00	9.96	10.52	8.69	1.46	1.20
15	NO2-N (mgN/L)	0.19	0.29	0.46	0.80	0.59	0.06	0.06	0.15		0.18	0.29	0.29	0.29	0.84	0.86	0.62
16	NO3-N (mgN/L)	7.01	8.41	6.87	6.73	0.53	1.31	1.38	3.21		8.34	7.71	9.67	10.23	7.85	0.60	0.58
17	o-PO4-P (mg P/L)	0.134	0.156	0.165	0.176	0.900	0.124	0.038	0.152		0.165	0.165	0.165	0.165	0.196	0.186	0.960
18	SiO2 (mg/L)						14.4	12.0	16.3								
19	SO4 (mg/L)	13.9	15.8	14.4	21.6	28.1	31.0	35.4	12.2		159.4	59.5	20.2	20.2	23.0	31.7	32.2
	TRACE & TOXIC																

Water Quality Seasonal Average for the period: 2006-2017

Station Name : BHITAURA (GG000E7)

Local River : GANGA

Well Water

Division : M Ganga Div. II, Lucknow

Sub-Division : M Ganga SD, Kanpur

S.No	Parameters	Summer															
		Mar - May															
		2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	CHEMICAL INDICES																
1	HAR_Ca (mgCaCO3/L)	142	189	129	38	52	142	106	125		155	151	202	250	48	60	69
2	HAR_Total (mgCaCO3/L)	327	365	189	167	198	315	247	284		374	365	391	404	194	271	232
3	Na% (%)	44	37	48	41	33	31	34	23		47	45	44	45	40	37	30
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.9	1.5	0.9		0.1	0.0	0.0	0.0	0.6	0.0	0.0
5	SAR (-)	3.2	2.4	2.8	1.8	1.5	1.8	1.9	1.1		3.9	3.5	3.6	3.5	1.9	2.1	1.5
	PESTICIDES																

HISTORY SHEET

		Water Year	: 2016-2017
Site	: Shahzadpur	Code	: GGOO0B7
State	: Uttar Pradesh	District	Kaushambi *
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: -	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Ganga
Division	: M Ganga Div. III, Varanasi	Sub-Division	: M Ganga Yamuna SD, Allahabad
Drainage Area	: 93604 Sq. Km.	Bank	: Left
Latitude	: 25°40'00"	Longitude	: 81°25'30"
	Opening Date	Closing Date	
Gauge	: 6/19/1959		
Discharge	: 6/19/1959		
Sediment	: 1/1/1963		
Water Quality	: 12/1/1980		

Water Quality Datasheet for the period : 2016-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/1/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)	46.13	121.0	1719	944.9	582.0	372.0	236.0	134.0	183.0	93.00	91.90	48.40
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Light Brown	Clear	Clear	Brown
3	EC_FLD (μmho/cm)	515	405	240	220	322	348	281	419	380	390	418	540
4	EC_GEN (μmho/cm)	522	412	243	225	326	356	286	422	388	402	422	545
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_FLD (pH units)	8.2	7.8	8.0	7.9	7.8	7.4	7.9	7.5	7.9	8.2	7.9	7.6
7	pH_GEN (pH units)	8.1	7.7	8.0	7.8	7.6	7.3	7.8	7.4	7.8	8.1	7.9	7.6
8	TDS (mg/L)	302	250	154	110	166	179	173	210	195	206	212	306
9	Temp (deg C)	32.0	33.5	29.5	32.0	30.0	25.0	20.5	16.5	19.5	20.0	29.0	29.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	179	128	84	88	86	80	72	76	80	84	88	120
3	B (mg/L)	0.03	0.04	0.05	0.04	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.04
4	Ca (mg/L)	32	43	48	49	47	47	43	42	44	46	47	43
5	Cl (mg/L)	54.0	40.0	24.0	20.0	22.0	20.0	24.0	22.0	26.0	30.0	32.0	34.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.44	0.47	0.47	0.41	0.40	0.38	0.36	0.35	0.36	0.37	0.37	0.40
8	Fe (mg/L)	0.3	0.3	0.3		0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
9	HCO3 (mg/L)	219	156	103	107	105	98	88	93	98	102	107	147
10	K (mg/L)	11.0	13.0	14.0	11.0	10.0	8.0	8.0	9.0	10.0	11.0	12.0	13.0
11	Mg (mg/L)	19.6	16.5	13.6	12.0	12.6	12.6	13.2	11.4	12.4	13.3	14.0	13.4
12	Na (mg/L)	34.0	36.0	40.0	36.0	32.0	26.0	22.0	20.0	24.0	28.0	30.0	24.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.29	0.29	0.31	0.29	0.29	0.28	0.27	0.26	0.27	0.28	0.28	0.27
15	NO2-N (mgN/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
16	NO3-N (mgN/L)	0.29	0.29	0.31	0.29	0.29	0.28	0.27	0.26	0.27	0.28	0.28	0.27
17	P-Tot (mgP/L)	0.032	0.028	0.025	0.020	0.024	0.022	0.020	0.024	0.028	0.032	0.032	0.035
18	SiO2 (mg/L)	10.4	11.2	11.8	11.1	11.4	11.0	10.2	11.4	10.5	10.9	11.0	11.4
19	SO4 (mg/L)	38.0	42.0	45.0	42.0	36.0	38.0	32.0	29.0	31.0	35.0	36.0	40.0

Water Quality Datasheet for the period : 2016-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	6/1/2016	7/1/2016	8/1/2016	9/1/2016	10/1/2016	11/1/2016	12/1/2016	1/2/2017	2/1/2017	3/1/2017	4/1/2017	5/1/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	3.8	3.2	2.0	1.8	1.6	2.2	3.5	4.2	2.2	2.6	2.3	3.1
2	COD (mg/L)	21.6	20.4	6.5	9.3	6.7	16.2	18.7	21.8	22.7	26.0	27.8	28.3
3	DO (mg/L)	7.2	7.4	6.9	7.1	6.7	7.1	8.2	6.5	6.7	6.3	6.8	6.1
4	DO_SAT% (%)	99	103	89	97	89	86	91	66	73	70	88	79
5	FCol-MPN (MPN/100mL)	2200	2000	2100	1900	2000	1800	1500	1600	1800	2000	2200	2500
6	Tcol-MPN (MPN/100mL)	6200	5800	6000	5400	5700	5200	4000	3500	3700	4200	4700	5100
	TRACE & TOXIC												
1	As (µg/L)			7.71								11.00	
2	Cd (µg/L)			0.11								4.00	
3	Cr (µg/L)			5.99								21.00	
4	Ni (µg/L)			0.77								N.A.	
5	Pb (µg/L)			0.53								0.00	
6	Zn (µg/L)			5.00								521.00	
7	Cu (µg/L)			10.17								23.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	80	108	121	121	119	119	108	104	110	115	118	108
2	HAR_Total (mgCaCO3/L)	162	176	178	171	171	171	163	151	161	171	177	164
3	Na% (%)	30	29	31	30	28	24	22	21	23	25	25	23
4	RSC (-)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.2	1.2	1.3	1.2	1.1	0.9	0.8	0.7	0.8	0.9	1.0	0.8
	PESTICIDES												

Water Quality Datasheet for the period : 2016-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

Well Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	11/1/2016 B	9/1/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Brown
2	EC_FLD (µmho/cm)	2265	2030
3	EC_GEN (µmho/cm)	2274	2042
4	Odour_Code (-)	odour free	odour free
5	pH_FLD (pH units)	8.1	8.2
6	pH_GEN (pH units)	8.0	8.2
7	TDS (mg/L)	1138	1200
8	Temp (deg C)	25.5	24.5
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	312	304
3	B (mg/L)	0.02	0.02
4	Ca (mg/L)	41	53
5	Cl (mg/L)	196.0	205.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.29	0.24
8	Fe (mg/L)	0.2	0.2
9	HCO3 (mg/L)	381	371
10	K (mg/L)	15.0	23.0
11	Mg (mg/L)	63.0	67.1
12	Na (mg/L)	150.0	126.0
13	NH3-N (mg N/L)	0.05	0.05
14	NO2+NO3 (mg N/L)	1.12	0.93
15	NO2-N (mgN/L)	0.00	0.00
16	NO3-N (mgN/L)	1.12	0.93
17	P-Tot (mgP/L)	0.009	0.010
18	SiO2 (mg/L)	8.8	7.6
19	SO4 (mg/L)	50.0	58.0
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	103	133
2	HAR_Total (mgCaCO3/L)	365	413
3	Na% (%)	46	38
4	RSC (-)	0.0	0.0
5	SAR (-)	3.4	2.7
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : Shahzadpur (GG000B7)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

River Water Summary

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	2373	29.50	408.1
2	EC_FLD (µmho/cm)	12	540	220	373
3	EC_GEN (µmho/cm)	12	545	225	379
4	pH_FLD (pH units)	12	8.2	7.4	7.8
5	pH_GEN (pH units)	12	8.1	7.3	7.8
6	TDS (mg/L)	12	306	110	205
7	Temp (deg C)	12	33.5	16.5	26.4
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	179	72	97
3	B (mg/L)	12	0.05	0.03	0.04
4	Ca (mg/L)	12	49	32	44
5	Cl (mg/L)	12	54.0	20.0	29
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.47	0.35	0.4
8	Fe (mg/L)	11	0.3	0.2	0.3
9	HCO3 (mg/L)	12	219	88	119
10	K (mg/L)	12	14.0	8.0	10.8
11	Mg (mg/L)	12	19.6	11.4	13.7
12	Na (mg/L)	12	40.0	20.0	29.3
13	NH3-N (mg N/L)	12	0.08	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.31	0.26	0.28
15	NO2-N (mgN/L)	12	0.00	0.00	0
16	NO3-N (mgN/L)	12	0.31	0.26	0.28
17	P-Tot (mgP/L)	12	0.035	0.020	0.027
18	SiO2 (mg/L)	12	11.8	10.2	11
19	SO4 (mg/L)	12	45.0	29.0	37
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	4.2	1.6	2.7
2	COD (mg/L)	12	28.3	6.5	18.8
3	DO (mg/L)	12	8.2	6.1	6.9
4	DO_SAT% (%)	12	103	66	86
5	FCol-MPN (MPN/100mL)	12	2500	1500	1967
6	Tcol-MPN (MPN/100mL)	12	6200	3500	4958
	TRACE & TOXIC				
1	As (µg/L)	2	11.00	7.71	9.36
2	Cd (µg/L)	2	4.00	0.11	2.06
3	Cr (µg/L)	2	21.00	5.99	13.50
4	Ni (µg/L)	1	0.77	0.77	0.77
5	Pb (µg/L)	2	0.53	0.00	0.27
6	Zn (µg/L)	2	521.00	5.00	263.00
7	Cu (µg/L)	2	23.00	10.17	16.59
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	121	80	111
2	HAR_Total (mgCaCO3/L)	12	178	151	168
3	Na% (%)	12	31	21	26
4	RSC (-)	12	0.4	0.0	0
5	SAR (-)	12	1.3	0.7	1
	PESTICIDES				

Water Quality Summary for the period : 2016-2017

Station Name : Shahzadpur (GG000B7)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

Well Water Summary

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_FLD (μmho/cm)	2	2265	2030	2148
2	EC_GEN (μmho/cm)	2	2274	2042	2158
3	pH_FLD (pH units)	2	8.2	8.1	8.2
4	pH_GEN (pH units)	2	8.2	8.0	8.1
5	TDS (mg/L)	2	1200	1138	1169
6	Temp (deg C)	2	25.5	24.5	25.0
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	2	312	304	308
3	B (mg/L)	2	0.02	0.02	0.02
4	Ca (mg/L)	2	53	41	47
5	Cl (mg/L)	2	205.0	196.0	200.5
6	CO3 (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.29	0.24	0.26
8	Fe (mg/L)	2	0.2	0.2	0.2
9	HCO3 (mg/L)	2	381	371	376
10	K (mg/L)	2	23.0	15.0	19.0
11	Mg (mg/L)	2	67.1	63.0	65.0
12	Na (mg/L)	2	150.0	126.0	138.0
13	NH3-N (mg N/L)	2	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	2	1.12	0.93	1.02
15	NO2-N (mgN/L)	2	0.00	0.00	0.00
16	NO3-N (mgN/L)	2	1.12	0.93	1.02
17	P-Tot (mgP/L)	2	0.010	0.009	0.009
18	SiO2 (mg/L)	2	8.8	7.6	8.2
19	SO4 (mg/L)	2	58.0	50.0	54.0
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	2	133	103	118
2	HAR_Total (mgCaCO3/L)	2	413	365	389
3	Na% (%)	2	46	38	42
4	RSC (-)	2	0.0	0.0	0.0
5	SAR (-)	2	3.4	2.7	3.1
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	718.7	1428	948.5	1293	760.5	869.8	1604	313.9	2189	1990	1299	3220	468.1	827.7	682.5
2	EC_FLD (µmho/cm)	372	404	438	352	339	285	270	454	423	354	361	386	354	318	340
3	EC_GEN (µmho/cm)	343	372	435	346	294	273	259	463	417	350	354	382	348	308	346
4	pH_FLD (pH units)	7.2	7.1	7.3	7.7	7.8	8.1	8.1	8.0	8.2	8.4	7.7	8.2	7.8	7.9	7.9
5	pH_GEN (pH units)	8.4	8.4	8.2	8.6	8.4	8.6	8.4	8.1	8.2	8.6	7.8	8.4	8.0	8.1	7.8
6	TDS (mg/L)								256	243	201	214	238	211	191	196
7	Temp (deg C)	31.1	31.2	30.0	30.2	30.5	30.5	30.3	29.9	30.8	30.0	29.2	29.5	28.1	31.0	31.4
8	Turb (NTU)								0.3	0.3	3.0	0.3	0.6	5.7	2.3	
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	26.8	8.0	15.9	8.0	0.8	12.0	8.0	0.0	10.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	199	180	207	403	251	127	104	134	101	128	128	151	136	129	113
3	B (mg/L)	0.02	0.01	0.01	0.01	0.00	0.06	0.02	0.02	0.03	0.03	0.03	0.02	0.04	0.03	0.04
4	Ca (mg/L)	24	21	24	23	22	32	21	32	32	34	39	36	40	34	44
5	Cl (mg/L)	21.8	17.8	18.1	25.0	53.4	35.5	21.2	45.0	48.4	40.8	40.8	41.6	39.8	27.4	32.0
6	CO3 (mg/L)	0.0	0.0	0.0	9.5	9.6	19.2	9.6	1.0	14.4	9.6	0.0	12.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.07	0.06	0.13	0.14	0.18	0.37	0.72	0.47	0.66	0.64	0.56	0.34	0.44
8	Fe (mg/L)	0.0	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.3
9	HCO3 (mg/L)	121	110	126	141	143	116	108	162	94	137	156	160	166	157	138
10	K (mg/L)	27.2	6.8	3.2	7.2	9.2	8.6	8.6	7.0	8.4	6.2	8.0	8.2	7.0	7.0	11.8
11	Mg (mg/L)	22.2	18.9	24.6	16.3	13.0	17.9	12.5	19.5	14.3	17.7	25.9	22.7	16.9	13.3	14.9
12	Na (mg/L)	28.5	20.2	23.6	25.2	25.8	30.6	34.4	32.0	29.2	24.8	27.2	25.6	26.0	18.2	35.6
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.08	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.05
14	NO2+NO3 (mg N/L)	0.30	0.54	0.14	0.11	0.90	0.10	0.17	0.16	0.07	0.19	0.23	0.23	0.22	0.24	0.29
15	NO2-N (mgN/L)	0.10	0.12	0.05	0.00	0.02	0.04	0.03	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.20	0.42	0.09	0.11	0.88	0.06	0.14	0.16	0.06	0.16	0.23	0.23	0.22	0.24	0.29
17	Org-N (mgN/L)						1.1	0.0	0.0	0.0	0.0					
18	P-Tot (mgP/L)	0.112	0.106	0.097	0.147	0.038	0.011	0.010	0.002	0.003	0.001	0.001	0.001	0.014	0.022	0.026
19	SiO2 (mg/L)	5.6	9.5	8.6	9.1	8.0	6.9	5.2	9.0	9.4	8.8	9.7	9.9	10.7	8.4	11.2

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20	SO ₄ (mg/L)	20.1	29.0	64.6	33.4	32.2	29.0	29.4	29.6	33.1	108.4	35.4	38.8	38.8	27.6	40.6
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	3.0	2.5	2.4	2.8	2.7	2.8	3.0	3.0	2.5	3.0	2.8	3.1	3.0	2.9	2.5
2	COD (mg/L)						7.8	8.0	7.0	17.2	17.4	12.7	12.5	18.7	15.2	12.9
3	DO (mg/L)	6.7	6.7	7.1	6.9	6.6	6.7	6.7	6.8	7.0	7.9	6.3	6.9	6.8	7.2	7.1
4	DO _{SAT} % (%)	91	91	93	91	88	89	89	89	94	104	82	91	87	96	96
5	FCol-MPN (MPN/100mL)					180	0	360	360	1020	1500	1460	1580	1860	1940	2040
6	Tcol-MPN (MPN/100mL)					720	900	1220	740	2740	3300	3160	3880	4800	4720	5820
	TRACE & TOXIC															
1	As (µg/L)															7.71
2	Cd (µg/L)															0.11
3	Cr (µg/L)															5.99
4	Ni (µg/L)															0.77
5	Pb (µg/L)															0.53
6	Zn (µg/L)															5.00
7	Cu (µg/L)															10.17
	CHEMICAL INDICES															
1	HAR _{Ca} (mgCaCO ₃ /L)	60	53	60	56	55	81	53	81	80	85	98	90	99	84	110
2	HAR _{Total} (mgCaCO ₃ /L)	153	132	163	124	110	155	105	162	140	158	206	185	170	139	172
3	Na% (%)	25	22	23	26	29	29	40	29	27	24	22	22	24	20	29
4	RSC (-)	0.0	0.0	0.0	0.5	0.7	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
5	SAR (-)	1.0	0.7	0.8	0.9	1.0	1.1	1.5	1.1	1.1	0.9	0.8	0.8	0.9	0.7	1.2
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GGOO0B7)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	267.1	397.1	364.7	367.5	186.1	247.4	326.4	305.3	414.7	446.3	265.6	530.0	210.7	179.8	231.3
2	EC_FLD (µmho/cm)	440	435	624	394	478	284	333	424	302	364	389	395	385	393	357
3	EC_GEN (µmho/cm)	410	396	594	370	363	269	322	422	296	356	406	386	379	379	363
4	pH_FLD (pH units)	7.0	7.3	7.6	8.6	7.5	8.5	8.1	8.1	8.4	8.5	7.8	8.3	8.0	8.0	7.7
5	pH_GEN (pH units)	8.3	8.3	8.2	8.9	8.0	8.7	8.4	8.4	8.6	8.6	8.1	8.3	8.1	8.2	7.6
6	TDS (mg/L)								227	180	213	240	241	232	228	189
7	Temp (deg C)	21.6	20.8	21.9	21.5	23.5	20.0	21.4	18.3	20.6	22.6	22.1	23.0	19.9	22.1	20.4
8	Turb (NTU)								0.2	0.1	1.0	0.1	1.0	4.5	0.8	
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	2.2	6.5	4.9	11.5	14.9	10.0	2.0	24.9	5.0	2.5	10.0	0.0	6.0	0.0
2	ALK-TOT (mgCaCO3/L)	222	210	261	164	391	121	146	146	141	130	134	151	130	149	77
3	B (mg/L)	0.01	0.01	0.02	0.04	0.03	0.04	0.04	0.01	0.02	0.02	0.03	0.03	0.03	0.02	0.03
4	Ca (mg/L)	21	22	34	23	35	36	34	28	37	34	35	35	40	37	44
5	Cl (mg/L)	26.2	23.3	17.3	30.3	51.0	30.5	36.0	47.0	38.3	43.3	39.8	39.0	41.8	28.5	23.0
6	CO3 (mg/L)	0.0	2.6	7.8	5.9	13.8	18.0	12.0	2.4	30.0	6.0	3.0	12.0	0.0	7.2	0.0
7	F (mg/L)	0.05	0.05	0.07	0.17	0.05	0.16	0.11	0.12	0.54	0.42	0.40	0.42	0.40	0.31	0.36
8	Fe (mg/L)	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.2	0.2
9	HCO3 (mg/L)	135	126	174	189	224	110	154	173	111	146	157	160	158	167	94
10	K (mg/L)	11.0	7.0	5.3	8.0	11.0	8.0	11.2	5.5	7.5	6.0	7.5	8.0	7.5	7.5	8.8
11	Mg (mg/L)	25.0	23.6	36.4	21.9	19.3	18.6	19.3	19.8	14.1	14.8	23.4	23.2	13.4	16.3	12.4
12	Na (mg/L)	31.8	21.3	35.5	28.5	37.3	32.5	72.4	35.8	20.5	24.8	24.3	26.0	26.8	17.8	23.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.06
14	NO2+NO3 (mg N/L)	0.55	0.22	0.20	0.18	0.55	0.19	0.31	0.05	0.13	0.18	0.21	0.23	0.20	0.25	0.27
15	NO2-N (mgN/L)	0.17	0.17	0.02	0.02	0.06	0.02	0.03	0.00	0.00	0.12	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.38	0.05	0.18	0.16	0.49	0.17	0.29	0.05	0.13	0.06	0.21	0.23	0.20	0.25	0.27
17	Org-N (mgN/L)						0.2	0.0	0.0	0.0	0.0					
18	P-Tot (mgP/L)	0.133	0.138	0.043	0.011	0.026	0.007	0.014	0.001	0.005	0.001	0.001	0.001	0.019	0.021	0.024
19	SiO2 (mg/L)	5.3	10.9	11.1	9.1	9.0	7.7	7.8	12.2	9.8	9.1	8.4	8.9	9.0	7.4	10.8

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
20	SO ₄ (mg/L)	19.4	27.3	56.3	34.8	38.5	35.8	27.4	26.9	31.8	35.0	34.0	39.0	41.0	24.0	32.5
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	2.3	2.4	2.6	3.1	3.4	3.6	3.0	3.3	2.5	2.2	2.4	2.9	2.9	3.3	3.0
2	COD (mg/L)						9.6	4.2	14.1	16.7	16.5	12.7	11.5	19.2	19.9	19.9
3	DO (mg/L)	7.5	7.3	7.4	7.0	6.8	7.0	6.7	7.8	8.1	8.2	7.8	7.7	6.9	8.4	7.2
4	DO_SAT% (%)	85	80	84	79	80	77	75	83	90	94	89	89	76	96	79
5	FCol-MPN (MPN/100mL)					0	0	300	225	1425	1650	1688	1725	1600	1925	1675
6	Tcol-MPN (MPN/100mL)					650	950	1025	1050	3850	3050	3600	4325	3775	4875	4100
	TRACE & TOXIC															
1	As (µg/L)															
2	Cd (µg/L)															
3	Cr (µg/L)															
4	Ni (µg/L)															
5	Pb (µg/L)															
6	Zn (µg/L)															
7	Cu (µg/L)															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	52	54	85	57	87	90	85	71	92	85	88	88	101	92	110
2	HAR_Total (mgCaCO ₃ /L)	156	152	236	149	167	168	165	154	151	147	185	185	157	160	162
3	Na% (%)	29	22	24	29	31	29	46	33	22	26	21	23	26	19	22
4	RSC (-)	0.0	0.0	0.0	0.4	0.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.1	0.8	1.0	1.0	1.3	1.1	2.5	1.3	0.7	0.9	0.8	0.8	0.9	0.6	0.8
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	220.6	175.9	129.8	101.8	167.0	93.15	124.3	90.57	211.3	145.2	215.2	260.1	199.1	63.90	77.77
2	EC_FLD (µmho/cm)	567	587	623	473	473	324	477	480	359	375	403	403	343	487	449
3	EC_GEN (µmho/cm)	545	454	573	446	416	311	469	474	355	369	396	397	331	483	456
4	pH_FLD (pH units)	7.1	7.5	7.5	8.6	7.6	8.7	7.9	8.2	8.5	8.3	8.1	8.3	8.1	7.8	7.9
5	pH_GEN (pH units)	8.2	8.3	8.5	8.9	8.4	9.4	8.4	8.4	8.6	8.7	8.5	8.7	8.2	7.9	7.8
6	TDS (mg/L)								258	224	215	235	248	201	293	241
7	Temp (deg C)	26.3	26.0	25.7	27.3	25.5	25.5	26.0	22.8	25.2	26.3	23.8	26.8	18.1	26.5	26.0
8	Turb (NTU)								0.1	0.1	1.0	0.1	1.0	1.5	0.9	
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	81.8	0.2	10.6	13.3	23.2	15.9	19.9	0.0	3.3	8.9	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	292	259	497	188	247	120	166	172	124	127	133	152	121	189	97
3	B (mg/L)	0.02	0.02	0.01	0.01	0.03		0.05	0.02	2.02	0.04	0.04	0.04	0.04	0.03	0.04
4	Ca (mg/L)	28	30	35	25	27	32	38	30	40	37	37	35	41	43	46
5	Cl (mg/L)	26.2	33.3	32.0	35.3	32.7	25.3	83.7	48.3	40.0	44.0	44.0	44.7	42.7	45.0	32.0
6	CO3 (mg/L)	0.0	0.0	98.6	0.2	12.8	16.0	28.0	19.2	24.0	0.0	4.0	10.7	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.07	0.16	0.11		0.07	0.32	0.42	0.35	0.39	0.41	0.40	0.39	0.38
8	Fe (mg/L)	0.1	0.1	0.0	0.1	0.0		0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3
9	HCO3 (mg/L)	178	158	203	229	137	114	145	171	103	155	154	164	148	231	119
10	K (mg/L)	10.0	6.3	6.0	12.0	12.0	7.7	15.0	8.3	7.0	8.7	8.3	8.7	7.0	10.0	12.0
11	Mg (mg/L)	29.9	20.2	28.8	22.0	17.1	16.8	20.1	20.6	18.8	15.5	22.2	23.8	13.9	19.8	13.6
12	Na (mg/L)	40.3	32.3	40.0	38.3	32.7	31.7	54.7	41.9	26.7	27.3	26.7	28.0	26.7	28.3	27.3
13	NH3-N (mg N/L)	0.06	0.05	0.07	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.94	0.23	0.73	0.17	0.58		0.01	0.06	0.12	0.24	0.23	0.23	0.23	0.27	0.27
15	NO2-N (mgN/L)	0.23	0.14	0.01	0.03	0.03		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.71	0.08	0.72	0.14	0.55		0.01	0.06	0.12	0.24	0.23	0.23	0.23	0.27	0.27
17	Org-N (mgN/L)							0.0	0.0	0.0	0.0					
18	P-Tot (mgP/L)	0.145	0.115	0.076	0.001	0.008		0.014	0.001	0.001	0.001	0.001	0.001	0.015	0.028	0.033
19	SiO2 (mg/L)	6.8	11.5	8.5	9.5	7.0		8.4	11.4	9.7	9.5	9.4	9.5	9.1	8.0	11.1

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
20	SO ₄ (mg/L)	31.7	24.7	57.3	36.7	38.7	42.0	28.6	25.9	29.3	37.7	36.3	38.7	38.0	34.3	37.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	3.2	2.7	3.1	3.2	3.1	3.4	3.1	4.4	2.7	2.3	2.7	2.8	3.2	3.4	2.7
2	COD (mg/L)						8.5	6.4	22.1	18.6	15.6	16.7	12.5	18.5	17.4	27.4
3	DO (mg/L)	7.6	7.6	7.3	6.6	7.4	7.4	7.2	7.4	7.7	7.4	7.8	7.9	6.4	7.1	6.4
4	DO_SAT% (%)	94	93	89	83	91	91	88	86	93	91	92	98	73	87	79
5	FCol-MPN (MPN/100mL)					0	0	433	233	1833	2800	1733	2967	2100	2267	2233
6	Tcol-MPN (MPN/100mL)					700	700	1467	1133	4767	2167	4133	3833	4533	5467	4667
	TRACE & TOXIC															
1	As (µg/L)									8.0	1.0	1.0	1.0	2.0	1.5	11.00
2	Cd (µg/L)									3.0	0.0	2.0	2.5	3.0	2.0	4.00
3	Cr (µg/L)									34.1	2.0	2.0	3.0	3.0	3.5	21.00
4	Ni (µg/L)									20.0	6.1	5.0	5.0	6.0	5.5	N.A.
5	Pb (µg/L)									2.0	2.1	2.0	2.0	3.0	2.0	0.00
6	Zn (µg/L)									6.0	4.0	4.0	4.0	5.0	4.5	521.00
7	Cu (µg/L)															23.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	71	75	88	62	67	80	94	74	100	93	92	89	103	108	114
2	HAR_Total (mgCaCO ₃ /L)	195	159	209	154	138	150	178	160	179	157	184	188	160	191	170
3	Na% (%)	30	27	29	33	31	30	38	35	24	26	23	24	26	23	24
4	RSC (-)	0.0	0.0	2.6	0.7	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.3	1.1	1.2	1.4	1.2	1.1	1.8	1.5	0.9	1.0	0.9	0.9	0.9	0.9	0.9
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	EC_FLD (µmho/cm)	3224	1744	1404	2700	2415	1973	3586	2984	2040						
2	EC_GEN (µmho/cm)	3204	1712	1376	2660	2397	1953	3570	2969	2032						
3	pH_FLD (pH units)	7.2	7.1	7.2	7.3	7.7	8.0	7.7	7.9	7.9						
4	pH_GEN (pH units)	7.9	8.2	7.9	7.8	8.0	8.7	8.0	8.0	8.0						
5	TDS (mg/L)								1609	1094						
6	Temp (deg C)	30.0	29.4	26.6	28.4	27.5	27.4	25.9	27.1	26.2						
7	Turb (NTU)								0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	31.1	16.7	15.9	5.1	0.0	8.0						
2	ALK-TOT (mgCaCO3/L)	276	279	257	758	491	260	290	569	192						
3	B (mg/L)	0.06	0.02	0.02	0.03	0.00	0.22	0.00	0.06	0.04						
4	Ca (mg/L)	125	50	87	147	70	94	114	135	47						
5	Cl (mg/L)	476.9	477.2	281.4	364.4	260.0	314.4	519.5	634.6	223.2						
6	CO3 (mg/L)	0.0	0.0	0.0	7.6	20.2	19.2	6.2	0.0	9.6						
7	F (mg/L)	0.05	0.06	0.12	0.05	0.16	0.12	0.18	0.71	0.77						
8	Fe (mg/L)	0.2	0.1	0.1	0.1	0.0	0.1	0.0	0.2	0.3						
9	HCO3 (mg/L)	168	205	190	349	279	279	342	694	215						
10	K (mg/L)	147.2	50.0	5.4	8.2	12.0	14.2	15.8	44.6	17.3						
11	Mg (mg/L)	113.6	114.0	97.6	104.7	81.3	117.5	118.6	111.4	55.5						
12	Na (mg/L)	263.0	118.0	65.6	172.0	109.0	182.4	250.2	353.2	141.8						
13	NH3-N (mg N/L)	0.06	0.05	0.05	0.05	0.05	0.05	0.11	0.07	0.05						
14	NO2+NO3 (mg N/L)	0.96	0.25	0.25	1.22	0.69	7.30	8.19	7.56	4.35						
15	NO2-N (mgN/L)	0.28	0.23	0.08	0.21	0.03	0.06	0.12	0.17	0.17						
16	NO3-N (mgN/L)	0.68	0.02	0.17	1.02	0.65	7.24	8.07	7.39	4.18						
17	Org-N (mgN/L)								0.0	0.0						
18	P-Tot (mgP/L)	0.196	0.173	0.100	0.049	0.047	0.006	0.053	0.031	0.023						
19	SiO2 (mg/L)	11.4	13.3	9.4	8.9	9.8	8.6	6.3	9.3	9.5						

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20	SO ₄ (mg/L)	44.8	25.7	19.0	77.2	106.4	100.4	115.8	60.3	71.3						
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								1.1							
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	312	124	217	369	174	236	284	339	117						
2	HAR_Total (mgCaCO ₃ /L)	785	599	624	805	513	725	778	803	349						
3	Na% (%)	37	27	27	32	31	35	41	47	45						
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0						
5	SAR (-)	4.3	2.1	1.5	2.8	2.1	3.0	4.0	5.5	3.4						
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	EC_FLD (μmho/cm)	2313	1838	2548	2985	1913	1844	4277	2900	3522		2170	3600	3660	2500	2265
2	EC_GEN (μmho/cm)	2290	1811	2519	2887	1875	1831	4268	2812	3510		3642	3588	3644	2430	2274
3	pH_FLD (pH units)	7.0	7.0	7.2	7.9	7.7	8.5	7.9	7.8	8.0		7.8	7.7	8.0	7.4	8.1
4	pH_GEN (pH units)	7.8	7.9	8.0	8.2	8.1	8.8	8.1	8.1	8.1	7.8	8.0	7.8	8.1	7.5	8.0
5	TDS (mg/L)								1552	1978		2166	2208	2140	1460	1138
6	Temp (deg C)	23.0	22.6	22.8	21.6	22.3	21.6	22.1	21.8	23.1		27.0	25.5	25.0	27.0	25.5
7	Turb (NTU)								0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	5.6	4.6	0.0	16.9	14.9	0.0	3.0	5.0		0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	233	268	611	326	757	293	315	414	221		200	204	604	380	312
3	B (mg/L)	0.03	0.03	0.03	0.05	0.04	0.19	0.14	0.01	0.04		0.02	0.02	0.02	0.01	0.02
4	Ca (mg/L)	70	52	194	111	116	104	137	131	52		46	51	154	40	41
5	Cl (mg/L)	361.3	476.1	454.8	385.0	330.5	350.5	794.2	583.7	370.0		288.0	296.0	336.0	246.0	196.0
6	CO3 (mg/L)	0.0	6.8	5.5	0.0	20.4	18.0	0.0	3.6	6.0		0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.14	0.37	0.17	0.05	0.14	0.18	0.45		0.50	0.49	0.49	0.39	0.29
8	Fe (mg/L)	0.2	0.1	0.1	0.1	0.0	0.1	0.1	0.4	0.2		0.2	0.2	0.0	0.2	0.2
9	HCO3 (mg/L)	142	157	411	398	441	260	384	497	257		244	249	737	464	381
10	K (mg/L)	64.8	50.8	5.5	24.3	15.8	15.8	47.6	61.5	27.3		26.0	28.0	26.0	16.0	15.0
11	Mg (mg/L)	147.6	97.5	149.2	114.8	110.3	91.1	134.6	97.1	63.5		68.3	69.3	70.0	61.5	63.0
12	Na (mg/L)	168.5	125.0	71.5	270.0	204.8	179.0	351.8	344.0	245.0		372.0	368.0	248.0	159.0	150.0
13	NH3-N (mg N/L)	0.06	0.05	0.05	0.05	0.08	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.32	0.27	0.51	1.44	5.09	8.14	9.51	8.05	3.32			3.07	2.03	1.35	1.12
15	NO2-N (mgN/L)	0.19	0.26	0.18	0.09	0.16	0.10	0.09	0.03	0.15			0.22	0.04	0.00	0.00
16	NO3-N (mgN/L)	0.14	0.01	0.32	1.35	4.93	8.03	9.42	8.01	3.17			2.84	1.98	1.35	1.12
17	Org-N (mgN/L)							0.0	0.0	0.0						
18	P-Tot (mgP/L)	0.161	0.144	0.064	0.026	0.022	0.001	0.006	0.037	0.025		0.017	0.021	0.014	0.012	0.009
19	SiO2 (mg/L)	8.8	11.6	12.5	13.8	10.6	8.7	8.5	9.6	9.6		9.2	9.1	9.2	8.4	8.8

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GGOO0B7)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
20	SO4 (mg/L)	15.9	16.3	38.3	84.3	119.3	39.8	342.6	144.0	76.5		68.0	70.0	70.0	48.0	50.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								2.9							
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	175	131	485	278	291	260	343	328	129		116	128	385	100	103
2	HAR_Total (mgCaCO3/L)	790	537	1106	756	750	640	904	733	394		401	417	677	356	365
3	Na% (%)	30	32	12	43	37	38	39	47	55		65	64	43	48	46
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.5	0.0
5	SAR (-)	2.6	2.4	0.9	4.3	3.3	3.2	5.0	5.6	5.4		8.1	7.9	4.2	3.7	3.4
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	2563	1680	2027	1917	2397	2682	3673	2232	3500	4000	3820	3820	2200	2200	2030
2	EC_GEN (µmho/cm)	2543	1610	1952	1840	2377	2665	3663	2217	3490	3900	3814	3816	2150	2150	2042
3	pH_FLD (pH units)	7.0	7.5	7.3	7.9	7.5	7.6	7.2	8.2	8.1	7.5	7.8	8.2	7.5	7.5	8.2
4	pH_GEN (pH units)	7.7	8.0	8.2	8.1	7.9	7.9	8.2	8.4	8.4	7.8	8.0	8.3	7.6	7.6	8.2
5	TDS (mg/L)								1178	1950	1950	1960	2326	1290	1290	1200
6	Temp (deg C)	25.3	22.8	23.2	23.5	22.8	21.8	23.3	21.5	23.5	22.0	26.5	24.0	25.5	25.5	24.5
7	Turb (NTU)								0.1	0.1			0.1			
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	18.6	0.0	37.2	0.0	0.0	14.6	19.9	0.0	0.0	6.6	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	356	196	972	222	560	283	351	454	277	216	216	237	344	344	304
3	B (mg/L)	0.05	0.05	0.03	0.01	0.04		0.08	0.17	0.04	0.03	0.03	0.03	0.01	0.01	0.02
4	Ca (mg/L)	65	41	174	106	81	86	157	106	74	82	82	66	37	37	53
5	Cl (mg/L)	334.5	296.7	306.6	285.0	316.7	405.3	818.2	316.4	360.0	386.0	324.0	320.0	208.0	208.0	205.0
6	CO3 (mg/L)	0.0	0.0	22.4	0.0	44.8	0.0	0.0	17.6	24.0	0.0	0.0	8.0	0.0	0.0	0.0
7	F (mg/L)	0.06	0.05	0.05	0.25	0.10		0.11	0.79	0.46	0.45	0.46	0.47	0.32	0.32	0.24
8	Fe (mg/L)	0.2	0.1	0.0	0.0	0.1		0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	272	119	570	271	296	345	428	518	289	264	264	273	420	420	371
10	K (mg/L)	81.3	13.0	6.7	14.7	15.7	17.7	64.4	26.0	27.0	27.0	30.0	30.0	12.0	12.0	23.0
11	Mg (mg/L)	130.9	59.7	88.6	93.4	120.3	118.0	164.4	96.3	63.0	68.7	66.4	75.7	57.6	57.6	67.1
12	Na (mg/L)	181.7	93.3	78.3	126.3	185.7	269.0	446.3	207.0	260.0	378.0	28.0	390.0	148.0	148.0	126.0
13	NH3-N (mg N/L)	0.10	0.06	0.05	0.07	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.38	0.37	0.62	2.83	7.15		11.06	6.77	3.17	3.13	3.08	3.15	1.32	1.32	0.93
15	NO2-N (mgN/L)	0.37	0.19	0.03	0.13	0.18		0.05	0.22	0.05	0.04	0.04	0.05	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.01	0.17	0.58	2.70	6.97		11.01	6.55	3.12	3.10	3.05	3.10	1.32	1.32	0.93
17	Org-N (mgN/L)								0.0	0.0						
18	P-Tot (mgP/L)	0.189	0.133	0.037	0.003	0.020		0.001	0.025	0.023	0.318	0.326	0.334	0.010	0.010	0.010
19	SiO2 (mg/L)	10.1	13.2	12.2	15.6	14.9		9.1	9.7	9.3	9.3	9.3	9.2	7.0	7.0	7.6

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Shahzadpur (GG000B7)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
20	SO ₄ (mg/L)	46.4	13.7	51.3	94.7	150.7	43.3	446.4	144.6	102.0	72.0	116.0	160.0	42.0	42.0	58.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								6.7							
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	162	103	434	264	202	215	394	266	185	205	206	165	92	92	133
2	HAR_Total (mgCaCO ₃ /L)	707	351	803	653	703	707	1078	667	448	491	483	481	332	332	413
3	Na% (%)	33	36	17	29	36	45	46	39	54	61	11	62	48	48	38
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0
5	SAR (-)	3.0	2.2	1.2	2.2	3.1	4.4	6.0	3.5	5.4	7.4	0.6	7.8	3.5	3.5	2.7
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: ALLAHABAD	Code	: GGOOOZ9
State	: Uttar Pradesh	District	Allahabad
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: -	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Ganga
Division	: M Ganga Div. III, Varanasi	Sub-Division	: M Ganga Yamuna SD, Allahabad
Drainage Area	: 463971 Sq. Km.	Bank	: Left
Latitude	: 25°24'00"	Longitude	: 81°55'00"
	Opening Date	Closing Date	
Gauge	: 7/3/1970		
Discharge	: 7/3/1970		
Sediment	: 7/7/1972		
Water Quality	: 1/1/1972		

Water Quality Datasheet for the period : 2016-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)	131.8	323.0	7320	8641	2040	851.0	548.0	336.0	418.0	279.0	265.0	136.0
2	Colour_Cod (-)	Light Brown	Light Brown	Brown	Brown	Light Brown	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Brown
3	EC_FLD (µmho/cm)	580	431	220	201	372	421	390	487	400	430	440	630
4	EC_GEN (µmho/cm)	583	435	223	207	374	425	398	492	403	432	442	633
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_FLD (pH units)	8.2	8.3	8.1	7.7	7.8	7.7	8.0	7.9	8.0	8.0	7.8	8.0
7	pH_GEN (pH units)	8.2	8.3	8.0	7.5	7.7	7.6	7.9	7.8	8.0	7.9	7.7	7.9
8	TDS (mg/L)	354	270	140	112	184	212	200	242	201	215	221	357
9	Temp (deg C)	27.0	30.0	28.5	30.0	28.5	26.5	19.0	16.5	19.2	22.0	27.5	29.8
10	Turb (NTU)	2.0	4.2	4.0	3.1	2.0	1.4	1.0	0.6	0.4	0.1	0.1	0.1
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	184	103	84	92	86	82	87	90	92	90	92	124
3	B (mg/L)	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
4	Ca (mg/L)	40	48	52	48	47	45	43	41	42	43	44	38
5	Cl (mg/L)	70.0	42.0	36.0	30.0	28.0	24.0	28.0	24.0	28.0	32.0	28.0	34.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.59	0.52	0.48	0.41	0.39	0.38	0.33	0.30	0.30	0.28	0.30	0.33
8	Fe (mg/L)	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.3
9	HCO3 (mg/L)	224	126	102	112	104	101	106	109	112	110	112	151
10	K (mg/L)	14.0	15.0	17.0	12.0	12.0	10.0	9.0	10.0	10.0	11.0	9.0	11.0
11	Mg (mg/L)	18.3	18.6	20.4	17.3	15.9	15.5	16.0	13.6	14.7	15.5	15.8	11.4
12	Na (mg/L)	36.0	38.0	42.0	36.0	32.0	28.0	24.0	23.0	25.0	28.0	28.0	25.1
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	5.00	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.29	0.32	0.33	0.33	0.31	0.30	0.29	0.27	0.38	0.29	0.29	0.31
15	NO2-N (mgN/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
16	NO3-N (mgN/L)	0.29	0.32	0.33	0.33	0.31	0.30	0.29	0.27	0.38	0.29	0.29	0.31
17	P-Tot (mgP/L)	0.038	0.026	0.030	0.033	0.031	0.030	0.026	0.032	0.034	0.035	0.038	0.040
18	SiO2 (mg/L)	9.8	10.8	11.3	14.6	14.2	13.5	12.7	13.1	11.8	11.2	11.8	11.4

Water Quality Datasheet for the period : 2016-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
19	SO ₄ (mg/L)	45.0	40.0	38.0	32.0	36.0	30.0	32.0	35.0	37.0	34.0	36.0	44.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD ₃₋₂₇ (mg/L)	4.2	4.5	2.8	2.4	1.8	1.8	1.6	2.0	2.2	2.4	3.4	2.9
2	COD (mg/L)	20.4	12.7	8.4	9.4	22.8	19.6	16.0	22.9	21.2	24.8	25.0	23.7
3	DO (mg/L)	7.5	7.8	7.5	7.3	6.3	7.7	8.1	7.5	6.3	5.9	5.1	5.3
4	DO_SAT% (%)	94	103	95	96	81	95	87	76	68	68	65	69
5	FCol-MPN (MPN/100mL)	3600	3100	2400	2100	2300	2100	1700	1900	2000	2100	2400	2000
6	Tcol-MPN (MPN/100mL)	8300	8000	7200	6800	6700	6000	5000	4800	5000	4600	5000	4600
	TRACE & TOXIC												
1	As (µg/L)			4.08				3.81				19.00	
2	Cd (µg/L)			0.14				0.08				5.00	
3	Cr (µg/L)			5.71				0.88				15.00	
4	Ni (µg/L)			2.55				1.85				10.00	
5	Pb (µg/L)			0.54				0.28				0.00	
6	Zn (µg/L)			7.30				4.20				159.00	
7	Cu (µg/L)			0.07				2.20				11.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO ₃ /L)	99	120	129	120	117	112	108	101	106	108	111	95
2	HAR_Total (mgCaCO ₃ /L)	175	198	214	193	183	176	175	158	167	173	177	143
3	Na% (%)	29	28	28	27	26	24	22	23	23	25	25	26
4	RSC (-)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.2	1.2	1.3	1.1	1.0	0.9	0.8	0.8	0.8	0.9	0.9	0.9
	PESTICIDES												

Water Quality Datasheet for the period : 2016-2017

Station Name : ALLAHABAD (GGOOZ9)

Local River : Ganga

Well Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	01/11/2016 B	01/05/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_FLD (µmho/cm)	1370	1315
3	EC_GEN (µmho/cm)	1376	1319
4	Odour_Code (-)	odour free	odour free
5	pH_FLD (pH units)	7.6	8.1
6	pH_GEN (pH units)	7.5	8.1
7	TDS (mg/L)	688	760
8	Temp (deg C)	26.0	25.5
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	428	394
3	B (mg/L)	0.00	0.00
4	Ca (mg/L)	65	65
5	Cl (mg/L)	144.0	118.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.59	0.52
8	Fe (mg/L)	0.2	0.3
9	HCO3 (mg/L)	522	480
10	K (mg/L)	17.0	20.0
11	Mg (mg/L)	73.9	68.1
12	Na (mg/L)	58.0	81.0
13	NH3-N (mg N/L)	0.05	0.05
14	NO2+NO3 (mg N/L)	2.11	1.85
15	NO2-N (mgN/L)	0.00	0.00
16	NO3-N (mgN/L)	2.11	1.85
17	P-Tot (mgP/L)	0.008	0.013
18	SiO2 (mg/L)	8.1	8.5
19	SO4 (mg/L)	46.0	52.0
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	163	163
2	HAR_Total (mgCaCO3/L)	471	447
3	Na% (%)	21	27
4	RSC (-)	0.0	0.0
5	SAR (-)	1.2	1.7
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : ALLAHABAD (GG000Z9)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

River Water Summary

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	25777	67.90	2421
2	EC_FLD (μmho/cm)	12	630	201	417
3	EC_GEN (μmho/cm)	12	633	207	421
4	pH_FLD (pH units)	12	8.3	7.7	8
5	pH_GEN (pH units)	12	8.3	7.5	7.9
6	TDS (mg/L)	12	357	112	226
7	Temp (deg C)	12	30.0	16.5	25.4
8	Turb (NTU)	12	4.2	0.1	1.6
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	184	82	101
3	B (mg/L)	12	0.04	0.03	0.04
4	Ca (mg/L)	12	52	38	44
5	Cl (mg/L)	12	70.0	24.0	33.7
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.59	0.28	0.38
8	Fe (mg/L)	12	0.3	0.2	0.2
9	HCO3 (mg/L)	12	224	101	123
10	K (mg/L)	12	17.0	9.0	11.7
11	Mg (mg/L)	12	20.4	11.4	16.1
12	Na (mg/L)	12	42.0	23.0	30.4
13	NH3-N (mg N/L)	12	5.00	0.05	0.46
14	NO2+NO3 (mg N/L)	12	0.38	0.27	0.31
15	NO2-N (mgN/L)	12	0.00	0.00	0
16	NO3-N (mgN/L)	12	0.38	0.27	0.31
17	P-Tot (mgP/L)	12	0.040	0.026	0.033
18	SiO2 (mg/L)	12	14.6	9.8	12.2
19	SO4 (mg/L)	12	45.0	30.0	36.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	4.5	1.6	2.6
2	COD (mg/L)	12	25.0	8.4	18.9
3	DO (mg/L)	12	8.1	5.1	6.9
4	DO_SAT% (%)	12	103	65	83
5	FCol-MPN (MPN/100mL)	12	3600	1700	2308
6	Tcol-MPN (MPN/100mL)	12	8300	4600	6000
	TRACE & TOXIC				
1	As (μg/L)	3	19.00	3.81	11.41
2	Cd (μg/L)	3	5.00	0.08	2.54
3	Cr (μg/L)	3	15.00	0.88	7.94
4	Ni (μg/L)	3	10.00	1.85	5.93
5	Pb (μg/L)	3	0.54	0.00	0.27
6	Zn (μg/L)	3	159.00	4.20	81.60
7	Cu (μg/L)	3	11.00	0.07	5.54
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	129	95	111
2	HAR_Total (mgCaCO3/L)	12	214	143	178
3	Na% (%)	12	29	22	25
4	RSC (-)	12	0.2	0.0	0
5	SAR (-)	12	1.3	0.8	1
	PESTICIDES				

Water Quality Summary for the period : 2016-2017

Station Name : ALLAHABAD (GG000Z9)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

Sub-Division : M Ganga Yamuna SD, Allahabad

Well Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_FLD (μmho/cm)	2	1370	1315	1343
2	EC_GEN (μmho/cm)	2	1376	1319	1348
3	pH_FLD (pH units)	2	8.1	7.6	7.9
4	pH_GEN (pH units)	2	8.1	7.5	7.8
5	TDS (mg/L)	2	760	688	724
6	Temp (deg C)	2	26.0	25.5	25.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	2	428	394	411
3	B (mg/L)	2	0.00	0.00	0.00
4	Ca (mg/L)	2	65	65	65
5	Cl (mg/L)	2	144.0	118.0	131.0
6	CO3 (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.59	0.52	0.56
8	Fe (mg/L)	2	0.3	0.2	0.3
9	HCO3 (mg/L)	2	522	480	501
10	K (mg/L)	2	20.0	17.0	18.5
11	Mg (mg/L)	2	73.9	68.1	71.0
12	Na (mg/L)	2	81.0	58.0	69.5
13	NH3-N (mg N/L)	2	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	2	2.11	1.85	1.98
15	NO2-N (mgN/L)	2	0.00	0.00	0.00
16	NO3-N (mgN/L)	2	2.11	1.85	1.98
17	P-Tot (mgP/L)	2	0.013	0.008	0.011
18	SiO2 (mg/L)	2	8.5	8.1	8.3
19	SO4 (mg/L)	2	52.0	46.0	49.0
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	2	163	163	163
2	HAR_Total (mgCaCO3/L)	2	471	447	459
3	Na% (%)	2	27	21	24
4	RSC (-)	2	0.0	0.0	0.0
5	SAR (-)	2	1.7	1.2	1.4
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	1652	5365	3003	3482	1217	1497	4738	1102	4774	7562	3063	13177	1434	3769	3691
2	EC_FLD (µmho/cm)	355	499	337	371	380	347	268	459	442	348	324	409	372	352	361
3	EC_GEN (µmho/cm)	340	482	327	336	357	328	257	449	435	343	317	405	367	348	364
4	pH_FLD (pH units)	8.1	8.1	8.4	8.3	7.8	8.4	8.0	8.3	7.9	8.2	7.7	7.9	7.9	7.4	8.0
5	pH_GEN (pH units)	8.3	8.3	8.2	8.3	8.5	8.7	8.3	8.4	8.4	8.3	7.8	8.0	8.0	7.7	7.9
6	TDS (mg/L)								366	250	196	200	220	221	209	212
7	Temp (deg C)	29.3	28.7	29.6	30.9	28.2	29.5	27.7	28.8	30.1	30.6	29.0	27.4	26.5	29.3	28.8
8	Turb (NTU)							0.4	0.3	2.3	0.2	0.4	0.8	5.4	1.0	3.1
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	10.1	11.2	19.9	4.0	6.9	21.0	8.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	214	231	187	134	234	128	93	145	190	176	160	160	150	140	110
3	B (mg/L)	0.00	0.01	0.00	0.01	0.00	0.05	0.00	0.00	0.03	0.05	0.04	0.04	0.04	0.03	0.04
4	Ca (mg/L)	34	21	22	17	17	34	28	35	38	34	41	42	36	34	47
5	Cl (mg/L)	21.8	52.3	18.3	27.0	43.7	45.8	24.0	40.4	62.4	51.4	58.4	59.2	53.2	32.2	41.2
6	CO3 (mg/L)	0.0	0.0	0.0	12.1	13.4	24.0	4.8	8.3	25.3	9.6	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.11	0.11	0.22	0.24	0.41	0.72	0.72	0.53	0.51	0.47	0.35	0.48
8	Fe (mg/L)	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	130	170	114	139	147	107	103	159	181	195	196	195	183	171	134
10	K (mg/L)	14.0	6.2	4.0	6.2	8.6	9.4	8.0	6.1	9.4	7.4	7.8	8.6	7.2	7.2	14.0
11	Mg (mg/L)	23.1	33.1	15.5	16.4	15.6	18.7	7.1	18.8	15.3	17.7	16.1	15.5	16.9	16.0	18.1
12	Na (mg/L)	38.2	35.8	18.0	31.8	29.8	26.2	33.8	29.6	40.4	26.5	28.0	28.0	28.6	22.0	36.8
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.02	0.05
14	NO2+NO3 (mg N/L)	0.26	0.44	0.14	0.14	0.97	0.43	0.21	0.24	0.21	0.23	0.30	0.29	0.25	0.24	0.32
15	NO2-N (mgN/L)	0.10	0.06	0.04	0.00	0.11	0.02	0.00	0.01	0.07	0.05	0.01	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.16	0.38	0.10	0.14	0.86	0.41	0.21	0.23	0.14	0.19	0.29	0.29	0.25	0.24	0.32
17	o-PO4-P (mg P/L)														0.010	
18	Org-N (mgN/L)	2.3	2.9				1.3	0.0	0.2							
19	P-Tot (mgP/L)	0.038	0.077	0.103	0.047	0.001	0.011	0.007	0.003	0.007	0.024	0.015	0.001	0.031	0.022	0.032

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20	SiO ₂ (mg/L)	5.6	8.6	8.4	8.3	7.9	6.4	5.9	8.6	7.2	7.5	7.8	7.7	9.3	8.5	12.1
21	SO ₄ (mg/L)	23.3	12.8	11.4	39.6	32.0	28.0	25.8	29.3	20.8	27.4	41.0	38.0	39.0	32.4	38.2
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	3.5	3.0	3.8	3.8	3.2	3.4	3.8	3.9	3.7	3.1	3.8	3.3	3.3	3.4	3.1
2	COD (mg/L)	3.2	2.1				15.0	6.0	11.9	15.5	15.8	11.0	12.2	16.9	14.9	14.7
3	DO (mg/L)	7.5	7.3	7.3	7.2	7.0	7.1	7.5	7.2	7.2	7.8	6.9	6.2	7.4	7.2	7.3
4	DO_SAT% (%)	97	95	96	96	89	93	95	94	96	104	90	79	91	94	94
5	FCol-MPN (MPN/100mL)	2360	2775	2360	1020	1300	1800	1300	1340	2740	3040	3660	3440	3640	3360	2700
6	Tcol-MPN (MPN/100mL)	4740	5725	9720	2060	2080	2780	2840	2260	4260	5180	5620	5680	7440	6740	7400
	TRACE & TOXIC															
1	As (µg/L)															4.08
2	Cd (µg/L)															0.14
3	Cr (µg/L)															5.71
4	Ni (µg/L)															2.55
5	Pb (µg/L)															0.54
6	Zn (µg/L)															7.30
7	Cu (µg/L)															0.07
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	85	53	55	42	43	84	70	88	95	85	103	105	91	85	117
2	HAR_Total (mgCaCO ₃ /L)	181	191	120	110	108	162	100	167	159	159	170	169	161	152	193
3	Na% (%)	29	25	24	31	33	25	41	27	33	26	25	25	27	21	28
4	RSC (-)	0.0	0.0	0.0	0.5	0.7	0.0	0.1	0.0	0.7	0.4	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.2	1.0	0.7	1.2	1.2	0.9	1.5	1.0	1.4	0.9	0.9	0.9	1.0	0.8	1.2
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	525.5	945.8	737.7	554.0	368.4	398.6	677.2	538.9	692.7	916.3	737.9	1154	535.9	364.8	538.3
2	EC_FLD (µmho/cm)	402	397	550	428	410	337	328	446	313	363	326	373	368	428	425
3	EC_GEN (µmho/cm)	389	389	538	377	386	321	313	437	308	356	316	367	363	425	430
4	pH_FLD (pH units)	8.2	8.4	7.9	8.2	7.8	8.0	8.0	8.1	8.1	8.1	7.9	7.9	8.0	7.8	7.9
5	pH_GEN (pH units)	8.4	8.4	8.1	8.6	8.6	8.4	8.3	8.3	8.4	8.2	8.2	8.1	8.1	8.1	7.8
6	TDS (mg/L)								371	210	175	210	224	219	256	214
7	Temp (deg C)	21.1	21.6	19.6	20.9	20.3	18.9	18.6	17.5	20.0	20.1	20.3	19.0	18.8	21.3	20.3
8	Turb (NTU)							0.1	0.1	0.2	0.2	0.1	0.3	4.6	1.5	0.9
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	1.6	0.0	17.4	5.0	10.0	7.0	11.6	0.0	0.0	0.0	0.0	4.0	0.0
2	ALK-TOT (mgCaCO3/L)	218	283	225	141	264	124	131	163	175	186	167	167	154	159	88
3	B (mg/L)	0.01	0.00	0.01	0.02	0.01	0.00	0.00	0.00	0.02	0.03	0.03	0.05	0.09	0.03	0.03
4	Ca (mg/L)	32	23	32	23	26	35	31	23	42	38	44	40	36	40	43
5	Cl (mg/L)	27.1	31.8	23.3	29.3	51.3	39.0	46.3	54.1	58.8	66.5	56.0	59.0	45.3	35.5	26.0
6	CO3 (mg/L)	0.0	0.0	1.9	0.0	21.0	6.0	12.0	8.4	14.0	0.0	0.0	0.0	0.0	4.8	0.0
7	F (mg/L)	0.05	0.05	0.07	0.23	0.11	0.48	0.26	0.14	0.59	0.50	0.37	0.41	0.37	0.41	0.33
8	Fe (mg/L)	0.0	0.1	0.1	0.0	0.0	0.2	0.1	0.3	0.2	0.2	0.1	0.1	0.2	0.2	0.2
9	HCO3 (mg/L)	133	173	138	172	192	140	135	182	185	227	204	204	188	184	107
10	K (mg/L)	10.8	6.8	5.5	6.0	10.5	8.0	12.0	6.5	9.0	7.0	7.5	8.0	7.5	8.0	9.8
11	Mg (mg/L)	16.8	22.1	33.4	23.6	23.7	20.5	20.3	26.8	17.8	13.0	15.6	17.9	16.5	18.1	14.9
12	Na (mg/L)	33.0	28.3	27.0	30.8	38.5	33.0	53.9	43.7	35.3	25.0	28.8	29.8	27.0	24.0	25.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.01	1.29
14	NO2+NO3 (mg N/L)	0.14	0.32	0.32	0.08	0.67	2.92	1.31	0.13	0.39	0.23	0.20	0.23	0.23	0.26	0.31
15	NO2-N (mgN/L)	0.02	0.09	0.03	0.01	0.04	0.04	0.03	0.06	0.00	0.16	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.11	0.23	0.29	0.07	0.64	2.88	1.28	0.07	0.39	0.07	0.20	0.23	0.23	0.26	0.31
17	o-PO4-P (mg P/L)													0.010		
18	Org-N (mgN/L)	3.0	1.8			0.0	0.0	0.0	0.0							
19	P-Tot (mgP/L)	0.047	0.107	0.067	0.059	0.005	0.001	0.003	0.002	0.044	0.018	0.009	0.001	0.022	0.026	0.031

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
20	SiO ₂ (mg/L)	4.9	8.6	12.2	10.9	7.2	5.3	6.0	7.5	8.2	8.2	7.3	7.4	8.6	8.6	12.8
21	SO ₄ (mg/L)	10.6	16.8	43.8	37.8	40.3	33.3	33.3	37.2	32.5	26.0	42.5	42.0	40.0	31.5	33.5
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	3.3	2.8	4.4	3.7	4.0	3.9	3.8	4.4	3.3	2.8	3.3	3.0	3.1	2.9	1.9
2	COD (mg/L)	1.5	1.2			14.1	8.2	5.2	10.0	14.9	14.9	16.4	12.8	19.9	17.1	19.9
3	DO (mg/L)	7.8	8.0	8.0	7.1	7.7	7.9	7.6	8.2	7.9	8.2	8.0	7.8	7.7	8.0	7.4
4	DO_SAT% (%)	87	91	87	80	85	85	81	86	87	90	88	84	83	89	82
5	FCol-MPN (MPN/100mL)	2100	2075	1000	1050	1075	1300	1225	1325	1900	2125	3825	3800	3175	2950	1925
6	Tcol-MPN (MPN/100mL)	4125	6625	4575	1700	1575	2900	2875	1875	4575	4650	6150	6825	6325	6800	5200
	TRACE & TOXIC															
1	As (µg/L)															3.81
2	Cd (µg/L)															0.08
3	Cr (µg/L)															0.88
4	Ni (µg/L)															1.85
5	Pb (µg/L)															0.28
6	Zn (µg/L)															4.20
7	Cu (µg/L)															2.20
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	81	58	79	59	65	87	78	57	106	95	109	101	89	99	107
2	HAR_Total (mgCaCO ₃ /L)	151	150	218	157	164	173	163	169	180	149	174	176	158	174	169
3	Na% (%)	30	28	20	29	33	29	40	35	29	26	25	26	26	22	23
4	RSC (-)	0.0	0.1	0.0	0.1	0.6	0.0	0.0	0.1	0.3	0.8	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.2	1.0	0.8	1.1	1.3	1.1	1.8	1.5	1.2	0.9	0.9	1.0	0.9	0.8	0.8
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	401.5	362.2	320.8	211.0	386.1	164.9	313.5	189.5	333.2	396.6	408.3	680.9	549.1	184.1	226.7
2	EC_FLD (µmho/cm)	565	469	590	587	413	359	523	535	317	380	465	417	367	593	500
3	EC_GEN (µmho/cm)	551	456	579	538	390	346	513	528	312	375	460	414	352	587	502
4	pH_FLD (pH units)	7.9	8.6	7.6	8.1	7.8	8.5	7.5	8.6	8.3	8.1	7.9	8.0	7.6	8.0	7.9
5	pH_GEN (pH units)	8.3	8.4	8.5	8.5	8.8	8.9	8.2	8.7	8.6	8.2	8.2	8.1	8.1	8.1	7.8
6	TDS (mg/L)								311	195	183	250	249	211	352	264
7	Temp (deg C)	24.7	25.7	22.8	28.5	24.2	23.5	23.0	27.5	25.2	26.7	19.7	23.2	26.7	25.5	26.4
8	Turb (NTU)							0.1	0.1	0.1	0.1	0.1	0.1	2.7	1.4	0.1
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	12.6	0.0	17.3	6.6	23.2	29.2	10.2	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	312	207	316	209	148	124	161	194	134	169	164	173	154	204	102
3	B (mg/L)	0.02	0.01	0.01	0.01	0.00		0.01	0.01	0.04	0.03	0.04	0.04	0.04	0.03	0.04
4	Ca (mg/L)	33	21	28	37	25	35	34	37	37	38	40	39	36	51	42
5	Cl (mg/L)	38.5	29.2	33.7	44.7	31.3	34.0	93.7	48.4	43.3	66.0	62.7	60.0	50.7	57.3	31.3
6	CO3 (mg/L)	0.0	0.0	15.2	0.0	20.8	8.0	28.0	35.2	12.3	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.17	0.22		0.16	0.43	0.48	0.50	0.46	0.44	0.43	0.57	0.30
8	Fe (mg/L)	0.2	0.1	0.1	0.0	0.1		0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
9	HCO3 (mg/L)	190	150	209	255	138	135	140	165	138	207	200	211	188	249	125
10	K (mg/L)	10.3	7.7	6.0	9.0	12.3	8.3	13.7	9.5	6.7	8.7	9.0	9.3	7.7	13.3	10.3
11	Mg (mg/L)	28.6	19.7	25.1	20.9	18.8	14.3	21.1	20.8	21.7	14.2	17.3	19.7	17.6	25.0	14.2
12	Na (mg/L)	44.3	31.7	46.3	44.3	31.7	31.3	63.4	41.9	29.7	27.3	27.0	30.3	32.3	36.0	27.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.02	0.05
14	NO2+NO3 (mg N/L)	0.56	0.36	0.51	0.11	0.09		0.00	0.04	0.52	0.36	0.30	0.25	0.24	0.29	0.29
15	NO2-N (mgN/L)	0.10	0.09	0.01	0.01	0.02		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.46	0.27	0.50	0.10	0.07		0.00	0.04	0.52	0.36	0.30	0.25	0.24	0.29	0.29
17	o-PO4-P (mg P/L)													0.007		
18	Org-N (mgN/L)	5.0	0.0			0.7		0.0	0.0	0.0						
19	P-Tot (mgP/L)	0.080	0.114	0.012	0.001	0.011		0.001	0.003	0.047	0.041	0.028	0.001	0.022	0.036	0.038

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
20	SiO ₂ (mg/L)	7.5	10.2	12.6	10.5	7.2		7.8	6.7	7.9	8.1	8.2	8.5	9.0	9.7	11.5
21	SO ₄ (mg/L)	17.0	22.7	59.0	37.0	37.7	38.0	48.2	24.8	28.3	30.7	39.7	40.7	42.7	44.7	38.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	4.3	4.1	4.4	3.9	3.6	4.1	4.1	4.2	3.2	2.8	3.2	2.9	3.2	3.6	2.9
2	COD (mg/L)	3.7	1.0			19.2	5.2	7.5	17.7	13.8	14.9	16.3	15.7	21.7	16.0	24.5
3	DO (mg/L)	7.7	7.4	7.5	6.5	7.3	7.0	6.9	7.5	8.3	7.3	7.8	8.1	7.6	7.3	5.5
4	DO_SAT% (%)	92	90	86	84	86	82	79	95	100	91	85	95	94	88	67
5	FCol-MPN (MPN/100mL)	1900	2200	800	767	1167	1067	1500	1467	2233	2400	3800	3967	3567	3333	2167
6	Tcol-MPN (MPN/100mL)	3767	6733	1267	1400	2467	2267	2467	1800	5400	4933	6367	7667	7167	7467	4733
	TRACE & TOXIC															
1	As (µg/L)									8.0	2.0	1.0	1.0	2.0	1.5	19.00
2	Cd (µg/L)									2.0	2.4	1.5	1.5	4.0	2.0	5.00
3	Cr (µg/L)									54.0	46.0	2.0	2.0	3.0		15.00
4	Ni (µg/L)									30.0	7.2	6.0	6.0	9.0		10.00
5	Pb (µg/L)												3.0	4.0		0.00
6	Zn (µg/L)												7.0	7.0		159.00
7	Cu (µg/L)															11.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	83	54	71	93	63	86	86	91	92	95	100	98	90	127	105
2	HAR_Total (mgCaCO ₃ /L)	202	136	175	180	141	146	174	178	182	154	172	180	164	231	164
3	Na% (%)	31	32	36	34	31	30	42	33	25	27	24	26	29	24	25
4	RSC (-)	0.0	0.0	0.7	0.7	0.2	0.0	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.4	1.2	1.6	1.4	1.2	1.1	2.1	1.4	1.0	1.0	0.9	1.0	1.1	1.0	0.9
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	EC_FLD (µmho/cm)	1148	780	689	1166	1226	1010	1462	1067	922						
2	EC_GEN (µmho/cm)	1130	775	678	1158	1206	985	1237	1053	917						
3	pH_FLD (pH units)	7.9	8.0	8.2	8.1	7.5	8.0	7.9	8.1	7.7						
4	pH_GEN (pH units)	8.1	8.2	8.1	8.1	8.0	8.4	8.3	8.2	8.3						
5	TDS (mg/L)								561	526						
6	Temp (deg C)	25.1	27.7	26.1	28.4	25.2	26.8	25.4	24.6	27.1						
7	Turb (NTU)							0.1	0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	27.2	47.8	74.9	44.6	29.5	47.8						
2	ALK-TOT (mgCaCO3/L)	202	199	256	471	820	419	422	411	348						
3	B (mg/L)	0.02	0.02	0.02	0.01	0.00	0.10	0.00	0.00	0.00						
4	Ca (mg/L)	35	21	24	39	31	51	42	48	52						
5	Cl (mg/L)	39.8	88.8	39.0	49.6	56.5	61.2	45.2	71.8	72.4						
6	CO3 (mg/L)	0.0	0.0	0.0	32.8	57.6	90.3	53.8	35.5	57.6						
7	F (mg/L)	0.05	0.05	0.09	0.25	0.05	0.80	0.80	0.75	0.96						
8	Fe (mg/L)	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.3						
9	HCO3 (mg/L)	247	243	282	508	507	328	405	429	307						
10	K (mg/L)	11.4	6.2	5.4	5.6	4.6	8.4	9.2	6.1	8.0						
11	Mg (mg/L)	94.5	48.9	56.2	72.2	61.1	77.3	65.4	75.6	49.1						
12	Na (mg/L)	124.4	52.4	18.8	104.2	101.6	125.0	94.8	63.6	52.4						
13	NH3-N (mg N/L)	0.09	0.05	0.05	0.11	0.06	0.05	0.05	0.05	0.05						
14	NO2+NO3 (mg N/L)	0.86	0.59	0.22	1.01	0.80	5.90	6.65	7.63	5.31						
15	NO2-N (mgN/L)	0.25	0.12	0.08	0.02	0.03	0.03	0.03	0.12	0.00						
16	NO3-N (mgN/L)	0.62	0.47	0.14	0.99	0.77	5.87	6.62	7.51	5.31						
17	Org-N (mgN/L)		4.8						0.0							
18	P-Tot (mgP/L)	0.116	0.094	0.095	0.043	0.020	0.006	0.005	0.019	0.007						
19	SiO2 (mg/L)	10.5	9.5	9.6	10.1	9.7	10.4	7.4	7.6	6.8						
20	SO4 (mg/L)	33.1	15.2	22.8	78.2	15.8	12.8	16.4	18.0	21.6						

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)		2.4						1.0							
2	COD (mg/L)		3.2						1.3							
3	DO (mg/L)		7.4													
4	DO_SAT% (%)		97													
5	FCol-MPN (MPN/100mL)		2300													
6	Tcol-MPN (MPN/100mL)		4100													
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	88	51	60	99	78	128	104	120	129						
2	HAR_Total (mgCaCO3/L)	482	255	295	400	333	450	377	435	334						
3	Na% (%)	35	30	14	36	40	37	35	24	25						
4	RSC (-)	0.0	0.0	0.0	1.5	3.6	0.1	1.0	0.0	0.4						
5	SAR (-)	2.5	1.4	0.5	2.3	2.5	2.6	2.1	1.3	1.2						
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	974	779	1198	1157	1255	979	1051	1098	1035	1000	1010	1005	1000	1200	1370
2	EC_GEN (µmho/cm)	964	744	1183	1147	1227	951	1038	1087	1027	995	998	1000	996	1195	1376
3	pH_FLD (pH units)	8.0	8.3	8.5	8.1	7.5	7.9	7.8	8.1	7.9	7.8	8.0	7.8	7.8	7.1	7.6
4	pH_GEN (pH units)	8.1	8.3	8.5	8.1	8.2	8.4	8.5	8.1	8.3	8.1	8.2	8.0	8.4	7.2	7.5
5	TDS (mg/L)								546	618		600	600	670	720	688
6	Temp (deg C)	24.8	24.9	23.1	26.0	16.5	24.6	23.6	22.0	26.0	26.5	27.0	26.5	26.5	26.5	26.0
7	Turb (NTU)							0.1	0.1	0.1	0.1	0.1				
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	3.6	1.2	46.0	80.2	69.2	0.0	24.9	39.8	39.8	0.0	39.8	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	150	201	599	471	911	431	442	468	332	360	364	288	368	414	428
3	B (mg/L)	0.02	0.01	0.03	0.04	0.03	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	21	16	38	42	60	51	53	39	52	52	53	54	53	67	65
5	Cl (mg/L)	34.5	33.2	45.4	48.5	51.8	62.5	65.3	65.7	80.5	58.0	60.0	62.0	110.0	120.0	144.0
6	CO3 (mg/L)	0.0	0.0	4.4	1.4	55.4	96.6	83.4	0.0	30.0	48.0	48.0	0.0	48.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.13	0.71	0.39	0.47	0.46	0.55	0.46	0.47	0.47	0.45	0.45	0.48	0.59
8	Fe (mg/L)	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	183	198	575	572	499	329	370	571	344	342	346	351	351	505	522
10	K (mg/L)	10.0	7.0	8.8	6.5	8.8	8.5	9.2	4.3	8.5	10.0	10.0	11.0	11.0	10.0	17.0
11	Mg (mg/L)	77.3	39.6	102.9	75.4	68.8	76.2	64.9	92.9	55.0	55.8	54.3	53.5	54.3	61.5	73.9
12	Na (mg/L)	92.5	30.8	30.0	143.5	122.3	116.0	92.1	69.0	57.3	76.0	78.0	76.0	77.0	75.0	58.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.40	0.48	0.48	3.28	4.93	1.25	4.08	4.10	2.75	2.15	2.15	2.18	2.17	2.24	2.11
15	NO2-N (mgN/L)	0.09	0.18	0.07	0.16	0.08	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.31	0.30	0.41	3.12	4.85	1.23	4.08	4.08	2.75	2.15	2.15	2.18	2.17	2.24	2.11
17	Org-N (mgN/L)								0.0							
18	P-Tot (mgP/L)	0.110	0.125	0.042	0.040	0.015	0.001	0.001	0.033	0.001	0.001	0.001	0.028	0.001	0.004	0.008
19	SiO2 (mg/L)	9.3	9.7	12.7	12.1	7.0	7.5	7.0	8.0	7.4	7.1	7.6	7.8	7.2	7.2	8.1
20	SO4 (mg/L)	18.3	23.8	53.8	11.0	14.3	14.8	21.8	54.5	26.5	26.0	26.0	34.0	28.0	32.0	46.0

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)															
2	COD (mg/L)								1.7							
3	DO (mg/L)															
4	DO_SAT% (%)															
5	FCol-MPN (MPN/100mL)															
6	Tcol-MPN (MPN/100mL)															
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	52	41	95	106	149	126	134	97	131	129	132	136	133	168	163
2	HAR_Total (mgCaCO3/L)	374	206	524	420	436	444	404	484	360	362	358	358	359	425	471
3	Na% (%)	34	24	11	42	38	36	33	24	25	31	32	31	31	27	21
4	RSC (-)	0.0	0.0	0.0	1.1	1.7	0.1	0.8	0.3	0.1	0.0	0.2	0.0	0.2	0.0	0.0
5	SAR (-)	2.1	0.9	0.6	3.1	2.6	2.4	2.0	1.4	1.3	1.7	1.8	1.8	1.8	1.6	1.2
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	1260	783	1133	1009	1197	1032	1000	1023	961		1020	1030	790	1260	1315
2	EC_GEN (µmho/cm)	1245	773	1122	1002	1173	1021	987	1015	959		1010	1020	783	1252	1319
3	pH_FLD (pH units)	7.9	8.6	7.6	8.1	7.5	8.0	7.7	8.3	8.0		8.1	7.7	8.0	7.1	8.1
4	pH_GEN (pH units)	8.0	8.2	8.3	8.1	7.8	8.5	8.5	8.4	8.2		8.4	7.8	7.8	7.2	8.1
5	TDS (mg/L)								505	603		616	630	470	751	760
6	Temp (deg C)	23.5	26.7	25.2	28.2	24.5	24.2	24.0	24.5	26.0		26.0	26.0	26.5	26.5	25.5
7	Turb (NTU)							0.1	0.1	0.1		0.1				
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	26.6	4.0	68.4	58.4	77.0	40.0	19.9		39.8	39.8	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	235	295	485	467	717	448	480	375	274		368	376	292	444	394
3	B (mg/L)	0.02	0.04	0.02	0.00	0.02		0.00	0.01	0.02		0.03	0.03	0.00	0.02	0.00
4	Ca (mg/L)	22	17	43	44	46	48	49	43	56		62	63	48	72	65
5	Cl (mg/L)	50.5	37.7	44.7	48.0	58.7	61.3	109.1	87.7	106.0		64.0	60.0	76.0	136.0	118.0
6	CO3 (mg/L)	0.0	0.0	32.1	4.8	82.4	70.4	92.8	48.2	24.0		48.0	48.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.07	0.55	0.70		0.54	0.90	0.50		0.48	0.48	0.41	0.05	0.52
8	Fe (mg/L)	0.2	0.1	0.1	0.0	0.0		0.1	0.2	0.2		0.2	0.2	0.2	0.2	0.3
9	HCO3 (mg/L)	286	180	526	560	353	403	397	359	286		351	361	356	542	480
10	K (mg/L)	9.0	8.7	7.3	5.7	9.3	8.7	9.4	8.6	10.0		14.0	16.0	9.0	12.0	20.0
11	Mg (mg/L)	85.2	34.6	80.0	70.5	79.4	76.5	74.3	63.7	62.5		51.3	50.6	49.8	65.4	68.1
12	Na (mg/L)	84.3	33.7	47.0	123.3	138.7	97.3	80.1	86.6	79.0		80.0	82.0	52.0	82.0	81.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05		0.05	0.05	0.05		0.05
14	NO2+NO3 (mg N/L)	0.80	0.39	0.49	2.49	7.42		2.19	7.23	2.63		2.46	2.47	1.81	2.25	1.85
15	NO2-N (mgN/L)	0.20	0.12	0.01	0.27	0.03		0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.60	0.27	0.48	2.22	7.38		2.18	7.23	2.63		2.46	2.47	1.81	2.25	1.85
17	Org-N (mgN/L)								0.0	0.0						
18	P-Tot (mgP/L)	0.139	0.126	0.047	0.001	0.008		0.001	0.009	0.001		0.001	0.032	0.002	0.016	0.013
19	SiO2 (mg/L)	10.9	11.7	13.0	13.1	9.9		8.2	6.9	7.6		7.6	7.9	6.7	7.6	8.5
20	SO4 (mg/L)	19.7	20.7	60.0	12.3	16.0	18.3	15.7	75.2	57.0		28.0	32.0	24.0	40.0	52.0

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ALLAHABAD (GG000Z9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD3-27 (mg/L)															
2	COD (mg/L)								22.3							
3	DO (mg/L)															
4	DO_SAT% (%)															
5	FCol-MPN (MPN/100mL)															
6	Tcol-MPN (MPN/100mL)															
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	54	42	107	109	114	120	122	107	141		155	158	120	180	163
2	HAR_Total (mgCaCO3/L)	410	186	440	403	445	439	432	372	401		369	369	328	453	447
3	Na% (%)	31	28	19	40	40	32	28	33	30		31	32	25	28	27
4	RSC (-)	0.0	0.0	1.0	1.4	0.3	0.3	1.0	0.3	0.0		0.0	0.2	0.0	0.0	0.0
5	SAR (-)	1.8	1.1	1.0	2.7	2.9	2.0	1.7	2.0	1.7		1.8	1.9	1.3	1.7	1.7
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: MIRZAPUR	Code	: GG000X9
State	: Uttar Pradesh	District	
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Ganga
Division	: M Ganga Div. III, Varanasi	Sub-Division	: M Ganga Yamuna SD, Allahabad
Drainage Area	: 485277 Sq. Km.	Bank	: Right
Latitude	: 25°09'30"	Longitude	: 82°32'39"
	Opening Date	Closing Date	
Gauge	: 5/31/1976		
Discharge	: 5/31/1976		
Sediment	: 9/4/1979		
Water Quality	: 5/31/1976		

Water Quality Datasheet for the period : 2016-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)	137.0	310.0	6858	9680	3718	1090	740.0	460.0	515.0	426.0	393.6	206.0
2	Colour_Cod (-)	Clear	Clear	Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (μmho/cm)	536	620	391	272	298	401	396	442	479	480	600	540
4	EC_GEN (μmho/cm)	542	658	399	275	301	404	402	448	484	485	604	542
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_FLD (pH units)	8.2	8.2	7.9	7.9	7.9	7.8	7.6	8.3	8.3	8.3	8.0	7.8
7	pH_GEN (pH units)	8.1	8.2	7.9	7.9	7.8	7.8	7.5	8.1	8.3	8.2	7.9	7.8
8	TDS (mg/L)	332	385	244	166	153	203	206	226	246	243	302	304
9	Temp (deg C)	30.0	32.0	30.0	28.0	27.0	27.0	20.0	16.0	18.0	20.0	23.0	29.0
10	Turb (NTU)	1.8	2.6	3.7	1.8	1.2	1.0	0.6	0.4	0.2	0.1	0.1	0.1
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	213	156	108	124	112	98	104	102	106	108	112	132
3	B (mg/L)	0.04	0.04	0.03	0.04	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
4	Ca (mg/L)	44	40	47	52	49	46	44	41	43	43	45	36
5	Cl (mg/L)	68.0	48.0	36.0	40.0	44.0	34.0	38.0	40.0	44.0	50.0	40.0	42.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.42	0.41	0.40	0.36	0.35	0.33	0.31	0.32	0.32	0.33	0.33	0.36
8	Fe (mg/L)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	260	190	131	151	137	120	127	124	129	132	137	161
10	K (mg/L)	14.0	17.0	12.0	10.0	9.0	9.0	8.0	9.0	10.0	12.0	11.0	10.0
11	Mg (mg/L)	22.6	18.6	12.7	11.6	11.4	12.4	14.2	12.8	13.6	14.0	14.7	11.4
12	Na (mg/L)	45.0	37.0	42.0	37.0	35.0	31.0	29.0	30.0	32.0	35.0	37.0	30.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.23	0.20	0.19	0.20	0.20	0.18	0.17	0.18	0.19	0.19	0.20	0.21
15	NO2-N (mgN/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
16	NO3-N (mgN/L)	0.23	0.20	0.19	0.20	0.20	0.18	0.17	0.18	0.19	0.19	0.20	0.21
17	P-Tot (mgP/L)	0.030	0.024	0.026	0.030	0.028	0.024	0.027	0.030	0.034	0.030	0.034	0.029
18	SiO2 (mg/L)	9.6	9.9	10.2	12.4	11.8	10.2	11.0	10.8	11.0	10.5	10.8	10.5

Water Quality Datasheet for the period : 2016-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
19	SO4 (mg/L)	44.0	36.0	28.0	32.0	30.0	25.0	28.0	26.0	30.0	34.0	36.0	42.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	3.6	3.9	2.7	2.4	1.6	2.5	2.0	1.6	3.2	3.0	2.3	2.2
2	COD (mg/L)	16.9	17.9	6.8	6.0	20.1	19.4	16.5	19.4	21.8	23.2	26.3	24.8
3	DO (mg/L)	7.5	7.6	6.7	6.9	6.9	7.3	8.0	7.1	5.9	6.1	5.9	5.7
4	DO_SAT% (%)	99	104	88	88	87	92	88	72	63	67	69	74
5	FCol-MPN (MPN/100mL)	2800	2500	2000	1600	1600	1500	1800	1500	1800	1700	2100	2000
6	Tcol-MPN (MPN/100mL)	5800	5600	5200	4500	4600	4200	4500	4200	4500	4000	4800	4500
	TRACE & TOXIC												
1	As (µg/L)			1.66				0.77				13.00	
2	Cd (µg/L)			0.18				0.08				4.00	
3	Cr (µg/L)			5.06				0.28				6.00	
4	Ni (µg/L)			2.49				0.19				8.00	
5	Pb (µg/L)			0.17				0.36				1.00	
6	Zn (µg/L)			5.90				3.90				53.00	
7	Cu (µg/L)			2.44				1.37				9.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	111	99	117	131	123	114	111	103	107	108	113	90
2	HAR_Total (mgCaCO3/L)	205	176	169	179	170	166	170	157	163	167	174	138
3	Na% (%)	31	29	33	30	30	28	26	28	28	30	30	30
4	RSC (-)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.4	1.2	1.4	1.2	1.2	1.1	1.0	1.0	1.1	1.2	1.2	1.1
	PESTICIDES												

Water Quality Datasheet for the period : 2016-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	01/11/2016 B	01/05/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_FLD (μmho/cm)	1340	830
3	EC_GEN (μmho/cm)	1345	832
4	Odour_Code (-)	odour free	odour free
5	pH_FLD (pH units)	8.0	8.0
6	pH_GEN (pH units)	7.9	7.9
7	TDS (mg/L)	672	486
8	Temp (deg C)	27.0	27.5
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	304	300
3	B (mg/L)	0.00	0.00
4	Ca (mg/L)	77	69
5	Cl (mg/L)	84.0	92.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.36	0.31
8	Fe (mg/L)	0.2	0.2
9	HCO3 (mg/L)	371	366
10	K (mg/L)	12.0	10.0
11	Mg (mg/L)	43.3	38.2
12	Na (mg/L)	48.0	55.0
13	NH3-N (mg N/L)	0.05	0.06
14	NO2+NO3 (mg N/L)	2.10	1.86
15	NO2-N (mgN/L)	0.00	0.00
16	NO3-N (mgN/L)	2.10	1.86
17	P-Tot (mgP/L)	0.160	0.140
18	SiO2 (mg/L)	10.2	9.5
19	SO4 (mg/L)	68.0	65.0
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	194	172
2	HAR_Total (mgCaCO3/L)	374	331
3	Na% (%)	21	26
4	RSC (-)	0.0	0.0
5	SAR (-)	1.1	1.3
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : MIRZAPUR (GG000X9)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

River Water Summary

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	28169	81.75	2676
2	EC_FLD (µmho/cm)	12	620	272	455
3	EC_GEN (µmho/cm)	12	658	275	462
4	pH_FLD (pH units)	12	8.3	7.6	8
5	pH_GEN (pH units)	12	8.3	7.5	8
6	TDS (mg/L)	12	385	153	251
7	Temp (deg C)	12	32.0	16.0	25
8	Turb (NTU)	12	3.7	0.1	1.1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	213	98	123
3	B (mg/L)	12	0.04	0.03	0.04
4	Ca (mg/L)	12	52	36	44
5	Cl (mg/L)	12	68.0	34.0	43.7
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.42	0.31	0.35
8	Fe (mg/L)	12	0.2	0.2	0.2
9	HCO3 (mg/L)	12	260	120	150
10	K (mg/L)	12	17.0	8.0	10.9
11	Mg (mg/L)	12	22.6	11.4	14.2
12	Na (mg/L)	12	45.0	29.0	35
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.23	0.17	0.19
15	NO2-N (mgN/L)	12	0.00	0.00	0
16	NO3-N (mgN/L)	12	0.23	0.17	0.19
17	P-Tot (mgP/L)	12	0.034	0.024	0.029
18	SiO2 (mg/L)	12	12.4	9.6	10.7
19	SO4 (mg/L)	12	44.0	25.0	32.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	3.9	1.6	2.6
2	COD (mg/L)	12	26.3	6.0	18.3
3	DO (mg/L)	12	8.0	5.7	6.8
4	DO_SAT% (%)	12	104	63	83
5	FCol-MPN (MPN/100mL)	12	2800	1500	1908
6	Tcol-MPN (MPN/100mL)	12	5800	4000	4700
	TRACE & TOXIC				
1	As (µg/L)	3	13.00	0.77	6.89
2	Cd (µg/L)	3	4.00	0.08	2.04
3	Cr (µg/L)	3	6.00	0.28	3.14
4	Ni (µg/L)	3	8.00	0.19	4.10
5	Pb (µg/L)	3	1.00	0.17	0.59
6	Zn (µg/L)	3	53.00	3.90	28.45
7	Cu (µg/L)	3	9.00	1.37	5.19
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	131	90	111
2	HAR_Total (mgCaCO3/L)	12	205	138	169
3	Na% (%)	12	33	26	29
4	RSC (-)	12	0.2	0.0	0
5	SAR (-)	12	1.4	1.0	1.2
	PESTICIDES				

Water Quality Summary for the period : 2016-2017

Station Name : MIRZAPUR (GG000X9)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

Well Water Summary

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_FLD ($\mu\text{mho/cm}$)	2	1340	830	1085
2	EC_GEN ($\mu\text{mho/cm}$)	2	1345	832	1089
3	pH_FLD (pH units)	2	8.0	8.0	8.0
4	pH_GEN (pH units)	2	7.9	7.9	7.9
5	TDS (mg/L)	2	672	486	579
6	Temp (deg C)	2	27.5	27.0	27.3
	CHEMICAL				
1	Alk-Phen (mgCaCO ₃ /L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO ₃ /L)	2	304	300	302
3	B (mg/L)	2	0.00	0.00	0.00
4	Ca (mg/L)	2	77	69	73
5	Cl (mg/L)	2	92.0	84.0	88.0
6	CO ₃ (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.36	0.31	0.34
8	Fe (mg/L)	2	0.2	0.2	0.2
9	HCO ₃ (mg/L)	2	371	366	368
10	K (mg/L)	2	12.0	10.0	11.0
11	Mg (mg/L)	2	43.3	38.2	40.8
12	Na (mg/L)	2	55.0	48.0	51.5
13	NH ₃ -N (mg N/L)	2	0.06	0.05	0.05
14	NO ₂ +NO ₃ (mg N/L)	2	2.10	1.86	1.98
15	NO ₂ -N (mgN/L)	2	0.00	0.00	0.00
16	NO ₃ -N (mgN/L)	2	2.10	1.86	1.98
17	P-Tot (mgP/L)	2	0.160	0.140	0.150
18	SiO ₂ (mg/L)	2	10.2	9.5	9.8
19	SO ₄ (mg/L)	2	68.0	65.0	66.5
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO ₃ /L)	2	194	172	183
2	HAR_Total (mgCaCO ₃ /L)	2	374	331	353
3	Na% (%)	2	26	21	24
4	RSC (-)	2	0.0	0.0	0.0
5	SAR (-)	2	1.3	1.1	1.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	1657	5454	3621	4015	3012	1634	4865	960.5	5847	8721	3801	11510	1477	5104	4141
2	EC_FLD (µmho/cm)	388	386	396	362	370	439	314	351	430	371	311	343	382	335	423
3	EC_GEN (µmho/cm)	371	363	367	347	347	432	295	412	424	365	298	318	378	330	435
4	pH_FLD (pH units)	7.6	7.6	7.2	8.8	7.6	8.3	8.1	8.2	8.3	8.5	7.7	8.0	7.8	7.7	8.0
5	pH_GEN (pH units)	8.2	8.4	8.3	8.9	8.7	8.6	8.3	8.2	8.4	8.6	7.9	8.3	8.0	7.9	8.0
6	TDS (mg/L)								217	261	201	182	220	230	199	256
7	Temp (deg C)	30.5	30.1	30.6	29.2	29.0	27.5	29.2	30.1	30.0	29.3	28.7	29.6	31.6	30.0	29.4
8	Turb (NTU)								0.3	0.3	0.7	0.3	0.5	4.4	0.7	2.2
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0		13.5	21.9	4.0	4.0	6.6	19.9	8.0	12.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	200	262	213		223	135	85	131	134	165	159	157	137	130	143
3	B (mg/L)	0.00	0.01	0.00	0.02	0.00	0.05	0.00	0.03	0.00	0.00	0.01	0.02	0.02	0.03	0.03
4	Ca (mg/L)	34	19	16	18	12	36	23	28	33	34	40	39	36	32	46
5	Cl (mg/L)	28.6	40.8	18.7	35.2	56.1	41.6	26.8	45.2	56.0	57.6	53.2	52.4	48.6	30.8	47.2
6	CO3 (mg/L)	0.0	0.0	0.0	8.1	16.3	26.4	4.8	4.8	8.0	24.0	9.6	14.4	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.17	0.10	0.05	0.44	0.74	0.41	0.51	0.53	0.44	0.32	0.39
8	Fe (mg/L)	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.2	0.1	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	122	159	130	148	127	111	94	150	147	152	175	162	167	159	174
10	K (mg/L)	19.8	23.8	6.2	5.6	5.8	6.4	6.6	4.5	12.8	7.2	8.0	8.2	7.6	7.0	12.4
11	Mg (mg/L)	20.7	20.3	20.0	20.5	13.5	15.1	12.2	19.2	18.0	15.5	15.7	16.0	16.7	13.5	15.4
12	Na (mg/L)	60.8	42.6	18.8	37.8	32.8	28.4	32.8	29.7	33.4	32.4	37.0	32.4	30.8	20.4	39.2
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.07	0.05	0.05	0.05	0.10	0.05	0.05	0.05	0.05	0.05	0.00	0.05
14	NO2+NO3 (mg N/L)	0.56	0.44	0.19	0.12	0.42	0.08	0.18	0.47	0.27	0.26	0.29	0.29	0.29	0.22	0.20
15	NO2-N (mgN/L)	0.16	0.03	0.02	0.00	0.01	0.01	0.00	0.03	0.02	0.06	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.41	0.41	0.17	0.12	0.41	0.08	0.18	0.44	0.25	0.20	0.29	0.29	0.29	0.22	0.20
17	Org-N (mgN/L)						0.7	0.0	0.0	0.0						
18	P-Tot (mgP/L)	0.046	0.086	0.086	0.050	0.001	0.009	0.005	0.002	0.003	0.083	0.001	0.001	0.017	0.020	0.028
19	SiO2 (mg/L)	6.1	7.6	9.3	9.1	9.1	6.6	6.9	8.3	8.8	7.9	7.9	7.7	8.5	7.3	10.8

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
20	SO ₄ (mg/L)	24.2	30.7	10.8	36.4	30.2	37.0	35.6	30.4	26.1	28.8	31.2	42.0	29.6	24.0	34.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	1.6	2.0	1.5	2.8	2.4	3.4	2.5	2.6	2.8	3.2	3.5	3.2	3.0	2.9	2.8
2	COD (mg/L)						11.3	6.6	9.9	11.5	11.7	9.0	10.5	16.6	14.9	13.5
3	DO (mg/L)	8.0	6.4	6.0	6.3	6.0	6.7	8.2	7.4	7.4	8.1	7.1	7.2	7.2	7.1	7.1
4	DO_SAT% (%)	106	84	80	83	77	85	106	98	98	105	92	94	99	94	93
5	FCol-MPN (MPN/100mL)						220	1440	3040	2940	2540	2720	2760	3160	2660	2100
6	Tcol-MPN (MPN/100mL)						720	3000	6600	4420	4880	5420	5200	6340	5680	5140
	TRACE & TOXIC															
1	As (µg/L)															1.66
2	Cd (µg/L)															0.18
3	Cr (µg/L)															5.06
4	Ni (µg/L)															2.49
5	Pb (µg/L)															0.17
6	Zn (µg/L)															5.90
7	Cu (µg/L)															2.44
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	85	47	41	44	31	91	57	71	82	84	100	98	90	79	116
2	HAR_Total (mgCaCO ₃ /L)	171	132	124	129	88	154	107	151	157	149	165	165	160	135	180
3	Na% (%)	41	37	24	33	42	28	39	30	29	31	32	29	28	22	30
4	RSC (-)	0.0	0.1	0.1	0.2	1.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	2.1	1.6	0.7	1.3	1.5	1.0	1.4	1.1	1.2	1.2	1.3	1.1	1.1	0.7	1.3
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	535.1	987.2	757.8	694.6	419.8	433.6	685.0	613.4	705.2	774.6	737.8	1291	677.1	535.7	701.3
2	EC_FLD (µmho/cm)	418	378	633	394	420	433	370	441	339	395	345	360	405	503	430
3	EC_GEN (µmho/cm)	389	357	605	370	387	427	356	437	333	388	337	357	393	498	435
4	pH_FLD (pH units)	7.4	7.5	7.1	8.6	7.5	8.0	8.0	8.0	8.1	8.3	8.0	8.2	7.9	8.0	8.0
5	pH_GEN (pH units)	8.3	8.4	8.3	8.9	8.6	8.5	8.4	8.2	8.4	8.6	8.2	8.4	8.0	8.2	7.9
6	TDS (mg/L)								225	199	195	189	232	230	300	220
7	Temp (deg C)	20.4	20.8	22.9	21.5	20.0	19.4	21.9	21.8	21.3	22.9	23.0	24.3	20.8	21.8	20.3
8	Turb (NTU)								0.1	0.1	0.1	0.2	0.3	3.6	0.5	0.6
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	3.7		18.4	17.4	10.0	2.0	3.3	0.0	17.4	12.9	0.0	7.0	0.0
2	ALK-TOT (mgCaCO3/L)	218	195	314		226	127	121	150	128	159	166	169	137	175	102
3	B (mg/L)	0.00	0.01	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.03	0.03	0.04
4	Ca (mg/L)	23	26	33	38	24	34	33	27	34	34	41	40	39	44	43
5	Cl (mg/L)	29.5	30.5	36.9	30.3	47.8	39.5	47.7	64.2	50.0	48.5	54.0	54.0	44.5	50.5	39.0
6	CO3 (mg/L)	0.0	0.0	4.5	0.2	22.2	21.0	12.0	2.4	4.0	0.0	21.0	15.6	0.0	8.4	0.0
7	F (mg/L)	0.05	0.05	0.05	0.28	0.05	0.19	0.17	0.15	0.55	0.50	0.47	0.46	0.43	0.39	0.32
8	Fe (mg/L)	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	133	119	187	188	156	112	123	179	148	193	160	174	167	196	125
10	K (mg/L)	18.5	10.3	5.8	8.0	7.3	6.8	10.8	5.2	8.8	7.3	7.0	7.0	8.0	9.5	9.0
11	Mg (mg/L)	19.6	18.1	36.8	23.2	19.9	17.6	20.0	20.6	17.0	11.1	15.5	16.8	16.2	21.7	13.3
12	Na (mg/L)	70.8	27.8	31.3	28.5	36.0	29.3	43.0	52.7	30.3	25.8	29.0	29.0	29.3	33.0	30.5
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.08	0.05	0.05	0.05	0.05	0.05	0.00	0.05
14	NO2+NO3 (mg N/L)	0.41	0.43	0.17	0.17	0.24	0.25	0.46	0.70	0.55	0.31	0.27	0.27	0.28	0.21	0.18
15	NO2-N (mgN/L)	0.04	0.14	0.01	0.01	0.01	0.00	0.00	0.02	0.18	0.22	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.38	0.30	0.16	0.16	0.23	0.25	0.46	0.68	0.37	0.09	0.27	0.27	0.28	0.21	0.18
17	Org-N (mgN/L)					0.0	0.0	0.0	0.0	0.0						
18	P-Tot (mgP/L)	0.075	0.103	0.025	0.011	0.005	0.001	0.005	0.001	0.064	0.025	0.013	0.001	0.013	0.028	0.029
19	SiO2 (mg/L)	5.4	8.6	12.7	9.1	7.4	6.1	6.9	8.1	8.2	8.1	7.8	7.9	7.7	8.7	10.8

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
20	SO ₄ (mg/L)	16.5	28.8	33.5	34.8	31.8	39.3	40.8	24.5	31.5	31.0	35.0	35.0	30.5	39.0	27.3
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	2.9	2.0	1.6	2.5	3.1	3.1	2.1	2.8	2.5	2.8	3.3	2.9	2.9	3.2	2.3
2	COD (mg/L)	2.9				12.1	8.0	2.6	9.7	14.5	11.1	14.3	12.3	17.9	18.2	19.3
3	DO (mg/L)	8.2	6.3	6.8	6.6	6.6	6.9	9.1	7.6	8.2	8.0	8.1	7.8	7.5	7.7	7.1
4	DO_SAT% (%)	91	70	78	75	72	74	102	86	92	93	94	93	83	88	79
5	FCol-MPN (MPN/100mL)					750	225	2125	4275	2575	2675	2925	2950	2700	2475	1650
6	Tcol-MPN (MPN/100mL)					1900	850	5875	7250	4800	4800	5650	5650	5475	4950	4350
	TRACE & TOXIC															
1	As (µg/L)															0.77
2	Cd (µg/L)															0.08
3	Cr (µg/L)															0.28
4	Ni (µg/L)															0.19
5	Pb (µg/L)															0.36
6	Zn (µg/L)															3.90
7	Cu (µg/L)															1.37
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	57	64	82	95	59	85	82	69	84	86	102	99	97	111	109
2	HAR_Total (mgCaCO ₃ /L)	139	139	235	191	142	158	165	155	154	132	166	169	164	202	164
3	Na% (%)	49	28	22	25	34	28	34	42	29	28	27	26	27	25	28
4	RSC (-)	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.5	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	2.6	1.0	0.9	0.9	1.3	1.0	1.5	1.9	1.1	1.0	1.0	1.0	1.0	1.0	1.0
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	374.0	387.8	274.6	273.7	488.8	208.6	391.5	240.8	340.6	457.9	627.9	759.9	743.5	347.8	341.9
2	EC_FLD (µmho/cm)	620	477	727	473	503	428	473	557	348	402	408	401	477	543	540
3	EC_GEN (µmho/cm)	592	441	696	446	475	385	462	556	346	394	397	397	468	539	544
4	pH_FLD (pH units)	7.4	7.3	7.6	8.6	7.5	8.6	7.9	8.5	8.4	8.3	8.2	8.1	8.0	7.9	8.0
5	pH_GEN (pH units)	8.3	8.5	8.6	8.9	8.6	9.0	8.2	8.6	8.7	8.6	8.4	8.4	8.0	8.0	8.0
6	TDS (mg/L)								275	195	208	222	234	280	323	283
7	Temp (deg C)	25.5	25.7	26.2	27.3	25.7	25.2	23.5	26.5	25.3	24.7	25.3	25.0	25.0	27.7	24.0
8	Turb (NTU)								0.1	0.1	0.1	0.1	0.1	0.3		0.1
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	21.7		19.9	19.9	6.6	26.6	10.2	13.3	10.0	19.9	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	357	270	566		160	176	139	212	118	165	163	175	153	181	117
3	B (mg/L)	0.01	0.02	0.01	0.01	0.00		0.01	0.01	0.00	0.02	0.02	0.03	0.04	0.03	0.04
4	Ca (mg/L)	29	16	32	25	18	33	29	41	31	36	39	41	37	46	42
5	Cl (mg/L)	35.7	41.5	43.3	35.3	37.7	34.7	64.5	61.0	53.3	50.0	53.3	54.0	53.0	60.7	44.0
6	CO3 (mg/L)	0.0	0.0	26.2	0.2	24.0	24.0	8.0	32.0	12.3	16.0	12.0	24.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.08	0.16	0.25		0.14	0.41	0.49	0.47	0.51	0.47	0.43	0.39	0.34
8	Fe (mg/L)	0.1	0.1	0.1	0.0	0.0		0.0	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	218	165	319	229	146	99	153	193	120	169	174	164	187	221	143
10	K (mg/L)	21.3	10.0	6.3	12.0	7.7	7.0	8.5	7.7	8.3	9.0	8.7	7.7	9.0	10.7	11.0
11	Mg (mg/L)	33.6	22.3	43.1	22.0	22.9	14.9	20.3	22.2	20.1	13.5	17.0	16.0	17.8	22.4	13.3
12	Na (mg/L)	77.3	34.7	55.7	38.3	36.3	32.0	45.3	51.7	31.7	28.3	29.0	29.3	33.3	41.7	34.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.89	0.42	0.34	0.31	0.16		0.03	0.08	0.50	0.38	0.35	0.29	0.32	0.21	0.20
15	NO2-N (mgN/L)	0.16	0.11	0.01	0.01	0.02		0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.73	0.31	0.33	0.30	0.14		0.03	0.04	0.50	0.38	0.35	0.29	0.32	0.21	0.20
17	Org-N (mgN/L)					0.2		0.0	0.0	0.0						
18	P-Tot (mgP/L)	0.098	0.102	0.034	0.001	0.005		0.001	0.001	0.009	0.020	0.018	0.001	0.021	0.028	0.031
19	SiO2 (mg/L)	7.5	10.8	10.5	9.5	8.5		7.0	8.8	8.2	8.1	8.0	8.2	8.1	8.8	10.6

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
20	SO ₄ (mg/L)	16.2	17.7	58.3	36.7	36.0	39.0	38.9	34.4	32.5	28.0	34.0	35.3	34.7	41.3	37.3
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	3.2	1.3	2.8	2.6	3.4	2.7	2.3	3.8	2.9	2.8	3.0	2.9	3.1	4.2	2.5
2	COD (mg/L)					15.5	5.2	4.6	27.2	14.5	12.6	14.8	13.1	22.6	18.6	24.8
3	DO (mg/L)	6.1	6.0	7.2	6.1	6.7	7.5	8.3	7.6	8.4	8.0	8.0	7.7	7.1	7.3	5.9
4	DO_SAT% (%)	74	74	88	76	81	91	97	94	103	96	97	94	86	92	70
5	FCoI-MPN (MPN/100mL)					867	267	2100	2067	3000	3067	3167	3167	3267	2700	1933
6	TcoI-MPN (MPN/100mL)					2467	733	6033	4800	5500	5500	5700	6233	6267	5500	4433
	TRACE & TOXIC															
1	As (µg/L)									7.0	2.0	2.0	2.5	2.0	2.0	13.00
2	Cd (µg/L)									2.0	3.0	3.0	4.0	3.0	2.5	4.00
3	Cr (µg/L)									15.0	8.0	6.0	6.0	7.0	7.5	6.00
4	Ni (µg/L)									25.0	9.0	10.0	12.0	14.0	6.0	8.00
5	Pb (µg/L)									47.0	7.0	8.0	10.0	9.0	8.0	1.00
6	Zn (µg/L)												7.6	8.0		53.00
7	Cu (µg/L)															9.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	72	40	80	62	46	82	72	101	77	90	97	101	91	115	104
2	HAR_Total (mgCaCO ₃ /L)	212	132	259	154	141	145	157	194	161	147	168	168	166	208	160
3	Na% (%)	42	34	35	33	34	31	37	36	29	28	26	27	29	29	30
4	RSC (-)	0.0	0.4	1.0	0.7	0.4	0.0	0.1	0.5	0.0	0.4	0.0	0.2	0.0	0.0	0.0
5	SAR (-)	2.3	1.3	1.7	1.4	1.3	1.2	1.6	1.6	1.1	1.0	1.0	1.0	1.1	1.3	1.2
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	EC_FLD (µmho/cm)	1272	1234	1002	1322	1310	1266	981	920	799						
2	EC_GEN (µmho/cm)	1257	1212	957	1296	1275	1258	973	1130	787						
3	pH_FLD (pH units)	7.3	7.4	7.2	8.1	7.4	8.2	7.5	8.1	8.2						
4	pH_GEN (pH units)	8.1	8.1	8.1	8.2	8.2	8.6	7.9	8.3	8.3						
5	TDS (mg/L)								675	504						
6	Temp (deg C)	26.5	27.4	29.1	27.3	27.4	25.2	26.4	29.7	30.2						
7	Turb (NTU)								0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0		38.2	59.8	0.0	8.0	6.6						
2	ALK-TOT (mgCaCO3/L)	589	622	603		698	583	365	368	199						
3	B (mg/L)	0.02	0.01	0.02	0.01	0.00	0.09	0.01	0.00	0.01						
4	Ca (mg/L)	61	50	35	52	34	60	44	59	67						
5	Cl (mg/L)	78.2	369.0	163.8	73.3	70.2	93.4	56.3	123.8	84.3						
6	CO3 (mg/L)	0.0	0.0	0.0	21.7	46.1	72.0	0.0	9.6	8.0						
7	F (mg/L)	0.05	0.05	0.20	0.11	0.12	0.55	0.43	0.56	1.03						
8	Fe (mg/L)	0.2	0.1	0.1	0.0	0.0	0.3	0.0	21.7	0.4						
9	HCO3 (mg/L)	359	379	367	487	379	471	446	429	226						
10	K (mg/L)	12.8	23.2	7.6	6.4	4.2	13.6	13.5	6.2	6.7						
11	Mg (mg/L)	47.1	34.5	31.8	35.8	40.7	47.0	31.6	39.7	29.2						
12	Na (mg/L)	341.0	295.0	88.2	248.4	158.0	249.4	176.0	106.9	51.7						
13	NH3-N (mg N/L)	0.06	0.06	0.05	0.08	0.05	0.08	0.05	0.05	0.05						
14	NO2+NO3 (mg N/L)	1.05	0.76	0.23	1.11	0.54	0.74	1.22	5.88	2.12						
15	NO2-N (mgN/L)	0.30	0.11	0.07	0.08	0.04	0.06	0.18	0.12	0.00						
16	NO3-N (mgN/L)	0.75	0.66	0.15	1.03	0.49	0.68	1.04	5.76	2.12						
17	o-PO4-P (mg P/L)															
18	Org-N (mgN/L)								0.0	0.0						
19	P-Tot (mgP/L)	0.102	0.102	0.136	0.036	0.001	0.134	0.001	0.283	0.088						
20	SiO2 (mg/L)	10.2	9.6	10.4	9.4	10.4	8.9	6.3	8.5	11.7						

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
21	SO4 (mg/L)	20.5	41.6	11.6	42.2	35.4	18.6	34.0	34.3	56.3						
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								1.2							
2	DO (mg/L)															
3	DO_SAT% (%)															
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	152	126	87	131	85	149	111	147	168						
2	HAR_Total (mgCaCO3/L)	348	269	219	280	254	345	242	312	290						
3	Na% (%)	67	68	48	66	55	60	53	42	27						
4	RSC (-)	0.1	0.9	1.7	3.2	2.9	3.3	2.5	1.2	0.0						
5	SAR (-)	8.0	7.9	2.8	6.8	4.4	5.9	5.0	2.7	1.3						
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	1160	1015	1255	1313	1205	1181	985	1001	860	970	980	980	990	1200	1340
2	EC_GEN (µmho/cm)	1137	977	1221	1296	1175	1172	973	997	851	962	969	978	978	1152	1345
3	pH_FLD (pH units)	7.2	7.4	7.1	8.3	7.5	8.1	7.6	8.0	8.1	8.2	7.8	8.0	8.0	7.8	8.0
4	pH_GEN (pH units)	8.1	8.3	8.3	8.4	8.5	8.7	8.2	8.1	8.3	8.4	8.0	8.2	8.3	7.9	7.9
5	TDS (mg/L)								505	526	430	464	460	592	690	672
6	Temp (deg C)	22.8	23.8	25.0	22.9	22.4	22.1	22.3	22.0	25.8	28.0	26.0	25.0	26.0	25.0	27.0
7	Turb (NTU)								0.1	0.1	0.1	0.1	0.1			
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	4.9		70.7	52.8	39.8	5.0	10.0	19.9	19.9	0.0	19.9	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	524	489	1007		955	451	348	325	221	208	216	175	208	288	304
3	B (mg/L)	0.01	0.03	0.02	0.05	0.04	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
4	Ca (mg/L)	47	50	48	40	41	49	54	42	49	51	51	50	55	66	77
5	Cl (mg/L)	75.5	293.8	114.4	86.0	83.5	83.5	124.6	124.0	96.0	64.0	66.0	64.0	104.0	88.0	84.0
6	CO3 (mg/L)	0.0	0.0	5.9	9.0	85.2	63.6	48.0	6.0	12.0	24.0	24.0	0.0	24.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.11	0.59	0.50	0.28	0.25	0.18	0.39	0.40	0.37	0.34	0.37	0.40	0.36
8	Fe (mg/L)	0.1	0.2	0.2	0.1	0.0	0.3	0.0	0.1	0.2	0.2	0.2	0.3	0.2	0.2	0.2
9	HCO3 (mg/L)	320	298	608	304	495	421	327	384	245	205	215	214	205	351	371
10	K (mg/L)	16.5	20.3	8.8	4.8	14.5	15.3	12.2	3.7	10.5	6.0	67.0	8.0	8.0	9.0	12.0
11	Mg (mg/L)	54.5	24.7	60.9	29.4	37.5	54.7	32.3	57.3	36.6	35.9	37.3	36.5	33.4	42.9	43.3
12	Na (mg/L)	318.8	227.5	88.5	222.3	259.8	246.0	124.6	88.7	63.0	70.0	7.0	68.0	70.0	56.0	48.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.82	0.38	0.31	0.65	0.32	0.04	0.19	3.13	2.23	1.93	1.94	1.98	1.96	2.14	2.10
15	NO2-N (mgN/L)	0.19	0.21	0.01	0.13	0.07	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.63	0.18	0.30	0.51	0.25	0.04	0.18	3.11	2.23	1.93	1.94	1.98	1.96	2.14	2.10
17	o-PO4-P (mg P/L)													0.031		
18	Org-N (mgN/L)								0.0	0.0						
19	P-Tot (mgP/L)	0.101	0.123	0.096	0.080	0.019	0.013	0.019	0.016	0.142	0.096	0.096	0.088	0.097	0.152	0.160
20	SiO2 (mg/L)	7.7	10.4	14.4	12.9	8.7	7.6	7.2	14.0	9.1	9.1	8.9	8.8	8.3	9.4	10.2

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
21	SO4 (mg/L)	20.3	39.5	42.0	26.5	39.5	17.3	19.3	64.4	52.0	45.0	44.0	40.0	64.0	72.0	68.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								2.9							
2	DO (mg/L)			7.7												
3	DO_SAT% (%)			90												
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	119	126	120	101	104	121	136	105	123	127	127	125	137	164	194
2	HAR_Total (mgCaCO3/L)	346	229	374	223	260	349	270	344	276	277	282	277	276	343	374
3	Na% (%)	66	66	34	66	67	59	47	36	32	35	4	34	35	26	21
4	RSC (-)	0.0	0.3	2.8	1.0	5.8	2.1	1.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	7.5	6.5	2.0	6.6	7.1	5.8	3.3	2.1	1.7	1.8	0.2	1.8	1.8	1.3	1.1
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	1567	1123	1767	1783	1220	1005	1270	877	802	975	980	980	1350	1070	830
2	EC_GEN (µmho/cm)	1534	1092	1734	1741	1184	997	1257	871	798	970	972	972	1344	1061	832
3	pH_FLD (pH units)	7.5	7.3	7.5	8.3	7.5	8.3	7.6	8.0	7.5	8.0	8.0	8.1	8.0	7.2	8.0
4	pH_GEN (pH units)	8.1	8.3	8.6	8.4	8.2	9.2	8.5	8.2	7.8	8.2	8.4	8.4	8.0	7.4	7.9
5	TDS (mg/L)								422	462	542	478	470	810	633	486
6	Temp (deg C)	24.3	24.8	27.5	24.7	24.2	25.0	23.2	25.2	23.0	24.0	27.0	26.0	26.5	28.0	27.5
7	Turb (NTU)								0.1	0.1	0.1	0.1	0.1			
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	26.8		63.7	50.5	48.1	35.8	0.0	0.0	0.0	10.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	711	480	1271		774	449	364	310	184	184	192	216	280	264	300
3	B (mg/L)	0.02	0.02	0.01	0.00	0.00		0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)	54	46	56	53	60	46	66	41	70	63	64	62	63	61	69
5	Cl (mg/L)	91.1	66.2	132.0	103.7	99.3	80.7	149.0	85.6	96.0	72.0	72.0	60.0	116.0	80.0	92.0
6	CO3 (mg/L)	0.0	0.0	32.3	19.4	76.8	60.8	58.0	43.1	0.0	0.0	0.0	12.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.11	0.48	0.64		0.35	0.75	0.31	0.34	0.34	0.36	0.48	0.34	0.31
8	Fe (mg/L)	0.2	0.1	0.1	0.0	0.0		0.0	0.2	0.4	0.1	0.1	0.1	0.2	0.2	0.2
9	HCO3 (mg/L)	434	293	742	340	479	424	327	291	224	224	234	239	342	322	366
10	K (mg/L)	26.7	19.0	8.3	4.3	15.7	13.7	9.1	4.9	7.0	8.0	72.0	9.0	11.0	8.0	10.0
11	Mg (mg/L)	54.6	26.2	43.5	34.8	28.3	52.2	33.3	46.0	19.2	30.6	30.6	30.3	40.0	40.0	38.2
12	Na (mg/L)	336.7	198.0	238.7	160.0	258.7	176.0	106.7	90.3	52.0	72.0	8.0	70.0	82.0	52.0	55.0
13	NH3-N (mg N/L)	0.06	0.05	0.13	0.06	0.06		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06
14	NO2+NO3 (mg N/L)	1.32	0.59	0.37	1.80	0.33		0.36	2.44	2.00	1.96	1.97	1.94	2.33	1.96	1.86
15	NO2-N (mgN/L)	0.14	0.24	0.14	0.24	0.01		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	1.18	0.35	0.23	1.55	0.32		0.36	2.44	2.00	1.96	1.97	1.94	2.33	1.96	1.86
17	o-PO4-P (mg P/L)															
18	Org-N (mgN/L)								0.0	0.0						
19	P-Tot (mgP/L)	0.129	0.126	0.094	0.188	0.275		0.042	0.044	0.184	0.174	0.174	0.140	0.166	0.144	0.140
20	SiO2 (mg/L)	9.6	12.4	13.6	14.4	10.4		8.1	12.7	8.4	8.6	8.6	8.6	9.8	9.0	9.4

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MIRZAPUR (GG000X9)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga Yamuna SD, Allahabad

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
21	SO4 (mg/L)	21.3	37.9	40.7	8.7	35.3	19.7	8.8	34.9	40.0	47.0	46.0	42.0	84.0	64.0	65.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								22.4							
2	DO (mg/L)															
3	DO_SAT% (%)															
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO3/L)	135	116	139	133	150	115	164	102	175	158	160	156	158	152	172
2	HAR_Total (mgCaCO3/L)	362	225	321	278	268	332	303	294	254	286	287	282	324	319	331
3	Na% (%)	65	63	60	55	66	45	43	40	30	35	4	34	35	26	26
4	RSC (-)	0.6	0.3	6.9	0.9	5.1	2.4	1.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	7.7	5.8	5.8	4.2	6.9	4.2	2.7	2.4	1.4	1.9	0.2	1.8	2.0	1.3	1.3
	PESTICIDES															

HISTORY SHEET

		Water Year	: 2016-2017
Site	: Varanasi	Code	: GGOOOW3
State	: Uttar Pradesh	District	Varanasi
Basin	: Ganga-Brahm-Meghna Basin	Independent River	: Ganga
Tributary	: -	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Ganga
Division	: M Ganga Div. III, Varanasi	Sub-Division	: M Ganga - C Sarju SD, Varanasi
Drainage Area	: 489087 Sq. Km.	Bank	: Left
Latitude	: 25°19'24"	Longitude	: 83°02'24"
	Opening Date	Closing Date	
Gauge	: 4/10/1959		
Discharge	: 4/10/1959		
Sediment	: 7/1/1961		
Water Quality	: 8/17/1963		

Water Quality Datasheet for the period : 2016-2017

Station Name : Varanasi (GGOOW3)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)	179.5	191.0	6259	11561	4680	1040	673.0	504.0	577.0	425.0	434.0	233.0
2	Colour_Cod (-)	Clear	Clear	Brown	Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	496	580	315	260	312	402	400	462	487	440	550	530
4	EC_GEN (µmho/cm)	502	588	320	269	315	408	410	464	491	445	445	533
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_FLD (pH units)	8.3	8.3	8.1	8.2	7.7	8.1	8.2	8.3	8.3	8.3	8.4	8.2
7	pH_GEN (pH units)	8.3	8.2	8.0	8.0	7.6	8.0	8.0	8.2	8.3	8.3	8.3	8.2
8	TDS (mg/L)	300	345	206	160	159	203	216	231	245	222	275	299
9	Temp (deg C)	31.0	31.5	29.0	30.0	29.0	26.5	21.5	18.5	19.0	21.5	21.5	30.0
10	Turb (NTU)	3.0	3.5	4.0	3.6	3.0	2.6	1.0	0.8	0.2	0.1	0.1	0.1
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	213	144	95	101	96	94	96	95	97	104	114	144
3	B (mg/L)	0.04	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
4	Ca (mg/L)	54	56	53	54	51	52	55	53	57	55	57	45
5	Cl (mg/L)	82.0	64.0	50.0	44.0	40.0	38.0	42.0	44.0	48.0	50.0	38.0	40.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.52	0.48	0.46	0.40	0.37	0.37	0.35	0.33	0.34	0.36	0.37	0.35
8	Fe (mg/L)	0.5	0.4	0.3	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3
9	HCO3 (mg/L)	260	176	116	123	117	114	117	116	118	127	139	176
10	K (mg/L)	12.0	10.0	14.0	10.0	9.0	9.0	10.0	9.0	9.0	10.0	9.0	9.0
11	Mg (mg/L)	31.1	15.5	12.1	13.2	12.0	12.6	14.5	13.4	14.2	16.3	16.7	13.4
12	Na (mg/L)	48.0	40.0	32.0	27.0	25.0	28.0	30.0	26.0	29.0	32.0	35.0	28.0
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	0.33	0.30	0.31	0.28	0.27	0.28	0.29	0.28	0.30	0.31	0.32	0.27
15	NO2-N (mgN/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
16	NO3-N (mgN/L)	0.33	0.30	0.31	0.28	0.27	0.28	0.29	0.28	0.30	0.31	0.32	0.27
17	P-Tot (mgP/L)	0.038	0.030	0.026	0.033	0.031	0.028	0.032	0.036	0.040	0.034	0.036	0.029
18	SiO2 (mg/L)	9.4	10.2	10.1	12.4	11.8	10.2	10.8	10.1	10.7	10.3	10.8	9.9

Water Quality Datasheet for the period : 2016-2017

Station Name : Varanasi (GG00W3)

Local River : Ganga

River Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	01/06/2016	01/07/2016	01/08/2016	01/09/2016	01/10/2016	01/11/2016	01/12/2016	02/01/2017	01/02/2017	01/03/2017	01/04/2017	01/05/2017
		A	A	A	A	A	A	A	A	A	A	A	A
19	SO4 (mg/L)	42.0	32.0	28.0	36.0	32.0	29.0	33.0	30.0	34.0	32.0	34.0	46.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	3.1	3.5	2.4	2.6	1.9	1.7	2.6	2.8	2.6	2.2	2.2	2.2
2	COD (mg/L)	17.7	16.7	5.8	6.6	19.6	16.7	15.4	25.0	25.6	23.5	28.0	27.2
3	DO (mg/L)	7.6	7.7	6.3	7.3	6.9	7.5	7.8	6.7	7.1	6.5	6.5	6.3
4	DO_SAT% (%)	103	104	82	96	90	93	88	71	77	73	73	83
5	FCol-MPN (MPN/100mL)	4000	3500	2800	2500	3000	2500	2100	1700	1600	2000	2400	2300
6	Tcol-MPN (MPN/100mL)	8800	8600	7400	6900	7200	6200	5700	5000	5200	4900	5200	5500
	TRACE & TOXIC												
1	As (µg/L)			2.27				1.59				11.00	
2	Cd (µg/L)			0.18				0.07				0.00	
3	Cr (µg/L)			5.27				0.93				7.00	
4	Ni (µg/L)			4.41				1.02				6.00	
5	Pb (µg/L)			0.25				0.30				1.00	
6	Zn (µg/L)			6.70				5.90				19.00	
7	Cu (µg/L)			7.97				7.02				5.00	
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	135	140	133	134	126	129	138	133	142	138	143	112
2	HAR_Total (mgCaCO3/L)	264	204	184	189	176	181	198	189	201	206	212	168
3	Na% (%)	27	29	26	23	23	24	24	22	23	24	25	25
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.3	1.2	1.0	0.9	0.8	0.9	0.9	0.8	0.9	1.0	1.0	0.9
	PESTICIDES												

Water Quality Datasheet for the period : 2016-2017

Station Name : Varanasi (GG00OW3)

Local River : Ganga

Well Water Analysis

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	01/11/2016 B	01/05/2017 B
	PHYSICAL		
1	Colour_Cod (-)	Clear	Clear
2	EC_FLD (µmho/cm)	1337	2060
3	EC_GEN (µmho/cm)	1342	2063
4	Odour_Code (-)	odour free	odour free
5	pH_FLD (pH units)	7.7	7.8
6	pH_GEN (pH units)	7.6	7.7
7	TDS (mg/L)	886	1170
8	Temp (deg C)	25.5	25.0
	CHEMICAL		
1	Alk-Phen (mgCaCO3/L)	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	312	364
3	B (mg/L)	0.03	0.03
4	Ca (mg/L)	89	69
5	Cl (mg/L)	268.0	218.0
6	CO3 (mg/L)	0.0	0.0
7	F (mg/L)	0.44	0.32
8	Fe (mg/L)	0.2	0.2
9	HCO3 (mg/L)	381	444
10	K (mg/L)	22.0	23.0
11	Mg (mg/L)	86.7	75.3
12	Na (mg/L)	154.0	133.0
13	NH3-N (mg N/L)	0.05	0.05
14	NO2+NO3 (mg N/L)	2.17	1.83
15	NO2-N (mgN/L)	0.00	0.00
16	NO3-N (mgN/L)	2.17	1.83
17	P-Tot (mgP/L)	0.168	0.157
18	SiO2 (mg/L)	10.7	9.3
19	SO4 (mg/L)	46.0	54.0
	BIOLOGICAL/BACTERIOLOGICAL		
	TRACE & TOXIC		
	CHEMICAL INDICES		
1	HAR_Ca (mgCaCO3/L)	224	172
2	HAR_Total (mgCaCO3/L)	585	486
3	Na% (%)	36	36
4	RSC (-)	0.0	0.0
5	SAR (-)	2.8	2.6
	PESTICIDES		

Water Quality Summary for the period : 2016-2017

Station Name : Varanasi (GG00OW3)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

River Water Summary

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)	365	30839	74.30	3033
2	EC_FLD (µmho/cm)	12	580	260	436
3	EC_GEN (µmho/cm)	12	588	269	433
4	pH_FLD (pH units)	12	8.4	7.7	8.2
5	pH_GEN (pH units)	12	8.3	7.6	8.1
6	TDS (mg/L)	12	345	159	238
7	Temp (deg C)	12	31.5	18.5	25.8
8	Turb (NTU)	12	4.0	0.1	1.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	213	94	116
3	B (mg/L)	12	0.04	0.02	0.03
4	Ca (mg/L)	12	57	45	53
5	Cl (mg/L)	12	82.0	38.0	48.3
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.52	0.33	0.39
8	Fe (mg/L)	12	0.5	0.3	0.4
9	HCO3 (mg/L)	12	260	114	142
10	K (mg/L)	12	14.0	9.0	10
11	Mg (mg/L)	12	31.1	12.0	15.4
12	Na (mg/L)	12	48.0	25.0	31.7
13	NH3-N (mg N/L)	12	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	12	0.33	0.27	0.29
15	NO2-N (mgN/L)	12	0.00	0.00	0
16	NO3-N (mgN/L)	12	0.33	0.27	0.29
17	P-Tot (mgP/L)	12	0.040	0.026	0.033
18	SiO2 (mg/L)	12	12.4	9.4	10.6
19	SO4 (mg/L)	12	46.0	28.0	34
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	3.5	1.7	2.5
2	COD (mg/L)	12	28.0	5.8	19
3	DO (mg/L)	12	7.8	6.3	7
4	DO_SAT% (%)	12	104	71	86
5	FCol-MPN (MPN/100mL)	12	4000	1600	2533
6	Tcol-MPN (MPN/100mL)	12	8800	4900	6383
	TRACE & TOXIC				
1	As (µg/L)	3	11.00	1.59	6.30
2	Cd (µg/L)	3	0.18	0.00	0.09
3	Cr (µg/L)	3	7.00	0.93	3.97
4	Ni (µg/L)	3	6.00	1.02	3.51
5	Pb (µg/L)	3	1.00	0.25	0.63
6	Zn (µg/L)	3	19.00	5.90	12.45
7	Cu (µg/L)	3	7.97	5.00	6.49
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	143	112	134
2	HAR_Total (mgCaCO3/L)	12	264	168	198
3	Na% (%)	12	29	22	25
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	1.3	0.8	1
	PESTICIDES				

Water Quality Summary for the period : 2016-2017

Station Name : Varanasi (GG00OW3)

Division : M Ganga Div. III, Varanasi

Local River : Ganga

Well Water Summary

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	EC_FLD (μmho/cm)	2	2060	1337	1699
2	EC_GEN (μmho/cm)	2	2063	1342	1703
3	pH_FLD (pH units)	2	7.8	7.7	7.8
4	pH_GEN (pH units)	2	7.7	7.6	7.7
5	TDS (mg/L)	2	1170	886	1028
6	Temp (deg C)	2	25.5	25.0	25.3
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	2	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	2	364	312	338
3	B (mg/L)	2	0.03	0.03	0.03
4	Ca (mg/L)	2	89	69	79
5	Cl (mg/L)	2	268.0	218.0	243.0
6	CO3 (mg/L)	2	0.0	0.0	0.0
7	F (mg/L)	2	0.44	0.32	0.38
8	Fe (mg/L)	2	0.2	0.2	0.2
9	HCO3 (mg/L)	2	444	381	412
10	K (mg/L)	2	23.0	22.0	22.5
11	Mg (mg/L)	2	86.7	75.3	81.0
12	Na (mg/L)	2	154.0	133.0	143.5
13	NH3-N (mg N/L)	2	0.05	0.05	0.05
14	NO2+NO3 (mg N/L)	2	2.17	1.83	2.00
15	NO2-N (mgN/L)	2	0.00	0.00	0.00
16	NO3-N (mgN/L)	2	2.17	1.83	2.00
17	P-Tot (mgP/L)	2	0.168	0.157	0.163
18	SiO2 (mg/L)	2	10.7	9.3	10.0
19	SO4 (mg/L)	2	54.0	46.0	50.0
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	2	224	172	198
2	HAR_Total (mgCaCO3/L)	2	585	486	535
3	Na% (%)	2	36	36	36
4	RSC (-)	2	0.0	0.0	0.0
5	SAR (-)	2	2.8	2.6	2.7
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GG00OW3)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	Q (cumec)	1656	6062	3517	4457	2598	1639	5315	1104	4787	7856	3334	12192	2345	4864	4574
2	EC_FLD (µmho/cm)	424	388	328	378	404	474	268	505	420	394	380	424	460	388	393
3	EC_GEN (µmho/cm)	408	384	307	368	388	466	254	498	423	387	374	415	452	380	399
4	pH_FLD (pH units)	8.1	8.1	7.9	8.4	8.5	8.3	7.9	8.2	8.4	8.3	8.0	8.0	7.9	7.6	8.1
5	pH_GEN (pH units)	8.3	8.5	8.2	8.6	8.8	8.5	8.8	8.3	8.4	8.5	8.2	8.3	8.1	7.8	8.0
6	SS (mg/L)															
7	TDS (mg/L)								274	268	219	239	243	272	229	234
8	Temp (deg C)	29.5	30.0	27.7	29.0	30.6	30.2	30.2	31.1	31.3	30.4	30.5	30.8	30.7	30.3	30.1
9	Turb (NTU)								0.3	0.3		0.7		1.5	3.4	3.4
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	5.0	9.6	22.7	13.9	0.0	27.9	19.9	12.0	19.9	4.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	224	309	110	146	106	200	89	165	165	161	165	148	140	126	130
3	B (mg/L)	0.00	0.01	0.00	0.01	0.00	0.02	0.05	0.05	0.04	0.03	0.03	0.03	0.02	0.03	0.03
4	Ca (mg/L)	29	20	21	20	14	40	26	32	32	30	34	32	32	32	53
5	Cl (mg/L)	28.4	23.3	19.4	32.4	43.4	38.2	24.8	72.8	55.0	53.2	64.8	64.4	53.2	33.2	56.0
6	CO3 (mg/L)	0.0	0.0	0.0	6.1	11.6	27.4	16.8	0.0	33.6	24.0	14.4	24.0	4.8	0.0	0.0
7	F (mg/L)	0.05	0.11	0.05	0.06	0.08	0.25	0.32	0.55	0.74	0.61	0.66	0.66	0.64	0.32	0.44
8	Fe (mg/L)	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.4
9	HCO3 (mg/L)	136	189	134	166	105	117	74	202	133	147	172	148	161	154	159
10	K (mg/L)	12.8	3.6	3.2	6.4	5.6	6.2	6.2	6.5	8.0	9.8	8.8	8.6	8.4	7.6	11.0
11	Mg (mg/L)	33.6	20.1	23.3	21.8	16.8	12.7	11.1	18.0	13.4	14.9	16.8	16.6	15.7	14.2	16.8
12	Na (mg/L)	49.8	29.8	12.6	38.4	29.4	41.8	25.4	58.3	38.4	31.4	28.6	34.4	32.6	21.8	34.4
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.05	0.05	0.05	0.00	0.00	0.00	0.05
14	NO2+NO3 (mg N/L)	0.46	0.30	0.25	0.31	0.08	0.14	0.40	0.25	0.16	0.26	0.27	0.26	0.24	0.24	0.30
15	NO2-N (mgN/L)	0.10	0.05	0.04	0.19	0.05	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.37	0.25	0.21	0.12	0.03	0.13	0.40	0.24	0.16	0.25	0.27	0.26	0.24	0.24	0.30
17	Org-N (mgN/L)	2.0	2.4				0.8	0.0	0.9	0.0						
18	P-Tot (mgP/L)	0.041	0.039	0.080	0.043	0.001	0.001	0.001	0.002	0.001	0.001	0.001		0.021	0.022	0.032

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GG00W3)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
19	SiO ₂ (mg/L)	9.4	8.5	7.9	9.8	11.6	5.6	6.2	8.5	9.4	8.2	8.8	8.7	8.6	8.0	10.8
20	SO ₄ (mg/L)	21.3	28.2	26.2	34.2	25.4	23.0	20.0	28.6	22.4	23.6	29.8	33.6	33.0	26.4	34.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	2.5	2.2	2.9	2.9	2.8	2.8	2.8	2.6	3.2	3.7	3.4	3.1	3.3	3.1	2.7
2	COD (mg/L)	5.0	4.6	16.5	4.5	7.1	11.8	5.4	8.8	11.1	12.6	11.9	13.4	17.7	13.0	13.3
3	DO (mg/L)	7.0	6.8	7.0	7.5	7.8	7.9	8.0	7.7	7.8	7.8	7.4	7.3	7.4	7.1	7.2
4	DO_SAT% (%)	92	89	88	96	104	104	106	104	104	103	99	98	98	94	95
5	FCol-MPN (MPN/100mL)	3140	1540	1440	1350	880	3600	1850	5300	2780	3160	3600	3820	3260	3960	3160
6	Tcol-MPN (MPN/100mL)	4380	2680	2220	2350	1540	5300	2500	9460	5120	6120	6520	7240	7640	8200	7780
	TRACE & TOXIC															
1	As (µg/L)															2.27
2	Cd (µg/L)															0.18
3	Cr (µg/L)															5.27
4	Ni (µg/L)															4.41
5	Pb (µg/L)															0.25
6	Zn (µg/L)															6.70
7	Cu (µg/L)															7.97
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	72	50	52	50	36	100	65	79	80	75	85	81	79	81	134
2	HAR_Total (mgCaCO ₃ /L)	212	134	149	140	106	153	111	154	135	137	154	150	144	140	204
3	Na% (%)	33	30	16	31	35	36	31	44	35	31	27	32	31	22	25
4	RSC (-)	0.0	0.5	0.0	0.5	0.2	0.1	0.0	0.3	0.6	0.5	0.3	0.3	0.0	0.0	0.0
5	SAR (-)	1.5	1.1	0.5	1.3	1.3	1.5	1.0	2.0	1.4	1.2	1.0	1.2	1.2	0.8	1.0
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GGOOW3)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	Q (cumec)	537.6	1055	801.7	1155	607.9	507.5	795.0	577.9	886.2	838.1	670.3	1315	637.1	418.0	698.5
2	EC_FLD (µmho/cm)	418	378	633	386	370	486	339	441	335	399	369	449	413	493	438
3	EC_GEN (µmho/cm)	393	370	628	384	355	481	327	414	341	390	383	441	403	488	443
4	pH_FLD (pH units)	8.1	8.2	8.1	8.5	8.3	8.4	8.0	8.2	8.4	8.2	7.9	8.1	8.0	8.1	8.2
5	pH_GEN (pH units)	8.4	8.4	8.3	8.5	8.6	8.4	8.4	8.4	8.7	8.5	8.3	8.5	8.1	8.2	8.1
6	SS (mg/L)												12			
7	TDS (mg/L)								219	213	231	230	251	242	294	224
8	Temp (deg C)	20.0	19.9	20.4	20.5	20.3	20.5	21.9	20.3	22.4	20.6	19.6	20.5	20.1	21.6	21.4
9	Turb (NTU)								0.1	0.1		0.3		0.6	0.5	1.1
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	3.5	0.0	20.9	12.5	19.9	6.0	19.9	14.9	19.9	19.9	0.0	4.9	0.0
2	ALK-TOT (mgCaCO3/L)	225	246	176	155	204	213	123	176	165	156	169	171	113	183	95
3	B (mg/L)	0.00	0.00	0.02	0.03	0.00	0.00	0.10	0.00	0.01	0.01	0.02	0.01	0.03	0.03	0.03
4	Ca (mg/L)	16	14	35	38	21	36	33	31	35	32	34	35	34	55	54
5	Cl (mg/L)	26.7	20.3	25.9	36.5	49.0	39.5	58.3	62.3	50.5	59.0	62.5	63.5	43.0	74.5	43.0
6	CO3 (mg/L)	0.0	0.0	4.2	0.0	25.2	15.0	24.0	7.2	24.0	18.0	24.0	24.0	0.0	5.9	0.0
7	F (mg/L)	0.05	0.05	0.10	0.30	0.05	0.27	0.14	0.15	0.56	0.46	0.57	0.59	0.44	0.45	0.35
8	Fe (mg/L)	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
9	HCO3 (mg/L)	137	150	206	189	162	137	101	200	153	154	157	160	138	211	116
10	K (mg/L)	10.3	7.5	5.5	4.5	6.5	6.8	7.7	5.0	8.5	9.5	8.0	8.5	8.8	13.0	9.3
11	Mg (mg/L)	32.4	14.5	18.1	29.3	25.1	17.4	22.3	17.1	19.4	15.5	17.5	16.7	17.2	21.7	13.7
12	Na (mg/L)	50.8	25.0	34.0	35.8	37.0	43.0	38.8	59.1	27.5	33.8	32.3	34.0	27.0	47.0	28.3
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.05
14	NO2+NO3 (mg N/L)	0.42	0.15	0.28	0.65	0.17	0.08	0.43	0.45	0.32	0.29	0.29	0.26	0.26	0.30	0.29
15	NO2-N (mgN/L)	0.02	0.10	0.03	0.03	0.05	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.40	0.05	0.26	0.62	0.12	0.07	0.43	0.44	0.32	0.29	0.29	0.26	0.26	0.30	0.29
17	Org-N (mgN/L)	5.9	3.4			0.0	0.0	0.0	1.0	0.0						
18	P-Tot (mgP/L)	0.028	0.066	0.060	0.008	0.006	0.001	0.001	0.001	0.001	0.001	0.001		0.014	0.031	0.034

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GGOOW3)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
19	SiO ₂ (mg/L)	6.6	7.8	12.6	13.0	8.2	6.8	7.4	9.2	8.1	8.3	8.6	8.4	8.3	8.5	10.5
20	SO ₄ (mg/L)	21.5	28.8	53.5	33.0	34.3	25.0	30.4	19.8	19.8	29.5	32.8	34.5	28.0	33.0	31.5
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	2.1	2.1	2.7	2.9	2.1	2.7	3.0	3.0	2.7	2.9	3.2	3.1	3.2	3.7	2.4
2	COD (mg/L)	4.2	2.4	6.9	4.2	10.0	10.0	5.0	13.3	14.3	10.4	14.7	12.1	16.9	19.5	20.7
3	DO (mg/L)	7.6	6.8	7.3	7.9	8.1	8.0	8.6	8.4	8.1	8.2	8.2	7.8	7.7	8.0	7.3
4	DO_SAT% (%)	83	75	81	88	89	88	98	92	92	90	89	87	85	92	82
5	FCol-MPN (MPN/100mL)	2550	1000	600	675	1200	3275	3000	9100	2775	2575	3750	4475	3500	3300	1975
6	Tcol-MPN (MPN/100mL)	3625	1800	975	1425	1950	6500	4550	21950	4900	4950	6700	8800	6850	7150	5525
	TRACE & TOXIC															
1	As (µg/L)															1.59
2	Cd (µg/L)															0.07
3	Cr (µg/L)															0.93
4	Ni (µg/L)															1.02
5	Pb (µg/L)															0.30
6	Zn (µg/L)															5.90
7	Cu (µg/L)															7.02
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	41	35	87	96	54	89	81	77	87	80	85	88	86	137	135
2	HAR_Total (mgCaCO ₃ /L)	176	96	163	218	159	162	174	149	167	144	158	157	158	228	192
3	Na% (%)	37	35	32	26	33	36	31	46	25	32	30	31	26	30	23
4	RSC (-)	0.0	0.7	1.0	0.1	0.5	0.0	0.0	0.6	0.3	0.3	0.2	0.3	0.0	0.0	0.0
5	SAR (-)	1.7	1.1	1.3	1.1	1.3	1.5	1.3	2.1	0.9	1.2	1.1	1.2	0.9	1.4	0.9
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GGOOW3)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	Q (cumec)	333.6	399.4	373.9	371.5	571.4	257.0	343.7	223.0	336.3	391.7	570.7	840.4	638.7	219.8	364.0
2	EC_FLD (µmho/cm)	640	487	587	489	443	386	437	338	381	407	427	442	460	550	507
3	EC_GEN (µmho/cm)	635	480	580	489	430	379	428	518	384	399	416	438	445	546	474
4	pH_FLD (pH units)	8.2	8.0	8.4	8.6	8.2	8.7	7.9	8.5	8.7	8.4	8.1	8.3	7.9	7.8	8.3
5	pH_GEN (pH units)	8.3	8.4	8.6	8.6	8.4	9.2	8.4	8.6	8.7	8.7	8.6	8.7	8.0	7.9	8.2
6	SS (mg/L)															
7	TDS (mg/L)								255	239	250	254	253	266	329	265
8	Temp (deg C)	26.3	24.8	25.0	25.7	25.0	26.3	25.0	27.7	26.7	26.0	26.0	25.5	25.3	25.8	24.3
9	Turb (NTU)								0.1	0.1		0.3		0.6	0.7	0.1
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	18.8	0.1	14.6	19.9	19.9	43.8	19.9	13.3	19.9	19.9	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	401	147	188	198	285	132	155	163	156	163	169	167	151	213	121
3	B (mg/L)	0.01	0.00	0.01	0.01	0.00		0.08	0.07	0.03	0.03	0.03	0.02	0.03	0.03	0.03
4	Ca (mg/L)	26	21	25	27	25	32	40	29	49	36	36	35	37	60	52
5	Cl (mg/L)	37.1	34.3	45.8	44.7	42.3	39.3	116.2	48.6	52.7	68.0	68.0	63.3	57.7	84.0	42.7
6	CO3 (mg/L)	0.0	0.0	22.6	0.1	17.6	24.0	24.0	52.8	24.0	16.0	24.0	24.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.42	0.22	0.18		0.19	0.46	0.52	0.50	0.46	0.59	0.53	0.49	0.36
8	Fe (mg/L)	0.0	0.1	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
9	HCO3 (mg/L)	244	180	183	241	156	112	141	91	141	166	158	155	184	260	147
10	K (mg/L)	12.3	8.3	6.3	6.7	6.3	7.7	8.1	6.6	9.0	11.3	9.3	9.3	10.0	14.3	9.3
11	Mg (mg/L)	28.4	25.3	1.4	23.4	17.1	19.3	20.5	20.7	12.0	14.1	16.6	16.4	17.7	25.1	15.5
12	Na (mg/L)	59.0	33.0	50.3	44.0	40.7	43.7	82.6	43.5	35.7	40.7	41.3	37.3	36.0	52.7	31.7
13	NH3-N (mg N/L)	0.05	0.05	0.06	0.05	0.05		0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.05
14	NO2+NO3 (mg N/L)	0.59	0.49	0.42	0.01	0.19		0.05	0.04	0.32	0.32	0.31	0.25	0.25	0.32	0.30
15	NO2-N (mgN/L)	0.11	0.12	0.00	0.00	0.05		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.48	0.36	0.42	0.01	0.14		0.05	0.04	0.32	0.32	0.31	0.25	0.25	0.32	0.30
17	Org-N (mgN/L)	9.0				0.1		0.1	0.0	0.0						
18	P-Tot (mgP/L)	0.070	0.091	0.040	0.001	0.007		0.001	0.001	0.001	0.001	0.001		0.019	0.035	0.033

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GG000W3)

Local River : Ganga

River Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
19	SiO ₂ (mg/L)	9.5	9.4	11.7	13.8	7.2		8.5	10.2	8.1	8.3	8.3	8.4	8.9	9.0	10.3
20	SO ₄ (mg/L)	37.3	60.4	71.0	45.3	34.7	25.7	39.2	25.3	22.5	29.3	32.0	35.3	36.7	38.0	37.3
	BIOLOGICAL/BACTERIOLOGICAL															
1	BOD ₃₋₂₇ (mg/L)	2.8	3.0	2.8	3.0	2.4	3.2	3.4	3.6	2.5	3.0	3.2	3.0	3.4	3.8	2.2
2	COD (mg/L)	9.1	3.4	4.1	6.9	19.7	5.2	5.7	21.0	13.9	11.9	14.2	12.9	21.0	18.6	26.2
3	DO (mg/L)	6.7	6.8	7.2	7.9	7.9	7.5	8.1	8.2	8.8	7.8	7.9	8.0	7.8	7.4	6.4
4	DO_SAT% (%)	83	81	86	96	95	93	97	103	108	96	97	98	96	91	77
5	FCol-MPN (MPN/100mL)	2100	1067	1133	1033	2900	3133	3000	9167	3733	3167	3967	4867	4467	3433	2233
6	Tcol-MPN (MPN/100mL)	3100	1500	1900	1667	4333	7667	4800	20200	6033	5367	7667	9833	8500	7833	5200
	TRACE & TOXIC															
1	As (µg/L)									10.0	2.0	2.5	2.5	3.0	2.5	11.00
2	Cd (µg/L)									5.0	2.5	3.0	3.0	4.0	3.0	0.00
3	Cr (µg/L)									5.0	7.0	6.0	8.0	9.0	6.0	7.00
4	Ni (µg/L)									20.0	5.0	6.0	8.0	11.0	8.0	6.00
5	Pb (µg/L)									64.0	2.0	2.0	4.0	6.0	5.0	1.00
6	Zn (µg/L)									118.0	12.0	16.0	18.0	22.0	9.0	19.00
7	Cu (µg/L)															5.00
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	66	52	62	67	62	80	99	72	123	89	89	89	92	151	131
2	HAR_Total (mgCaCO ₃ /L)	184	157	67	164	133	160	184	158	173	148	158	157	166	255	195
3	Na% (%)	40	31	59	36	39	36	48	36	30	35	35	33	31	30	25
4	RSC (-)	0.6	0.3	2.4	0.7	0.5	0.0	0.0	0.2	0.0	0.3	0.2	0.2	0.0	0.0	0.0
5	SAR (-)	1.9	1.2	2.7	1.5	1.5	1.5	2.7	1.5	1.2	1.5	1.4	1.3	1.2	1.4	1.0
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GG00W3)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL															
1	EC_FLD (µmho/cm)	3331	3161	2100	3633	3114	2410	3252	3047	1420						
2	EC_GEN (µmho/cm)	3308	3152	2093	3613	3096	2392	3232	3032	1427						
3	pH_FLD (pH units)	7.6	7.6	7.4	7.8	7.7	8.0	7.8	7.8	8.3						
4	pH_GEN (pH units)	7.9	7.9	7.7	7.9	7.9	8.2	8.2	8.0	8.3						
5	TDS (mg/L)								1533	814						
6	Temp (deg C)	25.2	24.8	25.8	23.9	25.5	26.4	27.1	27.2	26.2						
7	Turb (NTU)								0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	23.9	37.8	15.9	23.9	47.0						
2	ALK-TOT (mgCaCO3/L)	608	553	433	285	440	379	291	653	306						
3	B (mg/L)	0.04	0.01	0.02	0.03	0.00	0.17	0.00	0.07	0.12						
4	Ca (mg/L)	191	137	147	156	82	117	129	96	28						
5	Cl (mg/L)	907.6	709.5	344.9	815.2	654.0	640.4	751.2	519.4	111.2						
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	28.8	45.6	19.2	28.8	56.6						
7	F (mg/L)	0.05	0.05	0.06	0.05	0.14	0.16	0.28	0.68	0.78						
8	Fe (mg/L)	0.2	0.1	0.0	0.1	0.0	0.4	0.1	0.0	0.1						
9	HCO3 (mg/L)	410	337	264	348	269	223	316	738	259						
10	K (mg/L)	71.0	64.8	75.8	166.8	382.0	177.0	263.4	216.5	194.0						
11	Mg (mg/L)	212.1	135.2	99.4	113.1	85.9	102.2	103.4	91.6	44.1						
12	Na (mg/L)	248.0	184.2	122.0	147.8	94.8	145.2	141.4	324.9	60.8						
13	NH3-N (mg N/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05						
14	NO2+NO3 (mg N/L)	1.16	0.37	0.26	1.11	1.50	8.79	8.63	8.17	4.89						
15	NO2-N (mgN/L)	0.21	0.12	0.05	0.03	0.05	0.05	0.04	0.04	0.00						
16	NO3-N (mgN/L)	0.95	0.25	0.23	1.08	1.45	8.74	8.59	8.13	4.89						
17	o-PO4-P (mg P/L)															
18	Org-N (mgN/L)								0.0	0.0						
19	P-Tot (mgP/L)	0.079	0.073	0.133	0.043	0.001	0.020	0.018	0.016	0.068						
20	SiO2 (mg/L)	11.0	10.9	9.3	10.4	11.0	8.8	8.4	8.5	12.0						

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GGOOOW3)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Flood														
		Jun - Oct														
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
21	SO ₄ (mg/L)	52.3	24.1	22.6	57.0	62.4	41.0	44.8	61.1	50.0						
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								1.0							
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	479	343	367	390	206	294	322	240	69						
2	HAR_Total (mgCaCO ₃ /L)	1362	906	781	861	564	719	753	621	253						
3	Na% (%)	27	29	24	23	17	25	22	44	21						
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.1						
5	SAR (-)	2.9	2.7	2.0	2.2	1.9	2.4	2.3	5.7	1.6						
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GG00OW3)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	3004	2142	3268	2593	2868	2202	3210	3020	2973	3210	3010	3145	3150	3700	1337
2	EC_GEN (µmho/cm)	2983	2127	3255	2580	2852	2193	3199	3000	2987	3200	3000	3060	3100	3630	1342
3	pH_FLD (pH units)	7.5	7.6	7.9	7.9	7.8	8.2	7.7	8.2	8.1	8.1	8.1	8.1	8.0	7.3	7.7
4	pH_GEN (pH units)	7.9	8.0	8.1	8.0	8.0	8.2	8.3	8.3	8.3	8.2	8.6	8.4	8.3	7.4	7.6
5	TDS (mg/L)								1500	1681	1894	1600	1800	1860	2180	886
6	Temp (deg C)	22.6	22.3	23.0	22.6	24.4	23.6	24.1	22.8	23.4	25.5	25.5	25.0	26.0	25.5	25.5
7	Turb (NTU)								0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	2.5	0.0	20.9	34.9	54.5	31.9	17.8	0.0	19.9		19.9	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	528	550	551	240	496	407	438	541	270	240	284		288	432	312
3	B (mg/L)	0.01	0.02	0.03	0.06	0.00	0.25	0.00	0.02	0.03	0.02	0.02	0.03	0.02	0.03	0.03
4	Ca (mg/L)	143	80	241	127	132	115	103	115	25	29	29	32	31	56	89
5	Cl (mg/L)	756.1	599.2	1027.6	782.5	679.5	619.0	670.1	496.5	106.0	102.0	104.0	106.0	124.0	284.0	268.0
6	CO3 (mg/L)	0.0	0.0	3.0	0.0	25.2	42.0	65.6	38.4	21.5	0.0	24.0	24.0	24.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.07	0.25	0.09	0.25	0.32	0.23	0.55	0.50	0.49	0.49	0.46	0.74	0.44
8	Fe (mg/L)	0.1	0.2	0.1	0.1	0.0	0.3	0.1	0.0	0.2	0.1	0.1	0.0	0.1	0.1	0.2
9	HCO3 (mg/L)	322	335	333	293	277	241	400	582	285	293	298	303	303	527	381
10	K (mg/L)	41.8	48.3	64.5	201.5	213.8	171.0	330.1	154.7	192.3	158.0	146.0	144.0	10.0	18.0	22.0
11	Mg (mg/L)	197.6	112.6	153.7	110.1	97.9	96.5	110.8	88.0	34.4	47.8	62.3	61.1	68.5	118.1	86.7
12	Na (mg/L)	188.8	146.8	173.5	157.3	154.8	144.0	260.9	276.4	66.5	55.0	92.0	90.0	90.0	172.0	154.0
13	NH3-N (mg N/L)	0.05	0.05	0.06	0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.05
14	NO2+NO3 (mg N/L)	0.58	0.36	0.26	2.28	4.90	8.63	9.32	5.54	3.44	2.78	2.74	2.68	2.79	3.23	2.17
15	NO2-N (mgN/L)	0.10	0.15	0.00	0.02	0.06	0.03	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.48	0.21	0.26	2.26	4.83	8.60	9.31	5.51	3.44	2.78	2.74	2.68	2.79	3.23	2.17
17	o-PO4-P (mg P/L)												0.041	0.031		
18	Org-N (mgN/L)								0.0	0.0						
19	P-Tot (mgP/L)	0.049	0.097	0.064	0.013	0.001	0.001	0.007	0.017	0.152	0.120	0.110		0.107	0.196	0.168
20	SiO2 (mg/L)	7.8	9.3	13.5	13.2	13.0	7.8	7.8	13.9	9.5	9.4	9.5	9.5	9.6	10.8	10.7

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GGOOW3)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Winter														
		Nov - Feb														
		2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
21	SO ₄ (mg/L)	20.9	20.3	61.0	58.3	65.5	39.5	154.1	78.8	65.0	88.0	84.0	86.0	82.0	134.0	46.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								27.0							
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	357	201	601	319	331	288	258	287	63	71	72	79	79	140	224
2	HAR_Total (mgCaCO ₃ /L)	1181	670	1242	778	739	690	720	653	207	271	332	334	364	632	585
3	Na% (%)	25	31	23	25	25	26	33	42	24	20	28	28	34	37	36
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	2.4	2.5	2.2	2.6	2.5	2.4	4.3	4.7	2.0	1.5	2.2	2.2	2.1	3.0	2.8
	PESTICIDES															

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GG00W3)

Local River : Ganga

Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL															
1	EC_FLD (µmho/cm)	3648	2247	2570	2540	2830	2567	2557	2343	2950	3110	3110	3145	3450	3500	2060
2	EC_GEN (µmho/cm)	3641	2233	2557	2530	2815	2560	2548	2338	2929	3100	3100	3140	3420	3480	2063
3	pH_FLD (pH units)	7.7	7.8	8.2	7.9	7.4	8.3	7.6	7.7	8.3	8.2	8.1	8.0	7.7	7.4	7.8
4	pH_GEN (pH units)	7.9	7.9	8.4	7.9	7.7	8.4	8.5	7.8	8.3	8.3	8.4	8.2	7.7	7.6	7.7
5	TDS (mg/L)								1243	1685	1885	1850	1800	2050	2090	1170
6	Temp (deg C)	23.5	24.3	23.0	22.8	23.5	23.3	25.2	25.8	26.0	25.5	26.5	26.0	25.0	25.0	25.0
7	Turb (NTU)								0.1	0.1						
	CHEMICAL															
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	19.5	0.0	31.9	26.6	69.1	0.0	26.6	19.9	19.9	19.9	0.0		0.0
2	ALK-TOT (mgCaCO3/L)	689	595	549	236	363	323	484	473	298	411	316	324	400		364
3	B (mg/L)	0.02	0.08	0.00	0.00	0.00		0.01	0.03	0.03	0.04	0.04	0.05	0.03	0.02	0.03
4	Ca (mg/L)	138	103	142	106	103	112	110	112	30	39	30	37	46	51	69
5	Cl (mg/L)	790.7	691.3	771.7	671.0	627.0	585.3	573.3	565.3	110.0	184.0	170.0	164.0	210.0	242.0	218.0
6	CO3 (mg/L)	0.0	0.0	23.5	0.0	38.4	32.0	83.3	0.0	32.0	24.0	24.0	24.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.41	0.07	0.07		0.31	0.81	0.38	0.42	0.44	0.42	0.62	0.69	0.32
8	Fe (mg/L)	0.1	0.1	0.1	0.0	0.1		0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2
9	HCO3 (mg/L)	420	363	311	288	182	255	421	577	299	453	337	346	488	454	444
10	K (mg/L)	53.0	87.3	59.3	346.7	175.3	257.3	231.9	174.3	188.2	214.0	208.0	198.0	14.0	14.0	23.0
11	Mg (mg/L)	218.8	125.8	115.3	103.8	101.6	92.6	101.7	104.2	42.9	68.7	68.1	66.9	109.3	99.6	75.3
12	Na (mg/L)	197.3	154.7	177.0	103.3	139.7	125.7	301.0	295.0	70.0	96.0	96.0	92.0	130.0	162.0	133.0
13	NH3-N (mg N/L)	0.05	0.05	0.08	0.07	0.05		0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.05
14	NO2+NO3 (mg N/L)	1.14	0.56	1.34	5.41	9.20		11.15	7.48	2.96	2.64	2.64	0.27	2.91	2.96	1.83
15	NO2-N (mgN/L)	0.23	0.23	0.04	0.05	0.06		0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.91	0.33	1.30	5.37	9.13		10.42	7.48	2.96	2.64	2.64	0.27	2.91	2.96	1.83
17	o-PO4-P (mg P/L)												0.031	0.000		
18	Org-N (mgN/L)								0.0	0.0						
19	P-Tot (mgP/L)	0.097	0.124	0.036	0.001	0.005		0.001	0.039	0.080	0.074	0.074		0.182	0.184	0.157
20	SiO2 (mg/L)	11.4	11.5	14.6	16.5	15.4		8.3	13.7	8.6	8.4	8.3	8.5	10.4	10.2	9.3

Water Quality Seasonal Average for the period: 2002-2017

Station Name : Varanasi (GGOOW3)

Local River : Ganga

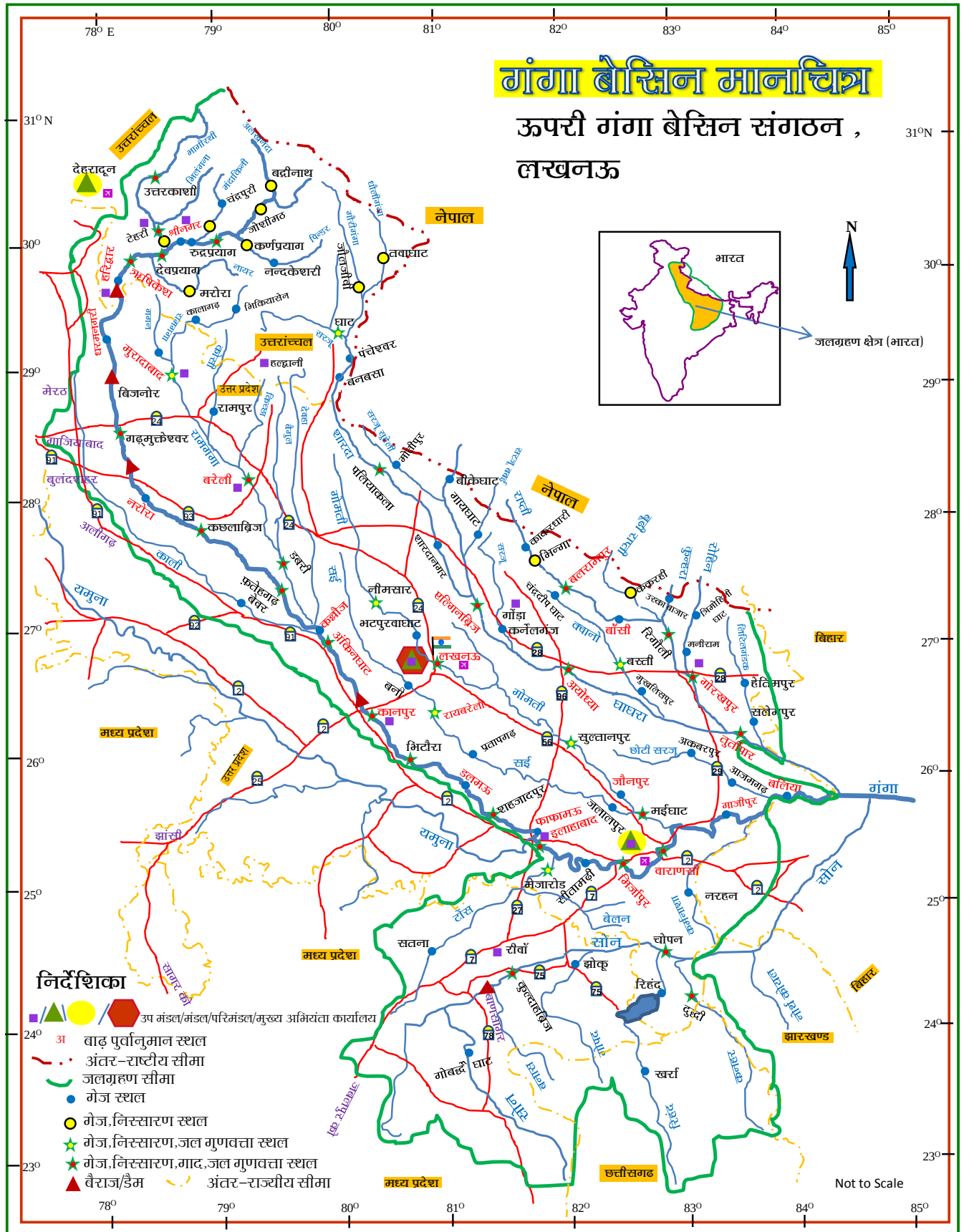
Well Water

Division : M Ganga Div. III, Varanasi

Sub-Division : M Ganga - C Sarju SD, Varanasi

S.No	Parameters	Summer														
		Mar - May														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
21	SO ₄ (mg/L)	42.3	27.3	68.0	55.0	59.3	42.3	279.4	125.6	78.0	98.0	92.0	90.0	128.0	122.0	54.0
	BIOLOGICAL/BACTERIOLOGICAL															
1	COD (mg/L)								42.3							
	TRACE & TOXIC															
	CHEMICAL INDICES															
1	HAR_Ca (mgCaCO ₃ /L)	345	256	354	264	257	281	276	280	76	97	74	93	116	128	172
2	HAR_Total (mgCaCO ₃ /L)	1257	780	834	697	680	667	699	714	254	383	358	372	572	543	486
3	Na% (%)	25	27	30	17	25	22	40	41	24	24	25	24	33	39	36
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.6	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	2.4	2.4	2.7	1.7	2.3	2.1	5.0	4.8	1.9	2.1	2.2	2.1	2.4	3.0	2.6
	PESTICIDES															

Index Map



ABBREVIATIONS AND SYMBOLS

N	: North
E	: East
sq. km.	: Square Kilometre
m	: Metre
o	: Degree
'	: Minute
”	: Second
SP	:Sodium Percentage
RSC	: Residual Sodium Carbonate
SAR	: Sodium Adsorption Ratio
HAR	: Hardness
mg/l	: Milligram per Litre
ml.	: Millilitre
pH	: Negative Logarithm of Hydrogen Ion Concentration