खंड–2
(केवल कार्यालय उपयोग हेतु)

Volume-II
(FOR OFFICIAL USE ONLY)

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय
MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION
केन्द्रीय जल आयोग
CENTRAL WATER COMMISSION

जलवर्ष पुस्तिका
WATER YEAR BOOK
(जून 2015 - मई 2016) (June 2015-May 2016)
ब्राह्मणी बेसिन
BRAHMANI BASIN

जल विज्ञानीय प्रेक्षण परिमंडल
HYDROLOGICAL OBSERVATION CIRCLE
भुवनेश्बर (BHUBANESWAR)

February: 2017

खंड–2

Volume-II

जलवर्ष पुस्तिका

WATER YEAR BOOK

(जून 2015 से मई 2016) (June 2015 - May 2016)

ब्राह्मणी बेसिन

BRAHMANI BASIN

FOREWORD

Proper assessment, analysis and compilation of hydro-meteorological data are essential for planning and management of precious water resources, which is vital not only for economic development but also for providing basic needs for such a large population of our country. Water reaches the land-mass through precipitation, a part of which evaporates, a portion of it percolates into ground as natural ground water and the excess runoff flows through rivulets and rivers and drain into the sea. Central Water Commission (CWC), an apex technical Organisation of Government of India for surface water resources, carries out systematic collection of hydro-meteorological data and assessment of surface water as one of its prime functions.

Hydro-meteorological observation stations have been established by CWC in almost all the river basins of India in a phased manner. These are further modernised and strengthened under various schemes. In the process, additional Divisions, Circles and Regional offices have been set up on a basin-wise concept.

The basin encompassing the east flowing rivers in-between the Ganga and the Godavari basins viz. Subarnarekha, Burhabalang, Baitarani, Brahmani, Mahanadi, Rushikulya, Vamsadhara, Nagavali and Sarada has been identified as Mahanadi and Eastern Rivers Basin which is dealt by Mahanadi and Eastern Rivers Organisation (MERO), CWC, Bhubaneswar. Hydrological Observation Circle (HOC), Bhubaneswar under MERO carries out hydrological observation and flood forecasting activities in these 9 river basins flowing mainly through Odisha along with its neighbouring States of Jharkhand, Chattisgarh, Andhra Pradesh and West Bengal through two Divisions under its jurisdiction viz. Mahanadi Division (MD), Burla and Eastern Rivers Division (ERD), Bhubaneswar.

There are a total of 104 observation stations under MERO. Systematic gauge and discharge observations are regularly conducted at 42 hydrological stations (out of the above 104) throughout the year. Sediment, Water Quality and Meteorological data are also observed at some of the stations. After scrutiny and checking, the collected & processed data are stored in a database through a custom made software “Surface Water Data Entry System (SWDES) and published in the form of Water Year Books. The present publication of Water Year Book contains Hydrological, Sediment and Water Quality data for the hydrological year 2015-16, i.e. from June 2015 to May 2016.

Water Year Book pertaining to the Hydrological Observation Circle, CWC, Bhubaneswar is published in four volumes. While Volume-I incorporates data of Mahanadi basin, Volume-II contains data of Brahmani basin, Volume-III of Subarnarekha, Burhabalang & Baitarani basins and Volume-IV of Rushikulya, Vamsadhara, Nagavali and Sarada basins. Each Volume contains Discharge data as Section-I, Sediment data as Section-II and Water Quality data as Section-III for respective river basins.

This Volume-II covers hydrological, sediment and water quality data for Water Year 2015-16 of seven sites of Brahmani river basin and three effluent stations alongwith salient features and other important statistical information. Sincere effort put in by the officers and staff of ERD, CWC, Bhubaneswar namely, Smt. Dr. Shanthala Devi B.S, Extra Assistant Director and S.S. Mohanty, Senior Computer of Hydromet Sections under the able leadership of Shri N.C. Nanda, Executive Engineer, in collecting & processing the data and bringing out this publication is highly commendable. The guidance and encouragement of Shri A.K.Nayak, Chief Engineer, MERO, Bhubaneswar and co-operation of the officials of H.O. Circle and Chief Engineer’s office are duly acknowledged.

Place: Bhubaneswar
Date: February,2017

(D.K. Jena)
Superintending Engineer
HOC, CWC
Bhubaneswar

LIST OF ABBREVIATIONS USED:

General:

CWC	:	Central Water Commission
H.P.	:	Hydrology Project
IMD	:	India Meteorological Department
msl	:	mean sea level
Q	:	Discharge
WL	:	Water level

Type of station:

G	:	Gauge (Water Level)
D	:	Discharge (Average discharge passing across a cross section of the river
S	:	Sediment (suspended sediment load)
Q	:	Water Quality

Units:

m	:	meter
mm	:	milli meter
km	:	kilometer
s	:	second
MCM	:	million cubic meters
MT	:	metric tonne
g	:	gramme
l	:	litre

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BRAHMANI BASIN

BRAHMANI BASIN

1. BASIN DESCRIPTION

1.1 General

Brahmani is a major inter-state east flowing river amongst the peninsular rivers in India, falling into Bay of Bengal. Brahmani basin is situated within the geographical co-ordinates of north latitude 20 °-28′- to 23°-35′ and east longitude 83°52′ to 87°03′ approximately. The basin is bounded in the north by Chhota Nagpur plateau, in the west & south by the Mahanadi basin and in the east by the Bay of Bengal. The river flows through Jharkhand, Chhattisgarh and Odisha States and drains a total area of 39,033 sq.km, before out-falling in to the Bay of Bengal. State-wise break up of drainage area is tabulated below:

Sl. No.	Name of State	Catchment Area (sq. km)	Percentage of total catchment area
1.	Jharkhand	15,769	40.4
2.	Odisha	22,364	57.3
3.	Chhattisgarh	900	2.3
	Total	39,033	100

Basin map of Brahmani river system depicting various hydrological and hydro-meteorological observation stations maintained by CWC is placed herewith. CWC is maintaining 8 stations in the basins, out of which 6 are of type GDSQ, 1 of GQ and balance 1 of G (Seasonal) type. In addition, water quality is also observed at 3 sampling stations in this basin. However, this report contains data of seven sites (6 GDSQ and 1 GQ type) which are operated round the year along with the water quality of 3 sampling stations.

1.2 River System

River Brahmani, known as South Koel river in the upper reaches, originates near Nagri village in Ranchi district of Jharkhand, at an elevation of about 600 m. The total length of the river is about 799 km. Principal tributaries of this river are Sankh, Tikra and Karo. The catchment area details are tabulated below:

Name of Stream	River/Tributary	Length (km)	Catchment area (sq.km)	Percentage of total catchment area
Brahmani	Main stream	799	26,831	68.7
Karo	Left Tributary	112	2,741	7.0
Sankh	Right Tributary	196	6,933	17.8
Tikra	Right Tributary	101	2,528	6.5
		Total	**39,033**	**100.0**

1.3 Climatic Characteristics

The climate of the basin is tropical, with fairly hot summers and moderately cold winters. This basin is influenced by south-west monsoon from June to October, in addition to some occasional down-pours in the lower reaches due to the cyclonic depressions in the Bay of Bengal. The average annual rainfall of this basin is 1460 mm. The maximum temperature varies from 38 to 43° C and the minimum temperature ranges between 10 to 15° C.

1.4 Geology

The soils in this basin can be grouped as red and yellow, mixed red and black soils, red sandy soils, laterite, red loamy, coastal alluvium, saline and forest. The basin is rich in mineral resources. Coal, Iron ore, Copper, Bauxite, Chromite, Limestone, Manganese, Dolomites, Lead, Fire-clay and China clay are the main mineral resources of this basin.

1.5 Water storage/Diversion Structures

Details of water storage/ diversion structures in the Brahmani basin are as below:

Sl. No	Name of Project	River	Status of the project
1.	Rengali Multipurpose Dam	Brahmani	Existing
2.	Samal Barrage	Brahmani	Existing
3.	Gohira	Gohira	Under construction
4.	Aunil	Aunil	Under construction
5.	Nandini Reservoir	Nandini	Under construction
6.	Kans Reservoir	Kans	Existing
7.	Upper Sankh Reservoir	Sankh	Existing
8.	Chargaon Reservoir	Kodari	Existing
9.	Pitamahal	Pitamahal	Existing
10.	Tikra WRO Project	Tikranarli	Under construction
11.	Derjang	Derjang	Existing
12.	Ramiala	Ramiala	Existing
13.	Samakhoi	Samakhoi	Under Construction
14.	Dadaraghati	Dagachira	Existing
15.	Jaipur Reservoir	Saphi	Existing
16.	Gorkho Reservoir	South Koel	Existing
17.	Baski Reservoir	South Koel	Existing
18.	Karanjholi	Bhangi	Existing
19.	Matukdihi	Marda	Existing
20.	Sankh Irrigation	Tributary of Sankh	Existing
21.	Ramarekha Reservoir	Tributary of Sankh	Existing
22.	Mandira	Brahmani	Existing

2 STREAM FLOW DATA

2.1 Observation Methodology

Discharge Observation Methods: Area-velocity method is generally adopted for measuring discharge at sites. Cup type current meter is used to measure the velocity of the flow and the depth is measured by using sounding rod for depths upto 3 m and by log line beyond 3 m. Discharge by area velocity method is being observed once in a day starting at 0800 Hrs. at all the sites except on Sundays and holidays. Besides, silt and water quality observation are also being carried out at the CWC sites as per the table below.

Computation of flows on non-observed days: The observed stage and discharge figures for each season (monsoon and non-monsoon) are plotted and a mean Stage V/s. Discharge curve is drawn, giving due attention to the scattered points with reference to area, velocity etc.

The factors responsible for the shifting of the curves are also taken care of by studying the river cross section at regular intervals and with super imposition of previous years' Stage V/s. Discharge curves. Accordingly, the trend of the current curve is finalised. Finally, the discharges of the non observed days are computed from these Stage V/s. Discharge Curves.

2.2 Data Availability

The data of following sites is presented in this volume:

Sl. No.	Code No.	Station Name	Type	Data available	
				From	To
1.	EBI00L3	Tilga	GDSQ	G-27.04.78 D-15.06.79 S-21.07.80 Q-01.06.80	Continuing -do- -do- -do-

2.	EBJ00D5	Jaraikela	GDSQ	G-23.07.71 D-29.12.71 S- 01.06.75 Q-01.09.75	Continuing -do- 04-09-2002 Continuing
3.	EB000H6	Panposh	GDSQ	G-22.07.72 D-21.06.96 S- 01.08.96 Q-01.11.96	Continuing -do- -do- -do-
4.	EB000W3	Gomlai	GDSQ	G-29.08.77 D-21.01.79 S- 17.07.80 Q-01.06.80	Continuing -do- -do- -do-
5.	EB000G6	Jenapur	GDSQ	G-09.07.77 D-20.07.79 S- 09.07.80 Q-01.03.80	Continuing -do- -do- -do-
6.	EBA00I3	Altuma	GDSQ	G-09.07.77 D-20.07.79 S- 19.08.13 Q-01.06.13	Continuing -do- -do- -do-
7.	-	Talcher	GQ	G-16.08.85 D-16.08.85 S- 16.08.85 Q-16.08.85	Continuing 31-05-96 31-05-96 Continuing
9.	-	Nandira	Q	Q-01.11.90	Continuing
10.	-	Kamalang	Q	Q-01.11.90	Continuing
11.	-	RSP Nala	Q	Q-01.11.90	Continuing

2.3 Explanatory Notes of Water Year Book

SWDES (Surface Water Data Entry Software), a custom made software for processing hydrological data, has been used for preparation of this volume. The explanatory notes described below can be used for the interpretation of data presented in this volume.

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

ii) Discharge is given in cubic meters per second.

iii) Discharges are expressed as 0.000 when river bed is dry and 0.000 N.F. when velocity is observed as 'NIL'.

iv) The zero R.L. of gauge is a datum level fixed for given site, which is kept 1 or 2 m lower than the lowest water level recorded in a perennial stream. In a non-perennial stream, it is kept 1 or 2 m lower than the lowest bed level of the stream.

v) Discharges are rounded off as per standard practice.

vi) Runoff in mm is the notional depth of water in millimeters over the catchment, equivalent to annual runoff volume calculated at the discharge measurement station. It is computed using the relation:

$$\text{Runoff (mm)} = \frac{\text{Annual runoff (Mm}^3\text{) x 1000}}{\text{Catchment area (km}^2\text{)}}$$

vii) Peak and lowest flow correspond to the highest and lowest water levels recorded from 'SWDES' entered data.

viii) Measuring Authority refers to the field division of Central Water Commission (Eastern Rivers Division) responsible for the operation of the gauging station.

ix) The gauging station code number is a unique seven column alphanumeric reference number which facilitates storage and retrieval of flow data in data base. The first column is identifier of either an integral river basin or, for the sake of convenience, a region having several contiguous river catchments. This is followed by a column which identifies an independent river system which either has 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.

3. HYDROLOGICAL DATA

This volume contains the following information for each site stated above:

i. History Sheet: Site Name, State, District, River Basin, Tributary, Sub-Tributary, Catchment Area, Latitude / Longitude, Opening / Closing date for various types of data.
ii. Annual maximum/minimum discharge since period of observation.
iii. Daily Water level and observed/ computed discharge data including 10-daily, monthly and annual totals etc.
iv. Histogram and Hydrograph showing current year monthly mean discharges, Historical monthly mean discharges, historical monthly minimum and monthly maximum discharges.
v. Histogram showing Annual Run off volume since beginning of observation.
vi. Pie-Charts showing monthly mean run off (as percentage of Annual Run off) historical for the current year.
vii. Plot of Pre and Post Monsoon Cross-section of the rivers for current year.
viii. Water Level hydrograph for 3(three) major flood events of current year.

4. SEDIMENT DATA (For Sediment Observation sites)

The frequency of sediment observation is carried out daily during monsoon season and once in a week (on Monday) during the non-monsoon period. Data for non-observed days is estimated/ interpolated from the relationship of discharge v/s. sediment load, prepared on the basis of observed sediment concentration and weighted mean discharge of the same year.

Sediment samples are collected from 0.6 depth, using Punjab type bottle sampler, from all the verticals along the hydrological observation sections where velocity is observed for computation of discharge. The collected samples from all the segments are combined in 3 to 7 groups having compartments or groups of equal or nearly equal discharges for analysis. Quantum of suspended sediment load is estimated in three grades, viz. Coarse, Medium and Fine. Coarse and medium grades are separated by sieving process and the fine grade by filtration of left over samples after sieving through filter paper. Grade wise concentration is

derived gravimetrically as per standard procedure. The following parameters are derived and recorded:

- Daily Observed suspended sediment (g/l).
- Corresponding discharge.
- Average sediment load in tonnes/day (10 daily & monthly basis).
- Annual sediment load for the current year.
- Annual & Seasonal sediment load and the corresponding volume of inflow for all the years since inception.
- Grain size distribution of bed load.

5. WATER QUALITY DATA (For Water Quality Observation sites)

The water samples are collected at a regular interval of once in a month for trend stations and once in two month for base stations (on 1st working day), from the main flowing segment of the stream just below the water surface (20 to 30 cm) on the Station Gauge line where depth of flow and velocity are maximum, preferably in the mid stream. The water samples are collected in the pre-rinsed and cleaned one-litre capacity polythene bottle having double stopper (inside and out side) facility. Sampling bottle is filled to its full capacity without entrapping air bubbles inside.

After sampling, the collected samples are sent to the Water Quality Laboratory (Level-II) based at Bhubaneswar (under the Eastern Rivers Division) along with in-situ physical characteristics, for analysis. The samples received from the sites are preserved in a refrigerator in the water quality laboratories for analysis**.**

Analysis of parameters, namely pH, Electrical conductivity, Sodium, Potassium, Iron, Fluoride, Nitrate, Nitrite, Phosphate, Silicate, Boron, Sulphate, Calcium, Magnesium, Carbonate, Bi-carbonate, Chloride, Dissolved Oxygen, BOD and COD, are carried out at the Level II laboratory by using standard methodology. Micro biological parameters like total colliform and faecal colliform are also being analyzed. For analysis of trace and toxic elements, samples are sent to Level-II + laboratory at Hyderabad once in a year, in the month of April and to Level-III+ laboratory at Kalindi Bhawan, New Delhi twice in a year in the months of March and September. The results so recorded, include:

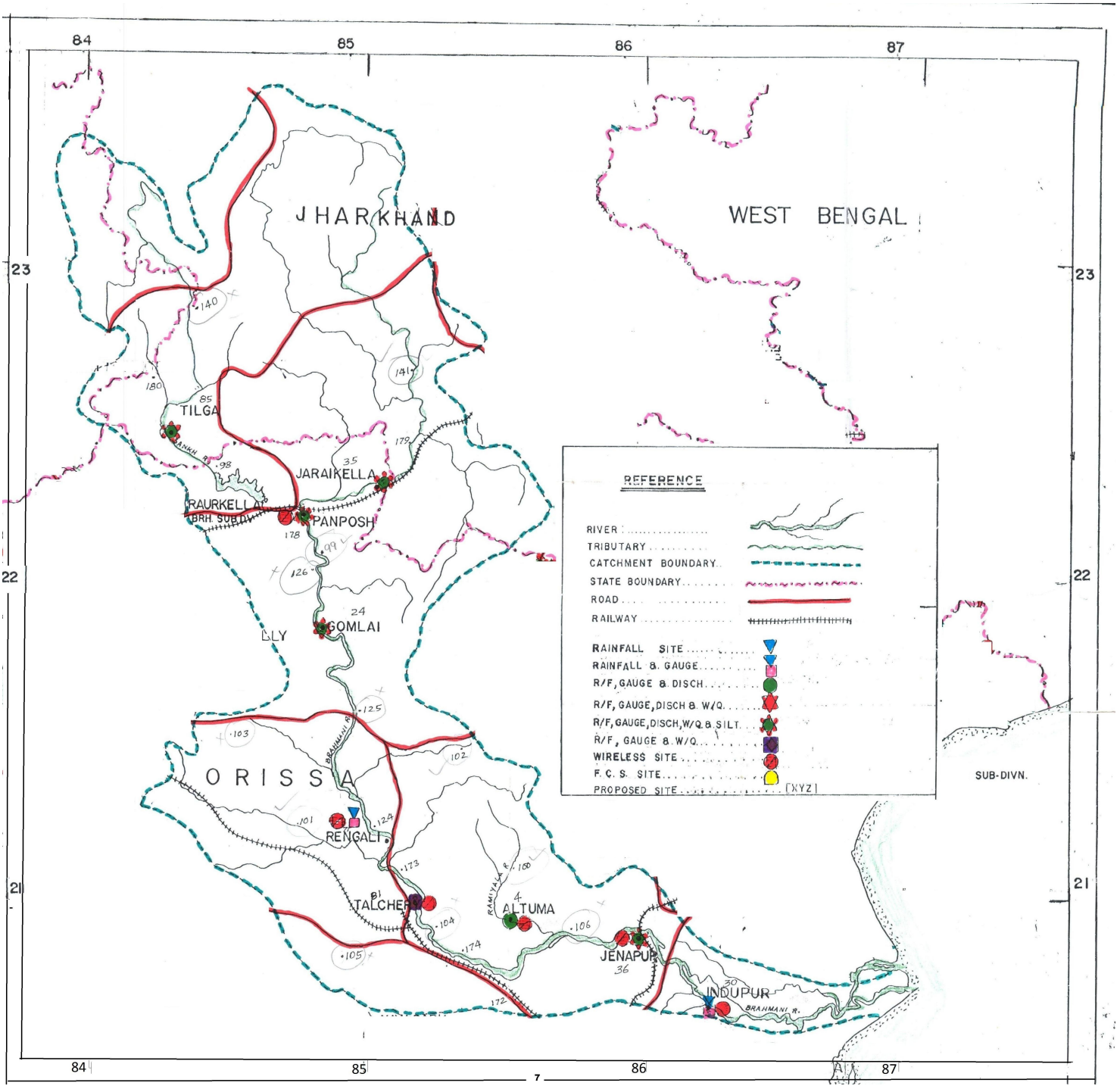
- River Water Analysis: Monthly physical, chemical & biological parameters.
- Annual Water Quality Summary: physical, chemical & biological parameters.
- Average Values over the years: Season-wise averages;
  - Average for Summer (March to June)
  - Average for Floods (July to October).
  - Average for Winter (November to February)

DETAILS OF SITES IN OPERATION UNDER BRAHMANI BASIN

Sl. No.	Station Name	River/ Tributary	Code No.	Type	Latitude	Longitude
1.	Tilga	Sankh	EBI00L3	GDSQ	20°-.20-'00"	84°-30-'00"
2.	Jaraikela	Koel	EBJ00D5	GDSQ	22°-19 '-08"	85°-06-'19"
3.	Panposh	Brahmani	EB000H6	GDSQ	22°-16 '-19"	84°-51-'07"
4.	Gomlai	Brahmani	EB000W3	GDSQ	21°-50 '-16"	84°-56-'33"
5.	Jenapur	Brahmani	EB000G6	GDSQ	20°-53 '-23"	86°-06-'51"
6.	Altuma	Ramiya	EBA00I3	GDSQ	20°-55 '-48"	85°-31-'20"
7.	Talcher	Brahmani	EB000N5	GQ	20°-57 '-00"	85°-20-'00"
8.	Rengali	Brahmani	-	G	21°-15 '-22"	85°-02-'14"

In addition, Water Quality observation samples are also collected from the following locations in the basin, which are not CWC sites per-se. The data of these sites are also presented in this report:

Sl. No.	Station Name	River/tributary	Type	Co-ordinates	
				Latitude	longitude
1	Nandira	Nandira Nala	Q	20°-53 '-56"	85°-15 '-50"
2	Kanlang	Brahmani	Q	20°-52 '-16"	85°-17 '-52"
3	RSP Nalla	RSP Nala	Q	22°-17 '-18"	84°-49 '-05"


84
85
86
87
23
22
21
JHARKHAND
WEST BENGAL
ORISSA
TILGA
JARAIKELLA
RAURKELLA
BRH. SUB
PANPOSH
GOMLAI
RENGALI
TALCHER
ALTUMA
JENAPUR
INDUPUR
BRAHMANI R.
SUB-DIVN.
REFERENCE
RIVER
TRIBUTARY
CATCHMENT BOUNDARY
STATE BOUNDARY
ROAD
RAILWAY
RAINFALL SITE
RAINFALL & GAUGE
R/F, GAUGE & DISCH
R/F, GAUGE, DISCH & W/Q
R/F, GAUGE, DISCH, W/Q & SILT
R/F, GAUGE & W/Q
WIRELESS SITE
F. C. S. SITE
PROPOSED SITE [XYZ]

HYDROLOGICAL DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**TILGA**	**Code**	:	**EBI00L3**
State	:	Jharkhand	District		Simdega
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmani
Tributary	:	Sankh	Sub Tributary	:	
Sub-Sub Tributary	:		Local River	:	Sankh
Division	:	E.E., Bhubaneswar	Sub-Division	:	Rourkela.
Drainage Area	:	3160 Sq. Km.	Bank	:	Left
Latitude	:	22°20'00"	Longitude	:	84°30'00"
Zero of Gauge (m)	:	372 (m.s.l)	14.04.1978	-	31.03.2028
		Opening Date	Closing Date		
Gauge	:	27.04.1978			
Discharge	:	15.06.1979			
Sediment	:	21.07.1980			
Water Quality	:	01.06.1980			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1980-1981	2004	377.400	12.07.1980	0.231	373.480	22.05.1981
1981-1982	579.6	375.830	27.07.1981	0.000	373.595	11.05.1982
1982-1983	654.4	376.100	22.08.1982	0.050	373.625	03.06.1982
1983-1984	660.6	375.990	19.09.1983	0.000	373.375	18.05.1984
1984-1985	967.7	376.700	04.09.1984	0.000	373.450	03.05.1985
1985-1986	561.4	376.130	11.07.1985	0.000	373.730	07.05.1986
1986-1987	1162	376.640	27.07.1986	0.000	373.640	23.04.1987
1987-1988	2830	378.625	28.08.1987	0.200	373.675	01.06.1987
1988-1989	989.7	377.050	28.06.1988	0.000	373.500	25.04.1989
1989-1990	696.6	376.400	22.06.1989	0.000	373.500	21.04.1990
1990-1991	628.8	376.205	21.07.1990	0.000	373.500	15.05.1991
1991-1992	1600	378.035	23.07.1991	0.000	373.645	02.06.1991
1992-1993	429.2	375.670	22.07.1992	0.000	373.420	17.05.1993
1993-1994	632.3	375.995	27.09.1993	0.020	373.420	13.05.1994
1994-1995	2504	377.808	29.06.1994	0.435	373.525	03.06.1994
1995-1996	1153	376.920	18.09.1995	0.276	373.490	18.05.1996
1996-1997	1428	377.620	26.07.1996	0.000	373.510	18.05.1997
1997-1998	2083	377.735	06.08.1997	0.000	373.460	10.06.1997
1998-1999	1536	377.495	10.09.1998	0.000	373.480	05.05.1999
1999-2000	1300	376.760	08.08.1999	0.407	373.535	08.05.2000
2000-2001	459.3	375.585	31.07.2000	0.000	373.530	04.05.2001
2001-2002	1500	376.840	22.07.2001	0.000	373.445	12.05.2002

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
2002-2003	662.3	376.203	24.06.2002	0.000	373.550	06.05.2003
2003-2004	1350	377.500	25.10.2003	0.000	373.450	21.04.2004
2004-2005	1211	377.078	14.08.2004	0.000	373.565	29.04.2005
2005-2006	932.6	376.595	30.06.2005	0.000	373.700	03.05.2006
2006-2007	891.7	376.310	31.07.2006	0.000	373.645	13.04.2007
2007-2008	703.8	376.095	27.09.2007	0.000	373.640	01.05.2008
2008-2009	786.4	376.383	07.07.2008	0.000	373.645	02.05.2009
2009-2010	773.4	376.300	28.07.2009	0.000		14.03.2010
2010-2011	341.1	375.575	17.09.2010	0.000		11.06.2010
2011-2012	1500	377.460	24.09.2011	0.491	373.325	31.05.2012
2012-2013	962.8	376.860	04.08.2012	0.321	373.305	07.06.2012
2013-2014	1650	378.030	14.10.2013	1.330	373.570	25.05.2014
2014-2015	949.2	376.175	04.08.2014	0.000	373.910	15.07.2014
2015-2016	1078	376.510	23.07.2015	0.000	374.990	01.09.2015

Stage-Discharge Data for the period 2015 - 2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	373.670	1.267	374.098	30.79	373.970	46.29	374.990	0.000	373.953	34.72	373.970	38.20 *
2	373.645	1.210	374.365	70.68	374.270	52.03 *	374.985	213.8	373.930	35.28 *	373.858	27.51
3	373.615	0.790	374.168	45.86	377.270	110.4	374.605	129.9	373.955	34.78	373.790	19.36
4	373.670	1.470	374.210	48.97	375.630	141.4	374.478	93.59	373.960	31.40 *	373.750	16.57
5	373.690	2.941	374.295	70.00 *	375.040	110.3	374.420	103.7	373.930	30.08	373.735	14.17
6	373.658	2.144	374.250	56.82	374.610	93.75	374.280	85.35 *	373.895	20.33	373.710	12.17
7	373.650	2.000 *	374.240	54.52	374.350	73.99	374.185	74.95	373.870	26.35	373.710	11.22
8	373.655	2.132	374.445	74.83	374.220	71.73	374.140	50.47	373.875	22.19	373.710	11.22 *
9	373.705	6.678	374.645	110.2	374.060	55.95 *	374.185	65.90	373.858	19.10	373.685	9.787
10	373.678	2.475	375.248	292.7	374.025	53.10	374.148	60.63	373.803	16.53	373.685	10.38
11	373.660	2.286	376.533	984.3	374.225	60.67	374.100	44.49	373.885	16.45 *	373.680	10.24 *
12	373.668	2.292	375.530	455.0 *	374.550	88.69	374.083	39.86	373.760	15.42	373.660	9.719
13	373.640	1.802	374.708	110.2	374.110	60.69	374.065	34.20 *	373.750	14.05	373.645	9.032
14	373.650	1.900 *	374.418	75.09	374.093	55.26	374.045	39.70	373.760	15.11	373.630	8.974
15	373.718	4.517	374.203	55.92	374.160	55.28 *	374.000	31.91	373.760	16.64	373.620	9.910 *
16	373.690	5.650	374.270	76.72	374.200	55.29 *	373.970	30.75	373.905	25.72	373.640	8.025
17	373.845	14.60	375.185	277.3	374.518	92.29	373.975	27.87 *	373.830	21.03	373.625	8.087
18	373.723	7.881	374.900	240.0 *	374.555	93.59	373.990	32.02	373.830	21.03 *	373.625	8.128
19	373.745	8.622	374.480	119.0 *	374.675	102.2	373.980	33.44	373.793	16.31	373.640	7.571
20	373.685	5.797	375.298	304.7	374.665	100.7	374.035	36.57 *	373.743	13.67	373.630	7.984
21	373.660	4.700 *	374.540	125.5	374.460	83.66	374.330	88.31	373.730	12.00 *	373.625	7.743
22	373.660	4.723	374.490	137.3	374.285	70.06	374.885	159.2	373.720	10.73 *	373.625	7.740 *
23	373.775	8.792	376.510	1078	374.330	98.30 *	374.563	106.9	373.725	11.37	373.625	9.134
24	373.820	13.43	375.413	367.8	374.293	74.70	374.410	89.14	373.715	10.96 *	373.620	7.802
25	374.020	29.63	375.078	212.0	374.290	73.19	374.250	62.30 *	373.720	11.17 *	373.625	8.000 *
26	374.023	31.54	375.230	250.0 *	374.283	68.39	374.143	57.16	373.710	10.76	373.635	8.394
27	373.863	18.06	374.683	163.7	374.193	60.69	374.085	47.38 *	373.715	11.14	373.640	7.939
28	373.790	10.00 *	374.630	161.4	374.190	74.60	374.020	48.82	373.710	10.13	373.630	8.167
29	373.770	9.272	374.203	72.98	374.073	47.86	374.003	37.59	373.705	9.538	373.630	8.160 *
30	373.810	10.09	373.993	50.94	374.950	47.97 *	373.988	38.53	373.678	8.391	373.625	7.505
31			373.960	42.36	374.850	136.6			374.030	43.93		
Ten-Daily Mean												
I Ten-Daily	373.664	2.311	374.396	85.54	374.745	80.89	374.441	87.84	373.903	27.08	373.760	17.06
II Ten-Daily	373.702	5.535	374.952	269.8	374.375	76.47	374.024	35.08	373.802	17.54	373.639	8.767
III Ten-Daily	373.819	14.02	374.793	242.0	374.381	76.00	374.268	73.53	373.742	13.65	373.628	8.058
Monthly												
Min.	373.615	0.790	373.960	30.79	373.970	46.29	373.970	0.000	373.677	8.391	373.620	7.505
Max.	374.022	31.54	376.533	1078	377.270	141.4	374.990	213.8	374.030	43.93	373.970	38.20
Mean	373.728	7.29	374.717	200.5	374.496	77.73	374.244	65.48	373.813	19.24	373.676	11.29

Annual Runoff in MCM = 1073 Annual Runoff in mm = 339

Peak Observed Discharge = 1078 cumecs on 23/07/2015 Corres. Water Level :376.51 m

Lowest Observed Discharge = 0.000 cumecs on 01/09/2015 Corres. Water Level :374.99 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2015 - 2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	373.620	6.970	373.610	6.127	373.605	3.909	373.785	8.623	373.555	1.129	373.540	0.122 *
2	373.625	6.445	373.610	6.348	373.605	4.231	373.750	7.568	373.555	1.119	373.540	0.122
3	373.625	6.904	373.610	6.290 *	373.605	2.788	373.735	6.753	373.550	1.120 *	373.535	0.152
4	373.625	7.623	373.605	5.796	373.605	3.327	373.720	6.478	373.540	0.622	373.525	0.151
5	373.650	7.975	373.610	5.688	373.605	3.671	373.715	5.204	373.545	0.443	373.500	0.108
6	373.640	8.030 *	373.615	6.777	373.605	3.073	373.730	6.622 *	373.540	0.975	373.525	0.163
7	373.630	8.368	373.615	5.713	373.605	3.075 *	373.790	12.30 *	373.550	0.878	373.520	0.147
8	373.635	7.432	373.605	5.062	373.600	4.356	373.735	7.095	373.545	0.781	373.520	0.147 *
9	373.640	6.827	373.605	4.820	373.600	3.689	373.725	5.598	373.540	0.481	373.525	0.129
10	373.645	6.779	373.610	4.680 *	373.695	4.351	373.720	5.184	373.540	0.481 *	373.530	0.164
11	373.645	5.484	373.615	4.530	373.685	3.274	373.705	4.574	373.540	0.480	373.530	0.169
12	373.640	6.531	373.615	3.847	373.685	3.381	373.705	4.239	373.540	0.403	373.530	0.133
13	373.640	6.530 *	373.615	4.930	373.680	3.132	373.700	3.910 *	373.530	0.448	373.525	0.146
14	373.645	6.141	373.600	3.232	373.680	3.133 *	373.695	3.584	373.530	0.449 *	373.520	0.147
15	373.645	6.148	373.595	3.246	373.690	3.966	373.700	4.123	373.530	0.390	373.540	0.147 *
16	373.625	5.958	373.605	3.305	373.690	4.589	373.700	4.347	373.540	0.382	373.585	2.238
17	373.630	6.394	373.600	3.370 *	373.690	3.943	373.695	4.546	373.540	0.382 *	373.590	2.567
18	373.660	7.239	373.600	3.367	373.685	3.448	373.690	3.712	373.540	0.371	373.575	2.364
19	373.655	6.639	373.605	3.553	373.680	3.886	373.680	3.843	373.540	0.378	373.620	3.060
20	373.625	6.720 *	373.615	4.148	373.685	3.721	373.650	3.277 *	373.540	0.365	373.560	2.511
21	373.625	6.718	373.615	4.484	373.685	3.735 *	373.620	2.710	373.530	0.260	373.545	2.507 *
22	373.625	6.709	373.625	3.752	373.685	2.079	373.595	2.487	373.530	0.309	373.540	2.506 *
23	373.620	6.557	373.615	4.680	373.680	1.968	373.580	2.047	373.520	0.219	373.600	3.053
24	373.625	6.720 *	373.615	4.680 *	373.685	2.082	373.570	1.567 *	373.510	0.219 *	373.620	3.481
25	373.625	6.720 *	373.620	4.690	373.685	1.905	373.570	1.567 *	373.510	0.262	373.605	3.172
26	373.635	6.691	373.615	4.560 *	373.685	1.997	373.570	1.567	373.510	0.249	373.590	2.871
27	373.630	6.900 *	373.600	4.146	373.750	8.956	373.570	1.567 *	373.510	0.246	373.590	2.424
28	373.625	7.102	373.610	3.661	373.850	13.89 *	373.570	1.518	373.510	0.222	373.600	4.063
29	373.630	8.368	373.615	3.499	373.885	15.32	373.570	1.531	373.510	0.293	373.615	4.059 *
30	373.615	5.436	373.620	5.651			373.570	1.425	373.550	0.329	373.580	3.130
31	373.610	5.177	373.615	3.910 *			373.565	1.285			373.560	2.504
Ten-Daily Mean												
I Ten-Daily	373.633	7.335	373.609	5.730	373.613	3.647	373.741	7.142	373.546	0.803	373.526	0.141
II Ten-Daily	373.641	6.378	373.607	3.753	373.685	3.647	373.692	4.015	373.537	0.405	373.558	1.348
III Ten-Daily	373.624	6.645	373.615	4.338	373.732	5.770	373.577	1.752	373.519	0.261	373.586	3.070
Monthly												
Min.	373.610	5.177	373.595	3.232	373.600	1.905	373.565	1.285	373.510	0.219	373.500	0.108
Max.	373.660	8.368	373.625	6.777	373.885	15.32	373.790	12.30	373.555	1.129	373.620	4.063
Mean	373.633	6.782	373.610	4.598	373.675	4.306	373.667	4.221	373.534	0.489	373.557	1.57

Peak Computed Discharge = 455.0 cumecs on 12/07/2015 Corres. Water Level :375.53 m

Lowest Computed Discharge = 0.122 cumecs on 01/05/2016 Corres. Water Level :373.54 m

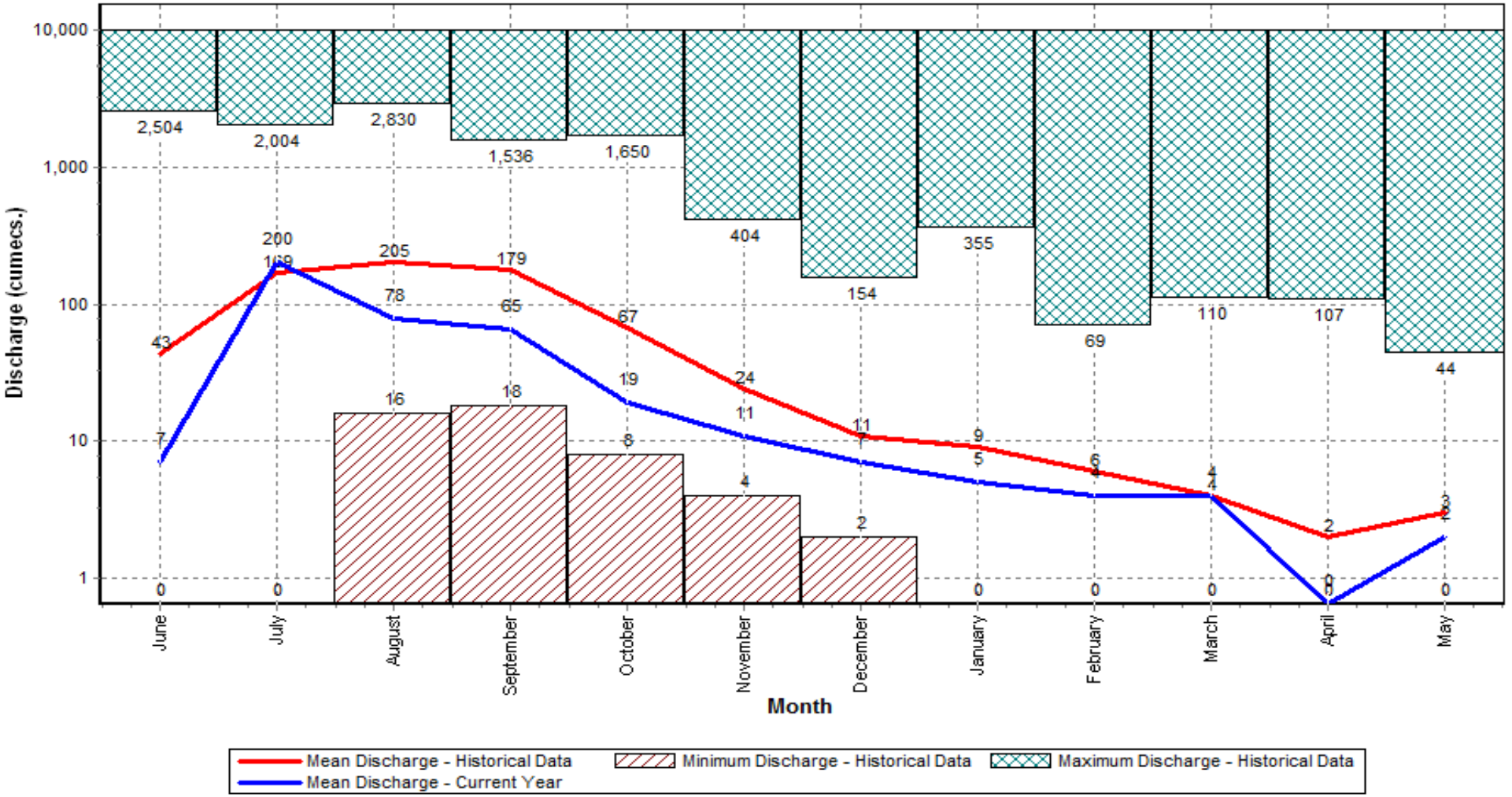
Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2015-2016

Station Name : TILGA (EBI00L3) **Data considered : 1980-2016** **Division : E.E., Bhubaneswar**

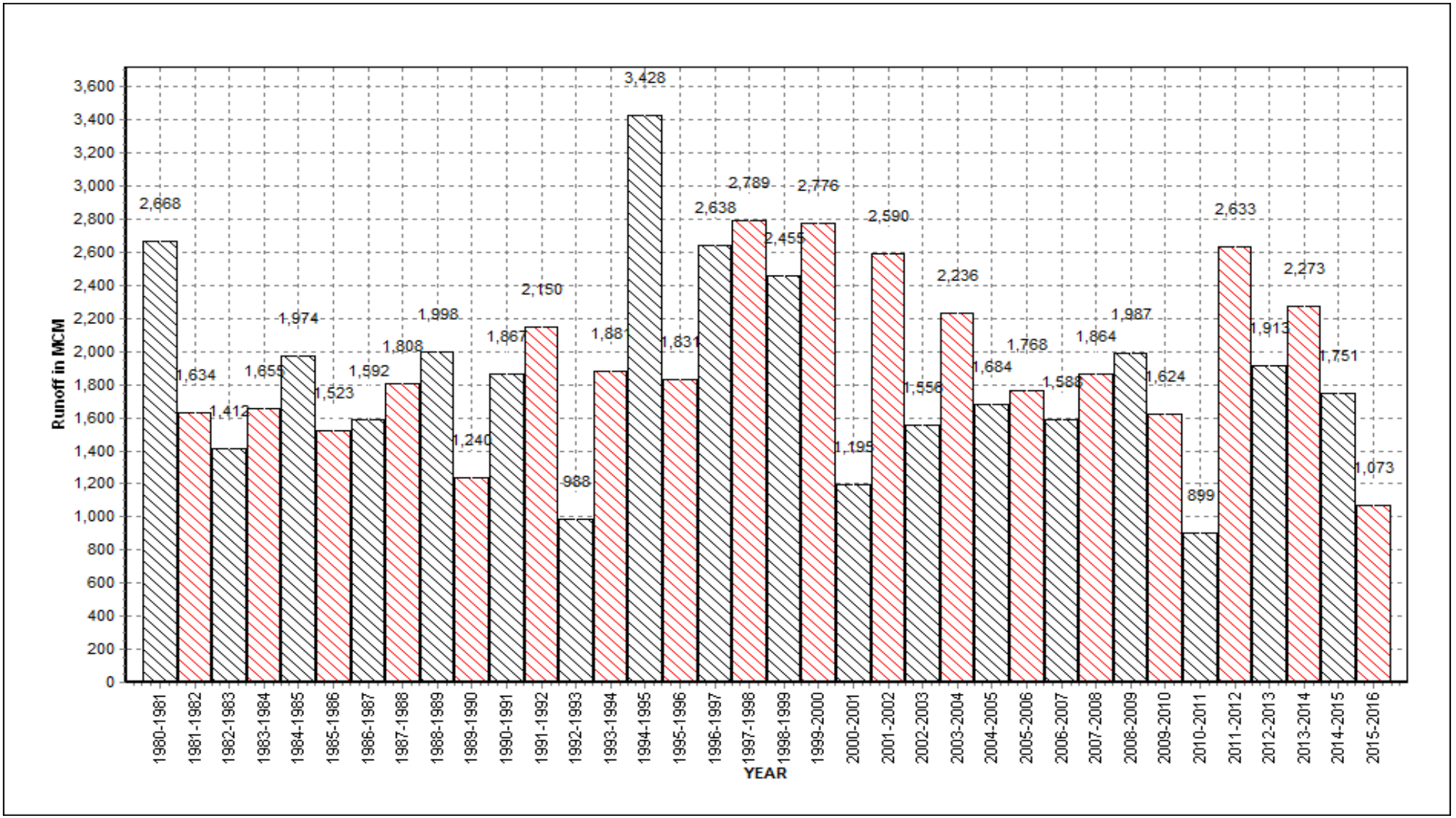
Local River : Sankh **Sub-Division : Rourkela.**



Annual Runoff Values for the period: 1980 - 2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

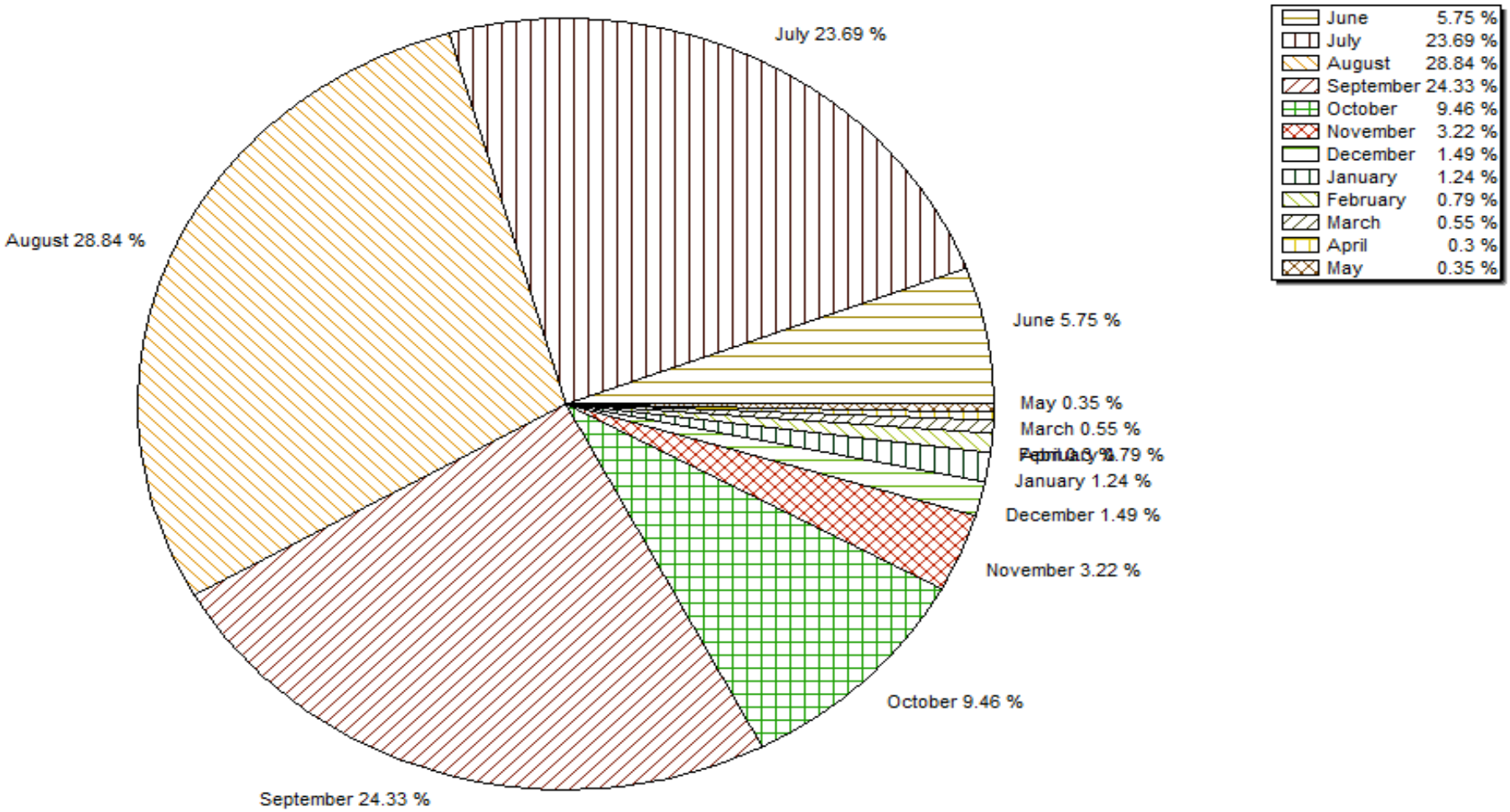


Note: Missing values have not been considered while arriving at Annual Runoff

Monthly Average Runoff based on period : 1980-2015

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**



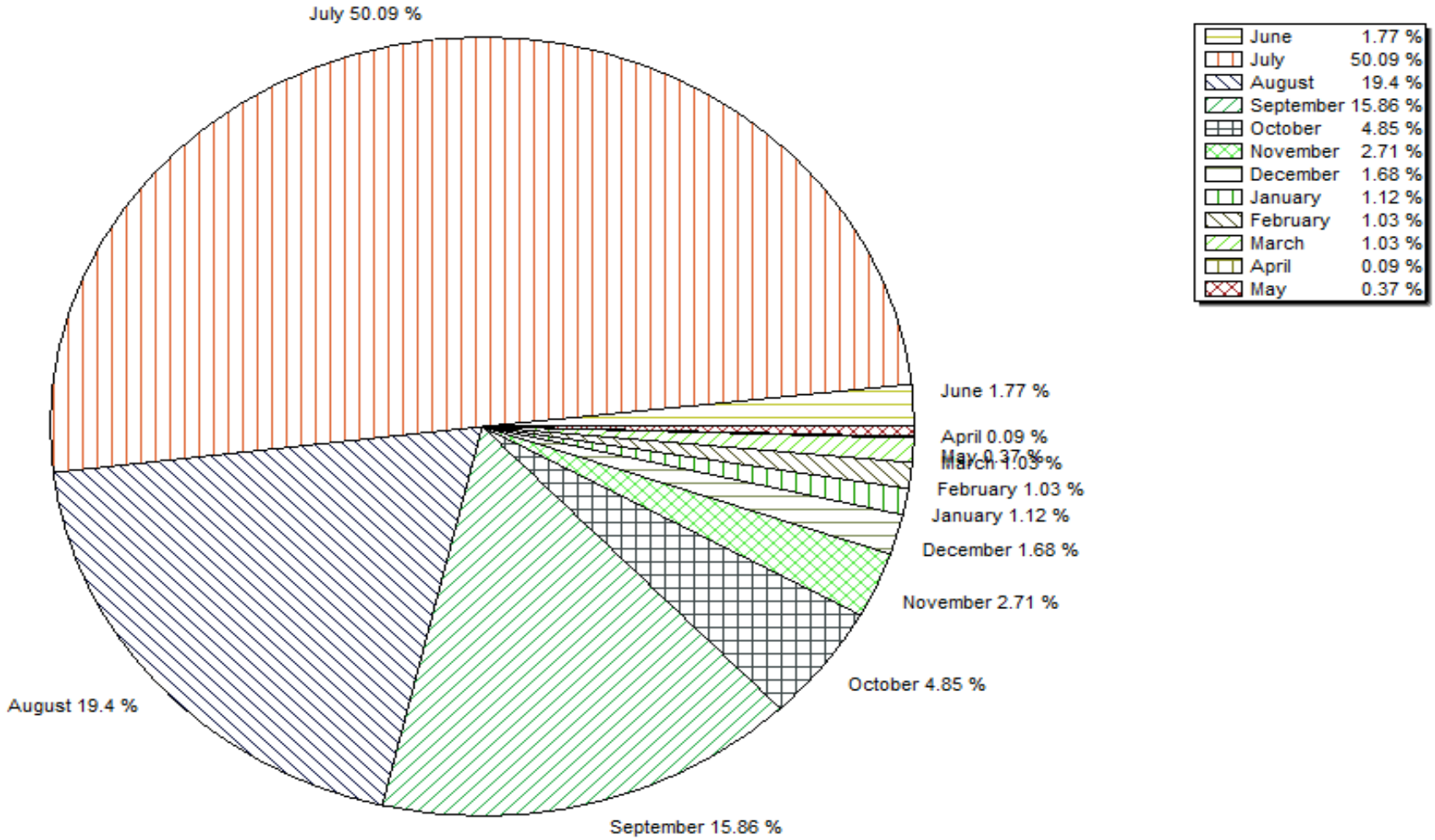
Monthly Runoff for the Year : 2015-2016

Station Name : TILGA (EBI00L3)

Local River : Sankh

Division : E.E., Bhubaneswar

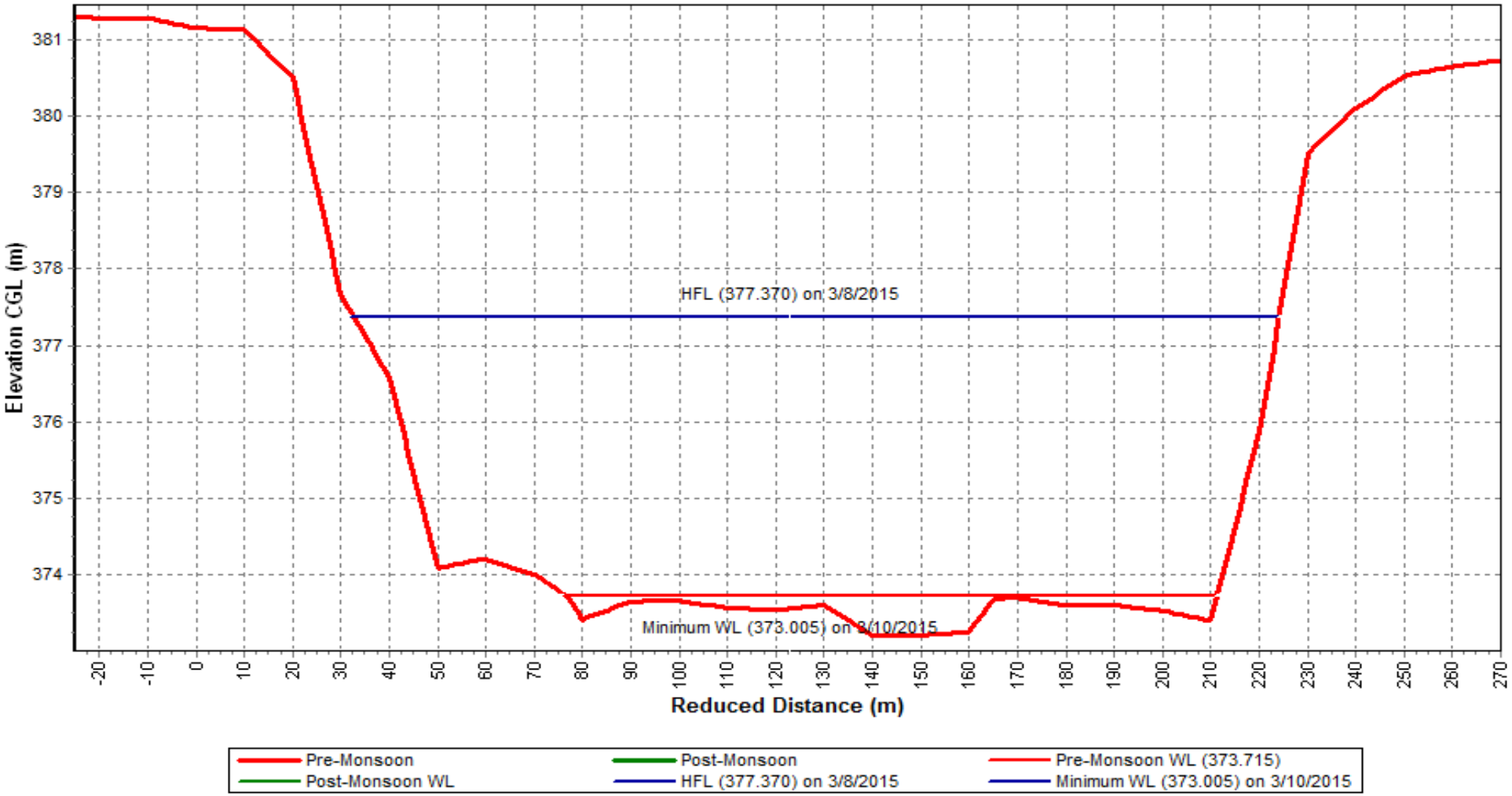
Sub-Division : Rourkela.



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

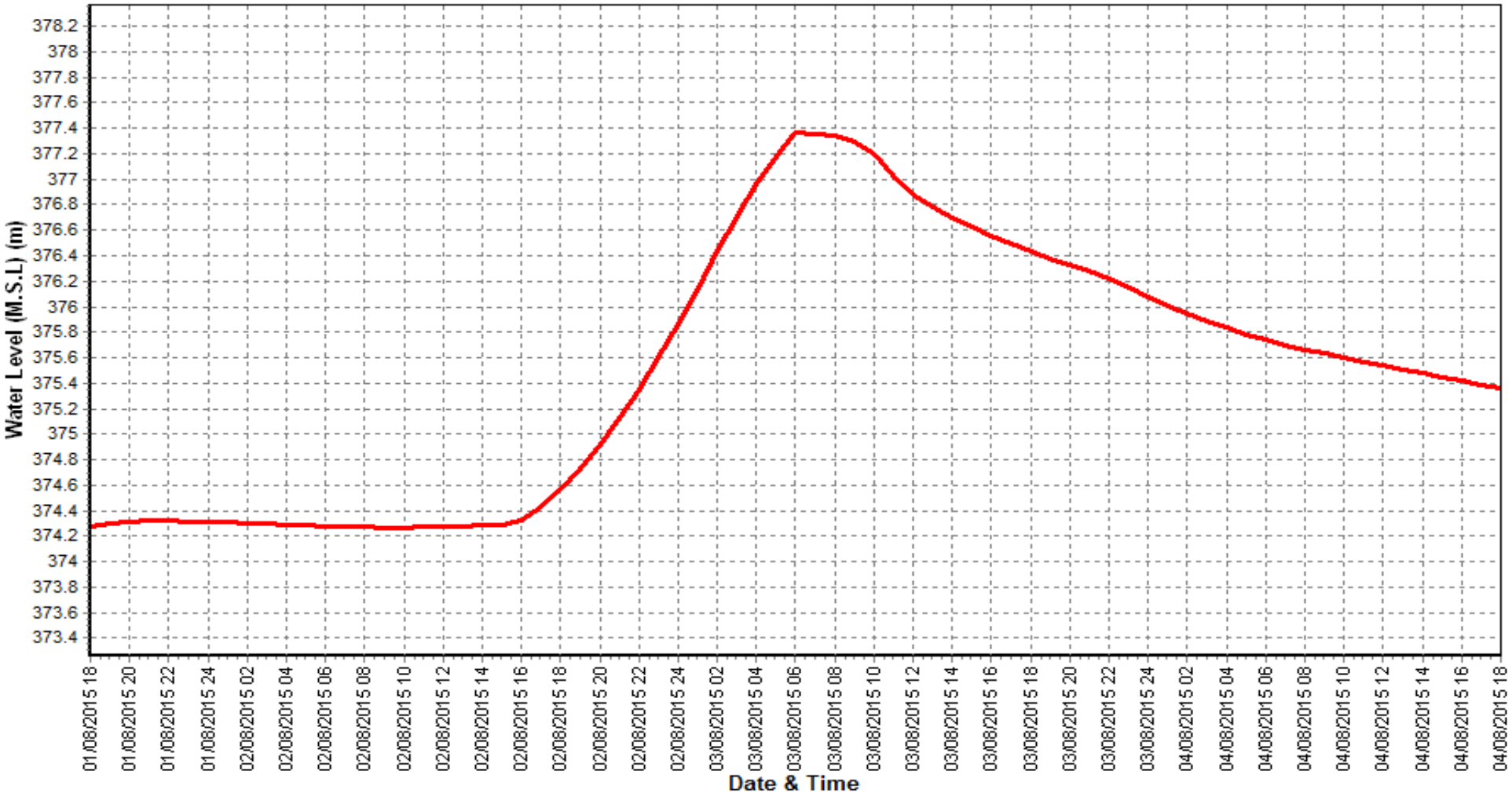
Local River : Sankh **Sub-Division : Rourkela.**



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

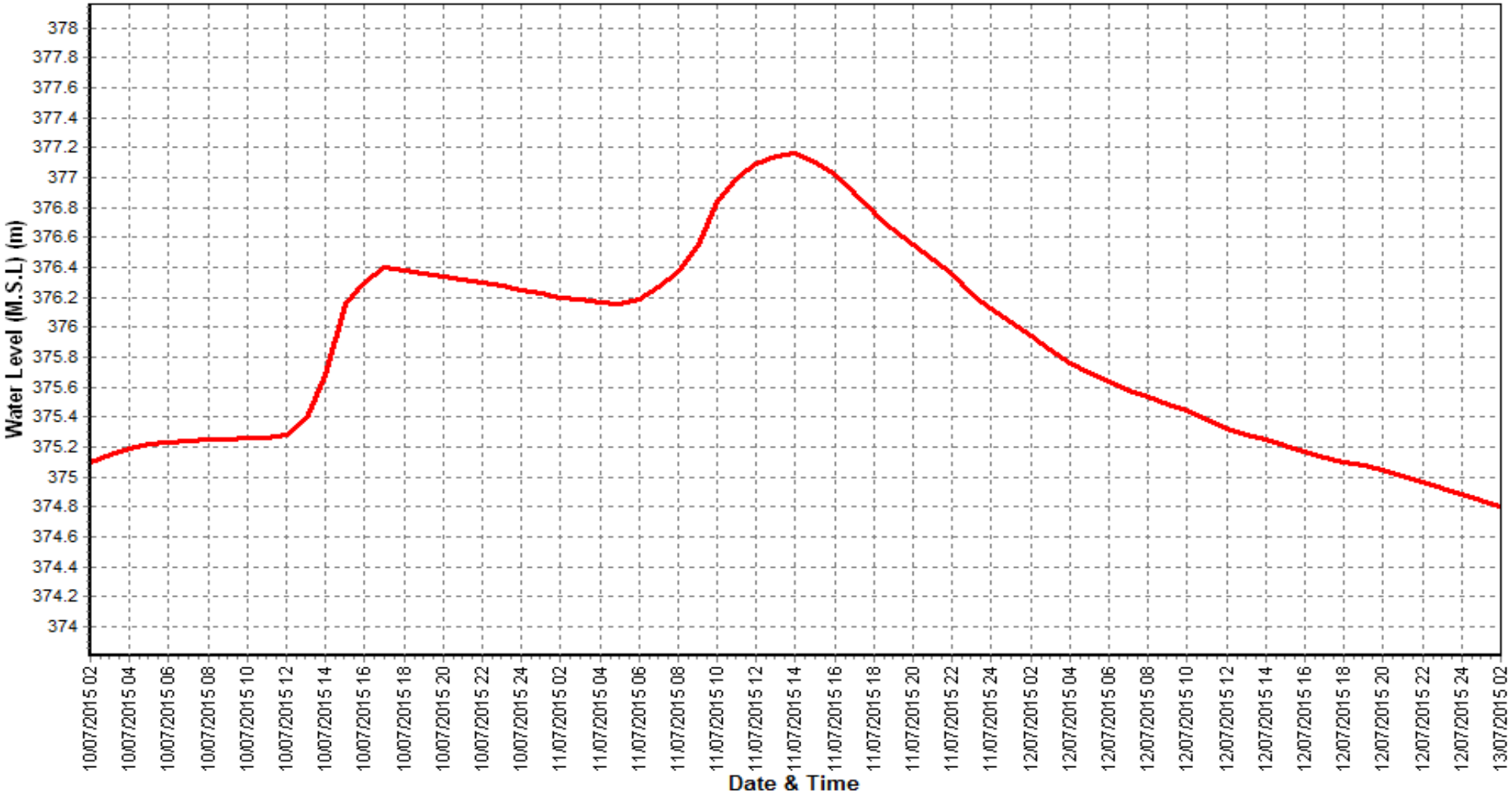


Time Span: 72 Hrs

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

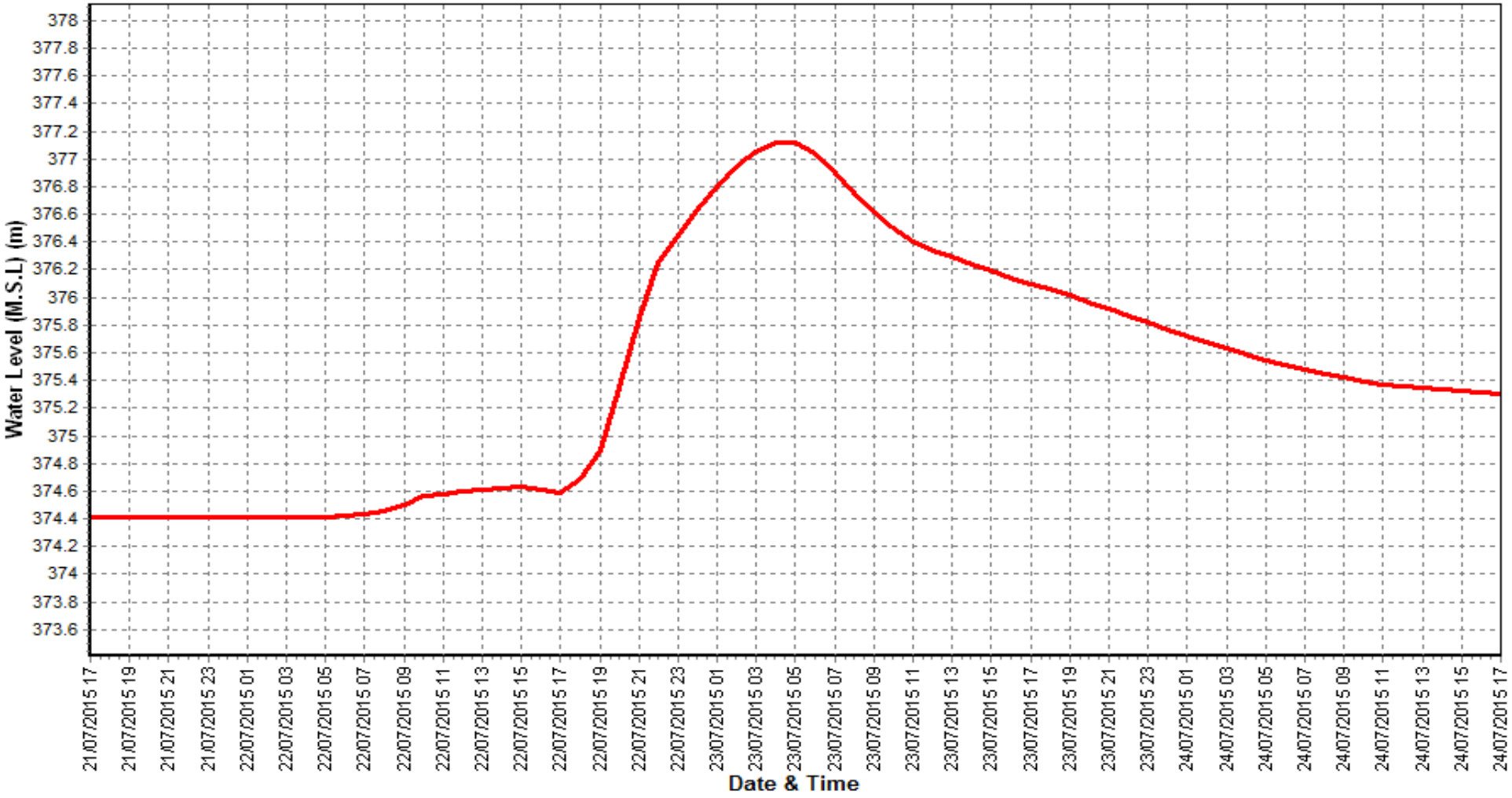


Time Span: 72 Hrs

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**



Time Span: 72 Hrs

SEDIMENT DATA

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1.267	0.000	0.000	0.000	0.000	0	30.79	0.004	0.004	0.236	0.244	649	46.29	0.003	0.008	0.172	0.183	732
2	1.210	0.000	0.000	0.000	0.000	0	70.68	0.007	0.007	0.551	0.565	3450	52.03	0.003	0.008	0.172	0.183	823
3	0.790	0.000	0.000	0.000	0.000	0	45.86	0.006	0.006	0.353	0.365	1446	110.4	0.005	0.019	0.462	0.486	4634
4	1.470	0.000	0.000	0.000	0.000	0	48.97	0.006	0.006	0.423	0.435	1841	141.4	0.003	0.008	0.601	0.612	7479
5	2.941	0.000	0.000	0.000	0.000	0	70.00	0.006	0.006	0.423	0.435	2631	110.3	0.001	0.003	0.152	0.156	1487
6	2.144	0.000	0.000	0.000	0.000	0	56.82	0.008	0.008	0.509	0.525	2577	93.75	0.007	0.004	0.157	0.168	1361
7	2.000	0.000	0.000	0.000	0.000	0	54.52	0.007	0.007	0.482	0.496	2336	73.99	0.021	0.021	0.215	0.257	1643
8	2.132	0.000	0.000	0.000	0.000	0	74.83	0.008	0.008	0.775	0.791	5114	71.73	0.006	0.003	0.163	0.172	1066
9	6.678	0.000	0.000	0.000	0.000	0	110.2	0.006	0.006	0.391	0.403	3838	55.95	0.006	0.003	0.163	0.172	831
10	2.475	0.000	0.000	0.000	0.000	0	292.7	0.012	0.012	0.791	0.815	20613	53.10	0.003	0.003	0.115	0.121	555
11	2.286	0.000	0.000	0.000	0.000	0	984.3	0.013	0.013	0.872	0.898	76367	60.67	0.002	0.004	0.179	0.185	970
12	2.292	0.000	0.000	0.000	0.000	0	455.0	0.013	0.013	0.872	0.898	35302	88.69	0.002	0.003	0.147	0.152	1165
13	1.802	0.000	0.000	0.000	0.000	0	110.2	0.013	0.013	0.872	0.898	8551	60.69	0.007	0.008	0.199	0.214	1122
14	1.900	0.000	0.000	0.000	0.000	0	75.09	0.010	0.009	0.306	0.325	2109	55.26	0.003	0.004	0.197	0.204	974
15	4.517	0.000	0.000	0.000	0.000	0	55.92	0.010	0.009	0.144	0.163	788	55.28	0.003	0.004	0.197	0.204	974
16	5.650	0.000	0.000	0.000	0.000	0	76.72	0.008	0.009	0.554	0.571	3785	55.29	0.003	0.004	0.197	0.204	975
17	14.60	0.009	0.008	0.269	0.286	361	277.3	0.012	0.012	1.867	1.891	45308	92.29	0.005	0.011	0.252	0.268	2137
18	7.881	0.009	0.008	0.269	0.286	195	240.0	0.012	0.012	1.867	1.891	39212	93.59	0.008	0.009	0.061	0.078	631
19	8.622	0.009	0.008	0.269	0.286	213	119.0	0.012	0.012	1.867	1.891	19443	102.2	0.008	0.009	0.061	0.078	689
20	5.797	0.009	0.008	0.269	0.286	143	304.7	0.013	0.014	0.506	0.533	14032	100.7	0.010	0.019	0.670	0.699	6084
21	4.700	0.009	0.008	0.269	0.286	116	125.5	0.010	0.011	0.150	0.171	1854	83.66	0.010	0.010	0.122	0.142	1026
22	4.723	0.000	0.000	0.000	0.000	0	137.3	0.016	0.010	0.359	0.385	4567	70.06	0.006	0.007	0.103	0.116	702
23	8.792	0.000	0.000	0.000	0.000	0	1078	0.014	0.023	0.861	0.898	83624	98.30	0.006	0.007	0.103	0.116	985
24	13.43	0.002	0.002	0.160	0.164	190	367.8	0.039	0.018	0.408	0.465	14775	74.70	0.008	0.014	0.134	0.156	1007
25	29.63	0.004	0.004	0.398	0.406	1039	212.0	0.003	0.014	0.708	0.725	13281	73.19	0.010	0.014	0.109	0.133	841
26	31.54	0.004	0.004	0.666	0.674	1837	250.0	0.003	0.014	0.708	0.725	15660	68.39	0.003	0.003	0.102	0.108	638
27	18.06	0.002	0.002	0.553	0.557	869	163.7	0.001	0.012	0.253	0.266	3762	60.69	0.008	0.012	0.100	0.120	629
28	10.00	0.002	0.002	0.553	0.557	481	161.4	0.006	0.007	0.225	0.238	3320	74.60	0.005	0.003	0.117	0.125	806
29	9.272	0.002	0.002	0.393	0.397	318	72.98	0.007	0.015	0.246	0.268	1690	47.86	0.015	0.014	0.083	0.112	463
30	10.09	0.004	0.005	0.436	0.445	388	50.94	0.002	0.057	0.147	0.206	907	47.97	0.015	0.014	0.083	0.112	464
31							42.36	0.013	0.022	0.103	0.138	505	136.6	0.003	0.003	0.205	0.211	2490
Ten Daily Mean																		
Ten Daily I	2.311	0.000	0.000	0.000	0.000	0	85.54	0.007	0.007	0.493	0.507	4450	80.89	0.006	0.008	0.237	0.251	2061
Ten Daily II	5.535	0.004	0.003	0.108	0.114	91	269.8	0.012	0.012	0.973	0.996	24490	76.47	0.005	0.008	0.216	0.229	1572
Ten Daily III	14.02	0.003	0.003	0.343	0.349	524	242.0	0.010	0.018	0.379	0.408	13086	76.00	0.008	0.009	0.115	0.132	914
Monthly Total						6151						433336						46382

Annual Sediment Load (Metric Tonnes) : 520003

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	0.000	0.009	0.009	0.287	0.305	0	34.72	0.001	0.028	0.045	0.074	222	38.20	0.004	0.011	0.011	0.026	86
2	213.8	0.009	0.015	0.232	0.256	4730	35.28	0.001	0.028	0.045	0.074	226	27.51	0.001	0.001	0.130	0.132	315
3	129.9	0.035	0.010	0.108	0.153	1718	34.78	0.002	0.003	0.049	0.054	162	19.36	0.007	0.002	0.094	0.103	172
4	93.59	0.003	0.005	0.103	0.111	898	31.40	0.002	0.003	0.049	0.054	146	16.57	0.002	0.002	0.062	0.066	94
5	103.7	0.008	0.007	0.108	0.123	1103	30.08	0.001	0.002	0.042	0.045	117	14.17	0.003	0.002	0.059	0.064	78
6	85.35	0.008	0.007	0.108	0.123	907	20.33	0.003	0.003	0.042	0.048	84	12.17	0.003	0.003	0.044	0.050	53
7	74.95	0.002	0.003	0.077	0.082	531	26.35	0.001	0.002	0.035	0.038	87	11.22	0.010	0.008	0.058	0.076	74
8	50.47	0.004	0.004	0.063	0.071	310	22.19	0.006	0.003	0.043	0.052	100	11.22	0.010	0.008	0.058	0.076	74
9	65.90	0.004	0.005	0.082	0.091	518	19.10	0.010	0.005	0.039	0.054	89	9.787	0.000	0.000	0.000	0.000	0
10	60.63	0.007	0.004	0.048	0.059	309	16.53	0.002	0.004	0.032	0.038	54	10.38	0.000	0.000	0.000	0.000	0
11	44.49	0.006	0.011	0.062	0.079	304	16.45	0.002	0.004	0.032	0.038	54	10.24	0.000	0.000	0.000	0.000	0
12	39.86	0.001	0.003	0.052	0.056	193	15.42	0.007	0.004	0.032	0.043	57	9.719	0.000	0.000	0.000	0.000	0
13	34.20	0.001	0.003	0.052	0.056	165	14.05	0.011	0.003	0.045	0.059	72	9.032	0.000	0.000	0.000	0.000	0
14	39.70	0.003	0.004	0.055	0.062	213	15.11	0.010	0.003	0.053	0.066	86	8.974	0.000	0.000	0.000	0.000	0
15	31.91	0.001	0.003	0.072	0.076	210	16.64	0.009	0.002	0.050	0.061	88	9.910	0.000	0.000	0.000	0.000	0
16	30.75	0.006	0.003	0.028	0.037	98	25.72	0.009	0.013	0.146	0.168	373	8.025	0.000	0.000	0.000	0.000	0
17	27.87	0.006	0.003	0.028	0.037	89	21.03	0.003	0.004	0.055	0.062	113	8.087	0.000	0.000	0.000	0.000	0
18	32.02	0.002	0.002	0.047	0.051	141	21.03	0.003	0.004	0.055	0.062	113	8.128	0.000	0.000	0.000	0.000	0
19	33.44	0.001	0.002	0.045	0.048	139	16.31	0.015	0.002	0.031	0.048	68	7.571	0.000	0.000	0.000	0.000	0
20	36.57	0.001	0.002	0.045	0.048	152	13.67	0.010	0.003	0.035	0.048	57	7.984	0.000	0.000	0.000	0.000	0
21	88.31	0.008	0.021	0.287	0.316	2411	12.00	0.010	0.003	0.035	0.048	50	7.743	0.000	0.000	0.000	0.000	0
22	159.2	0.008	0.033	0.334	0.375	5157	10.73	0.010	0.003	0.035	0.048	45	7.740	0.000	0.000	0.000	0.000	0
23	106.9	0.010	0.004	0.143	0.157	1450	11.37	0.003	0.005	0.042	0.050	49	9.134	0.000	0.000	0.000	0.000	0
24	89.14	0.005	0.010	0.194	0.209	1607	10.96	0.003	0.005	0.042	0.050	47	7.802	0.000	0.000	0.000	0.000	0
25	62.30	0.005	0.010	0.194	0.209	1123	11.17	0.003	0.005	0.042	0.050	48	8.000	0.000	0.000	0.000	0.000	0
26	57.16	0.003	0.007	0.066	0.076	375	10.76	0.007	0.002	0.006	0.015	14	8.394	0.000	0.000	0.000	0.000	0
27	47.38	0.003	0.007	0.066	0.076	311	11.14	0.005	0.002	0.005	0.012	12	7.939	0.000	0.000	0.000	0.000	0
28	48.82	0.007	0.004	0.067	0.078	329	10.13	0.050	0.003	0.008	0.061	53	8.167	0.000	0.000	0.000	0.000	0
29	37.59	0.003	0.001	0.062	0.066	214	9.538	0.007	0.002	0.027	0.036	30	8.160	0.000	0.000	0.000	0.000	0
30	38.53	0.007	0.002	0.055	0.064	213	8.391	0.001	0.000	0.031	0.032	23	7.505	0.000	0.000	0.000	0.000	0
31							43.93	0.004	0.011	0.111	0.126	478						
Ten Daily Mean																		
Ten Daily I	87.84	0.009	0.007	0.122	0.137	1102	27.08	0.003	0.008	0.042	0.053	129	17.06	0.004	0.004	0.052	0.059	95
Ten Daily II	35.08	0.003	0.004	0.049	0.055	170	17.54	0.008	0.004	0.053	0.066	108	8.767	0.000	0.000	0.000	0.000	0
Ten Daily III	73.53	0.006	0.010	0.147	0.163	1319	13.65	0.009	0.004	0.035	0.048	77	8.058	0.000	0.000	0.000	0.000	0
Monthly Total						25916						3216						946

Annual Sediment Load (Metric Tonnes) : 520003

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	6.970	0.000	0.000	0.000	0.000	0	6.127	0.000	0.000	0.000	0.000	0	3.909	0.000	0.000	0.000	0.000	0
2	6.445	0.000	0.000	0.000	0.000	0	6.348	0.000	0.000	0.000	0.000	0	4.231	0.000	0.000	0.000	0.000	0
3	6.904	0.000	0.000	0.000	0.000	0	6.290	0.000	0.000	0.000	0.000	0	2.788	0.000	0.000	0.000	0.000	0
4	7.623	0.000	0.000	0.000	0.000	0	5.796	0.000	0.000	0.000	0.000	0	3.327	0.000	0.000	0.000	0.000	0
5	7.975	0.000	0.000	0.000	0.000	0	5.688	0.000	0.000	0.000	0.000	0	3.671	0.000	0.000	0.000	0.000	0
6	8.030	0.000	0.000	0.000	0.000	0	6.777	0.000	0.000	0.000	0.000	0	3.073	0.000	0.000	0.000	0.000	0
7	8.368	0.000	0.000	0.000	0.000	0	5.713	0.000	0.000	0.000	0.000	0	3.075	0.000	0.000	0.000	0.000	0
8	7.432	0.000	0.000	0.000	0.000	0	5.062	0.000	0.000	0.000	0.000	0	4.356	0.000	0.000	0.000	0.000	0
9	6.827	0.000	0.000	0.000	0.000	0	4.820	0.000	0.000	0.000	0.000	0	3.689	0.000	0.000	0.000	0.000	0
10	6.779	0.000	0.000	0.000	0.000	0	4.680	0.000	0.000	0.000	0.000	0	4.351	0.000	0.000	0.000	0.000	0
11	5.484	0.000	0.000	0.000	0.000	0	4.530	0.000	0.000	0.000	0.000	0	3.274	0.000	0.000	0.000	0.000	0
12	6.531	0.000	0.000	0.000	0.000	0	3.847	0.000	0.000	0.000	0.000	0	3.381	0.000	0.000	0.000	0.000	0
13	6.530	0.000	0.000	0.000	0.000	0	4.930	0.000	0.000	0.000	0.000	0	3.132	0.000	0.000	0.000	0.000	0
14	6.141	0.000	0.000	0.000	0.000	0	3.232	0.000	0.000	0.000	0.000	0	3.133	0.000	0.000	0.000	0.000	0
15	6.148	0.000	0.000	0.000	0.000	0	3.246	0.000	0.000	0.000	0.000	0	3.966	0.000	0.000	0.000	0.000	0
16	5.958	0.000	0.000	0.000	0.000	0	3.305	0.000	0.000	0.000	0.000	0	4.589	0.000	0.000	0.000	0.000	0
17	6.394	0.000	0.000	0.000	0.000	0	3.370	0.000	0.000	0.000	0.000	0	3.943	0.000	0.000	0.000	0.000	0
18	7.239	0.000	0.000	0.000	0.000	0	3.367	0.000	0.000	0.000	0.000	0	3.448	0.000	0.000	0.000	0.000	0
19	6.639	0.000	0.000	0.000	0.000	0	3.553	0.000	0.000	0.000	0.000	0	3.886	0.000	0.000	0.000	0.000	0
20	6.720	0.000	0.000	0.000	0.000	0	4.148	0.000	0.000	0.000	0.000	0	3.721	0.000	0.000	0.000	0.000	0
21	6.718	0.000	0.000	0.000	0.000	0	4.484	0.000	0.000	0.000	0.000	0	3.735	0.000	0.000	0.000	0.000	0
22	6.709	0.000	0.000	0.000	0.000	0	3.752	0.000	0.000	0.000	0.000	0	2.079	0.000	0.000	0.000	0.000	0
23	6.557	0.000	0.000	0.000	0.000	0	4.680	0.000	0.000	0.000	0.000	0	1.968	0.000	0.000	0.000	0.000	0
24	6.720	0.000	0.000	0.000	0.000	0	4.680	0.000	0.000	0.000	0.000	0	2.082	0.000	0.000	0.000	0.000	0
25	6.720	0.000	0.000	0.000	0.000	0	4.690	0.000	0.000	0.000	0.000	0	1.905	0.000	0.000	0.000	0.000	0
26	6.691	0.000	0.000	0.000	0.000	0	4.560	0.000	0.000	0.000	0.000	0	1.997	0.000	0.000	0.000	0.000	0
27	6.900	0.000	0.000	0.000	0.000	0	4.146	0.000	0.000	0.000	0.000	0	8.956	0.000	0.000	0.000	0.000	0
28	7.102	0.000	0.000	0.000	0.000	0	3.661	0.000	0.000	0.000	0.000	0	13.89	0.000	0.000	0.000	0.000	0
29	8.368	0.000	0.000	0.000	0.000	0	3.499	0.000	0.000	0.000	0.000	0	15.32	0.001	0.039	0.432	0.472	625
30	5.436	0.000	0.000	0.000	0.000	0	5.651	0.000	0.000	0.000	0.000	0						
31	5.177	0.000	0.000	0.000	0.000	0	3.910	0.000	0.000	0.000	0.000	0						
Ten Daily Mean																		
Ten Daily I	7.335	0.000	0.000	0.000	0.000	0	5.730	0.000	0.000	0.000	0.000	0	3.647	0.000	0.000	0.000	0.000	0
Ten Daily II	6.378	0.000	0.000	0.000	0.000	0	3.753	0.000	0.000	0.000	0.000	0	3.647	0.000	0.000	0.000	0.000	0
Ten Daily III	6.645	0.000	0.000	0.000	0.000	0	4.338	0.000	0.000	0.000	0.000	0	5.770	0.000	0.004	0.048	0.052	69
Monthly																		
Total						0						0						625

Annual Sediment Load (Metric Tonnes) : 520003

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	8.623	0.001	0.039	0.432	0.472	352	1.129	0.000	0.000	0.000	0.000	0	0.122	0.000	0.000	0.000	0.000	0
2	7.568	0.001	0.039	0.432	0.472	309	1.119	0.000	0.000	0.000	0.000	0	0.122	0.000	0.000	0.000	0.000	0
3	6.753	0.001	0.039	0.432	0.472	275	1.120	0.000	0.000	0.000	0.000	0	0.152	0.000	0.000	0.000	0.000	0
4	6.478	0.001	0.039	0.432	0.472	264	0.622	0.000	0.000	0.000	0.000	0	0.151	0.000	0.000	0.000	0.000	0
5	5.204	0.001	0.039	0.432	0.472	212	0.443	0.000	0.000	0.000	0.000	0	0.108	0.000	0.000	0.000	0.000	0
6	6.622	0.001	0.039	0.432	0.472	270	0.975	0.000	0.000	0.000	0.000	0	0.163	0.000	0.000	0.000	0.000	0
7	12.30	0.001	0.039	0.432	0.472	501	0.878	0.000	0.000	0.000	0.000	0	0.147	0.000	0.000	0.000	0.000	0
8	7.095	0.001	0.039	0.432	0.472	289	0.781	0.000	0.000	0.000	0.000	0	0.147	0.000	0.000	0.000	0.000	0
9	5.598	0.001	0.039	0.432	0.472	228	0.481	0.000	0.000	0.000	0.000	0	0.129	0.000	0.000	0.000	0.000	0
10	5.184	0.001	0.039	0.432	0.472	211	0.481	0.000	0.000	0.000	0.000	0	0.164	0.000	0.000	0.000	0.000	0
11	4.574	0.001	0.039	0.432	0.472	187	0.480	0.000	0.000	0.000	0.000	0	0.169	0.000	0.000	0.000	0.000	0
12	4.239	0.001	0.039	0.432	0.472	173	0.403	0.000	0.000	0.000	0.000	0	0.133	0.000	0.000	0.000	0.000	0
13	3.910	0.001	0.039	0.432	0.472	159	0.448	0.000	0.000	0.000	0.000	0	0.146	0.000	0.000	0.000	0.000	0
14	3.584	0.000	0.000	0.000	0.000	0	0.449	0.000	0.000	0.000	0.000	0	0.147	0.000	0.000	0.000	0.000	0
15	4.123	0.000	0.000	0.000	0.000	0	0.390	0.000	0.000	0.000	0.000	0	0.147	0.000	0.000	0.000	0.000	0
16	4.347	0.000	0.000	0.000	0.000	0	0.382	0.000	0.000	0.000	0.000	0	2.238	0.000	0.000	0.000	0.000	0
17	4.546	0.000	0.000	0.000	0.000	0	0.382	0.000	0.000	0.000	0.000	0	2.567	0.000	0.000	0.000	0.000	0
18	3.712	0.000	0.000	0.000	0.000	0	0.371	0.000	0.000	0.000	0.000	0	2.364	0.000	0.000	0.000	0.000	0
19	3.843	0.000	0.000	0.000	0.000	0	0.378	0.000	0.000	0.000	0.000	0	3.060	0.000	0.000	0.000	0.000	0
20	3.277	0.000	0.000	0.000	0.000	0	0.365	0.000	0.000	0.000	0.000	0	2.511	0.000	0.000	0.000	0.000	0
21	2.710	0.000	0.000	0.000	0.000	0	0.260	0.000	0.000	0.000	0.000	0	2.507	0.000	0.000	0.000	0.000	0
22	2.487	0.000	0.000	0.000	0.000	0	0.309	0.000	0.000	0.000	0.000	0	2.506	0.000	0.000	0.000	0.000	0
23	2.047	0.000	0.000	0.000	0.000	0	0.219	0.000	0.000	0.000	0.000	0	3.053	0.000	0.000	0.000	0.000	0
24	1.567	0.000	0.000	0.000	0.000	0	0.219	0.000	0.000	0.000	0.000	0	3.481	0.000	0.000	0.000	0.000	0
25	1.567	0.000	0.000	0.000	0.000	0	0.262	0.000	0.000	0.000	0.000	0	3.172	0.000	0.000	0.000	0.000	0
26	1.567	0.000	0.000	0.000	0.000	0	0.249	0.000	0.000	0.000	0.000	0	2.871	0.000	0.000	0.000	0.000	0
27	1.567	0.000	0.000	0.000	0.000	0	0.246	0.000	0.000	0.000	0.000	0	2.424	0.000	0.000	0.000	0.000	0
28	1.518	0.000	0.000	0.000	0.000	0	0.222	0.000	0.000	0.000	0.000	0	4.063	0.000	0.000	0.000	0.000	0
29	1.531	0.000	0.000	0.000	0.000	0	0.293	0.000	0.000	0.000	0.000	0	4.059	0.000	0.000	0.000	0.000	0
30	1.425	0.000	0.000	0.000	0.000	0	0.329	0.000	0.000	0.000	0.000	0	3.130	0.000	0.000	0.000	0.000	0
31	1.285	0.000	0.000	0.000	0.000	0							2.504	0.000	0.000	0.000	0.000	0
Ten Daily Mean																		
Ten Daily I	7.142	0.001	0.039	0.432	0.472	291	0.803	0.000	0.000	0.000	0.000	0	0.141	0.000	0.000	0.000	0.000	0
Ten Daily II	4.015	0.000	0.012	0.130	0.142	52	0.405	0.000	0.000	0.000	0.000	0	1.348	0.000	0.000	0.000	0.000	0
Ten Daily III	1.752	0.000	0.000	0.000	0.000	0	0.261	0.000	0.000	0.000	0.000	0	3.070	0.000	0.000	0.000	0.000	0
Monthly																		
Total						3431						0						0

Annual Sediment Load (Metric Tonnes) : 520003

Annual Sediment Load for period : 1987-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

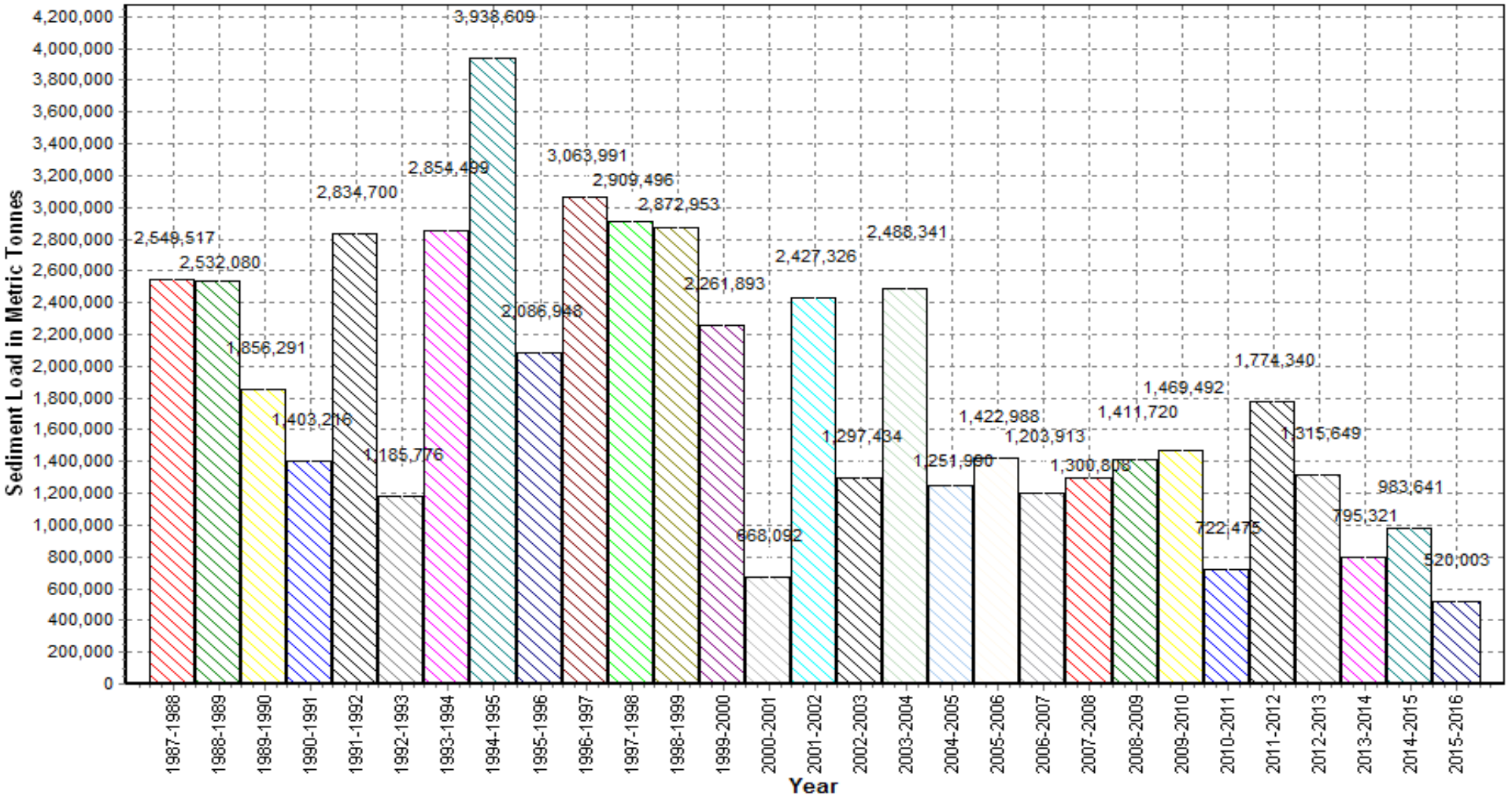
Local River : Sankh **Sub-Division : Rourkela.**

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1987-1988	2547446	2071	2549517	1808
1988-1989	2531017	1063	2532080	1998
1989-1990	1842714	13578	1856291	1240
1990-1991	1387808	15408	1403216	1867
1991-1992	2742881	91819	2834700	2150
1992-1993	1184174	1602	1185776	988
1993-1994	2852461	2038	2854499	1881
1994-1995	3912141	26468	3938609	3428
1995-1996	2054374	32574	2086948	1831
1996-1997	3063393	598	3063991	2638
1997-1998	2801400	108096	2909496	2789
1998-1999	2868272	4682	2872953	2455
1999-2000	2260030	1864	2261893	2776
2000-2001	667129	963	668092	1195
2001-2002	2426912	414	2427326	2590
2002-2003	1297120	314	1297434	1556
2003-2004	2462651	25690	2488341	2236
2004-2005	1248959	3031	1251990	1684
2005-2006	1420741	2248	1422988	1768
2006-2007	1203294	619	1203913	1588
2007-2008	1300660	148	1300808	1864
2008-2009	1411720	0	1411720	1987
2009-2010	1469309	183	1469492	1624
2010-2011	721353	1122	722475	899
2011-2012	1759072	15268	1774340	2633
2012-2013	1314262	1387	1315649	1913
2013-2014	785923	9398	795321	2273
2014-2015	982814	827	983641	1751
2015-2016	515947	4056	520003	1073

Annual Sediment Load for the period: 1987-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : Rourkela.**



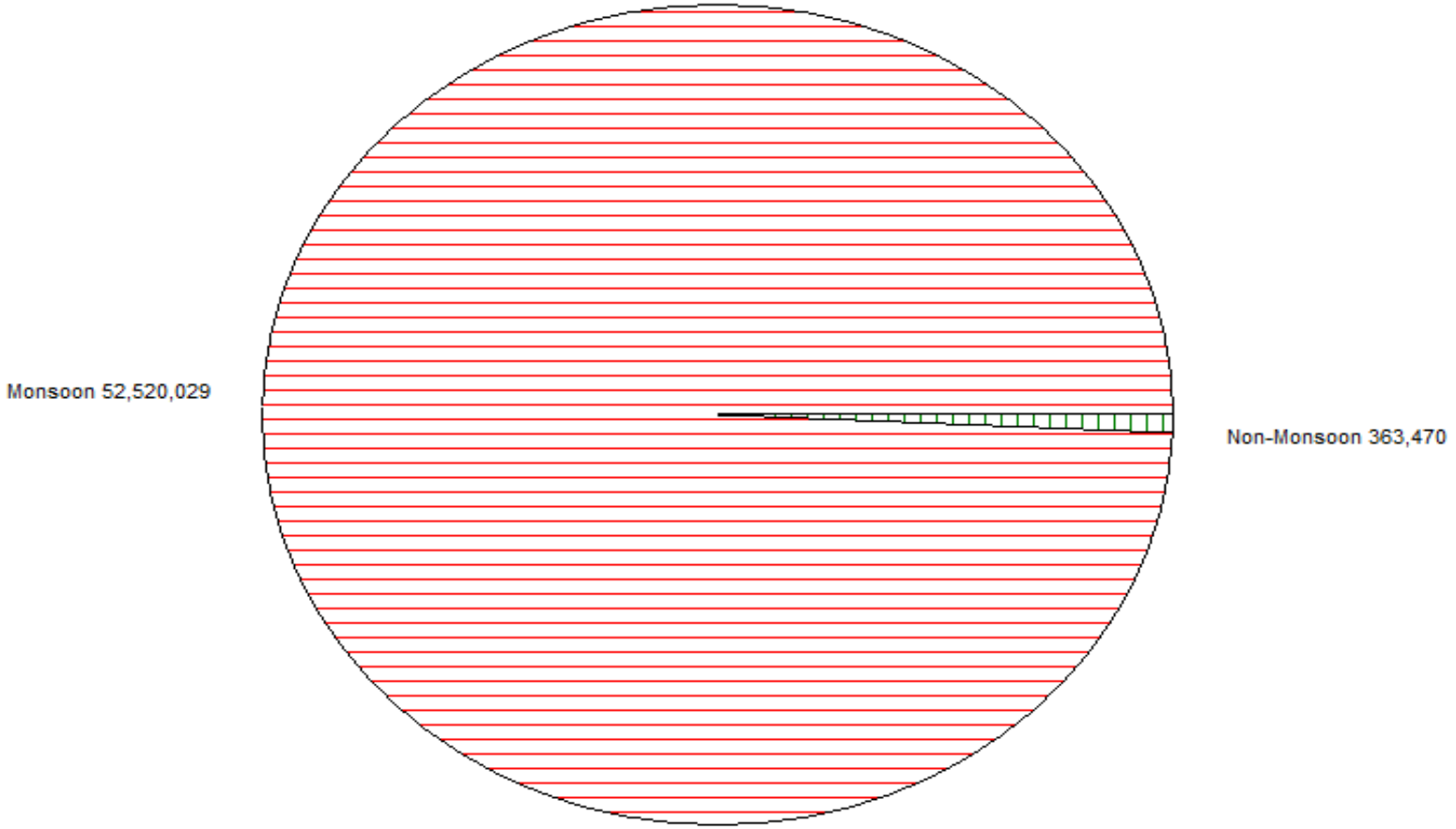
Seasonal Sediment Load for the period : 1987-2015

Station Name : TILGA (EBI00L3)

Local River : Sankh

Division : E.E., Bhubaneswar

Sub-Division : Rourkela.



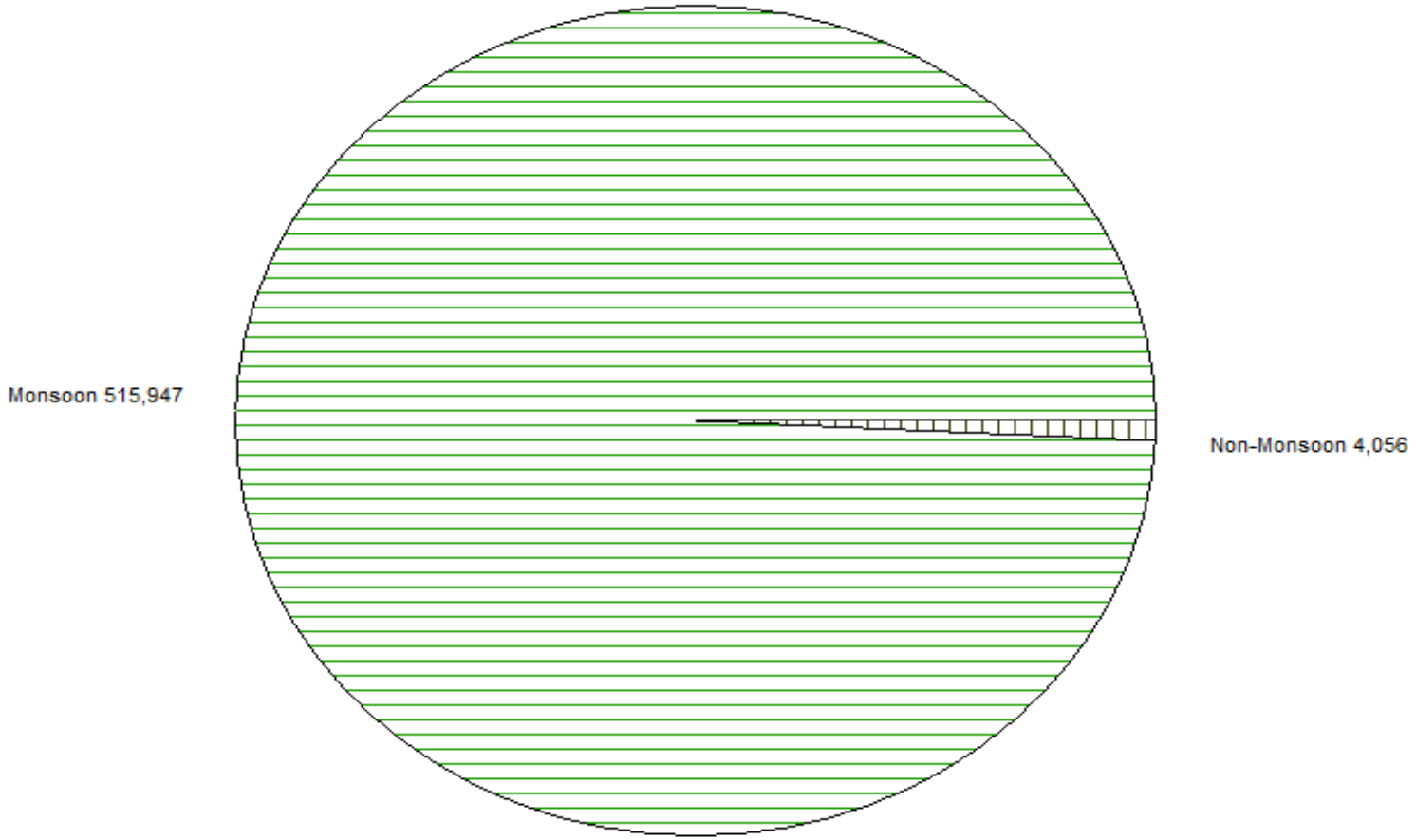
Seasonal Sediment Load for the Year: 2015-2016

Station Name : TILGA (EBI00L3)

Local River : Sankh

Division : E.E., Bhubaneswar

Sub-Division : Rourkela.



WATER QUALITY DATA

Water Quality Datasheet for the period : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **River Water Analysis** **Sub-Division : A.E, Rourkela.**

S.No	Parameters	01.06.2015	01.08.2015	01.10.2015	01.12.2015	01.02.2016	01.04.2016
		A	A	A	A	A	A
	PHYSICAL						
1	Q (cumec)						
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	169	96	216	220	153	179
4	EC_GEN (µmho/cm)	147	82	225	225	151	182
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.4	6.5	7.2	7.4	7.9	7.9
7	pH_GEN (pH units)	7.4	6.6	7.1	7.3	7.8	7.9
8	Temp (deg C)	29.0	26.5	29.0	22.0	18.0	23.5
	CHEMICAL						
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	74	55	60	55	51	55
3	B (mg/L)	0.01	0.00	0.01	0.01	0.01	0.01
4	Ca (mg/L)	24	22	21	19	21	22
5	Cl (mg/L)	9.4	15.1	15.1	17.0	18.9	13.2
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.4	0.5	0.5	0.4	0.6
9	HCO3 (mg/L)	90	68	73	68	62	68
10	K (mg/L)	1.1	2.0	1.3	1.3	1.1	1.0
11	Mg (mg/L)	13.6	12.6	9.7	10.7	11.7	12.6
12	Na (mg/L)	4.8	1.5	1.2	5.6	4.8	8.9
13	NO2+NO3 (mg N/L)	0.91	0.81	1.23	1.15	1.01	1.28
14	NO2-N (mgN/L)	0.00	0.00	0.01	0.00	0.03	0.00
15	NO3-N (mgN/L)	0.91	0.81	1.22	1.15	0.98	1.28
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.010	0.010	0.010
17	SiO2 (mg/L)	4.0	5.0	6.0	5.0	6.0	5.0
18	SO4 (mg/L)	1.3	4.2	4.1	3.1	3.2	3.2
	BIOLOGICAL/BACTERIOLOGICAL						
1	BOD3-27 (mg/L)	0.2	0.4	0.8	1.6	1.8	0.8
2	DO (mg/L)	5.8	7.6	4.8	7.9	9.3	7.0
3	DO_SAT% (%)	75	93	62	91	99	81
	TRACE & TOXIC						
	CHEMICAL INDICES						
1	HAR_Ca (mgCaCO3/L)	60	56	52	48	52	56
2	HAR_Total (mgCaCO3/L)	117	109	93	93	101	109
3	Na% (%)	8	3	3	12	9	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.2	0.1	0.1	0.3	0.2	0.4
	PESTICIDES						

Water Quality Summary for the period : 2015-2016

Station Name : TILGA (EBI00L3) **Division : E.E., Bhubaneswar**

Local River : Sankh **Sub-Division : A.E, Rourkela.**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	6	220	96	172
3	EC_GEN (µmho/cm)	6	225	82	169
4	pH_FLD (pH units)	6	7.9	6.5	7.4
5	pH_GEN (pH units)	6	7.9	6.6	7.3
6	Temp (deg C)	6	29.0	18.0	24.7
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	6	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	6	74	51	59
3	B (mg/L)	6	0.01	0.00	0.01
4	Ca (mg/L)	6	24	19	22
5	Cl (mg/L)	6	18.9	9.4	14.8
6	CO3 (mg/L)	6	0.0	0.0	0
7	F (mg/L)	6	0.05	0.05	0.05
8	Fe (mg/L)	6	0.6	0.4	0.5
9	HCO3 (mg/L)	6	90	62	71
10	K (mg/L)	6	2.0	1.0	1.3
11	Mg (mg/L)	6	13.6	9.7	11.8
12	Na (mg/L)	6	8.9	1.2	4.5
13	NO2+NO3 (mg N/L)	6	1.28	0.81	1.06
14	NO2-N (mgN/L)	6	0.03	0.00	0.01
15	NO3-N (mgN/L)	6	1.28	0.81	1.06
16	P-Tot (mgP/L)	6	0.010	0.001	0.005
17	SiO2 (mg/L)	6	6.0	4.0	5.2
18	SO4 (mg/L)	6	4.2	1.3	3.2
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	6	1.8	0.2	0.9
2	DO (mg/L)	6	9.3	4.8	7.1
3	DO_SAT% (%)	6	99	62	83
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	6	60	48	54
2	HAR_Total (mgCaCO3/L)	6	117	93	103
3	Na% (%)	6	15	3	8
4	RSC (-)	6	0.0	0.0	0
5	SAR (-)	6	0.4	0.1	0.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : TILGA (EBI00L3) | **Division : E.E., Bhubaneswar**

Local River : Sankh | **River Water** | **Sub-Division : A.E, Rourkela.**

S.No	Parameters	Flood																	
		Jun - Oct																	
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004
	PHYSICAL																		
1	Q (cumec)																		
2	EC_FLD (µmho/cm)	72	82	62	86			109		137	94	102	111	56	83	160	80	80	82
3	EC_GEN (µmho/cm)	72	82	62	88			104		137	94	102	111	56	83	151	80	80	82
4	pH_FLD (pH units)	7.6	7.6	7.2	7.7			7.5		7.5	7.3	7.9	7.5	7.5	7.6	7.0	7.6	7.3	7.2
5	pH_GEN (pH units)	7.6	7.6	7.2	7.7			7.6		7.5	7.2	7.9	7.5	7.5	7.6	7.0	7.6	7.3	7.1
6	Temp (deg C)	27.1	28.3	26.2	28.1			31.0		26.0	28.2	27.8	27.8	25.8	29.2	28.2	17.3	17.5	17.5
	CHEMICAL																		
1	ALK-TOT (mgCaCO3/L)							33		26	30	34			46	63			
2	B (mg/L)	0.00	0.00	0.00	0.00			0.00		0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
3	Ca (mg/L)	5	9	3	8			10		11	7	38	9	9	15	22	5	6	7
4	Cl (mg/L)	9.3	8.2	8.2	11.9			9.9		11.7	8.1	14.5	14.5	12.5	11.7	13.2	8.7	9.4	8.7
5	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	0.0	0.0	0.0
6	F (mg/L)	0.00	0.00	0.00	0.40			0.00		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00
7	Fe (mg/L)	0.2			0.1			0.1		6.3	0.1	0.0	1.9	0.0	0.3	0.4	0.1		
8	HCO3 (mg/L)	24	39	18	34			40		38	33	41	30	46	60	77	26	30	31
9	K (mg/L)	1.2	1.6	1.1	1.7			1.8		1.6	2.2	1.5	1.6	1.5	1.2	1.5	1.4	1.7	1.4
10	Mg (mg/L)	1.7	3.4	1.3	3.5			2.0		4.9	2.9	3.6	1.9	2.7	5.2	12.0	2.0	1.5	1.5
11	Na (mg/L)	5.9	5.7	5.5	8.2			6.8		8.0	5.1	4.1	2.8	9.0	2.9	2.5	6.6	6.2	6.1
12	NO2+NO3 (mg N/L)	0.30	0.50	0.06	0.70			0.20		0.15	0.29	0.38	0.71	0.41	0.84	0.99	0.18	0.27	0.11
13	NO2-N (mgN/L)	0.03	0.02	0.00	0.01			0.00		0.00	0.01	0.07	0.00	0.30	0.04	0.00	0.01	0.02	0.01
14	NO3-N (mgN/L)	0.27	0.48	0.06	0.69			0.20		0.14	0.28	0.31	0.71	0.39	0.80	0.98	0.17	0.25	0.11
15	P-Tot (mgP/L)	0.001			0.003			4.740		0.018	0.002	0.010	0.001	0.001	0.001	0.001	0.001		
16	SiO2 (mg/L)	10.1	12.3	6.9	21.7			8.2		6.6	4.7	7.7	10.7	7.9	4.3	5.0	12.4	12.6	8.9
17	SO4 (mg/L)	1.0	1.8	0.6	6.3			2.2		13.3	5.8	6.2	15.9	14.7	4.7	3.2	1.2	1.1	0.8
	BIOLOGICAL/BACTERIOLOGICAL																		
1	BOD3-27 (mg/L)	0.8	0.7	0.8	0.8			1.1		1.0	1.3	1.1	0.9	0.2	0.3	0.5	1.4	0.8	0.7
2	DO (mg/L)	6.9	6.5	6.4	7.0			6.1		7.1	7.3	6.3	6.6	6.9	6.9	6.0	7.5	7.5	8.6
3	DO_SAT% (%)	87	83	79	90			82		87	93	80	84	85	90	77	78	78	89
	TRACE & TOXIC																		
1	Al (mg/L)																		
	CHEMICAL INDICES																		
1	HAR_Ca (mgCaCO3/L)	12	22	8	20			25		27	19	96	23	23	39	56	12	16	17
2	HAR_Total (mgCaCO3/L)	19	36	14	35			34		47	31	111	31	34	60	106	20	22	23
3	Na% (%)	44	26	45	33			29		26	25	17	14	35	15	5	40	36	36
4	RSC (-)	0.0	0.0	0.0	0.0			0.0		0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1
5	SAR (-)	0.7	0.4	0.7	0.6			0.5		0.5	0.4	0.3	0.2	0.7	0.2	0.1	0.6	0.6	0.6
	PESTICIDES																		

Water Quality Seasonal Average for the period: 2001-2016

Station Name : TILGA (EBI00L3) — **Division : E.E., Bhubaneswar**

Local River : Sankh — **River Water** — **Sub-Division : A.E, Rourkela.**

S.No	Parameters	Winter Nov - Feb																
		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007
	PHYSICAL																		
1	Q (cumec)																		
2	EC_FLD (µmho/cm)	84			89		99	97	90	86	76	110	187	114	139	127			
3	EC_GEN (µmho/cm)	84			84		99	97	90	86	76	110	188	114	139	127			
4	pH_FLD (pH units)	7.6			7.3		7.3	7.1	7.0	7.6	7.6	7.5	7.6	7.7	7.7	7.6			
5	pH_GEN (pH units)	7.7			7.4		7.3	7.1	7.0	7.6	7.7	7.5	7.5	7.7	7.8	7.6			
6	Temp (deg C)	19.0			14.8		14.5	17.8	16.8	15.5	17.5	18.0	20.0	22.2	23.7	24.7			
	CHEMICAL																		
1	ALK-TOT (mgCaCO3/L)				29		32	26	39				53						
2	B (mg/L)	0.00			0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00			
3	Ca (mg/L)	9			9		7	10	9	10	9	9	20	10	10	15			
4	Cl (mg/L)	7.8			10.7		11.7	8.5	14.1	12.3	12.0	14.1	17.9	9.1	9.7	11.3			
5	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			
6	F (mg/L)	0.40			0.00		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00			
7	Fe (mg/L)	0.1			0.1		0.0	0.1	0.0	1.9	0.0	0.2	0.4	0.2					
8	HCO3 (mg/L)	32			36		30	32	48	31	43	48	65	45	39	73			
9	K (mg/L)	1.1			1.5		1.1	1.3	1.0	1.2	1.2	1.1	1.2	1.3	1.9	2.1			
10	Mg (mg/L)	2.9			2.2		3.4	2.9	1.0	2.9	1.4	3.4	11.2	2.6	2.4	5.0			
11	Na (mg/L)	4.9			6.2		7.2	5.3	4.6	5.0	2.9	3.8	5.2	6.2	6.5	7.2			
12	NO2+NO3 (mg N/L)	0.71			0.29		0.07	0.31	0.45	0.70	0.36	0.92	1.08	0.09	0.54	0.08			
13	NO2-N (mgN/L)	0.00			0.00		0.00	0.00	0.07	0.00	0.01	0.01	0.01	0.00	0.01	0.00			
14	NO3-N (mgN/L)	0.71			0.29		0.07	0.31	0.38	0.70	0.35	0.90	1.06	0.09	0.53	0.08			
15	P-Tot (mgP/L)	0.001			0.002		0.002	0.001	0.010	0.001	0.003	0.001	0.010	0.001					
16	SiO2 (mg/L)	22.3			9.7		6.4	5.7	10.0	11.5	9.1	5.3	5.5	14.1	13.6	15.4			
17	SO4 (mg/L)	2.4			1.8		4.5	6.6	2.1	2.2	12.4	2.1	3.1	1.4	1.0	0.8			
	BIOLOGICAL/BACTERIOLOGICAL																		
1	BOD3-27 (mg/L)	1.0			0.8		1.0	1.2	2.1	0.2	0.3	0.4	1.7	0.6	1.0	0.8			
2	DO (mg/L)	7.0			8.6		7.2	7.9	8.1	8.6	8.1	11.5	8.6	7.0	6.7	7.6			
3	DO_SAT% (%)	75			84		71	82	83	87	84	122	95	80	78	90			
	TRACE & TOXIC																		
1	Al (mg/L)																		
	CHEMICAL INDICES																		
1	HAR_Ca (mgCaCO3/L)	22			21		18	24	22	24	23	22	50	25	24	37			
2	HAR_Total (mgCaCO3/L)	34			31		32	36	26	36	28	36	97	36	34	58			
3	Na% (%)	27			29		34	24	27	22	18	17	10	27	28	25			
4	RSC (-)	0.0			0.0		0.0	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.0			
5	SAR (-)	0.4			0.5		0.6	0.4	0.4	0.4	0.2	0.3	0.2	0.5	0.5	0.5			
	PESTICIDES																		

Water Quality Seasonal Average for the period: 2001-2016

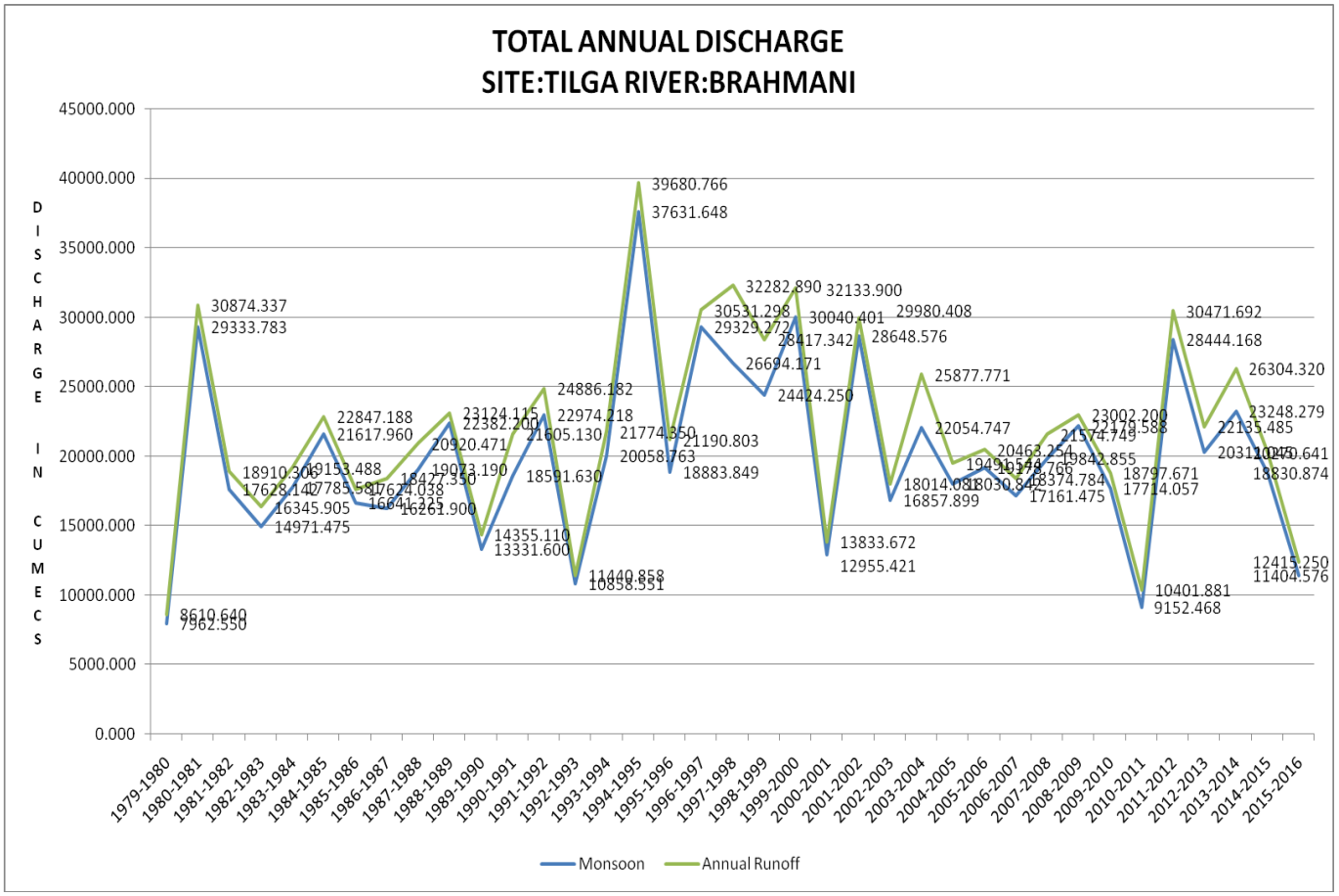
Station Name : TILGA (EBI00L3)
Local River : Sankh

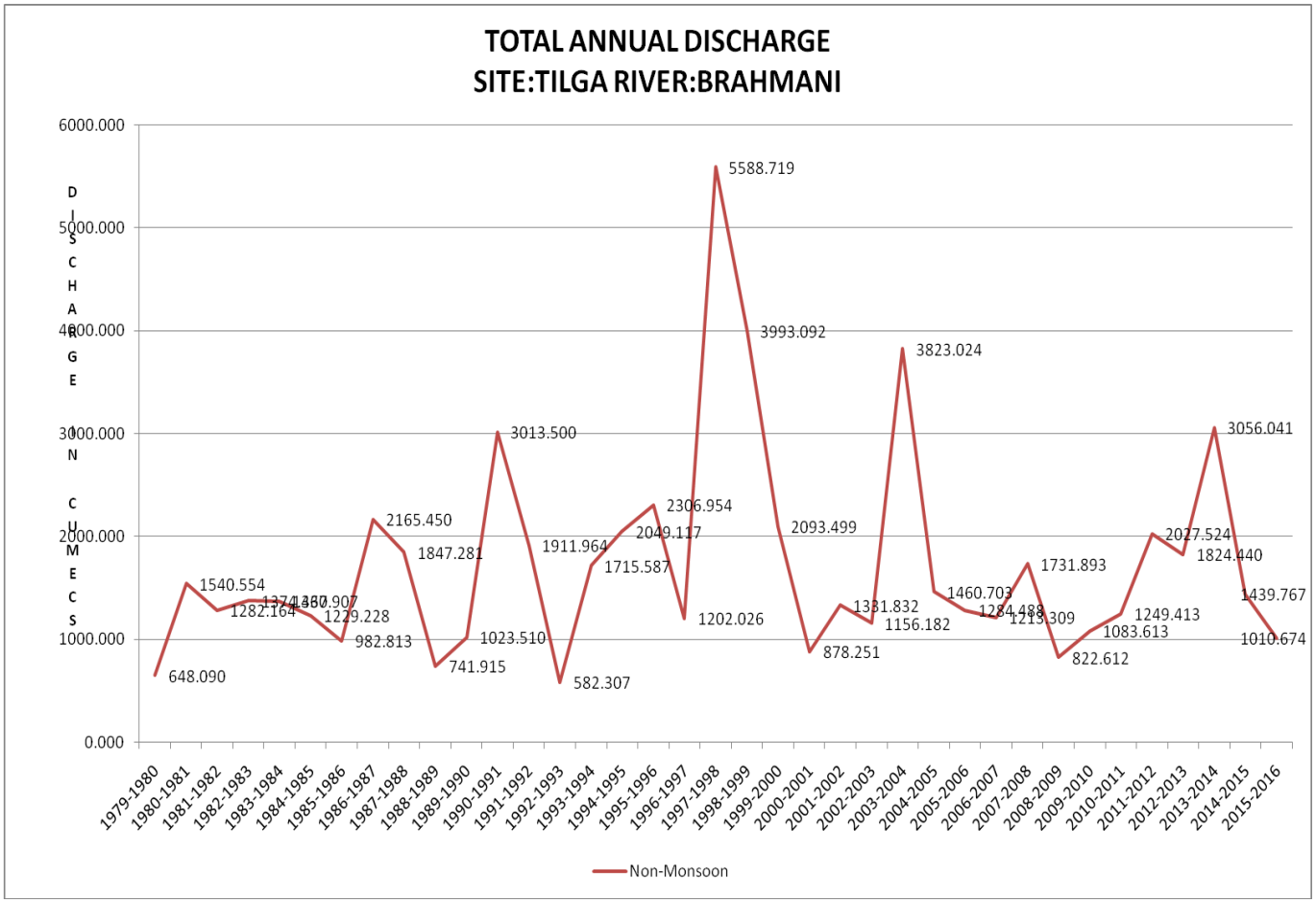
Division : E.E., Bhubaneswar
Sub-Division : A.E, Rourkela.

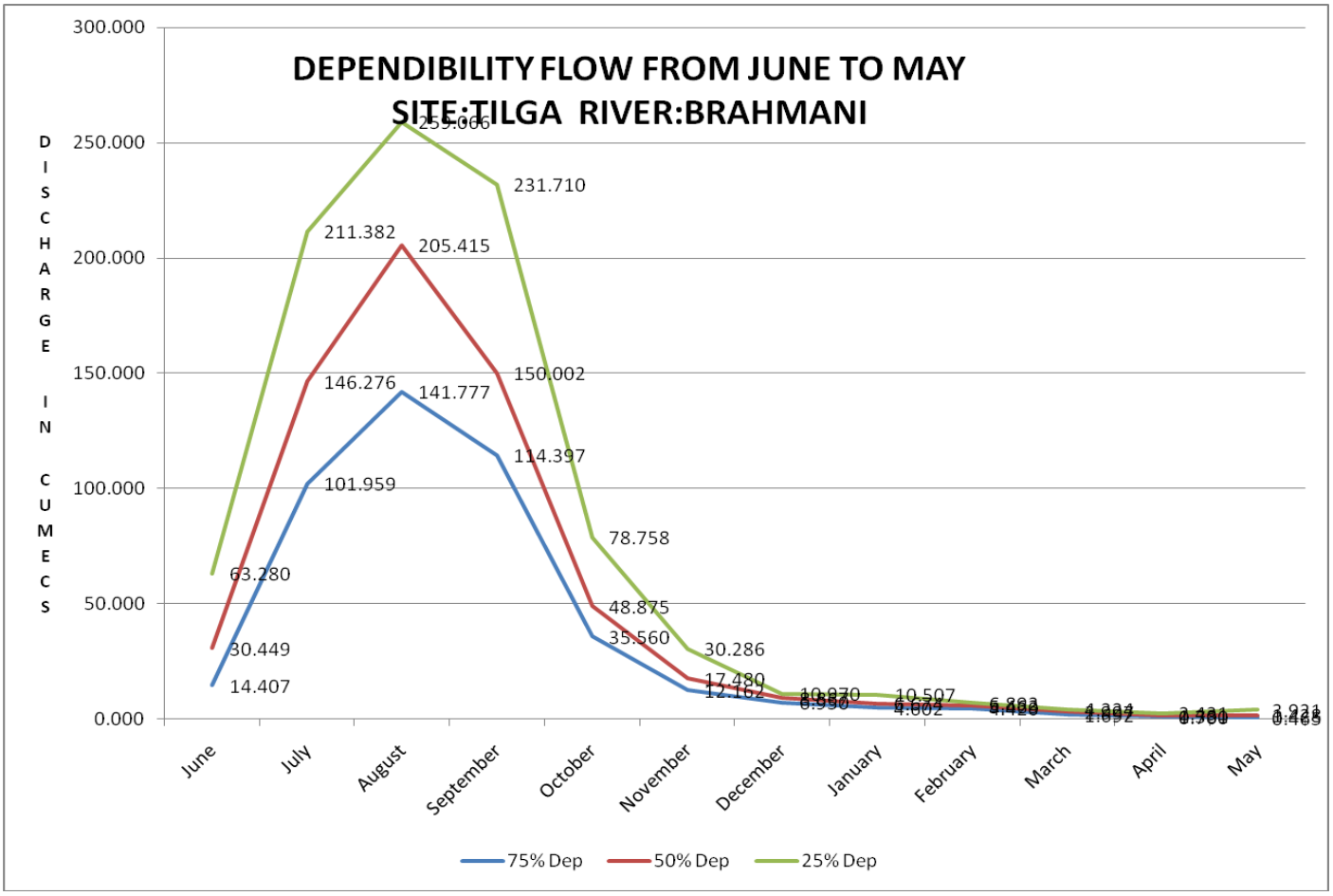
River Water

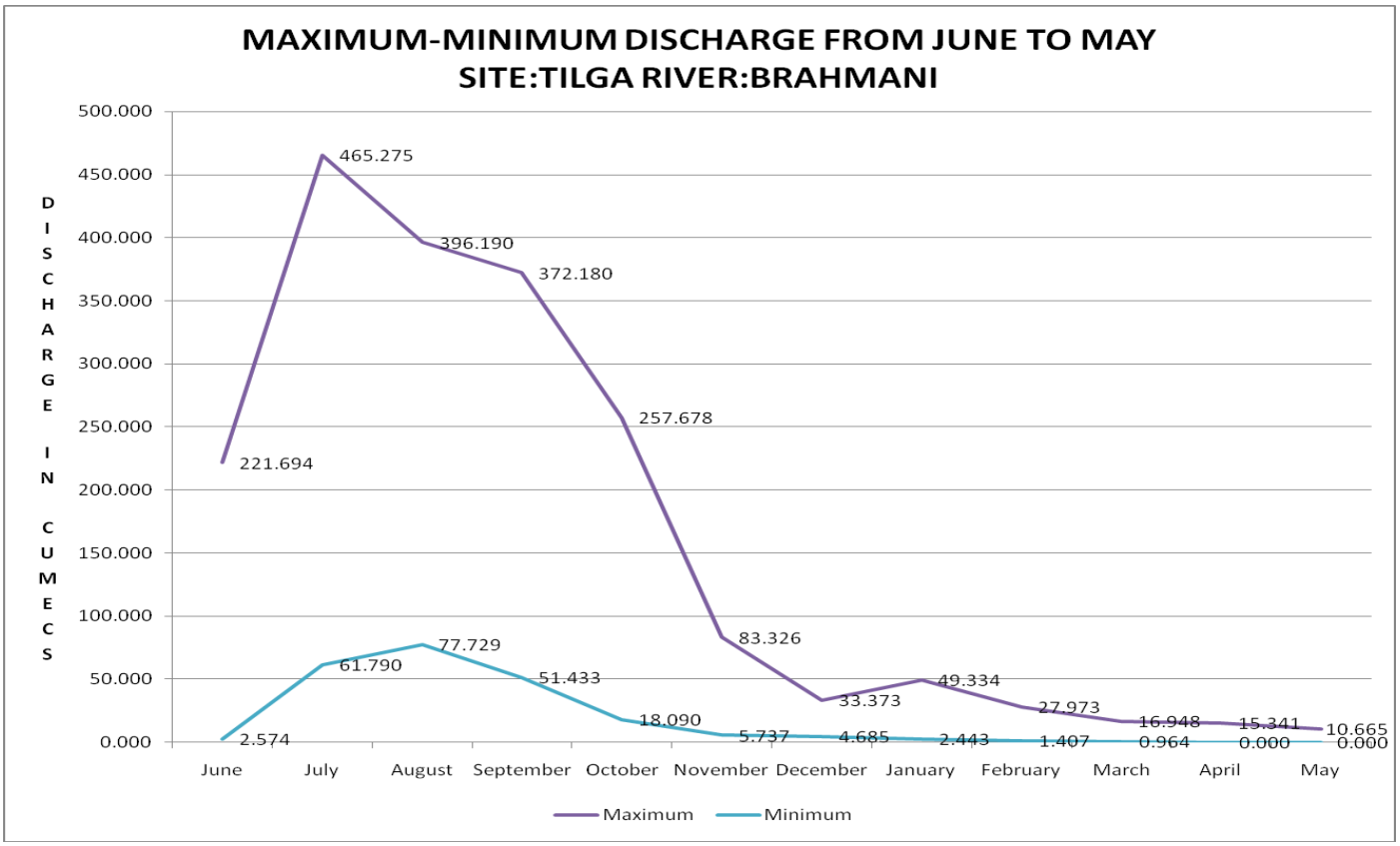
S.No	Parameters	Summer								
		Mar - May								
		2008	2009	2010	2011	2012	2013	2014	2015	2016
	PHYSICAL									
1	Q (cumec)									
2	EC_FLD (µmho/cm)	92		103	158	102	115	93	154	179
3	EC_GEN (µmho/cm)	95		103	158	102	115	93	154	182
4	pH_FLD (pH units)	7.7		6.4	8.0	7.2	7.7	7.5	7.4	7.9
5	pH_GEN (pH units)	7.8		6.4	8.0	7.2	7.7	7.5	7.4	7.9
6	Temp (deg C)	22.0		23.0	24.5	24.0	23.5	24.0	25.0	23.5
	CHEMICAL									
1	ALK-TOT (mgCaCO3/L)	31			59	51				55
2	B (mg/L)	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01
3	Ca (mg/L)	11		8	14	13	13	9	13	22
4	Cl (mg/L)	9.2		7.4	9.4	24.5	21.4	12.3	23.5	13.2
5	CO3 (mg/L)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	F (mg/L)	0.05		0.05	0.05	0.05	0.05	0.05	0.05	0.05
7	Fe (mg/L)			0.1	0.1	0.0	0.2	0.1	0.4	0.6
8	HCO3 (mg/L)	38		50	72	62	90	28	62	68
9	K (mg/L)	0.8		1.2	1.1	1.2	2.4	1.6	1.4	1.0
10	Mg (mg/L)	2.8		4.9	5.8	1.0	2.5	2.4	9.7	12.6
11	Na (mg/L)	6.1		4.8	5.8	4.8	16.3	12.6	4.6	8.9
12	NO2+NO3 (mg N/L)	0.29		0.13	0.55	0.36	0.84	0.50	0.69	1.28
13	NO2-N (mgN/L)	0.00		0.00	0.03	0.07	0.00	0.00	0.01	0.00
14	NO3-N (mgN/L)	0.29		0.13	0.52	0.29	0.84	0.50	0.67	1.28
15	P-Tot (mgP/L)	0.050		0.001	0.001	0.010	0.001	0.001	0.001	0.010
16	SiO2 (mg/L)	6.2		6.7	7.6	11.0	22.5	7.8	3.0	5.0
17	SO4 (mg/L)	6.3		2.6	2.0	1.6	4.0	10.6	1.6	3.2
	BIOLOGICAL/BACTERIOLOGICAL									
1	BOD3-27 (mg/L)	1.7		0.8	1.9	1.1	1.6	0.4	0.2	0.8
2	DO (mg/L)	8.6		7.8	7.5	6.8	7.7	7.3	6.0	6.9
3	DO_SAT% (%)	98		91	89	80	90	87	72	81
	TRACE & TOXIC									
1	Al (mg/L)									
	CHEMICAL INDICES									
1	HAR_Ca (mgCaCO3/L)	28		20	36	32	32	22	32	56
2	HAR_Total (mgCaCO3/L)	40		40	60	36	42	32	73	109
3	Na% (%)	25		20	17	22	44	45	12	15
4	RSC (-)	0.0		0.0	0.0	0.3	0.6	0.0	0.0	0.0
5	SAR (-)	0.4		0.3	0.3	0.3	1.1	1.0	0.2	0.4
	PESTICIDES									

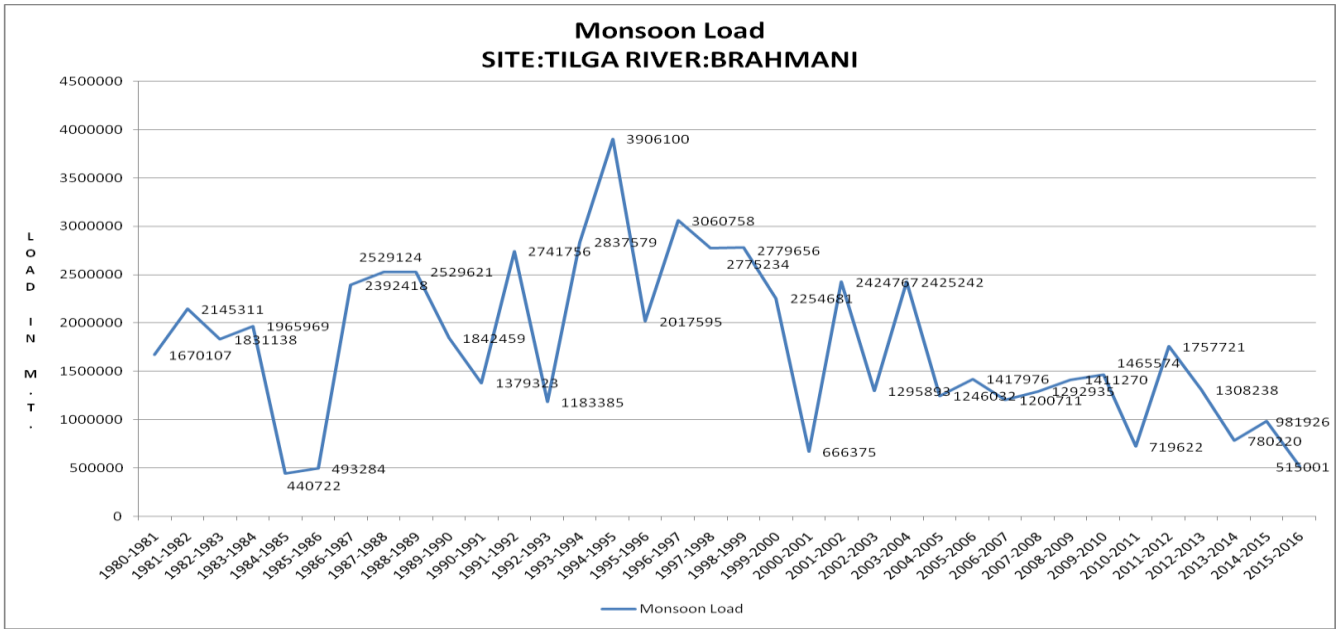
TREND ANALYSIS

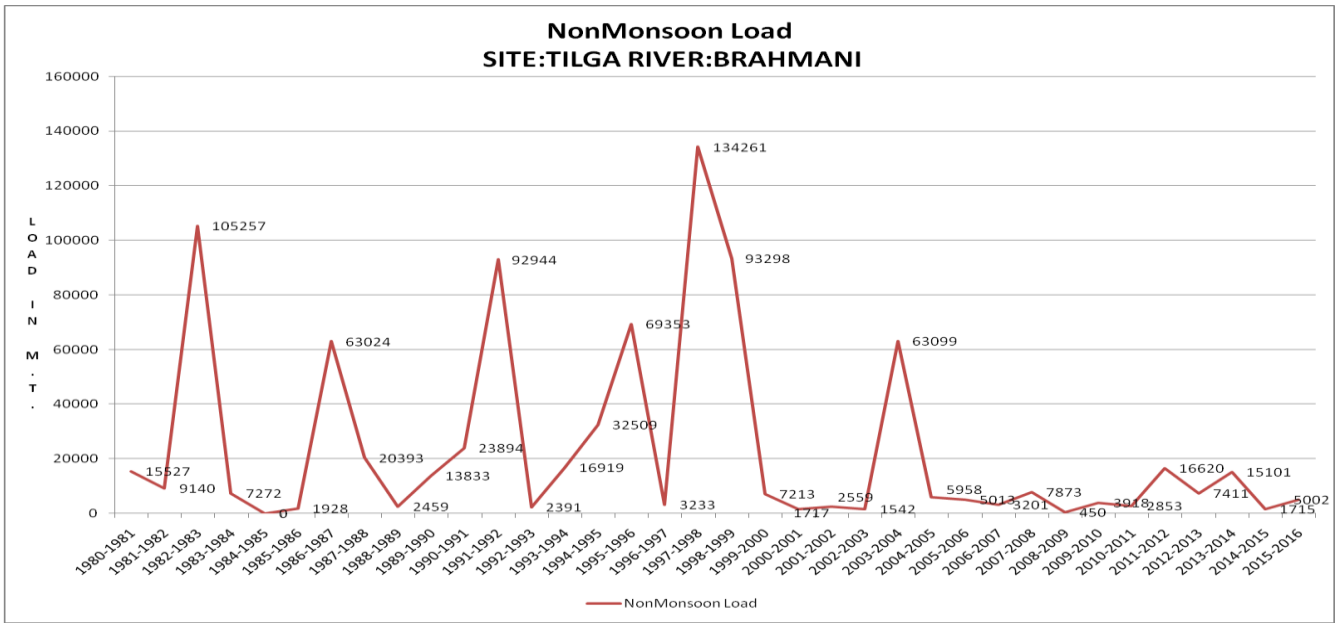

TOTAL ANNUAL DISCHARGE
SITE:TILGA RIVER:BRAHMANI
DISCHARGE IN CUMECS
45000.000
40000.000
35000.000
30000.000
25000.000
20000.000
15000.000
10000.000
5000.000
0.000
Monsoon
Annual Runoff

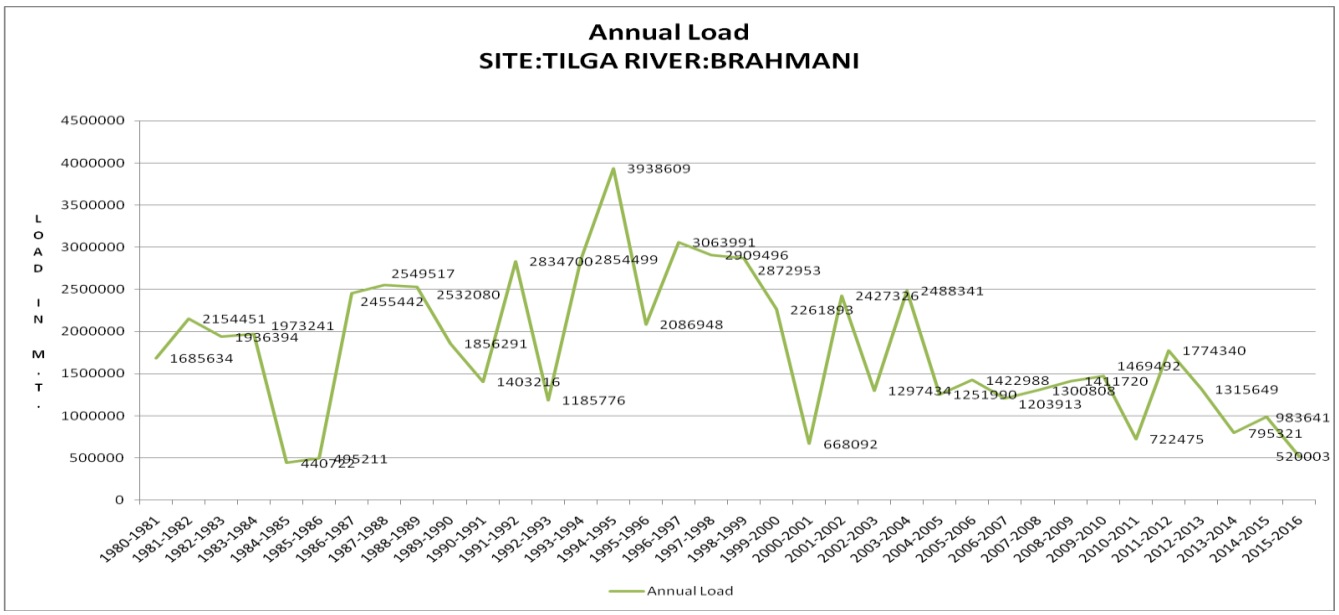

TOTAL ANNUAL DISCHARGE
SITE:TILGA RIVER:BRAHMANI
DISCHARGE IN CUMECS
6000.000
5000.000
4000.000
3000.000
2000.000
1000.000
0.000
Non-Monsoon

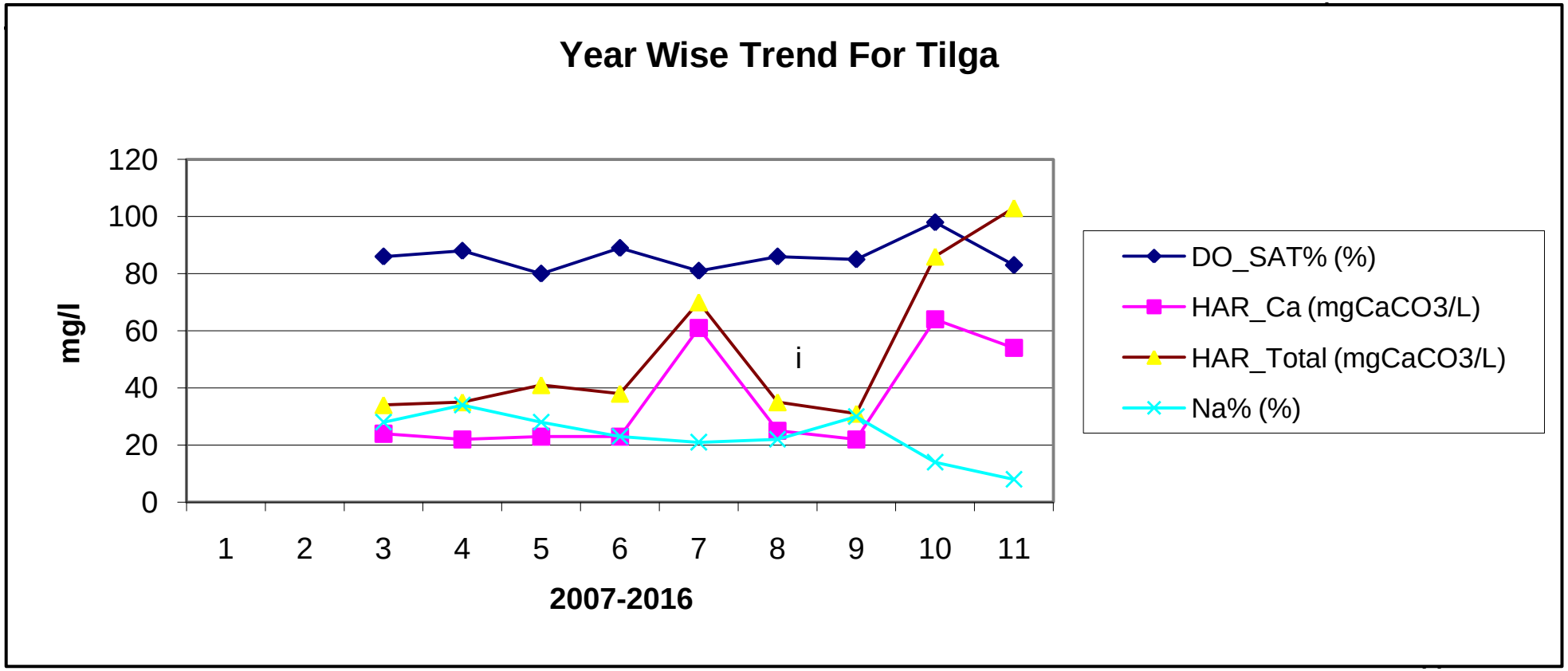

DEPENDIBILITY FLOW FROM JUNE TO MAY
SITE:TILGA RIVER:BRAHMANI
DISCHARGE IN CUMECS
300.000
250.000
200.000
150.000
100.000
50.000
0.000
June
July
August
September
October
November
December
January
February
March
April
May
75% Dep
50% Dep
25% Dep

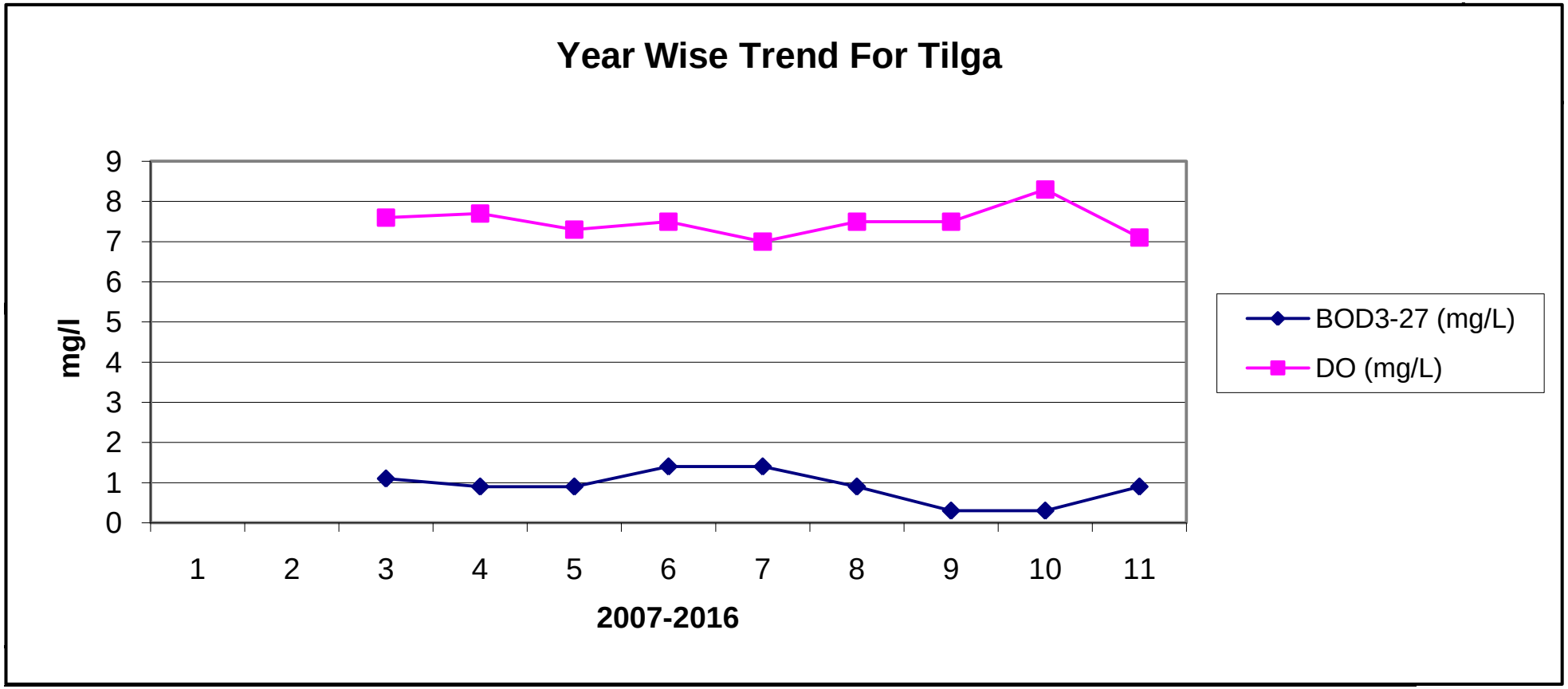

MAXIMUM-MINIMUM DISCHARGE FROM JUNE TO MAY
SITE:TILGA RIVER:BRAHMANI
DISCHARGE IN CUMECS
500.000
450.000
400.000
350.000
300.000
250.000
200.000
150.000
100.000
50.000
0.000
June
July
August
September
October
November
December
January
February
March
April
May
Maximum
Minimum

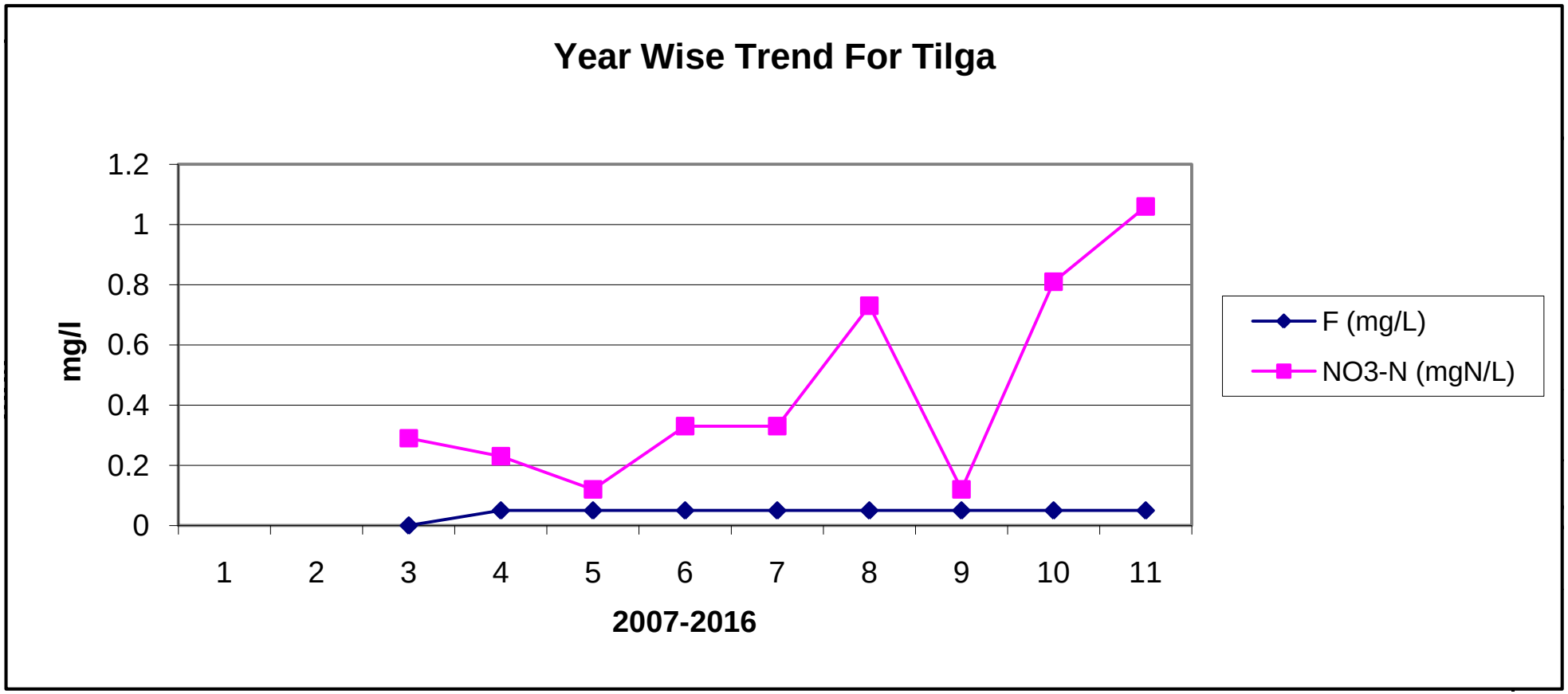

Monsoon Load
SITE:TILGA RIVER:BRAHMANI
LOAD IN M.T.
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
1670107
2145311
1851138
1965969
440722
493284
2392418
2529124
2529621
1842459
1379328
2741756
1183385
2837579
3906100
2017595
3060758
2775234
2779656
2254681
666375
2424767
2425242
1295893
1246032
1417976
1200711
1292935
1411270
1465574
719622
1757721
1308238
780220
981926
515001
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
1991-1992
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
Monsoon Load

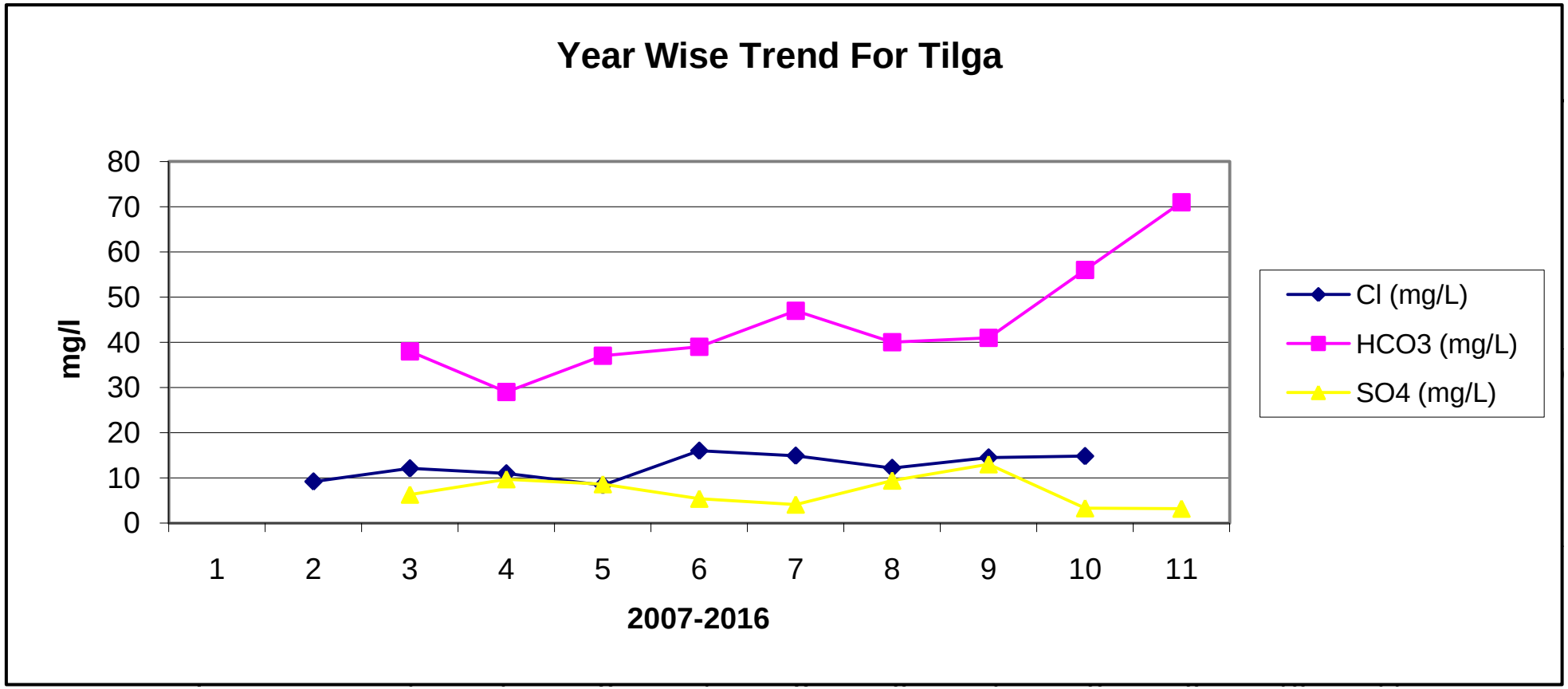

NonMonsoon Load
SITE:TILGA RIVER:BRAHMANI
LOAD IN M.T.
160000
140000
120000
100000
80000
60000
40000
20000
0
15527
9140
105257
7272
0
1928
63024
20393
2459
13833
23894
92944
2391
16919
32509
69353
3233
134261
93298
7213
1717
2559
1542
63099
5958
5013
3201
7873
450
3918
2853
16620
7411
15101
1715
5002
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
1991-1992
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
NonMonsoon Load

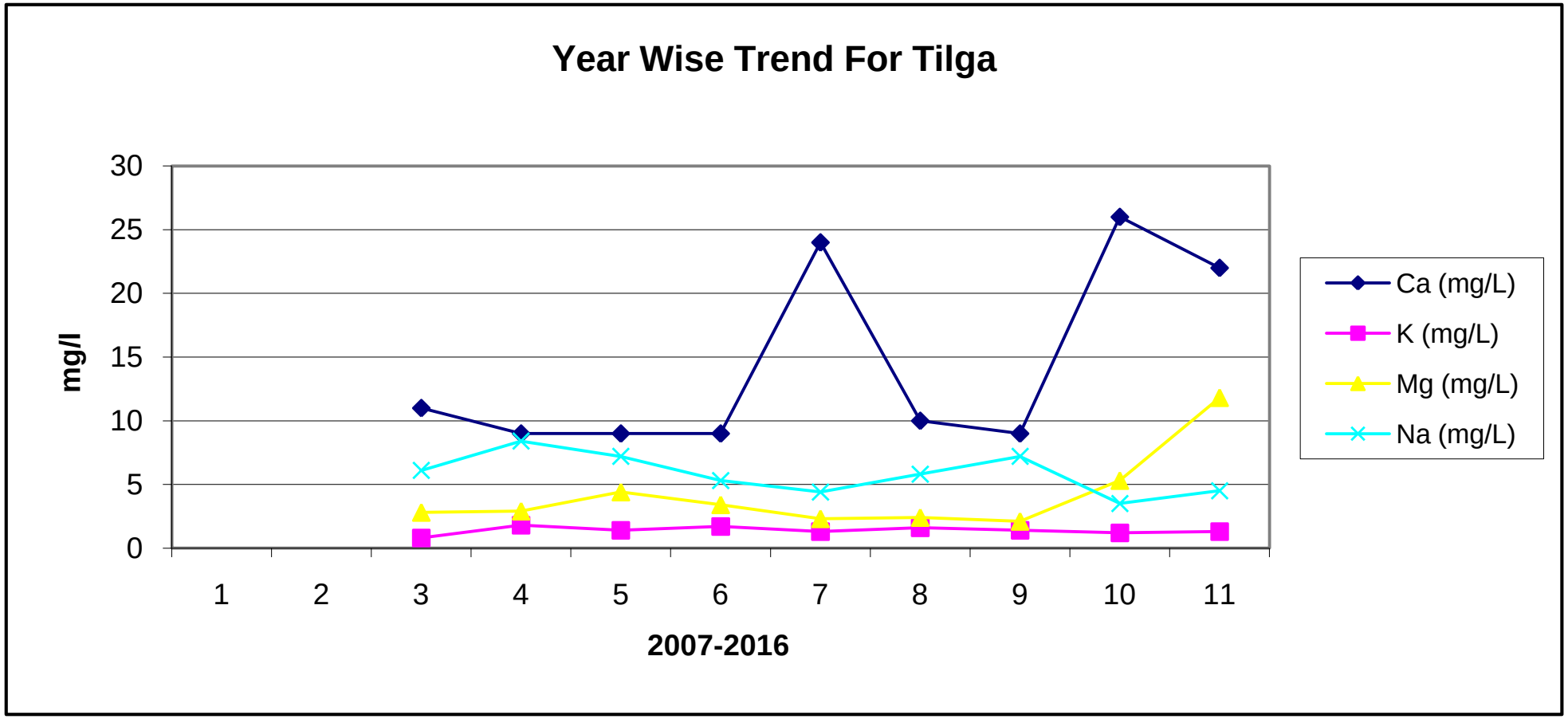

Annual Load
SITE:TILGA RIVER:BRAHMANI
LOAD IN M.T.
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
1685634
2154451
1936394
1973241
440722
405211
2455442
2549517
2532080
1856291
1403216
2834700
1185776
2854499
3938609
2086948
3063991
2909496
2872953
2261898
668092
2427326
2488341
1297434
1251900
1422988
1203913
1300808
1411720
1469492
722475
1774340
1315649
795321
983641
520003
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
1991-1992
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
Annual Load


Year Wise Trend For Tilga
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2007-2016
i
DO_SAT% (%)
HAR_Ca (mgCaCO3/L)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Tilga
mg/l
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2007-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Tilga
1.2
1
0.8
0.6
0.4
0.2
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2007-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Tilga
80
70
60
50
40
30
20
10
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2007-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Tilga
mg/l
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
2007-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

HYDROLOGICAL DATA

HISTORY SHEET

Water Year : 2015-2016

Site	**:**	**JARAIKELA**	**Code**	**:**	**EBJ00D5**
State	:	Orissa	District		Sundergarh
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmani
Tributary	:	Koel	Sub Tributary	:	
Sub-Sub Tributary	:		Local River	:	Koel
Division	:	E.E., Bhubaneswar	Sub-Division	:	Rourkela
Drainage Area	:	9160 Sq. Km.	Bank	:	Left
Latitude	:	22°19'08"	Longitude	:	85°06'19"
Zero of Gauge (m)	:	182 (m.s.l)	01.07.1971	-	20.03.1975
		185 (m.s.l)	21.03.1975	-	31.12.2025
		Opening Date	Closing Date		
Gauge	:	23.07.1971			
Discharge	:	01.08.1972			
Sediment	:	01.06.1975	04.09.2002		
Water Quality	:	01.09.1975			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1973-1974	2436	192.185	26.09.1973	1.300	186.265	11.05.1974
1974-1975	3557	192.540	17.08.1974	1.000	186.055	26.04.1975
1975-1976	4130	192.405	18.07.1975	1.300	186.035	18.06.1975
1976-1977	8062	193.950	18.09.1976	1.711	185.865	05.04.1977
1977-1978	10730	193.900	06.08.1977	1.330	186.320	25.05.1978
1978-1979	5697	193.090	03.09.1978	0.730	186.230	30.05.1979
1979-1980	816.3	189.658	09.08.1979	0.410	186.260	10.05.1980
1980-1981	1372	190.135	11.07.1980	1.180	186.430	02.04.1981
1981-1982	1089	190.105	07.09.1981	0.970	186.645	13.05.1982
1982-1983	2251	191.370	21.08.1982	1.145	186.445	17.04.1983
1983-1984	1351	190.485	19.09.1983	0.604	186.615	30.05.1984
1984-1985	2611	191.810	27.08.1984	1.090	186.250	07.05.1985
1985-1986	2663	191.855	17.10.1985	2.260	186.665	21.04.1986
1986-1987	1818	190.900	28.07.1986	1.541	186.510	28.05.1987
1987-1988	3465	191.750	28.08.1987	1.000	186.265	29.05.1988
1988-1989	6422	192.975	28.06.1988	0.483	186.255	16.05.1989
1989-1990	1666	191.670	22.06.1989	2.656	186.395	05.06.1989
1990-1991	2293	191.365	15.07.1990	2.562	186.675	21.05.1991
1991-1992	2153	191.670	13.08.1991	2.200	186.465	24.05.1992
1992-1993	744.1	189.905	30.08.1992	1.318	186.445	18.05.1993
1993-1994	2202	191.770	13.07.1993	1.113	186.550	12.05.1994

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1994-1995	5007	192.915	03.08.1994	2.437	186.520	28.04.1995
1995-1996	4233	193.120	18.09.1995	1.538	186.465	19.05.1996
1996-1997	4903	192.965	26.07.1996	1.824	186.405	31.05.1997
1997-1998	12539	194.010	06.08.1997	0.884	186.365	12.06.1997
1998-1999	3252	192.205	11.09.1998	1.690	186.260	03.05.1999
1999-2000	1900	191.750	19.10.1999	2.337	186.380	25.04.2000
2000-2001	3872	193.010	25.07.2000	1.863	186.320	05.05.2001
2001-2002	4288	192.455	21.07.2001	1.764	186.295	14.05.2002
2002-2003	1139	190.400	24.06.2002	1.363	186.405	29.05.2003
2003-2004	2600	192.100	25.10.2003	0.895	186.355	08.06.2003
2004-2005	4063	193.060	21.08.2004	1.431	186.380	28.05.2005
2005-2006	1262	190.415	30.06.2005	0.990	186.280	22.06.2005
2006-2007	2658	191.190	30.07.2006	2.755	186.540	31.05.2007
2007-2008	4603	193.330	20.08.2007	1.682	186.490	08.06.2007
2008-2009	1240	190.625	08.07.2008	1.710	186.545	06.05.2009
2009-2010	2366	192.025	08.09.2009	0.957	186.230	28.04.2010
2010-2011	571.1	189.475	16.09.2010	0.770	186.440	04.04.2011
2011-2012	4032	193.085	20.06.2011	1.821	186.345	31.05.2012
2012-2013	878.7	190.200	17.08.2012	1.025	186.300	14.06.2012
2013-2014	1548	191.960	03.10.2013	0.000	188.715	20.08.2013
2014-2015	957.0	190.570	10.08.2014	0.000	190.020	21.07.2014
2015-2016	461.3	188.780	26.07.2015	0.000	189.920	24.07.2015

Stage-Discharge Data for the period 2015 - 2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	186.580	3.739	187.820	99.26	187.830	98.11	188.600	260.3	187.040	34.32	186.870	24.20 *
2	186.580	3.501	187.970	136.1	187.380	187.4 *	188.500	248.3	187.010	32.11 *	186.920	26.79
3	186.570	3.337	188.100	132.3	191.840	171.3	188.250	221.1	186.980	29.88	187.070	41.92
4	186.570	3.386	187.920	96.64	190.530	0.000	188.170	211.3	186.980	29.90 *	187.000	32.81
5	186.690	7.215	188.000	188.0 *	189.120	275.1	188.140	196.7	186.980	29.55	186.960	27.36
6	186.740	8.977	188.170	170.9	188.660	263.0	187.660	187.6 *	186.980	26.96	186.890	20.21
7	186.690	5.103 *	187.590	101.6	188.320	177.9	187.510	171.4	186.960	28.26	186.850	19.64
8	186.730	11.86	187.800	121.5	188.100	185.4	187.415	117.0	186.930	26.22	186.820	18.65 *
9	186.800	15.63	188.200	183.0	187.900	187.9 *	187.315	91.21	186.920	24.60	186.800	15.48
10	186.740	8.977	188.745	299.1	187.800	74.99	187.310	82.59	186.900	19.91	186.800	15.39
11	186.650	9.543	190.325	202.5	187.800	77.37	187.260	64.32	186.890	19.89 *	186.780	15.35 *
12	186.690	7.381	189.040	189.0 *	187.800	66.18	187.220	47.20	186.870	19.27	186.780	15.72
13	186.800	15.63	188.600	260.8	187.760	68.12	187.200	187.2 *	186.860	15.56	186.770	14.11
14	186.750	14.13 *	188.080	174.8	187.730	72.60	187.160	40.29	186.860	15.89	186.770	13.85
15	186.640	5.406	187.970	160.2	187.720	187.7 *	187.155	40.70	186.850	15.89	186.770	13.85 *
16	186.750	10.95	187.970	180.3	187.800	187.8 *	187.150	40.02	186.830	14.35	186.770	13.42
17	187.160	30.10	187.860	140.0	187.860	80.24	187.140	187.1 *	186.830	5.916	186.770	13.39
18	186.980	25.81	189.300	201.6 *	187.800	89.60	187.160	46.00	186.820	15.62 *	186.770	13.11
19	186.960	27.18	188.730	201.0 *	188.140	123.8	187.150	39.42	186.820	4.810	186.760	13.07
20	186.870	21.65	188.400	199.4	188.020	119.9	187.130	187.1 *	186.820	4.454	186.750	14.80
21	186.850	21.70 *	189.320	325.2	188.120	129.5	187.120	36.09	186.820	13.77 *	186.740	11.56
22	186.810	20.98	189.350	275.6	188.100	121.8	187.230	59.13	186.820	14.12 *	186.730	10.57 *
23	186.800	18.05	189.020	0.000	188.020	188.0 *	187.790	140.9	186.820	-9.477	186.720	25.79
24	186.800	121.1	189.920	0.000	187.980	117.6	187.665	147.3	186.800	11.23 *	186.720	10.46
25	187.590	80.91	189.040	305.7	187.940	112.2	187.520	187.5 *	186.780	12.83 *	186.720	10.43 *
26	187.460	76.54	188.780	461.3 *	187.880	84.53	187.330	73.61	186.770	12.19	186.720	11.81
27	187.200	56.66	188.580	225.0	187.800	97.42	187.250	187.3 *	186.770	12.65	186.720	6.475
28	187.120	41.15 *	188.960	282.7	187.850	103.4	187.165	55.09	186.760	11.68	186.710	8.736
29	187.190	53.26	188.520	195.7	187.780	105.3	187.100	42.75	186.760	10.70	186.710	8.721 *
30	187.405	56.96	188.360	172.1	187.860	187.9 *	187.080	36.55	186.770	10.34	186.710	10.02
31			188.030	123.1	188.240	121.6			186.915	20.27		
Ten-Daily Mean												
I Ten-Daily	186.669	7.173	188.031	152.8	188.748	162.1	187.887	178.7	186.968	28.17	186.898	24.25
II Ten-Daily	186.825	16.78	188.628	191.0	187.843	107.3	187.173	87.94	186.845	13.16	186.769	14.07
III Ten-Daily	187.122	54.73	188.898	215.1	187.961	124.5	187.325	96.61	186.799	10.93	186.720	11.46
Monthly												
Min.	186.570	3.337	187.590	0.000	187.380	0.000	187.080	36.09	186.760	-9.477	186.710	6.475
Max.	187.590	121.1	190.325	461.3	191.840	275.1	188.600	260.3	187.040	34.32	187.070	41.92
Mean	186.872	26.23	188.531	187.2	188.177	131.1	187.462	121.1	186.868	17.21	186.796	16.59

Annual Runoff in MCM = 1413 Annual Runoff in mm = 154

Peak Observed Discharge = 325.2 cumecs on 21/07/2015 Corres. Water Level :189.32 m

Lowest Observed Discharge = -9.477 cumecs on 23/10/2015 Corres. Water Level :186.82 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2015 - 2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	186.700	10.12	186.660	4.801	186.600	3.972	186.580	7.397	186.530	4.390	186.560	1.578 *
2	186.700	11.71	186.660	4.670	186.590	4.069	186.620	8.327	186.540	4.058	186.560	1.648
3	186.700	8.060	186.650	5.145 *	186.590	4.051	186.620	7.804	186.540	4.057 *	186.560	1.542
4	186.700	6.656	186.640	5.592	186.580	4.070	186.620	8.007	186.540	3.245	186.560	1.374
5	186.700	8.201	186.630	5.103	186.580	4.069	186.600	7.909	186.540	2.900	186.560	1.201
6	186.720	8.845 *	186.630	5.143	186.580	4.161	186.580	7.639 *	186.550	2.604	186.560	1.236
7	186.720	8.845	186.630	5.057	186.580	4.164 *	186.580	7.652	186.550	2.405	186.560	1.238
8	186.700	8.087	186.630	5.003	186.570	3.797	186.560	7.656	186.560	2.294	186.560	1.236 *
9	186.700	8.395	186.630	5.057	186.560	3.677	186.550	6.782	186.560	2.213	186.560	1.242
10	186.700	7.522	186.620	4.871 *	186.560	3.628	186.540	8.021	186.500	2.213 *	186.560	0.963
11	186.690	8.254	186.620	4.922	186.560	3.585	186.540	7.848	186.560	2.164	186.550	1.140
12	186.690	6.588	186.620	4.526	186.550	3.587	186.540	7.737	186.560	2.164	186.550	1.223
13	186.690	6.414 *	186.620	4.483	186.550	4.032	186.540	7.735 *	186.560	2.133	186.550	1.177
14	186.680	8.841	186.610	4.556	186.540	4.018 *	186.530	6.081	186.560	2.134 *	186.560	1.150
15	186.680	9.802	186.610	4.515	186.540	4.040	186.530	6.831	186.560	2.054	186.560	1.131 *
16	186.680	8.779	186.610	4.477	186.550	4.171	186.530	5.798	186.560	2.335	186.560	1.861
17	186.680	8.671	186.610	4.955 *	186.560	4.502	186.530	4.946	186.560	2.337 *	186.580	2.055
18	186.690	8.998	186.610	4.320	186.550	4.404	186.530	5.165	186.560	2.318	186.680	29.25
19	186.700	9.017	186.610	4.229	186.540	4.343	186.520	4.641	186.560	2.154	186.590	18.90
20	186.700	9.312 *	186.610	4.456	186.540	4.288	186.520	5.336 *	186.560	2.134 *	186.510	15.47
21	186.710	9.883	186.610	4.147	186.530	4.488 *	186.510	3.948	186.560	2.198	186.500	15.46 *
22	186.700	9.243	186.610	4.129	186.520	4.198	186.510	4.050	186.560	2.060	186.560	17.90 *
23	186.690	9.373	186.610	4.084	186.520	4.095	186.510	4.636	186.560	1.852	186.580	18.98
24	186.690	9.323 *	186.610	4.136 *	186.510	4.013	186.520	4.642 *	186.560	1.852 *	186.550	14.63
25	186.690	9.323 *	186.610	4.075	186.510	3.938	186.520	4.642 *	186.560	1.645	186.580	17.27
26	186.690	7.519	186.610	4.341 *	186.510	3.865	186.520	3.936	186.560	1.562	186.600	18.28
27	186.690	7.191 *	186.610	4.034	186.510	4.071	186.500	3.877 *	186.560	1.582	186.600	17.14
28	186.680	6.227	186.600	4.055	186.630	7.616 *	186.500	3.879	186.560	1.605	186.560	14.91
29	186.670	6.236	186.600	4.000	186.630	7.235	186.520	4.264	186.560	1.586	186.560	14.90 *
30	186.670	6.110	186.600	3.988			186.530	4.460	186.560	1.576	186.530	13.24
31	186.670	4.880	186.600	4.018 *			186.520	4.397			186.530	12.83
Ten-Daily Mean												
I Ten-Daily	186.704	8.644	186.638	5.044	186.579	3.966	186.585	7.720	186.541	3.038	186.560	1.326
II Ten-Daily	186.688	8.468	186.613	4.544	186.548	4.097	186.531	6.212	186.560	2.193	186.569	7.336
III Ten-Daily	186.686	7.755	186.606	4.091	186.541	4.835	186.515	4.248	186.560	1.752	186.559	15.96
Monthly												
Min.	186.670	4.880	186.600	3.988	186.510	3.585	186.500	3.877	186.500	1.562	186.500	0.963
Max.	186.720	11.71	186.660	5.592	186.630	7.616	186.620	8.327	186.560	4.390	186.680	29.25
Mean	186.693	8.272	186.619	4.545	186.557	4.281	186.543	6.001	186.554	2.328	186.563	8.456

Peak Computed Discharge = 461.3 cumecs on 26/07/2015 **Corres. Water Level :188.78 m**

Lowest Computed Discharge = 1.131 cumecs on 15/05/2016 **Corres. Water Level :186.56 m**

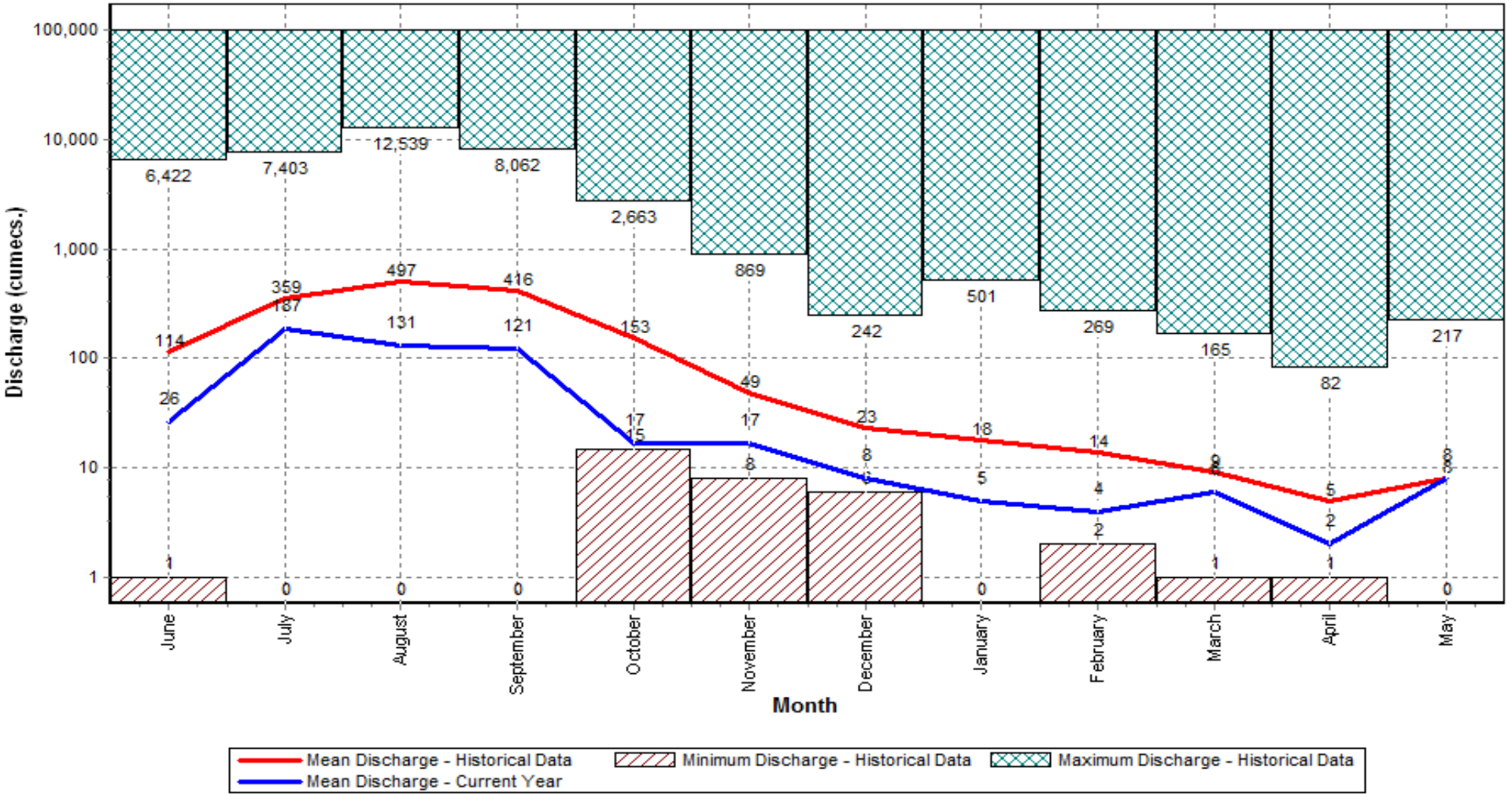
Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Data considered : 1973-2016** **Division : E.E., Bhubaneswar**

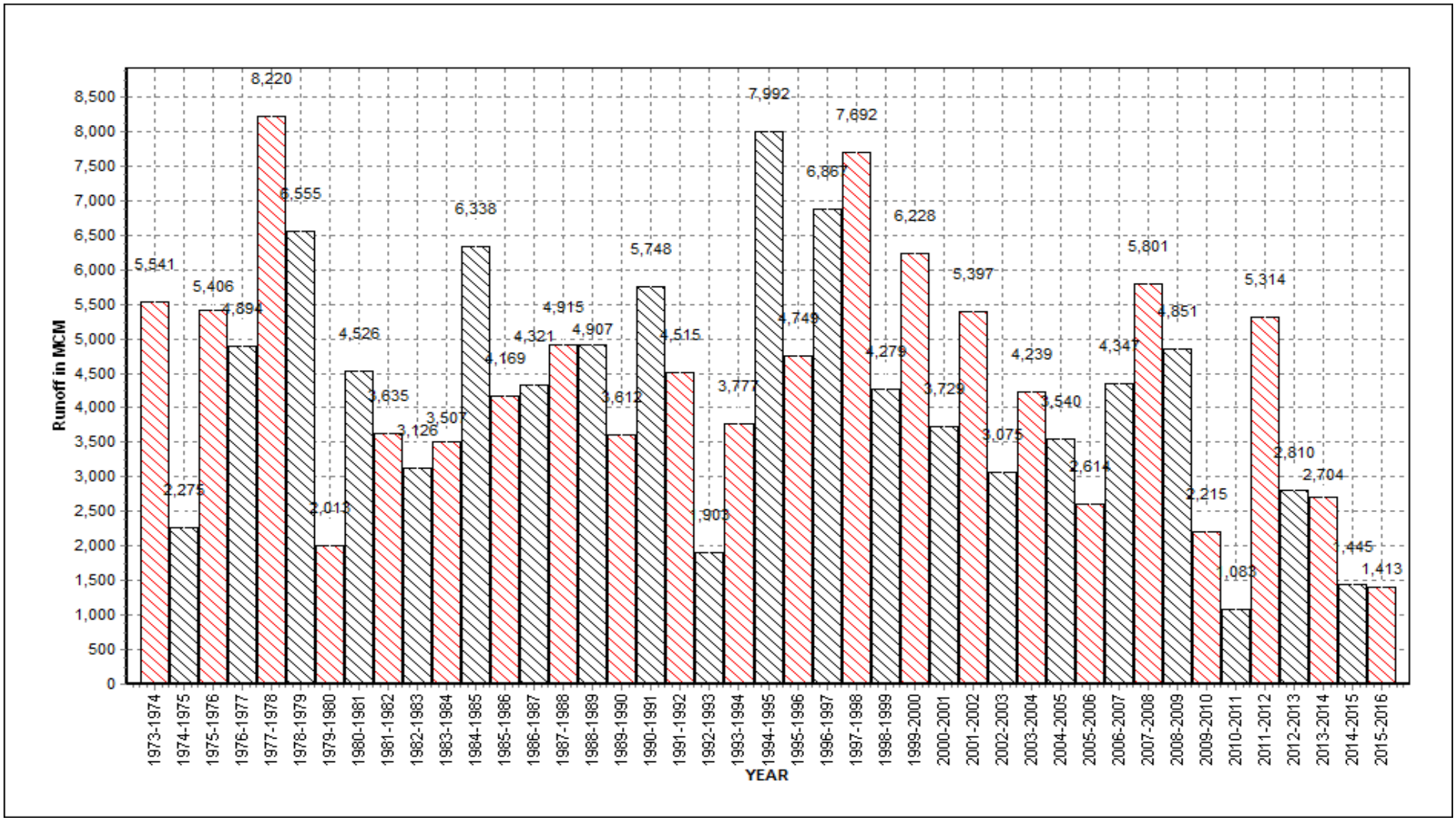
Local River : Koel **Sub-Division : Rourkela**



Annual Runoff Values for the period: 1973 - 2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**

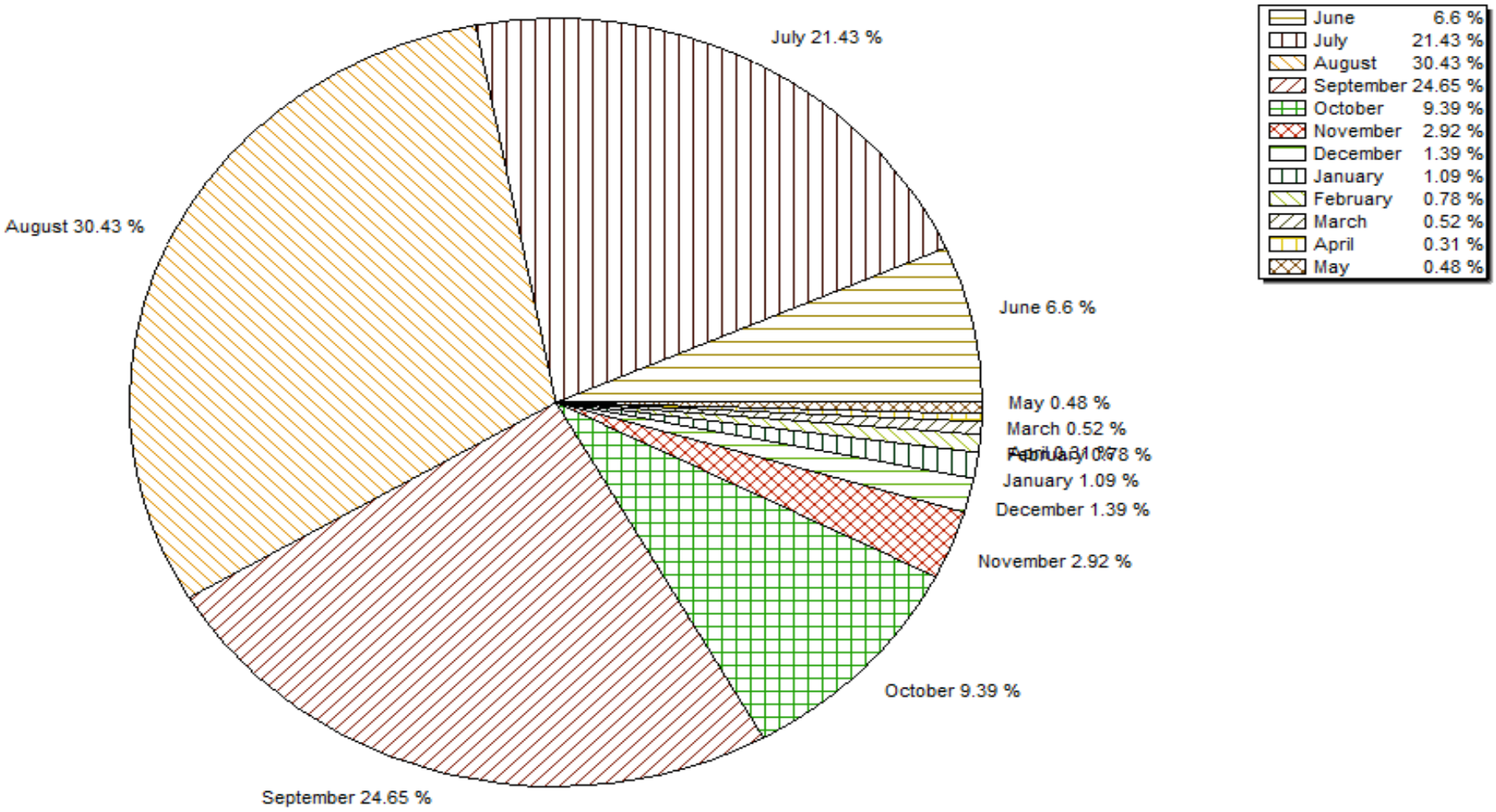


Note: Missing values have not been considered while arriving at Annual Runoff

Monthly Average Runoff based on period : 1973-2015

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

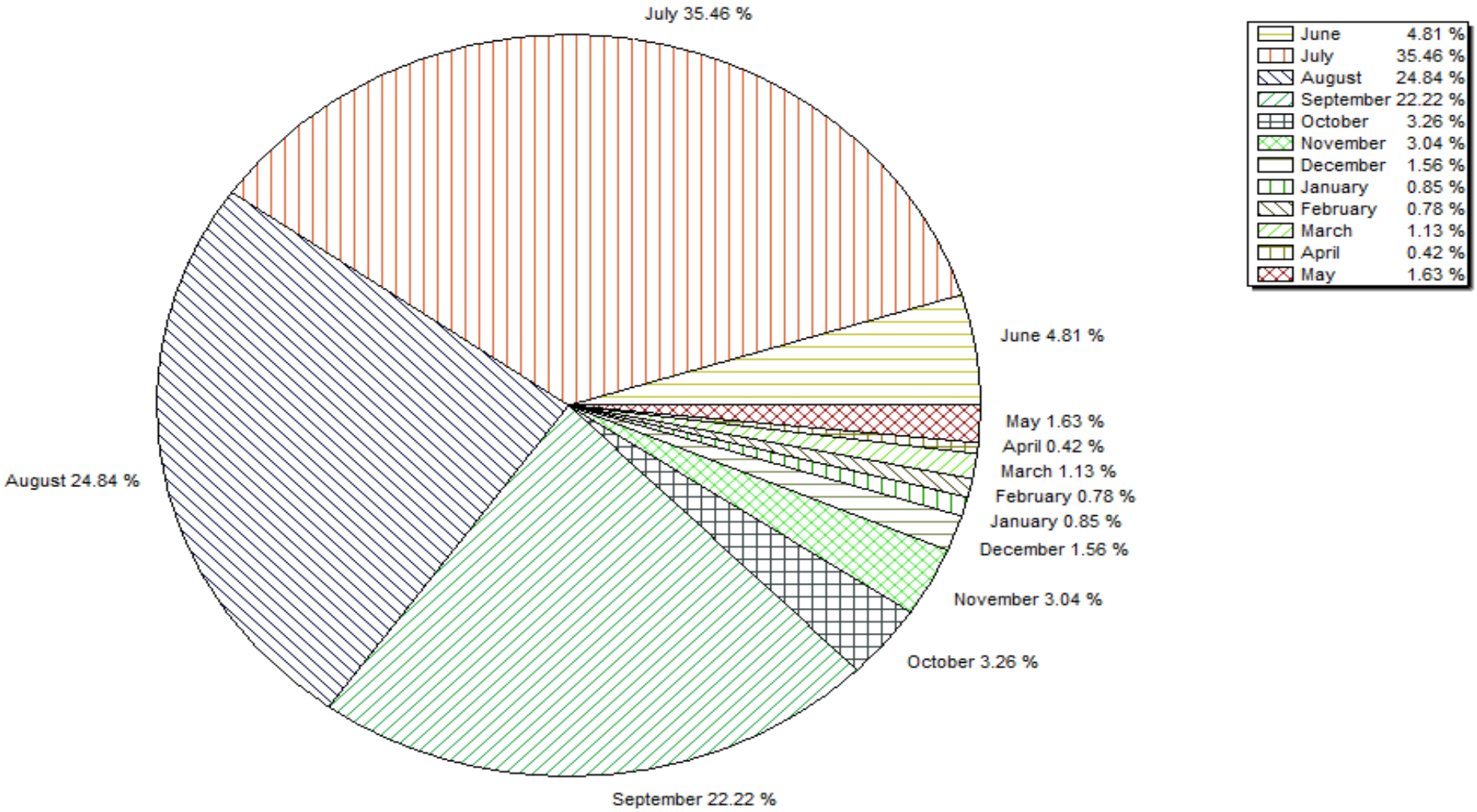
Local River : Koel **Sub-Division : Rourkela**



Monthly Runoff for the Year : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

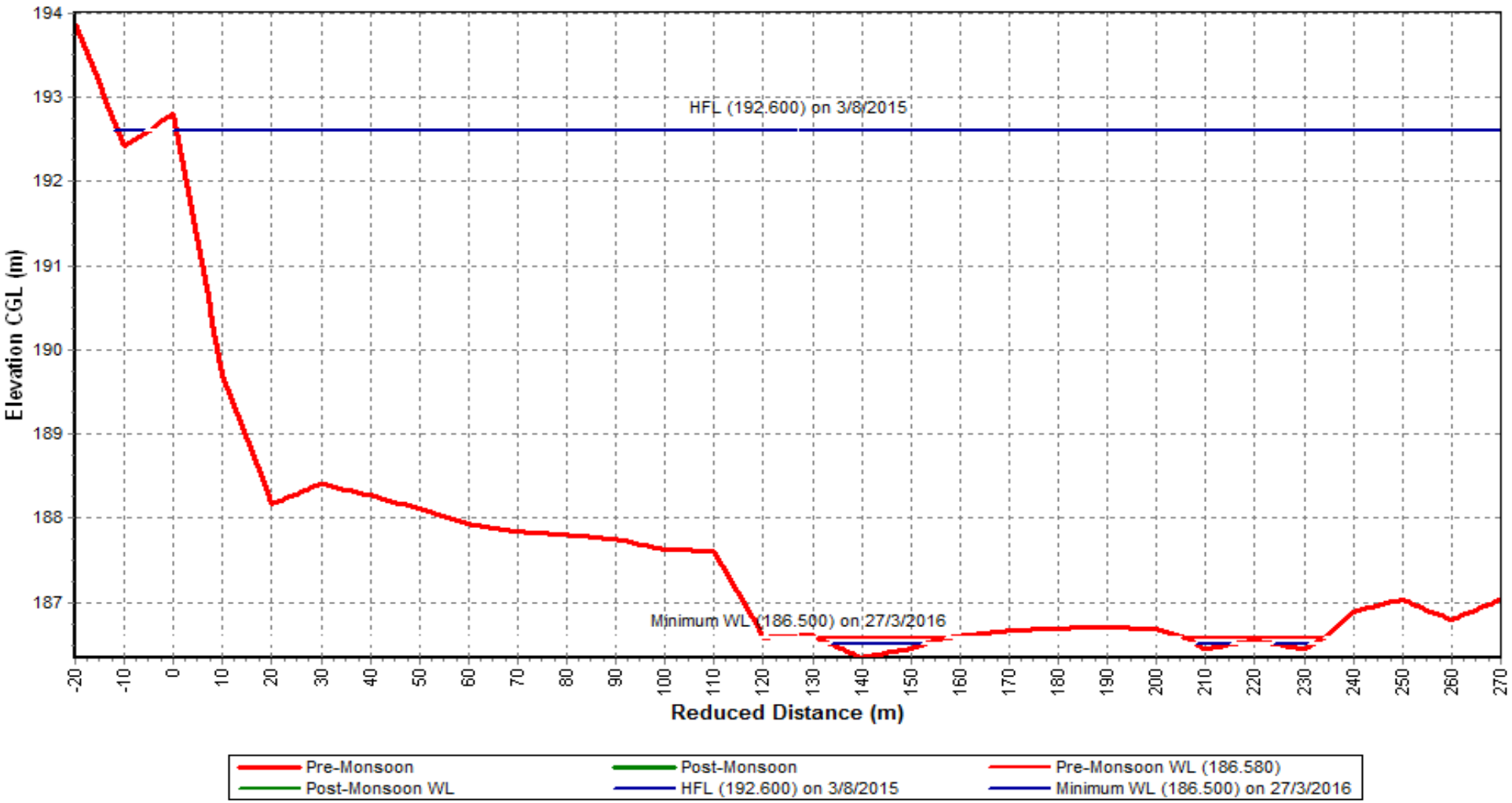
Local River : Koel **Sub-Division : Rourkela**



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

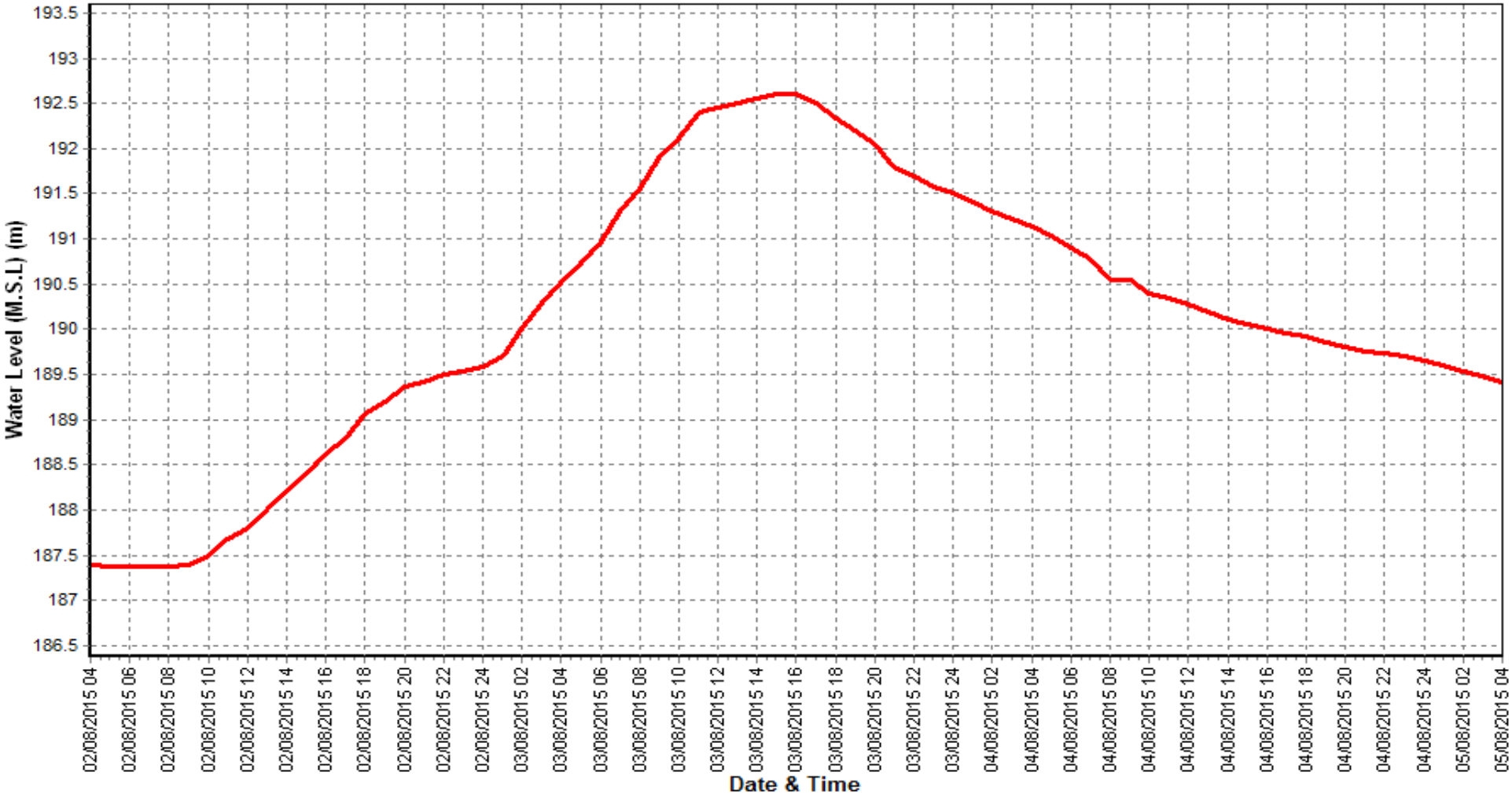
Local River : Koel **Sub-Division : Rourkela**



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**

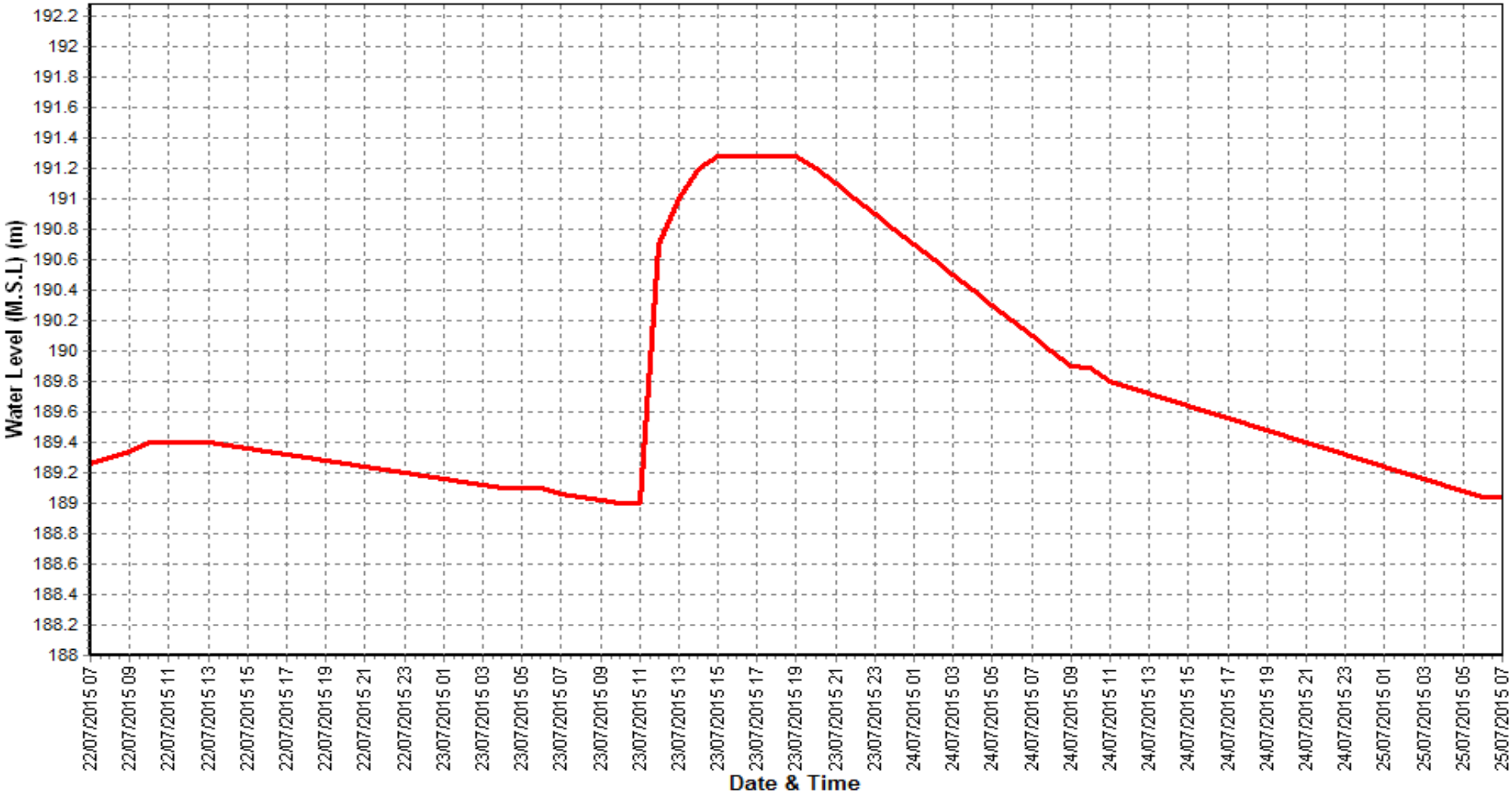


Time Span: 72 Hrs

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**

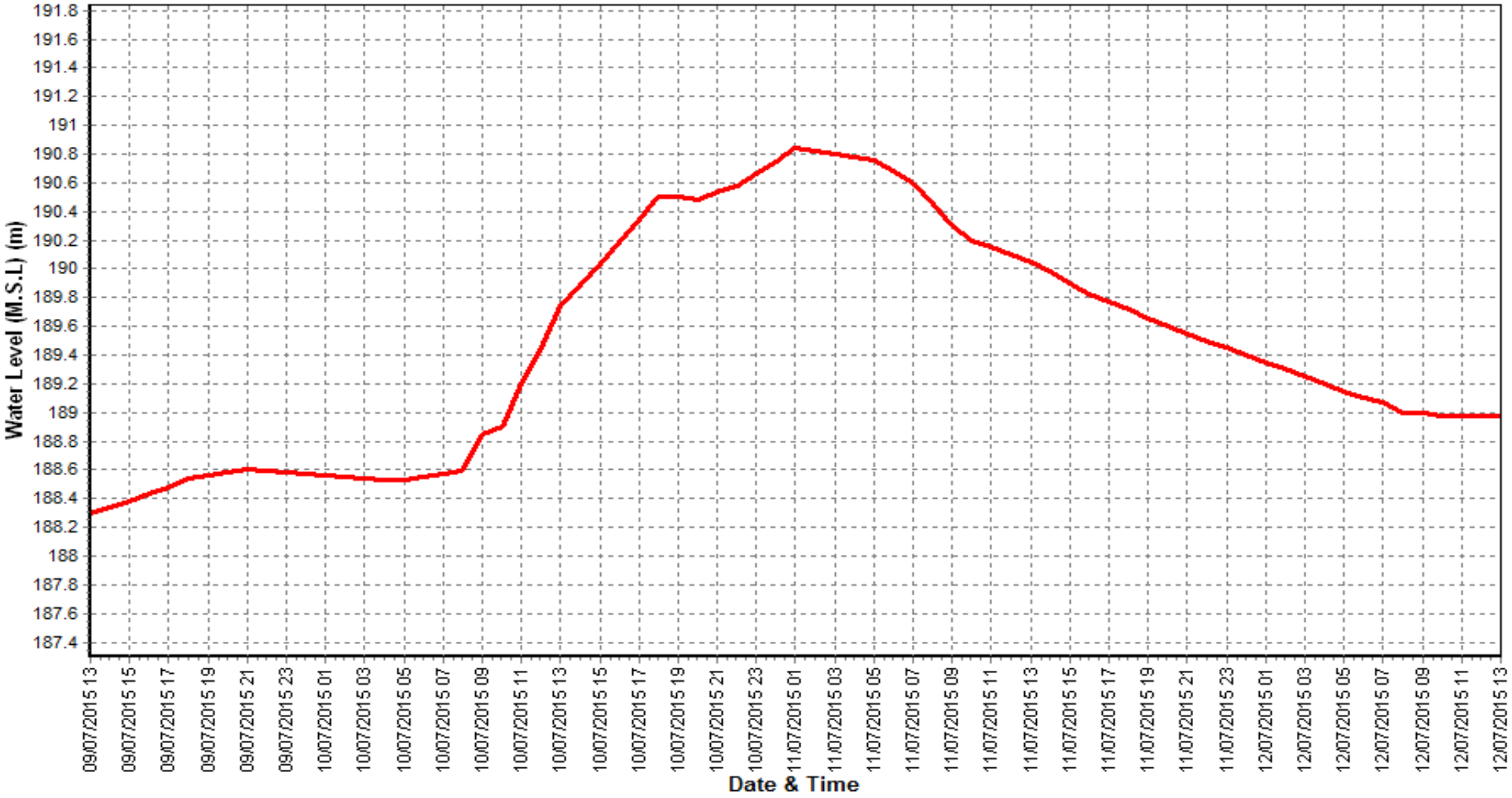


Time Span: 72 Hrs

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**



Time Span: 72 Hrs

WATER QUALITY DATA

Water Quality Datasheet for the period : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **River Water Analysis** **Sub-Division : Rourkela**

S.No	Parameters	01.06.2015	01.08.2015	01.10.2015	01.12.2015	01.02.2016	01.04.2016
		A	A	A	A	A	A
	PHYSICAL						
1	Q (cumec)						
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	243	120	369	378	375	340
4	EC_GEN (µmho/cm)	254	127	357	389	371	343
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.8	7.1	7.5	7.8	8.1	8.0
7	pH_GEN (pH units)	7.7	6.9	7.3	7.7	8.2	8.1
8	Temp (deg C)	29.0	26.0	27.3	26.0	18.0	34.5
	CHEMICAL						
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	23.0	13.8
2	ALK-TOT (mgCaCO3/L)	69	51	46	51	92	83
3	B (mg/L)	0.01	0.00	0.01	0.01	0.01	0.01
4	Ca (mg/L)	22	22	19	18	19	21
5	Cl (mg/L)	11.3	13.2	17.0	18.9	22.6	17.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	27.7	16.6
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.3	0.4	0.4	0.3	0.4	0.4
9	HCO3 (mg/L)	85	62	56	62	56	68
10	K (mg/L)	1.4	2.1	1.2	1.4	1.2	1.3
11	Mg (mg/L)	12.6	11.7	10.7	11.7	12.6	13.6
12	Na (mg/L)	6.9	2.5	1.4	6.9	6.4	9.0
13	NO2+NO3 (mg N/L)	0.87	0.91	1.12	1.12	0.99	0.95
14	NO2-N (mgN/L)	0.03	0.00	0.07	0.03	0.00	0.00
15	NO3-N (mgN/L)	0.84	0.91	1.05	1.09	0.99	0.95
16	P-Tot (mgP/L)	0.002	0.001	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	5.0	5.0	5.0	6.0	5.0
18	SO4 (mg/L)	1.2	35.6	3.6	3.4	3.5	3.6
	BIOLOGICAL/BACTERIOLOGICAL						
1	BOD3-27 (mg/L)	1.8	0.2	0.6	1.8	1.8	0.6
2	DO (mg/L)	6.2	7.6	7.0	8.5	8.9	6.4
3	DO_SAT% (%)	80	93	87	105	94	90
	TRACE & TOXIC						
	CHEMICAL INDICES						
1	HAR_Ca (mgCaCO3/L)	56	56	48	44	48	52
2	HAR_Total (mgCaCO3/L)	109	105	93	93	101	109
3	Na% (%)	12	5	3	14	12	15
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.3	0.1	0.1	0.3	0.3	0.4
	PESTICIDES						

Water Quality Summary for the period : 2015-2016

Station Name : JARAIKELA (EBJ00D5) **Division : E.E., Bhubaneswar**

Local River : Koel **Sub-Division : Rourkela**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	6	378	120	304
3	EC_GEN (µmho/cm)	6	389	127	307
4	pH_FLD (pH units)	6	8.1	7.1	7.7
5	pH_GEN (pH units)	6	8.2	6.9	7.6
6	Temp (deg C)	6	34.5	18.0	26.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	6	23.0	0.0	6.1
2	ALK-TOT (mgCaCO3/L)	6	92	46	65
3	B (mg/L)	6	0.01	0.00	0.01
4	Ca (mg/L)	6	22	18	20
5	Cl (mg/L)	6	22.6	11.3	16.7
6	CO3 (mg/L)	6	27.7	0.0	7.4
7	F (mg/L)	6	0.05	0.05	0.05
8	Fe (mg/L)	6	0.4	0.3	0.4
9	HCO3 (mg/L)	6	85	56	65
10	K (mg/L)	6	2.1	1.2	1.4
11	Mg (mg/L)	6	13.6	10.7	12.1
12	Na (mg/L)	6	9.0	1.4	5.5
13	NO2+NO3 (mg N/L)	6	1.12	0.87	0.99
14	NO2-N (mgN/L)	6	0.07	0.00	0.02
15	NO3-N (mgN/L)	6	1.09	0.84	0.97
16	P-Tot (mgP/L)	6	0.010	0.001	0.007
17	SiO2 (mg/L)	6	6.0	5.0	5.3
18	SO4 (mg/L)	6	35.6	1.2	8.5
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	6	1.8	0.2	1.1
2	DO (mg/L)	6	8.9	6.2	7.4
3	DO_SAT% (%)	6	105	80	92
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	6	56	44	51
2	HAR_Total (mgCaCO3/L)	6	109	93	101
3	Na% (%)	6	15	3	10
4	RSC (-)	6	0.0	0.0	0
5	SAR (-)	6	0.4	0.1	0.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : JARAIKELA (EBJ00D5) | **Division : E.E., Bhubaneswar**

Local River : Koel | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Flood																			
		Jun - Oct																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
	PHYSICAL																				
1	Q (cumec)																				
2	EC_FLD (µmho/cm)	118	120	145	135			167		186	189	159	246	140	148	244	164	160	146	167	
3	EC_GEN (µmho/cm)	118	120	145	134			163		186	189	159	246	140	148	246	164	160	146	164	
4	pH_FLD (pH units)	7.7	7.7	7.4	7.8			8.0		7.6	7.5	8.0	7.6	7.6	7.9	7.4	7.8	7.6	7.5	8.1	
5	pH_GEN (pH units)	7.7	7.7	7.4	7.8			8.1		7.6	7.5	8.0	7.6	7.5	7.9	7.3	7.8	7.6	7.5	8.1	
6	Temp (deg C)	29.3	29.2	29.4	29.7			29.8		28.7	28.7	27.7	28.0	27.7	28.8	27.4	21.0	20.1	20.8	23.0	
	CHEMICAL																				
1	Alk-Phen (mgCaCO3/L)							0.0		0.0	0.0	3.1	0.0		0.0	0.0					
2	ALK-TOT (mgCaCO3/L)							81		64	63	62	46		32	55					
3	B (mg/L)	0.00	0.00	0.00	0.00			0.00		0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	
4	Ca (mg/L)	12	12	8	13			15		17	15	43	18	17	18	21	14	15	14	14	
5	Cl (mg/L)	8.1	8.1	6.8	11.0			13.0		14.9	13.6	17.6	19.5	13.2	16.3	13.8	8.7	10.7	12.1	14.1	
6	CO3 (mg/L)	0.0	0.0	0.0	0.0			0.0		0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	
7	F (mg/L)	0.02	0.02	0.00	0.25			0.00		0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.03	0.00	0.00	0.22	
8	Fe (mg/L)	0.1	0.1	0.1	0.1			0.2		0.1	0.1	0.0	0.6	0.1	0.4	0.3	0.1			0.1	
9	HCO3 (mg/L)	60	60	36	65			68		60	76	68	66	79	56	68	79	73	65	60	
10	K (mg/L)	1.9	1.6	1.7	1.9			2.1		2.3	2.2	1.7	2.1	1.5	1.5	1.6	2.2	2.1	4.5	1.0	
11	Mg (mg/L)	4.1	4.1	2.8	5.6			6.4		6.8	9.4	10.7	6.2	8.1	8.4	11.7	6.1	5.3	4.9	6.3	
12	Na (mg/L)	5.4	5.5	4.2	7.4			8.0		8.9	8.0	4.0	3.9	10.1	3.6	3.6	6.8	7.1	7.2	6.3	
13	NO2+NO3 (mg N/L)	0.35	0.47	1.22	0.65			0.60		0.35	0.54	0.44	1.00	0.43	0.88	0.97	0.33	0.52	0.22	1.21	
14	NO2-N (mgN/L)	0.01	0.00	0.02	0.01			0.04		0.00	0.00	0.07	0.00	0.00	0.02	0.03	0.00	0.00	0.00	0.03	
15	NO3-N (mgN/L)	0.34	0.47	1.19	0.64			0.57		0.35	0.54	0.37	1.00	0.43	0.85	0.93	0.33	0.52	0.22	1.18	
16	P-Tot (mgP/L)	0.005			0.001			0.001		0.001	0.001	0.010	0.001	0.001	0.001	0.004	0.031			0.001	
17	SiO2 (mg/L)	7.5	9.7	8.5	22.0			9.0		7.5	7.4	8.7	19.7	8.6	4.0	5.3	8.2	8.8	9.6	21.2	
18	SO4 (mg/L)	0.9	1.0	1.1	3.3			3.6		13.6	6.6	7.2	14.3	10.5	3.8	13.5	0.9	1.5	1.1	2.9	
	BIOLOGICAL/BACTERIOLOGICAL																				
1	BOD3-27 (mg/L)	0.6	0.8	0.9	0.8			1.0		1.0	1.2	1.1	0.7	0.6	0.8	0.9	1.1	0.8	0.6	0.6	
2	DO (mg/L)	6.9	7.1	6.1	7.0			7.0		6.7	6.8	6.3	6.4	6.2	6.4	6.9	7.5	7.5	8.5	7.8	
3	DO_SAT% (%)	90	92	79	92			92		87	88	80	81	78	83	87	84	82	94	91	
	TRACE & TOXIC																				
1	Al (mg/L)																				
	CHEMICAL INDICES																				
1	HAR_Ca (mgCaCO3/L)	30	31	21	34			37		41	37	108	45	43	46	53	36	37	34	34	
2	HAR_Total (mgCaCO3/L)	47	48	33	53			64		70	77	153	71	77	81	102	61	59	54	60	
3	Na% (%)	21	20	22	22			21		21	19	8	10	24	9	7	19	20	21	18	
4	RSC (-)	0.1	0.1	0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.0	
5	SAR (-)	0.4	0.4	0.3	0.4			0.4		0.4	0.4	0.2	0.2	0.5	0.2	0.2	0.4	0.4	0.4	0.4	
	PESTICIDES																				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : JARAIKELA (EBJ00D5) | **Division : E.E., Bhubaneswar**

Local River : Koel | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Winter										Summer									
		Nov - Feb										Mar - May									
		2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
	PHYSICAL																				
1	Q (cumec)																				
2	EC_FLD (µmho/cm)		161	245	189	202	159	182	150	225	377	217	180	199				182	280	220	310
3	EC_GEN (µmho/cm)		152	245	189	202	159	182	150	225	380	217	180	199				188	280	220	310
4	pH_FLD (pH units)		7.6	7.5	7.5	7.8	7.4	7.6	8.0	7.9	8.0	7.9	8.0	7.9				7.9	7.8	7.3	8.1
5	pH_GEN (pH units)		7.6	7.5	7.5	7.8	7.4	7.6	8.0	7.9	7.9	7.9	8.0	7.9				8.0	7.8	7.6	8.1
6	Temp (deg C)		20.8	22.5	18.3	22.3	19.0	18.0	18.5	20.0	22.0	25.7	25.2	27.5				26.5	26.5	19.5	23.0
	CHEMICAL																				
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	2.0	0.0	0.0				11.5							0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)		50	104	57	65	74				72							60	90	88	112
3	B (mg/L)		0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00				0.01	0.00	0.00	0.00
4	Ca (mg/L)		14	23	17	18	18	19	22	18	18	19	15	16				18	30	22	32
5	Cl (mg/L)		12.1	16.6	12.6	12.3	14.1	19.8	15.5	14.1	20.7	21.4	10.3	12.9				14.1	15.5	11.1	17.0
6	CO3 (mg/L)		0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	13.9	0.0	0.0	0.0				0.0	0.0	0.0	0.0
7	F (mg/L)		0.08	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00				0.05	0.05	0.05	0.05
8	Fe (mg/L)		0.1	0.7	0.1	0.1	0.0	0.5	0.1	0.2	0.3	0.2						0.1	0.2	0.1	0.1
9	HCO3 (mg/L)		61	97	65	86	90	48	117	90	59	77	85	81				73	110	107	136
10	K (mg/L)		1.9	1.9	2.5	1.6	1.3	3.8	1.6	1.3	1.3	2.4	2.0	2.2				0.5	1.3	1.6	2.5
11	Mg (mg/L)		4.8	7.3	6.8	8.7	3.9	9.5	6.8	8.7	12.2	6.6	5.5	7.0				5.6	10.2	9.7	11.7
12	Na (mg/L)		8.8	11.2	8.2	7.5	6.7	11.1	12.0	6.7	6.7	12.3	7.2	8.8				9.9	8.1	6.4	9.4
13	NO2+NO3 (mg N/L)		0.35	0.50	0.32	0.42	0.44	0.83	0.78	0.75	1.06	0.58	0.52	0.24				0.73	0.64	0.24	0.57
14	NO2-N (mgN/L)		0.00	0.02	0.00	0.00	0.07	0.00	0.00	0.02	0.01	0.04	0.01	0.03				0.00	0.00	0.00	0.00
15	NO3-N (mgN/L)		0.35	0.48	0.32	0.42	0.37	0.83	0.78	0.73	1.04	0.54	0.50	0.21				0.73	0.64	0.24	0.57
16	P-Tot (mgP/L)		0.001	0.002	0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.001						0.060	0.002	0.001	0.001
17	SiO2 (mg/L)		14.0	9.4	7.8	6.3	11.0	18.3	10.2	4.5	5.5	15.2	10.4	8.8				7.3	9.6	9.7	9.6
18	SO4 (mg/L)		7.3	11.6	9.0	6.8	1.2	2.2	12.8	1.2	3.5	2.0	1.2	0.8				10.2	13.6	3.1	7.6
	BIOLOGICAL/BACTERIOLOGICAL																				
1	BOD3-27 (mg/L)		0.9	0.9	1.4	1.1	1.8	0.3	0.5	0.3	1.8	0.5	0.6	0.7				0.8	1.0	1.0	1.4
2	DO (mg/L)		8.7	8.5	8.2	8.0	8.0	8.3	7.0	10.8	8.7	6.9	6.5	7.4				7.5	7.5	7.2	7.1
3	DO_SAT% (%)		96	98	87	91	86	88	75	119	100	85	79	93				92	93	77	83
	TRACE & TOXIC																				
1	Al (mg/L)																				
	CHEMICAL INDICES																				
1	HAR_Ca (mgCaCO3/L)		35	57	42	46	46	48	56	46	46	48	39	39				46	76	56	80
2	HAR_Total (mgCaCO3/L)		55	87	70	83	62	88	84	83	97	76	62	68				69	119	97	129
3	Na% (%)		25	23	19	16	20	20	24	15	13	25	21	22				24	13	12	13
4	RSC (-)		0.0	0.0	0.0	0.0	0.3	0.0	0.4	0.0	0.0	0.0	0.2	0.0				0.0	0.0	0.0	0.0
5	SAR (-)		0.5	0.5	0.4	0.4	0.4	0.5	0.6	0.3	0.3	0.6	0.4	0.5				0.5	0.3	0.3	0.4
	PESTICIDES																				

Water Quality Seasonal Average for the period: 2001-2016

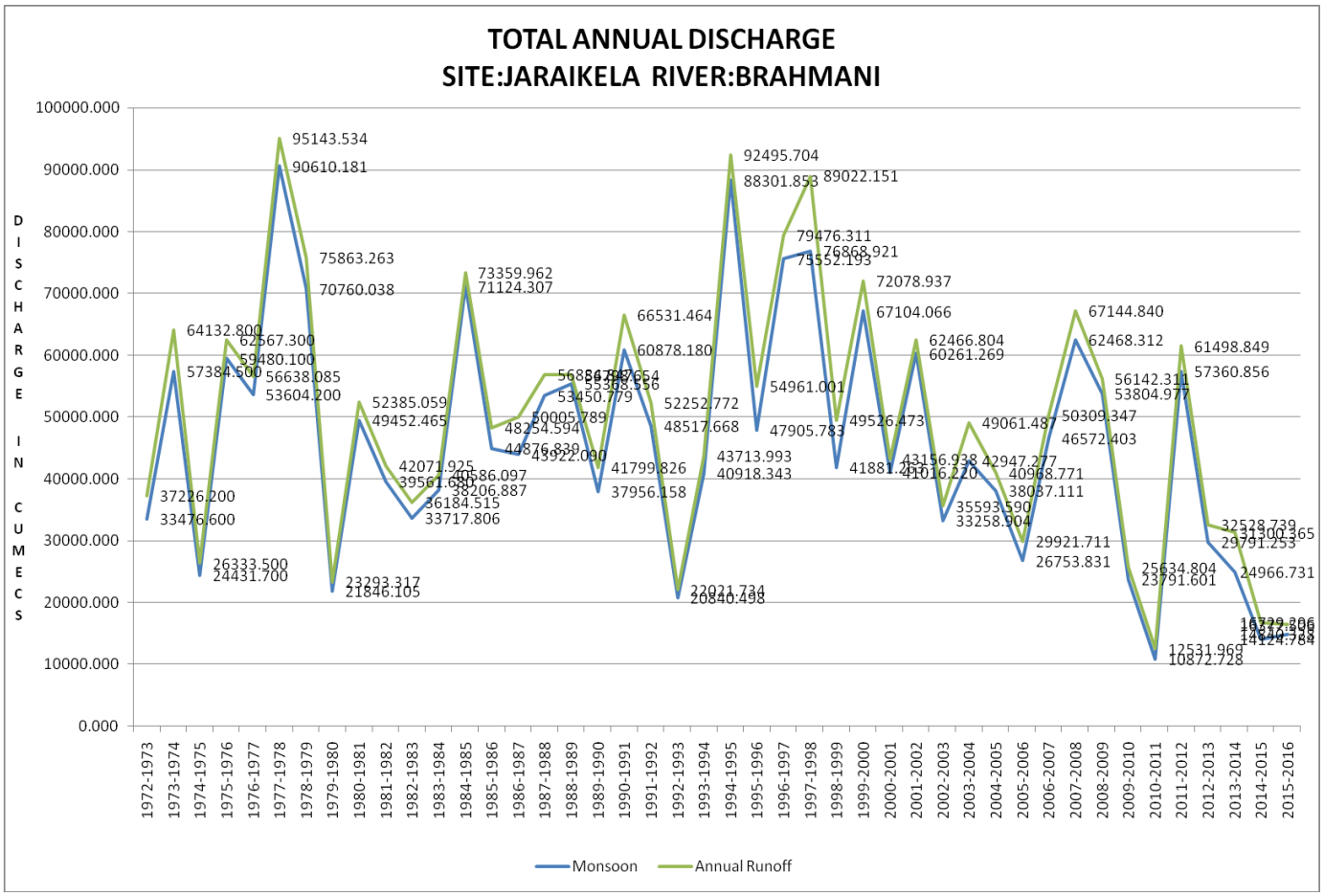
Station Name : JARAIKELA (EBJ00D5) | **Division : E.E., Bhubaneswar**

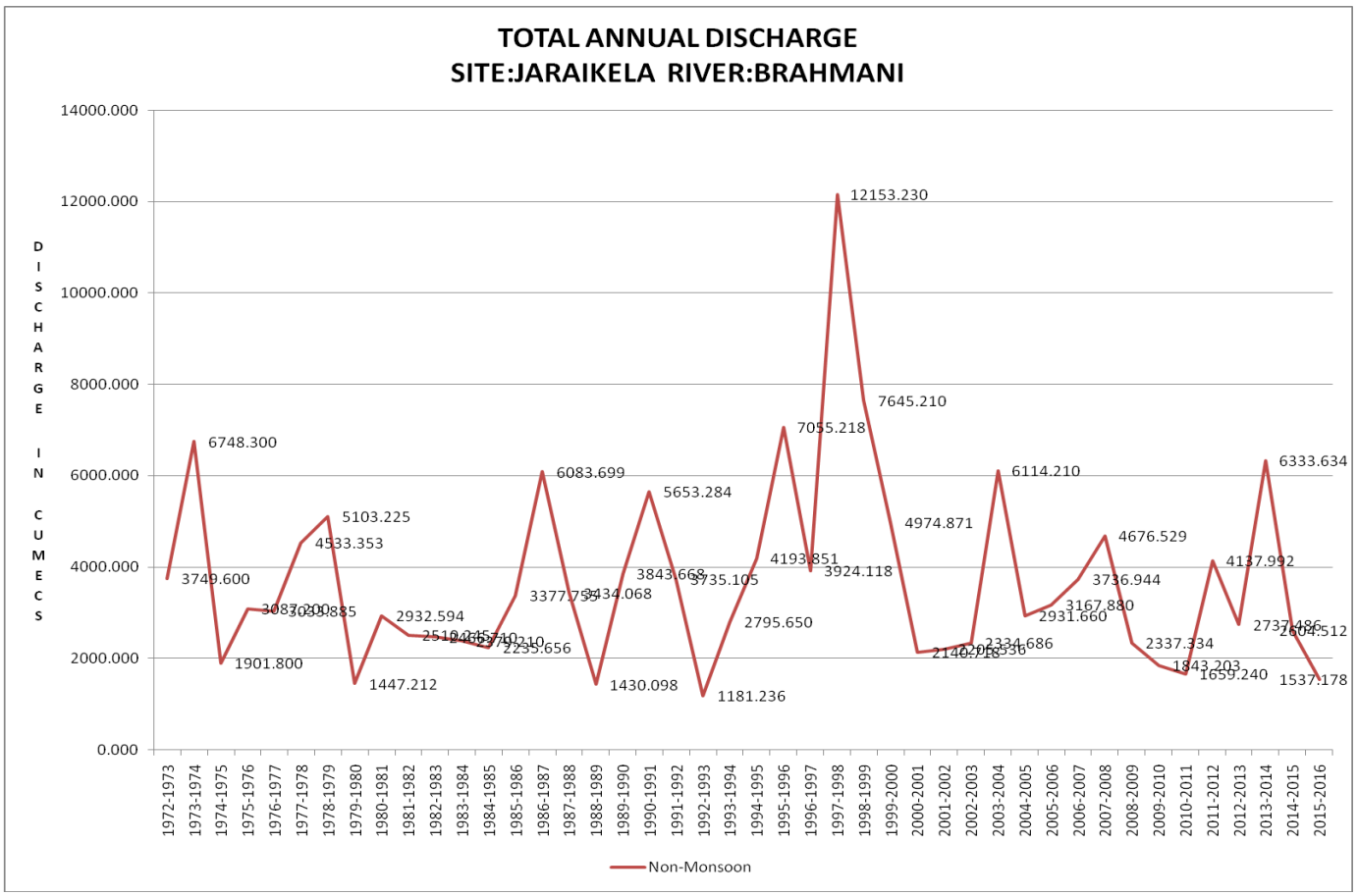
Local River : Koel | **Sub-Division : Rourkela**

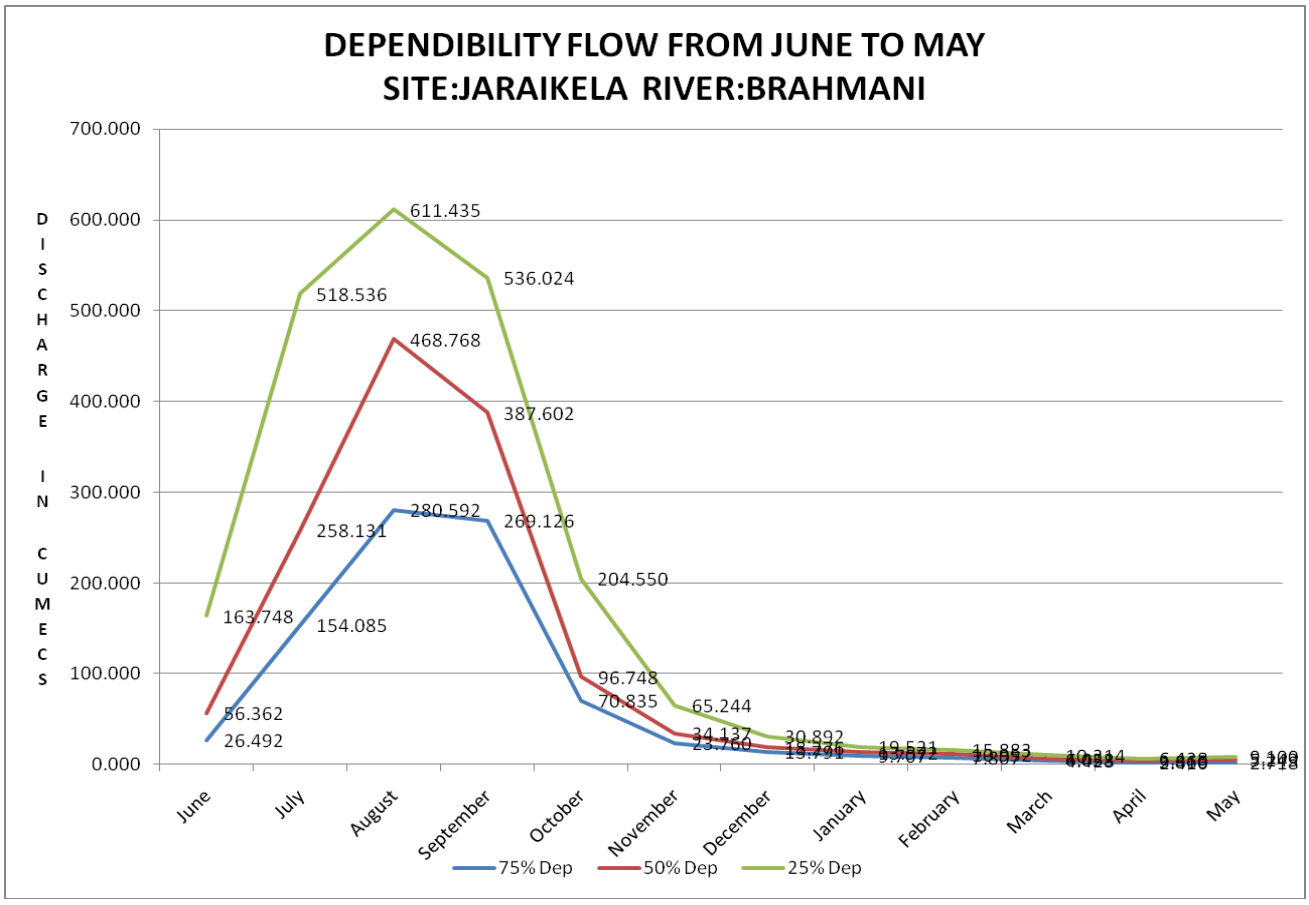
River Water

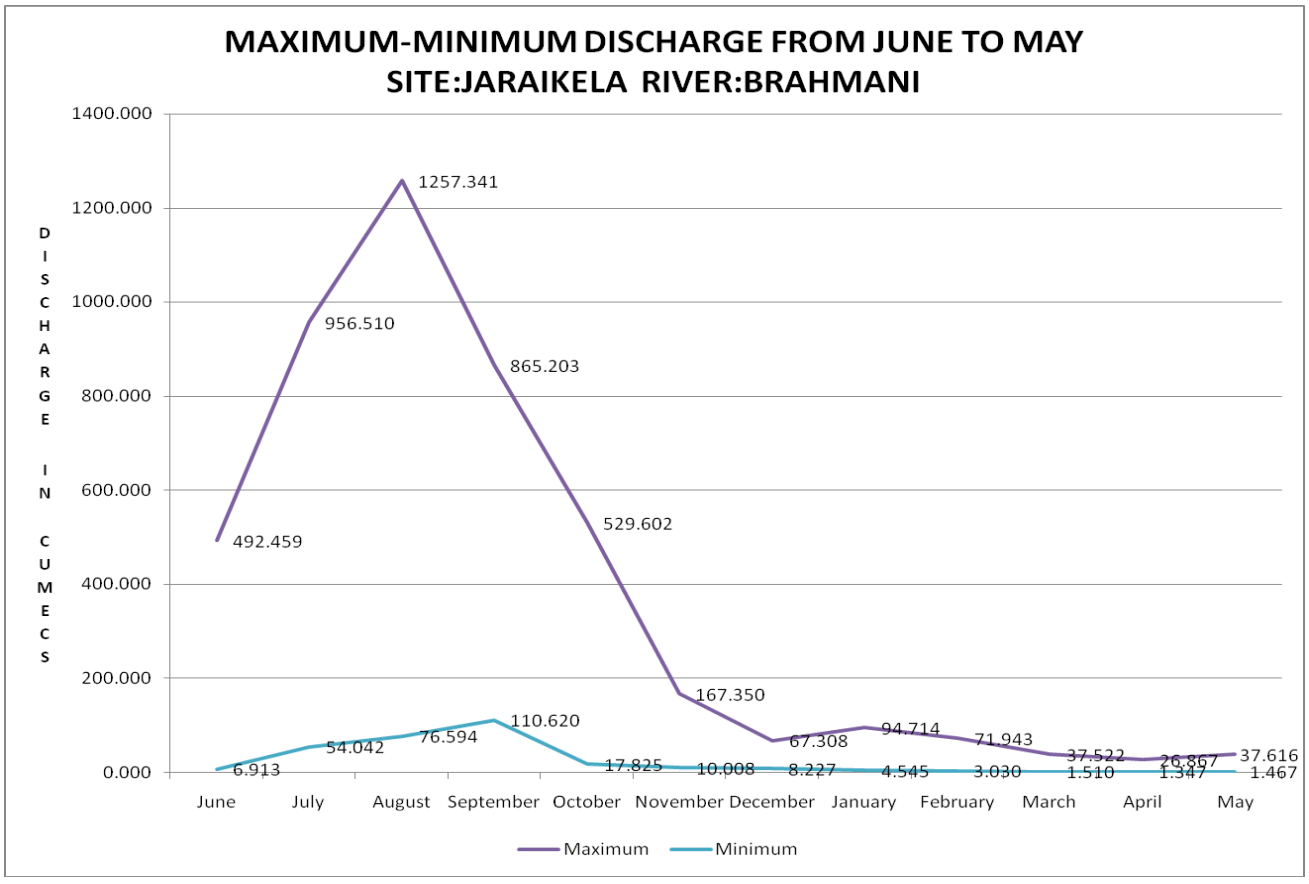
S.No	Parameters					
		2012	2013	2014	2015	2016
	PHYSICAL					
1	Q (cumec)					
2	EC_FLD (µmho/cm)	210	230	194	253	340
3	EC_GEN (µmho/cm)	210	230	194	253	343
4	pH_FLD (pH units)	7.8	7.8	7.7	7.6	8.0
5	pH_GEN (pH units)	7.8	7.8	7.7	7.6	8.1
6	Temp (deg C)	24.0	26.0	25.2	26.0	34.5
	CHEMICAL					
1	Alk-Phen (mgCaCO3/L)	0.0				13.8
2	ALK-TOT (mgCaCO3/L)	83				83
3	B (mg/L)	0.01	0.00	0.00	0.00	0.01
4	Ca (mg/L)	29	18	18	29	21
5	Cl (mg/L)	13.2	21.3	14.6	13.2	17.0
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	16.6
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.0	5.2	0.0	0.2	0.4
9	HCO3 (mg/L)	101	104	79	101	68
10	K (mg/L)	1.5	8.1	2.1	1.5	1.3
11	Mg (mg/L)	4.9	8.2	5.2	4.9	13.6
12	Na (mg/L)	6.9	14.2	12.1	6.3	9.0
13	NO2+NO3 (mg N/L)	0.46	9.53	0.53	0.67	0.95
14	NO2-N (mgN/L)	0.07	0.00	0.00	0.00	0.00
15	NO3-N (mgN/L)	0.39	9.53	0.53	0.67	0.95
16	P-Tot (mgP/L)	0.010	0.001	0.001	0.001	0.010
17	SiO2 (mg/L)	10.0	18.3	10.8	6.0	5.0
18	SO4 (mg/L)	1.6	2.8	12.8	1.4	3.6
	BIOLOGICAL/BACTERIOLOGICAL					
1	BOD3-27 (mg/L)	1.0	0.6	0.2	1.0	0.6
2	DO (mg/L)	6.8	6.6	6.9	5.8	6.3
3	DO_SAT% (%)	80	81	84	71	90
	TRACE & TOXIC					
1	Al (mg/L)					
	CHEMICAL INDICES					
1	HAR_Ca (mgCaCO3/L)	72	46	46	72	52
2	HAR_Total (mgCaCO3/L)	92	80	67	92	109
3	Na% (%)	14	26	27	13	15
4	RSC (-)	0.0	0.1	0.0	0.0	0.0
5	SAR (-)	0.3	0.7	0.6	0.3	0.4
	PESTICIDES					

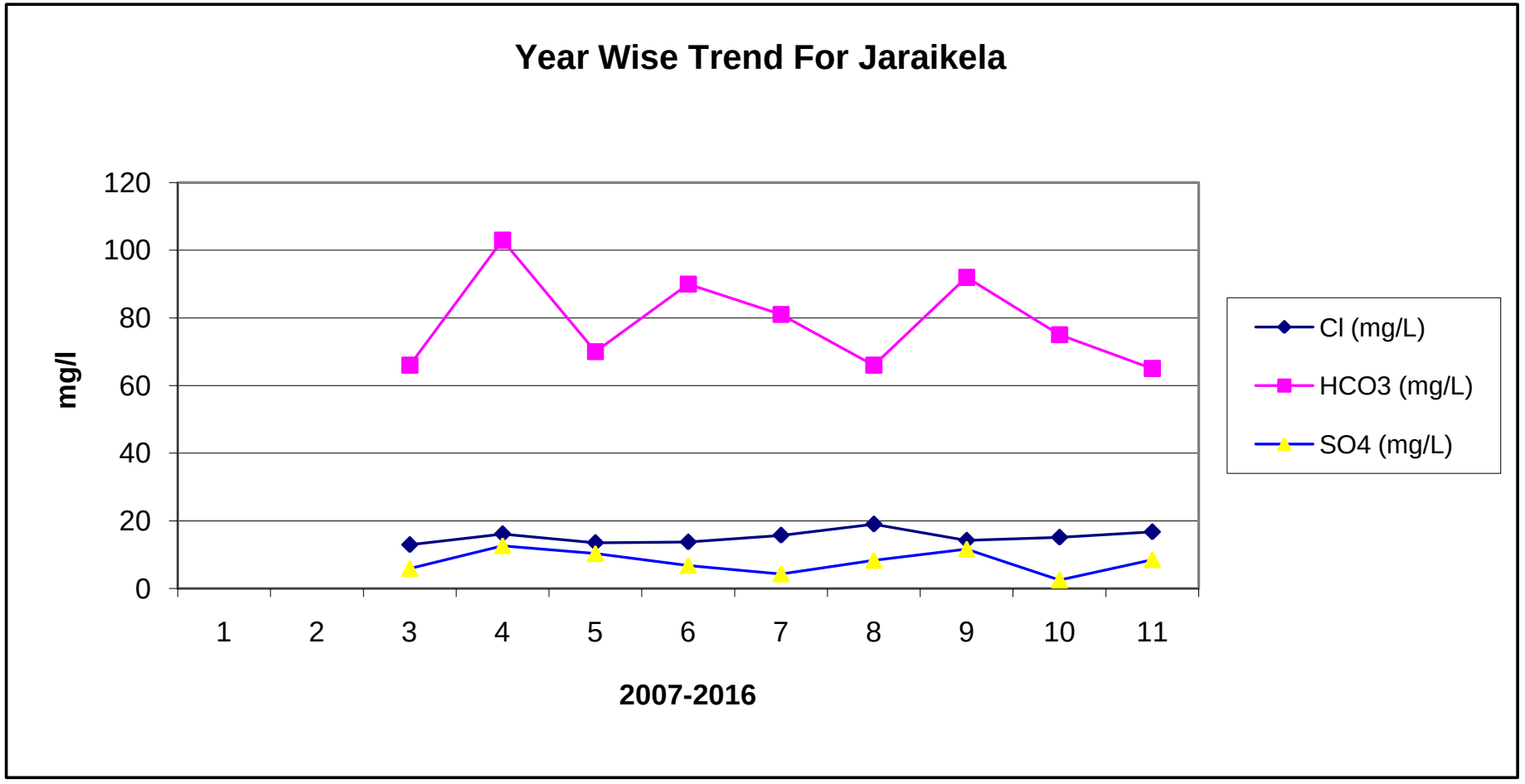
TREND ANALYSIS

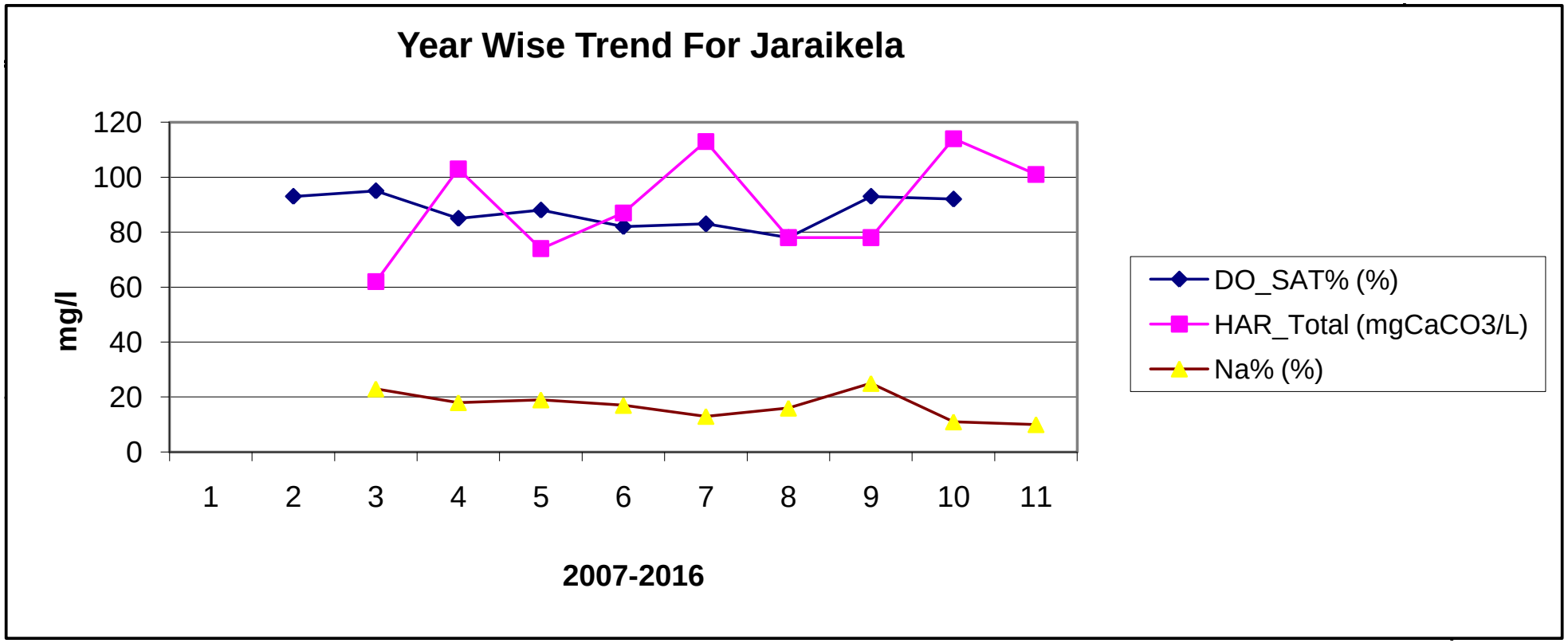

TOTAL ANNUAL DISCHARGE
SITE:JARAIKELA RIVER:BRAHMANI
DISCHARGE IN CUMECS
Monsoon
Annual Runoff

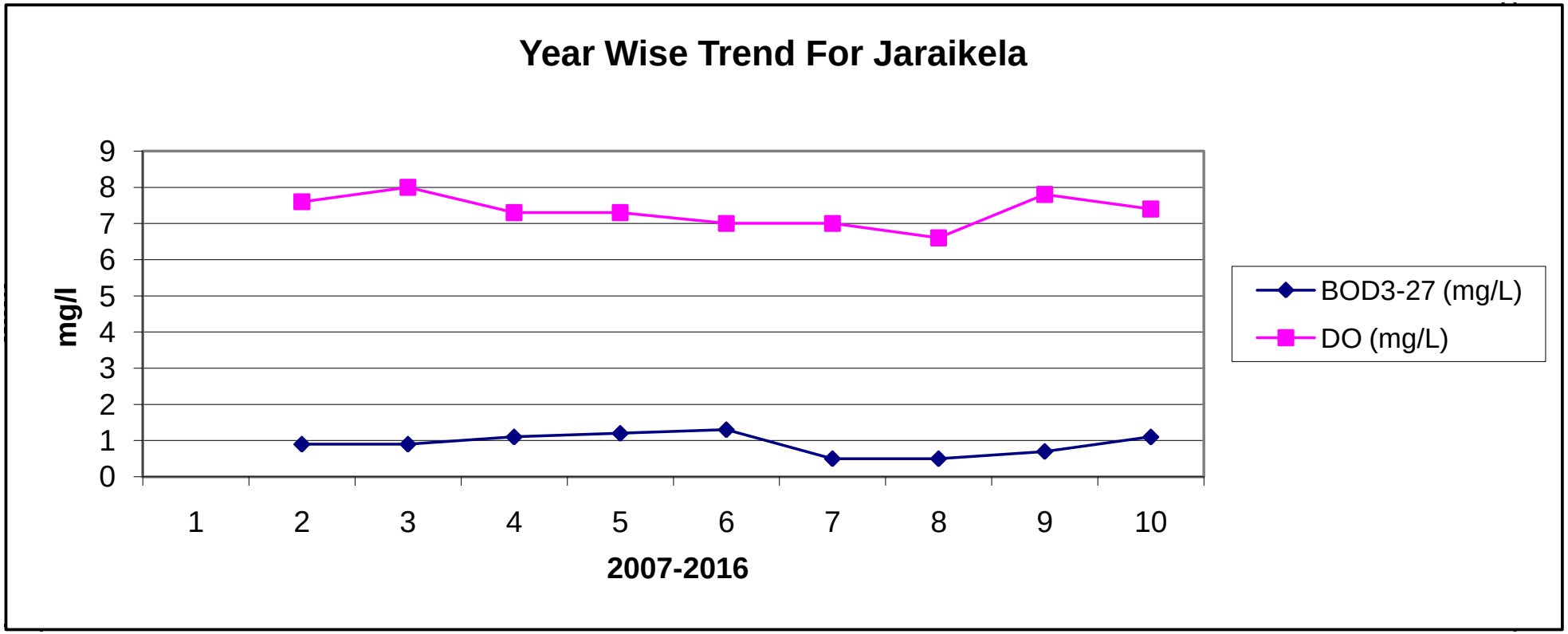

TOTAL ANNUAL DISCHARGE
SITE:JARAIKELA RIVER:BRAHMANI
DISCHARGE IN CUMECS
Non-Monsoon

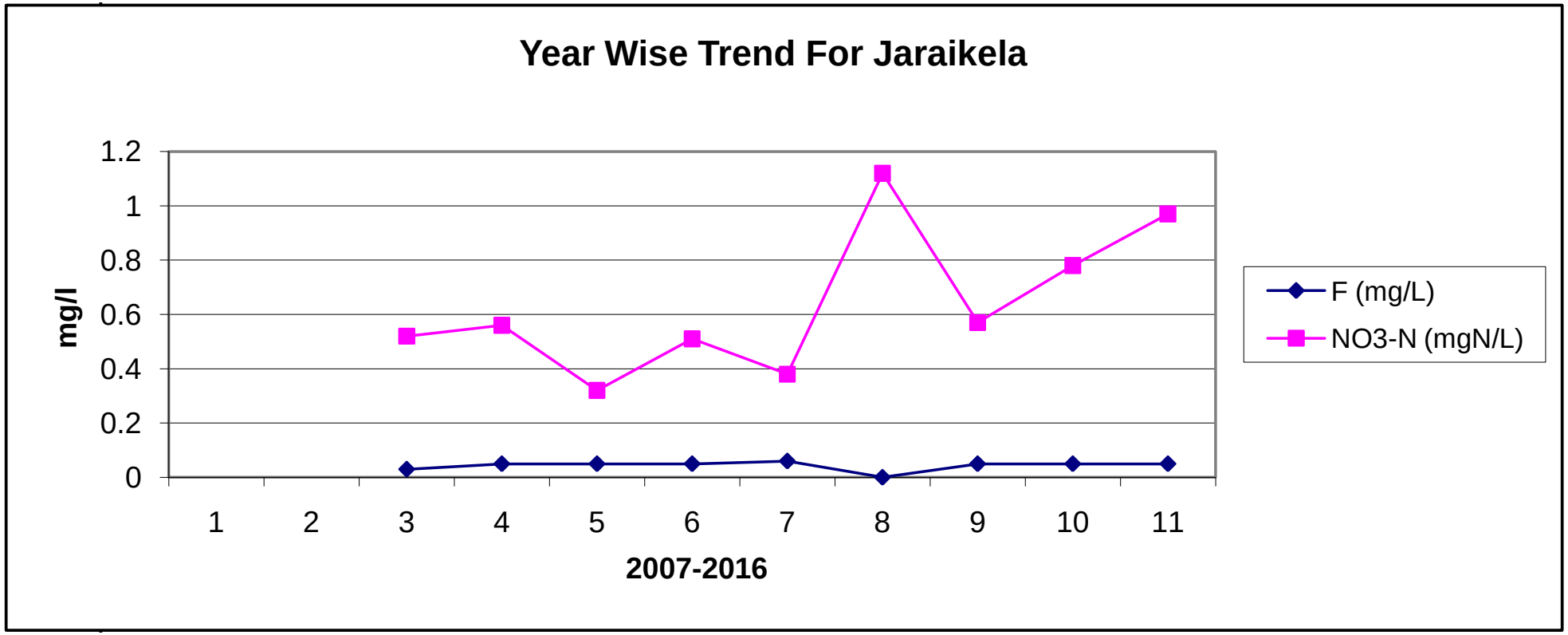

DEPENDIBILITY FLOW FROM JUNE TO MAY
SITE:JARAIKELA RIVER:BRAHMANI
DISCHARGE IN CUMECS
700.000
600.000
500.000
400.000
300.000
200.000
100.000
0.000
611.435
536.024
518.536
468.768
387.602
280.592
269.126
258.131
204.550
163.748
154.085
96.748
70.835
65.244
56.362
26.492
June
July
August
September
October
November
December
January
February
March
April
May
75% Dep
50% Dep
25% Dep

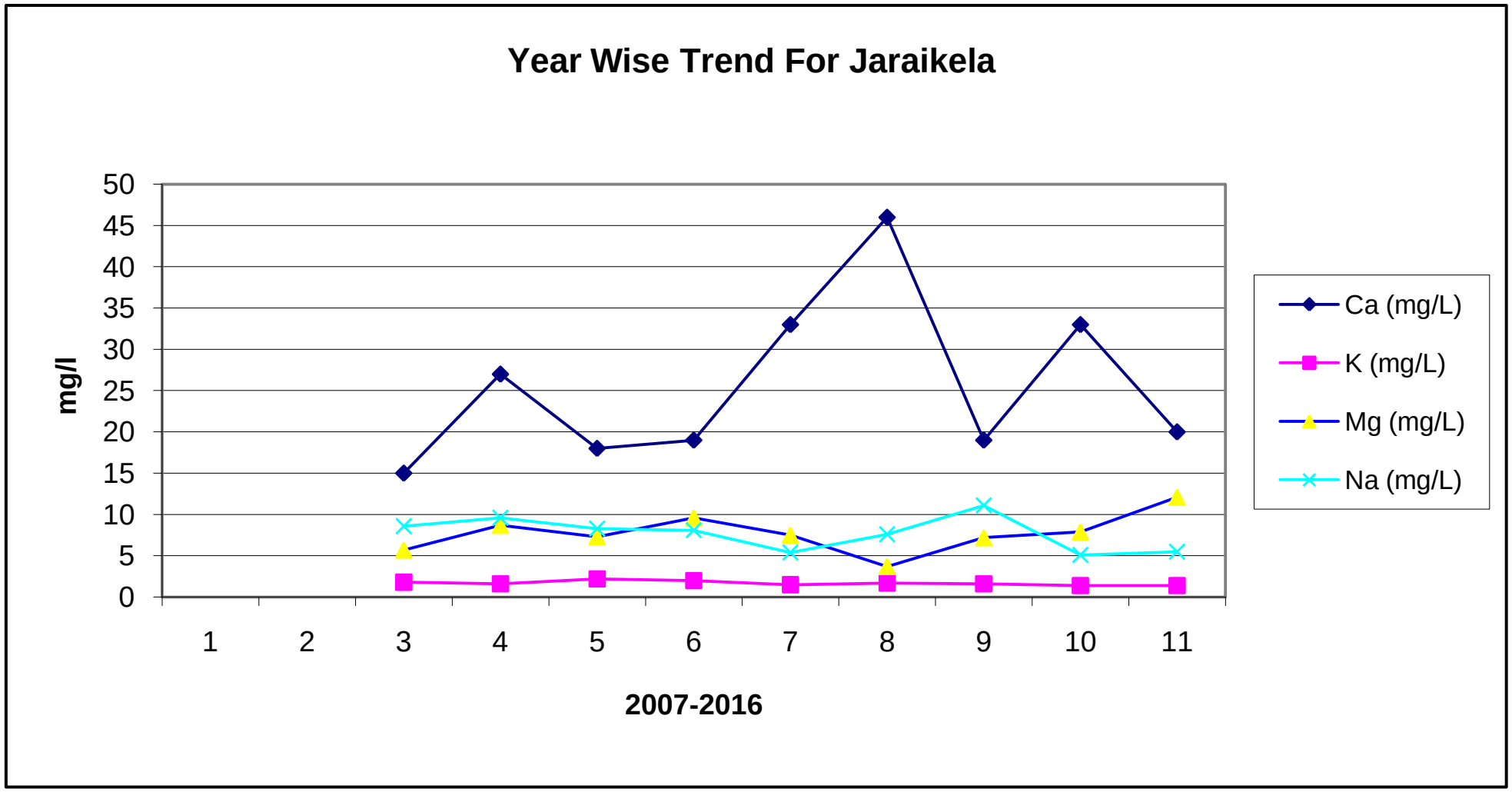

MAXIMUM-MINIMUM DISCHARGE FROM JUNE TO MAY
SITE:JARAIKELA RIVER:BRAHMANI
DISCHARGE IN CUMECS
1400.000
1200.000
1000.000
800.000
600.000
400.000
200.000
0.000
1257.341
956.510
865.203
529.602
492.459
167.350
110.620
94.714
76.594
71.943
67.308
54.042
37.616
37.522
26.867
17.825
10.008
8.227
6.913
4.545
3.030
1.510
1.347
1.467
June
July
August
September
October
November
December
January
February
March
April
May
Maximum
Minimum


Year Wise Trend For Jaraikela
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2007-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Jaraikela
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2007-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Jaraikela
mg/l
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
2007-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Jaraikela
1.2
1
0.8
0.6
0.4
0.2
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2007-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Jaraikela
mg/l
50
45
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
2007-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

HYDROLOGICAL DATA

HISTORY SHEET

Water Year : 2015-2016

Site	**:**	**PANPOSH**	**Code**	**:**	**EB000H6**
State	:	Orissa	District		Sundergarh
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmni
Tributary	:	Brahmni	Sub Tributary	:	Brahmni
Sub-Sub Tributary	:	Brahmni	Local River	:	Brahmni
Division	:	E.E., Bhubaneswar	Sub-Division	:	Rourkela
Drainage Area	:	19448 Sq. Km.	Bank	:	Left
Latitude	:	22°16'19"	Longitude	:	84°51'07"
Zero of Gauge (m)	:	170.5 (m.s.l)	01.01.1996	-	31.12.2025
		Opening Date	Closing Date		
Gauge	:	01.07.1972			
Discharge	:	21.06.1996			
Sediment	:	01.08.1996			
Water Quality	:	01.11.1990			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1997-1998	9229	179.350	07.08.1997	12.30	171.140	03.06.1997
1998-1999	8815	178.620	11.09.1998	12.25	171.150	19.05.1999
1999-2000	6307	177.820	08.08.1999	8.565	171.020	24.04.2000
2000-2001	3999	176.325	27.07.2000	8.559	171.060	28.04.2001
2001-2002	11628	179.680	22.07.2001	9.718	171.100	27.03.2002
2002-2003	3066	175.515	13.09.2002	10.51	171.220	17.04.2003
2003-2004	6600	177.900	25.10.2003	11.98	171.050	29.05.2004
2004-2005	5429	177.235	20.09.2004	10.32	171.320	30.05.2005
2005-2006	3372	175.520	01.07.2005	8.010	170.985	18.04.2006
2006-2007	4701	176.800	23.08.2006	8.843	171.110	04.04.2007
2007-2008	9661	179.345	20.08.2007	9.809	171.110	02.06.2007
2008-2009	5412	176.350	08.07.2008	9.497	171.150	14.05.2009
2009-2010	4184	175.175	09.09.2009	9.179	171.270	21.04.2010
2010-2011	1279	173.575	18.09.2010	6.484	171.050	15.02.2011
2011-2012	10947	181.440	24.09.2011	10.21	171.310	07.04.2012
2012-2013	3500	175.350	12.08.2012	10.31	171.160	13.06.2012
2013-2014	5554	176.225	15.10.2013	13.93	171.180	01.06.2013
2014-2015	3852	174.910	22.07.2014	-94.509	171.080	23.02.2015
2015-2016	7431	177.475	11.07.2015	9.634	171.180	03.05.2016

Stage-Discharge Data for the period 2015 - 2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	171.180	10.39	171.750	176.6	172.025	267.9	173.040	1074	171.360	102.4	171.360	102.4
2	171.160	11.09	172.205	358.4	171.940	188.1 *	173.005	1031	171.360	139.4 *	171.270	40.82
3	171.065	11.09	171.995	276.5	175.275	3010	173.090	1083	171.355	95.01	171.290	43.99
4	171.235	15.49	172.010	317.6	176.250	5179	172.330	533.3	171.340	93.00 *	171.260	38.52
5	171.120	12.87	171.910	296.0 *	174.170	2022	172.350	537.0	171.310	90.04	171.250	43.21
6	171.110	14.62	171.985	310.4	173.065	897.2	171.980	302.6 *	171.330	89.25	171.240	41.92
7	171.200	15.06 *	171.895	252.5	172.760	645.1	171.895	261.5	171.310	66.85	171.200	27.41
8	171.150	13.03	171.980	301.2	172.300	346.5	171.825	219.1	171.265	63.03	171.190	26.58 *
9	171.320	24.35	172.530	685.7	172.210	271.2 *	171.785	206.0	171.255	61.82	171.180	26.10
10	171.275	18.48	173.055	1053	172.080	274.2	171.740	186.1	171.240	59.75	171.150	23.48
11	171.140	15.39	177.475	7431	171.995	240.2	171.780	227.7	171.290	65.00 *	171.140	23.00 *
12	171.195	14.66	174.950	3739 *	171.955	222.1	171.750	210.9	171.240	47.33	171.140	22.58
13	171.155	12.05	173.390	1395	172.200	338.3	171.670	183.7 *	171.225	45.67	171.140	22.11
14	171.230	30.35 *	172.870	617.7	172.170	378.5	171.480	141.6	171.250	46.54	171.170	24.36
15	171.720	167.0	172.270	340.6	172.120	332.4 *	171.480	139.2	171.200	41.83	171.160	23.40 *
16	171.440	47.38	172.220	315.2	171.970	227.4 *	171.470	136.5	171.190	41.42	171.150	22.43
17	171.405	40.46	172.170	288.3	172.095	317.3	171.470	132.0 *	171.220	43.82	171.150	21.05
18	171.470	73.69	173.270	603.8 *	172.710	775.8	171.500	154.2	171.230	46.28 *	171.140	20.69
19	171.350	52.89	173.180	554.4 *	173.290	1530	171.500	152.5	171.160	40.16	171.120	25.12
20	171.320	37.86	172.450	441.9	172.640	704.0	171.490	147.0 *	171.220	44.12	171.200	29.66
21	171.300	35.80 *	173.485	1196	172.640	700.9	171.500	145.4	171.160	32.00 *	171.140	26.19
22	171.300	35.79	173.065	982.1	172.495	586.1	171.510	153.2	171.150	30.00 *	171.140	25.00 *
23	171.285	35.09	172.935	814.8	172.130	343.9 *	171.740	195.7	171.220	43.03	171.130	23.30
24	171.290	32.98	175.125	2915	172.160	372.4	172.090	315.4	171.200	32.00 *	171.220	26.27
25	171.830	202.7	173.615	1238	172.340	446.0	172.030	293.1 *	171.130	25.00 *	171.200	25.20 *
26	171.840	195.0	173.530	1165 *	172.415	563.4	171.980	284.7	171.200	32.93	171.180	24.14
27	171.595	139.2	173.100	903.0	172.280	478.4	171.940	271.1 *	171.160	23.87	171.170	23.41
28	171.450	74.42 *	173.300	1055	172.285	496.2	171.600	166.0	171.170	24.36	171.200	24.25
29	171.415	58.77	172.570	498.8	172.075	379.6	171.420	116.4	171.160	23.07	171.190	23.40 *
30	171.480	69.04	172.325	380.6	172.050	358.9 *	171.360	104.1	171.200	26.13	171.170	20.84
31			172.165	312.8	172.180	418.6			171.335	51.80		
Ten-Daily Mean												
I Ten-Daily	171.182	14.65	172.132	402.8	173.207	1310	172.304	543.4	171.313	86.06	171.239	41.45
II Ten-Daily	171.342	49.18	173.425	1573	172.314	506.6	171.559	162.5	171.223	46.22	171.151	23.44
III Ten-Daily	171.478	87.88	173.201	1042	172.277	467.7	171.717	204.5	171.190	31.29	171.174	24.20
Monthly												
Min.	171.065	10.39	171.750	176.6	171.940	188.1	171.360	104.1	171.130	23.07	171.120	20.69
Max.	171.840	202.7	177.475	7431	176.250	5179	173.090	1083	171.360	139.4	171.360	102.4
Mean	171.334	50.57	172.928	1007	172.589	752	171.860	303.5	171.240	53.77	171.188	29.7

Annual Runoff in MCM = 6111 Annual Runoff in mm = 314

Peak Observed Discharge = 7431 cumecs on 11/07/2015 Corres. Water Level :177.475 m

Lowest Observed Discharge = 9.634 cumecs on 03/05/2016 Corres. Water Level :171.18 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2015 - 2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	171.150	20.07	171.190	18.91	171.160	18.50	171.250	17.56	171.160	12.05	171.160	11.83 *
2	171.170	20.79	171.150	18.19	171.140	17.67	171.160	13.67	171.220	12.61	171.180	12.62
3	171.160	19.88	171.150	18.10 *	171.130	17.03	171.230	16.81	171.250	22.93 *	171.180	9.634
4	171.150	18.55	171.150	18.02	171.120	16.89	171.250	17.09	171.200	19.06	171.190	9.705
5	171.110	17.40	171.230	20.67	171.090	15.87	171.260	17.99	171.070	14.53	171.210	12.47
6	171.150	18.81 *	171.180	19.70	171.080	15.70	171.270	18.94 *	171.140	12.55	171.200	10.95
7	171.180	19.88	171.200	20.22	171.070	15.65 *	171.230	15.14 *	171.230	13.04	171.140	11.31
8	171.190	20.40	171.210	19.23	171.070	14.38	171.200	12.39	171.270	18.28	171.090	11.06 *
9	171.170	19.73	171.150	18.62	171.000	13.84	171.180	14.23	171.250	14.80	171.040	10.98
10	171.220	20.28	171.190	20.40 *	170.960	12.63	171.150	13.15	171.250	14.71 *	171.050	11.01
11	171.200	18.94	171.150	17.03	170.900	10.66	171.100	12.67	171.250	15.17	171.060	11.32
12	171.210	19.44	171.120	15.72	171.030	13.62	171.110	12.91	171.240	14.66	171.100	11.03
13	171.150	18.65 *	171.220	18.96	171.100	12.33	171.150	13.83 *	171.210	12.89	171.120	11.72
14	171.130	18.39	171.230	19.38	171.200	13.19 *	171.120	12.88	171.120	12.88	171.140	11.24
15	171.230	20.80	171.220	19.30	171.200	13.18	171.210	14.79	171.140	9.913	171.140	11.47 *
16	171.160	19.64	171.180	17.59	171.220	13.93	171.200	14.41	171.120	9.902	171.140	11.70
17	171.110	17.49	171.220	18.57 *	171.230	14.34	171.180	13.79	171.180	13.79	171.170	11.53
18	171.210	20.00	171.200	18.08	171.240	14.68	171.130	13.30	171.060	11.35	171.410	82.32
19	171.150	19.28	171.230	19.36	171.230	14.15	171.100	12.11	171.080	11.89	171.340	59.89
20	171.180	18.85 *	171.230	19.34	171.240	14.48	171.050	13.61 *	171.100	11.90 *	171.370	62.05
21	171.220	20.25	171.190	17.37	171.230	12.95 *	171.020	14.51	171.120	11.71	171.340	50.59 *
22	171.210	19.53	171.180	17.35	171.220	11.41	171.000	14.01	171.130	10.68	171.250	24.82 *
23	171.180	20.52	171.210	17.86	171.190	12.14	171.010	14.04	171.110	10.44	171.200	13.36
24	171.180	20.50 *	171.210	17.11 *	171.180	11.15	171.000	14.00 *	171.110	10.43 *	171.190	11.28
25	171.170	18.12 *	171.210	17.58	171.170	10.87	171.000	14.00 *	171.100	10.27	171.250	14.10
26	171.200	19.57	171.200	17.30 *	171.220	11.41	171.040	14.52	171.110	11.45	171.190	11.46
27	171.190	19.11 *	171.200	18.25	171.300	19.78	171.160	15.58 *	171.100	11.03	171.300	19.39
28	171.180	18.64	171.190	17.69	171.280	18.99 *	171.180	15.74	171.130	11.33	171.200	12.85
29	171.160	18.48	171.200	17.92	171.260	18.17	171.170	15.22	171.120	11.01	171.240	14.13 *
30	171.160	18.25	171.210	17.51			171.130	13.59	171.140	11.04	171.230	14.16
31	171.130	17.44	171.200	17.50 *			171.200	13.27			171.150	12.12
Ten-Daily Mean												
I Ten-Daily	171.165	19.58	171.180	19.21	171.082	15.82	171.218	15.70	171.204	15.46	171.144	11.16
II Ten-Daily	171.173	19.15	171.200	18.33	171.159	13.46	171.135	13.43	171.150	12.43	171.199	28.43
III Ten-Daily	171.180	19.13	171.200	17.59	171.228	14.10	171.083	14.41	171.117	10.94	171.231	18.02
Monthly												
Min.	171.110	17.40	171.120	15.72	170.900	10.66	171.000	12.11	171.060	9.902	171.040	9.634
Max.	171.230	20.80	171.230	20.67	171.300	19.78	171.270	18.94	171.270	22.93	171.410	82.32
Mean	171.173	19.28	171.194	18.35	171.154	14.47	171.143	14.51	171.157	12.94	171.193	19.16

Peak Computed Discharge = 3739 cumecs on 12/07/2015 Corres. Water Level :174.95 m

Lowest Computed Discharge = 10.43 cumecs on 24/04/2016 Corres. Water Level :171.11 m

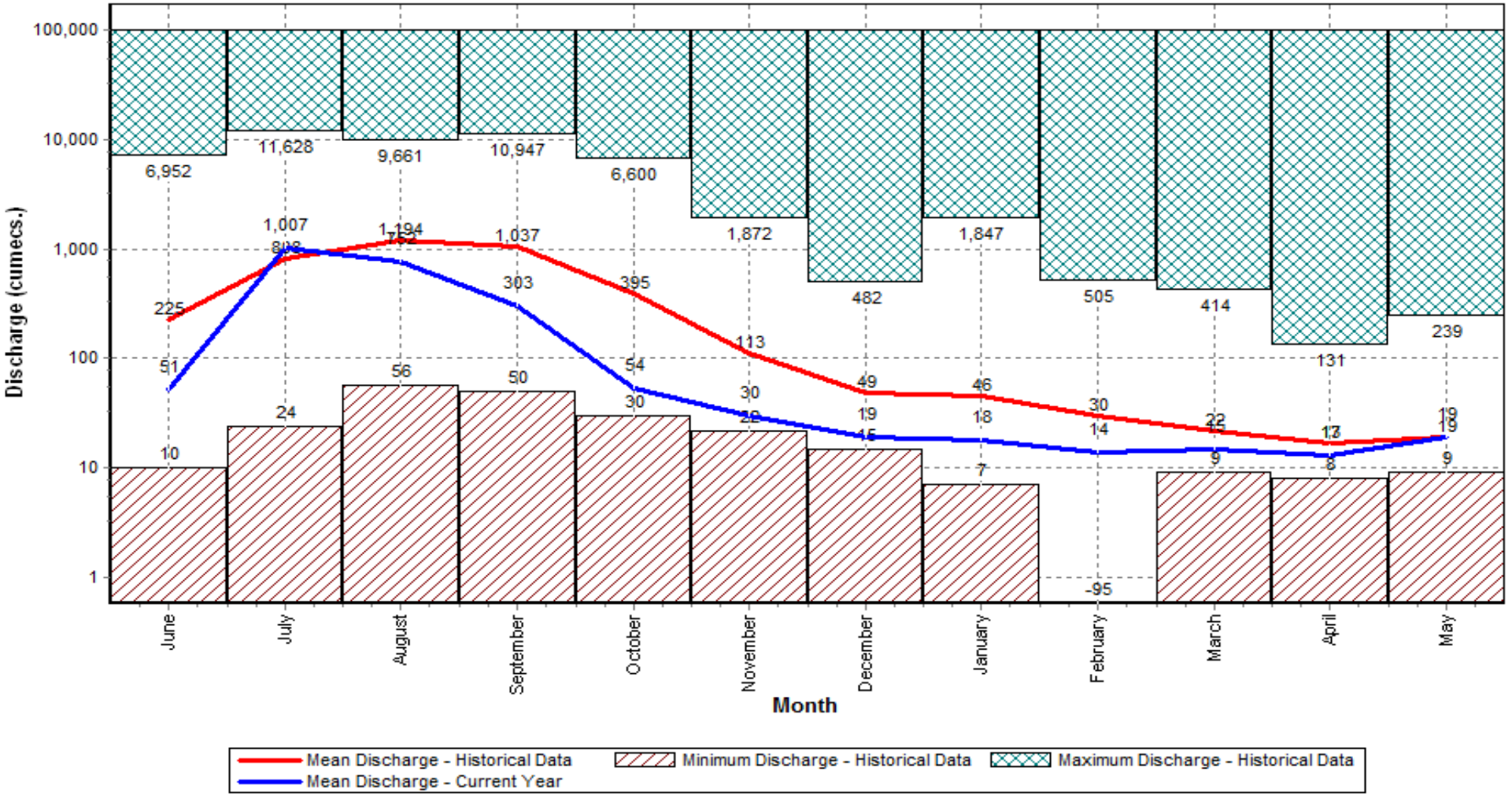
Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2015-2016

Station Name : PANPOSH (EB000H6) | **Data considered : 1997-2016** | **Division : E.E., Bhubaneswar**

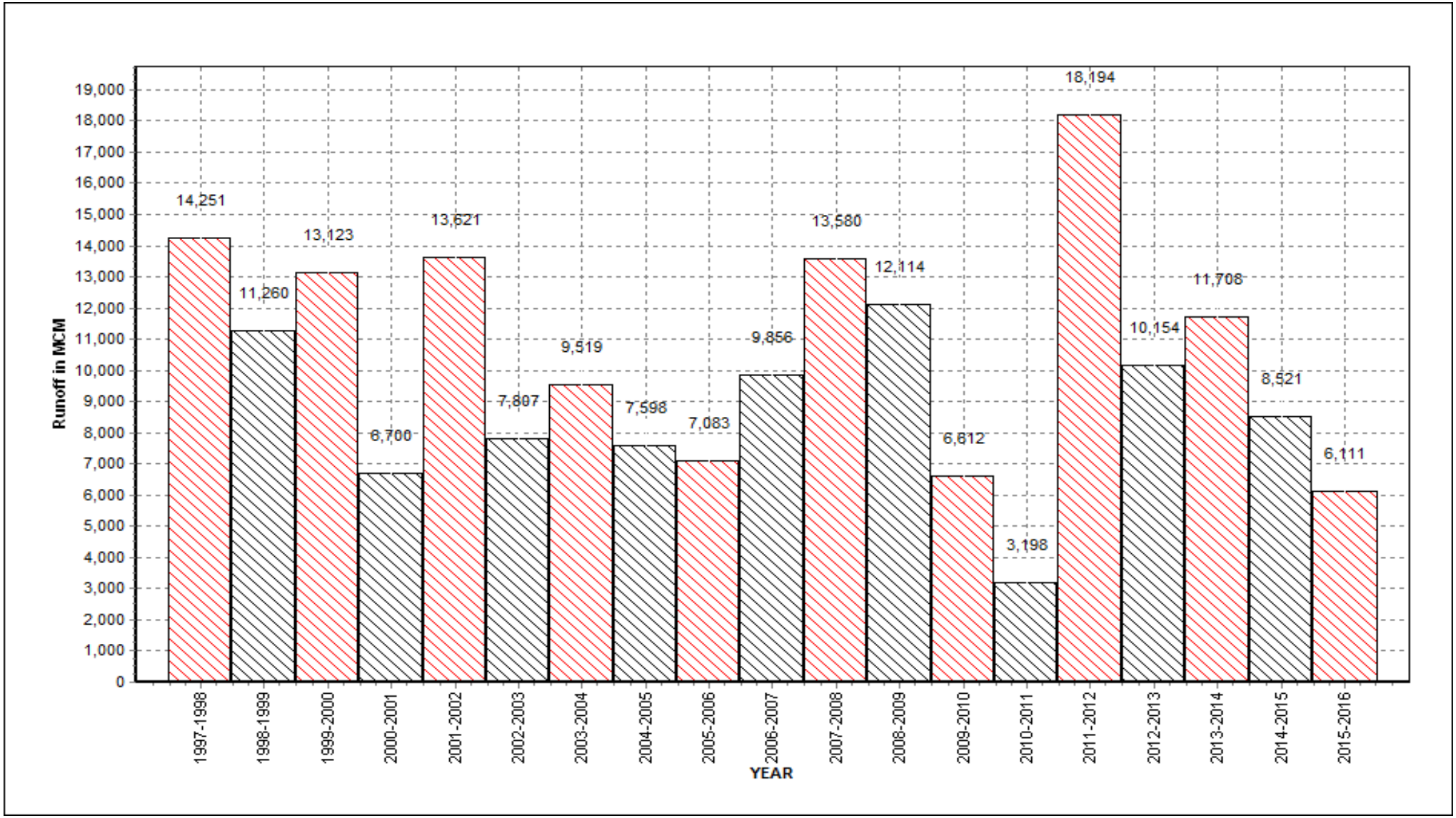
Local River : Brahmni | **Sub-Division : Rourkela**



Annual Runoff Values for the period: 1997 - 2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



Note: Missing values have not been considered while arriving at Annual Runoff

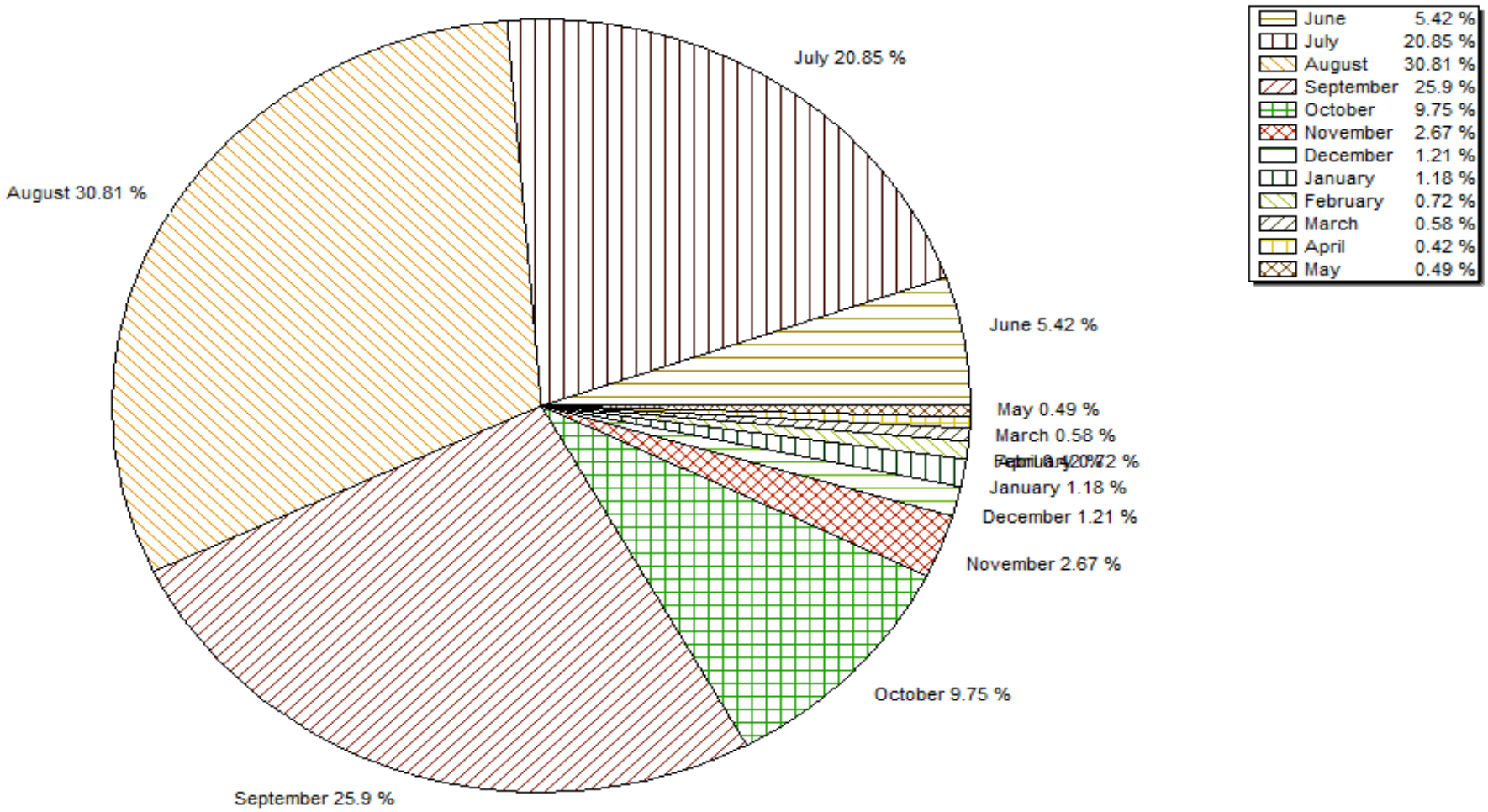
Monthly Average Runoff based on period : 1997-2015

Station Name : PANPOSH (EB000H6)

Local River : Brahmni

Division : E.E., Bhubaneswar

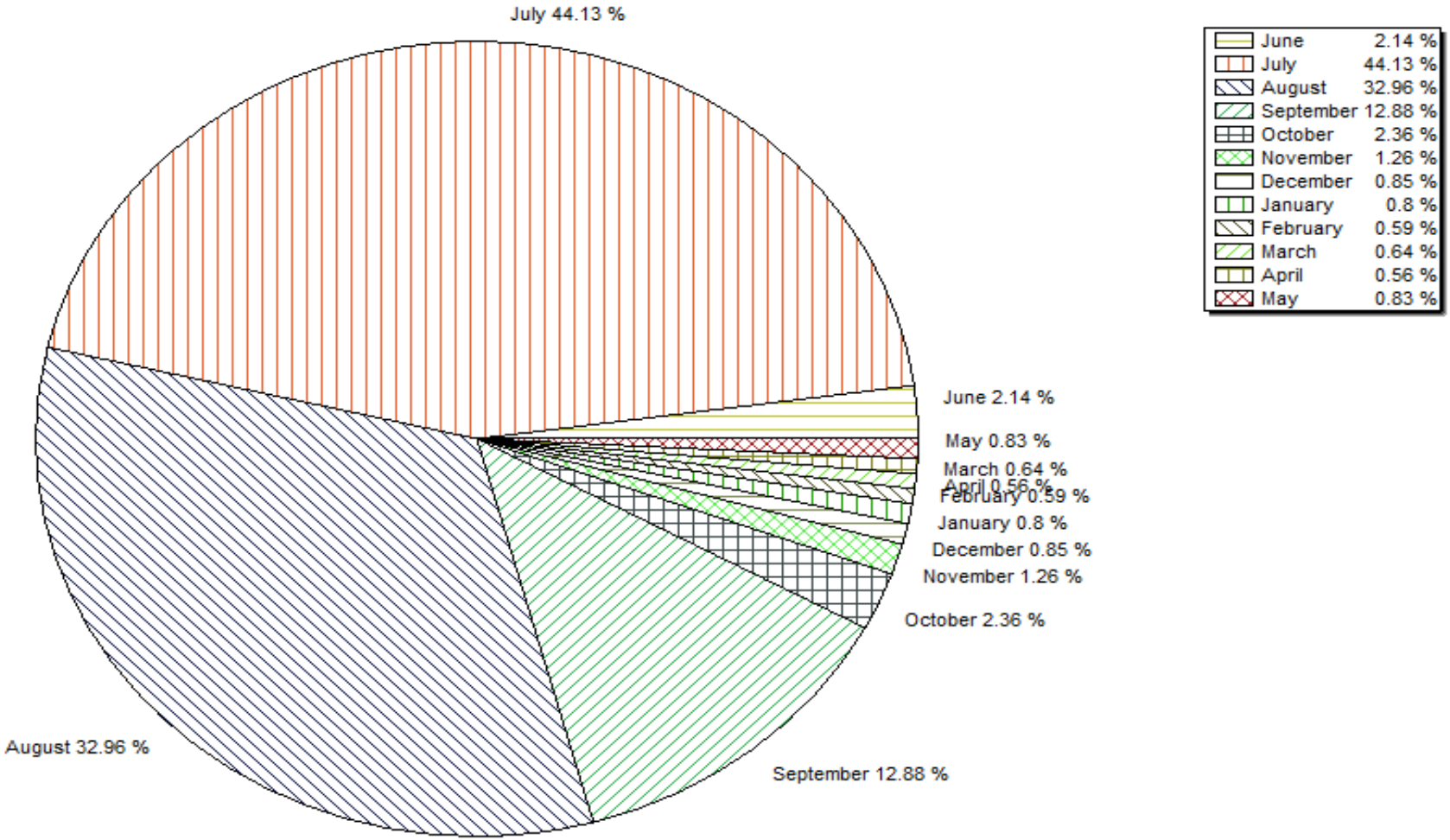
Sub-Division : Rourkela



Monthly Runoff for the Year : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

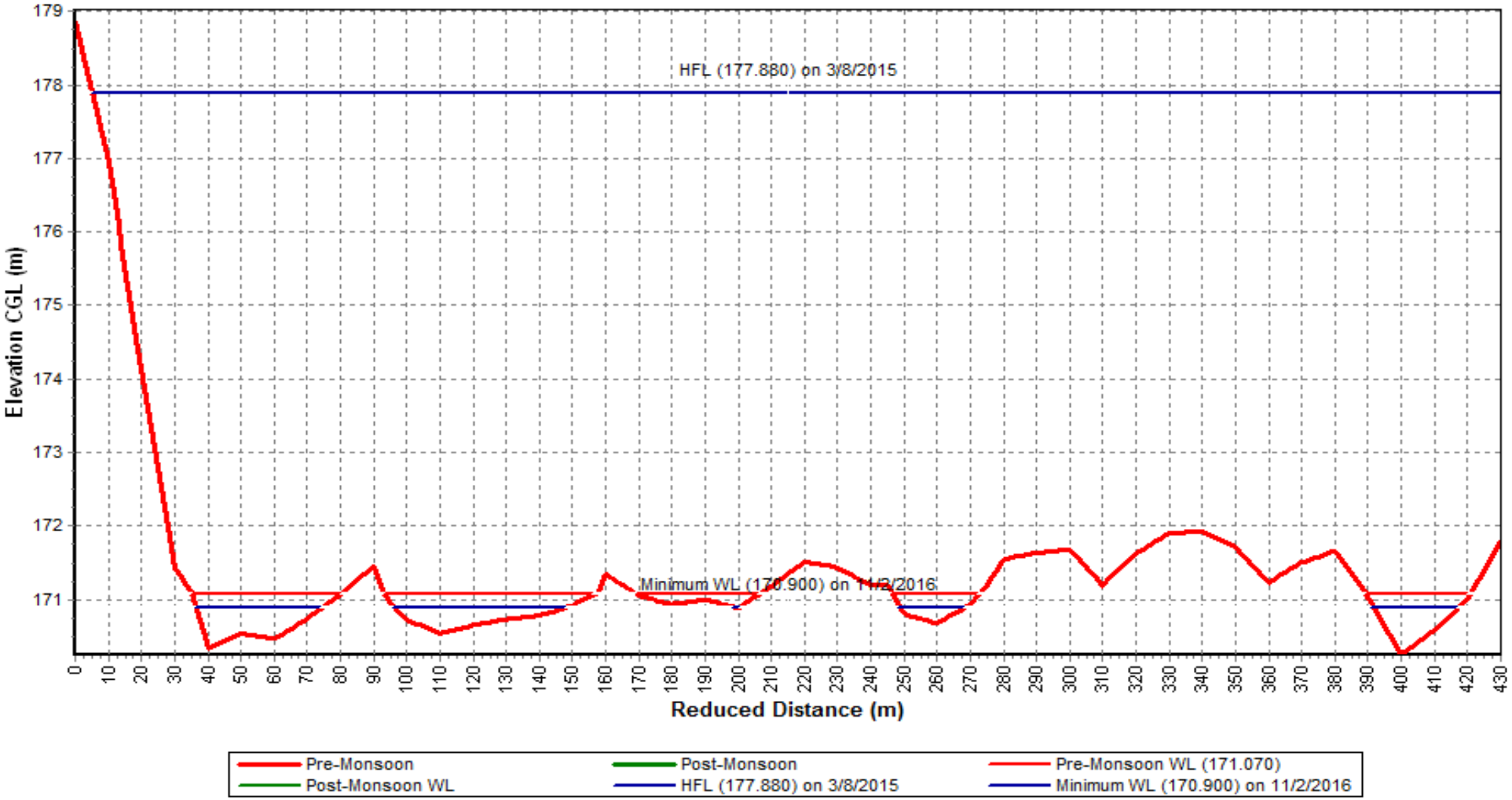
Local River : Brahmni **Sub-Division : Rourkela**



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

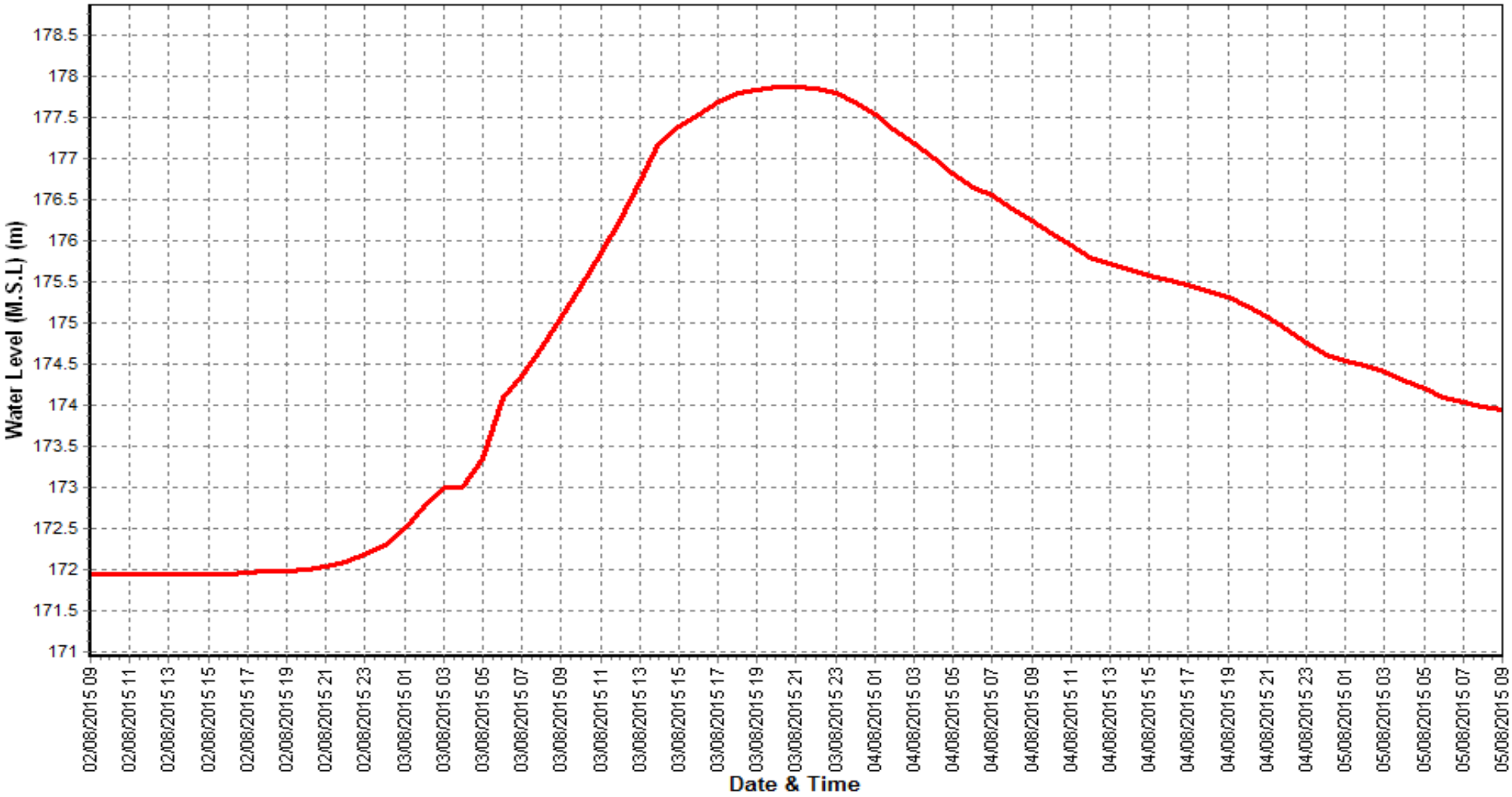
Local River : Brahmni **Sub-Division : Rourkela**



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

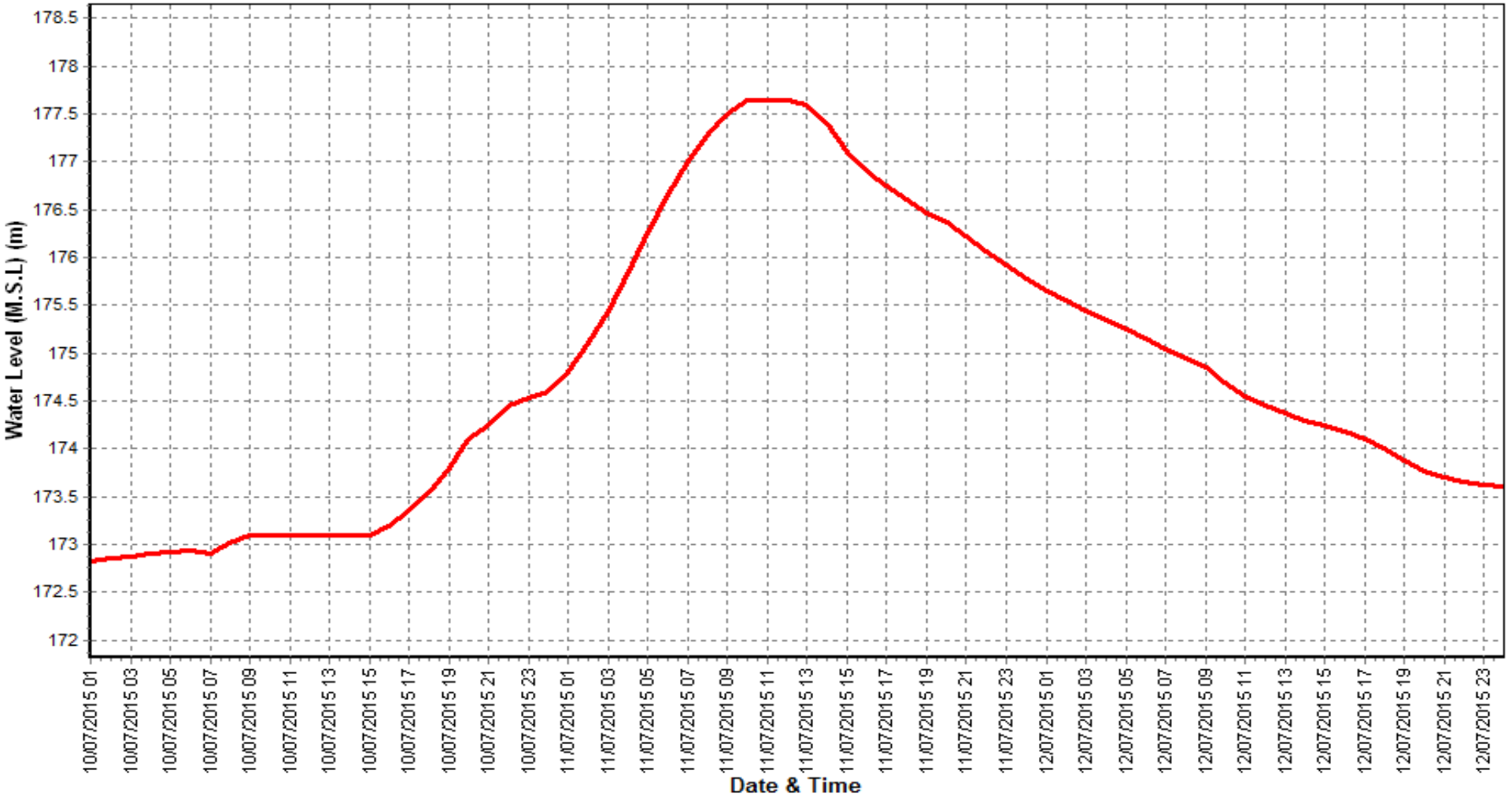


Time Span: 72 Hrs

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

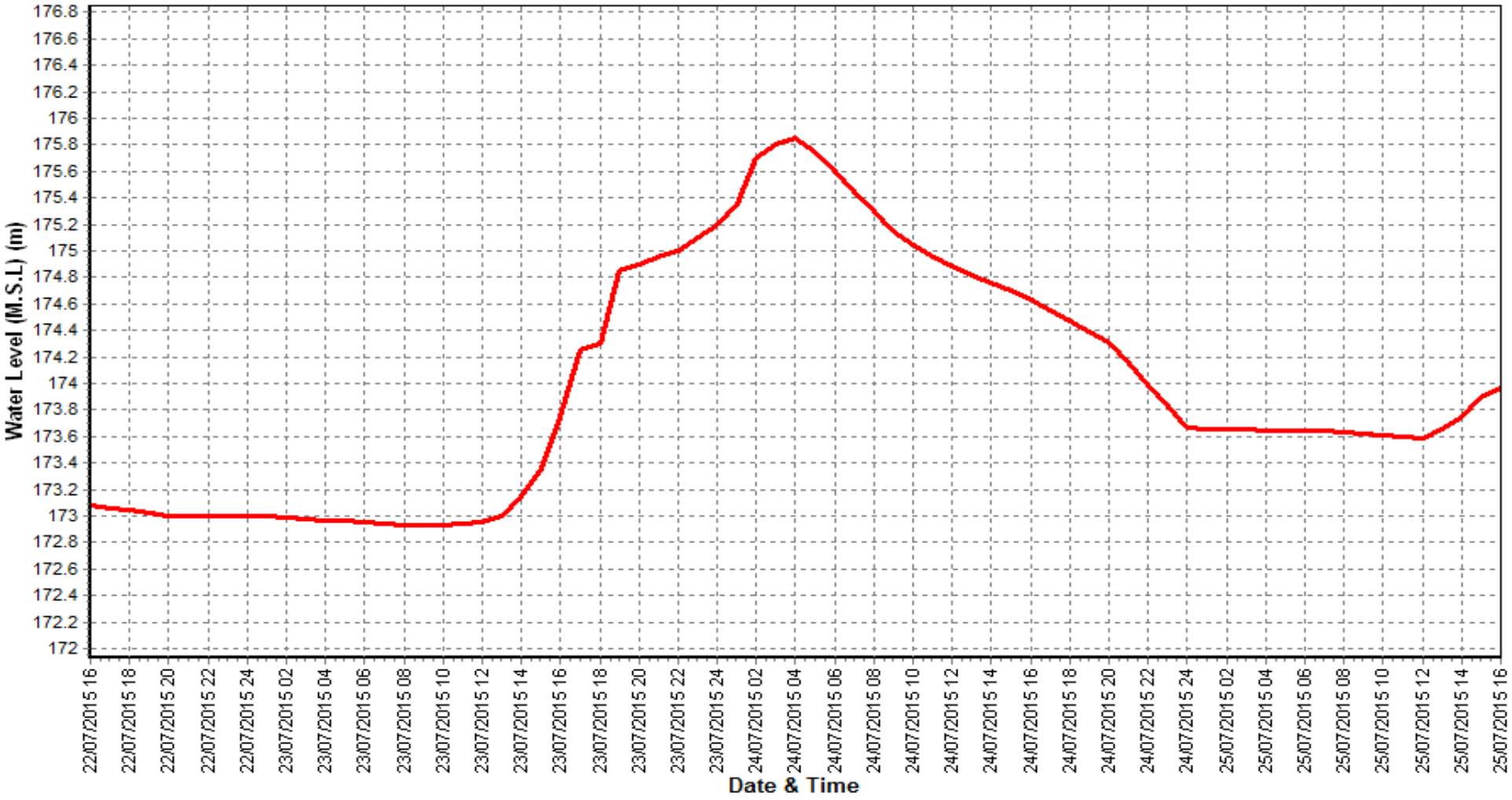


Time Span: 72 Hrs

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



Time Span: 72 Hrs

SEDIMENT DATA

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	10.39	0.000	0.000	0.032	0.032	29	176.6	0.000	0.000	0.502	0.502	7658	267.9	0.030	0.022	0.339	0.391	9058
2	11.09	0.000	0.000	0.036	0.036	34	358.4	0.013	0.009	0.442	0.464	14373	188.1	0.030	0.022	0.339	0.391	6359
3	11.09	0.000	0.000	0.046	0.046	44	276.5	0.011	0.007	0.417	0.435	10382	3010	0.071	0.059	1.276	1.406	365574
4	15.49	0.000	0.000	0.046	0.046	62	317.6	0.013	0.011	0.435	0.459	12589	5179	0.077	0.068	1.448	1.593	712998
5	12.87	0.000	0.000	0.050	0.050	56	296.0	0.013	0.011	0.435	0.459	11734	2022	0.060	0.054	1.277	1.391	243041
6	14.62	0.000	0.000	0.054	0.054	68	310.4	0.016	0.012	0.410	0.437	11730	897.2	0.056	0.046	1.046	1.147	88941
7	15.06	0.000	0.000	0.054	0.054	71	252.5	0.014	0.011	0.401	0.426	9294	645.1	0.046	0.036	0.851	0.933	51986
8	13.03	0.000	0.000	0.037	0.037	41	301.2	0.016	0.014	0.408	0.439	11414	346.5	0.043	0.040	0.766	0.849	25424
9	24.35	0.000	0.000	0.065	0.065	136	685.7	0.025	0.019	0.568	0.612	36229	271.2	0.043	0.040	0.766	0.849	19898
10	18.48	0.000	0.000	0.063	0.063	100	1053	0.029	0.018	0.676	0.724	65833	274.2	0.038	0.031	0.682	0.751	17792
11	15.39	0.000	0.000	0.038	0.038	50	7431	0.080	0.063	1.580	1.723	1106380	240.2	0.034	0.028	0.556	0.618	12819
12	14.66	0.000	0.000	34.970	34.970	44287	3739	0.080	0.063	1.580	1.723	556711	222.1	0.033	0.028	0.488	0.549	10527
13	12.05	0.000	0.000	0.032	0.032	33	1395	0.035	0.027	0.641	0.703	84699	338.3	0.033	0.022	0.501	0.556	16262
14	30.35	0.000	0.000	0.032	0.032	84	617.7	0.028	0.021	0.515	0.564	30096	378.5	0.031	0.020	0.503	0.554	18120
15	167.0	0.000	0.000	0.034	0.034	495	340.6	0.023	0.017	0.422	0.462	13603	332.4	0.031	0.020	0.503	0.554	15913
16	47.38	0.000	0.000	0.047	0.047	193	315.2	0.022	0.016	0.439	0.477	13000	227.4	0.031	0.020	0.503	0.554	10887
17	40.46	0.000	0.000	0.254	0.254	886	288.3	0.021	0.013	0.420	0.454	11308	317.3	0.028	0.019	0.310	0.358	9815
18	73.69	0.000	0.000	0.232	0.232	1478	603.8	0.021	0.013	0.420	0.454	23684	775.8	0.032	0.021	0.680	0.732	49089
19	52.89	0.000	0.000	0.218	0.218	996	554.4	0.021	0.013	0.420	0.454	21747	1530	0.037	0.031	1.011	1.079	142679
20	37.86	0.000	0.000	0.195	0.195	638	441.9	0.024	0.017	0.688	0.728	27805	704.0	0.033	0.025	0.603	0.661	40180
21	35.80	0.000	0.000	0.195	0.195	603	1196	0.031	0.026	0.847	0.905	93519	700.9	0.035	0.029	0.628	0.693	41947
22	35.79	0.000	0.000	0.208	0.208	642	982.1	0.028	0.023	0.651	0.703	59624	586.1	0.034	0.025	0.579	0.638	32295
23	35.09	0.000	0.000	0.208	0.208	631	814.8	0.031	0.022	0.662	0.715	50331	343.9	0.034	0.025	0.579	0.638	18951
24	32.98	0.000	0.000	0.215	0.215	611	2915	0.073	0.062	1.061	1.196	301341	372.4	0.031	0.022	0.528	0.581	18682
25	202.7	0.000	0.000	0.342	0.342	5990	1238	0.054	0.043	0.931	1.027	109876	446.0	0.031	0.020	0.477	0.528	20343
26	195.0	0.000	0.000	0.375	0.375	6311	1165	0.054	0.043	0.931	1.027	103403	563.4	0.031	0.018	0.580	0.629	30609
27	139.2	0.000	0.000	0.399	0.399	4804	903.0	0.045	0.036	0.827	0.907	70766	478.4	0.032	0.021	0.521	0.573	23700
28	74.42	0.000	0.000	0.399	0.399	2567	1055	0.043	0.037	0.814	0.894	81488	496.2	0.029	0.017	0.527	0.573	24548
29	58.77	0.000	0.000	0.374	0.374	1900	498.8	0.035	0.030	0.654	0.718	30962	379.6	0.029	0.021	0.550	0.599	19640
30	69.04	0.000	0.000	0.431	0.431	2573	380.6	0.036	0.027	0.491	0.553	18187	358.9	0.029	0.021	0.550	0.599	18568
31							312.8	0.034	0.027	0.378	0.439	11853	418.6	0.031	0.024	0.493	0.548	19832
Ten Daily Mean																		
Ten Daily I	14.65	0.000	0.000	0.048	0.048	64	402.8	0.015	0.011	0.469	0.496	19123	1310	0.049	0.042	0.879	0.970	154107
Ten Daily II	49.18	0.000	0.000	3.605	3.605	4914	1573	0.036	0.026	0.713	0.774	188903	506.6	0.032	0.024	0.566	0.622	32629
Ten Daily III	87.88	0.000	0.000	0.315	0.315	2663	1042	0.042	0.034	0.750	0.826	84668	467.7	0.031	0.022	0.546	0.600	24465
Monthly																		
Total						76413						3011617						2136477

Annual Sediment Load (Metric Tonnes) : 5691326

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1074	0.037	0.032	0.721	0.790	73320	102.4	0.000	0.000	0.284	0.284	2513	102.4	0.000	0.000	0.125	0.125	1105
2	1031	0.036	0.027	0.720	0.782	69693	139.4	0.000	0.000	0.284	0.284	3419	40.82	0.000	0.000	0.116	0.116	409
3	1083	0.037	0.029	0.724	0.790	73902	95.01	0.000	0.000	0.318	0.318	2606	43.99	0.000	0.000	0.112	0.112	425
4	533.3	0.035	0.029	0.654	0.718	33081	93.00	0.000	0.000	0.318	0.318	2551	38.52	0.000	0.000	0.111	0.111	369
5	537.0	0.033	0.027	0.517	0.578	26816	90.04	0.000	0.000	0.353	0.353	2747	43.21	0.000	0.000	0.105	0.105	392
6	302.6	0.033	0.027	0.517	0.578	15112	89.25	0.000	0.000	0.194	0.194	1497	41.92	0.000	0.000	0.103	0.103	372
7	261.5	0.030	0.021	0.575	0.625	14130	66.85	0.000	0.000	0.183	0.183	1059	27.41	0.000	0.000	0.097	0.097	230
8	219.1	0.028	0.019	0.382	0.428	8102	63.03	0.000	0.000	0.166	0.166	902	26.58	0.000	0.000	0.094	0.094	215
9	206.0	0.023	0.017	0.342	0.382	6806	61.82	0.000	0.000	0.163	0.163	869	26.10	0.000	0.000	0.118	0.118	265
10	186.1	0.024	0.015	0.335	0.374	6019	59.75	0.000	0.000	0.159	0.159	818	23.48	0.000	0.000	0.114	0.114	230
11	227.7	0.022	0.015	0.315	0.353	6937	65.00	0.000	0.000	0.159	0.159	890	23.00	0.000	0.000	0.114	0.114	226
12	210.9	0.020	0.013	0.301	0.334	6092	47.33	0.000	0.000	0.180	0.180	737	22.58	0.000	0.000	0.132	0.132	258
13	183.7	0.020	0.013	0.301	0.334	5306	45.67	0.000	0.000	0.163	0.163	643	22.11	0.000	0.000	0.124	0.124	236
14	141.6	0.025	0.017	0.396	0.438	5361	46.54	0.000	0.000	0.160	0.160	641	24.36	0.000	0.000	0.110	0.110	230
15	139.2	0.021	0.014	0.320	0.355	4271	41.83	0.000	0.000	0.157	0.157	568	23.40	0.000	0.000	0.110	0.110	221
16	136.5	0.017	0.010	0.303	0.330	3892	41.42	0.000	0.000	0.151	0.151	539	22.43	0.000	0.000	0.113	0.113	220
17	132.0	0.017	0.010	0.303	0.330	3764	43.82	0.000	0.000	0.137	0.137	519	21.05	0.000	0.000	0.114	0.114	206
18	154.2	0.019	0.011	0.297	0.328	4368	46.28	0.000	0.000	0.137	0.137	549	20.69	0.000	0.000	0.106	0.106	189
19	152.5	0.021	0.014	0.293	0.328	4326	40.16	0.000	0.000	0.126	0.126	436	25.12	0.000	0.000	0.092	0.092	200
20	147.0	0.021	0.014	0.293	0.328	4168	44.12	0.000	0.000	0.124	0.124	471	29.66	0.000	0.000	0.087	0.087	223
21	145.4	0.017	0.012	0.292	0.320	4024	32.00	0.000	0.000	0.124	0.124	342	26.19	0.000	0.000	0.082	0.082	185
22	153.2	0.021	0.014	0.299	0.334	4424	30.00	0.000	0.000	0.124	0.124	320	25.00	0.000	0.000	0.082	0.082	177
23	195.7	0.017	0.012	0.228	0.257	4337	43.03	0.000	0.000	0.121	0.121	451	23.30	0.000	0.000	0.076	0.076	152
24	315.4	0.020	0.011	0.210	0.242	6580	32.00	0.000	0.000	0.121	0.121	335	26.27	0.000	0.000	0.076	0.076	173
25	293.1	0.020	0.011	0.210	0.242	6116	25.00	0.000	0.000	0.121	0.121	262	25.20	0.000	0.000	0.076	0.076	166
26	284.7	0.023	0.014	0.217	0.253	6215	32.93	0.000	0.000	0.119	0.119	340	24.14	0.000	0.000	0.069	0.069	143
27	271.1	0.023	0.014	0.217	0.253	5919	23.87	0.000	0.000	0.125	0.125	257	23.41	0.000	0.000	0.065	0.065	131
28	166.0	0.023	0.010	0.241	0.274	3933	24.36	0.000	0.000	0.117	0.117	245	24.25	0.000	0.000	0.055	0.055	115
29	116.4	0.011	0.006	0.298	0.314	3162	23.07	0.000	0.000	0.115	0.115	229	23.40	0.000	0.000	0.055	0.055	111
30	104.1	0.007	0.003	0.289	0.299	2687	26.13	0.000	0.000	0.115	0.115	259	20.84	0.000	0.000	0.049	0.049	88
31							51.80	0.000	0.000	0.125	0.125	559						
Ten Daily Mean																		
Ten Daily I	543.4	0.032	0.024	0.549	0.605	32698	86.06	0.000	0.000	0.242	0.242	1898	41.45	0.000	0.000	0.109	0.109	401
Ten Daily II	162.5	0.020	0.013	0.312	0.346	4848	46.22	0.000	0.000	0.149	0.149	599	23.44	0.000	0.000	0.110	0.110	221
Ten Daily III	204.5	0.018	0.010	0.250	0.279	4740	31.29	0.000	0.000	0.121	0.121	327	24.20	0.000	0.000	0.068	0.068	144
Monthly																		
Total						422861						28574						7665

Annual Sediment Load (Metric Tonnes) : 5691326

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	20.07	0.000	0.000	0.049	0.049	84	18.91	0.000	0.000	0.033	0.033	53	18.50	0.000	0.000	0.025	0.025	40
2	20.79	0.000	0.000	0.049	0.049	87	18.19	0.000	0.000	0.033	0.033	51	17.67	0.000	0.000	0.025	0.025	38
3	19.88	0.000	0.000	0.049	0.049	84	18.10	0.000	0.000	0.033	0.033	51	17.03	0.000	0.000	0.025	0.025	37
4	18.55	0.000	0.000	0.049	0.049	78	18.02	0.000	0.000	0.038	0.038	59	16.89	0.000	0.000	0.025	0.025	37
5	17.40	0.000	0.000	0.049	0.049	73	20.67	0.000	0.000	0.038	0.038	68	15.87	0.000	0.000	0.025	0.025	35
6	18.81	0.000	0.000	0.049	0.049	79	19.70	0.000	0.000	0.038	0.038	65	15.70	0.000	0.000	0.025	0.025	34
7	19.88	0.000	0.000	0.044	0.044	75	20.22	0.000	0.000	0.038	0.038	67	15.65	0.000	0.000	0.025	0.025	34
8	20.40	0.000	0.000	0.044	0.044	77	19.23	0.000	0.000	0.038	0.038	63	14.38	0.000	0.000	0.027	0.027	34
9	19.73	0.000	0.000	0.044	0.044	74	18.62	0.000	0.000	0.038	0.038	61	13.84	0.000	0.000	0.027	0.027	33
10	20.28	0.000	0.000	0.044	0.044	76	20.40	0.000	0.000	0.038	0.038	67	12.63	0.000	0.000	0.027	0.027	30
11	18.94	0.000	0.000	0.044	0.044	71	17.03	0.000	0.000	0.034	0.034	50	10.66	0.000	0.000	0.027	0.027	25
12	19.44	0.000	0.000	0.044	0.044	73	15.72	0.000	0.000	0.034	0.034	46	13.62	0.000	0.000	0.027	0.027	32
13	18.65	0.000	0.000	0.044	0.044	70	18.96	0.000	0.000	0.034	0.034	56	12.33	0.000	0.000	0.027	0.027	29
14	18.39	0.000	0.000	0.038	0.038	61	19.38	0.000	0.000	0.034	0.034	57	13.19	0.000	0.000	0.027	0.027	31
15	20.80	0.000	0.000	0.038	0.038	68	19.30	0.000	0.000	0.034	0.034	57	13.18	0.000	0.000	0.031	0.031	35
16	19.64	0.000	0.000	0.038	0.038	65	17.59	0.000	0.000	0.034	0.034	52	13.93	0.000	0.000	0.031	0.031	37
17	17.49	0.000	0.000	0.038	0.038	58	18.57	0.000	0.000	0.034	0.034	55	14.34	0.000	0.000	0.031	0.031	38
18	20.00	0.000	0.000	0.038	0.038	66	18.08	0.000	0.000	0.027	0.027	43	14.68	0.000	0.000	0.031	0.031	39
19	19.28	0.000	0.000	0.038	0.038	63	19.36	0.000	0.000	0.027	0.027	46	14.15	0.000	0.000	0.031	0.031	38
20	18.85	0.000	0.000	0.038	0.038	62	19.34	0.000	0.000	0.027	0.027	46	14.48	0.000	0.000	0.031	0.031	39
21	20.25	0.000	0.000	0.036	0.036	63	17.37	0.000	0.000	0.027	0.027	41	12.95	0.000	0.000	0.031	0.031	35
22	19.53	0.000	0.000	0.036	0.036	60	17.35	0.000	0.000	0.027	0.027	41	11.41	0.000	0.000	0.026	0.026	25
23	20.52	0.000	0.000	0.036	0.036	63	17.86	0.000	0.000	0.027	0.027	42	12.14	0.000	0.000	0.026	0.026	27
24	20.50	0.000	0.000	0.036	0.036	63	17.11	0.000	0.000	0.027	0.027	41	11.15	0.000	0.000	0.026	0.026	25
25	18.12	0.000	0.000	0.036	0.036	56	17.58	0.000	0.000	0.026	0.026	39	10.87	0.000	0.000	0.026	0.026	24
26	19.57	0.000	0.000	0.036	0.036	61	17.30	0.000	0.000	0.026	0.026	39	11.41	0.000	0.000	0.026	0.026	25
27	19.11	0.000	0.000	0.036	0.036	59	18.25	0.000	0.000	0.026	0.026	41	19.78	0.000	0.000	0.026	0.026	44
28	18.64	0.000	0.000	0.033	0.033	53	17.69	0.000	0.000	0.026	0.026	40	18.99	0.000	0.000	0.026	0.026	42
29	18.48	0.000	0.000	0.033	0.033	52	17.92	0.000	0.000	0.026	0.026	40	18.17	0.000	0.000	0.022	0.022	35
30	18.25	0.000	0.000	0.033	0.033	52	17.51	0.000	0.000	0.026	0.026	39						
31	17.44	0.000	0.000	0.033	0.033	49	17.50	0.000	0.000	0.026	0.026	39						
Ten Daily Mean																		
Ten Daily I	19.58	0.000	0.000	0.047	0.047	79	19.21	0.000	0.000	0.037	0.037	61	15.82	0.000	0.000	0.026	0.026	35
Ten Daily II	19.15	0.000	0.000	0.040	0.040	66	18.33	0.000	0.000	0.032	0.032	51	13.46	0.000	0.000	0.030	0.030	34
Ten Daily III	19.13	0.000	0.000	0.035	0.035	57	17.59	0.000	0.000	0.027	0.027	40	14.10	0.000	0.000	0.026	0.026	31
Monthly																		
Total						2077						1559						978

Annual Sediment Load (Metric Tonnes) : 5691326

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	17.56	0.000	0.000	0.031	0.031	47	12.05	0.000	0.000	0.032	0.032	33	11.83	0.000	0.000	0.011	0.011	12
2	13.67	0.000	0.000	0.031	0.031	37	12.61	0.000	0.000	0.032	0.032	35	12.62	0.000	0.000	0.009	0.009	10
3	16.81	0.000	0.000	0.031	0.031	45	22.93	0.000	0.000	0.032	0.032	63	9.634	0.000	0.000	0.009	0.009	7
4	17.09	0.000	0.000	0.031	0.031	46	19.06	0.000	0.000	0.030	0.030	49	9.705	0.000	0.000	0.009	0.009	8
5	17.99	0.000	0.000	0.031	0.031	48	14.53	0.000	0.000	0.030	0.030	37	12.47	0.000	0.000	0.009	0.009	10
6	18.94	0.000	0.000	0.031	0.031	51	12.55	0.000	0.000	0.030	0.030	32	10.95	0.000	0.000	0.009	0.009	9
7	15.14	0.000	0.000	0.031	0.031	41	13.04	0.000	0.000	0.030	0.030	33	11.31	0.000	0.000	0.009	0.009	9
8	12.39	0.000	0.000	0.026	0.026	28	18.28	0.000	0.000	0.030	0.030	47	11.06	0.000	0.000	0.009	0.009	9
9	14.23	0.000	0.000	0.026	0.026	32	14.80	0.000	0.000	0.030	0.030	38	10.98	0.000	0.000	0.015	0.015	15
10	13.15	0.000	0.000	0.026	0.026	30	14.71	0.000	0.000	0.030	0.030	38	11.01	0.000	0.000	0.015	0.015	15
11	12.67	0.000	0.000	0.026	0.026	29	15.17	0.000	0.000	0.012	0.012	15	11.32	0.000	0.000	0.015	0.015	15
12	12.91	0.000	0.000	0.026	0.026	29	14.66	0.000	0.000	0.012	0.012	15	11.03	0.000	0.000	0.015	0.015	15
13	13.83	0.000	0.000	0.026	0.026	31	12.89	0.000	0.000	0.012	0.012	13	11.72	0.000	0.000	0.015	0.015	15
14	12.88	0.000	0.000	0.028	0.028	31	12.88	0.000	0.000	0.012	0.012	13	11.24	0.000	0.000	0.015	0.015	15
15	14.79	0.000	0.000	0.028	0.028	36	9.913	0.000	0.000	0.012	0.012	10	11.47	0.000	0.000	0.015	0.015	15
16	14.41	0.000	0.000	0.028	0.028	35	9.902	0.000	0.000	0.012	0.012	10	11.70	0.000	0.000	0.016	0.016	16
17	13.79	0.000	0.000	0.028	0.028	34	13.79	0.000	0.000	0.012	0.012	14	11.53	0.000	0.000	0.016	0.016	16
18	13.30	0.000	0.000	0.028	0.028	32	11.35	0.000	0.000	0.029	0.029	28	82.32	0.000	0.000	0.016	0.016	112
19	12.11	0.000	0.000	0.028	0.028	29	11.89	0.000	0.000	0.029	0.029	29	59.89	0.000	0.000	0.016	0.016	81
20	13.61	0.000	0.000	0.028	0.028	33	11.90	0.000	0.000	0.029	0.029	30	62.05	0.000	0.000	0.016	0.016	84
21	14.51	0.000	0.000	0.031	0.031	39	11.71	0.000	0.000	0.029	0.029	29	50.59	0.000	0.000	0.016	0.016	69
22	14.01	0.000	0.000	0.031	0.031	38	10.68	0.000	0.000	0.029	0.029	26	24.82	0.000	0.000	0.016	0.016	34
23	14.04	0.000	0.000	0.031	0.031	38	10.44	0.000	0.000	0.029	0.029	26	13.36	0.000	0.000	0.065	0.065	75
24	14.00	0.000	0.000	0.031	0.031	38	10.43	0.000	0.000	0.029	0.029	26	11.28	0.000	0.000	0.065	0.065	64
25	14.00	0.000	0.000	0.031	0.031	38	10.27	0.000	0.000	0.011	0.011	10	14.10	0.000	0.000	0.065	0.065	79
26	14.52	0.000	0.000	0.031	0.031	39	11.45	0.000	0.000	0.011	0.011	11	11.46	0.000	0.000	0.065	0.065	65
27	15.58	0.000	0.000	0.031	0.031	42	11.03	0.000	0.000	0.011	0.011	11	19.39	0.000	0.000	0.065	0.065	109
28	15.74	0.000	0.000	0.032	0.032	43	11.33	0.000	0.000	0.011	0.011	11	12.85	0.000	0.000	0.065	0.065	72
29	15.22	0.000	0.000	0.032	0.032	42	11.01	0.000	0.000	0.011	0.011	11	14.13	0.000	0.000	0.065	0.065	80
30	13.59	0.000	0.000	0.032	0.032	37	11.04	0.000	0.000	0.011	0.011	11	14.16	0.000	0.000	0.030	0.030	36
31	13.27	0.000	0.000	0.032	0.032	36							12.12	0.000	0.000	0.030	0.030	31
Ten Daily Mean																		
Ten Daily I	15.70	0.000	0.000	0.030	0.030	40	15.46	0.000	0.000	0.030	0.030	40	11.16	0.000	0.000	0.011	0.011	10
Ten Daily II	13.43	0.000	0.000	0.028	0.028	32	12.43	0.000	0.000	0.017	0.017	18	28.43	0.000	0.000	0.016	0.016	38
Ten Daily III	14.41	0.000	0.000	0.031	0.031	39	10.94	0.000	0.000	0.018	0.018	17	18.02	0.000	0.000	0.050	0.050	65
Monthly																		
Total						1154						752						1199

Annual Sediment Load (Metric Tonnes) : 5691326

Annual Sediment Load for period : 1997-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

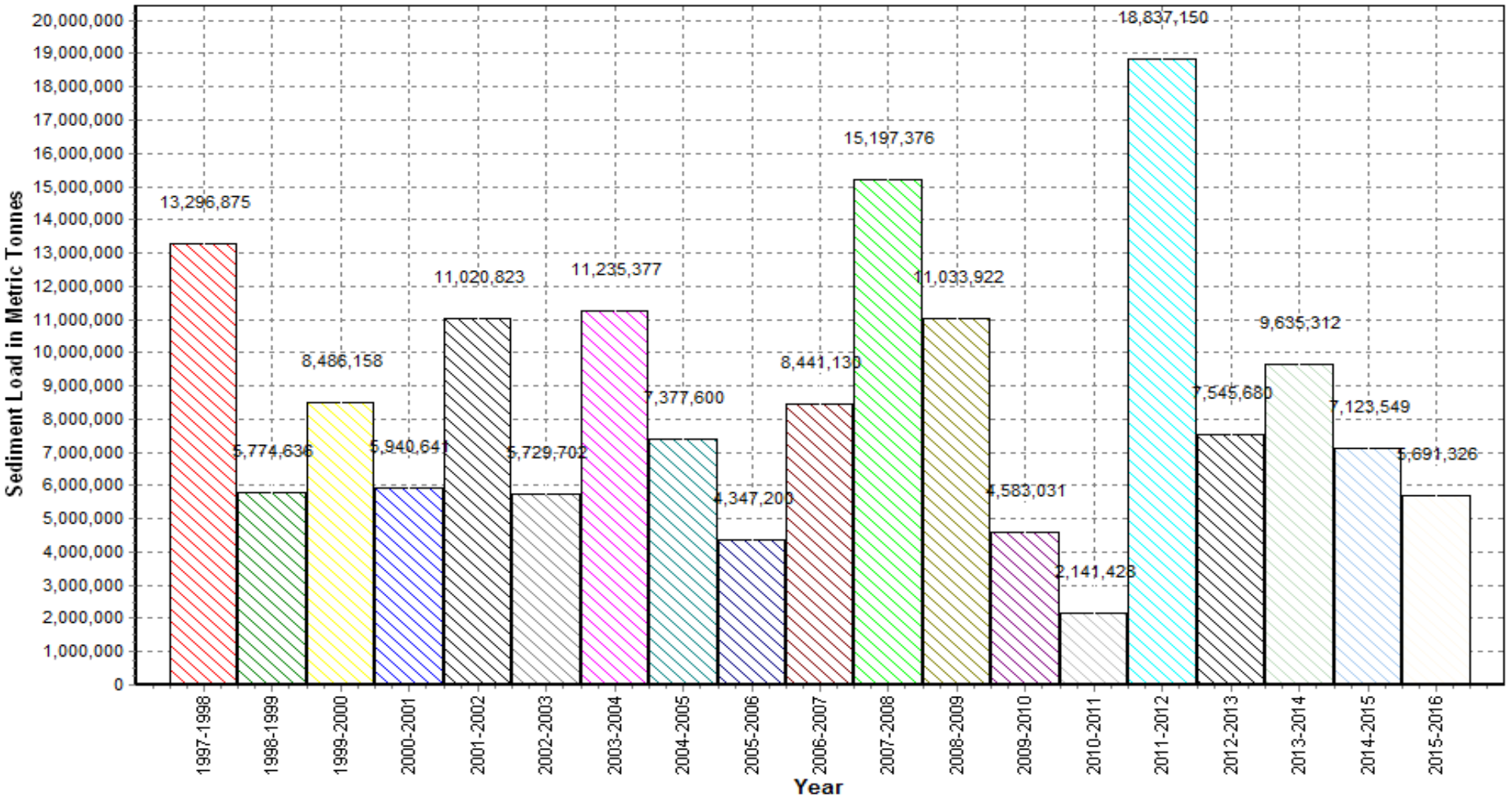
Local River : Brahmni **Sub-Division : Rourkela**

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1997-1998	13082732	214143	13296875	14251
1998-1999	5740493	34142	5774636	11260
1999-2000	8468080	18078	8486158	13123
2000-2001	5933566	7075	5940641	6700
2001-2002	11015435	5388	11020823	13621
2002-2003	5722434	7268	5729702	7804
2003-2004	11211416	23962	11235377	9519
2004-2005	7359200	18401	7377600	7598
2005-2006	4310272	36928	4347200	7083
2006-2007	8427091	14039	8441130	9856
2007-2008	15178560	18817	15197376	13580
2008-2009	11014979	18943	11033922	12114
2009-2010	4573405	9626	4583031	6612
2010-2011	2130446	10981	2141428	3198
2011-2012	18822863	14287	18837150	18194
2012-2013	7530170	15510	7545680	10154
2013-2014	9597843	37469	9635312	11708
2014-2015	7116756	6792	7123549	8521
2015-2016	5683606	7720	5691326	6111

Annual Sediment Load for the period: 1997-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



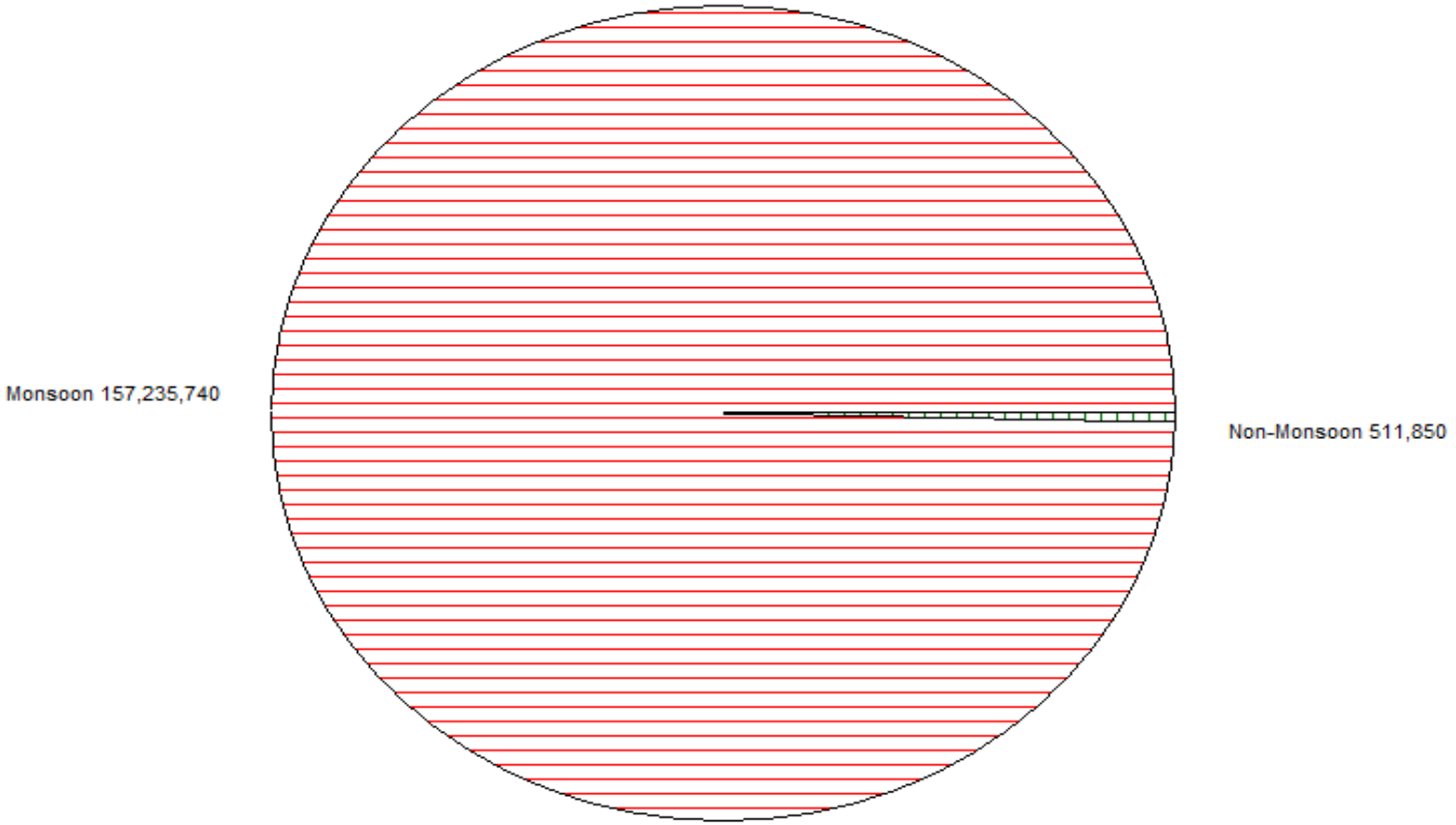
Seasonal Sediment Load for the period : 1997-2015

Station Name : PANPOSH (EB000H6)

Local River : Brahmni

Division : E.E., Bhubaneswar

Sub-Division : Rourkela



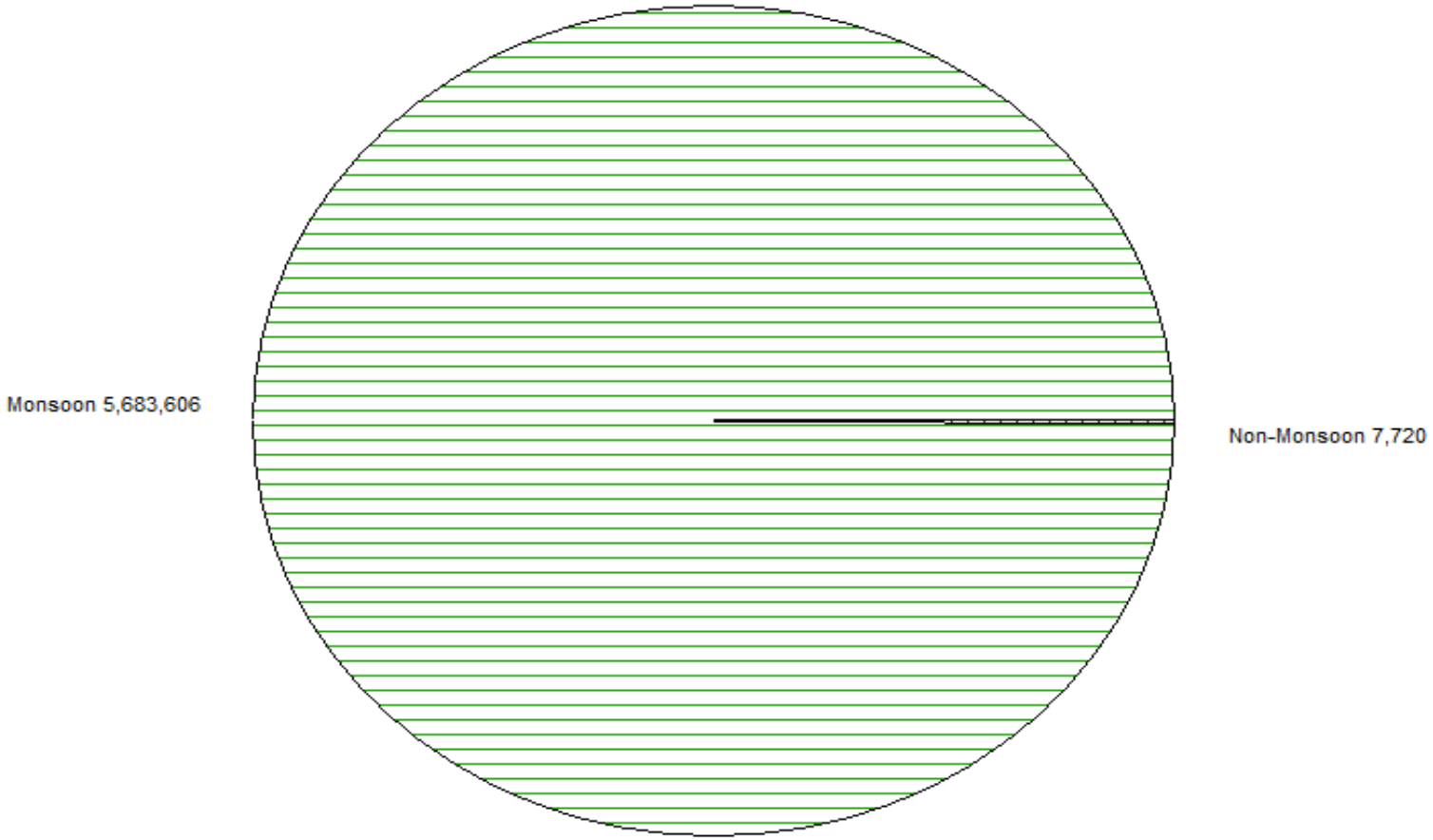
Seasonal Sediment Load for the Year: 2015-2016

Station Name : PANPOSH (EB000H6)

Local River : Brahmni

Division : E.E., Bhubaneswar

Sub-Division : Rourkela



WATER QUALITY DATA

Water Quality Datasheet for the period : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmani **River Water Analysis** **Sub-Division : Rourkela**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	294	170	148	329	457	483	582	530	136	418	307	151
4	EC_GEN (µmho/cm)	282	174	140	334	450	481	590	535	139	415	304	156
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)	7.6	7.1	7.2	7.2	7.2	7.3	7.1	7.4	7.8	7.3	7.9	7.4
7	pH_GEN (pH units)	7.7	7.3	7.1	7.1	7.1	7.2	7.3	7.3	7.9	7.2	7.8	7.5
8	Temp (deg C)	30.0	27.0	27.0	27.0	28.0	25.0	21.0	18.0	19.0	23.0	26.0	30.0
	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)	69	65	55	65	55	55	60	60	55	92	60	42
3	B (mg/L)	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	24	22	19	16	19	22	19	21	19	42	21	24
5	Cl (mg/L)	15.1	17.0	13.2	11.3	13.2	17.0	15.1	15.1	17.0	11.3	13.2	17.0
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)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.3	0.3	0.4	0.3	0.6	0.4	0.3	0.5	0.6	0.6	0.4
9	HCO3 (mg/L)	85	79	68	79	68	68	73	73	68	113	73	51
10	K (mg/L)	1.9	2.5	2.1	1.9	1.5	1.6	1.7	1.4	1.8	1.2	1.6	1.4
11	Mg (mg/L)	13.6	12.6	10.7	8.8	8.8	11.7	7.8	8.8	8.8	16.5	9.7	9.7
12	Na (mg/L)	7.2	5.2	3.1	2.6	1.3	1.5	7.8	6.1	8.8	8.9	8.9	9.0
13	NO2+NO3 (mg N/L)	0.83	1.02	1.02	1.26	1.29	1.12	1.19	0.85	0.88	0.84	0.83	0.91
14	NO2-N (mgN/L)	0.01	0.01	0.07	0.00	0.01	0.03	0.00	0.03	0.07	0.00	0.01	0.00
15	NO3-N (mgN/L)	0.81	1.01	0.95	1.26	1.28	1.09	1.19	0.83	0.81	0.84	0.81	0.91
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	5.0	5.0	6.0	6.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0
18	SO4 (mg/L)	1.9	3.8	3.8	3.6	3.7	3.8	2.8	2.6	2.8	3.4	3.2	2.4
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	3.4	0.4	0.2	0.8	1.0	1.0	1.0	1.2	0.8	1.6	0.4	0.8
2	DO (mg/L)	4.4	5.6	7.0	5.2	5.4	7.2	6.8	7.0	6.4	3.2	4.8	5.4
3	DO_SAT% (%)	58	70	87	65	68	87	76	73	68	37	59	71
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	60	56	48	40	48	56	48	52	48	104	52	60
2	HAR_Total (mgCaCO3/L)	117	109	93	77	85	105	81	89	85	173	93	101
3	Na% (%)	12	9	7	7	3	3	17	13	18	10	17	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
5	SAR (-)	0.3	0.2	0.1	0.1	0.1	0.1	0.4	0.3	0.4	0.3	0.4	0.4
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : PANPOSH (EB000H6) **Division : E.E., Bhubaneswar**

Local River : Brahmani **Sub-Division : Rourkela**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	582	136	334
3	EC_GEN (µmho/cm)	12	590	139	333
4	pH_FLD (pH units)	12	7.9	7.1	7.3
5	pH_GEN (pH units)	12	7.9	7.1	7.4
6	Temp (deg C)	12	30.0	18.0	25.1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	92	42	61
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	42	16	22
5	Cl (mg/L)	12	17.0	11.3	14.6
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.3	0.4
9	HCO3 (mg/L)	12	113	51	75
10	K (mg/L)	12	2.5	1.2	1.7
11	Mg (mg/L)	12	16.5	7.8	10.6
12	Na (mg/L)	12	9.0	1.3	5.9
13	NO2+NO3 (mg N/L)	12	1.29	0.83	1
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.28	0.81	0.98
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	6.0	5.0	5.6
18	SO4 (mg/L)	12	3.8	1.9	3.2
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	3.4	0.2	1
2	DO (mg/L)	12	7.2	3.2	5.7
3	DO_SAT% (%)	12	87	37	68
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	104	40	56
2	HAR_Total (mgCaCO3/L)	12	173	77	100
3	Na% (%)	12	18	3	11
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.4	0.1	0.3
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : PANPOSH (EB000H6) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Flood																				
		Jun - Oct																				
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	130	146	121	154	152	147	165	149	173	171	135	159	179	172	280	186	173	204	184	223	210
3	EC_GEN (µmho/cm)	133	147	122	165	150	143	158	149	173	175	135	159	179	172	276	189	174	204	188	218	205
4	pH_FLD (pH units)	7.7	7.8	7.6	7.7	7.7	7.5	7.9	7.4	7.5	7.7	8.0	7.5	7.3	7.6	7.2	7.9	7.6	7.7	8.0	7.6	8.3
5	pH_GEN (pH units)	7.8	7.7	7.5	7.5	7.8	7.5	8.0	7.4	7.5	7.7	8.0	7.5	7.3	7.6	7.3	7.8	7.6	7.7	7.9	7.6	8.3
6	Temp (deg C)	29.1	28.8	28.8	29.2	30.2	30.8	29.0	29.0	29.8	30.7	30.2	27.6	25.8	28.2	27.8	22.0	22.9	23.2	22.5	23.0	22.8
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)							0.0	0.0	0.0	0.0	1.8				0.0						0.0
2	ALK-TOT (mgCaCO3/L)							85	46	57	64	65				62						71
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	12	14	9	16	15	14	16	14	16	14	17	17	13	17	20	15	17	17	21	21	21
5	Cl (mg/L)	9.7	10.5	9.4	15.8	13.6	14.8	12.3	14.5	11.3	11.2	17.7	17.0	11.1	17.7	14.0	21.7	12.2	12.2	24.0	13.6	15.6
6	CO3 (mg/L)	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0
7	F (mg/L)	0.18	0.22	0.09	0.44	0.09	0.18	0.11	0.05	0.15	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.01	0.00	0.50	0.00	0.00
8	Fe (mg/L)	0.1			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.9	0.0	0.3	0.3	0.1			0.1	0.1	0.1
9	HCO3 (mg/L)	44	62	41	81	54	59	69	49	61	71	74	67	77	74	76	42	78	66	102	86	81
10	K (mg/L)	2.2	1.9	1.3	2.1	2.7	2.5	2.1	2.2	2.2	2.4	1.8	1.9	1.6	1.8	2.0	3.1	2.4	1.5	1.5	2.8	2.6
11	Mg (mg/L)	3.7	4.9	3.0	7.3	4.0	4.1	4.9	4.7	6.3	7.6	4.5	3.9	4.7	4.5	10.9	3.9	4.9	3.5	8.3	7.8	4.7
12	Na (mg/L)	6.6	7.4	6.0	10.7	8.8	9.4	7.6	9.2	7.6	6.6	4.6	3.9	8.3	4.6	3.9	14.2	8.4	7.9	15.9	9.1	10.3
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	0.47	0.31	0.34	0.22	0.52	0.27	0.39	0.45	0.36	0.34	0.36	0.71	0.98	1.23	1.08	0.85	0.55	0.40	0.12	1.82	0.85
15	NO2-N (mgN/L)	0.01	0.02	0.00	0.00	0.00	0.01	0.04	0.00	0.00	0.00	0.07	0.00	0.00	0.08	0.02	0.01	0.01	0.00	0.00	0.01	0.02
16	NO3-N (mgN/L)	0.47	0.29	0.34	0.22	0.52	0.27	0.34	0.45	0.36	0.34	0.29	0.71	0.98	1.15	1.06	0.84	0.54	0.40	0.12	1.80	0.83
17	o-PO4-P (mg P/L)		0.072		0.000	0.000	0.004	0.000		0.000											0.000	0.026
18	P-Tot (mgP/L)	0.005	0.001	0.001	0.001	0.001	0.005	0.001	0.001	0.002	0.001	0.010	0.001	0.001	0.001	0.001	0.027	0.001	0.001	0.001	0.001	0.027
19	SiO2 (mg/L)	10.7	15.2	8.8	21.1	23.8	9.6	14.6	8.7	7.1	9.4	11.0	14.5	11.3	5.8	5.6	13.1	14.4	11.6	20.0	19.0	15.4
20	SO4 (mg/L)	3.0	4.4	1.2	6.5	9.1	9.5	4.2	9.6	12.6	7.1	8.7	27.0	10.8	8.7	3.4	20.9	3.2	0.9	8.9	8.2	11.3
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.7	1.5	1.0	1.1	0.7	0.9	1.5	1.2	1.1	1.5	1.4	0.6	0.8	0.6	1.2	0.8	1.2	1.0	1.0	1.1	1.2
2	DO (mg/L)	6.7	6.6	5.8	6.0	6.2	6.5	6.6	6.9	7.0	6.8	6.5	5.8	6.4	6.2	5.5	8.0	7.3	8.2	7.4	7.8	7.1
3	DO_SAT% (%)	87	85	75	78	82	87	86	90	92	91	86	73	79	80	70	92	85	95	86	91	82
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	30	34	22	40	36	34	39	34	40	35	42	43	33	42	51	37	42	42	52	53	53
2	HAR_Total (mgCaCO3/L)	45	55	35	66	53	51	61	66	66	67	61	59	52	61	96	53	62	56	87	85	73
3	Na% (%)	26	24	29	25	25	27	21	29	20	17	14	12	25	14	7	35	22	24	29	18	23
4	RSC (-)	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.1	0.0	0.0	0.2	0.0	0.2	0.0	0.1
5	SAR (-)	0.5	0.5	0.5	0.6	0.5	0.6	0.4	0.6	0.4	0.4	0.3	0.2	0.5	0.3	0.2	0.9	0.5	0.5	0.8	0.4	0.6
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

Station Name : PANPOSH (EB000H6) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	186	219	202	235	183	204	165	273	433	220	163	208	259	282	243	202	229	177	250	190	225
3	EC_GEN (µmho/cm)	178	219	202	235	183	204	165	273	436	222	161	207	259	277	240	201	229	177	250	190	225
4	pH_FLD (pH units)	8.0	7.6	7.5	7.5	7.6	7.3	7.8	7.5	7.4	8.1	8.1	7.9	7.9	7.7	8.1	8.1	7.7	7.9	8.1	7.4	7.8
5	pH_GEN (pH units)	8.0	7.6	7.5	7.5	7.6	7.3	7.8	7.5	7.4	8.0	8.1	7.9	7.8	7.7	8.1	8.0	7.7	7.9	8.1	7.4	7.8
6	Temp (deg C)	21.8	22.3	20.3	21.8	22.4	19.5	19.5	20.8	20.8	27.2	27.2	28.3	28.0	28.0	27.7	26.3	27.0	26.7	26.3	32.2	23.7
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0			0.0						0.0	0.0	0.0	0.0	3.9	0.0	
2	ALK-TOT (mgCaCO3/L)	117	66	45	71	80	65			58						102	49	68	64	94	62	
3	B (mg/L)	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.01	0.00
4	Ca (mg/L)	17	19	19	21	21	21	15	19	20	22	17	21	23	27	26	18	21	15	23	30	19
5	Cl (mg/L)	12.0	16.6	15.1	17.0	19.8	15.1	12.0	19.3	16.0	12.3	9.7	12.3	28.9	13.9	13.3	8.1	14.9	12.2	16.3	13.8	16.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0
7	F (mg/L)	0.00	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.31	0.00	0.00	0.08	0.10	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.2	0.1	0.1	0.1	0.0	1.9	0.0	0.2	0.5	0.0	0.2		0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.0	1.9
9	HCO3 (mg/L)	77	80	54	100	97	72	63	99	70	89	62	91	103	111	124	60	75	78	105	75	94
10	K (mg/L)	2.7	1.9	1.3	2.3	1.5	1.7	1.9	1.4	1.6	2.9	2.6	1.9	2.3	2.3	2.6	1.4	1.6	1.5	2.6	1.7	2.0
11	Mg (mg/L)	4.5	8.3	8.7	9.2	8.0	5.1	4.5	5.3	9.2	6.5	4.9	6.6	7.8	10.5	8.2	3.2	9.4	7.8	9.7	5.2	9.1
12	Na (mg/L)	8.3	10.8	8.6	9.7	6.8	6.4	10.1	6.1	6.1	8.8	6.9	8.3	18.2	9.9	8.7	5.6	9.3	7.3	10.1	7.2	8.8
13	NH3-N (mg N/L)																0.05					
14	NO2+NO3 (mg N/L)	0.28	0.39	0.46	0.49	0.39	0.71	1.02	0.82	1.01	0.31	1.86	0.33	0.21	3.96	0.59	0.35	0.29	0.21	0.37	0.41	0.71
15	NO2-N (mgN/L)	0.00	0.00	0.00	0.08	0.07	0.00	0.00	0.01	0.03	0.05	0.04	0.07	0.00	0.02	0.10	0.00	0.00	0.00	0.00	0.07	0.00
16	NO3-N (mgN/L)	0.28	0.39	0.46	0.41	0.33	0.71	1.02	0.80	0.98	0.26	1.83	0.25	0.21	3.94	0.49	0.35	0.29	0.21	0.37	0.34	0.71
17	o-PO4-P (mg P/L)	0.000	0.093	0.002										0.103	0.000	0.017	0.050	0.103	0.000			
18	P-Tot (mgP/L)	0.001	0.025	0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.018	0.050	0.001	0.003	0.001	0.010	0.001
19	SiO2 (mg/L)	11.7	9.3	8.5	4.8	10.5	13.0	14.0	5.1	5.8	15.4	13.5	15.4	21.3	25.6	11.0	12.4	5.9	7.2	11.2	10.3	13.0
20	SO4 (mg/L)	2.9	10.7	13.9	6.6	3.0	5.5	13.7	3.1	3.0	15.7	3.1	2.8	5.6	14.5	3.4	4.7	19.7	3.8	3.1	2.3	19.3
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.5	1.3	1.7	1.4	2.0	0.4	0.3	0.8	1.0	0.9	0.9	1.1	0.9	0.9	1.5	1.3	1.5	1.8	1.9	1.3	0.8
2	DO (mg/L)	8.0	7.4	8.5	7.4	8.0	8.1	7.5	8.8	6.8	6.7	6.4	6.9	6.1	7.0	6.8	6.6	5.9	7.0	6.5	6.8	7.3
3	DO_SAT% (%)	90	85	94	84	92	87	81	98	76	84	80	88	77	89	87	82	75	88	81	93	85
	TRACE & TOXIC																					
1	Al (mg/L)															3.29						
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	43	47	47	52	54	53	37	48	51	55	41	52	57	68	64	45	52	37	57	76	47
2	HAR_Total (mgCaCO3/L)	62	82	84	91	87	74	56	70	90	82	62	80	90	112	98	58	91	70	98	98	85
3	Na% (%)	22	25	18	19	15	19	28	16	13	18	20	18	33	17	16	17	19	18	18	15	18
4	RSC (-)	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.5	0.6	0.4	0.4	0.3	0.4	0.6	0.3	0.3	0.4	0.4	0.4	0.9	0.4	0.4	0.3	0.4	0.4	0.4	0.3	0.4
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

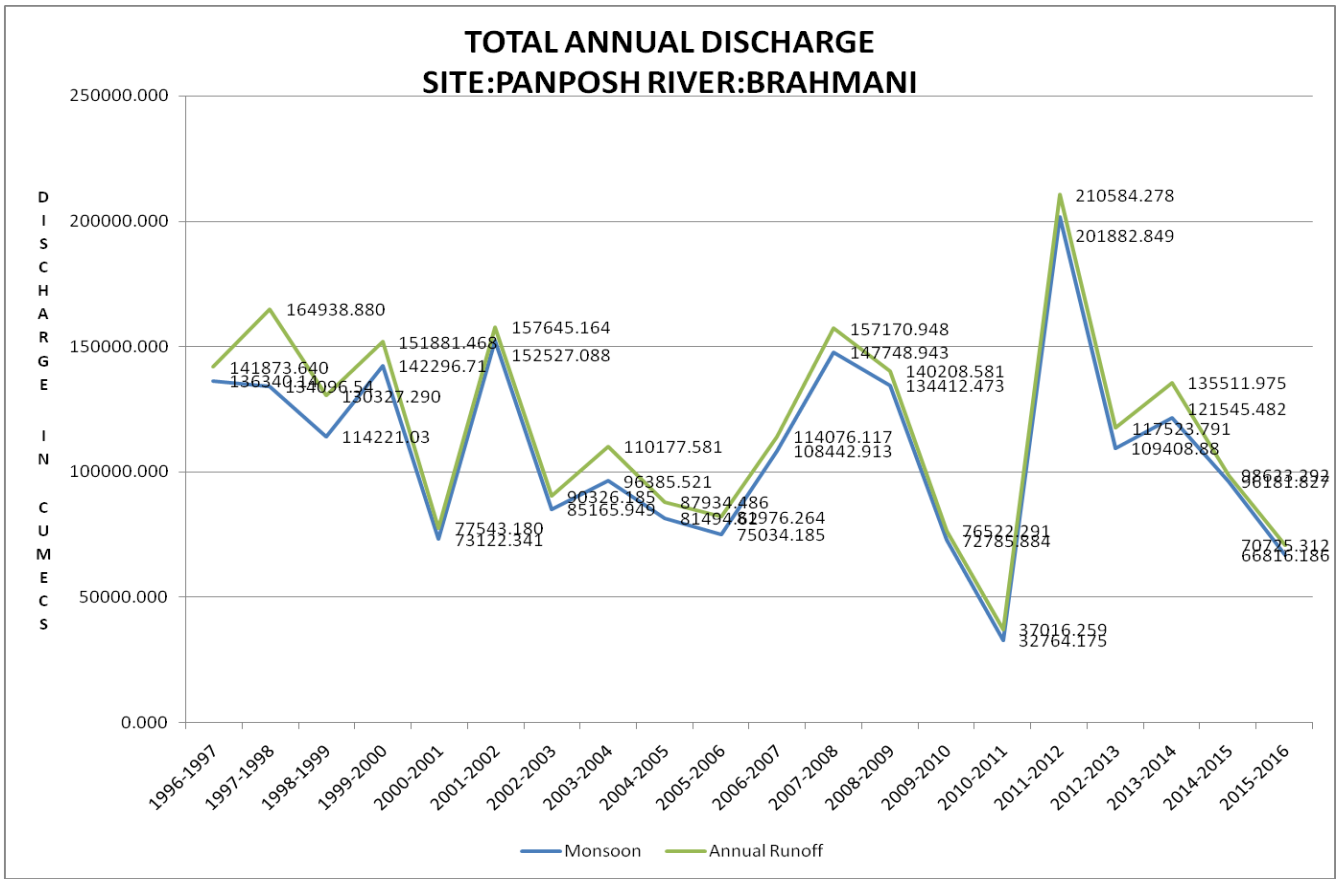
Station Name : PANPOSH (EB000H6) | **Division : E.E., Bhubaneswar**

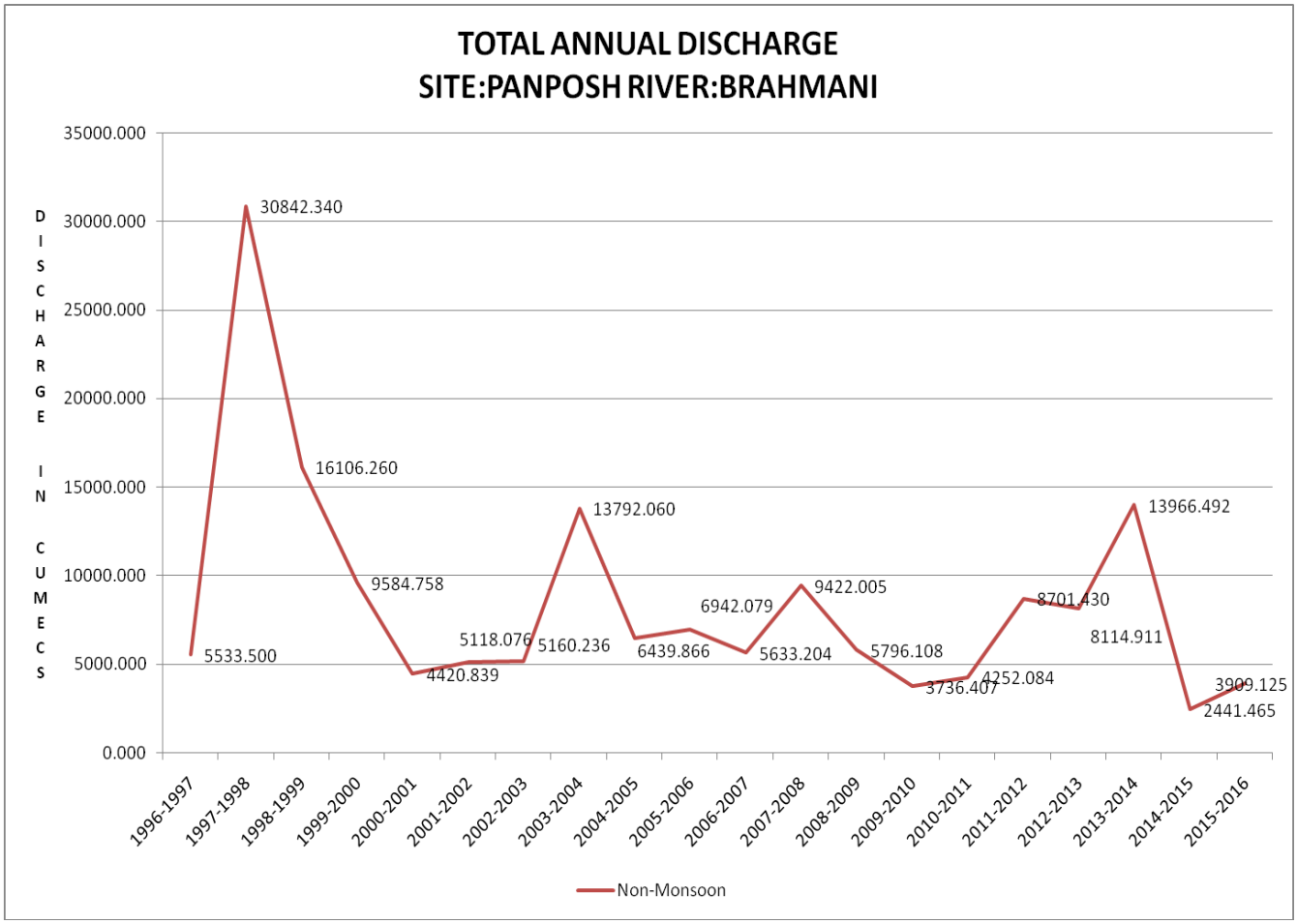
Local River : Brahmani | **Sub-Division : Rourkela**

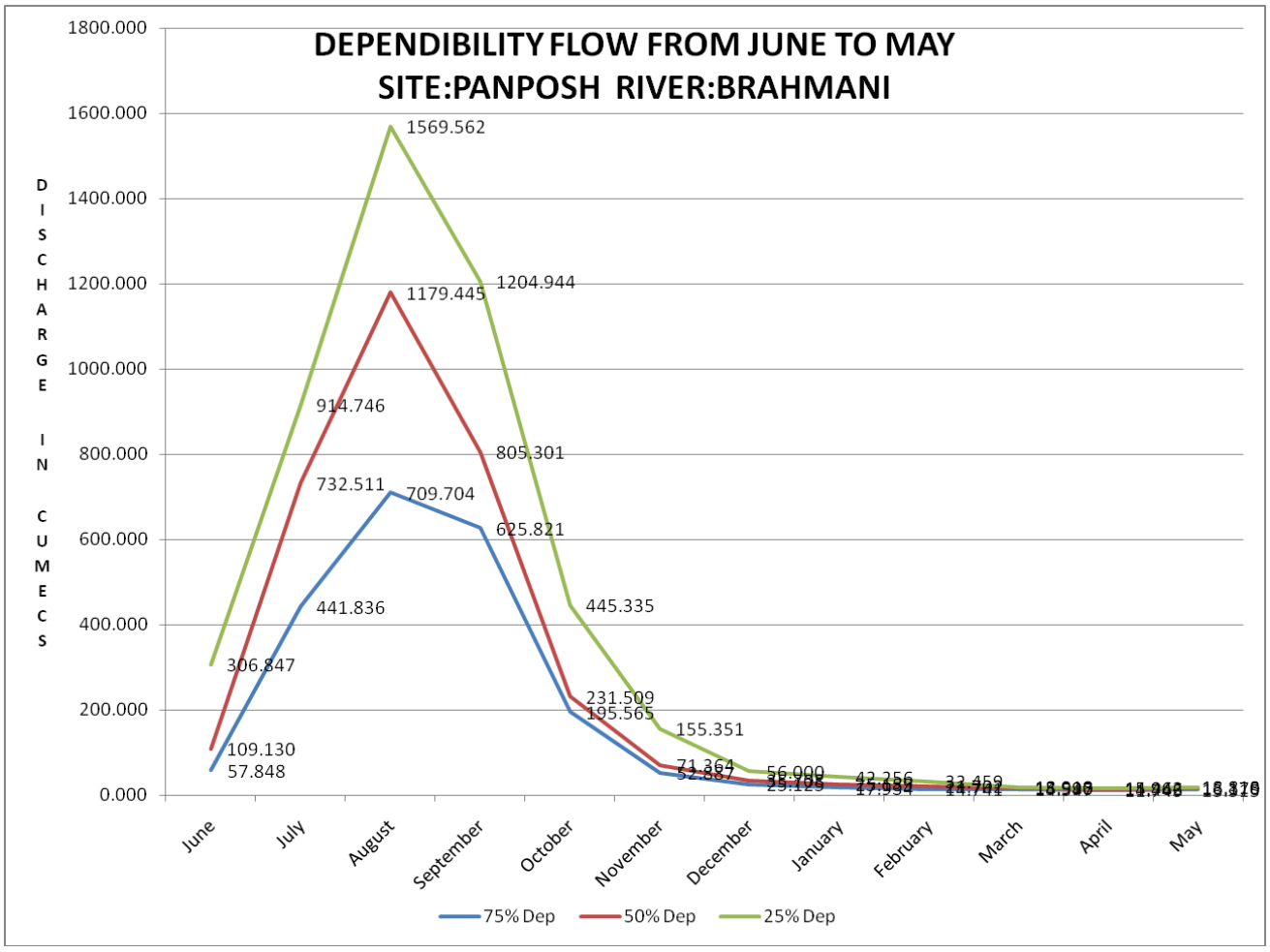
River Water

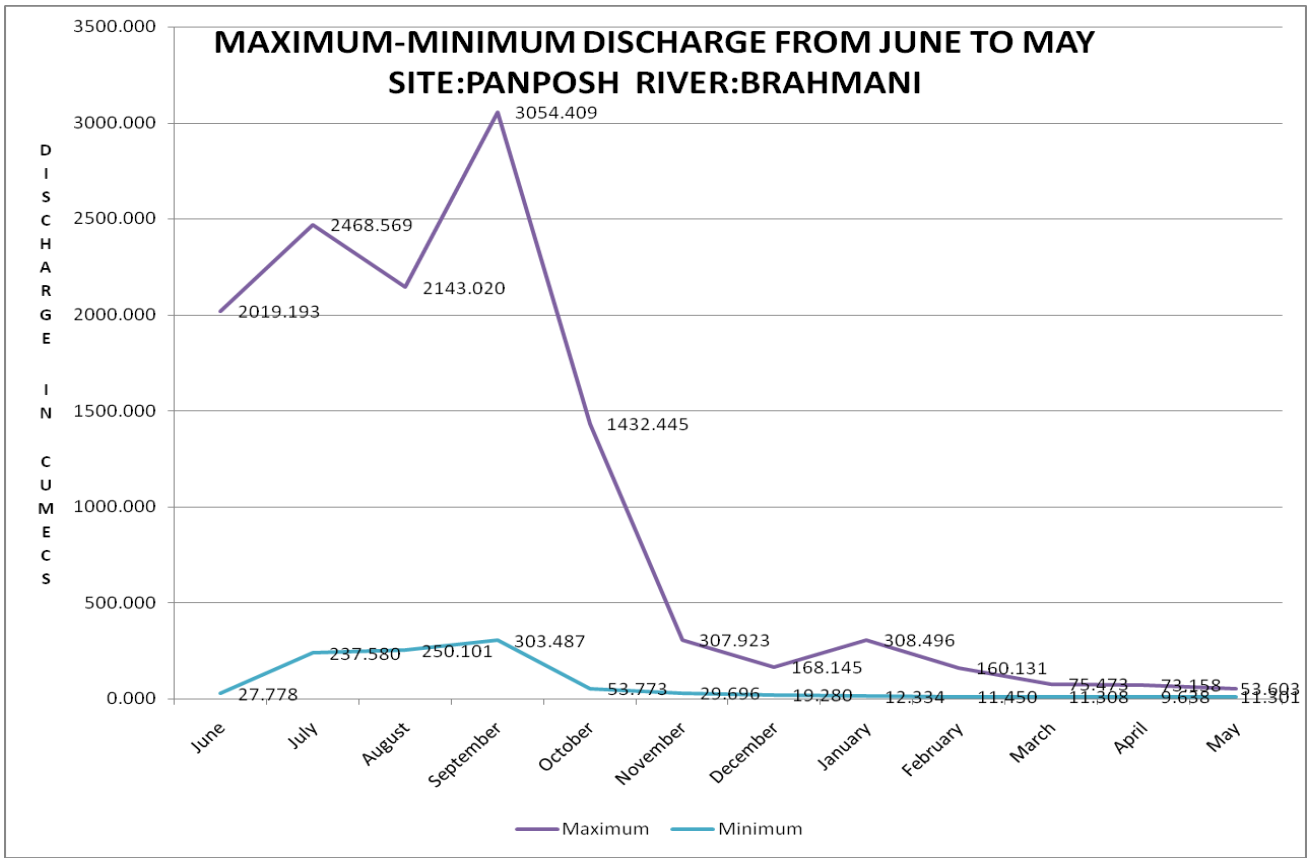
S.No	Parameters			
		2014	2015	2016
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	220	291	292
3	EC_GEN (µmho/cm)	220	291	292
4	pH_FLD (pH units)	7.7	7.6	7.5
5	pH_GEN (pH units)	7.7	7.6	7.5
6	Temp (deg C)	25.7	27.0	26.3
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0		0.0
2	ALK-TOT (mgCaCO3/L)	60		65
3	B (mg/L)	0.00	0.00	0.01
4	Ca (mg/L)	19	20	29
5	Cl (mg/L)	14.5	12.0	13.8
6	CO3 (mg/L)	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.0	0.3	0.5
9	HCO3 (mg/L)	77	53	79
10	K (mg/L)	2.2	1.3	1.4
11	Mg (mg/L)	4.7	7.7	12.0
12	Na (mg/L)	10.5	6.5	8.9
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	1.19	0.74	0.86
15	NO2-N (mgN/L)	0.00	0.00	0.00
16	NO3-N (mgN/L)	1.19	0.74	0.85
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.001	0.010
19	SiO2 (mg/L)	14.3	5.8	5.3
20	SO4 (mg/L)	23.6	2.1	3.0
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.7	1.0	0.9
2	DO (mg/L)	7.5	4.3	4.4
3	DO_SAT% (%)	91	54	56
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	47	49	72
2	HAR_Total (mgCaCO3/L)	66	81	122
3	Na% (%)	26	15	14
4	RSC (-)	0.1	0.0	0.0
5	SAR (-)	0.6	0.3	0.4
	PESTICIDES			

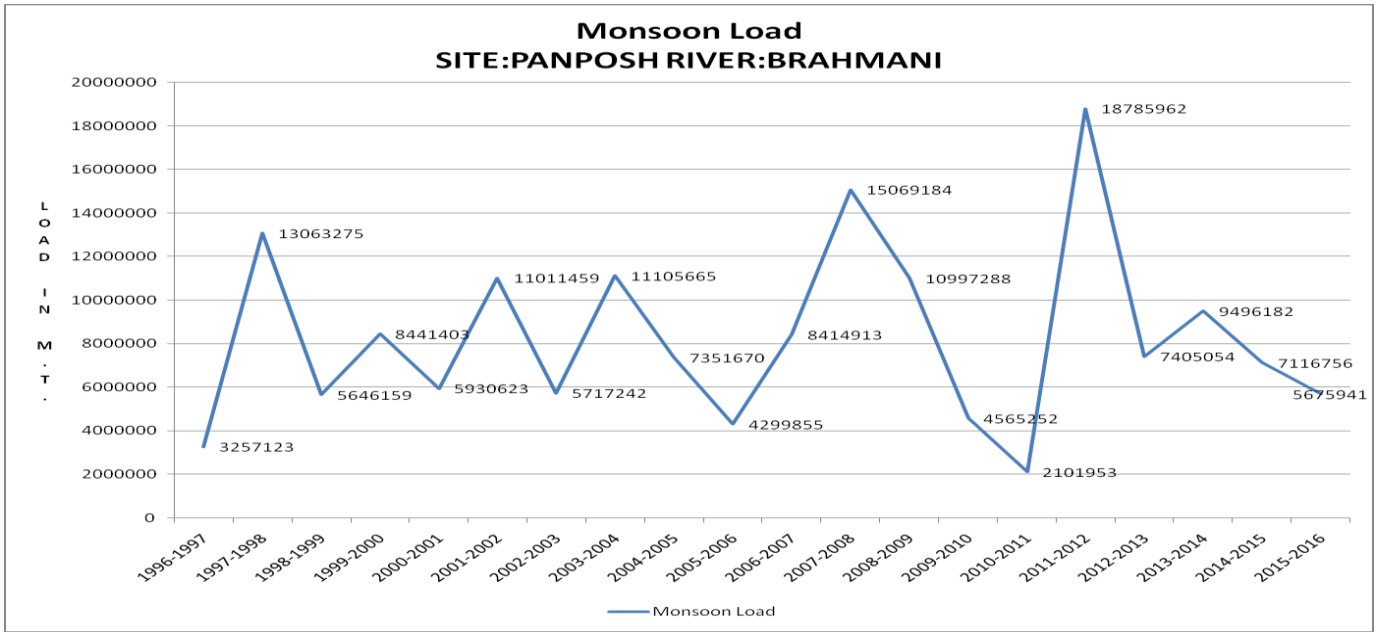
TREND ANALYSIS

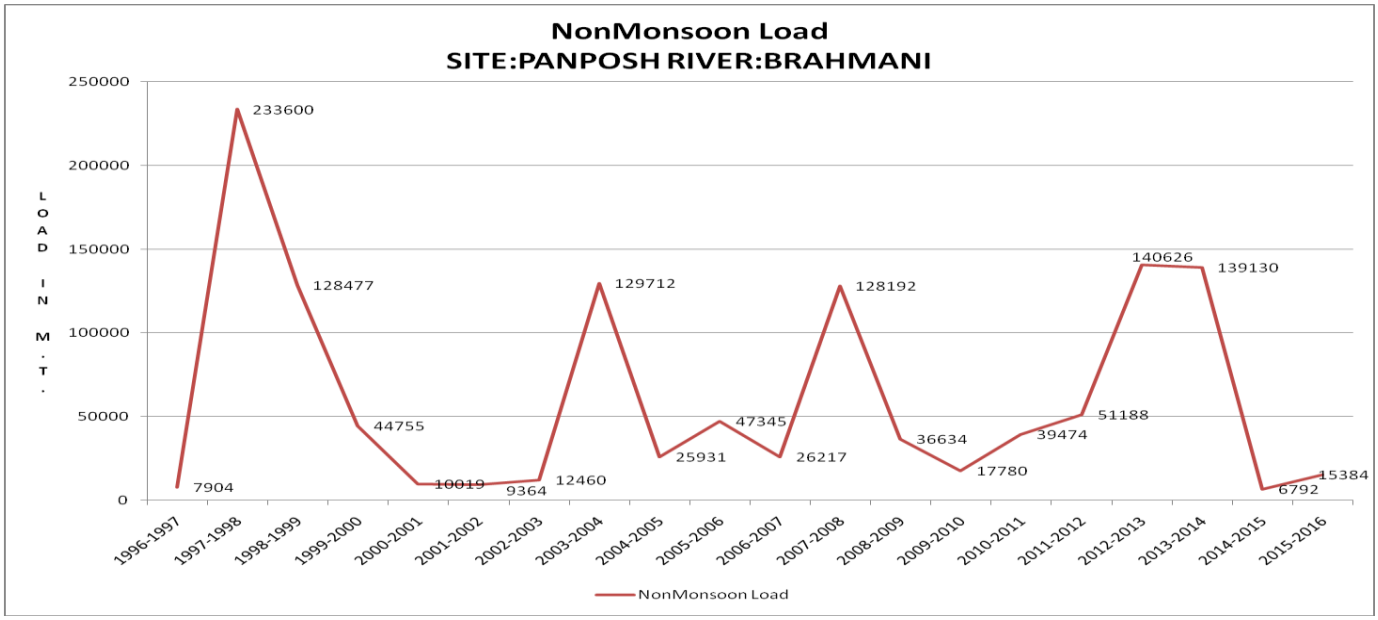

TOTAL ANNUAL DISCHARGE
SITE:PANPOSH RIVER:BRAHMANI
DISCHARGE IN CUMECS
250000.000
200000.000
150000.000
100000.000
50000.000
0.000
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
Monsoon
Annual Runoff

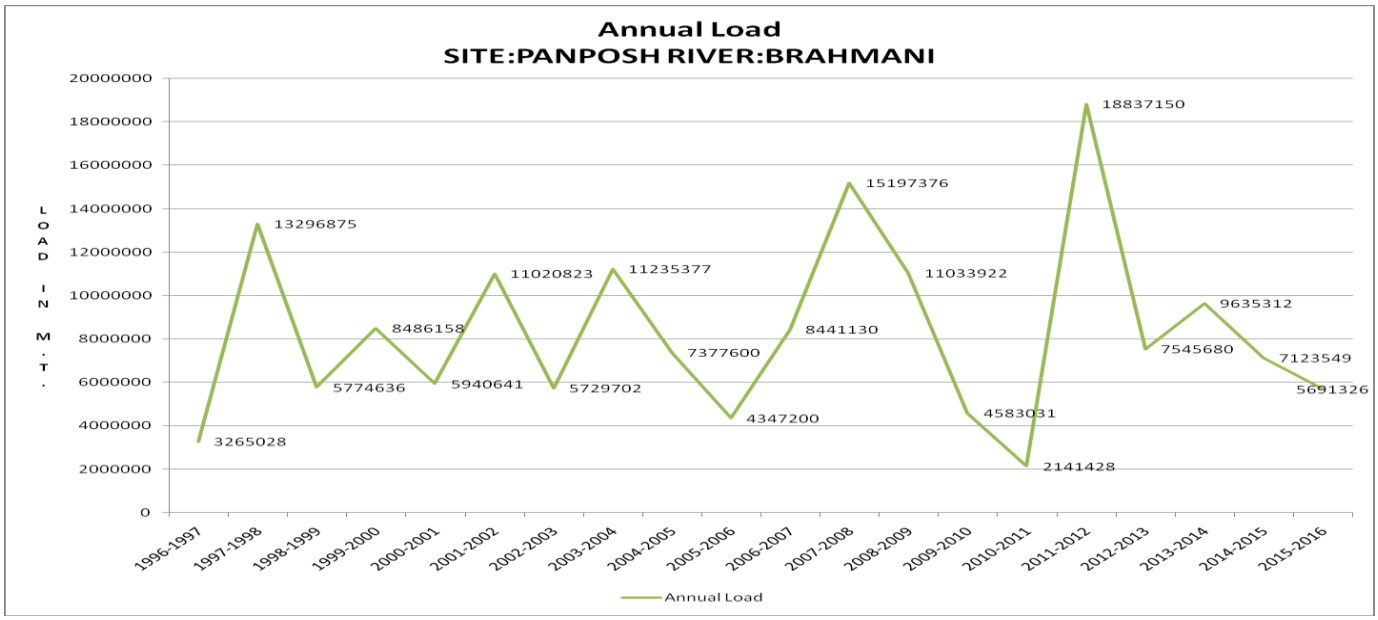

TOTAL ANNUAL DISCHARGE
SITE:PANPOSH RIVER:BRAHMANI
DISCHARGE IN CUMECS
35000.000
30000.000
25000.000
20000.000
15000.000
10000.000
5000.000
0.000
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
Non-Monsoon

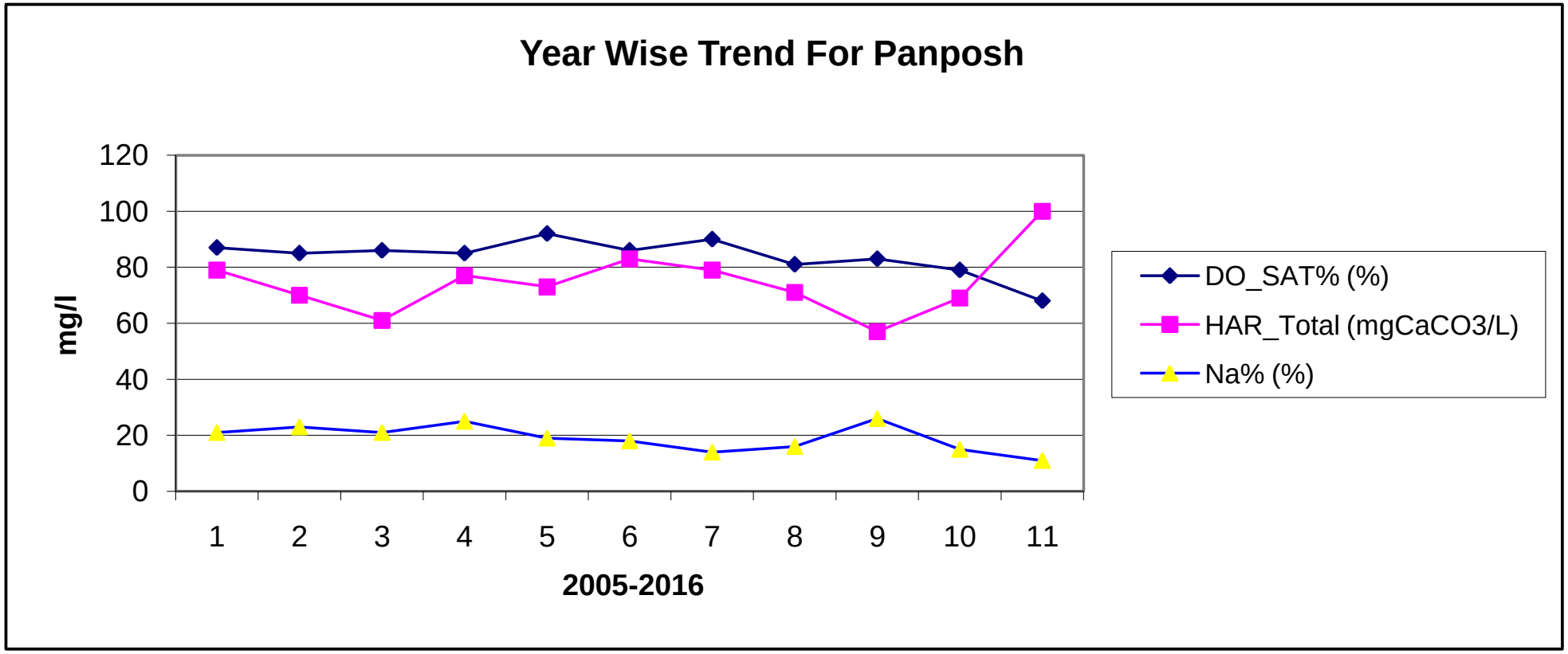

DEPENDIBILITY FLOW FROM JUNE TO MAY
SITE:PANPOSH RIVER:BRAHMANI
DISCHARGE IN CUMECS
1800.000
1600.000
1400.000
1200.000
1000.000
800.000
600.000
400.000
200.000
0.000
1569.562
1204.944
1179.445
914.746
805.301
732.511
709.704
625.821
441.836
445.335
306.847
231.509
195.565
155.351
109.130
57.848
June
July
August
September
October
November
December
January
February
March
April
May
75% Dep
50% Dep
25% Dep

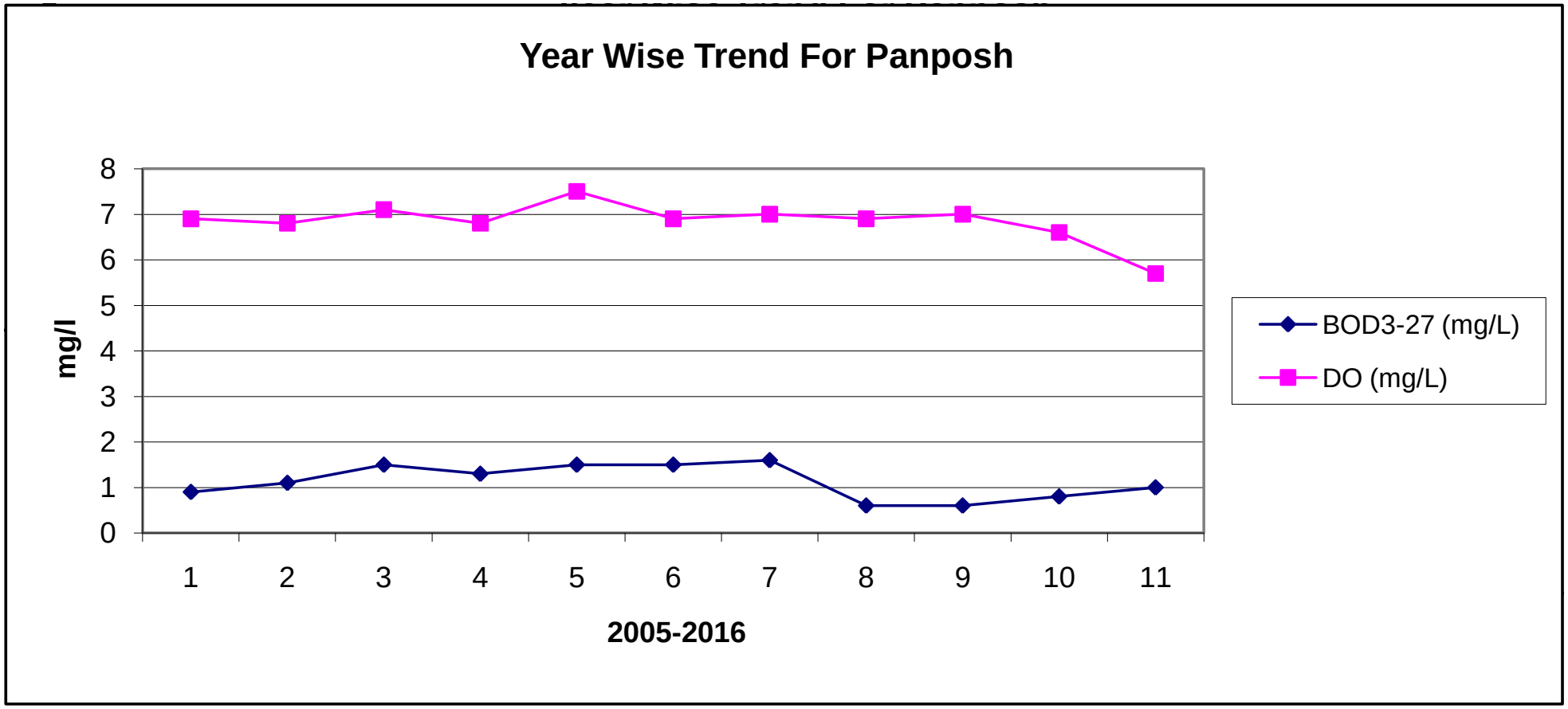

MAXIMUM-MINIMUM DISCHARGE FROM JUNE TO MAY
SITE:PANPOSH RIVER:BRAHMANI
DISCHARGE IN CUMECS
3500.000
3000.000
2500.000
2000.000
1500.000
1000.000
500.000
0.000
3054.409
2468.569
2143.020
2019.193
1432.445
307.923
308.496
168.145
160.131
303.487
237.580
250.101
27.778
53.773
29.696
19.280
12.334
11.450
June
July
August
September
October
November
December
January
February
March
April
May
Maximum
Minimum

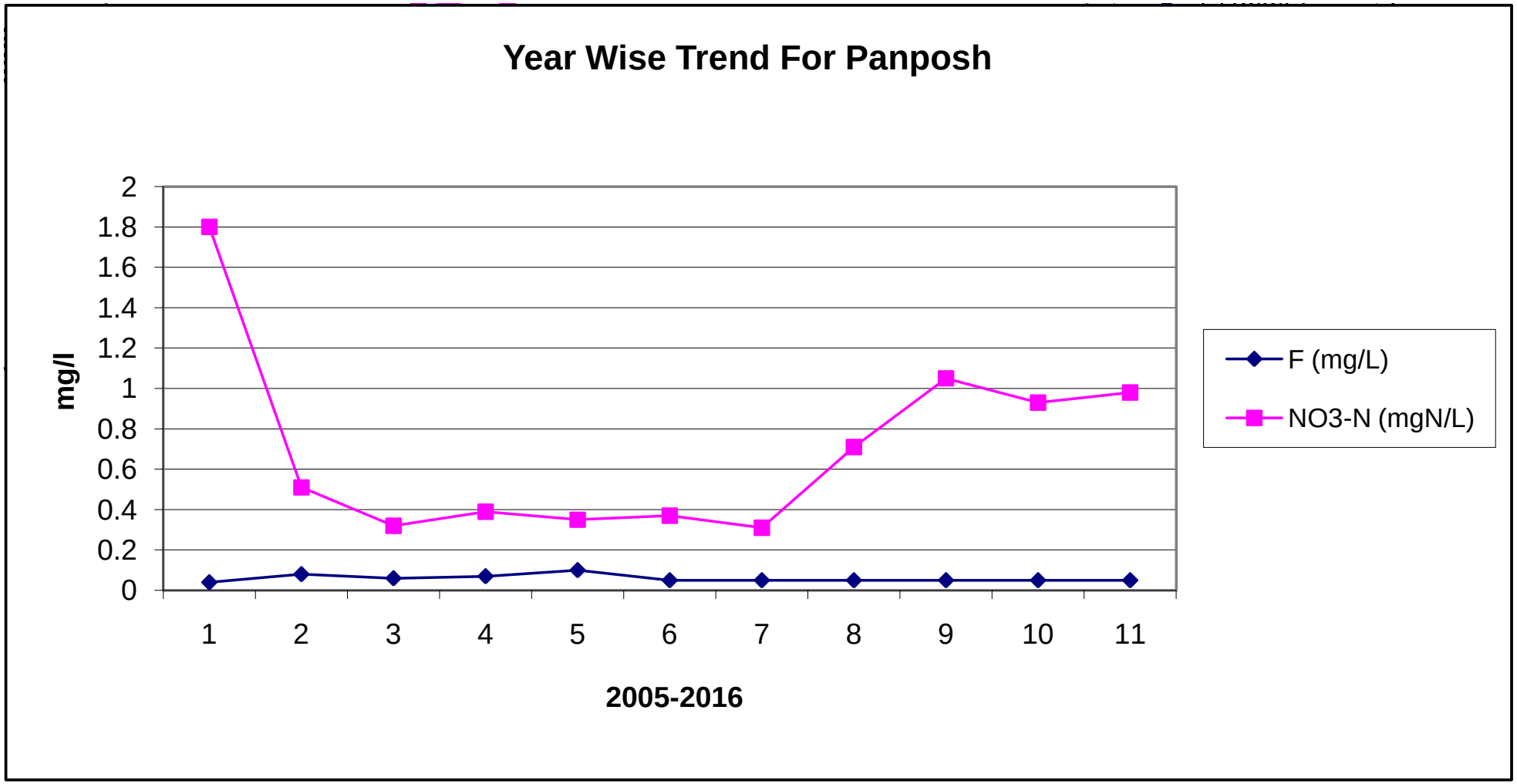

Monsoon Load
SITE:PANPOSH RIVER:BRAHMANI
LOAD IN M.T.
20000000
18000000
16000000
14000000
12000000
10000000
8000000
6000000
4000000
2000000
0
3257123
13063275
5646159
8441403
5930623
11011459
5717242
11105665
7351670
4299855
8414913
15069184
10997288
4565252
2101953
18785962
7405054
9496182
7116756
5675941
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
Monsoon Load

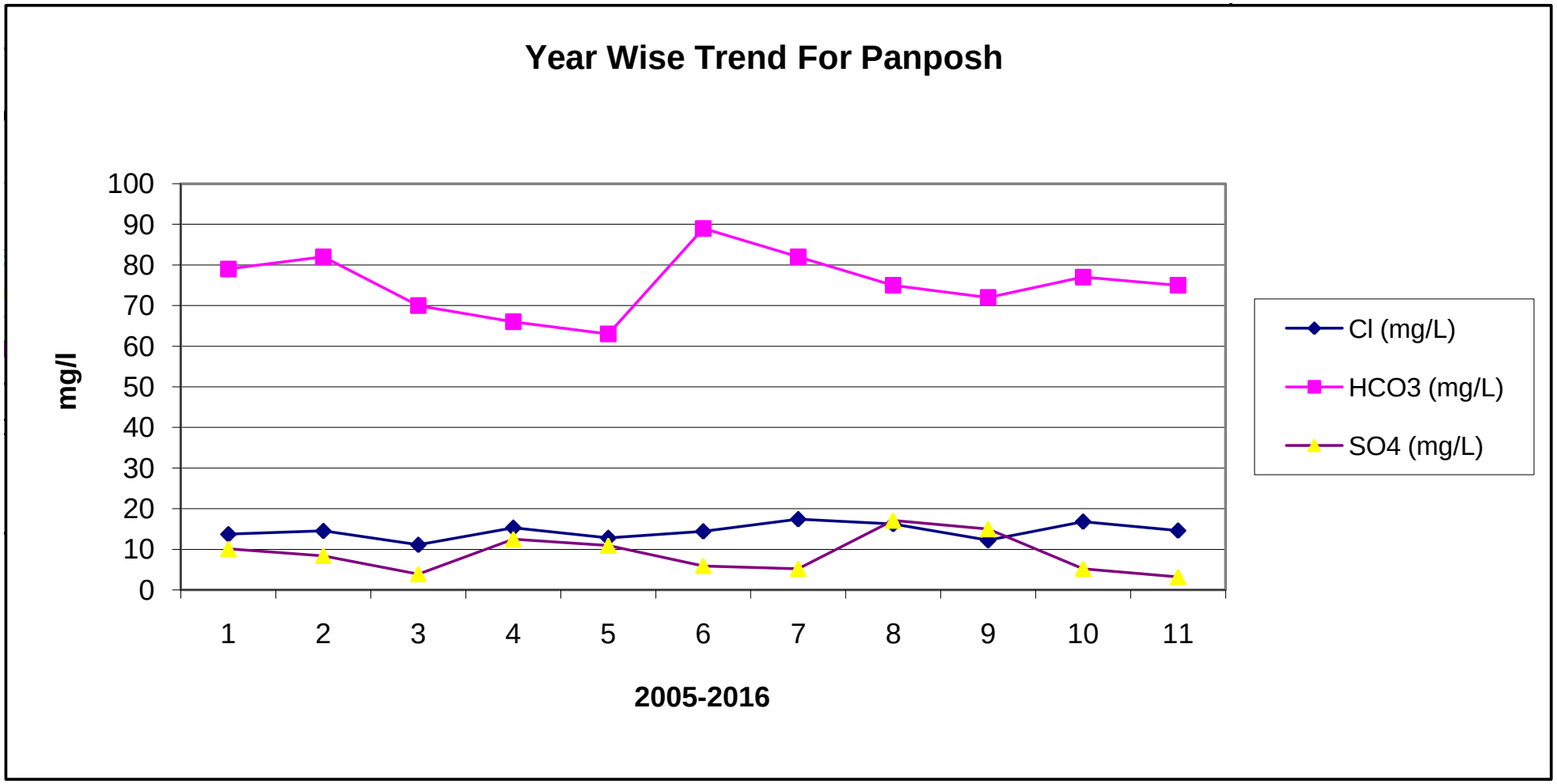

NonMonsoon Load
SITE:PANPOSH RIVER:BRAHMANI
LOAD IN M.T.
250000
200000
150000
100000
50000
0
7904
233600
128477
44755
10019
9364
12460
129712
25931
47345
26217
128192
36634
17780
39474
51188
140626
139130
6792
15384
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
NonMonsoon Load

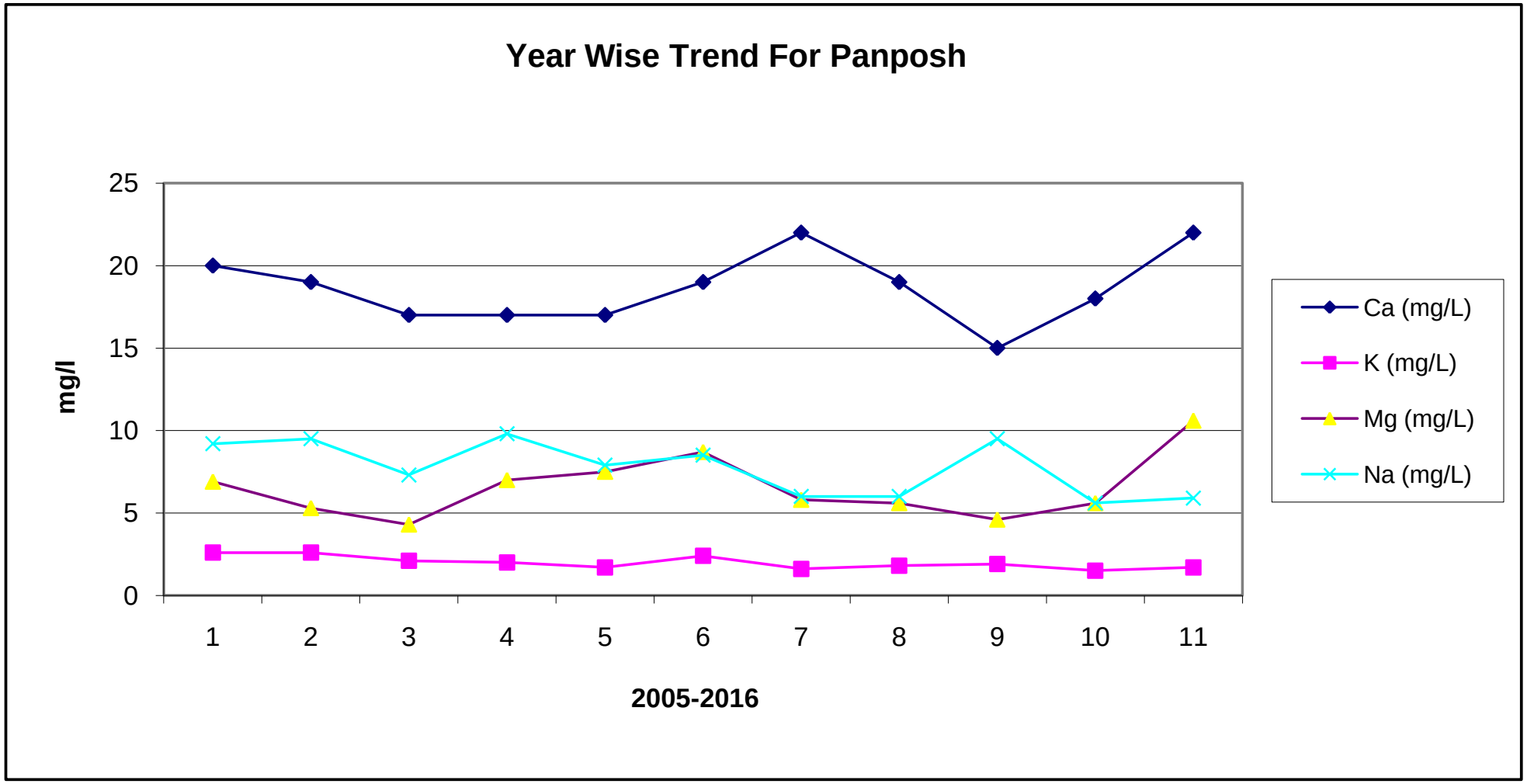

Annual Load
SITE:PANPOSH RIVER:BRAHMANI
LOAD IN M.T.
20000000
18000000
16000000
14000000
12000000
10000000
8000000
6000000
4000000
2000000
0
3265028
13296875
5774636
8486158
5940641
11020823
5729702
11235377
7377600
4347200
8441130
15197376
11033922
4583031
2141428
18837150
7545680
9635312
7123549
5691326
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
Annual Load


Year Wise Trend For Panposh
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Panposh
mg/l
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Panposh
mg/l
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Panposh
mg/l
100
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Panposh
mg/l
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

HYDROLOGICAL DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**Gomlai**	**Code**	:	**EB000W3**
State	:	Orissa	District		Sundergarh
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmni
Tributary	:	Brahmni	Sub Tributary	:	Brahmni
Sub-Sub Tributary	:	Brahmni	Local River	:	Brahmni
Division	:	E.E., Bhubaneswar	Sub-Division	:	Rourkela
Drainage Area	:	21950 Sq. Km.	Bank	:	Left
Latitude	:	21°50'16"	Longitude	:	84°56'33"
Zero of Gauge (m)	:	135 (m.s.l)	01.01.1970	-	31.12.2025
		Opening Date	Closing Date		
Gauge	:	29.08.1977			
Discharge	:	21.01.1979			
Sediment	:	17.07.1980			
Water Quality	:	17.07.1980			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1979-1980	1914	142.570	09.08.1979	6.337	138.450	28.04.1980
1980-1981	4555	144.010	20.06.1980	8.975	138.330	07.03.1981
1981-1982	1955	142.350	08.09.1981	1.110	138.500	17.05.1982
1982-1983	5002	144.480	21.08.1982	5.800	138.515	17.03.1983
1983-1984	4675	144.250	07.09.1983	7.100	138.535	23.04.1984
1984-1985	5570	144.830	14.08.1984	8.200	138.440	04.05.1985
1985-1986	4582	144.505	07.08.1985	9.200	138.540	30.03.1986
1986-1987	4176	143.975	28.07.1986	9.000	138.375	24.05.1987
1987-1988	10268	146.260	29.08.1987	9.800	138.540	27.05.1988
1988-1989	7766	145.500	04.08.1988	9.000	138.485	03.06.1988
1989-1990	5389	144.250	22.06.1989	10.33	138.645	23.04.1990
1990-1991	6852	145.190	15.07.1990	9.940	138.760	03.05.1991
1991-1992	5666	145.200	13.08.1991	1.350	138.765	11.04.1992
1992-1993	2279	142.030	19.08.1992	8.610	138.630	18.03.1993
1993-1994	2944	143.080	17.07.1993	8.655	138.395	09.05.1994
1994-1995	8433	146.100	09.07.1994	12.98	138.465	10.06.1994
1995-1996	4687	144.230	19.09.1995	10.45	138.620	20.05.1996
1996-1997	10652	146.390	26.07.1996	12.95	138.615	16.05.1997
1997-1998	9139	146.835	07.08.1997	12.65	138.610	06.06.1997
1998-1999	7072	145.960	11.09.1998	9.730	138.590	21.05.1999
1999-2000	6120	145.150	08.08.1999	8.669	138.695	27.04.2000
2000-2001	4506	144.380	27.07.2000	6.750	138.595	01.05.2001

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
2001-2002	10074	147.000	23.07.2001	8.165	138.300	15.05.2002
2002-2003	3289	143.005	13.09.2002	8.000	138.440	27.04.2003
2003-2004	5603	144.995	25.10.2003	9.474	138.475	12.06.2003
2004-2005	3692	143.160	15.08.2004	7.000	138.545	29.05.2005
2005-2006	3221	143.635	29.06.2005	5.300	138.510	16.04.2006
2006-2007	7397	144.915	31.07.2006	7.263	138.520	05.04.2007
2007-2008	10795	147.270	20.08.2007	8.755	138.580	18.05.2008
2008-2009	7521	144.425	08.07.2008	6.402	138.735	15.04.2009
2009-2010	3013	142.910	09.09.2009	6.480	138.415	27.04.2010
2010-2011	1119	140.800	19.09.2010	4.532	138.290	01.03.2011
2011-2012	10801	146.650	24.09.2011	6.339	138.555	06.05.2012
2012-2013	3428	143.150	12.08.2012	7.770	138.540	02.06.2012
2013-2014	4443	144.250	15.10.2013	3.640	138.640	06.04.2014
2014-2015	3866	142.645	11.08.2014	8.914	138.470	31.03.2015
2015-2016	6433	144.180	04.08.2015	6.825	138.280	05.05.2016

Stage-Discharge Data for the period 2015 - 2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	138.475	11.72	139.110	99.10	140.135	939.0	140.775	1225	139.130	111.6	138.680	30.74 *
2	138.470	11.64	139.910	371.1	139.900	746.3 *	140.970	1447	139.050	105.9 *	138.830	42.83
3	138.475	11.77	139.990	374.7	140.215	868.1	140.860	1373	139.050	105.9	138.710	39.34
4	138.475	11.79	140.085	399.2	144.180	6433	140.550	1077	139.010	90.37 *	138.915	51.55
5	138.500	11.55	139.940	366.1 *	141.860	3190	140.400	857.9	139.000	86.48	138.930	54.02
6	138.575	16.46	139.910	359.3	140.830	1468	140.090	528.4 *	138.980	84.29	138.860	44.27
7	138.505	14.24 *	139.990	383.4	140.595	1207	139.855	313.5	139.010	86.50	138.830	42.63
8	138.505	14.87	139.660	311.6	140.295	971.4	139.750	306.4	138.985	89.56	138.790	39.89 *
9	138.600	18.62	140.000	378.9	140.100	620.0 *	139.700	248.5	138.960	78.09	138.720	33.84
10	138.540	14.38	141.695	2573	139.950	349.6	139.625	229.2	138.910	74.53	138.710	32.75
11	138.570	17.22	143.400	4693	139.870	304.5	139.610	227.9	138.910	74.54 *	138.700	32.16 *
12	138.770	27.06	142.800	3892 *	139.840	292.9	139.570	209.9	138.900	73.63	138.690	31.57
13	138.610	15.41	141.090	1653	139.840	301.9	139.630	213.4 *	138.880	70.36	138.680	30.73
14	138.780	41.54 *	140.515	1204	139.105	779.8	139.425	201.2	138.880	69.18	138.640	28.07
15	138.895	56.77	140.090	1162	140.010	472.8 *	139.310	187.7	138.860	55.95	138.630	27.38 *
16	139.505	184.6	140.240	1186	139.800	205.0 *	139.270	166.2	138.840	53.48	138.620	26.70
17	139.110	99.78	140.125	1144	139.980	376.1	139.280	180.0 *	138.810	50.28	138.610	25.27
18	139.025	85.64	140.500	1237 *	140.420	851.0	139.270	177.0	138.780	45.18 *	138.610	24.93
19	139.100	103.7	140.970	1505 *	140.595	821.3	139.300	185.9	138.730	37.19	138.600	24.28
20	138.935	77.08	140.455	1103	140.580	1069	139.530	208.2 *	138.720	36.47	138.590	23.30
21	138.880	68.70 *	140.765	1297	140.475	985.2	139.570	212.5	138.710	31.01 *	138.580	22.48
22	138.815	60.33	140.830	1404	140.430	882.7	139.505	205.4	138.720	36.48 *	138.580	22.52 *
23	138.780	30.92	140.700	1244	140.100	798.7 *	139.430	173.1	138.705	32.62	138.570	22.37
24	138.985	70.56	142.790	3558	140.130	806.1	139.740	253.2	138.720	30.68 *	138.570	21.97
25	139.475	149.8	141.260	1742	140.430	881.2	139.910	300.7 *	138.690	27.97 *	138.560	20.95 *
26	139.560	182.7	141.320	1786 *	140.350	840.7	139.920	303.1	138.680	27.52	138.550	22.33
27	139.460	152.0	141.590	1992	140.410	864.4	139.840	279.4 *	138.650	26.14	138.540	18.29
28	139.260	120.9 *	141.100	1626	140.260	774.9	139.675	230.5	138.660	25.59	138.530	17.63
29	139.200	111.6	140.655	1238	140.170	760.4	139.350	177.5	138.660	25.85	138.530	17.63 *
30	139.130	103.1	140.290	991.8	140.130	834.3 *	139.190	112.9	138.650	24.91	138.540	18.77
31			140.135	934.1	140.330	851.4			138.650	24.74		
Ten-Daily Mean												
I Ten-Daily	138.512	13.70	140.029	561.7	140.806	1679	140.257	760.6	139.008	91.32	138.798	41.18
II Ten-Daily	138.930	70.88	141.018	1878	140.004	547.4	139.420	195.7	138.831	56.63	138.637	27.44
III Ten-Daily	139.155	105.1	141.040	1619	140.292	843.6	139.613	224.8	138.681	28.50	138.555	20.49
Monthly												
Min.	138.470	11.55	139.110	99.10	139.105	205.0	139.190	112.9	138.650	24.74	138.530	17.63
Max.	139.560	184.6	143.400	4693	144.180	6433	140.970	1447	139.130	111.6	138.930	54.02
Mean	138.866	63.22	140.707	1362	140.365	1018	139.763	393.7	138.835	57.84	138.663	29.71

Annual Runoff in MCM = 8007 Annual Runoff in mm = 365

Peak Observed Discharge = 6433 cumecs on 04/08/2015 Corres. Water Level :144.18 m

Lowest Observed Discharge = 6.825 cumecs on 05/05/2016 Corres. Water Level :138.28 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2015 - 2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	138.530	18.10	138.500	18.44	138.390	11.75	138.510	18.59	138.400	11.97	138.290	7.300 *
2	138.510	16.85	138.480	17.46	138.380	11.41	138.620	26.41	138.390	11.47	138.260	7.257
3	138.530	18.45	138.480	17.46 *	138.390	11.79	138.540	21.29	138.360	10.86 *	138.290	7.227
4	138.510	17.59	138.460	16.44	138.380	11.40	138.480	15.77	138.350	10.92	138.280	6.855
5	138.510	17.50	138.460	16.26	138.380	11.38	138.490	15.85	138.360	10.95	138.280	6.825
6	138.510	17.50 *	138.430	14.65	138.380	11.30	138.480	15.39 *	138.390	11.86	138.290	7.427
7	138.500	16.89	138.450	15.97	138.380	11.29 *	138.490	15.48 *	138.330	9.328	138.290	7.446
8	138.490	16.05	138.440	15.41	138.400	13.09	138.480	15.87	138.320	8.900	138.290	8.500 *
9	138.530	20.19	138.430	14.58	138.390	11.26	138.470	15.50	138.320	8.771	138.290	7.563
10	138.520	19.67	138.430	14.58 *	138.390	11.03	138.460	15.35	138.320	8.678 *	138.290	7.488
11	138.500	17.48	138.420	12.55	138.390	11.16	138.450	14.82	138.310	8.193	138.280	7.153
12	138.510	18.65	138.440	15.25	138.390	11.07	138.440	15.62	138.310	8.169	138.360	10.92
13	138.510	17.50 *	138.440	14.41	138.390	11.00	138.420	13.98 *	138.310	8.159	138.360	10.76
14	138.500	16.71	138.410	12.03	138.390	11.98 *	138.420	12.54	138.310	8.115 *	138.300	7.812
15	138.510	18.01	138.410	12.01	138.390	10.94	138.410	12.81	138.300	7.853	138.310	8.200 *
16	138.470	18.24	138.410	11.97	138.400	11.19	138.420	13.23	138.300	7.808	138.290	7.418
17	138.520	19.05	138.410	11.97 *	138.410	11.27	138.450	13.42	138.300	7.651 *	138.290	7.402
18	138.530	20.26	138.420	13.54	138.420	11.73	138.440	14.03	138.300	7.692	138.310	8.272
19	138.480	18.31	138.420	13.09	138.420	11.75	138.430	13.79	138.300	7.716	138.320	8.313
20	138.480	18.30 *	138.410	12.83	138.420	11.76	138.420	13.48 *	138.300	7.521 *	138.810	42.69
21	138.500	19.24	138.430	14.08	138.420	11.39 *	138.410	12.08	138.290	7.506	138.740	40.00 *
22	138.540	20.06	138.440	14.53	138.410	11.08	138.400	13.57	138.290	7.450	138.710	34.00 *
23	138.570	25.40	138.430	13.37	138.400	10.99	138.390	11.50	138.290	7.789	138.630	21.98
24	138.570	25.48 *	138.410	11.97 *	138.390	14.69	138.390	11.39 *	138.290	7.391 *	138.620	21.54
25	138.590	28.19 *	138.400	12.25	138.390	11.30	138.390	11.36 *	138.290	7.418	138.540	18.00
26	138.560	22.76	138.420	13.12 *	138.410	11.84	138.390	11.46	138.290	7.408	138.490	14.08
27	138.550	20.00 *	138.400	12.13	138.450	14.88	138.380	11.86 *	138.290	7.308	138.425	13.25
28	138.520	20.01	138.420	13.11	138.440	26.88 *	138.370	10.38	138.290	7.289	138.420	13.23
29	138.520	19.89	138.400	11.98	138.730	36.37	138.370	10.32	138.290	7.313	138.470	15.00 *
30	138.510	19.48	138.400	11.87			138.400	12.23	138.290	6.989	138.400	12.99
31	138.500	18.54	138.410	13.83 *			138.400	12.06			138.390	12.88
Ten-Daily Mean												
I Ten-Daily	138.514	17.88	138.456	16.13	138.386	11.57	138.502	17.55	138.354	10.37	138.285	7.389
II Ten-Daily	138.501	18.25	138.419	12.97	138.402	11.39	138.430	13.77	138.304	7.888	138.363	11.89
III Ten-Daily	138.539	21.73	138.415	12.93	138.449	16.60	138.390	11.66	138.290	7.386	138.530	19.72
Monthly												
Min.	138.470	16.05	138.400	11.87	138.380	10.94	138.370	10.32	138.290	6.989	138.260	6.825
Max.	138.590	28.19	138.500	18.44	138.730	36.37	138.620	26.41	138.400	11.97	138.810	42.69
Mean	138.519	19.37	138.429	13.97	138.411	13.07	138.439	14.24	138.316	8.548	138.397	13.22

Peak Computed Discharge = 3892 cumecs on 12/07/2015 Corres. Water Level :142.8 m

Lowest Computed Discharge = 7.300 cumecs on 01/05/2016 Corres. Water Level :138.29 m

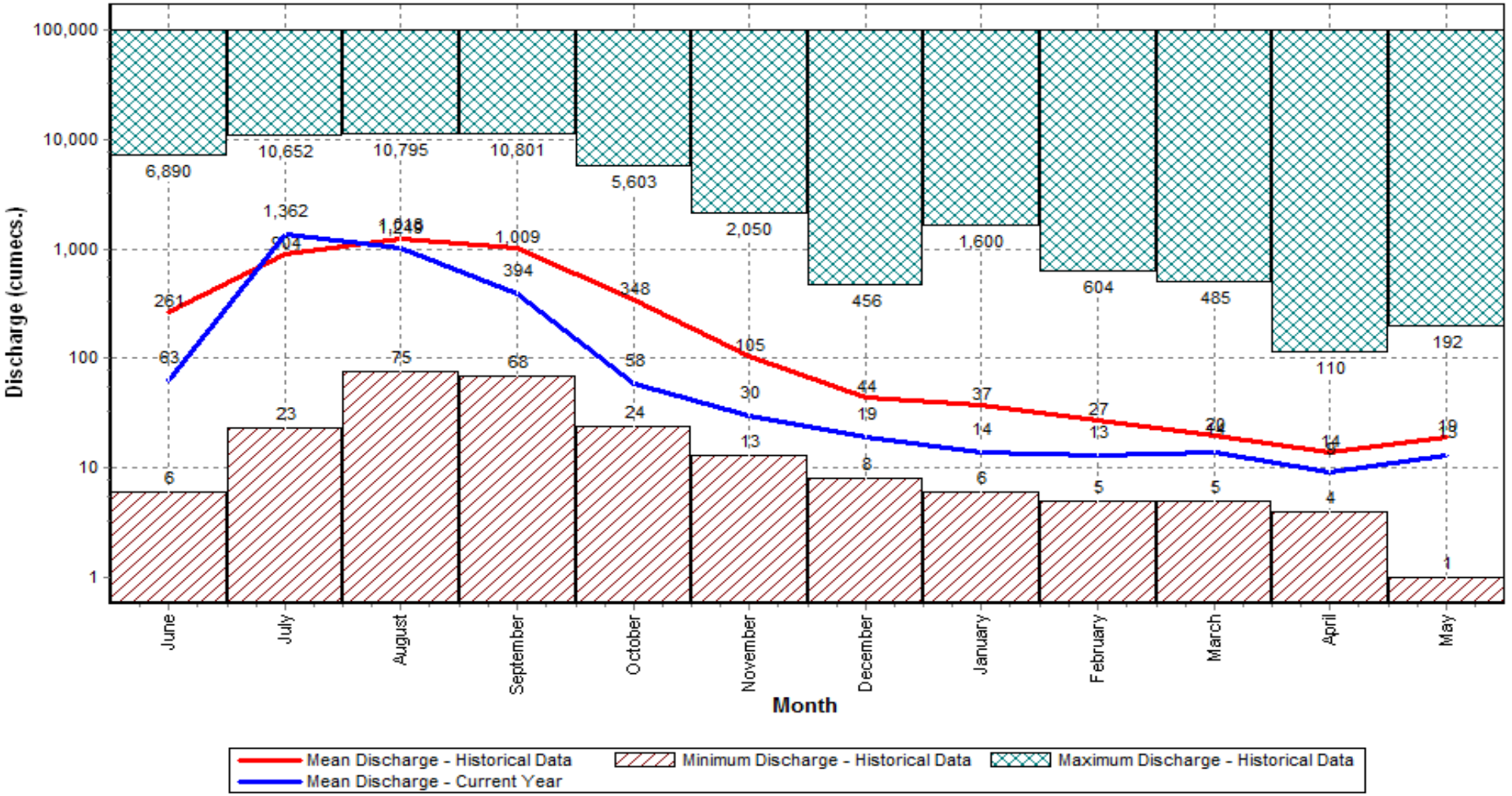
Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2015-2016

Station Name : Gomlai (EB000W3) **Data considered : 1979-2016** **Division : E.E., Bhubaneswar**

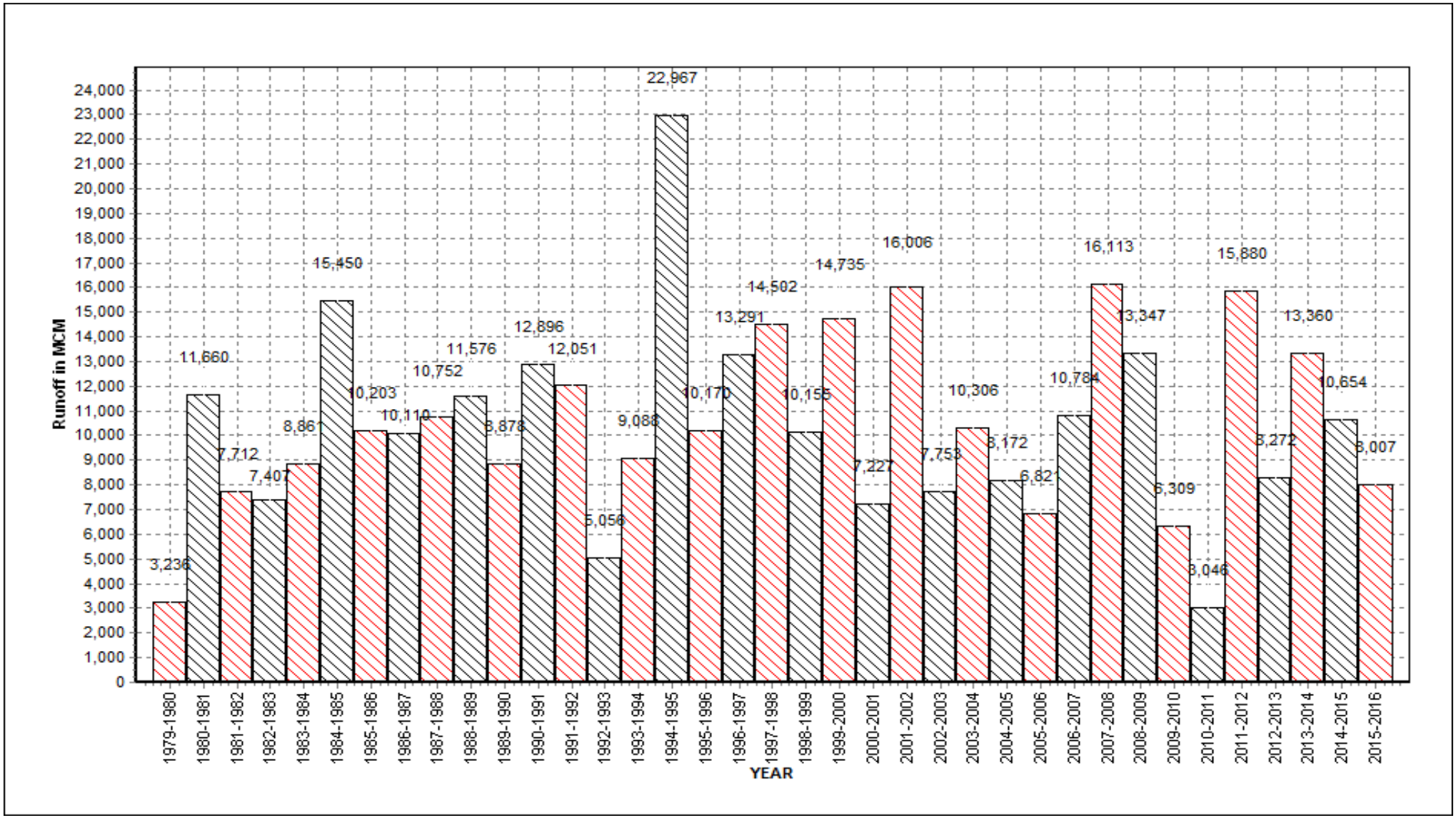
Local River : Brahmni **Sub-Division : Rourkela**



Annual Runoff Values for the period: 1979 - 2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

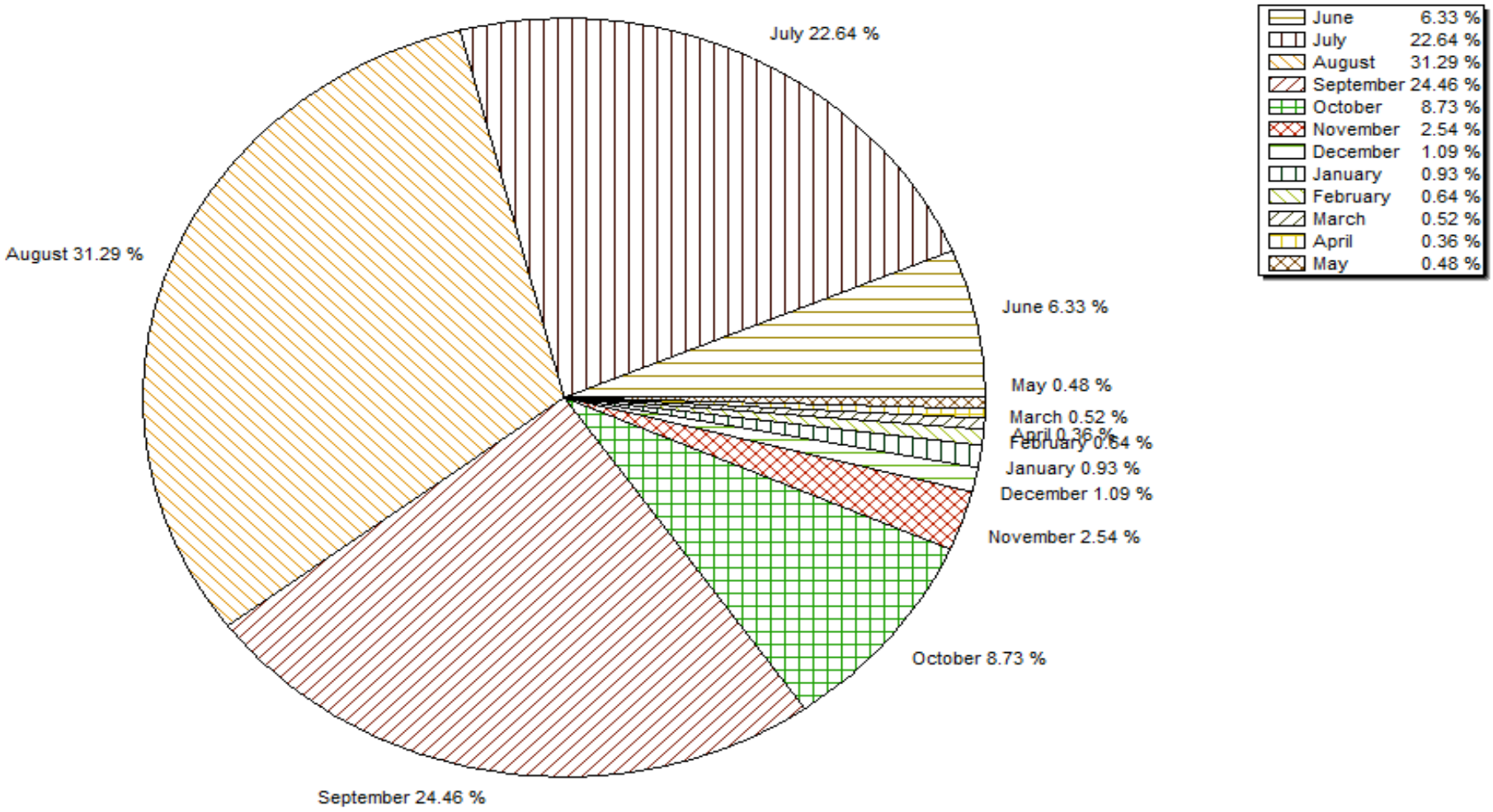


Note: Missing values have not been considered while arriving at Annual Runoff

Monthly Average Runoff based on period : 1979-2015

Station Name : Gomlai (EB000W3)
Local River : Brahmni

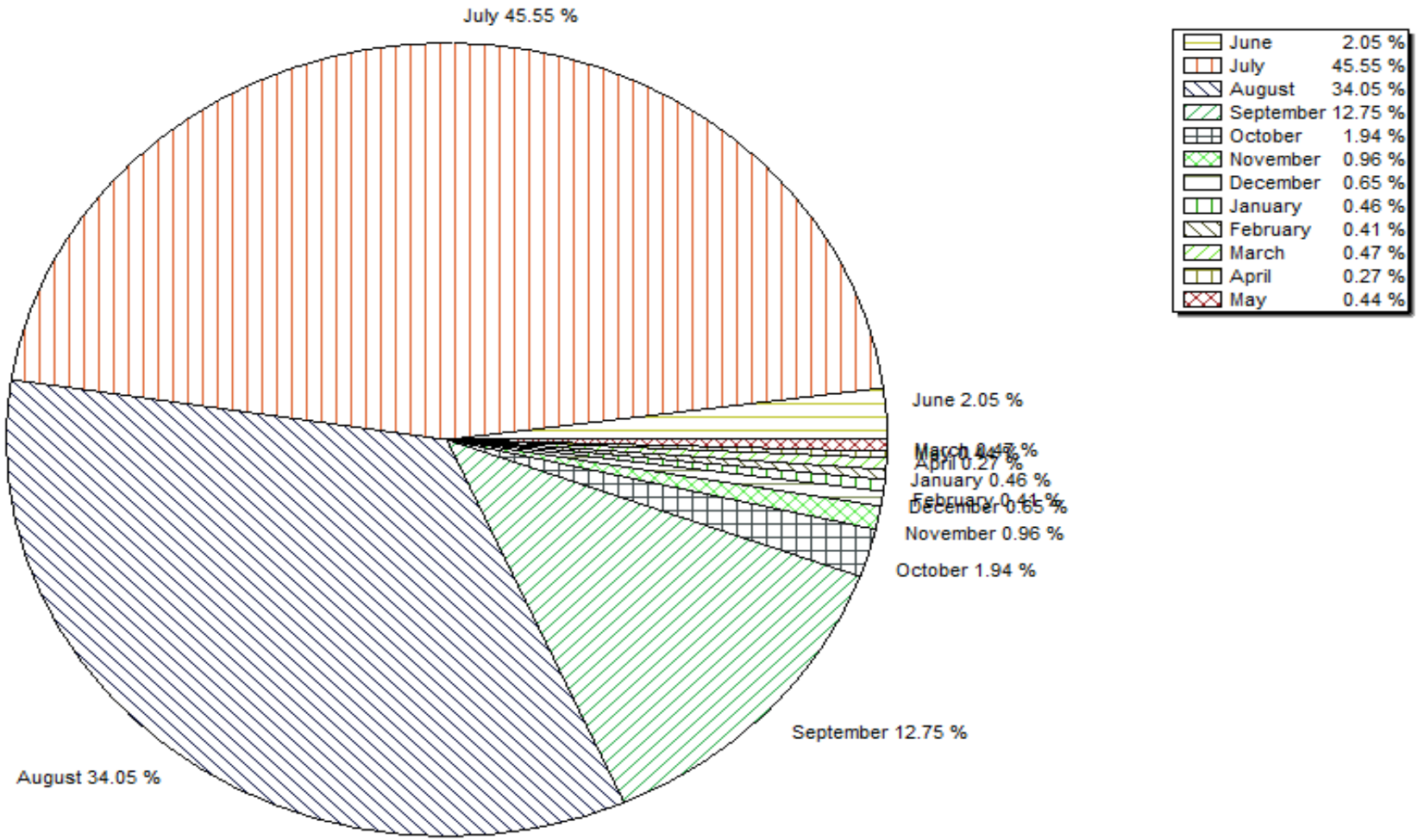
Division : E.E., Bhubaneswar
Sub-Division : Rourkela



Monthly Runoff for the Year : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

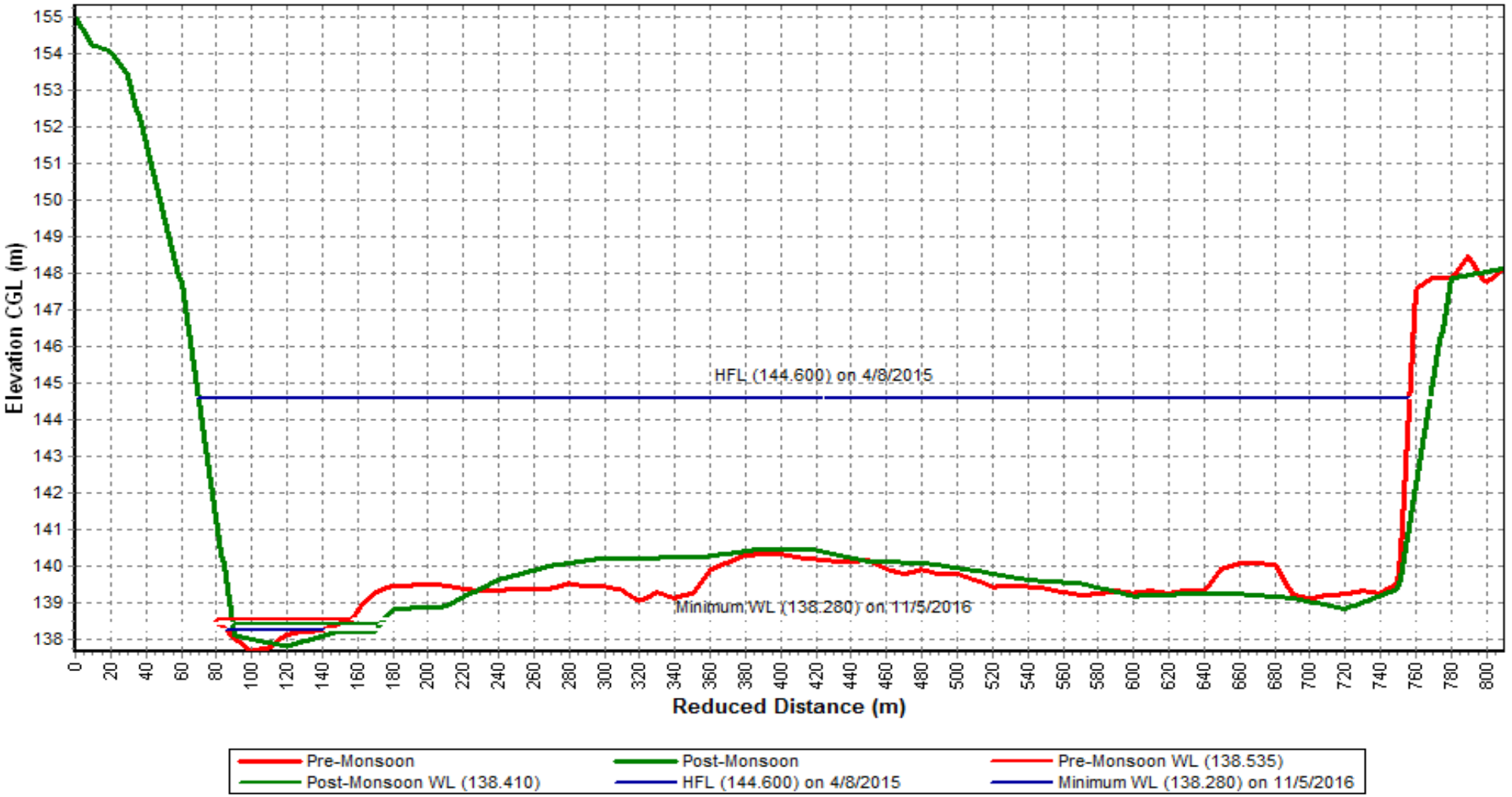
Local River : Brahmni **Sub-Division : Rourkela**



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

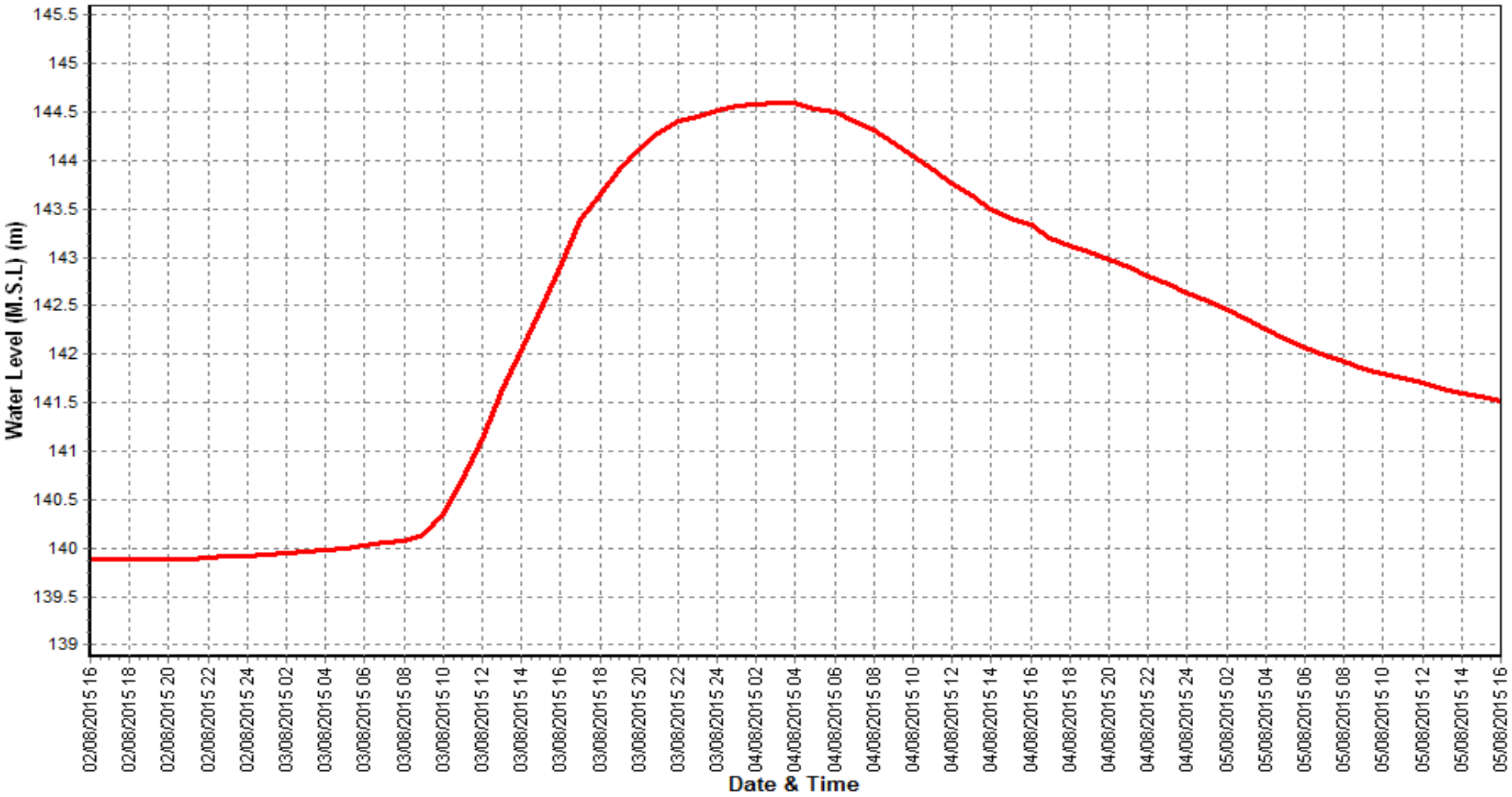
Local River : Brahmni **Sub-Division : Rourkela**



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

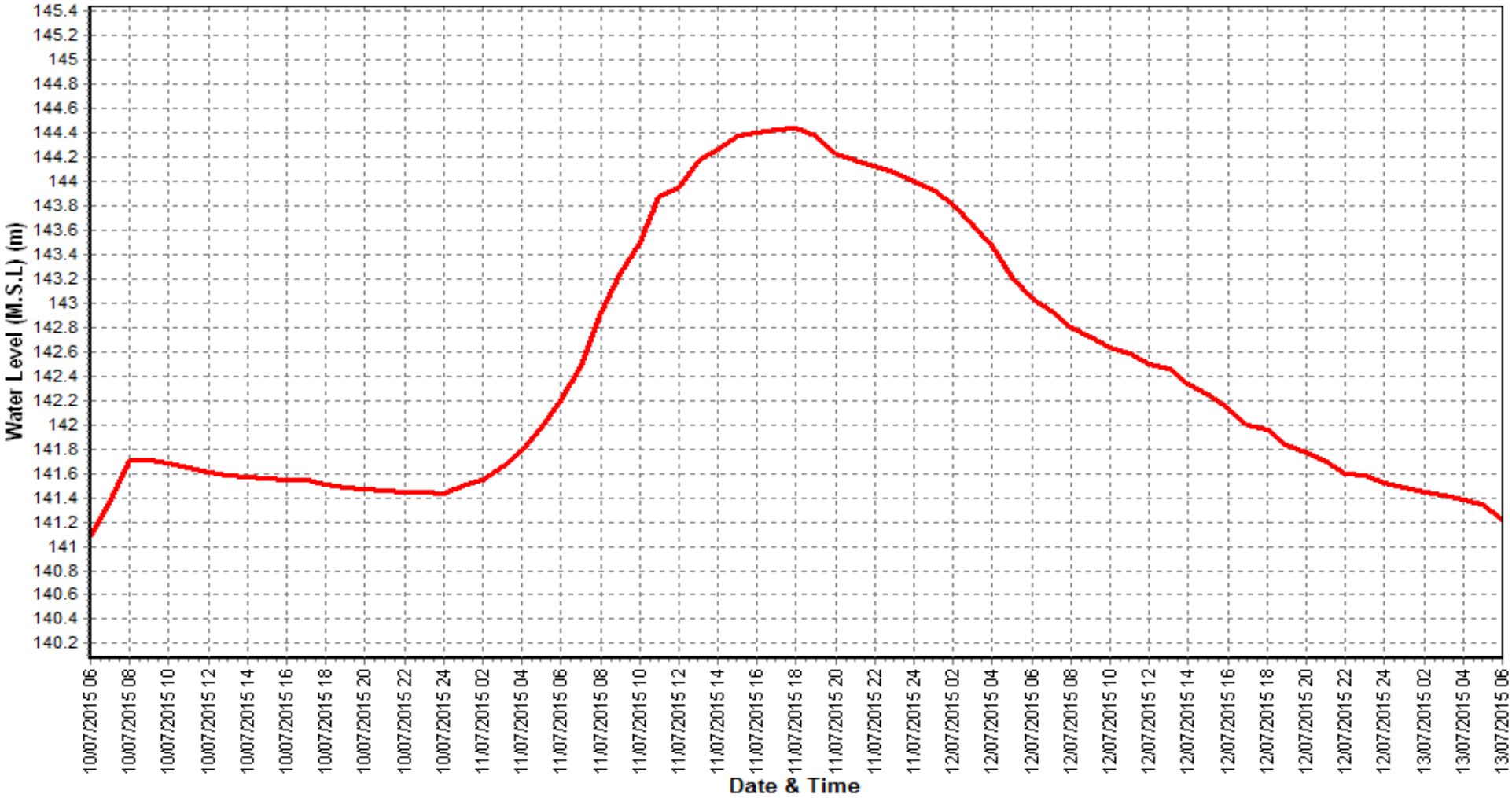


Time Span: 72 Hrs

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

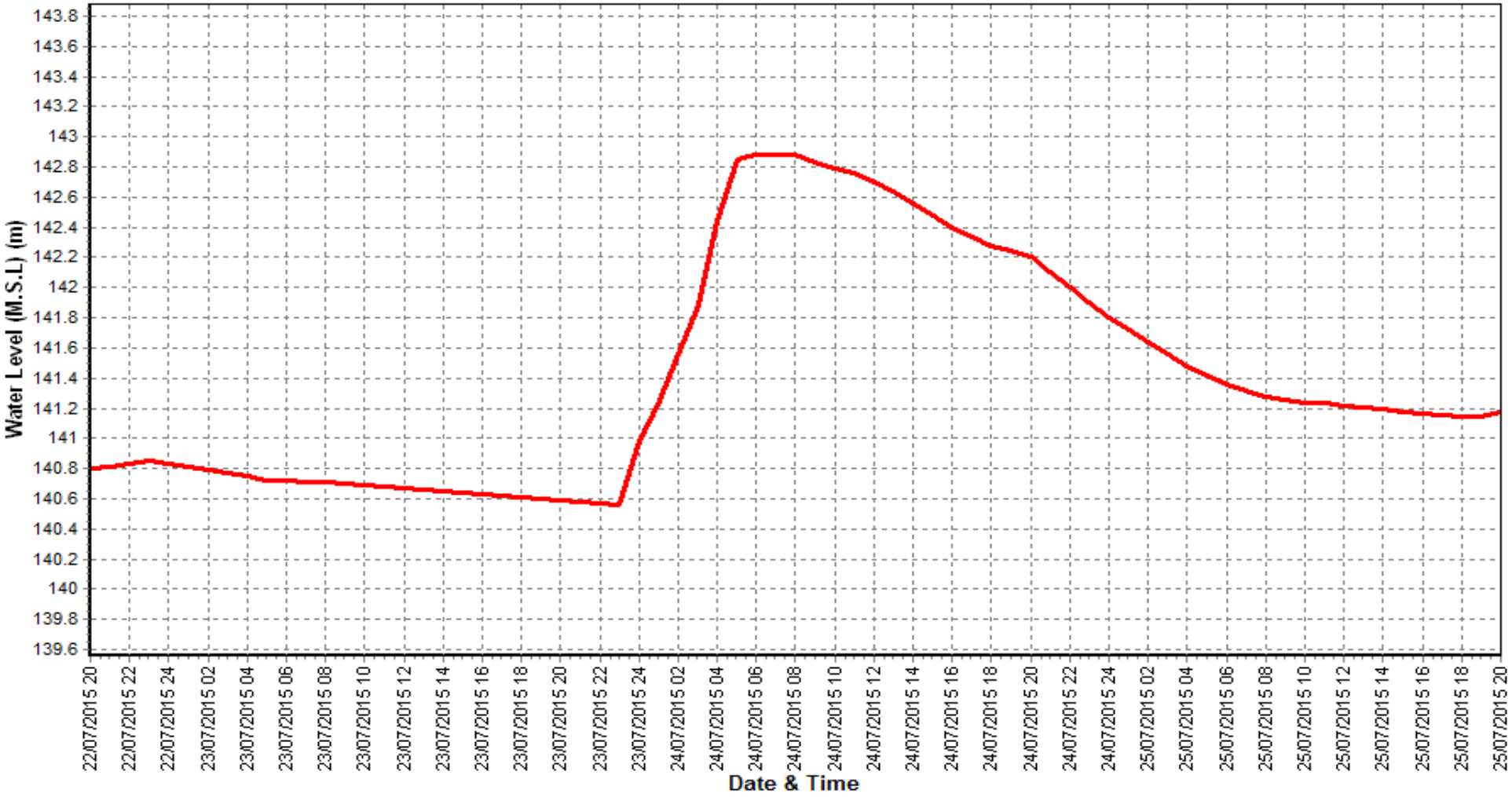


Time Span: 72 Hrs

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



Time Span: 72 Hrs

SEDIMENT DATA

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	11.72	0.000	0.000	0.012	0.012	12	99.10	0.003	0.004	0.068	0.075	642	939.0	0.004	0.004	0.127	0.135	10953
2	11.64	0.000	0.000	0.010	0.010	10	371.1	0.002	0.003	0.072	0.077	2469	746.3	0.004	0.004	0.127	0.135	8705
3	11.77	0.000	0.000	0.014	0.014	14	374.7	0.003	0.004	0.247	0.254	8223	868.1	0.003	0.004	0.093	0.100	7501
4	11.79	0.000	0.000	0.015	0.015	15	399.2	0.003	0.004	0.086	0.093	3207	6433	0.003	0.000	0.626	0.629	349835
5	11.55	0.000	0.000	0.014	0.014	14	366.1	0.003	0.004	0.086	0.093	2942	3190	0.003	0.004	0.382	0.389	107212
6	16.46	0.000	0.000	0.001	0.001	1	359.3	0.004	0.005	0.306	0.315	9780	1468	0.003	0.004	0.316	0.323	40968
7	14.24	0.000	0.000	0.001	0.001	1	383.4	0.004	0.005	0.322	0.331	10964	1207	0.003	0.003	0.202	0.208	21694
8	14.87	0.000	0.000	0.018	0.018	23	311.6	0.004	0.005	0.277	0.286	7700	971.4	0.003	0.003	0.193	0.199	16702
9	18.62	0.000	0.000	0.013	0.013	21	378.9	0.004	0.005	0.276	0.285	9331	620.0	0.003	0.003	0.193	0.199	10660
10	14.38	0.000	0.000	0.001	0.001	1	2573	0.003	0.004	0.376	0.383	85160	349.6	0.003	0.004	0.125	0.132	3987
11	17.22	0.000	0.000	0.011	0.011	16	4693	0.003	0.004	0.376	0.383	155287	304.5	0.004	0.005	0.151	0.160	4209
12	27.06	0.000	0.000	0.010	0.010	23	3892	0.003	0.004	0.376	0.383	128796	292.9	0.004	0.005	0.186	0.195	4934
13	15.41	0.000	0.000	0.018	0.018	24	1653	0.003	0.004	0.378	0.385	54997	301.9	0.004	0.005	0.107	0.116	3026
14	41.54	0.000	0.000	0.018	0.018	65	1204	0.003	0.004	0.526	0.533	55462	779.8	0.004	0.004	0.087	0.095	6400
15	56.77	0.002	0.005	0.019	0.026	128	1162	0.003	0.004	0.221	0.228	22885	472.8	0.004	0.004	0.087	0.095	3881
16	184.6	0.001	0.003	0.063	0.067	1069	1186	0.003	0.004	0.241	0.248	25408	205.0	0.004	0.004	0.087	0.095	1683
17	99.78	0.002	0.003	0.073	0.078	672	1144	0.004	0.005	0.156	0.165	16303	376.1	0.003	0.004	0.118	0.125	4062
18	85.64	0.002	0.004	0.088	0.094	696	1237	0.004	0.005	0.156	0.165	17629	851.0	0.005	0.005	0.150	0.160	11765
19	103.7	0.003	0.004	0.113	0.120	1075	1505	0.004	0.005	0.156	0.165	21455	821.3	0.005	0.005	0.146	0.156	11070
20	77.08	0.003	0.004	0.113	0.120	799	1103	0.004	0.004	0.244	0.252	24015	1069	0.005	0.006	0.128	0.139	12834
21	68.70	0.003	0.004	0.113	0.120	712	1297	0.003	0.004	0.306	0.313	35083	985.2	0.006	0.007	0.124	0.137	11662
22	60.33	0.003	0.004	0.046	0.053	276	1404	0.004	0.004	0.386	0.394	47795	882.7	0.006	0.006	0.114	0.126	9610
23	30.92	0.002	0.003	0.038	0.043	115	1244	0.004	0.005	0.361	0.370	39767	798.7	0.006	0.006	0.114	0.126	8695
24	70.56	0.003	0.004	0.164	0.171	1042	3558	0.004	0.004	0.496	0.504	154929	806.1	0.005	0.006	0.093	0.104	7244
25	149.8	0.003	0.004	0.133	0.140	1812	1742	0.004	0.004	0.586	0.594	89425	881.2	0.005	0.006	0.134	0.145	11039
26	182.7	0.003	0.004	0.128	0.135	2131	1786	0.004	0.004	0.586	0.594	91650	840.7	0.006	0.007	0.113	0.126	9152
27	152.0	0.003	0.004	0.096	0.103	1353	1992	0.004	0.004	0.349	0.357	61440	864.4	0.006	0.006	0.108	0.120	8963
28	120.9	0.003	0.004	0.096	0.103	1076	1626	0.004	0.004	0.258	0.266	37372	774.9	0.006	0.006	0.086	0.098	6561
29	111.6	0.003	0.004	0.143	0.150	1447	1238	0.004	0.004	0.389	0.397	42475	760.4	0.005	0.005	0.095	0.105	6898
30	103.1	0.003	0.004	0.061	0.068	606	991.8	0.004	0.004	0.284	0.292	25023	834.3	0.005	0.005	0.095	0.105	7569
31							934.1	0.004	0.004	0.275	0.283	22841	851.4	0.005	0.005	0.149	0.159	11696
Ten Daily Mean																		
Ten Daily I	13.70	0.000	0.000	0.010	0.010	11	561.7	0.003	0.004	0.212	0.219	14042	1679	0.003	0.003	0.238	0.245	57822
Ten Daily II	70.88	0.001	0.002	0.053	0.056	457	1878	0.003	0.004	0.283	0.291	52223	547.4	0.004	0.005	0.125	0.134	6386
Ten Daily III	105.1	0.003	0.004	0.102	0.109	1057	1619	0.004	0.004	0.389	0.397	58891	843.6	0.006	0.006	0.111	0.123	9008
Monthly																		
Total						15251						1310452						741171

Annual Sediment Load (Metric Tonnes) : 2181484

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1225	0.004	0.004	0.157	0.165	17468	111.6	0.002	0.002	0.011	0.015	145	30.74	0.000	0.000	0.004	0.004	11
2	1447	0.005	0.005	0.186	0.196	24501	105.9	0.002	0.002	0.011	0.015	137	42.83	0.000	0.000	0.009	0.009	33
3	1373	0.005	0.004	0.152	0.161	19097	105.9	0.001	0.001	0.012	0.014	128	39.34	0.000	0.000	0.008	0.008	27
4	1077	0.005	0.004	0.122	0.131	12189	90.37	0.001	0.001	0.012	0.014	109	51.55	0.000	0.000	0.008	0.008	36
5	857.9	0.005	0.005	0.083	0.093	6893	86.48	0.000	0.000	0.003	0.003	22	54.02	0.000	0.000	0.011	0.011	51
6	528.4	0.005	0.005	0.083	0.093	4245	84.29	0.000	0.000	0.043	0.043	313	44.27	0.000	0.000	0.008	0.008	31
7	313.5	0.005	0.005	0.046	0.056	1517	86.50	0.000	0.000	0.046	0.046	344	42.63	0.000	0.000	0.009	0.009	33
8	306.4	0.006	0.005	0.064	0.075	1985	89.56	0.000	0.000	0.010	0.010	77	39.89	0.000	0.000	0.009	0.009	31
9	248.5	0.005	0.005	0.075	0.085	1825	78.09	0.000	0.000	0.014	0.014	94	33.84	0.000	0.000	0.009	0.009	26
10	229.2	0.005	0.005	0.070	0.080	1584	74.53	0.000	0.000	0.013	0.013	84	32.75	0.000	0.000	0.008	0.008	23
11	227.9	0.004	0.004	0.057	0.065	1280	74.54	0.000	0.000	0.013	0.013	84	32.16	0.000	0.000	0.008	0.008	22
12	209.9	0.004	0.004	0.060	0.068	1233	73.63	0.000	0.000	0.014	0.014	89	31.57	0.000	0.000	0.007	0.007	19
13	213.4	0.004	0.004	0.060	0.068	1254	70.36	0.000	0.000	0.014	0.014	85	30.73	0.000	0.000	0.007	0.007	19
14	201.2	0.002	0.002	0.066	0.070	1217	69.18	0.000	0.000	0.014	0.014	84	28.07	0.000	0.000	0.007	0.007	17
15	187.7	0.002	0.002	0.041	0.045	730	55.95	0.000	0.000	0.012	0.012	58	27.38	0.000	0.000	0.007	0.007	17
16	166.2	0.002	0.002	0.025	0.029	416	53.48	0.000	0.000	0.013	0.013	60	26.70	0.000	0.000	0.007	0.007	16
17	180.0	0.002	0.002	0.025	0.029	451	50.28	0.000	0.000	0.011	0.011	48	25.27	0.000	0.000	0.006	0.006	13
18	177.0	0.002	0.002	0.032	0.036	551	45.18	0.000	0.000	0.011	0.011	43	24.93	0.000	0.000	0.006	0.006	13
19	185.9	0.002	0.002	0.023	0.027	434	37.19	0.000	0.000	0.016	0.016	51	24.28	0.000	0.000	0.006	0.006	13
20	208.2	0.002	0.002	0.023	0.027	486	36.47	0.000	0.000	0.017	0.017	54	23.30	0.000	0.000	0.007	0.007	14
21	212.5	0.003	0.003	0.072	0.078	1432	31.01	0.000	0.000	0.017	0.017	46	22.48	0.000	0.000	0.007	0.007	14
22	205.4	0.003	0.003	0.039	0.045	799	36.48	0.000	0.000	0.017	0.017	54	22.52	0.000	0.000	0.007	0.007	14
23	173.1	0.002	0.002	0.040	0.044	658	32.62	0.000	0.000	0.015	0.015	42	22.37	0.000	0.000	0.006	0.006	12
24	253.2	0.004	0.004	0.031	0.039	853	30.68	0.000	0.000	0.150	0.150	398	21.97	0.000	0.000	0.006	0.006	11
25	300.7	0.004	0.004	0.031	0.039	1013	27.97	0.000	0.000	0.015	0.015	36	20.95	0.000	0.000	0.006	0.006	11
26	303.1	0.004	0.003	0.058	0.065	1702	27.52	0.000	0.000	0.006	0.006	14	22.33	0.000	0.000	0.006	0.006	12
27	279.4	0.004	0.003	0.058	0.065	1569	26.14	0.000	0.000	0.006	0.006	14	18.29	0.000	0.000	0.007	0.007	11
28	230.5	0.003	0.003	0.050	0.056	1115	25.59	0.000	0.000	0.008	0.008	18	17.63	0.000	0.000	0.007	0.007	11
29	177.5	0.002	0.002	0.043	0.047	721	25.85	0.000	0.000	0.004	0.004	9	17.63	0.000	0.000	0.007	0.007	11
30	112.9	0.002	0.002	0.022	0.026	254	24.91	0.000	0.000	0.004	0.004	9	18.77	0.000	0.000	0.007	0.007	11
31							24.74	0.000	0.000	0.004	0.004	9						
Ten Daily Mean																		
Ten Daily I	760.6	0.005	0.005	0.104	0.114	9131	91.32	0.001	0.001	0.018	0.019	145	41.18	0.000	0.000	0.008	0.008	30
Ten Daily II	195.7	0.003	0.003	0.041	0.046	805	56.63	0.000	0.000	0.014	0.014	66	27.44	0.000	0.000	0.007	0.007	16
Ten Daily III	224.8	0.003	0.003	0.044	0.050	1012	28.50	0.000	0.000	0.022	0.022	59	20.49	0.000	0.000	0.007	0.007	12
Monthly																		
Total						109472						2756						580

Annual Sediment Load (Metric Tonnes) : 2181484

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	18.10	0.000	0.000	0.007	0.007	11	18.44	0.000	0.000	0.008	0.008	13	11.75	0.000	0.000	0.010	0.010	10
2	16.85	0.000	0.000	0.007	0.007	10	17.46	0.000	0.000	0.008	0.008	12	11.41	0.000	0.000	0.010	0.010	10
3	18.45	0.000	0.000	0.007	0.007	11	17.46	0.000	0.000	0.008	0.008	12	11.79	0.000	0.000	0.010	0.010	10
4	17.59	0.000	0.000	0.007	0.007	11	16.44	0.000	0.000	0.010	0.010	14	11.40	0.000	0.000	0.010	0.010	10
5	17.50	0.000	0.000	0.007	0.007	11	16.26	0.000	0.000	0.010	0.010	14	11.38	0.000	0.000	0.010	0.010	10
6	17.50	0.000	0.000	0.007	0.007	11	14.65	0.000	0.000	0.010	0.010	13	11.30	0.000	0.000	0.010	0.010	10
7	16.89	0.000	0.000	0.008	0.008	12	15.97	0.000	0.000	0.010	0.010	14	11.29	0.000	0.000	0.010	0.010	10
8	16.05	0.000	0.000	0.008	0.008	11	15.41	0.000	0.000	0.010	0.010	13	13.09	0.000	0.000	0.010	0.010	11
9	20.19	0.000	0.000	0.008	0.008	14	14.58	0.000	0.000	0.010	0.010	13	11.26	0.000	0.000	0.010	0.010	10
10	19.67	0.000	0.000	0.008	0.008	14	14.58	0.000	0.000	0.010	0.010	13	11.03	0.000	0.000	0.010	0.010	10
11	17.48	0.000	0.000	0.008	0.008	12	12.55	0.000	0.000	0.011	0.011	12	11.16	0.000	0.000	0.010	0.010	10
12	18.65	0.000	0.000	0.008	0.008	13	15.25	0.000	0.000	0.011	0.011	14	11.07	0.000	0.000	0.010	0.010	10
13	17.50	0.000	0.000	0.008	0.008	12	14.41	0.000	0.000	0.011	0.011	14	11.00	0.000	0.000	0.010	0.010	10
14	16.71	0.000	0.000	0.008	0.008	12	12.03	0.000	0.000	0.011	0.011	11	11.98	0.000	0.000	0.010	0.010	10
15	18.01	0.000	0.000	0.008	0.008	12	12.01	0.000	0.000	0.011	0.011	11	10.94	0.000	0.000	0.010	0.010	9
16	18.24	0.000	0.000	0.008	0.008	13	11.97	0.000	0.000	0.011	0.011	11	11.19	0.000	0.000	0.010	0.010	10
17	19.05	0.000	0.000	0.008	0.008	13	11.97	0.000	0.000	0.011	0.011	11	11.27	0.000	0.000	0.010	0.010	10
18	20.26	0.000	0.000	0.008	0.008	14	13.54	0.000	0.000	0.010	0.010	12	11.73	0.000	0.000	0.010	0.010	10
19	18.31	0.000	0.000	0.008	0.008	13	13.09	0.000	0.000	0.010	0.010	11	11.75	0.000	0.000	0.010	0.010	10
20	18.30	0.000	0.000	0.008	0.008	13	12.83	0.000	0.000	0.010	0.010	11	11.76	0.000	0.000	0.010	0.010	10
21	19.24	0.000	0.000	0.007	0.007	12	14.08	0.000	0.000	0.010	0.010	12	11.39	0.000	0.000	0.010	0.010	10
22	20.06	0.000	0.000	0.007	0.007	12	14.53	0.000	0.000	0.010	0.010	13	11.08	0.000	0.000	0.010	0.010	10
23	25.40	0.000	0.000	0.007	0.007	15	13.37	0.000	0.000	0.010	0.010	12	10.99	0.000	0.000	0.010	0.010	9
24	25.48	0.000	0.000	0.007	0.007	15	11.97	0.000	0.000	0.010	0.010	10	14.69	0.000	0.000	0.010	0.010	13
25	28.19	0.000	0.000	0.007	0.007	17	12.25	0.000	0.000	0.010	0.010	11	11.30	0.000	0.000	0.010	0.010	10
26	22.76	0.000	0.000	0.007	0.007	14	13.12	0.000	0.000	0.010	0.010	11	11.84	0.000	0.000	0.010	0.010	10
27	20.00	0.000	0.000	0.007	0.007	12	12.13	0.000	0.000	0.010	0.010	10	14.88	0.000	0.000	0.010	0.010	13
28	20.01	0.000	0.000	0.008	0.008	14	13.11	0.000	0.000	0.010	0.010	11	26.88	0.000	0.000	0.010	0.010	23
29	19.89	0.000	0.000	0.008	0.008	14	11.98	0.000	0.000	0.010	0.010	10	36.37	0.000	0.000	0.010	0.010	31
30	19.48	0.000	0.000	0.008	0.008	13	11.87	0.000	0.000	0.010	0.010	10						
31	18.54	0.000	0.000	0.008	0.008	13	13.83	0.000	0.000	0.010	0.010	12						
Ten Daily Mean																		
Ten Daily I	17.88	0.000	0.000	0.007	0.007	11	16.13	0.000	0.000	0.009	0.009	13	11.57	0.000	0.000	0.010	0.010	10
Ten Daily II	18.25	0.000	0.000	0.008	0.008	13	12.97	0.000	0.000	0.011	0.011	12	11.39	0.000	0.000	0.010	0.010	10
Ten Daily III	21.73	0.000	0.000	0.007	0.007	14	12.93	0.000	0.000	0.010	0.010	11	16.60	0.000	0.000	0.010	0.010	14
Monthly																		
Total						392						373						327

Annual Sediment Load (Metric Tonnes) : 2181484

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	18.59	0.000	0.000	0.010	0.010	16	11.97	0.000	0.000	0.007	0.007	7	7.300	0.000	0.000	0.007	0.007	4
2	26.41	0.000	0.000	0.010	0.010	23	11.47	0.000	0.000	0.007	0.007	7	7.257	0.000	0.000	0.006	0.006	4
3	21.29	0.000	0.000	0.010	0.010	18	10.86	0.000	0.000	0.007	0.007	7	7.227	0.000	0.000	0.006	0.006	4
4	15.77	0.000	0.000	0.010	0.010	14	10.92	0.000	0.000	0.007	0.007	7	6.855	0.000	0.000	0.006	0.006	4
5	15.85	0.000	0.000	0.010	0.010	14	10.95	0.000	0.000	0.007	0.007	7	6.825	0.000	0.000	0.006	0.006	4
6	15.39	0.000	0.000	0.010	0.010	13	11.86	0.000	0.000	0.007	0.007	7	7.427	0.000	0.000	0.006	0.006	4
7	15.48	0.000	0.000	0.010	0.010	13	9.328	0.000	0.000	0.007	0.007	6	7.446	0.000	0.000	0.006	0.006	4
8	15.87	0.000	0.000	0.007	0.007	10	8.900	0.000	0.000	0.007	0.007	5	8.500	0.000	0.000	0.006	0.006	4
9	15.50	0.000	0.000	0.007	0.007	9	8.771	0.000	0.000	0.007	0.007	5	7.563	0.000	0.000	0.006	0.006	4
10	15.35	0.000	0.000	0.007	0.007	9	8.678	0.000	0.000	0.007	0.007	5	7.488	0.000	0.000	0.006	0.006	4
11	14.82	0.000	0.000	0.007	0.007	9	8.193	0.000	0.000	0.007	0.007	5	7.153	0.000	0.000	0.006	0.006	4
12	15.62	0.000	0.000	0.007	0.007	9	8.169	0.000	0.000	0.007	0.007	5	10.92	0.000	0.000	0.006	0.006	6
13	13.98	0.000	0.000	0.007	0.007	8	8.159	0.000	0.000	0.007	0.007	5	10.76	0.000	0.000	0.006	0.006	6
14	12.54	0.000	0.000	0.007	0.007	8	8.115	0.000	0.000	0.007	0.007	5	7.812	0.000	0.000	0.006	0.006	4
15	12.81	0.000	0.000	0.007	0.007	8	7.853	0.000	0.000	0.007	0.007	5	8.200	0.000	0.000	0.006	0.006	4
16	13.23	0.000	0.000	0.007	0.007	8	7.808	0.000	0.000	0.007	0.007	5	7.418	0.000	0.000	0.007	0.007	4
17	13.42	0.000	0.000	0.007	0.007	8	7.651	0.000	0.000	0.007	0.007	5	7.402	0.000	0.000	0.007	0.007	4
18	14.03	0.000	0.000	0.007	0.007	8	7.692	0.000	0.000	0.007	0.007	5	8.272	0.000	0.000	0.007	0.007	5
19	13.79	0.000	0.000	0.007	0.007	8	7.716	0.000	0.000	0.007	0.007	5	8.313	0.000	0.000	0.007	0.007	5
20	13.48	0.000	0.000	0.007	0.007	8	7.521	0.000	0.000	0.007	0.007	5	42.69	0.000	0.000	0.007	0.007	26
21	12.08	0.000	0.000	0.007	0.007	7	7.506	0.000	0.000	0.007	0.007	5	40.00	0.000	0.000	0.007	0.007	24
22	13.57	0.000	0.000	0.007	0.007	8	7.450	0.000	0.000	0.007	0.007	5	34.00	0.000	0.000	0.007	0.007	21
23	11.50	0.000	0.000	0.007	0.007	7	7.789	0.000	0.000	0.007	0.007	5	21.98	0.000	0.000	0.008	0.008	15
24	11.39	0.000	0.000	0.007	0.007	7	7.391	0.000	0.000	0.007	0.007	4	21.54	0.000	0.000	0.008	0.008	15
25	11.36	0.000	0.000	0.007	0.007	7	7.418	0.000	0.000	0.007	0.007	4	18.00	0.000	0.000	0.008	0.008	12
26	11.46	0.000	0.000	0.007	0.007	7	7.408	0.000	0.000	0.007	0.007	4	14.08	0.000	0.000	0.008	0.008	10
27	11.86	0.000	0.000	0.007	0.007	7	7.308	0.000	0.000	0.007	0.007	4	13.25	0.000	0.000	0.008	0.008	9
28	10.38	0.000	0.000	0.007	0.007	6	7.289	0.000	0.000	0.007	0.007	4	13.23	0.000	0.000	0.008	0.008	9
29	10.32	0.000	0.000	0.007	0.007	6	7.313	0.000	0.000	0.007	0.007	4	15.00	0.000	0.000	0.008	0.008	10
30	12.23	0.000	0.000	0.007	0.007	7	6.989	0.000	0.000	0.007	0.007	4	12.99	0.000	0.000	0.009	0.009	10
31	12.06	0.000	0.000	0.007	0.007	7							12.88	0.000	0.000	0.009	0.009	10
Ten Daily Mean																		
Ten Daily I	17.55	0.000	0.000	0.009	0.009	14	10.37	0.000	0.000	0.007	0.007	6	7.389	0.000	0.000	0.006	0.006	4
Ten Daily II	13.77	0.000	0.000	0.007	0.007	8	7.888	0.000	0.000	0.007	0.007	5	11.89	0.000	0.000	0.007	0.007	7
Ten Daily III	11.66	0.000	0.000	0.007	0.007	7	7.386	0.000	0.000	0.007	0.007	4	19.72	0.000	0.000	0.008	0.008	13
Monthly																		
Total						300						155						253

Annual Sediment Load (Metric Tonnes) : 2181484

Annual Sediment Load for period : 1981-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

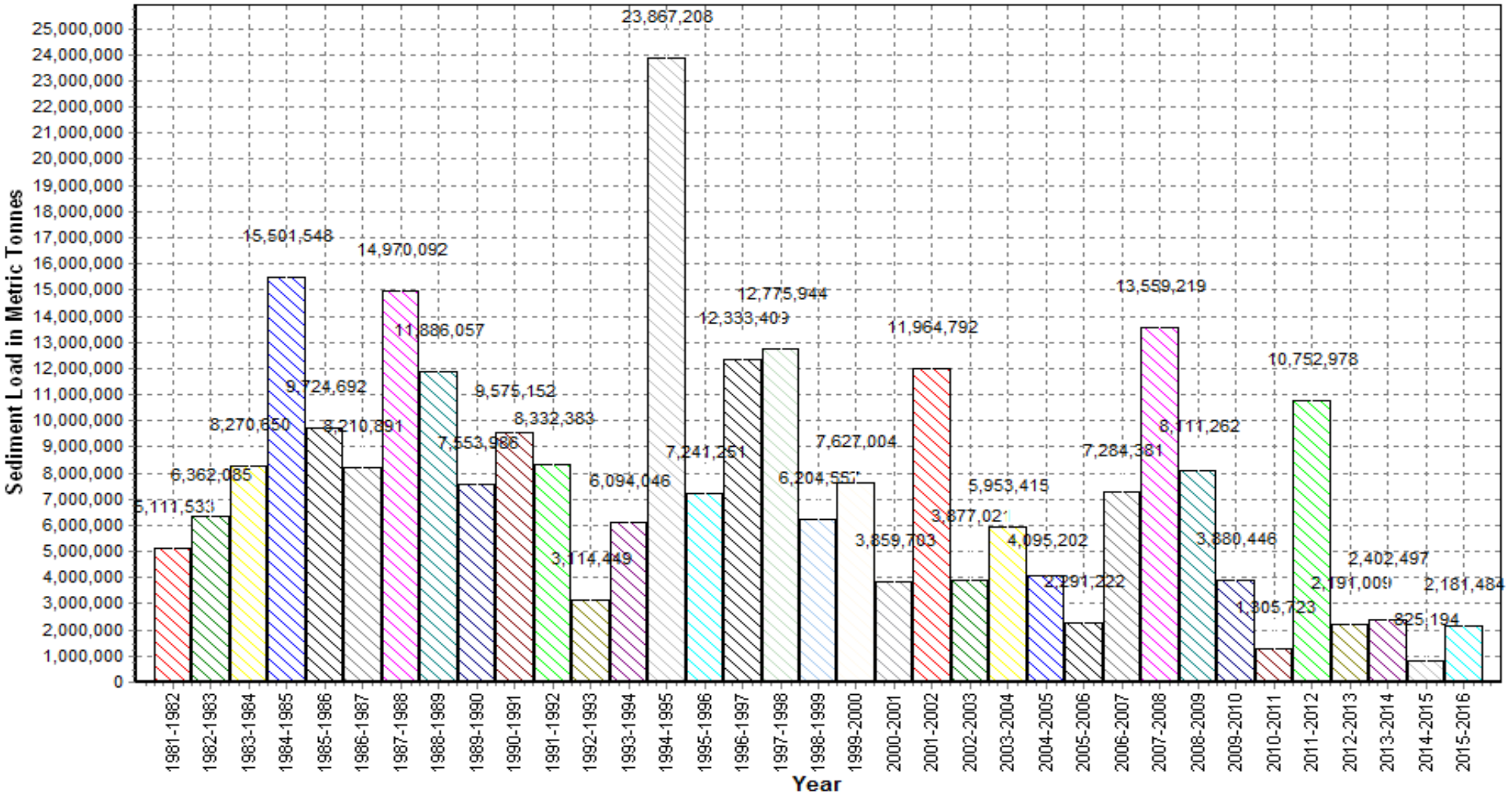
Local River : Brahmni **Sub-Division : Rourkela**

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1981-1982	5097467	14066	5111533	7712
1982-1983	6285626	76459	6362085	7407
1983-1984	8267114	3536	8270650	8861
1984-1985	15497373	4175	15501548	15450
1985-1986	9721444	3247	9724692	10203
1986-1987	8191659	19232	8210891	10110
1987-1988	14950091	20001	14970092	10752
1988-1989	11882814	3243	11886057	11576
1989-1990	7459501	94485	7553986	8878
1990-1991	9542221	32930	9575152	12896
1991-1992	8299839	32544	8332383	12051
1992-1993	3109937	4512	3114449	5056
1993-1994	6086939	7107	6094046	9088
1994-1995	23858486	8722	23867208	22967
1995-1996	7222350	18901	7241251	10170
1996-1997	12327625	5784	12333409	13291
1997-1998	12371036	404909	12775944	14502
1998-1999	6184487	20071	6204557	10155
1999-2000	7614833	12171	7627004	14735
2000-2001	3855282	4421	3859703	7227
2001-2002	11960636	4156	11964792	16006
2002-2003	3871634	5386	3877021	7735
2003-2004	5947177	6237	5953415	10306
2004-2005	4089879	5322	4095202	8169
2005-2006	2279216	12006	2291222	6821
2006-2007	7278047	6334	7284381	10784
2007-2008	13552621	6599	13559219	16113
2008-2009	8104533	6729	8111262	13347
2009-2010	3876418	4028	3880446	6309
2010-2011	1301819	3904	1305723	3046
2011-2012	10747050	5928	10752978	15880
2012-2013	2184651	6358	2191009	8270
2013-2014	2399652	2844	2402497	13360
2014-2015	823808	1386	825194	10654
2015-2016	2179683	1800	2181484	8007

Annual Sediment Load for the period: 1981-2016

Station Name : Gomlai (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



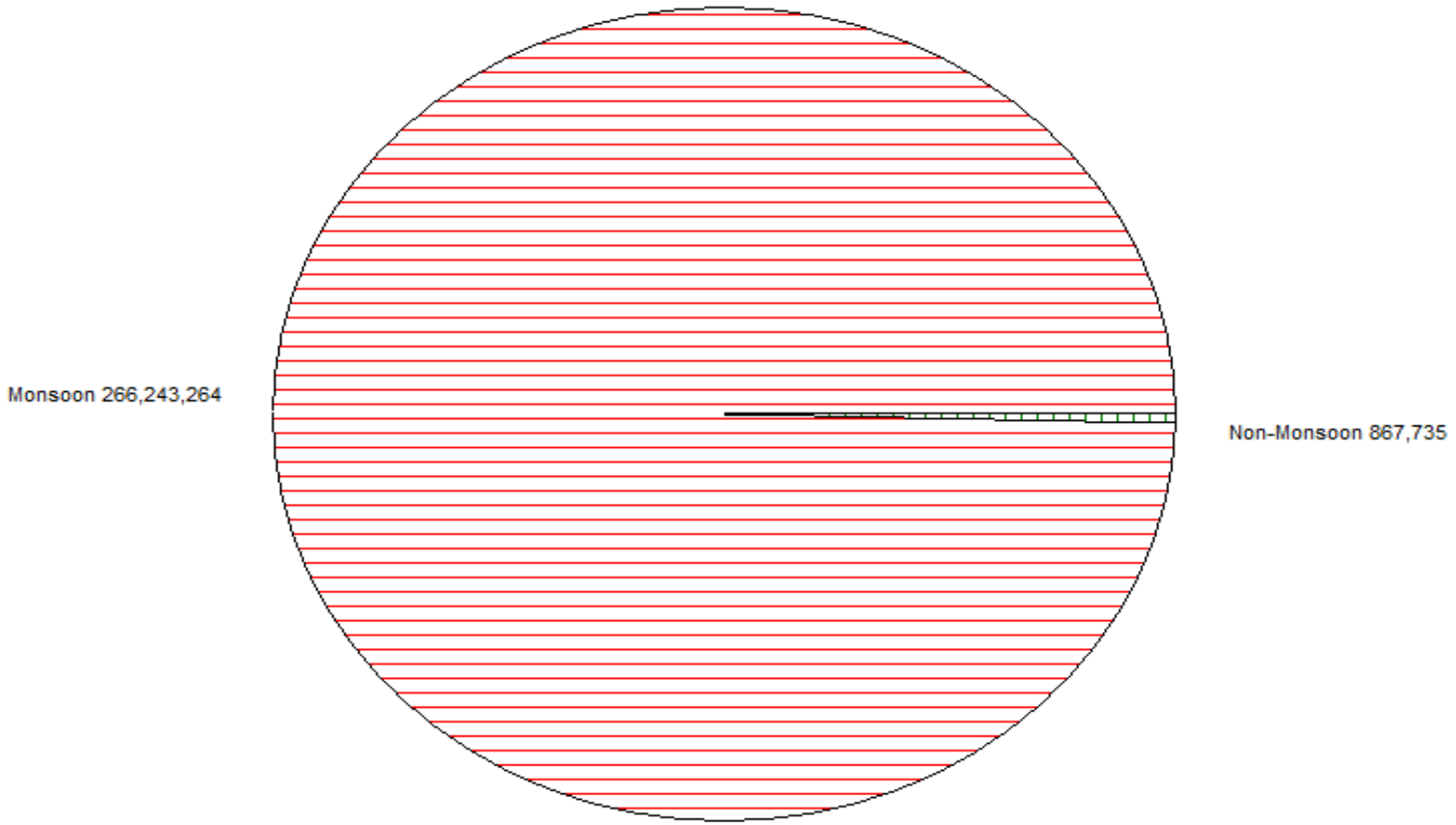
Seasonal Sediment Load for the period : 1981-2015

Station Name : Gomlai (EB000W3)

Local River : Brahmni

Division : E.E., Bhubaneswar

Sub-Division : Rourkela



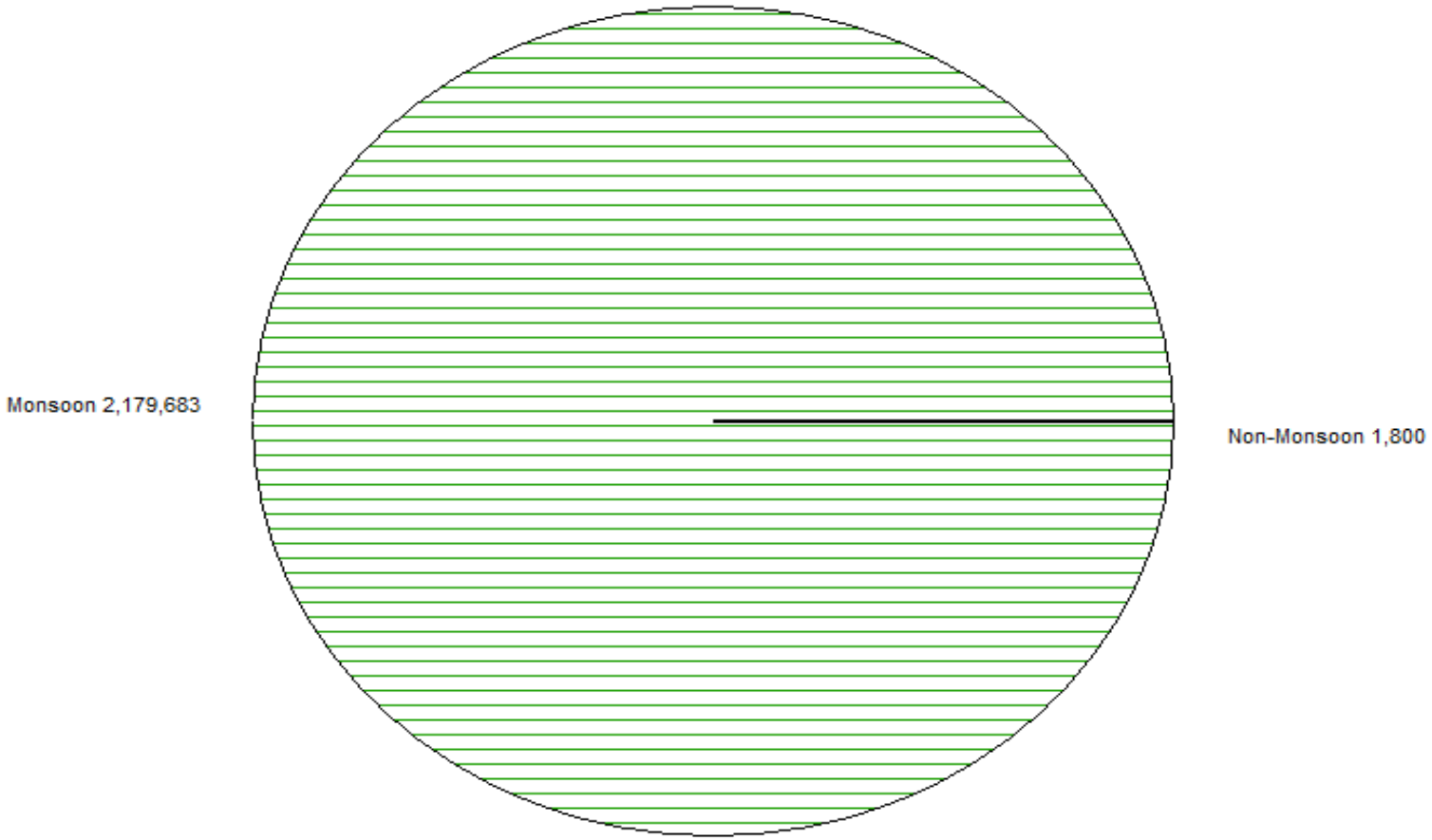
Seasonal Sediment Load for the Year: 2015-2016

Station Name : Gomlai (EB000W3)

Local River : Brahmni

Division : E.E., Bhubaneswar

Sub-Division : Rourkela



WATER QUALITY DATA

Water Quality Datasheet for the period : 2015-2016

Station Name : GOMLAI (EB000W3) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water Analysis** | **Sub-Division : Rourkela**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	286	187	111	305	374	536	535	506	509	560	451	268
4	EC_GEN (µmho/cm)	298	194	106	285	388	521	543	501	511	569	456	271
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	7.6	7.8	7.5	7.6	7.6	7.6	7.9	8.4	7.9	7.6	8.1
7	pH_GEN (pH units)	7.5	7.4	7.4	7.4	7.5	7.5	7.5	7.8	8.5	7.6	7.3	8.2
8	Temp (deg C)	28.0	28.0	26.0	28.0	28.0	24.0	22.0	17.0	19.0	23.0	25.0	28.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	0.0	0.0	13.8
2	ALK-TOT (mgCaCO3/L)	69	60	46	51	55	55	60	65	152	60	65	74
3	B (mg/L)	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	21	5	21	19	19	19	18	19	19	45	22	34
5	Cl (mg/L)	18.9	10.1	13.2	11.3	13.2	17.0	13.2	17.0	17.0	18.9	22.6	28.3
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.4	0.0	0.0	16.6
7	F (mg/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
8	Fe (mg/L)	0.4	0.2	0.2	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4
9	HCO3 (mg/L)	85	73	56	62	68	68	73	79	73	73	79	56
10	K (mg/L)	1.8	2.6	2.0	1.7	1.9	2.0	1.9	1.6	4.1	1.8	3.0	3.5
11	Mg (mg/L)	11.7	2.6	8.8	6.8	5.8	6.8	6.8	7.8	8.8	14.6	11.7	12.6
12	Na (mg/L)	7.9	4.7	3.2	4.6	6.0	6.2	7.8	8.0	9.9	10.1	14.0	14.4
13	NO2+NO3 (mg N/L)	1.25	0.81	0.83	1.23	1.22	0.94	1.11	1.11	0.87	0.99	0.81	0.85
14	NO2-N (mgN/L)	0.00	0.00	0.01	0.00	0.03	0.03	0.01	0.01	0.03	0.01	0.00	0.01
15	NO3-N (mgN/L)	1.25	0.81	0.81	1.23	1.19	0.91	1.09	1.09	0.84	0.98	0.81	0.84
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0
18	SO4 (mg/L)	7.7	10.1	10.4	8.0	10.8	11.7	8.3	10.0	8.8	3.1	10.0	32.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	1.0	0.8	1.2	0.8	1.2	1.2	0.8	1.8	0.6	1.4	0.4	0.8
2	DO (mg/L)	6.6	5.6	6.8	6.2	6.4	7.6	6.8	7.0	8.1	5.6	6.2	7.0
3	DO_SAT% (%)	84	71	83	79	81	90	77	72	88	65	75	89
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	52	12	52	48	48	48	44	48	48	112	56	84
2	HAR_Total (mgCaCO3/L)	101	23	89	76	72	76	72	81	85	173	105	137
3	Na% (%)	14	28	7	11	15	15	19	17	19	11	22	18
4	RSC (-)	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0
5	SAR (-)	0.3	0.4	0.1	0.2	0.3	0.3	0.4	0.4	0.5	0.3	0.6	0.5
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : GOMLAI (EB000W3) **Division : E.E., Bhubaneswar**

Local River : Brahmani **Sub-Division : Rourkela**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	560	111	386
3	EC_GEN (µmho/cm)	12	569	106	387
4	pH_FLD (pH units)	12	8.4	7.4	7.7
5	pH_GEN (pH units)	12	8.5	7.3	7.6
6	Temp (deg C)	12	28.0	17.0	24.7
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	46.0	0.0	5
2	ALK-TOT (mgCaCO3/L)	12	152	46	68
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	45	5	22
5	Cl (mg/L)	12	28.3	10.1	16.7
6	CO3 (mg/L)	12	55.4	0.0	6
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.5	0.2	0.4
9	HCO3 (mg/L)	12	85	56	70
10	K (mg/L)	12	4.1	1.6	2.3
11	Mg (mg/L)	12	14.6	2.6	8.7
12	Na (mg/L)	12	14.4	3.2	8.1
13	NO2+NO3 (mg N/L)	12	1.25	0.81	1
14	NO2-N (mgN/L)	12	0.03	0.00	0.01
15	NO3-N (mgN/L)	12	1.25	0.81	0.99
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	6.0	5.0	5.7
18	SO4 (mg/L)	12	32.0	3.1	10.9
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	1.8	0.4	1
2	DO (mg/L)	12	8.1	5.6	6.6
3	DO_SAT% (%)	12	90	65	79
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	112	12	54
2	HAR_Total (mgCaCO3/L)	12	173	23	91
3	Na% (%)	12	28	7	16
4	RSC (-)	12	1.4	0.0	0.2
5	SAR (-)	12	0.6	0.1	0.4
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : GOMLAI (EB000W3) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Flood																				
		Jun - Oct																				
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	107	259	139	181	133	232	139	142	131	147	147	150	117	172	253	185	200	157	181	180	198
3	EC_GEN (µmho/cm)	104	258	138	199	129	228	134	142	131	147	147	150	117	172	254	185	197	157	172	178	198
4	pH_FLD (pH units)	7.7	7.7	7.6	7.8	7.7	7.8	7.8	7.7	7.7	7.9	8.2	7.5	7.6	7.8	7.6	7.8	7.6	7.5	7.9	7.9	8.3
5	pH_GEN (pH units)	7.7	7.7	7.6	7.8	7.8	7.8	7.8	7.7	7.7	7.9	8.2	7.5	7.6	7.8	7.4	7.8	7.6	7.5	7.9	7.9	8.3
6	TDS (mg/L)									87	97											
7	Temp (deg C)	28.0	29.6	30.6	28.6	29.4	29.1	29.6	29.2	30.6	30.4	29.3	29.9	29.2	28.8	27.6	22.4	23.0	22.3	21.6	21.3	22.6
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)							0.0	0.0	0.0	0.0	9.1				0.0						
2	ALK-TOT (mgCaCO3/L)							41	41	30	26	63				56						
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	8	22	10	12	12	23	13	13	12	15	13	16	17	13	17	17	19	14	16	15	19
5	Cl (mg/L)	9.2	15.9	8.5	23.1	9.1	21.7	11.2	12.6	8.2	14.1	15.8	16.6	15.8	15.8	13.3	12.6	14.1	10.7	13.8	15.1	12.7
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.18	0.03	0.53	0.10	0.11	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.06	0.03	0.46	0.04	0.00
8	Fe (mg/L)	0.2			0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	1.5	0.0	0.2	0.3	0.2			0.1	0.1	0.1
9	HCO3 (mg/L)	34	72	49	57	41	86	50	44	43	38	54	48	79	54	69	67	76	71	78	55	66
10	K (mg/L)	1.5	2.2	1.4	2.7	1.9	2.3	1.8	2.5	2.2	2.3	1.8	2.0	2.1	1.8	2.0	2.3	2.1	1.8	1.6	3.2	3.3
11	Mg (mg/L)	2.2	5.8	4.0	5.2	4.0	5.9	4.6	4.1	5.6	3.7	5.2	6.2	4.3	5.2	7.1	4.9	6.3	5.7	5.8	4.6	6.1
12	Na (mg/L)	6.0	9.0	5.9	14.9	5.7	13.9	7.7	7.7	5.0	8.4	6.4	4.8	10.4	6.4	5.3	8.0	9.5	7.2	8.6	10.0	8.7
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	0.27	4.21	0.21	0.27	3.26	1.07	1.62	0.72	2.63	2.25	0.38	0.61	1.27	1.71	1.07	0.41	1.03	0.26	0.15	0.34	0.38
15	NO2-N (mgN/L)	0.01	0.03	0.00	0.00	0.04	0.02	0.03	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.01	0.03	0.02	0.00	0.00	0.04	0.03
16	NO3-N (mgN/L)	0.26	4.18	0.21	0.27	3.22	1.05	1.59	0.72	2.63	2.25	0.31	0.61	1.27	1.70	1.06	0.38	1.01	0.26	0.15	0.30	0.35
17	o-PO4-P (mg P/L)	0.000				0.000	0.021	0.000		0.002											0.000	0.034
18	P-Tot (mgP/L)	0.011			0.001	0.001	0.021	0.001	0.002	0.004	0.001	0.010	0.001	0.001	0.001	0.001	0.098			0.001	0.001	0.027
19	SiO2 (mg/L)	11.9	13.3	12.0	20.5	19.1	17.1	9.2	9.9	8.9	7.8	9.8	13.4	13.1	6.0	6.0	10.4	14.6	17.0	21.7	21.2	20.4
20	SO4 (mg/L)	1.2	5.3	1.7	8.7	4.5	13.9	5.5	10.6	10.9	11.3	12.7	26.9	15.0	12.7	9.4	12.4	6.7	3.3	4.0	16.4	23.6
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.9	1.1	0.6	0.8	0.7	0.7	1.0	1.1	1.0	1.1	1.1	0.7	0.7	0.7	1.0	0.9	0.8	0.7	1.0	0.7	0.9
2	DO (mg/L)	6.7	6.6	6.0	6.6	6.3	6.8	6.8	6.8	6.6	6.7	6.7	6.6	6.8	5.8	6.3	7.4	7.2	8.1	7.7	7.7	7.6
3	DO_SAT% (%)	86	86	80	85	82	89	89	89	88	89	87	88	89	76	80	85	84	92	87	86	87
	TRACE & TOXIC																					
1	Al (mg/L)																					0.90
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	20	54	25	30	31	57	32	32	30	38	33	39	42	31	42	43	47	36	39	38	47
2	HAR_Total (mgCaCO3/L)	29	79	41	52	47	82	51	49	54	53	55	65	59	53	72	63	73	60	62	57	73
3	Na% (%)	31	21	25	37	22	23	25	25	16	26	20	13	28	20	15	21	22	21	22	26	20
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.5	0.5	0.4	0.9	0.4	0.6	0.5	0.5	0.3	0.5	0.4	0.3	0.6	0.4	0.3	0.4	0.5	0.4	0.5	0.6	0.4
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

Station Name : GOMLAI (EB000W3) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	188	275	192	260	168	199	153	268	522	283	222	210	210	236	230	228	247	207	363	223	267
3	EC_GEN (µmho/cm)	179	275	192	260	168	199	153	268	519	280	220	209	203	233	227	233	247	207	363	223	267
4	pH_FLD (pH units)	7.8	8.0	7.8	7.4	7.7	7.5	8.1	7.9	7.8	8.0	7.9	7.8	7.8	7.6	8.1	8.1	8.0	7.9	8.1	7.6	7.8
5	pH_GEN (pH units)	7.9	8.0	7.8	7.5	7.7	7.5	8.1	7.9	7.8	7.9	7.9	7.9	7.9	7.6	8.1	8.1	8.0	7.9	8.1	7.6	7.9
6	TDS (mg/L)			127	166														140	238		
7	Temp (deg C)	21.3	22.6	20.6	20.8	21.8	22.9	21.0	19.4	20.5	27.7	28.5	27.6	25.8	26.8	25.7	26.0	27.5	23.3	24.2	29.8	27.0
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0			0.0	11.5						0.0	0.0	0.0	0.0	3.9	0.0	
2	ALK-TOT (mgCaCO3/L)	50	89	51	71	55			65	83						131	79	76	49	73	68	
3	B (mg/L)	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
4	Ca (mg/L)	17	28	17	25	18	20	18	15	19	30	22	18	15	23	24	24	22	17	32	23	19
5	Cl (mg/L)	16.9	13.7	12.6	17.4	12.7	20.3	19.0	11.3	16.0	19.4	16.2	11.0	12.3	15.3	14.4	14.7	16.2	18.6	25.8	22.6	15.8
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0
7	F (mg/L)	0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.25	0.18	0.00	0.34	0.06	0.08	0.05	0.05	0.03	0.05	0.05	0.05
8	Fe (mg/L)	0.2	0.3	0.2	0.1	0.1	1.9	0.0	0.3	0.3	0.0			0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	1.9
9	HCO3 (mg/L)	61	108	62	91	68	92	82	70	73	91	63	86	81	89	93	97	93	60	79	83	88
10	K (mg/L)	3.3	1.7	1.3	2.8	1.7	2.1	1.8	1.6	2.4	3.1	3.5	2.5	1.8	3.0	3.0	1.4	2.7	2.6	3.7	2.4	2.7
11	Mg (mg/L)	5.4	10.4	8.7	9.7	5.3	14.3	5.1	5.6	7.5	8.1	7.1	7.5	4.3	9.0	8.7	9.1	9.4	9.1	14.6	5.2	11.9
12	Na (mg/L)	11.4	9.0	7.5	10.1	7.0	8.0	11.0	6.3	8.0	11.7	10.5	7.6	9.4	9.3	12.7	10.4	10.6	10.1	15.6	9.4	11.3
13	NH3-N (mg N/L)																0.05					
14	NO2+NO3 (mg N/L)	2.67	1.07	4.82	2.47	0.41	0.70	1.45	0.93	1.01	6.17	4.85	0.32	0.23	4.02	4.95	0.57	2.07	3.21	6.01	0.42	0.71
15	NO2-N (mgN/L)	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.02	0.02	0.04	0.02	0.06	0.01	0.06	0.04	0.00	0.00	0.00	1.75	0.07	0.00
16	NO3-N (mgN/L)	2.67	1.07	4.82	2.47	0.34	0.70	1.45	0.91	0.98	6.14	4.83	0.26	0.22	3.96	4.91	0.57	2.07	3.21	4.26	0.35	0.71
17	o-PO4-P (mg P/L)	0.000		0.000										0.010	0.000	0.000			0.000			
18	P-Tot (mgP/L)	0.001	0.002	0.002	0.001	0.010	0.001	0.001	0.001	0.010	0.001			0.001	0.001	0.001	0.050	0.005	0.001	0.001	0.010	0.001
19	SiO2 (mg/L)	14.2	9.0	9.9	4.1	14.3	13.3	12.8	4.4	5.8	10.7	12.3	15.6	20.4	22.4	15.3	10.1	9.0	8.7	2.9	17.3	13.7
20	SO4 (mg/L)	7.2	15.9	7.6	18.3	5.5	10.7	18.5	5.6	9.7	10.2	20.0	1.7	3.2	11.2	10.7	10.8	12.6	15.4	34.7	11.0	20.1
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.9	1.1	1.5	1.4	1.3	0.4	0.4	1.6	1.1	0.7	0.8	0.9	0.7	0.9	1.0	1.1	1.2	1.2	1.2	1.1	0.6
2	DO (mg/L)	7.3	8.1	8.3	7.4	7.8	7.6	7.9	9.5	7.3	6.9	6.1	7.3	6.8	7.4	7.0	6.8	7.1	7.0	6.7	6.5	6.4
3	DO_SAT% (%)	81	94	92	83	88	88	88	102	82	86	78	93	84	91	86	83	90	82	79	84	79
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	41	70	43	63	45	50	46	37	47	75	56	45	36	58	60	60	56	41	80	57	47
2	HAR_Total (mgCaCO3/L)	64	114	80	104	67	110	67	60	78	108	86	76	54	95	96	97	95	79	141	79	97
3	Na% (%)	27	15	17	17	18	14	26	18	18	19	20	17	26	17	21	19	20	21	19	20	20
4	RSC (-)	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.2	0.3	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.6	0.4	0.4	0.4	0.4	0.3	0.6	0.4	0.4	0.5	0.5	0.4	0.6	0.4	0.6	0.5	0.5	0.5	0.6	0.5	0.5
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

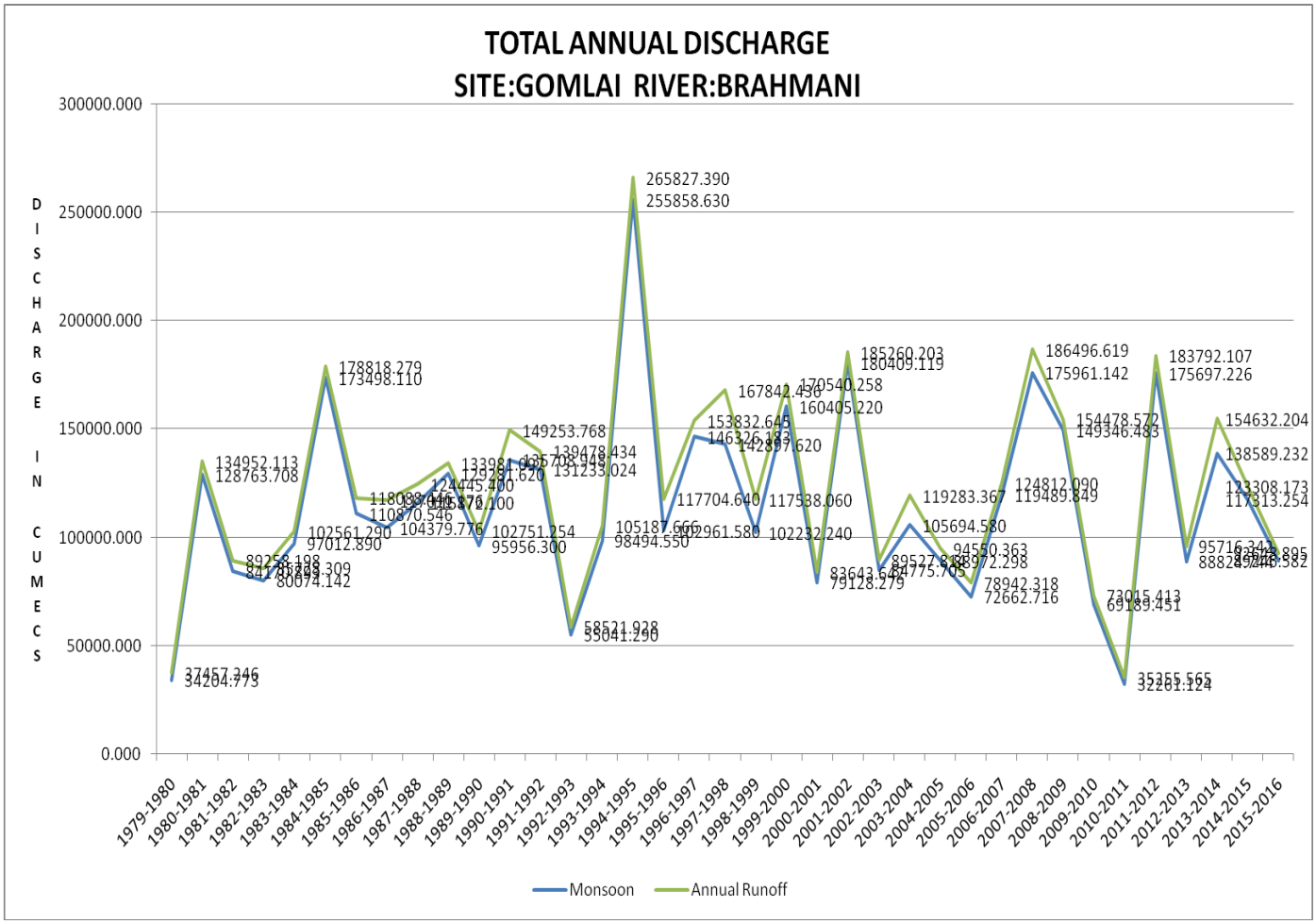
Station Name : GOMLAI (EB000W3) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **Sub-Division : Rourkela**

River Water

S.No	Parameters			
		2014	2015	2016
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	207	228	426
3	EC_GEN (µmho/cm)	207	228	432
4	pH_FLD (pH units)	7.8	7.8	7.9
5	pH_GEN (pH units)	7.8	7.8	7.7
6	TDS (mg/L)			
7	Temp (deg C)	26.8	25.3	25.3
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0		4.6
2	ALK-TOT (mgCaCO3/L)	68		66
3	B (mg/L)	0.00	0.00	0.01
4	Ca (mg/L)	19	18	34
5	Cl (mg/L)	13.5	16.4	23.3
6	CO3 (mg/L)	0.0	0.0	5.5
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.1	0.3	0.4
9	HCO3 (mg/L)	93	57	70
10	K (mg/L)	1.4	1.7	2.8
11	Mg (mg/L)	4.3	6.5	13.0
12	Na (mg/L)	8.3	5.7	12.8
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	1.48	0.70	0.89
15	NO2-N (mgN/L)	0.01	0.00	0.01
16	NO3-N (mgN/L)	1.47	0.70	0.88
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.001	0.010
19	SiO2 (mg/L)	13.3	4.3	5.0
20	SO4 (mg/L)	14.3	6.2	15.0
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	1.0	0.9	0.9
2	DO (mg/L)	7.3	6.1	6.2
3	DO_SAT% (%)	90	74	76
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	48	44	84
2	HAR_Total (mgCaCO3/L)	66	71	138
3	Na% (%)	22	14	17
4	RSC (-)	0.2	0.0	0.0
5	SAR (-)	0.5	0.3	0.5
	PESTICIDES			

TREND ANALYSIS


TOTAL ANNUAL DISCHARGE
SITE:GOMLAI RIVER:BRAHMANI
DISCHARGE IN CUMECS
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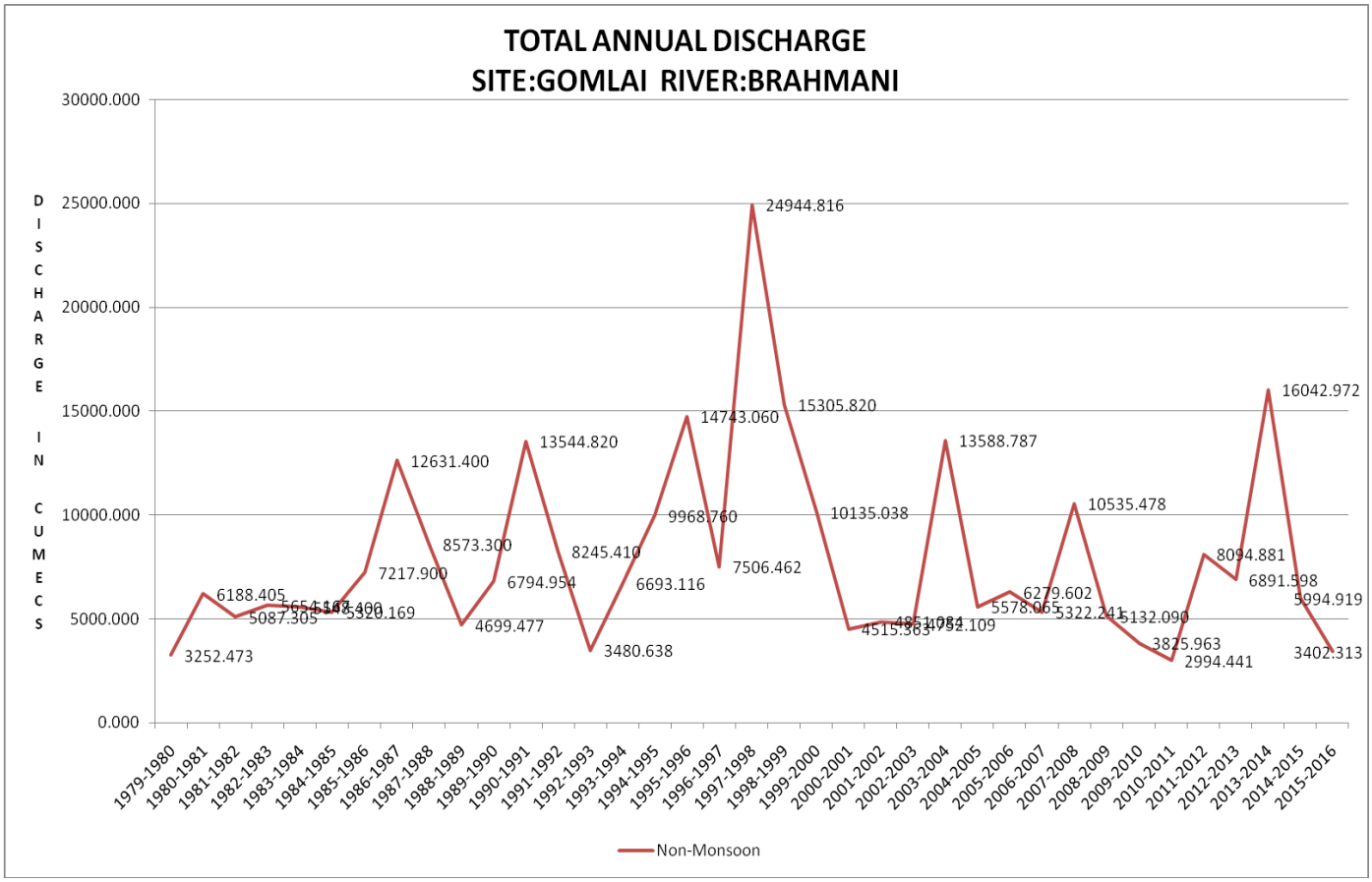
250000.000
200000.000
150000.000
100000.000
50000.000
0.000
Monsoon
Annual Runoff


TOTAL ANNUAL DISCHARGE
SITE:GOMLAI RIVER:BRAHMANI
DISCHARGE IN CUMECS
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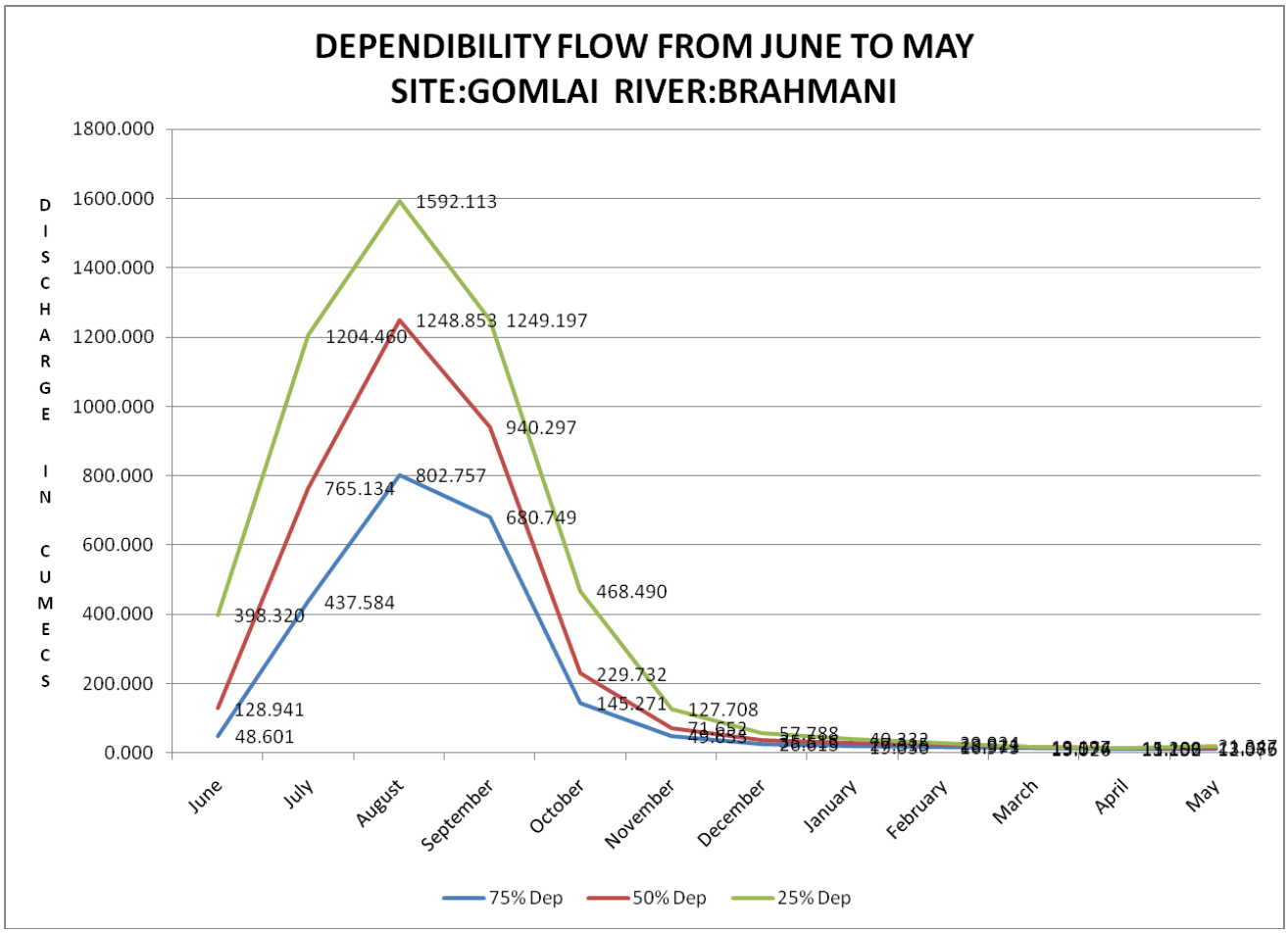
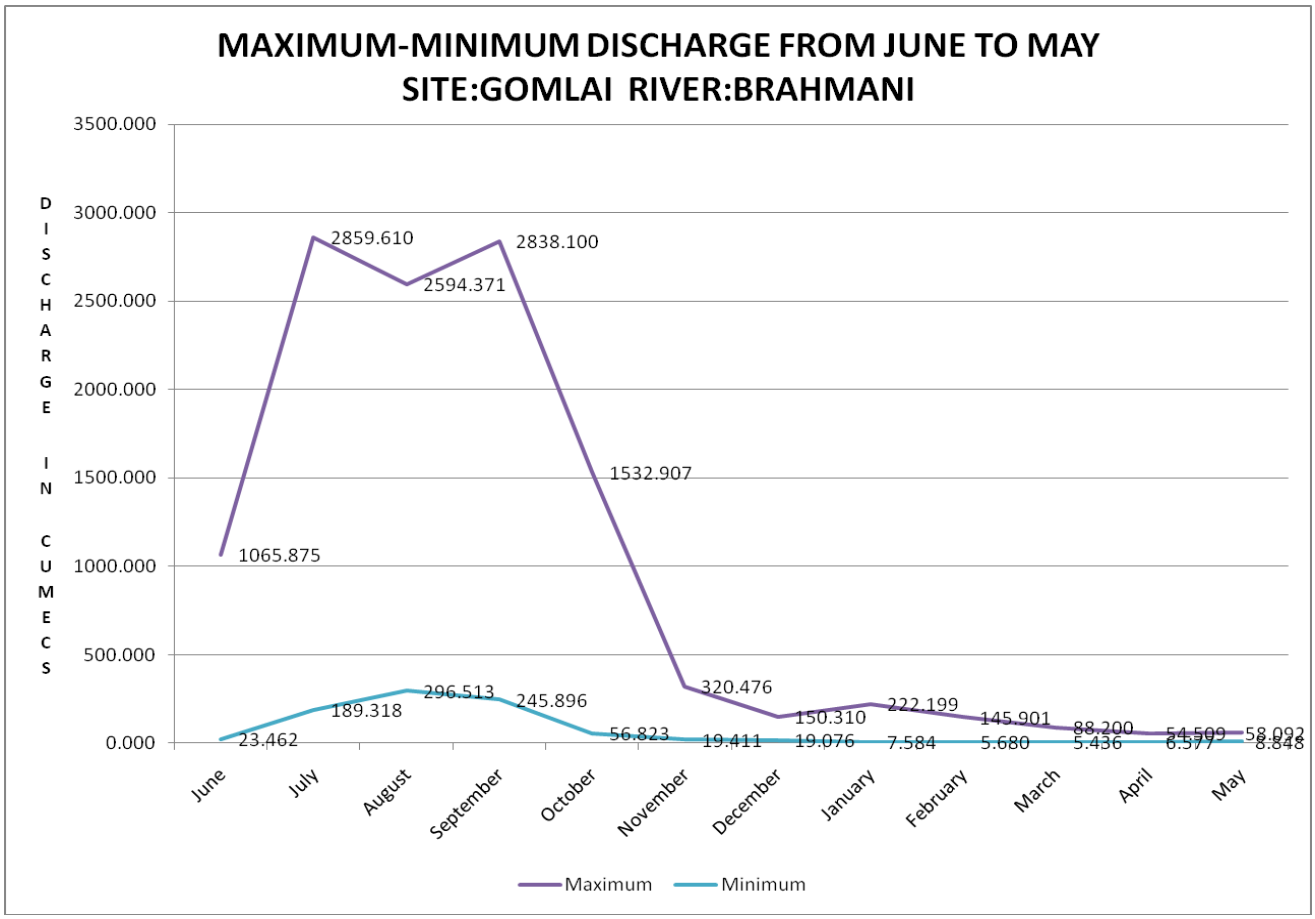
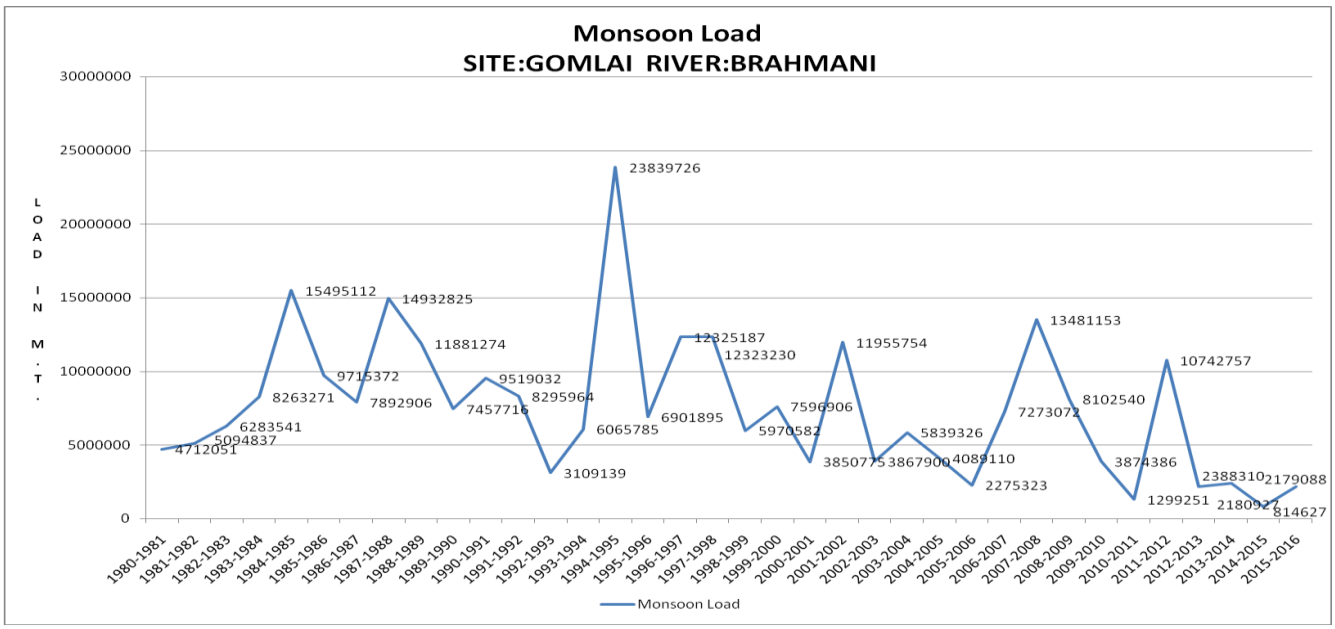
25000.000
20000.000
15000.000
10000.000
5000.000
0.000
Non-Monsoon


DEPENDIBILITY FLOW FROM JUNE TO MAY
SITE:GOMLAI RIVER:BRAHMANI
DISCHARGE IN CUMECS
1800.000
1600.000
1400.000
1200.000
1000.000
800.000
600.000
400.000
200.000
0.000
1592.113
1204.460
1248.853
1249.197
940.297
765.134
802.757
680.749
468.490
398.320
437.584
229.732
145.271
128.941
48.601
127.708
June
July
August
September
October
November
December
January
February
March
April
May
75% Dep
50% Dep
25% Dep


MAXIMUM-MINIMUM DISCHARGE FROM JUNE TO MAY
SITE:GOMLAI RIVER:BRAHMANI
DISCHARGE IN CUMECS
3500.000
3000.000
2500.000
2000.000
1500.000
1000.000
500.000
0.000
2859.610
2838.100
2594.371
1532.907
1065.875
320.476
296.513
245.896
189.318
150.310
222.199
145.901
88.200
54.509
58.092
23.462
56.823
19.411
19.076
7.584
5.680
5.436
6.577
8.848
June
July
August
September
October
November
December
January
February
March
April
May
Maximum
Minimum


Monsoon Load
SITE:GOMLAI RIVER:BRAHMANI
LOAD IN M.T.
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20000000
15000000
10000000
5000000
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5094837
6283541
8263271
15495112
9715372
7892906
14932825
11881274
7457716
9519032
8295964
3109139
6065785
23839726
6901895
12325187
12323230
5970582
7596906
3850775
11955754
3867900
5839326
4089110
2275323
7273072
13481153
8102540
3874386
1299251
10742757
2180922
2388310
814627
2179088
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
1991-1992
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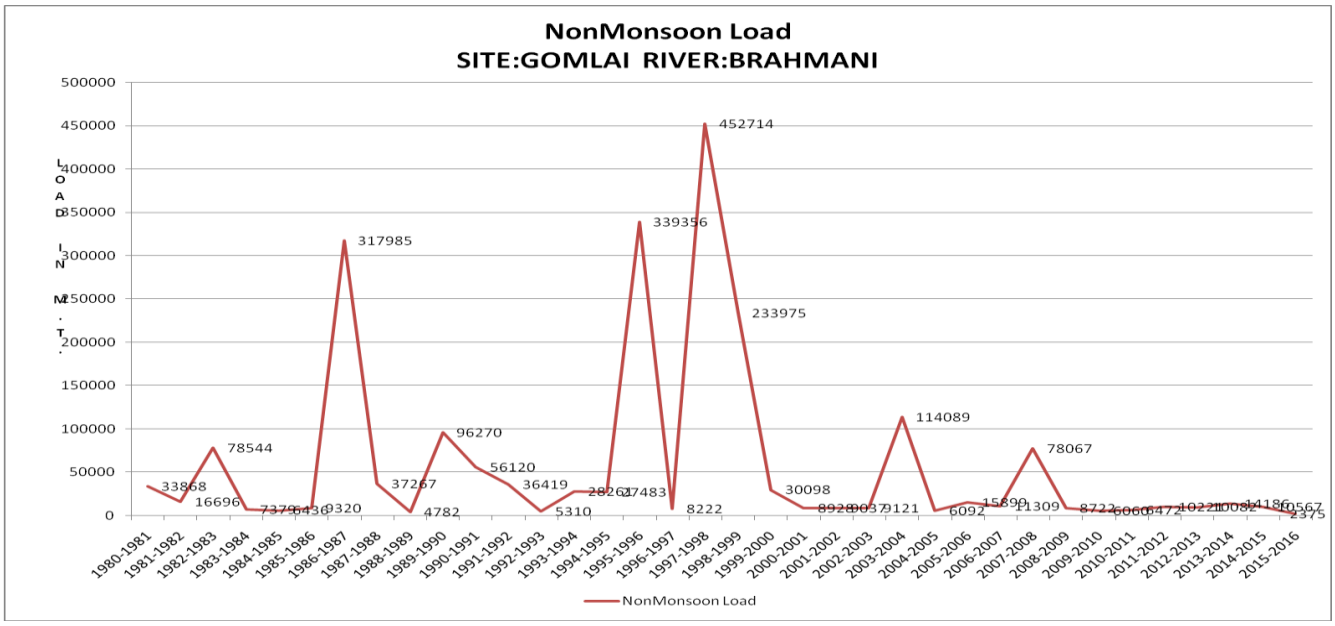
1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
Monsoon Load


NonMonsoon Load
SITE:GOMLAI RIVER:BRAHMANI
LOAD IN M.T.
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
33868
16696
78544
317985
37267
4782
96270
56120
36419
5310
339356
452714
233975
30098
114089
78067
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
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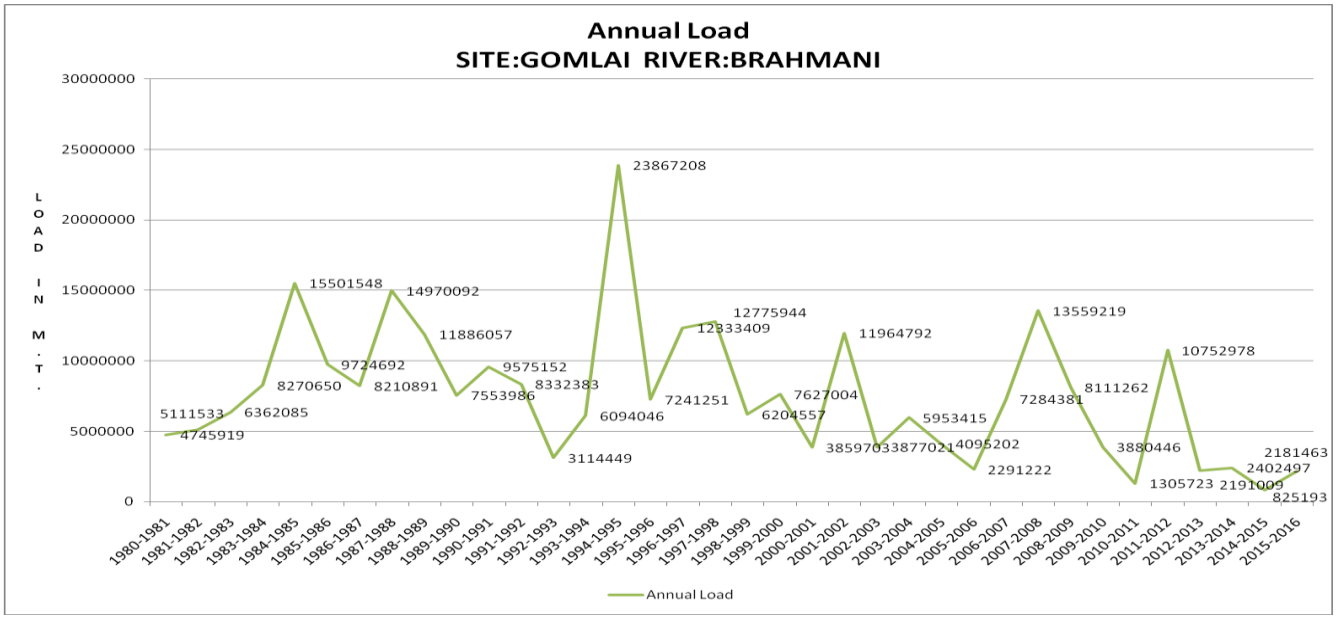
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
NonMonsoon Load


Annual Load
SITE:GOMLAI RIVER:BRAHMANI
LOAD IN M.T.
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25000000
20000000
15000000
10000000
5000000
0
4745919
5111533
6362085
8270650
15501548
9724692
8210891
14970092
11886057
7553986
9575152
8332383
3114449
6094046
23867208
7241251
12833409
12775944
6204557
7627004
3859703
3877021
11964792
5953415
4095202
2291222
7284381
13559219
8111262
3880446
1305723
10752978
2191009
2181463
2402497
825193
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
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1992-1993
1993-1994
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1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
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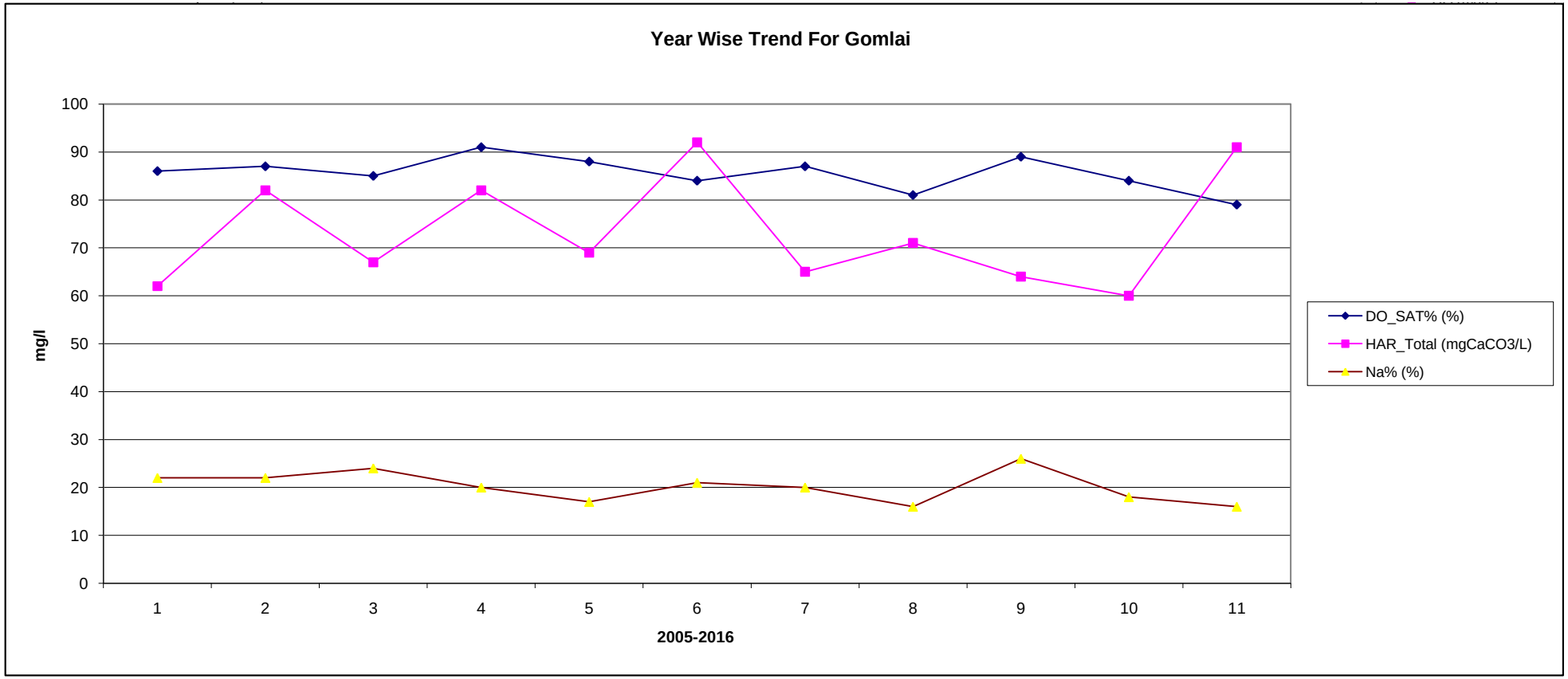
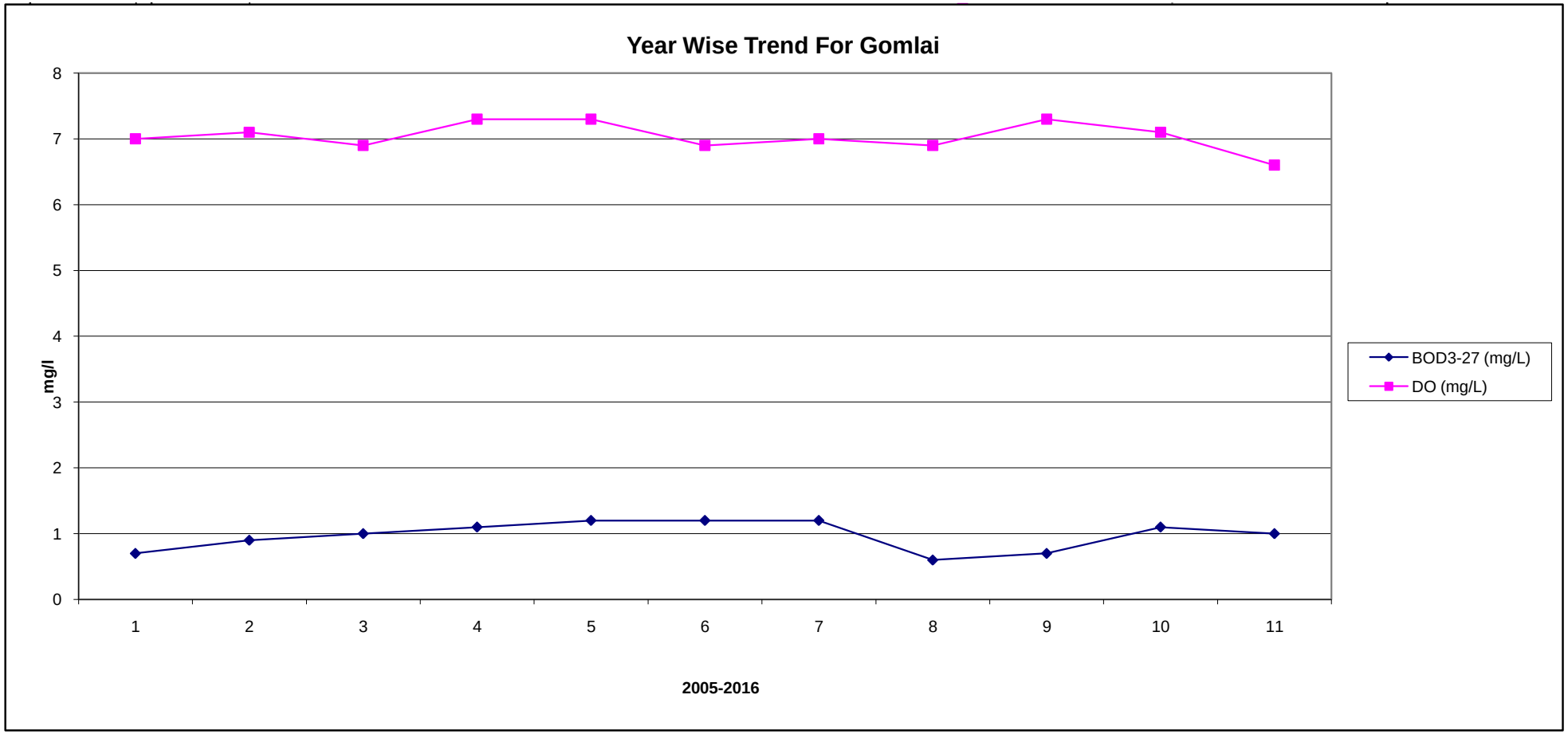
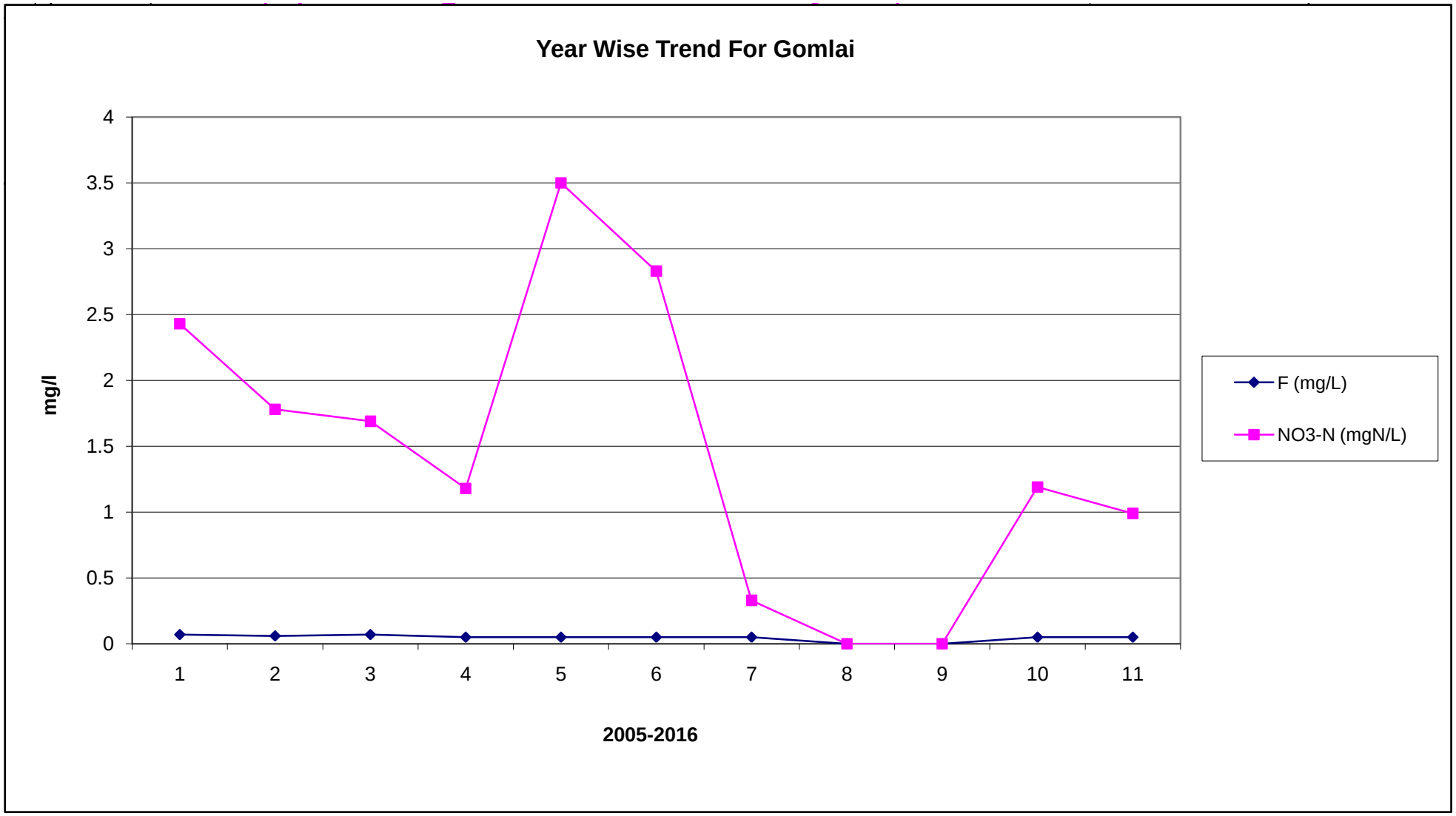
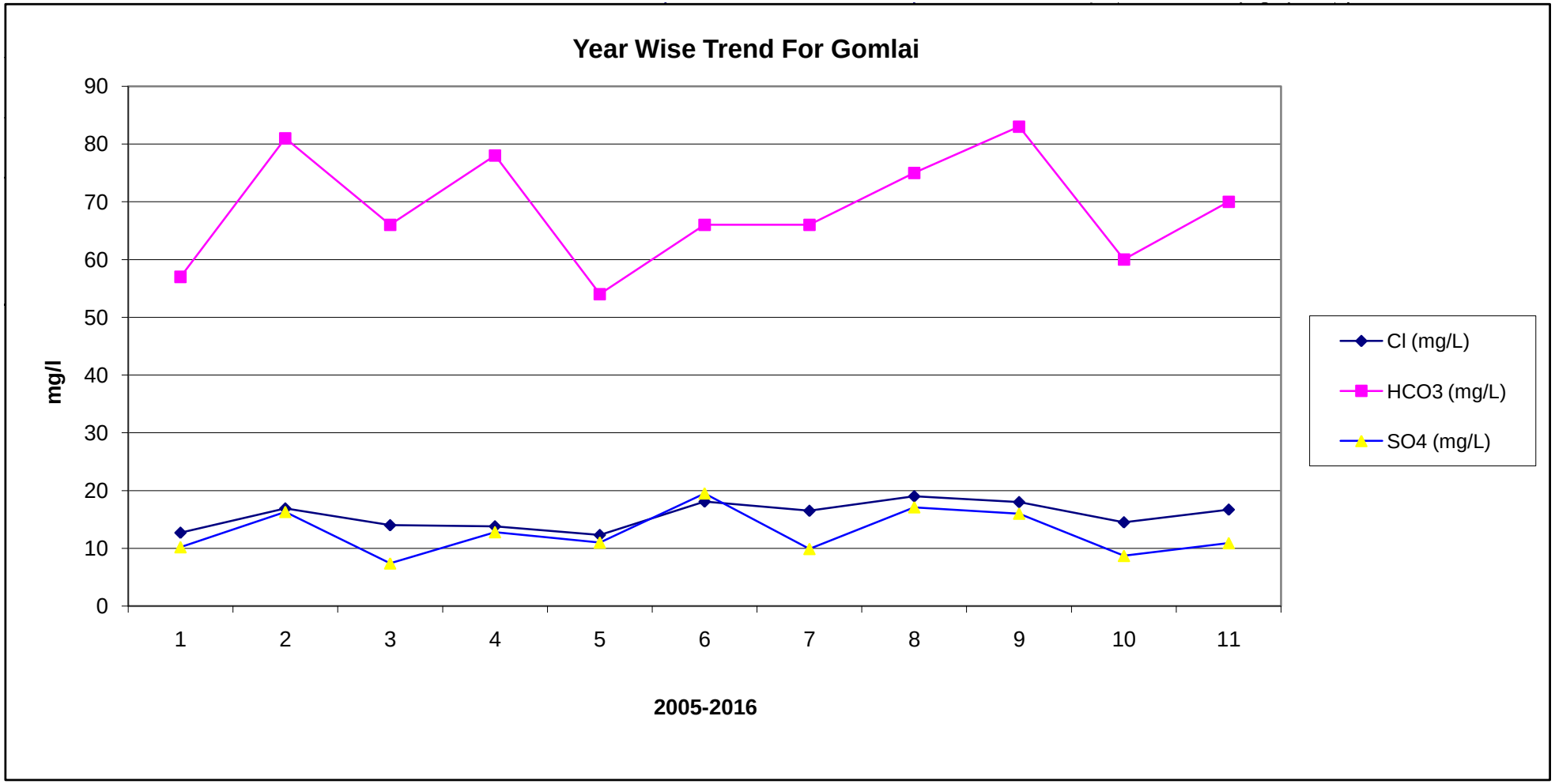
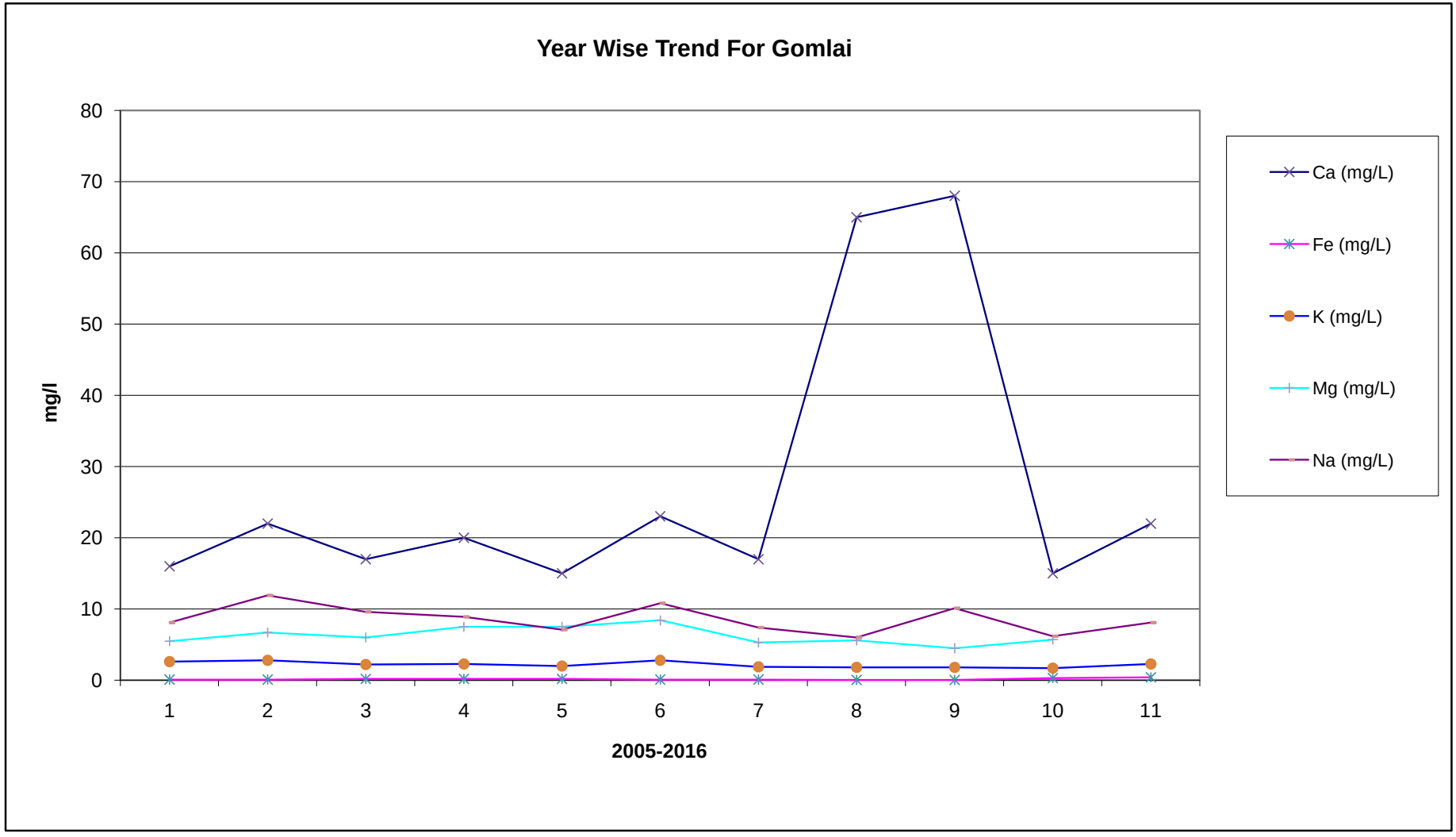
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
Annual Load


Year Wise Trend For Gomlai
100
90
80
70
60
50
40
30
20
10
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Gomlai
8
7
6
5
4
3
2
1
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Gomlai
mg/l
4
3.5
3
2.5
2
1.5
1
0.5
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Gomlai
90
80
70
60
50
40
30
20
10
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Gomlai
80
70
60
50
40
30
20
10
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
Fe (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

HYDROLOGICAL DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**Jenapur**	**Code**	:	**EB000G6**
State	:	Orissa	District		Jajpur
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmni
Tributary	:	Brahmni	Sub Tributary	:	Brahmni
Sub-Sub Tributary	:	Brahmni	Local River	:	Brahmni
Division	:	E.E., Bhubaneswar	Sub-Division	:	Rourkela
Drainage Area	:	33955 Sq. Km.	Bank	:	Right
Latitude	:	20°53'23"	Longitude	:	86°00'51"
Zero of Gauge (m)	:	13 (m.s.l)	01.01.1975	-	31.12.2025
		Opening Date	Closing Date		
Gauge	:	09.07.1977			
Discharge	:	20.07.1979			
Sediment	:	09.07.1980			
Water Quality	:	01.03.1980			

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1980-1981	3036	21.210	09.09.1980	18.52	16.365	23.03.1981
1981-1982	2805	20.800	17.08.1981	14.96	16.745	21.05.1982
1982-1983	4660	22.210	23.08.1982	6.465	16.630	16.04.1983
1983-1984	8506	22.960	07.09.1983	5.120	16.810	21.05.1984
1984-1985	9702	23.475	18.08.1984	8.500	16.870	03.06.1984
1985-1986	7485	22.360	29.08.1985	6.995	16.870	14.06.1985
1986-1987	5057	22.200	23.07.1986	91.10	17.500	13.06.1986
1987-1988	4738	21.550	31.08.1987	82.17	17.355	13.05.1988
1988-1989	6217	22.175	04.08.1988	77.70	17.580	31.05.1989
1989-1990	4312	21.395	28.07.1989	78.90	17.490	05.04.1990
1990-1991	4595	21.673	15.10.1990	41.00	17.190	02.05.1991
1991-1992	9151	22.880	14.08.1991	45.77	17.170	26.04.1992
1992-1993	4892	21.680	29.07.1992	20.99	16.790	03.04.1993
1993-1994	3346	20.630	30.09.1993	26.75	17.080	23.04.1994
1994-1995	8952	22.860	19.09.1994	65.00	17.200	12.06.1994
1995-1996	3823	21.410	21.09.1995	82.06	17.750	24.01.1996
1996-1997	4652	21.680	23.06.1996	57.68	17.440	28.02.1997
1997-1998	7135	22.560	06.08.1997	75.60	17.860	14.01.1998
1998-1999	5173	22.040	14.09.1998	85.80	17.880	31.03.1999
1999-2000	8053	22.640	31.10.1999	110.0	17.680	28.05.2000
2000-2001	3545	21.320	30.07.2000	37.00	17.270	07.05.2001
2001-2002	10077	23.360	25.07.2001	49.62	17.570	30.05.2002

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
2002-2003	2002	20.220	09.09.2002	49.59	17.450	08.06.2002
2003-2004	5622	22.140	27.10.2003	61.01	17.600	06.04.2004
2004-2005	3906	21.380	23.08.2004	56.53	17.660	23.06.2004
2005-2006	10314	23.060	31.07.2005	45.00	17.540	23.04.2006
2006-2007	9804	23.110	24.08.2006	41.51	17.260	28.05.2007
2007-2008	7568	22.590	28.09.2007	40.28	17.260	12.03.2008
2008-2009	7489	22.240	19.09.2008	48.19	17.120	09.04.2009
2009-2010	6466	22.290	22.07.2009	34.55	17.060	05.02.2010
2010-2011	952.9	19.230	07.08.2010	52.00	17.300	20.02.2011
2011-2012	10372	23.730	26.09.2011	27.60	17.280	05.06.2011
2012-2013	3234	20.920	27.08.2012	23.59	19.120	17.10.2012
2013-2014	4059	21.650	14.10.2013	40.46	17.440	10.02.2014
2014-2015	7963	22.740	06.08.2014	17.56	17.560	08.03.2015
2015-2016	3916	21.130	06.08.2015	21.19	17.600	07.02.2016

Stage-Discharge Data for the period 2015 - 2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	18.320	271.3	18.980	758.1	19.990	1983	19.540	1272	18.100	171.1	17.800	57.13 *
2	18.320	274.8	18.920	706.5	19.900	1700 *	19.320	1038	18.120	158.4 *	17.800	66.38
3	18.280	262.9	18.980	766.7	20.020	1992	19.440	1155	18.320	286.9	17.820	69.54
4	18.340	293.3	18.700	531.1	20.500	2690	19.360	1075	18.120	169.9 *	17.800	65.59
5	18.320	278.2	18.760	520.2 *	20.650	2984	19.320	1013	18.000	139.3	17.800	66.65
6	18.380	309.6	18.760	582.5	21.130	3916	19.300	858.2 *	17.960	105.0	17.800	66.23
7	18.760	418.9 *	18.800	629.0	21.080	3758	19.200	851.5	17.930	93.36	17.800	66.15
8	18.580	504.1	18.920	708.5	20.840	3399	19.000	668.6	17.980	119.6	17.800	56.90 *
9	18.560	551.8	18.880	683.6	19.500	1405 *	18.940	655.7	17.940	98.73	17.800	69.88
10	18.580	0.000	18.900	649.8	19.140	1017	18.800	570.3	17.920	87.76	17.800	63.94
11	18.560	550.5	18.920	660.4	19.140	1017	18.830	593.4	17.900	70.08 *	17.800	54.92 *
12	18.540	542.3	19.220	859.5 *	19.060	794.1	19.020	683.8	17.880	74.89	17.800	66.78
13	18.240	254.8	19.360	1154	19.100	900.4	19.020	602.8 *	17.880	80.71	17.800	65.35
14	18.640	157.7 *	19.180	926.4	19.080	885.4	18.940	647.3	17.860	77.77	17.800	65.03
15	17.940	130.8	19.000	807.4	19.100	788.4 *	18.640	497.1	17.840	74.16	17.800	56.01 *
16	17.940	138.9	19.080	847.8	18.820	569.1 *	18.700	526.1	17.820	70.13	17.800	67.71
17	18.140	222.5	19.080	844.8	18.850	659.9	18.820	508.3 *	17.800	65.02	17.860	96.36
18	18.260	256.3	19.100	774.7 *	19.110	723.0	18.880	613.3	17.820	52.51 *	17.840	87.38
19	18.340	295.4	19.060	745.5 *	19.340	1047	18.740	544.2	17.840	73.93	17.860	95.16
20	18.560	555.0	18.860	621.5	19.040	688.5	18.680	386.7 *	17.820	71.30	17.840	87.67
21	18.120	505.8 *	19.190	1086	19.180	873.2	18.720	519.9	17.840	63.33 *	17.840	87.93
22	18.700	572.6	19.040	842.9	18.970	646.2	18.800	592.7	17.840	63.33 *	17.840	75.79 *
23	18.640	555.7	19.180	1083	18.880	536.3 *	18.660	472.7	17.840	73.30	17.840	88.01
24	18.620	546.6	19.180	1058	19.040	685.6	18.560	426.4	17.840	63.33 *	17.820	80.58
25	18.620	545.4	19.100	877.7	18.880	613.7	18.520	357.8 *	17.820	61.03 *	17.820	69.53 *
26	18.720	582.1	19.180	844.1 *	19.080	780.6	18.480	319.9	17.820	71.01	17.820	79.98
27	18.960	742.2	19.360	1119	19.060	787.2	18.480	336.0 *	17.800	65.91	17.820	80.45
28	17.800	637.8 *	19.690	1624	18.940	650.1	18.460	366.6	17.800	66.35	17.820	81.17
29	18.920	705.2	20.560	2841	19.320	1031	18.460	337.4	17.800	65.72	17.820	69.90 *
30	18.820	658.2	20.010	2003	19.420	990.6 *	18.280	253.7	17.800	67.45	17.820	80.54
31			19.080	873.7	19.460	1185			17.800	66.61		
Ten-Daily Mean												
I Ten-Daily	18.444	316.5	18.860	653.6	20.275	2485	19.222	915.7	18.039	143.0	17.802	64.84
II Ten-Daily	18.316	310.4	19.086	824.2	19.064	807.3	18.827	560.3	17.846	71.05	17.820	74.24
III Ten-Daily	18.592	605.2	19.415	1296	19.112	798.1	18.542	398.3	17.818	66.13	17.826	79.39
Monthly												
Min.	17.800	0.000	18.700	520.2	18.820	536.3	18.280	253.7	17.800	52.51	17.800	54.92
Max.	18.960	742.2	20.560	2841	21.130	3916	19.540	1272	18.320	286.9	17.860	96.36
Mean	18.451	410.7	19.130	936.5	19.472	1345	18.864	624.8	17.898	92.52	17.816	72.82

Annual Runoff in MCM = 10760 Annual Runoff in mm = 317

Peak Observed Discharge = 3916 cumecs on 06/08/2015 Corres. Water Level :21.13 m

Lowest Observed Discharge = 0.000 cumecs on 10/06/2015 Corres. Water Level :18.58 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2015 - 2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	17.820	85.54	17.820	55.44	17.640	26.33	17.860	57.59	17.800	67.73	18.340	206.2 *
2	17.820	0.000	17.840	58.19	17.620	25.24	17.820	52.86	17.840	84.91	18.280	218.3
3	17.820	81.33	17.840	53.12 *	17.620	25.47	17.820	53.63	17.940	94.05 *	18.200	180.8
4	17.800	72.78	17.820	56.09	17.620	24.88	17.800	50.83	18.020	134.6	18.140	164.4
5	17.800	77.67	17.820	52.68	17.600	23.48	17.840	55.02	18.100	154.8	18.100	149.5
6	17.800	66.82 *	17.820	52.39	17.600	23.76	17.880	62.45 *	18.080	144.9	17.980	130.6
7	17.800	72.93	17.820	53.60	17.600	21.19 *	18.080	134.6 *	18.120	165.9	17.900	102.9
8	17.800	78.58	17.820	53.61	17.600	23.29	18.060	140.2	18.120	165.1	17.800	62.67 *
9	17.800	78.24	17.820	54.48	17.600	24.15	18.140	150.7	18.100	159.9	17.780	64.13
10	17.800	79.77	17.820	47.56 *	17.600	24.31	18.120	140.1	18.100	134.4 *	17.740	50.08
11	17.820	85.20	17.820	53.89	17.600	24.80	18.020	116.0	18.080	145.6	17.720	46.26
12	17.820	85.64	17.820	49.87	17.600	25.04	18.100	135.6	18.100	153.2	17.680	36.36
13	17.820	76.64 *	17.820	50.78	17.600	25.11	18.180	154.7 *	18.140	168.9	17.660	33.63
14	17.800	79.96	17.820	50.95	17.600	22.59 *	18.300	229.8	18.160	165.9 *	17.640	29.60
15	17.800	80.66	17.820	50.71	17.600	25.18	18.260	205.2	18.120	164.1	17.640	27.34 *
16	17.880	88.93	17.800	46.83	17.580	23.36	18.220	185.5	18.040	134.2	17.620	26.96
17	17.900	98.05	17.780	38.53 *	17.580	23.37	18.140	156.2	18.020	134.6 *	17.620	26.63
18	17.900	99.23	17.760	41.03	17.580	23.48	18.040	131.0	18.040	136.7	17.660	34.15
19	17.880	91.48	17.760	42.90	17.580	24.07	17.980	111.4	18.080	148.8	18.100	168.9
20	17.880	78.90 *	17.740	37.64	17.580	22.66	17.940	95.21 *	18.040	134.2 *	18.200	217.7
21	17.860	86.88	17.740	38.23	17.580	21.32 *	17.920	105.2	17.920	116.2	18.500	290.8 *
22	17.860	75.41	17.740	38.67	17.580	24.97	17.900	96.92	17.820	70.28	18.840	404.1 *
23	17.860	69.24	17.740	38.91	17.580	22.47	17.880	90.89	17.780	60.06	18.800	465.4
24	17.860	60.21 *	17.740	34.13 *	17.580	22.72	17.920	90.02 *	17.800	67.73 *	18.240	272.5
25	17.860	60.21 *	17.720	34.30	17.640	25.11	17.960	99.21 *	17.920	114.7	18.300	284.4
26	17.860	69.92	17.720	30.03 *	17.660	27.68	18.020	126.5	17.920	113.7	18.600	424.9
27	17.860	61.05 *	17.680	28.56	17.700	34.55	18.020	113.0 *	17.960	129.3	18.440	383.4
28	17.880	77.84	17.660	27.05	17.760	38.28 *	17.960	108.5	18.100	156.8	18.280	275.9
29	17.840	58.56	17.640	26.53	17.820	52.79	17.900	100.7	18.260	223.1	18.480	284.6 *
30	17.840	59.18	17.640	26.38			17.860	83.00	18.420	266.3	18.720	410.6
31	17.820	53.82	17.640	23.10 *			17.820	64.20			18.220	223.8
Ten-Daily Mean												
I Ten-Daily	17.806	69.37	17.824	53.72	17.610	24.21	17.942	89.79	18.022	130.6	18.026	133.0
II Ten-Daily	17.850	86.47	17.794	46.31	17.590	23.97	18.118	152.1	18.082	148.6	17.754	64.75
III Ten-Daily	17.855	66.57	17.696	31.44	17.656	29.99	17.924	98.02	17.990	131.8	18.493	338.2
Monthly												
Min.	17.800	0.000	17.640	23.10	17.580	21.19	17.800	50.83	17.780	60.06	17.620	26.63
Max.	17.900	99.23	17.840	58.19	17.820	52.79	18.300	229.8	18.420	266.3	18.840	465.4
Mean	17.837	73.89	17.769	43.43	17.617	25.92	17.992	112.8	18.031	137	18.104	183.8

Peak Computed Discharge = 1700 cumecs on 02/08/2015 Corres. Water Level :19.9 m

Lowest Computed Discharge = 21.19 cumecs on 07/02/2016 Corres. Water Level :17.6 m

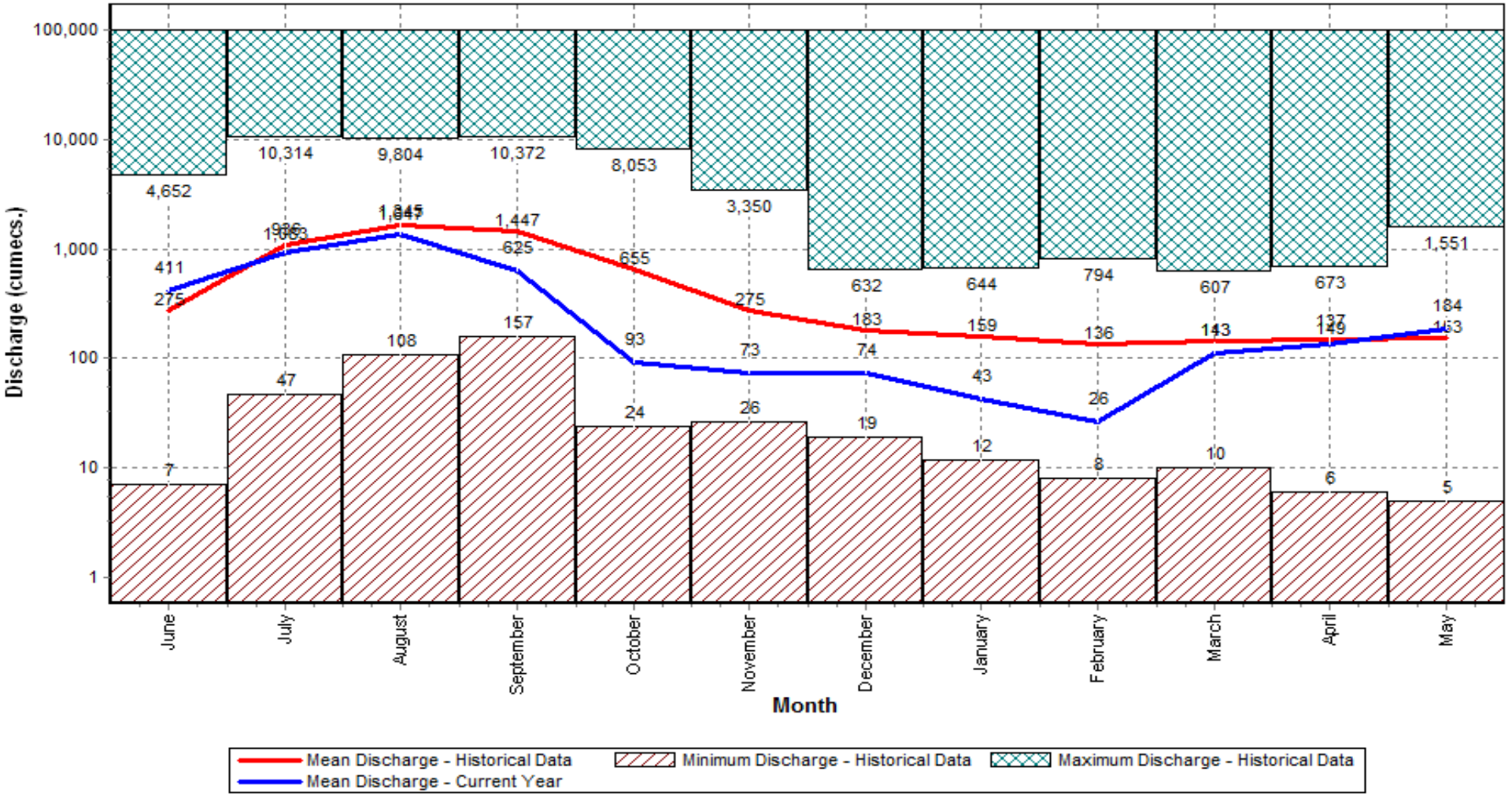
Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2015-2016

Station Name : Jenapur (EB000G6) **Data considered : 1980-2016** **Division : E.E., Bhubaneswar**

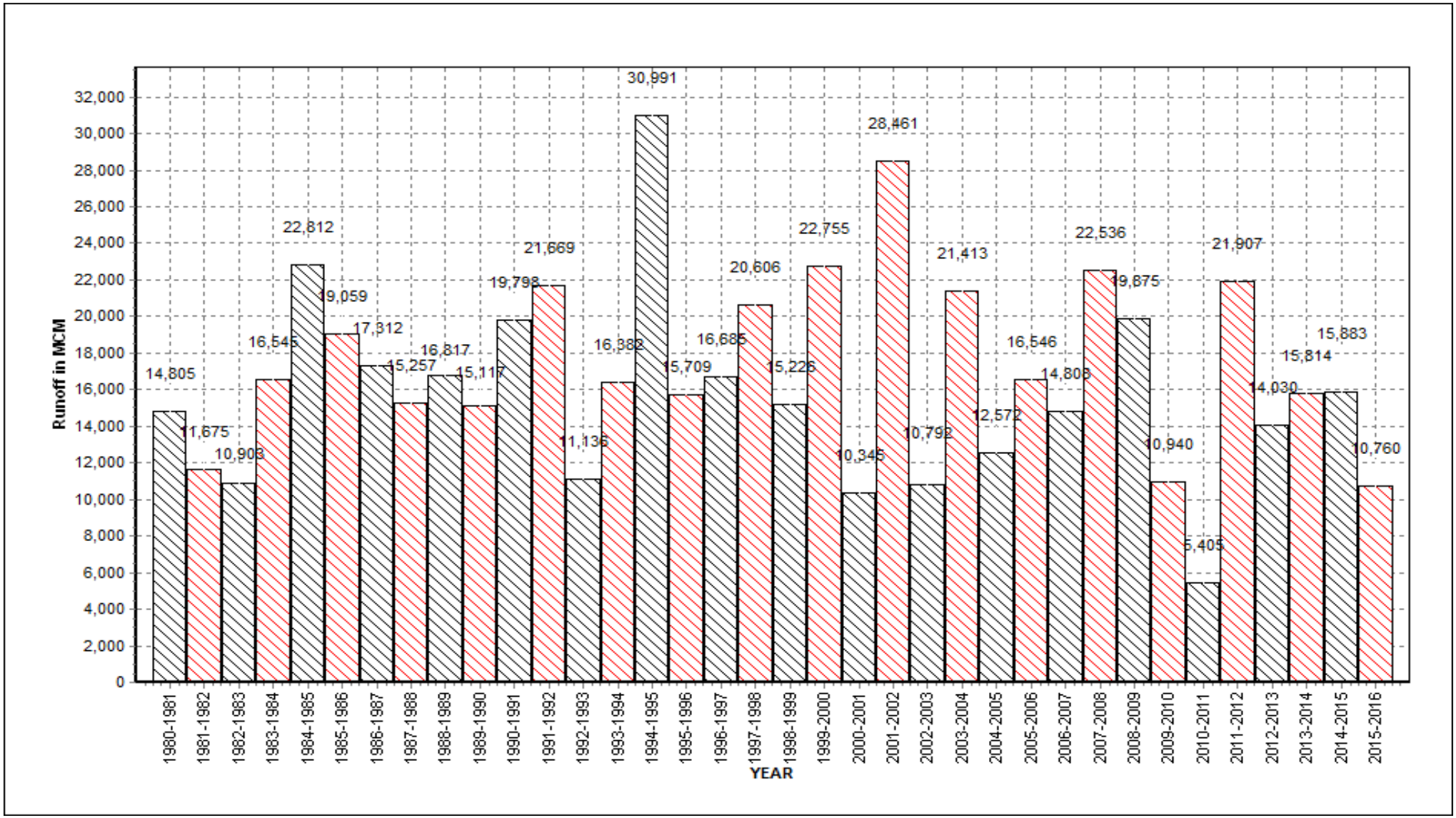
Local River : Brahmni **Sub-Division : Rourkela**



Annual Runoff Values for the period: 1980 - 2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

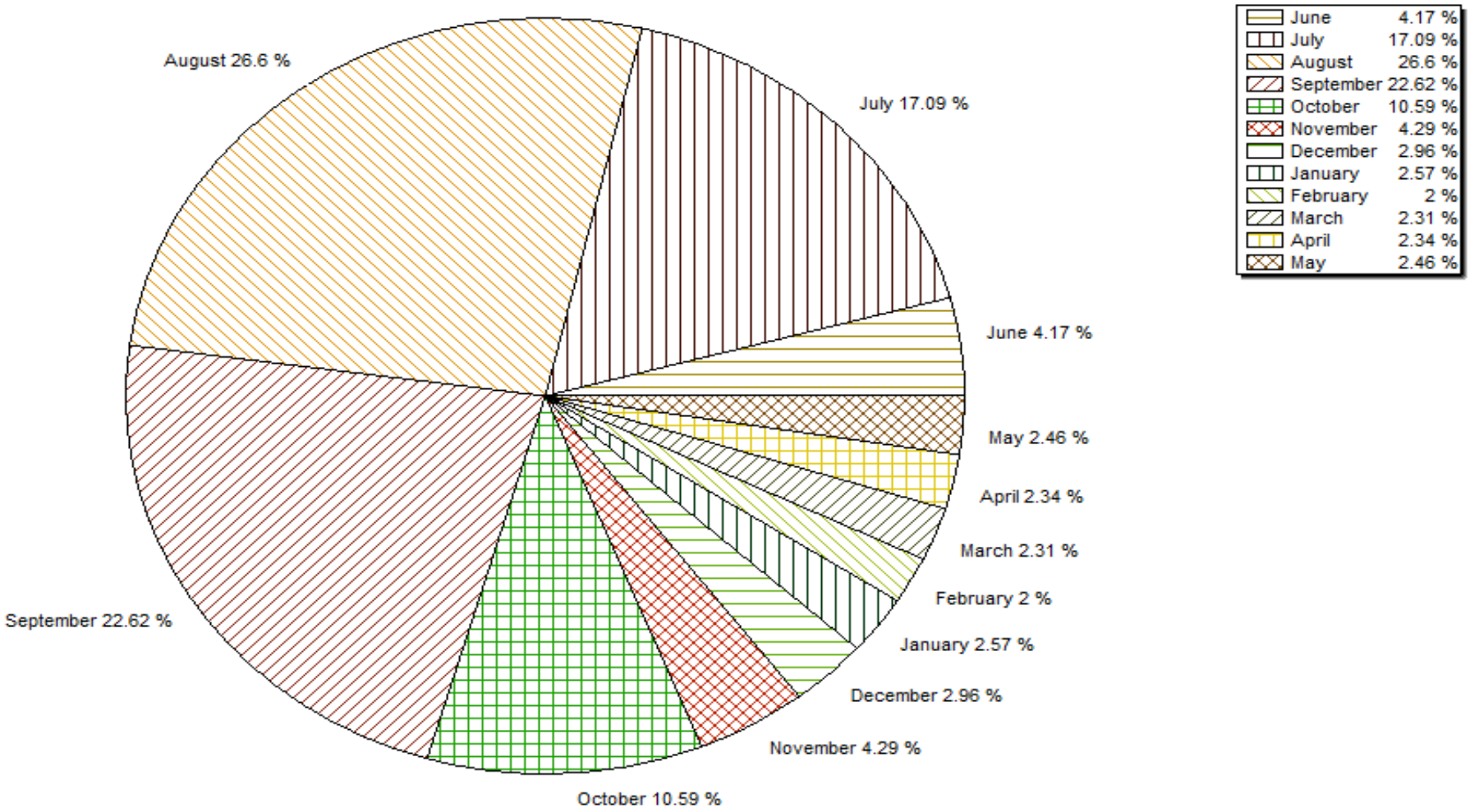


Note: Missing values have not been considered while arriving at Annual Runoff

Monthly Average Runoff based on period : 1980-2015

Station Name : Jenapur (EB000G6)
Local River : Brahmni

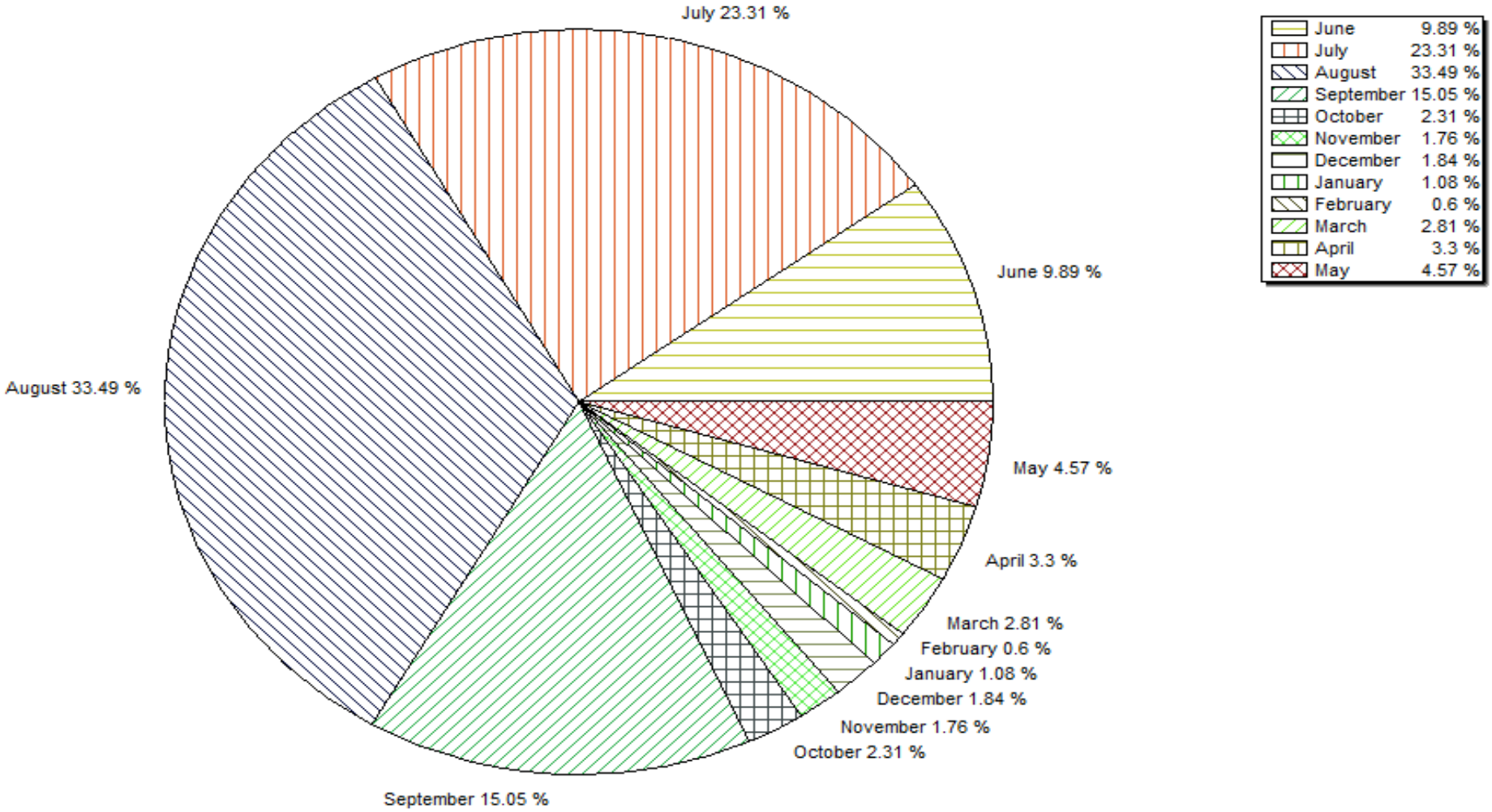
Division : E.E., Bhubaneswar
Sub-Division : Rourkela



Monthly Runoff for the Year : 2015-2016

Station Name : Jenapur (EB000G6)
Local River : Brahmni

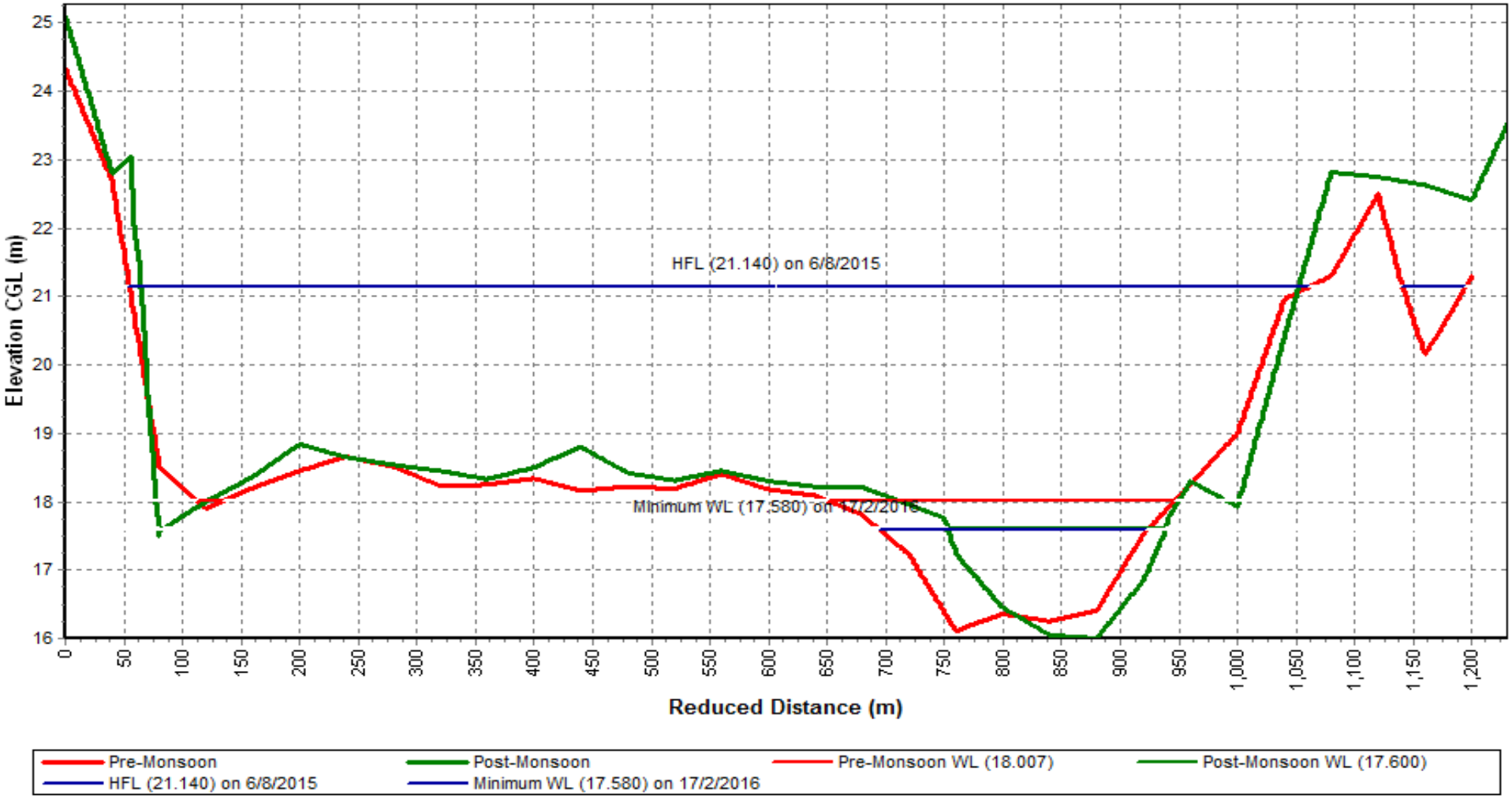
Division : E.E., Bhubaneswar
Sub-Division : Rourkela



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

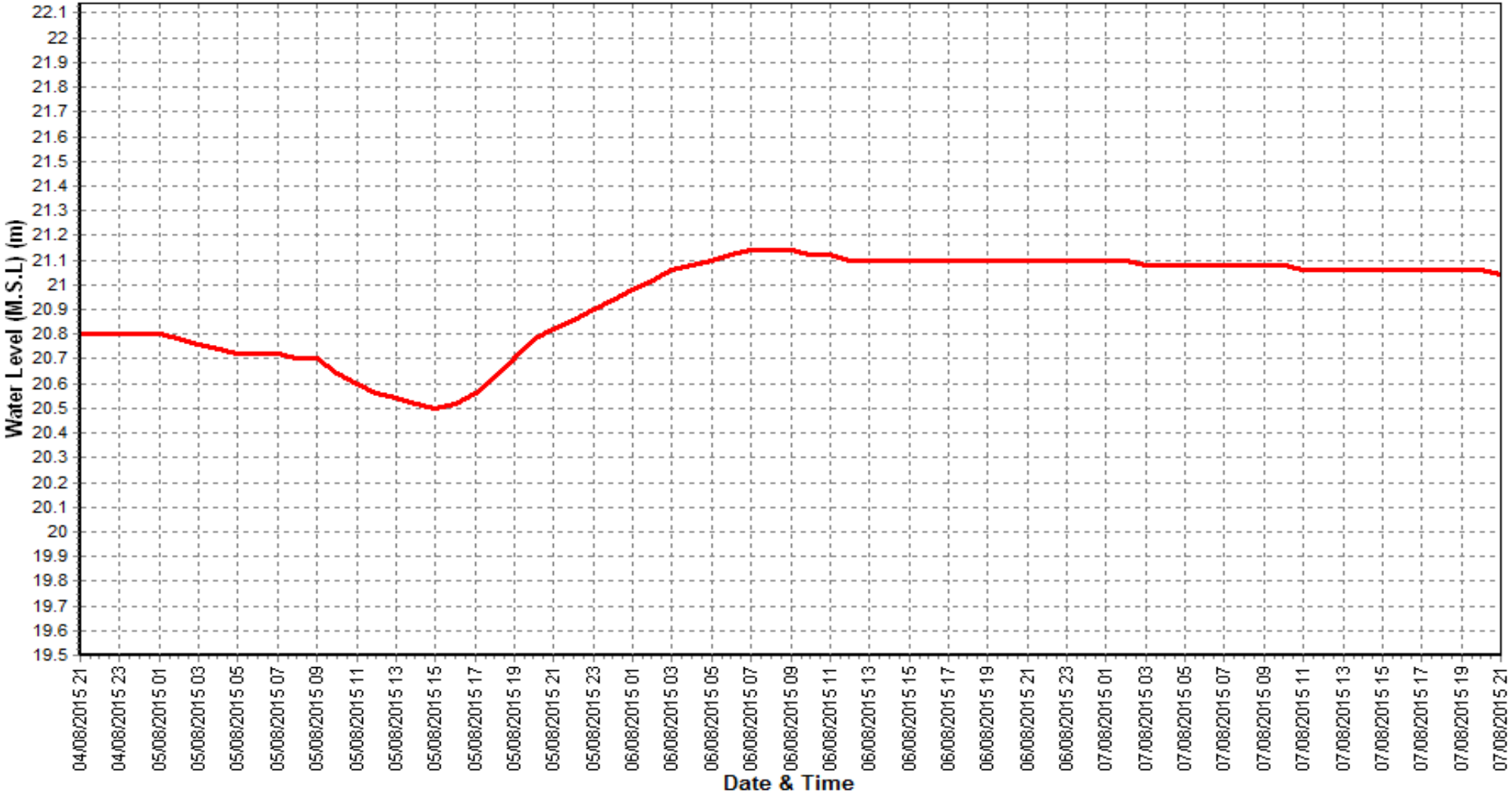
Local River : Brahmni **Sub-Division : Rourkela**



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

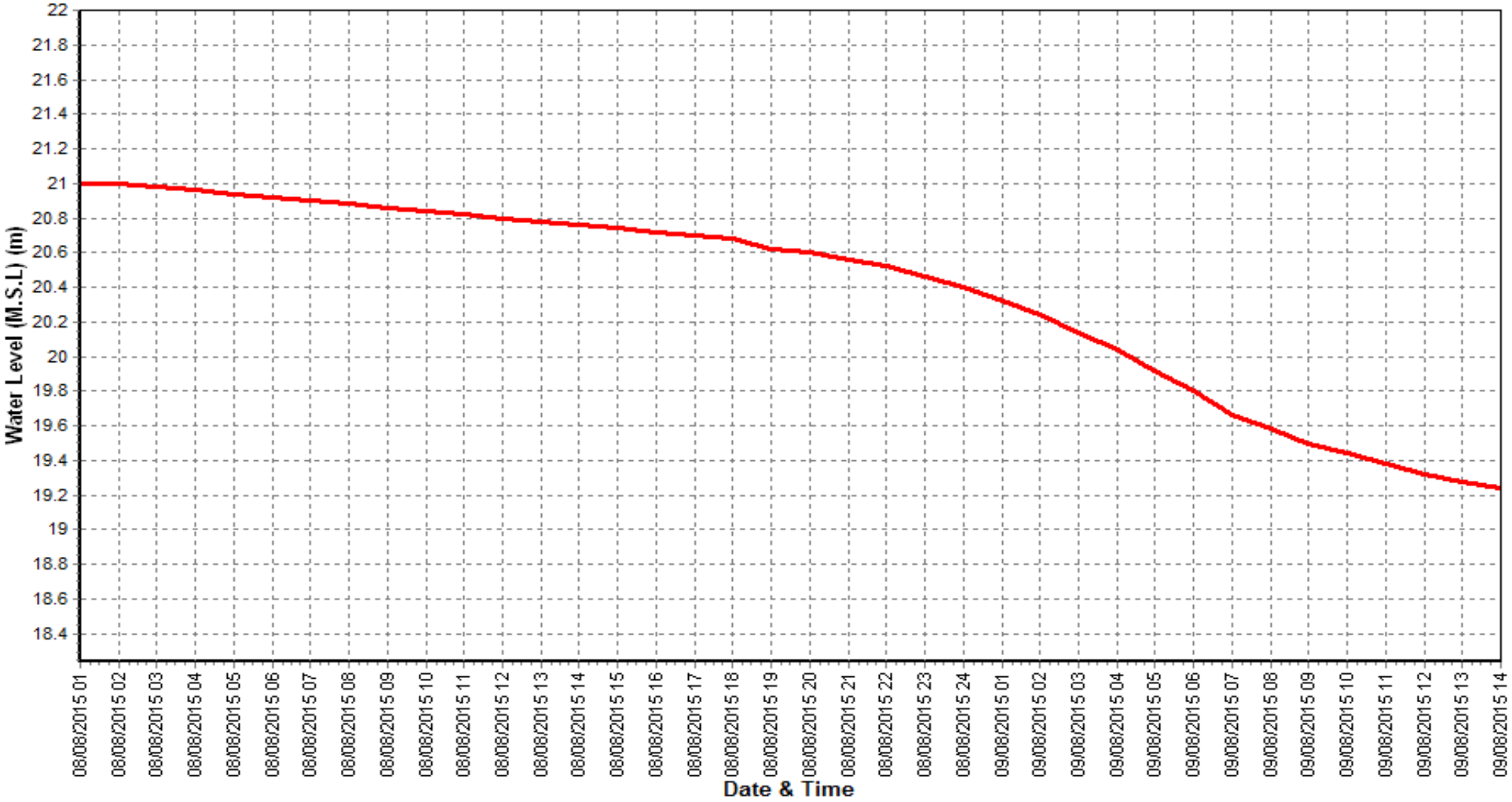


Time Span: 72 Hrs

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

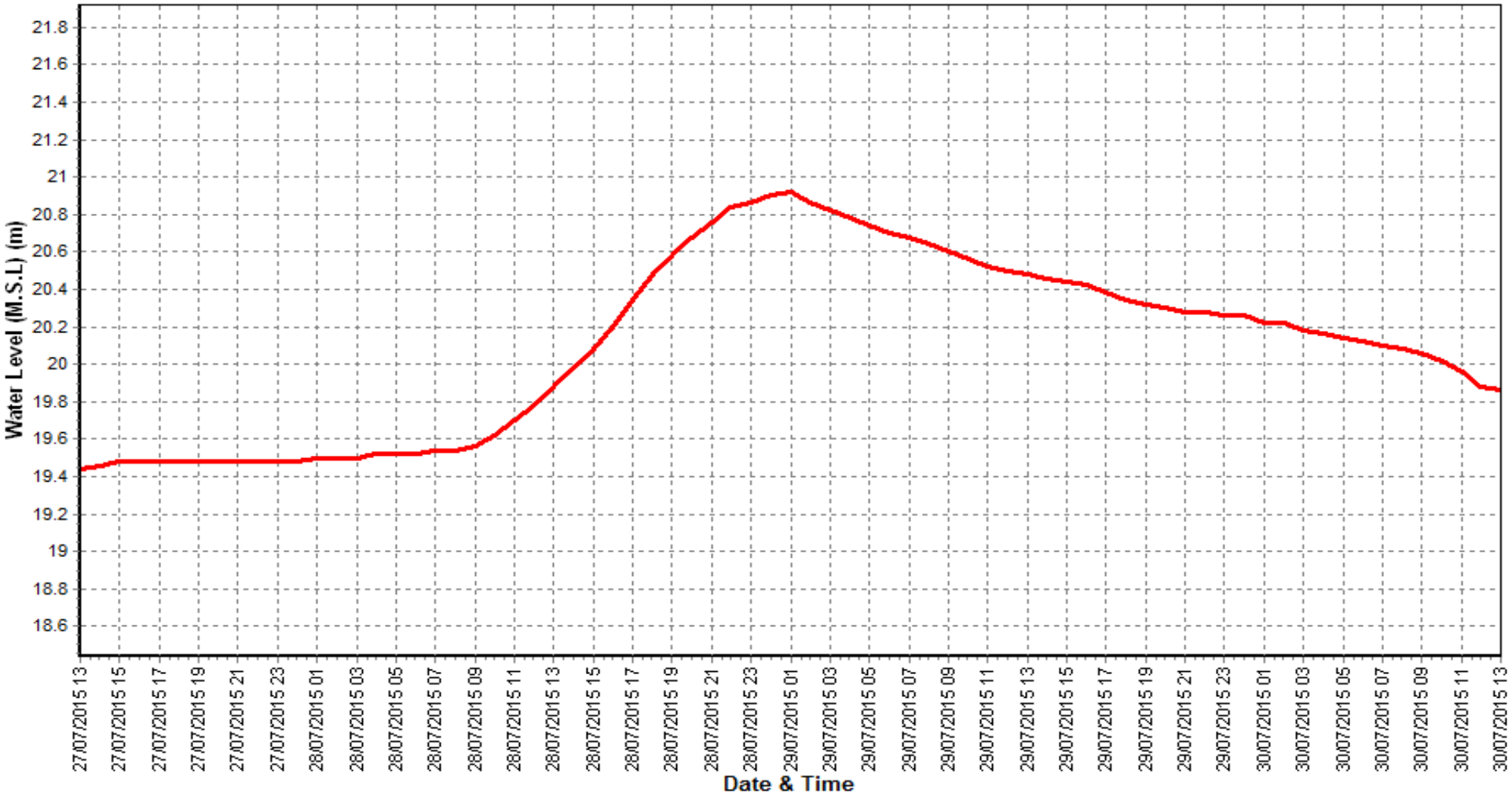


Time Span: 72 Hrs

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



Time Span: 72 Hrs

SEDIMENT DATA

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	271.3	0.000	0.000	0.008	0.008	188	758.1	0.000	0.000	0.076	0.076	4978	1983	0.000	0.000	0.122	0.122	20903
2	274.8	0.000	0.000	0.001	0.001	24	706.5	0.000	0.000	0.045	0.045	2747	1700	0.000	0.000	0.122	0.122	17923
3	262.9	0.000	0.000	0.037	0.037	840	766.7	0.000	0.000	0.156	0.156	10334	1992	0.000	0.000	0.124	0.124	21344
4	293.3	0.000	0.000	0.027	0.027	684	531.1	0.000	0.000	0.114	0.114	5231	2690	0.000	0.000	0.128	0.128	29748
5	278.2	0.000	0.000	0.044	0.044	1067	520.2	0.000	0.000	0.114	0.114	5124	2984	0.000	0.000	0.136	0.136	35060
6	309.6	0.000	0.000	0.108	0.108	2889	582.5	0.000	0.000	0.162	0.162	8153	3916	0.000	0.000	0.122	0.122	41281
7	418.9	0.000	0.000	0.108	0.108	3909	629.0	0.000	0.000	0.162	0.162	8804	3758	0.000	0.000	0.122	0.122	39614
8	504.1	0.000	0.000	0.114	0.114	4965	708.5	0.000	0.000	0.116	0.116	7101	3399	0.000	0.000	0.142	0.142	41706
9	551.8	0.000	0.000	0.079	0.079	3766	683.6	0.000	0.000	0.112	0.112	6615	1405	0.000	0.000	0.142	0.142	17236
10	0.000	0.000	0.000	0.089	0.089	0	649.8	0.000	0.000	0.122	0.122	6849	1017	0.000	0.000	0.140	0.140	12307
11	550.5	0.000	0.000	0.088	0.088	4185	660.4	0.000	0.000	0.140	0.140	7989	1017	0.000	0.000	0.134	0.134	11772
12	542.3	0.000	0.000	0.088	0.088	4123	859.5	0.000	0.000	0.140	0.140	10397	794.1	0.000	0.000	0.150	0.150	10292
13	254.8	0.000	0.000	0.116	0.116	2554	1154	0.000	0.000	0.144	0.144	14363	900.4	0.000	0.000	0.130	0.130	10114
14	157.7	0.000	0.000	0.116	0.116	1581	926.4	0.000	0.000	0.162	0.162	12966	885.4	0.000	0.000	0.148	0.148	11322
15	130.8	0.000	0.000	0.085	0.085	960	807.4	0.000	0.000	0.162	0.162	11301	788.4	0.000	0.000	0.148	0.148	10081
16	138.9	0.000	0.000	0.084	0.084	1008	847.8	0.000	0.000	0.160	0.160	11720	569.1	0.000	0.000	0.148	0.148	7277
17	222.5	0.000	0.000	0.128	0.128	2461	844.8	0.000	0.000	0.144	0.144	10511	659.9	0.000	0.000	0.104	0.104	5930
18	256.3	0.000	0.000	0.121	0.121	2680	774.7	0.000	0.000	0.144	0.144	9639	723.0	0.000	0.000	0.142	0.142	8871
19	295.4	0.000	0.000	0.102	0.102	2603	745.5	0.000	0.000	0.144	0.144	9275	1047	0.000	0.000	0.132	0.132	11941
20	555.0	0.000	0.000	0.106	0.106	5083	621.5	0.000	0.000	0.152	0.152	8162	688.5	0.000	0.000	0.120	0.120	7138
21	505.8	0.000	0.000	0.106	0.106	4632	1086	0.000	0.000	0.112	0.112	10508	873.2	0.000	0.000	0.110	0.110	8299
22	572.6	0.000	0.000	0.072	0.072	3562	842.9	0.000	0.000	0.121	0.121	8812	646.2	0.000	0.000	0.126	0.126	7035
23	555.7	0.000	0.000	0.052	0.052	2497	1083	0.000	0.000	0.142	0.142	13290	536.3	0.000	0.000	0.126	0.126	5838
24	546.6	0.000	0.000	0.013	0.013	614	1058	0.000	0.000	0.134	0.134	12245	685.6	0.000	0.000	0.122	0.122	7227
25	545.4	0.000	0.000	0.138	0.138	6503	877.7	0.000	0.000	0.142	0.142	10768	613.7	0.000	0.000	0.221	0.221	11718
26	582.1	0.000	0.000	0.118	0.118	5934	844.1	0.000	0.000	0.142	0.142	10356	780.6	0.000	0.000	0.140	0.140	9442
27	742.2	0.000	0.000	0.108	0.108	6926	1119	0.000	0.000	0.122	0.122	11798	787.2	0.000	0.000	0.102	0.102	6937
28	637.8	0.000	0.000	0.108	0.108	5951	1624	0.000	0.000	0.142	0.142	19930	650.1	0.000	0.000	0.202	0.202	11346
29	705.2	0.000	0.000	0.048	0.048	2924	2841	0.000	0.000	0.126	0.126	30929	1031	0.000	0.000	0.144	0.144	12824
30	658.2	0.000	0.000	0.041	0.041	2332	2003	0.000	0.000	0.140	0.140	24223	990.6	0.000	0.000	0.144	0.144	12325
31							873.7	0.000	0.000	0.176	0.176	13285	1185	0.000	0.000	0.118	0.118	12084
Ten Daily Mean																		
Ten Daily I	316.5	0.000	0.000	0.062	0.062	1833	653.6	0.000	0.000	0.118	0.118	6594	2485	0.000	0.000	0.130	0.130	27712
Ten Daily II	310.4	0.000	0.000	0.103	0.103	2724	824.2	0.000	0.000	0.149	0.149	10632	807.3	0.000	0.000	0.136	0.136	9474
Ten Daily III	605.2	0.000	0.000	0.080	0.080	4188	1296	0.000	0.000	0.136	0.136	15104	798.1	0.000	0.000	0.141	0.141	9552
Monthly																		
Total						87445						338403						476935

Annual Sediment Load (Metric Tonnes) : 1360336

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1272	0.000	0.000	0.360	0.360	39567	171.1	0.000	0.000	0.027	0.027	399	57.13	0.000	0.000	0.140	0.140	691
2	1038	0.000	0.000	0.392	0.392	35148	158.4	0.000	0.000	0.027	0.027	370	66.38	0.000	0.000	0.160	0.160	918
3	1155	0.000	0.000	0.284	0.284	28338	286.9	0.000	0.000	0.102	0.102	2529	69.54	0.000	0.000	0.163	0.163	979
4	1075	0.000	0.000	0.232	0.232	21539	169.9	0.000	0.000	0.102	0.102	1497	65.59	0.000	0.000	0.165	0.165	935
5	1013	0.000	0.000	0.272	0.272	23809	139.3	0.000	0.000	0.104	0.104	1251	66.65	0.000	0.000	0.158	0.158	910
6	858.2	0.000	0.000	0.272	0.272	20168	105.0	0.000	0.000	0.106	0.106	962	66.23	0.000	0.000	0.162	0.162	927
7	851.5	0.000	0.000	0.260	0.260	19128	93.36	0.000	0.000	0.102	0.102	823	66.15	0.000	0.000	0.164	0.164	937
8	668.6	0.000	0.000	0.232	0.232	13403	119.6	0.000	0.000	0.106	0.106	1096	56.90	0.000	0.000	0.164	0.164	806
9	655.7	0.000	0.000	0.152	0.152	8611	98.73	0.000	0.000	0.108	0.108	921	69.88	0.000	0.000	0.163	0.163	984
10	570.3	0.000	0.000	0.248	0.248	12221	87.76	0.000	0.000	0.034	0.034	258	63.94	0.000	0.000	0.160	0.160	884
11	593.4	0.000	0.000	0.300	0.300	15382	70.08	0.000	0.000	0.034	0.034	206	54.92	0.000	0.000	0.160	0.160	759
12	683.8	0.000	0.000	0.240	0.240	14179	74.89	0.000	0.000	0.102	0.102	660	66.78	0.000	0.000	0.156	0.156	900
13	602.8	0.000	0.000	0.240	0.240	12500	80.71	0.000	0.000	0.102	0.102	711	65.35	0.000	0.000	0.159	0.159	898
14	647.3	0.000	0.000	0.248	0.248	13869	77.77	0.000	0.000	0.106	0.106	712	65.03	0.000	0.000	0.162	0.162	910
15	497.1	0.000	0.000	0.288	0.288	12371	74.16	0.000	0.000	0.103	0.103	660	56.01	0.000	0.000	0.162	0.162	784
16	526.1	0.000	0.000	0.112	0.112	5091	70.13	0.000	0.000	0.106	0.106	642	67.71	0.000	0.000	0.104	0.104	608
17	508.3	0.000	0.000	0.112	0.112	4919	65.02	0.000	0.000	0.026	0.026	146	96.36	0.000	0.000	0.100	0.100	833
18	613.3	0.000	0.000	0.272	0.272	14413	52.51	0.000	0.000	0.026	0.026	118	87.38	0.000	0.000	0.106	0.106	800
19	544.2	0.000	0.000	0.268	0.268	12601	73.93	0.000	0.000	0.026	0.026	166	95.16	0.000	0.000	0.118	0.118	970
20	386.7	0.000	0.000	0.268	0.268	8954	71.30	0.000	0.000	0.098	0.098	604	87.67	0.000	0.000	0.106	0.106	803
21	519.9	0.000	0.000	0.110	0.110	4941	63.33	0.000	0.000	0.098	0.098	536	87.93	0.000	0.000	0.103	0.103	783
22	592.7	0.000	0.000	0.102	0.102	5223	63.33	0.000	0.000	0.098	0.098	536	75.79	0.000	0.000	0.103	0.103	674
23	472.7	0.000	0.000	0.116	0.116	4738	73.30	0.000	0.000	0.120	0.120	760	88.01	0.000	0.000	0.101	0.101	768
24	426.4	0.000	0.000	0.022	0.022	810	63.33	0.000	0.000	0.120	0.120	657	80.58	0.000	0.000	0.107	0.107	745
25	357.8	0.000	0.000	0.022	0.022	680	61.03	0.000	0.000	0.120	0.120	633	69.53	0.000	0.000	0.107	0.107	643
26	319.9	0.000	0.000	0.102	0.102	2820	71.01	0.000	0.000	0.104	0.104	638	79.98	0.000	0.000	0.121	0.121	836
27	336.0	0.000	0.000	0.102	0.102	2961	65.91	0.000	0.000	0.124	0.124	706	80.45	0.000	0.000	0.120	0.120	834
28	366.6	0.000	0.000	0.196	0.196	6208	66.35	0.000	0.000	0.026	0.026	149	81.17	0.000	0.000	0.122	0.122	856
29	337.4	0.000	0.000	0.102	0.102	2973	65.72	0.000	0.000	0.044	0.044	250	69.90	0.000	0.000	0.122	0.122	737
30	253.7	0.000	0.000	0.024	0.024	526	67.45	0.000	0.000	0.142	0.142	828	80.54	0.000	0.000	0.121	0.121	842
31							66.61	0.000	0.000	0.140	0.140	806						
Ten Daily Mean																		
Ten Daily I	915.7	0.000	0.000	0.270	0.270	22193	143.0	0.000	0.000	0.082	0.082	1011	64.84	0.000	0.000	0.160	0.160	897
Ten Daily II	560.3	0.000	0.000	0.235	0.235	11428	71.05	0.000	0.000	0.073	0.073	463	74.24	0.000	0.000	0.133	0.133	827
Ten Daily III	398.3	0.000	0.000	0.090	0.090	3188	66.13	0.000	0.000	0.103	0.103	591	79.39	0.000	0.000	0.113	0.113	772
Monthly																		
Total						368091						21229						24955

Annual Sediment Load (Metric Tonnes) : 1360336

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	85.54	0.000	0.000	0.121	0.121	894	55.44	0.000	0.000	0.020	0.020	96	26.33	0.000	0.000	0.052	0.052	118
2	0.000	0.000	0.000	0.121	0.121	0	58.19	0.000	0.000	0.020	0.020	101	25.24	0.000	0.000	0.052	0.052	113
3	81.33	0.000	0.000	0.121	0.121	850	53.12	0.000	0.000	0.020	0.020	92	25.47	0.000	0.000	0.052	0.052	114
4	72.78	0.000	0.000	0.121	0.121	761	56.09	0.000	0.000	0.018	0.018	87	24.88	0.000	0.000	0.052	0.052	112
5	77.67	0.000	0.000	0.121	0.121	812	52.68	0.000	0.000	0.018	0.018	82	23.48	0.000	0.000	0.052	0.052	105
6	66.82	0.000	0.000	0.121	0.121	699	52.39	0.000	0.000	0.018	0.018	81	23.76	0.000	0.000	0.052	0.052	107
7	72.93	0.000	0.000	0.053	0.053	334	53.60	0.000	0.000	0.018	0.018	83	21.19	0.000	0.000	0.052	0.052	95
8	78.58	0.000	0.000	0.053	0.053	360	53.61	0.000	0.000	0.018	0.018	83	23.29	0.000	0.000	0.056	0.056	113
9	78.24	0.000	0.000	0.053	0.053	358	54.48	0.000	0.000	0.018	0.018	85	24.15	0.000	0.000	0.056	0.056	117
10	79.77	0.000	0.000	0.053	0.053	365	47.56	0.000	0.000	0.018	0.018	74	24.31	0.000	0.000	0.056	0.056	118
11	85.20	0.000	0.000	0.053	0.053	390	53.89	0.000	0.000	0.072	0.072	335	24.80	0.000	0.000	0.056	0.056	120
12	85.64	0.000	0.000	0.053	0.053	392	49.87	0.000	0.000	0.072	0.072	310	25.04	0.000	0.000	0.056	0.056	121
13	76.64	0.000	0.000	0.053	0.053	351	50.78	0.000	0.000	0.072	0.072	316	25.11	0.000	0.000	0.056	0.056	121
14	79.96	0.000	0.000	0.040	0.040	276	50.95	0.000	0.000	0.072	0.072	317	22.59	0.000	0.000	0.056	0.056	109
15	80.66	0.000	0.000	0.040	0.040	279	50.71	0.000	0.000	0.072	0.072	315	25.18	0.000	0.000	0.036	0.036	78
16	88.93	0.000	0.000	0.040	0.040	307	46.83	0.000	0.000	0.072	0.072	291	23.36	0.000	0.000	0.036	0.036	73
17	98.05	0.000	0.000	0.040	0.040	339	38.53	0.000	0.000	0.072	0.072	240	23.37	0.000	0.000	0.036	0.036	73
18	99.23	0.000	0.000	0.040	0.040	343	41.03	0.000	0.000	0.016	0.016	57	23.48	0.000	0.000	0.036	0.036	73
19	91.48	0.000	0.000	0.040	0.040	316	42.90	0.000	0.000	0.016	0.016	59	24.07	0.000	0.000	0.036	0.036	75
20	78.90	0.000	0.000	0.040	0.040	273	37.64	0.000	0.000	0.016	0.016	52	22.66	0.000	0.000	0.036	0.036	70
21	86.88	0.000	0.000	0.030	0.030	225	38.23	0.000	0.000	0.016	0.016	53	21.32	0.000	0.000	0.036	0.036	66
22	75.41	0.000	0.000	0.030	0.030	195	38.67	0.000	0.000	0.016	0.016	53	24.97	0.000	0.000	0.040	0.040	86
23	69.24	0.000	0.000	0.030	0.030	179	38.91	0.000	0.000	0.016	0.016	54	22.47	0.000	0.000	0.040	0.040	78
24	60.21	0.000	0.000	0.030	0.030	156	34.13	0.000	0.000	0.016	0.016	47	22.72	0.000	0.000	0.040	0.040	79
25	60.21	0.000	0.000	0.030	0.030	156	34.30	0.000	0.000	0.034	0.034	101	25.11	0.000	0.000	0.040	0.040	87
26	69.92	0.000	0.000	0.030	0.030	181	30.03	0.000	0.000	0.034	0.034	88	27.68	0.000	0.000	0.040	0.040	96
27	61.05	0.000	0.000	0.030	0.030	158	28.56	0.000	0.000	0.034	0.034	84	34.55	0.000	0.000	0.040	0.040	119
28	77.84	0.000	0.000	0.020	0.020	135	27.05	0.000	0.000	0.034	0.034	79	38.28	0.000	0.000	0.040	0.040	132
29	58.56	0.000	0.000	0.020	0.020	101	26.53	0.000	0.000	0.034	0.034	78	52.79	0.000	0.000	0.066	0.066	301
30	59.18	0.000	0.000	0.020	0.020	102	26.38	0.000	0.000	0.034	0.034	78						
31	53.82	0.000	0.000	0.020	0.020	93	23.10	0.000	0.000	0.034	0.034	68						
Ten Daily Mean																		
Ten Daily I	69.37	0.000	0.000	0.094	0.094	543	53.72	0.000	0.000	0.019	0.019	86	24.21	0.000	0.000	0.053	0.053	111
Ten Daily II	86.47	0.000	0.000	0.044	0.044	327	46.31	0.000	0.000	0.055	0.055	229	23.97	0.000	0.000	0.044	0.044	91
Ten Daily III	66.57	0.000	0.000	0.026	0.026	153	31.44	0.000	0.000	0.027	0.027	71	29.99	0.000	0.000	0.042	0.042	116
Monthly																		
Total						10382						3940						3070

Annual Sediment Load (Metric Tonnes) : 1360336

Daily Observed Sediment Datasheet for period : 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	57.59	0.000	0.000	0.066	0.066	328	67.73	0.000	0.000	0.007	0.007	41	206.2	0.000	0.000	0.006	0.006	100
2	52.86	0.000	0.000	0.066	0.066	301	84.91	0.000	0.000	0.007	0.007	51	218.3	0.000	0.000	0.026	0.026	490
3	53.63	0.000	0.000	0.066	0.066	306	94.05	0.000	0.000	0.007	0.007	57	180.8	0.000	0.000	0.026	0.026	406
4	50.83	0.000	0.000	0.066	0.066	290	134.6	0.000	0.000	0.009	0.009	105	164.4	0.000	0.000	0.026	0.026	369
5	55.02	0.000	0.000	0.066	0.066	314	154.8	0.000	0.000	0.009	0.009	120	149.5	0.000	0.000	0.026	0.026	336
6	62.45	0.000	0.000	0.066	0.066	356	144.9	0.000	0.000	0.009	0.009	113	130.6	0.000	0.000	0.026	0.026	293
7	134.6	0.000	0.000	0.066	0.066	768	165.9	0.000	0.000	0.009	0.009	129	102.9	0.000	0.000	0.026	0.026	231
8	140.2	0.000	0.000	0.024	0.024	291	165.1	0.000	0.000	0.009	0.009	128	62.67	0.000	0.000	0.026	0.026	141
9	150.7	0.000	0.000	0.024	0.024	313	159.9	0.000	0.000	0.009	0.009	124	64.13	0.000	0.000	0.032	0.032	177
10	140.1	0.000	0.000	0.024	0.024	290	134.4	0.000	0.000	0.009	0.009	105	50.08	0.000	0.000	0.032	0.032	138
11	116.0	0.000	0.000	0.024	0.024	240	145.6	0.000	0.000	0.003	0.003	43	46.26	0.000	0.000	0.032	0.032	128
12	135.6	0.000	0.000	0.024	0.024	281	153.2	0.000	0.000	0.003	0.003	45	36.36	0.000	0.000	0.032	0.032	101
13	154.7	0.000	0.000	0.024	0.024	321	168.9	0.000	0.000	0.003	0.003	50	33.63	0.000	0.000	0.032	0.032	93
14	229.8	0.000	0.000	0.048	0.048	953	165.9	0.000	0.000	0.003	0.003	49	29.60	0.000	0.000	0.032	0.032	82
15	205.2	0.000	0.000	0.048	0.048	851	164.1	0.000	0.000	0.003	0.003	48	27.34	0.000	0.000	0.032	0.032	76
16	185.5	0.000	0.000	0.048	0.048	769	134.2	0.000	0.000	0.003	0.003	39	26.96	0.000	0.000	0.030	0.030	70
17	156.2	0.000	0.000	0.048	0.048	648	134.6	0.000	0.000	0.003	0.003	40	26.63	0.000	0.000	0.030	0.030	69
18	131.0	0.000	0.000	0.048	0.048	543	136.7	0.000	0.000	0.004	0.004	43	34.15	0.000	0.000	0.030	0.030	89
19	111.4	0.000	0.000	0.048	0.048	462	148.8	0.000	0.000	0.004	0.004	46	168.9	0.000	0.000	0.030	0.030	438
20	95.21	0.000	0.000	0.048	0.048	395	134.2	0.000	0.000	0.004	0.004	42	217.7	0.000	0.000	0.030	0.030	564
21	105.2	0.000	0.000	0.028	0.028	255	116.2	0.000	0.000	0.004	0.004	36	290.8	0.000	0.000	0.030	0.030	754
22	96.92	0.000	0.000	0.028	0.028	234	70.28	0.000	0.000	0.004	0.004	22	404.1	0.000	0.000	0.030	0.030	1048
23	90.89	0.000	0.000	0.028	0.028	220	60.06	0.000	0.000	0.004	0.004	19	465.4	0.000	0.000	0.024	0.024	965
24	90.02	0.000	0.000	0.028	0.028	218	67.73	0.000	0.000	0.004	0.004	21	272.5	0.000	0.000	0.024	0.024	565
25	99.21	0.000	0.000	0.028	0.028	240	114.7	0.000	0.000	0.006	0.006	55	284.4	0.000	0.000	0.024	0.024	590
26	126.5	0.000	0.000	0.028	0.028	306	113.7	0.000	0.000	0.006	0.006	55	424.9	0.000	0.000	0.024	0.024	881
27	113.0	0.000	0.000	0.028	0.028	273	129.3	0.000	0.000	0.006	0.006	63	383.4	0.000	0.000	0.024	0.024	795
28	108.5	0.000	0.000	0.007	0.007	66	156.8	0.000	0.000	0.006	0.006	76	275.9	0.000	0.000	0.024	0.024	572
29	100.7	0.000	0.000	0.007	0.007	61	223.1	0.000	0.000	0.006	0.006	108	284.6	0.000	0.000	0.024	0.024	590
30	83.00	0.000	0.000	0.007	0.007	50	266.3	0.000	0.000	0.006	0.006	129	410.6	0.000	0.000	0.032	0.032	1135
31	64.20	0.000	0.000	0.007	0.007	39							223.8	0.000	0.000	0.032	0.032	619
Ten Daily Mean																		
Ten Daily I	89.79	0.000	0.000	0.053	0.053	356	130.6	0.000	0.000	0.008	0.008	97	133.0	0.000	0.000	0.025	0.025	268
Ten Daily II	152.1	0.000	0.000	0.041	0.041	546	148.6	0.000	0.000	0.003	0.003	44	64.75	0.000	0.000	0.031	0.031	171
Ten Daily III	98.02	0.000	0.000	0.020	0.020	178	131.8	0.000	0.000	0.005	0.005	58	338.2	0.000	0.000	0.027	0.027	774
Monthly																		
Total						10982						2000						12904

Annual Sediment Load (Metric Tonnes) : 1360336

Annual Sediment Load for period : 1981-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

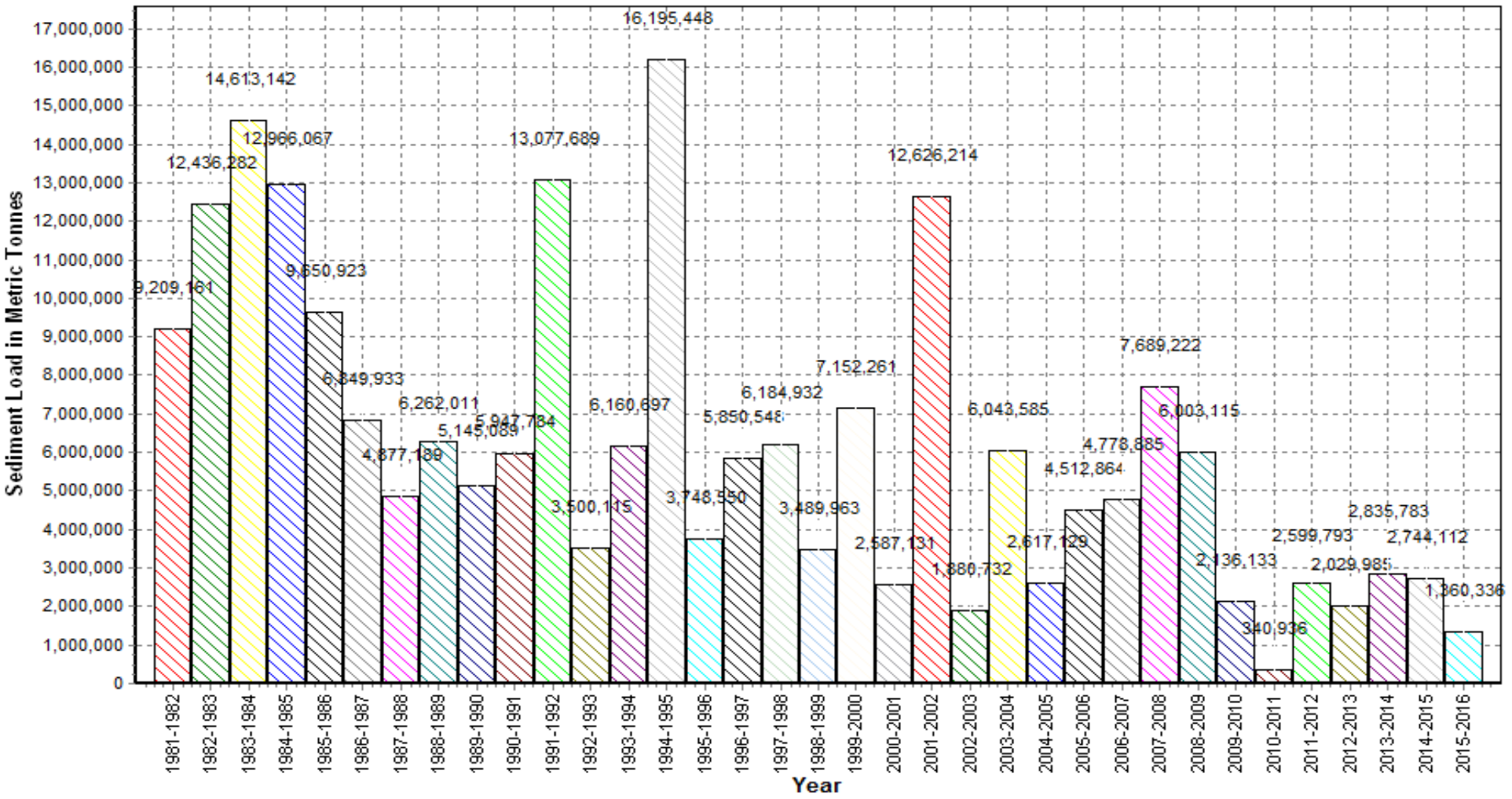
Local River : Brahmni **Sub-Division : Rourkela**

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1981-1982	9166586	42575	9209161	11675
1982-1983	12422941	13341	12436282	10903
1983-1984	14604846	8296	14613142	16545
1984-1985	12924990	41078	12966067	22812
1985-1986	9577008	73915	9650923	19059
1986-1987	6728612	121321	6849933	17312
1987-1988	4663043	214147	4877189	15257
1988-1989	6234143	27868	6262011	16817
1989-1990	4940638	204451	5145089	15117
1990-1991	5819871	127913	5947784	19798
1991-1992	12933609	144081	13077689	21669
1992-1993	3450830	49285	3500115	11136
1993-1994	5934153	226545	6160697	16382
1994-1995	15355732	839715	16195448	30991
1995-1996	3591112	157438	3748550	15709
1996-1997	5684669	165879	5850548	16685
1997-1998	5957430	227503	6184932	20606
1998-1999	3422796	67168	3489963	15226
1999-2000	7101132	51129	7152261	22755
2000-2001	2493260	93872	2587131	10345
2001-2002	12566894	59321	12626214	28461
2002-2003	1868745	11986	1880732	10785
2003-2004	6004276	39309	6043585	21413
2004-2005	2576281	40848	2617129	12544
2005-2006	4466743	46121	4512864	16546
2006-2007	4726357	52528	4778885	14808
2007-2008	7670521	18701	7689222	22536
2008-2009	5978111	25004	6003115	19875
2009-2010	2120268	15864	2136133	10940
2010-2011	301296	39640	340936	5405
2011-2012	2329808	269985	2599793	21907
2012-2013	1860984	169002	2029985	14030
2013-2014	2638430	197353	2835783	15814
2014-2015	2642842	101270	2744112	15883
2015-2016	1317057	43279	1360336	10760

Annual Sediment Load for the period: 1981-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



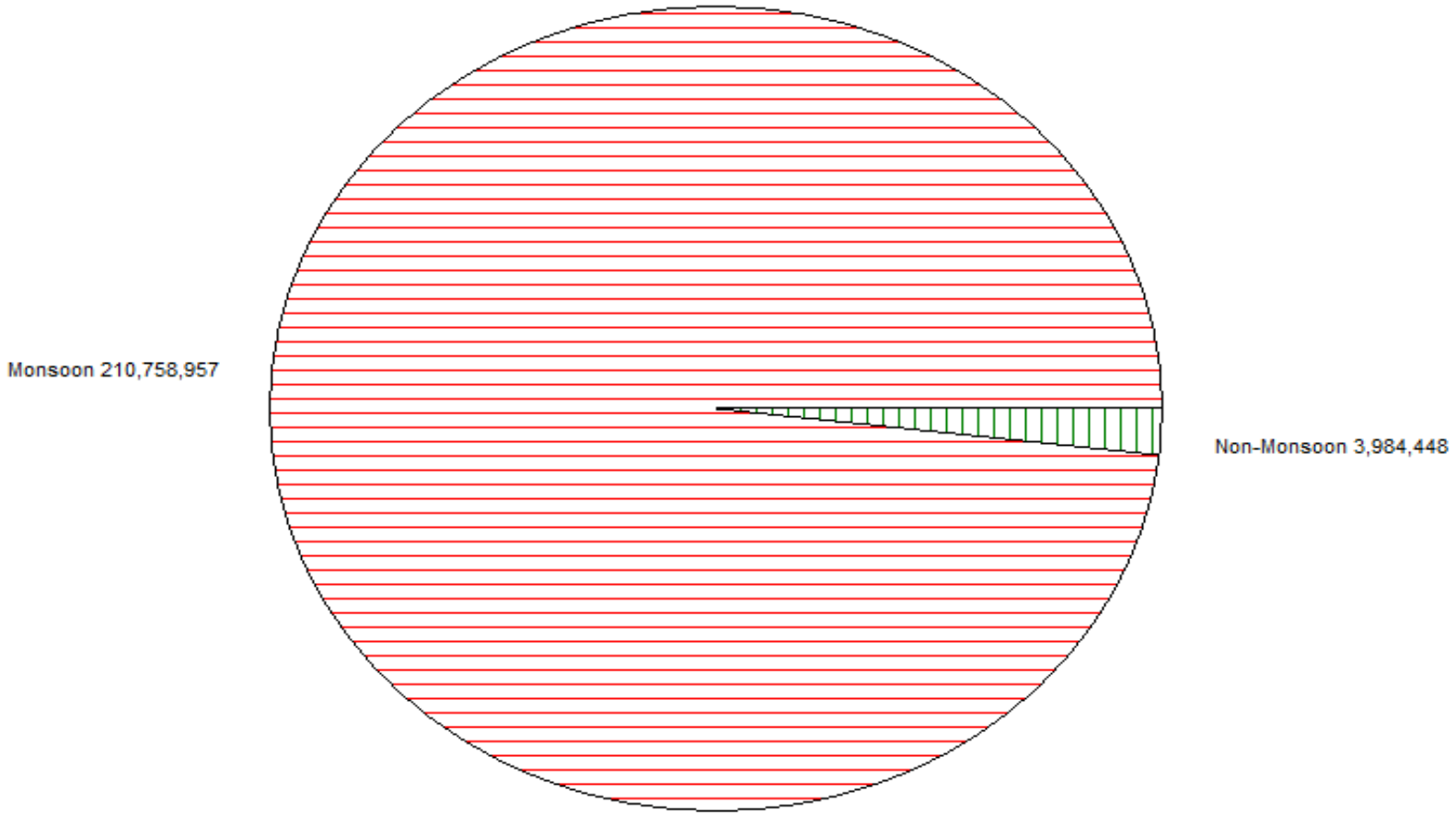
Seasonal Sediment Load for the period : 1981-2015

Station Name : Jenapur (EB000G6)

Local River : Brahmni

Division : E.E., Bhubaneswar

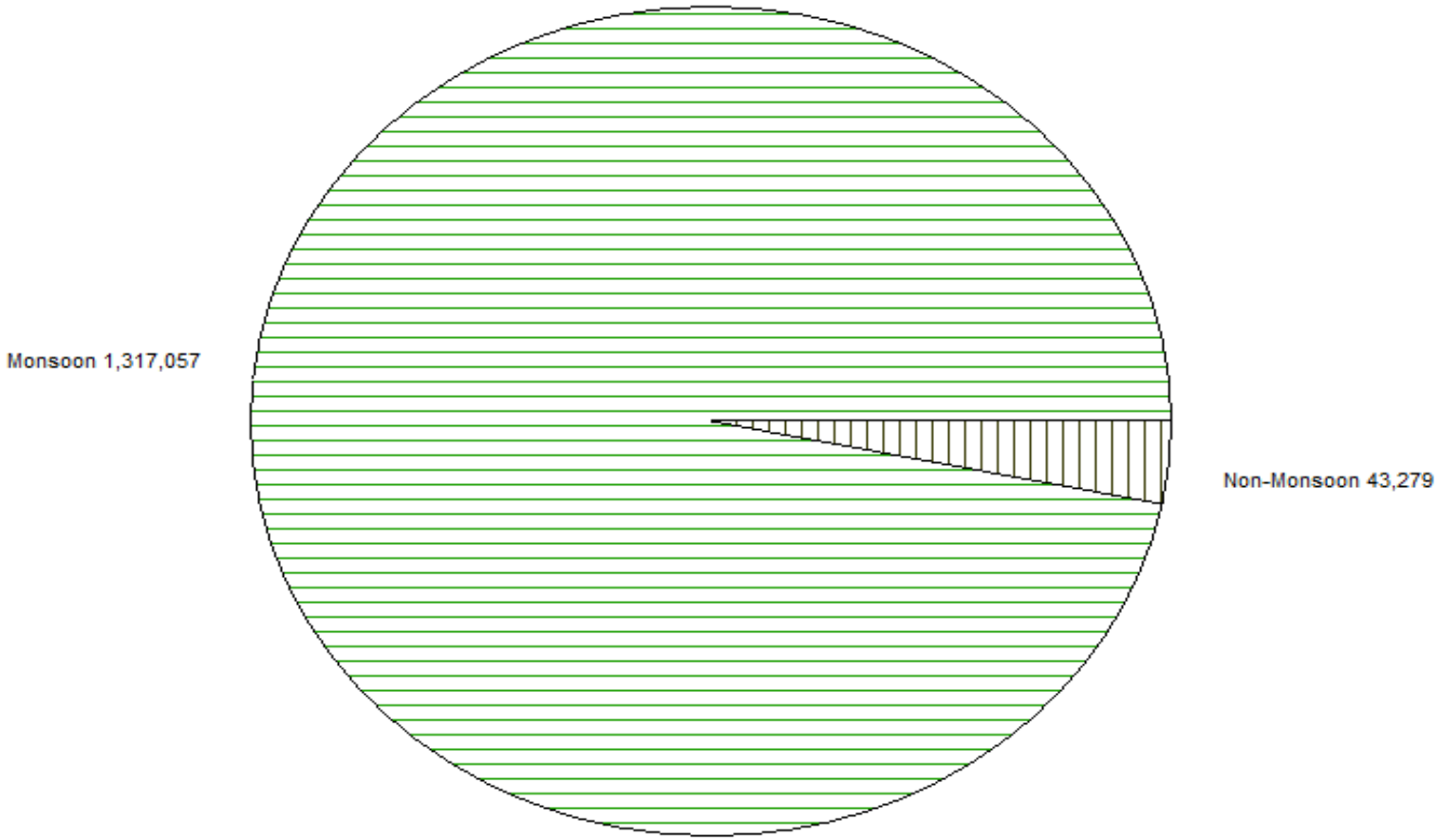
Sub-Division : Rourkela



Seasonal Sediment Load for the Year: 2015-2016

Station Name : Jenapur (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Rourkela**



WATER QUALITY DATA

Water Quality Datasheet for the period : 2015-2016

Station Name : JENAPUR (EB000G6) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water Analysis** | **Sub-Division : Rourkela**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	153	166	123	390	417	440	325	378	421	288	280	150
4	EC_GEN (µmho/cm)	162	153	118	396	408	444	329	383	425	296	284	153
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)	7.5	7.5	7.6	7.7	7.8	7.3	7.5	7.8	8.3	7.9	8.0	7.5
7	pH_GEN (pH units)	7.6	7.4	7.5	7.6	7.6	7.7	7.3	7.9	8.4	8.0	8.1	7.6
8	Temp (deg C)	27.0	27.0	27.5	26.0	27.0	25.0	24.0	24.0	22.0	29.0	33.0	37.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0	9.2	46.0	0.0
2	ALK-TOT (mgCaCO3/L)	54	61	88	65	55	65	69	55	111	69	162	42
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	26	24	24	22	26	24	24	26	26	29	29	59
5	Cl (mg/L)	11.3	13.2	15.1	11.3	15.1	17.0	15.1	18.9	17.0	13.2	15.1	75.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.7	11.1	55.4	0.0
7	F (mg/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
8	Fe (mg/L)	0.6	0.2	0.3	0.3	0.4	0.4	0.5	0.4	0.4	0.4	0.2	0.3
9	HCO3 (mg/L)	65	75	107	79	68	79	85	68	79	62	85	51
10	K (mg/L)	1.6	1.9	1.8	1.8	1.6	1.5	1.4	1.6	3.6	6.9	1.5	1.7
11	Mg (mg/L)	12.6	9.7	8.8	7.8	8.8	9.7	7.8	8.8	8.8	6.8	11.7	29.2
12	Na (mg/L)	6.2	5.6	4.7	4.8	6.7	6.9	5.8	6.1	94.5	95.0	10.0	10.3
13	NO2+NO3 (mg N/L)	0.95	0.94	1.12	0.84	1.23	0.98	1.05	1.29	1.11	1.09	0.95	0.83
14	NO2-N (mgN/L)	0.00	0.03	0.03	0.03	0.11	0.03	0.00	0.00	0.01	0.00	0.00	0.01
15	NO3-N (mgN/L)	0.95	0.91	1.09	0.81	1.12	0.95	1.05	1.29	1.09	1.09	0.95	0.81
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	5.0	6.0	7.0	6.0	6.0	5.0	6.0	6.0	5.0	6.0	5.0	6.0
18	SO4 (mg/L)	7.4	15.2	15.8	13.2	14.4	14.4	8.5	10.2	8.8	22.3	9.6	7.2
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.6	0.6	0.4	1.0	0.8	1.0		2.0	0.6	0.8	0.4	0.8
2	DO (mg/L)	6.4	6.2	7.4	6.4	6.8	7.7	7.6	9.1	4.2	6.2	6.4	6.6
3	DO_SAT% (%)	80	77	92	78	85	94	90	108	48	80	88	97
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	64	60	60	56	64	60	60	64	64	72	72	148
2	HAR_Total (mgCaCO3/L)	117	101	97	89	101	101	93	101	101	100	121	270
3	Na% (%)	10	11	9	10	12	13	12	12	66	66	15	8
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.8	0.0
5	SAR (-)	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	4.1	4.1	0.4	0.3
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : JENAPUR (EB000G6) **Division : E.E., Bhubaneswar**

Local River : Brahmani **Sub-Division : Rourkela**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	440	123	294
3	EC_GEN (µmho/cm)	12	444	118	296
4	pH_FLD (pH units)	12	8.3	7.3	7.7
5	pH_GEN (pH units)	12	8.4	7.3	7.7
6	Temp (deg C)	12	37.0	22.0	27.4
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	46.0	0.0	6.5
2	ALK-TOT (mgCaCO3/L)	12	162	42	75
3	B (mg/L)	12	0.01	0.01	0.01
4	Ca (mg/L)	12	59	22	28
5	Cl (mg/L)	12	75.4	11.3	19.8
6	CO3 (mg/L)	12	55.4	0.0	7.9
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.2	0.4
9	HCO3 (mg/L)	12	107	51	75
10	K (mg/L)	12	6.9	1.4	2.2
11	Mg (mg/L)	12	29.2	6.8	10.9
12	Na (mg/L)	12	95.0	4.7	21.4
13	NO2+NO3 (mg N/L)	12	1.29	0.83	1.03
14	NO2-N (mgN/L)	12	0.11	0.00	0.02
15	NO3-N (mgN/L)	12	1.29	0.81	1.01
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	7.0	5.0	5.8
18	SO4 (mg/L)	12	22.3	7.2	12.2
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	11	2.0	0.4	0.8
2	DO (mg/L)	12	9.1	4.2	6.7
3	DO_SAT% (%)	12	108	48	85
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	148	56	70
2	HAR_Total (mgCaCO3/L)	12	270	89	116
3	Na% (%)	12	66	8	20
4	RSC (-)	12	0.8	0.0	0.1
5	SAR (-)	12	4.1	0.2	0.9
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : JENAPUR (EB000G6) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Flood																			
		Jun - Oct																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																					
1	Q (cumec)	1390	652.8	985.9	545.8	2102	839.8	1066	1141	446.7	271.8	681.6	617.8	852.4	923.7		185.9	125.8	471.6	181.7	174.4	114.4
2	EC_FLD (µmho/cm)	141	157	122	122	104	143	144	143	132	165	129	139	119	144	250	116	112	114	113	133	134
3	EC_GEN (µmho/cm)	141	158	122	122	103	139	139	143	132	166	129	139	119	144	247	118	113	116	118	130	129
4	pH_FLD (pH units)	7.8	7.9	7.6	7.5	7.8	7.9	7.9	7.8	7.8	8.1	8.2	7.6	7.5	7.8	7.6	7.8	7.5	7.6	7.9	7.8	8.0
5	pH_GEN (pH units)	7.8	7.8	7.6	7.5	7.9	7.9	8.0	7.8	7.7	8.1	8.2	7.6	7.5	7.8	7.5	7.8	7.6	7.6	7.8	7.9	8.0
6	Temp (deg C)	27.1	29.4	27.0	27.8	28.6	29.4	29.4	29.0	28.4	29.8	28.7	28.5	28.2	29.2	26.9	24.0	23.9	23.5	23.8	21.9	23.3
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0	0.0	0.0	0.0	1.0	0.0	0.0			0.0						0.0
2	ALK-TOT (mgCaCO3/L)						59	76	31	28	49	54	44			65						69
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	14	17	11	11	12	16	14	13	11	14	15	17	16	15	24	12	11	14	12	13	13
5	Cl (mg/L)	10.1	13.2	8.9	18.6	8.5	10.7	10.4	12.9	13.2	13.4	15.5	13.2	12.5	15.5	13.2	8.7	8.2	11.2	9.0	11.1	11.2
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.00	0.00	0.00	0.31	0.00	0.08	0.01	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.42	0.00	0.00
8	Fe (mg/L)	0.1			1.1	0.2	0.1	0.1	0.1	0.1	0.1	0.0	1.9	0.1	0.5	0.3	0.1			0.1	0.1	0.1
9	HCO3 (mg/L)	41	59	38	48	44	58	53	43	30	57	62	51	40	62	79	42	39	46	55	50	43
10	K (mg/L)	1.7	1.6	1.1	2.1	1.2	1.8	1.7	1.7	1.7	3.3	1.5	3.6	1.3	1.5	1.7	1.3	1.4	1.3	1.5	2.1	1.7
11	Mg (mg/L)	1.7	3.5	2.6	3.9	2.4	2.9	4.0	5.1	4.9	6.6	6.0	6.2	4.4	6.0	9.5	2.7	2.6	3.3	3.9	3.6	2.4
12	Na (mg/L)	7.1	8.5	6.0	12.0	5.7	7.5	7.0	8.9	8.0	8.5	4.4	5.9	6.6	4.3	5.6	6.2	6.2	6.7	5.9	7.3	7.3
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	2.00	1.14	1.40	1.05	1.28	1.85	1.65	1.54	1.55	1.22	0.30	0.71	0.55	1.47	1.02	2.03	1.43	1.47	0.77	1.50	2.04
15	NO2-N (mgN/L)	0.02	0.04	0.00	0.06	0.03	0.00	0.02	0.00	0.00	0.04	0.02	0.00	0.01	0.01	0.04	0.00	0.01	0.00	0.00	0.01	0.01
16	NO3-N (mgN/L)	1.98	1.09	1.40	0.99	1.25	1.85	1.63	1.54	1.55	1.17	0.29	0.71	0.54	1.47	0.98	2.03	1.42	1.47	0.77	1.50	2.03
17	o-PO4-P (mg P/L)	0.000	0.000		0.000	0.000	0.000	0.000	0.015	0.000											0.000	0.013
18	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.002	0.002	0.005	0.001	0.007	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.013
19	SiO2 (mg/L)	7.4	13.8	8.6	20.2	22.5	14.9	11.7	9.0	8.7	6.7	10.0	27.6	18.6	9.4	6.0	6.3	8.3	8.5	21.0	19.9	17.2
20	SO4 (mg/L)	2.2	2.2	1.7	3.0	2.0	3.0	4.8	12.8	12.9	9.9	10.2	25.2	10.3	10.2	13.2	2.0	0.9	1.8	5.8	2.4	2.3
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.0	0.8	1.0	0.9	0.7	1.0	1.0	1.1	1.2	1.3	1.1	0.7	0.5	0.7	0.7	0.8	0.6	0.8	0.9	1.2	0.9
2	DO (mg/L)	7.1	7.1	6.7	7.1	6.8	7.1	7.0	6.9	7.2	7.1	7.0	6.8	6.8	5.9	6.6	7.6	7.7	8.1	8.0	8.4	7.8
3	DO_SAT% (%)	89	93	84	90	88	93	91	90	93	94	90	87	87	77	82	90	91	95	94	95	90
4	FCol-MPN (MPN/100mL)						11	40	11	7	146		19									17
5	Tcol-MPN (MPN/100mL)						14	54	15	7	295		26									22
	TRACE & TOXIC																					
1	Al (mg/L)				0.00	2.26																2.70
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	36	42	27	26	29	41	36	33	27	34	38	42	40	38	61	30	26	34	30	32	33
2	HAR_Total (mgCaCO3/L)	43	56	38	43	39	53	53	54	48	62	64	68	59	64	101	41	37	48	46	47	43
3	Na% (%)	26	24	25	37	24	23	22	26	26	23	13	15	20	12	11	24	26	23	21	25	26
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	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.5	0.5	0.4	0.8	0.4	0.5	0.4	0.5	0.5	0.5	0.2	0.3	0.4	0.2	0.2	0.4	0.4	0.4	0.4	0.5	0.5
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

Station Name : JENAPUR (EB000G6) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	PHYSICAL																					
1	Q (cumec)	357.4	154.8	101.7	82.82	290.5	148.8	353.3	130.5		153.2	252.8	111.7	183.6	90.38	156.0	121.0	131.6	133.1	147.8	141.1	396.0
2	EC_FLD (µmho/cm)	111	161	142	196	104	140	137	187	391	133	124	137	117	130	134	144	165	118	191	127	150
3	EC_GEN (µmho/cm)	105	160	142	196	104	140	137	187	395	132	123	138	115	125	128	143	166	118	191	127	150
4	pH_FLD (pH units)	8.0	7.9	7.8	7.6	7.8	7.5	7.9	7.9	7.7	8.0	7.9	7.9	7.8	7.6	8.1	8.1	8.0	8.0	8.3	7.6	7.7
5	pH_GEN (pH units)	8.1	7.9	7.8	7.6	7.8	7.5	7.9	7.9	7.8	7.7	7.8	7.9	7.8	7.6	8.1	8.2	8.0	8.0	8.3	7.6	7.7
6	Temp (deg C)	21.0	23.3	20.1	20.5	21.5	20.9	22.6	25.7	23.8	26.8	23.5	27.5	26.0	27.5	27.0	25.8	28.2	24.7	25.3	24.8	28.1
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	5.8						0.0	0.0	0.0	1.3	5.9	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	34	41	38	65	49	46		60	75						70	44	49	35	63	51	85
3	B (mg/L)	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
4	Ca (mg/L)	12	15	12	17	12	20	12	11	25	15	13	12	10	13	12	14	14	12	15	16	16
5	Cl (mg/L)	9.2	14.2	14.6	12.3	22.6	15.1	12.5	23.1	17.0	9.7	9.7	9.1	10.3	9.5	10.0	11.7	14.3	11.2	12.6	16.3	10.7
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	7.1	0.0	0.0
7	F (mg/L)	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.28	0.04	0.00	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.2	0.1	0.2	0.1	0.0	1.9	0.0	0.3	0.4	0.1			0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	1.9
9	HCO3 (mg/L)	42	50	42	81	60	58	39	62	77	48	46	48	43	51	42	55	60	39	62	62	88
10	K (mg/L)	1.3	2.6	1.4	1.6	1.2	1.4	1.7	1.3	2.0	1.7	1.4	1.5	1.7	1.6	1.6	0.3	1.4	1.2	1.7	1.4	1.2
11	Mg (mg/L)	2.6	4.9	5.6	8.3	2.9	19.4	4.7	5.3	8.8	2.3	2.9	3.7	3.3	2.3	3.5	4.6	6.5	4.2	9.1	6.2	5.3
12	Na (mg/L)	6.5	8.4	8.5	7.7	3.5	6.1	7.8	3.8	28.3	6.8	6.3	6.8	6.9	6.2	6.8	8.0	9.7	7.3	7.5	5.0	4.4
13	NH3-N (mg N/L)											0.00					0.05	0.00				
14	NO2+NO3 (mg N/L)	1.36	1.11	1.41	0.81	0.41	0.71	1.02	1.21	1.11	1.54	1.21	1.57	1.51	0.80	2.12	0.96	1.38	1.46	1.52	0.41	0.71
15	NO2-N (mgN/L)	0.04	0.00	0.00	0.00	0.07	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00
16	NO3-N (mgN/L)	1.32	1.11	1.41	0.81	0.34	0.71	1.02	1.20	1.10	1.54	1.21	1.57	1.51	0.80	2.12	0.96	1.38	1.46	1.52	0.34	0.71
17	o-PO4-P (mg P/L)	0.000		0.000								0.000	0.010	0.000	0.000	0.000			0.000			
18	P-Tot (mgP/L)	0.001	0.001	0.001	0.002	0.010	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.050	0.001	0.001	0.001	0.010	0.001
19	SiO2 (mg/L)	9.2	9.2	9.5	4.6	10.3	30.3	12.4	5.3	5.5	9.1	10.1	9.1	21.8	24.9	16.5	10.3	8.5	7.8	4.3	8.3	30.3
20	SO4 (mg/L)	2.4	11.5	8.1	8.6	6.3	8.5	9.2	5.3	10.5	2.9	3.4	2.0	3.1	3.7	2.9	6.8	9.3	5.8	6.2	4.7	6.4
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.1	1.1	1.2	1.2	1.5	0.3	0.3	0.5	1.2	0.8	0.6	0.9	1.0	0.8	1.1	0.9	1.1	1.4	1.5	1.4	0.9
2	DO (mg/L)	8.1	7.8	7.9	8.2	7.7	7.8	7.7	9.6	7.1	5.0	6.1	7.5	7.4	7.7	7.3	6.8	7.2	8.1	7.6	7.3	6.8
3	DO_SAT% (%)	90	91	87	91	87	87	89	117	85	64	72	94	90	97	91	83	92	96	92	88	86
4	FCol-MPN (MPN/100mL)	42	7	11	17		11									4	9	11	144	24		12
5	Tcol-MPN (MPN/100mL)	72	7	15	21		27									9	11	144	179	25		13
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	29	37	29	43	31	49	31	28	62	37	32	30	25	33	31	35	35	29	39	40	41
2	HAR_Total (mgCaCO3/L)	40	57	52	77	43	130	50	50	99	47	44	46	38	43	45	54	62	47	77	66	63
3	Na% (%)	26	23	27	18	15	10	25	14	26	23	23	24	27	23	24	24	24	25	17	15	13
4	RSC (-)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
5	SAR (-)	0.5	0.5	0.5	0.4	0.2	0.2	0.5	0.2	1.2	0.4	0.4	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.3	0.2
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

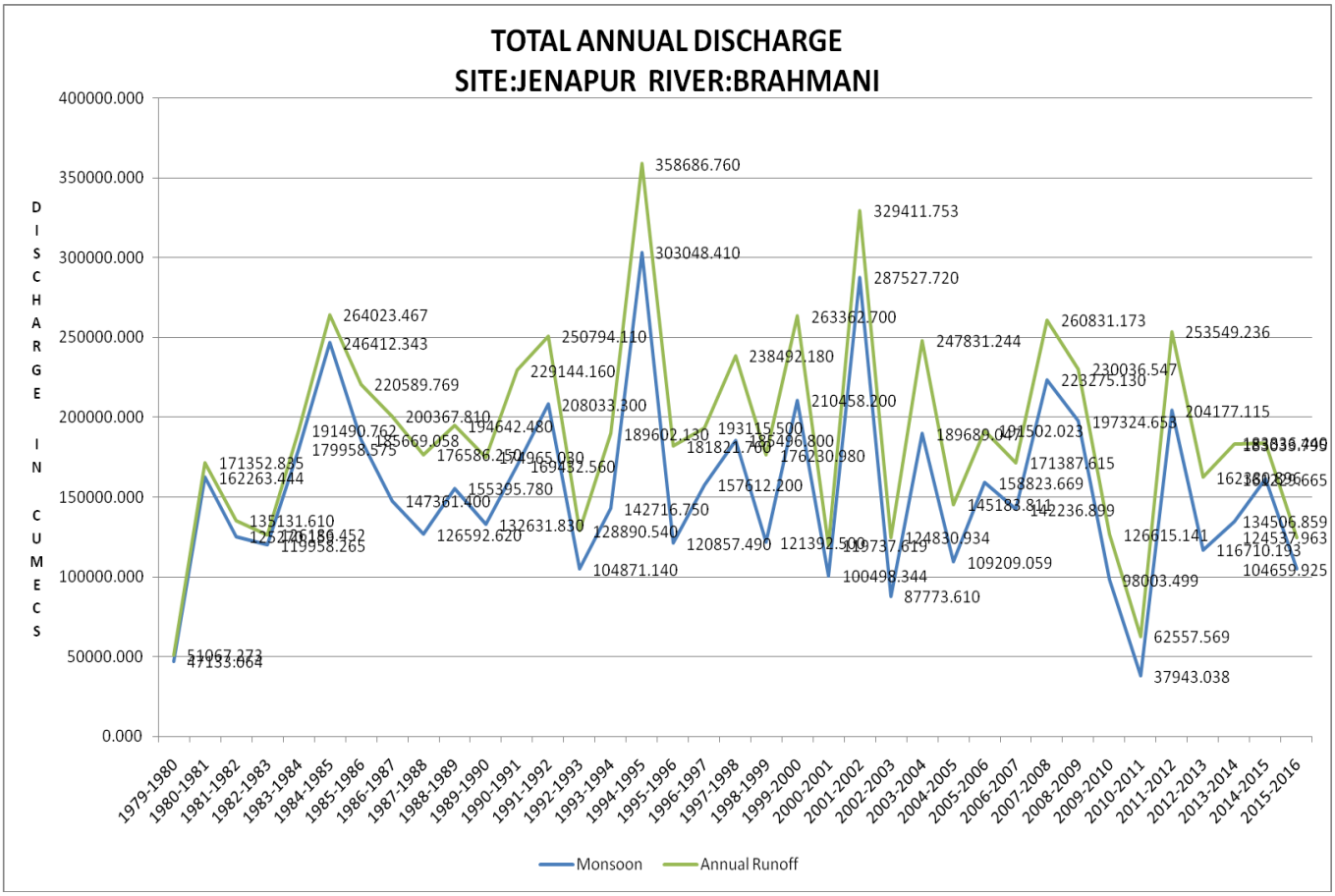
Station Name : JENAPUR (EB000G6)
Local River : Brahmani

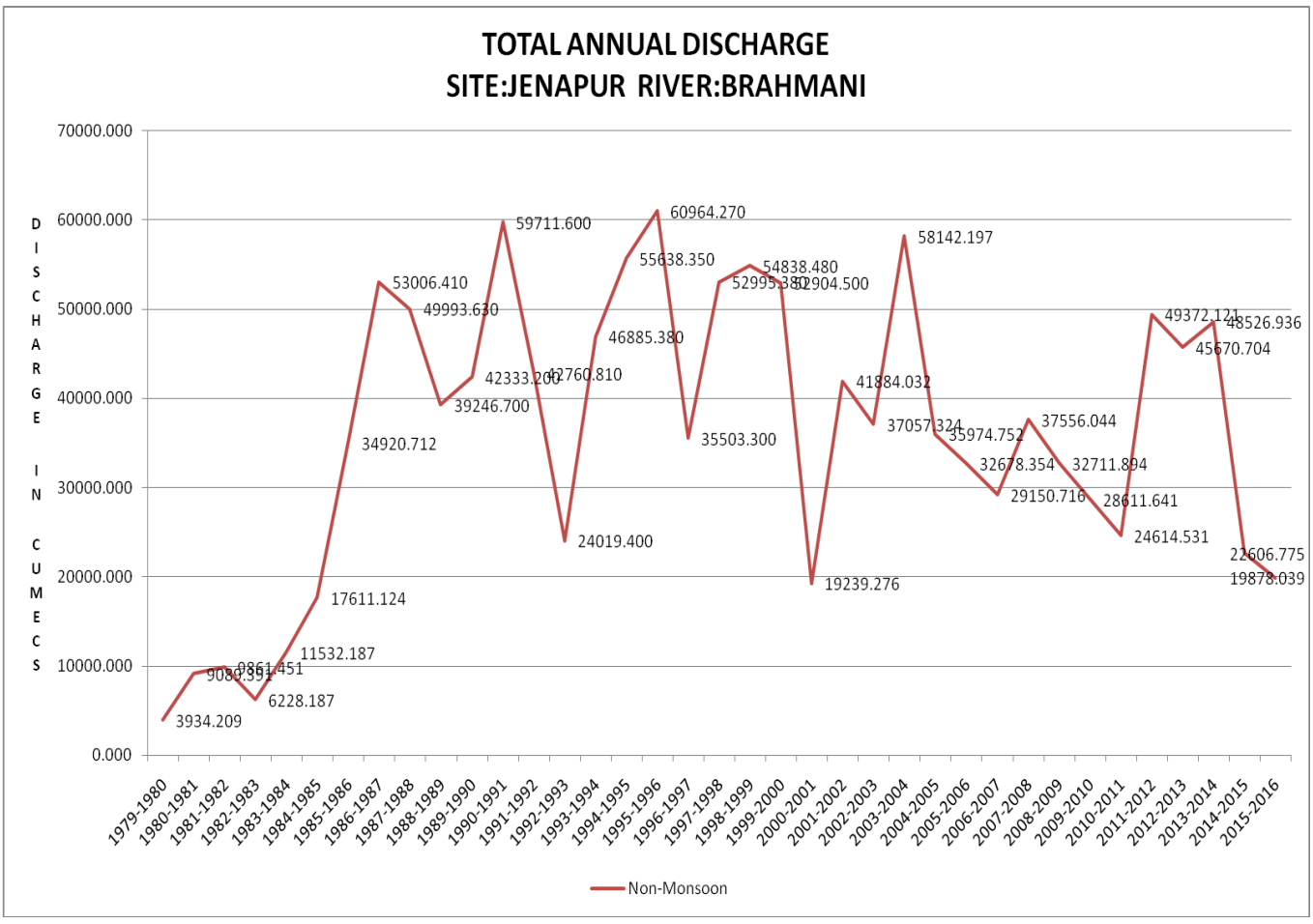
Division : E.E., Bhubaneswar
Sub-Division : Rourkela

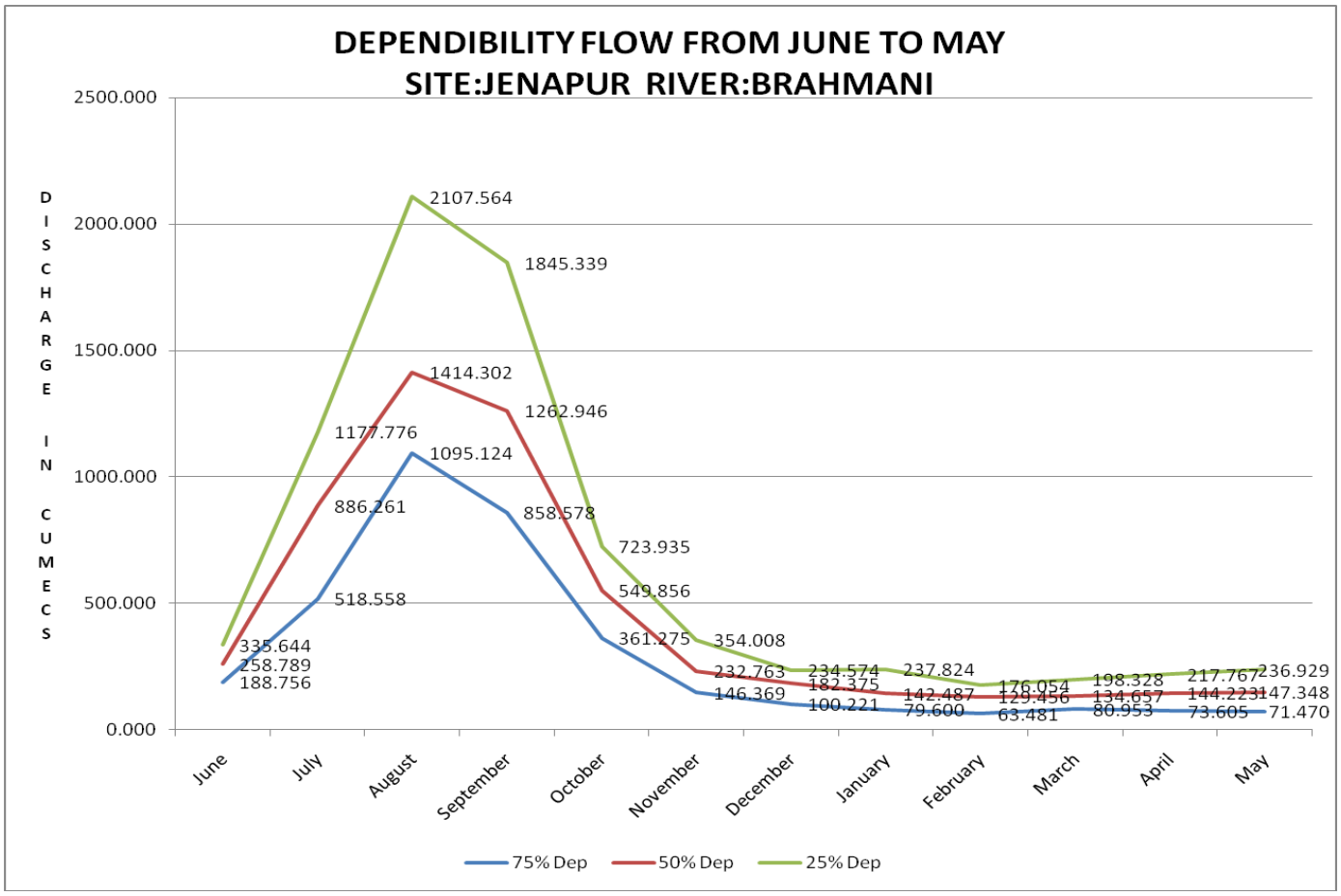
River Water

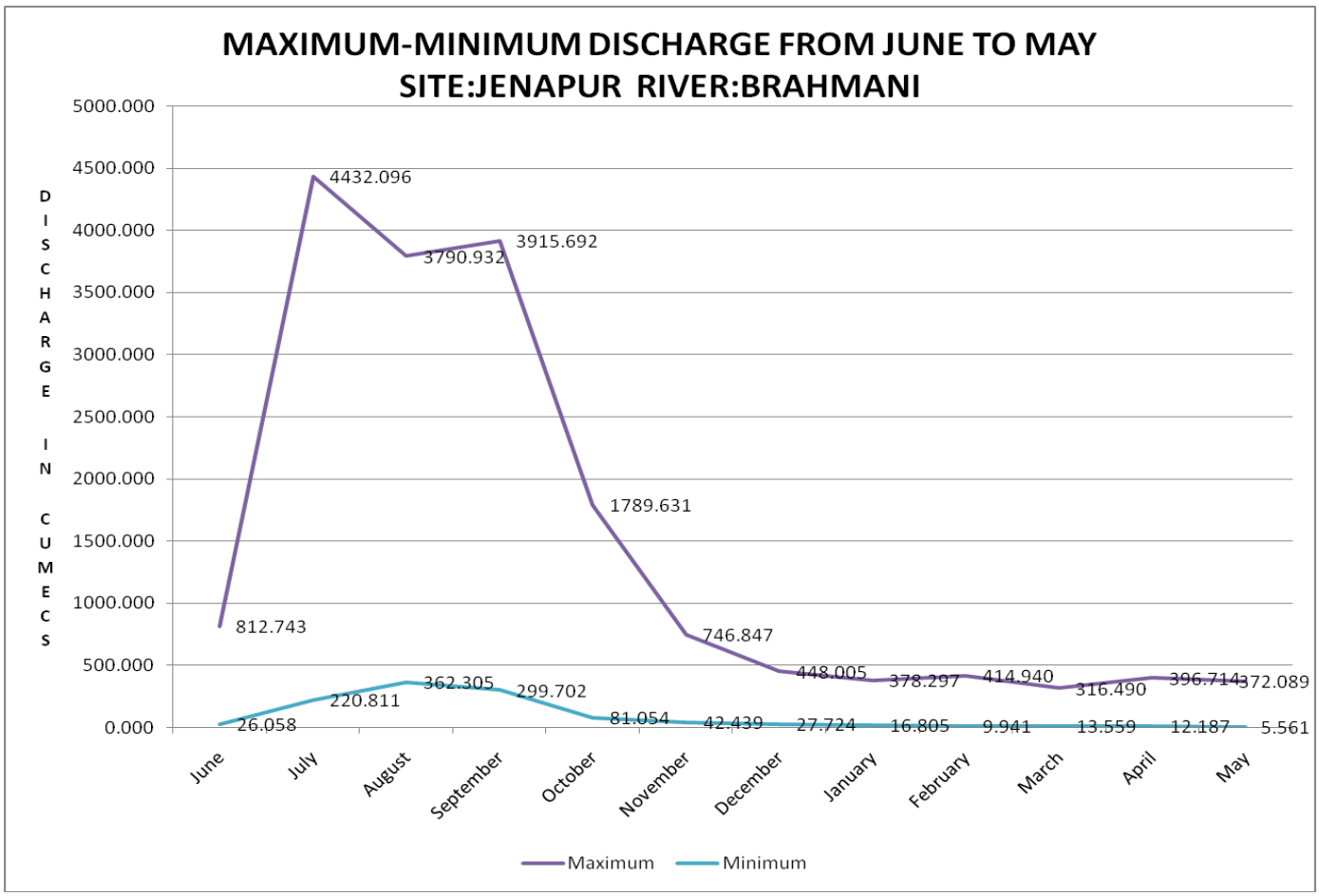
S.No	Parameters			
		2014	2015	2016
	PHYSICAL			
1	Q (cumec)	259.7	83.32	
2	EC_FLD (µmho/cm)	113	208	239
3	EC_GEN (µmho/cm)	113	208	244
4	pH_FLD (pH units)	7.7	7.9	7.8
5	pH_GEN (pH units)	7.7	7.9	7.9
6	Temp (deg C)	27.8	26.2	33.0
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	18.4
2	ALK-TOT (mgCaCO3/L)	43	24	91
3	B (mg/L)	0.00	0.00	0.01
4	Ca (mg/L)	13	17	39
5	Cl (mg/L)	14.1	15.2	34.6
6	CO3 (mg/L)	0.0	0.0	22.2
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.0	0.1	0.3
9	HCO3 (mg/L)	50	55	66
10	K (mg/L)	2.1	1.2	3.4
11	Mg (mg/L)	5.5	6.2	15.9
12	Na (mg/L)	8.9	5.2	38.4
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	0.92	1.07	0.96
15	NO2-N (mgN/L)	0.01	0.00	0.00
16	NO3-N (mgN/L)	0.91	1.07	0.95
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.001	0.010
19	SiO2 (mg/L)	12.5	5.3	5.7
20	SO4 (mg/L)	9.8	5.9	13.0
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.5	0.3	0.7
2	DO (mg/L)	6.9	5.9	6.4
3	DO_SAT% (%)	88	73	89
4	FCol-MPN (MPN/100mL)			
5	Tcol-MPN (MPN/100mL)			
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	33	43	98
2	HAR_Total (mgCaCO3/L)	56	68	164
3	Na% (%)	25	14	29
4	RSC (-)	0.0	0.0	0.3
5	SAR (-)	0.5	0.3	1.6
	PESTICIDES			

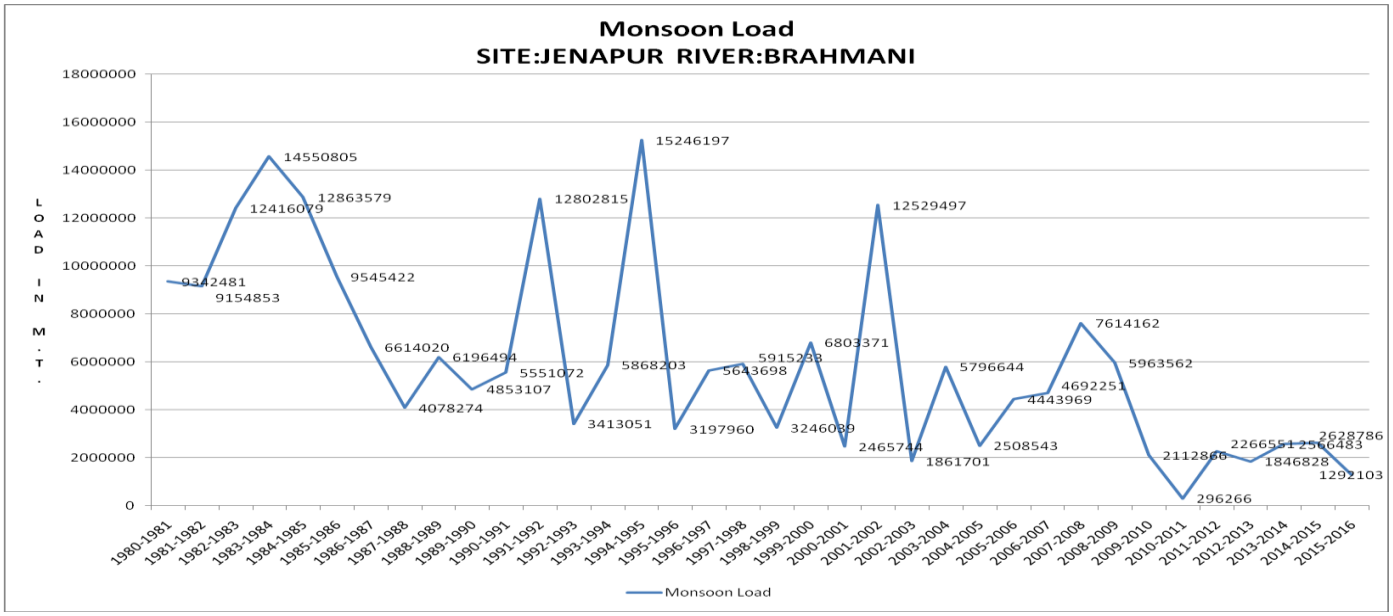
TREND ANALYSIS

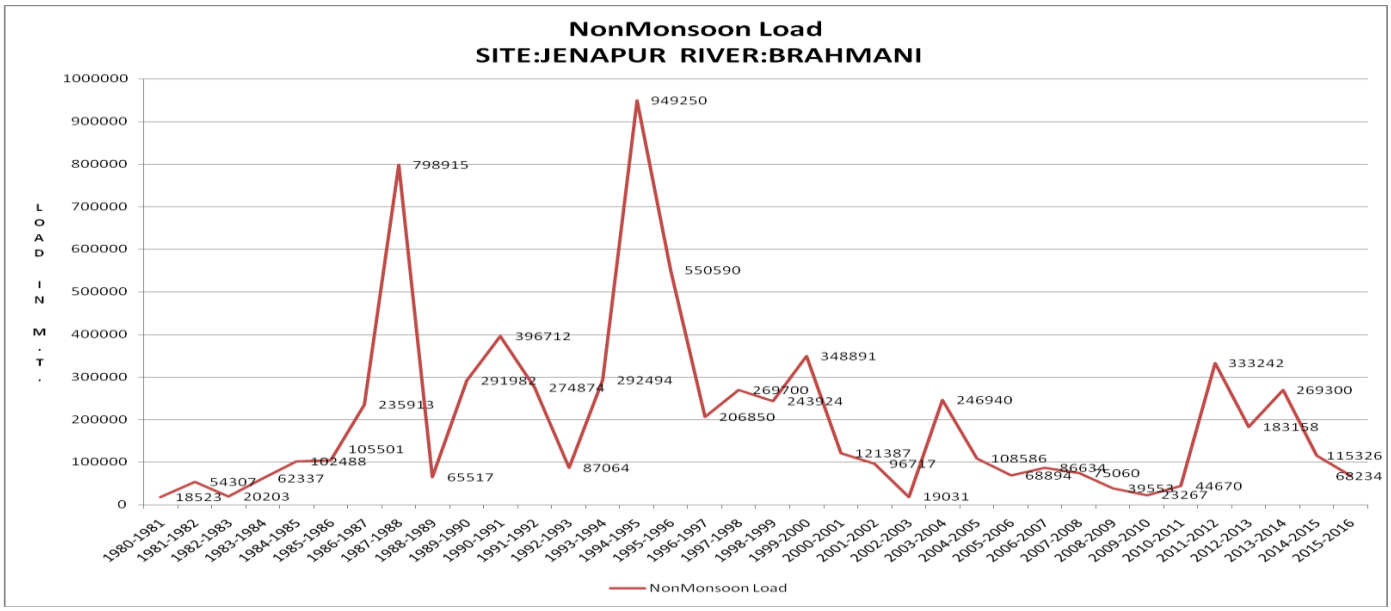

TOTAL ANNUAL DISCHARGE
SITE:JENAPUR RIVER:BRAHMANI
DISCHARGE IN CUMECS
400000.000
350000.000
300000.000
250000.000
200000.000
150000.000
100000.000
50000.000
0.000
Monsoon
Annual Runoff

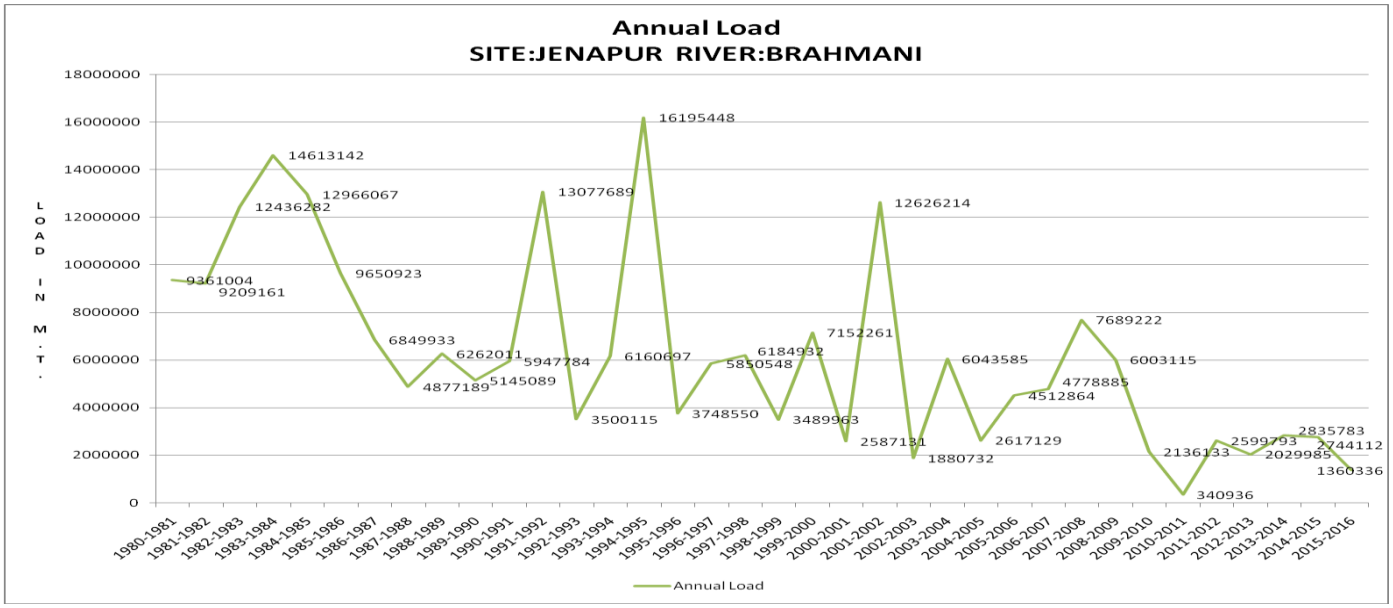

TOTAL ANNUAL DISCHARGE
SITE:JENAPUR RIVER:BRAHMANI
DISCHARGE IN CUMECS
70000.000
60000.000
50000.000
40000.000
30000.000
20000.000
10000.000
0.000
Non-Monsoon

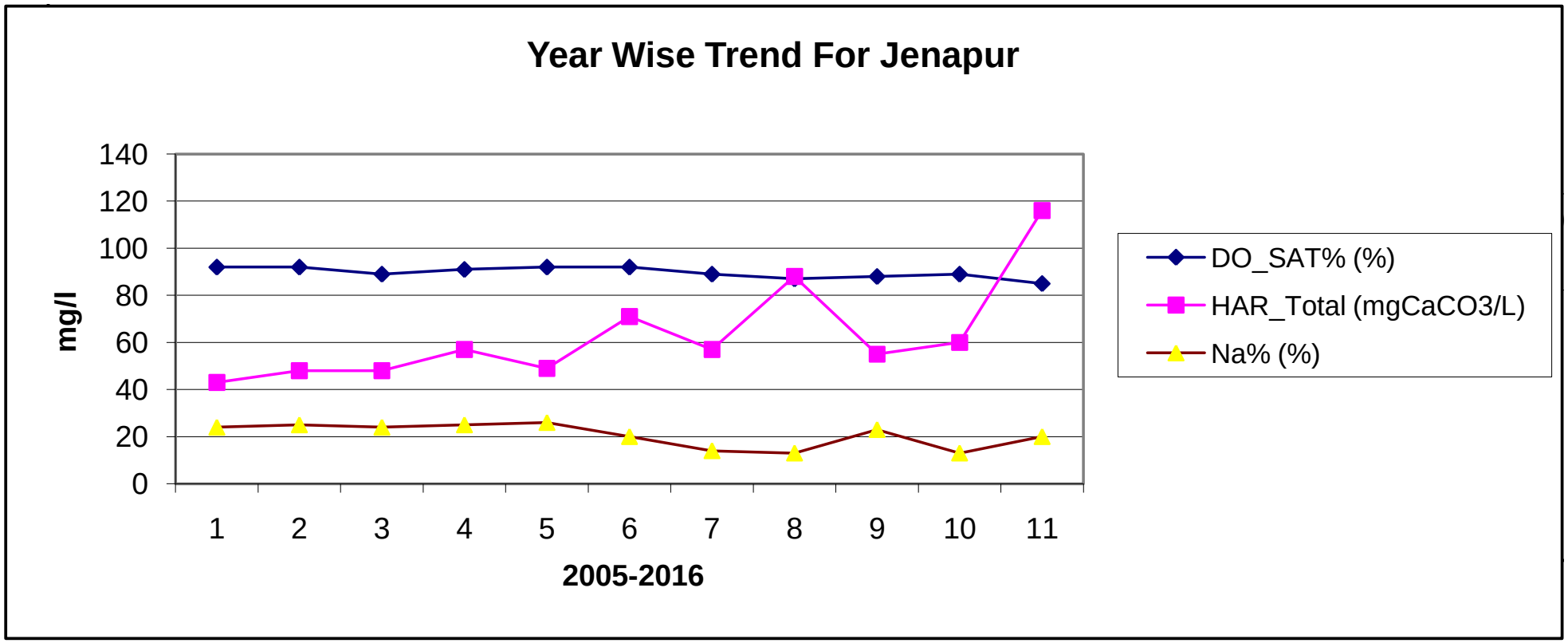

DEPENDIBILITY FLOW FROM JUNE TO MAY
SITE:JENAPUR RIVER:BRAHMANI
DISCHARGE IN CUMECS
2500.000
2000.000
1500.000
1000.000
500.000
0.000
2107.564
1845.339
1414.302
1262.946
1177.776
1095.124
886.261
858.578
723.935
549.856
518.558
361.275
354.008
335.644
258.789
188.756
232.763
234.574
237.824
182.375
176.054
198.328
217.767
236.929
146.369
142.487
134.657
144.223
147.348
129.456
100.221
79.600
63.481
80.953
73.605
71.470
June
July
August
September
October
November
December
January
February
March
April
May
75% Dep
50% Dep
25% Dep

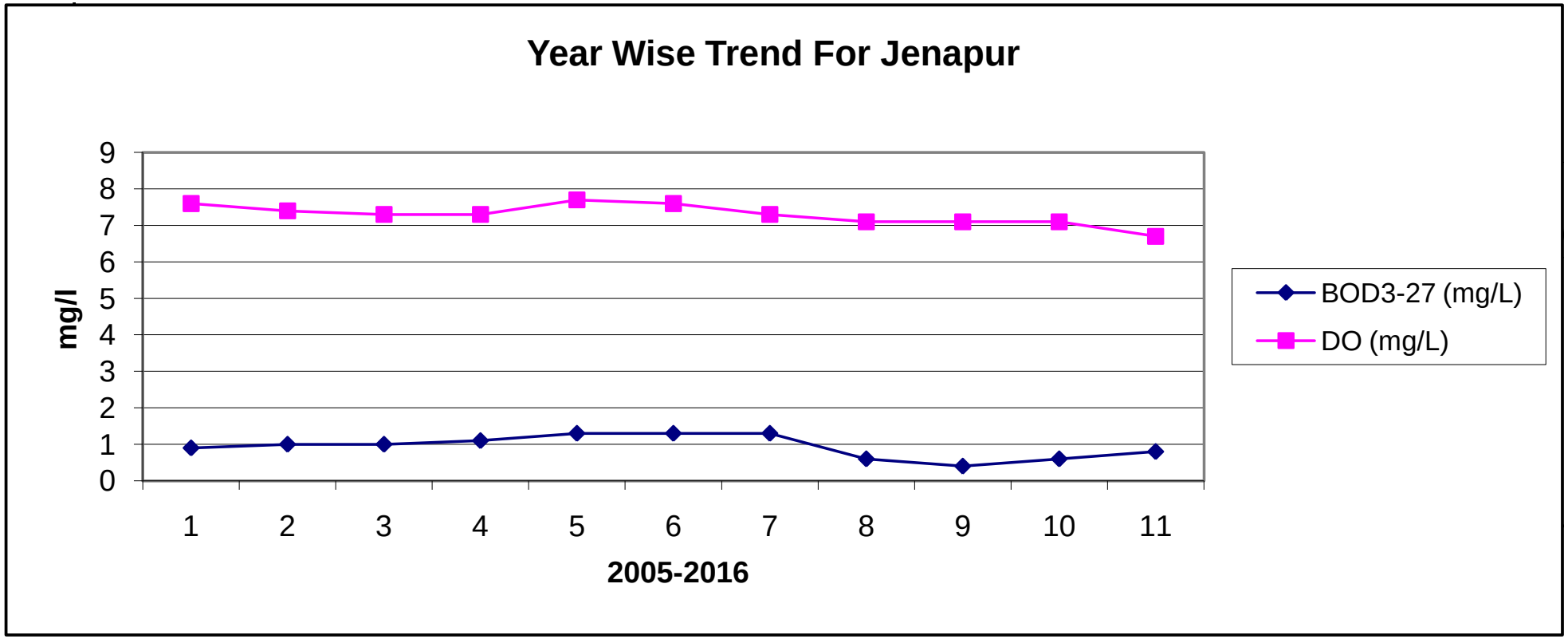

MAXIMUM-MINIMUM DISCHARGE FROM JUNE TO MAY
SITE:JENAPUR RIVER:BRAHMANI
DISCHARGE IN CUMECS
5000.000
4500.000
4000.000
3500.000
3000.000
2500.000
2000.000
1500.000
1000.000
500.000
0.000
4432.096
3915.692
3790.932
1789.631
812.743
746.847
448.005
378.297
414.940
316.490
396.714
372.089
362.305
299.702
220.811
81.054
42.439
27.724
16.805
9.941
13.559
12.187
5.561
26.058
June
July
August
September
October
November
December
January
February
March
April
May
Maximum
Minimum

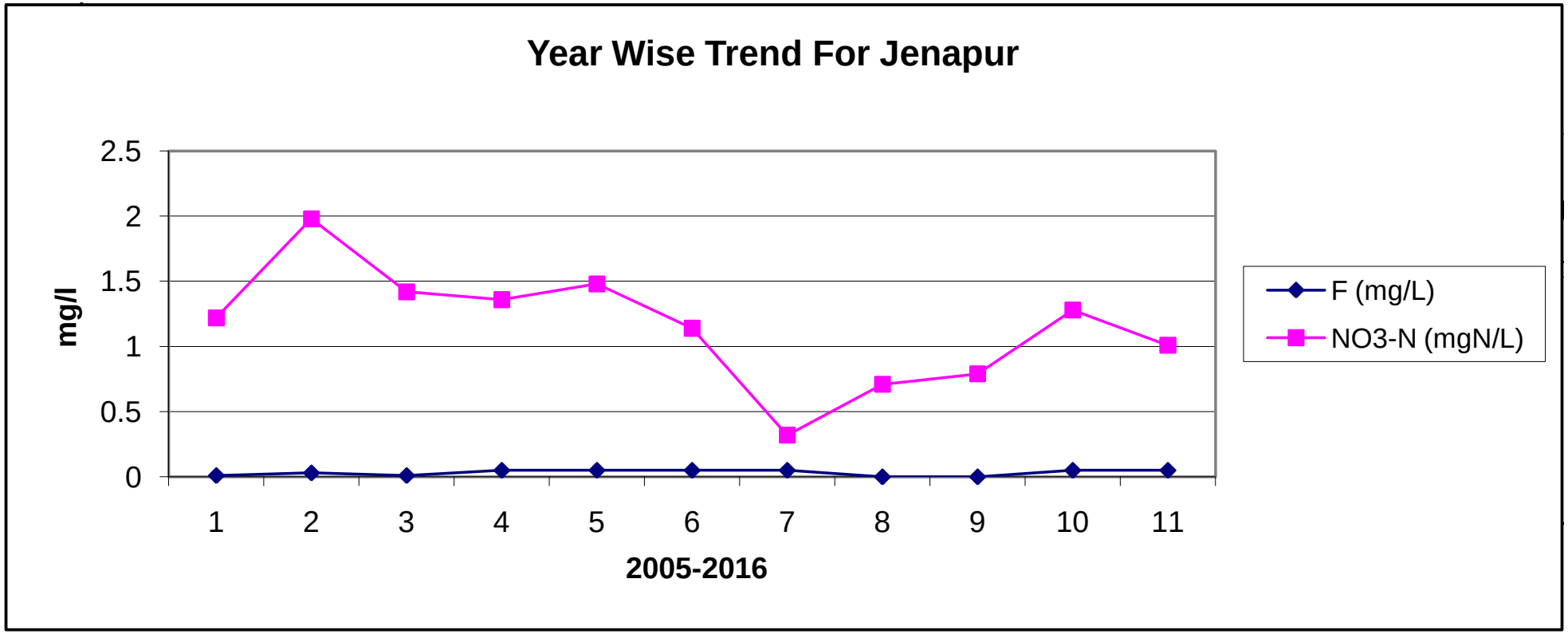

Monsoon Load
SITE:JENAPUR RIVER:BRAHMANI
LOAD IN M.T.
Monsoon Load

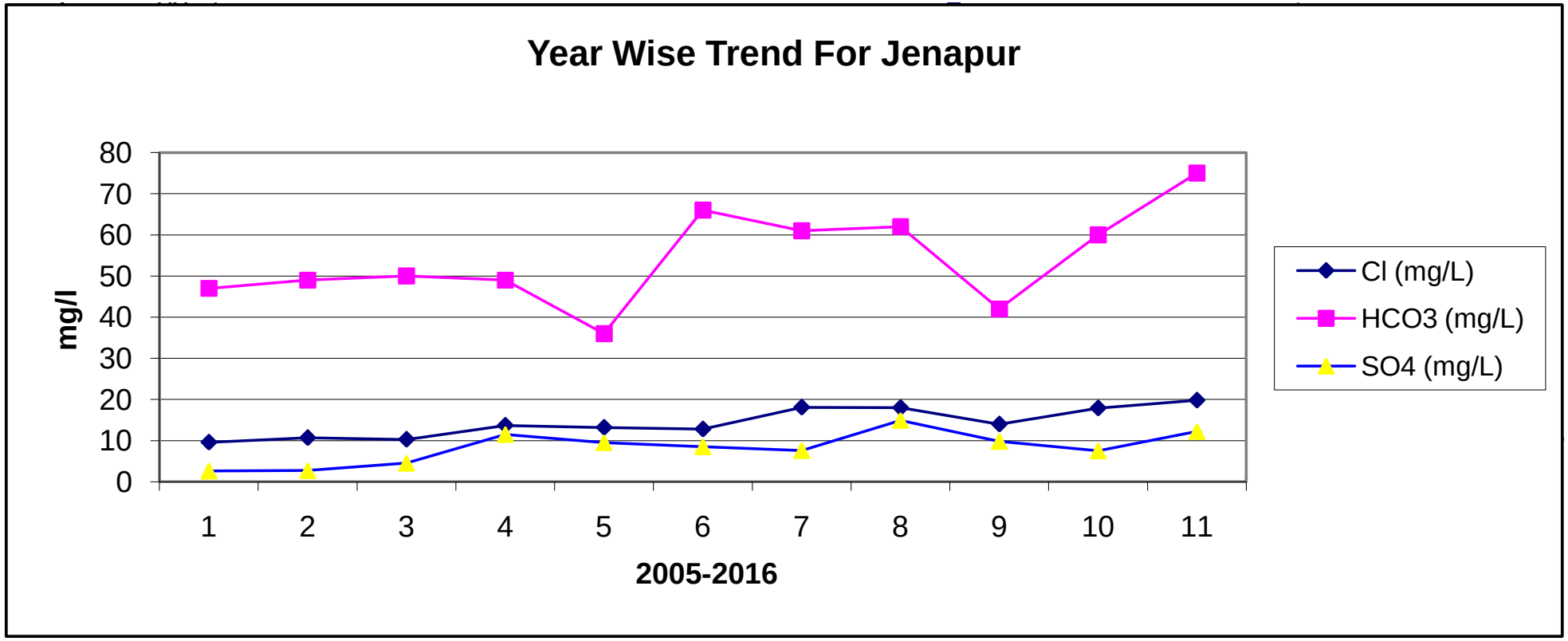

NonMonsoon Load
SITE:JENAPUR RIVER:BRAHMANI
LOAD IN M.T.
NonMonsoon Load

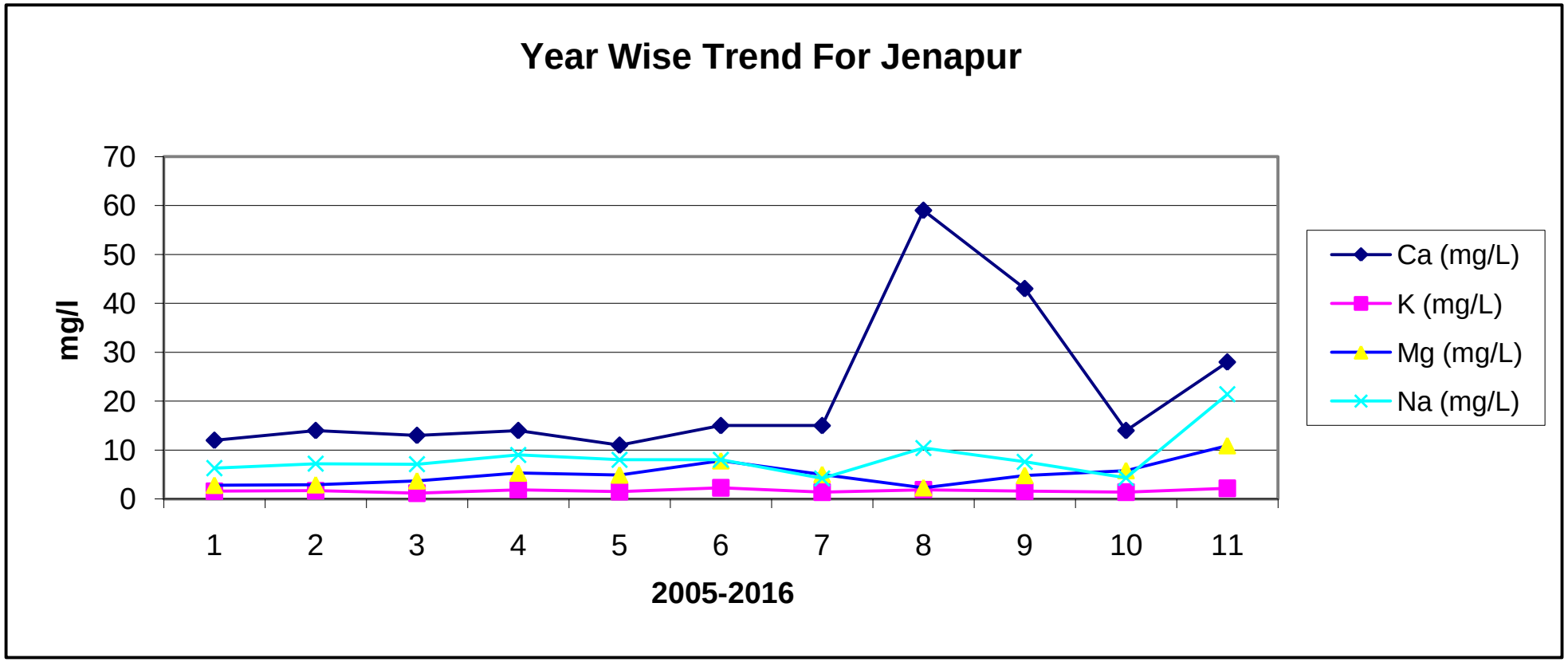

Annual Load
SITE:JENAPUR RIVER:BRAHMANI
LOAD IN M.T.
Annual Load


Year Wise Trend For Jenapur
140
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Jenapur
mg/l
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Jenapur
mg/l
2.5
2
1.5
1
0.5
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Jenapur
mg/l
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Jenapur
mg/l
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

HYDROLOGICAL DATA

HISTORY SHEET

Water Year : 2015-2016

Site : Altuma **Code : EBA00I3**

State : Orissa District Dhenkanal

Basin : Brahmani-Baitarani Independent River : Brahmni

Tributary : Ramyala Sub Tributary : Ramyala

Sub-Sub Tributary : Ramyala Local River : Ramyala

Division : E.E., Bhubaneswar Sub-Division : Rourkela

Drainage Area : 830 Sq. Km. Bank : Left

Latitude : 20°55'48" Longitude : 85°31'20"

Zero of Gauge (m) : 44 (m.s.l) 08.06.1990 - 31.12.2020

Opening Date Closing Date

Gauge : 08.06.1990

Discharge : 25.07.1990

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	**Q (cumecs)**	**WL (m)**	**Date**	**Q (cumecs)**	**WL (m)**	**Date**
1993-1994	791.2	49.620	15.08.1993	0.500	46.300	09.06.1993
1994-1995	329.4	49.740	17.08.1994	0.600	46.280	02.06.1994
1995-1996	333.2	48.830	09.08.1995	0.780	46.160	31.05.1996
1996-1997	500.7	48.800	22.06.1996	0.620	46.145	20.06.1996
1997-1998	922.3	49.940	06.08.1997	0.550	46.180	17.06.1997
1998-1999	377.1	48.380	03.07.1998	0.590	46.260	02.06.1998
1999-2000	500.0	50.000	31.10.1999	1.530	46.290	10.06.1999
2000-2001	392.5	48.620	31.08.2000	0.370	46.200	23.05.2001
2001-2002	475.4	48.780	09.07.2001	0.485	46.160	29.06.2001
2002-2003	102.5	47.130	06.09.2002	0.796	46.125	10.06.2002
2003-2004	581.5	48.910	07.09.2003	1.000	46.185	18.01.2004
2004-2005	250.3	47.980	13.08.2004	0.963	46.130	28.06.2004
2005-2006	758.4	49.780	31.07.2005	0.159	45.985	25.06.2005
2006-2007	531.1	48.860	23.08.2006	1.054	45.990	31.05.2007
2007-2008	543.0	48.675	24.09.2007	0.674	45.960	14.06.2007
2008-2009	536.8	49.560	18.09.2008	0.785	45.920	03.06.2008
2009-2010	892.7	50.150	21.07.2009	1.124	45.910	09.06.2009
2010-2011	243.8	47.580	30.06.2010	0.584	45.855	06.06.2010
2011-2012	832.0	49.585	23.09.2011	1.069	45.820	01.06.2011
2012-2013	460.8	48.460	11.09.2012	0.000	46.200	16.08.2012
2013-2014	399.4	47.980	10.10.2013	0.792	45.650	07.06.2013
2014-2015	783.5	49.505	05.08.2014	0.621	45.540	30.06.2014
2015-2016	241.3	47.305	29.07.2015	0.552	45.360	20.05.2016

Stage-Discharge Data for the period 2015 - 2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

Local River : Ramyala **Sub-Division : Rourkela**

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	45.550	1.171	45.900	12.00	47.020	153.9	46.210	40.85	45.720	7.141	45.670	7.900 *
2	45.540	1.125	45.680	4.122	46.220	33.00 *	45.975	18.71	45.720	7.100 *	45.670	7.903
3	45.560	1.264	45.630	2.270	46.620	88.88	46.030	22.13	45.710	6.881	45.660	132.4
4	45.560	1.259	45.610	2.049	46.970	147.6	45.970	18.13	45.700	6.900 *	45.660	7.165
5	45.550	1.178	45.610	2.080 *	47.200	223.5	45.940	15.66	45.800	9.716	45.660	7.437
6	45.550	1.160	45.670	3.098	46.160	35.76	45.900	15.00 *	45.790	9.147	45.660	6.859
7	45.570	1.300 *	45.665	3.089	46.040	20.70	45.920	14.79	46.070	24.73	45.660	7.156
8	45.560	1.236	45.760	7.741	45.960	13.97	45.870	11.73	45.860	11.77	45.660	7.100 *
9	45.560	1.196	45.740	6.291	45.920	12.00 *	45.810	9.865	45.880	12.33	45.720	8.332
10	45.530	1.146	46.060	18.36	45.890	10.41	46.020	21.55	45.860	11.95	45.710	8.130
11	45.540	1.074	45.980	16.58	45.860	10.05	45.960	16.01	45.840	11.50 *	45.700	8.000 *
12	45.550	2.204	46.080	20.00 *	45.830	8.954	45.960	16.26	45.810	10.35	45.690	7.734
13	45.660	2.716	45.840	10.67	45.875	10.54	45.970	16.00 *	45.880	12.57	45.680	7.457
14	45.570	1.300 *	45.780	8.784	45.850	9.644	45.870	12.24	45.840	11.25	45.670	5.694
15	45.655	2.638	45.670	3.902	45.930	12.00 *	45.830	10.93	45.775	9.531	45.670	7.100 *
16	45.670	2.734	45.690	4.259	45.980	15.00 *	45.900	13.58	45.740	9.338	45.670	7.172
17	45.630	2.312	45.730	4.640	46.100	21.55	46.140	30.00 *	45.720	9.196	45.660	6.939
18	45.620	2.132	45.840	10.60 *	46.260	47.48	45.920	14.51	45.710	9.000 *	45.660	6.911
19	45.610	2.072	45.900	12.00 *	46.250	46.37	45.860	11.75	45.710	8.630	45.660	6.359
20	45.600	2.010	45.770	6.240	46.360	55.54	46.000	20.00 *	45.700	8.651	45.660	6.897
21	45.600	2.000 *	45.740	5.933	46.080	22.82	46.010	20.39	45.700	8.630 *	45.650	6.647
22	45.620	2.178	46.000	17.10	45.975	16.99	45.915	13.75	45.700	8.630 *	45.650	6.690 *
23	45.610	2.105	45.940	13.99	45.890	12.00 *	45.840	10.54	45.700	8.626	45.650	6.619
24	45.720	6.698	46.100	20.16	45.870	11.15	45.800	9.759	45.690	8.480 *	45.650	6.635
25	45.690	5.512	46.090	19.45	45.850	10.41	45.790	9.000 *	45.690	8.480 *	45.630	6.200 *
26	45.655	2.894	46.280	30.00 *	45.890	12.55	45.770	8.493	45.690	8.481	45.610	5.564
27	45.620	2.109	46.180	28.20	46.140	30.95	45.750	8.000 *	45.680	8.374	45.610	5.532
28	45.610	2.000 *	46.340	53.29	46.020	21.71	45.740	7.789	45.680	8.261	45.610	5.360
29	45.600	1.971	47.305	241.3	46.100	25.02	45.740	7.790	45.680	8.160	45.570	5.000 *
30	45.590	1.713	46.900	155.2	45.950	15.00 *	45.730	7.344	45.680	8.186	45.540	2.027
31			46.060	18.02	46.920	145.9			45.670	7.936		
Ten-Daily Mean												
I Ten-Daily	45.553	1.203	45.733	6.110	46.400	73.97	45.965	18.84	45.811	10.77	45.673	20.04
II Ten-Daily	45.611	2.119	45.828	9.767	46.030	23.71	45.941	16.13	45.772	10.00	45.672	7.026
III Ten-Daily	45.632	2.918	46.267	54.79	46.062	29.50	45.808	10.29	45.687	8.386	45.617	5.627
Monthly												
Min.	45.530	1.074	45.610	2.049	45.830	8.954	45.730	7.344	45.670	6.881	45.540	2.027
Max.	45.720	6.698	47.305	241.3	47.200	223.5	46.210	40.85	46.070	24.73	45.720	132.4
Mean	45.598	2.08	45.953	24.56	46.161	41.98	45.905	15.09	45.755	9.675	45.654	10.9

Annual Runoff in MCM = 299 Annual Runoff in mm = 361

Peak Observed Discharge = 241.3 cumecs on 29/07/2015 Corres. Water Level :47.305 m

Lowest Observed Discharge = 0.552 cumecs on 20/05/2016 Corres. Water Level :45.36 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2015 - 2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

Local River : Ramyala **Sub-Division : Rourkela**

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	45.540	2.015	45.480	1.650	45.380	0.887	45.410	1.136	45.440	2.251	45.410	
2	45.530	1.981	45.470	1.613	45.380	0.877	45.410	1.141	45.430	1.228	45.400	0.991
3	45.490	1.977	45.470	1.650 *	45.380	0.877	45.410	1.116	45.420		45.400	0.985
4	45.530	1.979	45.460	1.541	45.380	0.870	45.400	1.033	45.420	1.159	45.400	0.980
5	45.530	1.980	45.420	1.089	45.380	0.871	45.400	1.008	45.420	1.106	45.400	0.973
6	45.520	1.900 *	45.420	1.099	45.380	0.865	45.400	1.050 *	45.410	1.052	45.390	0.871
7	45.520	1.957	45.420	1.122	45.380	0.925 *	45.400	1.040 *	45.410	1.028	45.390	0.860
8	45.520	1.913	45.420	1.148	45.380	0.864	45.390	0.941	45.400	0.954	45.390	
9	45.510	1.887	45.420	1.116	45.390	0.881	45.390	0.901	45.400	0.941	45.380	0.781
10	45.510	1.895	45.420	1.140 *	45.390	0.877	45.390	0.890	45.380	0.862	45.370	0.718
11	45.500	1.828	45.410	1.054	45.370	0.624	45.390	0.873	45.390		45.370	0.682
12	45.500	1.898	45.410	1.012	45.370	0.633	45.390	0.871	45.390	0.839	45.370	0.686
13	45.500	1.810 *	45.410	1.005	45.380	0.648	45.380	0.930 *	45.390	0.836	45.370	0.680
14	45.500	1.821	45.410	1.035	45.400	0.770 *	45.380	0.799	45.390		45.360	0.610
15	45.500	1.821	45.410	1.078	45.400	0.672	45.400	0.984	45.380	0.778	45.360	
16	45.490	1.801	45.400	1.005	45.400	0.650	45.400	1.020	45.380	0.774	45.360	0.614
17	45.490	1.805	45.400	1.075 *	45.400	0.668	45.400	0.998	45.380		45.360	0.619
18	45.490	1.802	45.400	0.977	45.400	0.666	45.390	0.727	45.380	0.746	45.360	0.618
19	45.480	1.632	45.400	0.965	45.390	0.653	45.390	0.887	45.400	0.913	45.360	0.588
20	45.480	1.650 *	45.400	0.967	45.390	0.650	45.390	0.934 *	45.410		45.360	0.552
21	45.480	1.628	45.400	0.957	45.390	0.745 *	45.390	0.877	45.410	0.988	45.380	
22	45.480	1.596	45.400	0.952	45.390	0.655	45.390	0.871	46.140	41.96	46.280	
23	45.480	1.593	45.400	0.947	45.390	0.616	45.380	0.819	45.460	1.415	45.540	1.701
24	45.490	1.790 *	45.400	1.013 *	45.390	0.639	45.380	0.824 *	45.440		45.500	1.402
25	45.500	1.800 *	45.390	0.927	45.380	0.600	45.380	0.828 *	45.430	1.261	45.480	1.285
26	45.500	1.782	45.390	0.990 *	45.380	0.598	45.380	0.785	45.420	1.183	45.460	1.149
27	45.500	1.780 *	45.390	0.925	46.040	26.20	45.380	0.812 *	45.420	1.155	45.460	1.166
28	45.500	1.788	45.390	0.915	45.690	4.140 *	45.390	0.858	45.410	1.086	45.480	1.247
29	45.490	1.753	45.390	0.901	45.500	1.866	45.400	1.049	45.410	1.069	45.490	
30	45.490	1.741	45.390	0.902			45.400	1.000	45.410	1.055	45.460	1.122
31	45.480	1.654	45.380	0.949 *			45.440	1.371			45.460	1.086
Ten-Daily Mean												
I Ten-Daily	45.520	1.948	45.440	1.317	45.382	0.879	45.400	1.026	45.413	1.176	45.393	0.895
II Ten-Daily	45.493	1.787	45.405	1.017	45.390	0.663	45.391	0.902	45.389	0.814	45.363	0.628
III Ten-Daily	45.490	1.719	45.393	0.944	45.506	4.007	45.392	0.918	45.495	5.686	45.545	1.270
Monthly												
Min.	45.480	1.593	45.380	0.901	45.370	0.598	45.380	0.727	45.380	0.746	45.360	0.552
Max.	45.540	2.015	45.480	1.650	46.040	26.20	45.440	1.371	46.140	41.96	46.280	1.701
Mean	45.501	1.815	45.412	1.088	45.423	1.775	45.394	0.948	45.432	2.776	45.437	0.919

Peak Computed Discharge = 33.00 cumecs on 02/08/2015 Corres. Water Level :46.22 m

Lowest Computed Discharge = 0.745 cumecs on 21/02/2016 Corres. Water Level :45.39 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2015-2016

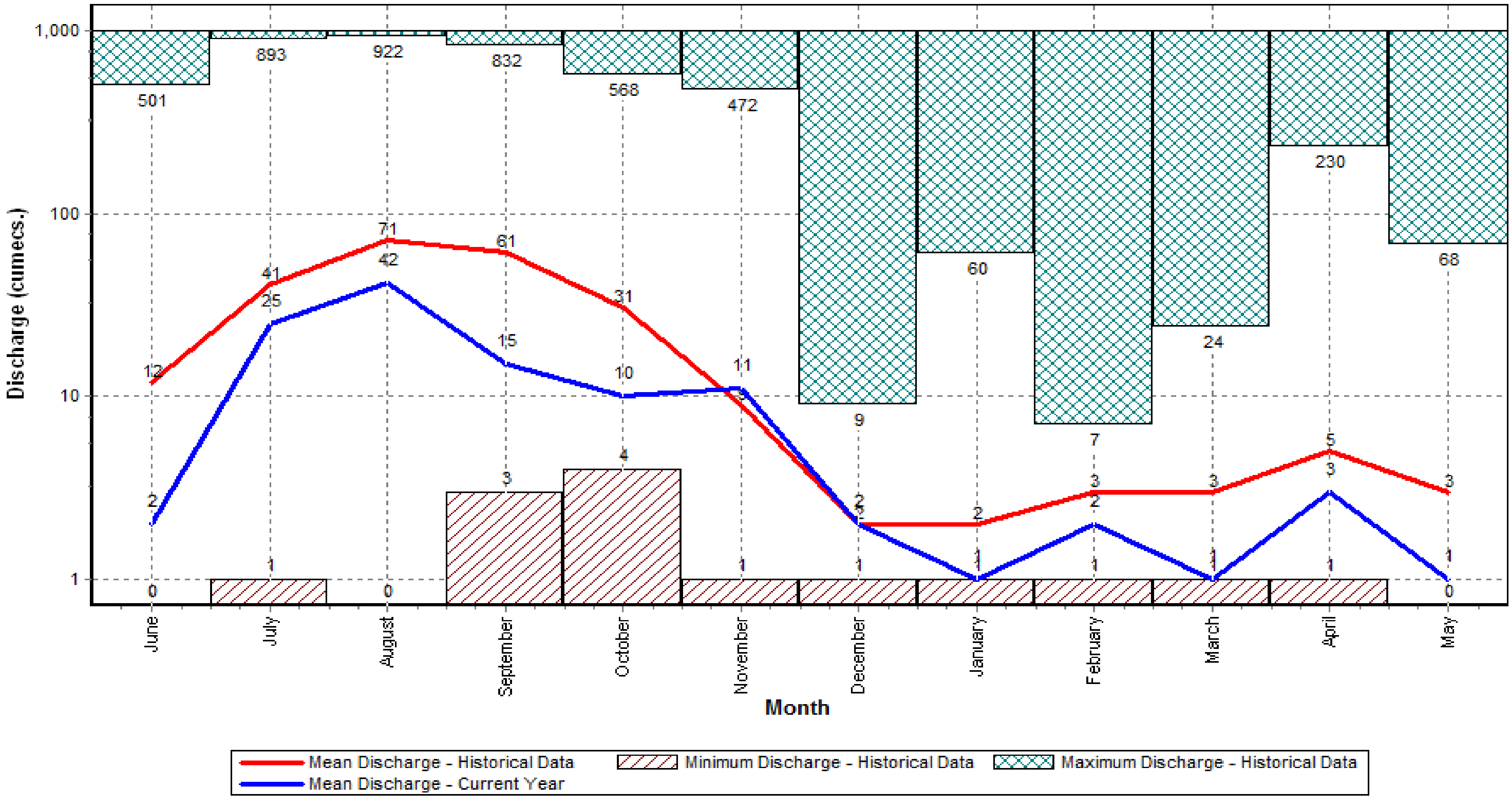
Station Name : Altuma (EBA00I3)

Data considered : 1993-2016

Division : E.E., Bhubaneswar

Local River : Ramyala

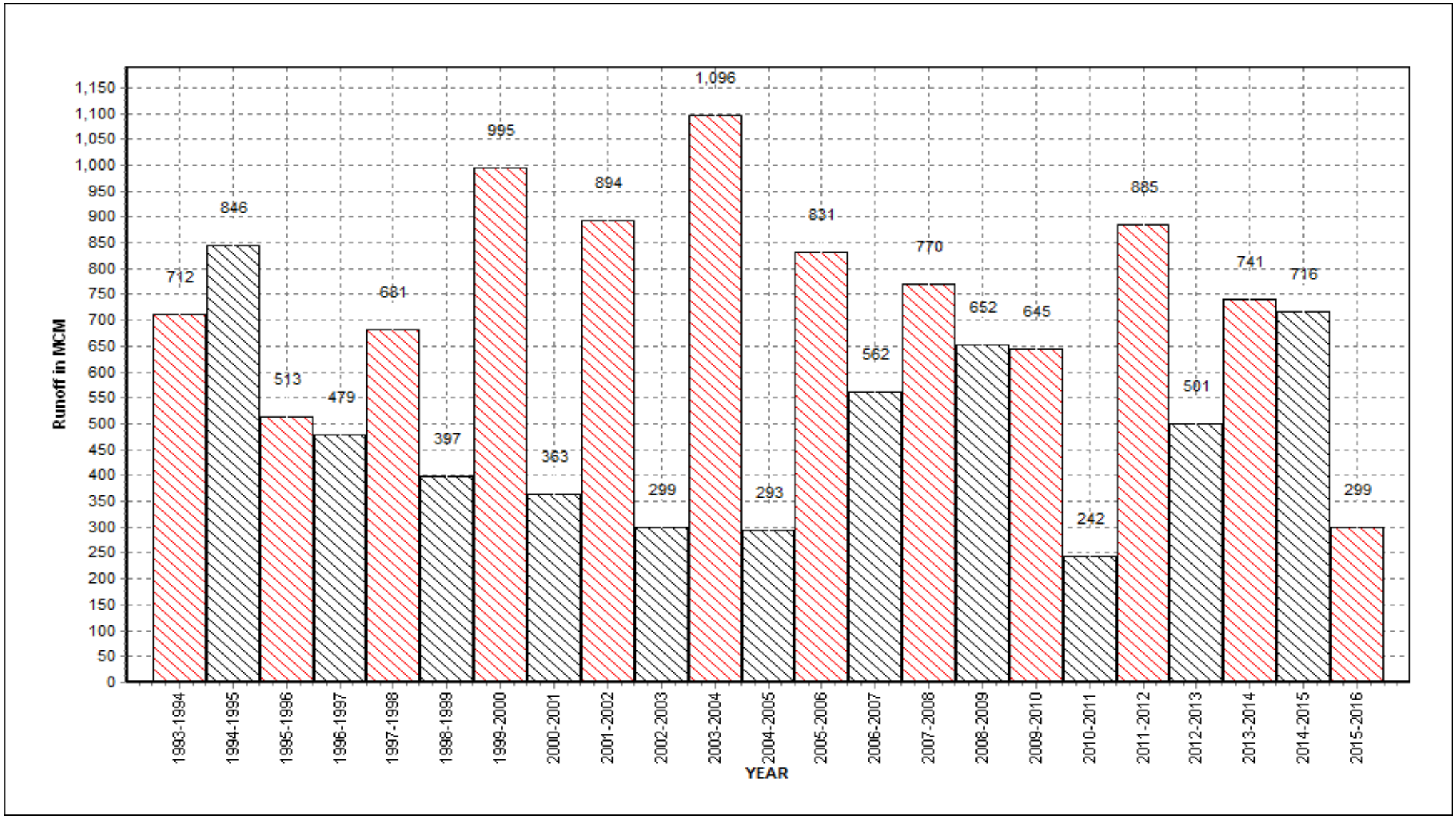
Sub-Division : Rourkela



Annual Runoff Values for the period: 1993 - 2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

Local River : Ramyala **Sub-Division : Rourkela**

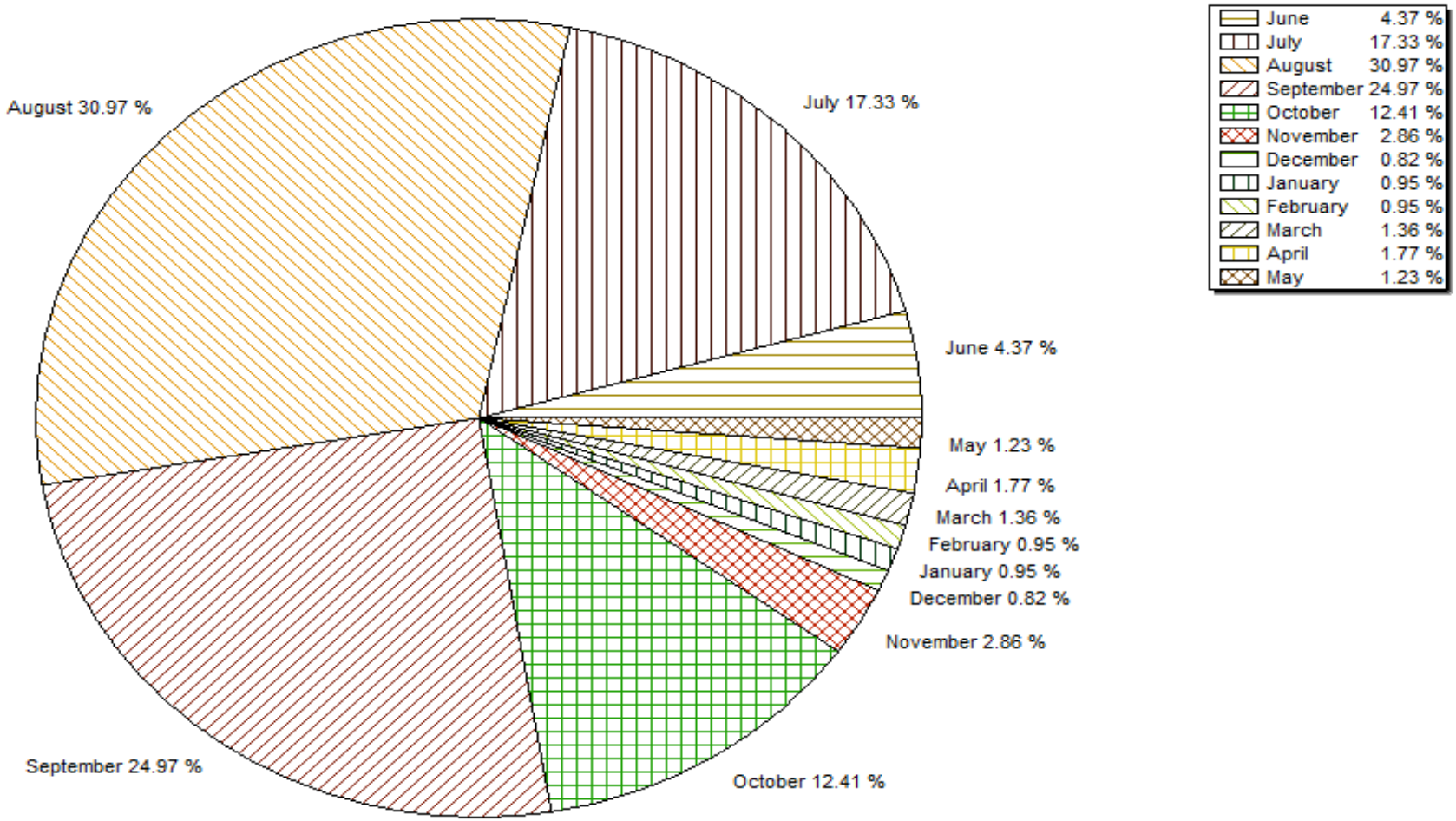


Note: Missing values have not been considered while arriving at Annual Runoff

Monthly Average Runoff based on period : 1993-2015

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

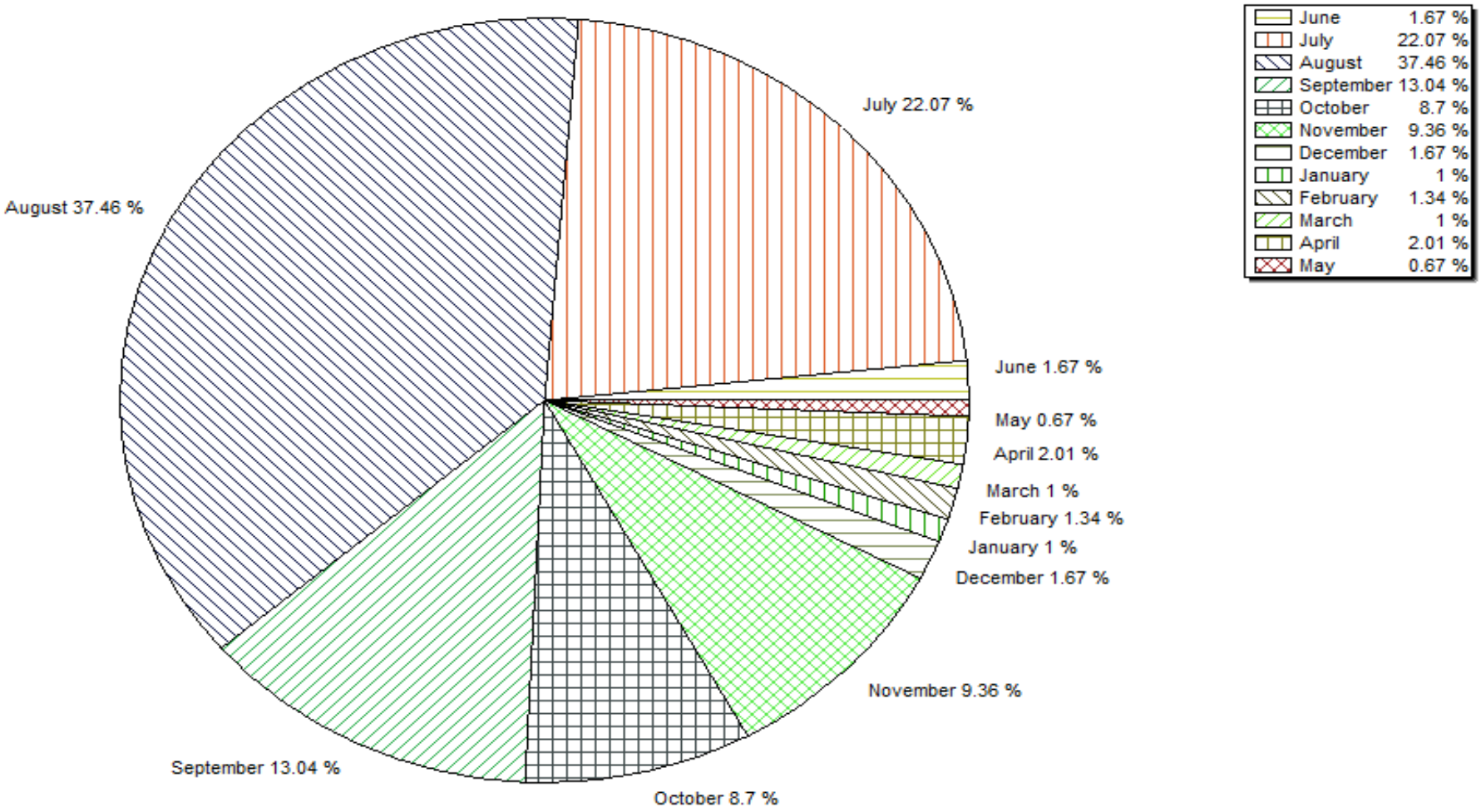
Local River : Ramvala **Sub-Division : Rourkela**



Monthly Runoff for the Year : 2015-2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

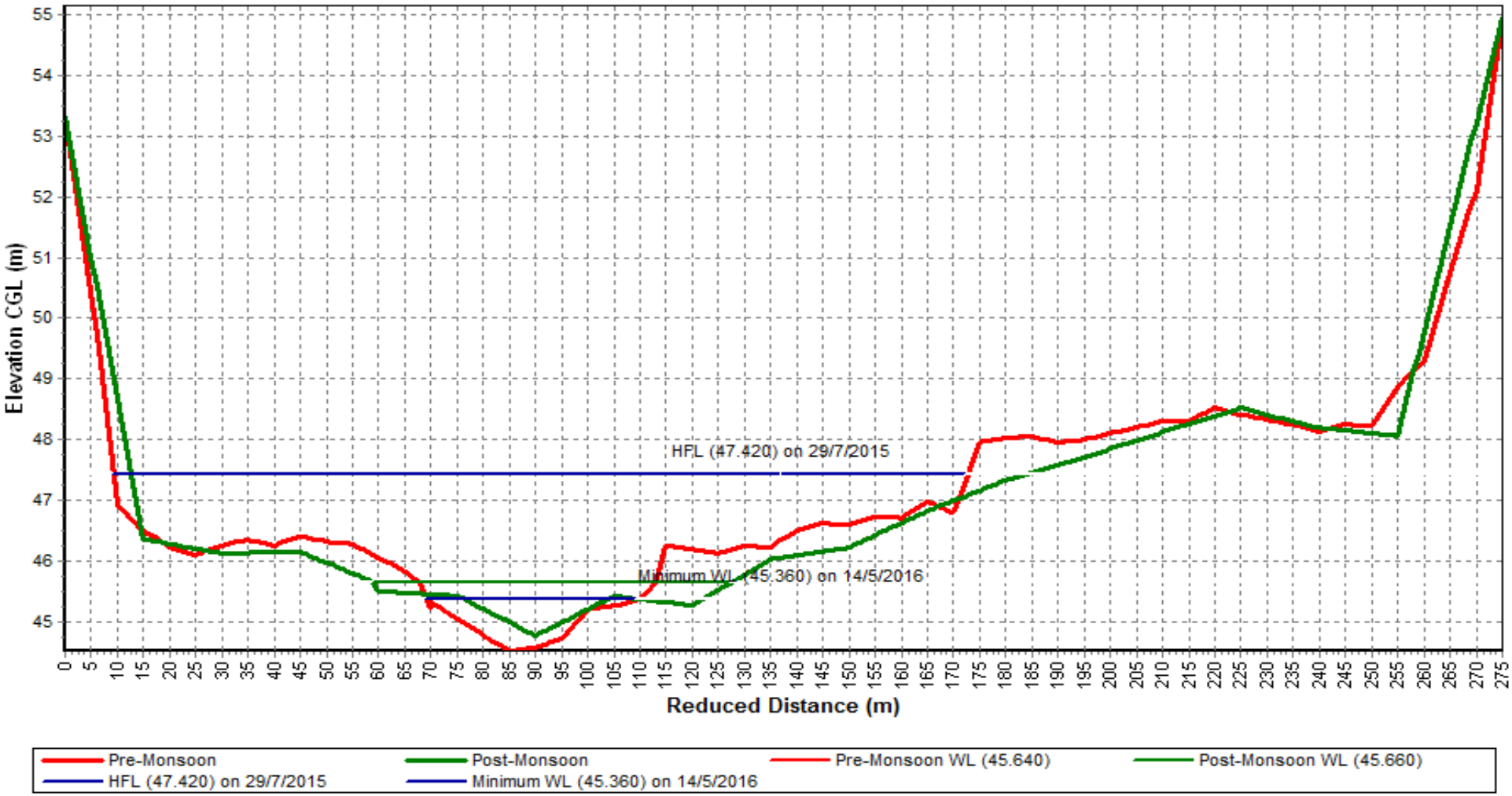
Local River : Ramyala **Sub-Division : Rourkela**



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2015-2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

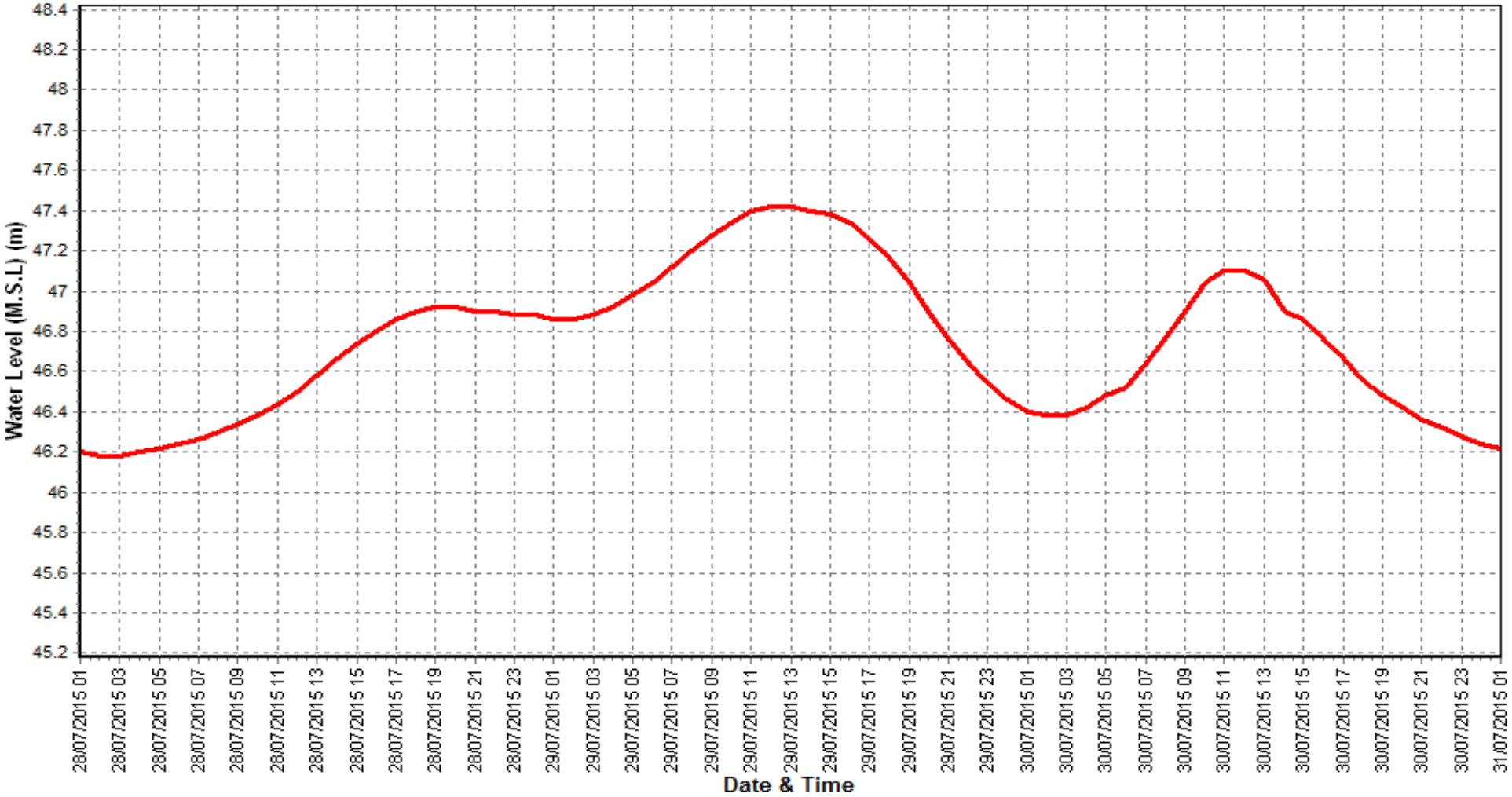
Local River : Ramvala **Sub-Division : Rourkela**



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2015-2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

Local River : Ramyala **Sub-Division : Rourkela**

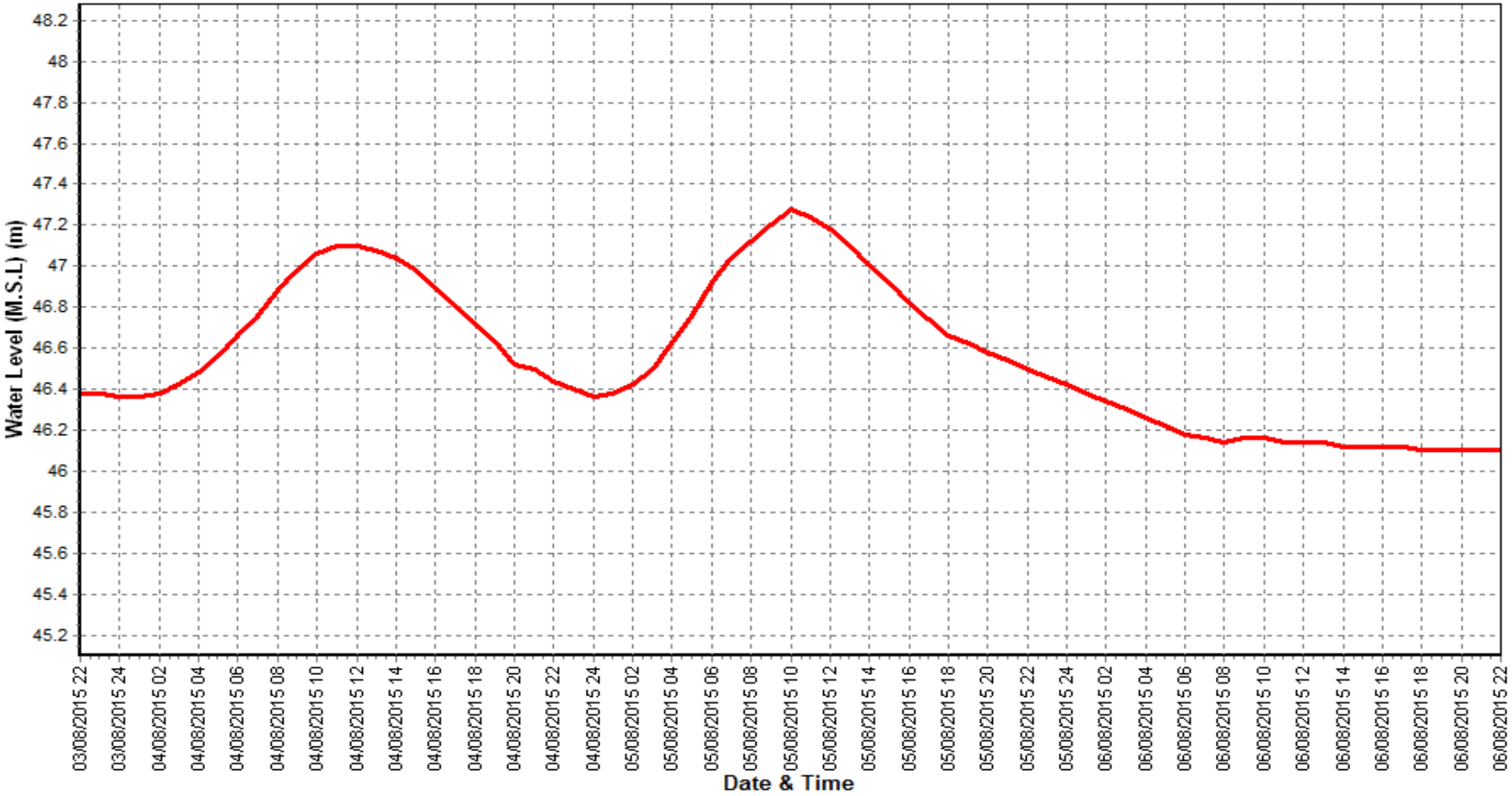


Time Span: 72 Hrs

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2015-2016

Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

Local River : Ramyala **Sub-Division : Rourkela**

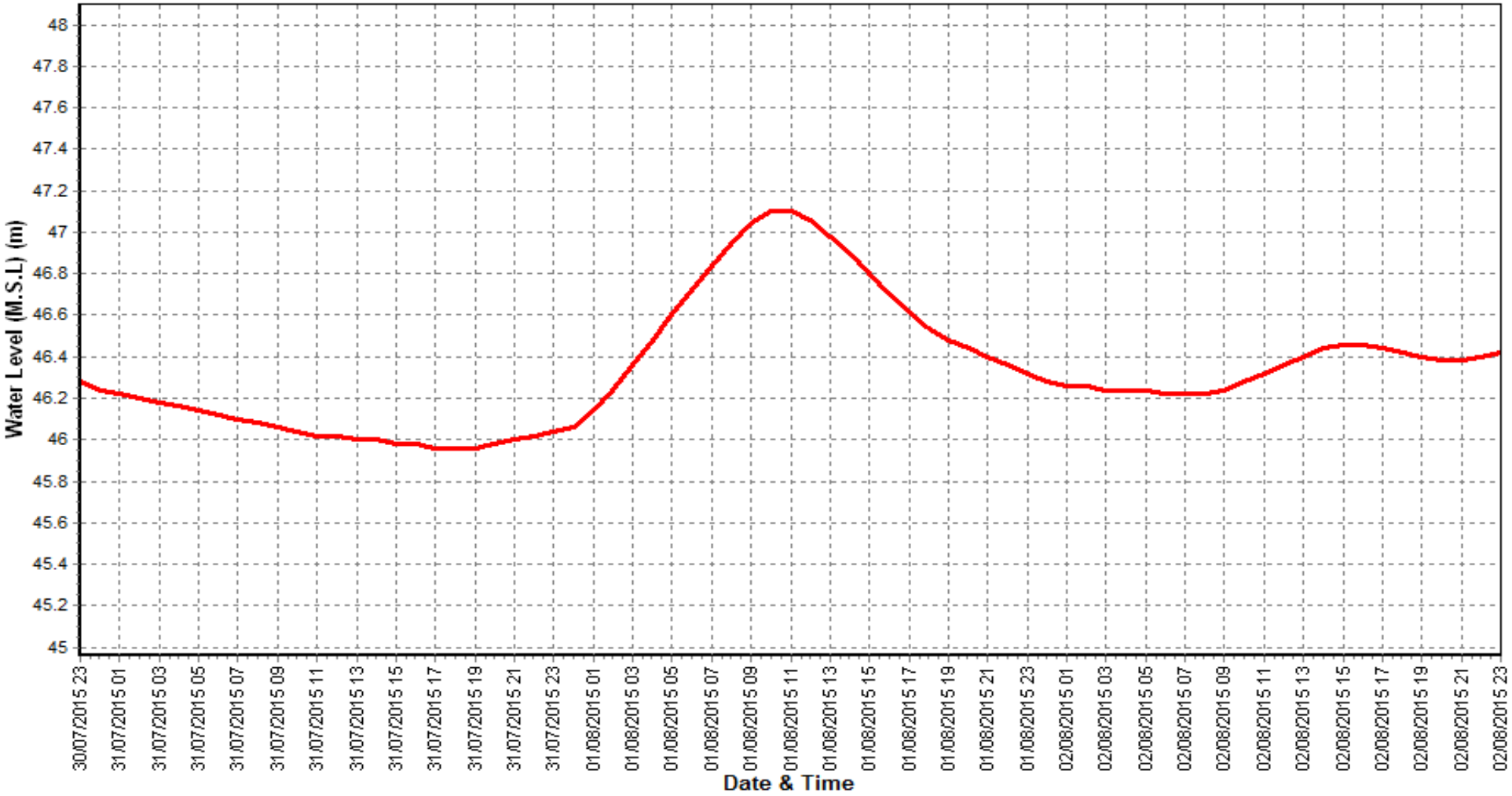


Time Span: 72 Hrs

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2015-2016

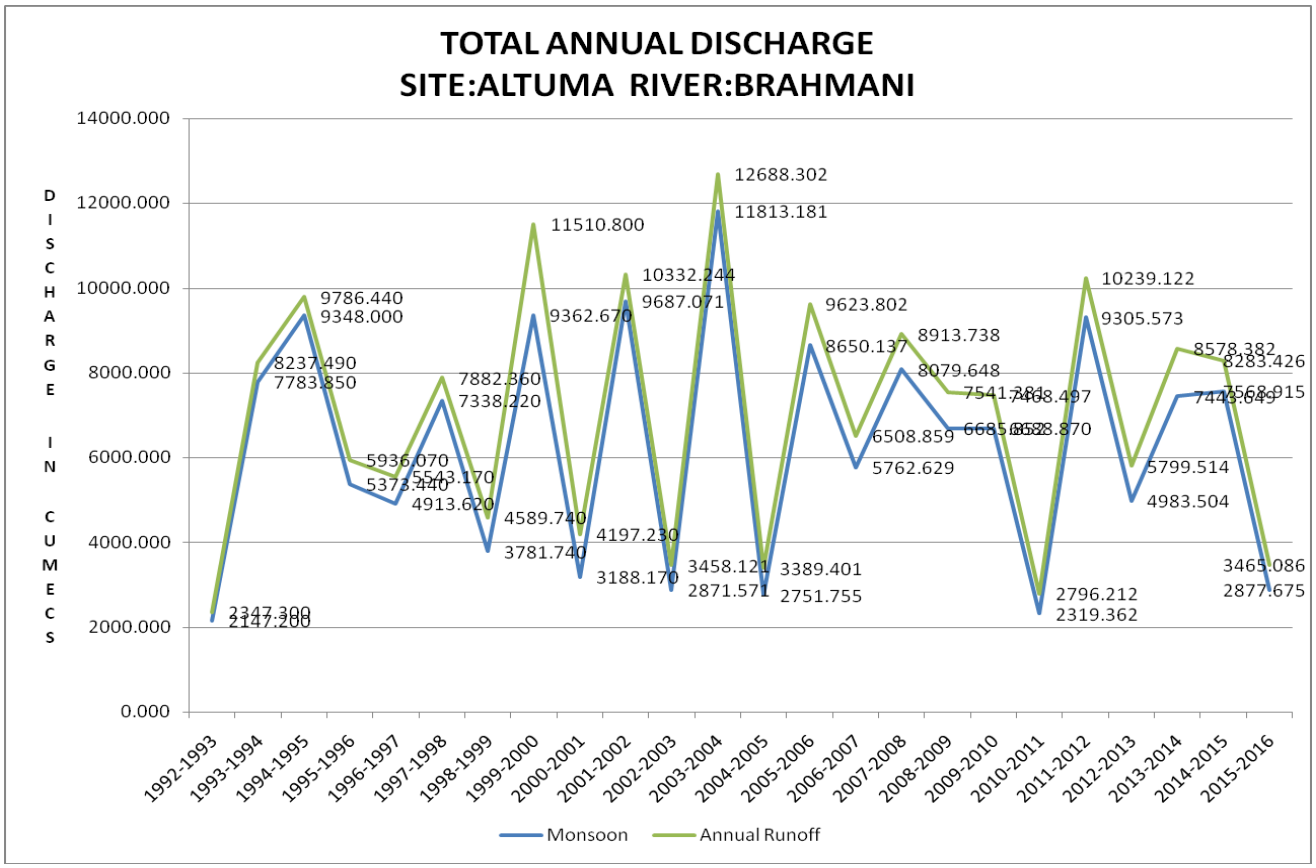
Station Name : Altuma (EBA00I3) **Division : E.E., Bhubaneswar**

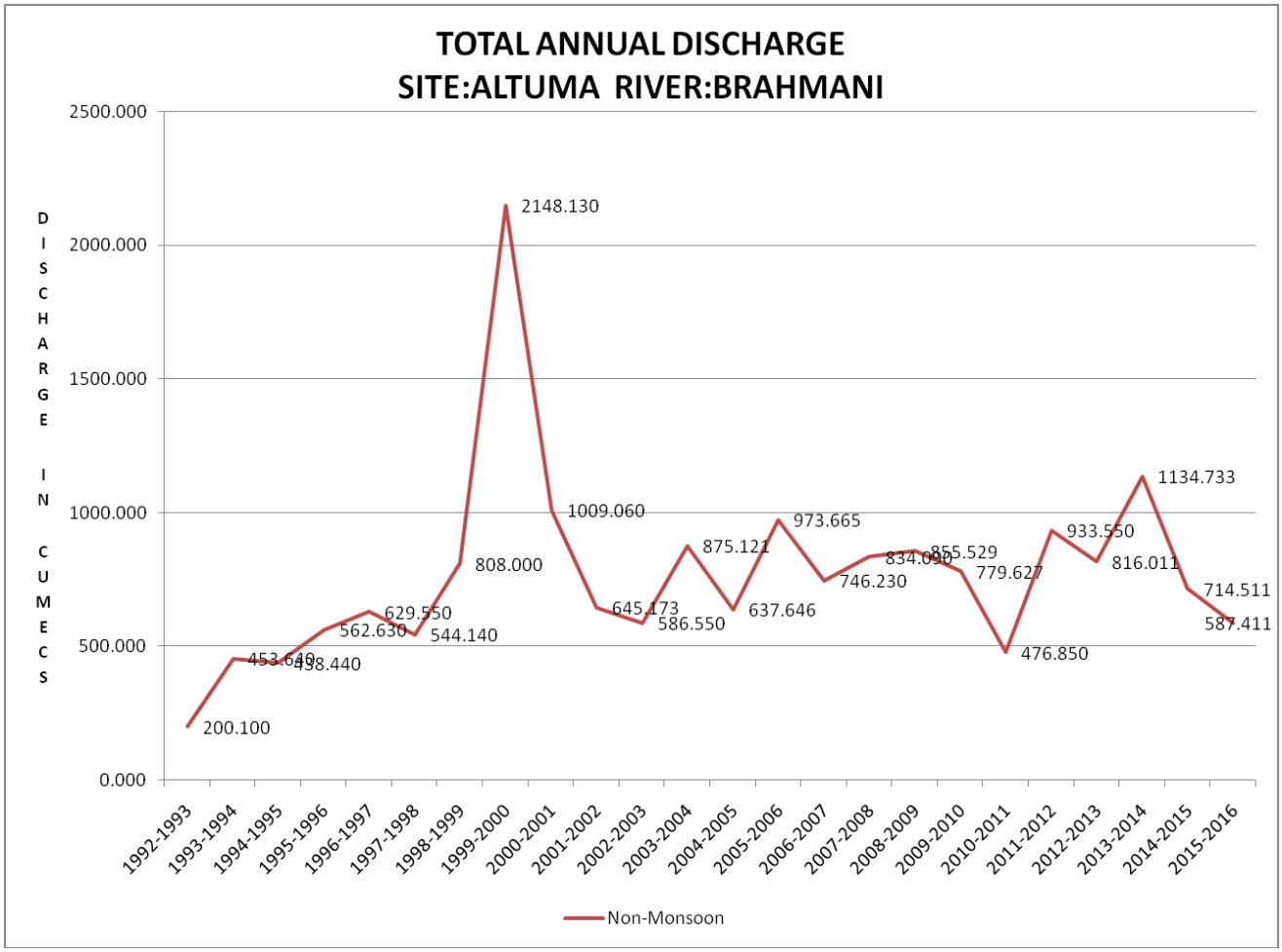
Local River : Ramyala **Sub-Division : Rourkela**

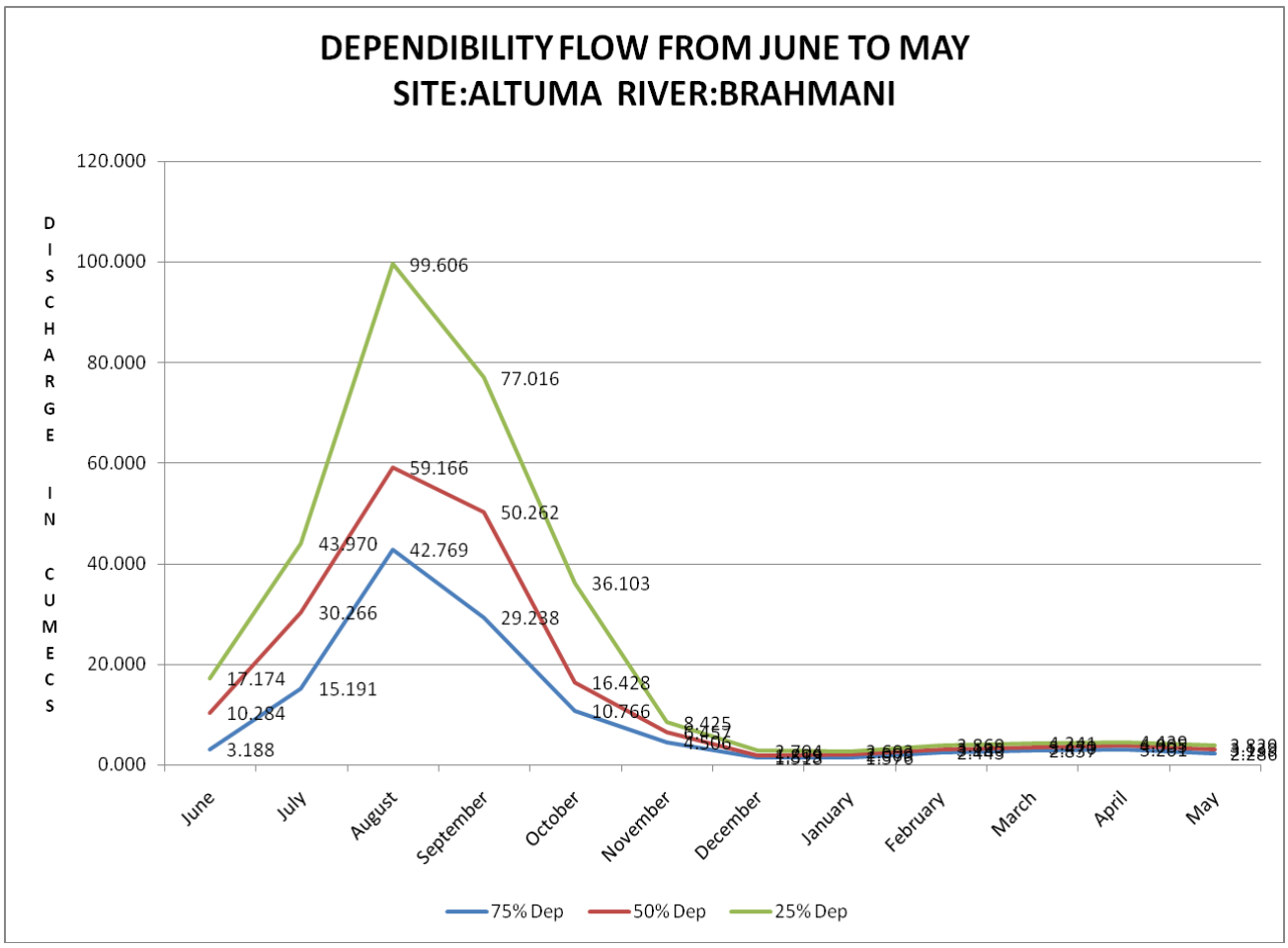


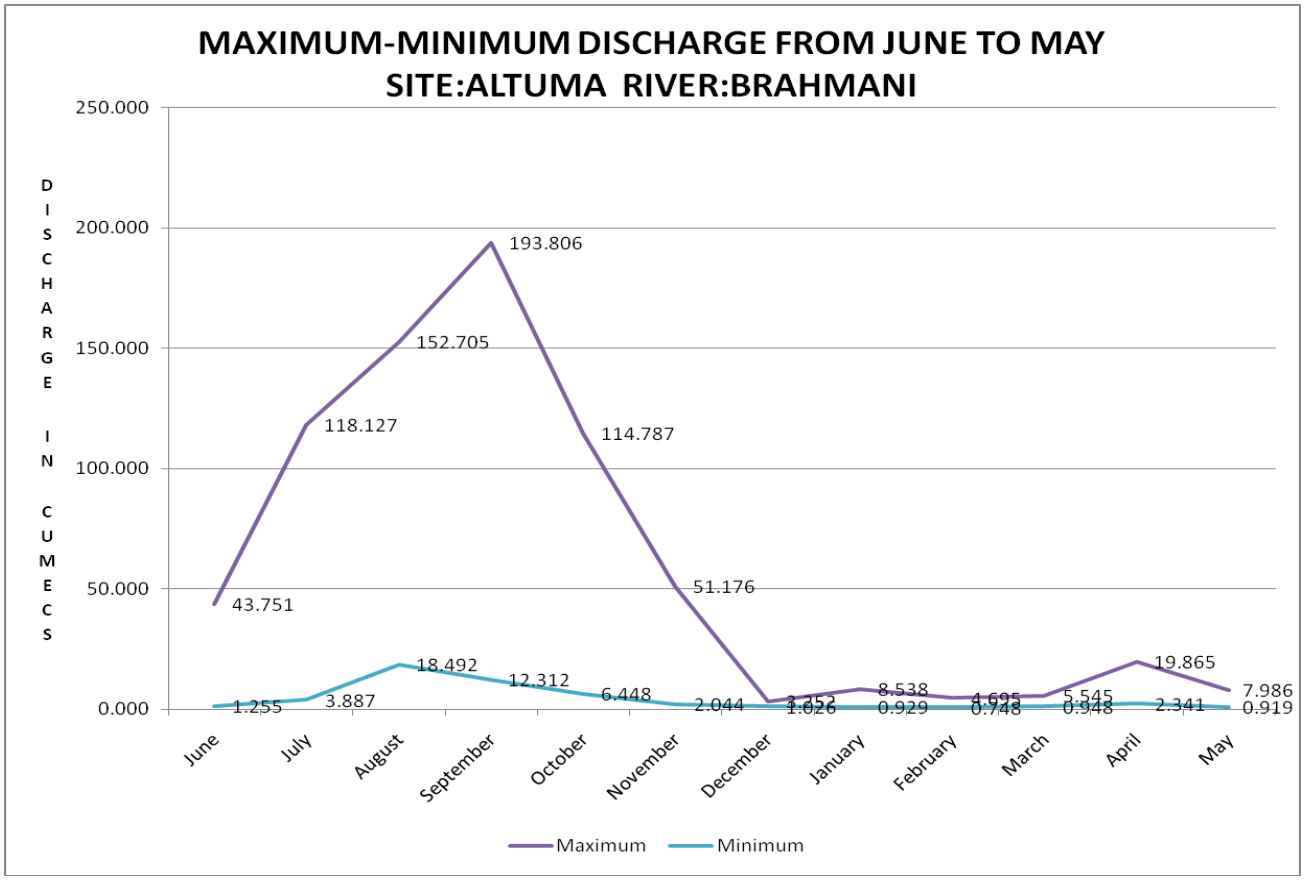
Time Span: 72 Hrs

TREND ANALYSIS


TOTAL ANNUAL DISCHARGE
SITE:ALTUMA RIVER:BRAHMANI
DISCHARGE IN CUMECS
14000.000
12000.000
10000.000
8000.000
6000.000
4000.000
2000.000
0.000
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
Monsoon
Annual Runoff


TOTAL ANNUAL DISCHARGE
SITE:ALTUMA RIVER:BRAHMANI
DISCHARGE IN CUMECS
2500.000
2000.000
1500.000
1000.000
500.000
0.000
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
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
Non-Monsoon


DEPENDIBILITY FLOW FROM JUNE TO MAY
SITE:ALTUMA RIVER:BRAHMANI
DISCHARGE IN CUMECS
120.000
100.000
80.000
60.000
40.000
20.000
0.000
99.606
77.016
59.166
50.262
43.970
42.769
36.103
30.266
29.238
17.174
16.428
15.191
10.766
10.284
3.188
June
July
August
September
October
November
December
January
February
March
April
May
75% Dep
50% Dep
25% Dep


MAXIMUM-MINIMUM DISCHARGE FROM JUNE TO MAY
SITE:ALTUMA RIVER:BRAHMANI
DISCHARGE IN CUMECS
250.000
200.000
150.000
100.000
50.000
0.000
193.806
152.705
118.127
114.787
51.176
43.751
19.865
18.492
12.312
8.538
7.986
6.448
5.545
3.887
2.341
2.044
1.255
0.929
0.919
June
July
August
September
October
November
December
January
February
March
April
May
Maximum
Minimum

WATER QUQLITY DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**TALCHER**	**Code**	:	**EB000N5**
State	:	Orissa	District		Angul
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmani
Tributary	:	Brahmani	Sub Tributary	:	
Sub-Sub Tributary	:		Local River	:	Brahmani
Division	:	E.E., Bhubaneswar	Sub-Division	:	Rourkela
Drainage Area	:	29750 Sq. Km.	Bank	:	Left
Latitude	:	20°57'00"	Longitude	:	85°15'00"
		Opening Date	Closing Date		
Gauge	:	16.08.1985			
Discharge	:	16.08.1985	31.05.1996		
Sediment	:	16.08.1985	31.05.1996		
Water Quality	:	16.08.1985			

Water Quality Datasheet for the period : 2015-2016

Station Name : TALCHER (EB000N5) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water Analysis** | **Sub-Division : Rourkela**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	230	159	118	239	383	1038	306	308	1130	306	238	156
4	EC_GEN (µmho/cm)	180	152	115	242	391	1034	291	304	1137	303	240	153
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)	7.5	7.3	7.3	7.6	7.5	7.5	7.6	7.6	8.2	7.8	7.7	7.9
7	pH_GEN (pH units)	7.6	7.4	7.5	7.4	7.4	7.7	7.5	7.5	8.2	7.9	7.9	8.0
8	Temp (deg C)	30.0	29.5	29.0	29.5	30.0	29.0	25.2	21.0	20.6	26.1	28.0	30.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.4	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	51	56	74	46	42	46	55	60	88	51	55	23
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	21	20	19	18	18	19	19	21	21	24	24	26
5	Cl (mg/L)	9.4	10.6	13.2	11.3	11.3	15.1	11.3	17.0	15.1	15.1	34.0	47.2
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2	0.0	0.0	0.0
7	F (mg/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
8	Fe (mg/L)	0.3	0.3	0.4	0.6	0.6	0.5	0.6	0.2	0.6	0.3	0.4	0.4
9	HCO3 (mg/L)	62	69	90	56	51	56	68	73	62	62	68	28
10	K (mg/L)	1.5	2.3	2.1	2.1	1.3	1.4	1.8	2.0	7.9	13.0	1.0	1.3
11	Mg (mg/L)	11.7	10.1	7.8	5.8	9.7	11.7	8.8	8.8	8.8	10.7	11.7	19.4
12	Na (mg/L)	5.0	4.0	3.9	3.9	5.3	5.4	5.8	6.2	18.9	19.0	6.0	6.3
13	NO2+NO3 (mg N/L)	0.88	0.81	1.25	1.04	1.26	1.15	0.98	0.95	0.94	1.05	1.15	1.09
14	NO2-N (mgN/L)	0.03	0.00	0.00	0.03	0.00	0.00	0.03	0.00	0.03	0.00	0.00	0.00
15	NO3-N (mgN/L)	0.85	0.81	1.25	1.01	1.26	1.15	0.95	0.95	0.91	1.05	1.15	1.09
16	P-Tot (mgP/L)	0.001	0.002	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	5.0	5.0	6.0	6.0	6.0	5.0	5.0	8.0	5.0	6.0	5.0	6.0
18	SO4 (mg/L)	5.3	8.2	11.4	9.7	11.3	11.9	14.4	13.0	14.4	26.9	14.8	7.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.4	0.8	1.8	1.0	1.0	0.6	1.2	2.2	2.8	1.2	0.6	1.0
2	DO (mg/L)	6.4	6.0	7.4	6.2	6.4	7.4	7.6	9.7	8.5	7.0	6.4	7.0
3	DO_SAT% (%)	84	78	96	80	84	96	91	109	94	86	81	92
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	52	50	48	44	44	48	48	52	52	60	60	64
2	HAR_Total (mgCaCO3/L)	101	92	81	68	85	97	85	89	89	105	109	145
3	Na% (%)	10	8	9	11	12	11	13	13	30	26	11	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	0.2	0.2	0.2	0.3	0.2	0.3	0.3	0.9	0.8	0.3	0.2
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : TALCHER (EB000N5) **Division : E.E., Bhubaneswar**

Local River : Brahmani **Sub-Division : Rourkela**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	1130	118	384
3	EC_GEN (µmho/cm)	12	1137	115	379
4	pH_FLD (pH units)	12	8.2	7.3	7.6
5	pH_GEN (pH units)	12	8.2	7.4	7.6
6	Temp (deg C)	12	30.0	20.6	27.3
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	18.4	0.0	1.5
2	ALK-TOT (mgCaCO3/L)	12	88	23	54
3	B (mg/L)	12	0.01	0.01	0.01
4	Ca (mg/L)	12	26	18	21
5	Cl (mg/L)	12	47.2	9.4	17.5
6	CO3 (mg/L)	12	22.2	0.0	1.8
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.2	0.4
9	HCO3 (mg/L)	12	90	28	62
10	K (mg/L)	12	13.0	1.0	3.1
11	Mg (mg/L)	12	19.4	5.8	10.4
12	Na (mg/L)	12	19.0	3.9	7.5
13	NO2+NO3 (mg N/L)	12	1.26	0.81	1.05
14	NO2-N (mgN/L)	12	0.03	0.00	0.01
15	NO3-N (mgN/L)	12	1.26	0.81	1.04
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	8.0	5.0	5.7
18	SO4 (mg/L)	12	26.9	5.3	12.4
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.8	0.4	1.2
2	DO (mg/L)	12	9.7	6.0	7.1
3	DO_SAT% (%)	12	109	78	89
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	64	44	52
2	HAR_Total (mgCaCO3/L)	12	145	68	95
3	Na% (%)	12	30	8	13
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.9	0.2	0.3
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : TALCHER (EB000N5) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Flood Jun - Oct																				
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	124	136	114	151	112	129	156	124	126	160	108	144	110	131	226	123	138	116	136	191	117
3	EC_GEN (µmho/cm)	123	138	114	152	109	126	151	124	126	160	108	144	110	131	216	122	138	115	136	186	114
4	pH_FLD (pH units)	7.7	7.8	7.5	7.8	7.7	7.9	7.9	7.6	7.7	7.8	8.2	7.6	7.6	7.9	7.4	7.7	7.5	7.6	7.8	7.8	8.0
5	pH_GEN (pH units)	7.7	7.8	7.5	7.9	7.8	7.9	7.9	7.6	7.7	7.8	8.2	7.6	7.6	7.9	7.4	7.7	7.6	7.6	7.9	7.8	8.0
6	Temp (deg C)	29.5	30.2	29.9	24.5	28.9	29.2	30.2	29.2	28.4	27.4	28.0	29.6	28.9	27.7	29.6	27.3	25.9	23.0	24.9	23.6	24.8
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0	0.0	0.0	0.0	0.0	3.7	0.0		0.0	0.0						0.0
2	ALK-TOT (mgCaCO3/L)						80	86	36	32	44	43	46		34	54						87
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	11	13	12	16	12	13	16	12	11	16	47	21	15	47	19	13	14	13	11	18	15
5	Cl (mg/L)	9.7	10.1	8.5	16.7	9.4	10.5	12.6	10.6	9.7	12.6	17.0	14.7	13.4	17.0	11.2	10.2	10.2	8.7	8.7	15.6	8.8
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.06	0.05	0.02	0.27	0.02	0.02	0.02	0.06	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.02	0.37	0.00	0.00
8	Fe (mg/L)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	1.9	0.0	0.4	0.4	0.1	0.2	0.2	0.1	0.1	0.2
9	HCO3 (mg/L)	44	50	45	68	43	64	62	44	39	55	43	62	66	43	66	46	44	49	43	87	48
10	K (mg/L)	1.6	1.6	1.5	1.8	1.7	8.2	1.8	1.3	1.6	1.9	1.6	1.8	1.6	1.6	1.9	1.7	1.6	1.6	1.5	2.0	1.6
11	Mg (mg/L)	2.9	3.3	2.1	5.3	2.0	3.2	4.6	3.9	5.1	4.7	3.5	6.8	4.2	3.5	9.0	2.9	2.7	2.8	3.6	7.3	2.2
12	Na (mg/L)	6.4	6.7	6.0	10.6	6.1	6.6	7.8	7.6	5.9	7.7	3.4	4.5	9.6	3.4	4.4	6.4	6.4	6.5	5.6	10.7	5.9
13	NO2+NO3 (mg N/L)	0.36	0.48	0.34	1.63	0.34	1.14	0.39	0.39	0.27	0.57	0.41	0.71	1.11	1.45	1.05	1.35	1.25	0.54	0.56	0.40	0.60
14	NO2-N (mgN/L)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.02
15	NO3-N (mgN/L)	0.36	0.48	0.34	1.63	0.34	1.14	0.39	0.39	0.27	0.57	0.34	0.71	1.11	1.45	1.04	1.35	1.25	0.54	0.56	0.39	0.57
16	o-PO4-P (mg P/L)		0.000		0.000	0.000	0.000	0.000		0.000							0.000			0.000	0.000	0.000
17	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	SiO2 (mg/L)	8.5	22.4	9.2	18.1	27.4	11.5	13.3	8.3	6.8	6.9	10.4	12.8	10.9	5.2	5.6	6.1	10.5	9.3	22.1	22.8	18.8
19	SO4 (mg/L)	1.7	2.8	2.2	5.1	3.1	1.9	4.8	10.6	12.8	10.3	11.6	55.3	10.5	16.2	9.2	2.0	2.5	2.1	7.0	2.4	4.8
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.5	0.6	0.7	0.5	0.7	0.7	0.9	1.0	1.1	1.2	1.0	0.9	0.2	0.7	1.0	0.6	0.9	0.5	1.6	0.6	0.6
2	DO (mg/L)	7.3	7.3	6.8	7.5	7.2	7.1	7.3	7.1	7.4	7.3	7.1	7.2	7.4	6.5	6.4	7.8	7.6	8.2	8.0	8.2	7.7
3	DO_SAT% (%)	95	97	89	90	93	92	97	93	96	92	90	95	96	82	84	97	93	95	97	96	92
4	FCol-MPN (MPN/100mL)						93	13	27	12	250		30									111
5	Tcol-MPN (MPN/100mL)						118	21	34	20	625		25									112
	TRACE & TOXIC																					
1	Al (mg/L)																0.11					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	27	32	30	39	30	33	41	30	28	41	117	51	38	117	48	32	35	32	27	45	37
2	HAR_Total (mgCaCO3/L)	39	45	39	61	38	47	60	47	49	60	132	80	55	132	85	44	46	43	43	75	46
3	Na% (%)	27	24	25	28	25	21	22	27	21	21	9	12	27	9	10	24	23	24	22	21	21
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	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
5	SAR (-)	0.5	0.4	0.4	0.6	0.4	0.4	0.4	0.5	0.4	0.4	0.2	0.2	0.6	0.2	0.2	0.4	0.4	0.4	0.4	0.5	0.4
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

Station Name : TALCHER (EB000N5) | **Division : E.E., Bhubaneswar**

Local River : Brahmani | **River Water** | **Sub-Division : Rourkela**

S.No	Parameters	Winter Nov - Feb									Summer Mar - May											
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	99	158	130	152	108	128	113	159	696	135	136	122	139	135	136	143	178	115	267	123	137
3	EC_GEN (µmho/cm)	93	158	148	152	108	128	113	163	692	129	136	123	137	130	125	140	178	115	267	123	137
4	pH_FLD (pH units)	8.0	7.8	7.7	7.7	7.7	7.4	7.9	7.9	7.7	7.9	7.9	7.8	7.7	7.6	8.1	8.0	8.0	7.9	8.3	7.5	7.7
5	pH_GEN (pH units)	8.0	7.8	7.7	7.7	7.7	7.4	7.9	7.9	7.7	7.9	7.9	7.9	7.9	7.7	8.0	8.1	8.0	7.9	8.3	7.5	7.7
6	Temp (deg C)	24.4	24.1	24.3	23.8	26.3	23.1	24.1	20.9	24.0	29.0	26.3	23.9	26.7	28.2	29.0	26.8	28.8	27.7	28.3	30.0	26.3
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	4.6						0.0	0.0	0.0	0.0	8.8	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	41	44	37	38	45	72		60	62						75	41	44	35	79	48	76
3	B (mg/L)	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
4	Ca (mg/L)	11	17	10	12	16	18	14	36	20	14	16	14	8	15	14	13	17	10	24	14	21
5	Cl (mg/L)	9.0	12.7	11.2	12.3	22.2	12.3	11.6	21.9	14.6	10.4	11.6	8.4	11.0	9.8	9.3	12.0	17.5	9.9	20.7	11.9	24.1
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.1	0.0	0.0
7	F (mg/L)	0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.00	0.34	0.00	0.00	0.01	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.1	0.2	0.1	0.1	0.0	1.5	0.0	0.3	0.4	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	0.1	0.0	1.9
9	HCO3 (mg/L)	35	53	44	57	54	68	74	42	65	46	49	53	34	52	46	51	58	43	62	58	73
10	K (mg/L)	1.5	1.5	1.5	1.8	1.4	1.5	1.3	1.5	3.3	1.6	1.7	1.5	2.0	1.7	1.6	1.2	1.6	1.3	4.9	1.5	1.5
11	Mg (mg/L)	1.7	4.9	5.3	6.1	3.4	10.0	3.5	5.3	9.5	2.6	2.9	2.7	3.8	2.0	2.4	4.8	5.5	4.9	9.1	2.9	4.5
12	Na (mg/L)	5.5	7.3	7.1	7.4	3.5	5.2	9.6	3.4	9.1	6.6	7.2	5.7	7.5	6.3	6.4	7.3	10.5	5.5	13.6	3.9	4.7
13	NO2+NO3 (mg N/L)	0.58	0.51	0.26	0.36	0.43	0.71	1.06	0.82	1.01	0.85	1.94	0.50	0.43	0.78	0.63	1.62	0.38	0.21	0.64	0.40	0.71
14	NO2-N (mgN/L)	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.07	0.00
15	NO3-N (mgN/L)	0.58	0.51	0.26	0.36	0.36	0.71	1.15	0.81	0.99	0.84	1.94	0.50	0.43	0.78	0.62	1.62	0.38	0.21	0.64	0.33	0.71
16	o-PO4-P (mg P/L)	0.000		0.000											0.000	0.000	0.010		0.000			
17	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.050	0.001	0.001	0.001	0.010	0.001
18	SiO2 (mg/L)	9.0	7.9	7.4	4.6	11.5	13.3	9.7	5.0	5.8	12.3	14.8	10.2	21.8	18.4	20.0	9.0	8.2	7.7	3.8	10.3	13.7
19	SO4 (mg/L)	4.7	11.4	9.6	9.4	9.4	9.3	11.7	10.0	13.4	4.0	2.0	1.2	7.3	3.1	3.2	3.9	12.2	7.1	24.8	2.6	3.7
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.8	0.9	1.1	1.0	1.4	0.3	0.5	0.9	1.7	0.6	0.6	0.6	0.8	0.7	0.8	0.9	1.1	1.4	1.3	1.1	1.1
2	DO (mg/L)	7.8	8.0	8.1	8.1	7.5	8.1	8.4	9.9	8.3	7.6	7.0	7.8	7.1	7.6	7.3	7.0	5.2	7.7	7.5	7.2	6.9
3	DO_SAT% (%)	93	95	97	95	93	95	100	110	98	98	86	92	88	97	94	87	68	97	97	95	86
4	FCol-MPN (MPN/100mL)		5	18	64		22									14	4	5	11	19		16
5	Tcol-MPN (MPN/100mL)		6	22	885		23									146	5	8	12	20		24
	TRACE & TOXIC																					
1	Al (mg/L)										0.03											
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	28	42	26	30	40	45	35	91	50	36	40	34	21	36	34	33	41	24	59	35	53
2	HAR_Total (mgCaCO3/L)	35	62	48	55	54	87	50	113	90	47	52	45	36	45	44	53	64	44	97	47	72
3	Na% (%)	24	20	24	22	12	13	29	8	16	23	23	21	30	23	23	22	26	21	21	15	13
4	RSC (-)	0.0	0.0	0.0	0.0	0.2	0.1	0.2	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 (-)	0.4	0.4	0.5	0.4	0.2	0.3	0.6	0.2	0.4	0.4	0.4	0.4	0.6	0.4	0.4	0.4	0.6	0.4	0.6	0.2	0.2
	PESTICIDES																					

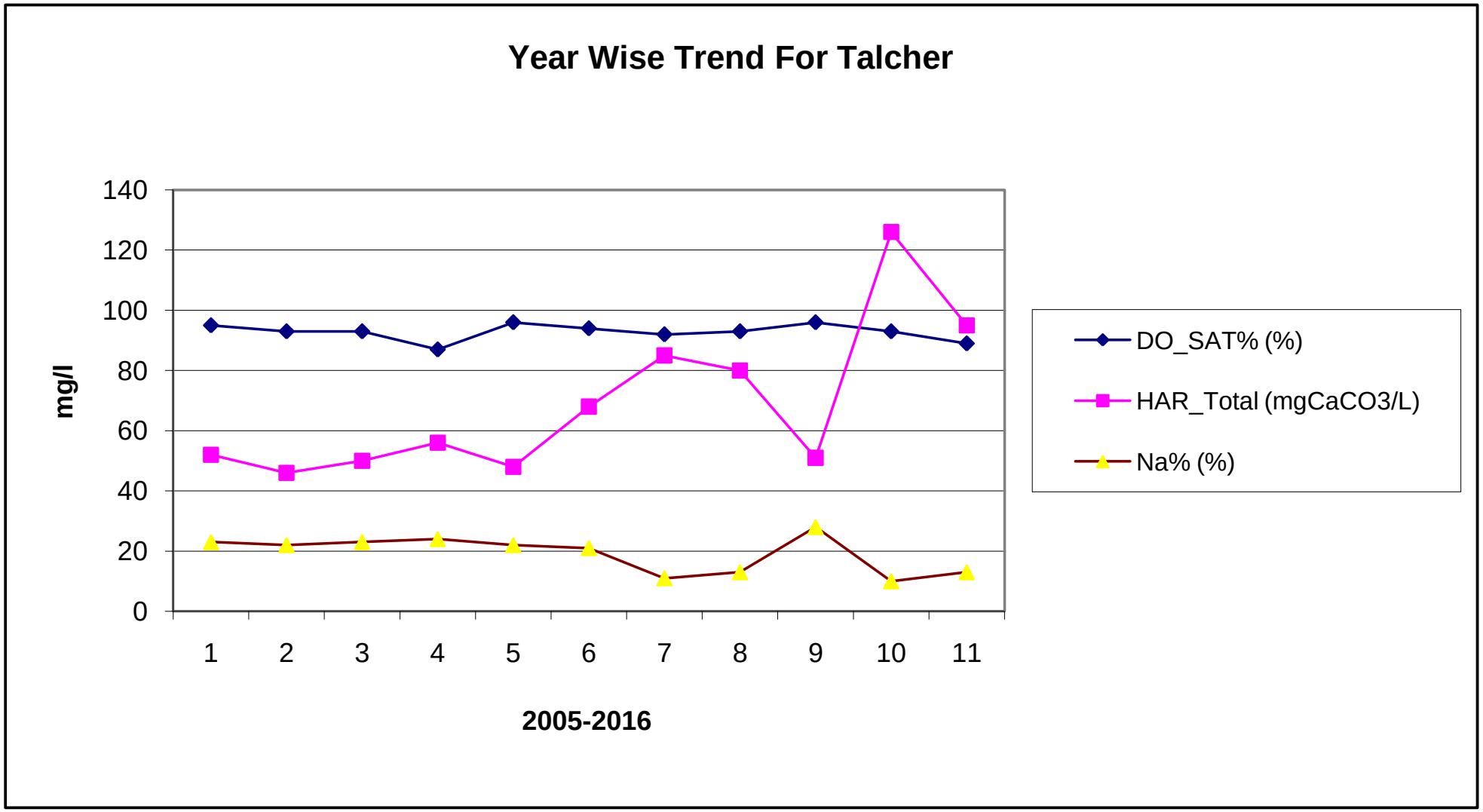
Water Quality Seasonal Average for the period: 2001-2016

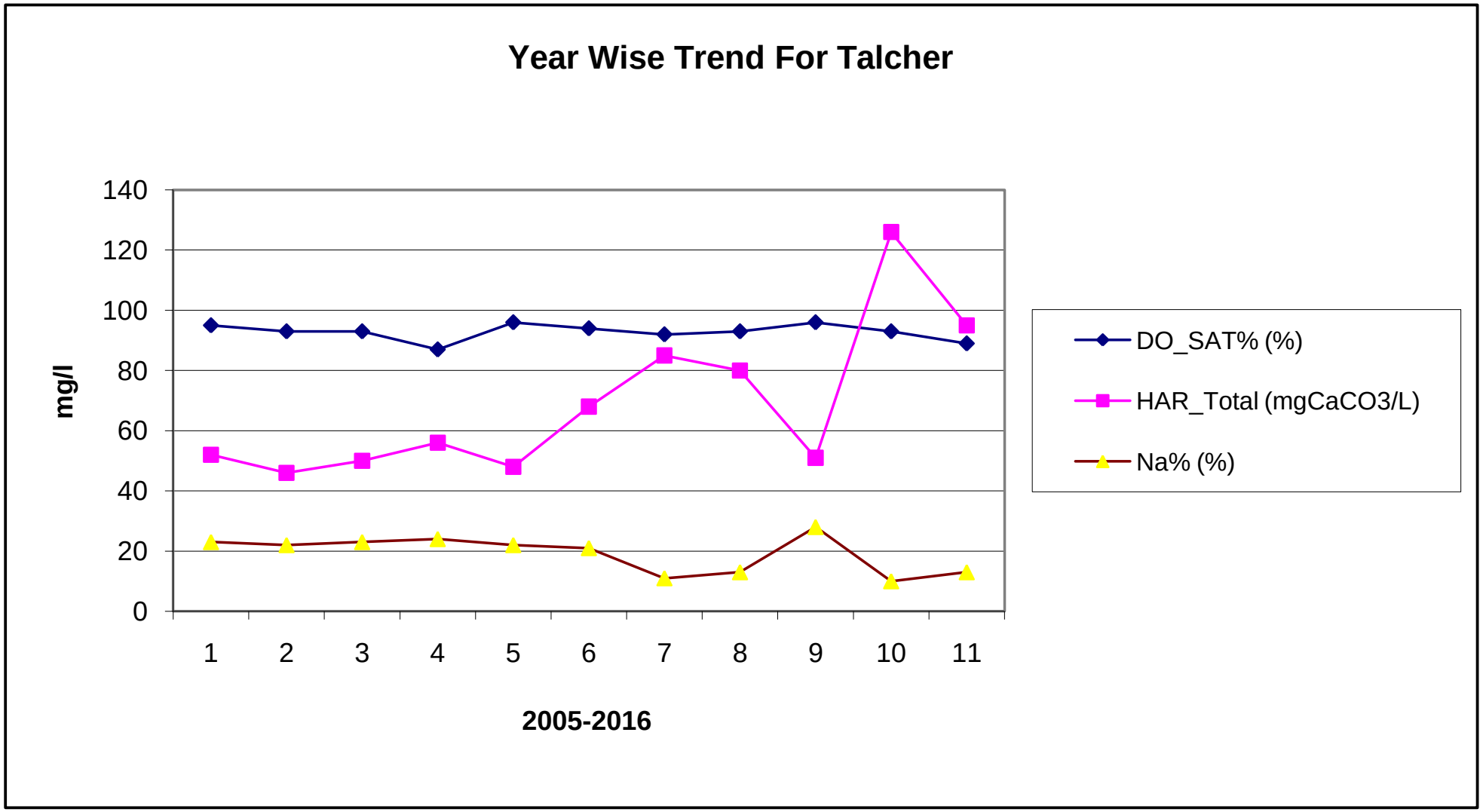
Station Name : TALCHER (EB000N5) **Division : E.E., Bhubaneswar**

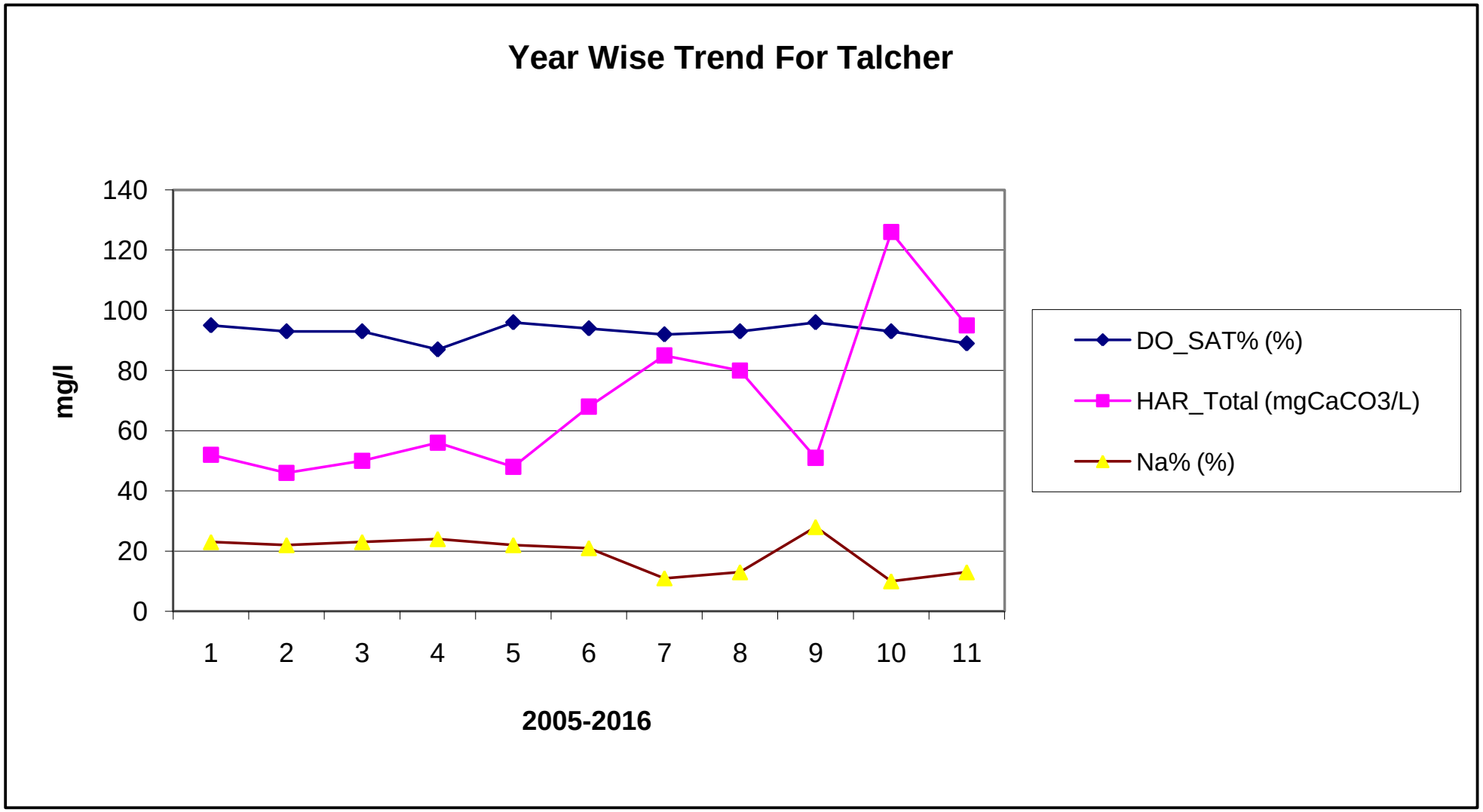
Local River : Brahmani **River Water** **Sub-Division : Rourkela**

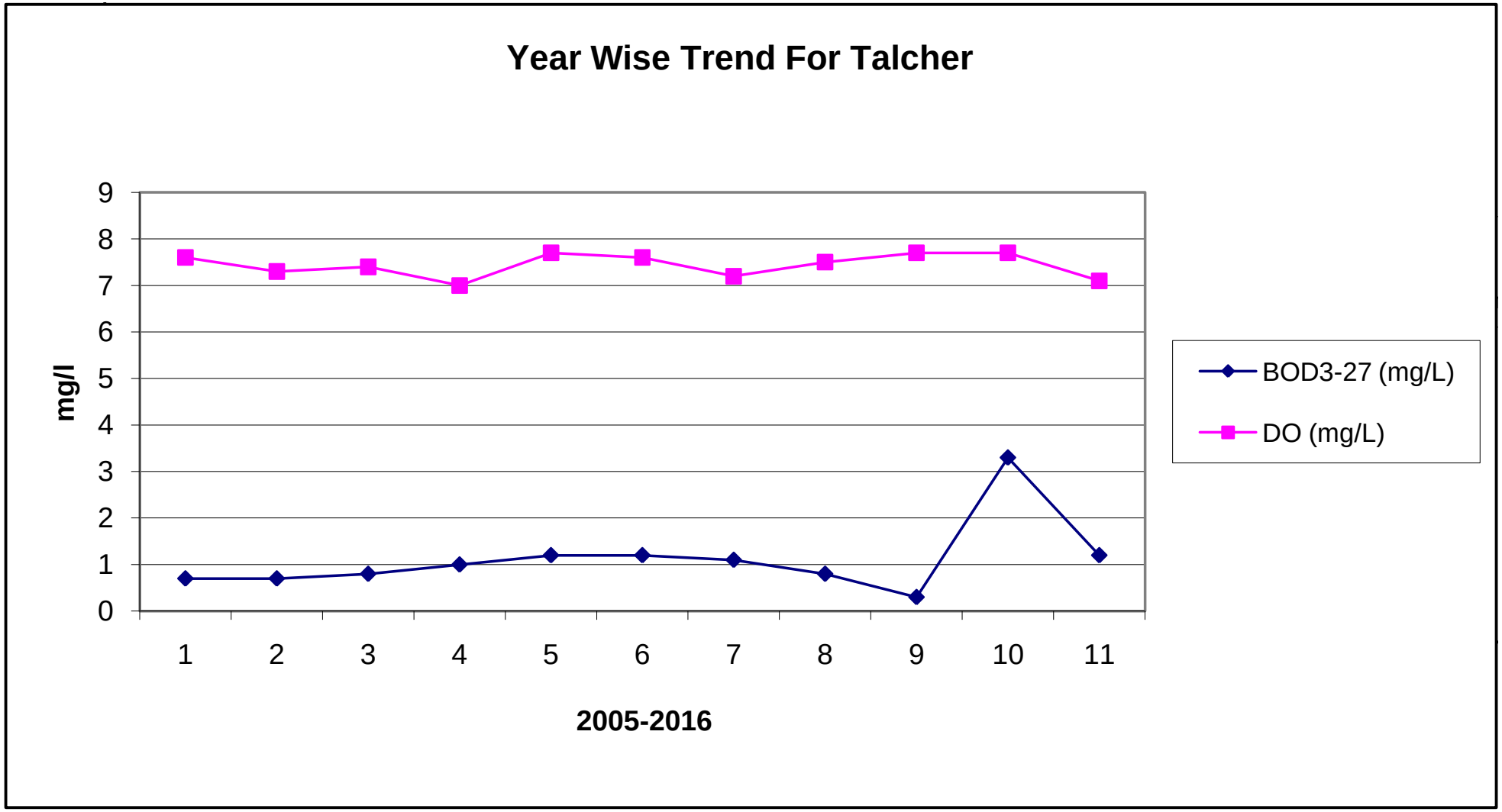
S.No	Parameters			
		2014	2015	2016
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	114	173	233
3	EC_GEN (µmho/cm)	114	173	232
4	pH_FLD (pH units)	7.7	7.8	7.8
5	pH_GEN (pH units)	7.8	7.8	7.9
6	Temp (deg C)	27.0	29.2	28.0
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	62	40	43
3	B (mg/L)	0.00	0.00	0.01
4	Ca (mg/L)	13	23	25
5	Cl (mg/L)	12.5	17.7	32.1
6	CO3 (mg/L)	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.0	0.3	0.4
9	HCO3 (mg/L)	76	52	53
10	K (mg/L)	1.4	2.0	5.1
11	Mg (mg/L)	3.7	18.1	13.9
12	Na (mg/L)	8.7	9.1	10.4
13	NO2+NO3 (mg N/L)	1.19	1.11	1.10
14	NO2-N (mgN/L)	0.00	0.00	0.00
15	NO3-N (mgN/L)	1.19	1.11	1.10
16	o-PO4-P (mg P/L)			
17	P-Tot (mgP/L)	0.001	0.001	0.010
18	SiO2 (mg/L)	10.7	4.3	5.7
19	SO4 (mg/L)	10.8	9.0	16.2
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.3	1.1	0.9
2	DO (mg/L)	7.4	6.8	6.7
3	DO_SAT% (%)	93	89	86
4	FCol-MPN (MPN/100mL)			
5	Tcol-MPN (MPN/100mL)			
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	32	58	61
2	HAR_Total (mgCaCO3/L)	48	134	119
3	Na% (%)	28	14	15
4	RSC (-)	0.3	0.0	0.0
5	SAR (-)	0.6	0.3	0.4
	PESTICIDES			

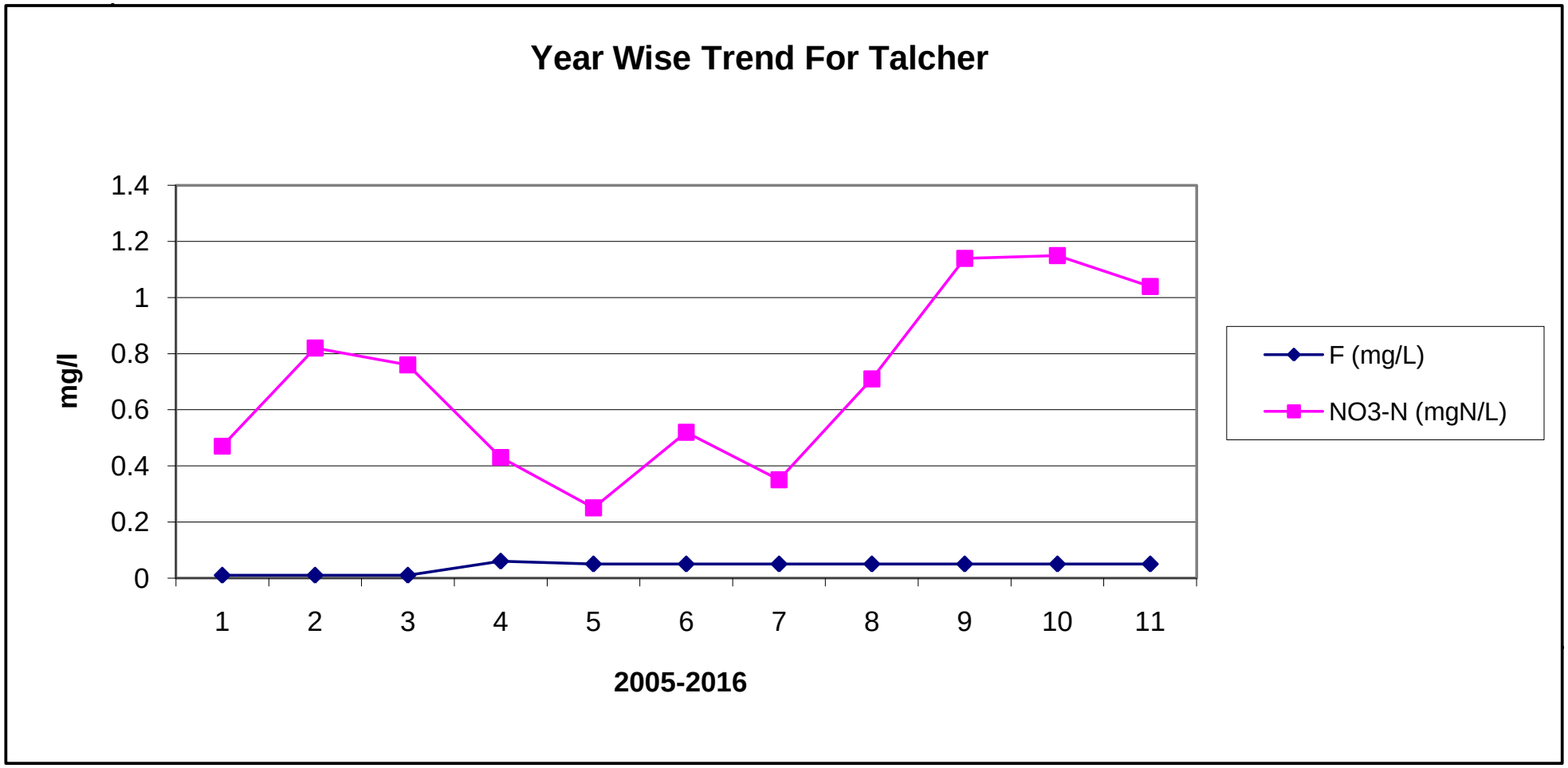
TREND ANALYSIS

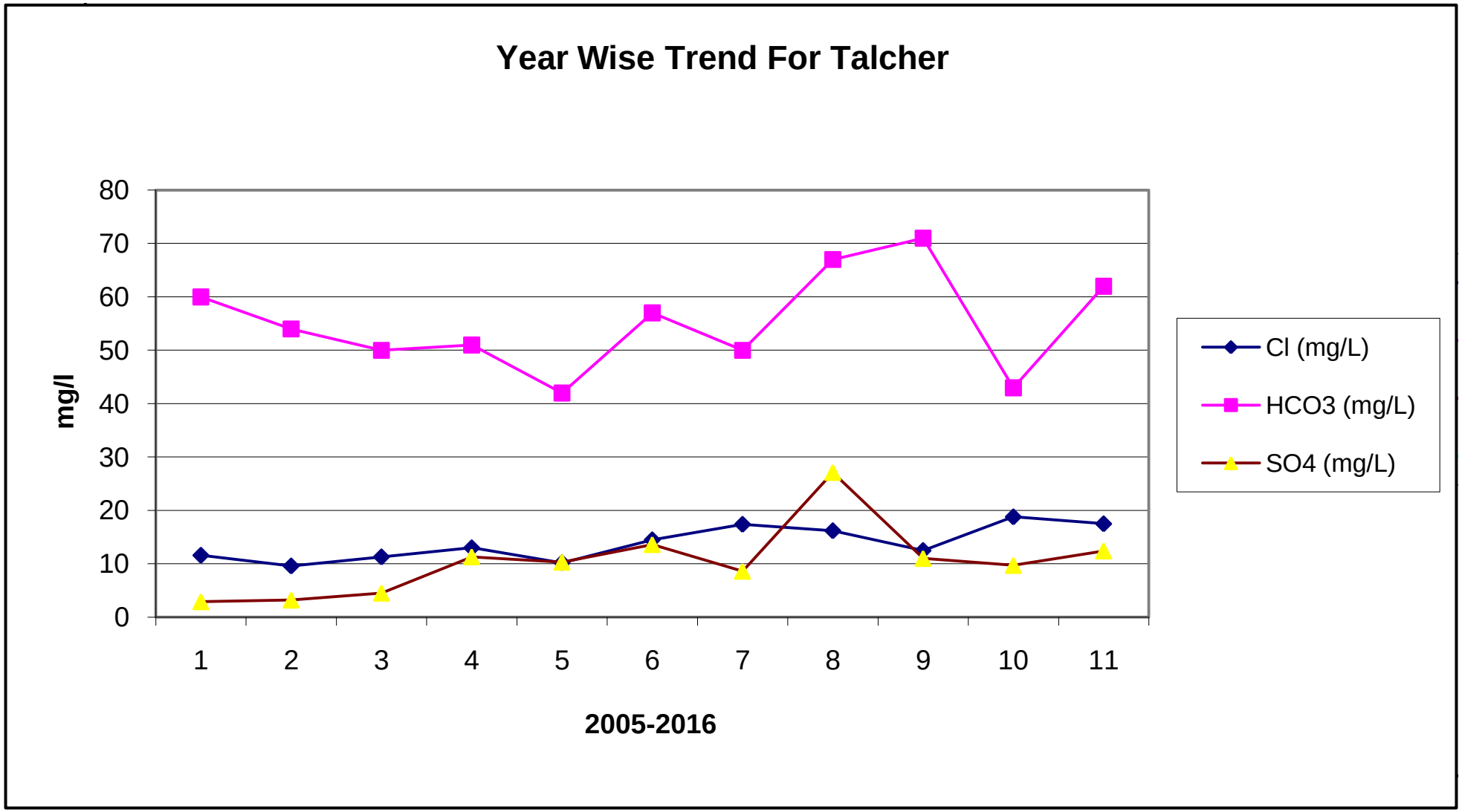

Year Wise Trend For Talcher
140
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)

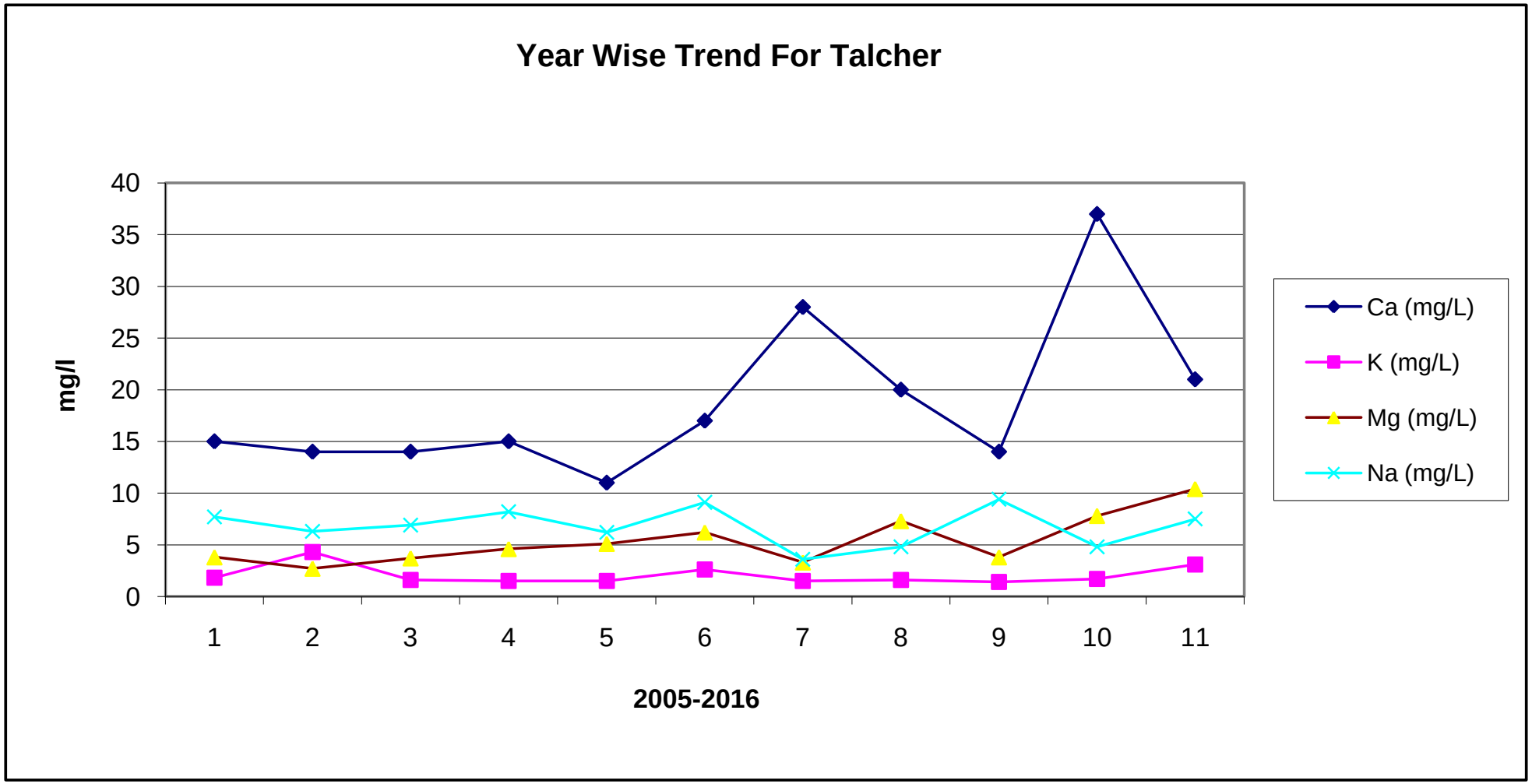

Year Wise Trend For Talcher
140
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Talcher
140
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Talcher
mg/l
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Talcher
mg/l
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Talcher
80
70
60
50
40
30
20
10
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Talcher
mg/l
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

WATER QUALITY DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**NANDIRA**	**Code**	:	**NANDIRA**
State	:	Orissa	District		Angul
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmni
Tributary	:	Nandiranala	Sub Tributary	:	
Sub-Sub Tributary	:		Local River	:	Nandiranala
Division	:	E.E., Bhubaneswar	Sub-Division	:	Sambalpur
Drainage Area	:	Sq. Km.	Bank	:	Right
Latitude	:	°""	Longitude	:	°""
		Opening Date	Closing Date		
Gauge	:				
Discharge	:				
Sediment	:				
Water Quality	:	01.11.1990			

Water Quality Datasheet for the period : 2015-2016

Station Name : NANDIRA (NANDIRA) | **Division : E.E., Bhubaneswar**

Local River : Nandiranala | **River Water Analysis** | **Sub-Division : Sambalpur**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	180	184	413	432	1082	355	350	1032	1103	680	315	410
4	EC_GEN (µmho/cm)	177	186	417	440	1093	347	346	1034	1100	685	319	414
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)	7.6	7.8	7.5	7.4	7.9	7.9	7.7	7.6	8.1	7.9	7.3	7.6
7	pH_GEN (pH units)	7.5	7.5	7.6	7.4	7.9	7.6	7.6	7.7	8.2	7.9	7.9	7.8
8	Temp (deg C)	29.0	29.0	28.5	29.0	28.5	28.0	22.0	20.0	20.5	25.9	27.8	30.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	69	60	60	65	60	65	60	55	88	139	65	51
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	30	29	27	26	16	18	18	19	21	59	26	29
5	Cl (mg/L)	11.3	15.1	11.3	9.4	17.0	17.0	17.0	15.1	18.9	32.1	26.4	11.3
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	0.0
7	F (mg/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
8	Fe (mg/L)	0.5	0.4	0.6	0.3	0.6	0.3	0.6	0.4	0.3	0.4	0.2	0.4
9	HCO3 (mg/L)	85	73	73	79	73	79	73	68	73	169	79	62
10	K (mg/L)	1.8	5.8	1.9	1.9	5.9	6.9	2.9	1.8	6.7	4.2	1.7	1.9
11	Mg (mg/L)	14.6	13.6	11.7	10.7	7.8	8.8	8.8	7.8	9.7	15.6	13.6	11.7
12	Na (mg/L)	9.6	22.6	5.3	5.3	24.0	25.0	18.0	20.0	24.1	24.6	10.8	10.6
13	NO2+NO3 (mg N/L)	1.13	1.12	1.13	0.97	1.19	0.97	1.12	1.19	1.25	0.87	0.83	0.84
14	NO2-N (mgN/L)	0.04	0.07	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
15	NO3-N (mgN/L)	1.09	1.05	1.13	0.95	1.19	0.95	1.12	1.19	1.25	0.87	0.83	0.84
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0
18	SO4 (mg/L)	26.1	22.5	22.6	21.4	22.0	22.9	21.8	23.2	22.0	9.2	22.7	8.7
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.6	0.8	0.8	1.0	0.8	1.0	2.4	2.0	2.6	0.6	0.2	1.0
2	DO (mg/L)	5.8	6.8	7.6	6.6	6.8	7.0	8.1	9.3	8.3	6.4	6.2	4.6
3	DO_SAT% (%)	75	88	97	85	86	89	93	103	92	77	77	60
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	76	72	68	64	40	44	44	48	52	148	64	72
2	HAR_Total (mgCaCO3/L)	137	129	117	109	72	81	81	81	93	213	121	121
3	Na% (%)	13	27	9	9	40	38	32	35	34	20	16	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
5	SAR (-)	0.4	0.9	0.2	0.2	1.2	1.2	0.9	1.0	1.1	0.7	0.4	0.4
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : NANDIRA (NANDIRA) **Division : E.E., Bhubaneswar**

Local River : Nandiranala **Sub-Division : Sambalpur**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	1103	180	545
3	EC_GEN (µmho/cm)	12	1100	177	547
4	pH_FLD (pH units)	12	8.1	7.3	7.7
5	pH_GEN (pH units)	12	8.2	7.4	7.7
6	Temp (deg C)	12	30.0	20.0	26.5
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	13.8	0.0	1.2
2	ALK-TOT (mgCaCO3/L)	12	139	51	70
3	B (mg/L)	12	0.01	0.01	0.01
4	Ca (mg/L)	12	59	16	26
5	Cl (mg/L)	12	32.1	9.4	16.8
6	CO3 (mg/L)	12	16.6	0.0	1.4
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.2	0.4
9	HCO3 (mg/L)	12	169	62	82
10	K (mg/L)	12	6.9	1.7	3.6
11	Mg (mg/L)	12	15.6	7.8	11.2
12	Na (mg/L)	12	25.0	5.3	16.7
13	NO2+NO3 (mg N/L)	12	1.25	0.83	1.05
14	NO2-N (mgN/L)	12	0.07	0.00	0.01
15	NO3-N (mgN/L)	12	1.25	0.83	1.04
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	6.0	5.0	5.8
18	SO4 (mg/L)	12	26.1	8.7	20.4
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.6	0.2	1.1
2	DO (mg/L)	12	9.3	4.6	6.9
3	DO_SAT% (%)	12	103	60	85
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	148	40	66
2	HAR_Total (mgCaCO3/L)	12	213	72	113
3	Na% (%)	12	40	9	24
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	1.2	0.2	0.7
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : NANDIRA (NANDIRA) | **Division : E.E., Bhubaneswar**

Local River : Nandiranala | **River Water** | **Sub-Division : Sambalpur**

S.No	Parameters	Flood																			
		Jun - Oct																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	274	264	298	408	305	290	336	264	214	309	246	251	262	274	458	323	316	333	306	243	230
3	EC_GEN (µmho/cm)	274	270	295	408	302	277	333	264	214	309	246	251	262	274	463	323	321	341	306	239	226
4	pH_FLD (pH units)	7.8	7.7	7.9	8.0	7.8	7.9	8.0	7.8	7.8	8.1	8.0	7.6	7.7	7.8	7.6	7.8	7.9	7.8	8.0	7.9	8.1
5	pH_GEN (pH units)	7.8	7.5	7.7	8.0	7.8	8.0	8.0	7.8	7.8	8.1	8.0	7.6	7.7	7.8	7.5	7.8	7.8	7.7	8.0	7.9	8.1
6	Temp (deg C)	30.4	29.3	30.7	26.0	29.1	29.6	29.9	29.3	29.2	28.4	29.6	30.4	29.0	27.2	28.8	27.0	24.9	25.7	25.4	22.7	23.2
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0	0.1	0.0	0.0	3.2	4.6	0.0		0.0	0.0						0.0
2	ALK-TOT (mgCaCO3/L)						113	76	48	26	68	71	42		69	63						71
3	B (mg/L)	0.37	0.65	0.55	0.13	0.53	0.00	0.17	0.21	0.15	0.15	0.01	0.00	0.00	0.00	0.01	0.43	0.54	0.56	0.15	0.53	0.00
4	Ca (mg/L)	36	35	33	31	33	31	34	23	17	29	22	20	20	25	26	33	38	32	32	25	23
5	Cl (mg/L)	16.1	17.8	16.4	25.7	21.6	17.4	23.3	20.0	18.3	17.9	28.3	18.9	20.6	28.3	12.8	23.7	17.1	21.3	23.3	22.3	16.6
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	3.8	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.25	0.16	0.42	0.82	0.47	0.54	0.66	0.05	0.20	0.48	0.05	0.17	0.05	0.05	0.05	0.40	0.24	0.32	0.35	0.11	0.19
8	Fe (mg/L)	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.0	1.3	0.1	0.3	0.5	0.2	0.2	0.1	0.1	0.1	0.3
9	HCO3 (mg/L)	54	82	77	100	96	62	94	59	31	75	76	50	97	84	77	89	70	92	89	78	68
10	K (mg/L)	2.1	2.2	2.0	5.9	2.1	2.9	2.6	5.8	2.3	3.0	2.4	2.4	1.6	2.4	3.5	2.3	2.8	2.2	2.8	3.7	3.3
11	Mg (mg/L)	4.3	7.0	6.0	9.7	9.4	7.8	10.1	8.6	8.6	12.5	9.9	9.3	4.8	9.9	11.7	9.5	9.7	10.0	9.2	6.0	7.1
12	Na (mg/L)	10.4	12.2	11.3	17.2	14.9	11.5	15.5	13.4	10.9	12.2	8.4	9.0	10.7	8.4	13.4	17.0	11.0	13.9	15.3	14.8	11.1
13	NO2+NO3 (mg N/L)	10.07	10.67	7.27	10.01	9.01	11.29	9.05	6.58	5.43	7.80	0.41	0.96	1.88	2.03	1.11	10.60	12.14	10.48	8.76	6.33	7.82
14	NO2-N (mgN/L)	0.00	0.01	0.00	0.02	0.25	1.26	0.00	0.00	0.00	0.01	0.07	0.00	0.00	0.01	0.02	0.00	0.72	0.00	0.00	0.65	0.92
15	NO3-N (mgN/L)	10.07	10.66	7.27	9.98	8.75	10.03	9.05	6.58	5.43	7.79	0.34	0.96	1.88	2.02	1.08	10.60	11.42	10.48	8.76	5.68	6.90
16	o-PO4-P (mg P/L)				0.103	0.064	0.044	0.058	0.110	0.060	0.062									0.008	0.043	0.018
17	P-Tot (mgP/L)	0.113	0.106	0.066	0.001	0.064	0.045	0.280	0.003	0.010	0.001	0.010	0.001	0.001	0.001	0.001	0.147	0.114	0.037	0.001	0.032	0.019
18	SiO2 (mg/L)	11.1	15.0	14.0	32.6	26.7	13.9	10.1	9.2	8.5	6.6	11.6	11.4	8.0	5.4	6.0	16.1	15.3	14.4	31.9	22.2	18.2
19	SO4 (mg/L)	20.3	22.8	16.0	9.3	11.4	19.6	20.5	20.1	27.3	27.8	29.3	34.9	24.6	31.9	22.9	25.6	27.6	10.2	17.9	7.4	7.6
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.5	2.0	1.8	1.4	1.9	1.9	1.9	2.2	2.1	2.5	2.1	0.9	0.6	0.6	0.8	1.8	1.6	1.7	1.4	2.0	1.9
2	DO (mg/L)	6.4	5.7	6.5	6.5	6.7	6.6	6.6	6.9	7.2	7.2	6.8	6.6	6.9	6.4	6.7	6.5	7.7	7.3	8.0	7.9	7.5
3	DO_SAT% (%)	86	75	87	80	87	86	87	90	94	92	89	87	90	80	86	82	92	89	96	91	88
4	FCol-MPN (MPN/100mL)						170	60	57	12	335		17									705
5	Tcol-MPN (MPN/100mL)						920	65	70	31	1250		26									1270
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	89	88	83	77	82	76	86	58	42	71	55	50	49	61	64	83	95	80	80	61	58
2	HAR_Total (mgCaCO3/L)	108	117	108	117	121	109	128	93	77	123	97	89	69	103	113	123	136	122	118	86	87
3	Na% (%)	17	18	18	25	23	19	21	24	24	19	16	17	25	15	20	23	15	20	21	27	20
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	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.5	0.5	0.7	0.6	0.5	0.6	0.6	0.5	0.5	0.4	0.4	0.6	0.4	0.6	0.7	0.4	0.6	0.6	0.7	0.5
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

Station Name : NANDIRA (NANDIRA) | **Division : E.E., Bhubaneswar**

Local River : Nandiranala | **River Water** | **Sub-Division : Sambalpur**

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	216	229	217	290	230	363	272	330	710	337	500	347	138	204	239	351	293	378	450	273	338
3	EC_GEN (µmho/cm)	213	229	217	290	230	363	272	330	707	337	498	352	138	201	236	353	293	378	450	273	338
4	pH_FLD (pH units)	7.9	7.9	7.8	7.6	7.7	7.4	8.0	8.0	7.8	8.1	8.0	8.0	7.9	7.5	8.1	8.1	8.3	7.9	8.2	7.6	7.5
5	pH_GEN (pH units)	8.0	7.9	7.8	7.6	7.7	7.4	8.0	8.0	7.7	8.1	8.0	7.8	7.9	7.5	8.1	8.1	8.3	7.9	8.2	7.6	7.5
6	Temp (deg C)	23.8	23.9	25.3	25.0	26.9	23.3	23.9	20.0	22.6	30.2	24.8	27.3	26.1	27.4	28.5	28.5	30.2	28.7	29.3	31.0	27.5
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5						0.0	0.0	0.0	0.0	19.5	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	43	46	45	69	72	113	84	64	67						94	87	53	90	120	71	81
3	B (mg/L)	0.19	0.15	0.17	0.15	0.01	0.00	0.00	0.00	0.01	0.49	0.37	0.61	0.01	0.14	0.00	0.19	0.11	0.18	0.15	0.01	0.00
4	Ca (mg/L)	20	21	19	28	27	34	23	20	19	38	35	56	12	22	25	36	26	32	43	28	26
5	Cl (mg/L)	17.8	18.6	15.5	17.9	16.5	27.8	20.9	17.4	17.0	26.7	22.4	21.2	12.7	18.7	15.2	28.1	22.0	26.0	19.5	17.6	32.9
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	1.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	23.5	0.0	0.0
7	F (mg/L)	0.44	0.21	0.30	0.56	0.05	0.06	0.05	0.05	0.05	0.94	3.14	3.69	0.83	0.36	0.16	0.38	0.14	0.63	0.61	0.05	0.06
8	Fe (mg/L)	0.1	0.2	0.1	0.1	0.0	1.5	0.3	0.3	0.4	0.1	0.2	0.1	0.3	0.1	0.2	0.0	0.1	0.1	0.1	0.0	1.3
9	HCO3 (mg/L)	53	57	54	79	88	117	100	77	73	87	102	167	45	60	59	106	64	109	98	86	92
10	K (mg/L)	2.1	1.6	1.5	2.9	2.0	4.2	1.8	2.0	4.6	3.0	3.7	2.4	3.4	1.9	2.0	3.6	3.0	3.9	4.7	2.6	3.0
11	Mg (mg/L)	6.3	8.0	9.2	10.0	6.1	13.1	5.7	9.2	8.8	7.8	10.4	18.0	3.2	5.0	8.2	9.3	9.4	17.2	18.5	4.9	9.4
12	Na (mg/L)	12.3	13.8	9.8	12.3	10.8	19.5	12.0	10.7	21.8	17.0	15.9	13.9	9.8	13.1	10.8	19.5	16.0	15.6	14.1	10.3	17.0
13	NO2+NO3 (mg N/L)	6.33	6.27	4.06	5.25	0.44	0.84	2.89	1.24	1.13	11.07	9.46	8.30	4.39	5.62	7.51	7.31	2.67	4.49	3.56	0.41	0.81
14	NO2-N (mgN/L)	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.02	0.00	0.12	0.00	0.00	0.00	0.07	0.00
15	NO3-N (mgN/L)	6.33	6.27	4.06	5.25	0.37	0.84	2.89	1.23	1.13	11.07	9.46	8.30	4.28	5.60	7.51	7.19	2.67	4.49	3.56	0.34	0.81
16	o-PO4-P (mg P/L)	0.000	0.121	0.065											0.005	0.026		0.141	0.020			
17	P-Tot (mgP/L)	0.001	0.002	0.010	0.001	0.010	0.001	0.001	0.001	0.010	0.110	0.052	0.001	0.001	0.006	0.021	0.050	0.002	0.010	0.001	0.010	0.001
18	SiO2 (mg/L)	9.0	8.6	7.9	3.2	11.8	11.5	8.8	5.9	6.0	11.2	15.2	18.5	32.6	20.1	19.3	9.1	9.1	8.7	2.2	11.7	12.0
19	SO4 (mg/L)	15.0	15.2	25.4	34.5	27.8	43.9	27.4	27.9	22.5	20.0	21.8	40.3	4.7	10.7	20.5	22.0	42.4	36.4	60.0	31.8	55.6
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	2.0	2.0	2.6	2.4	2.8	0.7	0.7	1.2	2.0	2.5	1.7	2.1	2.5	2.0	2.2	2.3	2.6	2.6	4.8	2.5	0.8
2	DO (mg/L)	7.4	7.7	7.8	7.6	7.5	7.8	7.8	9.3	8.2	6.0	6.9	5.9	7.2	6.9	7.0	6.2	6.6	6.9	7.2	6.7	4.6
3	DO_SAT% (%)	88	91	95	92	94	92	92	102	94	79	83	73	88	87	89	80	87	89	94	91	58
4	FCol-MPN (MPN/100mL)		13	17	104		30									114	80	7	12	16		22
5	Tcol-MPN (MPN/100mL)		17	21	940		25									855	90	11	15	19		31
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	51	53	48	71	68	86	56	51	47	95	88	140	29	54	62	89	64	79	107	71	65
2	HAR_Total (mgCaCO3/L)	77	87	87	113	94	141	80	89	84	127	131	215	46	75	96	128	103	151	184	91	104
3	Na% (%)	25	26	20	19	20	22	25	20	35	23	20	12	31	26	20	25	26	19	14	19	27
4	RSC (-)	0.0	0.0	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	0.0	0.0	0.2	0.1
5	SAR (-)	0.6	0.7	0.5	0.5	0.5	0.7	0.6	0.5	1.0	0.7	0.6	0.4	0.7	0.6	0.5	0.8	0.7	0.5	0.4	0.5	0.8
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

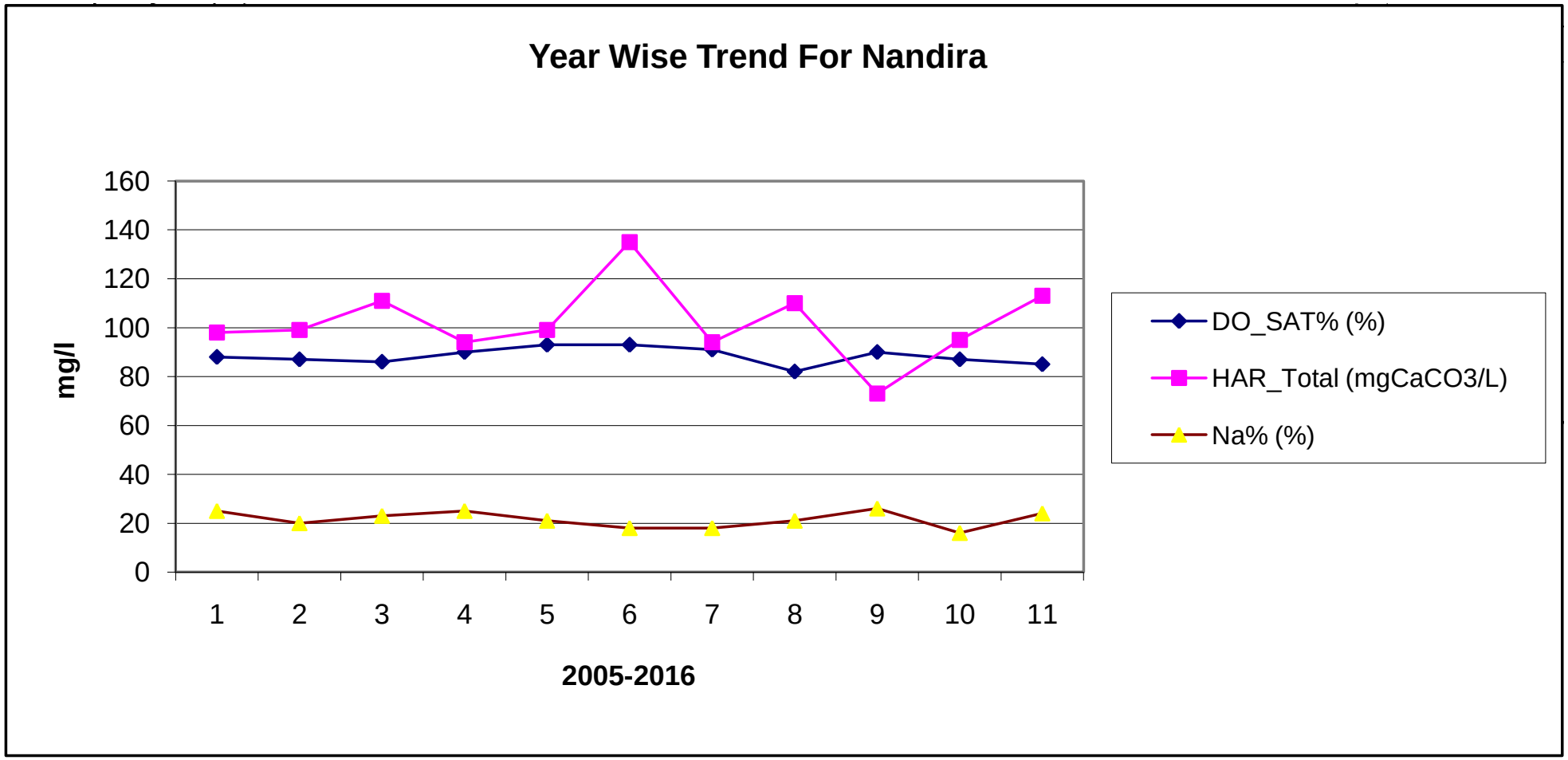
Station Name : NANDIRA (NANDIRA) **Division : E.E., Bhubaneswar**

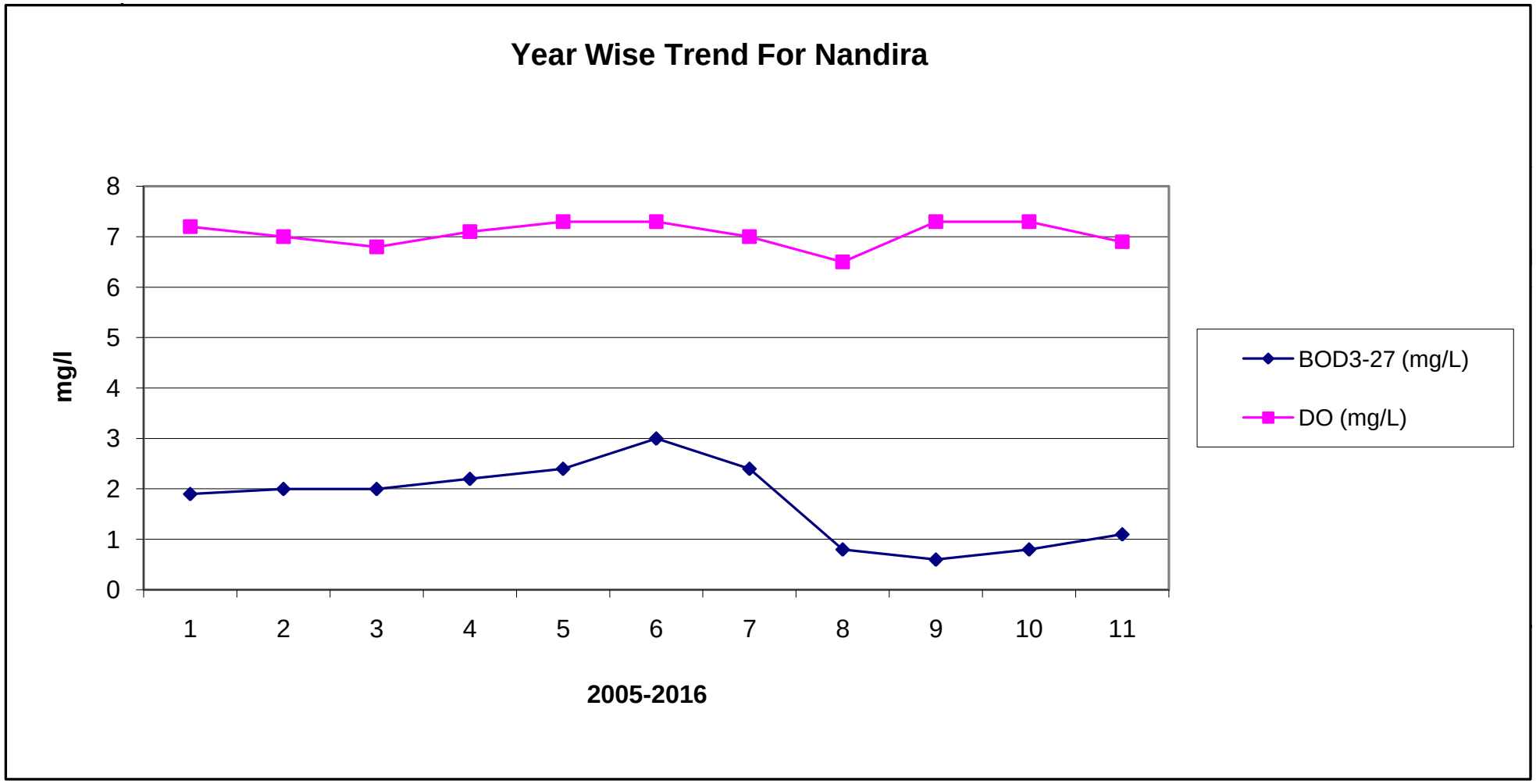
Local River : Nandiranala **Sub-Division : Sambalpur**

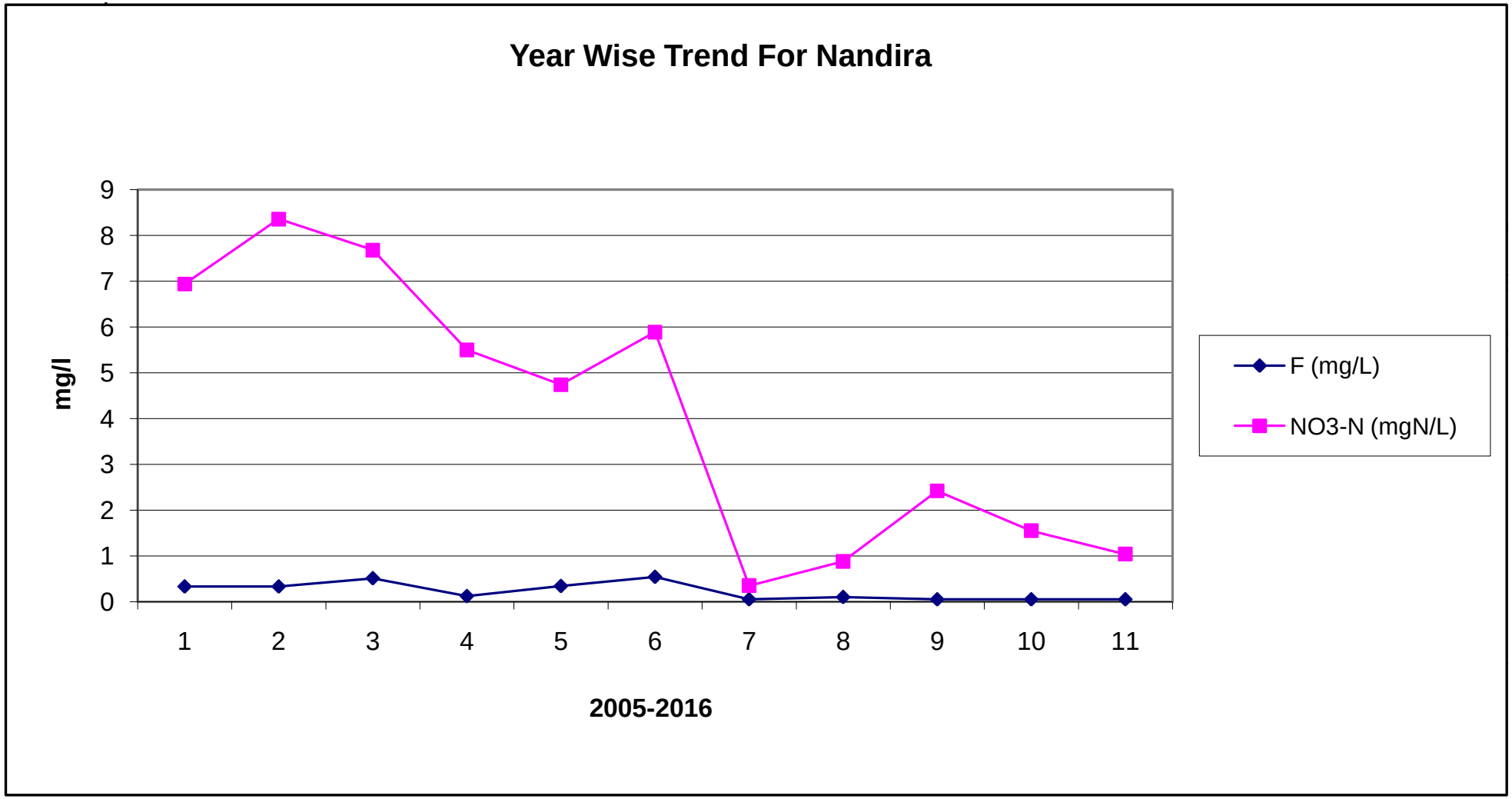
River Water

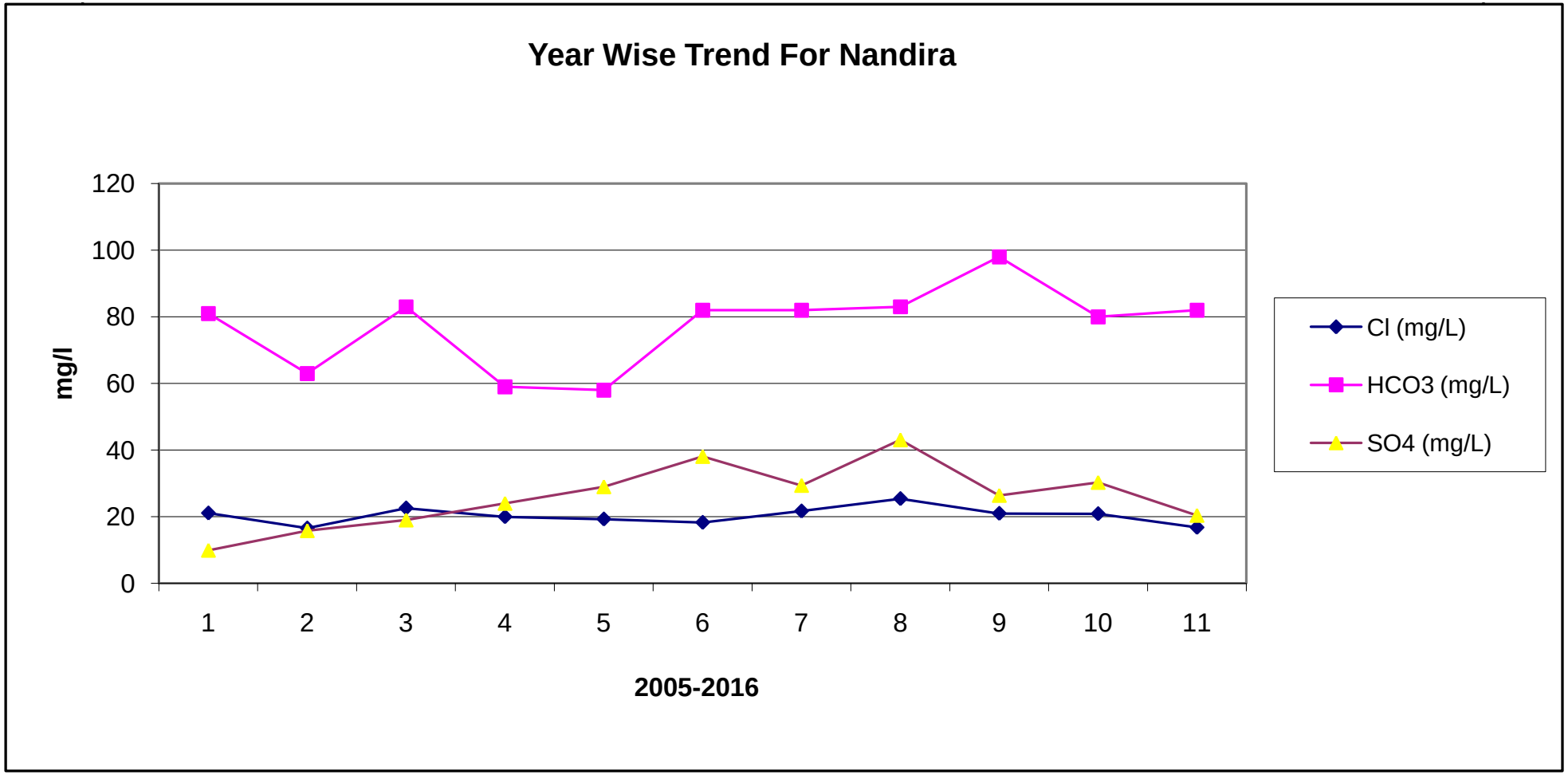
S.No	Parameters			
		2014	2015	2016
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	120	184	468
3	EC_GEN (µmho/cm)	120	184	473
4	pH_FLD (pH units)	7.6	7.8	7.6
5	pH_GEN (pH units)	7.6	7.8	7.8
6	Temp (deg C)	26.3	28.2	27.9
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)		0.0	0.0
2	ALK-TOT (mgCaCO3/L)		62	85
3	B (mg/L)	0.00	0.00	0.01
4	Ca (mg/L)	21	25	38
5	Cl (mg/L)	21.7	13.3	23.3
6	CO3 (mg/L)	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.1	0.4	0.3
9	HCO3 (mg/L)	97	78	103
10	K (mg/L)	2.1	1.9	2.6
11	Mg (mg/L)	4.0	6.8	13.6
12	Na (mg/L)	12.9	7.2	15.3
13	NO2+NO3 (mg N/L)	2.72	1.19	0.85
14	NO2-N (mgN/L)	0.00	0.01	0.00
15	NO3-N (mgN/L)	2.72	1.18	0.85
16	o-PO4-P (mg P/L)			
17	P-Tot (mgP/L)	0.001	0.001	0.010
18	SiO2 (mg/L)	7.9	6.0	5.0
19	SO4 (mg/L)	28.1	30.7	13.5
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.3	0.5	0.6
2	DO (mg/L)	7.0	6.1	5.7
3	DO_SAT% (%)	86	78	72
4	FCol-MPN (MPN/100mL)			
5	Tcol-MPN (MPN/100mL)			
	TRACE & TOXIC			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	53	63	95
2	HAR_Total (mgCaCO3/L)	70	91	152
3	Na% (%)	28	14	17
4	RSC (-)	0.3	0.0	0.0
5	SAR (-)	0.7	0.3	0.5
	PESTICIDES			

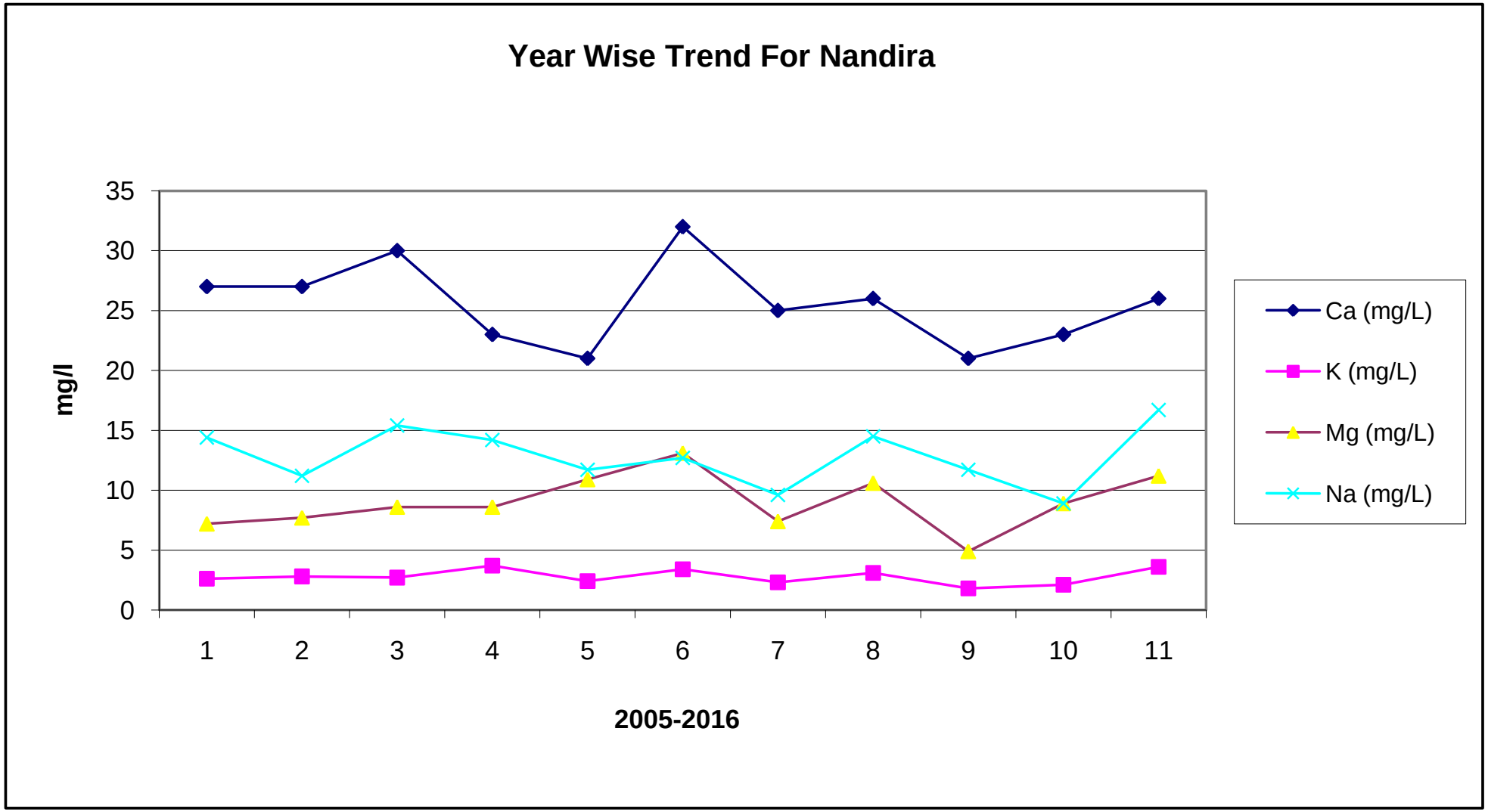
TREND ANALYSIS


Year Wise Trend For Nandira
160
140
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Nandira
mg/l
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Nandira
mg/l
9
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Nandira
120
100
80
60
40
20
0
mg/l
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Nandira
mg/l
35
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

WATER QUALITY DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**KAMALANGA**	**Code**	:	**KAMALANGA**
State	:	Orissa	District		Angul
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmni
Tributary	:		Sub Tributary	:	
Sub-Sub Tributary	:		Local River	:	Brahmni
Division	:	E.E., Bhubaneswar	Sub-Division	:	Sambalpur
Drainage Area	:	Sq. Km.	Bank	:	Left
Latitude	:	°'"	Longitude	:	°'"
		Opening Date	Closing Date		
Gauge	:				
Discharge	:				
Sediment	:				
Water Quality	:	01.11.1990			

Water Quality Datasheet for the period : 2015-2016

Station Name : KAMALANGA (KAMALANGA) | **Division : E.E., Bhubaneswar**

Local River : Brahmni | **River Water Analysis** | **Sub-Division : Sambalpur**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	204	168	429	409	910	1028	360	789	1110	711	320	154
4	EC_GEN (µmho/cm)	185	179	432	421	916	1023	366	790	1115	705	324	158
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	7.8	7.9	7.5	7.2	7.4	7.1	7.6	8.1	7.9	7.7	7.9
7	pH_GEN (pH units)	7.6	7.5	7.6	7.4	7.8	7.7	6.8	7.7	8.2	7.9	7.7	8.1
8	Temp (deg C)	29.0	29.0	28.5	29.0	28.5	27.5	25.0	20.0	20.4	25.9	27.8	29.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	0.0	0.0	9.2
2	ALK-TOT (mgCaCO3/L)	92	83	92	55	51	55	60	51	92	79	65	74
3	B (mg/L)	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	26	27	26	22	18	19	19	21	21	63	24	29
5	Cl (mg/L)	7.5	13.2	17.0	15.1	15.1	17.0	17.0	13.2	22.6	24.5	26.4	7.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.6	0.0	0.0	11.1
7	F (mg/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
8	Fe (mg/L)	0.4	0.7	0.4	0.4	0.4	0.6	0.2	0.3	0.4	0.4	0.5	0.3
9	HCO3 (mg/L)	113	101	113	68	62	68	73	62	79	96	79	68
10	K (mg/L)	1.8	2.0	1.8	1.9	4.7	4.8	2.4	2.0	1.7	8.0	1.6	1.8
11	Mg (mg/L)	11.7	9.7	8.8	8.8	7.8	8.8	8.8	8.8	9.7	23.3	12.6	9.7
12	Na (mg/L)	9.7	5.9	4.3	4.6	22.5	26.1	13.6	15.1	7.5	7.6	7.6	7.9
13	NO2+NO3 (mg N/L)	1.12	0.87	0.88	0.81	1.12	1.08	0.88	0.71	1.13	1.09	0.99	0.95
14	NO2-N (mgN/L)	0.03	0.03	0.03	0.00	0.00	0.03	0.07	0.01	0.00	0.00	0.00	0.00
15	NO3-N (mgN/L)	1.09	0.84	0.85	0.81	1.12	1.05	0.81	0.70	1.13	1.09	0.99	0.95
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	7.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0	5.0
18	SO4 (mg/L)	29.4	23.2	23.9	20.8	23.3	23.7	35.6	32.1	36.0	14.4	36.4	8.5
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.6	0.4	1.0	1.2	0.6	0.8	1.4	2.2	0.6	1.8	0.8	0.8
2	DO (mg/L)	6.0	5.6	7.2	7.0	7.0	7.2	7.6	9.3	4.6	5.6	5.6	7.0
3	DO_SAT% (%)	77	72	91	90	89	90	91	103	50	67	70	90
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	64	68	64	56	44	48	48	52	52	156	60	72
2	HAR_Total (mgCaCO3/L)	113	109	101	93	77	85	85	89	93	254	113	113
3	Na% (%)	16	10	8	10	37	39	25	27	15	6	13	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	0.2	0.2	0.2	1.1	1.2	0.6	0.7	0.3	0.2	0.3	0.3
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : KAMALANGA (KAMALANGA) **Division : E.E., Bhubaneswar**

Local River : Brahmni **Sub-Division : Sambalpur**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	1110	154	549
3	EC_GEN (µmho/cm)	12	1115	158	551
4	pH_FLD (pH units)	12	8.1	7.1	7.6
5	pH_GEN (pH units)	12	8.2	6.8	7.7
6	Temp (deg C)	12	29.0	20.0	26.6
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	13.8	0.0	1.9
2	ALK-TOT (mgCaCO3/L)	12	92	51	71
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	63	18	26
5	Cl (mg/L)	12	26.4	7.5	16.3
6	CO3 (mg/L)	12	16.6	0.0	2.3
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.7	0.2	0.4
9	HCO3 (mg/L)	12	113	62	82
10	K (mg/L)	12	8.0	1.6	2.9
11	Mg (mg/L)	12	23.3	7.8	10.7
12	Na (mg/L)	12	26.1	4.3	11
13	NO2+NO3 (mg N/L)	12	1.13	0.71	0.97
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.13	0.70	0.96
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	7.0	5.0	5.5
18	SO4 (mg/L)	12	36.4	8.5	25.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.2	0.4	1
2	DO (mg/L)	12	9.3	4.6	6.6
3	DO_SAT% (%)	12	103	50	82
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	156	44	65
2	HAR_Total (mgCaCO3/L)	12	254	77	110
3	Na% (%)	12	39	6	18
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	1.2	0.2	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : KAMALANGA (KAMALANGA) | **Division : E.E., Bhubaneswar**

Local River : Brahmni | **River Water** | **Sub-Division : Sambalpur**

S.No	Parameters	Flood																			
		Jun - Oct																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	235	284	222	313	159	203	278	231	183	269	191	177	251	308	424	238	236	313	160	146	139
3	EC_GEN (µmho/cm)	235	285	228	312	155	198	276	231	183	269	191	177	251	308	427	238	244	318	159	141	135
4	pH_FLD (pH units)	7.8	8.0	7.7	8.0	7.8	7.9	8.0	7.7	7.8	8.1	8.1	7.6	7.6	7.9	7.6	7.8	7.8	7.7	8.0	7.9	8.0
5	pH_GEN (pH units)	7.8	7.9	7.5	8.0	7.9	8.0	8.0	7.7	7.8	8.0	8.1	7.6	7.6	7.9	7.6	7.8	7.6	7.5	8.0	8.0	8.0
6	Temp (deg C)	30.0	30.2	28.9	25.5	28.3	28.5	29.5	29.3	29.3	28.4	29.6	30.4	23.4	27.2	28.8	26.4	25.3	24.4	25.2	22.8	23.8
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0	0.0	0.0	0.0	3.2	4.6	0.0		0.0	0.0						0.0
2	ALK-TOT (mgCaCO3/L)						104	62	47	36	66	65	51		52	75						57
3	B (mg/L)	0.27	0.60	0.53	0.00	0.44	0.00	0.13	0.11	0.13	0.14	0.01	0.00	0.00	0.00	0.01	0.28	0.56	0.45	0.11	0.47	0.00
4	Ca (mg/L)	28	32	25	30	19	23	28	21	15	24	19	16	18	24	24	25	26	34	17	16	14
5	Cl (mg/L)	12.7	17.5	11.0	18.3	10.7	16.5	15.2	15.2	14.8	17.9	23.4	14.7	21.1	23.4	13.6	17.4	12.2	17.2	10.3	10.1	10.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.08	0.17	0.18	0.42	0.06	0.21	0.21	0.23	0.11	0.12	0.05	0.06	0.05	0.05	0.05	0.73	0.15	0.15	0.38	0.14	0.08
8	Fe (mg/L)	0.1	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.0	1.3	0.1	0.3	0.5	0.1	0.1	0.1	0.2	0.1	0.2
9	HCO3 (mg/L)	64	71	50	81	48	66	76	57	44	72	68	48	80	63	91	63	60	75	36	41	41
10	K (mg/L)	2.1	2.3	1.7	4.0	1.6	2.0	6.3	3.3	1.9	2.5	2.0	1.7	3.1	2.0	2.4	2.6	2.1	2.2	2.4	1.6	1.7
11	Mg (mg/L)	6.0	7.8	6.2	8.6	4.5	5.7	8.4	8.6	7.6	10.3	7.4	5.3	4.6	7.4	9.3	6.1	6.8	9.6	4.4	5.4	4.7
12	Na (mg/L)	9.1	12.4	7.8	12.7	6.3	11.5	11.0	10.7	8.2	12.3	5.6	5.0	13.1	5.6	9.4	11.5	8.8	12.7	6.6	6.7	7.4
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	9.15	9.57	7.41	7.61	3.64	6.15	7.94	4.18	3.30	5.15	0.41	2.59	2.87	1.54	0.96	5.99	9.01	11.39	5.97	4.80	3.14
15	NO2-N (mgN/L)	1.08	0.10	0.00	0.06	0.06	0.07	0.02	0.00	0.00	0.00	0.07	0.00	0.01	0.01	0.02	0.01	0.08	0.06	0.02	0.03	0.07
16	NO3-N (mgN/L)	8.07	9.47	7.41	7.55	3.58	6.08	7.93	4.18	3.30	5.15	0.34	2.59	2.86	1.54	0.94	5.98	8.93	11.33	5.95	4.76	3.08
17	o-PO4-P (mg P/L)				0.036	0.010	0.089	0.012	0.058	0.046										0.088	0.047	0.310
18	P-Tot (mgP/L)	0.081	0.026	0.061	0.001	0.011	0.062	0.015	0.002	0.008	0.001	0.010	0.001	0.001	0.001	0.001	0.034	0.044	0.064	0.001	0.044	0.055
19	SiO2 (mg/L)	13.5	15.8	13.4	25.2	12.8	15.1	9.7	8.8	8.0	8.0	10.2	12.4	8.5	8.5	6.0	11.3	16.7	18.4	24.7	16.7	20.6
20	SO4 (mg/L)	18.0	19.9	20.5	25.9	13.6	9.5	23.0	24.4	18.5	17.3	22.8	65.3	22.1	24.8	24.1	14.7	14.0	30.3	15.8	12.9	12.6
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.1	1.5	2.3	1.2	1.2	1.5	1.5	1.6	1.6	2.0	1.5	1.0	0.6	0.4	0.8	1.4	1.6	1.3	1.2	1.5	1.5
2	DO (mg/L)	6.6	6.6	5.5	6.7	7.0	7.0	7.1	7.2	7.3	7.4	7.1	6.7	7.0	6.1	6.5	6.7	7.4	7.9	8.1	8.0	7.9
3	DO_SAT% (%)	86	87	71	81	89	90	93	93	95	95	93	89	86	77	84	84	89	93	98	93	94
4	FCol-MPN (MPN/100mL)						60	80	26	15	82		17									550
5	Tcol-MPN (MPN/100mL)						165	90	29	28	155		22									660
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	71	80	64	75	47	59	70	52	38	59	46	39	44	59	59	63	64	85	44	41	35
2	HAR_Total (mgCaCO3/L)	96	112	90	112	66	82	105	88	70	102	77	61	63	90	98	88	92	125	70	64	55
3	Na% (%)	17	19	16	20	17	22	18	22	21	20	14	15	30	12	16	22	16	18	19	18	22
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	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.5	0.4	0.5	0.3	0.5	0.5	0.5	0.5	0.5	0.3	0.3	0.7	0.3	0.4	0.5	0.4	0.5	0.4	0.4	0.4
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

Station Name : KAMALANGA (KAMALANGA) | **Division : E.E., Bhubaneswar**

Local River : Brahmni | **River Water** | **Sub-Division : Sambalpur**

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	175	175	212	267	197	358	284	373	822	270	279	193	133	145	179	226	260	258	467	260	352
3	EC_GEN (µmho/cm)	170	175	212	267	197	358	284	373	824	270	288	200	131	140	175	225	260	258	467	260	352
4	pH_FLD (pH units)	8.1	7.9	7.8	7.6	7.7	7.5	8.1	8.0	7.5	8.1	8.0	8.1	7.8	7.6	8.2	8.1	7.9	7.9	8.2	7.6	7.6
5	pH_GEN (pH units)	8.1	8.0	7.8	7.6	7.7	7.5	8.1	8.0	7.6	8.1	7.7	7.9	7.8	7.7	8.2	7.5	7.7	7.9	8.2	7.6	7.6
6	Temp (deg C)	23.4	23.6	25.3	25.0	27.0	23.3	18.7	20.1	23.2	29.5	26.8	23.9	26.8	27.8	28.2	27.0	29.5	28.7	29.3	31.0	27.5
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	3.5						0.0		0.0	0.0	13.7	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	46	38	45	66	51	83		65	65						104		60	49	110	68	85
3	B (mg/L)	0.19	0.10	0.12	0.15	0.01	0.00	0.00	0.00	0.01	0.58	0.48	0.55	0.04	0.29	0.00	0.21	0.07	0.17	0.15	0.01	0.00
4	Ca (mg/L)	22	14	19	25	31	39	16	26	20	30	34	21	12	17	21	23	23	21	41	26	25
5	Cl (mg/L)	10.9	15.2	14.1	15.1	17.9	25.9	15.7	18.1	17.4	23.9	14.9	11.0	11.6	9.4	9.9	16.1	17.5	16.7	23.3	17.0	29.6
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5	0.0	0.0
7	F (mg/L)	0.17	0.23	0.15	0.07	0.05	0.06	0.05	0.05	0.05	0.51	0.13	0.11	0.40	0.08	0.09	0.11	0.23	0.16	0.13	0.05	0.05
8	Fe (mg/L)	0.1	0.1	0.1	0.1	0.0	1.3	0.1	0.2	0.4	0.2	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.0	1.1
9	HCO3 (mg/L)	56	47	55	81	62	106	85	79	70	70	86	55	33	43	64	85	73	59	100	83	113
10	K (mg/L)	1.4	1.5	1.4	2.6	1.8	3.8	2.2	1.7	2.7	2.6	2.2	1.8	2.3	1.6	1.6	1.6	1.9	2.7	4.9	2.4	3.4
11	Mg (mg/L)	4.1	7.0	8.7	10.0	7.8	16.5	4.3	5.6	9.0	6.8	6.8	6.3	3.2	4.9	6.1	6.8	10.4	11.7	21.1	8.1	10.0
12	Na (mg/L)	8.0	9.6	9.8	10.7	8.3	19.2	11.9	7.9	15.6	15.1	10.3	7.8	7.8	5.8	6.1	12.0	12.5	11.3	15.0	9.6	16.3
13	NH3-N (mg N/L)																0.05					
14	NO2+NO3 (mg N/L)	3.76	3.38	3.85	5.03	0.42	0.86	2.05	0.93	0.95	6.73	7.27	5.70	2.84	3.71	3.87	0.98	2.64	5.14	8.09	0.41	0.79
15	NO2-N (mgN/L)	0.10	0.00	0.04	0.00	0.07	0.00	0.00	0.02	0.03	0.02	0.05	0.08	0.06	0.04	0.02	0.06	0.00	0.06	0.00	0.07	0.00
16	NO3-N (mgN/L)	3.66	3.38	3.81	5.03	0.35	0.86	2.05	0.91	0.92	6.71	7.22	5.62	2.78	3.68	3.85	0.93	2.64	5.09	8.09	0.35	0.79
17	o-PO4-P (mg P/L)	0.013	0.062	0.078										0.041	0.055	0.017		0.069	0.147			
18	P-Tot (mgP/L)	0.031	0.003	0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.062	0.069	0.131	0.001	0.065	0.018	0.050	0.002	0.001	0.001	0.010	0.001
19	SiO2 (mg/L)	8.8	8.8	7.6	3.2	10.8	12.5	8.4	8.8	5.3	10.9	16.3	13.3	23.4	19.3	17.2	9.9	9.0	8.2	1.9	11.0	12.0
20	SO4 (mg/L)	13.0	10.9	21.3	28.2	28.5	40.7	22.6	24.1	31.9	20.2	19.6	17.0	10.0	14.1	11.5	16.6	27.5	34.2	52.9	29.3	49.7
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.9	1.6	1.9	1.8	2.3	0.3	0.7	0.7	1.2	2.0	1.7	1.5	1.7	1.7	1.5	1.6	1.4	1.8	2.1	1.9	1.2
2	DO (mg/L)	7.5	7.8	7.8	7.7	7.5	7.9	7.9	8.9	7.2	6.0	5.9	7.4	7.3	7.2	7.0	6.8	6.8	7.2	7.0	6.9	6.6
3	DO_SAT% (%)	88	91	95	93	94	93	96	97	84	79	73	87	91	91	90	86	89	93	92	93	83
4	FCol-MPN (MPN/100mL)		7	13	33		17									74	45	8	4	13		20
5	Tcol-MPN (MPN/100mL)		8	16	560		22									654	65	12	6	13		25
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	54	36	47	62	78	97	41	65	50	75	84	52	31	43	51	57	57	52	102	64	62
2	HAR_Total (mgCaCO3/L)	71	65	84	104	111	166	59	88	88	103	112	78	40	64	77	86	101	101	189	98	104
3	Na% (%)	21	24	20	18	16	20	30	16	26	23	16	18	26	16	15	24	22	19	14	17	25
4	RSC (-)	0.0	0.0	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	0.0	0.0	0.0	0.2
5	SAR (-)	0.4	0.5	0.5	0.5	0.4	0.6	0.7	0.4	0.7	0.6	0.4	0.4	0.5	0.3	0.3	0.6	0.6	0.5	0.5	0.4	0.7
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2001-2016

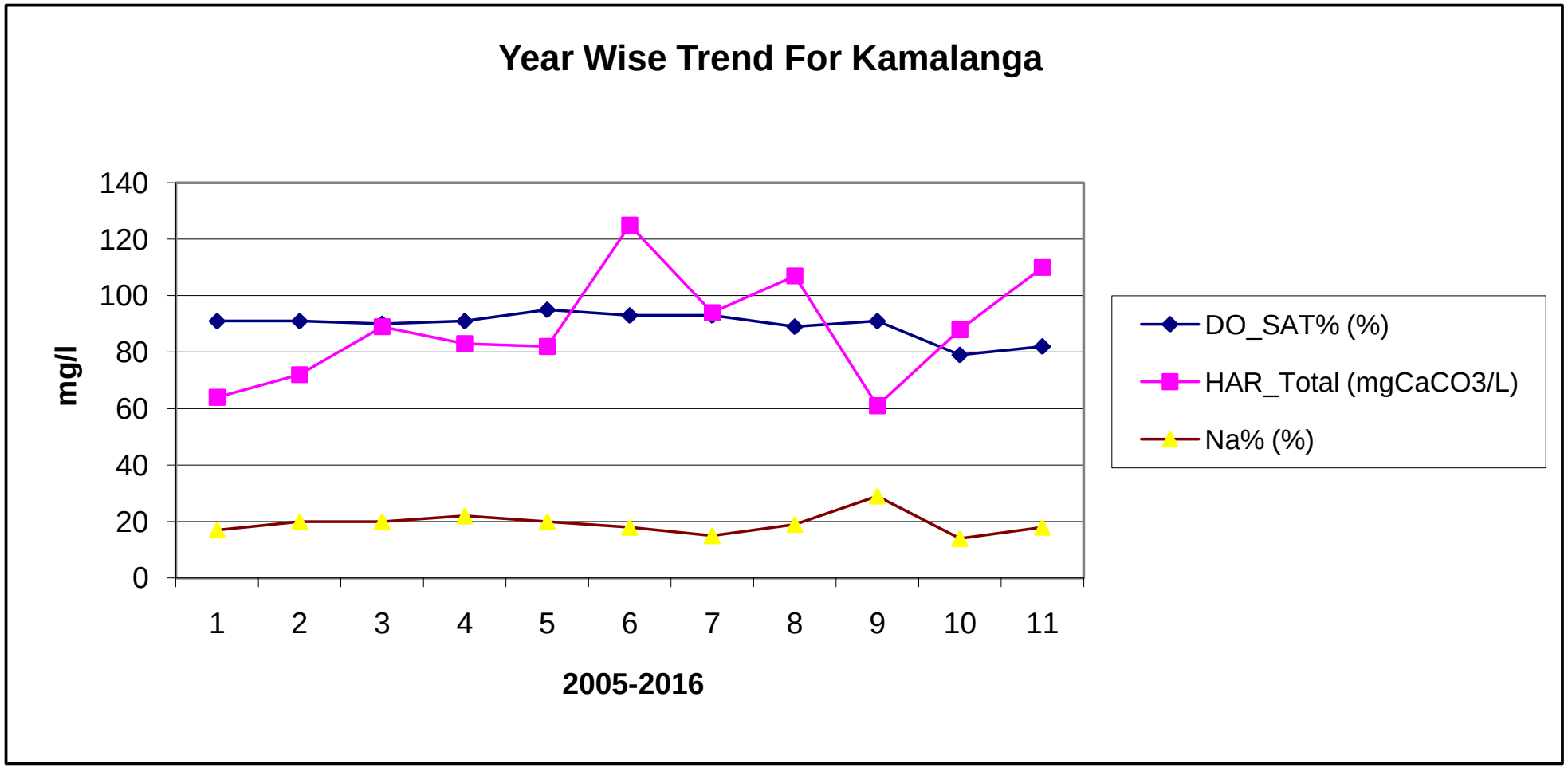
Station Name : KAMALANGA (KAMALANGA) | **Division : E.E., Bhubaneswar**

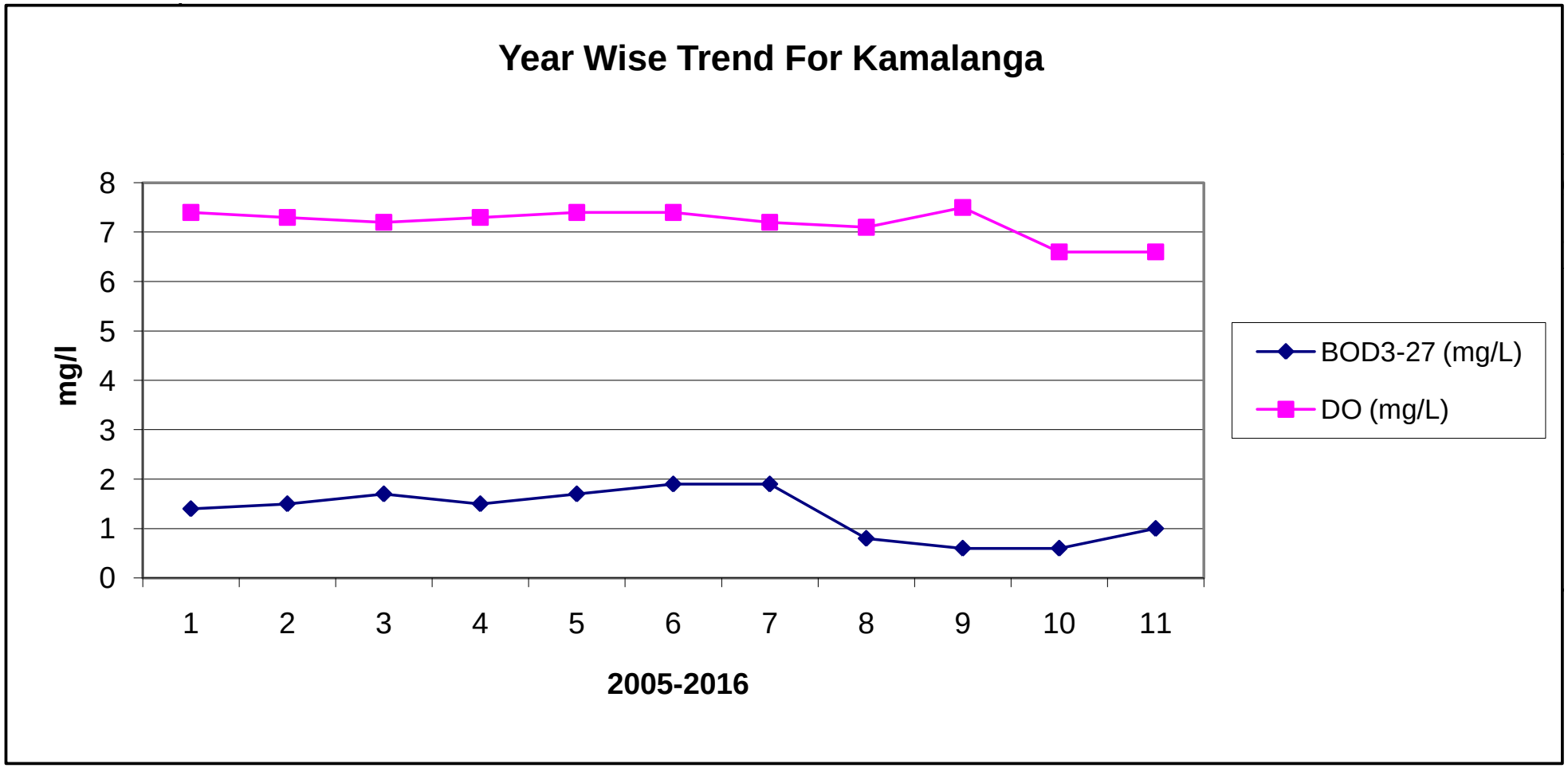
Local River : Brahmni | **Sub-Division : Sambalpur**

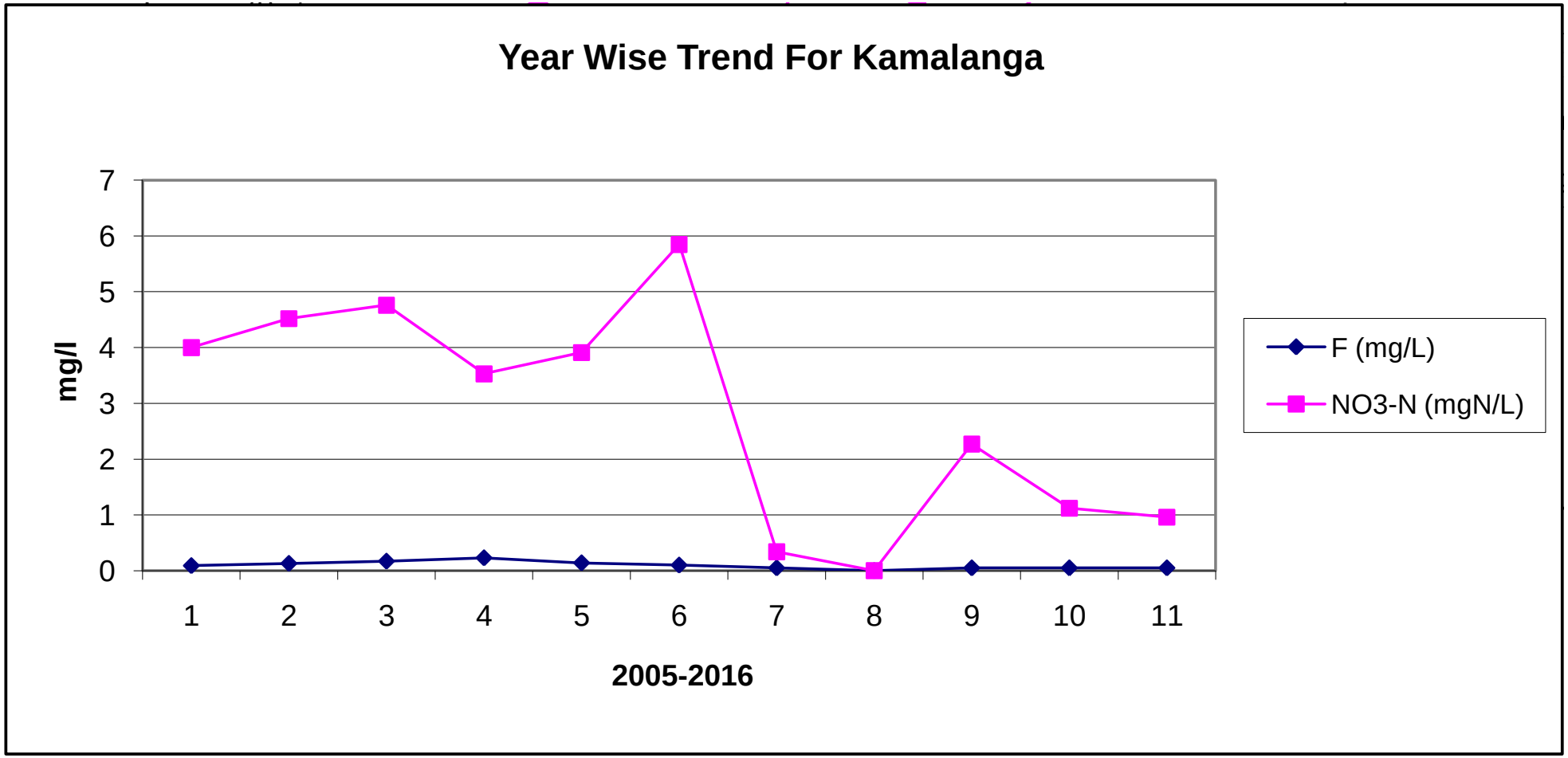
River Water

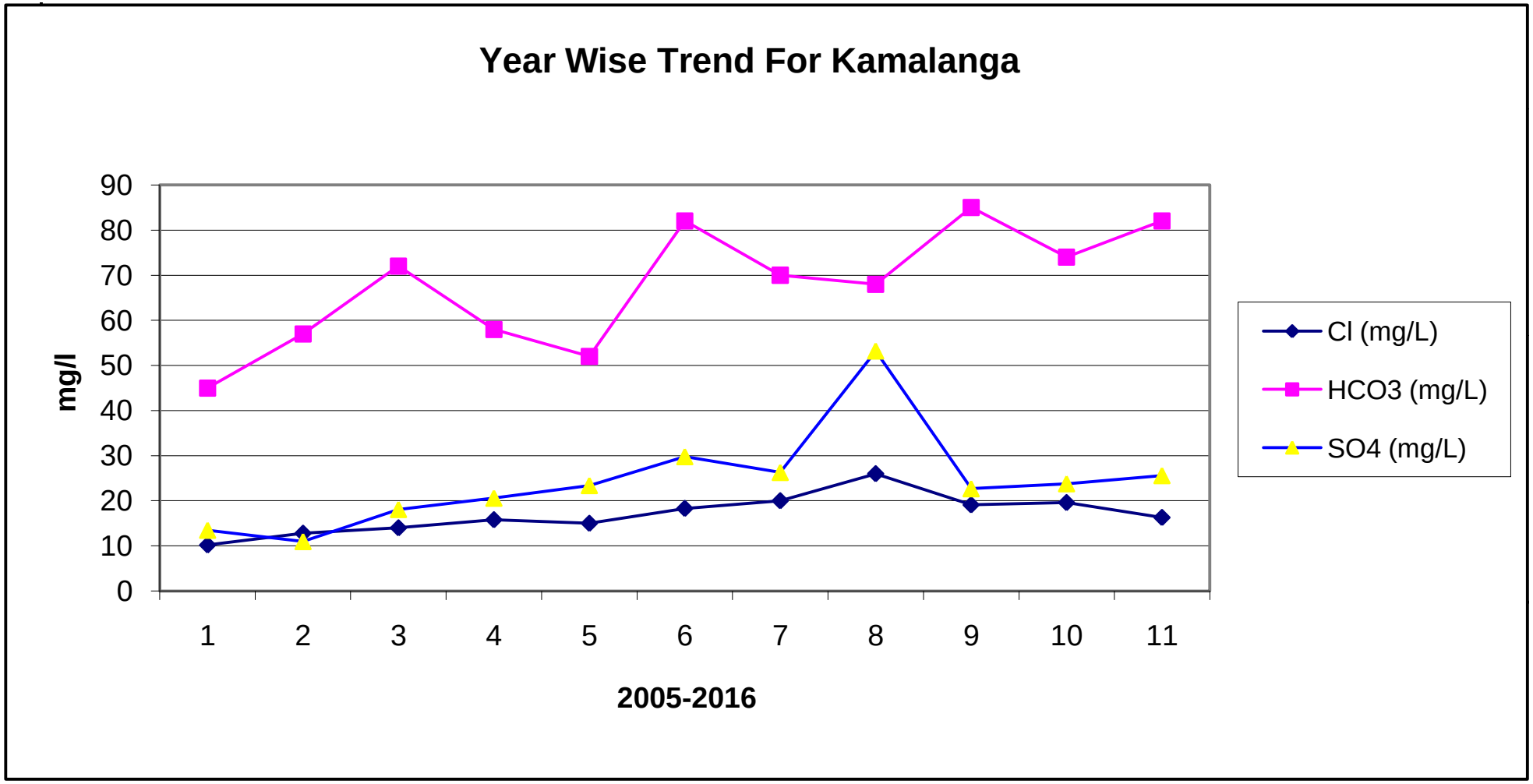
S.No	Parameters			
		2014	2015	2016
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	119	132	395
3	EC_GEN (µmho/cm)	119	193	396
4	pH_FLD (pH units)	7.7	7.7	7.8
5	pH_GEN (pH units)	7.7	7.7	7.9
6	Temp (deg C)	26.3	28.0	27.6
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	3.1
2	ALK-TOT (mgCaCO3/L)	64	71	72
3	B (mg/L)	0.00	0.00	0.01
4	Ca (mg/L)	18	25	38
5	Cl (mg/L)	20.2	15.2	19.5
6	CO3 (mg/L)	0.0	0.0	3.7
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.1	0.4	0.4
9	HCO3 (mg/L)	94	87	81
10	K (mg/L)	1.6	1.7	3.8
11	Mg (mg/L)	4.0	5.2	15.2
12	Na (mg/L)	10.5	6.2	7.7
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	1.56	0.72	1.01
15	NO2-N (mgN/L)	0.00	0.03	0.00
16	NO3-N (mgN/L)	1.55	0.70	1.01
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.001	0.010
19	SiO2 (mg/L)	8.6	8.7	5.0
20	SO4 (mg/L)	24.0	21.5	19.7
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.7	0.7	1.1
2	DO (mg/L)	7.6	4.4	6.0
3	DO_SAT% (%)	94	57	76
4	FCol-MPN (MPN/100mL)			
5	Tcol-MPN (MPN/100mL)			
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	44	62	96
2	HAR_Total (mgCaCO3/L)	61	83	160
3	Na% (%)	27	14	11
4	RSC (-)	0.3	0.0	0.0
5	SAR (-)	0.6	0.3	0.3
	PESTICIDES			

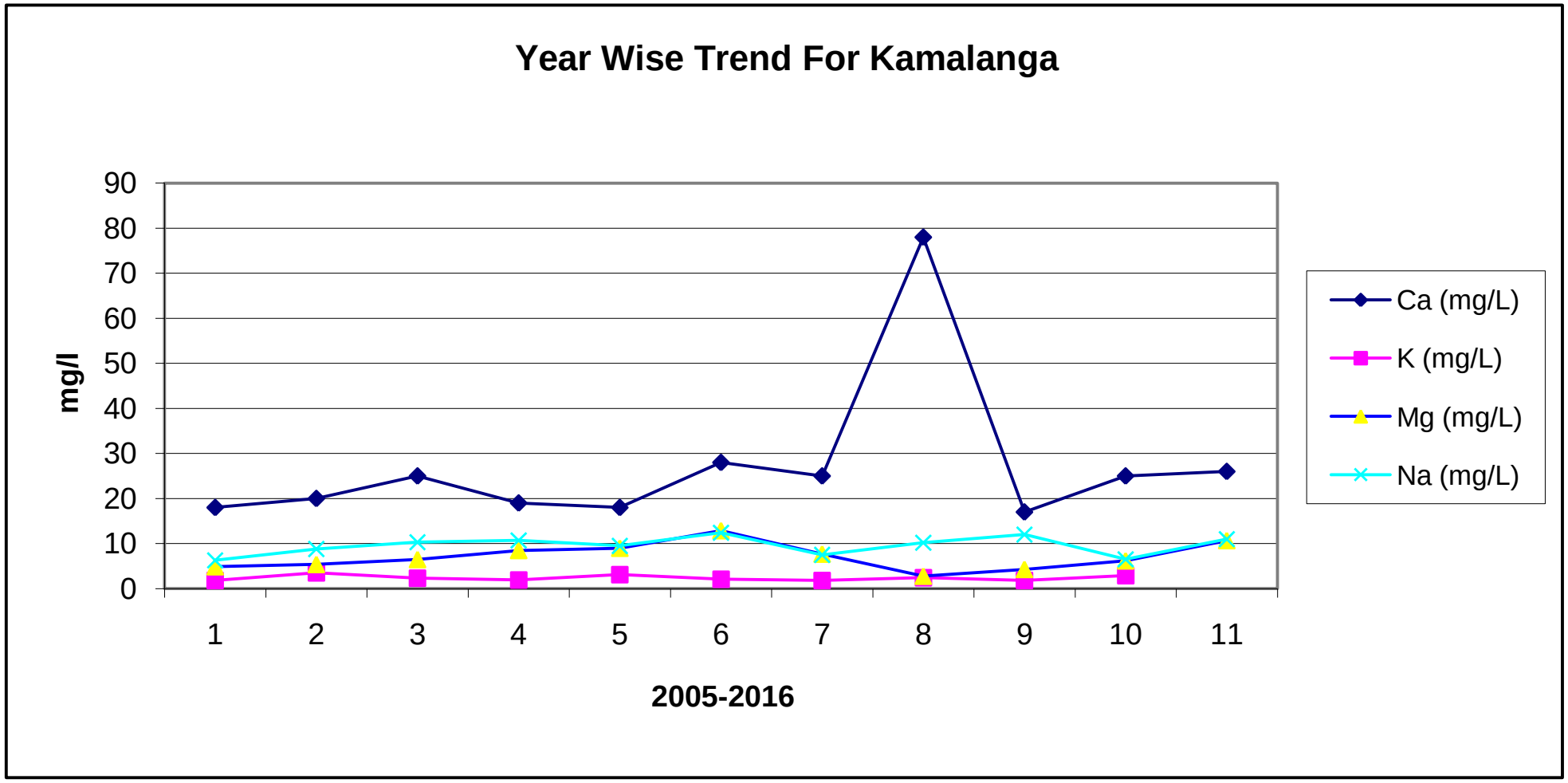
TREND ANALYSIS


Year Wise Trend For Kamalanga
mg/l
140
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For Kamalanga
mg/l
8
7
6
5
4
3
2
1
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For Kamalanga
mg/l
0
1
2
3
4
5
6
7
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For Kamalanga
mg/l
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For Kamalanga
mg/l
90
80
70
60
50
40
30
20
10
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

WATER QUALITY DATA

HISTORY SHEET

			Water Year	:	**2015-2016**
Site	:	**RSP NALLA**	**Code**	:	**RSP**
State	:	Orissa	District		Sundergarh
Basin	:	Brahmani-Baitarani	Independent River	:	Brahmni
Tributary	:	RSP Nala	Sub Tributary	:	
Sub-Sub Tributary	:		Local River	:	RSP Nala
Division	:	E.E., Bhubaneswar	Sub-Division	:	Sambalpur
Drainage Area	:	Sq. Km.	Bank	:	Left
Latitude	:	°""	Longitude	:	°""
		Opening Date	Closing Date		
Gauge	:				
Discharge	:				
Sediment	:				
Water Quality	:	01.11.1990			

Water Quality Datasheet for the period : 2015-2016

Station Name : RSP NALLA (RSP) **Division : E.E., Bhubaneswar**

Local River : RSP Nala **River Water Analysis** **Sub-Division : Sambalpur**

S.No	Parameters	01.06.2015	01.07.2015	01.08.2015	01.09.2015	01.10.2015	02.11.2015	01.12.2015	01.01.2016	01.02.2016	01.03.2016	01.04.2016	02.05.2016
		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	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	511	452	506	538	565	968	947	723	869	992	1033	417
4	EC_GEN (µmho/cm)	507	453	511	526	585	971	950	729	862	995	1037	414
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)	7.6	7.2	7.6	7.8	7.7	7.3	7.8	7.1	7.8	6.9	6.8	7.4
7	pH_GEN (pH units)	7.7	7.3	7.4	7.4	7.5	7.2	7.5	7.3	7.9	7.3	5.6	7.8
8	Temp (deg C)	30.0	27.0	29.0	30.0	28.0	25.0	19.0	18.0	19.0	23.2	26.0	30.0
	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)	88	83	65	60	46	51	55	46	55	55	55	37
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	32	30	29	27	22	21	22	21	24	75	26	40
5	Cl (mg/L)	32.1	15.1	17.0	15.1	9.4	15.1	13.2	24.5	17.0	30.2	34.0	28.3
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)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.2	0.6	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.4
9	HCO3 (mg/L)	107	101	79	73	56	62	68	56	68	68	68	45
10	K (mg/L)	3.8	3.6	4.5	4.8	1.4	1.6	3.8	2.9	12.3	1.3	15.5	15.8
11	Mg (mg/L)	14.6	13.6	12.6	11.7	10.7	11.7	11.7	10.7	12.6	19.4	13.6	19.4
12	Na (mg/L)	13.9	8.9	8.5	8.6	2.8	2.9	11.9	16.8	17.6	18.2	17.9	18.2
13	NO2+NO3 (mg N/L)	1.22	1.11	1.19	1.25	1.16	1.19	1.26	1.26	0.81	1.12	1.16	0.95
14	NO2-N (mgN/L)	0.03	0.01	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	NO3-N (mgN/L)	1.19	1.09	1.19	1.25	1.09	1.19	1.26	1.26	0.81	1.12	1.16	0.95
16	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	7.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0	5.0	6.0	5.0	5.0
18	SO4 (mg/L)	37.2	24.1	24.1	23.4	23.2	23.6	25.0	24.0	24.5	3.6	26.0	2.5
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	40.0	0.4	2.8	1.2	0.8	1.2	2.0	1.2	1.0	79.0	1.2	1.0
2	DO (mg/L)	1.4	4.4	5.6	5.0	5.8	2.8	5.8	6.8	6.2	2.0	2.8	4.6
3	DO_SAT% (%)	18	55	72	66	74	34	62	71	66	23	34	60
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	80	76	72	68	56	52	56	52	60	188	64	100
2	HAR_Total (mgCaCO3/L)	141	133	125	117	101	101	105	97	113	269	121	181
3	Na% (%)	17	12	12	13	6	6	19	27	23	13	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
5	SAR (-)	0.5	0.3	0.3	0.3	0.1	0.1	0.5	0.7	0.7	0.5	0.7	0.6
	PESTICIDES												

Water Quality Summary for the period : 2015-2016

Station Name : RSP NALLA (RSP) **Division : E.E., Bhubaneswar**

Local River : RSP Nala **Sub-Division : Sambalpur**

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	1033	417	710
3	EC_GEN (µmho/cm)	12	1037	414	712
4	pH_FLD (pH units)	12	7.8	6.8	7.4
5	pH_GEN (pH units)	12	7.9	5.6	7.3
6	Temp (deg C)	12	30.0	18.0	25.4
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	88	37	58
3	B (mg/L)	12	0.01	0.01	0.01
4	Ca (mg/L)	12	75	21	31
5	Cl (mg/L)	12	34.0	9.4	20.9
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.2	0.5
9	HCO3 (mg/L)	12	107	45	71
10	K (mg/L)	12	15.8	1.3	5.9
11	Mg (mg/L)	12	19.4	10.7	13.5
12	Na (mg/L)	12	18.2	2.8	12.2
13	NO2+NO3 (mg N/L)	12	1.26	0.81	1.14
14	NO2-N (mgN/L)	12	0.07	0.00	0.01
15	NO3-N (mgN/L)	12	1.26	0.81	1.13
16	P-Tot (mgP/L)	12	0.010	0.001	0.006
17	SiO2 (mg/L)	12	7.0	5.0	5.8
18	SO4 (mg/L)	12	37.2	2.5	21.8
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	79.0	0.4	11
2	DO (mg/L)	12	6.8	1.4	4.4
3	DO_SAT% (%)	12	74	18	53
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	188	52	77
2	HAR_Total (mgCaCO3/L)	12	269	97	134
3	Na% (%)	12	27	6	16
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	0.7	0.1	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : RSP NALLA (RSP) | **Division : E.E., Bhubaneswar**

Local River : RSP Nala | **River Water** | **Sub-Division : Sambalpur**

S.No	Parameters	Flood																			
		Jun - Oct																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
	PHYSICAL																				
1	Q (cumec)																				
2	EC_FLD (µmho/cm)	418	313	426	379	272	262	328	321	293	311	358	338	316	404	514	343	403	297	465	292
3	EC_GEN (µmho/cm)	416	317	432	379	269	260	326	321	293	311	358	338	316	404	516	345	409	303	465	287
4	pH_FLD (pH units)	7.7	7.2	7.5	7.6	7.6	7.4	7.6	7.4	7.4	7.5	8.1	7.3	7.4	7.4	7.6	7.5	7.0	7.5	7.8	7.5
5	pH_GEN (pH units)	7.7	7.1	7.4	7.6	7.6	7.5	7.6	7.4	7.4	7.5	8.1	7.3	7.4	7.4	7.4	7.6	6.8	7.2	7.8	7.6
6	Temp (deg C)	28.9	29.2	29.5	29.0	30.6	30.2	28.6	29.6	29.8	31.0	30.2	28.0	25.8	28.6	28.8	22.3	23.8	29.3	23.0	22.7
	CHEMICAL																				
1	Alk-Phen (mgCaCO3/L)							0.0	0.0	0.0	0.0	1.8			0.0	0.0					
2	ALK-TOT (mgCaCO3/L)							72	61	60	48	82			91	68					
3	B (mg/L)	0.00	0.61	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.16	0.01	0.00	0.00	0.00	0.01	0.00	0.63	0.49	0.00	0.00
4	Ca (mg/L)	45	45	30	43	29	27	33	30	25	28	34	28	20	34	28	39	56	42	57	29
5	Cl (mg/L)	16.8	18.6	16.8	22.1	17.5	18.2	19.0	22.0	21.4	21.9	27.2	34.7	25.7	33.8	17.7	17.1	17.5	18.7	16.5	18.8
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.56	0.29	0.27	0.39	0.40	0.51	0.43	0.30	0.27	0.25	0.05	0.06	0.05	0.05	0.05	0.63	0.57	0.58	0.53	0.32
8	Fe (mg/L)	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.0	1.4	0.1	0.3	0.5	0.2	0.1	0.1	0.1	0.3
9	HCO3 (mg/L)	112	127	80	111	55	80	88	72	42	59	96	45	93	111	83	73	152	89	149	50
10	K (mg/L)	2.5	3.1	2.9	3.3	2.5	6.7	2.9	5.3	4.3	4.5	6.7	4.1	3.3	6.7	3.6	5.6	3.0	2.4	2.3	4.5
11	Mg (mg/L)	12.5	15.9	11.1	10.5	7.5	7.1	11.5	10.7	10.7	11.1	12.6	8.4	6.1	12.6	12.6	8.7	15.3	15.1	14.8	7.9
12	Na (mg/L)	10.8	12.6	12.3	15.1	13.2	12.5	13.7	14.8	12.6	13.5	15.5	9.3	15.7	15.5	8.5	12.2	11.7	13.0	11.2	14.0
13	NO2+NO3 (mg N/L)	17.64	10.88	9.50	10.68	13.11	7.23	10.33	10.66	7.36	7.50	0.39	1.06	12.72	1.50	1.19	12.95	13.50	19.70	17.90	15.24
14	NO2-N (mgN/L)	0.00	0.06	0.00	0.01	0.96	0.16	0.03	0.09	0.00	0.00	0.07	0.00	0.00	0.02	0.02	0.01	0.01	0.39	1.30	1.00
15	NO3-N (mgN/L)	17.64	10.82	9.50	10.67	12.15	7.07	10.30	10.57	7.36	7.50	0.33	1.06	12.72	1.48	1.16	12.94	13.49	19.31	16.60	14.24
16	o-PO4-P (mg P/L)				0.027	0.011	0.010	0.000		0.000										0.000	0.000
17	P-Tot (mgP/L)	0.004	0.026	0.001	0.001	0.012	0.011	0.001	0.002	0.003	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
18	SiO2 (mg/L)	13.5	20.3	16.2	23.7	25.4	12.3	8.6	9.1	9.1	7.8	8.8	11.6	8.0	5.6	6.0	10.7	16.6	16.1	25.5	21.7
19	SO4 (mg/L)	15.1	29.7	28.9	23.3	20.2	16.2	25.1	24.4	42.7	37.4	42.8	45.0	32.5	45.0	26.4	27.4	33.3	36.2	27.8	25.6
	BIOLOGICAL/BACTERIOLOGICAL																				
1	BOD3-27 (mg/L)	1.9	5.8	1.2	5.5	1.4	3.4	1.4	1.4	1.8	1.7	1.9	5.6	1.9	5.3	9.0	1.4	2.3	1.9	6.5	1.8
2	DO (mg/L)	5.5	7.3	5.3	4.9	5.8	5.6	5.6	5.3	4.5	5.4	3.8	5.0	5.6	3.2	4.4	5.0	5.6	4.8	4.8	7.4
3	DO_SAT% (%)	71	95	69	64	77	75	73	69	59	73	50	64	69	42	57	59	66	63	56	85
	TRACE & TOXIC																				
1	Al (mg/L)					4.02															
	CHEMICAL INDICES																				
1	HAR_Ca (mgCaCO3/L)	112	114	75	108	72	67	81	75	63	70	84	70	51	84	71	99	141	106	142	73
2	HAR_Total (mgCaCO3/L)	164	180	121	152	103	95	129	120	107	116	137	105	77	137	123	135	205	168	204	106
3	Na% (%)	14	15	19	19	22	23	22	23	21	20	18	16	30	18	12	16	11	15	11	21
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	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.4	0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6	0.4	0.8	0.6	0.3	0.5	0.4	0.4	0.3	0.6
	PESTICIDES																				

Water Quality Seasonal Average for the period: 2001-2016

Station Name : RSP NALLA (RSP) | **Division : E.E., Bhubaneswar**

Local River : RSP Nala | **River Water** | **Sub-Division : Sambalpur**

S.No	Parameters	Winter										Summer									
		Nov - Feb										Mar - May									
		2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
	PHYSICAL																				
1	Q (cumec)																				
2	EC_FLD (µmho/cm)	301	318	400	265	475	273	348	233	460	877	402	313	233	493	382	398	454	450	343	523
3	EC_GEN (µmho/cm)	300	339	403	265	475	273	348	233	460	878	397	312	267	493	377	393	457	450	343	523
4	pH_FLD (pH units)	7.9	7.6	7.8	7.6	7.5	7.5	7.7	7.6	7.7	7.5	7.8	7.8	7.7	7.6	7.4	7.6	7.4	7.7	7.4	7.5
5	pH_GEN (pH units)	7.9	7.6	7.8	7.6	7.5	7.5	7.7	7.6	7.7	7.5	7.8	7.6	7.5	7.6	7.5	7.6	7.4	7.7	7.4	7.5
6	Temp (deg C)	22.4	22.3	22.5	20.5	21.8	22.8	19.8	19.5	21.0	20.3	27.7	26.7	28.2	27.7	28.4	28.5	28.5	27.0	26.7	26.3
	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
2	ALK-TOT (mgCaCO3/L)		64	84	30	93	89			102	52						151		73	39	92
3	B (mg/L)	0.00	0.19	0.00	0.25	0.20	0.01	0.00	0.00	0.00	0.01	0.00	0.56	0.64	0.70	0.07	0.00	0.20	0.00	0.55	0.15
4	Ca (mg/L)	32	35	38	24	47	31	34	23	29	22	42	50	33	57	42	44	49	42	25	50
5	Cl (mg/L)	16.5	21.3	24.5	19.9	26.4	35.8	32.5	31.3	37.2	17.4	22.6	18.7	17.3	23.1	19.3	18.3	29.1	30.9	28.5	30.8
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.33	0.33	0.08	0.41	0.74	0.05	0.06	0.05	0.05	0.05	0.27	0.63	0.20	0.49	0.77	0.34	0.32	0.18	0.41	0.38
8	Fe (mg/L)	0.2	0.1	0.3	0.1	0.1	0.0	1.2	0.1	0.3	0.5	0.3	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1
9	HCO3 (mg/L)	78	78	90	37	113	108	76	119	124	63	75	105	71	124	87	97	155	89	48	112
10	K (mg/L)	3.2	3.6	4.5	2.0	5.1	5.6	5.1	4.6	6.4	5.2	3.2	2.6	2.1	3.6	3.2	3.7	3.3	5.0	4.3	5.4
11	Mg (mg/L)	10.3	11.2	14.1	10.3	16.0	7.8	16.0	7.2	10.7	11.7	12.6	13.6	10.9	13.9	12.1	12.9	14.0	12.6	12.3	18.5
12	Na (mg/L)	11.9	14.1	16.0	12.0	17.1	15.7	13.5	14.9	15.5	12.3	14.0	13.2	11.9	14.8	13.6	12.4	19.3	20.9	16.4	19.3
13	NO2+NO3 (mg N/L)	13.00	14.38	12.66	10.82	10.90	0.40	1.11	15.50	1.12	1.13	22.18	19.07	15.57	17.98	19.35	14.69	9.16	10.62	11.53	20.07
14	NO2-N (mgN/L)	0.83	0.09	0.96	0.10	0.00	0.07	0.00	0.00	0.00	0.00	1.72	0.00	0.29	0.10	1.18	0.07	0.07	0.30	0.39	0.00
15	NO3-N (mgN/L)	12.17	14.29	11.70	10.72	10.90	0.33	1.11	15.50	1.12	1.13	20.46	19.07	15.28	17.88	18.17	14.62	9.09	10.32	11.14	20.07
16	o-PO4-P (mg P/L)	0.005	0.000	0.120	0.008										0.000	0.000	0.000	0.012		0.000	
17	P-Tot (mgP/L)	0.007	0.001	0.002	0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.001	0.034	0.002	0.007	0.001
18	SiO2 (mg/L)	16.3	8.9	9.4	8.9	5.5	8.8	12.0	9.1	5.8	5.8	13.7	15.3	15.6	24.1	19.1	16.8	9.6	9.3	8.8	4.1
19	SO4 (mg/L)	23.3	22.4	28.4	23.9	62.6	28.5	42.8	41.5	44.4	24.3	29.3	28.8	19.7	34.7	27.6	28.8	23.3	45.9	40.1	49.3
	BIOLOGICAL/BACTERIOLOGICAL																				
1	BOD3-27 (mg/L)	1.5	1.6	1.9	2.0	2.3	2.2	1.2	7.7	3.3	1.3		7.7	2.6	20.4	1.9	1.6	1.8	2.4	1.8	1.9
2	DO (mg/L)	7.2	6.3	6.9	7.9	6.2	6.5	7.2	5.9	6.9	5.4	2.9	6.3	3.9	3.6	5.7	4.9	4.9	5.0	5.8	5.3
3	DO_SAT% (%)	83	71	79	88	71	75	78	64	78	58	37	79	49	46	73	62	63	63	71	66
	TRACE & TOXIC																				
1	Al (mg/L)																	0.05			
	CHEMICAL INDICES																				
1	HAR_Ca (mgCaCO3/L)	80	88	94	59	117	78	86	57	73	55	105	125	83	141	104	111	121	106	63	124
2	HAR_Total (mgCaCO3/L)	122	135	153	102	184	111	153	87	117	104	158	182	129	199	154	164	180	158	114	201
3	Na% (%)	17	19	18	20	17	23	16	26	21	19	16	14	16	14	16	14	19	22	23	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.5	0.5	0.6	0.5	0.6	0.7	0.5	0.7	0.6	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.6	0.7	0.7	0.6
	PESTICIDES																				

Water Quality Seasonal Average for the period: 2001-2016

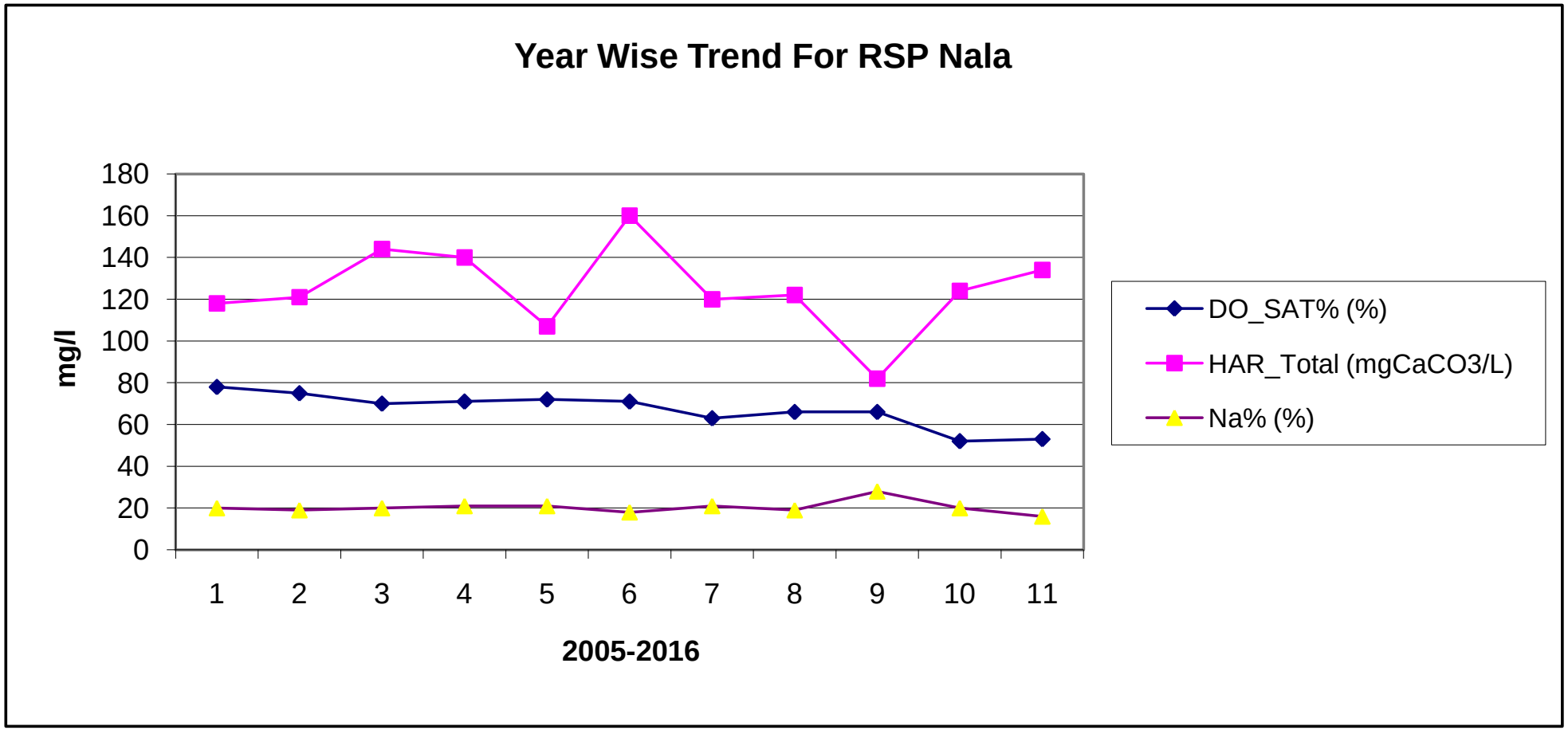
Station Name : RSP NALLA (RSP) | **Division : E.E., Bhubaneswar**

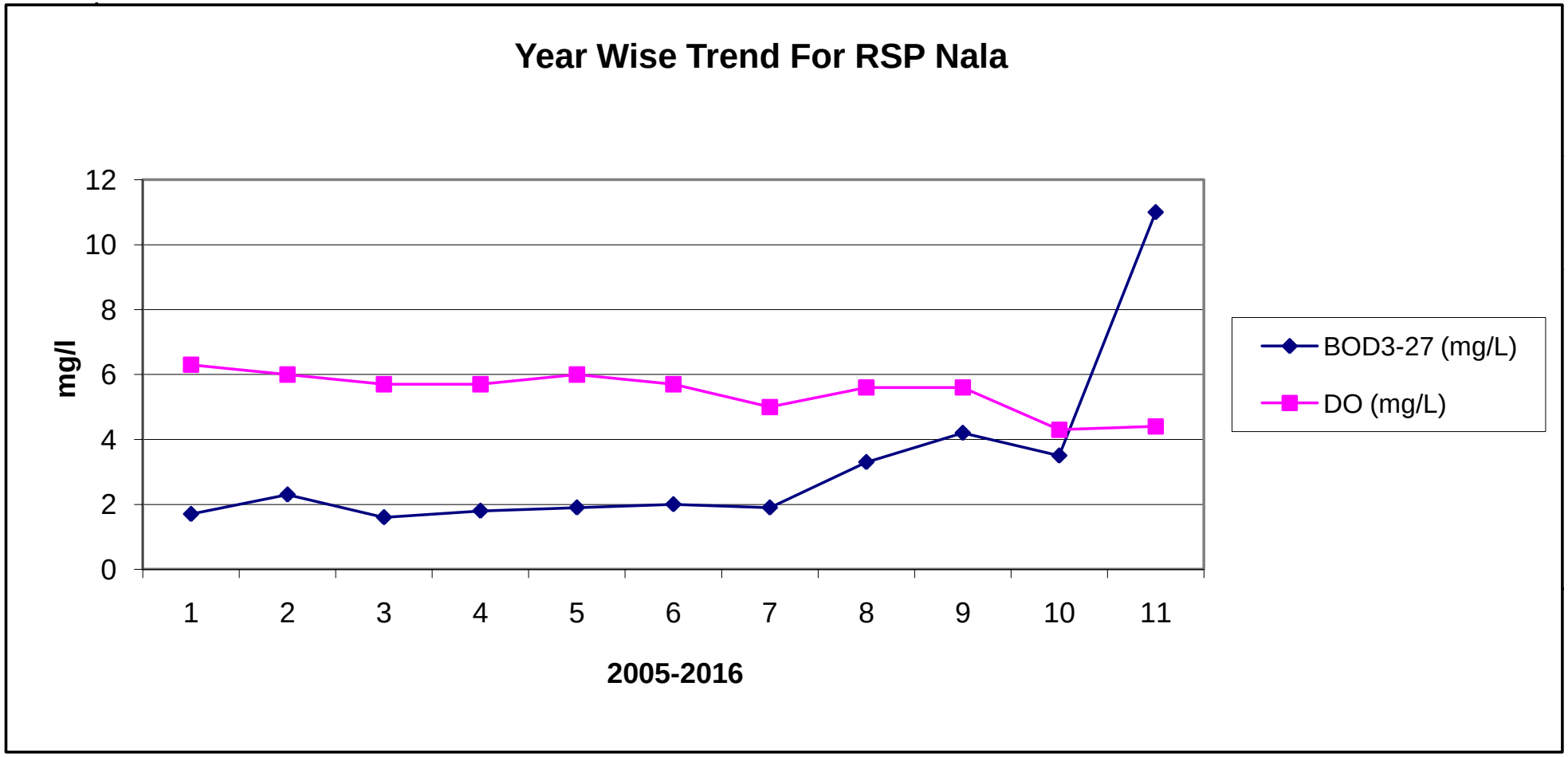
Local River : RSP Nala | **Sub-Division : Sambalpur**

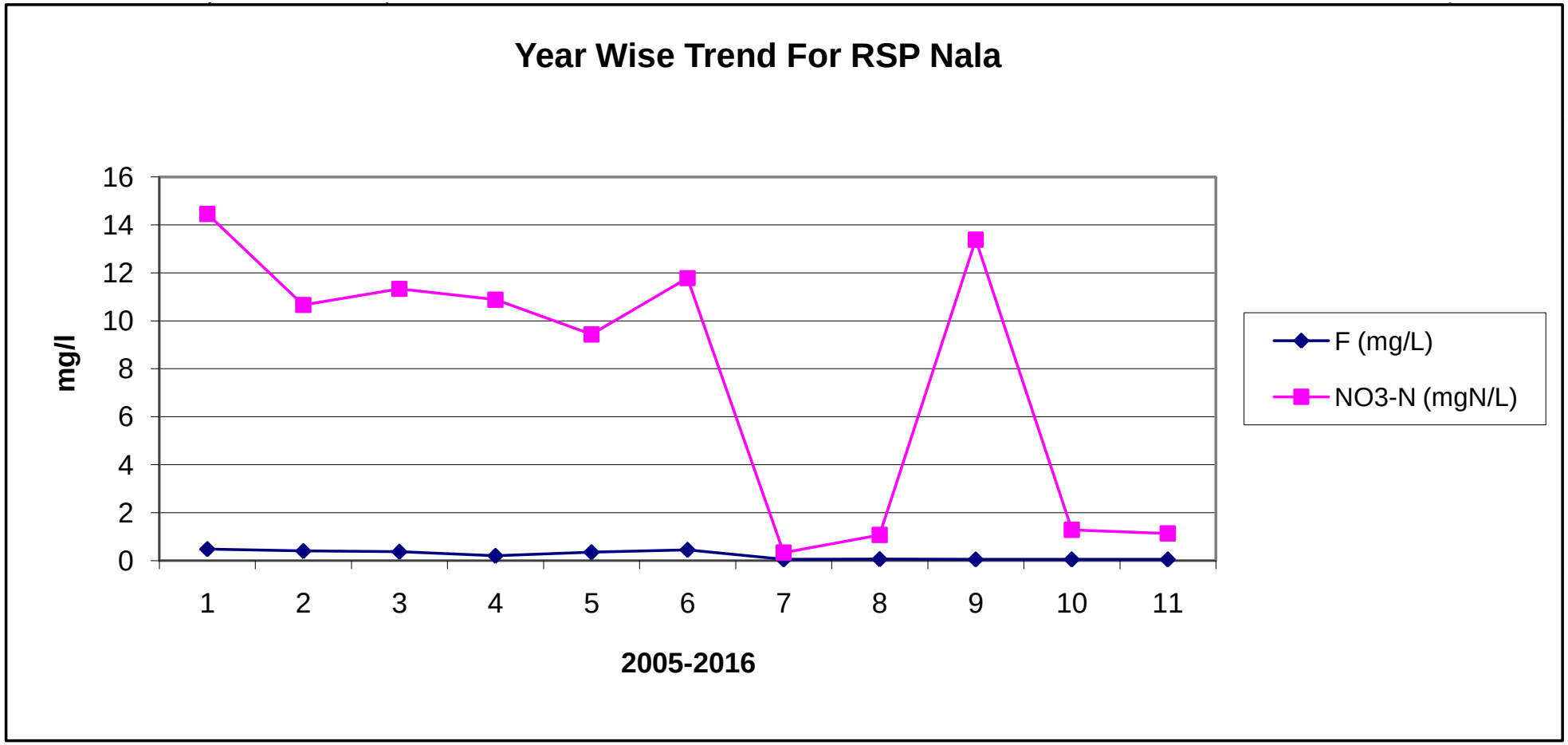
River Water

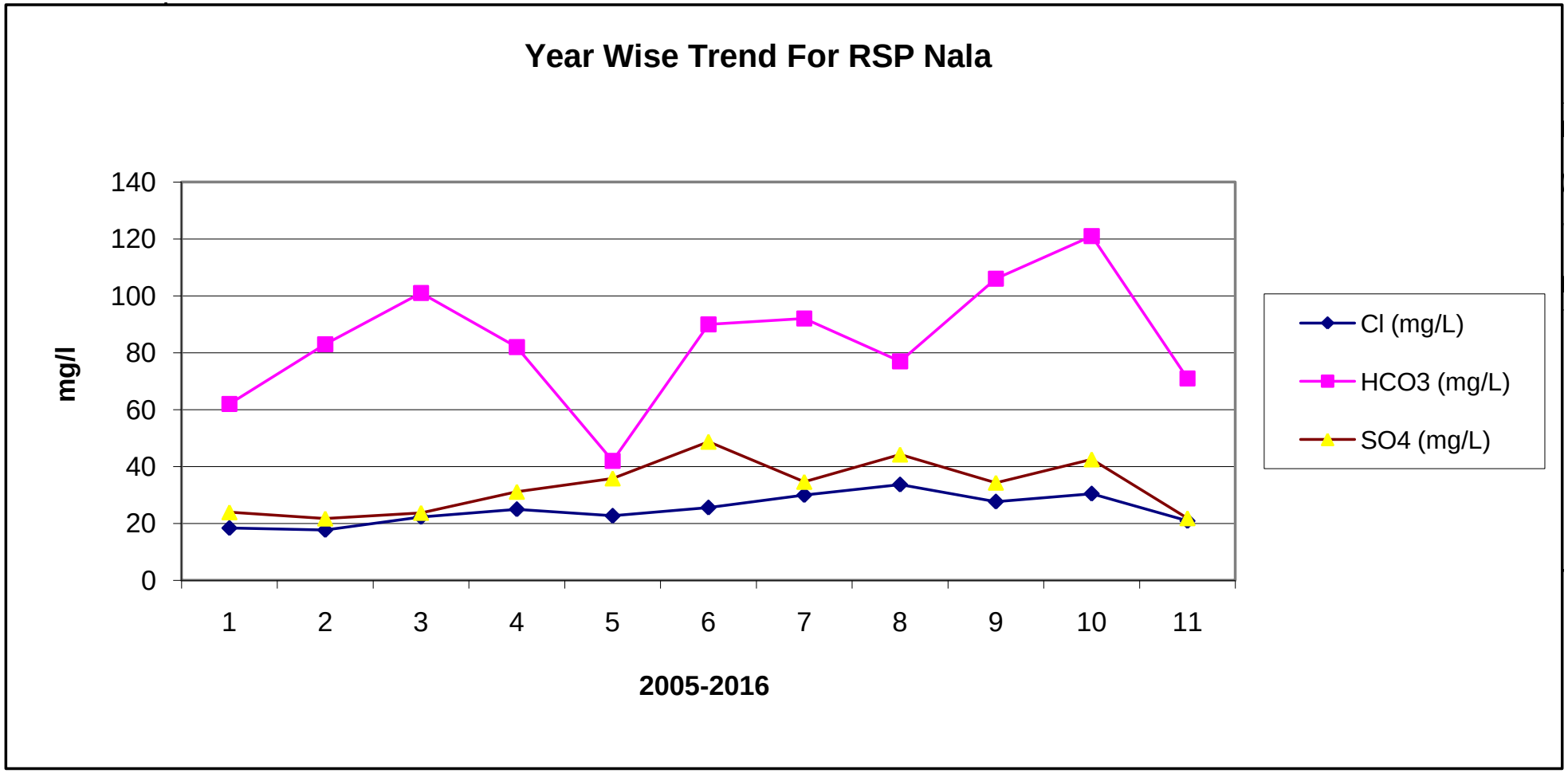
S.No	Parameters	2012	2013	2014	2015	2016
	PHYSICAL					
1	Q (cumec)					
2	EC_FLD (µmho/cm)	337	473	357	634	814
3	EC_GEN (µmho/cm)	337	473	357	634	815
4	pH_FLD (pH units)	7.3	7.7	7.6	7.4	7.0
5	pH_GEN (pH units)	7.3	7.7	7.6	7.4	6.9
6	Temp (deg C)	28.7	23.7	25.7	27.0	26.4
	CHEMICAL					
1	Alk-Phen (mgCaCO3/L)	10.4			0.0	0.0
2	ALK-TOT (mgCaCO3/L)	73			110	49
3	B (mg/L)	0.01	0.00	0.00	0.00	0.01
4	Ca (mg/L)	31	27	22	29	47
5	Cl (mg/L)	27.0	33.6	26.1	26.9	30.8
6	CO3 (mg/L)	12.5	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.06	0.05	0.05	0.05
8	Fe (mg/L)	0.0	0.9	0.1	0.4	0.4
9	HCO3 (mg/L)	64	133	111	134	60
10	K (mg/L)	3.7	6.6	6.2	3.6	10.9
11	Mg (mg/L)	6.2	10.4	7.3	9.0	17.5
12	Na (mg/L)	15.0	20.5	16.5	14.5	18.1
13	NO2+NO3 (mg N/L)	0.41	1.04	11.65	1.15	1.08
14	NO2-N (mgN/L)	0.07	0.00	0.01	0.00	0.00
15	NO3-N (mgN/L)	0.34	1.04	11.64	1.15	1.08
16	o-PO4-P (mg P/L)					
17	P-Tot (mgP/L)	0.010	0.001	0.001	0.001	0.010
18	SiO2 (mg/L)	8.7	12.0	8.1	6.7	5.3
19	SO4 (mg/L)	29.2	44.8	27.8	35.9	10.7
	BIOLOGICAL/BACTERIOLOGICAL					
1	BOD3-27 (mg/L)	1.4	2.3	3.3	0.8	27.1
2	DO (mg/L)	5.2	4.6	5.2	2.7	3.1
3	DO_SAT% (%)	67	53	62	34	39
	TRACE & TOXIC					
1	Al (mg/L)					
	CHEMICAL INDICES					
1	HAR_Ca (mgCaCO3/L)	77	67	54	73	118
2	HAR_Total (mgCaCO3/L)	103	111	84	111	190
3	Na% (%)	23	27	28	21	17
4	RSC (-)	0.0	0.5	0.3	0.1	0.0
5	SAR (-)	0.6	0.9	0.8	0.6	0.6
	PESTICIDES					

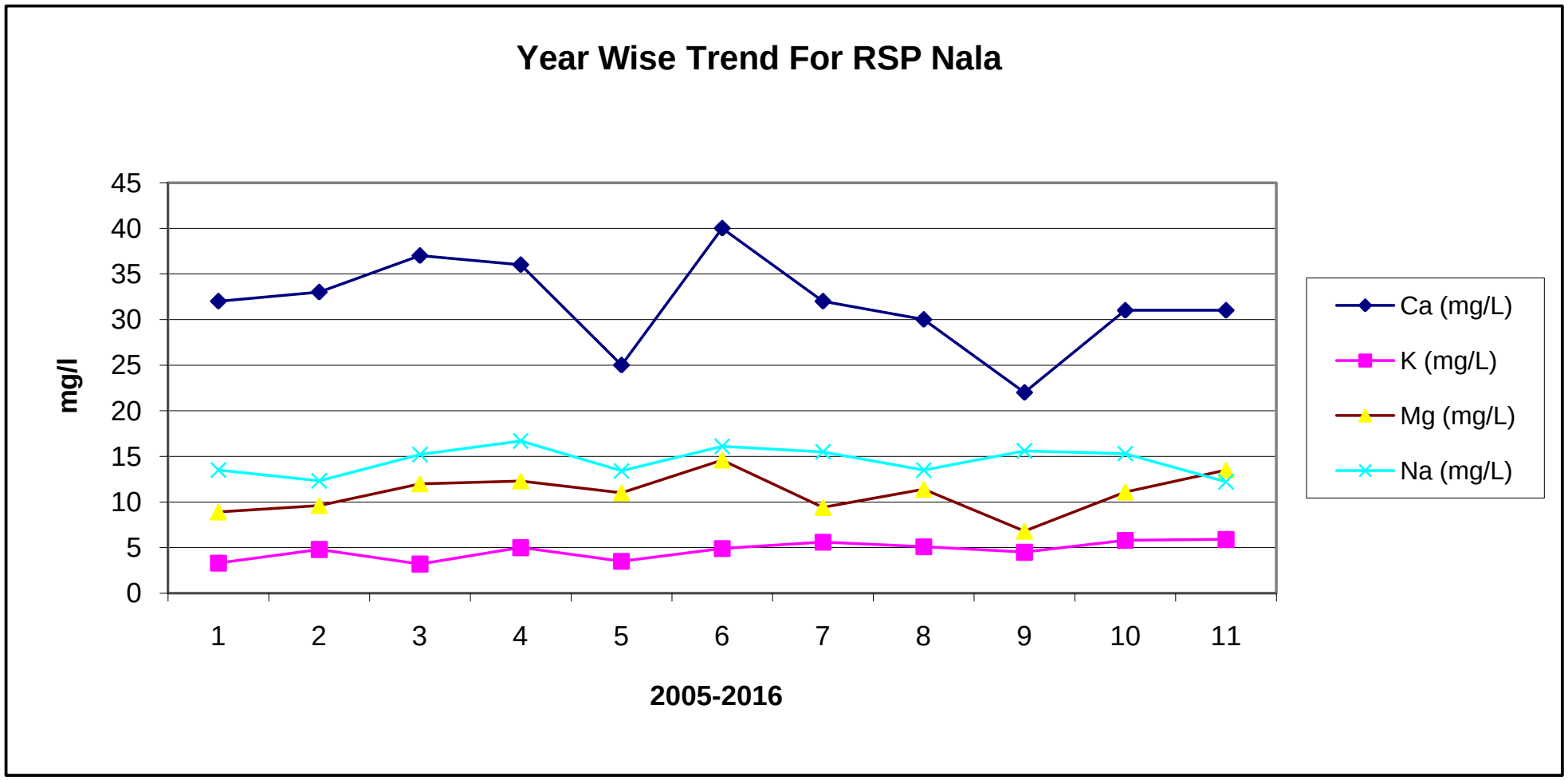
TREND ANALYSIS


Year Wise Trend For RSP Nala
mg/l
180
160
140
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
DO_SAT% (%)
HAR_Total (mgCaCO3/L)
Na% (%)


Year Wise Trend For RSP Nala
mg/l
12
10
8
6
4
2
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
BOD3-27 (mg/L)
DO (mg/L)


Year Wise Trend For RSP Nala
mg/l
16
14
12
10
8
6
4
2
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
F (mg/L)
NO3-N (mgN/L)


Year Wise Trend For RSP Nala
mg/l
140
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Cl (mg/L)
HCO3 (mg/L)
SO4 (mg/L)


Year Wise Trend For RSP Nala
mg/l
45
40
35
30
25
20
15
10
5
0
1
2
3
4
5
6
7
8
9
10
11
2005-2016
Ca (mg/L)
K (mg/L)
Mg (mg/L)
Na (mg/L)

LIST OF PERSONS INVOLVED IN THE PREPARATION OF WATER YEAR BOOK

1. Sri. N.C.Nanda, Executive Engineer, ERD, CWC, Bhubaneswar
2. Sri. D.S. Prasad, AEE, H.O. Circle, CWC, Bhubaneswar
3. Sri. S. K. Jagat, AEE, ERD, CWC, Bhubaneswar
4. Sri. B. R. Patel, SDE, Brahmani Sub-Division, CWC, Rourkela
5. Smt. B.S Shanthala Devi, EAD, ERD, CWC, Bhubaneswar
6. Sri. N.K. Bhuyan, SRA, ERD, CWC, Bhubaneswar
7. Sri. B.B Nayak, JE (HQS), ERD, CWC, Bhubaneswar
8. Sri. S.S. Mohanty, Sr. Computer, ERD, CWC, Bhubaneswar
9. Sri. Ashok Mishra, SWA,ERD, Bhubaneswar