

MONITORING OF ENVIRONMENTAL PLAN FOR JN PORT ENVIRONMENTAL MONITORING REPORT- EXECUTIVE SUMMARY

1. Ambient Air Monitoring:

Monthly average values of Air quality status at various stations in JNPT Area during August, 2018.

Parameters			Industrial (Port Operation) area					Residential Area	Eco sensitive area
			Station name						
	Units	NAAQS	POC	IMC	NG	APM	BMCT	RC	EC
PM ₁₀	($\mu\text{g}/\text{m}^3$)	100	79.59	81.99	88.23	83.89	89.27	76.30	45.99
PM _{2.5}	($\mu\text{g}/\text{m}^3$)	60	52.03	51.99	52.26	50.75	50.21	50.42	34.38
SO _x	($\mu\text{g}/\text{m}^3$)	80	34.26	35.27	35.93	35.28	32.69	28.50	23.18
NO _x	($\mu\text{g}/\text{m}^3$)	80	39.67	41.42	41.65	41.12	39.68	31.54	27.47
O ₃	($\mu\text{g}/\text{m}^3$)	100	12.50	12.90	15.44	13.60	16.32	15.89	8.25
C ₆ H ₆	($\mu\text{g}/\text{m}^3$)	5	1.96	1.81	1.58	1.95	1.83	1.67	<1.0
B(a)P	(ng/m ³)	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CO	($\mu\text{g}/\text{m}^3$)	4	2.36	2.12	1.95	1.86	1.81	1.72	<1.0
CO ₂	(ppm)		389.80	366.20	367.00	377.20	394.00	357.40	300.50

Conclusion:

- 24-hr average concentration of PM₁₀, PM_{2.5}, SO₂ and NO₂ were measured at seven locations viz. POC, IMC, North Gate, APM terminals, BMCT, JNP residential township and Elephanta using high volume samplers (APM 460 NL and APM 550 MFC).
- From the results obtained for the month of August, 2018, it is noticed that overall ambient air quality of the JN Port area is within CPCB permissible limits for all parameters. In this month rain also helps by making dust particles stick to the ground. The port is also taking number of precautionary measures such as time to time cleaning of paved and unpaved roads, repairing of road, use of tarpaulin sheets to cover dumpers and tree plantation.
- In this month prominent wind direction (blowing from) was South South East (SSE) in the port area. Average values of wind speed, temperature, relative humidity, solar radiation recorded were 3.47m/s, 27.23°C, 87.35%, 0.105CCM respectively. Total rainfall in this month is 162.5 mm.

Corrective Action Suggested:

- Use water sprinklers to avoid dispersion of dust at construction site and on container movement road.
- Green mesh cloth should be used to minimize dust generated during renovation work at JNP Township. PUC documents must be strictly checked of all vehicles entering into the port region and promote for routine maintenance of vehicle to lessen emission.
- Mechanical cleaning of road need be initiated at port premises to reduce PM₁₀.
- Avoid excessive idling of automobiles and ships.
- Plantation of trees adjacent to the construction site/road for wind barriers.
- Stringent rules must be follow according to MARPOL ANNEX-VI.
- Time to time collection of wreckage and frequent cleaning should be done from paved and unpaved road
- Avoid excessive use of electrical appliances, when it is not in use.
- Dumper carrying construction material and earth filing material must be covered with tarpaulin sheet to avoid spreading of dust particle in the air.

2.0 Marine Water Quality

Observed Concentration Ranges of Marine Water for Various Parameters for JNP Area during Tidal Cycle (For August, 2018)

Sl. No.	Parameter	Unit	Observed Range (Harbour)	Prescribed Limits
1	Temperature	°C	22.9-25.9	-
2	pH	-	6.8-7.9	6.5 - 9.0
3	Salinity	ppt	27.4-32.4	-
4	Turbidity	NTU	21.4-36.7	-
5	TDS	mg/L	20142-24586	-
6	TSS	mg/L	98-172	-
7	TS	mg/L	20259-24708	-
8	DO	mg/L	6.6-6.98	3.0 mg/L(min.) or 40% of saturation value
9	COD	mg/L	55-89	-
10	BOD	mg/L	<2.0	5 (max.)
11	NH ₃ -N	mg/L	<1.0	-
12	Phenol	mg/L	<0.001	-
13	Oil & Grease	mg/L	<4.0	10 (max.)

14	Total Plate Count	CFU/ml	65-120	-
15	Fecal Coliforms	MPN/100ml	44-107	500 (max.)

Conclusion:

From the above results it can be concluded that, the Port's working does not affect the Quality of the Marine water. The overall Marine Water Quality of the Harbour is in good category.

3.0 Marine Ecology (Flora and Fauna):

Sr. No.	Parameter	Observed Range	Criteria
1	Net Primary Productivity	75-87.5 mg C/m ³	<1500 mg C/m ³ /day at surface
2	Chlorophyll a	0.939-1.347 mg/m ³	<4 mg/m ³ (Oligotrophic class), 4-10 mg/m ³ (Mesotrophic class), >10 (Eutrophic class)
3	Phosphate	39-78 µg/L	0.1-90 µg/L
4	Nitrate	2468-3015 µg/L	1.0-500 µg/L
5	Nitrite	<10 µg/L	<125 µg/L
6	Particulate Organic Carbon	210-320 mg/m ³	10-100 mg/m ³
7	Silicate	1122-1378 µg/L	10-5000 µg/L

The results obtained from the study for the month of August 2018. The values for Nitrates and Particulate Organic Carbon (POC) exceeds the prescribed standards which might be usual phenomenon happening due to discharge of untreated sewage and Industrial waste in to the sea water by the nearby Municipal Corporation, MIDCs and nearby villages etc. On the other hand, Net Primary Productivity and Chlorophyll-a were well within prescribe standards for ecological parameters for Arabian Sea.

Phosphate, Nitrite and Silicate are also well within prescribing standards for ecological parameters for Arabian Sea. However, considering the activities in JNP Harbour, it is seen that the marine ecosystem is not adversely affected by Port activities.



Corrective Action Suggested:

Proper care should be taken for treatment of sewage and industrial waste before discharging into the open sea by concerned authorities Municipal Corporation, Municipal Council, MIDCs and nearby villages, etc.

4.0 Drinking Water Quality

The drinking water being supplied to JN Port is safe for drinking purpose. At all drinking water monitoring stations around port area are found to be as per the drinking water specifications given in IS 10500:2012 and also on the basis of analysis parameters.