

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

1.0 Ambient Air Monitoring:

Monthly average values of air quality parameters at various stations in JNPT area during November, 2018

Parameters			Industrial (Port Operation) area					Residential Area	Eco sensitive area	
			Station name							
	Units	NAAQS	POC	IMC	NG	SEZ	APM	BMCT	RC	EC
PM ₁₀	(µg/m ³)	100	183.1	186.8	205.8	142.7	132.2	156.5	106.8	74.6
PM _{2.5}	(µg/m ³)	60	48.6	67.2	58.8	46.9	46.0	44.6	44.8	37.7
SO _x	(µg/m ³)	80	29.3	34.8	30.8	30.1	32.0	31.1	27.2	24.1
NO _x	(µg/m ³)	80	35.3	40.1	35.1	32.3	34.5	33.9	30.6	28.6
O ₃	(µg/m ³)	100	9.3	11.1	10.8	10.6	10.5	10.8	10.2	8.5
C ₆ H ₆	(µg/m ³)	5	1.7	1.5	1.7	1.6	1.5	1.5	1.4	<1.0
B(a)P	(ng/m ³)	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CO	(mg/m ³)	4	1.5	1.6	1.6	1.5	1.5	1.6	1.1	<1.0
CO ₂	(ppm)		321.5	328.9	340.0	376.3	318.8	332.8	308.4	301.5
AQI			155.4	157.9	170.5	128.4	121.5	137.7	104.5	74.6

Conclusion:

- 24-hr average concentration of PM₁₀, PM_{2.5}, SO₂ and NO₂ were measured at eight locations viz. POC, JNP residential township, IMC, South Gate, North Gate, BMCT and APM terminals using high volume samplers (APM 460 NL and APM 550 MFC)
- From the results obtained for the month of November, 2018, it is noticed that overall ambient air quality of the JN Port area is within CPCB limits except PM₁₀ and PM_{2.5}. The port is taking number of precautionary measures like Inter Terminal Tractor Movement Facility, time to time cleaning of paved and unpaved roads, Shore power supply to tugs and port crafts, use of tarpaulin sheets to cover earth filling dumper and tree plantation for particulate matter reduction in air.
- The prominent wind direction (blowing from) was North (N) in the port area and average values of wind speed, temperature, relative humidity, and solar radiation recorded were 9.03m/s, 28.32°C, 61.70%, and 0.09CCM respectively.

Corrective Action Suggested:

- Dumper carrying construction material and earth filling material must be covered with tarpaulin sheet to reduce dispersal of dust in the air.
- Regular cleaning and time to time collection of wreckage should be done from paved and unpaved road as well construction sites to decrease PM₁₀ concentration.
- Road resurfacing should be done to avoid spreading of dust particle in the air.
- Water sprinklers should be used on heavy traffic road to settle the dust particle.
- Practice should be initiated for using mask as preventative measure, to avoid inhalation of dust particle.
- Each and every vehicles entering into the port region must be strictly checked PUC documents and encourage for regular maintenance of vehicle to minimize emission.
- At JNP Township Green mesh cloth should be used to minimize dust generated during renovation work.
- Avoid excessive idling of automobiles and ships.
- Evacuation of tractor trailers traffic as early as possible.

2.0 Marine Water Quality

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

Sl. No.	Parameter	Unit	Observed Range (Harbour)	Prescribed Limits
1	Temperature	°C	23.4-25.4	-
2	pH	-	7.75-8.17	6.5 - 9.0
3	Salinity	ppt	20.9-29.81	-
4	Turbidity	NTU	6.46-36.7	-
5	TDS	mg/L	28473-39520	-
6	TSS	mg/L	63-131	-
7	TS	mg/L	14288-19795	-
8	DO	mg/L	4.7-7.1	3.0 mg/L(min.) or 40% of saturation value
9	COD	mg/L	48-100	-
10	BOD	mg/L	<2.0	5 (max.)
11	NH ₃ -N	mg/L	<1	-
12	Phenol	mg/L	<0.001	-

13	Oil & Grease	mg/L	<4.0	10 (max.)
14	Total Plate Count	CFU/ml	44-122	-
15	Fecal Coliforms	MPN/100ml	44-110	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	125-175 mg C/m ³	<1500 mg C/m ³ /day at surface
2	Chlorophyll a	0.247-0.963 mg/m ³	<4 mg/m ³ (Oligotrophic class), 4-10 mg/m ³ (Mesotrophic class), >10 (Eutrophic class)
3	Phosphate	55-88 µg/L	0.1-90 µg/L
4	Nitrate	199-390 µg/L	1.0-500 µg/L
5	Nitrite	<10 µg/L	<125 µg/L
6	Particulate Organic Carbon	123-256 mg/m ³	10-100 mg/m ³
7	Silicate	1354-1982 µg/L	10-5000 µg/L

The results obtained from the study for the month of November 2018. Net Primary Productivity and Chlorophyll-a were well within prescribe standards for ecological parameters for Arabian Sea. Phosphate, Nitrates, Nitrite and Silicate are also well within prescribing standards for ecological parameters for Arabian Sea. The values for Particulate Organic Carbon (POC) exceeds the prescribed standards high due to detritus material originating from mangrove swamps, detritus plankton, benthos, fish etc. as well as untreated sewage discharges from metropolitans and villages around the area. 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 nearby concerned Municipal Corporations, Municipal Councils, MIDCs and village's 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.