

## Annual Average and Range values of Four Criteria Parameters (January-December, 2020)

### (A) Mahanadi River System (2020)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values) Parameters					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)	FS (MPN/100 ml)	BOD	TC	FC				FS
			<b>Ib river</b>												
1.	Sundargar h	12	7.8 (6.8-8.3)	7.5 (6.4-8.2)	<1.0 (<1.0-1.6)	945 (330-1800)	240 (110-490)	NA	0	0	0	-	C		
2.	Jharsuguda	12	7.6 (6.8-8.3)	7.9 (7.4-8.6)	1.0 (<1.0-1.8)	912 (230-2200)	237 (45-790)	NA	0	0	0	-	C		
3.	Brajarajnarag U/s	12	7.6 (6.9-8.3)	8.2 (7.8-8.6)	1.1 (<1.0-1.8)	1242 (330-3500)	375 (78-790)	NA	0	0	0	-	C		
4.	Brajarajnarag D/s	12	7.6 (6.9-8.1)	8.0 (7.4-8.8)	1.2 (<1.0-1.8)	1932 (490-3500)	709 (130-2200)	NA	0	0	0	-	C		
<b>Bheden river</b>															
5.	Jharsuguda	12	7.6 (6.9-8.3)	7.9 (7.4-8.2)	1.1 (< 1.0-1.8)	839 (33-3500)	318 (7.8-1700)	NA	0	0	0	-	C		
<b>Hirakud reservoir</b>															
6.	Hirakud reservoir	12	7.7 (6.8-8.3)	8.2 (7.4-8.8)	1.0 (< 1.0-1.5)	808 (130-2400)	144 (20-230)	NA	0	0	0	-	C		
<b>Power Channel</b>															
7.	Power Channel U/s	12	7.6 (6.9-8.1)	7.5 (6.8-8.2)	<1.0 (<1.0-1.4)	324 (78-790)	92 (20-220)	NA	0	0	0	-	C		
8.	Power Channel D/s	12	7.5 (7.1-7.9)	7.5 (6.8-8.0)	1.1 (<1.0-1.7)	1003 (170-2400)	394 (20-1300)	NA	0	0	0	-	C		
<b>Mahanadi river</b>															
9	Sambalpur U/s	12	7.4 (6.6-8.2)	7.7 (6.6-8.6)	1.0 (< 1.0-1.4)	1025 (130-3500)	281 (45-1400)	NA	0	0	0	-	C		

NA : Not analysed

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)	FS (MPN/100 ml)							
10	Sambalpur D/s	12	7.7 (6.9-8.5)	7.6 (7.0-8.4)	1.6 (1.0-2.7)	3087 (540-7000)	862 (130-2200)	17 (<1.8-79)	0	1 (8)	0	0	C		
11.	Sambalpur FD/s at Shankarmath	12	7.4 (6.6-8.0)	7.6 (6.4-8.2)	1.2 (< 1.0-1.8)	2841 (790-4900)	681 (170-1700)	5 (2-22)	0	0	0	0	C		
12.	Sambalpur FFD/s at Huma	12	7.7 (7.0-8.3)	7.8 (6.8-8.4)	1.0 (< 1.0-1.5)	2302 (330-3500)	518 (130-1700)	10 (<1.8-17)	0	0	0	0	C		
13.	Sonepur U/s	12	7.8 (7.1-8.3)	7.7 (6.8-8.8)	< 1.0 (< 1.0-1.5)	597 (20-3300)	245 (1.8-1300)	6 (2-17)	0	0	0	0	C		
14.	Sonepur D/s	12	7.8 (7.1-8.3)	7.5 (6.2-8.8)	1.0 (< 1.0-1.9)	961 (170-3400)	451 (20-1700)	13 (4-70)	0	0	0	0	C		
15.	Tikarapada	12	7.6 (6.8-8.3)	7.5 (5.8-10.4)	1.0 (< 1.0-1.6)	568 (78-1700)	221 (20-780)	17 (<1.8-49)	0	0	0	0	C		
16.	Narasinghpur	12	7.9 (7.2-8.4)	8.1 (7.2-9.2)	< 1.0 (< 1.0-1.7)	856 (170-2800)	189 (45-790)	17 (<1.8-22)	0	0	0	0	C		
17.	Mundali	12	7.9 (7.2-8.4)	7.9 (7.1-8.8)	< 1.0 (< 1.0-1.4)	943 (170-2400)	260 (20-790)	11 (<1.8-32)	0	0	0	0	C		
18.	Cuttack U/s	12	8.0 (7.3-8.5)	8.1 (6.8-9.4)	< 1.0 (< 1.0-1.5)	1150 (230-3500)	374 (78-1300)	24 (<1.8-49)	0	0	0	0	C		
19.	Cuttack D/s	12	7.7 (7.3-8.3)	7.9 (6.3-8.9)	1.3 (< 1.0-2.6)	2699 (790-4900)	1026 (220-2300)	21 (<1.8-70)	0	0	0	0	C		
20.	Cuttack FD/s	12	7.7 (7.1-8.4)	7.9 (6.2-8.6)	1.0 (< 1.0-1.7)	2138 (330-3500)	803 (130-1700)	19 (<1.8-79)	0	0	0	0	C		
21.	Paradeep U/s	12	7.8 (7.1-8.1)	7.5 (6.4-8.6)	< 1.0 (< 1.0-1.3)	6945 (45-1700)	182 (20-490)	7 (2-14)	0	0	0	0	C		
22	Paradeep D/s	12	7.7 (7.1-8.4)	7.3 (6.0-8.6)	1.3 (< 1.0-2.4)	665 (1.8-1700)	192 (1.8-490)	11 (<1.8-23)	0	0	0	0	C		

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters						BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)	FS (MPN/100 ml)								
<b>Ong River</b>																
23.	Dharuakhaman	12	8.0 (7.2-8.5)	7.5 (6.4-8.6)	< 1.0 (< 1.0-1.3)	229 (20-490)	61 (1.8-130)	NA	0	0	0	-	C			
<b>Tel River</b>																
24.	Monmunda	12	7.9 (7.0-8.3)	7.5 (6.2-8.4)	1.0 (< 1.0-1.9)	246 (78-1100)	65 (20-230)	NA	0	0	0	-	C			
<b>Kathajodi River</b>																
25.	Cuttack U/s	12	8.0 (7.6-8.4)	8.0 (7.4-8.6)	< 1.0 (< 1.0-1.3)	1533 (170-3500)	735 (45-1700)	NA	0	0	0	0	C			
26.	Cuttack D/s	12	8.0 (7.5-8.5)	7.5 (6.1-8.4)	2.3 (< 1.0-3.6)	11108 (1700-54000)	5511 (1300-24000)	27 (5-140)	2 (18)	8 (67)	5 (42)	1 (8)	Doesn't conform to Class C	BOD, TC	Waste water of Cuttack city	
27.	Mattagajpur (Cuttack FD/s)	12	7.8 (7.2-8.2)	7.1 (5.6-9.0)	2.5 (< 1.0-3.3)	7869 (330-17000)	2885 (68-7900)	35 (4-170)	3 (25)	7 (58)	3 (25)	1 (8)	Doesn't conform to Class C	BOD, TC		
28.	Kamasasan (Cuttack FFD/s)	12	7.9 (7.4-8.2)	7.6 (6.2-9.2)	< 1.0 (< 1.0-1.4)	1933 (230-4900)	554 (45-1700)	NA	0	0	0	0	C			
<b>Serua River</b>																
29.	Sankhatrasa (Cuttack FD/s)	12	7.8 (7.0-8.5)	7.7 (6.1-8.8)	2.2 (< 1.0-3.8)	10216 (490-54000)	3593 (130-22000)	17 (8-49)	1 (8)	8 (67)	3 (25)	0	Doesn't conform to Class C	BOD, TC	Waste water of Cuttack city	

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters						BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)	FS (MPN/100 ml)								
<b>Kuakhai River</b>																
30	Bhubaneswar FU/s	12	7.7 (7.4-8.3)	7.5 (4.7-8.8)	1.0 (< 1.0-1.7)	1991 (490-3500)	709 (130-1700)	14 (<1.8-46)	0	0	0	0	C			
31.	Bhubaneswar U/s	12	7.7 (7.3-8.3)	7.4 (5.4-9.7)	1.2 (< 1.0-1.9)	3283 (1300-5400)	1257 (330-2200)	13 (2-27)	0	1 (8)	0	0	C			
<b>Daya River</b>																
32.	Gelapur	12	7.4 (7.0-8.3)	7.3 (4.7-9.5)	1.0 (< 1.0-1.4)	3833 (1400-16000)	2542 (790-13000)	8 (4-17)	0	1 (8)	1 (8)	0	C	TC	Human activities	
33.	Bhubaneswar D/s	12	7.5 (7.0-8.4)	6.2 (4.3-8.8)	3.4 (1.1-4.7)	44033 (2400-160000)	28722 (1300-92000)	51 (2-170)	9 (75)	8 (67)	10 (83)	2 (17)	Doesn't conform to Class C	BOD, TC	Waste water of Bhubaneswar city	W w of C c
34.	Bhubaneswar FD/s	12	7.4 (7.0-8.1)	6.1 (4.1-8.9)	2.9 (1.7-4.2)	29733 (2400-160000)	24288 (790-160000)	61 (2-220)	8 (67)	10 (83)	10 (83)	2 (17)	Doesn't conform to Class C	BOD, TC		
35.	Kanas	12	7.5 (7.0-7.9)	6.9 (5.5-8.5)	2.0 (< 1.0-2.9)	10158 (1400-35000)	3069 (450-17000)	27 (4-79)	0	8 (67)	5 (42)	0	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				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)								FS (MPN/100 ml)
<b>Gangua River</b>															
36.	Near Rajdhani Engg. College	12	7.2 (6.9-7.9)	2.1 (0.6-3.4)	6.5 (3.3-13.3)	154333 (92000-160000)	91222 (14000-160000)	203 (110-280)	12 (100)	12 (100)	12 (100)	12 (100)	Doesn't conform to Class C	DO#, BOD, TC	Waste water of Bhubaneswar city
37.	Palasuni	12	7.0 (5.9-7.8)	1.6 (0.4-2.3)	7.8 (3.8-19.9)	151167 (54000-160000)	123889 (28000-160000)	265 (130-920)	12 (100)	12 (100)	12 (100)	12 (100)	Doesn't conform to Class C	DO#, BOD, TC	
38.	Samantraypur	12	7.0 (5.7-7.8)	1.5 (<0.3-3.2)	9.1 (5.1-13.8)	129417 (35000-160000)	114667 (13000-160000)	194 (79-350)	12 (100)	12 (100)	12 (100)	11 (92)	Doesn't conform to Class C	DO#, BOD, TC	
39.	Vadimula	12	7.2 (6.1-7.9)	3.6 (1.3-8.3)	4.8 (3.4-8.5)	33718 (7900-92000)	14763 (2100-54000)	78 (23-170)	12 (100)	12 (100)	10 (83)	10 (83)	Doesn't conform to Class C	DO##, BOD, TC	
<b>Birupa River</b>															
40.	Choudwar D/s	12	7.7 (7.0-8.5)	7.4 (6.2-8.6)	1.0 (< 1.0-1.9)	3502 (230-17000)	1011 (45-4900)	NA	0	2 (17)	1 (8)	-	C		
<b>Kushabhadra River</b>															
41.	Bhingarpur	12	7.4 (6.6-8.2)	7.5 (5.5-11.3)	1.4 (< 1.0-2.2)	4724 (790-17000)	1666 (330-7900)	NA	0	2 (17)	2 (17)	-	C		
42.	Nimapara	12	7.5 (6.8-8.0)	7.4 (5.8-10.3)	1.3 (< 1.0-2.0)	5132 (780-13000)	1764 (110-4900)	NA	0	3 (25)	4 (33)	-	Doesn't conform to Class C	TC	Human activities

# Frequency of violation for DO is 12 times (100% of total observation)

## Frequency of violation for DO is 10 times (83% 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				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)							
43.	Gop	12	7.4 (6.7-8.0)	7.1 (5.3-8.6)	1.5 (< 1.0-2.1)	6458 (1300- 22000)	2501 (700- 13000)	NA	0	4 (33)	4 (33)	-	Doesn't conform to Class C	TC	Human activities
<b>Bhargavi River</b>															
44.	Chandanpur	12	7.6 (6.9-7.9)	7.2 (6.1-8.3)	1.1 (< 1.0-1.4)	1663 (230- 4900)	693 (78-2300)	NA	0	0		-	C		
<b>Mangala River</b>															
45.	Malatipatpur	12	7.6 (6.7-8.3)	7.0 (6.1-7.8)	1.1 (< 1.0-1.7)	2603 (130- 11000)	1301 (45-4900)	NA	0	1 (8)	1 (8)	-	C		
46.	Golasahi	12	7.6 (6.8-8.3)	7.4 (4.5-15.7)	2.6 (1.3-4.6)	16131 (490- 160000)	3512 (130- 22000)	20 (4-140)	3 (25)	2 (17)	2 (17)	1 (8)	Doesn't conform to Class C	BOD, TC	Human activities
<b>Devi River</b>															
47.	Machhagaon	12	7.7 (6.9-8.2)	7.1 (5.8-8.4)	1.1 (< 1.0-2.1)	632 (45-3300)	290 (20-1300)	NA	0	0	0	-	C		
<b>Govari River</b>															
48.	Kendrapara U/s	12	7.6 (7.0-8.2)	6.3 (5.2-8.2)	1.1 (< 1.0-1.6)	1467 (230-2800)	452 (20-790)	NA	0	0	0	-	C		
49.	Kendrapara D/s	12	7.4 (6.8-8.2)	6.2 (4.6-8.0)	1.5 (< 1.0-2.4)	2855 (470-4700)	695 (45-1700)	NA	0	0	0	-	C		
<b>Nuna River</b>															
50.	Bijipur	12	7.5 (7.0-8.1)	6.9 (5.3-8.8)	1.1 (< 1.0-1.8)	9075 (1700- 54000)	3400 (110-22000)	NA	0	2 (17)	1 (8)	-	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				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)							
<b>Kusumi River</b>															
51.	Tangi	12	7.5 (6.9-8.1)	7.2 (6.3-8.7)	1.1 (< 1.0-2.0)	3318 (2200-4900)	1248 (400-2200)	41 (13-70)	0	0	0	0	C		
<b>Kansari River</b>															
52.	Banapur	12	7.6 (7.2-8.3)	7.0 (5.9-8.3)	1.2 (< 1.0-1.9)	1654 (400-3500)	630 (230-1100)	NA	0	0	0	-	C		
<b>Badasankha River</b>															
53.	Langaleswar	12	7.5 (6.9-7.8)	6.7 (5.6-8.0)	1.2 (< 1.0-2.1)	2821 (330-4900)	1464 (130-2800)	NA	0	0	0	-	C		
<b>Sabulia River</b>															
54.	Rambha	12	7.8 (7.5-8.2)	7.4 (5.8-10.6)	1.3 (< 1.0-1.9)	3250 (2100-4900)	1180 (330-2300)	36 (<1.8-79)	0	0	0	0	C		
<b>Ratnachira River</b>															
55.	Kumardihi	12	7.4 (6.6-7.9)	6.9 (5.4-8.3)	1.2 (< 1.0-1.8)	1883 (220-4900)	764 (170-1700)	14 (2-49)	0	0	0	0	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**NB :** The criteria of non-compliance with respect to TC for Class C rivers has been calculated on the following basis:

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

**(b) Brahmani river System (2020)**

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)								FS (MPN/100 ml)
<b>Sankh River</b>															
1.	Sankh U/s	12	7.6 (6.5-8.1)	7.4 (6.2-8.6)	< 1.0 (< 1.0-1.3)	1951 (270-3500)	607 (110-1300)	NA	0	0	0	-	C		
<b>Koel River</b>															
2.	Koel U/s	12	7.5 (6.7-8.1)	7.8 (6.6-8.7)	1.0 (< 1.0-1.6)	2977 (230-4900)	734 (110-1400)	NA	0	0	0	-	C		
<b>Brahmani River</b>															
3.	Panposh U/s	12	7.5 (6.7-8.2)	7.4 (6.5-8.6)	1.1 (< 1.0-1.6)	2106 (170-3400)	526 (110-1300)	NA	0	0	0	-	C		
4.	Panposh D/s	12	7.3 (6.6-7.9)	4.8 (2.8-7.2)	4.6 (2.8-6.3)	12050 (4000-24000)	5256 (1100-13000)	19 (4-30)	10 (83)	10 (83)	8 (67)	0	Doesn't conform to Class C	DO#,BOD, TC	Waste water of Rourkela town and Steel Plant
5.	Rourkela D/s	12	7.2 (6.5-7.8)	5.8 (4.0-8.6)	3.8 (2.1-5.4)	8100 (1100-14000)	2492 (230-4900)	17 (8-49)	9 (75)	8 (67)	6 (50)	0	Doesn't conform to Class C	BOD, TC	-do-
6.	Rourkela FD/s (Attaghat)	12	7.4 (6.6-7.9)	7.1 (5.6-10.0)	2.9 (1.5-4.0)	2933 (130-11000)	1139 (78-3300)	11 (<1.8-22)	4 (33)	2 (17)	1 (8)	0	Doesn't conform to Class C	BOD, TC	-do-
7.	Rourkela FD/s (Biritola)	12	7.6 (6.8-8.4)	7.5 (6.7-8.4)	2.0 (< 1.0-3.2)	1653 (220-3500)	696 (78-1700)	13 (<1.8-17)	1 (8)	0	0	0	Doesn't conform to Class C	BOD	-do-
8.	Bonaigarh	12	7.6 (6.8-8.4)	7.2 (6.0-8.5)	1.0 (< 1.0-1.4)	845 (140-2300)	280 (45-1300)	NA	0	0	0	-	C		

# Frequency of violation for DO is 5 times (42% 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				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)							
9.	Rengali	12	7.6 (7.0-8.3)	7.6 (5.8-9.4)	< 1.0 (< 1.0-1.2)	358 (20-1700)	223 (20-790)	NA	0	0	0	-	C		
10.	Samal	12	7.6 (6.9-8.2)	7.4 (5.0-8.6)	1.0 (< 1.0-1.3)	1457 (220-3500)	470 (110-790)	NA	0	0	0	-	C		
10.	Talcher FU/s	12	7.6 (7.0-8.2)	7.7 (6.8-9.6)	< 1.0 (< 1.0-1.1)	833 (46-2800)	263 (7.8-1100)	NA	0	0	0	-	C		
10.	Talcher U/s	12	7.5 (7.0-8.1)	7.8 (6.4-8.8)	< 1.0 (< 1.0-1.1)	1284 (140-3300)	460 (33-1300)	NA	0	0	0	-	C		
13.	Mandapal	12	7.6 (7.1-8.1)	7.8 (6.6-9.4)	< 1.0 (< 1.0-1.6)	2901 (490-4900)	988 (170-2300)	NA	0	0	0	-	C		
14.	Talcher D/s	12	7.5 (7.0-7.9)	7.4 (6.2-8.8)	1.7 (< 1.0-2.4)	2213 (170-7900)	914 (20-3300)	NA	0	1 (8)	1 (8)	-	C		
15.	Talcher FD/s	12	7.6 (7.0-8.0)	7.7 (6.8-8.8)	1.2 (< 1.0-1.9)	1364 (130-4900)	342 (23-1300)	NA	0	0	0	-	C		
16.	Dhenkanal U/s	12	7.8 (7.2-8.5)	7.4 (6.4-9.0)	< 1.0 (< 1.0-1.5)	687 (170-2300)	266 (45-1300)	NA	0	0	0	-	C		
17.	Dhenkanal D/s	12	7.8 (7.4-8.2)	7.7 (5.8-10.2)	1.2 (< 1.0-1.9)	1071 (78-2400)	496 (45-2200)	NA	0	0	0	-	C		
18.	Bhuban	12	7.8 (7.2-8.2)	7.5 (6.2-8.6)	1.3 (< 1.0-2.4)	1631 (490-3300)	543 (78-1700)	NA	0	0	0	-	C		
19.	Kabatabandha	12	7.6 (6.8-8.2)	7.5 (6.5-8.2)	< 1.0 (< 1.0-1.6)	1527 (330-3500)	632 (130-1300)	NA	0	0	0	-	C		
20.	Dharmasala U/s	12	7.7 (6.9-8.3)	7.6 (7.2-8.0)	1.1 (< 1.0-1.9)	2074 (790-3500)	636 (220-1300)	NA	0	0	0	-	C		
21.	Dharmasala D/s	12	7.6 (6.5-8.3)	7.5 (7.1-7.9)	1.2 (< 1.0-1.9)	2233 (1300-3500)	739 (270-1700)	NA	0	0	0	-	C		
22.	Pottamundai	12	7.9 (7.1-8.0)	7.3 (5.8-8.3)	1.0 (< 1.0-1.8)	1801 (220-3500)	562 (220-790)	NA	0	0	0	-	C		

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values) Parameters						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)	BOD	TC	FC	FS			
			<b>Nandira River</b>												
23.	Nandira U/s	12	7.9 (7.2-8.5)	7.9 (5.8-9.4)	1.1 (< 1.0-1.7)	1048 (20-2200)	435 (70-790)	NA	0	0	0	-	C		
24.	Nandira D/s	12	7.8 (7.2-8.3)	7.6 (5.4-10.8)	1.5 (<1.0-1.9)	2465 (330-4900)	937 (45-2200)	34 (<1.8-79)	0	0	0	0	C		
<b>Kisinda Jhor</b>															
25.	Kisindajhor	12	7.8 (7.5-8.1)	7.5 (6.0-10.4)	1.3 (< 1.0-1.8)	1537 (79-3500)	348 (23-790)	NA	0	0	0	-	C		
<b>Kharasrota River</b>															
26.	Khanditara	12	7.5 (6.6-8.4)	7.7 (7.1-8.2)	1.0 (< 1.0-1.8)	658 (130-2100)	247 (17-790)	NA	0	0	0	-	C		
27.	Binjharpur	12	7.3 (6.7-7.9)	7.6 (7.0-8.6)	< 1.0 (< 1.0-1.1)	1017 (220-2800)	388 (110-1300)	NA	0	0	0	-	C		
28.	Aul	12	7.9 (6.9-8.2)	7.4 (5.2-9.0)	< 1.0 (< 1.0-1.6)	1973 (220-4300)	893 (78-1700)	NA	0	0	0	-	C		
<b>Guradih nallah</b>															
29.	Guradih nallah	12	7.5 (6.6-8.0)	3.6 (2.3-5.8)	6.4 (2.9-11.7)	39427 (220-92000)	14663 (170-35000)	150 (<1.8-350)	8 (67)	11 (92)	11 (92)	3 (75)	Doesn't conform to Class C	DO#,BOD, TC	Waste water of Rourkela town and Steel Plant
<b>Badajhor</b>															
30.	Badajhor	12	7.8 (7.6-8.2)	7.8 (5.4-10.4)	1.0 (< 1.0-1.6)	3067 (1700-4900)	824 (270-1700)	NA	0	0	0	-	C		
<b>Damsala River</b>															
31.	Dayanabil	12	7.5 (6.8-7.9)	7.4 (6.7-8.2)	< 1.0 (< 1.0-1.4)	803 (140-2200)	198 (45-640)	NA	0	0	0	-	C		
<b>Ganda Nallah</b>															
32.	Marthapur	12	7.3 (6.7-7.9)	7.1 (6.4-7.6)	1.0 (< 1.0-1.6)	1087 (49-4900)	177 (20-450)	NA	0	0	0	-	C		

# Frequency of violation for DO is 9 times (75% 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				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters						BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)								
<b>Lingira River</b>																
33.	Angul U/s	12	8.2 (7.9-8.4)	7.5 (5.6-10)	1.1 (< 1.0-1.7)	1378 (220-2400)	473 (78-1300)	NA	0	0	0	-	C			
34.	Angul D/s	12	8.1 (7.8-8.5)	7.5 (5.4-9.8)	1.3 (< 1.0-1.9)	2616 (490-3500)	1031 (130-1700)	NA	0	0	0	-	C			
<b>Ramiala River</b>																
35.	Kamakhyanager	12	7.5 (6.9-8.0)	7.4 (6.4-8.8)	1.2 (< 1.0-1.9)	2382 (780-4900)	839 (330-1700)	NA	0	0	0	-	C			
<b>Banguru nallah</b>																
36.	Banguru nallah	12	7.8 (7.0-8.2)	7.1 (6.0-8.8)	1.1 (< 1.0-1.6)	1584 (490-3500)	708 (170-1700)	14 (5-23)	0	0	0	0	C			
<b>Singadajhor</b>																
37.	Singadajhor	12	7.8 (7.3-8.2)	7.0 (4.6-9.6)	< 1.0 (< 1.0-1.3)	1659 (330-3500)	738 (130-1700)	NA	0	0	0	-	C			
<b>Tikira River</b>																
38.	Kaniha U/s	12	7.9 (7.2-8.2)	7.7 (6.0-9.6)	1.1 (< 1.0-1.4)	1450 (220-3300)	542 (110-1300)	NA	0	0	0	-	C			
39.	Kaniha D/s	12	7.7 (7.2-8.0)	7.0 (5.6-8.4)	1.3 (< 1.0-1.9)	2950 (1700-4900)	1037 (330-2200)	NA	0	0	0	-	C			
<b>Bangurusingada jhor</b>																
40.	Bangurusingada jhor	12	7.8 (7.4-8.2)	7.3 (5.8-8.4)	1.2 (< 1.0-2.3)	1903 (490-3500)	808 (220-1700)	NA	0	0	0	-	C			

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)							
<b>Karo River</b>															
41.	Barbil	12	7.6 (6.8-8.2)	7.2 (6.7-8.0)	1.0 (< 1.0-1.8)	1028 (210-2400)	513 (45-1300)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**NB :** The criteria of non-compliance with respect to TC for Class C rivers has been calculated on the following basis:

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

**(C) Baitarani river System (2020)**

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters						BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)								
<b>Kundra nallah</b>																
1.	Joda	12	7.2 (6.8-7.9)	6.7 (4.9-8.2)	< 1.0 (< 1.0-1.6)	2092 (490-4900)	1118 (110-3300)	NA	0	0	0	-	C			
<b>Kusei River</b>																
2.	Deogaon	12	7.7 (7.3-8.1)	7.3 (5.8-8.4)	1.1 (< 1.0-1.6)	1980 (220-4900)	810 (130-1700)	NA	0	0	0	-	C			
<b>Baitarani River</b>																
3.	Naigarh	12	7.3 (6.9-7.5)	6.9 (5.9-7.9)	< 1.0 (< 1.0-1.5)	821 (140-2300)	340 (45-1300)	NA	0	0	0	-	C			
4.	Unchabali	12	7.2 (6.7-7.7)	6.7 (5.8-7.6)	< 1.0 (<1.0-1.4)	1808 (220-4900)	745 (68-1700)	NA	0	0	0	-	C			
5.	Champua	12	7.3 (6.6-7.6)	7.0 (6.2-8.3)	< 1.0 (< 1.0-1.8)	1378 (140-3300)	369 (20-780)	NA	0	0	0	-	C			
6.	Tribindha	12	7.5 (6.8-7.8)	7.0 (5.8-7.7)	< 1.0 (<1.0-1.6)	995 (78-3300)	342 (20-780)	NA	0	0	0	-	C			
7.	Joda	12	7.4 (6.9-8.0)	6.9 (6.0-7.9)	< 1.0 (< 1.0-1.6)	1315 (170-3500)	551 (78-1300)	NA	0	0	0	-	C			
8.	Anandpur	12	7.5 (6.9-8.0)	7.3 (5.6-8.4)	1.1 (< 1.0-1.8)	2038 (270-3300)	1068 (170-2300)	NA	0	0	0	-	C			
9.	Jajpur		7.6 (6.9-8.3)	7.4 (6.9-7.9)	1.0 (< 1.0-1.3)	1204 (130-3500)	314 (20-1100)	NA	0	0	0	-	C			
10.	Chandbali U/s	12	7.3 (6.8-8.0)	6.7 (5.6-8.4)	1.0 (< 1.0-2.3)	1889 (220-3500)	924 (220-2200)	NA	0	0	0	-	C			
11.	Chandbali D/s	12	7.3 (6.7-7.9)	7.2 (6.0-8.8)	1.3 (< 1.0-2.4)	2822 (270-4900)	1480 (230-2400)	NA	0	0	0	-	C			

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)	FS (MPN/100 ml)							
<b>Salandi River</b>															
12.	Bhadrak U/s	12	7.4 (6.5-8.1)	7.5 (6.0-9.2)	< 1.0 (< 1.0-1.4)	1584 (230-2200)	518 (130-1100)	NA	0	0	0	-	C		
13.	Bhadrak D/s	12	7.3 (6.5-8.5)	7.6 (6.0-9.6)	1.4 (< 1.0-2.0)	3067 (1300-4900)	1584 (780-2800)	NA	0	0	0	-	C		
<b>Dhamra River</b>															
14.	Dhamra	12	7.4 (6.7-8.0)	7.3 (6.0-8.8)	1.3 (< 1.0-1.8)	1311 (220-2400)	351 (45-790)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>								<b>Drinking water source with conventional treatment followed by disinfection</b>	
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>						<b>Bathing Water</b>	

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

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

(Ref : IS 2296-1982 foot note)

(D) Rushikulya River System (2020)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)								FS (MPN/100 ml)
<b>Russelkunda Reservoir</b>															
1.	Russelkunda	12	7.6 (7.2-8.3)	7.9 (6.0-10.0)	1.2 (< 1.0-1.8)	3094 (330-9200)	1710 (230-5400)	NA	0	1 (8)	1 (8)	-	C		
<b>Bada Nadi</b>															
2	Aska	12	7.9 (7.3-8.3)	7.2 (6.2-8.8)	1.1 (< 1.0-1.7)	3133 (270-5400)	2067 (130-3400)	NA	0	1 (8)	1 (8)	-	C		
<b>Rushikula River</b>															
3.	Aska	12	7.9 (7.4-8.4)	7.4 (5.5-9.5)	1.2 (< 1.0-2.2)	2653 (330-4900)	982 (230-1700)	NA	0	0	0	-	C		
4.	Nalabanta	12	8.0 (6.8-8.5)	7.2 (5.2-8.6)	< 1.0 (<1.0-1.5)	3544 (330-4900)	1626 (130-2500)	NA	0	0	0	-	C		
5.	Madhopur	12	7.9 (7.1-8.5)	7.9 (6.2-9.5)	1.1 (< 1.0-1.6)	3417 (1100-17000)	1414 (130-4900)	14 (<1.8-47)	0	1 (8)	1 (8)	0	C		
6.	Potagarh	12	7.9 (7.3-8.4)	7.0 (6.0-9.0)	1.2 (<1.0-2.1)	1900 (230-4800)	933 (78-2100)	16 (<1.8-70)	0	0	0	0	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

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

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

(Ref : IS 2296-1982 foot note)

**(E) Nagavali River System (2020)**

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)								FS (MPN/ 100 ml)
1.	Penta U/s	11	7.5 (6.9-8.2)	7.1 (6.2-8.4)	< 1.0 (< 1.0-1.2)	1808 (230-3500)	625 (330-1300)	NA	0	0	0	-	C		
2.	J.K. Pur D/S	11	7.6 (7.1-8.0)	6.5 (6.1-7.3)	1.5 (< 1.0-2.1)	1878 (130-4900)	685 (270-1700)	15 (<1.8-33)	0	0	0	0	C		
3.	Rayagada D/S	11	7.7 (6.8-8.5)	7.2 (6.6-7.8)	1.0 (< 1.0-1.4)	1422 (78-3500)	487 (130-1100)	20 (<1.8-79)	0	0	0	0	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**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 (2020)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)							
<b>Subarnarekha River</b>															
1.	Rajghat	12	7.9 (7.2-8.5)	7.6 (6.0-8.8)	1.3 (1.0-1.8)	1830 (170-3500)	823 (45-2400)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**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 (2020)**

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)								FS (MPN/ 100 ml)
<b>Budhabalanga River</b>															
1.	Baripada D/s	12	7.7 (7.2-8.4)	7.5 (6.0-8.8)	1.4 (1.1-1.9)	3200 (1300-7900)	1310 (490-2200)	30 (8-79)	0	1 (8)	0	0	C		
2.	Balasore U/s	12	7.7 (7.1-8.3)	7.4 (6.0-8.8)	1.0 (<1.0-1.4)	1160 (450-2300)	480 (130-1300)	NA	0	0	0	-	C		
3.	Balasore D/s	12	7.5 (6.9-8.1)	6.9 (6.0-8.4)	1.5 (<1.0-2.8)	3017 (2200-4300)	1242 (220-3500)	NA	0	0	0	-	C		
<b>Sone River</b>															
4.	Hatigond	12	7.7 (7.3-8.1)	7.1 (6.4-8.4)	1.1 (<1.0-1.5)	2168 (330-3500)	1148 (78-3500)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

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

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

(Ref : IS 2296-1982 foot note)

(H) Kolab river system (2020)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)								FS (MPN/100 ml)
<b>Kerandi River</b>															
1.	Sunabeda	11	7.4 (6.9-8.0)	7.1 (6.7-7.4)	< 1.0 (< 1.0-1.4)	1484 (110-3300)	418 (110-790)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**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 (2020)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)								FS (MPN/100 ml)
<b>Vansadhara River</b>															
1.	Muniguda	11	7.6 (6.9-8.2)	7.1 (6.7-7.8)	< 1.0 (< 1.0-1.2)	647 (130-1700)	139 (45-330)	NA	0	0	0	-	C		
2.	Gunupur	11	7.7 (6.7-8.2)	7.2 (6.5-7.7)	< 1.0 (< 1.0-1.4)	1954 (220-4900)	996 (130-1700)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**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 (2020)

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason	
			Parameters					BOD	TC	FC	FS				
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/100 ml)	FC (MPN/100 ml)								FS (MPN/100 ml)
<b>Indravati River</b>															
1.	Nawarangpur	11	7.4 (6.8-7.8)	7.1 (6.5-7.4)	1.2 (< 1.0-1.8)	1677 (340-3500)	369 (170-490)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**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)

**(K) Bahuda river system (2020)**

Sl. No	Sampling Location	No. of Obs.	Annual average values (Range of values)						Frequency of violation (Percent of violation) from designated criteria value				Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters						BOD	TC	FC	FS			
			pH	DO (mg/L)	BOD (mg/L)	TC (MPN/ 100 ml)	FC (MPN/ 100 ml)	FS (MPN/ 100 ml)							
<b>Bahuda River</b>															
1.	Damodarpally	12	8.0 (7.5-8.4)	7.2 (5.2-10.0)	1.2 (< 1.0-1.8)	2349 (450-3500)	631 (170-1400)	NA	0	0	0	-	C		
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>							<b>Drinking water source with conventional treatment followed by disinfection</b>		
<b>Water quality criteria MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>-</b>	<b>2500 (Maximum Permissible)</b>	<b>100</b>					<b>Bathing Water</b>		

**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)

**Table-4 Water quality with respect to Other Parameters during 2020 (January-December)**

**(A) Mahanadi River System (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
<b>Ib River</b>																
1.	Sundargarh	82 (<10-379)	57 (24-88)	8.5 (<5-14.4)	0.64 (<0.4-1.12)	0.014 (0-0.082)	5.38 (<1.5-14)	140 (66-183)	0.32 (0.11-0.55)	17.28 (6.23-29.12)	<0.5	96 (92-104)	54 (24-76)	9.2 (<5-30)	10.47 (5.5-19.64)	0.251 (<0.2-0.337)
2.	Jharsuguda	43 (<10-227)	60 (40-80)	9.6 (<5-22.2)	0.56 (0.6-0.56)	0.005 (0-0.028)	1.96 (<1.5-4.76)	154 (109-204)	0.43 (0.15-0.61)	21.03 (8.91-27.31)	<0.5	100 (92-112)	57 (40-80)	9.1 (6-12)	12.82 (<5-21.91)	0.234 (<0.2-0.313)
3.	Brajrajnagar U/s	68 (<10-315)	59 (32-88)	8.6 (<5-11.8)	0.8 (0.6-1.12)	0.014 (0-0.055)	2.94 (<1.5-5.6)	154 (97-242)	0.49 (0.18-1.04)	23.24 (11.64-35.84)	<0.5	112 (96-144)	52 (36-72)	9.3 (6-21.1)	13.4 (8.1-31.2)	0.251 (<0.2-0.316)
4.	Brajrajnagar D/s	56 (<10-298)	61 (32-84)	10.5 (6-14.8)	1.16 (0.6-2.8)	0.018 (0-0.084)	3.02 (<1.5-5.32)	172 (102-248)	0.54 (0.25-0.90)	24.11 (15.12-37.97)	<0.5	129 (112-152)	58 (36-84)	12.6 (6-23.1)	16.6 (10.4-27.1)	0.263 (<0.2-0.312)
<b>Bheden River</b>																
5.	Jharsuguda	25 (<10-87)	65 (40-108)	9.7 (6-14.5)	0.91 (<0.4-1.68)	0.022 (0-0.109)	2.46 (<1.5-5.04)	215 (121-342)	0.59 (0.16-1.24)	22.9 (8.93-39.96)	<0.5	170 (144-204)	72 (48-96)	15.5 (6-38.5)	23.42 (5.3-50.24)	0.344 (<0.2-0.533)
<b>Hirakud Reservoir</b>																
6.	Hirakud reservoir	21 (<10-86)	66 (40-108)	9.1 (6-12)	0.75 (0.6-1.12)	0.008 (0-0.036)	3.11 (<1.5-7.84)	169 (124-215)	0.34 (0.10-0.84)	15.6 (5.45-35.98)	<0.5	104 (92-120)	71 (52-88)	8.0 (<5-18)	13.31 (7.6-26.91)	0.286 (<0.2-0.344)
<b>Power Channel</b>																
7.	Power Channel U/s	21 (<10-64)	67 (52-96)	7.2 (<5-11.5)	0.96 (0.6-1.12)	0.012 (0-0.042)	3.11 (1.68-6.16)	172 (146-195)	0.32 (0.19-0.43)	15.57 (9.57-21.09)	<0.5	104 (96-112)	68 (56-84)	8.4 (5.8-12)	14.35 (7.1-23.93)	0.288 (<0.2-0.383)
8.	Power Channel D/s	17 (<10-72)	68 (36-92)	9.9 (6-13.7)	0.74 (0.6-1.12)	0.010 (0-0.025)	4.26 (<1.5-7.84)	178 (143-208)	0.31 (0.19-0.42)	14.9 (9.72-17.83)	<0.5	109 (104-112)	72 (54-88)	9.8 (7.7-14)	14.84 (9.4-23.33)	0.287 (<0.2-0.374)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)				(mg/L)				
<b>Mahanadi River</b>																
9.	Sambalpur U/s	19 (<10-61)	67 (40-92)	8.3 (6-14.8)	0.63 (0.6-1.12)	0.008 (0-0.039)	3.28 (<1.5-6.72)	181 (143-299)	0.52 (0.24-1.77)	20.88 (11.92-45.94)	<0.5	130 (92-196)	67 (50-84)	14.29 (8-45.2)	15.96 (7.3-23.21)	0.305 (<0.2-0.422)
10.	Sambalpur D/s	18 (<10-93)	69 (44-88)	14.1 (9-21.2)	0.87 (<0.4-2.24)	0.016 (0-0.067)	4.45 (<1.5-10.07)	207 (157-342)	0.61 (0.18-1.64)	22.62 (9.55-43.15)	<0.5	143 (112-204)	75 (48-96)	16.8 (6-51.9)	18.44 (11.2-32.35)	0.304 (<0.2-0.408)
11.	Sambalpur FD/s at Shankarmath	23 (<10-78)	76 (44-128)	12.6 (7.5-18.9)	0.65 (<0.4-1.12)	0.009 (0-0.034)	3.64 (<1.5-6.16)	209 (140-288)	0.47 (0.24-0.75)	20.25 (13.11-25.85)	<0.5	127 (112-140)	74 (60-108)	12.14 (6-20)	17.61 (7.6-25.98)	0.374 (0.206-0.538)
12.	Sundergarh	16 (<10-58)	69 (40-84)	9.2 (<5-17.7)	0.56 (<0.4-1.12)	0.011 (0-0.034)	3.61 (<1.5-5.88)	179 (140-206)	0.38 (0.21-0.60)	17.9 (10.96-25.06)	<0.5	110 (88-120)	70 (48-84)	10.79 (7.7-16)	15.24 (8.9-23.45)	0.329 (<0.2-0.51)
13.	Sonepur U/s	14 (<10-55)	70 (36-106)	7.2 (<5-11.1)	0.5 (<0.4-0.84)	0.013 (0-0.036)	2.46 (<1.5-3.92)	178 (128-255)	0.33 (0.19-0.48)	15.62 (10.21-21.59)	<0.5	125 (96-156)	70 (48-104)	8.55 (6-12.5)	15.05 (8.7-25.48)	0.319 (<0.2-0.412)
14.	Sonepur D/s	17 (<10-57)	81 (40-124)	9.9 (<5-19.2)	0.65 (<0.4-1.12)	0.025 (0-0.090)	2.6 (<1.5-5.6)	202 (147-287)	0.36 (0.18-0.56)	15.77 (8.19-20.77)	<0.5	139 (104-172)	82 (64-116)	9.63 (5.8-15.4)	15.5 (6.2-27.14)	0.342 (0.204-0.428)
15.	Tikarapada	34 (<10-130)	76 (48-120)	8.2 (<5-13.7)	0.62 (<0.4-1.12)	0.011 (0-0.067)	2.97 (<1.5-8.4)	191 (145-272)	0.49 (0.16-1.94)	19.18 (9.05-50.9)	<0.5	133 (104-180)	71 (56-96)	13.06 (6-57.7)	14.48 (6.6-30.48)	0.291 (<0.2-0.354)
16.	Narasinghpur	20 (<10-72)	72 (36-92)	8.1 (<5-11.6)	0.6 (<0.4-1.12)	0.027 (0-0.105)	4.17 (<1.5-16.8)	183 (146-225)	0.54 (0.21-1.41)	22.26 (10.8-49.56)	<0.5	115 (96-132)	67 (44-80)	13.66 (6-26)	10.66 (6.3-22.02)	0.315 (<0.2-0.393)
17.	Munduli	44 (<10-173)	68 (34-84)	8.4 (<5-15.5)	0.62 (<0.4-1.68)	0.029 (0-0.109)	3.53 (<1.5-16.8)	179 (142-212)	0.35 (0.17-0.56)	16.37 (8.98-22.97)	<0.5	115 (104-120)	72 (64-80)	11.15 (8-14)	13.08 (5.9-29.7)	0.304 (0.2-0.399)
18.	Cuttack U/s	31 (<10-107)	59 (20-84)	8.2 (<5-14.7)	0.5 (<0.4-1.12)	0.026 (0-0.087)	2.69 (<1.5-6.16)	163 (82-209)	0.36 (0.15-0.48)	17.62 (8.16-29.09)	<0.5	106 (88-124)	65 (24-92)	10.69 (<5-18)	13.07 (6.2-22.14)	0.302 (<0.2-0.441)



Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents									
		Annual average values (Range of values)															
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F	
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)								
19.	Cuttack D/s	34 (<10-104)	67 (36-88)	11.6 (6-16)	0.65 (<0.4-1.4)	0.021 (0-0.056)	2.46 (<1.5-3.36)	190 (135-230)	0.44 (0.13-0.88)	18.86 (7.16-32.8)	<0.5	125 (116-132)	72 (54-88)	14.75 (6-19.2)	16.24 (8-41.43)	0.257 (<0.2-0.383)	
20.	Cuttack FD/s	36 (<10-116)	67 (32-88)	7.7 (<5-12)	0.62 (<0.4-2.24)	0.024 (0-0.070)	2.63 (<1.5-4.48)	173 (124-212)	0.41 (0.16-0.72)	18.78 (8.81-31.73)	<0.5	111 (96-128)	65 (48-84)	9.7 (<5-15.4)	14.39 (7.1-26.55)	0.291 (<0.2-0.399)	
21.	Paradeep U/s	37 (<10-127)	73 (36-96)	9.8 (<5-29.1)	0.74 (<0.4-1.12)	0.014 (0-0.045)	3.36 (1.68-9.52)	1630 (146-7746)	4.22 (0.21-22.28)	35.64 (12-82.28)	<0.5	1059 (116-2948)	56 (52-540)	303.43 (6-1534.5)	68.99 (6.8-223.81)	0.32 (<0.2-0.512)	
22.	Paradeep D/s	92 (<10-237)	118 (64-192)	21.1 (<5-38.8)	0.84 (<0.4-2.24)	0.031 (0-0.280)	4.87 (2.24-10.64)	13368 (292-42560)	30.96 (1.67-116.62)	69.51 (46.1-91.68)	1.558 (0.819-2.036)	7509 (1960-18600)	1145 (60-2200)	680.07 (48-19986)	385.14 (15.6-1000)	0.541 (0.273-0.868)	
<b>Ong River</b>																	
23.	Dharuakhamma	18 (<10-91)	97 (48-148)	8 (<5-11.8)	0.61 (0.6-0.84)	0.017 (0-0.087)	2.88 (<1.5-4.48)	230 (127-318)	0.64 (0.19-2.22)	22.38 (8.46-53.43)	<0.5	146 (96-184)	81 (46-120)	12.59 (6-26)	11.73 (<5-22.02)	0.416 (0.216-0.625)	
<b>Tel r Rver</b>																	
24.	Monmunda	37 (<10-133)	71 (40-116)	8.6 (<5-19.2)	0.47 (<0.4-0.56)	0.016 (0-0.055)	2.8 (<1.5-6.16)	167 (105-218)	0.43 (0.18-0.74)	20.43 (8.19-30.65)	<0.5	99 (68-120)	63 (40-96)	9.91 (5.8-16.3)	8.29 (<5-20.83)	0.268 (<0.2-0.373)	
<b>Kathajodi River</b>																	
25.	Cuttack U/s	36 (<10-112)	66 (40-88)	9.3 (<5-14)	0.64 (<0.4-1.12)	0.023 (0-0.070)	2.88 (<1.5-6.72)	173 (136-225)	0.37 (0.12-0.75)	16.95 (6.67-32.09)	<0.5	108 (92-136)	70 (56-92)	9.63 (6-14)	14.97 (6.1-29.12)	0.306 (<0.2-0.476)	
26.	Cuttack D/s	48 (<10-154)	72 (36-104)	15.4 (6-21.4)	1.06 (<0.4-1.68)	0.056 (0-0.174)	3.3 (<1.5-5.6)	205 (162-318)	0.45 (0.18-0.82)	19.79 (9.13-32.18)	<0.5	139 (100-184)	74 (44-108)	13.13 (6-25.9)	17.13 (9.2-34.41)	0.295 (0.215-0.393)	
27.	Cuttack FD/s at Mattagajpur)	25 (<10-51)	83 (36-104)	17.5 (9-31.9)	1.24 (<0.4-2.8)	0.045 (0-0.182)	3.7 (1.68-5.04)	240 (147-334)	0.71 (0.33-1.79)	25.03 (15.35-46.07)	<0.5	131 (0-204)	81 (56-108)	21.35 (10-53.8)	14.63 (8.1-30.83)	0.238 (<0.2-0.31)	

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
28.	Cuttack FFD/s at Kamasasan	41 (<10-192)	74 (44-104)	8 (<5-14)	0.74 (<0.4-1.12)	0.024 (0-0.073)	2.77 (<1.5-5.04)	195 (130-287)	0.61 (0.15-2.11)	22.51 (8.44-53.52)	<0.5	130 (112-164)	68 (44-88)	13.95 (6-40.4)	13.35 (8.1-22.8)	0.286 (<0.2-0.409)
<b>Serua River</b>																
29.	Cuttack FFD/s at Sankhatarasa	50 (<10-238)	75 (52-100)	16.2 (7.7-23.3)	1.24 (<0.4-2.8)	0.044 (0-0.164)	3.61 (<1.5-5.6)	194 (128-301)	0.54 (0.16-1.62)	20.77 (8.5-43.49)	<0.5	135 (112-184)	73 (52-84)	13.72 (6-51.9)	14.82 (5.2-25.95)	0.329 (<0.2-0.714)
<b>Kuakhai River</b>																
30.	Bhubaneswar FU/s	65 (<10-200)	71 (28-116)	9 (<5-16.6)	0.74 (<0.4-1.12)	0.011 (0-0.045)	3.11 (<1.5-8.4)	183 (113-251)	0.51 (0.23-1.06)	21.96 (13.69-41.24)	<0.5	122 (96-160)	63 (36-84)	11.63 (<5-20.2)	13.16 (7.4-22.14)	0.254 (<0.2-0.341)
31.	Bhubaneswar U/s	51 (<10-180)	73 (36-120)	10.9 (<5-18.5)	0.98 (0.6-1.68)	0.022 (0-0.084)	2.86 (<1.5-6.16)	198 (141-258)	0.52 (0.29-0.85)	22.13 (15.19-29.8)	<0.5	126 (88-164)	69 (44-88)	13.54 (6-20.2)	14.22 (7.1-23.33)	0.231 (<0.2-0.328)
<b>Daya River</b>																
32.	Gelapur	63 (<10-361)	74 (48-110)	11.2 (6-19.1)	0.91 (0.6-1.68)	0.010 (0-0.038)	3.27 (<1.5-6.16)	208 (151-346)	0.55 (0.19-1.16)	22.37 (10.29-36.03)	<0.5	128 (92-164)	70 (52-80)	15.44 (<5-25.9)	14.38 (8.5-21.43)	0.29 (<0.2-0.41)
33.	Bhubaneswar D/s	53 (<10-132)	71 (36-116)	22.1 (11-35.5)	1.54 (0.6-2.8)	0.012 (0-0.035)	4.42 (<1.5-6.16)	266 (152-391)	1.08 (0.44-1.80)	34.24 (20.06-45.91)	<0.5	193 (104-232)	75 (44-100)	33.93 (10-66)	21.34 (5.8-50.24)	0.378 (<0.2-0.649)
34.	Bhubaneswar FD/s	53 (<10-198)	72 (36-124)	16.4 (7.3-23.3)	1.33 (0.6-2.24)	0.013 (0-0.067)	3.39 (<1.5-5.06)	274 (148-402)	1.04 (0.42-1.79)	32.06 (21.07-44.64)	<0.5	180 (84-236)	75 (52-92)	35.03 (10-66)	18.19 (<5-39.04)	0.353 (<0.2-0.579)
35.	Kanas	27 (<10-74)	74 (52-108)	12.4 (<5-17.1)	0.68 (0.6-0.84)	0.008 (0-0.019)	3.15 (<1.5-5.04)	227 (162-430)	0.98 (0.34-2.70)	30.65 (16.23-56.71)	<0.5	175 (108-240)	70 (48-96)	23.68 (<5-55.8)	19.59 (7.1-38.33)	0.306 (<0.2-0.472)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
<b>Gangua River</b>																
36.	Near Rajdhani Engg. College	37 (<10-73)	67 (34-104)	32.2 (14.9-49.5)	2.39 (0.6-5.32)	0.015 (0-0.129)	5.13 (2.24-7)	274 (186-391)	1.20 (0.61-1.87)	37.16 (24.69-51.39)	<0.5	185 (120-244)	77 (52-124)	34.87 (14-52)	19.95 (5.1-62.38)	0.238 (<0.2-0.497)
37.	Palasuni	99 (19-537)	67 (40-124)	38.7 (17.4-69.8)	3.36 (1.1-7.84)	0.021 (0-0.164)	6.5 (4.48-9.24)	366 (180-642)	1.76 (0.65-2.93)	42 (24.26-51.9)	<0.5	256 (208-316)	82 (64-152)	57.43 (6-175.9)	27.95 (11.3-67.62)	0.743 (0.26-1.45)
38.	Samantrapur	87 (<10-413)	77 (56-116)	45.2 (31.4-68.6)	3.08 (0.6-8.4)	0.010 (0-0.067)	7.75 (3.36-14.56)	357.6 (212-511)	1.56 (0.70-1.99)	39.54 (28.08-47.19)	<0.5	260 (204-296)	87 (68-120)	52.43 (20-106.2)	30.06 (10.7-73.09)	0.485 (<0.2-0.861)
39.	Vadimula	121 (<10-437)	68 (52-92)	27.6 (11.9-49.5)	1.4 (0.6-2.24)	0.009 (0-0.067)	4.2 (<1.5-10.08)	308 (175-401)	1.38 (0.44-2.27)	37.52 (19.97-54.02)	<0.5	218 (196-240)	74 (66-88)	42.93 (10-67.3)	23.65 (9.5-54.52)	0.386 (<0.2-0.941)
<b>Birupa River</b>																
40.	Choudwar D/s	59 (<10-209)	75 (54-96)	8.4 (<5-11.6)	0.98 (0.6-1.12)	0.031 (0-0.174)	3.75 (<1.5-7.28)	187 (121-226)	0.41 (0.16-0.99)	18.09 (8.82-39.23)	<0.5	120 (116-132)	71 (48-88)	10.01 (6-18)	15.32 (5.9-26.42)	0.299 (<0.2-0.412)
<b>Kushabhadra River</b>																
41.	Bhingarpur	20 (<10-44)	82 (52-124)	10 (6-17.4)	0.92 (0.6-2.24)	0.007 (0-0.022)	2.8 (<1.5-5.04)	250 (172-359)	0.71 (0.30-1.77)	25.92 (13.35-46.88)	<0.5	164 (128-204)	79 (56-108)	18.34 (11.5-42.3)	17.35 (6.2-32.5)	0.22 (<0.2-0.314)
42.	Nimapara	24 (<10-67)	87 (60-184)	10.2 (<5-19.1)	0.64 (<0.4-1.12)	0.007 (0-0.025)	3.15 (<1.5-8.4)	245 (166-401)	0.76 (0.24-1.62)	26.61 (12.96-49.64)	<0.5	155 (120-172)	77 (36-144)	19.81 (6-37.5)	15.58 (7.8-22.14)	<0.2 (<0.2-0.247)
43.	Gop	30 (<10-140)	87 (64-124)	10.4 (<5-17.1)	1.04 (0.6-2.8)	0.010 (0-0.045)	3.92 (<1.5-12.32)	239 (148-318)	0.82 (0.31-1.41)	29.86 (15.44-46.08)	<0.5	156 (132-184)	73 (44-102)	20.21 (10-34)	16.39 (8.1-25.7)	0.228 (<0.2-0.377)
<b>Bhargavi River</b>																
44.	Chandanpur	47 (<10-178)	87 (56-148)	10.5 (6-14.7)	0.56 (0.6-0.56)	0.010 (0-0.022)	2.52 (<1.5-4.48)	340 (148-1100)	1.63 (0.32-5.18)	33.21 (15.31-64.86)	<0.5	344 (164-672)	83 (52-168)	56.45 (8-284.6)	19.53 (6.8-38.33)	0.242 (<0.2-0.416)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
<b>Mangala River</b>																
45.	Malatipatapur	48 (<10-223)	82 (44-140)	9.3 (<5-19.1)	0.91 (0.6-1.12)	0.013 (0-0.039)	2.99 (<1.5-7.28)	480 (128-3286)	1.64 (0.22-10.96)	26.9 (12.07-65.05)	<0.5 (<0.5-1.165)	723 (132-2480)	116 (56-500)	105.3 (7 (6-972)	39.03 (5.2-273.2)	0.227 (<0.2-0.395)
46.	Golasahi	61 (<10-126)	126 (64-192)	22.7 (11.9-42.9)	1.3 (0.6-1.68)	0.019 (0-0.090)	4.2 (1.96-7.28)	5487 (163-16140)	14.70 (0.23-46.01)	51.52 (8.18-84.18)	1.08 (<0.5-1.62)	5892 (3720-10348)	569 (56-1700)	1716. (31 (10-5765.2)	207.2 (7 (5.7-444.1)	0.286 (<0.2-0.528)
<b>Devi River</b>																
47.	Machhagaon	40 (15-104)	99 (48-196)	16.2 (7.4-37.4)	0.93 (0.6-1.68)	0.017 (0-0.134)	3.67 (1.68-9.52)	6154 (147-24960)	23.27 (0.3-83.71)	48.7 (13.59-93.03)	0.794 (<0.5-1.699)	10380 (5560-16460)	358 (54-1680)	2183. (37 (9.6-9418.8)	106.93 (<5-291.67)	0.348 (<0.2-0.518)
<b>Gobari River</b>																
48.	Kendrapada U/s	31 (<10-84)	87 (44-128)	9.7 (6-15)	1.17 (0.6-2.24)	0.025 (0-0.179)	2.69 (<1.5-6.16)	411 (110-1644)	1.57 (0.23-6.60)	33.37 (12.75-60.67)	<0.5	418 (160-996)	97 (48-228)	83.01 (8-496.1)	28.72 (6.8-58.34)	0.225 (<0.2-0.271)
49.	Kendrapada D/s	38 (<10-109)	90 (44-160)	12.8 (7.6-22.2)	0.89 (0.6-1.68)	0.021 (0-0.134)	4.48 (<1.5-20.16)	556 (178-1645)	2.62 (0.54-10.23)	40.1 (23.7-74.09)	<0.5	620 (176-1116)	117 (64-272)	143.4 (2 (14-534.6)	30.58 (9.2-60.72)	0.241 (<0.2-0.361)
<b>Nuna River</b>																
50.	Bijipur	22 (<10-51)	97 (68-144)	9.9 (6-15.5)	0.92 (0.6-1.12)	0.013 (0-0.073)	4.9 (<1.5-11.76)	266 (141-446)	0.77 (0.31-1.30)	27.67 (15.28-39.35)	<0.5	183 (104-260)	78 (64-116)	17.25 (8-38.5)	14.73 (<5-28.45)	0.269 (<0.2-0.429)
<b>Kusumi River</b>																
51.	Tangi	43 (<10-108)	65 (44-100)	10.6 (<5-19.3)	1.17 (0.6-1.68)	0.018 (0-0.109)	5.16 (<1.5-12.32)	195 (125-273)	0.75 (0.42-1.37)	29.7 (18.32-45.27)	<0.5	118 (88-140)	56 (44-80)	13.64 (6-19.2)	15.84 (<5-45.24)	0.202 (<0.2-0.322)
<b>Kansari River</b>																
52.	Banapur	50 (<10-156)	91 (52-120)	11.3 (7-15.4)	1.06 (0.6-1.68)	0.013 (0-0.055)	4.48 (1.68-14)	225 (166-290)	0.83 (0.37-1.82)	28.87 (14.3-53.43)	<0.5	162 (144-180)	77 (48-108)	17.72 (6-26.9)	14.62 (<5-41.19)	0.219 (<0.2-0.449)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)			(μS/cm)	(mg/L)								
<b>Badasankha River</b>																
53.	Langaleswar	18 (<10-48)	143 (96-196)	14.1 (6-46.6)	1.07 (0.8-1.12)	0.013 (0-0.039)	4.12 (<1.5-16.24)	483 (315-877)	2.11 (0.79-4.54)	42.44 (22.65-68.61)	<0.5	313 (288-348)	111 (56-164)	58.99 (20-101.9)	21.39 (9.7-47.86)	0.398 (0.324-0.504)
<b>Sabulia River</b>																
54.	Rambha	21 (<10-80)	129 (80-212)	14.5 (8.9-23.1)	0.93 (0.6-1.68)	0.019 (0-0.091)	6.72 (<1.5-18.48)	513 (298-818)	1.85 (0.47-5.29)	38.51 (16.72-63.81)	<0.5	262 (216-288)	128 (88-200)	84.03 (22-226.9)	23.24 (6.2-47.62)	0.503 (0.267-0.651)
<b>Ratnachira River</b>																
55.	Kumardihi	28 (<10-67)	93 (60-148)	12.3 (6-15.2)	1.47 (0.6-2.24)	0.013 (0-0.090)	4.26 (<1.5-7.28)	352 (173-627)	1.69 (0.53-3.98)	38.53 (21.77-60.95)	<0.5	214 (116-288)	82 (56-128)	55.86 (10-149.9)	12.58 (<5-27.50)	0.273 (<0.2-0.405)
❖ 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

**(A) Contd..**

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values) (mg/L)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Ib River</b>											
1.	Sundergarh	5.617 (0.767-32.922)	<0.05 (<0.05-0.061)	<0.002	0.247	0.005	0.005	0.012	0.0024	0.00032	0.004
2.	Jharsuguda	2.269 (0.93-4.653)	<0.05 (<0.05-0.096)	<0.002	0.289	0.007	0.003	0.013	0.0006	0.00038	0.007
3.	Brajarajnaragar U/S	2.175 (0.778-3.516)	<0.05 (<0.05-0.112)	<0.002	0.513	0.007	0.005	0.003	0.0007	0.00032	0.005
4.	Brajarajnaragar D/S	2.12 (0.824-4.171)	<0.05 (<0.05-0.106)	<0.002	0.293	0.020	0.004	0.009	0.0013	0.00032	0.006
<b>Bheden River</b>											
5.	Bheden	1.994 (0.824-4.39)	<0.05 (<0.05-0.111)	<0.002	0.069	0.018	0.004	0.127	0.0007	0.00057	0.005
<b>Hirakud reservoir</b>											
6.	Hirakud	2.594 (0.866-5.379)	0.05 (<0.05-0.234)	<0.002	0.452	0.008	0.009	0.006	0.0031	0.00038	0.010
<b>Power Channel</b>											
7.	Power Channel U/s	2.668 (1.015-5.211)	0.05 (<0.05-0.255)	<0.002	1.094	0.011	0.018	0.008	0.0036	0.00006	0.004
8.	Power Channel D/s	2.783 (0.91-5.436)	<0.05 (<0.05-0.106)	<0.002	0.083	0.009	0.008	0.004	0.0033	0.00044	0.004
<b>Mahanadi River</b>											
9.	Sambalpur U/s	2.112 (0.72-3.831)	<0.05 (<0.05-0.077)	<0.002	0.073	0.004	0.006	0.008	0.0026	0.00019	0.005
10.	Sambalpur D/s	2.678 (0.623-7.951)	<0.05 (<0.05-0.145)	<0.002	0.034	0.012	0.010	0.006	0.0046	0.00025	0.002
11.	Sambalpur FD/s at Shankarmath	2.482 (0.785-5.703)	<0.05 (<0.05-0.121)	<0.002	1.625	0.007	0.008	0.004	0.0031	0.00019	0.004
12.	Sambalpur FFD/s Huma	2.267 (0.784-4.481)	<0.05 (<0.05-0.082)	<0.002	0.348	0.010	0.010	0.009	0.0029	0.00025	0.002
13.	Sonepur U/s	2.733 (0.724-5.667)	<0.05 (<0.05-0.129)	<0.002	0.056	0.003	0.008	0.040	0.0026	0.00032	0.003

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
14.	Sonepur D/s	3.079 (0.971-9.862)	<0.05 (<0.05-0.083)	<0.002	0.184	0.003	0.006	0.002	0.0027	0.00013	0.006
15.	Tikarapada	2.861 (0.612-8.37)	<0.05 (<0.05-0.096)	<0.002	0.149	0.001	0.001	0.017	0.0006	0.00057	0.006
16.	Narasinghpur	1.969 (0.62-8.064)	<0.05 (<0.05-0.112)	<0.002	0.307	0.004	0.004	0.004	0.0012	0.00006	0.004
17.	Munduli	2.812 (0.724-10.688)	<0.05 (<0.05-0.085)	<0.002	0.958	0.009	0.006	0.003	0.0011	0.00057	0.005
18.	Cuttack U/S	2.233 (0.614-7.163)	0.07 (<0.05-0.195)	<0.002	0.064	0.003	0.004	0.012	0.0011	0.00019	0.003
19.	Cuttack D/S	2.982 (0.76-8.811)	0.08 (<0.05-0.208)	<0.002	0.035	0.004	0.002	0.003	0.0013	0.00032	0.002
20.	Cuttack FD/s	3.084 (0.473-7.058)	0.07 (<0.05-0.226)	<0.002	0.083	0.002	0.004	0.021	0.0014	0.00006	0.004
21.	Paradeep U/s	2.068 (0.569-4.653)	0.07 (<0.05-0.143)	<0.002	0.055	0.019	0.006	0.010	0.0026	0.00013	0.006
22.	Paradeep D/s	2.697 (0.784-9.437)	0.16 (<0.05-0.451)	<0.002	0.036	0.014	0.039	0.027	0.0023	0.00032	0.003
<b>Ong river</b>											
23.	Dharuakhamma	2.253 (0.666-5.703)	<0.05 (<0.05-0.09)	<0.002	0.026	0.005	0.008	0.003	0.0031	0.00038	0.007
<b>Tel River</b>											
24.	Monmundal	2.033 (0.748-3.204)	<0.05 (<0.05-0.075)	<0.002	0.024	0.002	0.006	0.002	0.0033	0.00038	0.004
<b>Kathajodi River</b>											
25.	Cuttack U/s	2.626 (0.668-6.227)	0.07 (<0.05-0.350)	<0.002	0.035	0.005	0.003	0.004	0.0017	0.00006	0.004
26.	Cuttack D/s	3.115 (0.669-10.268)	0.07 (<0.05-0.208)	<0.002	0.304	0.001	0.005	0.005	0.0012	0.00057	0.003
27.	Cuttack FD/s Mattagajpur	4.085 (0.705-9.219)	0.07 (<0.05-0.182)	<0.002	0.149	0.002	0.004	0.010	0.0011	0.00019	0.003
28.	Kamasasan (Cuttack FFD/s)	2.749 (0.839-6.026)	0.05 (<0.05-0.098)	<0.002	0.534	0.002	0.004	0.052	0.0012	0.00038	0.005

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Serua River</b>											
29.	Cuttack FD/s Sankhatrasa	3.546 (0.608-11.03)	0.05 (<0.05-0.131)	<0.002	0.081	0.003	0.007	0.005	0.0013	0.00006	0.006
<b>Kuakhai River</b>											
30.	Bhubaneswar FU/s	1.909 (0.824-3.061)	0.07 (<0.05-0.247)	<0.002	0.023	0.002	0.001	0.004	0.0012	0.00057	0.003
31.	Bhubaneswar U/s	1.907 (0.69-3.478)	0.09 (<0.05-0.227)	<0.002	0.064	0.002	0.004	0.007	0.0013	0.00095	0.003
<b>Daya River</b>											
32.	Gelapur	2.74 (1.382-5.739)	0.12 (<0.05-0.321)	<0.002	0.666	0.002	0.004	0.005	0.0014	0.00013	0.004
33.	Bhubaneswar D/s	10.913 (1.364-36.092)	0.17 (<0.05-0.478)	<0.002	0.564	0.005	0.011	0.016	0.0013	0.00064	0.005
34.	Bhubaneswar FD/s	11.157 (1.303-40.946)	0.17 (<0.05-0.536)	<0.002	0.140	0.005	0.001	0.003	0.0019	0.00070	0.004
35.	Kanas	3.831 (0.778-15.499)	0.07 (<0.05-0.224)	<0.002	0.445	0.015	0.006	0.145	0.0028	0.00070	0.004
<b>Gangua River</b>											
36.	Near Rajdhani Engg. College	10.998 (3.079-43.986)	0.28 (<0.05-0.893)	<0.002	0.058	0.002	0.003	0.006	0.0015	0.00025	0.005
37.	Palasuni	13.449 (1.539-40.094)	0.38 (0.1-0.794)	<0.002	0.154	0.007	0.005	0.003	0.0015	0.00006	0.004
38.	Samantraypur	14.417 (0.93-52.62)	0.52 (0.1-0.944)	<0.002	1.225	0.004	0.004	0.004	0.0011	0.00006	0.005
39.	Vadimula	13.347 (1.088-42.025)	0.32 (0.1-0.829)	<0.002	0.785	0.010	0.017	0.004	0.0012	0.00019	0.005
<b>Birupa River</b>											
40.	Choudwar D/s	2.247 (0.565-6.289)	<0.05 (<0.05-0.087)	<0.002	0.426	0.002	0.010	0.003	0.0014	0.00006	0.002
<b>Kushabhadra River</b>											
41.	Bhingarpur	4.431 (0.315-24.984)	0.08 (<0.05-0.212)	<0.002	0.403	0.014	0.007	0.068	0.0027	0.00051	0.004
42.	Nimapara	4.286 (1.385-16.137)	0.06 (<0.05-0.207)	<0.002	0.279	0.005	0.004	0.020	0.0022	0.00025	0.008



Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
43.	Gop	5.596 (1.38-27.417)	0.06 (<0.05-0.192)	<0.002	0.223	0.016	0.004	0.014	0.0021	0.00032	0.009
<b>Bhargavi River</b>											
44.	Bhargavi at Chandanpur	4.041 (1.003-9.935)	0.05 (<0.05-0.112)	<0.002	0.070	0.002	0.006	0.010	0.0026	0.00038	0.008
<b>Mangala River</b>											
45.	Malatipatpur	3.075 (1.21-6.192)	0.06 (<0.05-0.131)	<0.002	0.821	0.007	0.011	0.006	0.0033	0.00025	0.007
46.	Golasahi	9.442 (1.167-37.905)	0.17 (<0.05-0.612)	<0.002	0.109	0.016	0.027	0.114	0.0028	0.00032	0.009
<b>Devi River</b>											
47.	Devi at Machhagaon	2.152 (0.743-5.685)	0.09 (<0.05-0.218)	<0.002	1.250	0.008	0.022	0.023	0.0026	0.00025	0.004
<b>Gobari River</b>											
48.	Kendrapada U/s	2.386 (0.638-8.519)	<0.05 (<0.05-0.192)	<0.002	0.730	0.011	0.006	0.008	0.0024	0.00019	0.002
49.	Kendrapada D/s	3.179 (1.07-8.65)	0.07 (<0.05-0.296)	<0.002	0.793	0.010	0.006	0.068	0.0017	0.00025	0.005
<b>Nuna River</b>											
50.	Bijipur	2.424 (0.473-6.439)	0.07 (<0.05-0.204)	<0.002	0.207	0.006	0.009	0.018	0.0069	0.00038	0.004
<b>Kusumi River</b>											
51.	Tangi	2.013 (0.253-4.566)	<0.05 (<0.05-0.119)	<0.002	1.034	0.005	0.004	0.013	0.0013	0.00051	0.004
<b>Kansari River</b>											
52.	Banapur	1.914 (0.572-3.516)	0.12 (<0.05-0.315)	<0.002	0.485	0.006	0.006	0.006	0.001	0.00057	0.002
<b>Badasankha River</b>											
53.	Langaleswar	1.786 (0.572-2.913)	0.05 (<0.05-0.161)	<0.002	0.007	0.002	0.002	0.001	0.0010	0.00019	0.004
<b>Sabulia River</b>											
54.	Rambha	1.877 (0.572-3.114)	0.08 (<0.05-0.154)	<0.002	0.064	0.004	0.001	0.010	0.0008	0.00032	0.009

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)							
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>	
<b>Ratnachira River</b>												
55.	Kumardihi	4.196 (0.93-15.945)	0.06 (<0.05-0.286)	<0.002	0.494	0.007	0.009	0.006	0.0024	0.00038	0.009	
	❖ Class 'C'	50	-	0.05	50	-	1.5	15.0	0.01	-	0.10	
	❖ Class 'E'	-	-	-	-	-	-	-	-	-	-	

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

Class 'E' :Irrigation water quality

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

## Data for the period April, 2020

**(B) Brahmani River System (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)	(mg/L)							
<b>Sankh river</b>																
1.	Sankh U/s	84 (<5-408)	60 (24-92)	8.4 (<5-11.5)	0.68 (<0.4-0.84)	0.005 (0-0.017)	3.73 (<1.5-15.12)	155 (91-272)	0.35 (0.1-0.78)	17.09 (5.63-31)	<0.5	120 (92-164)	59 (34-96)	8.8 (<5-17.3)	9.999 (5.69-18.43)	0.224 (<0.2-0.326)
<b>Koel River</b>																
2.	Koel U/s	95 (<5-377)	69 (32-92)	9.8 (<5-14.4)	0.92 (<0.4-1.12)	0.007 (0-0.025)	2.96 (<1.5-7.84)	166 (103-257)	0.28 (0.09-0.37)	13.91 (5.87-19.03)	<0.5	125 (96-164)	65 (36-88)	7.1 (<5-12.0)	11.438 (6.08-20.12)	0.229 (<0.2-0.342)
<b>Brahmani River</b>																
3.	Panposh U/S	90 (<10-383)	63 (24-96)	9.3 (<5-18.5)	0.76 (<0.4-1.12)	0.005 (0-0.017)	2.68 (<1.5-8.4)	161 (95-213)	0.29 (0.12-0.5)	14.72 (7.21-22.87)	<0.5	107 (92-120)	63 (36-92)	7.9 (<5-12.5)	15.701 (<5-34.048)	0.254 (<0.2-0.364)
4.	Panposh D/S	76 (<10-280)	62 (12-116)	27.8 (11.9-38.1)	1.3 (0.56-2.24)	0.016 (0-0.090)	4.88 (1.68-8.4)	262 (168-379)	0.62 (0.2-1.25)	22.42 (9.23-35.41)	<0.5	177 (120-220)	84 (60-112)	18.1 (10-37.5)	34.831 (16.47-57.858)	0.525 (0.226-1.02)
5.	Rourkela D/S	78 (12-369)	57 (32-96)	21.5 (10.4-29.6)	1.08 (0.84-1.12)	0.005 (0-0.025)	3.98 (<1.5-8.96)	183 (120-249)	0.39 (0.14-0.69)	17.69 (8.38-28.2)	<0.5	121 (96-136)	66 (36-92)	10.9 (6-18)	20.838 (8.53-32.858)	0.317 (<0.2-0.669)
6.	Attaghat	58 (<10-333)	61 (28-140)	16 (9-23.2)	0.8 (<0.4-1.12)	0.005 (0-0.017)	2.8 (<1.5-8.96)	163 (101-240)	0.36 (0.13-0.66)	17.59 (8.54-30.03)	<0.5	107 (96-140)	62 (48-84)	9 (6-18.3)	17.87 (6.47-31.429)	0.362 (<0.2-0.604)
7.	Rourkela FD/s (Biritola)	86 (<10-343)	54 (24-88)	12.3 (<5-18.3)	1.07 (<0.4-2.8)	0.005 (0-0.035)	2.92 (<1.5-8.4)	161 (95-227)	0.37 (0.12-0.72)	17.96 (7.13-31.01)	<0.5	110 (88-128)	57 (36-88)	8.5 (<5-15.4)	17.723 (8.14-30.98)	0.273 (<0.2-0.502)
8.	Bonaigarh	82 (<10-388)	54 (28-76)	7.6 (<5-14.7)	0.68 (<0.4-1.12)	0.007 (0-0.034)	3.3 (<1.5-10.64)	150 (94-220)	0.29 (0.12-0.42)	17.1 (7.83-26.76)	<0.5	99 (92-112)	56 (40-80)	8.3 (6-12.5)	13.262 (7.619-22.262)	0.273 (<0.2-0.495)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)	(mg/L)							
9.	Rengali	21 (<10-82)	46 (32-58)	8 (<5-11)	0.7 (<0.4-1.68)	0.010 (0-0.059)	2.27 (<1.5-3.36)	119 (93-169)	0.29 (0.09-0.45)	15.72 (6.44-22.9)	<0.5	74 (64-80)	48 (28-64)	7.2 (<5-12)	10.053 (<5-15.238)	0.228 (<0.2-0.288)
10.	Samal	28 (<10-83)	51 (36-72)	9.1 (<5-14.7)	0.88 (<0.4-1.68)	0.009 (0-0.034)	2.02 (<1.5-2.8)	129 (94-183)	0.26 (0.07-0.41)	14.4 (4.54-22.68)	<0.5	81 (72-92)	52 (40-68)	7.6 (6-11.5)	11.176 (5.62-18.4)	0.247 (<0.2-0.362)
11.	Talcher FU/s	23 (<10-84)	48 (36-64)	7.1 (<5-11)	1.05 (<0.4-2.24)	0.014 (0-0.078)	3.28 (<1.5-8.4)	135 (103-184)	0.32 (0.16-0.45)	17.4 (9.72-24.64)	<0.5	87 (80-96)	54 (44-64)	6.9 (<5-9.6)	13.689 (7.143-17.75)	0.248 (<0.2-0.356)
12.	Talcher U/s	24 (<10-69)	50 (40-64)	8.3 (<5-11.5)	1.12 (<0.4-2.52)	0.030 (0-0.164)	2.94 (<1.5-8.4)	139 (111-205)	0.41 (0.27-0.66)	19.77 (13.06-31.27)	<0.5	91 (84-100)	55 (40-76)	7 (5.8-9.6)	14.094 (7.024-18.33)	0.234 (<0.2-0.298)
13.	Mandapal	29 (<10-92)	49 (40-64)	9 (<5-15.4)	0.93 (<0.4-2.24)	0.016 (0-0.045)	1.9 (<1.5-4.76)	145 (113-199)	0.28 (0.12-0.41)	15.47 (7.62-21.54)	<0.5	94 (84-112)	54 (44-60)	6.8 (<5-9.6)	15.816 (6.786-31.905)	0.241 (<0.2-0.354)
14.	Talcher D/s	27 (<10-102)	54 (44-68)	13.8 (7.4-19.3)	1.15 (0.56-2.24)	0.018 (0-0.090)	3.28 (1.68-5.88)	164 (115-241)	0.41 (0.27-0.66)	19.77 (13.06-31.27)	<0.5	107 (88-120)	63 (40-88)	9.6 (6-13.5)	17.965 (9.91-30.83)	0.287 (<0.2-0.4)
15.	Talcher FD/s	34 (<10-98)	62 (44-128)	10.2 (<5-14.7)	0.72 (<0.4-1.12)	0.016 (0-0.045)	2.38 (<1.5-5.32)	165 (129-215)	0.31 (0.12-0.44)	15.44 (7.01-23.63)	<0.5	102 (84-120)	65 (44-96)	7.7 (5.8-10)	17.875 (11.19-27.738)	0.312 (<0.2-0.421)
16.	Dhenkanal U/s	26 (<10-64)	51 (32-60)	8.4 (<5-11.6)	0.7 (<0.4-1.12)	0.012 (0-0.036)	2.74 (<1.5-8.4)	143 (113-187)	0.37 (0.26-0.54)	19.34 (13.81-26.07)	<0.5	92 (76-104)	52 (36-60)	8.9 (5.8-13.5)	13.72 (8.57-20.715)	0.303 (<0.2-0.422)
17.	Dhenkanal D/s	39 (<10-180)	55 (36-80)	11.6 (<5-17.4)	0.81 (<0.4-1.68)	0.014 (0-0.045)	2.38 (<1.5-3.36)	151 (111-213)	0.36 (0.2-0.53)	18.18 (9.82-23.9)	<0.5	100 (88-112)	60 (40-76)	8.6 (5.8-12.5)	16.254 (8.69-28.05)	0.269 (<0.2-0.397)
18.	Bhuban	31 (<10-95)	54 (40-72)	10.1 (<5-15.4)	0.6 (<0.4-0.84)	0.009 (0-0.036)	1.99 (<1.5-5.04)	151 (112-191)	0.49 (0.11-1.33)	21.83 (6.68-48.6)	<0.5	99 (92-104)	57 (36-72)	10.7 (6-20)	13.349 (6.85-20)	0.282 (<0.2-0.378)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
19.	Kabatabandha	57 (<10-194)	51 (40-62)	7.3 (<5-11.3)	0.98 (<0.4-2.24)	0.011 (0-0.090)	3.24 (<1.5-5.6)	146 (114-181)	0.42 (0.16-0.64)	20.38 (8.38-28.62)	<0.5	98 (92-108)	55 (44-74)	10.2 (5.8-19.2)	15.709 (9.88-26.38)	0.245 (<0.2-0.347)
20.	Dharmasala U/s	42 (<10-118)	58 (40-88)	8.1 (5.7-11.5)	0.65 (<0.4-0.84)	0.009 (0-0.045)	2.89 (<1.5-5.6)	158 (119-246)	0.43 (0.1-0.87)	19.4 (5.91-32.35)	<0.5	119 (84-144)	62 (38-76)	11.5 (<5-23.1)	14.004 (8.09-22.619)	0.235 (<0.2-0.265)
21.	Dharmasala D/s	40 (<10-121)	60 (32-82)	9 (5.6-11.4)	0.84 (<0.4-1.12)	0.007 (0-0.025)	1.71 (<1.5-2.52)	155 (116-216)	0.33 (0.18-0.49)	16.7 (10.07-24.4)	<0.5	117 (112-124)	63 (48-88)	8.1 (6-11.5)	15.388 (8.43-23.69)	0.26 (0.215-0.298)
22.	Pottamundai	46 (<10-218)	66 (32-88)	7.7 (<5-11.6)	0.93 (<0.4-1.68)	0.015 (0-0.067)	4.14 (<1.5-12.6)	210 (123-477)	0.85 (0.24-3.07)	26.15 (10.92-56.16)	<0.5	143 (88-208)	71 (48-88)	30.9 (6-130.8)	13.514 (5-21.43)	0.271 (<0.2-0.373)
<b>Nandira River</b>																
23.	Nandira U/s	24 (<10-82)	127 (48-192)	9.9 (5.9-15.4)	0.92 (<0.4-1.12)	0.027 (0-0.109)	2.71 (<1.5-5.04)	463 (244-623)	1.06 (0.47-1.72)	28.85 (14.45-40.17)	<0.5	267 (176-344)	136 (88-200)	41.6 (18-63.5)	47.462 (26.96-73.692)	1.421 (0.251-2.58)
24.	Nandira D/s	25 (<10-72)	130 (64-192)	13.6 (7.8-19.3)	1.12 (0.56-2.24)	0.034 (0-0.109)	4.11 (2.24-6.72)	483 (348-585)	1.03 (0.57-1.53)	27.18 (16.84-38)	<0.5	301 (240-372)	154 (112-204)	39 (20-54)	58.491 (29.61-86.668)	1.641 (0.207-2.84)
<b>Kisindhajhor</b>																
25.	Kisindhajhor	17 (<10-55)	128 (44-188)	11.7 (7.6-15.4)	0.88 (<0.4-1.68)	0.020 (0-0.056)	3.73 (<1.5-5.32)	421 (246-597)	0.86 (0.39-1.32)	24.87 (14.54-33.38)	<0.5	264 (204-308)	142 (88-220)	30.6 (12-56)	44.709 (19.43-73.692)	2.24 (<0.2-4.85)
<b>Kharasrota River</b>																
26.	Khanditara	49 (<10-210)	55 (36-76)	8.6 (5.8-11.8)	0.93 (<0.4-1.68)	0.007 (0-0.038)	3.86 (<1.5-8.96)	144 (113-203)	0.31 (0.15-0.57)	15.93 (9.88-24.2)	<0.5	98 (84-124)	58 (44-72)	7.7 (5.8-15.4)	13.43 (7.26-19.52)	0.238 (<0.2-0.294)
27.	Binjharpur	40 (<10-111)	57 (36-88)	7.8 (6.0-11.3)	0.75 (<0.4-1.12)	0.007 (0-0.039)	4.24 (<1.5-9.52)	150 (102-209)	0.33 (0.17-0.88)	16.67 (9.23-35.06)	<0.5	104 (84-120)	58 (40-76)	8.3 (6-21.1)	12.7 (6.76-16.548)	0.203 (<0.2-0.252)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(μS/cm)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
28.	Aul	46 (<10-145)	56 (44-76)	9.1 (<5-19.4)	0.84 (<0.4-1.12)	0.014 (0-0.045)	2.49 (<1.5-5.04)	198 (115-506)	0.9 (0.23-4.03)	25.83 (13.56-63.99)	<0.5	186 (92-296)	59 (48-72)	24.9 (6-103.8)	15.238 (7.97-38.1)	0.264 (<0.2-0.367)
<b>Guradih nallah</b>																
29.	Guradhi Nallah	50 (11-141)	78 (28-132)	40.7 (14.9-65.6)	5.64 (1.68-22.4)	0.082 (0-0.336)	12.48 (2.8-29.4)	426 (222-698)	0.83 (0.54-1.33)	25.57 (16-36.64)	<0.5	249 (168-312)	125 (72-180)	27.3 (12-37.5)	76.834 (27.35-160.8)	1.107 (<0.2-1.62)
<b>Badajhor</b>																
30.	Badhajhor	21 (<10-65)	86 (28-124)	9.5 (5.7-19.3)	0.64 (<0.4-1.12)	0.013 (0-0.036)	2.8 (<1.5-5.6)	263 (167-410)	0.77 (0.36-1.55)	26.45 (14.4-45.6)	<0.5	149 (100-180)	85 (56-116)	24.3 (16-36)	15.088 (7.52-24.762)	0.267 (<0.2-0.351)
<b>Damsala River</b>																
31.	Dayanabil	38 (<10-157)	62 (32-86)	7.4 (<5-11.3)	0.7 (<0.4-1.12)	0.005 (0-0.045)	2.24 (<1.5-6.72)	163 (91-346)	0.25 (0.11-0.45)	13.05 (6.91-21.08)	<0.5	110 (92-124)	62 (40-84)	7.5 (6-9.6)	12.54 (3.14-26.786)	<0.2 (<0.2-0.312)
<b>Gonda nallah</b>																
32.	Marthapur	78 (<10-274)	72 (20-104)	10.2 (6-15.4)	0.98 (<0.4-1.68)	0.009 (0-0.034)	4.42 (<1.5-8.12)	300 (77-586)	0.89 (0.14-1.89)	26.09 (9.27-45.42)	<0.5	253 (120-336)	94 (40-188)	25.3 (6-53.8)	41.033 (8.09-116.193)	0.834 (<0.2-1.83)
<b>Lingira River</b>																
33.	Lingira U/s	12 (<10-68)	123 (52-196)	10.2 (5.9-15.4)	0.6 (<0.4-0.84)	0.023 (0-0.070)	2.86 (<1.5-5.6)	335 (222-453)	0.82 (0.42-1.57)	25.1 (13.93-39.41)	<0.5	186 (128-256)	118 (76-160)	26.3 (12-66)	17.816 (6.072-34.52)	0.516 (<0.2-0.884)
34.	Lingira D/s	14 (<10-62)	125 (56-216)	13 (5.9-19.3)	0.96 (<0.4-1.68)	0.048 (0-0.140)	2.89 (1.68-5.04)	355 (228-437)	0.8 (0.45-1.46)	24.18 (13.83-36.27)	<0.5	194 (132-268)	129 (76-176)	26.1 (10-68)	21.875 (11.17-37.62)	0.494 (<0.2-0.871)
<b>Ramiala River</b>																
35.	Kamakhyanagar	38 (<10-161)	60 (40-80)	9.2 (<5-15.9)	0.56 (<0.4-0.56)	0.010 (0-0.022)	3.08 (<1.5-8.96)	149 (107-183)	0.38 (0.11-0.72)	18.29 (6.45-32.13)	<0.5	102 (84-116)	62 (44-84)	10.5 (6-20)	10.865 (<5-20.953)	0.208 (<0.2-0.376)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators					Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)					(μS/cm)	(mg/L)						
<b>Banguru nallah</b>																
36.	Banguru nallah	40 (<10-123)	89 (28-184)	12.7 (<5-27.8)	0.56 (<0.4-0.56)	0.007 (0-0.028)	2.89 (<1.5-4.72)	592 (319-980)	0.73 (0.22-1.72)	19.31 (7.56-35.92)	<0.5	329 (224-512)	208 (96-380)	24.5 (8-40.4)	32.505 (54.41-238.1)	0.473 (0.211-0.784)
<b>Singada jhor</b>																
37.	Singada jhor	34 (<10-105)	104 (44-156)	10.7 (6.8-15.4)	0.76 (<0.4-1.12)	0.012 (0-0.045)	3.11 (<1.5-6.72)	307 (173-485)	0.51 (0.22-0.94)	18.73 (7.54-36.12)	<0.5	153 (104-208)	120 (48-200)	19.2 (10-40.4)	32.411 (14.51-72.09)	0.366 (0.239-0.547)
<b>Tikira River</b>																
38.	Kaniha U/s	72 (<10-339)	69 (40-88)	8.7 (5.9-11.6)	0.88 (<0.4-1.4)	0.026 (0-0.112)	2.43 (<1.5-4.48)	188 (149-250)	0.4 (0.19-0.66)	17.85 (10.15-26.85)	<0.5	122 (112-140)	72 (64-86)	11.1 (6-16)	17.419 (<5-29.76)	0.283 (<0.2-0.376)
39.	Kaniha D/s	67 (<10-320)	83 (32-108)	12.2 (<5-19.3)	1.0 (<0.4-1.68)	0.017 (0-0.067)	2.58 (<1.5-4.48)	253 (186-464)	0.43 (0.24-0.68)	17.82 (11.13-26.57)	<0.5	132 (112-152)	90 (64-124)	18.1 (9.6-52)	27.699 (7.024-47.14)	0.603 (<0.2-1.31)
<b>Bangurusingada jhor</b>																
40.	Bangurusingada jhor	20 (<10-78)	121 (48-172)	10.1 (5.7-19.2)	0.72 (<0.4-1.68)	0.011 (0-0.059)	3.17 (<1.5-8.4)	291 (185-409)	0.44 (0.14-0.82)	16.21 (5.91-29.46)	<0.5	157 (112-220)	119 (68-160)	16.2 (6-28)	22.301 (5.83-68.22)	0.492 (<0.2-0.864)
<b>Karo River</b>																
41.	Barbil	25 (<10-99)	63 (40-88)	7.8 (<5-18.5)	0.96 (<0.4-1.68)	0.013 (0-0.055)	3.22 (<1.5-6.72)	170 (109-282)	0.59 (0.14-3.08)	20.09 (8.39-63.38)	<0.5	111 (72-188)	61 (40-116)	17.8 (<5-59.6)	8.627 (<5-25.36)	<0.2 (<0.2-0.222)
❖ 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

**(B) Contd..**

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values) (mg/L)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Sankh River</b>											
1.	Sankh U/s	2.796 (0.68-9.306)	<0.05 (<0.05-0.052)	<0.002	0.252	0.002	0.001	0.003	0.0020	0.00044	0.005
<b>Koel River</b>											
2.	Koel U/s	2.606 (0.643-4.95)	<0.05 (<0.05-0.097)	<0.002	1.511	0.007	0.007	0.018	0.0021	0.00013	0.007
<b>Brahmani River</b>											
3.	Panposh U/S	2.256 (0.428-5.37)	<0.05 (<0.05-0.055)	<0.002	0.671	0.005	0.004	0.034	0.0023	0.00025	0.007
4.	Panposh D/S	16.054 (3.187-54.887)	0.062 (<0.05-0.166)	<0.002	0.586	0.013	0.004	0.177	0.0016	0.00044	0.006
5.	Rourkella D/S	9.066 (1.155-22.753)	0.065 (<0.05-0.29)	<0.002	0.747	0.008	0.001	0.008	0.0015	0.00019	0.004
6.	Attaghat	5.035 (1.326-9.68)	0.06 (<0.05-0.309)	<0.002	0.324	0.003	0.003	0.005	0.0011	0.00038	0.005
7.	Rourkela FD/s (Biritola)	4.525 (1.198-8.172)	0.05 (<0.05-0.23)	<0.002	0.570	0.003	0.004	0.011	0.0018	0.00013	0.005
8.	Bonaigarh	6.595 (1.544-30.457)	<0.05 (<0.05-0.237)	<0.002	0.139	0.005	0.003	0.005	0.0011	0.00025	0.004
9.	Rengali	1.962 (0.955-3.376)	<0.05 (<0.05-0.078)	<0.002	0.223	0.002	0.001	0.011	0.0015	0.00064	0.007
10.	Samal	1.792 (0.549-3.236)	<0.05 (<0.05-0.091)	<0.002	0.007	0.004	0.001	0.001	0.0004	0.00083	0.005
11.	Talcher FU/s	1.654 (0.55-3.324)	<0.05 (<0.05-0.126)	<0.002	0.155	0.005	0.001	0.046	0.0009	0.00064	0.010
12.	Talcher U/S	1.814 (0.534-3.394)	0.05 (<0.05-0.174)	<0.002	0.056	0.003	0.002	0.064	0.0011	0.00006	0.008
13.	Mandapal	1.646 (0.824-2.956)	0.051 (<0.05-0.138)	<0.002	0.454	0.005	0.002	0.002	0.0009	0.00064	0.005
14.	Talcher D/S	2.438 (0.399-8.432)	0.058 (<0.05-0.208)	<0.002	0.033	0.003	0.002	0.005	0.0004	0.00083	0.007



Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
15.	Talcher FD/s	2.266 (0.979-4.143)	0.072 (<0.05-0.239)	<0.002	0.035	0.005	0.005	0.008	0.0008	0.00076	0.007
16.	Dhenkanal U/s	2.159 (0.888-4.828)	<0.05 (<0.05-0.154)	<0.002	0.028	0.009	0.005	0.023	0.0023	0.00038	0.007
17.	Dhenkanal D/s	2.069 (0.334-5.558)	0.05 (<0.05-0.169)	<0.002	0.281	0.005	0.002	0.008	0.0008	0.00032	0.010
18.	Bhuban	1.712 (0.912-3.219)	0.076 (<0.05-0.316)	<0.002	0.304	0.007	0.004	0.016	0.0019	0.00025	0.011
19.	Kabatabandha	3.187 (0.728-6.236)	0.082 (<0.05-0.469)	<0.002	0.254	0.005	0.002	0.002	0.0008	0.00051	0.006
20.	Dharmasala U/s	3.164 (0.664-5.143)	<0.05 (<0.05-0.068)	<0.002	0.418	0.010	0.005	0.006	0.0019	0.00013	0.007
21.	Dharmasala D/s	2.592 (0.562-4.741)	<0.05 (<0.05-0.073)	<0.002	0.368	0.010	0.004	0.009	0.0010	0.00019	0.004
22.	Pottamundai	1.885 (1.076-4.408)	<0.05 (<0.05-0.135)	<0.002	1.317	0.009	0.030	0.151	0.0016	0.00025	0.005
<b>Nandira jhor</b>											
23.	Nandira U/s	3.197 (0.824-9.026)	0.06 (<0.05-0.237)	<0.002	0.111	0.002	0.003	0.019	0.0017	0.00019	0.010
24.	Nandira D/s	3.953 (0.779-11.405)	0.0770 (<0.05-0.247)	<0.002	0.174	0.009	0.008	0.005	0.0017	0.00064	0.007
<b>Kisindajhor</b>											
25.	Kisindhajhor	9.252 (0.824-37.073)	0.058 (<0.05-0.276)	<0.002	0.108	0.009	0.005	0.024	0.0051	0.00006	0.007
<b>Kharasrota River</b>											
26.	Khanditara	3.807 (1.38-10.251)	<0.05 (<0.05-0.078)	<0.002	0.664	0.018	0.009	0.007	0.0010	0.00013	0.004
27.	Binjharpur	2.897 (1.052-4.776)	<0.05 (<0.05-0.128)	<0.002	0.291	0.010	0.003	<0.001	0.0011	0.00013	0.007
28.	Aul	1.871 (0.302-4.758)	<0.05 (<0.05-0.204)	<0.002	0.767	0.003	0.005	0.032	0.0007	0.00057	0.004
<b>Guradih nallah</b>											
29.	Guradhi Nallah	21.296 (2.146-44.898)	0.11 (0.054-0.177)	<0.002	0.577	0.015	0.007	0.031	0.0017	0.00006	0.004

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Badajhor</b>											
30.	Badhajhor	2.57 (0.824-5.484)	<0.05 (<0.05-0.197)	<0.002	0.296	0.011	0.003	0.005	0.0015	0.00013	0.011
<b>Damsala River</b>											
31.	Dayanabil	3.862 (0.93-8.202)	<0.05 (<0.05-0.188)	0.016	0.498	0.011	0.004	0.011	0.0011	0.00019	0.008
<b>Gonda nallah</b>											
32.	Marthapur	15.232 (1.003-60.661)	<0.05 (<0.05-0.051)	<0.002	0.162	0.015	0.005	0.007	0.0010	0.00025	0.007
<b>Lingira River</b>											
33.	Lingira U/s	1.626 (0.824-2.764)	0.052 (<0.05-0.184)	<0.002	0.171	0.007	0.002	0.004	0.0013	0.00019	0.009
34.	Lingira D/s	1.6 (0.71-2.974)	0.061 (<0.05-0.167)	<0.002	0.132	0.011	0.003	0.030	0.0019	0.00057	0.017
<b>Ramiala River</b>											
35.	Ramiala near Kamakhyanager	1.59 (0.46-2.748)	<0.05 (<0.05-0.08)	<0.002	0.617	0.016	0.003	0.014	0.0009	0.00006	0.012
<b>Bangurunallah</b>											
36.	Bangurunallah	4.007 (0.824-8.764)	<0.05 (<0.05-0.09)	<0.002	0.742	0.718	0.010	0.020	0.0092	0.00013	0.011
<b>Singadajhor</b>											
37.	Singadajhor	1.675 (0.657-4.481)	<0.05 (<0.05-0.091)	<0.002	0.324	0.016	0.004	0.020	0.0031	0.00019	0.009
<b>Tikira River</b>											
38.	Kaniha U/s	1.811 (0.477-5.956)	<0.05 (<0.05-0.104)	<0.002	0.211	0.024	0.004	0.028	0.0009	0.00032	0.009
39.	Kaniha D/s	1.536 (0.824-2.785)	0.065 (<0.05-0.164)	<0.002	0.344	0.017	0.003	0.024	0.0026	0.00044	0.011
<b>Bangurusingada jhor</b>											
40.	Bangurusingada jhor	1.668 (0.824-3.058)	<0.05 (<0.05-0.096)	<0.002	0.140	0.013	0.002	0.015	0.0013	0.00064	0.010

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Karo River</b>											
41.	Karo river at Barbil	2.282 (0.564-7.417)	0.053 (<0.05-0.166)	<0.002	0.182	0.004	0.002	0.007	0.0008	0.00013	0.004
	❖ <b>Class 'C'</b>	50	-	0.05	50	-	1.5	15.0	0.01	-	0.10
	❖ <b>Class 'E'</b>	-	-	-	-	-	-	-	-	-	-

❖ **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, 2020

**(C) Baitarani river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)	(mg/L)							
<b>Kundra Nallah</b>																
1.	Joda	46 (<10-210)	50 (28-96)	7.6 (<5-11.6)	0.89 (0.56-1.68)	0.006 (0-0.022)	3.44 (<1.5-12.88)	125 (88-221)	0.34 (0.08-0.59)	18.6 (5.67-28.34)	<0.5	90 (64-132)	49 (32-84)	9.6 (4.8-12.5)	6.2 (<5-15.83)	0.117 (0.087-0.168)
<b>Kusei River</b>																
2.	Deogaon	42 (<10-134)	78 (48-136)	7.7 (<5-11.2)	0.72 (0.56-1.12)	0.016 (0-0.073)	3.72 (<1.5-15.68)	180 (108-280)	0.41 (0.2-0.74)	18.48 (8.15-27.95)	<0.5	126 (76-160)	71 (48-120)	12.3 (6.0-28.0)	11.52 (<5-23.14)	0.18 (0.099-0.254)
<b>Baitarani River</b>																
3.	Naigarh	132 (<10-621)	34 (20-84)	7.2 (<5-11.2)	0.72 (0.56-1.12)	0.006 (0-0.022)	2.66 (<1.5-6.72)	106 (68-159)	0.34 (0.09-1.1)	19 (6.83-51.05)	<0.5	72 (48-104)	40 (20-76)	5.9 (3.8-8.0)	15.54 (<5-46.00)	0.097 (0.075-0.126)
4.	Unchabali	121 (<10-515)	33 (20-64)	6.4 (<5-11.2)	0.8 (0.56-1.12)	0.007 (0-0.017)	3.84 (<1.5-7.28)	108 (64-171)	0.28 (0.08-0.86)	16.13 (5.91-39.15)	<0.5	68 (48-92)	43 (24-72)	8.5 (3.8-24.0)	15.29 (<5-48.5)	0.181 (0.089-0.71)
5.	Champua	49 (<10-285)	49 (32-84)	7.1 (<5-14.8)	0.64 (0.56-1.12)	0.005 (0-0.025)	2.6 (<1.5-6.72)	132 (105-196)	0.4 (0.17-1.49)	19.17 (8.44-48.34)	<0.5	95 (72-128)	49 (36-80)	7.6 (4.8-12.0)	13.33 (<5-24.64)	0.156 (0.109-0.184)
6.	Tribindha	61 (<10-236)	60 (36-108)	8.1 (<5-18.5)	0.98 (0.56-1.68)	0.009 (0-0.039)	3.42 (<1.5-7.28)	142 (107-212)	0.31 (0.16-0.49)	16.63 (7.53-24.48)	<0.5	99 (88-128)	56 (36-98)	7.6 (4.0-14.0)	11.23 (<5-19.41)	0.142 (0.103-0.211)
7.	Joda	89 (<10-505)	47 (28-68)	8 (<5-11.9)	0.8 (0.56-1.12)	0.009 (0-0.034)	3.64 (<1.5-14.56)	127 (90-153)	0.4 (0.17-0.95)	20.42 (9.3-38.86)	<0.5	87 (80-96)	46 (36-66)	9.6 (5.8-26.0)	11.36 (<5-24.51)	0.116 (0.078-0.155)
8.	Anandpur	44 (<10-186)	54 (44-68)	9.4 (5.8-14.8)	0.7 (0.56-1.12)	0.008 (0-0.029)	3.92 (<1.5-10.64)	139 (117-166)	0.34 (0.16-0.52)	18.2 (9.25-26.17)	<0.5	84 (76-92)	53 (42-60)	8.8 (6.0-16.0)	11.06 (<5-20.6)	0.164 (0.103-0.217)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators					Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(μS/cm)				(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
9.	Jajpur	57 (<10-150)	73 (36-124)	9 (6.0-11.6)	0.8 (0.56-1.68)	0.009 (0-0.039)	4.66 (<1.5-13.44)	178 (111-269)	0.34 (0.17-0.53)	16.83 (9.55-27.13)	<0.5	109 (104-116)	71 (44-144)	8.5 (6.0-12)	17.11 (8.57-45.36)	0.235 (0.134-0.467)
10.	Chandbali U/s	148 (12-483)	80 (40-136)	11.8 (6.0-19.1)	0.73 (0.56-0.84)	0.002 (0-0.013)	2.1 (<1.5-3.92)	1226 (139-6210)	4.05 (0.43-17.4)	45.83 (18.18-71.62)	<0.5	1541 (276-4260)	161 (44-860)	286.5 (12.0-2111.4)	76.08 (9.2-473.8)	0.213 (0.114-0.403)
11.	Chandbali D/s	163 (30-461)	80 (8-156)	15.6 (9.0-32.1)	0.89 (0.56-1.12)	0.005 (0-0.034)	2.99 (1.68-5.6)	1449 (142-7980)	4.63 (0.47-22.18)	45.24 (19.94-73.02)	<0.5	2045 (496-5912)	198 (44-1080)	396.4 (16.0-3072.9)	83.51 (7.84-502.4)	0.208 (0.12-0.341)
<b>Salandi River</b>																
12.	Bhadrak U/s	24 (<10-81)	54 (28-96)	9.4 (7.2-17.9)	0.76 (0.56-1.68)	0.006 (0-0.028)	2.83 (<1.5-8.96)	150 (85-224)	0.46 (0.22-1.04)	22.25 (14.23-36.52)	<0.5	113 (72-140)	54 (32-84)	10.4 (6.0-18.0)	11.05 (<5-19.52)	0.238 (0.123-0.67)
13.	Bhadrak D/s	25 (<10-96)	54 (16-108)	12.1 (7.7-17.9)	1.08 (0.56-1.68)	0.019 (0-0.174)	3.73 (<1.5-7.84)	1160 (81-12100)	0.51 (0.24-0.77)	23.46 (15.93-29.44)	<0.5	135 (76-168)	59 (36-100)	14.8 (6.0-36.5)	33.45 (<5-210.59)	0.232 (0.116-0.423)
<b>Dhamra River</b>																
14.	Dhamra	171 (<10-379)	128 (52-280)	18.8 (<5-39.3)	0.93 (0.56-1.12)	0.006(0-0.039)	3.67 (1.68-9.52)	13323 (115-34510)	42.77 (2.08-117.69)	71.01 (43.76-91.98)	2.328 (2.237-2.462)	17766 (13292-26860)	1092 (56-3400)	5631.6 (62.0-15564.6)	414.37 (5.95-1204.78)	0.38 (0.118-0.596)
❖ 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

## (C) Contd..

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Kundra Nallah</b>											
1.	Joda	2.300 (0.778-5.484)	<0.05 (<0.05 -0.09)	<0.002	0.154	0.004	0.002	0.012	0.0010	0.00006	0.004
<b>Kusei River</b>											
2.	Deogaon	1.756 (0.763-3.778)	<0.05 (<0.05 -0.212)	<0.002	0.389	0.005	0.002	0.002	0.0008	0.00019	0.004
<b>Baitarani River</b>											
3.	Naigarh	2.372 (0.633-5.895)	0.06 (<0.05 -0.274)	<0.002	0.256	0.005	0.002	<0.001	0.0009	0.00006	0.005
4.	Unchabali	2.319 (0.743-4.933)	<0.05 (<0.05 -0.085)	<0.002	0.845	0.005	0.003	<0.001	0.0018	0.00000	0.002
5.	Champua	2.855 (1.102-6.192)	<0.05 (<0.05 -0.114)	<0.002	0.535	0.005	0.002	0.002	0.0012	0.00006	0.006
6.	Tribindha	2.654 (0.366-8.204)	<0.05 (<0.05 -0.072)	<0.002	0.128	0.004	0.002	0.001	0.0006	0.00025	0.005
7.	Joda	2.647 (0.831-6.956)	<0.05 (<0.05 -0.132)	<0.002	0.195	0.004	0.003	0.002	0.0008	0.00013	0.003
8.	Anandpur	2.289 (0.27-7.017)	0.069 (<0.05 -0.272)	<0.002	0.138	0.006	0.003	0.005	0.0006	0.00019	0.006
9.	Jajpur	2.965 (0.833-8.271)	<0.05 (<0.05 -0.093)	<0.002	0.265	0.010	0.003	0.001	0.0014	0.00013	0.008

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P (mg/L)	Cr(VI) <sup>##</sup>	Annual Average values (Range of values) (mg/L)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
10.	Chandbali U/s	2.200 (1.003-4.015)	<0.05 (<0.05 -0.155)	<0.002	0.094	0.014	0.019	0.027	0.0015	0.00038	0.003
11.	Chandbali D/s	2.262 (1.07-4.39)	0.05 (<0.05 -0.115)	<0.002	1.165	0.022	0.015	0.048	0.0018	0.00057	0.002
<b>Salandi River</b>											
12.	Bhadrak U/s	2.198 (0.612-6.348)	0.06 (<0.05 -0.195)	<0.002	0.427	0.021	0.020	0.069	0.0016	0.00019	0.004
13.	Bhadrak D/s	2.058 (0.687-4.214)	<0.05 (<0.05 -0.104)	<0.002	0.791	0.015	0.015	0.037	0.0017	0.00006	0.004
<b>Dhamra River</b>											
14.	Dhamra	2.727 (0.961-8.125)	0.054 (<0.05 -0.225)	<0.002	1.065	0.019	0.013	0.038	0.0015	0.00019	0.004
❖ <b>Class 'C'</b>		50	-	0.05	50	-	1.5	15.0	0.01	-	0.10
❖ <b>Class 'E'</b>		-	-	-	-	-	-	-	-	-	-

❖ **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, 2020

**(D) Rushikulya river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
<b>Russelkunda Reservoir</b>																
1.	Russelkunda	50 (<10-256)	70 (44-96)	10.4 (5.9-14.8)	0.56 (0.56-0.56)	0.004 (0-0.017)	1.62 (<1.5-3.64)	225 (148-328)	0.88 (0.45-2.68)	29.8 (18.41-62.02)	<0.5	151 (112-196)	73 (48-96)	27.2 (6.0-69.2)	15.4 (5.6-48.3)	0.233 (<0.2-0.353)
<b>Bada Nadi</b>																
2	Aska	102 (<10-233)	83 (48-132)	9.4 (5.9-15.2)	0.7 (0.56-1.12)	0.014 (0-0.045)	2.18 (<1.5-3.92)	219 (133-298)	0.67 (0.32-0.96)	26.22 (16.67-35.81)	<0.5	120 (80-168)	73 (46-108)	18.8 (9.6-33.1)	11.9 (2.7-21.9)	0.236 (<0.2-0.309)
<b>Rushikulya River</b>																
3.	Aska	91 (<10-245)	98 (52-148)	10.3 (5.6-15.1)	0.61 (0.56-0.84)	0.012 (0-0.070)	1.34 (<1.5-1.96)	235 (144-309)	0.67 (0.44-0.87)	25.24 (19.37-32.22)	<0.5	142 (120-172)	81 (56-112)	17.2 (8.0-28.8)	10.4 (1.4-16.9)	0.249 (0.204-0.296)
4.	Nalabanta	90 (<10-222)	103 (56-148)	9.5 (3.8-14.8)	0.7 (<0.4-1.12)	0.030 (0-0.130)	2.52 (<1.5-3.92)	286 (194-576)	0.66 (0.5-0.83)	23.53 (19.15-29.88)	<0.5	197 (136-320)	96 (56-208)	21.1 (14.0-42.3)	17.7 (1.3-88.1)	0.245 (<0.2-0.279)
5.	Madhopur	80 (<10-266)	104 (64-152)	9.3 (3.8-15.1)	1.03 (0.56-3.36)	0.017 (0-0.087)	2.08 (<1.5-3.92)	404 (173-2050)	1.44 (0.56-8.21)	29.43 (20.23-66.57)	<0.5	468 (132-1412)	113 (56-376)	86.3 (8.0-765.3)	13.9 (4.9-56.8)	0.259 (<0.2-0.368)
6.	Potagarh	117 (<10-348)	130 (92-230)	14.4 (5.9-28.1)	0.84 (0.56-1.68)	0.016 (0-0.070)	1.74 (<1.5-3.08)	6989 (255-35300)	21.16 (0.62-86.03)	53.54 (21.92-88.95)	0.917 (<0.5-2.262)	12755 (600-27120)	495 (84-2200)	2818 (16.0-16149.3)	110.3 (4.4-297.6)	0.334 (0.235-0.512)
❖ 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						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Russelkunda Reservoir</b>											
1.	Russelkunda	1.740 (0.888-3.481)	0.091 (<0.05-0.49)	<0.002	0.268	0.002	0.002	0.003	0.0011	0.00006	0.003
<b>Bada Nadi</b>											
2	Aska	1.883 (0.663-5.720)	0.079 (<0.05-0.469)	<0.002	0.327	0.002	0.003	0.002	0.0012	0.00051	0.005
<b>Rushikulya River</b>											
3.	Aska	2.005 (0.691-5.615)	0.063 (<0.05-0.227)	<0.002	0.079	0.002	0.001	0.001	0.0013	0.00038	0.005
4.	Nalabanta	2.184 (0.499-6.245)	0.042 (<0.05-0.084)	<0.002	0.089	0.002	0.001	0.002	0.0010	0.00019	0.005
5.	Madhopur	1.653 (0.569-3.953)	0.042 (<0.05-0.115)	<0.002	0.145	0.003	0.002	0.002	0.0018	0.0006	0.006
6.	Potagarh	1.778 (0.772-4.741)	<0.05 (<0.05--0.071)	<0.002	0.214	0.002	0.001	0.004	0.0023	0.00038	0.003
❖ 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, 2020

**(F) Nagavali river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)				(mg/L)				
<b>Nagavali river</b>																
1.	Penta	100 (<10-498)	72 (46-100)	7.6 (4.5-10.0)	1.04 (0.56-1.68)	0.012 (0-0.067)	2.17 (<1.5-2.80)	189 (136-279)	0.51 (0.17-1.24)	21.7 (8.3-47.1)	<0.5	126 (112-168)	67 (40-88)	12.2 (4.0-39.9)	14.4 (7.4-27.9)	0.214 (<0.2-0.324)
2.	Jaykaypur D/s	126 (<10-894)	83 (52-108)	14.2 (9.0-20.6)	1.03 (0.56-1.12)	0.011 (0-0.039)	4.52 (<1.5-6.72)	227 (166-393)	0.59 (0.19-1.51)	22.7 (9.1-41.7)	<0.5	157 (128-224)	76 (48-100)	15.0 (6.0-48.1)	16.4 (6.3-40.2)	<0.2 (<0.2-0.281)
3.	Rayagada D/s	113 (<10-713)	82 (56-104)	10.2 (6.0-12.3)	0.580 (0.56-1.68)	0.014 (0-0.056)	3.22 (<1.5-5.04)	212 (160-319)	0.46 (0.22-0.88)	18.6 (10.3-29.6)	<0.5	148 (112-188)	82 (54-100)	12.5 (5.8-28.8)	16.9 (<5-34.2)	<0.2 (<0.2-0.256)
	❖ 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
(mg/L)			(mg/L)								
<b>Nagavali river</b>											
1.	Penta	4.408 (0.824-18.656)	0.099 (<0.05-0.445)	<0.002	0.304	0.004	0.002	0.004	0.0013	0.00025	0.005
2.	Jaykaypur D/s	2.721 (0.824-8.160)	0.146 (<0.05-0.728)	<0.002	0.352	0.005	0.004	0.005	0.0014	0.00013	0.006
3.	Rayagada D/s	2.777 (0.824-7.811)	0.127 (<0.05-0.378)	<0.002	0.185	0.001	0.005	0.005	0.0017	0.00025	0.004
	❖ <b>Class 'C'</b>	50	-	0.05	50	-	1.5	15.0	0.01	-	0.10
	❖ <b>Class 'E'</b>	-	-	-	-	-	-	-	-	-	-

❖ **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, 2020

**(F) Subarnarekha river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)	(mg/L)							
<b>Subarnarekha river</b>																
1.	Rajghat	30 (<10-70)	75 (52-108)	9.7 (7.2-14.6)	0.78 (0.56-1.12)	0.014 (0-0.073)	3.02 (<1.5-7.28)	239 (134-391)	0.9 (0.2-3.8)	27.0 (10.6-66.0)	<0.5 (<0.5-0.70)	162 (120-232)	72 (28-100)	21.2 (8.0-35.36)	16.7 (<5-40.5)	0.362 (<0.2-0.644)
	❖ 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>	
		(mg/L)			(mg/L)							
<b>Subarnarekha river</b>												
1.	Rajghat	4.752 (0.623-20.929)	0.11 (<0.05-0.73)	<0.002	0.432	0.017	0.002	0.018	0.002	0.00025	0.004	
	❖ 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, 2020

**(G) Budhabalanga river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)			(mg/L)					
<b>Budhabalanga river</b>																
1.	Baripada D/s	27 (<10-76)	94 (48-136)	11.2 (7.1-18.5)	1.01 (<0.4-2.24)	0.010 (0-0.034)	2.52 (<1.5-6.16)	259 (131-403)	0.66 (0.20-1.14)	24.27 (9.95-42.55)	<0.5	146 (104-220)	86 (44-120)	20.5 (8.0-38.0)	14.97 (6.76-27.62)	0.245 (<0.2-0.324)
2.	Balasore U/s	34 (<10-96)	67 (40-88)	8.3 (5.97-11.7)	8.29 (<0.4-14.72)	0.017 (0-0.118)	1.7 (<1.5-3.92)	167 (110-252)	0.41 (0.20-0.68)	19.37 (12.30-34.50)	<0.5	106 (76-128)	63 (36-80)	9.95 (6.0-14.4)	10.02 (6.27-14.52)	<0.2 (<0.2-0.271)
3.	Balasore D/s	29 (<10-62)	77 (42-104)	11.2 (7.2-14.8)	1.12 (<0.4-2.24)	0.014 (0-0.055)	2.2 (<1.5-4.48)	220 (149-313)	0.64 (0.23-1.01)	24.55 (11.47-34.48)	0.516 (<0.5-1.891)	130 (104-156)	75 (48-100)	20.9 (10.0-38.0)	14.07 (6.76-22.85)	0.222 (<0.2-0.322)
<b>Sone River</b>																
4.	Hatigond	74 (<10-340)	68 (44-100)	8.8 (5.7-11.7)	1.2 (<0.4-2.24)	0.019 (0-0.050)	1.6 (<1.5-3.92)	185 (118-255)	0.49 (0.16-0.90)	20.79 (9.36-36.96)	<0.5 (<0.5-1.741)	129 (116-136)	66 (44-104)	14.8 (6.0-24.9)	11.75 (5.2-18.21)	0.233 (<0.2-0.378)
	❖ Class 'C'	-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
	❖ Class 'E'	-	-	-	-	-	-	2250	26	-	2.0	2100	-	600	1000	-

(G) Contd..

Sl. No.	Sampling Location	Nutrients			Heavy metals						
		Nitrate as NO <sub>3</sub> <sup>-</sup> (mg/L)	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Annual Average values (Range of values)						
					Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
<b>Budhabalanga river</b>											
1.	Baripada D/s	2.738 (1.058-6.913)	0.086 (<0.05-0.490)	<0.002	0.882	0.004	0.006	0.106	0.0012	0.00006	0.006
2.	Balasore U/s	1.873 (1.064-3.324)	0.054 (<0.05-0.201)	<0.002	0.069	0.006	0.007	0.014	0.0011	0.00057	0.005
3.	Balasore D/s	3.555 (1.070-11.443)	0.097 (<0.05-0.314)	<0.002	0.203	0.011	0.009	0.019	0.0017	0.00025	0.004
<b>Sone River</b>											
4.	Hatigond	1.512 (0.522-2.590)	0.069 (<0.05-0.329)	<0.002	0.229	0.002	0.003	0.001	0.0015	0.00013	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, 2020

**(H) Kolab river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)		(mg/L)						
<b>Kerandi river</b>																
1.	Sunabeda	31 (<10-94)	28 (<20-48)	8.3 (3.0-15.4)	0.84 (<0.4-1.68)	0.016 (0-0.028)	3.15 (<1.5-5.04)	144 (70-278)	0.82 (0.09-2.05)	34.9 (6.9-62.8)	<0.5	113 (92-160)	33 (20-50)	15.6 (<5.0-61.5)	15.6 (6.1-31.3)	<0.2
	❖ 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
		(mg/L)			(mg/L)						
<b>Kerandi river</b>											
1.	Sunabeda	2.279 (0.824-5.120)	0.134 (<0.05-0.490)	<0.002	0.617	0.006	0.006	0.006	0.0017	0.00025	0.004
	❖ 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, 2020

(I) Vansadhara river system (2020)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
<b>Vansadhara river</b>																
1.	Muniguda	54 (<10-244)	72 (60-92)	7.0 (<5.0-13.3)	0.76 (<0.4-1.12)	0.008 (0-0.036)	3.47 (<1.5-5.04)	186 (151-279)	0.4 (0.2-1.0)	19.4 (8.0-42.1)	<0.5	116 (92-156)	66 (36-84)	11.2 (6.0-24.9)	12.2 (3.9-28.8)	<0.2 (<0.2-0.286)
2.	Gunupur	108 (<10-684)	70 (46-92)	9.0 (5.6-17.7)	0.76 (0.56-1.12)	0.010 (0-0.034)	3.19 (<1.5-5.6)	184 (109-270)	0.4 (0.1-0.9)	17.9 (7.3-31.2)	<0.5	127 (104-160)	65 (40-88)	9.5 (<5-19.2)	13.2 (<5-33.1)	<0.2 (<0.2-0.259)
	❖ 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
		(mg/L)			(mg/L)						
<b>Vansadhara river</b>											
1.	Muniguda	2.846 (0.824-9.254)	0.086 (<0.05-0.381)	<0.002	0.025	0.001	0.004	0.005	0.0014	0.00032	0.004
2.	Gunupur	2.639 (0.824-4.128)	0.079 (<0.05-0.209)	<0.002	0.052	0.015	0.006	0.007	0.0014	0.00038	0.004
	❖ 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, 2020





**(J) Indravati river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(μS/cm)	(mg/L)							
<b>Indravati river</b>																
1.	Nawarangpur	87 (<10-420)	46 (20-84)	8.6 (<5-11.8)	0.76 (0.56-1.12)	0.008 (0-0.022)	3.26 (1.12-5.04)	168 (85-258)	0.8 (0.2-1.9)	30.4 (9.7-52.8)	<0.5	98 (48-144)	46 (20-80)	17.2 (5.8-38.0)	14.0 (5.2-28.1)	<0.2
	❖ 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>	
		(mg/L)			(mg/L)							
<b>Indravati river</b>												
1.	Nawarangpur	2.022 (0.824-3.988)	0.109 (<0.05-0.490)	<0.002	0.617	0.006	0.006	0.006	0.0017	0.00025	0.004	
	❖ 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, 2020

**(K) Bahuda river system (2020)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents								
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	EC	SAR	% Na	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/L)		(mg/L)				(µS/cm)	(mg/L)							
<b>Bahuda river</b>																
1.	Damodarpally	54 (<10-157)	139 (56-212)	9.0 (7.4-12.0)	0.595 (<0.4-1.120)	0.032 (0-0.090)	2.427 (<1.5-4.20)	356 (175-859)	0.77 (0.31-2.59)	22.1 (13.7-43.7)	<0.5	307 (220-520)	128 (64-240)	32 (10-169)	16.8 (6.8-43.2)	0.323 (<0.2-0.436)
	❖ 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI) <sup>##</sup>	Fe <sup>##</sup>	Ni <sup>##</sup>	Cu <sup>##</sup>	Zn <sup>##</sup>	Cd <sup>##</sup>	Hg <sup>##</sup>	Pb <sup>##</sup>
		(mg/L)			(mg/L)						
1.	Damodarpally	1.670 (0.621-4.478)	<0.05 (<0.05-0.062)	<0.002	0.098	0.003	0.001	0.001	0.0007	0.00032	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

## Data for the period April, 2020