

Annual Average and Range values of Four Criteria Parameters (January-December, 2015)

(A) Mahanadi River System

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Ib river												
1.	Sundargarh	12	7.8 (7.2-8.3)	7.6 (5.8-9.4)	0.7 (0.2-1.9)	1725 (490-5400)	0	1 (8)	C	C		
2.	Jharsuguda	12	7.8 (7.0-8.2)	7.5 (6.2-9.6)	0.8 (0.2-1.4)	4433 (700-16000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
3.	Brajarajnaragar U/s	12	7.9 (7.2-8.3)	8.0 (6.3-9.4)	0.7 (0.3-1.7)	7416 (790-16000)	0	7 (58)	C	Doesn't conform to Class C	TC	Human activities
4.	Brajarajnaragar D/s	12	7.9 (7.3-8.4)	7.6 (6.4-8.9)	1.0 (0.4-1.9)	8862 (940-16000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities
Bheden river												
5.	Jharsuguda	12	7.9 (7.0-8.4)	7.8 (6.3-9.8)	1.0 (0.4-0.7)	2781 (490-9400)	0	1 (8)	C	C		
Hirakud reservoir												
6.	Hirakud reservoir	12	7.9 (7.1-8.3)	7.6 (6.4-8.9)	0.8 (0.2-1.9)	2943 (630-9200)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
Power Channel												
7.	Power Channel U/s	12	7.9 (7.5-8.4)	7.0 (5.3-8.6)	0.8 (0.3-1.4)	1383 (130-5400)	0	1 (8)	C	C		
8.	Power Channel D/s	12	7.8 (7.4-8.4)	6.9 (5.9-8.4)	1.3 (0.4-2.3)	2648 (790-9200)	0	2 (17)	C	C		
Mahanadi river												
9	Sambalpur U/s	12	7.9 (7.1-8.4)	7.6 (6.5-9.3)	0.9 (0.3-1.9)	12692 (2200-35000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
10	Sambalpur D/s	12	7.9 (7.5-8.3)	6.9 (5.6-8.7)	2.6 (1.8-4.1)	46742 (7900-160000)	2 (17)	12 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Sambalpur town
11.	Sambalpur FD/s at Shankarmath	12	7.9 (7.3-8.2)	6.7 (4.9-8.4)	1.9 (1.2-3.3)	24200 (5400-92000)	1 (8)	12 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Sambalpur town
12.	Sambalpur FFD/s at Huma	12	8.1 (7.6-8.4)	7.4 (5.9-9.8)	1.4 (0.8-2.5)	6792 (1300-13000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
13.	Sonepur U/s	12	8.0 (7.6-8.4)	7.6 (6.6-8.8)	0.8 (0.2-1.5)	2893 (330-16000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
14.	Sonepur D/s	12	8.1 (7.5-8.5)	7.3 (6.1-8.7)	1.1 (0.3-1.8)	5406 (490-16000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
15.	Tikarapada#	11	8.1 (7.8-8.5)	7.4 (6.4-8.6)	0.7 (0.2-1.4)	5973 (230-24000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
16.	Narasinghpur	12	8.2 (7.8-8.5)	7.7 (6.7-8.6)	0.8 (0.4-1.9)	5657 (490-16000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
17.	Mundali	12	8.1 (7.4-8.4)	7.8 (6.7-8.5)	0.9 (0.5-1.6)	7715 (490-24000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
18.	Cuttack U/s	12	8.0 (7.1-8.4)	7.8 (6.6-9.0)	1.0 (0.5-2.0)	1748 (130-5400)	0	1 (8)	C			

Data for the period January-November, 2015

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
19.	Cuttack D/s	12	8.2 (7.1-8.5)	7.2 (5.8-8.1)	2.2 (1.5-2.8)	51017 (3300-160000)	0	10 (83)	C	Doesn't conform to Class C	TC	Waste water of Cuttack city
20.	Cuttack FD/s	12	8.1 (7.5-8.5)	7.4 (6.6-8.4)	1.5 (1.0-2.0)	39549 (490-92000)	0	9 (75)	C	Doesn't conform to Class C	TC	Waste water of Cuttack city
21.	Paradeep U/s	12	7.9 (7.5-8.4)	7.6 (6.8-8.9)	1.1 (0.2-2.2)	4953 (460-16000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
22.	Paradeep D/s	12	7.9 (6.7-8.4)	7.2 (6.5-8.2)	1.9 (0.8-2.9)	6756 (230-24000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
Tel River												
23.	Monmunda	12	8.1 (7.8-8.4)	7.6 (6.4-8.9)	1.0 (0.6-2.7)	2517 (230-13000)	0	1 (8)	C	C		
Kathajodi river												
24.	Cuttack U/s	12	8.1 (7.2-8.4)	7.7 (6.5-8.5)	1.2 (0.5-1.8)	3627 (130-16000)	0	2 (17)	C	Doesn't conform to Class C	TC	Human activities
25.	Cuttack D/s	12	8.2 (7.4-8.4)	7.1 (6.0-7.9)	3.3 (2.1-4.7)	27108 (3300-54000)	10 (83)	11 (92)	C	Doesn't conform to Class C	BOD,TC	Waste water of Cuttack city

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
26.	Mattagajpur (Cuttack FD/s)	12	7.3 (5.4-8.0)	5.5 (1.3-14.2)	9.7 (5.4-17.0)	58583 (11000-160000)	12 (100)	12 (100)	C	Doesn't conform to Class C	DO**, BOD,TC	Waste water of Cuttack city
Serua River												
27.	Sankhatrasa (Cuttack FD/s)	12	8.0 (7.2-8.4)	7.6 (6.8-8.8)	2.1 (1.3-3.7)	26599 (490-92000)	1 (8)	11 (92)	C	Doesn't conform to Class C	BOD, TC	Waste water of Cuttack city
Kuakhai river												
28	BhubaneswarFU/s	12	8.1 (7.6-8.4)	7.8 (6.2-9.2)	1.1 (0.5-1.9)	5552 (330-16000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
29.	Bhubaneswar U/s	12	8.1 (7.5-8.4)	7.5 (5.7-9.0)	1.3 (0.7-1.9)	26642 (5400-54000)	0	12 (100)	C	Doesn't conform to Class C	TC	Human activities
Daya river												
30.	Bhubaneswar D/s	12	7.6 (7.3-8.1)	5.0 (2.5-6.9)	4.3 (3.5-5.4)	74908 (4900-160000)	12 (100)	11 (92)	C	Doesn't conform to Class C	DO***, BOD, TC	Waste water of Bhubaneswar city
31.	BhubaneswarFD/s	12	7.7 (7.3-8.4)	5.4 (4.6-7.3)	3.4 (1.9-4.6)	61317 (5400-160000)	9 (75)	12 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Bhubaneswar city

** Frequency of violation for DO is 4 times (25% of observation)

*** Frequency of violation for DO is 2 times (17% of observation)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Birupa River												
32.	Choudwar D/s	12	8.1 (7.6-8.3)	7.2 (5.3-9.1)	1.1 (0.4-2.4)	8692 (1300-24000)	0	7 (58)	C	Doesn't conform to Class C	TC	Waste water of Choudwar town
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.(Ref : IS 2296-1982 foot note)

(B) Brahmani river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Sankh river												
1.	Sankh U/s	12	7.7 (6.0-8.3)	7.6 (6.0-9.4)	1.0 (0.3-2.5)	7651 (3300-35000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
Koel River												
2.	Koel U/s	12	8.0 (7.3-8.4)	7.7 (6.2-9.6)	1.1 (0.5-2.1)	13917 (1300-54000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
Brahmani river												
3.	Panposh U/s	12	7.8 (7.1-8.2)	7.4 (6.7-8.0)	0.9 (0.4-1.5)	7400 (3300-17000)	0	8 (67)	C	Doesn't conform to Class C	TC	Human activities
4.	Panposh D/s	12	7.4 (6.8-8.1)	6.5 (5.3-7.8)	4.5 (2.6-5.3)	39750 (11000-92000)	11 (92)	12 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Rourkela town and Steel Plant
5.	Rourkela D/s	12	7.6 (7.0-8.2)	6.8 (6.0-7.8)	3.5 (2.2-4.5)	18650 (7900-54000)	11 (92)	12 (100)	C	Doesn't conform to Class C	BOD, TC	-do-
6.	Rourkela FD/s (Attaghat)	12	7.9 (6.9-8.4)	7.2 (5.8-8.9)	2.6 (1.5-4.2)	4638 (170-17000)	1 (8)	2 (17)	C	Doesn't conform to Class C	BOD, TC	-do-
7.	Rourkela FD/s (Biritola)	12	7.8 (7.1-8.4)	7.2 (5.6-8.8)	2.0 (1.0-3.5)	6148 (790-13000)	1 (8)	5 (42)	C	Doesn't conform to Class C	BOD, TC	-do-

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
8.	Bonaigarh	12	7.7 (7.2-8.4)	7.8 (6.0-9.4)	1.2 (0.4-1.9)	5882 (310-22000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
9.	Rengali	12	7.8 (7.2-8.4)	7.5 (6.0-9.2)	0.9 (0.5-1.3)	3239 (130-16000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
10.	Samal	12	7.5 (6.9-8.4)	7.8 (6.7-9.3)	1.1 (0.4-1.7)	8115 (78-24000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
10.	Talcher FU/s	12	7.8 (7.1-8.2)	7.5 (6.8-8.5)	0.9 (0.4-1.4)	2958 (790-7900)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
10.	Talcher U/s	12	8.0 (7.5-8.4)	7.8 (6.6-9.7)	1.3 (0.7-2.7)	4266 (790-14000)	0	2 (17)	C			
13.	Talcher D/s	12	7.9 (7.3-8.4)	7.5 (6.6-9.6)	2.1 (0.8-3.4)	12900 (1300-35000)	1 (8)	9 (75)	C	Doesn't conform to Class C	BOD, TC	Waste water of Talcher township
14.	Talcher FD/s	12	8.1 (7.5-8.6)	7.6 (6.4-9.8)	1.4 (0.4-2.7)	9523 (790-54000)	0	6 (50)	C	Doesn't conform to Class C	TC	-do-
15.	Dhenkanal U/s #	11	7.8 (7.3-8.3)	7.9 (6.9-9.2)	0.8 (0.4-1.7)	62618 (5400-160000)	0	11 (100)	C	Doesn't conform to Class C	TC	Human activities
16.	Dhenkanal D/s	12	7.8 (7.2-8.4)	7.6 (6.2-9.0)	1.6 (0.8-2.9)	62850 (1300-160000)	0	8 (67)	C	Doesn't conform to Class C	TC	Waste water of Dhenkanal township

Data for the period January-December, 2015 excluding March, 2015

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
17.	Bhuban	12	8.0 (7.4-8.4)	7.9 (6.4-10.4)	1.1 (0.4-1.8)	5008 (490-16000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
18.	Kabatabandha	12	8.0 (7.2-8.4)	7.8 (6.7-9.7)	1.2 (0.5-2.6)	2073 (130-5400)	0	2 (17)	C	C		
19.	Dharmasala U/s	12	8.0 (7.4-8.4)	7.6 (6.1-9.3)	1.0 (0.4-1.8)	13425 (1300-35000)	0	12 (100)	B	Doesn't conform to Class B	TC	Human activities
20.	Dharmasala D/s	12	8.0 (7.4-8.4)	7.6 (6.0-9.9)	1.4 (0.6-2.9)	23585 (230-160000)	0	11 (92)	B	Doesn't conform to Class B	TC	Human activities
21.	Pottamundai	12	7.9 (7.5-8.4)	7.5 (6.1-9.9)	1.4 (0.7-2.5)	7691 (700-24000)	0	12 (100)	B	Doesn't conform to Class B	TC	Human activities
Nandira river												
22.	Nandira river before confluence with river Brahmani	12	8.3 (7.9-8.6)	7.7 (6.1-11.5)	2.5 (1.0-4.5)	14967 (1300-79000)	1 (8)	9 (75)	C	Doesn't conform to Class C	BOD, TC	Human activities
Kisindajhor												
23.	Kisindajhor	12	8.1 (7.2-8.5)	8.6 (6.7-11.4)	2.6 (0.6-4.2)	4002 (330-9200)	4 (33)	3 (25)	C	Doesn't conform to Class C	BOD, TC	Human activities
Kharasuan River												
24.	Khanditara	12	8.1 (7.7-8.4)	7.3 (5.5-9.0)	1.0 (0.4-1.6)	4964 (1700-17000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
25.	Binjharpur	12	8.0 (7.3-8.4)	7.5 (6.4-9.5)	1.0 (0.4-1.8)	3533 (1100-11000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
26.	Aul	12	7.8 (7.4-8.2)	7.4 (5.7-8.8)	1.4 (0.4-2.1)	10174 (790-24000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities
Class 'B' water quality Criteria (IS-2296-1982)			6.5-8.5	5 and above	3 or less	500 or less			Outdoor bathing			
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(C) Baitarani river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Kusei River												
1.	Deogaon	12	8.2 (7.6-8.4)	7.6 (6.1-9.7)	0.9 (0.5-1.5)	15817 (2200-35000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities
Baitarani River												
2.	Joda	12	7.8 (7.2-8.2)	7.4 (6.0-9.1)	1.0 (0.4-2.7)	4713 (170-13000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
3.	Anandpur	12	7.9 (7.6-8.3)	7.4 (6.1-9.2)	1.0 (0.2-2.2)	7257 (790-16000)	0	7 (58)	C	Doesn't conform to Class C	TC	Human activities
4.	Jajpur	12	8.1 (7.6-8.4)	7.6 (6.2-8.8)	1.8 (0.5-2.9)	13783 (1100-54000)	0	10 (83)	C	Doesn't conform to Class C	TC	Human activities
5.	Chandbali U/s	12	7.8 (7.1-8.2)	6.6 (5.4-8.5)	1.5 (0.8-2.5)	49142 (4900-160000)	0	11 (92)	C	Doesn't conform to Class C	TC	Human activities
6.	Chandbali D/s	12	7.7 (6.5-8.3)	6.7 (5.3-8.7)	1.7 (0.9-2.4)	51853 (7900-160000)	0	12 (100)	C	Doesn't conform to Class C	TC	Human activities
Salandi River												
7.	Bhadrak U/s	12	8.0 (7.4-8.4)	7.1 (5.0-9.1)	0.9 (0.3-1.8)	34492 (1700-160000)	0	11 (92)	C	Doesn't conform to Class C	TC	Human activities
8.	Bhadrak D/s	12	8.0 (7.6-8.6)	7.1 (4.8-12.1)	1.8 (0.9-2.9)	38917 (16000-160000)	0	12 (100)	C	Doesn't conform to Class C	TC	Human activities

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Dhamra River												
9.	Dhamara	12	7.9 (7.8-8.2)	6.0 (5.1-7.0)	1.9 (0.9-2.7)	10883 (1300-16000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB :The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(D) Rushikulya river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Rushikulya river												
1.	Madhopur	12	8.2 (7.6-8.4)	7.7 (6.6-9.5)	1.5 (0.7-2.4)	7308 (490-17000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
2.	Potagarh	12	8.1 (7.8-8.4)	7.7 (6.8-9.5)	1.8 (0.8-2.8)	1112 (2-5400)	0	1 (8)	C			
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(E) Nagavali river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Nagavali river												
1.	Penta U/s	12	7.9 (7.3-8.3)	7.3 (6.7-7.8)	1.0 (0.6-1.6)	6316 (490-22000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
2.	J.K. Pur D/S	12	7.8 (7.1-8.2)	7.3 (6.3-8.3)	2.5 (1.8-3.3)	18308 (2200-92000)	3 (25)	10 (83)	C	Doesn't conform to Class C	BOD,TC	Human activities
3.	Rayagada D/S	12	8.0 (7.6-8.4)	7.4 (6.8-7.9)	1.9 (0.5-2.8)	9200 (1300-35000)	0	8 (67)	C	Doesn't conform to Class C	TC	Human activities
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(F) Subarnarekha river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Subarnarekha river												
1.	Rajghat	12	8.1 (7.4-8.4)	7.6 (6.7-8.2)	1.2 (0.4-2.8)	3252 (230-9200)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(G) Budhabalanga river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Budhabalanga river												
1.	Baripada D/s	12	8.0 (7.3-8.3)	7.5 (6.4-8.2)	1.8 (0.9-2.7)	39417 (13000-160000)	0	12 (100)	C	Doesn't conform to Class C	TC	Human activities
2.	Balasore U/s	12	7.9 (7.2-8.4)	7.3 (6.8-8.0)	1.1 (0.5-1.9)	10792 (3500-54000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
3.	Balasore D/s	12	7.8 (7.4-8.3)	7.2 (6.2-7.8)	2.2 (0.8-3.4)	34642 (5400-92000)	2 (17)	9 (75)	C	Doesn't conform to Class C	BOD,TC	Human activities
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(H) Kolab river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Kerandi River												
1.	Sunabeda	12	7.3 (6.5-8.2)	7.5 (6.8-7.8)	0.9 (0.4-1.7)	4162 (460-16000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

(I) Vansadhara river system

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Vansadhara River												
1.	Muniguda	12	8.0 (7.5-8.5)	7.0 (6.2-8.1)	1.0 (0.2-2.3)	7693 (330-35000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
2.	Gunupur	12	7.9 (6.9-8.4)	7.3 (6.4-8.2)	1.1 (0.4-2.7)	8917 (1300-28000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less			Drinking water source with conventional treatment followed by disinfection			

NB : The criteria of non-compliance with respect to TC has been calculated on the following basis:
 TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.
 (Ref : IS 2296-1982 foot note)

Water quality with respect to Other Parameters during 2015 (January-December)

(A) Mahanadi River System

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Ib river																
1.	Sundargarh	27 (4-87)	58 (32-76)	6.1 (3.0-11.8)	0.079 (0.056-0.112)	0.003 (0.001-0.007)	1.26 (0.84-1.68)	709 (170-2400)	156 (114-202)	0.37 (0.26-0.56)	0.023 (0.003-0.063)	88 (65-118)	55 (32-66)	9.4 (5.9-14.7)	7.9 (2.9-16.3)	0.373 (0.260-0.721)
2.	Jharsuguda	22 (6-92)	56 (32-76)	7.5 (4.6-15.1)	0.065 (0.056-0.112)	0.003 (0-0.004)	1.12 (0.84-1.40)	1988 (330-7900)	163 (120-202)	0.42 (0.29-1.02)	0.023 (0.003-0.063)	94 (70-118)	55 (40-68)	10.6 (6.9-26.4)	12.5 (4.1-21.4)	0.364 (0.260-0.655)
3.	Brajrajnagar U/s	22 (4-102)	61 (36-76)	7.0 (3.4-18.2)	0.070 (.056-0.112)	0.004 (0.001-0.011)	1.19 (0.84-1.40)	4244 (460-16000)	166 (132-204)	0.38 (0.26-0.64)	0.045 (0.003-0.179)	95 (72-116)	60 (42-74)	9.7 (7.8-12.7)	9.5 (5.0-17.3)	0.364 (0.265-0.572)
4.	Brajrajnagar D/s	26 (6-110)	61 (36-78)	9.8 (5.3-21.9)	0.070 (0.056-0.112)	0.004 (0.001-0.007)	1.21 (0.84-1.40)	5376 (310-16000)	187 (138-275)	0.49 (0.23-1.34)	0.038 (0.003-0.112)	108 (78-162)	64 (40-96)	13.0 (5.9-37.2)	12.3 (6.2-20.4)	0.367 (0.257-0.648)
Bheden river																
5.	Jharsuguda	27 (5-60)	85 (40-148)	10.3 (4.6-15.4)	0.079 (0.056-0.112)	0.005 (0-0.014)	1.28 (1.12-1.68)	1546 (170-4900)	304 (132-653)	0.88 (0.27-1.96)	0.082 (0.009-0.273)	170 (70-358)	96 (48-192)	27.0 (6.9-75.3)	23.8 (5.8-61.6)	0.941 (0.260-3.300)
Hirakud Reservoir																
6.	Hirakud reservoir	15 (4-45)	78 (56-96)	9.3 (3.5-13.5)	0.131 (0.056-0.728)	0.006 (0-0.022)	1.26 (0.84-1.96)	1245 (230-5400)	208 (162-281)	0.42 (0.22-0.87)	0.047 (0.003-0.158)	118 (92-155)	82 (62-90)	11.4 (5.9-24.5)	13.2 (9.7-21.4)	0.429 (0.240-0.858)
Power Channel																
7.	Power Channel U/s	14 (3-36)	81 (54-100)	8.9 (5.3-15.8)	0.075 (0.056-0.112)	0.003 (0.001-0.007)	1.24 (1.12-1.40)	599 (45-3500)	216 (164-255)	0.41 (0.30-0.58)	0.028 (0.003-0.071)	118 (90-142)	78 (50-96)	10.8 (7.8-13.7)	13.3 (8.5-26.0)	0.409 (0.230-0.772)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents								
		Annual average values (Range of values)															
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F	
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)							
8.	Power Channel D/s	19 (5-56)	82 (58-96)	13.6 (5.3-26.1)	0.061 (0.056-0.112)	0.003 (0.001-0.007)	1.14 (0.84-1.40)	1134 (130-3500)	232 (170-345)	0.41 (0.33-0.53)	0.036 (0.003-0.081)	124 (96-152)	83 (64-102)	11.3 (9.8-13.7)	16.2 (8.1-30.0)	0.403 (0.230-0.750)	
Mahanadi river																	
9.	Sambalpur U/s	17 (4-75)	77 (48-100)	9.0 (4.6-17.4)	0.084 (0.056-0.224)	0.004 (0-0.009)	1.24 (0.84-1.68)	5166 (79-17000)	208 (165-257)	0.42 (0.21-0.63)	0.029 (0.003-0.063)	117 (90-140)	78 (56-90)	11.5 (5.9-15.7)	7.9 (2.9-16.3)	0.384 (0.230-0.692)	
10.	Sambalpur D/s	29 (12-78)	87 (62-124)	19.2 (8.6-27.5)	0.135 (0.056-0.504)	0.007 (0.001-0.025)	1.42 (0.84-2.52)	32358 (3300-160000)	244 (194-318)	0.54 (0.34-0.89)	0.042 (0.003-0.164)	141 (112-188)	87 (70-108)	14.9 (9.8-27.4)	7.9 (2.9-16.3)	0.401 (0.180-0.659)	
11.	Sambalpur FD/s at Shankarmath	21 (6-70)	93 (60-120)	14.5 (6.1-21.7)	0.061 (0.056-0.112)	0.003 (0.001-0.004)	1.12 (0.84-1.40)	12850 (2300-54000)	245 (174-337)	0.54 (0.30-1.21)	0.066 (0.003-0.197)	139 (100-186)	90 (60-112)	14.3 (7.8-33.3)	13.6 (5.9-25.5)	0.466 (0.250-0.676)	
12.	Sambalpur FFD/s at Huma	16 (2-62)	80 (54-96)	11.0 (4.6-18.8)	0.075 (0.056-0.168)	0.006 (0.001-0.016)	1.21 (0.84-1.40)	3223 (490-7900)	210 (165-271)	0.41 (0.32-0.57)	0.054 (0.003-0.221)	120 (96-150)	82 (62-96)	11.4 (8.8-15.6)	12.7 (6.1-24.8)	0.416 (0.230-0.638)	
13.	Sonepur U/s	19 (3-58)	81 (48-100)	9.0 (3.0-15.3)	0.070 (0.056-0.168)	0.005 (0.001-0.016)	1.17 (0.84-1.40)	2108 (130-16000)	214 (160-276)	0.42 (0.30-0.51)	0.041 (0.003-0.122)	121 (90-150)	82 (60-100)	11.4 (8.9-14.7)	13.0 (8.2-22.8)	0.407 (0.250-0.760)	
14.	Sonepur D/s	25 (1-61)	92 (60-104)	12.5 (7.6-19.2)	0.084 (0.056-0.168)	0.007 (0.001-0.017)	1.26 (0.84-1.68)	3135 (130-16000)	241 (182-282)	0.46 (0.32-0.61)	0.052 (0.003-0.119)	135 (108-152)	90 (64-98)	12.6 (9.8-17.6)	13.3 (7.7-26.0)	0.425 (0.189-0.752)	
15.	Tikarapada #	28 (4-84)	82 (60-96)	8.7 (3.8-15.9)	0.056 (0.056-0.056)	0.005 (0.002-0.017)	1.22 (0.84-1.40)	3422 (78-13000)	210 (169-260)	0.38 (0.29-0.48)	0.027 (0.003-0.048)	118 (96-140)	80 (64-100)	10.1 (7.8-11.7)	11.4 (6.7-17.7)	0.395 (0.291-0.680)	
16.	Narasinghpur	17 (3-56)	81 (60-108)	9.2 (3.4-17.3)	0.070 (0.056-0.112)	0.006 (0.002-0.014)	1.19 (0.84-1.68)	3223 (330-11000)	211 (184-280)	0.41 (0.28-0.80)	0.042 (0.016-0.112)	118 (102-152)	82 (62-94)	11.4 (7.8-21.5)	10.2 (4.7-18.2)	0.403 (0.280-0.622)	

Data for the period January-November, 2015

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter		Mineral constituents						
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
17.	Munduli	16 (4-45)	81 (48-108)	9.4 (4.6-13.8)	0.070 (0.056-0.168)	0.005 (0.002-0.007)	1.19 (0.84-1.40)	4561 (78-16000)	204 (146-285)	0.40 (0.31-0.62)	0.030 (0.003-0.074)	116 (82-155)	80 (54-96)	11.1 (8.8-17.6)	9.9 (5.6-21.1)	0.407 (0.270-0.790)
18.	Cuttack U/s	24 (4-81)	75 (48-96)	9.8 (6.1-15.2)	0.079 (0.056-0.112)	0.006 (0-0.014)	1.14 (0.84-1.40)	600 (20-1300)	199 (153-270)	0.40 (0.30-0.53)	0.034 (0.003-0.138)	112 (88-148)	75 (56-90)	10.5 (7.8-11.7)	10.2 (2.4-21.5)	0.387 (0.298-0.536)
19.	Cuttack D/s	32 (4-145)	82 (60-98)	16.1 (9.2-27.6)	0.075 (0.056-0.224)	0.007 (0-0.022)	1.17 (0.84-1.40)	36248 (780-160000)	219 (190-280)	0.37 (0.26-0.49)	0.043 (0.003-0.112)	125 (112-150)	86 (76-96)	10.4 (7.8-12.7)	13.6 (2.9-24.9)	0.378 (0.272-0.524)
20.	Cuttack FD/s	34 (4-157)	82 (58-102)	11.4 (5.5-18.3)	0.075 (0.056-0.168)	0.006 (0.001-0.016)	1.05 (0.84-1.12)	21502 (170-54000)	210 (165-262)	0.41 (0.33-0.53)	0.043 (0.003-0.138)	119 (95-140)	82 (70-94)	10.6 (8.8-13.7)	11.0 (3.6-21.9)	0.378 (0.302-0.510)
21.	Paradeep U/s	25 (3-61)	96 (68-116)	14.3 (6.7-24.4)	0.056 (0.056-0.056)	0.003 (0.001-0.007)	1.07 (0.84-1.40)	2165 (230-5400)	3971 (192-10960)	15.82 (0.31-47.53)	0.380 (0.003-1.171)	2769 (110-8310)	459 (76-1020)	1382.5 (8.8-4696.8)	245.7 (11.2-808.4)	0.514 (0.320-0.910)
22.	Paradeep D/s	42 (8-109)	119 (68-216)	24.5 (8.3-35.2)	0.056 (0.056-0.056)	0.003 (0-0.007)	1.05 (0.84-1.40)	3231 (130-13000)	14312 (267-29160)	38.58 (0.53-65.04)	1.177 (0.042-2.274)	11196 (142-23960)	1692 (84-4300)	5905.4 (13.7-12714.0)	855.1 (14.2-1853.2)	0.652 (0.462-0.900)
Tel River																
23.	Monmunda	27 (5-89)	78 (44-96)	10.6 (5.1-27.6)	0.079 (0.056-0.168)	0.005 (0.002-0.011)	1.19 (0.84-1.40)	1226 (78-7900)	186 (124-211)	0.33 (0.22-0.45)	0.045 (0.003-0.147)	106 (70-121)	76 (40-96)	8.9 (5.9-11.7)	7.7 (2.0-14.8)	0.388 (0.260-0.582)
Kathajodi River																
24.	Cuttack U/s	25 (4-68)	72 (58-84)	9.9 (6.1-15.8)	0.079 (0.056-0.168)	0.006 (0.001-0.014)	1.12 (0.84-1.40)	1460 (45-5400)	185 (144-218)	0.37 (0.25-0.49)	0.031 (0.010-0.077)	106 (82-128)	70 (56-90)	9.9 (6.9-11.7)	10.6 (5.0-17.0)	0.384 (0.266-0.604)
25.	Cuttack D/s	22 (3-66)	89 (68-132)	21.1 (16.6-24.4)	0.079 (0.056-0.112)	0.007 (0.002-0.014)	1.33 (1.12-1.68)	14873 (780-35000)	241 (193-309)	0.47 (0.31-0.65)	0.058 (0.022-0.133)	140 (115-181)	94 (68-128)	13.4 (8.8-20.6)	15.9 (9.7-25.5)	0.407 (0.262-0.543)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
26.	Mattagajpur (Cuttack FD/s)	27 (7-62)	141 (116-200)	55.7 (24.8-127.1)	0.079 (0.056-0.112)	0.089 (0-0.326)	9.10 (2.52-25.76)	28725 (4900-92000)	510 (352-652)	1.70 (1.13-2.31)	0.087 (0.010-0.170)	301 (210-444)	146 (100-232)	55.0 (37.2-70.5)	41.5 (7.6-125.6)	0.416 (0.300-0.555)
Serua River																
27.	Sankhatrasa (Cuttack FD/s)	26 (5-76)	79 (60-92)	14.4 (9.6-20.7)	0.138 (0.035-0.504)	0.010 (0-0.028)	1.38 (1.12-1.68)	14227 (130-54000)	225 (192-281)	0.53 (0.25-0.89)	0.030 (0.003-0.126)	127 (108-148)	80 (66-96)	14.4 (7.8-23.5)	13.2 (4.5-26.4)	0.389 (0.252-0.585)
Kuakhai River																
28.	Bhubaneswar FU/s	20 (2-71)	79 (62-96)	8.9 (3.7-15.4)	0.061 (0.056-0.112)	0.004 (0.001-0.009)	1.00 (0.56-1.12)	2663 (130-9200)	202 (161-240)	0.42 (0.30-0.52)	0.022 (0.003-0.061)	113 (90-138)	77 (58-92)	11.0 (7.8-12.7)	7.6 (3.9-11.1)	0.378 (0.168-0.626)
29.	Bhubaneswar U/s	24 (5-74)	78 (52-96)	11.5 (3.7-19.2)	0.070 (0.056-0.112)	0.005 (0.001-0.014)	1.21 (0.84-1.68)	13383 (1300-22000)	212 (183-260)	0.51 (0.34-0.70)	0.043 (0.012-0.112)	120 (105-142)	78 (60-96)	13.1 (8.8-17.6)	8.8 (4.1-12.9)	0.322 (0.204-0.492)
Daya River																
30.	Bhubaneswar D/s	36 (8-100)	88 (68-138)	27.0 (19.9-37.4)	4.466 (0.168-12.540)	0.145 (0.004-0.633)	8.31 (1.68-19.60)	64083 (1100-160000)	324 (222-473)	1.39 (0.64-2.90)	0.050 (0.022-0.126)	187 (132-278)	91 (80-122)	36.7 (17.6-64.6)	19.7 (7.5-29.2)	0.305 (0.212-0.454)
31.	Bhubaneswar FD/s	34 (8-72)	85 (74-104)	23.5 (16.8-31.5)	4.055 (0.112-11.870)	0.116 (0.003-0.415)	7.98 (1.68-19.60)	46358 (2200-160000)	298 (225-393)	1.20 (0.55-2.62)	0.045 (0.012-0.137)	165 (126-215)	83 (74-96)	31.0 (15.7-54.8)	12.9 (6.7-21.2)	0.323 (0.205-0.474)
Birupa River																
32.	Choudwar D/s	18 (4-98)	84 (58-108)	9.3 (1.9-19.2)	0.084 (0.056-0.168)	0.005 (0.002-0.011)	1.28 (0.84-1.68)	4978 (330-16000)	225 (172-385)	0.56 (0.33-2.02)	0.031 (0.006-0.067)	128 (100-218)	84 (72-96)	15.5 (7.8-60.7)	11.0 (4.7-21.8)	0.404 (0.212-0.742)
* Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
* Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

*** Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

(A) Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻⁻ P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)		(mg/l)								
Ib River												
1.	Sundargarh	1.998 (0.505-5.257)	0.090 (0.006-0.230)	0.015 (<0.002-0.036)	0.048 (0.001-0.099)	2.087 (0.140-6.150)	0.011 (0.006-0.017)	0.004 (0.002-0.009)	0.011 (0.004-0.020)	0.0024 (0.0007-0.0071)	0.00019 (<0.00006-0.00051)	0.010 (0.002-0.020)
2.	Jharsuguda	3.432 (1.337-7.723)	0.106 (0.006-0.222)	0.0154 (<0.002-0.033)	0.047 (0.013-0.099)	1.914 (0.170-5.890)	0.013 (0.003-0.024)	0.005 (0.002-0.010)	0.014 (0.001-0.023)	0.0021 (0.0004-0.0060)	0.00033 (0.00006-0.00089)	0.011 (0.002-0.028)
3.	Brajraj nagar U/s	2.196 (0.456-6.348)	0.110 (0.012-0.231)	0.013 (<0.002-0.035)	0.038 (0.008-0.071)	1.338 (0.030-5.630)	0.017 (0.007-0.044)	0.004 (0.001-0.008)	0.012 (0.006-0.022)	0.0019 (0.0006-0.0047)	0.00028 (<0.00006-0.00083)	0.014 (0.006-0.024)
4.	Brajraj nagar D/s	4.978 (0.558-14.365)	0.199 (0.022-1.271)	0.016 (<0.002-0.035)	0.049 (0.015-0.113)	1.249 (0.117-5.580)	0.014 (0.005-0.028)	0.005 (0.001-0.011)	0.011 (0.001-0.024)	0.0029 (0.0007-0.0081)	0.00042 (0.00019-0.00100)	0.015 (0.002-0.026)
Bheden River												
5.	Jharsuguda	3.643 (0.476-13.839)	0.148 (0.029-0.576)	0.011 (<0.002-0.033)	0.039 (0.008-0.074)	2.383 (<0.005-7.000)	0.013 (0.005-0.042)	0.015 (0.001-0.056)	0.010 (0.002-0.031)	0.0020 (0.0007-0.0036)	0.00026 (<0.00006-0.00089)	0.011 (0.004-0.018)
Hirakud Reservoir												
6.	Hirakud reservoir	3.736 (0.509-6.803)	0.078 (0.014-0.191)	0.008 (<0.002-0.028)	0.030 (0.003-0.097)	0.862 (0.003-3.180)	0.012 (0.004-0.022)	0.008 (0.003-0.014)	0.016 (0.004-0.022)	0.0025 (0.0006-0.0066)	0.00017 (<0.00006-0.00044)	0.007 (0.003-0.016)
Power channel												
7.	Power channel U/s	3.186 (0.319-9.747)	0.182 (0.018-1.430)	0.012 (<0.002-0.031)	0.031 (0.008-0.076)	1.429 (0.230-5.460)	0.009 (0.001-0.017)	0.007 (0.002-0.012)	0.016 (0.004-0.020)	0.0028 (0.0007-0.0071)	0.00013 (<0.00006-0.00032)	0.008 (0.001-0.015)
8.	Power Channel D/s	6.396 (0.700-14.734)	0.099 (0.023-0.216)	0.014 (<0.002-0.033)	0.048 (0.015-0.114)	1.516 (0.090-5.150)	0.014 (0.001-0.024)	0.008 (0.001-0.013)	0.023 (0.003-0.038)	0.0034 (0.0007-0.0085)	0.00022 (<0.00006-0.00095)	0.014 (0.008-0.023)

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)		(mg/l)								
Mahanadi River												
9.	Sambalpur U/s	3.807 (0.639-11.359)	0.065 (0.012-0.150)	0.015 (<0.002-0.031)	0.039 (0.013-0.087)	1.558 (0.143-5.530)	0.015 (0.007-0.042)	0.006 (0.002-0.014)	0.013 (0.003-0.020)	0.0028 (0.0008-0.0076)	0.00013 (<0.00006-0.00070)	0.013 (0.005-0.024)
10.	Sambalpur D/s	7.698 (1.302-16.554)	0.232 (0.027-1.050)	0.016 (<0.002-0.036)	0.051 (0.014-0.114)	1.320 (0.060-5.810)	0.017 (0.007-0.027)	0.007 (0.002-0.018)	0.026 (0.005-0.056)	0.0035 (0.0011-0.0085)	0.00027 (<0.00006-0.00076)	0.015 (0.004-0.042)
11.	Sambalpur FD/s at Shankarmath	7.613 (1.844-12.329)	0.211 (0.022-0.950)	0.011 (<0.002-0.036)	0.041 (0.003-0.133)	1.485 (0.060-5.180)	0.010 (0.003-0.047)	0.005 (0.001-0.016)	0.011 (0.004-0.020)	0.0024 (0.0009-0.0047)	0.00024 (<0.00006-0.00070)	0.011 (0.003-0.023)
12.	Sambalpur FD/s at Huma	4.835 (1.565-8.928)	0.108 (0.016-0.373)	0.015 (<0.002-0.047)	0.036 (0.008-0.104)	1.903 (0.060-7.260)	0.010 (0.005-0.022)	0.005 (0.001-0.013)	0.016 (0.004-0.039)	0.0024 (0.0009-0.0060)	0.00025 (0.00013-0.00076)	0.010 (0.004-0.022)
13.	Sonepur U/s	5.124 (0.292-13.799)	0.108 (0.033-0.337)	0.007 (<0.002-0.023)	0.027 (0.007-0.076)	1.674 (0.090-6.630)	0.009 (<0.001-0.018)	0.005 (<0.001-0.011)	0.007 (<0.001-0.013)	0.0028 (0.0007-0.0066)	0.00020 (<0.00006-0.00089)	0.011 (<0.001-0.022)
14.	Sonepur D/s	8.858 (2.015-31.328)	0.146 (0.015-0.451)	0.011 (<0.002-0.033)	0.038 (0.010-0.094)	1.778 (0.070-6.090)	0.020 (0.007-0.060)	0.008 (0.004-0.018)	0.011 (0.004-0.018)	0.0036 (0.0008-0.0081)	0.00023 (<0.00006-0.00070)	0.014 (0.007-0.023)
15.	Tikarapada #	3.430 (0.602-9.637)	0.154 (0.035-0.612)	0.012 (<0.002-0.036)	0.032 (0.008-0.076)	2.932 (0.240-7.220)	0.008 (0.004-0.010)	0.003 (0.001-0.007)	0.009 (0.001-0.019)	0.0027 (0.0006-0.0053)	0.00012 (<0.00006-0.00038)	0.010 (0.006-0.017)
16.	Narasinghpur	4.482 (0.363-15.336)	0.105 (0.017-0.280)	0.010 (<0.002-0.030)	0.038 (0.005-0.141)	1.825 (0.070-7.580)	0.015 (0.007-0.036)	0.005 (0.001-0.009)	0.007 (0.003-0.010)	0.0026 (0.0004-0.0054)	0.00011 (<0.00006-0.00044)	0.008 (0.004-0.014)
17.	Munduli	4.280 (0.500-15.296)	0.179 (0.045-0.413)	0.011 (<0.002-0.025)	0.043 (0.013-0.165)	1.803 (0.030-7.210)	0.011 (0.004-0.041)	0.004 (0.001-0.010)	0.008 (0.001-0.020)	0.0024 (0.0007-0.0054)	0.00011 (<0.00006-0.00044)	0.008 (0.002-0.012)
18.	Cuttack U/s	3.192 (0.155-6.851)	0.093 (0.015-0.223)	0.010 (<0.002-0.033)	0.029 (0.013-0.055)	2.309 (0.050-7.220)	0.007 (0.002-0.012)	0.003 (0.001-0.008)	0.005 (0.001-0.009)	0.0032 (0.0007-0.0067)	0.00011 (<0.00006-0.00038)	0.009 (0.004-0.014)

Data for the period January-November, 2015

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)		(mg/l)								
19.	Cuttack D/s	8.603 (2.817-23.343)	0.079 (0.031-0.266)	0.011 (<0.002-0.031)	0.041 (0.015-0.076)	2.496 (<0.005-7.450)	0.012 (0.007-0.017)	0.005 (0.002-0.013)	0.006 (0.001-0.013)	0.0039 (0.0011-0.0076)	0.00022 (<0.00006-0.00070)	0.012 (0.007-0.017)
20.	Cuttack FD/s	5.829 (1.678-12.086)	0.208 (0.033-1.248)	0.010 (<0.002-0.035)	0.036 (0.013-0.076)	2.365 (0.040-6.710)	0.012 (0.007-0.020)	0.004 (0.001-0.009)	0.006 (0.002-0.014)	0.0028 (0.0007-0.0059)	0.00015 (<0.00006-0.00032)	0.009 (0.004-0.015)
21.	Paradeep U/s	3.339 (0.881-9.747)	0.071 (0.01-0.143)	0.012 (<0.002-0.028)	0.038 (0.013-0.087)	1.102 (0.120-3.850)	0.020 (0.008-0.051)	0.009 (0.004-0.013)	0.010 (0.001-0.019)	0.0018 (0.0005-0.0065)	0.00016 (<0.00006-0.00057)	0.013 (0.005-0.021)
22.	Paradeep D/s	8.145 (0.903-18.232)	0.222 (0.033-1.234)	0.010 (<0.002-0.040)	0.046 (0.005-0.131)	1.823 (0.390-6.040)	0.017 (0.007-0.028)	0.013 (0.006-0.021)	0.015 (0.008-0.023)	0.0027 (0.0011-0.0074)	0.00021 (0.00006-0.00038)	0.016 (0.011-0.027)
Tel River												
23.	Monmunda	3.939 (0.478-10.665)	0.079 (0.022-0.147)	0.010 (<0.002-0.033)	0.040 (0.005-0.109)	3.141 (0.020-6.760)	0.012 (0.005-0.026)	0.007 (0.002-0.014)	0.015 (0.006-0.060)	0.0029 (0.0003-0.0064)	0.00014 (<0.00006-0.00051)	0.009 (0.004-0.014)
Kathajodi River												
24.	Cuttack U/s	3.040 (0.186-6.492)	0.074 (0.019-0.229)	0.014 (<0.002-0.033)	0.047 (0.013-0.099)	1.914 (0.170-5.890)	0.013 (0.003-0.024)	0.005 (0.002-0.010)	0.014 (0.001-0.023)	0.0021 (0.0004-0.0060)	0.00033 (0.00006-0.00089)	0.011 (0.002-0.028)
25.	Cuttack D/s	10.010 (0.522-30.467)	0.190 (0.027-0.590)	0.012 (<0.002-0.036)	0.048 (0.021-0.094)	2.366 (<0.005-6.990)	0.017 (0.009-0.027)	0.006 (<0.001-0.015)	0.010 (0.001-0.017)	0.0032 (0.0001-0.0061)	0.00035 (0.00013-0.00089)	0.011 (0.007-0.016)
26.	Mattagajpur (Cuttack FD/s)	16.529 (1.186-36.552)	0.327 (0.038-1.305)	0.013 (<0.002-0.038)	0.060 (0.016-0.114)	2.384 (0.367-6.290)	0.020 (0.008-0.048)	0.011 (0.002-0.022)	0.013 (0.003-0.028)	0.0034 (0.0013-0.0072)	0.00053 (0.00013-0.00095)	0.013 (0.009-0.024)
Serua River												
27.	Sankhatrasa (Cuttack FD/s)	4.412 (1.599-7.867)	0.153 (0.015-0.731)	0.010 (<0.002-0.033)	0.037 (0.005-0.076)	2.736 (0.150-6.960)	0.013 (0.007-0.026)	0.005 (0.001-0.012)	0.010 (0.001-0.028)	0.0032 (0.0009-0.0072)	0.00025 (<0.00006-0.00057)	0.010 (0.002-0.019)

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻⁻ P	Cr(VI)	T. Cr	Fe	Ni##	Cu##	Zn##	Cd##	Hg	Pb##
		(mg/l)		(mg/l)								
Kuakhai River												
28.	Bhubaneswar FU/s	5.632 (0.337-28.060)	0.128 (0.09-0.528)	0.004 (<0.002-0.016)	0.025 (0.005-0.094)	0.616 (0.010-2.260)	0.009 (0.001-0.017)	0.004 (0.001-0.009)	0.005 (0.001-0.015)	0.0026 (0.0006-0.0061)	0.00013 (<0.00006-0.00057)	0.010 (0.009-0.015)
29.	Bhubaneswar U/s	7.927 (1.054-20.510)	0.084 (0.019-0.232)	0.006 (<0.002-0.021)	0.030 (0.007-0.108)	1.727 (0.220-6.270)	0.011 (0.007-0.017)	0.005 (0.001-0.014)	0.008 (0.001-0.030)	0.0024 (0.0006-0.0069)	0.00015 (<0.00006-0.00064)	0.009 (0.004-0.013)
Daya River												
30.	Bhubaneswar D/s	12.754 (2.821-28.397)	0.127 (0.017-0.287)	0.013 (<0.002-0.038)	0.046 (0.016-0.131)	2.173 (0.480-7.140)	0.014 (0.009-0.024)	0.004 (<0.001-0.016)	0.007 (0.001-0.016)	0.0037 (0.0009-0.0086)	0.00041 (0.00019-0.00089)	0.013 (0.007-0.028)
31.	Bhubaneswar FD/s	8.279 (1.156-28.082)	0.134 (0.025-0.431)	0.008 (<0.002-0.030)	0.035 (0.011-0.094)	1.600 (0.330-3.320)	0.012 (0.006-0.024)	0.006 (0.001-0.014)	0.006 (0.001-0.016)	0.0033 (0.0008-0.0077)	0.00019 (0.00006-0.00051)	0.009 (0.004-0.015)
Birupa River												
32.	Choudwar D/s	4.531 (0.934-12.916)	0.136 (0.027-0.864)	0.006 (<0.002-0.026)	0.028 (0.008-0.057)	1.345 (0.100-6.340)	0.009 (0.003-0.024)	0.004 (0.001-0.011)	0.010 (0.002-0.016)	0.0033 (0.0005-0.0138)	0.00021 (<0.00006-0.00044)	0.014 (0.005-0.025)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015 except Tikarpada wherein Data for the period April-November

Brahmani River System

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(μS/cm)	(mg/l)						
Sankh river																
1.	Sankha U/s	24 (4-134)	54 (28-76)	8.1 (3.8-15.8)	0.065 (0.056-0.112)	0.003 (0-0.006)	1.12 (0.84-1.40)	3420 (110-13000)	157 (117-210)	0.43 (0.30-0.63)	0.026 (0.003-0.060)	90 (65-122)	53 (32-72)	10.6 (6.9-15.7)	10.7 (3.4-18.9)	0.386 (0.280-0.548)
Koel river																
2.	Koel U/s	24 (3-146)	81 (36-116)	8.8 (3.9-13.1)	0.061 (0.056-0.112)	0.004 (0.001-0.007)	1.21 (0.84-1.40)	6215 (330-24000)	199 (152-250)	0.38 (0.27-0.60)	0.030 (0.003-0.064)	116 (84-148)	80 (40-108)	10.5 (7.8-16.6)	9.8 (3.1-19.8)	0.373 (0.280-0.612)
Brahmani river																
3.	Panposh U/s	18 (2-80)	55 (24-72)	7.6 (3.8-11.8)	0.065 (0.056-0.112)	0.003 (0-0.006)	1.19 (0.84-1.40)	3375 (1100-11000)	154 (118-216)	0.31 (0.21-0.49)	0.038 (0.003-0.103)	86 (67-118)	55 (42-68)	7.9 (5.9-12.7)	9.8 (3.1-19.8)	0.343 (0.242-0.533)
4.	Panposh D/s	47 (14-160)	70 (52-92)	29.8 (19.6-43.3)	4.788 (0.784-14.224)	0.096 (0-0.427)	8.89 (3.08-23.52)	22867 (4600-54000)	317 (223-412)	0.92 (0.43-1.17)	0.056 (0.003-0.125)	86 (67-118)	97 (84-116)	25.6 (11.7-36.2)	40.5 (23.6-57.1)	1.187 (0.440-2.100)
5.	Rourkela D/s	39 (12-120)	68 (48-88)	24.8 (15.8-43.8)	2.240 (0.168-12.992)	0.049 (0-0.292)	4.76 (1.40-21.84)	9992 (3300-22000)	256 (153-368)	0.61 (0.34-0.79)	0.059 (0.003-0.228)	145 (86-202)	85 (56-108)	16.5 (8.8-21.5)	28.1 (13.2-45.0)	0.725 (0.420-1.110)
6.	Biritola	29 (10-110)	68 (42-140)	17.4 (11.1-25.6)	0.201 (0.056-0.896)	0.010 (0-0.031)	1.52 (1.12-1.96)	1952 (78-7900)	235.4 (153.0-369.4)	0.50 (0.30-0.64)	0.040 (0.003-0.154)	135 (88-240)	80 (56-140)	17.0 (5.9-45.0)	21.9 (11.1-39.2)	0.526 (0.400-0.866)
7.	Attaghat	27 (6-120)	65 (44-92)	14.9 (7.7-37.4)	0.287 (0.056-1.880)	0.015 (0-0.122)	1.56 (1.12-2.24)	2553 (330-4900)	208 (146-285)	0.59 (0.24-1.27)	0.034 (0.003-0.058)	119 (82-158)	74 (52-96)	13.1 (7.8-16.6)	19.3 (8.3-38.8)	0.489 (0.370-0.730)
8.	Bonaigarh	33 (4-130)	65 (40-80)	9.3 (5.1-17.8)	0.191 (0.056-1.344)	0.008 (0.001-0.054)	1.28 (0.84-2.52)	2858 (130-13000)	214 (134-281)	0.60 (0.41-0.94)	0.042 (0.003-0.125)	122 (80-156)	71 (48-92)	16.1 (9.8-27.4)	16.3 (10.0-33.6)	0.420 (0.220-0.797)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents								
		Annual Average values (Range of values)															
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F	
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)							
9.	Rengali	15 (2-39)	52 (40-80)	8.2 (3.7-19.8)	0.079 (0.056-0.168)	0.003 (0.001-0.007)	1.10 (0.84-1.68)	1498 (20-9200)	151 (123-215)	0.36 (0.20-0.70)	0.044 (0.006-0.093)	86 (70-122)	53 (35-76)	9.0 (5.9-19.6)	10.0 (3.5-18.9)	0.333 (0.200-0.530)	
10.	Samal	22 (3-80)	55 (44-80)	10.2 (3.1-19.8)	0.079 (0.056-0.112)	0.002 (0-0.014)	1.24 (0.84-1.40)	3617 (20-13000)	172 (137-243)	0.53 (0.33-0.92)	0.046 (0.003-0.089)	98 (80-135)	56 (44-82)	13.5 (7.8-23.5)	9.8 (3.1-19.8)	0.344 (0.205-0.580)	
11.	Talcher FU/s	29 (4-85)	46 (32-60)	5.7 (2.0-9.5)	0.065 (0.056-0.168)	0.003 (0-0.004)	1.14 (0.84-1.40)	1416 (130-4600)	145 (125-188)	0.39 (0.28-0.65)	0.024 (0.003-0.058)	82 (70-108)	49 (40-60)	9.6 (6.9-15.7)	10.5 (3.7-17.2)	0.357 (0.270-0.540)	
12.	Talcher U/s	25 (3-87)	51 (32-68)	9.8 (5.2-21.7)	0.163 (0.056-0.952)	0.007 (0.002-0.029)	1.19 (0.84-2.24)	2133 (330-9400)	147 (117-176)	0.32 (0.20-0.43)	0.047 (0.003-0.282)	84 (68-102)	53 (36-72)	8.1 (5.9-11.7)	9.6 (3.7-18.0)	0.380 (248-0.580)	
13.	Talcher D/s	30 (12-90)	61 (44-76)	7.6 (3.8-11.8)	0.303 (0.056-2.632)	0.009 (0.001-0.053)	1.49 (0.84-4.20)	6365 (490-24000)	154 (118-216)	0.39 (0.27-0.53)	0.075 (0.016-0.215)	104 (86-135)	66 (48-86)	10.1 (7.8-13.7)	14.9 (6.5-25.5)	0.443 (0.290-0.600)	
14.	Talcher FD/s	25 (4-82)	63 (52-92)	10.8 (3.7-23.6)	0.075 (0.056-0.112)	0.006 (0.001-0.011)	1.28 (1.12-1.68)	4148 (330-24000)	190 (146-243)	0.46 (0.27-0.68)	0.059 (0.003-0.164)	107 (85-138)	68 (56-104)	12.1 (7.8-16.6)	13.7 (6.1-29.6)	0.467 (0.320-0.850)	
15.	Dhenkanal U/s#	24 (7-65)	55 (40-68)	7.4 (3.9-15.0)	0.066 (0.056-0.112)	0.003 (0-0.005)	1.17 (0.84-1.40)	43234 (1700-160000)	154 (129-180)	0.37 (0.26-0.78)	0.037 (0.006-0.071)	89 (74-102)	56 (48-66)	9.0 (6.8-13.7)	10.2 (4.1-18.9)	0.376 (0.270-0.520)	
16.	Dhenkanal D/s	29 (6-75)	73 (54-108)	11.4 (7.6-21.0)	0.093 (0.056-0.224)	0.005 (0.001-0.021)	1.14 (0.84-1.68)	34497 (490-92000)	198 (137-259)	0.45 (0.27-0.68)	0.045 (0.006-0.083)	114 (82-150)	73 (56-110)	12.1 (5.9-18.6)	12.6 (4.2-24.6)	0.368 (0.288-0.461)	
17.	Bhuban	31 (6-85)	59 (38-80)	9.2 (5.2-12.9)	0.058 (0.026-0.112)	0.004 (0.001-0.009)	1.14 (0.56-1.68)	3044 (78-16000)	167 (129-207)	0.41 (0.31-0.67)	0.069 (0.019-0.148)	95 (72-115)	60 (44-76)	10.3 (7.8-15.7)	10.8 (5.30-24.1)	0.385 (0.212-0.610)	
18.	Kabatabandha	30 (3-88)	57 (36-70)	10.1 (5.2-18.5)	0.065 (0.056-0.112)	0.004 (0.001-0.007)	1.19 (0.84-1.40)	1069 (20-2400)	165 (124-218)	0.40 (0.31-0.58)	0.062 (0.006-0.204)	94 (72-118)	60 (40-80)	10.4 (7.8-15.7)	9.9 (5.6-18.0)	0.398 (0.202-0.600)	

Data for the period January-December, 2015 excluding March, 2015

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(MPN/100ml)	(µS/cm)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
19.	Dharmasala U/s	27 (3-102)	73 (44-92)	7.7 (5.3-11.7)	0.079 (0.056-0.224)	0.005 (0.002-0.009)	1.21 (0.084-1.68)	6391 (790-17000)	208 (129-329)	0.54 (0.31-1.03)	0.025 (0.006-0.083)	116 (75-188)	71 (44-86)	14.7 (7.8-30.3)	10.6 (4.4-42.5)	0.362 (0.203-0.525)
20.	Dharmasala D/s	30 (5-118)	73 (44-96)	10.6 (6.0-17.6)	0.084 (0.056-0.168)	0.005 (0.001-0.014)	1.19 (0.84-1.68)	13556 (78-92000)	193 (128-262)	0.41 (0.22-0.59)	0.051 (0.010-0.122)	111 (78-142)	71 (52-84)	11.2 (5.9-16.6)	10.3 (4.8-18.9)	0.374 (0.252-0.541)
21.	Pottamundai	15 (3-56)	798 (48-104)	11.6 (9.2-15.2)	0.056 (0.056-0.056)	0.003 (0.001-0.007)	1.12 (0.84-1.40)	4634 (230-16000)	229 (148-324)	0.67 (0.39-1.54)	0.059 (0.003-0.239)	132 (86-180)	80 (48-92)	18.3 (10.8-42.1)	9.8 (3.1-19.8)	0.390 (0.230-0.664)
Nandira River																
22.	Nandira river before confluence with river Brahmani	38 (10-92)	128 (72-180)	19.0 (11.1-37.4)	0.126 (0.056-0.336)	0.013 (0.004-0.028)	1.54 (1.12-2.52)	7994 (330-49000)	438 (289-505)	0.96 (0.58-1.73)	0.205 (0.096-0.370)	250 (165-278)	168 (146-190)	29.0 (21.5-45.0)	54.4 (22.4-89.1)	1.898 (0.310-2.780)
Kisinda Jhor																
23.	Kisindajhor	33 (4-115)	117 (72-148)	20.8 (7.8-47.3)	0.187 (0.056-0.504)	0.013 (0.004-0.028)	1.63 (1.12-2.24)	1662 (130-4900)	491 (316-616)	1.53 (0.74-2.90)	0.150 (0.010-0.440)	286 (180-385)	159 (104-208)	51.8 (27.4-100.8)	55.3 (16.8-94.5)	1.766 (0.310-3.600)
Kharasrota River																
24.	Khanditara	22 (3-87)	60 (37-76)	8.8 (3.8-16.0)	0.065 (0.056-0.112)	0.005 (0.002-0.011)	1.26 (1.12-1.40)	2207 (78-7900)	165 (102-210)	0.38 (0.24-0.55)	0.034 (0.003-0.093)	94 (58-120)	61 (36-80)	9.9 (6.9-14.7)	9.1 (4.7-15.5)	0.362 (0.238-0.618)
25.	Binjharpur	25 (6-111)	64 (46-80)	7.9 (3.8-14.4)	0.093 (0.056-0.168)	0.007 (0.001-0.014)	1.21 (0.84-1.40)	1960 (330-9200)	173 (143-214)	0.38 (0.28-0.49)	0.046 (0.003-0.197)	97 (80-122)	65 (56-76)	9.7 (7.8-11.7)	8.3 (4.8-11.4)	0.389 (0.216-0.802)
26.	Aul	25 (5-98)	64 (44-78)	11.3 (4.6-17.6)	0.070 (0.056-0.112)	0.003 (0.001-0.007)	1.17 (0.84-1.40)	4828 (230-11000)	209 (133-529)	0.79 (0.29-3.68)	0.039 (0.003-0.122)	122 (78-330)	65 (52-94)	22.3 (7.8-119.4)	9.8 (3.1-19.8)	0.410 (0.230-0.612)
*Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
*Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

*** Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

(B) Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr (VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)		(mg/l)								
Sankha River												
1.	Sankha U/s	3.645 (1.041-8.720)	0.128 (0.018-0.488)	0.012 (<0.002-0.031)	0.033 (0.012-0.077)	1.891 (0.100-7.190)	0.011 (0.003-0.020)	0.003 (0.001-0.008)	0.007 (0.001-0.016)	0.0019 (0.0004-0.0049)	0.00020 (<0.00006-0.00070)	0.009 (0.003-0.013)
Koel River												
2.	Koel U/s	5.189 (0.270-18.680)	0.150 (0.006-0.590)	0.009 (<0.002-0.025)	0.033 (0.007-0.072)	2.401 (0.030-7.740)	0.014 (0.003-0.038)	0.011 (0.001-0.028)	0.015 (0.003-0.050)	0.0034 (0.0005-0.0089)	0.00028 (<0.00006-0.00095)	0.014 (0.004-0.026)
Brahmani river												
3.	Panposh U/s	4.750 (0.771-18.640)	0.071 (0.004-0.335)	0.009 (<0.002-0.031)	0.026 (0.004-0.057)	1.902 (0.020-8.290)	0.006 (0.002-0.009)	0.004 (0.001-0.011)	0.008 (0.002-0.014)	0.0029 (0.0004-0.0079)	0.00014 (<0.00006-0.00044)	0.007 (0.003-0.014)
4.	Panposh D/s	8.774 (1.144-22.444)	0.136 (0.019-0.509)	0.012 (<0.002-0.033)	0.050 (0.011-0.094)	4.212 (0.133-7.800)	0.014 (0.003-0.030)	0.011 (0.002-0.037)	0.020 (0.005-0.032)	0.0032 (0.0010-0.0066)	0.00033 (<0.00006-0.00089)	0.013 (0.006-0.021)
5.	Rourkela D/s	11.369 (1.058-37.444)	0.111 (0.013-0.453)	0.012 (<0.002-0.033)	0.039 (0.015-0.113)	2.755 (0.060-6.330)	0.010 (0.001-0.027)	0.007 (0.001-0.017)	0.015 (0.003-0.023)	0.0029 (0.0008-0.0051)	0.00031 (0.00006-0.00089)	0.009 (0.002-0.013)
6.	Biritola	8.528 (1.023-38.754)	0.075 (0.011-0.192)	0.010 (<0.002-0.033)	0.027 (0.006-0.057)	1.607 (0.050-7.390)	0.010 (0.002-0.026)	0.004 (0.001-0.012)	0.012 (0.003-0.020)	0.0028 (0.0009-0.0055)	0.00022 (<0.00006-0.00083)	0.009 (0.005-0.013)
7.	Attaghat	4.867 (1.293-23.073)	0.081 (0.011-0.231)	0.009 (<0.002-0.035)	0.029 (0.006-0.087)	2.113 (0.080-6.820)	0.010 (0.002-0.020)	0.005 (0.001-0.012)	0.011 (0.002-0.019)	0.0023 (0.0006-0.0044)	0.00020 (<0.00006-0.00089)	0.008 (0.003-0.012)
8.	Bonaigarh	8.583 (0.252-42.854)	0.095 (0.027-0.410)	0.009 (<0.002-0.033)	0.023 (0.007-0.059)	2.490 (0.080-7.170)	0.008 (0.001-0.024)	0.004 (0.002-0.009)	0.012 (0.001-0.053)	0.0034 (0.0007-0.0105)	0.00020 (<0.00006-0.00089)	0.010 (0.002-0.025)
9.	Rengali	4.267 (1.509-9.929)	0.141 (0.024-0.600)	0.010 (<0.002-0.031)	0.027 (0.013-0.047)	1.415 (0.040-4.530)	0.015 (0.002-0.037)	0.004 (0.001-0.008)	0.016 (0.003-0.083)	0.0032 (0.0005-0.0086)	0.00019 (<0.00006-0.00057)	0.007 (0.003-0.010)

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻ (mg/l)	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
10.	Samal	5.334 (0.846-25.351)	0.108 (0.038-0.414)	0.014 (<0.002-0.033)	0.038 (0.011-0.094)	1.940 (<0.005-7.290)	0.009 (0.001-0.021)	0.005 (0.001-0.008)	0.010 (0.001-0.022)	0.0034 (0.0007-0.0088)	0.00018 (<0.00006-0.00070)	0.008 (0.002-0.019)
11.	Talcher FU/s	2.161 (0.531-4.793)	0.200 (0.016-1.273)	0.015 (<0.002-0.031)	0.046 (0.013-0.091)	2.000 (0.100-6.250)	0.011 (0.001-0.034)	0.003 (<0.001-0.009)	0.007 (0.001-0.023)	0.0019 (0.0007-0.0046)	0.00026 (<0.00006-0.00089)	0.005 (<0.001-0.012)
12.	Talcher U/s	3.799 (0.965-8.220)	0.090 (0.009-0.227)	0.017 (<0.002-0.035)	0.049 (0.013-0.097)	2.010 (0.090-6.450)	0.010 (0.003-0.019)	0.004 (0.001-0.009)	0.010 (0.002-0.026)	0.0019 (0.0005-0.0048)	0.00029 (<0.00006-0.00089)	0.007 (0.002-0.025)
13.	Talcher D/s	8.801 (4.744-16.345)	0.096 (0.011-0.231)	0.019 (<0.002-0.045)	0.054 (0.022-0.113)	1.888 (0.040-6.830)	0.011 (0.003-0.023)	0.005 (0.001-0.016)	0.013 (0.002-0.030)	0.0025 (0.0011-0.0084)	0.00034 (<0.00006-0.00083)	0.009 (0.004-0.015)
14.	Talcher FD/s	3.674 (0.337-7.591)	0.082 (0.035-0.202)	0.016 (<0.002-0.035)	0.041 (0.015-0.086)	2.272 (0.050-7.310)	0.012 (0.003-0.023)	0.006 (0.001-0.011)	0.012 (0.002-0.029)	0.0022 (0.0011-0.0054)	0.00025 (<0.00006-0.00095)	0.007 (0.003-0.011)
15.	Dhenkanal U/s	3.174 (0.457-8.335)	0.073 (0.012-0.231)	0.008 (<0.002-0.033)	0.029 (<0.001-0.076)	2.141 (<0.005-6.430)	0.011 (0.003-0.018)	0.005 (<0.001-0.015)	0.007 (0.002-0.013)	0.0029 (0.0005-0.0076)	0.00030 (<0.00006-0.00095)	0.012 (0.003-0.028)
16.	Dhenkanal D/s	9.355 (1.736-18.928)	0.107 (0.033-0.214)	0.012 (<0.002-0.038)	0.047 (0.013-0.094)	1.801 (0.060-6.070)	0.013 (0.004-0.024)	0.010 (0.001-0.040)	0.011 (0.001-0.017)	0.0037 (0.0006-0.0083)	0.00030 (<0.00006-0.00070)	0.011 (0.003-0.022)
17.	Bhuban	5.115 (0.465-11.705)	0.193 (0.009-1.212)	0.018 (<0.002-0.035)	0.048 (0.013-0.086)	2.250 (0.260-5.890)	0.011 (0.002-0.023)	0.005 (0.001-0.017)	0.013 (0.001-0.032)	0.0015 (0.0007-0.0044)	0.00022 (<0.00006-0.00089)	0.006 (0.002-0.015)
18.	Kabatabandha	5.555 (0.593-16.262)	0.085 (0.005-0.220)	0.017 (<0.002-0.038)	0.054 (0.007-0.116)	2.388 (0.070-7.110)	0.011 (0.003-0.021)	0.004 (0.001-0.009)	0.011 (0.001-0.043)	0.0015 (0.0004-0.0036)	0.00023 (<0.00006-0.00089)	0.007 (0.002-0.029)
19.	Dharmasala U/s	5.450 (0.806-15.204)	0.152 (0.004-0.731)	0.011 (<0.002-0.04031)	0.038 (0.008-0.086)	2.061 (0.100-7.170)	0.013 (0.007-0.019)	0.002 (<0.001-0.007)	0.007 (0.001-0.014)	0.0032 (0.0006-0.0141)	0.00022 (<0.00006-0.00083)	0.009 (0.004-0.019)

Data for the period January-December, 2015 excluding March, 2015

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni##	Cu##	Zn##	Cd##	Hg	Pb##
		(mg/l)		(mg/l)								
20.	Dharmasala D/s	8.214 (2.148-16.972)	0.185 (0.027-0.743)	0.015 (<0.002-0.043)	0.046 (0.008-0.114)	1.485 (0.128-6.710)	0.015 (0.001-0.024)	0.004 (<0.001-0.008)	0.008 (0.001-0.015)	0.0034 (0.0006-0.0146)	0.00026 (<0.00006-0.00089)	0.010 (0.006-0.018)
21	Pottamundai	4.979 (0.106-15.105)	0.266 (0.045-1.096)	0.012 (<0.002-0.036)	0.039 (0.009-0.092)	1.483 (0.130-6.680)	0.017 (0.002-0.049)	0.003 (0.001-0.007)	0.010 (0.002-0.029)	0.0016 (0.0006-0.0048)	0.00021 (<0.00006-0.00089)	0.011 (0.004-0.035)
Nandira River												
22.	Nandira river before confluence with river Brahmani	6.712 (3.175-18.317)	0.062 (0.023-0.094)	0.011 (<0.002-0.046)	0.045 (0.007-0.128)	1.302 (0.030-4.330)	0.016 (0.011-0.022)	0.007 (0.001-0.016)	0.019 (0.005-0.032)	0.0045 (0.0011-0.0104)	0.00036 (<0.00006-0.00076)	0.014 (0.009-0.020)
Kisinda Jhor												
23.	Kisindajhor	6.552 (1.025-19.757)	0.050 (0.012-0.115)	0.012 (<0.002-0.048)	0.045 (0.007-0.077)	0.879 (0.120-2.350)	0.022 (0.008-0.047)	0.008 (0.002-0.018)	0.019 (0.003-0.032)	0.0049 (0.0007-0.0109)	0.00046 (0.00019-0.00089)	0.017 (0.009-0.023)
Kharasrota River												
24.	Khanditara	3.685 (0.164-9.929)	0.049 (0.001-0.121)	0.012 (<0.002-0.040)	0.034 (0.008-0.108)	1.936 (0.060-7.390)	0.015 (0.004-0.040)	0.007 (0.001-0.028)	0.014 (0.002-0.042)	0.0017 (0.0007-0.0041)	0.00020 (<0.00006-0.00070)	0.008 (0.001-0.017)
25.	Binjharpur	4.138 (0.102-13.716)	0.097 (0.003-0.542)	0.012 (<0.002-0.041)	0.037 (0.011-0.094)	1.755 (0.340-7.320)	0.014 (0.003-0.047)	0.004 (0.002-0.007)	0.019 (0.004-0.089)	0.0031 (0.0007-0.0158)	0.00025 (<0.00006-0.00089)	0.008 (0.002-0.019)
26.	Aul	3.012 (0.084-11.169)	0.160 (0.036-0.667)	0.015 (<0.002-0.036)	0.043 (0.008-0.087)	2.384 (0.230-7.310)	0.016 (0.006-0.028)	0.005 (0.003-0.009)	0.009 (0.002-0.019)	0.0030 (0.0007-0.0116)	0.00021 (<0.00006-0.00089)	0.010 (0.002-0.036)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
* Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

*** Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

Data for the period April-December, 2015

(B) Baitarani river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Kusei river																
1.	Deogan	32 (8-110)	93 (48-140)	7.7 (4.1-15.8)	0.065 (0.056-0.112)	0005 (0.002-0.011)	1.17 (0.84-1.68)	8588 (490-24000)	247 (148-320)	0.49 (0.25-0.98)	0.037 (0.003-0.130)	137 (84-178)	96 (52-128)	13.78 (6.84-27.40)	10.5 (3.4-20.2)	0.337 (0.219-0.530)
Baitarani river																
2.	Joda	38 (6-111)	44 (24-60)	8.4 (2.0-18.5)	0.070 (0.056-0.112)	0.002 (0.001-0.004)	1.21 (0.84-1.68)	1801 (78-4900)	136 (107-183)	0.35 (0.20-0.52)	0.012 (0.003-0.038)	78 (62-108)	46 (32-60)	8.72 (4.89-13.69)	9.8 (2.5-17.7)	0.304 (0.180-0.514)
3.	Anandpur	29 (4-80)	59 (40-70)	8.8 (2.0-17.8)	0.070 (0.056-0.112)	0.003 (0.002-0.005)	1.17 (0.84-1.40)	3748 (330-16000)	164 (138-184)	0.38 (0.26-0.52)	0.041 (0.003-0.098)	93 (78-104)	59 (44-72)	9.62 (7.80-13.69)	9.2 (3.5-21.4)	0.307 (0.180-0.509)
4.	Jajpur	23 (6-85)	62 (36-86)	14.5 (9.2-23.5)	0.089 (0.056-0.112)	0.007 (0.001-0.014)	1.35 (1.12-1.68)	8785 (330-35000)	173 (124-220)	0.40 (0.33-0.49)	0.031 (0.003-0.080)	99 (72-125)	65 (44-78)	10.60 (8.80-13.69)	9.6 (4.0-16.9)	0.368 (0.225-0.720)
5.	Chandbali U/s	150 (38-759)	88 (44-192)	23.7 (5.2-78.8)	0.103 (0.056-0.224)	0.004 (0.001-0.007)	1.38 (0.84-1.96)	16500 (1700-54000)	6385 (180-16900)	19.16 (0.68-48.68)	0.536 (0.010-1.958)	4729 (106-13010)	878 (48-2350)	2414.2 (8.0-7145.2)	388.3 (10.3-883.1)	0.391 (0.230-0.617)
6.	Chandbali D/s	167 (45-679)	91 (54-198)	25.4 (12.2-59.1)	0.149 (0.056-0.728)	0004 (0-0.011)	1.47 (0.84-2.24)	38075 (2200-160000)	6316 (207-17340)	18.07 (0.62-46.63)	0.620 (0.042-2.185)	4722 (118-13390)	926 (52-2400)	2369.5 (15.65-7047.4)	329 (12.0-907.9)	0.392 (0.248-0.566)
Salandi river																
7.	Bhadrak U/s	21 (8-80)	57 (40-104)	7.7 (5.7-9.8)	0.079 (0.056-0.224)	0.004 (0.002-0.009)	1.17 (0.84-1.68)	16919 (230-54000)	154 (125-223)	48.63 (1.05-75.33)	0.039 (0.003-0.084)	88 (70-129)	56 (38-96)	11.25 (7.83-21.53)	6.6 (3.2-12.4)	0.340 (0.150-0.600)
8.	Bhadrak D/s	31 (12-87)	60 (32-100)	19.9 (9.9-76.8)	0.112 (0.056-0.280)	0.005 (0.001-0.011)	1.42 (0.84-1.96)	32567 (4900-160000)	173 (144-236)	0.43 (0.28-0.73)	0.055 (0.006-0.161)	99 (84-136)	60 (46-80)	12.79 (8.80-17.61)	8.8 (4.1-14.9)	0.301 (0.140-0.532)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Dhamra river																
9.	Dhamra	117 (30-490)	106 (52-196)	29.2 (11.4-72.0)	0.089 (0.056-0.112)	0.007 (0.002-0.014)	1.31 (0.84-1.68)	8086 (330-16000)	21309 (234-343800)	0.48 (0.28-0.83)	1.461 (0.016-3.918)	17122 (130-28390)	2680 (60-5000)	9295.3 (29.4-15677.5)	911.3 (17.9-1530.0)	0.512 (0.250-0.740)
*Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
* Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

*** Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

(C) Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)		(mg/l)								
Kusei river												
1.	Deogan	4.764 (1.523-10.066)	0.120 (0.015-0.803)	0.013 (<0.002-0.033)	0.043 (0.011-0.077)	2.452 (0.160-7.650)	0.010 (0.002-0.021)	0.004 (0.001-0.013)	0.012 (0.002-0.038)	0.0030 (0.0006-0.0074)	0.00013 (<0.00006-0.00051)	0.009 (0.003-0.019)
Baitarani river												
2.	Joda	3.678 (0.362-10.252)	0.121 (0.011-0.427)	0.015 (<0.002-0.036)	0.043 (0.008-0.081)	3.081 (0.280-8.620)	0.014 (0.004-0.031)	0.006 (0.002-0.010)	0.016 (0.003-0.048)	0.0027 (0.0006-0.0078)	0.00016 (<0.00006-0.00070)	0.008 (0.004-0.014)
3.	Anandpur	5.328 (1.092-8.820)	0.178 (0.027-0.916)	0.013 (<0.002-0.030)	0.047 (0.013-0.113)	1.949 (0.050-8.080)	0.013 (0.004-0.022)	0.007 (0.001-0.014)	0.014 (0.002-0.023)	0.0028 (0.0003-0.0064)	0.00024 (<0.00006-0.00100)	0.009 (0.003-0.014)
4.	Jajpur	5.607 (0.186-17.129)	0.072 (0.008-0.231)	0.013 (<0.002-0.035)	0.049 (0.007-0.131)	2.728 (0.160-7.06)	0.011 (0.002-0.020)	0.005 (0.002-0.013)	0.013 (0.001-0.024)	0.0029 (0.0010-0.0051)	0.00039 (0.00013-0.00095)	0.007 (0.002-0.015)
5.	Chandbali U/s	3.444 (0.580-7.859)	0.144 (0.023-0.734)	0.019 (<0.002-0.037)	0.054 (0.013-0.094)	5.373 (1.340-9.100)	0.026 (0.005-0.082)	0.010 (0.002-0.0-28)	0.033 (0.003-0.195)	0.0034 (0.0007-0.0116)	0.00025 (<0.00006-0.00083)	0.015 (0.002-0.040)
6.	Chandbali D/s	5.640 (0.753-12.011)	0.187 (0.017-0.922)	0.021 (<0.002-0.040)	0.054 (0.015-0.097)	4.102 (0.209-9.840)	0.026 (0.006-0.088)	0.010 (0.002-0.028)	0.033 (0.003-0.201)	0.0044 (0.0008-0.0154)	0.00024 (0.00006-0.00076)	0.016 (0.004-0.029)
Salandi river												
7.	Bhadrak U/s	3.564 (0.678-6.878)	0.113 (0.012-0.781)	0.010 (<0.002-0.031)	0.038 (0.011-0.087)	1.192 (0.180-6.550)	0.013 (0.006-0.061)	0.005 (0.001-0.013)	0.009 (0.001-0.022)	0.0018 (0.0008-0.0035)	0.00023 (<0.00006-0.00089)	0.007 (0.001-0.020)
8.	Bhadrak D/s	7.404 (2.582-15.297)	0.155 (0.018-1.078)	0.014 (<0.002-0.038)	0.049 (0.015-0.126)	1.186 (0.020-6.020)	0.016 (0.005-0.049)	0.006 (0.001-0.015)	0.020 (0.008-0.058)	0.0024 (0.0009-0.0043)	0.00038 (0.00013-0.00095)	0.008 (0.002-0.022)

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni##	Cu##	Zn##	Cd##	Hg	Pb##
		(mg/l)		(mg/l)								
Dhamara river												
9.	Dhamra	8.210 (0.793-31.487)	0.048 (0.029-0.075)	0.014 (<0.002-0.043)	0.043 (0.011-0.094)	4.096 (0.390-7.470)	0.030 (0.009-0.085)	0.013 (0.001-0.030)	0.036 (0.007-0.214)	0.0061 (0.0007-0.0293)	0.00030 (<0.00006-0.00095)	0.014 (0.004-0.046)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015

(D) Rushikulya river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Rushikulya river																
1.	Madhopur	35 (8-88)	116 (80-152)	10.8 (5.7-14.8)	0.061 (0.056-0.112)	0.006 (0.001-0.014)	1.14 (0.84-1.40)	4412 (130-16000)	315 (196-490)	0.85 (0.41-2.47)	0.059 (0.010-0.204)	180 (115-280)	114 (76-150)	25.84 (9.78-76.32)	12.1 (4.2-24.3)	0.483 (0.217-0.900)
2.	Potagarh	47 (10-128)	129 (96-172)	22.1 (10.4-34.5)	0.075 (0.056-0.280)	0.005 (0.002-0.018)	1.19 (0.84-1.40)	581 (<2-2400)	22660 (275-46240)	47.2 (0.46-104.47)	1.845 (0.010-4.339)	18054 (157-32960)	2660 (110-6000)	10033.7 (13.7-19080.8)	768.6 (21.8-1660.4)	0.634 (0.320-0.990)
Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients			Heavy metals							
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)			(mg/l)							
Rushikulya river												
1.	Madhopur	5.006 (0.204-13.423)	0.104 (0.007-0.370)	0.013 (<0.002-0.033)	0.042 (0.015-0.087)	2.292 (0.070-6.810)	0.011 (0.004-0.017)	0.005 (0.001-0.013)	0.009 (0.001-0.025)	0.0034 (0.0004-0.0080)	0.00032 (0.00006-0.00089)	0.011 (0.005-0.017)
2.	Potagarh	6.329 (0.391-26.128)	0.105 (0.032-0.344)	0.009 (<0.002-0.023)	0.042 (0.011-0.094)	2.654 (0.110-7.140)	0.027 (0.007-0.070)	0.014 (0.002-0.046)	0.021 (0.006-0.085)	0.0089 (0.0004-0.0436)	0.00028 (<0.00006-0.00070)	0.018 (0.006-0.052)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015

(E) Nagavali river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(MPN/100ml)	(µS/cm)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Nagavali river																
1.	Penta	39 (10-107)	77 (48-100)	9.4 (3.8-17.7)	0.061 (0.056-0.112)	0.003 (0.001-0.011)	1.12 (0.84-1.40)	2368 (130-7900)	187 (142-210)	0.34 (0.21-0.50)	0.034 (0.006-0.109)	106 (80-120)	76 (54-98)	8.72 (5.87-11.74)	7.0 (3.3-12.9)	0.307 (0.164-0.490)
2.	Jaykaypur D/s	55 (19-116)	90 (64-142)	18.2 (11.9-27.6)	0.056 (0.056-0.056)	0.002 (0.001-0.004)	1.14 (0.84-1.40)	9025 (700-54000)	244 (177-338)	0.51 (0.33-0.77)	0.049 (0.010-0.197)	140 (98-202)	92 (70-136)	13.7 (8.80-20.55)	15.7 (8.2-26.4)	0.294 (0.170-0.414)
3.	Rayagada D/s	52 (15-116)	95 (68-116)	15.3 (5.9-28.6)	0.056 (0.056-0.056)	0.003 (0.001-0.007)	1.05 (0.84-1.40)	3524 (490-14000)	263 (220-308)	0.60 (0.36-0.99)	0.039 (0.003-0.102)	149 (122-172)	100 (72-124)	16.80 (9.78-24.50)	18.8 (8.6-27.4)	0.299 (0.175-0.420)
Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

(E) Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni##	Cu##	Zn##	Cd##	Hg	Pb##
		(mg/l)		(mg/l)								
Nagavali river												
1.	Penta	5.062 (0.771-15.093)	0.086 (0.037-0.310)	0.012 (<0.002-0.033)	0.037 (0.008-0.077)	2.780 (0.460-6.500)	0.013 (0.007-0.026)	0.005 (0.002-0.011)	0.006 (0.003-0.012)	0.0018 (0.0004-0.0035)	0.00010 (<0.00006-0.00076)	0.008 (0.003-0.012)
2.	Jaykaypur D/s	8.905 (0.793-36.040)	0.113 (0.037-0.553)	0.015 (<0.002-0.033)	0.130 (0.011-0.958)	3.793 (1.170-7.210)	0.018 (0.009-0.030)	0.007 (0.002-0.012)	0.011 (0.002-0.024)	0.0028 (0.0010-0.0061)	0.00030 (<0.00006-0.00089)	0.012 (0.006-0.022)
3.	Rayagada D/s	5.058 (1.621-17.018)	0.074 (0.015-0.159)	0.018 (<0.002-0.036)	0.058 (0.023-0.150)	4.598 (0.790-7.630)	0.019 (0.007-0.030)	0.006 (0.002-0.010)	0.009 (0.003-0.019)	0.0022 (0.0009-0.0054)	0.00020 (<0.00006-0.00064)	0.008 (0.006-0.014)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015

(F) Subarnarekha river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Subarnarekha river																
1.	Rajghat	19 (4-56)	84 (58-112)	9.1 (5.1-17.5)	0.056 (0.056-0.056)	0.005 (0.001-0.007)	1.17 (0.84-1.40)	1282 (78-3500)	271 (172-402)	0.85 (0.39-2.04)	0.068 (0.003-0.274)	154 (96-255)	91 (64-124)	24.9 (9.8-65.6)	16.7 (3.8-27.6)	0.519 (0.290-0.700)
Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients				Heavy metals						
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)		(mg/l)								
Subarnarekha river												
1.	Rajghat	3.313 (0.496-10.062)	0.116 (0.027-0.435)	0.012 (<0.002-0.033)	0.049 (0.018-0.143)	1.351 (0.0280-6.220)	0.009 (0.003-0.015)	0.005 (0.002-0.008)	0.011 (0.003-0.018)	0.0024 (0.0005-0.0047)	0.00015 (<0.00006-0.00076)	0.007 (0.005-0.011)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015

(G) Budhabalanga river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(MPN/100ml)	(µS/cm)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Budhabalanga river																
1.	Baripada D/s	19 (5-30)	88 (60-112)	12.9 (6.7-21.8)	0.065 (0.056-0.112)	0.004 (0.001-0.009)	1.17 (0.84-1.40)	22233 (7900-92000)	242 (166-341)	0.51 (0.32-0.73)	0.044 (0.003-0.133)	138 (94-196)	92 (60-118)	14.83 (8.80-22.50)	16.4 (5.2-48.8)	0.314 (0.160-0.500)
2.	Balasore U/s	29 (6-62)	81 (40-104)	8.9 (5.1-15.8)	0.056 (0.056-0.056)	0.003 (0.001-0.007)	1.12 (0.84-1.40)	5925 (1300-35000)	224 (118-278)	0.54 (0.27-1.08)	0.033 (0.006-0.074)	125 (70-152)	80 (40-104)	14.35 (6.84-24.46)	14.5 (7.8-24.6)	0.331 (0.130-0.470)
3.	Balasore D/s	48 (26-92)	103 (44-84)	16.1 (10.2-23.1)	0.065 (0.056-0.168)	0.002 (0.001-0.007)	1.14 (0.84-1.40)	19308 (3300-54000)	1764 (190-8750)	7.19 (0.49-36.66)	0.146 (0.019-1.008)	1215 (122-6610)	235 (52-840)	593.9 (11.74-3571.5)	78.4 (11.4-359.4)	0.324 (0.190-0.500)
*Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
*Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni##	Cu##	Zn##	Cd##	Hg	Pb##
		(mg/l)		(mg/l)								
Budhabalanga river												
1.	Baripada D/s	6.1919 (1.089-20.415)	0.154 (0.034-0.531)	0.014 (0.002-0.038)	0.042 (0.011-0.114)	1.671 (0.260-5.330)	0.011 (0.002-0.019)	0.008 (0.002-0.029)	0.016 (0.008-0.025)	0.0026 (0.0007-0.0053)	0.00021 (<0.00006-0.00083)	0.011 (0.002-0.043)
2.	Balasore U/s	2.682 (0.368-7.002)	0.145 (0.006-0.460)	0.014 (<0.002-0.033)	0.040 (0.008-0.094)	2.998 (0.076-7.530)	0.014 (0.004-0.029)	0.005 (0.003-0.006)	0.013 (0.003-0.018)	0.0022 (0.0006-0.0059)	0.00005 (<0.00006-0.00019)	0.006 (0.002-0.017)
3.	Balasore D/s	5.622 (1.563-10.714)	0.168 (0.039-0.625)	0.018 (<0.002-0.046)	0.074 (0.015-0.173)	3.520 (0.092-7.210)	0.016 (0.003-0.035)	0.005 (0.002-0.009)	0.019 (0.007-0.026)	0.0028 (0.0007-0.0071)	0.00007 (<0.00006-0.00025)	0.009 (0.004-0.028)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015

(H) Kolab river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkali-inity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Kerandi river																
1.	Sunabeda	29 (6-60)	26 (16-34)	9.1 (5.3-15.8)	0.065 (0.056-0.168)	0.001 (0-0.004)	1.14 (0.84-1.40)	2717 (130-16000)	92 (78-100)	0.33 (0.23-0.48)	0.011 (0.003-0.025)	53 (44-62)	30 (18-38)	7.6 (5.9-10.8)	6.7 (3.0-18.8)	0.254 (0.120-0.392)
*Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
*Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients				Heavy metals							
		Annual Average values (Range of values)											
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}	
		(mg/l)				(mg/l)							
Kerandi river													
1.	Sunabeda	2.821 (0.429-7.578)	0.148 (0.036-0.803)	0.015 (0.000-0.042)	0.043 (0.013-0.087)	3.033 (0.710-7.780)	0.012 (0.003-0.027)	0.006 (0.001-0.011)	0.010 (0.003-0.015)	0.0021 (0.0004-0.0050)	0.00015 (<0.00006-0.00070)	0.010 (0.002-0.018)	
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10	
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-	

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015

(I) Vansadhara river system

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkali- -inity	COD	NH ₄ -N	Free NH ₃ -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
Vansadhara river																
1.	Muniguda	35 (4-122)	75 (48-88)	11.1 (3.8-36.6)	0.061 (0.056-0.112)	0.004 (0.001-0.009)	1.10 (0.84-1.68)	3163 (130-17000)	185 (162-212)	0.38 (0.30-0.52)	0.030 (0.006-0.071)	105 (88-118)	70 (52-78)	10.03 (7.82-13.7)	7.2 (3.5-14.3)	0.446 (0.18-1.100)
2.	Gunupur	41 (6-87)	78 (32-124)	11.4 (5.4-21.7)	0.061 (0.056-0.112)	0.004 (0.0-0.009)	1.12 (0.84-1.40)	4983 (330-17000)	199 (134-285)	0.36 (0.22-0.47)	0.047 (0.01-0.138)	113 (76-158)	76 (48-116)	9.62 (5.87-13.69)	10.5 (1.9-21.1)	0.301 (0.180-0.408)
Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients				Heavy metals						
		Annual Average values (Range of values)										
		Nitrate as NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg	Pb ^{##}
		(mg/l)				(mg/l)						
Vansadhara river												
1.	Muniguda	4.148 (0.553-7.591)	0.128 (0.045-0.299)	0.016 (<0.002-0.040)	0.053 (0.008-0.131)	2.333 (0.030-6.880)	0.012 (0.004-0.023)	0.005 (0.001-0.008)	0.009 (0.002-0.017)	0.0021 (0.0004-0.0056)	0.00016 (<0.00006-0.00057)	0.009 (0.002-0.017)
2.	Gunupur	5.146 (0.850-9.854)	0.120 (0.019-0.344)	0.017 (<0.002-0.036)	0.059 (0.007-0.146)	3.477 (0.120-6.870)	0.015-0.004 (0.029)	0.008 (<0.001-0.018)	0.009 (0.001-0.016)	0.0029 (0.0004-0.0058)	0.00022 (<0.00006-0.00057)	0.013 (0.002-0.034)
*Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
*Class 'E'		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

Data for the period April-December, 2015