

Table – 1 Coastal Water Quality with respect to Criteria parameters during 2014 (February-December)

Sl. No	Sampling Location	No. of Obs.	Annual average value (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	FC			
			pH	DO (mg/l)	BOD (mg/l)	Turbidity, NTU	FC (MPN/100 ml)					
1.	Puri											
(a)	Swargadwara	11	8.1 (7.7 – 8.5)	6.4 (5.4 – 7.2)	1.3 (0.4 – 2.6)	16.3 (1.3 – 51.0)	507 (2 – 2400)	0	4 (36)	Does not confirm to Class-SW-II	FC	Human activities
(b)	Bankimuhan	11	7.9 (7.3 – 8.5)	6.3 (5.8 – 6.9)	1.3 (0.5 – 2.1)	15.6 (2.5 – 55.0)	384 (2 – 1300)	0	4 (36)	Does not confirm to Class-SW-II	FC	Human activities
(c)	Baliapanda	11	8.1 (7.9 – 8.3)	6.3 (5.6 – 7.2)	1.2 (0.3 – 1.9)	19.6 (1.2 – 53.0)	250 (2 – 1300)	0	6 (55)	Does not confirm to Class-SW-II	FC	Human activities
2.	Gopalpur	11	8.1 (7.6 – 8.6)	5.9 (4.7 – 6.5)	1.9 (1.0 – 3.5)	13.3 (1.7 – 45.0)	21 (2 – 78)	1 (10)	0	Does not confirm to Class-SW-II	BOD	Human activities
3.	Paradeep	11	8.1 (7.7 – 8.4)	6.3 (5.2 – 7.5)	1.1 (0.4 – 2.3)	18.1 (2.9 – 55.0)	33 (2 – 130)	0	1 (9)	Does not confirm to Class-SW-II	FC	Human activities
Water quality criteria for Class SW-II Waters (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)			6.5-8.5	4.0 or more	3.0 or less	30 or less	100 or less			For Bathing, Contact Water Sports and Commercial Fishing		

Contd..

Sl. No	Sampling Location	No. of Obs.	Annual average value (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	O&G	FC			
			pH	DO (mg/l)	BOD (mg/l)	O&G, mg/l	FC (MPN/100 ml)						
1.	Gopalpur	11	8.1 (7.6 – 8.6)	5.9 (4.7 – 6.5)	1.9 (1.0 – 3.5)	0.2 (0.1-0.6)	21 (2 – 78)	0	0	0	SW-IV		
2.	Paradeep	11	8.1 (7.7 – 8.4)	6.3 (5.2 - 7.5)	1.1 (0.4 – 2.3)	0.6 (0.5-0.8)	33 (2 – 130)	0	0	1 (9)	Does not confirm to Class-SW-IV	FC	Human activities
Water quality criteria for Class SW-IV Waters (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)			6.5-9.0	3.0 or more	5.0 mg/l or less	10 or less	500 or less				For Harbour Waters		

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

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	TC	EC	SAR	B	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(MPN/100 ml)	(µS/cm)	(mg/l)						
1.	Puri															
(a)	Swargadwara	162 (8-299)	114 (88-134)	33.3 (12.9-48.3)	0.137 (0.056-0.448)	0.009 (0.004-0.027)	1.09 (0.56-2.24)	1003 (20-3500)	46485 (28120-58620)	89.3 (58.1-122.9)	2.030 (0.446-4.399)	39184 (22050-51100)	5182 (3300-6700)	21712 (12172-27866)	2072 (1188-3240)	0.729 (0.509-0.930)
(b)	Bankimuhan	157 (12-286)	122 (88-224)	31.1 (10.1-45.0)	0.159 (0.056-0.448)	0.009 (0.001-0.036)	1.21 (0.56-2.24)	1023 (45-2400)	47185 (30190-59700)	89.6 (57.9-131.7)	2.064 (0.388-4.370)	39497 (23630-51500)	5227 (3330-7600)	21337 (10780-27887)	1942 (1101-3014)	0.662 (0.260-0.887)
(c)	Baliapanda	163 (10-275)	104 (92-118)0	28.6 (8.1-42.1)	0.127 (0.056-0.392)	0.009 (0.004-0.025)	1.044 (0.560-1.960)	1076 (78-3500)	46154 (29120-61270)	90.0 (59.2-135.4)	2.137 (0.359-4.210)	38709 (22560-51300)	5027 (3050-6450)	21091 (12800-28377)	1922 (1054-3087)	0.720 (0.542-0.920)
2.	Gopalpur	147 (10-258)	107 (96-116)	30.8 (11.0-51.1)	0.117 (0.056-0.224)	0.008 (0.001-0.015)	1.07 (0.28-1.68)	139 (20-330)	47057 (32800-54410)	89.6 (62.2-127.2)	1.857 (0.401-3.472)	39369 (27250-47508)	5323 (3400-7100)	21612 (14700-26730)	2076 (1318-3103)	0.807 (0.515-1.000)
3.	Paradeep	183 (14-420)	106 (64-122)	26.7 (8.1-48.3)	0.092 (0.056-0.168)	0.007 (0.003-0.014)	1.02 (0.28-1.68)	149 (20-490)	42816 (30320-58340)	80.9 (62.4-105.0)	2.686 (0.982-5.118)	35782 (24120-51000)	5066 (3220-6400)	19412 (12740-27398)	1957 (1194-2629)	0.789 (0.572-1.020)

Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual average values (Range of values)										
		NO ₃ ⁻ (mg/l)	PO ₄ ³⁻ -P (mg/l)	Cr(VI)	T. Cr	Fe	Ni [#]	Cu [#]	Zn [#]	Cd [#]	Hg	Pb [#]
1.	Puri											
(a)	Swargadwara	4.729 (0.452-10.961)	0.117 (0.004-0.325)	0.012 (BDL-0.030)	0.037 (0.012-0.070)	0.570 (0.010-3.020)	0.013 (0.012-0.014)	0.005 (0.004-0.006)	0.072 (0.058-0.085)	0.0022 (0.0021-0.0023)	0.00009 (<0.00006-0.00025)	0.013 (0.011-0.014)
(b)	Bankimuhan	4.354 (3.268-6.244)	0.055 (BDL-0.264)	0.010 (BDL-0.033)	0.056 (0.005-0.150)	0.583 (0.026-2.500)	0.013 (0.012-0.014)	0.005 (0.004-0.006)	0.056 (0.056-0.056)	0.0023 (0.0022-0.0024)	0.00018 (<0.00006-0.00038)	0.012 (0.011-0.012)
(c)	Baliapanda	4.193 (1.931-6.371)	0.090 (BDL-0.263)	0.013 (0.003-0.033)	0.048 (0.012-0.143)	0.502 (BDL-2.120)	0.013 (0.012-0.013)	0.005 (0.004-0.006)	0.058 (0.058-0.058)	0.0021 (0.0020-0.0022)	0.00019 (<0.00006-0.00057)	0.012 (0.012-0.012)
2.	Gopalpur	3.582 (0.540-5.677)	0.178 (0.004-1.186)	0.012 (BDL-0.028)	0.042 (0.010-0.124)	1.440 (0.117-9.970)	0.014 (0.011-0.017)	0.005 (0.004-0.005)	0.067 (0.056-0.078)	0.0012 (0.0011-0.0014)	0.0001 (<0.00006-0.00032)	0.006 (0.005-0.007)
3.	Paradeep	3.700 (1.847-7.998)	0.183 (0.005-0.607)	0.0009 (0.001-0.017)	0.046 (0.007-0.118)	0.625 (BDL-2.210)	0.014 (0.011-0.016)	0.011 (0.010-0.011)	0.057 (0.046-0.067)	0.0044 (0.0042-0.0047)	0.00020 (<0.00006-0.00057)	0.008 (0.007-0.009)

BDL = Below Detection Limit

Data for the period February and March, 2014