

Annual Average and Range values of Four Criteria Parameters (January-December, 2017)

(A) Mahanadi River System (2017)

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 (7.3-8.3)	7.5 (5.4-9.2)	1.1 (0.3-2.6)	2719 (78-9200)	0	2 (17)	C	C		
2.	Jharsuguda	12	7.8 (7.2-8.2)	7.4 (6.0-8.5)	1.0 (0.4-1.8)	3155 (45-9200)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
3.	Brajarajnaragar U/s	12	7.8 (7.4-8.3)	7.4 (5.5-9.5)	1.0 (0.5-2.1)	1705 (490-5400)	0	1 (8)	C	C		
4.	Brajarajnaragar D/s	12	7.9 (7.4-8.4)	7.4 (5.9-9.5)	1.3 (0.8-2.6)	3583 (790-16000)	0	2 (17)	C	C		
Bheden river												
5.	Jharsuguda	12	7.9 (7.3-8.3)	7.4 (6.8-8.8)	1.3 (0.1-3.6)	712 (20-3500)	1 (8)	0	C	Doesn't conform to Class C	BOD	Human activities
Hirakud reservoir												
6.	Hirakud reservoir	12	8.0 (7.5-8.4)	7.7 (6.6-8.7)	0.8 (0.4-1.4)	1102 (23-5400)	0	1 (8)	C	C		
Power Channel												
7.	Power Channel U/s	12	8.0 (7.5-8.4)	7.1 (5.3-8.2)	0.6 (0.3-1.0)	283 (<1.8-1300)	0	0	C	C		
8.	Power Channel D/s	12	8.0 (7.7-8.4)	7.0 (5.6-8.5)	0.8 (0.4-1.3)	411 (20-1400)	0	0	C	C		
Mahanadi river												
9	Sambalpur U/s	12	7.9 (7.2-8.3)	7.5 (5.1-8.6)	1.1 (0.4-1.6)	3691 (78-16000)	0	3 (25)	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	7.8 (7.3-8.3)	6.9 (5.4-8.3)	2.1 (1.5-2.9)	15158 (3500-35000)	0	10 (83)	C	Doesn't conform to Class C	TC	Waste water of Sambalpur town
11.	Sambalpur FD/s at Shankarmath	12	7.7 (7.3-8.4)	7.4 (5.7-9.5)	1.5 (0.8-2.3)	4157 (490-11000)	0	3 (25)	C	Doesn't conform to Class C	TC	
12.	Sambalpur FFD/s at Huma	12	8.0 (7.4-8.4)	7.6 (5.6-9.5)	0.9 (0.5-1.7)	3074 (130-11000)	0	3 (25)	C	Doesn't conform to Class C	TC	
13.	Sonepur U/s	12	8.1 (7.3-8.4)	7.8 (6.8-9.0)	0.7 (0.3-1.2)	756 (130-3500)	0	0	C	C		
14.	Sonepur D/s	12	8.0 (7.4-8.4)	7.3 (5.5-9.0)	1.0 (0.6-1.5)	2650 (230-7900)	0	2 (17)	C	C		
15.	Tikarapada	12	8.1 (7.6-8.4)	7.8 (6.7-9.2)	0.7 (0.3-1.2)	1215 (46-5400)	0	1 (8)	C	C		
16.	Narasinghpur	12	8.0 (7.3-8.4)	7.6 (6.2-8.7)	0.8 (0.3-1.2)	1247 (170-3500)	0	0	C	C		
17.	Mundali	12	8.1 (7.3-8.4)	7.5 (6.4-9.2)	0.7 (0.4-1.0)	1754 (110-3500)	0	0	C	C		
18.	Cuttack U/s	12	8.1 (7.4-8.4)	7.5 (6.2-8.8)	0.8 (0.7-1.2)	920 (78-2200)	0	0	C	C		

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	8.0 (7.3-8.4)	7.0 (5.9-8.2)	1.3 (0.7-2.1)	28717 (1300-160000)	0	6 (50)	C	Doesn't conform to Class C	TC	Waste water of Cuttack city
20.	Cuttack FD/s§	11	7.9 (7.4-8.4)	7.4 (6.0-9.6)	1.0 (0.6-1.4)	8864 (1100-35000)	0	4 (36)	C	Doesn't conform to Class C	TC	
21.	Paradeep U/s	12	7.8 (7.2-8.4)	7.0 (6.1-8.8)	0.9 (0.4-1.6)	684 (<1.8-3500)	0	0	C	C		
22.	Paradeep D/s	12	7.8 (7.3-8.1)	7.0 (5.6-7.7)	1.0 (0.3-2.3)	1805 (<1.8-16000)	0	1 (8)	C	C		
Ong River												
23.	Dharuakhaman*	8	8.1 (7.5-8.5)	7.5 (5.2-9.8)	0.9 (0.3-1.8)	579 (20-3500)	0	0	C	C		
Tel River												
24.	Monmunda	12	7.9 (7.4-8.4)	7.4 (5.3-9.6)	0.9 (0.3-1.6)	436 (<1.8-3500)	0	0	C	C		
Kathajodi river												
25.	Cuttack U/s	12	8.0 (7.2-8.4)	7.6 (6.8-9.9)	0.8 (0.5-1.4)	1223 (40-4300)	0	0	C	C		
26.	Cuttack D/s	12	7.9 (7.0-8.4)	6.7 (5.4-9.8)	3.2 (1.3-5.4)	68000 (1100-160000)	7 (58)	11 (92)	C	Doesn't conform to Class C	BOD,TC	Waste water of Cuttack city
27.	Mattagajpur (Cuttack FD/s)	12	7.8 (7.0-8.5)	6.0 (3.3-14.1)	6.3 (1.2-11.2)	11673 (780-35000)	10 (83)	8 (67)	C	Doesn't conform to Class C	DO#,BOD,TC	Waste water of Cuttack city

§ No sampling during February, 2017

Frequency of violation for DO is 1 time (8% of total 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)						
28.	Kamasasan (Cuttack FFD/s)**	8	7.9 (7.4-8.4)	6.9 (6.3-7.7)	1.6 (0.9-2.5)	6671 (<1.8-16000)	0	3 (38)	C	Doesn't conform to Class C	TC	Waste water of Cuttack city
Serua River												
29.	Sankhatrasa (Cuttack FD/s)	12	7.9 (7.3-8.4)	6.3 (4.4-7.7)	2.3 (0.6-4.4)	75748 (130-160000)	5 (42)	10 (83)	C	Doesn't conform to Class C	BOD, TC	Waste water of Cuttack city
Kuakhai river												
30	Bhubaneswar FU/s	12	8.1 (7.7-8.4)	7.7 (5.4-9.7)	0.6 (0.3-1.0)	3275 (700-16000)	0	1 (8)	C	C		
31.	Bhubaneswar U/s	12	8.1 (7.7-8.4)	7.2 (5.0-9.7)	1.1 (0.4-2.9)	25375 (2400-160000)	0	8 (67)	C	Doesn't conform to Class C	TC	Human activities
Daya river												
32.	Gelapur*	9	8.1 (7.7-8.4)	7.9 (5.8-10.0)	1.0 (0.7-1.5)	11333 (2200-35000)	0	5 (56)	C	Doesn't conform to Class C	TC	Human activities
33.	Bhubaneswar D/s	12	7.8 (7.1-8.3)	4.0 (1.0-5.8)	5.0 (3.7-7.7)	116250 (13000-160000)	12 (100)	12 (100)	C	Doesn't conform to Class C	DO#, BOD, TC	Waste water of Bhubaneswar city
34.	Bhubaneswar FD/s	12	7.5 (6.8-8.0)	4.7 (1.8-7.5)	4.2 (2.5-7.3)	110583 (13000-160000)	10 (83)	12 (100)	C	Doesn't conform to Class C	DO##, BOD, TC	
35.	Kanas*	9	7.9 (7.4-8.1)	5.0 (2.5-8.5)	2.0 (0.8-4.0)	42044 (1100-92000)	1 (11)	7 (78)	C	Doesn't conform to Class C	DO###, BOD, TC	Human activities

Frequency of violation for DO is 7 times (58 % of total observation)
Frequency of violation for DO is 4 times (33% of total observation)
Frequency of violation for DO is 2 times (22 % of total 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)						
Gangua River												
36.	Near Rajdhani Engg. College*	9	7.5 (7.0-8.0)	1.8 (0.3-3.8)	11.0 (4.1-24.0)	144000 (16000-160000)	9 (100)	9 (100)	C	Doesn't conform to Class C	DO#, BOD, TC	Waste water of Bhubaneswar city
37.	Palasuni*	9	7.6 (6.9-8.1)	1.2 (0-2.3)	13.7 (3.9-39.0)	144667 (22000-160000)	9 (100)	9 (100)	C	Doesn't conform to Class C	DO#, BOD, TC	
38.	Samantray pur*	9	7.6 (7.1-8.3)	0.8 (0-3.2)	17.5 (5.9-35.0)	160000 (160000-160000)	9 (100)	9 (100)	C	Doesn't conform to Class C	DO#, BOD, TC	
39.	Vadimula	12	7.6 (6.8-8.1)	2.7 (0.3-5.2)	8.9 (4.1-19.9)	391167 (54000-1600000)	2 (100)	2 (100)	C	Doesn't conform to Class C	DO##, BOD, TC	
Birupa River												
40.	Choudwar D/s	12	8.0 (7.1-8.4)	7.5 (6.0-11.3)	0.8 (0.3-1.4)	16453 (<1.8-160000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
Kushabhadra River												
41.	Bhingarpur*	9	8.0 (7.6-8.4)	6.1 (4.2-8.5)	1.2 (0.6-1.7)	5740 (460-17000)	0	3 (33)	C	Doesn't conform to Class C	TC	Human activities
42.	Nimapara*	9	8.0 (7.3-8.4)	6.0 (4.5-7.4)	1.2 (0.5-1.6)	16004 (940-54000)	0	7 (78)	C	Doesn't conform to Class C	TC	Human activities
43.	Gop*	9	8.0 (7.4-8.4)	5.3 (2.6-6.8)	0.8 (0.4-2.2)	11156 (1100-35000)	0	6 (67)	C	Doesn't conform to Class C	DO###, TC	Human activities

Frequency of violation for DO is 9 times (100 % of total observation)

Frequency of violation for DO is 6 times (75% of total observation)

Frequency of violation for DO is 1 times (11 % of total 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									
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						BOD
Bhargavi River												
44.	Chandanpur*	9	8.1 (7.9-8.4)	6.1 (4.2-8.5)	1.2 (0.6-1.7)	6432 (790-16000)	0	5 (56)	C	Doesn't conform to Class C	TC	Human activities
Mangala River												
45.	Malatipatpur**	8	8.2 (7.7-8.4)	5.6 (4.8-7.4)	1.2 (0.3-2.3)	9578 (1300-22000)	0	5 (63)	C	Doesn't conform to Class C	TC	Human activities
46.	Golasahi**	8	8.1 (7.8-8.5)	6.6 (4.2-14.3)	3.3 (1.6-5.7)	27182 (68-92000)	4 (50)	5 (63)	C	Doesn't conform to Class C	BOD, TC	Human activities
Devi River												
47.	Machhagaon**	8	7.6 (7.3-8.2)	6.9 (5.8-8.0)	1.1 (0.5-1.7)	641 (<1.8-2800)	0	0	C	C		
Gobari River												
48.	Kendrapara U/s **	8	7.9 (7.4-8.4)	6.8 (4.2-7.6)	1.1 (0.6-2.0)	3885 (490-16000)	0	2 (25)	C	Doesn't conform to Class C	TC	Human activities
49.	Kendrapara D/s **	8	7.8 (7.4-8.4)	6.7 (4.8-7.8)	1.7 (1.2-2.8)	10813 (1800-24000)	0	6 (75)	C	Doesn't conform to Class C	TC	Human activities
Nuna River												
50.	Bijipur**	8	7.9 (7.3-8.4)	6.0 (4.3-7.4)	1.4 (0.8-3.1)	39638 (2800-160000)	1 (13)	7 (87)	C	Doesn't conform to Class C	BOD, TC	Human activities
Kusumi River												
51.	Tangi*	9	8.0 (7.5-8.4)	6.2 (4.1-7.8)	1.5 (0.4-3.2)	11888 (790-35000)	1 (11)	5 (56)	C	Doesn't conform to Class C	BOD, TC	Human activities

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			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
Kansari River												
52.	Banapur*	9	8.1 (7.5-8.4)	6.1 (4.2-7.5)	1.3 (0.5-2.0)	13803 (700-92000)	0	2 (22)	C	Doesn't conform to Class C	TC	Human activities
Badasankha River												
53.	Langaleswar*	9	7.9 (7.1-8.5)	6.7 (5.2-9.2)	3.1 (0.9-12.7)	4232 (78-17000)	1 (11)	2 (22)	C	Doesn't conform to Class C	BOD, TC	Human activities
Sabulia River												
54.	Rambha*	9	8.1 (7.6-8.4)	6.2 (4.1-7.8)	2.0 (0.6-5.0)	10592 (330-35000)	1 (11)	6 (67)	C	Doesn't conform to Class C	BOD, TC	Human activities
Ratnachira River												
55.	Kumardihi**	8	7.9 (7.6-8.3)	4.9 (2.1-7.8)	2.0 (0.6-3.3)	10099 (790-17000)	2 (25)	5 (63)	C	Doesn't conform to Class C	DO#,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)

* Monitoring started from April, 2017

** Monitoring started from May, 2017

Frequency of violation for DO is 1 time (13 % of total observation)

(b) Brahmani river System (2017)

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	7.9 (7.6-8.1)	7.4 (5.9-8.6)	1.2 (0.4-2.1)	6782 (23-16000)	0	7 (56)	C	Doesn't conform to Class C	TC	Human activities
Koel River												
2.	Koel U/s	12	7.9 (7.3-8.5)	7.3 (5.8-9.7)	1.2 (0.6-1.7)	10400 (1600-16000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities
Brahmani river												
3.	Panposh U/s	12	7.8 (7.5-8.4)	7.4 (5.4-8.8)	1.0 (0.4-1.5)	6958 (1300-16000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
4.	Panposh D/s	12	7.2 (6.5-7.9)	6.0 (4.4-7.5)	4.1 (1.5-5.8)	44742 (7900-160000)	10 (83)	12 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Rourkela town and Steel Plant
5.	Rourkela D/s	12	7.5 (6.8-8.1)	6.5 (4.9-8.5)	2.9 (1.2-4.8)	47558 (4900-160000)	5 (42)	11 (92)	C	Doesn't conform to Class C	BOD, TC	-do-
6.	Rourkela FD/s (Attaghat)	12	7.8 (7.2-8.1)	7.0 (5.4-9.8)	1.7 (0.7-3.2)	5544 (20-16000)	1 (8)	2 (25)	C	Doesn't conform to Class C	BOD, TC	-do-
7.	Rourkela FD/s (Biritola)	12	7.8 (7.3-8.2)	7.6 (5.5-9.6)	1.3 (0.4-2.7)	4845 (230-16000)	0	4 (33)	C	Doesn't conform to Class C	TC	-do-

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			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
8.	Bonaigarh	12	7.7 (7.0-8.2)	8.3 (6.1-10.7)	0.9 (0.2-1.8)	4316 (20-22000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
9.	Rengali	12	7.9 (7.3-8.3)	7.2 (5.8-8.8)	0.8 (0.2-1.9)	1009 (45-4300)	0	0	C	C		
10.	Samal	12	7.9 (7.6-8.3)	7.6 (6.2-9.4)	0.9 (0.3-1.6)	2750 (330-9200)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
10.	Talcher FU/s	12	7.9 (7.3-8.4)	7.8 (6.3-9.9)	0.6 (0.3-1.4)	1653 (170-5400)	0	1 (8)	C	C		
10.	Talcher U/s	12	8.0 (7.7-8.4)	7.7 (6.3-9.2)	0.9 (0.3-1.6)	3508 (220-16000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
13.	Mandapal*	9	7.8 (7.2-8.2)	7.3 (6.1-8.4)	1.1 (0.4-2.9)	6722 (1300-16000)	0	4 (44)	C	Doesn't conform to Class C	TC	Human activities
14.	Talcher D/s	12	7.9 (7.4-8.4)	7.3 (5.6-8.2)	1.6 (0.5-2.5)	4677 (110-17000)	0	4 (33)	C	Doesn't conform to Class C	TC	Human activities
15.	Talcher FD/s	12	8.0 (7.4-8.4)	7.7 (5.9-8.6)	1.2 (0.7-2.5)	3159 (110-16000)	0	2 (17)	C	C	TC	Human activities
16.	Dhenkanal U/s	12	8.0 (7.6-8.3)	8.1 (6.8-11.1)	0.7 (0.2-1.4)	4027 (490-16000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
17.	Dhenkanal D/s	12	7.9 (7.4-8.3)	7.5 (6.4-9.5)	0.9 (0.2-1.5)	4868 (580-16000)	0	4 (33)	C	Doesn't conform to Class C	TC	Waste water of Dhenkanal township

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			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
18.	Bhuban	12	7.9 (7.4-8.4)	7.7 (6.2-8.2)	1.0 (0.6-1.6)	3341 (460-16000)	0	2 (17)	C	C		
19.	Kabatabandha	12	8.0 (7.6-8.4)	7.9 (7.2-8.7)	0.8 (0.4-1.6)	1107 (330-3500)	0	0	C	C		
20.	Dharmasala U/s	12	7.9 (7.3-8.4)	7.6 (6.6-10.2)	0.7 (0.4-1.1)	3500 (68-16000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
21.	Dharmasala D/s	12	7.9 (7.4-8.4)	7.7 (6.5-10.0)	1.0 (0.6-1.5)	7828 (330-24000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
22.	Pottamundai	12	7.6 (7.2-8.3)	7.9 (6.2-9.5)	1.0 (0.3-1.8)	8408 (1300-16000)	0	7 (58)	C	Doesn't conform to Class C	TC	Human activities
Nandira river												
23.	Nandira U/s	12	8.1 (7.7-8.5)	7.6 (5.9-9.4)	1.1 (0.5-1.8)	1986 (230-5400)	0	2 (17)	C	C		
24.	Nandira D/s	12	8.1 (7.4-8.5)	7.5 (5.8-10.8)	1.8 (0.8-3.2)	7461 (330-35000)	1 (8)	6 (50)	C	Doesn't conform to Class C	BOD, TC	Human activities
Kisindajhor												
25.	Kisindajhor	12	8.1 (7.3-8.5)	7.2 (5.3-8.9)	0.9 (0.2-1.8)	2012 (18-9200)	0	1 (8)	C	C		
Kharasuan River												
26.	Khanditara	12	7.9 (7.5-8.4)	7.5 (6.6-8.7)	0.8 (0.4-1.6)	1067 (110-5400)	0	1 (8)	C	C		
27.	Binjharpur	12	7.9 (7.5-8.4)	8.0 (6.8-9.7)	0.9 (0.3-1.8)	4808 (490-24000)	0	3 (25)	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)						
28.	Aul	12	7.6 (7.2-8.2)	7.6 (6.4-8.8)	1.2 (0.4-2.0)	8992 (1100-24000)	0	7 (58)	C	Doesn't conform to Class C	TC	Human activities
Guradih nallah												
29.	Guradih nallah	12	7.0 (5.8-7.7)	5.9 (3.4-8.5)	6.5 (2.7-11.3)	139833 (54000-160000)						
Badjhor nallah												
30.	Badjhor nallah***	10	8.1 (7.3-8.5)	6.3 (5.4-7.8)	1.2 (0.5-1.8)	25920 (4900-92000)	0	8 (80)	C	Doesn't conform to Class C	TC	Human activities
Damsala River												
31.	Dayanabil*	9	8.0 (7.7-8.3)	7.5 (7.2-7.9)	0.7 (0.3-1.4)	1697 (170-4900)	0	0	C	C		
Ganda nallah												
32.	Marthapur*	9	7.9 (7.4-8.3)	7.1 (5.8-7.8)	1.3 (0.4-1.9)	4677 (790-13000)	0	2 (22)	C	Doesn't conform to Class C	TC	Human activities
Lingira River												
33.	Angul U/s*	9	8.3 (7.7-8.5)	7.7 (6.1-9.8)	1.0 (0.6-1.4)	942 (20-2400)	0	0	C	C		
34.	Angul D/s*	9	8.3 (7.7-8.5)	7.4 (6.0-9.4)	1.4 (0.8-1.9)	3822 (78-16000)	0	2 (22)	C	Doesn't conform to Class C	TC	Wastewater of Angul town
Ramiala River												
35.	Kamakhyanagar*	9	7.9 (6.8-8.3)	7.0 (6.6-7.4)	0.8 (0.5-1.4)	1649 (40-4900)	0	0	C	C		

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)						
Banguru nallah												
36.	Banguru nallah*	9	7.9 (7.3-8.5)	7.0 (6.2-8.4)	1.3 (0.3-3.2)	3522 (230-16000)	1 (11)	1 (11)	C	Doesn't conform to Class C	BOD, TC	Human activities
Singada jhor												
37.	Singada jhor*	0	8.0 (7.5-8.4)	7.2 (6.0-8.1)	0.9 (0.2-1.9)	3167 (220-16000)	0	2 (22)	C	Doesn't conform to Class C	TC	Human activities
Tikira River												
38.	Kaniha U/s*	9	7.9 (7.4-8.3)	7.4 (5.6-9.2)	0.9 (0.4-1.5)	3036 (490-16000)	0	1 (11)	C	C		
39.	Kaniha D/s*	9	7.9 (7.5-8.3)	7.1 (5.8-8.6)	1.3 (0.4-2.3)	3617 (230-16000)	0	2 (22)	C	Doesn't conform to Class C	TC	Human activities
Bangurusingada jhor												
40.	Bangurusingada jhor*	9	8.2 (7.8-8.5)	7.5 (6.8-9.0)	1.1 (0.3-2.0)	5269 (330-16000)	0	4 (44)	C	Doesn't conform to Class C	TC	Human activities
Karo River												
41.	Barbil **	8	7.7 (7.5-7.9)	6.9 (5.8-7.8)	0.9 (0.3-1.8)	4869 (45-28000)	0	1 (13)	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)

* Monitoring started from April, 2017, ** Monitoring started from May, 2017, *** Monitoring started from March, 2017

(C) Baitarani river system (2017)

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)						
Kundra nallah												
1.	Joda *	8	7.7 (7.1-8.1)	6.5 (5.5-7.5)	1.0 (0.2-1.9)	15511 (490-92000)	0	4 (50)	C	Doesn't conform to Class C	TC	Human activities
Kusei River												
2.	Deogaon	12	8.2 (7.8-8.5)	7.4 (6.2-8.7)	1.0 (0.2-2.5)	4788 (130-16000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
Baitarani River												
3.	Naigarh*	8	7.8 (7.4-8.1)	7.1 (6.5-7.6)	1.1 (0.3-2.5)	9209 (170-54000)	0	2 (25)	C	Doesn't conform to Class C	TC	Human activities
4.	Unchabali*	8	7.8 (7.4-8.1)	7.3 (6.7-8.4)	0.9 (0.4-1.3)	1108 (20-3500)	0	0	C	C		
5.	Champua*	8	7.7 (7.4-8.0)	7.3 (6.4-8.8)	1.0 (0.6-2.8)	1164 (20-3500)	0	0	C	C		
6.	Tribindha*	8	7.7 (7.3-8.1)	7.3 (5.9-8.1)	1.2 (0.6-2.8)	3425 (92-16000)	0	2 (25)	C	Doesn't conform to Class C	TC	Human activities
7.	Joda	12	7.8 (7.4-8.2)	7.2 (4.9-9.1)	0.9 (0.3-2.2)	1361 (<1.8-5400)	0	1 (8)	C	C		
8.	Anandpur	12	7.9 (7.5-8.4)	7.0 (6.0-8.6)	1.1 (0.4-2.2)	3967 (170-16000)	0	3 (25)	C	Doesn't conform to Class C	TC	Human activities
9.	Jajpur	12	7.9 (7.5-8.4)	7.4 (5.6-8.8)	1.2 (0.6-1.8)	39981 (270-160000)	0	7 (58)	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.	Chandbali U/s	12	8.0 (7.4-8.4)	7.3 (6.2-8.4)	0.8 (0.4-1.5)	11408 (490-35000)	0	8 (67)	C	Doesn't conform to Class C	TC	Human activities
11.	Chandbali D/s	12	7.9 (7.6-8.3)	6.7 (5.2-8.0)	1.0 (0.6-1.6)	23449 (790-160000)	0	10 (83)	C	Doesn't conform to Class C	TC	Human activities
Salandi River												
12.	Bhadrak U/s	12	7.9 (7.5-8.5)	6.7 (5.6-8.4)	0.9 (0.3-1.6)	22594 (490-160000)	0	6 (50)	C	Doesn't conform to Class C	TC	Human activities
13.	Bhadrak D/s	12	7.9 (7.4-8.4)	6.5 (5.2-8.3)	1.2 (0.8-2.1)	51358 (1700-160000)	0	9 (75)	C	Doesn't conform to Class C	TC	Human activities
Dhamra River												
14.	Dhamra	12	7.7 (7.2-8.1)	6.4 (5.2-8.0)	1.1 (0.3-2.8)	5553 (330-16000)	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)

* Monitoring started from May, 2017

(D) Rushikulya river system (2017)

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)						
Russelkunda Reservoir												
1.	Russelkunda*	8	8.0 (7.5-8.4)	7.7 (6.7-9.1)	1.1 (0.5-1.8)	6939 (<1.8-16000)	0	3 (38)	C	Doesn't conform to Class C	TC	Human activities
Bada Nadi												
2	Aska*	8	8.0 (7.6-8.5)	7.4 (5.9-8.6)	1.1 (0.6-2.2)	3191 (<1.8-9200)	0	2 (25)	C	Doesn't conform to Class C	TC	Human activities
Rushikulya River												
3.	Aska*	8	8.0 (6.7-8.4)	6.8 (5.8-7.6)	1.1 (0.6-1.9)	3601 (4.5-9200)	0	2 (25)	C	Doesn't conform to Class C	TC	Human activities
4.	Nalabanta	8	8.1 (7.8-8.4)	6.8 (5.8-8.1)	1.1 (0.5-1.9)	5849 (170-16000)	0	3 (38)	C	Doesn't conform to Class C	TC	Human activities
5.	Madhopur	12	8.2 (7.7-8.4)	7.1 (5.7-8.7)	1.1 (0.5-1.8)	6522 (49-16000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
6.	Potagarh	12	8.0 (7.5-8.5)	7.2 (5.9-8.3)	1.6 (0.5-2.8)	2919 (<1.8-16000)	0	2 (17)	C	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)

* Monitoring started from May, 2017

(E) Nagavali river system (2017)

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	8.1 (7.6-8.4)	7.0 (6.3-7.5)	0.8 (0.2-1.9)	1983 (130-5400)	0	1 (8)	C	C		
2.	J.K. Pur D/S	12	8.2 (7.5-8.4)	6.7 (5.9-7.5)	2.0 (0.5-3.5)	7019 (230-22000)	2 (16)	5 (41)	C	Doesn't conform to Class C	BOD,TC	Human activities
3.	Rayagada D/S	12	8.0 (7.1-8.5)	6.9 (6.2-7.5)	1.3 (0.5-2.6)	8133 (490-54000)	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)

(F) Subarnarekha river system (2017)

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 (7.5-8.3)	7.3 (6.4-8.2)	1.0 (0.3-2.1)	8336 (330-54000)	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 (2017)

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 (7.3-8.4)	7.7 (6.0-8.8)	1.2 (0.6-1.9)	8853 (330-35000)	0	5 (42)	C	Doesn't conform to Class C	TC	Human activities
2.	Balasore U/s	12	8.1 (7.6-8.4)	7.4 (6.4-8.4)	1.1 (0.6-1.8)	27477 (330-160000)	0	7 (58)	C	Doesn't conform to Class C	TC	Human activities
3.	Balasore D/s	12	8.1 (7.8-8.5)	6.3 (5.2-8.5)	2.0 (1.0-3.2)	46600 (4900-160000)	1 (8)	11 (92)	C	Doesn't conform to Class C	BOD,TC	Human activities
Sone River												
4.	Hatigond*	9	7.9 (7.5-8.4)	7.2 (5.6-8.2)	1.1 (0.5-1.6)	5461 (78-16000)	0	3 (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			

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)

* Monitoring started from April, 2017

(H) Kolab river system (2017)

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	7.7 (7.3-8.0)	7.2 (6.5-8.0)	0.8 (0.2-1.5)	2933 (230-16000)	0	1 (8)	C	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)

(I) Vansadhara river system (2017)

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	8.2 (7.7-8.4)	6.9 (6.4-7.4)	0.8 (0.5-1.4)	1247 (78-4900)	0	0	C	C		
2.	Gunupur	12	8.1 (7.5-8.5)	6.9 (6.0-7.3)	0.9 (0.3-1.7)	3033 (130-16000)	0	2 (17)	C	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)

J) Indravati river system (2017)

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)						
Indravati River												
1.	Nawaranngpur*	8	7.7 (7.0-8.1)	6.7 (6.1-7.4)	0.8 (0.2-1.9)	1122 (20-4900)	0	0	C	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)

* monitoring started from May, 2017

(K) Bahuda river system (2017)

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)						
Bahuda River												
1.	Damodarpally*	8	8.3 (7.9-8.4)	6.9 (5.2-8.3)	1.2 (0.4-1.8)	4985 (700-16000)	0	3 (38)	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)

* monitoring started from May, 2017

Water quality with respect to Other Parameters during 2017 (January-December)

(A) Mahanadi River System (2017)

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	166 (2-1016)	58 (20-76)	9.2 (5.0-23.5)	0.130 (0.056-0.280)	0.006 (0.002-0.027)	2.05 (0.56-7.28)	1110 (20-5400)	137 (94-167)	0.29 (0.19-0.41)	0.056 (0.003-0.295)	86 (59-102)	52 (36-60)	7.64 (3.99-10.99)	7.45 (2.10-15.42)	0.27 (0.19-0.45)	
2.	Jharsuguda	62 (8-330)	62 (20-76)	8.2 (4.3-14.3)	0.263 (0.056-0.900)	0.009 (0.001-0.028)	2.29 (0.56-8.40)	1535 (20-5400)	148 (99-186)	0.31 (0.18-0.48)	0.050 (0.003-0.147)	86 (59-102)	55 (32-68)	8.14 (4.99-11.99)	7.44 (2.45-16.29)	0.32 (0.14-0.95)	
3.	Brajrajnagar U/s	68 (9-224)	64 (28-96)	9.1 (4.3-13.7)	0.168 (0.056-0.670)	0.006 (0.002-0.022)	1.68 (0.56-5.60)	542 (78-1300)	159 (117-239)	0.33 (0.19-0.47)	0.040 (0.011-0.137)	89 (68-118)	56 (34-84)	8.98 (4.99-12.99)	19.52 (2.19-19.52)	0.31 (0.14-0.51)	
4.	Brajrajnagar D/s	77 (6-482)	82 (28-180)	11.8 (5.8-15.3)	0.167 (0.056-0.450)	0.008 (0.002-0.035)	2.30 (1.12-5.04)	1534 (<1.8-9200)	205 (118-438)	0.39 (0.19-0.84)	0.035 (0.014-0.088)	116 (71-239)	74 (32-156)	12.30 (4.99-27.98)	9.73 (1.42-23.38)	0.30 (0.14-0.40)	
Bheden river																	
5.	Jharsuguda	97 (4-564)	80 (32-124)	12.7 (5.8-21.8)	0.144 (0.050-0.670)	0.007 (0.001-0.034)	2.26 (0.56-7.84)	187 (<1.8-1100)	297 (121-525)	0.73 (0.27-1.95)	0.109 (0.004-0.260)	162 (72-310)	92 (48-154)	26.79 (6.99-79.96)	25.40 (3.24-58.80)	1.12 (0.29-2.70)	
Hirakud Reservoir																	
6.	Hirakud reservoir	37 (5-138)	72 (36-92)	9.0 (5.1-13.2)	0.163 (0.056-0.560)	0.011 (0.002-0.056)	2.50 (0.84-6.72)	405 (<1.8-2400)	183 (138-206)	0.32 (0.23-0.43)	0.046 (0.001-0.105)	107 (78-118)	71 (40-84)	9.47 (7.82-11.99)	11.62 (2.04-20.50)	0.31 (0.23-0.52)	
Power Channel																	
7.	Power Channel U/s	30 (2-158)	70 (28-96)	7.3 (5.4-11.8)	0.102 (0.050-0.280)	0.005 (0.002-0.011)	2.12 (0.84-6.16)	113 (<1.8-490)	181 (137-207)	0.32 (0.21-0.53)	0.035 (0.001-0.074)	106 (78-124)	71 (38-88)	10.14 (6.99-17.99)	12.34 (1.95-25.62)	0.30 (0.20-0.52)	
8.	Power Channel D/s	23 (2-104)	72 (28-92)	9.5 (6.7-11.8)	0.140 (0.050-0.560)	0.009 (0.002-0.045)	2.03 (0.56-7.28)	211 (<1.8-790)	177 (138-201)	0.31 (0.25-0.39)	0.049 (0.002-0.172)	107 (81-123)	73 (48-90)	9.64 (6.99-13.99)	11.90 (1.97-27.73)	0.33 (0.23-0.55)	

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)						
Mahanadi river																
9.	Sambalpur U/s	22 (2-68)	75 (40-104)	10.1 (6.7-17.0)	0.135 (0.050-0.340)	0.007 (0.001-0.027)	1.75 (0.56-4.48)	2307 (45-16000)	200 (145-261)	0.42 (0.31-0.69)	0.046 (0.002-0.119)	117 (88-149)	76 (54-94)	13.22 (8.99-17.99)	12.86 (2.25-21.40)	0.38 (0.23-0.55)
10.	Sambalpur D/s	30 (2-156)	83 (41-116)	16.5 (7.8-24.8)	0.191 (0.050-0.560)	0.011 (0.001-0.055)	2.19 (0.56-5.60)	7958 (1100-24000)	224 (150-293)	0.42 (0.31-0.68)	0.050 (0.005-0.123)	132 (96-168)	86 (54-114)	14.62 (9.99-21.99)	14.67 (5.84-25.00)	0.38 (0.23-0.54)
11.	Sambalpur FD/s at Shankarmath	40 (6-174)	81 (48-116)	13.2 (9.8-21.5)	0.177 (0.050-0.560)	0.010 (0.001-0.070)	2.57 (0.56-8.40)	1714 (170-5400)	219 (135-364)	0.36 (0.25-0.52)	0.040 (0.003-0.081)	108 (76-126)	80 (54-110)	11.22 (7.99-17.99)	10.98 (1.74-16.70)	0.39 (0.23-0.51)
12.	Sambalpur FFD/s at Huma	28 (1-136)	71 (36-92)	8.8 (6.0-11.8)	0.111 (0.050-0.280)	0.009 (0.002-0.035)	2.52 (0.56-8.96)	1000 (<1.8-3500)	185 (141-213)	0.33 (0.28-0.38)	0.051 (0.005-0.274)	108 (76-126)	74 (50-88)	9.97 (6.99-11.99)	11.52 (1.89-23.38)	0.34 (0.22-0.52)
13.	Sonepur U/s	20 (3-60)	85 (68-104)	8.0 (3.6-10.7)	0.130 (0.050-0.560)	0.012 (0.001-0.070)	1.96 (0.28-5.88)	267 (<1.8-1100)	211 (186-233)	0.33 (0.22-0.42)	0.046 (0.001-0.130)	117 (102-132)	85 (72-102)	10.72 (7.99-11.99)	9.34 (1.97-13.93)	0.36 (0.24-0.55)
14.	Sonepur D/s	31 (5-170)	92 (72-120)	11.0 (6.7-18.0)	0.163 (0.050-0.560)	0.009 (0.001-0.036)	2.94 (0.28-11.20)	1258 (<1.8-4900)	228 (194-262)	0.34 (0.17-0.46)	0.059 (0.001-0.140)	130 (112-148)	90 (68-112)	11.89 (5.99-15.99)	10.19 (1.49-16.66)	0.40 (0.27-0.66)
15.	Tikarapada	37 (4-154)	82 (36-100)	8.4 (3.6-11.7)	0.120 (0.050-0.560)	0.010 (0.001-0.055)	1.59 (0.56-4.48)	372 (20-2400)	196 (141-230)	0.30 (0.20-0.38)	0.052 (0.007-0.102)	113 (92-129)	79 (52-94)	9.47 (7.99-10.99)	27.48 (1.33-27.48)	0.37 (0.24-0.59)
16.	Narasinghpur	32 (2-100)	77 (50-100)	8.5 (3.5-12.8)	0.093 (0.056-0.280)	0.006 (0.001-0.014)	1.52 (0.28-5.04)	474 (20-1300)	188 (168-219)	0.30 (0.22-0.43)	0.053 (0.007-0.140)	109 (95-135)	77 (62-102)	9.39 (7.99-12.99)	9.87 (4.00-18.65)	0.32 (0.24-0.51)
17.	Munduli	40 (10-132)	82 (56-140)	8.5 (5.4-11.0)	0.080 (0.050-0.220)	0.007 (BDL-0.028)	1.33 (0.28-3.36)	584 (45-1700)	204 (163-366)	0.39 (0.22-0.83)	0.066 (0.005-0.123)	119 (92-214)	80 (62-132)	12.79 (5.99-31.98)	10.32 (5.60-17.53)	0.32 (0.22-0.55)

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)							
18.	Cuttack U/s	39 (5-134)	76 (52-96)	8.9 (5.0-11.7)	0.137 (0.050-0.560)	0.008 (BDL-0.036)	1.61 (0.28-5.60)	352 (<1.8-930)	190 (168-212)	0.35 (0.25-0.66)	0.051 (0.005-0.123)	109 (94-119)	73 (56-88)	10.14 (7.99-15.99)	9.29 (4.50-19.90)	0.33 (0.22-0.50)	
19.	Cuttack D/s	31 (4-102)	78 (48-96)	14.4 (9.2-18.4)	0.116 (0.050-0.560)	0.009 (BDL-0.055)	2.08 (0.28-8.40)	21198 (130-160000)	199 (156-235)	0.36 (0.26-0.51)	0.068 (0.007-0.175)	115 (99-138)	78 (60-92)	11.47 (6.99-18.00)	11.25 (6.09-18.16)	0.34 (0.23-0.51)	
20.	Cuttack FD/s [§]	58 (3-214)	78 (66-94)	11.3 (7.0-14.7)	0.145 (0.050-0.560)	0.008 (BDL-0.051)	1.32 (0.56-4.48)	6614 (45-24000)	193 (161-211)	0.33 (0.14-0.66)	0.078 (0.003-0.316)	113 (102-124)	76 (66-92)	10.70 (5.99-18.99)	10.44 (1.35-19.90)	0.33 (0.24-0.47)	
21.	Paradeep U/s	85 (18-208)	90 (56-128)	17.5 (7.1-48.5)	0.130 (0.050-0.500)	0.006 (0.001-0.018)	1.86 (0.56-7.84)	204 (<1.8-1100)	7372 (177-21140)	17.36 (0.39-49.43)	1.173 (0.011-3.104)	13937 (578-36640)	918 (64-2500)	2779.1 (10.0-7496.0)	387.04 (7.83-1225.1)	0.45 (0.22-0.69)	
22.	Paradeep D/s	167 (30-302)	116 (64-188)	30.7 (10.1-48.5)	0.221 (0.050-0.950)	0.008 (0.001-0.038)	1.59 (0.56-3.92)	1515 (<1.8-16000)	17109 (902-41140)	35.85 (3.55-82.07)	1.522 (0.021-3.230)	13937 (578-36640)	2165 (116-4500)	7512.9 (199.0-20789.6)	931.8 (70.8-2381.8)	0.74 (0.32-1.10)	
Ong River																	
23.	Dharuakhaman *	35 (2-110)	101 (40-156)	8.4 (3.6-12.2)	0.137 (0.056-0.340)	0.008 (0.003-0.014)	3.79 (0.28-13.40)	127 (<1.8-790)	240 (101-324)	0.36 (0.21-0.83)	0.062 (0.005-0.137)	136 (58-176)	95 (40-126)	12.21 (6.99-26.98)	9.28 (1.29-16.66)	0.37 (0.24-0.61)	
Tel River																	
24.	Monmunda	62 (9-220)	92 (68-140)	10.1 (3.6-15.1)	0.141 (0.050-0.560)	0.007 (0.001-0.022)	2.08 (0.56-5.32)	147 (<1.8-1400)	211 (162-396)	0.31 (0.17-0.63)	0.072 (0.007-0.147)	117 (98-192)	83 (60-136)	9.98 (5.99-22.98)	6.03 (0.44-12.44)	0.33 (0.21-0.51)	
Kathajodi River																	
25.	Cuttack U/s	42 (4-124)	71 (52-104)	9.3 (5.0-11.0)	0.179 (0.050-0.900)	0.014 (0.001-0.072)	1.82 (0.56-4.76)	423 (20-2100)	180 (138-229)	0.34 (0.22-0.64)	0.040 (0.007-0.112)	103 (84-126)	69 (52-88)	10.56 (7.99-21.98)	9.09 (4.80-19.65)	0.36 (0.00-0.81)	
26.	Cuttack D/s	37 (4-90)	98 (64-168)	23.2 (10.7-38.0)	1.186 (0.056-5.880)	0.078 (BDL-0.735)	3.73 (1.40-8.40)	61840 (180-160000)	279 (174-419)	0.60 (0.22-1.10)	0.076 (0.005-0.218)	160 (102-262)	96 (68-128)	21.61 (5.99-41.97)	14.27 (8.40-23.75)	0.30 (0.14-0.56)	

§ No sampling during February, 2017

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)						
27.	Mattagajpur (Cuttack FD/s)	89 (2-262)	122 (92-148)	42.4 (12.2-99.6)	1.525 (0.056-4.648)	0.053 (BDL-0.210)	5.88 (0.56-11.76)	5727 (20-17000)	392 (267-516)	1.05 (0.22-1.52)	0.108 (0.004-0.367)	223 (152-291)	118 (84-140)	40.56 (9.99-63.97)	19.85 (10.90-35.40)	0.28 (0.20-0.43)
28.	Kamasasan (Cuttack FFD/s)**	50 (4-126)	84 (52-118)	12.9 (9.2-18.4)	0.272 (0.056-0.780)	0.017 (0.001-0.062)	2.38 (0.56-6.72)	4206 (<1.8-16000)	229 (165-360)	0.53 (0.30-0.88)	0.133 (0.005-0.639)	127 (96-184)	81 (64-102)	14.74 (6.99-28.98)	11.48 (7.58-18.53)	0.28 (0.22-0.43)
Serua River																
29.	Sankhatrasa (Cuttack FD/s)	46 (8-122)	101 (68-136)	16.7 (6.7-30.8)	1.577 (0.050-7.560)	0.131 (0.001-0.945)	4.06 (0.28-11.76)	65682 (78-160000)	297 (170-444)	0.67 (0.21-1.40)	0.084 (0.023-0.225)	164 (96-245)	93 (68-128)	25.17 (5.99-46.97)	11.76 (7.09-19.03)	0.27 (0.17-0.38)
Kuakhai River																
30.	Mancheswar (Bhubaneswar FU/s)	24 (2-104)	76 (52-108)	7.7 (5.6-11.1)	0.112 (0.056-0.560)	0.007 (0.002-0.018)	1.80 (0.28-6.72)	1516 (220-9200)	186 (148-217)	0.33 (0.25-0.41)	0.048 (0.007-0.116)	108 (79-132)	74 (56-90)	10.22 (6.99-11.99)	9.34 (6.20-13.93)	0.27 (0.12-0.48)
31.	Hansapal (Bhubaneswar U/s)	24 (2-98)	76 (42-92)	10.6 (5.5-23.5)	0.130 (0.056-0.560)	0.010 (0.002-0.036)	1.80 (0.28-3.36)	20040 (490-160000)	188 (136-209)	0.36 (0.28-0.48)	0.051 (0.007-0.102)	109 (78-121)	73 (48-86)	11.06 (9.78-13.99)	9.60 (7.20-15.79)	0.32 (0.15-0.68)
Daya River																
32.	Gelapur*	31 (6-116)	74 (44-96)	9.3 (6.6-11.8)	0.287 (0.056-0.670)	0.022 (0.002-0.084)	3.05 (0.56-8.96)	6120 (490-17000)	188 (144-205)	0.40 (0.32-0.49)	0.074 (0.010-0.119)	110 (85-124)	71 (46-80)	11.88 (9.99-15.98)	10.34 (7.09-19.40)	0.25 (0.14-0.41)
33.	Kanti (Bhubaneswar D/s)	45 (16-100)	82 (44-136)	29.2 (19.6-43.4)	2.235 (3.628-38.201)	0.061 (BDL-0.273)	4.85 (0.56-16.80)	84575 (7900-160000)	287 (146-470)	1.06 (0.45-2.23)	0.067 (0.014-0.126)	168 (85-286)	80 (48-96)	34.72 (10.99-74.96)	12.76 (7.55-20.60)	0.31 (0.13-0.89)
34.	Manitri (Bhubaneswar FD/s)	59 (17-178)	79 (52-116)	24.0 (15.7-33.9)	2.025 (BDL-10.528)	0.057 (BDL-0.158)	4.46 (0.29-17.92)	87075 (7900-160000)	283 (166-451)	1.04 (0.48-1.59)	0.061 (0.010-0.102)	157 (94-211)	76 (54-92)	32.80 (13.99-50.88)	10.53 (4.21-17.41)	0.261 (0.12-0.68)
35.	Kanas*	53 (4-130)	88 (60-128)	16.1 (11.8-19.6)	0.142 (0.050-0.340)	0.006 (BDL-0.022)	2.86 (1.12-5.60)	9588 (790-22000)	288 (172-482)	1.04 (0.43-2.470)	0.039 (0.004-0.165)	171 (105-312)	80 (60-102)	34.87 (11.99-89.95)	15.13 (8.70-21.90)	0.26 (0.19-0.42)

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)								
Gangua River																
36.	Near Rajdhani Engg. College*	95 (8-262)	71 (44-98)	51.9 (23.5-131.1)	3.546 (0.056-22.960)	0.038 (BDL-0.176)	7.70 (1.12-31.36)	135869 (9200-160000)	298 (170-482)	1.22 (0.51-2.13)	0.058 (0.004-0.084)	162 (98-232)	69 (50-90)	37.09 (17.99-62.96)	14.96 (5.72-29.35)	0.18 (0.09-0.29)
37.	Palasuni*	92 (32-214)	77 (36-114)	60.4 (27.5-160.2)	3.540 (0.056-23.520)	0.019 (BDL-0.118)	8.87 (1.12-31.36)	143667 (13000-160000)	320 (170-478)	1.23 (0.58-1.87)	0.060 (0.004-0.095)	169 (92-236)	71 (50-86)	38.20 (17.99-59.97)	38.59 (8.95-38.59)	0.20 (0.15-0.32)
38.	Samantray pur*	99 (28-192)	93 (40-146)	71.0 (7.5-160.2)	4.584 (0.056-27.440)	0.060 (0.001-0.179)	9.80 (1.12-38.08)	160000	362 (165-603)	1.34 (0.57-2.08)	0.082 (0.007-0.182)	198 (91-287)	81 (50-110)	43.75 (11.99-67.96)	16.22 (8.95-31.80)	0.20 (0.10-0.33)
39.	Vadimula	53 (19-102)	90 (48-130)	45.1 (23.0-93.2)	4.657 (0.056-16.856)	0.152 (BDL-1.096)	9.42 (0.56-28.00)	171500 (54000-540000)	376 (165-601)	1.35 (0.49-2.08)	0.082 (0.004-0.105)	206 (98-289)	88 (52-108)	48.28 (15.99-97.96)	17.67 (6.71-31.60)	0.23 (0.10-0.51)
Birupa River																
40.	Choudwar D/s	39 (2-146)	76 (52-92)	9.0 (5.5-12.0)	0.126 (BDL-0.450)	0.009 (BDL-0.029)	1.26 (0.28-4.48)	9430 (<1.8-92000)	187 (143-224)	0.31 (0.20-0.42)	0.050 (0.014-0.172)	109 (88-128)	76 (60-88)	9.64 (6.99-13.99)	10.23 (4.30-15.50)	0.337 (0.230-0.630)
Kushabhadra River																
41.	Bhingarpur*	34 (6-100)	98 (52-138)	12.7 (7.1-23.5)	0.174 (0.056-0.450)	0.008 (0.003-0.017)	2.96 (0.56-9.52)	2218 (78-9200)	258 (159-388)	0.70 (0.43-1.08)	0.041 (0.004-0.190)	149 (96-209)	84 (60-120)	22.65 (11.99-35.98)	8.86 (1.38-15.30)	0.29 (0.21-0.43)
42.	Nimapara*	22 (5-60)	81 (56-112)	11.4 (5.4-15.7)	0.280 (0.056-1.340)	0.013 (0.002-0.043)	3.26 (0.56-9.50)	9776 (150-24000)	209 (156-278)	0.58 (0.32-1.23)	0.040 (0.004-0.154)	125 (96-156)	72 (60-88)	16.99 (10.99-32.98)	9.29 (1.02-14.90)	0.29 (0.17-0.49)
43.	Gop*	21 (6-54)	83 (52-104)	9.7 (5.4-13.3)	0.161 (0.056-0.450)	0.007 (0.002-0.011)	2.61 (0.56-8.40)	230 (153-312)	0.65 (0.33-1.34)	0.051 (0.004-0.204)	133 (86-198)	78 (52-96)	21.32 (9.99-43.97)	9.27 (0.99-15.42)	0.26 (0.20-0.46)	0.26 (0.20-0.46)
Bhargavi River																
44.	Chandanpur*	37 (4-188)	77 (54-90)	11.0 (5.5-14.7)	0.143 (0.056-0.450)	0.010 (0.003-0.029)	1.49 (0.28-6.72)	3242 (330-16000)	194 (161-225)	0.45 (0.36-0.70)	0.114 (0.009-0.560)	115 (94-131)	71 (52-80)	13.55 (9.99-18.99)	10.08 (1.74-17.78)	0.28 (0.21-0.45)

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)								
Mangala River																
45.	Malatipatpur**	61 (24-158)	101 (52-236)	11.6 (7.2-17.5)	0.185 (0.055-0.450)	0.013 (0.002-0.035)	2.24 (0.28-4.48)	3988 (330-16000)	1079 (173-7696)	3.05 (0.29-22.20)	0.279 (0.004-1.569)	920 (96-7160)	231 (64-1400)	464.32 (11.99-3998.00)	58.88 (5.81-432.20)	0.27 (0.21-0.37)
46.	Golasahi**	122 (40-214)	120 (56-208)	26.1 (12.2-67.9)	0.223 (0.056-0.560)	0.016 (0.002-0.034)	2.42 (0.28-5.60)	15656 (<1.8-54000)	10084 (196-41160)	24.78 (0.76-78.64)	0.720 (0.013-3.525)	8140 (118-33440)	1042 (64-4350)	4429.47 (19.99-18490.7)	582.77 (11.57-2562.00)	0.29 (0.19-0.44)
Devi River																
47.	Machhagaon**	105 (14-260)	108 (56-192)	19.3 (7.1-39.3)	0.181 (0.055-0.670)	0.006 (0.001-0.027)	2.06 (0.28-8.04)	241 (<1.8-1400)	10018 (185-41390)	27.17 (0.63-107.40)	0.994 (0.024-3.146)	9486 (102-34160)	1129 (62-4950)	5203.22 (16.98-18990.5)	479.11 (10.94-1670.4)	0.40 (0.24-0.62)
Gobari River																
48.	Kendrapara U/s**	77 (6-138)	95 (40-152)	10.9 (5.4-18.4)	0.091 (0.055-0.280)	0.007 (0.001-0.027)	1.58 (0.28-3.08)	2718 (230-16000)	726 (160-1435)	3.60 (0.40-9.72)	0.101 (0.004-0.225)	432 (96-836)	116 (50-226)	180.64 (11.99-424.70)	28.24 (3.11-96.50)	0.32 (0.23-0.43)
49.	Kendrapara D/s**	55 (12-122)	100 (40-156)	13.0 (8.9-22.0)	0.205 (0.056-0.460)	0.006 (0.002-0.014)	2.24 (0.28-3.64)	6023 (790-16000)	801 (171-1893)	4.06 (0.44-13.18)	0.089 (0.004-0.214)	496 (108-1230)	129 (52-236)	205.39 (11.99-624.60)	31.93 (2.48-107.80)	0.30 (0.23-0.47)
Nuna River																
50.	Bijipur**	74 (16-240)	87 (44-128)	14.5 (7.4-24.4)	0.279 (0.056-0.840)	0.012 (0.001-0.055)	2.52 (1.12-9.52)	18738 (1400-92000)	218 (159-340)	0.53 (0.36-1.07)	0.037 (0.002-0.102)	127 (98-187)	76 (58-90)	15.99 (10.99-31.98)	8.81 (1.62-12.93)	0.31 (0.20-0.44)
Kusumi River																
51.	Tangi*	48 (2-114)	78 (44-114)	15.4 (6.7-29.1)	0.211 (0.050-0.450)	0.016 (0.003-0.042)	4.39 (0.56-11.76)	5376 (68-17000)	214 (140-318)	0.62 (0.33-1.07)	0.082 (0.005-0.169)	123 (80-185)	70 (40-96)	20.43 (9.99-39.98)	6.58 (0.87-20.52)	0.33 (0.12-0.33)
Kansari River																
52.	Banapur*	56 (1-262)	88 (44-112)	14.8 (5.9-23.3)	0.148 (0.056-0.280)	0.011 (0.001-0.035)	3.24 (0.28-8.40)	7372 (78-54000)	230 (147-308)	0.59 (0.34-0.93)	0.051 (0.018-0.077)	134 (88-178)	82 (48-108)	19.43 (9.99-37.98)	7.40 (0.60-19.15)	0.22 (0.12-0.48)

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)								
Badasankha River																
53.	Langaleswar*	71 (22-248)	111 (36-176)	28.1 (13.4-68.0)	0.297 (0.056-0.952)	0.014 (0.001-0.043)	2.61 (0.56-6.16)	1997 (<1.8-13000)	6283 (182-26260)	16.49 (0.34-71.43)	0.618 (0.032-2.521)	5370 (102-23960)	732 (78-2600)	2932.8 (10.0-13493.3)	260.26 (2.77-1031.10)	0.37 (0.19-0.35)
Sabulia River																
54.	Rambha*	52 (2-126)	157 (56-268)	22.7 (8.9-64.1)	0.272 (0.056-0.784)	0.026 (0.002-0.098)	2.58 (1.12-6.16)	6259 (<1.8-17000)	444 (183-763)	1.30 (0.69-2.48)	0.101 (0.004-0.200)	255 (105-454)	134 (50-238)	53.53 (20.98-129.94)	8.11 (1.37-15.67)	0.34 (0.20-0.65)
Ratnachira River																
55.	Kumardihi**	47 (6-214)	78 (48-126)	14.9 (11.0-17.9)	0.182 (0.056-0.560)	0.006 (BDL-0.013)	1.76 (0.28-3.36)	2861 (7-9200)	213 (148-326)	0.57 (0.38-1.18)	0.157 (0.023-0.769)	125 (88-188)	73 (56-116)	18.99 (9.99-40.97)	9.99 (1.95-15.42)	0.27 (0.19-0.38)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'									2250	26	2.0	2100	-	600	1000	-

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

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

Class 'E' : Irrigation water quality

* Monitoring started from April, 2017

** Monitoring started from May, 2017

(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	4.426 (0.562-27.815)	0.032 (0.002-0.115)	0.008	0.020	0.040	0.004	0.003	0.003	0.0014	<0.00006	0.004
2.	Jharsuguda	3.479 (0.241-11.360)	0.154 (0.002-0.816)	0.007	0.018	0.060	0.004	0.002	0.005	0.0014	0.00006	0.003
3.	Brajraj nagar U/s	3.530 (0.724-10.788)	0.087 (0.002-0.188)	0.005	0.015	0.150	0.005	0.003	0.006	0.0016	0.00019	0.002
4.	Brajraj nagar D/s	4.451 (0.460-9.840)	0.079 (0.002-0.233)	0.007	0.018	0.040	0.004	0.002	0.008	0.0019	0.00019	0.004
Bheden river												
5.	Jharsuguda	3.095 (0.438-7.602)	0.060 (0.002-0.161)	0.012	0.032	0.080	0.008	0.003	0.016	0.0021	0.00032	0.005
Hirakud reservoir												
6.	Hirakud reservoir	5.133 (1.110-21.622)	0.138 (0.002-1.137)	0.005	0.013	0.020	0.006	0.002	0.005	0.0011	0.000	0.004
Power Channel												
7.	Power channel U/s	3.966 (1.115-9.179)	0.656 (0.002-0.656)	0.002	0.008	0.060	0.006	0.002	0.004	0.0014	0.00013	0.002
8.	Power Channel D/s	4.177 (1.299-10.905)	0.166 (0.002-0.676)	0.007	0.018	0.150	0.009	0.003	0.017	0.0016	0.00032	0.004

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	475 (1.658-12.853)	0.129 (0.002-1.051)	0.005	0.018	0.040	0.006	0.004	0.005	0.0016	0.00013	0.005
10.	Sambalpur D/s	5.315 (1.868-12.327)	0.100 (0.002-0.388)	0.015	0.035	0.010	0.009	0.005	0.011	0.0018	0.00019	0.004
11.	Sambalpur FD/s at Shankarmath	5.447 (1.013-19.972)	0.117 (0.002-0.559)	0.005	0.015	0.040	0.008	0.005	0.006	0.0016	0.00013	0.004
12.	Sambalpur FD/s at Huma	3.301 (1.049-5.744)	0.208 (0.002-1.113)	0.003	0.013	0.100	0.006	0.002	0.004	0.00014	<0.00006	0.003
13.	Sonepur U/s	3.140 (1.019-6.979)	0.242 (0.002-1.013)	0.008	0.015	0.020	0.004	0.002	0.012	0.0021	<0.00006	0.003
14.	Sonepur D/s	4.792 (0.980-10.481)	0.228 (0.002-1.107)	0.012	0.029	0.100	0.005	0.002	0.016	0.0024	<0.00006	0.003
15.	Tikarapada	4.017 (1.144-15.583)	0.210 (0.003-0.842)	0.01	0.027	0.030	0.004	0.005	0.006	0.0024	<0.00006	0.004
16.	Narasinghpur	4.468 (0.517-18.661)	0.064 (0.002-0.222)	0.003	0.008	0.160	0.006	0.005	0.006	0.0019	<0.00006	0.007
17.	Munduli	4.500 (0.143-14.829)	0.076 (0.002-0.337)	0.005	0.010	0.270	0.006	0.002	0.004	0.0019	<0.00006	0.007
18.	Cuttack U/s	2.697 (0.663-7.704)	0.067 (0.002-0.252)	0.007	0.015	1.140	0.005	0.003	0.008	0.0018	<0.00006	0.004

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	5.201 (2.123-15.532)	0.089 (0.002-0.286)	0.015	0.027	2.530	0.005	0.006	0.016	0.0024	0.00013	0.008
20.	Cuttack FD/s [§]	5.038 (0.911-19.317)	0.095 (0.002-0.253)	0.013	0.030	1.830	0.004	0.002	0.008	0.0024	0.00013	0.006
21.	Paradeep U/s	2.815 (0.300-8.736)	0.061 (0.002-0.201)	0.002	0.007	0.160	0.011	0.008	0.024	0.0029	0.00019	0.009
22.	Paradeep D/s	3.941 (1.142-10.335)	0.323 (0.045-0.798)	0.003	0.007	0.100	0.012	0.009	0.028	0.0031	0.00019	0.009
Ong River												
23.	Dharuakhaman*	3.337 (1.087-9.245)	0.268 (0.002-1.217)	0.013	0.035	0.010	0.004	0.004	0.011	0.0016	<0.00006	0.006
Tel River												
24.	Monmunda	4.003 (0.705-9.189)	0.194 (0.002-1.156)	0.01	0.022	0.110	0.004	0.005	0.011	0.0017	<0.00006	0.002
Kathajodi River												
25.	Cuttack U/s	3.009 (1.031-7.694)	0.109 (0.002-0.527)	0.007	0.018	1.440	0.003	0.003	0.005	0.0017	<0.00006	0.004
26.	Cuttack D/s	9.763 (0.542-33.887)	0.315 (0.002-0.984)	0.013	0.032	3.760	0.004	0.003	0.005	0.0032	0.00025	0.009
27.	Mattagajpur (Cuttack FD/s)	10.882 (1.617-28.099)	0.346 (0.081-1.020)	0.008	0.024	2.310	0.006	0.005	0.012	0.0029	0.00032	0.010
28.	Kamasasan (Cuttack FFD/s)**	7.147 (2.913-13.959)	0.200 (0.007-0.460)	0.003	0.011	0.450	0.004	0.002	0.011	0.0014	<0.00006	0.007

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)								
Seru River												
29.	Sankhatrasa (Cuttack FD/s)	10.282 (1.495-35.269)	0.429 (0.065-1.250)	0.017	0.035	3.660	0.002	0.005	0.014	0.0022	0.00019	0.009
Kuakhai River												
30.	Mancheswar (Bhubaneswar FU/s)	1.922 (0.480-4.421)	0.058 (0.002-0.174)	0.008	0.020	2.180	0.004	0.003	0.008	0.0016	<0.00006	0.006
31.	Hansapal (Bhubaneswar U/s)	2.400 (0.772-7.327)	0.060 (0.002-0.364)	0.012	0.032	2.230	0.005	0.006	0.005	0.0018	<0.00006	0.006
Daya River												
32.	Gelapur*	4.478 (0.623-18.765)	0.081 (0.002-0.248)	0.018	0.035	0.760	0.006	0.005	0.019	0.0026	0.00013	0.017
33.	Kanti (Bhubaneswar D/s)	13.978 (3.628-38.201)	0.451 (0.020-1.297)	0.007	0.022	1.630	0.008	0.009	0.009	0.0022	0.00019	0.008
34.	Manitri (Bhubaneswar FD/s)	14.626 (2.244-25.522)	0.434 (0.002-1.217)	0.005	0.015	0.220	0.008	0.005	0.004	0.0021	0.00019	0.005
35.	Kanas*	6.427 (1.761-18.080)	0.118 (0.002-0.345)	0.007	0.027	0.670	0.006	0.005	0.016	0.0026	0.00013	0.014
Gangua River												
36.	Near Rajdhani Engg. Collge*	19.893 (3.648-41.065)	0.618 (0.002-2.232)	0.002	0.008	0.310	0.002	0.006	0.025	0.0011	<0.00006	0.006
37.	Palasuni*	15.574 (1.788-41.937)	0.509 (0.002-2.066)	0.005	0.015	0.200	0.006	0.011	0.028	0.0016	0.00013	0.012

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)								
38.	Samantray pur*	17.235 (0.632-43.636)	0.349(0.002-0.797)	0.005	0.013	0.170	0.006	0.011	0.048	0.0019	0.00013	0.013
39.	Vadimula	21.533 (1.821-43.156)	0.696 (0.002-1.845)	0.007	0.018	0.210	0.008	0.016	0.052	0.0019	0.00019	0.016
Birupa River												
40.	Choudwar D/s	5.443 (0.494-24.054)	0.130 (0.003-0.922)	0.007	0.020	0.010	0.002	0.003	0.004	0.0014	<0.00006	0.006
Kushabhadra River												
41.	Bhingarpur*	3.094 (1.301-7.146)	0.071 (0.002-0.153)	0.015	0.032	0.330	0.004	0.003	0.008	0.0016	<0.00006	0.006
42.	Nimapara*	4.508 (0.797-19.379)	0.142 (0.002-0.712)	0.002	0.008	0.290	0.005	0.002	0.011	0.0018	0.00013	0.011
43.	Gop*	3.184 (0.618-9.456)	0.082 (0.003-0.156)	<0.002	0.005	0.530	0.005	0.004	0.019	0.0021	0.00013	0.012
Bhargavi River												
44.	Chandanpur*	3.902 (0.792-13.958)	0.103 (0.002-0.344)	0.01	0.024	0.640	0.004	0.003	0.016	0.0018	0.00019	0.009
Mangala River												
45.	Malatipatpur**	2.187 (1.098-3.459)	0.058 (0.003-0.218)	0.005	0.019	0.350	0.004	0.002	0.018	0.0011	<0.00006	0.005
46.	Golasahi**	4.630 (0.912-7.691)	0.112 (0.002-0.371)	0.007	0.021	0.550	0.005	0.002	0.016	0.0011	0.00019	0.007
Devi River												
47.	Machhagaon**	3.997 (0.665-9.184)	0.440 (0.002-3.062)	<0.002	0.007	0.830	0.004	0.004	0.018	0.0011	<0.00006	0.006

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)								
Gobari River												
48.	Kendrapara U/s **	3.753 (0.766-6.228)	0.123 (0.002-0.549)	0.005	0.019	0.580	0.004	0.002	0.012	0.0012	0.00013	0.006
49.	Kendrapara D/s **	4.443 (0.851-10.315)	0.099 (0.002-0.447)	0.007	0.021	7.090	0.004	0.002	0.017	0.0016	0.00019	0.008
Nuna River												
50.	Bijipur**	3.644 (0.803-12.469)	0.112 (0.030-0.330)	0.009	0.019	3.780	0.004	0.005	0.022	0.0016	0.00032	0.009
Kusumi River												
51.	Tangi**	2.992 (1.009-6.440)	0.064 (0.002-0.232)	0.023	0.039	0.670	0.006	0.003	0.031	0.0024	0.00013	0.007
Kansari River												
52.	Banapur*	2.771 (1.048-5.335)	0.060 (0.015-0.132)	0.023	0.040	0.310	0.007	0.004	0.015	0.0021	0.00006	0.007
Badasankha River												
53.	Langaleswar*	3.533 (0.792-11.266)	0.066 (0.002-0.158)	0.015	0.030	0.950	0.004	0.004	0.027	0.0011	<0.00006	0.011
Sabulia River												
54.	Rambha*	4.530 (1.851-9.888)	0.063 (0.002-0.174)	0.015	0.030	0.810	0.005	0.011	0.031	0.0026	0.00019	0.011

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)								
Ratnachira River												
55.	Kumardihi ^{**}	2.585 (0.923-6.010)	0.179 (0.016-0.660)	0.005	0.011	0.350	0.004	0.003	0.016	0.0011	0.00019	0.008
*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 Aprl, 2017 and May, 2017 according to the commencement of monitoring of stations.

* Monitoring started from April, 2017

** Monitoring started from May, 2017

(B) Brahmani River System (2017)

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.	Sankh U/s	182 (8-1404)	49 (26-64)	11.1 (7.5-14.0)	0.228 (0.056-1.340)	0.009 (0.001-0.047)	2.90 (1.12-15.68)	4585 (<1.8-16000)	121 (101-145)	0.27 (0.21-0.35)	0.046 (0.003-0.126)	72 (58-88)	49 (36-60)	6.72 (4.99-8.99)	6.86 (1.19-16.29)	0.26 (0.17-0.39)
Koel river																
2.	Koel U/s	171 (11-1152)	76 (24-112)	10.8 (2.9-19.9)	0.135 (0.056-0.340)	0.007 (0.001-0.035)	2.76 (0.56-10.08)	8790 (490-16000)	184 (96-298)	0.31 (0.19-0.72)	0.035 (0.003-0.088)	106 (59-175)	72 (30-106)	9.55 (3.99-24.98)	10.46 (5.65-18.15)	0.26 (0.19-0.36)
Brahmani river																
3.	Panposh U/s	182 (1-1528)	59 (34-96)	9.4 (4.3-14.1)	0.224 (0.056-0.900)	0.009 (0.001-0.036)	2.45(0.56-9.52)	3839 (230-16000)	147 (91-216)	0.28 (0.20-0.37)	0.085 (0.003-0.337)	86 (56-132)	58 (34-100)	7.97 (4.99-11.99)	8.85 (2.48-15.54)	0.30 (0.21-0.41)
4.	Panposh D/s	189 (11-1120)	53 (16-108)	29.7 (11.5-44.6)	4.307 (0.050-19.936)	0.006 (BDL-0.054)	8.63 (1.12-24.64)	31276 (1100-160000)	287 (151-396)	0.65 (0.29-1.32)	0.085 (0.007-0.235)	163 (85-198)	91 (54-116)	23.58 (10.99-38.16)	42.97 (7.08-70.50)	1.25 (0.29-2.20)
5.	Rourkela D/s	187 (4-1170)	54 (20-88)	23.0 (11.5-38.0)	1.432 (0.050-6.272)	0.012 (BDL-0.063)	5.25 (1.12-12.32)	32425 (200-160000)	205 (112-406)	0.39 (0.09-0.80)	0.074 (0.007-0.239)	116 (64-212)	72 (32-116)	14.03 (5.99-34.98)	20.63 (3.98-48.50)	0.70 (0.19-1.50)
6.	Rourkela FD/s (Attaghat)	131 (7-666)	65 (32-100)	15.2 (7.3-22.1)	0.106 (0.050-0.330)	0.005 (0.001-0.021)	2.01 (0.56-7.28)	3218 (<1.8-16000)	206 (107-369)	0.49 (0.22-1.07)	0.079 (0.005-0.555)	116 (58-198)	70 (44-106)	15.11 (5.99-37.98)	16.80 (3.36-27.86)	0.44 (0.18-0.86)
7.	Rourkela FD/s (Biritola)	134 (4-570)	57 (24-98)	12.0 (5.6-18.4)	0.256 (0.050-1.460)	0.009 (0.001-0.058)	2.75 (0.56-10.64)	3400 (130-16000)	177 (100-243)	0.38 (0.16-0.54)	0.064 (0.001-0.383)	103 (56-134)	64 (36-84)	11.44 (3.99-17.99)	16.44 (2.61-29.22)	0.45 (0.17-0.94)
8.	Bonaigarh	95 (5-474)	65 (32-100)	10.6 (5.6-15.8)	0.224 (0.056-1.120)	0.010 (BDL-0.073)	2.66 (0.28-8.96)	2245 (<1.8-13000)	179 (99-246)	0.40 (0.22-0.60)	0.067 (0.007-0.327)	104 (58-136)	63 (36-84)	11.97 (5.99-17.99)	14.20 (2.98-24.87)	0.47 (0.18-0.97)
9.	Rengali	47 (5-156)	45 (20-68)	8.1 (4.3-12.1)	0.224 (0.056-1.120)	0.011 (0.001-0.054)	2.01 (0.56-6.72)	602 (20-6800)	124 (107-149)	0.30 (0.22-0.39)	0.035 (0.010-0.081)	75 (64-89)	45 (34-58)	7.73 (4.99-11.99)	10.29 (1.32-20.27)	0.36 (0.23-0.96)

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)							
10.	Samal	77 (10-584)	55 (28-58)	8.9 (5.4-13.7)	0.130 (0.056-0.560)	0.007 (0.001-0.045)	2.29 (1.12-5.04)	1202 (20-5400)	130 (116-146)	0.31 (0.21-0.49)	0.038 (0.007-0.112)	76 (64-87)	48 (40-62)	7.90 (5.87-12.99)	11.05 (2.08-25.49)	0.36 (0.23-0.68)	
11.	Talcher FU/s	46 (3-324)	48 (28-60)	7.9 (3.6-13.1)	0.181 (0.050-1.120)	0.006 (0.001-0.014)	2.10 (0.84-9.52)	867 (<1.8-3500)	125 (105-136)	0.28 (0.20-0.36)	0.039 (0.003-0.232)	73 (64-83)	47 (40-58)	6.89 (4.99-8.99)	9.37 (1.62-25.37)	0.28 (0.20-0.49)	
12.	Talcher U/s	49 (5-348)	49 (24-82)	9.3 (3.6-16.8)	0.167 (0.056-0.560)	0.010 (0.002-0.044)	1.40 (0.28-3.92)	1309 (20-9200)	139 (110-227)	0.29 (0.19-0.36)	0.024 (0.004-0.063)	80 (68-124)	5 (38-86)	7.64 (4.99-9.99)	10.01 (1.19-25.17)	0.33 (0.23-0.42)	
13.	Mandapal*	66 (1-340)	50 (24-92)	9.8 (5.4-15.3)	0.211 (0.050-0.900)	0.011 (0.001-0.072)	3.36 (0.84-8.40)	3337 (270-16000)	139 (112-225)	0.26 (0.19-0.33)	0.044 (0.004-0.126)	91 (64-134)	51 (38-94)	6.88 (3.99-7.99)	10.96 (1.42-27.48)	0.31 (0.22-0.50)	
14.	Talcher D/s	64 (6-428)	56 (32-86)	14.1 (7.2-22.4)	0.130 (0.056-0.336)	0.006 (0.001-0.018)	2.43 (0.56-6.72)	2462 (20-16000)	145 (116-231)	0.31 (0.18-0.39)	0.031 (0.004-0.077)	87 (69-129)	58 (42-102)	8.22 (6.99-9.99)	10.09 (4.80-15.29)	0.38 (0.26-0.82)	
15.	Talcher FD/s	43 (1-296)	60 (36-86)	12.9 (7.1-18.7)	0.101 (0.056-0.280)	0.005 (BDL-0.014)	1.89 (0.56-3.36)	1494 (20-9200)	166 (125-232)	0.34 (0.23-0.48)	0.058 (0.004-0.123)	97 (73-132)	67 (48-100)	9.81 (7.99-12.99)	11.08 (4.68-18.78)	0.46 (0.29-0.57)	
16.	Dhenkanal U/s	56 (1-366)	56 (24-88)	7.9 (3.9-12.2)	0.102 (0.055-0.560)	0.005 (0.001-0.020)	1.63 (0.56-4.48)	1880 (110-5400)	143 (105-205)	0.30 (0.21-0.37)	0.032 (0.011-0.098)	87 (63-119)	59 (34-102)	8.64 (6.99-10.99)	9.85 (4.64-17.80)	0.34 (0.14-0.59)	
17.	Dhenkanal D/s	53 (7-202)	65 (40-124)	10.9 (3.9-18.7)	0.121 (0.056-0.390)	0.005 (0.001-0.010)	2.36 (0.56-7.28)	1710 (170-9200)	170 (137-285)	0.31 (0.19-0.40)	0.039 (0.004-0.081)	99 (79-156)	68 (52-128)	9.22 (6.99-12.99)	10.58 (5.00-23.90)	0.34 (0.23-0.62)	
18.	Bhuban	59 (6-294)	51 (28-76)	10.0 (3.6-12.2)	0.107 (0.050-0.340)	0.006 (0.001-0.027)	1.87 (0.28-5.60)	2893 (130-16000)	141 (121-206)	0.33 (0.25-0.49)	0.031 (0.004-0.070)	82 (68-112)	52 (36-82)	8.81 (6.99-12.99)	9.78 (1.64-20.64)	0.32 (0.22-0.49)	
19.	Kabatabandha	59 (5-286)	52 (20-72)	8.3 (3.6-13.2)	0.167 (0.050-0.840)	0.008 (0.002-0.042)	1.89 (0.56-5.60)	564 (130-2400)	144 (127-168)	0.31 (0.24-0.41)	0.056 (0.001-0.179)	83 (76-92)	52 (32-62)	8.06 (6.99-9.99)	9.46 (1.38-25.12)	0.34 (0.18-0.94)	

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)						
20.	Dharmasala U/s	51 (6-236)	75 (44-104)	8.0 (5.3-11.8)	0.126 (0.056-0.340)	0.006 (0.001-0.018)	1.26 (0.28-3.64)	1893 (20-9200)	185 (138-235)	0.41 (0.24-0.68)	0.060 (0.001-0.182)	110 (85-141)	68 (46-96)	12.38 (5.99-20.98)	10.37 (3.32-19.77)	0.30 (0.21-0.60)
21.	Dharmasala D/s	55 (6-262)	66 (28-112)	10.3 (5.4-16.5)	0.205 (0.056-0.840)	0.015 (0.001-0.105)	2.66 (1.12-7.28)	4253 (220-16000)	182 (124-254)	0.43 (0.29-0.72)	0.048 (0.002-0.193)	109 (76-158)	67 (38-98)	12.72 (6.99-19.99)	12.27 (3.42-27.73)	0.30 (0.19-0.60)
22.	Pottamundai	58 (4-264)	74 (42-98)	8.7 (3.6-11.7)	0.121 (0.056-0.280)	0.004 (0.001-0.011)	1.84 (0.28-6.16)	3812 (450-16000)	200 (152-261)	0.43 (0.27-0.77)	0.054 (0.004-0.147)	113 (83-145)	74 (56-96)	13.21 (7.99-25.98)	9.44 (3.23-18.16)	0.35 (0.22-0.44)
Nandira River																
23.	Nandira U/s	17 (6-26)	147 (70-226)	10.5 (5.4-18.7)	0.177 (0.056-0.560)	0.013 (0.002-0.043)	2.36 (0.28-6.70)	826 (<1.8-3500)	493 (309-548)	0.87 (0.57-1.23)	0.233 (0.065-0.439)	272 (178-322)	163 (84-210)	39.83 (27.98-63.97)	44.22 (17.91-64.18)	1.75 (0.45-4.70)
24.	Nandira D/s	16 (3-30)	133 (68-202)	15.7 (7.1-29.9)	0.190 (0.056-0.670)	0.015 (0.001-0.084)	2.03 (0.28-6.20)	4210 (170-24000)	467 (311-510)	0.76 (0.54-1.10)	0.269 (0.071-0.551)	273 (184-306)	170 (100-194)	35.59 (24.98-49.97)	55.05 (21.52-78.23)	2.32 (0.74-3.70)
Kisinda Jhor																
25.	Kisindajhor	20 (2-70)	117 (60-226)	12.3 (5.4-22.4)	0.204 (0.050-0.780)	0.019 (0.001-0.121)	2.44 (0.56-5.04)	732 (<1.8-2400)	486 (316-833)	1.11 (0.50-3.16)	0.153 (0.068-0.386)	276 (184-532)	154 (98-222)	51.55 (17.99-169.90)	49.68 (32.46-70.60)	2.02 (0.69-4.11)
Kharasrota River																
26.	Khanditara	49 (5-266)	52 (24-70)	8.0 (3.9-14.0)	0.111 (0.050-0.560)	0.005 (0.001-0.020)	1.38 (0.56-2.24)	498 (40-2400)	153 (128-203)	0.32 (0.24-0.39)	0.053 (0.001-0.137)	86 (69-98)	56 (46-68)	8.64 (5.99-10.99)	12.25 (3.47-30.22)	0.30 (0.22-0.49)
27.	Binjharpur	58 (7-172)	55 (28-84)	8.7 (3.6-13.4)	0.168 (0.056-0.840)	0.009 (BDL-0.055)	2.03 (0.28-6.72)	1914 (110-13000)	148 (124-187)	0.33 (0.23-0.53)	0.051 (0.003-0.165)	86 (67-108)	56 (32-84)	8.48 (5.99-11.99)	10.04 (1.50-15.29)	0.27 (0.18-0.38)
28.	Aul	109 (4-324)	54 (24-88)	10.5 (3.6-17.5)	0.135 (0.056-0.390)	0.004 (0.001-0.012)	2.22 (0.28-6.16)	4060 (340-13000)	155 (118-215)	0.41 (0.22-0.78)	0.069 (0.004-0.341)	94 (72-131)	59 (44-78)	11.72 (5.99-22.98)	10.79 (2.05-22.50)	0.33 (0.22-0.52)

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)						
Guradih nallah																
29.	Guradih nallah	74 (27-140)	52 (16-128)	40.8 (24.5-60.3)	4.844 (0.056-21.504)	0.016 (BDL-0.108)	9.40 (0.56-28.56)	122667 (22000-160000)	370 (268-527)	0.82 (0.60-1.15)	0.078 (0.001-0.130)	204 (147-298)	109 (74-164)	31.67 (23.98-38.98)	61.80 (18.90-93.50)	1.56 (0.26-2.80)
Badjhor nallah																
30.	Badjhor nallah***	40 (9-49)	93 (44-122)	10.4 (6.4-14.3)	0.144 (0.056-0.336)	0.012 (0.003-0.042)	1.99 (0.56-5.60)	17878 (780-54000)	260 (175-328)	0.69 (0.40-1.53)	0.101 (0.019-0.250)	149 (104-194)	90 (54-122)	22.29 (11.99-41.97)	11.17 (3.52-26.11)	0.31 (0.24-0.40)
Damsala River																
31.	Dayanabil*	64 (4-184)	55 (32-78)	7.6 (3.7-10.1)	0.173 (0.056-0.560)	0.011 (0.002-0.055)	2.15 (0.84-5.04)	576 (20-1700)	145 (97-184)	0.34 (0.19-0.43)	0.041 (0.003-0.193)	87 (58-111)	58 (44-78)	9.66 (4.99-14.99)	10.16 (1.16-27.86)	0.31 (0.14-0.81)
Ganda nallah																
32.	Marthapur*	68 (4-224)	90 (54-124)	11.0 (3.6-15.3)	0.130 (0.056-0.330)	0.006 (0.002-0.018)	2.80 (0.84-10.64)	1511 (330-4900)	355 (136-788)	0.96 (0.29-2.57)	0.094 (0.003-0.228)	200 (79-448)	101 (48-164)	39.97 (6.99-139.95)	26.97 (4.85-64.40)	0.35 (0.20-0.53)
Lingira River																
33.	Angul U/s*	12 (2-20)	118 (70-186)	11.0 (7.8-16.8)	0.148 (0.056-0.280)	0.015 (0.004-0.028)	2.30 (0.56-6.72)	503 (45-1300)	331 (183-647)	0.63 (0.33-2.22)	0.058 (0.004-0.144)	181 (118-361)	116 (80-146)	25.76 (13.99-103.95)	12.90 (2.19-17.80)	0.56 (0.43-0.70)
34.	Angul D/s*	15 (2-46)	130 (96-198)	15.1 (11.0-18.4)	0.173 (0.055-0.840)	0.019 (0.002-0.082)	2.11 (0.28-6.70)	236 (<1.8-5400)	357 (251-516)	0.64 (0.42-0.88)	0.053 (0.004-0.112)	191 (142-278)	129 (104-182)	25.20 (14.99-45.97)	14.16 (3.31-21.52)	0.60 (0.18-1.20)
Ramiala River																
35.	Kamakhyanagar*	78 (1-352)	56 (28-102)	8.7 (3.6-18.3)	0.205 (0.056-0.900)	0.014 (BDL-0.088)	2.92 (1.12-10.08)	553 (401-400)	139 (111-210)	0.29 (0.20-0.39)	0.049 (0.018-0.190)	82 (63-121)	56 (30-98)	7.54 (5.90-9.99)	8.48 (4.39-17.66)	0.32 (0.21-0.83)
Banguru nallah																
36.	Banguru nallah*	48 (8-180)	113 (952-180)	13.2 (3.6-30.2)	0.166 (0.056-0.560)	0.008 (0.002-0.026)	2.77 (0.28-7.28)	1928 (78-9200)	567 (167-1619)	0.97 (0.38-1.91)	0.122 (0.065-0.179)	304 (98-675)	169 (48-350)	44.63 (13.99-107.90)	86.06 (16.29-224.20)	0.43 (0.28-0.61)

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)						
Singada jhor																
37.	Singada jhor*	40 (1-130)	108 (62-196)	10.1 (3.6-15.5)	0.086 (0.050-0.283)	0.005 (0.001-0.010)	2.02 (0.56-7.28)	2145 (110-9200)	280 (158-440)	0.42 (0.23-0.70)	0.071 (0.030-0.158)	159 (89-241)	106 (60-170)	14.77 (5.99-24.98)	19.94 (8.45-45.50)	0.50 (0.20-2.00)
Tikira River																
38.	Kaniha U/s*	153 (4-492)	71 (40-106)	10.1 (3.6-18.3)	0.211 (0.056-0.730)	0.010 (0.002-0.038)	2.74 (0.56-6.16)	627 (130-1400)	305 (147-624)	0.57 (0.34-1.12)	0.190 (0.018-0.621)	174 (86-352)	102 (46-196)	23.21 (10.99-67.97)	44.97 (1.89-146.80)	1.06 (0.27-4.20)
39.	Kaniha D/s*	136 (26-642)	78 (40-118)	12.3 (3.6-24.4)	0.129 (0.050-0.280)	0.007 (0.002-0.021)	3.36 (1.12-7.80)	1798 (<1.8-9200)	271 (168-468)	0.47 (0.30-0.88)	0.211 (0.047-0.688)	154 (96-268)	94 (54-140)	16.43 (8.99-31.98)	34.10 (8.99-31.98)	0.48 (0.22-1.20)
Bangurusingada jhor																
40.	Bangurusingada jhor*	26 (3-58)	113 (46-170)	12.6 (7.1-17.9)	0.123 (0.056-0.560)	0.009 (0.002-0.028)	1.46 (0.56-3.36)	2382 (110-9200)	290 (185-512)	0.47 (0.26-0.76)	0.082 (0.009-0.239)	161 (106-229)	111 (60-184)	16.65 (7.99-30.98)	16.58 (6.71-31.21)	0.43 (0.26-0.64)
Karo River																
41.	Barbil**	138 (4-782)	58 (30-84)	9.2 (3.9-12.5)	0.251 (0.056-0.780)	0.008 (0.002-0.031)	3.36 (0.56-9.92)	2267 (<1.8-14000)	137 (82-170)	0.28 (0.23-0.37)	0.037 (0.011-0.088)	82 (49-99)	57 (34-82)	7.49 (4.99-9.99)	6.77 (0.64-16.29)	0.21 (0.10-0.46)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

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

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

Class 'E' : Irrigation water quality

* Monitoring started from April, 2017, ** Monitoring started from May, 2017, *** Monitoring started from March, 2017

(B) Contd..

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##
Sankha River												
1.	Sankha U/s	2.483 (1.482-3.856)	0.121 (0.002-0.959)	0.008	0.019	0.120	0.004	0.005	0.014	0.0014	<0.00006	0.008
Koel River												
2.	Koel U/s	2.463 (0.494-4.789)	0.174 (0.002-1.562)	0.005	0.024	0.660	0.008	0.007	0.011	0.0019	0.00019	0.008
Brahmani river												
3.	Panposh U/s	4.315 (0.768-16.857)	0.172 (0.002-1.193)	0.008	0.015	0.48	0.008	0.003	0.005	0.0009	<0.00006	0.006
4.	Panposh D/s	20.243 (3.353-45.129)	0.128 (0.002-0.605)	0.012	0.027	1.34	0.014	0.008	0.024	0.0011	0.00025	0.007
5.	Rourkela D/s	13.381 (2.118-26.142)	0.188 (0.002-1.107)	0.015	0.03	0.91	0.013	0.007	0.015	0.0016	0.00019	0.006
6.	Attaghat	7.543 (0.590-20.258)	0.223 (0.002-1.894)	0.005	0.015	0.27	0.013	0.003	0.007	0.0014	0.00013	0.006
7.	Biritola	8.654 (1.791-17.704)	0.075 (0.002-0.577)	0.007	0.015	0.150	0.009	0.004	0.006	0.0011	0.00013	0.007
8.	Bonai	7.754 (1.669-19.090)	0.112 (0.002-0.670)	0.008	0.020	0.380	0.009	0.002	0.012	0.0011	<0.00006	0.006
9.	Rengali	4.595 (1.784-15.504)	0.316 (0.002-1.728)	0.008	0.024	0.710	0.007	0.003	0.009	0.0017	<0.00006	0.008

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)								
10.	Samal	4.347 (1.458-25.014)	0.203 (0.002-0.984)	0.012	0.030	0.270	0.007	0.002	0.004	0.0017	<0.00006	0.009
11.	Talcher FU/s	3.165 (0.524-7.442)	0.088 (0.002-0.317)	0.007	0.019	0.540	0.003	0.002	0.006	0.0024	<0.00006	0.004
12.	Talcher U/s	3.076 (0.542-6.639)	0.140 (0.002-0.934)	0.003	0.015	0.590	0.003	0.004	0.012	0.0024	<0.00006	0.003
13.	Mandapal*	3.382 (1.587-8.943)	0.099 (0.002-0.440)	0.005	0.024	0.100	0.003	0.007	0.007	0.0016	<0.00006	0.004
14.	Talcher D/s	6.100 (1.324-17.456)	0.194 (0.004-1.463)	0.002	0.008	1.070	0.005	0.007	0.014	0.0032	0.00019	0.004
15.	Talcher FD/s	5.486 (1.207-16.818)	0.140 (0.002-0.880)	0.005	0.015	1.320	0.003	0.006	0.007	0.0018	<0.0006	0.005
16.	Dhenkanal U/s	2.577 (0.593-8.817)	0.171 (0.002-0.633)	0.005	0.019	0.150	0.003	0.004	0.009	0.0016	<0.00006	0.005
17.	Dhenkanal D/s	3.224 (1.225-10.569)	0.259 (0.002-1.383)	0.007	0.022	0.220	0.003	0.003	0.011	0.0017	<0.00006	0.004
18.	Bhuban	4.517 (0.857-16.656)	0.281 (0.002-2.127)	0.013	0.03	0.360	0.004	0.008	0.017	0.0019	<0.00006	0.008
19.	Kabatabandha	3.541 (0.199-10.823)	0.077 (0.002-0.249)	0.018	0.037	0.060	0.004	0.007	0.018	0.0018	<0.00006	0.008
20.	Dharmasala U/s	2.575 (0.978-10.226)	0.150 (0.003-0.637)	0.007	0.019	0.110	0.003	0.005	0.006	0.0011	<0.00006	0.004

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)								
21.	Dharmasala D/s	1.003 (1.227-10.880)	0.327 (0.002-1.918)	0.017	0.039	0.180	0.005	0.003	0.009	0.0012	<0.00006	0.006
22.	Pottamundai	2.486 (0.280-7.702)	0.126 (0.002-1.186)	0.007	0.019	0.520	0.003	0.003	0.007	0.0016	<0.00006	0.006
Nandira River												
23.	Nandira U/s	6.675 (1.329-25.116)	0.121 (0.002-0.683)	0.007	0.024	0.080	0.007	0.006	0.008	0.0022	<0.00006	0.011
24.	Nandira D/s	10.350 (0.900-30.672)	0.133 (0.002-0.504)	0.005	0.03	0.150	0.008	0.005	0.018	0.0026	0.00025	0.013
Kisindajhor												
25.	Kisindajhor	7.339 (0.936-20.151)	0.156 (0.002-0.314)	0.005	0.024	0.020	0.003	0.009	0.004	0.0018	0.00019	0.005
Kharasrota River												
26.	Khanditara	4.932 (1.137-23.989)	0.064 (0.002-0.184)	0.007	0.024	0.100	0.004	0.004	0.006	0.0014	<0.00006	0.002
27.	Binjharpur	2.763 (0.658-9.503)	0.218 (0.051-0.622)	0.010	0.027	0.080	0.004	0.008	0.008	0.0018	<0.00006	0.005
28.	Aul	6.022 (1.114-23.657)	0.173 (0.002-1.537)	0.015	0.032	0.330	0.006	0.015	0.016	0.0016	0.00013	0.009
Guradih nallah												
29.	Guradih nallah	17.703 (1.267-45.777)	0.336 (0.002-1.426)	0.007	0.027	4.710	0.019	0.016	0.079	0.0032	0.00078	0.009

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##
Badjhor nallah												
30.	Badjhor nallah***	5.612 (1.004-28.884)	0.181 (0.002-1.088)	0.003	0.013	0.110	0.005	0.004	0.014	0.0018	0.00013	0.007
Damsala River												
31.	Dayanabil*	6.887 (1.449-22.449)	0.115 (0.002-0.425)	0.003	0.011	0.45	0.004	0.002	0.011	0.0014	<0.00006	0.007
Ganda nallah												
32.	Marthapur*	11.750 (3.064-31.332)	0.055 (0.002-0.196)	0.015	0.032	0.42	0.005	0.009	0.016	0.0014	0.00019	0.008
Lingra River												
33.	Angul U/s*	4.704 (0.275-23.349)	0.045 (0.002-0.167)	0.008	0.020	0.330	0.004	0.003	0.016	0.0016	<0.00006	0.004
34.	Angul D/s*	2.434 (0.918-5.900)	0.203 (0.002-1.457)	0.023	0.047	0.420	0.006	0.005	0.021	0.0021	<0.00006	0.005
Ramiala River												
35.	Kamakhyanagar*	2.397 (0.618-5.266)	0.359 (0.002-2.490)	0.025	0.054	0.160	0.005	0.007	0.017	0.0024	<0.00006	0.007
Banguru nallah												
36.	Banguru nallah*	4.192 (2.204-10.531)	0.131 (0.002-0.359)	0.027	0.042	0.360	0.005	0.004	0.006	0.0012	<0.00006	0.007
Singada jhor												
37.	Singada jhor*	2.802 (1.196-5.298)	0.325 (0.002-1.955)	0.025	0.044	0.480	0.004	0.002	0.018	0.0014	<0.00006	0.008

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##
Tikira River												
38.	Kaniha U/s*	2.395 (1.000-4.015)	0.297 (0.002-1.45)	0.028	0.054	0.410	0.007	0.003	0.012	0.0016	<0.00006	0.009
39.	Kaniha D/s*	2.719 (1.487-4.418)	0.287 (0.002-1.033)	0.017	0.035	0.460	0.008	0.008	0.016	0.0017	0.00032	0.007
Bangurusingada jhor												
40.	Bangurusingada jhor*	3.880 (0.238-11.218)	0.153 (0.002-0.913)	0.025	0.047	0.150	0.007	0.002	0.025	0.0014	<0.00006	0.006
Karo River												
41.	Barbil**	2.898 (0.904-6.813)	0.156 (0.002-0.585)	0.009	0.023	0.12	0.006	0.004	0.008	0.0014	0.00019	0.009
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

Data for the period April, 2017 and May, 2017 according to the commencement of monitoring of stations.

* Monitoring started from April, 2017, ** Monitoring started from May, 2017, *** Monitoring started from March, 2017

(C) Baitarani river system (2017)

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)						
Kundra Nallah																
1.	Joda **	115 (17-536)	52 (32-72)	9.1 (3.9-12.8)	0.118 (0.050-0.280)	0.003 (0.001-0.011)	3.15 (0.56-7.30)	13140 (170-90000)	196 (102-654)	0.55 (0.21-2.18)	0.028 (0.011-0.084)	90 (64-176)	51 (40-66)	14.61 (5.99-61.97)	7.43 (0.68-13.43)	0.16 (0.11-0.22)
Kusei River																
2.	Deogaon	51 (8-256)	111 (60-154)	8.8 (4.4-21.4)	0.111 (0.056-0.280)	0.010 (0.002-0.028)	2.71 (0.56-9.50)	3250 (78-16000)	258 (173-339)	0.94 (0.31-1.60)	0.049 (0.007-0.098)	143 (94-174)	105 (64-136)	13.72 (7.99-17.99)	8.19 (0.96-15.04)	0.22 (0.12-0.39)
Baitarani River																
3.	Naigarh**	134 (24-384)	30 (16-44)	10.9 (6.1-17.5)	0.336 (0.056-1.010)	0.013 (0.001-0.051)	3.36 (0.56-7.28)	3855 (20-22000)	92 (77-104)	0.26 (0.17-0.37)	0.034 (0.001-0.158)	60 (46-95)	38 (30-60)	5.74 (3.99-7.99)	8.97 (0.22-28.98)	0.30 (0.16-0.65)
4.	Unchabali**	242 (20-938)	32 (22-44)	9.1 (5.4-14.7)	0.209 (0.050-0.560)	0.008 (0.001-0.028)	3.40 (1.12-6.16+)	375 (<1.8-1800)	153 (77-568)	0.50 (0.20-2.20)	0.027 (0.004-0.095)	75 (48-214)	38 (30-64)	12.99 (4.99-63.96)	11.20 (0.24-41.79)	0.18 (0.12-0.29)
5.	Champua**	88 (2-318)	44 (20-78)	11.0 (5.4-29.1)	0.181 (0.056-0.560)	0.004 (0.001-0.008)	1.89 (0.28-5.04)	394 (<1.8-1300)	117 (93-1564)	0.25 (0.16-0.35)	0.025 (0.002-0.070)	11 (54-97)	47 (28-76)	6.23 (3.99-7.99)	9.74 (0.86-16.79)	0.15 (0.08-0.19)
6.	Tribindha**	71 (4-214)	54 (20-80)	13.0 (3.6-29.1)	0.226 (0.056-0.560)	0.008 (0.002-0.036)	3.82 (0.56-8.96)	1666 (<1.8-9200)	134 (102-161)	0.32 (0.27-0.40)	0.033 (0.004-0.077)	80 (62-106)	51 (30-68)	8.12 (5.99-9.99)	7.77 (0.36-12.81)	0.16 (0.09-0.19)
7.	Joda	76 (5-218)	48 (20-84)	8.3 (3.3-16.1)	0.116 (0.056-0.560)	0.003 (0.002-0.008)	2.93 (0.28-10.00)	454 (<1.8-1300)	132 (103-172)	0.33 (0.23-0.62)	0.045 (0.007-0.154)	77 (58-101)	48 (36-66)	7.98 (5.99-13.99)	9.11 (0.60-20.89)	0.28 (0.08-1.12)
8.	Anandpur	51 (6-192)	64 (28-92)	10.0 (4.3-24.4)	0.180 (0.056-0.900)	0.007 (0.001-0.022)	2.80 (0.56-8.40)	2234 (45-9200)	159 (118-193)	0.35 (0.27-0.41)	0.041 (0.007-0.091)	93 (67-118)	62 (44-82)	9.73 (7.82-11.99)	7.78 (0.30-13.80)	0.19 (0.09-0.42)

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.	Jajpur	58 (6-160)	67 (32-94)	9.5 (6.5-14.1)	0.186 (0.056-0.730)	0.010 (0.002-0.058)	2.05 (0.56-6.16)	26927 (68-160000)	181 (104-240)	0.38 (0.24-0.53)	0.062 (0.004-0.193)	103 (63-135)	67 (36-88)	11.05 (53.99-17.99)	9.90 (0.32-22.38)	0.24 (0.15-0.33)
10.	Chandbali U/s	246 (50-534)	91 (36-174)	15.2 (6.7-35.7)	0.177 (0.050-0.560)	0.010 (0.001-0.036)	2.94 (0.56-11.20)	5141 (490-17000)	5165 (176-17040)	14.57 (0.28-50.37)	0.555 (0.007-1.791)	3894 (95-12240)	707 (44-2800)	2092.01 (6.99-6896.60)	279.95 (5.85-935.30)	0.29 (0.17-0.60)
11.	Chandbali D/s	344 (64-956)	94 (28-184)	25.7 (6.7-59.3)	0.210 (0.011-0.560)	0.010 (BDL-0.045)	3.10 (0.56-15.68)	13973 (490-92000)	6315 (166-22120)	22.45 (0.38-118.37)	0.546 (0.014-1.594)	5291 (106-21790)	755 (44-3200)	2964.64 (8.99-7596.20)	307.38 (9.70-1206.00)	0.33 (0.15-0.61)
Salandi River																
12.	Bhadrak U/s	18 (5-54)	74 (24-132)	10.8 (5.8-17.8)	0.083 (0.017-0.280)	0.004 (BDL-0.009)	1.45 (0.56-3.36)	11784 (170-92000)	175 (106-285)	0.38 (0.28-0.48)	0.08 (0.004-0.207)	103 (65-156)	67 (40-110)	11.14 (7.99-15.99)	5.49 (1.00-13.93)	0.23 (0.13-0.29)
13.	Bhadrak D/s	31 (10-133)	75 (36-136)	14.0 (7.8-19.4)	0.163 (0.056-0.450)	0.006 (BDL-0.014)	2.36 (0.56-10.64)	41416 (790-160000)	186 (121-290)	0.42 (0.26-0.58)	0.047 (0.014-0.224)	109 (72-168)	71 (44-112)	12.87 (7.99-21.99)	7.36 (1.61-16.54)	0.20 (0.13-0.26)
Dhamra River																
14.	Dhamra	335 (138-664)	99 (54-156)	31.6 (10.3-66.0)	0.186 (0.050-0.780)	0.007 (0.001-0.039)	3.45 (0.56-14.00)	3800 (130-16000)	20600 (113-43350)	55.63 (4.02-128.71)	2.103 (0.095-4.459)	18471 (64-37640)	2081 (114-4080)	10233.2 (194.9-20990.0)	1000.12 (67.91-2363.00)	0.53 (0.18-0.79)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

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

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

Class 'E' : Irrigation water quality

** Monitoring started from May, 2017

(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)										
Kundra nallah												
1.	Joda **	4.29 1 (2.257-8.064)	0.047 (0.002-0.121)	0.003	0.011	0.050	0.008	0.005	0.011	0.0018	0.00006	0.009
Kusei River												
2.	Deogaon	1.739 (0.457-7.412)	0.102 (0.002-0.455)	0.003	0.013	0.180	0.003	0.002	0.002	0.0008	<0.00006	0.0075
Baitarani river												
3.	Naigarh**	8.793 (0.672-40.325)	0.082 (0.002-0.316)	0.005	0.015	0.760	0.003	0.003	0.014	0.0012	<0.00006	0.008
4.	Unchabali**	5.074 (0.554-21.015)	0.280 (0.002-1.875)	0.007	0.018	0.330	0.004	0.005	0.017	0.0014	<0.00006	0.008
5.	Champua**	2.610 (0.584-7.156)	0.059 (0.004-0.234)	0.005	0.017	0.080	0.006	0.004	0.011	0.0016	<0.00006	0.009
6.	Tribindha**	1.958 (0.854-4.604)	0.109 (0.002-0.501)	0.003	0.011	0.050	0.004	0.005	0.009	0.0011	<0.00006	0.006
7.	Joda	2.668 (1.092-7.647)	0.102 (0.002-0.455)	0.003	0.011	0.460	0.003	0.002	0.015	0.0009	<0.00006	0.007
8.	Anandpur	2.159 (0.717-5.100)	0.074 (0.002-0.280)	0.002	0.008	0.150	0.004	0.005	0.005	0.0011	<0.00006	0.007
9.	Jajpur	9.044 (0.612-43.776)	0.155 (0.002-0.646)	0.017	0.020	0.040	0.003	0.002	0.076	0.0016	0.00032	0.007

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)								
10.	Chandbali U/s	4.425 (0.354-22.199)	0.089 (0.002-0.399)	0.012	0.024	5.980	0.011	0.008	0.025	0.0014	0.00019	0.006
11.	Chandbali D/s	5.690 (0.084-24.246)	0.080 (0.002-0.477)	0.015	0.032	5.370	0.014	0.008	0.028	0.0016	0.00019	0.006
Salandi river												
12.	Bhadrak U/s	3.194 (0.596-12.562)	0.191 (0.002-0.648)	0.007	0.015	0.210	0.003	0.006	0.002	0.0014	<0.00006	0.007
13.	Bhadrak D/s	4.379 (1.120-16.425)	0.272 (0.002-0.625)	0.008	0.024	0.250	0.003	0.006	0.006	0.0016	0.00019	0.007
Dhamra River												
14.	Dhamra	4.734 (1.157-18.403)	0.106 (0.002-0.344)	0.017	0.035	0.240	0.014	0.009	0.034	0.0018	0.00019	0.007
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

** Monitoring started from May, 2017

Data for the period April, 2017 for stations 2, 7-14 and for the period May, 2017 for the stations 1,3,4,5 and 6

(D) Rushikulya river system (2017)

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)						
Russelkunda Reservoir																
1.	Russelkunda**	91 (8-570)	64 (56-72)	10.9 (4.8-15.1)	0.280 (0.056-1.400)	0.022 (0.002-0.137)	3.54 (1.12-7.84)	4121 (<1.8-9200)	156 (131-195)	0.35 (0.11-0.72)	0.049 (0.005-0.081)	89 (75-119)	57 (44-62)	9.74 (5.99-19.99)	3.53 (0.50-7.58)	0.24 (0.18-0.30)
Bada Nadi																
2	Aska**	73 (26-168)	106 (56-144)	12.2 (3.2-21.4)	0.152 (0.050-0.560)	0.010 (0.002-0.034)	2.49 (0.56-5.04)	1150 (<1.8-5400)	259 (136-322)	0.52 (0.25-1.11)	0.144 (0.017-0.751)	145 (75-178)	95 (56-122)	17.11 (5.99-33.98)	6.65 (1.87-14.67)	0.27 (0.20-0.44)
Rushikulya river																
3.	Aska**	148 (20-404)	106 (84-148)	12.5 (7.7-23.5)	0.161 (0.056-0.560)	0.014 (BDL-0.070)	2.45 (0.56-5.04)	1616 (2.0-5400)	249 (177-231)	0.37 (0.27-0.68)	0.043 (0.010-0.116)	138 (104-169)	98 (66-124)	12.61 (7.99-23.98)	5.45 (1.00-10.45)	0.24 (0.19-0.29)
4.	Nalabanta**	150 (16-448)	120 (86-176)	14.0 (7.7-23.5)	0.231 (0.056-0.620)	0.018 (0.002-0.070)	2.56 (0.28-5.04)	2888 (45-9200)	277 (201-338)	0.41 (0.29-0.66)	0.078 (0.028-0.140)	149 (116-192)	106 (82-150)	14.29 (9.99-21.98)	5.30 (1.40-9.45)	0.30 (0.21-0.59)
5.	Madhopur	67 (18-142)	121 (84-152)	12.1 (5.4-20.0)	0.326 (0.050-1.450)	0.027 (0.002-0.175)	2.85 (0.56-9.80)	2312 (49-5400)	1083 (241-6706)	6.91 (0.40-62.02)	0.146 (0.042-0.470)	754 (138-5130)	140 (88-388)	361.31 (13.99-2998.50)	31.30 (2.86-140.54)	0.40 (0.19-0.95)
6.	Potagarh	141 (65-386)	122 (102-164)	27.9 (10.1-50.0)	0.194 (0.056-0.700)	0.008 (0.001-0.056)	2.18 (0.56-7.56)	1518 (<1.8-9200)	21030 (404-52860)	37.42 (1.42-76.71)	1.996 (0.067-3.746)	19722 (257-50120)	2860 (104-6300)	10586.0 (69.9-24737.6)	1345.41 (14.67-4116.90)	0.55 (0.20-1.10)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

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

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

Class 'E' : Irrigation water quality

** Monitoring started from May, 2017

(D) Contd..

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 ^{##}
Russelkunda Reservoir												
1.	Russelkunda**	3.480 (0.589-9.293)	0.049 (0.002-0.172)	0.003	0.011	0.24	0.004	0.004	0.016	0.0016	<0.00006	0.008
Bada Nadi												
2.	Aska**	2.745 (1.202-3.888)	0.060 (0.002-0.174)	0.003	0.013	1.64	0.006	0.004	0.024	0.0014	0.00019	0.008
Rushikulya river												
3.	Aska**	3.832 (1.120-9.862)	0.177 (0.002-0.990)	0.006	0.011	0.8	0.006	0.005	0.019	0.0014	0.00019	0.006
4.	Nalabanta**	3.153 (0.262-5.026)	0.113 (0.002-0.474)	0.003	0.009	0.26	0.004	0.004	0.011	0.0011	0.00013	0.007
5.	Madhopur	2.954 (1.212-5.648)	0.188 (0.002-0.870)	0.005	0.015	0.020	0.004	0.003	0.023	0.0011	0.00019	0.008
6.	Potagarh	3.281 (0.632-6.064)	0.134 (0.002-0.696)	0.005	0.015	0.060	0.006	0.014	0.026	0.0016	<0.00006	0.009
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

** Monitoring started from May, 2017

Data for the period April, 2017 for Sl. No. 5 and 6, and Data for the period May, 2017 for Sl. No. 1, 2, 3 and 4.

(E) Nagavali river system (2017)

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)						
Nagavali river																
1.	Penta	101 (7-362)	89 (64-108)	9.8 (4.0-14.3)	0.158 (0.055-0.560)	0.012 (0.001-0.044)	2.08 (0.56-7.84)	864 (45-2400)	198 (156-225)	0.30 (0.19-0.44)	0.004 (0.002-0.112)	114 (87-132)	81 (64-98)	9.8 (6.0-15.0)	6.1 (3.0-13.8)	0.21 (0.13-0.38)
2.	Jaykaypur D/s	121 (31-364)	99 (72-136)	19.4 (13.1-29.8)	0.282 (0.055-0.780)	0.024 (0.001-0.076)	2.89 (0.56-7.00)	3941 (170-16000)	270 (171-447)	0.49 (0.19-0.86)	0.055 (0.011-0.147)	157 (99-242)	100 (68-146)	18.5 (7.0-40.0)	17.4 (6.3-37.1)	0.25 (0.12-0.56)
3.	Rayagada D/s	147 (19-546)	101 (56-152)	16.1 (8.0-23.5)	0.186 (0.055-0.560)	0.010 (BDL-0.018)	3.15 (0.84-8.40)	2532 (170-14000)	298 (160-653)	0.61 (0.24-1.60)	0.056 (0.004-0.168)	171 (88-376)	100 (68-146)	23.9 (8.0-79.0)	18.6 (4.4-61.3)	0.28 (0.12-0.99)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

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

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 ⁻ (mg/l)	PO ₄ ³⁻ -P	Cr(VI) ^{##}	T. Cr ^{##}	Fe ^{##}	Ni ^{##}	Cu ^{##}	Zn ^{##}	Cd ^{##}	Hg ^{##}	Pb ^{##}
Nagavali river												
1.	Penta	2.531 (0.694-4.088)	0.155 (0.002-0.509)	0.01	0.027	0.110	0.004	0.006	0.004	0.0012	0.00013	0.003
2.	Jaykaypur D/s	8.572 (0.724-43.151)	0.194 (0.002-0.551)	0.024	0.04	0.240	0.006	0.011	0.009	0.0014	0.00025	0.005
3.	Rayagada D/s	5.375 (1.858-11.513)	0.321 (0.009-2.533)	0.007	0.024	0.160	0.005	0.006	0.015	0.0011	0.00019	0.006
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

Data for the period April, 2017

(F) Subarnarekha river system (2017)

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	58 (9-122)	78 (36-100)	9.5 (4.0-18.4)	0.112 (0.050-0.350)	0.011 (0.001-0.034)	1.38 (0.28-3.92)	3768 (130-16000)	253 (154-369)	0.65 (0.25-1.08)	0.072 (0.004-0.239)	145 (94-208)	83 (52-116)	21.62 (7.99-34.98)	19.13 (5.10-34.45)	0.47 (0.19-0.96)
	❖ Class 'C'	-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
	❖ Class 'E'	-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

(F) 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)							
Subarnarekha river												
1.	Rajghat	4.826 (0.739-32.416)	0.167 (0.002-0.567)	0.012	0.032	0.43	0.008	0.012	0.007	0.0014	<0.00006	0.006
	❖ Class 'C'	50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
	❖ Class 'E'	-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

Data for the period April, 2017

(G) Budhabalanga river system (2017)

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)						
Budhabalanga river																
1.	Baripada D/s	29 (8-52)	94 (52-144)	10.1 (5.6-14.3)	0.083 (BDL-0.056)	0.006 (BDL-0.014)	1.28 (0.56-2.52)	2563 (78-13000)	247 (139-415)	0.57 (0.28-1.37)	0.071 (0.004-0.239)	141 (82-216)	86 (46-132)	19.44 (6.99-44.97)	10.06 (3.48-15.30)	0.30 (0.13-0.71)
2.	Balasore U/s	46 (10-91)	77 (44-104)	10.5 (5.6-18.0)	0.093 (0.050-0.280)	0.008 (0.001-0.028)	1.56 (0.28-3.92)	14865 (130-92000)	205 (123-279)	0.47 (0.20-0.72)	0.053 (0.004-0.235)	120 (74-173)	77 (44-108)	15.44 (4.99-27.39)	10.08 (1.74-17.20)	0.24 (0.14-0.41)
3.	Balasore D/s	147 (22-780)	102 (56-202)	17.4 (9.2-28.0)	0.181 (BDL-0.560)	0.017 (BDL-0.055)	1.70 (0.56-3.36)	32344 (330-160000)	1111 (133-7006)	3.50 (0.34-13.84)	0.148 (0.011-0.611)	503 (86-2110)	131 (48-320)	200.64 (7.99-924.00)	45.99 (1.62-278.00)	0.39 (0.16-1.46)
Sone River																
4.	Hatigond*	71 (12-174)	68 (36-88)	12.2 (10.1-15.7)	0.192 (BDL-0.780)	0.011 (BDL-0.062)	1.49 (0.28-7.28)	2293 (20-9200)	169 (123-214)	0.38 (0.09-0.52)	0.022 (0.004-0.060)	99 (74-121)	63 (48-76)	10.99 (6.99-14.99)	8.43 (11.86-15.17)	0.18 (0.12-0.29)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

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

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

Class 'E' : Irrigation water quality

* Monitoring started from April, 2017

(G) Contd..

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 ^{##}
Budhabalanga river												
1.	Baripada D/s	3.472 (0.825-7.320)	0.136 (0.002-0.343)	0.012	0.027	2.14	0.004	0.005	0.004	0.0018	0.00019	0.007
2.	Balasure U/s	3.344 (0.560-16.144)	0.244 (0.002-0.959)	0.013	0.030	0.75	0.003	0.006	0.011	0.0016	0.00013	0.005
3.	Balasure D/s	6.989 (0.101-30.024)	0.184 (0.002-0.490)	0.013	0.032	1.81	0.006	0.008	0.017	0.0021	0.00025	0.009
Sone River												
4.	Hatigond*	1.839 (0.314-3.8834)	0.160 (0.002-0.892)	0.017	0.029	0.16	0.005	0.004	0.014	0.0014	0.00006	0.006
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

* Monitoring started from April, 2017

Data for the period April, 2017

(H) Kolab river system (2017)

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)						
Kerandi river																
1.	Sunabeda	102 (9-558)	30 (20-52)	9.7 (4.0-18.4)	0.25 (0.05-1.12)	0.009 (0.001-0.045)	2.20 (0.56-5.60)	2193 (45-16000)	98 (77-133)	0.36 (0.22-0.57)	0.030 (0.002-0.074)	59 (46-78)	34 (24-48)	8.3 ()6.0-12.0)	5.5 (1.6-10.6)	0.21 (0.11-0.65)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

(H) 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)								
Kerandi river													
1.	Sunabeda	3.572 (1.210-9.822)		0.140 (0.003-0.787)	0.008	0.020	0.130	0.004	0.002	0.004	0.0018	<0.00006	0.012
❖ Class 'C'		50		-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-		-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

Data for the period April, 2017

(I) Vansadhara river system (2017)

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)						
Vansadhara river																
1.	Muniguda	62 (9-204)	86 (64-134)	9.5 (4.0-26.8)	0.097 (0.055-0.280)	0.008 (0.003-0.027)	1.87 (0.25-5.04)	458 (20-1700)	204 (164-269)	0.33 (0.24-0.47)	0.041 (0.007-0.095)	113 (96-156)	79 (60-118)	10.39 (7.99-13.99)	5.48 (1.50-9.60)	0.24 (0.11-0.56)
2.	Gunupur	89 (14-324)	89 (48-122)	10.6 (4.0-21.8)	0.079 (0.050-0.280)	0.008 (0.001-0.043)	1.66 (0.84-3.36)	2364 (45-16000)	224 (133-353)	0.41 (0.26-1.27)	0.046 (0.004-0.119)	124 (78-198)	86 (34-96)	13.97 (6.99-46.97)	5.59 (1.99-10.40)	0.226 (0.094-0.420)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

(I) 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)									
Vansadhara river													
1.	Muniguda	3.846 (1.055-9.225)	0.146 (0.002-0.790)	0.002	0.0084	0.330	0.004	0.005	0.018	0.0012	<0.00006	0.003	
2.	Gunupur	4.679 (0.429-18.507)	0.153 (0.002-0.897)	0.002	0.0108	0.420	0.006	0.007	0.026	0.0018	<0.00006	0.009	
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10	
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-	

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

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

Class 'E' : Irrigation water quality

Data for the period April, 2017

(J) Indravati river system (2017)

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)						
Indravati river																
1.	Nawarangpur**	129 (8-622)	48 (32-64)	11.4 (5.36-18.4)	0.167 (0.055-0.560)	0.007 (BDL-0.022)	2.48 (0.28-8.90)	460 (<1.8-2200)	116 (86-194)	0.41 (0.27-1.14)	0.031 (0.004-0.070)	74 (46-118)	44 (28-54)	10.11 (5.99-29.98)	5.37 (2.48-10.57)	0.18 (0.09-0.26)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

(J) 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)								
Indravati river												
1.	Nawarangpur**	6.224 (1.205-27.861)	0.144 (0.003-0.756)	0.005	0.017	0.760	0.004	0.003	0.022	0.0014	<0.00006	0.008
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

** Monitoring started from May, 2017

Data for the period May, 2017

(K) Bahuda river system (2017)

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)						
Bahuda river																
1.	Damodarpally**	101 (24-374)	114 (60-140)	12.7 (5.3-19.9)	0.369 (0.056-1.400)	0.029 (0.002-0.112)	0.124 (0.002-0.569)	3756 (<1.8-16000)	286 (174-413)	0.64 (0.28-1.05)	0.20 (0.02-0.72)	162 (98-199)	103 (58-130)	22.60 (9.99-38.98)	8.23 (3.10-16.54)	0.33 (0.19-0.44)
❖ Class 'C'		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
❖ Class 'E'		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

(K) 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)						
Bahuda river												
1.	Damodarpally**	3.661 (0.271-7.129)	0.124 (0.002-0.569)	0.007	0.019	0.420	0.005	0.002	0.019	0.0012	0.00019	0.007
❖ Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
❖ Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

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

Class 'E' : Irrigation water quality

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