

Coastal Water Quality with respect to Criteria parameters during 2019 (January-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 | 12 | 7.9 (7.3-8.2) | 6.8 (6.0-8.1) | 0.8 (0.2-1.6) | 14.9 (1.4-59.0) | 54 (1.8-350) | 0 | 2 (17) | SW-II | | |
| (b) | Bankimuhan | 12 | 7.7 (6.5-8.3) | 6.5 (5.5-7.5) | 1.4 (0.3-2.3) | 12 (2-29) | 3167 (1.8-16000) | 0 | 6 (50) | Does not confirm to Class-SW-II | FC | Human activities |
| (c) | Baliapanda | 12 | 7.9 (6.7-8.2) | 6.5 (5.8-7.6) | 0.9 (0.3-1.6) | 10 (2-55) | 174 (1.8-1600) | 0 | 2 (17) | SW-II | | |
| 2. | Gopalpur | 12 | 8.0 (7.5-8.2) | 7.3 (6.5-8.8) | 0.9 (0.2-2.5) | 8.5 (1.0-23.0) | 41 (1.8-330) | 0 | 2 (17) | SW-II | | |
| 3. | Paradeep | 12 | 7.9 (7.1-8.2) | 6.9 (5.8-8.4) | 0.9 (0.3-1.4) | 8.9 (1.2-22.0) | 1.8 (1.8-1.8) | 0 | 0 | SW-II | | |
| 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 | | |

* The average value not exceeding 200/100 ml in 20 percent of samples in the year and in 3 consecutive samples in monsoon months.

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| 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 | 12 | 8.0 (7.5-8.2) | 7.3 (6.5-8.8) | 0.9 (0.2-2.5) | 1.5 (1.2-2.8) | 41 (1.8-330) | 0 | 0 | 0 | SW-IV | | |
| 2. | Paradeep | 12 | 7.9 (7.1-8.2) | 6.9 (5.8-8.4) | 0.9 (0.3-1.4) | 0.9 (0.3-1.5) | 1.8 (1.8-1.8) | 0 | 0 | 0 | SW-IV | | |
| 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 | | |

Coastal Water Quality with respect to other parameters during 2019 (January- 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 | 143 (9-254) | 125 (88-196) | 43.7 (29.3-58.0) | 0.593 (0.056-1.120) | 0.031 (0.002-0.090) | 2.54 (0.56-5.88) | 1432 (1.8-16000) | 40957 (31390-49630) | 61.36 (52.39-77.79) | 3.174 (2.057-4.138) | 32817 (26172-40100) | 4900 (3100-6200) | 17316 (13461-20738) | 2380.6 (1803.4-3181.0) | 0.615 (0.366-0.767) |
| (b) | Bankimuhan | 132 (12-242) | 133 (104-180) | 47.2 (38.6-56.6) | 0.72 (0.28-1.40) | 0.034 (0-0.137) | 2.43 (1.12-5.60) | 4554 (45-16000) | 40353 (28680-47860) | 62.92 (51.04-80.56) | 2.81 (1.61-4.23) | 32235 (23520-40500) | 4708 (3100-6160) | 17207 (12496-21153) | 2060 (1294-3103) | 0.542 (0.319-0.715) |
| (c) | Baliapanda | 166 (11-414) | 128 (88-196) | 44.3 (38.1-58.0) | 0.83 (0.17-1.96) | 0.019 (0.001-0.067) | 2.64 (0.56-6.16) | 494 (1.8-3500) | 41522 (29420-49740) | 64.05 (51.58-82.16) | 3.15 (1.97-3.95) | 33670 (24340-40500) | 4833 (3050-6120) | 17705 (13461-23076) | 2278 (1269-3138) | 0.611 (0.351-0.798) |
| 2. | Gopalpur | 166 (18-387) | 127 (108-168) | 45.7 (34.5-57.2) | 0.756 (0.112-1.960) | 0.048 (0.004-0.157) | 2.82 (1.40-6.72) | 98 (1.8-790) | 40668 (32470-48264) | 59.80 (51.86-71.96) | 2.706 (0.925-3.390) | 32425 (25992-35780) | 5107 (2700-6080) | 17334 (13942-20672) | 2176.6 (1069.6-2885.5) | 0.641 (0.362-0.809) |
| 3. | Paradeep | 203 (23-328) | 122 (100-184) | 47.7 (28.8-58.3) | 0.700 (0.280-1.120) | 0.033 (0.003-0.073) | 2.17 (0.84-4.76) | 17 (1.8-140) | 41011 (32160-48750) | 59.30 (52.82-71.67) | 2.599 (0.052-4.018) | 32387 (25492-38640) | 5066 (2650-6200) | 17286 (13942-20191) | 2158.8 (1268.6-2804.8) | 0.714 (0.506-0.833) |

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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. | Puri | | | | | | | | | | | |
| (a) | Swargadwara | 0.936 (0.529-1.514) | 0.067 (0.011-0.138) | <0.002 | 0.013 | 0.282 | 0.010 | 0.007 | 0.018 | 0.0011 | -- | <0.001 |
| (b) | Bankimuhan | 5.217 (0.565-20.819) | 0.086 (0.002-0.188) | <0.002 | 0.015 | 0.260 | 0.007 | 0.008 | 0.013 | 0.0013 | -- | <0.001 |
| (c) | Baliapanda | 1.013 (0.464-2.882) | 0.092 (0.006-0.276) | <0.002 | 0.015 | 0.320 | 0.011 | 0.007 | 0.014 | 0.0016 | -- | <0.001 |
| 2. | Gopalpur | 1.834 (0.802-4.408) | 0.051 (0.002-0.199) | <0.002 | 0.024 | 0.351 | 0.009 | 0.011 | 0.015 | 0.0012 | -- | <0.001 |
| 3. | Paradeep | 1.441 (0.565-4.093) | 0.314 (0.013-2.755) | <0.002 | 0.018 | 0.384 | 0.005 | 0.005 | 0.012 | 0.0015 | -- | <0.001 |

Data for the period April, 2019