

MONITORING OF ENVIRONMENTAL PLAN FOR JN PORT ENVIRONMENTAL MONITORING REPORT-APRIL 2019

EXECUTIVE SUMMARY

1.0 Ambient Air Monitoring:

Monthly average values of air quality parameters at various stations in JNPT area during April, 2019.

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	96.3	166.7	174.1	151.9	144.6	140.9	84.1	65.0
PM _{2.5}	µg/m ³	60	54.5	57.8	56.3	52.7	46.0	51.6	45.7	42.4
SO _x	µg/m ³	80	34.2	31.1	33.1	33.0	28.8	29.6	29.2	22.7
NO _x	µg/m ³	80	37.1	39.5	40.5	37.3	36.8	32.7	34.5	27.1
O ₃	µg/m ³	100	8.6	9.8	10.9	10.6	10.0	11.4	11.0	9.0
C ₆ H ₆	µg/m ³	5	1.6	1.7	1.9	1.5	1.4	1.5	1.3	<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	1.7	1.8	1.9	1.9	1.7	1.5	1.3	<1.0
CO ₂	ppm		334	356	347	350	359	359	323	304
AQI			118	139	96.3	144.5	149.4	134.6	129.8	127.2

Conclusion:

- 24-hr average concentration of PM₁₀, PM_{2.5}, SO₂ and NO₂ and other parameters were measured at eight locations viz. POC, IMC, North Gate, SEZ, APM terminals, BMCT, JNP residential township and EC area using high volume samplers (APM 460 NL and APM 550 MFC).
- During April 2019 overall ambient air quality of the JN Port area is within CPCB permissible limits. It is noticed that concentration of PM₁₀ above permissible limits at all location except POC, RC and EC. PM_{2.5} values were found in normal range at all location. To overcome particulate matter problem, the port is using number of precautionary measures, such as maintained a wide expanse of green zone, initiated inter-terminal transfer (ITT) of tractor-trailers, switched from diesel to electrically powered e-RTGCs, the use of LED lights at JNP area helps in lower energy consumption,

use of water sprinklers on project site, time to time cleaning of paved and unpaved roads, promote use of tarpaulin sheets to cover dumpers etc.

- The prominent wind direction (blowing from) was West North West (WNW) in the port area. Average values of wind speed, temperature, relative humidity, and solar radiation recorded were 8.32m/s, 27.56°C, 66.91% and 0.13CCM respectively.

Corrective Action Suggested:

- Use of water sprinklers should be made compulsory at the heavy traffic region and project operation site.
- Due to summer season dust dispersion in road increases, so 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.
- Mandatory practice initiated for strict inspection of PUC document and maintenance of vehicle entering into the port region.
- Dumper carrying construction material and earth filling material must be covered with tarpaulin sheet to reduce dispersal of dust in the air.
- Avoid excessive idling of automobiles and ships.
- Water pit at entry and exit points of construction site for washing of truck tyres.
- During renovation work at JNP Township green mesh cloth should be used to minimize dust generated.

2.0 Marine Water Quality

Observed concentration ranges of marine water for various parameters for JNP area during tidal cycle (For April, 2019).

Sr. No.	Parameter	Observed Range	Unit	Prescribed Limits
1	Temperature	°C	26.9-30.3	-
2	pH	-	8.01-8.18	6.5 - 9.0
3	Salinity	ppt	32.2-33.4	-
4	Turbidity	NTU	9.78-28.2	-
5	TDS	mg/L	26908-46019	-
6	TSS	mg/L	112-227	-
7	TS	mg/L	27064-46184	-

8	DO	mg/L	5.29-6.76	3.0 mg/L(min.) or 40% of saturation value
9	COD	mg/L	32-209	-
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	59-109	-
15	Fecal Coliforms	MPN/100ml	66-102	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	126.3-157.3 mg C/m ³	<1500 mg C/m ³ /day at surface
2	Chlorophyll a	0.329-0.896 mg/m ³	<4 mg/m ³ (Oligotrophic class), 4-10 mg/m ³ (Mesotrophic class), >10 (Eutrophic class)
3	Phosphate	8.12-90.59 µg/L	0.1-90 µg/L
4	Nitrate	49.17-117.58 µg/L	1.0-500 µg/L
5	Nitrite	<10 µg/L	<125 µg/L
6	Particulate Organic Carbon	208-245 mg/m ³	10-100 mg/m ³
7	Silicate	129-170 µg/L	10-5000 µg/L

The results obtained from the study for the month of April 2019. Phosphate, Nitrates, Nitrite and Silicate are also well within prescribing standards for ecological parameters for Arabian Sea. Net Primary Productivity and Chlorophyll-a were well within prescribe 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 nearby municipal corporation,



industrial estates 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 cities, industrial estates and 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 parameter