Table-1 Water Quality of Taladanda Canal with respect to Criteria parameters during 2014 (February-December)

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)	DO	BOD	TC	FC			
1.	Jobra*	10	7.9 (7.3 – 8.3)	7.3 (6.1 – 8.3)	1.3 (0.8 – 2.4)	40620 (1400 – 160000)	30529 (790 – 1600000)	0	0	9 (90)	10 (100)	Does not conform to Class B,C	TC,FC	Human activities
2.	Ranihat*	10	7.7 (7.3 – 8.3)	4.9 (0.3 – 8.4)	7.5 (0.6 – 23.3)	160000 (160000 – >160000)	146400 (92000 – 160000)	3 (30)	5 (50)	10 (100)	10 (100)	Does not conform to Class B & C	DO, BOD, TC,FC	Human activities and waste water of Cuttack town
3.	Chhatrabazar*	10	7.7 (7.3 – 8.2)	4.9 (0 – 7.7)	7.6 (0.7 – 23.0)	128889 (54000 – >160000)	111667 (24000 – >160000)	5 (50)	5 (50)	10 (100)	10 (100)			
4.	Nuabazar*	10	7.6 (7.0 – 8.1)	5.6 (0.8 – 14.3)	8.7 (0.8 – 30.9)	139600 (92000 – 160000)	118400 (24000 – 160000)	4 (40)	5 (50)	10 (100)	10 (100)			
5.	Biribati*	10	7.7 (7.0 – 8.4)	4.5 (0 – 9.7)	6.3 (0.7 – 19.5)	104756 (7900 – 160000)	80944 (2200 – 160000)	3 (30)	5 (50)	10 (100)	10 (100)			
6.	Atharabanki**	11	7.4 (7.0 – 7.9)	3.8 (0.1 – 6.8)	4.4 (0.7 – 17.6)	107745 (9200 – 160000)	93745 (2200 – 160000)	6 (60)	7 (64)	9 (90)	9 (90)			Human activities
***Class 'C'			6.5-8.5	4 and above	3 or less	5000 or less		Drinking water source with conventional treatment followed by disinfection						
***Class 'B'			6.5-8.5	5 and above	3 or less	500 or less		Outdoor bathing						
Water quality criteria for bathing water			6.5-8.5	5 and above	3 or less		2500 (Maximum Permissible)	Water use for organised outdoor bathing (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)						

*** Data for the period February- December, 2014 except June, 2014 ** Data for the period February- December, 2014 *** Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

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)

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Sl. No	Sampling Location	No. of Obs.	Annual average value (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	EC (micro Siemens /cm)	SAR	B (mg/l)	EC	SAR	B			
1.	Jobra*	10	7.9 (7.3 – 8.3)	202 (145 - 258)	0.38 (0.24 - 0.59)	0.027 (0.003 - 0.057)	0	0	0	Conform to Class E		
2.	Ranihat*	10	7.7 (7.3 – 8.3)	276 (132- 442)	0.63 (0.20 - 1.12)	0.044 (0.003 - 0.086)	0	0	0			
3.	Chhatrabazar*	10	7.7 (7.3 – 8.2)	306 (148 – 570)	0.70 (0.23 -2.12)	0.037 (0.006 - 0.083)	0	0	0			
4.	Nuabazar*	10	7.6 (7.0 – 8.1)	328 (146 – 582)	0.79 (0.18 - 1.59)	0.073 (0.012 - 0.247)	0	0	0			
5.	Biribati*	10	7.7 (7.0 – 8.4)	320 (152 – 584)	0.71 (0.22 - 1.60)	0.082 (0.028 - 0.186)	0	0	0			
6.	Atharabanki**	11	7.4 (7.0 – 7.9)	672 (162 – 2142)	2.59 (0.23 - 9.09)	0.134 (0.038 - 0.298)	0	0	0			
***** Class 'E'**			**6.5-8.5**	**2250 or less**	**26 or less**	**2 or less**				**Irrigation, Industrial Cooling or controlled waste disposal**		

*** Data for the period February- December, 2014 except June, 2014**

**** Data for the period February- December, 2014**

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

Table-2 Water Quality of Taladanda Canal with respect to other parameters during 2014 (February-December)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents				
		Annual average values (Range of values)										
		TSS	Total alkalinity	COD	NH_4-N	Free NH_3-N	TKN	TDS	TH	Cl	SO_4	F
		(mg/l)		(mg/l)				(mg/l)				
1.	Jobra*	43 (6-256)	76 (44-98)	10.7 (7.2-15.8)	0.179 (0.112-0.392)	0.008 (0.001-0.020)	1.60 (0.84-2.80)	115 (82-150)	75 (44-90)	11.9 (7.8-20.5)	7.9 (2.9-14.8)	0.325 (0.237-0.452)
2.	Ranihat*	50 (12-193)	86 (40-140)	32.7 (7.7-81.4)	3.377 (0.056-11.536)	0.073 (0.001-0.260)	5.94 (0.84-14.00)	155 (78-234)	84 (36-122)	21.8 (6.0-40.1)	11.6 (3.4-21.2)	0.288 (0.215-0.432)
3.	Chhatrabazar*	58 (9-233)	95 (48-160)	34.3 (5.8-99.5)	3.086 (0.112-10.416)	0.056 (0.002-0.130)	7.00 (0.84-17.92)	172 (88-314)	91 (40-132)	25.7 (7.8-86.1)	15.2 (3.7-31.8)	0.317 (0.210-0.472)
4.	Nuabazar*	62 (12-191)	97 (36-172)	34.5 (6.8-98.5)	3.056 (0.056-11.424)	0.071 (0-0.347)	5.96 (0.84-15.96)	181 (86-308)	94 (40-156)	30.5 (5.9-70.7)	15.4 (4.4-30.4)	0.317 (0.208-0.452)
5.	Biribati*	47 (6-205)	99 (44-186)	27.9 (8.8-70.0)	1.165 (0.056-5.040)	0.037 (0-0.280)	3.58 (0.84-8.68)	178 (90-312)	96 (46-178)	26.9 (7.8-66.5)	13.2 (4.9-24.8)	0.323 (0.233-0.459)
6.	Atharabanki**	35 (15-76)	95 (56-136)	29.1 (8.1-75.5)	0.188 (0.112-0.728)	0.003 (0-0.007)	1.32 (0.56-3.08)	430 (97-1552)	141 (60-450)	161.6 (7.8-782.7)	28.0 (5.5-80.8)	0.581 (0.288-1.210)
***Class 'C'		-	-	-	-	-	-	-	-	600	400	1.5
***Class 'E'								2100	-	600	1000	-

*** Data for the period February- December, 2014 except June, 2014** **** Data for the period February- December, 2014**

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

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

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Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual average values (Range of values)										
		NO_3^-	PO_4^{3-}-P	Cr(VI)	T. Cr	Fe	Ni#	Cu#	Zn#	Cd#	Hg	Pb#
		(mg/l)		(mg/l)								
1.	Jobra*	3.104 (0.390-9.030)	0.069 (0.004-0.225)	0.017 (0.002-0.031)	0.046 (0.011-0.195)	1.270 (0.030-8.899)	0.012 (0.009-0.015)	0.003 (0.003-0.004)	0.003 (0.002-0.005)	0.0008 (0.0007-0.0010)	0.0002 (<0.00006 -0.0015)	0.002 (0.001-0.003)
2.	Ranihat*	15.540 (1.391-40.920)	0.504 (0.022-1.492)	0.019 (0.008-0.033)	0.042 (0.017-0.077)	1.660 (0.051-9.435)	0.019 (0.018-0.019)	0.003 (0.001-0.005)	0.007 (0.002-0.012)	0.0012(0.0012-0.0013)	0.00018 (<0.00006 -0.00051)	0.017 (0.014-0.020)
3.	Chhatrabazar*	14.310 (1.634-42.258)	0.460 (0.018-1.432)	0.020 (0.005-0.041)	0.044 (0.006-0.100)	2.533 (0.020-9.588)	0.013 (0.009-0.017)	0.006 (0.005-0.006)	0.017 (0.012-0.022)	0.0011 (0.0009-0.0013)	0.00036 (<0.00006 -0.00108)	0.009 (0.009-0.010)
4.	Nuabazar*	12.558 (0.268-43.110)	0.227 (0.016-1.240)	0.017 (<0.002-0.053)	0.035 (0.003-0.060)	2.622 (0.150-9.971)	0.015 (0.011-0.018)	0.005 (0.001-0.008)	0.015 (0.012-0.018)	0.0010 (0.0009-0.0012)	0.00029 (<0.00006 -0.00076)	0.018 (0.016-0.021)
5.	Biribati*	15.370 (0.217-43.580)	0.370 (0.037-1.690)	0.014 (<0.002-0.038)	0.048 (0.010-0.200)	3.015 (0.352-9.333)	0.013 (0.012-0.014)	0.005 (0.005-0.005)	0.014 (0.012-0.016)	0.0013 (0.0004-0.0022)	0.00051 (0.00006-0.00120)	0.017 (0.015-0.020)
6.	Atharabanki**	4.867 (1.178-16.937)	0.268 (0.018-1.664)	0.013 (<0.002-0.033)	0.035 (0.003-0.058)	1.495 (0.031-8.746)	0.023 (0.022-0.025)	0.020 (0.018-0.022)	0.020 (0.016-0.024)	0.0024 (0.0006-0.0043)	0.00026 (0.00006-0.00051)	0.014 (0.010-0.018)
***Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
***Class 'E'		-	-	-	-	-	-	-	-	-	-	-

*** Data for the period February- December, 2014 except June, 2014 ** Data for the period February- December, 2014**
***** Tolerance limit for Inland Surface water bodies (IS-2296-1982)**
 # Data for the period February and March, 2014

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