

To

**Additional Principal Chief Conservator of Forests (C),**  
Ministry of Environment, Forest & Climate Change,  
Regional Office (South Eastern Zone),  
1<sup>st</sup> and 11<sup>nd</sup> Floor, Handloom Export Promotion Council,  
34, Cathedral Garden Road, Nungambakkam,  
Chennai – 600 034. Email : [eccompliance-tn@gov.in](mailto:eccompliance-tn@gov.in)

Dear Sir,

**Sub:** Half yearly Compliance report of Environment and CRZ Clearance for the development of proposed Port at Kattupalli, Tiruvallur District of Tamil Nadu by M/s Marine Infrastructure Developer Pvt. Limited for the period of April 2023 to September 2023 – Reg.

**Ref:** 1. CRZ & Environmental Clearance for the development of proposed Port at Kattupalli, Tiruvallur District of Tamil Nadu by M/s Marine Infrastructure Developer Pvt. Limited – bifurcation of EC&CRZ Clearance vide F. No 10-130/2007 – IA.III dtd. 9th February 2018.  
2. Environment Clearance for Change in Product Mix vide EC Identification No: EC22A033TN110498 & File No: 10-130/2007-IA.III dated: 10/10/2022

With reference to the captioned subject and cited reference above; we herewith submitting the **Half yearly compliance report** for the compliance period **April 2023 to September 2023** to the conditions stipulated in the cited reference for your kind information.

Submitted for your kind information and records.

Thank you,

for, **M/s. Marine Infrastructure Developer Private Limited**



**R. Premnath**  
**Head - Environment & Sustainability**



**Encl:** As above

**Copy to:**

1. The Director (Monitoring –IA-III Division), Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003 (Email : [monitoring-ec@nic.in](mailto:monitoring-ec@nic.in) )
2. Zonal Office, Central Pollution Control Board, A-Block, Nisarga Bhavan, 1st and 2nd Floors, 7th D Cross, Thimmaiah Road, Shivanagar, Bengaluru, Karnataka 5600879 (Email : [ssuresh.cpcb@nic.in](mailto:ssuresh.cpcb@nic.in) )
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai - 600 032 (Email : [tnpcbmembersecretary@gmail.com](mailto:tnpcbmembersecretary@gmail.com))
4. The District Environmental Engineer, Tamil Nadu Pollution Control Board, No.88 A, SIPCOT Industrial Complex, Gummidipoondi, Tiruvallur District -601 201. (Email : [deegummidipoondi@gmail.com](mailto:deegummidipoondi@gmail.com))
5. Member Secretary TNCZMA & Director – Dept of Environment, No.1, Jeenis Road, Panagal Building, Ground Floor, Saidapet, Chennai -600 015. (Email : [tndoe@nic.in](mailto:tndoe@nic.in))

**adani**

Ports and  
Logistics

**MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED (MIDPL)  
KATTUPALLI PORT, ADANI PORTS AND SPECIAL ECONOMIC ZONE  
TIRUVALLUR DISTRICT, CHENNAI- 600 120  
TAMIL NADU**



**CRZ & Environmental Clearance**  
**[File no: 10-130/2007- IA.III dated: 09/02/2018]**  
**Compliance Report**  
**for the Period**  
**APRIL 2023 TO SEPTEMBER 2023**

**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

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**CRZ & ENVIRONMENTAL CLEARANCE  
COMPLIANCE REPORT  
(April 2023 to September 2023)**

**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

**Half yearly Compliance report on conditions stipulated in CRZ & Environmental Clearance  
[File no: 10-130/2007- IA.III dated: 09/02/2018]**

<b>S. No.</b>	<b>Conditions</b>	<b>Compliance Status</b>
<b>Specific Conditions</b>		
(i)	The proponent shall comply all the conditions stipulated in the letter R.C.No. P1/2004/2008, dated 21.10.2008 of the Department of Environment, Chennai.	<b>Complied.</b>  Compliance to letter R.C.No. P1/2004/2008, dated 21.10.2008, is enclosed as <b>Annexure -I</b> .
(ii)	The proponent shall comply all the commitment made vide his letter No. D/Shipyard/00/07 dated 20.03.2009.	<b>Complied</b>  This EC is just a bifurcation of original EC of LTSB in name of MIDPL & LTSB.  All applicable commitments, w.r.t letter No. D/Shipyard/00/07 dated 20.03.2009 like provision of fire station, independent port connectivity, and no reclamation on areas outside port, non-usage of Tri Butyl Tin [TBT] and treatment of wastewater in STP and recycling, disposal of hazardous waste to authorised recyclers are being complied.
(iii)	Provision shall be made for the housing of Construction labour within the site with all necessary infrastructure and facilities such as fuel or cooking, mobile toilets, mobile STP, safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	<b>Complied.</b>  All the construction works are completed, and the port is in operation phase.
(iv)	There shall be no withdrawal of groundwater in Coastal Regulation Zone area, for this project. In any case any ground water is proposed to be withdrawn from outside the CRZ area, specific prior permission from the concerned State /Central	<b>Complied.</b>  No withdrawal of groundwater from CRZ Area. Presently Port is procuring Desalinated water from M/s. Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB), Chennai. In case of any requirement of Groundwater withdrawal outside the CRZ Area, prior


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**Half yearly Compliance report on conditions stipulated in CRZ & Environmental Clearance [File no: 10-130/2007- IA.III dated: 09/02/2018]**

S. No.	Conditions	Compliance Status
	Groundwater board shall be obtained in this regard.	permission will be obtained from State/Central Groundwater Board.
(v)	No dumping of dredging materials in the sea shall be undertaken. In case of sea dumping required, an integrated Modelling study to be carried out to locate the dump site so that it does not cause any problem to Ennore port.	<b>Complied.</b>  Annual maintenance dredging of around 0.16 Mcum was carried out during the compliance period April 2023 to September 2023.  Dredge materials were dumped in the spoil ground which has already been identified by LTSB through modelling studies.
(vi)	Shoreline changes due the project shall be monitored continuously nourishment of northern shoreline shall be carried out using the sediments from beach acceleration on the southern shoreline.	<b>Complied.</b>  MIDPL has engaged Institute of Ocean Management, Anna University, Chennai and carried out Shoreline Change study during December 2022. Report is attached as <b>Annexure - II.</b>  Northern shoreline nourishment was carried out as per the CMWSSB request in month of August 2023 and monitored continuously.
(vii)	Suitable Screens shall be installed between the construction area and the intakes so that operations of the intakes are not affected by the construction activity.	<b>Complied.</b>  Works are completed, and the port is in operation phase. No impact envisaged.

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(viii)	At least a distance of 100 meters shall be provided between intake of Chennai Water Desalination Ltd. (CWDL) and north edge of the northern breakwater as agreed in the meeting between the proponent and CWDL	<p><b>Complied.</b></p> <p>Distance maintained as agreed.</p> 
(ix)	Independent port connectivity shall be developed.	<p><b>Complied.</b></p> <p>An independent port connectivity has been developed. Kattupalli Port is having a dedicated road connectivity connecting State Highways and National Highways.</p>
(x)	Rehabilitation if any shall be carried out as per law / State Government.	<p><b>Complied.</b></p> <p>Rehabilitation was carried out completely as per law / State Government at the time of project implementation by M/s. LTSB.</p>

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(xi) Fire station shall be located within the project area

**Complied.**

MIDPL is having dedicated fire station inside the port premises with fire tender (1 No) and 15-member fire crew (DCPO – 3 Nos, Firemen – 11 Nos. and Supervisor – 1 No).

Further, the following infrastructures are well established to strengthen the firefighting system

- 309 Nos of Fire Extinguishers (ABC, Foam, CO2) fixed in various locations in the port (with 10% additional stock) and 33 Sand Buckets.
- Fire water pumphouse with an underground storage tank of 12 lakhs Liters capacity with 5 pumps (2 Electrical, 2 Diesel and 1 Jockey Pump).
- Sea water pump house with 3 Nos of vertical pumps, 2 Nos of Jockey pump and 2 Nos of Foam Pumps (1 Electrical and 1 DG pump)
- Fire hydrant points (76 Single Hydrant Points & 26 Double Hydrant Points), 4 Tower Monitors, 3 Water monitors and 20 water cum foam monitors are placed at various strategic locations.

MIDPL is facilitated with a Fire Tender with the following features:

- Water Tank Capacity – 5500 Its
- Foam Tank Capacity – 500 Its
- DCP Extinguishers - 75 kg – 2nos
- CO<sub>2</sub> Extinguishers - 22.5 kg – 4nos
- BA Set - 1no (Oxygen cylinder 2nos)

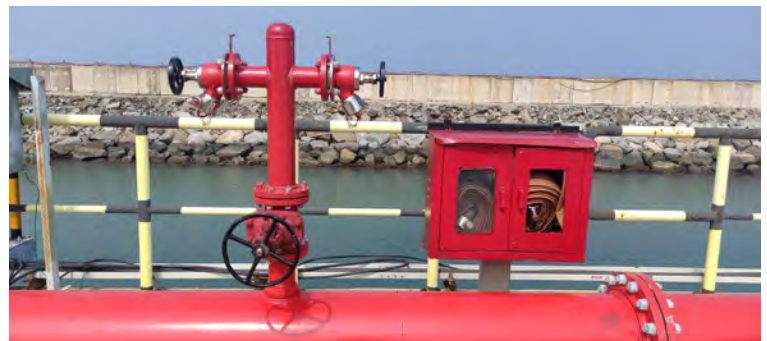
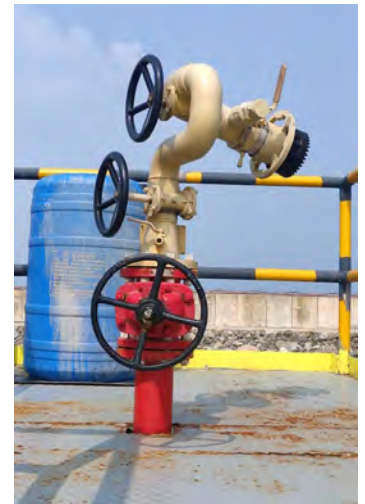




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S. No.	Conditions	Compliance Status															
(xii)	The Hazardous waste generated shall be properly collected and handled as per the provisions of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.	<p><b>Complied.</b></p> <p>Hazardous wastes generated are properly collected and handled inline to Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 as amended. Details of the same are submitted to TNPCB as a part of Hazardous waste annual return (Form 4) on regular basis.</p> <p>Annual Hazardous Waste Return for FY 2022-2023 is attached as <b>Annexure – III.</b></p>															
(xiii)	The wastewater generated from the activity shall be collected, treated and reused properly.	<p><b>Complied.</b></p> <p>MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <p>Average quantity of Sewage water treated in STPs during the compliance period is as furnished below.</p> <table border="1"> <thead> <tr> <th>Location</th> <th>STP/ETP Capacity</th> <th>Avg. Quantity of Sewage Water Treated (Apr'23 to Sep'23)</th> </tr> </thead> <tbody> <tr> <td>Near IWMS</td> <td>STP 30 KLD</td> <td>12.4 KLD</td> </tr> <tr> <td>Near CFS</td> <td>STP 5 KLD</td> <td>1.3 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>STP 10 KLD</td> <td>1.7 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>ETP 50 KLD</td> <td>0.2 KLD</td> </tr> </tbody> </table>	Location	STP/ETP Capacity	Avg. Quantity of Sewage Water Treated (Apr'23 to Sep'23)	Near IWMS	STP 30 KLD	12.4 KLD	Near CFS	STP 5 KLD	1.3 KLD	Near Liquid Terminal	STP 10 KLD	1.7 KLD	Near Liquid Terminal	ETP 50 KLD	0.2 KLD
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(xiv)	Sewage Treatment Facility should be provided in accordance with the CRZ Notification.	<p><b>Complied.</b></p> <p>Sewage Treatment Plants (3 Nos) with total capacity of 45 KLD are provided in accordance with the CRZ notification.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance inside the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">30 KLD STP</span> <span style="border: 1px solid black; padding: 2px; margin-left: 20px;">10 KLD STP</span> <span style="border: 1px solid black; padding: 2px; margin-left: 20px;">5 KLD STP</span> </p> <p>Summary of STP treated water analysis results during compliance period as mentioned below.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>TNPCB Limit</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>-</td> <td>6.71</td> <td>7.79</td> <td>6.5 to 9</td> </tr> <tr> <td>TSS</td> <td>mg/l</td> <td>5.6</td> <td>23</td> <td>30</td> </tr> <tr> <td>BOD</td> <td>mg/l</td> <td>3.8</td> <td>16</td> <td>20</td> </tr> <tr> <td>COD</td> <td>mg/l</td> <td>16</td> <td>70.8</td> <td>100</td> </tr> <tr> <td>Faecal Coliform</td> <td>MPN/100ml</td> <td>78</td> <td>210</td> <td>&lt;1000</td> </tr> </tbody> </table> <p>The monitoring results for the period April 2023 to September 2023 is enclosed as <b>Annexure - IV</b>.</p> <p>All the parameters are well within the prescribed norms.</p>	Parameter	Unit	Min	Max	TNPCB Limit	pH	-	6.71	7.79	6.5 to 9	TSS	mg/l	5.6	23	30	BOD	mg/l	3.8	16	20	COD	mg/l	16	70.8	100	Faecal Coliform	MPN/100ml	78	210	<1000
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S. No.	Conditions	Compliance Status
(xv)	<p>No Solid Waste will be disposed of in the Coastal Regulatory Zone area. The Solid Waste shall be properly collected segregated and disposed as per the provision of Solid Waste Management Rules, 2016.</p>	<p><b>Complied.</b></p> <p>No solid waste is being disposed of in the CRZ area. All the solid waste generated is properly collected, source segregation of all types of Solid Waste is practised and are disposed as per the provision of Solid Waste Management Rules 2016, as amended.</p> <p><b>Solid Waste Management:</b></p> <p>MIDPL Kattupalli Port certified as “Zero Waste to Landfill” Port from CII. To achieve this milestone, various sources of waste and their sustainable waste management techniques were identified. Having understood the entire concept of “Zero Waste to Landfill”, a firm commitment was given by the top management to implement the sustainable waste management techniques.</p> <p>A well-established Integrated waste Management system is in place and all wastes are being handled inline to 5R principle (Reduce, Reuse, Reprocess, Recycle &amp; Recover).</p> <div style="display: flex; justify-content: space-around;">   </div> <p>All the wastes (non-hazardous and hazardous) generated from the port activities are collected, segregated and stored in the designated compartments in Integrated Waste Management Shed (IWMS).</p>

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		<p><b>Non-Hazardous Waste Management:</b></p> <p>All types of non-hazardous wastes like paper, wood, metal scraps, etc., generated from port area are being handled, stored, and disposed thorough vendors in line with 5R principle. The method of non-hazardous waste disposal is presented below.</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Type of waste</th> <th>Storage Location within port</th> <th>Method of disposal</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Dry Waste (Paper, Plastic, Metal waste, etc.)</td> <td>IWMS</td> <td>Material recovery Sent for Recycling</td> </tr> <tr> <td>2.</td> <td>Wet Waste (Food Waste)</td> <td>Biogas Unit</td> <td>Reprocess</td> </tr> <tr> <td>3.</td> <td>Solid waste Dry and Wet port</td> <td>Daily Disposal</td> <td>Dry and Wet Waste separately for material recovery and composting respectively.</td> </tr> <tr> <td>4.</td> <td>Sludges</td> <td>STPs</td> <td>Reprocessed for gardening manure</td> </tr> </tbody> </table> <p><b>Hazardous &amp; Other Waste Management:</b></p> <p>Hazardous wastes that include used oil and filters contaminated with oil. Used oil and the filters contaminated with oil generated during various maintenance activities are collected in barrels and kept in Integrated Waste Management Shed and are disposed through TNPCC authorized recyclers in line to Hazardous Waste Management Rules 2016, (as amended).</p> <p>Used oil is mainly generated from Rubber tyred gantry cranes and diesel generators. Used oils are collected and stored in barrels and are being disposed to TNPCC authorized recyclers facility.</p>	S.No.	Type of waste	Storage Location within port	Method of disposal	1.	Dry Waste (Paper, Plastic, Metal waste, etc.)	IWMS	Material recovery Sent for Recycling	2.	Wet Waste (Food Waste)	Biogas Unit	Reprocess	3.	Solid waste Dry and Wet port	Daily Disposal	Dry and Wet Waste separately for material recovery and composting respectively.	4.	Sludges	STPs	Reprocessed for gardening manure
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		<p>Other hazardous wastes such as used batteries and E-wastes are also stored in Integrated Waste Management Shed and disposed through approved vendor in line to 5 R principle.</p> <p>Bio medical waste generated from OHC is being disposed at Common Bio Medical Waste Treatment Facility namely M/s. Tamilnadu Waste Management Limited, Maduranthagam Taluk and Kancheepuram District, in line to the Bio Medical Waste Management Rules 2016.</p> <p>All types of hazardous wastes generated from port operation and maintenance activity are being handled, stored and disposed as follows:</p> <table border="1"> <thead> <tr> <th>S. No</th> <th>Type of waste</th> <th>Storage Location within port</th> <th>Method of disposal</th> <th>Quantity Disposed</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Oily waste</td> <td>IWMS</td> <td>Disposed to authorized recycler</td> <td>Nil</td> </tr> <tr> <td>2.</td> <td>Oil Sludge</td> <td>IWMS</td> <td>Disposed to authorized Recycler</td> <td>Nil</td> </tr> <tr> <td>3.</td> <td>E-Waste</td> <td>IWMS</td> <td>Sold to Registered recycler / re-processor</td> <td>Nil</td> </tr> <tr> <td>4.</td> <td>Battery Waste</td> <td>IWMS</td> <td>Sold to Registered recycler / re-processor</td> <td>Nil</td> </tr> <tr> <td>5.</td> <td>Bio Medical Waste</td> <td>Occupational Health Centre (OHC)</td> <td>Sent to CBWTF for scientific Disposal.</td> <td>4.1 Kg</td> </tr> </tbody> </table>	S. No	Type of waste	Storage Location within port	Method of disposal	Quantity Disposed	1.	Oily waste	IWMS	Disposed to authorized recycler	Nil	2.	Oil Sludge	IWMS	Disposed to authorized Recycler	Nil	3.	E-Waste	IWMS	Sold to Registered recycler / re-processor	Nil	4.	Battery Waste	IWMS	Sold to Registered recycler / re-processor	Nil	5.	Bio Medical Waste	Occupational Health Centre (OHC)	Sent to CBWTF for scientific Disposal.	4.1 Kg
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S. No.	Conditions	Compliance Status
(xvi)	Installation and operation of DG set if any shall comply with the guidelines of CPCB.	<p><b>Complied.</b></p> <p>Tamil Nadu Electricity Board (TNEB) Power supply and inhouse Solar Plant (1 MW Capacity) are available for Port Operations. However, DG set of capacities 2000 kVA (2 Nos), 500 KVA (2 Nos) and 125 KVA (1 NO) are installed inline to CPCB guidelines as backup Power. Flue gas analysis report of the DG Set stack for the period Apr'23 to Sep'23 is attached as <b>Annexure IV</b>.</p> <p>All the DG Sets are retrofitted to reduce the Particulate Matter emission level. Efficiency of the retrofitting equipment is observed above 90% against the TNPCB requirement of &gt;70%.</p> 
(xvii)	There shall be no reclamation/ dredging of areas.	<p><b>Complied.</b></p> <p>There is no any reclamation /dredging.</p>
(xviii)	Air quality including the VOC shall be monitored regularly as per the guidelines of CPCB and reported.	<p><b>Complied.</b></p> <p><b>Ambient Air Quality</b> (twice in a week) including VOC is monitored at 4 locations through NABL accredited laboratory. Quality of Ambient Air confirm to the standard laid down by TNPCB / CPCB. Summary of</p>

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		<p>Ambient Air Quality Monitored during Apr'23 to Sep'23 is tabulated below.</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>NAAQM Norms</th> </tr> </thead> <tbody> <tr> <td colspan="5"><b>AAQM</b></td> </tr> <tr> <td>PM<sub>10</sub></td> <td>µg/m<sup>3</sup></td> <td>48.3</td> <td>61.5</td> <td>100</td> </tr> <tr> <td>PM<sub>2.5</sub></td> <td>µg/m<sup>3</sup></td> <td>20.4</td> <td>29.1</td> <td>60</td> </tr> <tr> <td>SO<sub>2</sub></td> <td>µg/m<sup>3</sup></td> <td>5.3</td> <td>8.9</td> <td>80</td> </tr> <tr> <td>NO<sub>2</sub></td> <td>µg/m<sup>3</sup></td> <td>12.3</td> <td>18.2</td> <td>80</td> </tr> <tr> <td>CO</td> <td>mg/m<sup>3</sup></td> <td>&lt;1.0</td> <td>&lt;1.0</td> <td>2.0</td> </tr> <tr> <td>Benzene</td> <td>µg/m<sup>3</sup></td> <td>&lt;1.0</td> <td>&lt;1.0</td> <td>5</td> </tr> <tr> <td>Benzo[a]Pyrene</td> <td>ng/m<sup>3</sup></td> <td>&lt;0.1</td> <td>&lt;0.1</td> <td>1</td> </tr> </tbody> </table> <p>Detailed Air Quality Monitoring Reports for the period Apr'23 to Sep'23 is enclosed as <b>Annexure-IV</b>.</p> <p>We have also installed one number Continuous Ambient Air Quality Monitoring Station (CAAQMS) including BTX analyser to monitor VOC. CAAQMS has been connected to TNPCB server and data is transferred on real-time basis. All the monitored parameters are found well with the prescribed standards.</p> 	Parameter	Unit	Min	Max	NAAQM Norms	<b>AAQM</b>					PM <sub>10</sub>	µg/m <sup>3</sup>	48.3	61.5	100	PM <sub>2.5</sub>	µg/m <sup>3</sup>	20.4	29.1	60	SO <sub>2</sub>	µg/m <sup>3</sup>	5.3	8.9	80	NO <sub>2</sub>	µg/m <sup>3</sup>	12.3	18.2	80	CO	mg/m <sup>3</sup>	<1.0	<1.0	2.0	Benzene	µg/m <sup>3</sup>	<1.0	<1.0	5	Benzo[a]Pyrene	ng/m <sup>3</sup>	<0.1	<0.1	1
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S. No.	Conditions	Compliance Status															
(xix)	The project proponent shall undertake green belt development all along the periphery of the project area and also alongside the road.	<p><b>Complied.</b></p> <p>MIDPL is having adequate Greenbelt covering 28.43Ha (which includes 35,177 nos of trees covering 13.19Ha inside the Port premises and around 35,000 trees covering 15.25Ha outside the Port premises). Greenbelt has been developed along the periphery of the port area and alongside of the road and are being well maintained.</p>															
(xx)	All necessary clearances from the concerned agencies shall be obtained before initiating the project.	<p><b>Complied.</b></p> <p>The project is in operation after obtaining all the necessary clearances (as applicable) from the concerned agencies as described below.</p> <table border="1"> <thead> <tr> <th>Permission</th> <th>Ref.No.</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Tamil Nadu Maritime Board (TNMB) clearance</td> <td>575/S1/2008</td> <td>24.05.2012</td> </tr> <tr> <td>Fire and Rescue License (Renewal)</td> <td>159/2015</td> <td>10.06.2015</td> </tr> <tr> <td>PESO Licenses - 15KL</td> <td>P/SC/TN/15/2514 (P266086)</td> <td>25.05.2012</td> </tr> <tr> <td>- 50KL</td> <td>P/SC/TN/14/6260 (P266084)</td> <td>16.08.2012</td> </tr> </tbody> </table>	Permission	Ref.No.	Date	Tamil Nadu Maritime Board (TNMB) clearance	575/S1/2008	24.05.2012	Fire and Rescue License (Renewal)	159/2015	10.06.2015	PESO Licenses - 15KL	P/SC/TN/15/2514 (P266086)	25.05.2012	- 50KL	P/SC/TN/14/6260 (P266084)	16.08.2012
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(xxi)	Project proponent shall install necessary oil spill mitigation measures in the shipyard. The details of the facilities provided shall be informed to this Ministry within 3 months from the date of receipt of this letter.	<p><b>Complied.</b></p> <p>Oil Spill contingency Plan (OSCP) is in place and MIDPL is maintaining oil spill equipment as per Coast Guard guidelines and conducting oil spill mock drills at regular intervals.</p>															


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		<p>Oil spill contingency plan along with list of available oil spill equipment submitted vide our Letter No. MIDPL/TNPCB/GMP/EC-HYC dated 14.05.2018.</p> <p>Details of Training and Mock Drill carried out during compliance period are as follows;</p> <table border="1"> <thead> <tr> <th>Activity/ Drill</th> <th>Number of Persons trained</th> <th>Total Manhours Trained</th> </tr> </thead> <tbody> <tr> <td>OSPR Drill &amp; Equipment inspection conducted on 28.07.2023. Officials from Indian Coast Guard are also participated.</td> <td>25</td> <td>168</td> </tr> <tr> <td>OSPR Drill conducted on 21.09.2023.</td> <td>28</td> <td>112</td> </tr> <tr> <td>Total</td> <td>53</td> <td>280</td> </tr> </tbody> </table> <div>  </div>	Activity/ Drill	Number of Persons trained	Total Manhours Trained	OSPR Drill & Equipment inspection conducted on 28.07.2023. Officials from Indian Coast Guard are also participated.	25	168	OSPR Drill conducted on 21.09.2023.	28	112	Total	53	280
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(xxii)	No hazardous chemicals shall be stored in the Coastal Regulation Zone area.	<b>Noted for Compliance.</b> No hazardous chemical is stored in CRZ Area.
(xxiii)	The project shall not be commissioned till the requisite water supply and electricity to the project are provided by the PWD/ Electricity Department.	<b>Complied.</b> Requisite permission for Water Supply and Electricity has been obtained from Chennai Metropolitan Water Supply and Sewerage Board (CMWSSB) and Tamil Nadu Electricity Board respectively before commissioning.


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(xxiv)	Specific arrangements for rainwater harvesting shall be made in the project design and the rain water so harvested shall be optimally utilized.	<p><b>Complied.</b></p> <p>MIDPL is having Rainwater Collection facilities including Storm Water drains and Rainwater Harvesting Pond.</p> <p>Existing Rainwater Harvesting Pond is being used for Greenbelt maintenance.</p> <p>Water table is observed to be high in and around the Port area. Feasibility of rainwater harvesting will be explored.</p>     

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(xxv)	<p>The facilities to be constructed in the CRZ area as part of this project shall be strictly in conformity with the provisions of the CRZ Notification, 2011 and its amendment. The facilities such as office building and residential buildings which do not require waterfront and foreshore facilities shall not be constructed within the Coastal Regulation Zone area.</p>	<p><b>Complied.</b></p> <p>All construction has been done in line to CRZ Notification, 2011 and CRZ &amp; Environmental clearance obtained.</p>
<b>General Conditions:</b>		
(i)	<p>Construction of the proposed structures shall be undertaken meticulously conforming to the existing Central/local rules and regulations including Coastal Regulation Zone Notification 1991</p>	<p><b>Complied.</b></p> <p>Project is in operation phase. All construction activity has been done in line to the existing Central/local rules including CRZ Notification, 2011 and CRZ &amp; Environmental Clearance obtained</p>

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	& its amendments. All the construction designs /drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments /Agencies.	
(ii)	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. shall be ensured for construction workers during the construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.	<b>Complied.</b>  Project is in Operation Phase.
(iii)	The project authorities shall make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise level etc. must conform to the standards laid down by the competent authorities including the Central/State Pollution Control Board and the Union Ministry of Environment and Forests under the Environment (Protection) Act, 1986, whichever are more stringent.	<b>Complied.</b>  No solid waste is being disposed of in the CRZ area.  Integrated waste Management system is in place. All the solid waste generated is properly collected, source segregation of all types of Solid Waste is practised and are disposed as per the provision of Solid Waste Management Rules 2016, as amended.  <b>Solid Waste Management:</b>  MIDPL Kattupalli Port certified as "Zero Waste to Landfill" Port from CII. To achieve this milestone, various sources of waste and their sustainable waste management techniques were identified. Having understood the entire concept of "Zero Waste to Landfill", a firm commitment was given by the top management to implement the sustainable waste management techniques.



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		<p>A well-established Integrated waste Management system is in place and all wastes are being handled inline to 5R principle (Reduce, Reuse, Reprocess, Recycle &amp; Recover).</p> <p>All the wastes (non-hazardous and hazardous) generated from the port activities are collected, segregated and stored in the designated compartments in Integrated Waste Management Shed (IWMS).</p> <div style="display: flex; justify-content: space-around;">   </div> <p><b>Non-Hazardous Waste Management:</b></p> <p>All types of non-hazardous wastes like paper, wood, metal scraps, etc., generated from port area are being handled, stored, and disposed thorough vendors in line with 5R principle. The method of non-hazardous waste disposal is presented below.</p> <table border="1"> <thead> <tr> <th>S.No</th> <th>Type of waste</th> <th>Storage Location within port</th> <th>Method of disposal</th> <th>Quantity Disposed</th> </tr> </thead> <tbody> <tr> <td>1..</td> <td>Wet Waste (Food Waste)</td> <td>Daily Disposal</td> <td>Reprocess</td> <td>1.19 MT</td> </tr> <tr> <td>2.</td> <td>Sludges</td> <td>STPs</td> <td>Reprocessed for gardening manure</td> <td>0.11 MT</td> </tr> <tr> <td>3.</td> <td>Horticulture Waste</td> <td>Greenbelt Area</td> <td>Reusing as mulching for gardening</td> <td>12.85 MT</td> </tr> </tbody> </table>	S.No	Type of waste	Storage Location within port	Method of disposal	Quantity Disposed	1..	Wet Waste (Food Waste)	Daily Disposal	Reprocess	1.19 MT	2.	Sludges	STPs	Reprocessed for gardening manure	0.11 MT	3.	Horticulture Waste	Greenbelt Area	Reusing as mulching for gardening	12.85 MT
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		<p><b>Sewage &amp; Effluent Treatment Facility:</b></p> <p>MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <p>Average quantity of Sewage water treated in STPs during the compliance period is as furnished below.</p> <table border="1"> <thead> <tr> <th>Location</th> <th>STP/ETP Capacity</th> <th>Avg. Quantity of Sewage Water Treated (Apr'23 to Sep'23)</th> </tr> </thead> <tbody> <tr> <td>Near IWMS</td> <td>STP 30 KLD</td> <td>12.4 KLD</td> </tr> <tr> <td>Near CFS</td> <td>STP 5 KLD</td> <td>1.3 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>STP 10 KLD</td> <td>1.7 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>ETP 50 KLD</td> <td>0.2 KLD</td> </tr> </tbody> </table> <p>The monitoring results for the period April 2023 to September 2023 is enclosed as <b>Annexure - IV</b>.</p>	Location	STP/ETP Capacity	Avg. Quantity of Sewage Water Treated (Apr'23 to Sep'23)	Near IWMS	STP 30 KLD	12.4 KLD	Near CFS	STP 5 KLD	1.3 KLD	Near Liquid Terminal	STP 10 KLD	1.7 KLD	Near Liquid Terminal	ETP 50 KLD	0.2 KLD
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**Half yearly Compliance report on conditions stipulated in CRZ & Environmental Clearance [File no: 10-130/2007- IA.III dated: 09/02/2018]**

S. No.	Conditions	Compliance Status																																																																						
		<p>Summary of STP &amp; ETP treated water analysis results during compliance period as mentioned below.</p> <table border="1"> <thead> <tr> <th colspan="5">STP TREATED WATER ANALYSIS REPORT(AVG)</th> </tr> <tr> <th>Parameter</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>TNPCB Limit</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>-</td> <td>6.71</td> <td>7.79</td> <td>6.5 to 9</td> </tr> <tr> <td>TSS</td> <td>mg/l</td> <td>5.6</td> <td>23</td> <td>30</td> </tr> <tr> <td>BOD</td> <td>mg/l</td> <td>3.8</td> <td>16</td> <td>20</td> </tr> <tr> <td>COD</td> <td>mg/l</td> <td>16</td> <td>70.8</td> <td>100</td> </tr> <tr> <td>Faecal Coliform</td> <td>MPN/100ml</td> <td>78</td> <td>210</td> <td>&lt;1000</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="5">ETP TREATED WATER ANALYSIS REPORT(AVG)</th> </tr> <tr> <th>Parameter</th> <th>Unit</th> <th>RO-1</th> <th>RO-2</th> <th>TNPCB Limit</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>-</td> <td>8.03</td> <td>8.2</td> <td>6.5 to 9</td> </tr> <tr> <td>TSS</td> <td>mg/l</td> <td>13.6</td> <td>8.6</td> <td>200</td> </tr> <tr> <td>TDS</td> <td>mg/l</td> <td>912</td> <td>825</td> <td>2100</td> </tr> <tr> <td>BOD</td> <td>mg/l</td> <td>5</td> <td>3.4</td> <td>100</td> </tr> <tr> <td>Oil &amp; Grease</td> <td>mg/l</td> <td>BDL</td> <td>BDL</td> <td>10</td> </tr> </tbody> </table> <div>  <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">30 KLD STP</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">10 KLD STP</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">5 KLD STP</div> </div> </div> <p>All the parameters are well within the prescribed norms.</p> <p><b>Ambient Air Quality:</b></p> <p>Ambient Air Quality (twice in a week) and Noise (once in a month) Monitoring are being carried out through NABL accredited laboratory. Quality of Ambient Air and Noise level confirm to the standard laid down by TNPCB / CPCB. Summary of the same for duration from April 2023 to Sept 2023 is as summarised below.</p>	STP TREATED WATER ANALYSIS REPORT(AVG)					Parameter	Unit	Min	Max	TNPCB Limit	pH	-	6.71	7.79	6.5 to 9	TSS	mg/l	5.6	23	30	BOD	mg/l	3.8	16	20	COD	mg/l	16	70.8	100	Faecal Coliform	MPN/100ml	78	210	<1000	ETP TREATED WATER ANALYSIS REPORT(AVG)					Parameter	Unit	RO-1	RO-2	TNPCB Limit	pH	-	8.03	8.2	6.5 to 9	TSS	mg/l	13.6	8.6	200	TDS	mg/l	912	825	2100	BOD	mg/l	5	3.4	100	Oil & Grease	mg/l	BDL	BDL	10
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**Half yearly Compliance report on conditions stipulated in CRZ & Environmental Clearance [File no: 10-130/2007- IA.III dated: 09/02/2018]**

S. No.	Conditions	Compliance Status				
		Parameter	Unit	Min	Max	NAAQM Norms
		<b>AAQM</b>				
		PM <sub>10</sub>	µg/m <sup>3</sup>	48.3	61.5	100
		PM <sub>2.5</sub>	µg/m <sup>3</sup>	20.4	29.1	60
		SO <sub>2</sub>	µg/m <sup>3</sup>	5.3	8.9	80
		NO <sub>2</sub>	µg/m <sup>3</sup>	12.3	18.2	80
		CO	mg/m <sup>3</sup>	<1.0	<1.0	2.0
		Benzene	µg/m <sup>3</sup>	<1.0	<1.0	5
		Benzo[a ] Pyrene	ng/m <sup>3</sup>	<0.1	<0.1	1
		<b>Noise</b>	<b>Unit</b>	<b>Min</b>	<b>Max</b>	<b>NAAQM Norms</b>
		Day Time	dB(A)	47.3	67.5	75
		Night Time	dB(A)	35.2	57.8	70
		<p>All the monitoring results are well within the prescribed standard.</p> <p>We have also installed Continuous Ambient Air Quality Monitoring Station (Including BTX analyser to monitor VOC). CAAQMS has been connected to TNPCB server and data is transferred on real-time basis. All the parameters are well with the prescribed standards.</p> <p>Detailed Air and Water Quality Monitoring Reports for the period April 2023 to September 2023 is enclosed as <b>Annexure –IV.</b></p>				
						

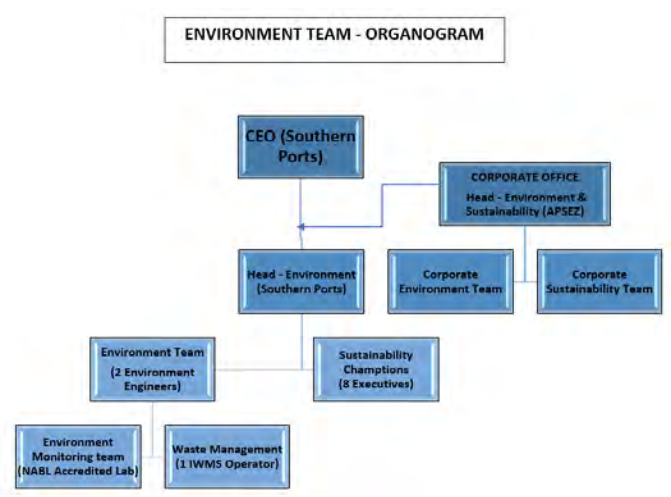
**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

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S. No.	Conditions	Compliance Status
(iv)	The proponent shall obtain the requisite consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 from the Tamil Nadu State Pollution Control Board before commissioning of the project and a copy of each of these shall be sent to this Ministry.	<b>Complied.</b>  Requisite Consents for discharge of effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (prevention and Control of Pollution) Act, 1981 were obtained before commissioning of the project and submitted to Ministry. Project is in operation phase and Consent to Operate has been obtained from the Tamil Nadu State Pollution Control Board vide <b>Consent Order No. 2105136876761 (water Act) &amp; 2105236876761 (Air Act) dated 13/09/2021 valid till 31.03.2026. Copies of the consent orders attached as Annexure - IX</b>

(v) In order to carry out the environmental monitoring during the operational phase of the project, the project authorities shall establish an environmental laboratory well equipped with standard equipment and facilities and qualified manpower to carry out the testing of various environmental parameters.

**Complied.**  
  
MIDPL is having Environmental Management Cell, staffed with qualified personnel at site supported by team at Head Office in Ahmedabad.  
  
Environment monitoring is being carried out through NABL accredited Laboratory.



**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

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S. No.	Conditions	Compliance Status
(vi)	The proponents shall provide for a regular monitoring mechanism so as to ensure that the treated effluents conform to the prescribed standards. The records of analysis reports must be properly maintained and made available for inspection to the concerned State/Central officials during their visits.	<p><b>Complied.</b></p> <p>MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <p>The monitoring results for the period April 2023 to September 2023 is enclosed as <b>Annexure - IV</b>. All the results are found well within the prescribed standard.</p> <p>Records are made available at site for inspection of State / Central officials during their visit.</p>
(vii)	The sand dunes and mangroves, if any, on the site shall not be disturbed in any way.	<p><b>Complied.</b></p> <p>No Sand dune and mangroves are present on the site.</p>
(viii)	A copy of the clearance letter will be marked to the concerned Panchayat / local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.	<p><b>Complied.</b></p> <p>This EC is just a bifurcation of original EC of LTSP.</p>

**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

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(ix)	The Tamil Nadu Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildars Office for 30 days.	<b>Complied.</b>  The condition does not pertain to project proponent																		
(x)	The funds earmarked for environment protection measures shall be maintained, in a separate account and there shall be no diversion of these funds for any other purpose. A year-wise expenditure on Environmental safeguards shall be reported to this ministry	<b>Complied.</b>  Separate budget for the Environment Protection is earmarked every year. All the expenses are recorded in advanced accounting system (SAP) of the organization.  Expenditure for Environment Management measures during April 2023 to September 2023 is Rs. 113.68 Lakhs. The breakup details are as follows; <table border="1"> <thead> <tr> <th>S. No.</th> <th>Description of Work</th> <th>Cost (Rs.) in Lakhs</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Comprehensive Environmental Monitoring and other Environment related studies like Impact Assessment Study, etc.,</td> <td>13.29</td> </tr> <tr> <td>2</td> <td>Integrated Waste Management</td> <td>1.85</td> </tr> <tr> <td>3</td> <td>O&amp;M of STP's &amp; ETP</td> <td>9.07</td> </tr> <tr> <td>3</td> <td>Housekeeping</td> <td>70.27</td> </tr> <tr> <td>4</td> <td>Greenbelt</td> <td>19.20</td> </tr> </tbody> </table>	S. No.	Description of Work	Cost (Rs.) in Lakhs	1	Comprehensive Environmental Monitoring and other Environment related studies like Impact Assessment Study, etc.,	13.29	2	Integrated Waste Management	1.85	3	O&M of STP's & ETP	9.07	3	Housekeeping	70.27	4	Greenbelt	19.20
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(xi)	Full support shall be extended to the officers (this Ministry's Regional Office at Chennai and the officers of the Central and State Pollution Control Boards by the project proponents during their inspection for monitoring purposes, by	<b>Noted for Compliance.</b>  Full support is being extended to the officers of RO-MoEF & CC Chennai, CPCB & TNPCB during their inspection and site visit.																		

**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

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S. No.	Conditions	Compliance Status
	furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	Further, monthly visits were made by TNPCB Officials to monitor the compliance and all the necessary supports were extended and the same shall be continued in future also.
(xii)	In case of deviation or alteration in the project including the implementing agency, a fresh reference shall be made to this ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection.	<b>Noted for Compliance.</b>  There is no deviation or alteration in the project including implementing agency.
(xiii)	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	<b>Noted for Compliance.</b>
(xiv)	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.	<b>Noted for Compliance.</b>
(xv)	The Project proponents shall inform the Regional Office at Chennai as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of Land Development Work.	<b>Complied.</b>  The same has been Complied by LTSB before bifurcation itself.

**CRZ & EC Amendment letter No. 10-130/2007- A.III dated 12.05.2010:**



**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

**Half yearly Compliance report on conditions stipulated in CRZ & Environmental Clearance  
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<b>S. No.</b>	<b>Conditions</b>	<b>Compliance Status</b>
(i)	The details of combined effect on both the Ports (i.e. Ennore Port and Kattupalli Port) shall be carried out to monitor the impact of the post-dumping. This model study shall be carried out for a period of one year.	<p><b>Complied.</b></p> <p>M/s LTSB has already carried out detailed modelling study to understand impact of post dumping and report was submitted to Ministry.</p> <p>MIDPL engaged Institute of Ocean Management, Anna University, Chennai to carry out shoreline study along with the details of combined effect on both the ports (i.e Ennore Port and Kattupalli Port) to monitor the impact of the post dumping.</p> <p>Study Report is attached as <b>Annexure - II.</b></p>
(ii)	A comparison between model study and actual dumping shall be carried out to examine the impacts both on North-East and South-West of the Ports and shall be submitted to the Ministry,	<p><b>Complied.</b></p> <p>Comparison between model study and actual dumping was made to examine the impacts and report was submitted to Ministry by LTSB.</p> <p>No dumping was being carried by MIDPL during the period April 2023 to September 2023.</p> <p>MIDPL has engaged Institute of Ocean Management, Anna University, Chennai and carried out Shoreline Change study during December 2022. Study Report is attached as <b>Annexure - II.</b></p>
(iii)	No reclamation of the areas outside the Port limit and Buckingham Canal shall be carried out.	<p><b>Being Complied.</b></p> <p>No reclamation of the areas outside Port Limit and Buckingham Canal is being carried out.</p>

**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

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S. No.	Conditions	Compliance Status
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**EC & CRZ Extension of validity letter No. 10-130/2007- XIII dated 17.12.2014:**

(i)	<p>The cargo should only include (i) Container 21.60 MTPA, (ii) Ro-Ro – 0.22 MTPA, (iii) Project cargo – 0.44 MTPA, (iv) Break bulk/General cargo (Barytes/Gypsum/Limestone/Granite/Steel cargo) – 1.82 MTPA and (v) Edible oil, CBFS, Base oil and Lube oil and non-hazardous liquid cargo - 0.57 MTPA</p>	<p><b>Being Complied.</b></p> <p>MIDPL is handing Containers, Ro-Ro, Project Cargo, Break bulk / General Cargo, Edible Oil, CBFS, Base oil and Lube Oil &amp; Other Non-Hazardous liquid cargo only.</p> <p>MIDPL has obtained “No increase in Pollution Load Certificate” from TNPCB Vide TNPCB Lr. No. T1/TNPCB /F.022882/RL/GMP/ NIPL / 2021 dated 12.01.2021 for the proposed change in cargo Mix (additional handling of Rock Phosphate, Dolomite, Bauxite cargos and increase the non-hazardous liquid cargo capacity from 0.57 MMTPA to 0.72 MMTPA by optimally deploying the port infrastructure being developed without change in the overall handling capacity approved in the EC &amp; CRZ by MoEF &amp; CC) and subsequently, obtained CTO orders vide Consent Order No. 2105236876761 (Air Act) and 2105136876761 (Water Act) on 13.09.2021 valid till 31.03.2026. Details of Cargo handled with quantity during the Apr'23 to Sep'23 are presented in the below table.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sl.No</th> <th>Description of Cargo</th> <th>Consented Cargo Qty</th> <th>Cargo handled in Apr'23 to Sep'23</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Containers</td> <td style="text-align: center;">21.60 MTPA</td> <td style="text-align: center;">5.99 MTPA</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Ro-Ro – Automobiles</td> <td style="text-align: center;">0.07 MTPA</td> <td style="text-align: center;">Nil</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Project Cargo</td> <td style="text-align: center;">0.44 MTPA</td> <td style="text-align: center;">Nil</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Break Bulk/general cargo (Barytes / Gypsum / Limestone / Granite / Steel Cargo /</td> <td style="text-align: center;">1.82 MTPA</td> <td style="text-align: center;">0.47 MTPA</td> </tr> </tbody> </table>	Sl.No	Description of Cargo	Consented Cargo Qty	Cargo handled in Apr'23 to Sep'23	1	Containers	21.60 MTPA	5.99 MTPA	2	Ro-Ro – Automobiles	0.07 MTPA	Nil	3	Project Cargo	0.44 MTPA	Nil	4	Break Bulk/general cargo (Barytes / Gypsum / Limestone / Granite / Steel Cargo /	1.82 MTPA	0.47 MTPA
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S. No.	Conditions	Compliance Status	
		Rock Phosphate / Bauxite / Dolomite cargoes)	
5		Edible oil, CBFS, Base Oil, Lube and Non-Hazardous Liquid Cargo	0.72 MTPA  0.30 MTPA
		<b>Total Handling capacity at Port</b>	<b>24.65 MTPA</b> <b>6.76 MTPA</b>
(ii)	All the conditions stipulated by the Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter no. 6064/EC.3/2014-1 dated 26.06.2014, shall be strictly complied with.	<b>Complied.</b> All the conditions stipulated by the Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter no. 6064/EC.3/2014-1 dated 26.06.2014 are being complied. Compliance status of the same is enclosed as <b>Annexure – V.</b>	
(iii)	No additional land should be utilized for the proposed development.	<b>Complied</b>	
(iv)	As committed, the local traffic should not be disturbed.	<b>Complied.</b> Separate road is available for the local Traffic. Kattupalli Port is having a dedicated road connectivity connecting State Highways and National Highways. NH-5 (Chennai – Kolkata) is about 30 km from Port. The cargo handled are directly goes to the roads mentioned above which are outside the City Limits of Chennai. Handling of cargo in Kattupalli Port does not affect the regular traffic.	
5	These stipulations would be enforced among other under the provisions of water (Prevention and Control of Pollution) Act, 1974 the Air (Prevention and Control of Pollution) Act 1981, the	<b>Noted for Compliance.</b>	

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	Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991, the Hazardous Chemical (Manufacture, storage and Import) Rules, 1989, Solid Waste Management Rules, 2016 and the Coastal Regulation Zone Notification, 2011 and its subsequent amendments made there under from time to time.																
6	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act 1972, etc shall be Obtained, as applicable by project proponents from the respective competent authorities.	<p><b>Complied.</b></p> <p>The project is in operation after obtaining all the necessary clearances (as applicable) from the concerned agencies as described below.</p> <table border="1"> <thead> <tr> <th>Permission</th> <th>Ref.No.</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Tamil Nadu Maritime Board (TNMB) clearance</td> <td>575/S1/2008</td> <td>24.05.2012</td> </tr> <tr> <td>Fire and Rescue License (Renewal)</td> <td>159/2015</td> <td>10.06.2015</td> </tr> <tr> <td>PESO Licenses - 15KL</td> <td>P/SC/TN/15/2514 (P266086)</td> <td>25.05.2012</td> </tr> <tr> <td>- 50KL</td> <td>P/SC/TN/14/6260 (P266084)</td> <td>16.08.2012</td> </tr> </tbody> </table>	Permission	Ref.No.	Date	Tamil Nadu Maritime Board (TNMB) clearance	575/S1/2008	24.05.2012	Fire and Rescue License (Renewal)	159/2015	10.06.2015	PESO Licenses - 15KL	P/SC/TN/15/2514 (P266086)	25.05.2012	- 50KL	P/SC/TN/14/6260 (P266084)	16.08.2012
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S. No.	Conditions	Compliance Status
7	The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the Tamil Nadu Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://envfonnic.in">http://envfonnic.in</a> . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Chennai.	<b>Complied.</b>  Copy of the same is already submitted along with the Compliance report for the period Oct-2018 to Mar-2019 vide our Letter No. MIDPL/TNPCB/GMP/EC-HYC dated 24.05.2019.
8	Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 <b>day</b> as prescribed under section 11 of the National Environment Appellate Act, 1997.	<b>Noted.</b>

**Name of the Project: CRZ and Environmental Clearance for the development of proposed Shipyard-cum-Minor Port Complex at Kattupalli, Ponneri Taluka, Tiruvallur District, Tamil Nadu by M/s. Marine Infrastructure Developer Private Limited (MIDPL) – bifurcation of Environmental and CRZ Clearance.**

**Half yearly Compliance report on conditions stipulated in CRZ & Environmental Clearance [File no: 10-130/2007- IA.III dated: 09/02/2018]**

S. No.	Conditions	Compliance Status																								
9	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>Six monthly Compliance Report of CRZ &amp; Environmental Clearance is uploaded on company website regularly (<a href="https://www.adaniports.com/ports-downloads">https://www.adaniports.com/ports-downloads</a>)</li> <li>Environment Statement (Form-V) for the year 2022-2023 was submitted to TNPCB vide letter No. MIDPL/ENV/TNPCB/ES/2023/32 dated 23.09.2023. Copy of the same is attached as <b>Annexure VIII</b>. Form V for the year 2022-23 is also uploaded on Company website (<a href="#">Form-V Environment-Statement MIDPL FY2021 22.pdf (adaniports.com)</a>) and sent to Regional Office of MoEF&amp;CC through e-mail on 29.09.2023</li> <li>The details of the past six Half yearly compliance reports are as tabulated below for reference.</li> </ul> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Compliance period</th> <th>Date of submission</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Oct'19 to Mar'20</td> <td>31.05.2020</td> </tr> <tr> <td>2.</td> <td>Apr'20 to Sep'20</td> <td>27.11.2020</td> </tr> <tr> <td>3.</td> <td>Oct'20 to Mar'21</td> <td>20.05.2021</td> </tr> <tr> <td>4.</td> <td>Apr'21 to Sep'21</td> <td>24.11.2021</td> </tr> <tr> <td>5.</td> <td>Oct'21 to Mar'22</td> <td>17.05.2022</td> </tr> <tr> <td>6.</td> <td>Apr'22 to Sep'22</td> <td>29.11.2022</td> </tr> <tr> <td>7.</td> <td>Oct'22 to Mar'23</td> <td>31.05.2023</td> </tr> </tbody> </table>	S.No.	Compliance period	Date of submission	1.	Oct'19 to Mar'20	31.05.2020	2.	Apr'20 to Sep'20	27.11.2020	3.	Oct'20 to Mar'21	20.05.2021	4.	Apr'21 to Sep'21	24.11.2021	5.	Oct'21 to Mar'22	17.05.2022	6.	Apr'22 to Sep'22	29.11.2022	7.	Oct'22 to Mar'23	31.05.2023
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7.	Oct'22 to Mar'23	31.05.2023																								
10	This CRZ and Environmental Clearance is valid till 2 <sup>nd</sup> July, 2019.	<b>Noted.</b>																								
11	This issue with the approval of the Competent Authority.	<b>Noted.</b>																								



Ports and  
Logistics

**MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED (MIDPL)**

**ADANI PORTS AND SPECIAL ECONOMIC ZONE**

**TIRUVALLUR DISTRICT, CHENNAI- 600 120**

**TAMILNADU**

## **CHANGE IN PRODUCT MIX**

### **Environment Clearance**

**[EC No: EC22A033TN110498 & File No: 10-130/2007-IA.III dated:  
10/10/2022]**

### **Compliance Report**

**for the Period**

**APRIL 2023 TO SEPTEMBER 2023**

**CHANGE IN PRODUCT MIX**


**Compliance to Environment Clearance EC Identification No: EC22A033TN110498 & File No: 10-130/2007-IA.III dated: 10/10/2022**

**Half yearly Compliance report on conditions stipulated in Environment Clearance**

S. No.	Conditions	Compliance Status
<b>Specific Conditions</b>		
(i)	The greenbelt at least 5 to 10 m width shall be developed mainly along the periphery of the project. Selection of plant species will be purely native in nature and shall be as per the CPCB guidelines in consultation with the state Forest Department.	<b>Shall be complied.</b>
(ii)	PP shall make additional arrangement if required for protection of possible fire hazards during material handling. Fire fighting system shall be as per the norms.	<b>Shall be complied.</b>
(iii)	All other terms and conditions prescribed in the environmental clearance vide letter no. F. No.10-130/2007-IA.III dated February 9, 2018 remains unchanged.	<b>Being complied.</b>  Six monthly Compliance Report of CRZ & Environmental Clearance vide letter no. F. No.10-130/2007-IA.III dated 09.02.2018 is uploaded on company website regularly ( <a href="https://www.adaniports.com/ports-downloads">https://www.adaniports.com/ports-downloads</a> ).







**ANNEXURE - 1**  
**(DoE COMPLIANCE STATUS)**


	<b>Marine Infrastructure Developer Pvt Ltd</b>	<b>From : April 2022</b> <b>To : September 2023</b>
<b><u>Status of Compliance to RC No. P1/2004/2008, dated 21.10.2008 of Department of Environment, Chennai</u></b>		

**Annexure -1**


Sl. No	Conditions	Compliance															
i	The unit shall carry out dumping/ land filling at dredged material only on land which is not covered under CRZ	<b>Noted for Compliance</b>															
ii	The unit shall not carry out any ship breaking activity	<b>Not applicable</b>															
iii	The unit should design that the wastewater should be recycled 100% and to be used for developing greenery etc., and there should not be any wastewater let out.	<p><b>Complied.</b></p> <p>MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <p>Average quantity of Sewage water treated in STPs during the compliance period is as furnished below.</p> <table border="1"> <thead> <tr> <th>Location</th> <th>STP/ETP Capacity</th> <th>Avg. Quantity of Sewage Water Treated (Apr'23 to Sep'23)</th> </tr> </thead> <tbody> <tr> <td>Near IWMS</td> <td>STP 30 KLD</td> <td>12.4 KLD</td> </tr> <tr> <td>Near CFS</td> <td>STP 5 KLD</td> <td>1.3 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>STP 10 KLD</td> <td>1.7 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>ETP 50 KLD</td> <td>0.2 KLD</td> </tr> </tbody> </table> <p>The monitoring results for the period April'23 to September'23 is enclosed as <b>Annexure - IV</b>.</p> <p>Summary of STP &amp; ETP treated water analysis results during compliance period as mentioned below.</p>	Location	STP/ETP Capacity	Avg. Quantity of Sewage Water Treated (Apr'23 to Sep'23)	Near IWMS	STP 30 KLD	12.4 KLD	Near CFS	STP 5 KLD	1.3 KLD	Near Liquid Terminal	STP 10 KLD	1.7 KLD	Near Liquid Terminal	ETP 50 KLD	0.2 KLD
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iv	<p>The unit should tie - up with institutions like Centre for Environmental Studies or IIT for the periodical monitoring during construction phase so as to ensure the adoption of Safety measures as per the Environmental Management Plan [EMP].</p>	<p><b>Complied.</b></p> <p>LTSB carried out the studies during Construction Phase.</p>																																																																						
v	<p>Before commencing construction activities, Proper resettlement for the local the unit should ensure the proper resettlement of local</p>	<p><b>Not applicable.</b></p> <p>Complied by M/s. LTSB. Rehabilitation &amp; resettlement was carried out completely as per law / State Government at the time of project implementation.</p>																																																																						

	<b>Marine Infrastructure Developer Pvt Ltd</b>	<b>From : April 2022</b> <b>To : September 2023</b>
<b><u>Status of Compliance to RC No. P1/2004/2008, dated 21.10.2008 of Department of Environment, Chennai</u></b>		

	inhabitants residing at the project area to the satisfaction of District Collector and submit a report to the Department of Environment.	This EC & CRZ Clearance is just a bifurcation of original EC & CRZ clearance of LTSB in name of MIDPL & LTSB.
<b>General Conditions</b>		
a	There should not be any extraction of Ground Water in CRZ.	<b>Noted for compliance.</b>  No withdrawal of groundwater from CRZ Area. Presently unit is procuring desalinated water from M/s. Chennai Metropolitan Water Supply and Sewerage Board, Chennai.
b	The unit should obtain planning permission for their constructions from the CMDA/Department of Environment before commencing the constructions	<b>Not applicable.</b>  Project is in operation phase. This EC & CRZ Clearance is just a bifurcation of original EC & CRZ clearance of LTSB in name of MIDPL & LTSB.  Required permission from concerned authorities was taken by M/s. LTSB before commencing the constructions.
c	The proposed activities should not cause coastal erosion and alter the beach configuration	<b>Complied.</b>  MIDPL has engaged Institute of Ocean Management, Anna University, Chennai and carried out Shoreline Change study during December 2022. Report is attached as <b>Annexure - II</b> .
d	No fencing or barricading along the pipeline alignment and parallel to the coast is permissible in CRZ.	<b>Agreed for compliance.</b>  All activities permissible as per CRZ notification 2011 & EC&CRZ clearance will only be carried out.
e	No blasting or drilling activities in CRZ is permissible.	<b>Agreed for compliance.</b>  No blasting or drilling activity is carried in CRZ area. All activities permissible as per CRZ notification 2011 & EC&CRZ clearance will only be carried out.
f	The proponent should not prevent public from easy access to the beach.	<b>Being complied.</b>  MIDPL will not block the access point to beach for the public.

	<b>Marine Infrastructure Developer Pvt Ltd</b>	<b>From : April 2022</b> <b>To : September 2023</b>
<b><u>Status of Compliance to RC No. P1/2004/2008, dated 21.10.2008 of Department of Environment, Chennai</u></b>		

<p>9</p>	<p>Chemical waste generated and the sewage generated, if any should not be discharged into the sea.</p>	<p><b>Complied.</b></p> <p>No chemical waste is generated. MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory. All the parameters are well within the prescribed norms.</p>
<p>h</p>	<p>The proponent should implement the EMP including the Green Belt as envisaged in the EIA report.</p>	<p><b>Complied.</b></p> <p>The EMP is being implemented in letter and spirit. MIDPL is having adequate Greenbelt covering 28.43Ha (which includes 35,177 nos of trees covering 13.19Ha inside the Port premises and around 35,000 trees covering 15.25Ha outside the Port premises). Greenbelt has been developed along the periphery of the port area and alongside of the road and are being well maintained.</p> <p>Operational Phase EMP compliance status is enclosed as <b>Annexure – VII.</b></p>
<p>i</p>	<p>The project activity should not affect the coastal ecosystem including marine flora and fauna.</p>	<p><b>Complied.</b></p> <p>Marine water &amp; Sediment quality are being monitored through NABL accredited laboratory on monthly basis. There is no impact on water quality in the vicinity. The details of Marine Water quality monitoring report for the period April 2023 to September 2023 is enclosed as <b>Annexure – IV.</b></p>
<p>j</p>	<p>The proponent should not undertake any activity, which is violate of provisions of CRZ Notification 1991 and the subsequent</p>	<p><b>Being complied.</b></p> <p>All activities permissible as per CRZ notification 2011 &amp; EC&amp;CRZ clearance will only be carried out.</p>

	<b>Marine Infrastructure Developer Pvt Ltd</b>	<b>From : April 2022</b> <b>To : September 2023</b>
<b><u>Status of Compliance to RC No. P1/2004/2008, dated 21.10.2008 of Department of Environment, Chennai</u></b>		

	amendments.	
k	The CRZ Clearance will be revoked if any of the conditions stipulated in not complied with.	<b>Noted for compliance</b>

## **ANNEXURE - 2**

**(SHORELINE CHANGE STUDY REPORT - DECEMBER 2022)**



*SHORELINE CHANGE STUDY IN AND AROUND KATTUPALLI PORT*

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**PROJECT REPORT ON**

**SHORELINE CHANGE STUDY IN AND AROUND KATTUPALLI PORT,  
PONNERI TALUK, TAMIL NADU**

**Prepared for**

**M/S MARINE INFRASTRUCTURE DEVELOPER PRIVATE  
LIMITED(MIDPL)  
KATTUPALLI PORT, KATTUPALLI**

**Prepared By**



**INSTITUTE FOR OCEAN MANAGEMENT  
ANNA UNIVERSITY  
CHENNAI-600025.**

**December-2022**



**ANNEXURE - 3**  
**(HW ANNUAL RETURNS IN FORM-4 FOR 2022-23)**

MIDPL/TNPCB/GMP/HWR-2023/21

Date: 16/06/2023

To,

**The District Environmental Engineer,**

Tamil Nadu Pollution Control Board,

88A, First Cross Road,

SIPCOT Industrial Complex,

Gummidipoondi - 601201.

Dear Sir,

**Sub:** Submission of Annual Hazardous Waste Returns (FORM 4) for the period April'2022 to March'2023- Reg.

With reference to captioned subject, **M/s. Marine Infrastructure Developer Private Limited** is submitting the Annual Hazardous Waste Returns in Form 4 for the period April'2022 to March'2023.

Submitted for your kind records.

Kindly acknowledge us the receipt of the same.

for, **M/s. Marine Infrastructure Developer Pvt Ltd**  
**Mr. Ramde Karangiya**  
**Head - Terminal**

Encl: As above

**FORM 4**  
**[See rules 6(5), 13(8), 16(6) and 20 (2)]**  
**Annual Return**  
**under**  
**Hazardous & Other Wastes(Management & Transboundary Movement) Rules, 2016**  
**Transboundary Movement) Rules, 2016**

To be submitted to State Pollution Control Board by 30th day of June of every year for the preceding period April to March

**Return No :** 53540024

**Period :** 2022-2023

<b>1. Name of facility/Industry Industry Address of facility/Industry</b>	MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED PB No. 001, KATTUPALLI PORT, KATTUPALLI VILLAGE			
<b>2. UID</b>	R17AMB9758447			
<b>3. Authorisation No Date of issue: Date of Expiry</b>	19HFC20312718 30/04/2019 29/04/2024			
<b>4. (i) Name of the authorised person &amp; Designation</b>	Mr. Sudip Dasgupta Chief Executive Officer			
<b>(ii) Correspondence Address</b>	Ramcon Fortuna Towers, 4th Floor, No.1/2. Kodambakkam High Road, Nungambakkam, Chennai-600034			
<b>(iii) Mobile No</b>	9150944421			
<b>(iv) Land Line No (with area code)</b>	India			
<b>(iv) Fax number (with area code)</b>				
<b>(vi) e-mail</b>	subramanian.a@adani.com			
<b>5. Production during the year (product wise), wherever applicable</b>	<b>Sr.no</b>	<b>Product Name</b>	<b>Quantity</b>	<b>Unit</b>
	1	Containers	10149523.0	Metric Ton
	2	Ro-Ro Automobiles	0	Metric Ton
	3	project Cargo	0	Metric Ton
	4	Break Bulk / General Cargo	822182.57	Metric Ton
	5	Edible Oil, CBFS, Base oil, Lube and Non-Hazardous liquid cargo	415994.16	Metric Ton

**Part A. To be filled by hazardous waste generators**

Sr.no	Category	Unit	Quantity in stock at the beginning of the year	Total quantity of waste generated	Quantity dispatched to disposal facility	Quantity dispatched to recycler or co-processors or pre-processor	Quantity dispatched to others	Quantity utilised in house	Quantity in storage at the end of the year

1	Schedule I - 3. Cleaning, emptying and maintenance of petroleum oil storage tanks including ships - 3.1-Cargo residue, washing water and sludge containing oil	Metric Ton	0	8.4	0	8.4	0	0	0
2	Schedule I - 5 Industrial operations using mineral/synthetic oil as lubricant in hydraulic systems - 5.1 Used/spent oil	Metric Ton	0	1.596	0	1.596	0	0	0
3	Schedule I - 5 Industrial operations using mineral/synthetic oil as lubricant in hydraulic systems - 5.2 Wastes/residues containing oil	Metric Ton	0	13.05	0	13.05	0	0	0

**Part B. To be filled by Treatment, storage and disposal facility operators**

Sr.no	Category	Unit	Quantity in stock at the beginning of the year	Total quantity received	Quantity treated	Quantity disposed in landfills as such and after treatment	Quantity incinerated (If applicable)	Quantity processed other than specified above	Quantity in storage at the end of the year
-------	----------	------	--	-------------------------	------------------	--	--------------------------------------	---	--

**Part C. To be filled by recyclers or co-processors or other users**

Sr.no	Category	Unit	Quantity in stock at the beginning of the year	Quantity of waste received during the year from Domestic sources	Quantity of waste received during the year Imported	Quantity recycled or co-processed or used	Quantity of waste generated	Quantity of waste disposed	Quantity re-exported (wherever applicable)	Quantity in storage at the end of the year
-------	----------	------	--	--	---	---	-----------------------------	----------------------------	--	--

**Quantity of products dispatched during the year (wherever applicable)**

Sr.no	Product dispatched	Quantity	Unit
-------	--------------------	----------	------

**Date :** 16/06/2023

**Place :** Tiruvallur

*Sudip Dasgupta*

**Name of the Occupier or Operator of the disposal facility**

**MIDPL/TNPCB/GMP/HWM/168****Date: 05.08.2022**

To,  
**The District Environmental Engineer,**  
Tamil Nadu Pollution Control Board,  
No. 88A, SIPCOT Industrial Complex,  
Gummidipoondi,  
Tiruvallur District – 601 201.

Dear Sir,

**Sub:** Submission of Hazardous waste Manifest (Form-10) for the month of **July 2022.**

With reference to the captioned subject, **M/s. Marine Infrastructure Developer Private Ltd.** is submitting the Hazardous Waste Manifest (Form-10) for the month of **July 2022.**

Submitted for your kind records.

Kindly acknowledge us the receipt of the same,

for, **M/s. Marine Infrastructure Developer Pvt Ltd**  
**R. Sathish Kumar****Head - Environment**



Encl: As above



**Form - 10**

[See rule 19 (1)]

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**



1.	Sender's Name & Mailing Address (Including Phone No. & E-mail)	Marine Infrastructure Developer Pvt Ltd Kattupalli Port, Bonneri Taluk, Tiruvallur, Chennai - 120.														
2.	Sender's Authorisation No.	19HFC 201312718 dt. 30/04/2019														
3.	Mainfest Document No.	MIDPL/HWM/2022/01														
4.	Transporter's Name & Address (Including Phone No. & E-mail)	<b>LAKSHMI TRANSPORT</b> ARAKKONAM														
5.	Type of Vehicle	(Truck / Tanker / Special Vehicle)														
6.	Transporter's Registration No.	Self														
7.	Vehicle Registration No.	TN 22 CC 9093														
8.	Receiver's Name & Mailing Address (Including Phone No. & Email)	<b>LAKSHMI &amp; CO.,</b> Plot No. 99, SIDCO Industrial Estate, Ammanur Village, Arakkonam, Taluk, Ranipet Dist. Pincode : 631002.														
9.	Receiver's Authorisation No.	<b>19HFC18785256</b>														
10.	Waste Description	5.1 - Used oil														
11.	Total Quantity No. of Containers	1800 Ltrs / 1.596 MT m3 or MT Oil sp. gravity - Oil Barrels - 57 Nos. = 0.887														
12.	Physical form	(Solid / Semi - Solid / Sludge / Oily / Tarry / Slurry / Liquid)														
13.	Special Handling Instruction & Additional information	Handle with Care & Avoid Leakages														
14.	Senders Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulation														
	 Signature: <i>M. Vasanth</i>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="3">YEAR</td> </tr> <tr> <td align="center">0</td><td align="center">7</td> <td align="center">2</td><td align="center">1</td> <td align="center">2</td><td align="center">0</td><td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR			0	7	2	1	2	0	22
MONTH		DAY		YEAR												
0	7	2	1	2	0	22										
	Name & Stamp: <b>LAKSHMI TRANSPORT</b> Signature:	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="3">YEAR</td> </tr> <tr> <td align="center">0</td><td align="center">7</td> <td align="center">2</td><td align="center">1</td> <td align="center">2</td><td align="center">0</td><td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR			0	7	2	1	2	0	22
MONTH		DAY		YEAR												
0	7	2	1	2	0	22										
15.	Transporter Acknowledgement of Receipt of Wastes															
	Name & Stamp: <b>LAKSHMI TRANSPORT</b> Signature:	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="3">YEAR</td> </tr> <tr> <td align="center">0</td><td align="center">7</td> <td align="center">2</td><td align="center">1</td> <td align="center">2</td><td align="center">0</td><td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR			0	7	2	1	2	0	22
MONTH		DAY		YEAR												
0	7	2	1	2	0	22										
16.	Receiver's Certification of Receipt of Hazardous and other Waste															
	 Signature: <i>R.P. [Signature]</i>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="3">YEAR</td> </tr> <tr> <td align="center">0</td><td align="center">7</td> <td align="center">2</td><td align="center">1</td> <td align="center">2</td><td align="center">0</td><td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR			0	7	2	1	2	0	22
MONTH		DAY		YEAR												
0	7	2	1	2	0	22										
	Name & Stamp: <b>LAKSHMI &amp; CO.</b> Signature:	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="3">YEAR</td> </tr> <tr> <td align="center">0</td><td align="center">7</td> <td align="center">2</td><td align="center">1</td> <td align="center">2</td><td align="center">0</td><td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR			0	7	2	1	2	0	22
MONTH		DAY		YEAR												
0	7	2	1	2	0	22										

- White : To be Forwarded by the sender to the State Pollution Control Board after signing all the seven copies.
- Yellow : To be retained by the sender after taking signature on it from the transporter and the rest of the five signed copies to be carried by the transporter.
- Pink : To be retained by the receiver (Actual user or treatment storage & disposal facility operator) after receiving the waste & the remaining four copies are to be duly signed by the receiver.
- Orange : To be handed over to be transporter by the receiver after accepting waste.
- Green : To be sent by the receiver to the State Pollution Control Board
- Blue : To be sent by the receiver the Sender
- Grey : To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State

**Form - 10**

[See rule 19 (1)]



**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1.	Sender's Name & Mailing Address (Including Phone No. & E-mail)	Marine Infrastructure Developer Pvt. Ltd, Kattupalli Port, Porur Paluk, Tiravallur, Chennai - 120.			
2.	Sender's Authorisation No.	19HFC 201312718 dt. 30/04/2019			
3.	Mainfest Document No.	MIDPL/HWM/2022/02			
4.	Transporter's Name & Address (Including Phone No. & E-mail)	<b>LAKSHMI TRANSPORT</b> ARAKKONAM			
5.	Type of Vehicle	(Truck / Tanker / Special Vehicle)			
6.	Transporter's Registration No.	Self			
7.	Vehicle Registration No.	TN 22 CC 9093			
8.	Receiver's Name & Mailing Address (Including Phone No. & Email)	<b>LAKSHMI &amp; CO.,</b> Plot No. 99, SIDCO Industrial Estate, Ammanur Village, Arakkonam, Taluk, Ranipet Dist. Pincode : 631002.			
9.	Receiver's Authorisation No.	<b>19HFC18785256</b>			
10.	Waste Description	5.2 - Waste Containing oil			
11.	Total Quantity No. of Containers	.....3.47 MT.....m3 or MT ..... Nos.			
12.	Physical form	(Solid / Semi - Solid / Sludge / Oily / Tarry / Slurry / Liquid)			
13.	Special Handling Instruction & Additional information	Handle with Care & Avoid Leakages			
14.	Senders Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulation			
	 Name & Stamp : <span style="margin-left: 150px;">Signature :</span>	MONTH	DAY	YEAR	
		0 7	2 1	2 0	2 2
15.	Transporter Acknowledgement of Receipt of Wastes				
	<b>LAKSHMI TRANSPORT</b> Name & Stamp : <span style="margin-left: 150px;">Signature :</span>	MONTH	DAY	YEAR	
		0 7	2 1	2 0	2 2
16.	Receiver's Certification of Receipt of Hazardous and other Waste				
	 For <b>Lakshmi &amp; Co.,</b> Name & Stamp : <span style="margin-left: 150px;">Signature :</span>	MONTH	DAY	YEAR	
		0 7	2 1	2 0	2 2
. White : To be Forwarded by the sender to the State Pollution Control Board after signing all the seven copies. . Yellow : To be retained by the sender after taking signature on it from the transporter and the rest of the five signed copies to be carried by the transporter. . Pink : To be retained by the receiver (Actual user or treatment storage & disposal facility operator) after receiving the waste & the remaining four copies are to be duly signed by the receiver. . Orange : To be handed over to be transporter by the receiver after accepting waste. . Green : To be sent by the receiver to the State Pollution Control Board . Blue : To be sent by the receiver the Sender . Grey : To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State.					

**Form - 10**

[See rule 19 (1)]

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1.	Sender's Name & Mailing Address (Including Phone No. & E-mail)	Marine Infrastructure Development Pvt. Ltd. Kattupalli Port, Ponneri Taluk, Tiruvallur, Chennai - 120												
2.	Sender's Authorisation No.	19HFC 201312718 dt. 30/04/2019												
3.	Mainfest Document No.	MIDPL / AWM / 2022 / 02												
4.	Transporter's Name & Address (Including Phone No. & E-mail)	<b>LAKSHMI TRANSPORT</b> ARAKKONAM												
5.	Type of Vehicle	(Truck / Tanker / Special Vehicle)												
6.	Transporter's Registration No.	Self												
7.	Vehicle Registration No.	TN 22 CC 9093												
8.	Receiver's Name & Mailing Address (Including Phone No. & Email)	<b>LAKSHMI &amp; CO.,</b> Plot No. 99, SIDCO Industrial Estate, Ammanur Village, Arakkonam, Taluk, Ranipet Dist. Pincode : 631002.												
9.	Receiver's Authorisation No.	<b>19HFC18785256</b>												
10.	Waste Description	5-2 - Waste / Residue Containing oil												
11.	Total Quantity No. of Containers	..... 4.84 MT ..... m <sup>3</sup> or MT ..... Nos.												
12.	Physical form	(Solid / Semi - Solid / Sludge / Oily / Tarry / Slurry / Liquid)												
13.	Special Handling Instruction & Additional information	Handle with Care & Avoid Leakages												
14.	Senders Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulation												
	 Name & Stamp: _____ Signature: <i>M. Pradgnan</i>													
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="2">YEAR</td> </tr> <tr> <td align="center">07</td> <td align="center">29</td> <td align="center">20</td> <td align="center">22</td> <td align="center">22</td> <td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR		07	29	20	22	22	22
MONTH		DAY		YEAR										
07	29	20	22	22	22									
15.	Transporter Acknowledgement of Receipt of Wastes													
	<b>LAKSHMI TRANSPORT</b> Name & Stamp: _____ Signature: _____	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="2">YEAR</td> </tr> <tr> <td align="center">07</td> <td align="center">29</td> <td align="center">20</td> <td align="center">22</td> <td align="center">22</td> <td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR		07	29	20	22	22	22
MONTH		DAY		YEAR										
07	29	20	22	22	22									
16.	Receiver's Certification of Receipt of Hazardous and other Waste													
	 Name & Stamp: _____ Signature: <i>R. Pradgnan</i> For <b>Lakshmi &amp; Co.,</b>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">MONTH</td> <td align="center" colspan="2">DAY</td> <td align="center" colspan="2">YEAR</td> </tr> <tr> <td align="center">07</td> <td align="center">29</td> <td align="center">20</td> <td align="center">22</td> <td align="center">22</td> <td align="center">22</td> </tr> </table>	MONTH		DAY		YEAR		07	29	20	22	22	22
MONTH		DAY		YEAR										
07	29	20	22	22	22									
<p>White - To be Forwarded by the sender to the State Pollution Control Board after signing all the seven copies.</p> <p>Yellow - To be retained by the sender after taking signature on it from the transporter and the rest of the five signed copies to be carried by the transporter.</p> <p>Pink - To be retained by the receiver (Actual user or treatment storage &amp; disposal facility operator) after receiving the waste &amp; the remaining four copies are to be duly signed by the receiver.</p> <p>Orange - To be handed over to be transporter by the receiver after accepting waste.</p> <p>Green - To be sent by the receiver to the State Pollution Control Board</p> <p>Blue - To be sent by the receiver the Sender</p> <p>Grey - To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State.</p>														



**MIDPL/TNPCB/GMP/HWM/189****Date: 05.11.2022**

To,

**The District Environmental Engineer,  
Tamil Nadu Pollution Control Board,  
No. 88A, SIPCOT Industrial Complex,  
Gummidipoondi,  
Tiruvallur District - 601 201.**

Dear Sir,

**Sub: Marine Infrastructure Developer Private Limited (MIDPL), Kattupalli Port - Submission  
of Hazardous Waste Manifest in Form-10 - Reg.**

**Ref: Hazardous Waste Authorization No. 19HFC20312718 dated 30.04.2019**

With reference to the captioned subject, **M/s. Marine Infrastructure Developer Private Ltd.**  
is submitting the Hazardous Waste Manifest in Form-10 for the month of **October 2022.**

Submitted for your kind information and records.

for, **M/s. Marine Infrastructure Developer Private Limited**

*R-S  
07/11/22*  
**R. Sathish Kumar  
Head - Environment**



**Encl: As above**

Marine Infrastructure Developer Pvt Ltd  
(Kattupalli Port)  
Kattupalli Village, Ponneri Taluk,  
Tiruvalluvar District 600 120,  
Tamil Nadu, India



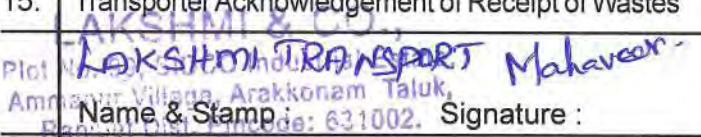
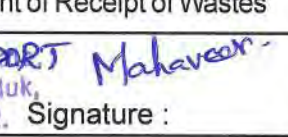

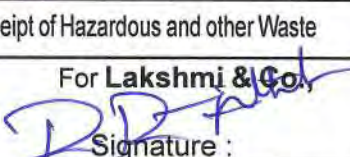
Tel +91 44 2824 3062

CIN: U74999TN2016PTC103769

## Form - 10

[See rule 19 (1)]

### MANIFEST FOR HAZARDOUS AND OTHER WASTE

1.	Sender's Name & Mailing Address (Including Phone No. & E-mail)	:	Marine Infrastructure Developer Pvt. Ltd. Kattupalli Port, Ponneri Taluk, Tiruvallur, Chennai - 120.		
2.	Sender's Authorisation No.	:	19 HFC 20312718 dt- 30.04.2019		
3.	Mainfest Document No.	:	MIDPL/HWM/2022/04		
4.	Transporter's Name & Address (Including Phone No. & E-mail)	:	<b>LAKSHMI TRANSPORT ARAKKONAM</b>		
5.	Type of Vehicle	:	(Truck / Tanker / Special Vehicle)		
6.	Transporter's Registration No.	:	Self		
7.	Vehicle Registration No.	:	TN 20AZ 6417		
8.	Receiver's Name & Mailing Address (Including Phone No. & Email)	:	<b>LAKSHMI &amp; CO.,</b> Plot No. 99, SIDCO Industrial Estate, Ammanur Village, Arakkonam, Taluk, Ranipet Dist. Pincode : 631002.		
9.	Receiver's Authorisation No.	:	19HFC18785256		
10.	Waste Description	:	5-2 - Waste / Residue Containing oil		
11.	Total Quantity No. of Containers	:	..... 4.74 ..... m3 or MT ..... Nos.		
12.	Physical form	:	(Solid / Semi - Solid / Sludge / Oil / Tarry / Slurry / Liquid)		
13.	Special Handling Instruction & Additional information	:	Handle with Care & Avoid Leakages		
14.	Senders Certificate	:	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulation		
					
	Name & Stamp	Signature :	MONTH	DAY	YEAR
			1	0	19 20 22
15.	Transporter Acknowledgement of Receipt of Wastes				
					
	Name & Stamp	Signature :	MONTH	DAY	YEAR
			1	0	19 20 22
16.	Receiver's Certification of Receipt of Hazardous and other Waste				
					
	Name & Stamp	Signature :	MONTH	DAY	YEAR
			1	0	19 20 22

1. White : To be Forwarded by the sender to the State Pollution Control Board after signing all the seven copies.
2. Yellow : To be retained by the sender after taking signature on it from the transporter and the rest of the five signed copies to be carried by the transporter.
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4. Orange : To be handed over to be transporter by the receiver after accepting waste.
5. Green : To be sent by the receiver to the State Pollution Control Board
6. Blue : To be sent by the receiver the Sender
7. Grey : To be sent by the receiver to the State Pollution Control Board of the sender in case the sender is in another State.

MIDPL/TNPCB/GMP/HWM/195

Date: 03.12.2022

To,

The District Environmental Engineer,  
Tamil Nadu Pollution Control Board,  
No. 88A, SIPCOT Industrial Complex,  
Gummidipoondi,  
Tiruvallur District - 601 201.

Dear Sir,

Sub: Marine Infrastructure Developer Private Limited (MIDPL), Kattupalli Port - Submission  
of Hazardous Waste Manifest in Form-10 - Reg.

Ref: Hazardous Waste Authorization No. 19HFC20312718 dated 30.04.2019

With reference to the captioned subject, M/s. Marine Infrastructure Developer Private Ltd.  
is submitting the Hazardous Waste Manifest in Form-10 for the month of November 2022.

Submitted for your kind information and records.

for, M/s. Marine Infrastructure Developer Private Limited


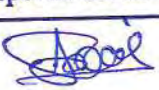



  
R. Sathish Kumar  
Head - Environment

Encl: As above



**FORM 10**  
{see rule 19 (1)}

**MANIFEST FOR HAZARDOUS AND OTHER WASTE**

1. Senders name and mailing address (Including Phone No. and E-mail)	:	M.V. SSL CHENNAI Chettipalli Port) MIDPL
2. Sender's Authorisation No.	:	19HFC 20312718
3. Manifest Document No.	:	
4. Transporter's Name and address Including Phone No. and E-mail	:	Thirupathi oil Company
5. Type of Vehicle	:	(Truck / Tranker / Special Vehicle)
6. Transporters Registration No.	:	T
7. Vehicle Registration No.	:	THIRUPATHI OIL COMPANY TN 52D2151
8. Receivers name and mailing address (Including Phone and E-mail)	:	Factory : Plot No. 7, Industrial Estate, Venmaniathur Village - 604 207 Tindivanam Taluk, Villupuram (Dt.)
9. Receivers authorisation No.	:	18HRC12111693.DT17/5/2018
10. Waste Description	:	OPL Sludge (3.1 category)
11. Total Quantity No. of Container	:	.....8.4.....M <sup>3</sup> or MT .....Nos.
12. Physical Form	:	Solid / Semi Solid / Sludge / Oily / Tarry / Slurry / Liquid / Other
13. Special handling instructions and additional information	:	
14. Senders Certificate	:	I hereby declare that the content of the consignment are fully and accurately described above the proper shipping name and are categorised packed, marked and labelled and are in all respects in proper conditions for transport and road according for transport by road according to applicable national government regulation.
Name and Stamp :	Signature	Day    Month    Year
23/11/22		23    11    2022
15. Transporter acknowledgement of receipt wastes		
Name and Stamp : Authorised Signatory		Day    Month    Year
		23    11    2022
16. Receivers Certification for receipt of hazardous and other waste		
Name and Stamp : Authorised Signatory		Day    Month    Year
		23    11    2022



## TAMILNADU POLLUTION CONTROL BOARD

**AUTHORISATION No. 19HFC20312718 dated 30/04/2019**

**Proceeding No. T1/TNPCB/F.0420GMP/HWA/RL/GMP/2019 dated 30/04/2019**

Sub: Tamil Nadu Pollution Control Board – Hazardous Waste Authorization-Fresh- M/s. MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED, S.F.No. 14-18B, 15, 168-1&2, 169, 170-1&2, 171-1&2, 172-1&2, 173-1&2, 174, 175, 176, 177, 178-1,2,3&4,179-1, 2, 3&4, 180, 181, 182, 183, 184-1, 2&3, 186, 187, 188-1, 2A, 2B& 2C,189, 190,191, 192-1 & 2, 193-1, 2, 3 & 4, 194, 195, 196, 197-1,2&3, 199, 200-1&2, 202-1&2, 203, 206-1,2A,2B,3,4A&4B, 207-2B, 208-2, 209-1,2&3, 210-1&2, 211-1,2,3,4,5,6&7, 212, 213, 214-1,2,3&4,215-1&2,216,217,218-1,2,3,4&5,219-1&2,220, 223-1&2, 224-1,2,3,4&5, 225, 226, 227, 228-1,2,3,4& 5, 229, 230, 231-1,2,3,4&5, 232, 233-1,2,3&4, 234-1,2,3&4, 235-1B, 2-3B, 236-3B, 4, 242-1&2, 243-2B, 244-2, 247-1, 248-1&2, 249-1A,2,2B, 198-1, 205-1A,1B,2,5, 1 (part)-4A1 Pt,4A2,4B Pt,5 Pt, 11 (part), 16 (part)-1&2,17 (part)-1, 2, 3A&3B ,143 (part), 151 (part)-1,2,3&4,152 (part), 153 (part), 154 (part)-1&2, 166 (part), 167 (part)-1&2, 204(part)-1,2&3, 221(part), 222 (part)-1&2, 330 (part)-1,2,3&4, 12 (Part),16-3, 198-2, 201, 205-3, 205-4, KATTUPALLI Village, PONNERI Taluk, Tiruvallur District - Authorization under Rule 6 (2) of the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 enacted under Environment (Protection) Act, 1986 – Issued- Reg.

Ref: 1. Unit's application No 20312718 Dated: 21.01.2019  
2. HWA-IR.No.0420GMP/HWA/RL/DEE/GMP/2019 dated: 20.03.2019

### FORM 2

[See rule 6 (2)]

#### FORM FOR GRANT OR RENEWAL OF AUTHORISATION TO THE OCCUPIERS, RECYCLERS, REPROCESSORS, REUSERS, USER AND OPERATORS OF DISPOSAL FACILITIES

1. Number of authorization: 19HFC20312718 and dated : 30/04/2019
2. The Chief Executive Officer of M/s. MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED is hereby granted an Authorisation based on the enclosed signed Inspection report for Generation, Collection, Storage, Reception, Disposal of hazardous or other wastes or both on the premises situated at S.F.No. 14-18B, 15, 168-1&2, 169, 170-1&2, 171-1&2, 172-1&2, 173-1&2, 174, 175, 176, 177, 178-1,2,3&4,179-1, 2, 3&4, 180, 181, 182, 183, 184-1, 2&3, 186, 187, 188-1, 2A, 2B& 2C,189, 190,191, 192-1 & 2, 193-1, 2, 3 & 4, 194, 195, 196, 197-1,2&3, 199, 200-1&2, 202-1&2, 203, 206-1,2A,2B,3,4A&4B, 207-2B, 208-2, 209-1,2&3, 210-1&2, 211-1,2,3,4,5,6&7, 212, 213, 214-1,2,3&4,215-1&2,216,217,218-1,2,3,4&5,219-1&2,220, 223-1&2, 224-1,2,3,4&5, 225, 226, 227, 228-1,2,3,4& 5, 229, 230, 231-1,2,3,4&5, 232, 233-1,2,3&4, 234-1,2,3&4, 235-1B, 2-3B, 236-3B, 4, 242-1&2, 243-2B, 244-2, 247-1, 248-1&2, 249-1A,2,2B, 198-1, 205-1A,1B,2,5, 1 (part)-4A1 Pt,4A2,4B Pt,5 Pt, 11 (part), 16 (part)-1&2,17 (part)-1, 2, 3A&3B ,143 (part), 151 (part)-1,2,3&4,152 (part), 153 (part), 154 (part)-1&2, 166 (part), 167 (part)-1&2, 204(part)-1,2&3, 221(part), 222 (part)-1&2, 330 (part)-1,2,3&4, 12 (Part),16-3, 198-2, 201, 205-3, 205-4, KATTUPALLI Village, PONNERI Taluk, Tiruvallur District.



## TAMILNADU POLLUTION CONTROL BOARD

Sl No	Schedule / Name of the Processes	Name of Hazardous Waste (with category No)	Quantity	Activities for which Authorization is issued
1	Schedule I /5. Industrial operations using mineral or synthetic oil as lubricant in hydraulic systems or other applications	5.1-Used or spent oil	150 KL/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
2	Schedule I /3. Cleaning, emptying and maintenance of petroleum oil storage tanks including ships	3.3-Sludge and filters contaminated with oil	5 T/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
3	Schedule I /33. Handling of hazardous chemicals and wastes	33.1-Empty barrels/containers/liners contaminated with hazardous chemicals /wastes	10 T/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
4	Schedule I /5. Industrial operations using mineral or synthetic oil as lubricant in hydraulic systems or other applications	5.2-Wastes or residues containing oil	50 T/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
5	Schedule I /3. Cleaning, emptying and maintenance of petroleum oil storage tanks including ships	3.1-Cargo residue, washing water and sludge containing oil	2000 T/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
6	Schedule I /35. Purification and treatment of exhaust air/gases, water and waste water from the processes in this schedule and common industrial effluent treatment plants (CETP's)	35.3-Chemical sludge from waste water treatment	1 T/Annum	Collection, Storage, Reception, Disposal to TSDF, Gummidipoondi/ authorized recyclers
7	Schedule I /3. Cleaning, emptying and maintenance of petroleum oil storage tanks including ships	3.4-Ballast water containing oil from ships	120 KL/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers / for Captive Recovery and Reuse after separating oil from water using Oil Water Separator
8	Schedule I /33. Handling of hazardous chemicals and wastes	33.2-Contaminated cotton rags or other cleaning materials	50 T/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
9	Schedule I /34. De-contamination of barrels/containers used for handling of hazardous wastes/chemicals	34.2-Sludge from treatment of waste water arising out of cleaning / disposal of barrels / containers	10 T/Annum	Collection, Storage, Reception, Disposal to TSDF, Gummidipoondi/ authorized recyclers
10	Schedule I /3. Cleaning, emptying and maintenance of petroleum oil storage tanks including ships	3.1-Cargo residue, washing water and sludge containing oil	25 T/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers
11	Schedule I /3. Cleaning, emptying and maintenance of petroleum oil storage tanks including ships	3.4-Ballast water containing oil from ships	1000 KL/Annum	Generation, Collection, Storage, Reception, Disposal to authorized recyclers / for Captive Recovery and Reuse after separating oil from water using Oil Water Separator

3 This authorization shall be valid for a period upto 29/04/2024.

**POLLUTION PREVENTION PAYS**



## TAMILNADU POLLUTION CONTROL BOARD

The Authorization is issued subject to the following general and special conditions annexed.

R. Kannan Digitally signed by R. Kannan  
Date: 2018.03.13 14:19  
UTC+05'30'

For Member Secretary  
Tamil Nadu Pollution Control Board  
Chennai

### A. GENERAL CONDITIONS OF AUTHORIZATION

1. The authorised person shall comply with the provisions of the Environment (Protection) Act, 1986 and the rules made there under.
2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by Tamil Nadu Pollution Control Board.
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the hazardous and other wastes except what is permitted through this Authorisation.
4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of his authorization.
5. The person authorised shall implement Emergency Response procedure (ERP) for which this authorisation is being granted considering all site specific possible scenarios such as spillages, leakages, fire ,etc and their possible impacts and also carry out mock drill in this regard at regular interval of time.
6. The person authorised shall comply with the provisions outlined in the CPCB guidelines on "Implementing Liabilities for Environmental damages due to Handling and Disposal of Hazardous Wastes and Penalty".
7. It is the duty of the authorized person to take prior permission of Tamil Nadu Pollution Control Board to close down the facility.
8. The imported Hazardous and other wastes shall be fully insured for transit as well as the accidental occurrences and its clean-up operation.
9. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
10. The Hazardous and other wastes which gets generated during recycling or reuse or recovery or pre-processing or utilisation of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of Authorisation.
11. The importer or Exporter shall bear the cost of import or export or mitigation of damages if any.
12. An application for the renewal of an authorization shall be made as laid down under these Rules.
13. Any other conditions for compliance as per the Guidelines issued by the MoEF and CC or CPCB from time to time.
14. Annual returns shall be filed by June 30th for the period ending 31st March of the previous financial year.

### B. SPECIFIC CONDITIONS - HW Generator

1. The occupier/generator shall be responsible for safe and environmentally sound management of hazardous and other wastes.
2. The occupier shall follow the following steps for the management of hazardous and other wastes. (a) prevention (b) minimization (c) reuse (d) recycling (e) recovery, utilisation including co-processing and (f) safe disposal
3. The occupier shall take all the steps while managing hazardous and other wastes - (a) To contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and (b) To provide persons working in the site with appropriate training, equipment and the information necessary to ensure their safety.
4. The occupier shall store the hazardous and other wastes for a period not exceeding ninety days and shall maintain a record of sale, transfer, storage, recycling, recovery, pre-processing, co-processing and utilisation of such wastes and make these records available for inspection:
5. The hazardous and other wastes shall be stored temporally in an isolated area earmarked for the purpose within the occupier's premises (it shall not be accessible to rain water) till scientific disposal. The storage area shall be fenced properly and a sign of danger shall be placed at the storage site.

**POLLUTION PREVENTION PAYS**



## TAMILNADU POLLUTION CONTROL BOARD

6. The containers holding the hazardous and other wastes shall be kept in good condition and made of materials which can withstand the physical and environmental conditions during storage and transportation. Only properly cleaned containers shall be used for storage of hazardous and other wastes.
7. The occupier handling hazardous or other wastes shall maintain records of such operations of generation, handling, storage and disposal as per Form 3.
8. The hazardous and other wastes generated in the establishment of the occupier shall be sent or sold to an authorised actual user or shall be disposed of in an authorised disposal facility.
9. The occupier handling hazardous or other wastes shall ensure that the hazardous and other wastes are packaged in a manner suitable for safe handling, storage and transport as per the guidelines issued by the Central Pollution Control Board from time to time
10. The labelling of package of hazardous or other wastes shall be done as per Form 8. The label shall be of non-washable material, weather proof and easily visible.
11. The hazardous and other wastes shall be transported from the occupier's establishment to an authorised actual user or to an authorised disposal facility in accordance with the provisions of these rules.
12. The transport of the hazardous and other wastes shall be in accordance with the provisions of these rules and the rules made by the Central Government under the Motor Vehicles Act, 1988 and the guidelines issued by the Central Pollution Control Board from time to time in this regard.
13. The occupier shall provide the transporter with the relevant information in Form 9, regarding the hazardous nature of the wastes and measures to be taken in case of an emergency and shall label the hazardous and other wastes containers as per Form 8
14. The authorisation for transport shall be obtained either by the sender or the receiver on whose behalf the transport is being arranged.
15. The transporter/sender of the hazardous and other wastes shall prepare and maintain manifest in Form 10.
16. The occupier or the operator or the transporter shall immediately intimate TNPCB through telephone, e-mail about the accident and subsequently send a report in Form 11, where an accident occurs at the facility of the occupier handling hazardous or other wastes and operator of the disposal facility or during transportation
17. The occupier who intends to get its hazardous and other wastes treated and disposed of by the operator of a treatment, storage and disposal facility shall give to the operator of that facility, such specific information as may be needed for safe storage and disposal.
18. The occupier shall be liable for all damages caused to the environment due to improper handling and management of the hazardous and other wastes.
19. The occupier handling hazardous and other wastes shall submit annual returns containing the details specified in Form 4 to TNPCB on or before the 30th day of June of every year for the preceding period April to March.
20. Any increase in quantity of handling of hazardous and other wastes, any change in category of hazardous and other wastes and any change in method of handling operations shall be brought to the notice of the TNPCB and fresh authorization shall be obtained.

### ADDITIONAL SPECIFIC CONDITIONS

1. The unit shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The unit shall dispose 3.3 (Sludge and filters contaminated with oil), 33.1 (Empty barrels/containers/liners contaminated with hazardous chemicals /wastes), 5.2 (Wastes or residues containing oil), 3.1(Cargo residue, washing water and sludge containing oil), 35.3 (Chemical sludge from waste water treatment), 3.4(Ballast water containing oil from ships), 34.2 (Sludge from treatment of waste water arising out of cleaning / disposal of barrels / containers), 5.1 (Used or spent oil), 33.2 (Contaminated cotton rags or other cleaning materials) to registered recyclers having valid authorization of the concerned State Pollution Control Board as reported.
3. The unit shall ensure that all relevant provisions of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 are complied with.
4. The hazardous wastes shall be stored in a compatible container on an impervious platform in closed shed which shall be provided with requisite fire protection system, personal protective equipment and safety system.
5. The unit shall maintain the records of generation of hazardous waste in Form 3 and shall furnish the copy of

**POLLUTION PREVENTION PAYS**





## TAMILNADU POLLUTION CONTROL BOARD

the manifest in Form 10 endorsed by the dispatcher, transporter and receiver of Hazardous wastes.

6. The unit shall furnish the Annual returns in Form 4 of the Rules to the Board on or before 30th June for the previous year from April to March.

7. The authorization is subject to such conditions as may be specified in the Rules for the time being in force under the Environment (Protection) Act, 1986 and the conditions mentioned in the Schedule A & B.

8. The unit shall provide Oil Water Separator (OWS) for separation of oil from water. The unit shall ensure that the oil separated shall be disposed to the authorized recyclers and the balance water shall be sent to ship.

9. The Specification of fuel derived from waste oil and other oily streams loaded from ships shall meet the specifications specified in Schedule V –Part B of the Hazardous & Other Waste (M & TB) Rules 2016.

10. The unit shall hand over the oily wastes only after obtaining and undertaking to this effect from the Registered Recycler.

**R. Kannan**

Digitally signed by R.  
Kannan  
Date: 2019.03.11 14:46  
+05'30'

**For Member Secretary  
Tamil Nadu Pollution Control Board  
Chennai**

**To**

The Chief Executive Officer  
MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED  
Kattupalli Port, Post box no: 001, Kattupalli Village  
Pin:600120

**Copy to:**

1. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Chennai.
2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, GUMMIDIPOONDI.

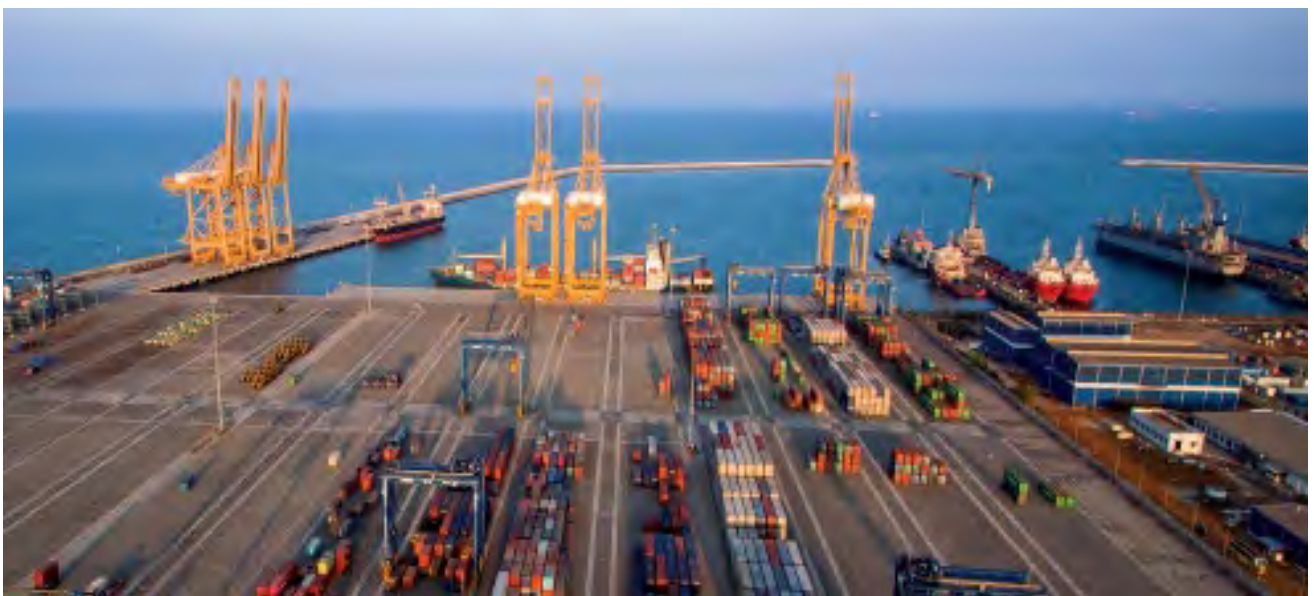
**ANNEXURE - 4**  
**(MIDPL MONITORING REPORT**  
**APRIL 2023 - SEPTEMBER 2023)**

# CONSOLIDATED HALF YEARLY MONITORING REPORT

M/s. MARINE INFRASTRUCTURE DEVELOPER PVT LTD

KATTUPALLI VILLAGE, PONNERI TALUK, THIRUVALLUR DISTRICT

APRIL 2023 TO  
SEPTEMBER 2023



Report Period

**April 2023 to September 2023**

Prepared by

**M/S. SV ENVIRO LABS AND CONSULTANTS**

(MoEF & CC Recognized, NABL & NABET Accredited,  
ISO 9001 & 45001 Certified Laboratory), Enviro House,  
B1, Block-B, Autonagar, Visakhapatnam – 530012,  
Andra Pradesh

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## I. INTRODUCTION

Marine Infrastructure Developer Private Limited (MIDPL), subsidiary of Adani Ports and Special Economic Zone Limited (APSEZ) is operating Kattupalli Port, having the latest technology of Terminal Operating System which is the first of its kind in India, which can support the entire supply chain in doing business smoothly.

MIDPL have engaged M/s. Green Chem Solutions (P) Ltd, an Accredited Consultant by NABL to carry out the Comprehensive Environmental monitoring studies in the Port site continuously as per the norms. This report covers the monitored environmental data for the Period April 2023 to September 2023.

## II. LOCATION OF THE PROJECT

The Project site is located at Port area, Kattupalli Port Area.

The location map is shown in Fig - 1

Fig - 1 - Location Map



## III. SCOPE OF WORK

The scope of Comprehensive Environmental monitoring includes the following environmental components;

1. Meteorological data
2. Ambient Air Quality
3. Ambient Noise Level
4. Marine Sampling
5. Treated STP / ETP Water.
6. Potable water
7. DG Set emission

The parameters covered under the scope for each of the above attributes are given below:

#### SCOPE OF WORK

S.No	Attribute	Scope	Frequency
1.	Meteorological Data	Collection of micrometeorological data on hourly basis by installing an auto weather monitoring station at plant site covering the following parameters : <ul style="list-style-type: none"> <li>• Wind speed</li> <li>• Wind direction</li> <li>• Rainfall</li> <li>• Relative Humidity</li> <li>• Temperature</li> <li>• Barometric pressure</li> <li>• Solar Radiation</li> </ul>	Daily
2.	Ambient Air Quality	Sampling of ambient air at 04 stations for analyzing the following parameters: <ul style="list-style-type: none"> <li>• PM10</li> <li>• PM2.5</li> <li>• SO<sub>2</sub></li> <li>• NO<sub>2</sub></li> <li>• CO</li> <li>• Lead</li> <li>• Ozone</li> <li>• Ammonia</li> <li>• Benzene</li> <li>• BenzoPyrene</li> <li>• Arsenic</li> <li>• Nickel</li> </ul>	Weekly Twice
3.	Ambient Noise	Collection of Noise levels on hourly basis at 4 locations <ul style="list-style-type: none"> <li>• L<sub>eq</sub> - Day (Max and Min)</li> <li>• L<sub>eq</sub> - Night (Max and Min)</li> </ul>	Monthly Once
4.	Marine Sampling		

4a.	Surface and Bottom Water	<p>Collection of Surface and Bottom Water analyzed for - 2 location</p> <ul style="list-style-type: none"> <li>• Temperature</li> <li>• pH @ 25°C</li> <li>• Total Suspended Solids</li> <li>• BOD at 27 °C for 3 days</li> <li>• Dissolved oxygen</li> <li>• Salinity at 25 °C</li> <li>• Oil &amp; Grease</li> <li>• Nitrate as <math>\text{NO}_3</math></li> <li>• Nitrite as <math>\text{NO}_2</math></li> <li>• Ammonical Nitrogen as N</li> <li>• Ammonia as <math>\text{NH}_3</math></li> <li>• Kjeldahl Nitrogen as NI</li> <li>• Total phosphates as <math>\text{PO}_4</math></li> <li>• Total Nitrogen,</li> <li>• Total Dissolved Solids</li> <li>• COD</li> <li>• Total bacterial count,</li> <li>• Coliforms</li> <li>• Escherichia coli</li> <li>• Salmonella</li> <li>• Shigella</li> <li>• Vibrio cholera</li> <li>• Vibrio parahaemolyticus</li> <li>• Enterococci</li> <li>• Colour</li> <li>• Odour</li> <li>• Taste</li> <li>• Turbidity</li> <li>• Calcium as Ca</li> <li>• Chloride as Cl</li> <li>• Cyanide as CN</li> <li>• Fluoride as F</li> <li>• Magnesium as Mg</li> <li>• Total Iron as Fe</li> <li>• Residual Free Chlorine</li> <li>• Phenolic Compounds as <math>\text{C}_6\text{H}_5\text{OH}</math></li> <li>• Total Hardness as <math>\text{CaCO}_3</math></li> <li>• Total Alkalinity as <math>\text{CaCO}_3</math></li> <li>• Sulphide as <math>\text{H}_2\text{S}</math></li> <li>• Sulphate as <math>\text{SO}_4</math></li> <li>• Anionic surfactants as MBAS</li> <li>• Monocrotophos</li> <li>• Atrazine</li> <li>• Ethion</li> <li>• Chiorpyrifos</li> <li>• Phorate</li> <li>• Mehyle parathion</li> <li>• Malathion</li> <li>• DDT (o,p and p,p-Isomers of</li> <li>• DDT, DDE and DDD</li> <li>• Gamma HCH (Lindane)</li> <li>• Alpha HCH</li> <li>• Beta HCH</li> </ul>	Monthly Once
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		<ul style="list-style-type: none"> <li>• Delta HCH</li> <li>• Endosulfan (Alpha,betaandsulphate)</li> <li>• Butachlor</li> <li>• Alachlor</li> <li>• Aldrin/Dieldrin</li> <li>• Isoproturon</li> <li>• 2,4-D</li> <li>• Polychlorinated Biphenyls(PCB)</li> <li>• Polynuclear aromatic hydrocarbons (PAH)</li> <li>• Arsenic as As</li> <li>• Mercury as Hg</li> <li>• Cadmium as Cd</li> <li>• Total Chromium as C</li> <li>• Copper as Cu</li> <li>• Lead as Pb</li> <li>• Manganese as Mn</li> <li>• Nickel as Ni</li> <li>• Selenium as Se</li> <li>• Barium as Ba</li> <li>• Silver as Ag</li> <li>• Molybdenum as Mo</li> <li>• Octane</li> <li>• Nonane</li> <li>• Decane</li> <li>• Undecane</li> <li>• Tridecane</li> <li>• Tetradecane</li> <li>• Pentadecane</li> <li>• Hexadecane</li> <li>• Heptadecane</li> <li>• Octadecane</li> <li>• Nonadecane</li> <li>• Elcosan</li> </ul>	
4b.	Sea Sediment	<p>Collection of sea sediment analyzed for - 2 location</p> <ul style="list-style-type: none"> <li>• pH</li> <li>• Organic Matter</li> <li>• Moisture Content</li> <li>• Conductivity</li> <li>• Iron</li> <li>• Sodium</li> <li>• Copper</li> <li>• Nickel</li> <li>• Zinc</li> <li>• Manganese</li> <li>• Lead</li> <li>• Boron</li> <li>• Phosphate</li> <li>• Chloride</li> <li>• Sulphate</li> <li>• Sulphide</li> <li>• Pesticide</li> </ul>	Monthly Once



		<ul style="list-style-type: none"> <li>• Potassium</li> <li>• Total Chromium</li> <li>• Petroleum Hydrocarbon</li> <li>• Aluminium</li> <li>• Total Nitrogen</li> <li>• Organic Nitrogen</li> <li>• Phosphorus</li> <li>• Texture</li> </ul>	
4c.	Phytoplankton Monitoring	<ul style="list-style-type: none"> <li>• Total Count</li> <li>• No. of species</li> <li>• Chlorophyll-a</li> <li>• Major Species</li> </ul>	Monthly Once
4d.	Zooplankton Monitoring	<ul style="list-style-type: none"> <li>• Total Count</li> <li>• No. of species</li> <li>• Major</li> </ul>	Monthly Once
4e.	Microbiological Monitoring	<ul style="list-style-type: none"> <li>• Total Bacteria count</li> <li>• Total Coliform</li> <li>• Faecal Coliform</li> <li>• E.Coli</li> <li>• Enterococcus</li> <li>• Salmonella</li> <li>• Sheigella</li> <li>• Vibrio</li> </ul>	Monthly Once
4f.	Primary Productivity Monitoring	<ul style="list-style-type: none"> <li>• Gross primary productivity</li> <li>• Net Primary productivity</li> </ul>	Monthly Once
4g.	Phytobenthos Monitoring data	<ul style="list-style-type: none"> <li>• Fungus</li> <li>• Total Count</li> <li>• No. of species</li> <li>• Diversity Index</li> <li>• Major species</li> </ul>	Monthly Once
4h.	Total Fauna Monitoring	<ul style="list-style-type: none"> <li>• Name of phylum</li> <li>• Class</li> <li>• Number of Individuals encountered</li> <li>• Total no. of species encountered</li> <li>• Total fauna</li> </ul>	Monthly Once
5.	STP Treated Water	<p>Collection of STP Treated water analyzed for - 2 locations</p> <ul style="list-style-type: none"> <li>• pH</li> <li>• TSS</li> <li>• BOD</li> <li>• Faecal Coliforms</li> </ul>	Monthly Once
6.	Potable Water analysis	<p>Collection of Drinking water analyzed for - 1 locations - As per IS 10500 2012 - 36 Parameters</p>	Monthly Once
7.	DG Set Emissions - 3Nos & Liquid Terminal oil Generator	<p>Sampling of Emission at 04 stations for analyzing the following parameters:</p> <ul style="list-style-type: none"> <li>• PM</li> <li>• Carbon Monoxide</li> <li>• NO<sub>x</sub> - NO<sub>2</sub></li> <li>• SO<sub>2</sub></li> </ul>	Monthly Once

## IV. METHODOLOGY

Methodologies adopted for sampling and analysis for each of the above parameters are detailed below

1	<b>Meteorological parameters</b>	
	Auto weather station	
2	<b>Ambient Air Quality</b>	
	<b>Parameters</b>	<b>Method</b>
	RespirableSuspendedParticulateMatter( PM10)	IS5182Part23:2006
	ParticulateMatter PM2.5	GCS/Lab/SOP/087, CPCB Guidelines
	SulphurdioxideasSO <sub>2</sub>	IS5182 Part2 :2001(Reaff.2006)
	OxidesofNitrogenas NO <sub>2</sub>	IS5182 Part6 :2006
	LeadasPb	IS5182 Part22:2004(Reaff.2009)
	ArsenicAs	GCS/Lab/SOP/089, CPCB Guidelines
	NickelasNi	GCS/Lab/SOP/090, CPCB Guidelines
	Carbonmonoxide as CO	IS5182Part10:1999(Reaff.2009)
	OzoneasO <sub>3</sub>	IS5182Part9:1974[Reaff.2009]
	AmmoniaasNH <sub>3</sub>	GCS/Lab/SOP/086, CPCB Guidelines
	Benzene (α) pyrene	IS 5182 - Part 12
	BenzeneasC <sub>6</sub> H <sub>6</sub>	IS5182Part11:2006
3	<b>Ambient Noise Monitoring</b>	
	Leq Day & Night	InstrumentManual, GCS/LAB/SOP/Noise/001
4	<b>Marine Sampling</b>	
	Surface and Bottom Water	APHA Methods 23 <sup>rd</sup> Edition, 2017 Standard Methods for examination of Water and Waste water and IS 3025 & USEPA Test Methods
	Sea Sediment	
	Phytoplankton Monitoring	
	Zooplankton Monitoring	
	Microbiological Monitoring	
	Primary Productivity Monitoring	
	Phytobenthos Monitoring data	
Total Fauna Monitoring		
5	<b>STP Water Analysis</b>	
	pH , TSS, BOD , Faecal Coliforms	APHA Methods 23 <sup>rd</sup> Edition, 2017 Standard Methods for examination of Water and Waste water and IS 3025
6	<b>New Water Analysis</b>	
	As per IS 10500 : 2012-36 Parameters	APHA Methods 23 <sup>rd</sup> Edition, 2017 Standard Methods for examination of Water and Waste water and IS 3025
7	<b>Emission Monitoring</b>	
	PM, Carbon Monoxide, NO <sub>x</sub> - NO <sub>2</sub> , SO <sub>2</sub>	IS 11255 Methods of measurement of emissions from Stationary source

## V. ENVIRONMENTAL STUDIES - April 23 - Sept 23

S.No	ATTRIBUTE	SCOPE
1.	Meteorological parameters	Collection of micrometeorological data at project site on daily basis with hourly frequency
2.	Ambient Air Quality	Collection of ambient air at 4 locations.
3.	STP water	Collection of STP outlet water at two locations
4.	Ambient Noise	Collection of Ambient noise levels for day and night at 4 locations
5.	Drinking Water	Collection of Drinking water at Canteen Building
6.	Marine Water and Marine Sediments	Collection of Marine water and Marine Sediments at Three locations
7	DG Set Emissions	Collection of DG Set Emissions.

i. METEOROLOGICAL DATA

Meteorological data was collected on hourly basis by installing an auto weather monitoring station at Plant site. The report depicted hereunder represents the data for the period **April 23 - Sept 23**.

The following parameters were recorded

- Wind speed
- Wind direction
- Ambient Temperature
- Ambient Pressure
- Relative humidity
- Rainfall

## ANNEXURE - 1 MICROMETEOROLOGY DATA

APRIL - 2023

<b>Marine Infrastructure Developer Private Ltd</b>							
Report Type: Average Report							
From: 01-04-2023		0:00:00 Hrs		To: 30-04-2023		23:59:59 Hrs	
Created by Adani.				Created at 02-05-2023 9:21:53 AM			
Date	AQMS-Wind_Speed (km/h)	AQMS-Wind_Direction(Degree)	AQMS-RH (%)	AQMS Total Rain Fall (mm)	AQMS-Atm Pressure (mBar)	AQMS-Atm Temperature (Degree)	AQMS-Solar_Radiation (w/m2)
<i>Avg</i>	1.6	11	94	0.0	1003.1	31.9	264.7
<i>Min</i>	0.2	2	89.8	-	996.1	30.7	202.1
<i>Max</i>	8.9	235	97.7	-	1008.4	33.0	305.5
01-04-2023	0.6	4.6	95.9	0.0	1004.2	31.6	246.0
02-04-2023	0.6	4.3	96.1	0.0	1003.8	32.1	248.9
03-04-2023	0.6	4.1	95.3	0.0	1003.8	32.1	221.7
04-04-2023	0.6	4.2	94.7	0.0	1004.8	32.2	238.1
05-04-2023	0.6	3.4	95.8	0.0	1004.6	32.0	261.1
06-04-2023	0.6	3.2	94.6	0.0	1005.1	32.1	272.5
07-04-2023	0.6	3.1	92.9	0.0	1007.0	31.7	285.1
08-04-2023	0.6	4.3	90.8	0.0	1008.6	31.4	282.3
09-04-2023	0.6	4.3	89.8	0.0	1008.8	31.7	291.1
10-04-2023	0.7	4.3	91.1	0.0	1007.5	31.6	305.5
11-04-2023	0.8	3.0	94.4	0.0	1007.2	30.7	296.5
12-04-2023	0.8	2.6	91.0	0.0	1006.3	31.2	300.1
13-04-2023	0.9	2.7	93.0	0.0	1005.6	31.4	275.4
14-04-2023	0.9	3.4	91.9	0.0	1005.1	31.5	284.5
15-04-2023	0.8	2.2	93.4	0.0	1004.9	31.6	260.3
16-04-2023	0.9	2.9	93.5	0.0	1003.4	31.7	281.4
17-04-2023	0.9	3.1	92.0	0.0	1003.8	31.8	285.0
18-04-2023	0.8	3.1	95.3	0.0	1004.8	31.4	270.9
19-04-2023	0.3	3.3	94.6	0.0	1002.5	31.9	264.6
20-04-2023	0.2	5.3	93.1	0.0	1000.3	32.8	266.4
21-04-2023	0.4	4.0	94.8	0.0	1000.3	33.0	244.7
22-04-2023	0.5	2.6	97.6	0.0	1000.9	32.6	208.4
23-04-2023	1.4	4.1	96.6	0.0	1001.1	32.9	264.5
24-04-2023	1.4	3.3	97.6	0.0	1003.2	31.7	274.4
25-04-2023	NA	3.0	95.2	0.0	1003.6	32.7	274.7
26-04-2023	0.9	4.1	97.7	0.0	1003.6	31.8	202.1
27-04-2023	1.0	2.5	95.7	0.0	1003.5	32.2	259.5
28-04-2023	6.9	3.7	95.4	0.0	1003.8	32.4	289.4
29-04-2023	8.8	2.4	96.2	0.0	1003.2	32.3	230.2
30-04-2023	8.9	3.7	93.9	0.0	1001.6	32.2	262.1

JUNE - 2023

## Marine Infrastructure Developer Private Ltd

Report Type: Average Report

From: 01-06-2023 0:00:00 Hrs To: 30-06-2023 23:59:59 Hrs

Created by Adani

Created at 02-07-2023 10:56:10 AM

Date	AQMS- Wind Speed (km/h)	AQMS- Wind Direction (Degree)	AQMS-RH (%)	AQMS Total Rain Fall (mm)	AQMS-Atm. Pressure (mmHg)	AQMS-Air Temperature (Degree)	AQMS- Solar Radiation (w/m <sup>2</sup> )
Avg	5.2	230	88	298.0	1003.7	33.0	237.8
Min	2.8	208	80.9	-	998.1	28.6	83.7
Max	10.0	242	94.5	-	1008.1	35.4	302.4
01-06-2023	5.3	230.3	90.9	0.0	999.2	34.0	261.9
02-06-2023	5.0	200.5	85.6	0.0	998.6	34.3	274.5
03-06-2023	5.0	216.9	88.6	0.0	998.4	34.2	253.4
04-06-2023	4.8	241.7	83.4	0.0	998.3	35.4	274.1
05-06-2023	5.4	211.7	81.0	0.0	998.0	34.3	260.4
06-06-2023	7.9	329.4	80.9	0.0	997.7	34.7	284.4
07-06-2023	5.7	218.3	90.3	0.0	997.7	33.4	186.5
08-06-2023	5.5	218.4	84.6	0.0	997.4	34.3	257.0
09-06-2023	6.3	216.8	82.2	0.0	996.1	34.4	257.2
10-06-2023	6.5	220.6	82.0	0.0	996.0	33.9	271.0
11-06-2023	6.7	227.7	81.6	0.0	996.4	33.6	247.9
12-06-2023	6.5	220.1	88.5	0.0	996.3	33.9	303.5
13-06-2023	6.3	232.8	84.2	0.0	996.6	34.1	283.8
14-06-2023	6.3	219.9	87.4	0.0	998.0	33.5	263.7
15-06-2023	4.4	215.7	84.7	0.0	998.0	34.4	288.5
16-06-2023	5.0	211.2	87.2	0.0	997.0	34.6	289.2
17-06-2023	5.2	212.7	88.3	0.0	997.8	33.3	178.6
18-06-2023	7.9	228.3	94.2	21.5	997.8	30.7	87.7
19-06-2023	9.2	230.0	99.3	116.0	997.3	28.6	89.2
20-06-2023	10.0	234.3	94.2	6.3	996.4	30.8	215.3
21-06-2023	4.2	235.0	98.0	30.6	998.1	30.1	128.8
22-06-2023	3.8	222.1	96.4	0.0	998.2	31.8	233.7
23-06-2023	4.0	236.9	93.2	0.0	998.4	32.0	153.5
24-06-2023	3.8	230.1	94.5	32.0	997.9	31.6	209.7
25-06-2023	5.1	236.3	92.6	0.0	997.9	32.1	173.0
26-06-2023	3.9	240.3	93.6	0.0	998.2	32.2	151.8
27-06-2023	5.7	239.7	88.0	0.0	998.4	32.9	231.2
28-06-2023	5.6	242.2	88.9	0.0	998.3	32.8	289.3
29-06-2023	6.3	220.7	90.5	0.0	998.7	33.0	309.4
30-06-2023	5.4	228.6	88.5	0.0	998.5	32.2	301.1

JULY - 2023

## Marine Infrastructure Developer Private Ltd

Report Type: Average Report

From: 01-07-2023 0:00:00 Hrs To: 31-07-2023 23:59:59 Hrs

Created by Adani. Created at: 01-08-2023 9:22:46 AM

Date	AQMS-SO2 (ug/m3)	AQMS-NOx (ug/m3)	AQMS-PM10 (ug/m3)	AQMS-PM2.5 (ug/m3)	AQMS-CO (mg/m3)	AQMS-Benzene (ug/m3)	AQMS-Ethylbenzene (ug/m3)	AQMS-Toulene (ug/m3)	AQMS-mpXylene (ug/m3)	AQMS-oXylene (ug/m3)
Avg	3.5	13.3	21.0	8.9	0.1	0.00	0.00	0.00	0.00	0.00
Min	3.1	5.1	7.2	3.4	0.0	0.00	0.00	0.00	0.00	0.00
Max	4.6	26.4	34.3	13.6	0.6	0.00	0.00	0.00	0.00	0.00
01-07-2023	3.3	26	27.3	11.3	0.2	0.00	0.00	0.00	0.00	0.00
02-07-2023	3.1	13	24.5	11.5	0.1	0.00	0.00	0.00	0.00	0.00
03-07-2023	3.3	17	24.5	13.6	0.1	0.00	0.00	0.00	0.00	0.00
04-07-2023	3.1	13	20.8	9.6	0.1	0.00	0.00	0.00	0.00	0.00
05-07-2023	3.2	10	14.8	6.4	0.0	0.00	0.00	0.00	0.00	0.00
06-07-2023	3.3	14	18.9	7.5	0.1	0.00	0.00	0.00	0.00	0.00
07-07-2023	3.3	11	21.3	8.6	0.1	0.00	0.00	0.00	0.00	0.00
08-07-2023	3.3	13	20.7	8.4	0.1	0.00	0.00	0.00	0.00	0.00
09-07-2023	3.4	16	15.6	6.7	0.1	0.00	0.00	0.00	0.00	0.00
10-07-2023	3.2	13	14.4	8.0	0.0	0.00	0.00	0.00	0.00	0.00
11-07-2023	3.3	14	15.9	8.0	0.0	0.00	0.00	0.00	0.00	0.00
12-07-2023	3.3	14	21.9	10.1	0.0	0.00	0.00	0.00	0.00	0.00
13-07-2023	3.6	16	23.6	11.1	0.1	0.00	0.00	0.00	0.00	0.00
14-07-2023	3.5	14	17.4	9.4	0.1	0.00	0.00	0.00	0.00	0.00
15-07-2023	3.6	14	23.0	9.0	0.0	0.00	0.00	0.00	0.00	0.00
16-07-2023	3.7	9	20.2	9.7	0.0	0.00	0.00	0.00	0.00	0.00
17-07-2023	3.4	13	26.0	9.4	0.0	0.00	0.00	0.00	0.00	0.00
18-07-2023	3.5	16	27.7	10.3	0.0	0.00	0.00	0.00	0.00	0.00
19-07-2023	3.2	11	26.2	10.1	0.0	0.00	0.00	0.00	0.00	0.00
20-07-2023	3.2	15	26.6	10.5	0.0	0.00	0.00	0.00	0.00	0.00
21-07-2023	3.4	10.7	34.3	12.7	0.0	0.00	0.00	0.00	0.00	0.00
22-07-2023	3.4	8	21.1	8.8	0.1	0.00	0.00	0.00	0.00	0.00
23-07-2023	3.3	16	15.0	7.4	0.0	0.00	0.00	0.00	0.00	0.00
24-07-2023	3.2	14	13.0	6.6	0.1	0.00	0.00	0.00	0.00	0.00
25-07-2023	3.2	14	9.1	4.6	0.1	0.00	0.00	0.00	0.00	0.00
26-07-2023	3.1	9	7.2	3.4	0.0	0.00	0.00	0.00	0.00	0.00
27-07-2023	*	*	*	*	*	*	*	*	*	*
28-07-2023	4.3	20	26.7	9.1	0.6	0.00	0.00	0.00	0.00	0.00
29-07-2023	4.6	11	24.5	8.7	0.5	0.00	0.00	0.00	0.00	0.00
30-07-2023	4.5	5	22.3	6.8	0.5	0.00	0.00	0.00	0.00	0.00
31-07-2023	4.5	11	24.4	8.9	0.5	0.00	0.00	0.00	0.00	0.00

Note: \* Monthly Analyser Maintenance and Calibration carried out.

AUGUST - 2023

## Marine Infrastructure Developer Private Ltd

Report Type: Average Report

From: 01-08-2023 0:00:00 Hrs To: 31-08-2023 23:59:59 Hrs

Created by Adani. Created at 01-09-2023 9:36:35 AM

Date	AQMS-Wind_Speed (km/h)	AQMS-Wind_Direction(Degree)	AQMS-RH (%)	AQMS Total Rain Fall (mm)	AQMS-Atm. Pressure (mBar)	AQMS-Atm. Temperature (Degree)	AQMS-Solar_Radiation (w/m2)
<b>Avg</b>	4.3	218	93	62.0	1003.1	31.8	249.5
<b>Min</b>	2.4	182	75.9	-	996.1	30.0	176.0
<b>Max</b>	6.7	243	99.2	-	1008.4	33.8	299.1
01-08-2023	4.6	214.1	84.21	0.0	996.9	33.2	176.0
02-08-2023	6.7	242.6	75.87	0.0	997.6	33.8	248.0
03-08-2023	6.0	223.8	81.75	0.0	997.5	33.1	276.4
04-08-2023	4.5	221.6	88.01	0.0	999.5	32.7	270.2
05-08-2023	4.8	216.8	89.07	0.0	1000.7	32.7	291.7
06-08-2023	4.4	219.5	90.3	0.0	999.8	33.0	299.1
07-08-2023	4.6	199.1	92.61	0.0	998.3	32.5	266.6
08-08-2023	4.2	191.4	91.31	0.0	998.9	32.5	208.6
09-08-2023	4.5	202.7	92.16	0.0	1000.3	32.4	275.7
10-08-2023	6.7	234.4	89.07	0.0	1000.5	32.0	239.3
11-08-2023	4.5	201.5	93.19	0.0	1000.1	31.1	222.6
12-08-2023	5.4	209.6	94.81	0.0	999.4	31.1	193.1
13-08-2023	5.4	198.9	93	0.0	998.8	31.5	206.7
14-08-2023	4.1	228.1	96.75	6.0	999.6	30.3	194.1
15-08-2023	2.9	224.2	97.95	0.0	999.7	30.9	275.8
16-08-2023	3.5	217.6	96.53	16.0	999.7	30.8	258.8
17-08-2023	4.2	237.5	93.43	11.5	998.6	31.5	269.8
18-08-2023	3.8	225.5	92.1	0.0	997.3	31.7	237.5
19-08-2023	4.9	230.6	90.04	0.0	996.8	31.7	246.8
20-08-2023	3.4	210.6	91.42	0.0	997.3	31.6	260.5
21-08-2023	4.1	182.0	95.72	0.0	997.3	31.9	298.4
22-08-2023	2.6	227.8	95.29	0.0	997.3	31.9	232.0
23-08-2023	4.4	222.9	95.34	0.5	997.6	31.3	271.0
24-08-2023	4.1	229.3	97.44	6.5	997.5	30.7	265.2
25-08-2023	2.5	217.4	96.95	0.0	997.5	31.8	265.0
26-08-2023	3.0	217.3	97.8	9.0	998.7	31.2	239.7
27-08-2023	2.4	228.6	99.2	12.5	999.5	30.0	200.8
28-08-2023	4.9	219.7	94.43	0.0	998.0	32.1	288.5
29-08-2023	4.1	227.6	95.75	0.0	997.7	31.3	210.3
30-08-2023	3.8	202.3	92.48	0.0	997.8	32.0	277.4
31-08-2023	5.0	218.9	94.88	0.0	997.8	31.3	268.7
<b>Remarks:</b>	-						



SEPTEMBER - 2023

## Marine Infrastructure Developer Private Ltd

Report Type: Average Report

From: 01-09-2023 0:00:00 Hrs To: 30-09-2023 23:59:59 Hrs

Created by Adani. Created at: 01-10-2023 11:19:50 AM

Date	AQMS-SO2 (ug/m3)	AQMS-NOx (ug/m3)	AQMS-PM10 (ug/m3)	AQMS-PM2.5 (ug/m3)	AQMS-CO (mg/m3)	AQMS-Benzene (ug/m3)	AQMS-Ethylbenzene (ug/m3)	AQMS-Toulene (ug/m3)	AQMS-mpXylene (ug/m3)	AQMS-oXylene (ug/m3)
<b>Avg</b>	4.4	13.3	19.1	8.2	0.6	0.00	0.00	0.00	0.00	0.00
<b>Min</b>	3.4	8.6	13.4	4.9	0.2	0.00	0.00	0.00	0.00	0.00
<b>Max</b>	5.0	18.5	24.4	10.4	1.0	0.00	0.00	0.00	0.00	0.00
01-09-2023	4.4	12	18.6	8.1	0.7	0.00	0.00	0.00	0.00	0.00
02-09-2023	4.4	12	23.9	8.1	0.6	0.00	0.00	0.00	0.00	0.00
03-09-2023	4.4	12	14.7	7.0	0.6	0.00	0.00	0.00	0.00	0.00
04-09-2023	4.4	12	17.4	8.4	0.7	0.00	0.00	0.00	0.00	0.00
05-09-2023	4.3	9	18.9	9.7	0.7	0.00	0.00	0.00	0.00	0.00
06-09-2023	4.4	18	15.7	6.3	0.3	0.00	0.00	0.00	0.00	0.00
07-09-2023	4.6	11	16.5	7.5	0.9	0.00	0.00	0.00	0.00	0.00
08-09-2023	4.7	16	20.6	9.9	1.0	0.00	0.00	0.00	0.00	0.00
09-09-2023	4.6	13	21.5	10.3	0.7	0.00	0.00	0.00	0.00	0.00
10-09-2023	4.6	13	18.1	7.9	0.8	0.00	0.00	0.00	0.00	0.00
11-09-2023	4.7	14	21.4	8.9	0.9	0.00	0.00	0.00	0.00	0.00
12-09-2023	5.0	15	22.8	9.6	0.8	0.00	0.00	0.00	0.00	0.00
13-09-2023	4.7	12	23.4	9.2	0.7	0.00	0.00	0.00	0.00	0.00
14-09-2023	4.8	16	23.4	10.4	1.0	0.00	0.00	0.00	0.00	0.00
15-09-2023	4.8	17	23.9	8.9	1.0	0.00	0.00	0.00	0.00	0.00
16-09-2023	4.6	15	16.9	7.9	0.9	0.00	0.00	0.00	0.00	0.00
17-09-2023	4.6	16	13.4	6.1	0.6	0.00	0.00	0.00	0.00	0.00
18-09-2023	4.6	9	14.3	7.2	0.2	0.00	0.00	0.00	0.00	0.00
19-09-2023	4.7	12	17.8	7.6	0.3	0.00	0.00	0.00	0.00	0.00
20-09-2023	4.8	14	22.3	9.9	0.8	0.00	0.00	0.00	0.00	0.00
21-09-2023	4.7	17.0	23.1	9.8	1.0	0.00	0.00	0.00	0.00	0.00
22-09-2023	4.7	14	20.8	10.0	0.9	0.00	0.00	0.00	0.00	0.00
23-09-2023	*	*	*	*	*	*	*	*	*	*
24-09-2023	3.4	12	14.3	4.9	0.2	*	*	*	*	*
25-09-2023	3.7	11	13.7	5.6	0.3	*	*	*	*	*
26-09-2023	3.5	12	16.1	7.7	0.4	0.00	0.00	0.00	0.00	0.00
27-09-2023	3.6	18.5	21.3	7.7	0.4	0.00	0.00	0.00	0.00	0.00
28-09-2023	3.4	10	20.0	8.1	0.3	0.00	0.00	0.00	0.00	0.00
29-09-2023	3.5	9	14.5	5.2	0.3	0.00	0.00	0.00	0.00	0.00
30-09-2023	3.6	15	20.0	8.1	0.3	0.00	0.00	0.00	0.00	0.00

Note: \* Monthly Analyser Maintenance and Calibration carried out.

## ii. AMBIENT AIR QUALITY

Ambient air quality monitoring is required to determine the existing quality of air, evaluation of the effectiveness of control system and to identify areas in need of restoration and their prioritization. In order to generate background data, air quality monitoring is conducted to assess existing level of contamination and to assess possible effects of air contamination occurring in future.

### Frequency of Monitoring

The frequency of monitoring that has been followed for sampling of ambient air quality is that one sample per weekly twice at three locations.

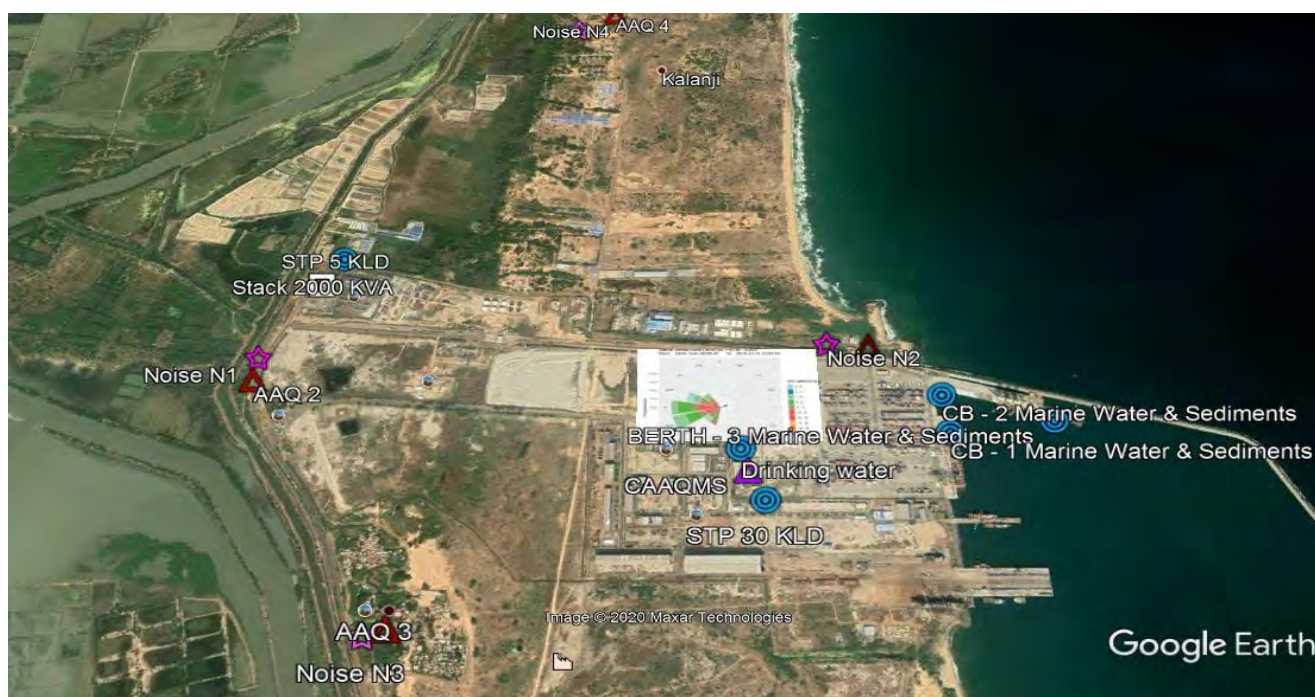
### DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS

Station code	Location	Geographical location	Environmental setting
AAQ1	Near Marine Control Tower	13 <sup>o</sup> 18' 55" N 80 <sup>o</sup> 20' 45" E	Industrial
AAQ2	Near Port Main Gate	13 <sup>o</sup> 18' 51" N 80 <sup>o</sup> 19' 28" E	Industrial
AAQ3	Kattupalli village	13 <sup>o</sup> 18' 18" N 80 <sup>o</sup> 19' 48" E	Village
AAQ4	Kalanji village	13 <sup>o</sup> 20' 8" N 80 <sup>o</sup> 20' 0" E	Village
CAAQM 1	Port Operating Building	13°18'45.68"N 80°20'25.50"E	Industrial

Fig - 2. AMBIENT AIR SAMPLING STATIONS LOCATION MAP



Fig.3.AMBIENT AIR SAMPLINGS STATIONS WITH RESPECT TO WIND



## TECHNIQUES USED FOR AMBIENT AIR QUALITY MONITORING

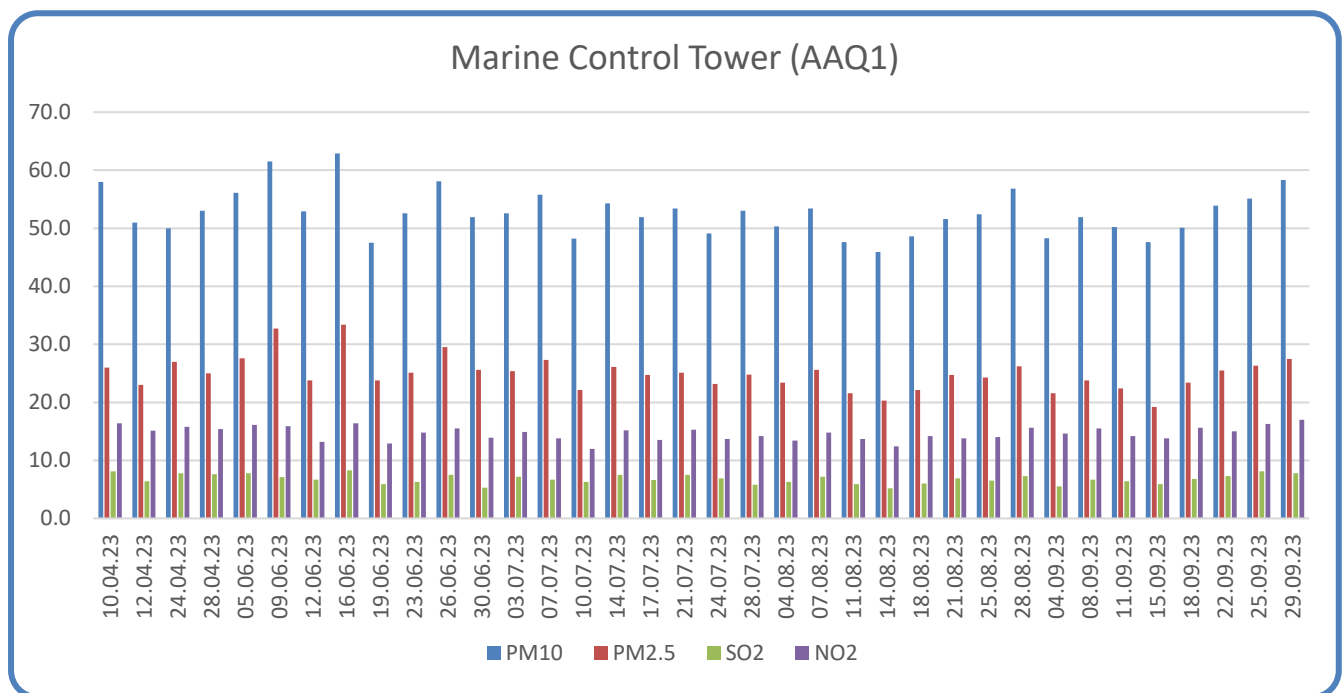
S.No	Parameter	Technique	Unit	Minimum Detectable Limit
1	PM <sub>10</sub>	Respirable Dust Sampler (Gravimetric method)	µg/m <sup>3</sup>	1.0
2	PM <sub>2.5</sub>	Fine particle Sampler (Gravimetric method)	µg/m <sup>3</sup>	5.0
3	Sulphur Dioxide	Modified West and Gaeke method	µg/m <sup>3</sup>	4.0
4	Nitrogen Oxide	Jacob &Hochheiser method	µg/m <sup>3</sup>	6.0
5	Lead	Atomic Absorption Spectrometry	µg/m <sup>3</sup>	0.5
6	Carbon Monoxide	Draggers Tube	mg/m <sup>3</sup>	0.1
7	Ozone	UV Photometric	µg/m <sup>3</sup>	2.0
8	Ammonia	Indophenol blue method	µg/m <sup>3</sup>	2.0
9	Benzene	Gas Chromatography	µg/m <sup>3</sup>	1.0
10	Benzene (α) pyrene	Gas Chromatography	ng/m <sup>3</sup>	0.1
11	Arsenic	Atomic Absorption Spectrometry	ng/m <sup>3</sup>	1.0
12	Nickel	Atomic Absorption Spectrometry	ng/m <sup>3</sup>	5.0

## Results and Discussion

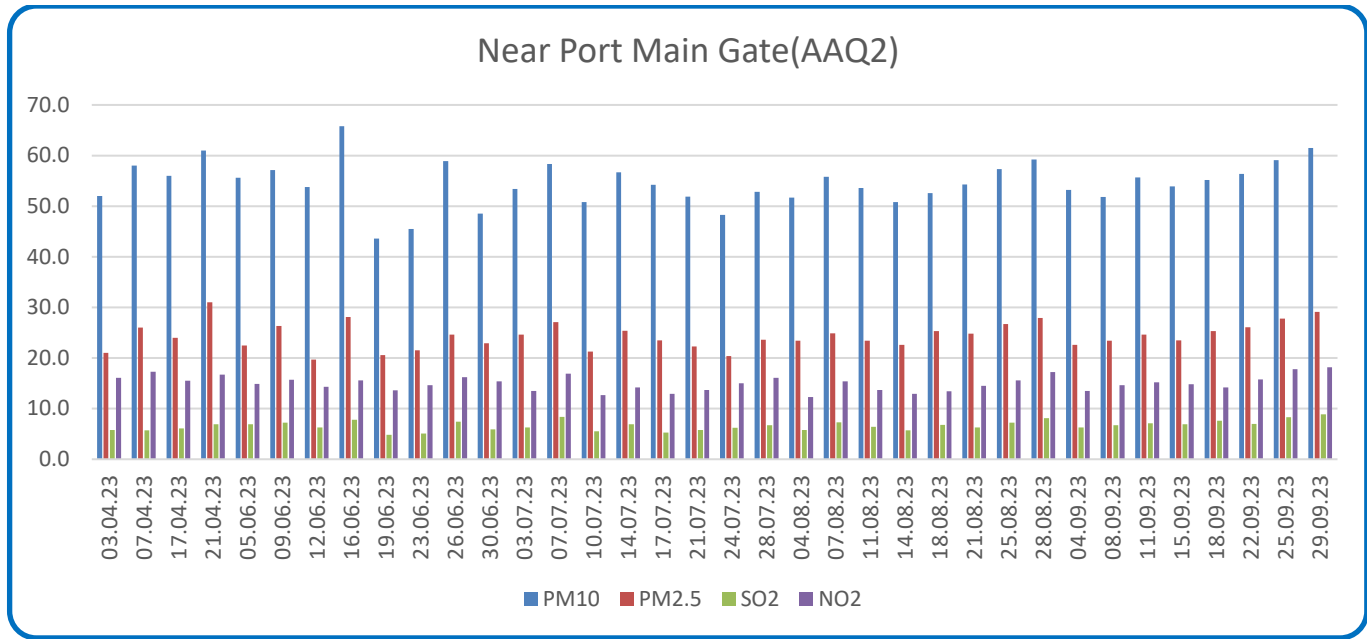
The results of the ambient air quality for the study period are submitted. The minimum, maximum 98<sup>th</sup> percentile and average values have been computed from the observed raw data for all the AAQ monitoring stations. The summary of these results for all the locations is presented in the Table and the detailed analytical results are shown in Annexure - 2. These are compared with the standards prescribed by Central Pollution Control Board (CPCB) for "Industrial, Rural, Residential and other areas"

ANNEXURE - 2 RESULTS OF AMBIENT AIR QUALITY MONITORING DATA

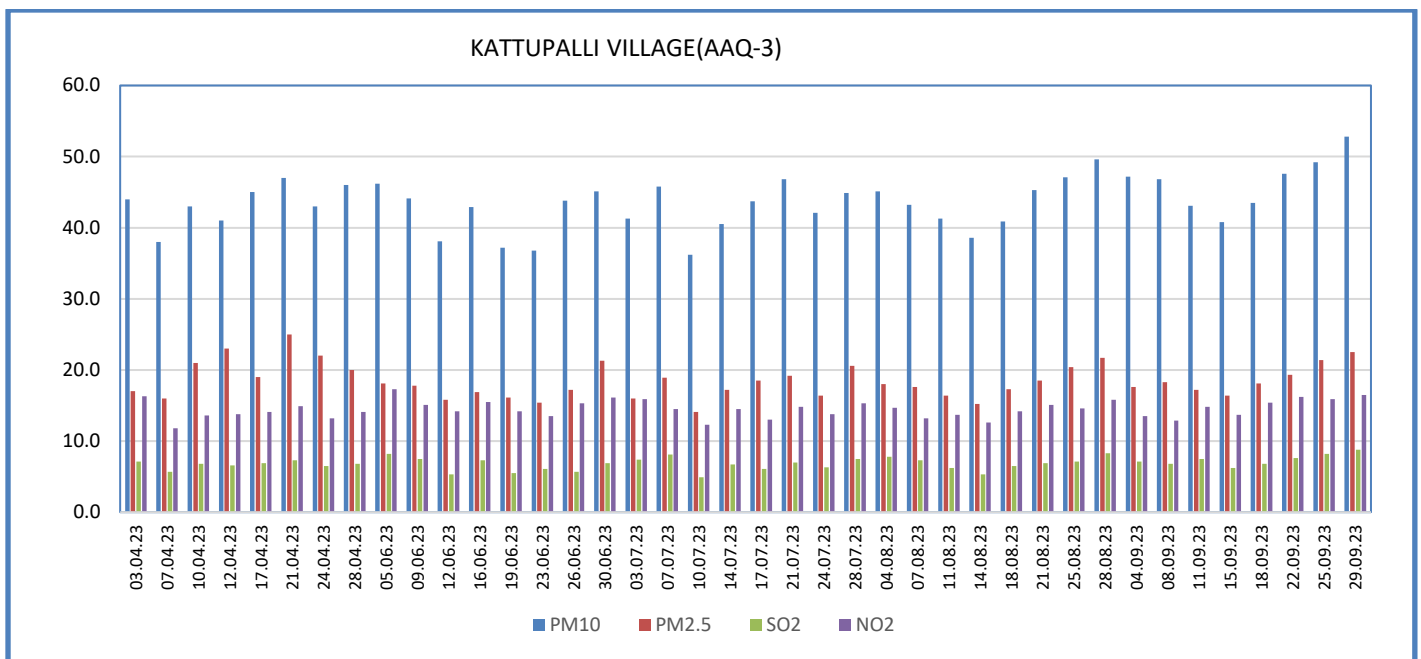
PORT INSIDE (AAQ1)													
Parameters		Particular matter PM10	Particular matter PM2.5	Sulphur dioxide as SO2	Nitrogen dioxide as NO2	Lead as Pb	Carbon monoxide as CO	Ozone as O3	Ammonia as NH3	Arsenic as As	Nickel as Ni	Benzene as C6H6	Benzo (a) pyrene as BaP
Unit		µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	ng/m3	ng/m3	µg/m3	ng/m3
National AAQM Standard		100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date												
1	10.04.23	58.0	26.0	8.1	16.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
2	12.04.23	51.0	23.0	6.4	15.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
3	24.04.23	50.0	27.0	7.8	15.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
4	28.04.23	53.0	25.0	7.6	15.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
5	05.06.23	56.1	27.6	7.8	16.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
6	09.06.23	61.5	32.7	7.1	15.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
7	12.06.23	52.9	23.8	6.7	13.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
8	16.06.23	62.9	33.4	8.3	16.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
9	19.06.23	47.5	23.8	5.9	12.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
10	23.06.23	52.6	25.1	6.3	14.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
11	26.06.23	58.1	29.5	7.5	15.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
12	30.06.23	51.9	25.6	5.3	13.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
13	03.07.23	52.6	25.4	7.2	14.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
14	07.07.23	55.8	27.3	6.7	13.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
15	10.07.23	48.2	22.1	6.3	12	<0.1	<1	<10	<2	<2	<2	<1	<0.1
16	14.07.23	54.3	26.1	7.5	15.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
17	17.07.23	51.9	24.7	6.6	13.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
18	21.07.23	53.4	25.1	7.5	15.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
19	24.07.23	49.1	23.2	6.9	13.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
20	28.07.23	53	24.8	5.8	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
21	04.08.23	50.3	23.4	6.3	13.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
22	07.08.23	53.4	25.6	7.2	14.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
23	11.08.23	47.6	21.6	5.9	13.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
24	14.08.23	45.9	20.3	5.2	12.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
25	18.08.23	48.6	22.1	6	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
26	21.08.23	51.6	24.7	6.9	13.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
27	25.08.23	52.4	24.3	6.5	14	<0.1	<1	<10	<2	<2	<2	<1	<0.1
28	28.08.23	56.8	26.2	7.3	15.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
29	04.09.23	48.3	21.6	5.5	14.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
30	08.09.23	51.9	23.8	6.7	15.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
31	11.09.23	50.2	22.4	6.4	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
32	15.09.23	47.6	19.2	5.9	13.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
33	18.09.23	50.1	23.4	6.8	15.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
34	22.09.23	53.9	25.5	7.3	15	<0.1	<1	<10	<2	<2	<2	<1	<0.1
35	25.09.23	55.1	26.3	8.1	16.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
36	29.09.23	58.3	27.5	7.8	17	<0.1	<1	<10	<2	<2	<2	<1	<0.1



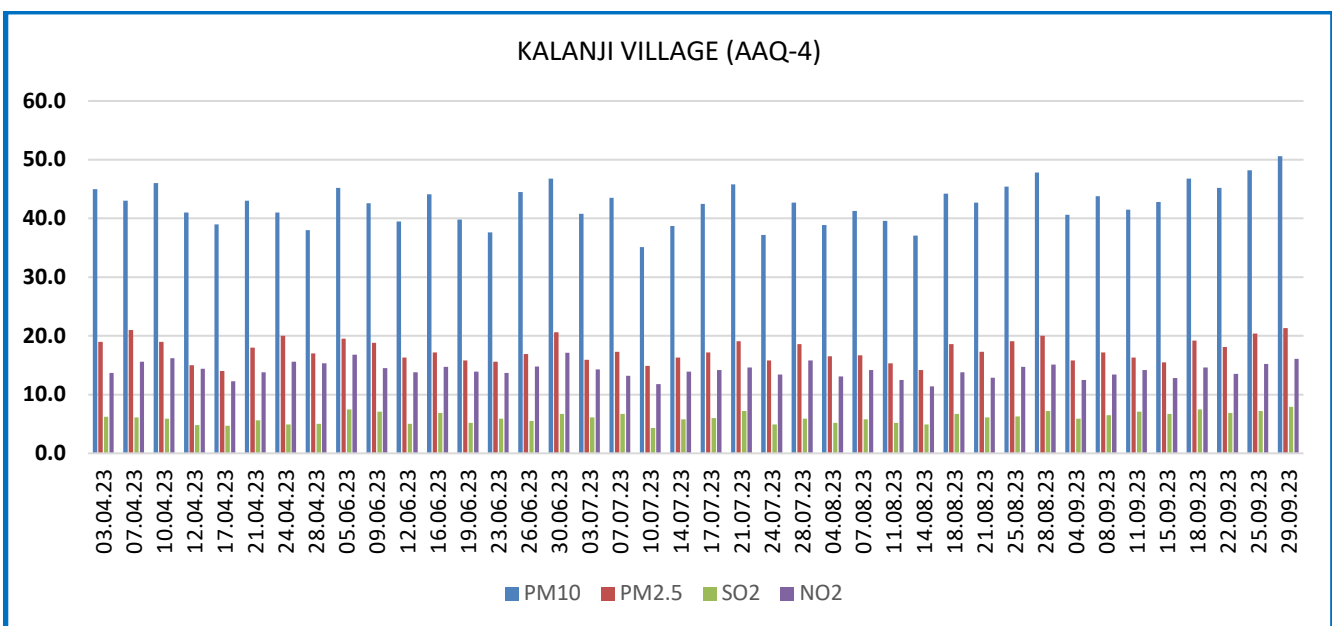
NEAR PORT MAIN GATE (AAQ2)													
Parameters		Particulate matter PM10	Particulate matter PM2.5	Sulphur dioxide as SO2	Nitrogen dioxide as NO2	Lead as Pb	Carbon monoxide as CO	Ozone as O3	Ammonia as NH3	Arsenic as As	Nickel as Ni	Benzene as C6H6	Benzo (a) pyrene as BaP
Unit		µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	ng/m3	ng/m3	µg/m3	ng/m3
National AAQM Standard		100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date												
1	03.04.23	52.0	21.0	5.8	16.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
2	07.04.23	58.0	26.0	5.7	17.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
3	17.04.23	56.0	24.0	6.1	15.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
4	21.04.23	61.0	31.0	6.9	16.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
5	05.06.23	55.6	22.5	6.9	14.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
6	09.06.23	57.1	26.3	7.2	15.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
7	12.06.23	53.8	19.7	6.3	14.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
8	16.06.23	65.8	28.1	7.8	15.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
9	19.06.23	43.6	20.6	4.8	13.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
10	23.06.23	45.5	21.5	5.1	14.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
11	26.06.23	58.9	24.6	7.4	16.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
12	30.06.23	48.5	22.9	5.9	15.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
13	03.07.23	53.4	24.6	6.3	13.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
14	07.07.23	58.3	27.1	8.4	16.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
15	10.07.23	50.8	21.3	5.5	12.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
16	14.07.23	56.7	25.4	6.9	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
17	17.07.23	54.2	23.5	5.3	12.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
18	21.07.23	51.9	22.3	5.8	13.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
19	24.07.23	48.3	20.4	6.2	15.0	<0.1	<1	<10	<2	<2	<2	<1	<0.1
20	28.07.23	52.8	23.6	6.7	16.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
21	04.08.23	51.7	23.4	5.8	12.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
22	07.08.23	55.8	24.9	7.3	15.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
23	11.08.23	53.6	23.4	6.4	13.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
24	14.08.23	50.8	22.6	5.7	12.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
25	18.08.23	52.6	25.3	6.8	13.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
26	21.08.23	54.3	24.8	6.3	14.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
27	25.08.23	57.3	26.7	7.2	15.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
28	28.08.23	59.2	27.9	8.1	17.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
29	04.09.23	53.2	22.6	6.3	13.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
30	08.09.23	51.8	23.4	6.7	14.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
31	11.09.23	55.7	24.6	7.1	15.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
32	15.09.23	53.9	23.5	6.9	14.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
33	18.09.23	55.2	25.3	7.6	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
34	22.09.23	56.4	26.1	7	15.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
35	25.09.23	59.1	27.8	8.3	17.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
36	29.09.23	61.5	29.1	8.9	18.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1



KATTUPALLI VILLAGE (AAQ3)												
Parameters	Particulate matter PM10	Particulate matter PM2.5	Sulphur dioxide as SO2	Nitrogen dioxide as NO2	Lead as Pb	Carbon monoxide as CO	Ozone as O3	Ammonia as NH3	Arsenic as As	Nickel as Ni	Benzene as C6H6	Benzo (a) pyrene as BaP
Unit	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	ng/m3	ng/m3	µg/m3	ng/m3
National AAQM	100	60	80	80	1	4	180	400	6	20	5	1
S.No.	Sampling Date											
1	03.04.23	44.0	17.0	7.1	16.3	<0.1	<1	<10	<2	<2	<2	<0.1
2	07.04.23	38.0	16.0	5.7	11.8	<0.1	<1	<10	<2	<2	<2	<0.1
3	10.04.23	43.0	21.0	6.8	13.6	<0.1	<1	<10	<2	<2	<2	<0.1
4	12.04.23	41.0	23.0	6.6	13.8	<0.1	<1	<10	<2	<2	<2	<0.1
5	17.04.23	45.0	19.0	6.9	14.1	<0.1	<1	<10	<2	<2	<2	<0.1
6	21.04.23	47.0	25.0	7.3	14.9	<0.1	<1	<10	<2	<2	<2	<0.1
7	24.04.23	43.0	22.0	6.5	13.2	<0.1	<1	<10	<2	<2	<2	<0.1
8	28.04.23	46.0	20.0	6.8	14.1	<0.1	<1	<10	<2	<2	<2	<0.1
9	05.06.23	46.2	18.1	8.2	17.3	<0.1	<1	<10	<2	<2	<2	<0.1
10	09.06.23	44.1	17.8	7.5	15.1	<0.1	<1	<10	<2	<2	<2	<0.1
11	12.06.23	38.1	15.8	5.3	14.2	<0.1	<1	<10	<2	<2	<2	<0.1
12	16.06.23	42.9	16.9	7.3	15.5	<0.1	<1	<10	<2	<2	<2	<0.1
13	19.06.23	37.2	16.1	5.5	14.2	<0.1	<1	<10	<2	<2	<2	<0.1
14	23.06.23	36.8	15.4	6.1	13.5	<0.1	<1	<10	<2	<2	<2	<0.1
15	26.06.23	43.8	17.2	5.7	15.3	<0.1	<1	<10	<2	<2	<2	<0.1
16	30.06.23	45.1	21.3	6.9	16.1	<0.1	<1	<10	<2	<2	<2	<0.1
17	03.07.23	41.3	16	7.4	15.9	<0.1	<1	<10	<2	<2	<2	<0.1
18	07.07.23	45.8	18.9	8.1	14.5	<0.1	<1	<10	<2	<2	<2	<0.1
19	10.07.23	36.2	14.1	4.9	12.3	<0.1	<1	<10	<2	<2	<2	<0.1
20	14.07.23	40.5	17.2	6.7	14.5	<0.1	<1	<10	<2	<2	<2	<0.1
21	17.07.23	43.7	18.5	6.1	13	<0.1	<1	<10	<2	<2	<2	<0.1
22	21.07.23	46.8	19.2	7	14.8	<0.1	<1	<10	<2	<2	<2	<0.1
23	24.07.23	42.1	16.4	6.3	13.8	<0.1	<1	<10	<2	<2	<2	<0.1
24	28.07.23	44.9	20.6	7.5	15.3	<0.1	<1	<10	<2	<2	<2	<0.1
25	04.08.23	45.1	18	7.8	14.7	<0.1	<1	<10	<2	<2	<2	<0.1
26	07.08.23	43.2	17.6	7.3	13.2	<0.1	<1	<10	<2	<2	<2	<0.1
27	11.08.23	41.3	16.4	6.2	13.7	<0.1	<1	<10	<2	<2	<2	<0.1
28	14.08.23	38.6	15.2	5.3	12.6	<0.1	<1	<10	<2	<2	<2	<0.1
29	18.08.23	40.9	17.3	6.5	14.2	<0.1	<1	<10	<2	<2	<2	<0.1
30	21.08.23	45.3	18.5	6.9	15.1	<0.1	<1	<10	<2	<2	<2	<0.1
31	25.08.23	47.1	20.4	7.1	14.6	<0.1	<1	<10	<2	<2	<2	<0.1
32	28.08.23	49.6	21.7	8.3	15.8	<0.1	<1	<10	<2	<2	<2	<0.1
33	04.09.23	47.2	17.6	7.1	13.5	<0.1	<1	<10	<2	<2	<2	<0.1
34	08.09.23	46.8	18.3	6.8	12.9	<0.1	<1	<10	<2	<2	<2	<0.1
35	11.09.23	43.1	17.2	7.5	14.8	<0.1	<1	<10	<2	<2	<2	<0.1
36	15.09.23	40.8	16.4	6.2	13.7	<0.1	<1	<10	<2	<2	<2	<0.1
37	18.09.23	43.5	18.1	6.8	15.4	<0.1	<1	<10	<2	<2	<2	<0.1
38	22.09.23	47.6	19.3	7.6	16.2	<0.1	<1	<10	<2	<2	<2	<0.1
39	25.09.23	49.2	21.4	8.2	15.9	<0.1	<1	<10	<2	<2	<2	<0.1
40	29.09.23	52.8	22.5	8.8	16.5	<0.1	<1	<10	<2	<2	<2	<0.1



KALANJI VILLAGE (AAQ4)													
Parameters	Particulate matter PM10	Particulate matter PM2.5	Sulphur dioxide as SO2	Nitrogen dioxide as NO2	Lead as Pb	Carbon monoxide as CO	Ozone as O3	Ammonia as NH3	Arsenic as As	Nickel as Ni	Benzene as C6H6	Benzo (a) pyrene as BaP	
	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	ng/m3	ng/m3	µg/m3	ng/m3	
National AAQM	100	60	80	80	1	4	180	400	6	20	5	1	
S.No.	Sampling Date												
1	03.04.23	43.0	21.0	6.1	15.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
2	07.04.23	46.0	19.0	5.9	16.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
3	10.04.23	41.0	15.0	4.8	14.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
4	12.04.23	39.0	14.0	4.7	12.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
5	17.04.23	43.0	18.0	5.6	13.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
6	21.04.23	41.0	20.0	4.9	15.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
7	24.04.23	38.0	17.0	5.0	15.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
8	28.04.23	45.0	19.0	6.2	13.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
9	05.06.23	45.2	19.5	7.5	16.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
10	09.06.23	42.6	18.8	7.1	14.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
11	12.06.23	39.5	16.3	5	13.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
12	16.06.23	44.1	17.2	6.9	14.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
13	19.06.23	39.8	15.8	5.2	13.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
14	23.06.23	37.6	15.6	5.9	13.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
15	26.06.23	44.5	16.9	5.5	14.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
16	30.06.23	46.8	20.6	6.7	17.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
17	03.07.23	40.8	15.9	6.1	14.3	<0.1	<1	<10	<2	<2	<2	<1	<0.1
18	07.07.23	43.5	17.3	6.7	13.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
19	10.07.23	35.1	14.9	4.3	11.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
20	14.07.23	38.7	16.3	5.8	13.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
21	17.07.23	42.5	17.2	6	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
22	21.07.23	45.8	19.1	7.2	14.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
23	24.07.23	37.2	15.8	4.9	13.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
24	28.07.23	42.7	18.6	5.9	15.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
25	04.08.23	38.9	16.5	5.2	13.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
26	07.08.23	41.3	16.7	5.8	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
27	11.08.23	39.6	15.3	5.2	12.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
28	14.08.23	37.1	14.2	4.9	11.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
29	18.08.23	44.2	18.6	6.7	13.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
30	21.08.23	42.7	17.3	6.1	12.9	<0.1	<1	<10	<2	<2	<2	<1	<0.1
31	25.08.23	45.4	19.1	6.3	14.7	<0.1	<1	<10	<2	<2	<2	<1	<0.1
32	28.08.23	47.8	20	7.2	15.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1
33	04.09.23	40.6	15.8	5.9	12.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
34	08.09.23	43.8	17.2	6.5	13.4	<0.1	<1	<10	<2	<2	<2	<1	<0.1
35	11.09.23	41.5	16.3	7.1	14.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
36	15.09.23	42.8	15.5	6.7	12.8	<0.1	<1	<10	<2	<2	<2	<1	<0.1
37	18.09.23	46.8	19.2	7.5	14.6	<0.1	<1	<10	<2	<2	<2	<1	<0.1
38	22.09.23	45.2	18.1	6.9	13.5	<0.1	<1	<10	<2	<2	<2	<1	<0.1
39	25.09.23	48.2	20.4	7.2	15.2	<0.1	<1	<10	<2	<2	<2	<1	<0.1
40	29.09.23	50.6	21.3	7.9	16.1	<0.1	<1	<10	<2	<2	<2	<1	<0.1



**NATIONAL AMBIENT AIR QUALITY STANDARDS  
CENTRAL POLLUTION CONTROL BOARD**

**NOTIFICATION  
New Delhi, the 18<sup>th</sup> November, 2009**

No E-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No. 14 of 1981), and in super session of the Notification No(s), S.O. 384(E), dated 11<sup>th</sup> April, 1994 and S.O. 935(E), dated 14<sup>th</sup> October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

**NATIONAL AMBIENT AIR QUALITY STANDARDS**

S. No.	Pollutant	Time Weighted average	Concentration in Ambient Air		Methods of Measurement
			Industrial, Residential, Rural and Other Area	Ecologically sensitive area (notified by Central Govt.)	
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual*	50	30	<ul style="list-style-type: none"> <li>Improved West and Geake</li> <li>Ultraviolet fluorescence</li> </ul>
		24 hours**	80	80	
2	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual*	40	30	<ul style="list-style-type: none"> <li>Modified Jacob &amp; Hochheiser (Na-Arsenite)</li> <li>Chemiluminescence</li> </ul>
		24 hours**	80	80	
3	Particulate Matter (size less than 10 µm) or PM <sub>10</sub> , µg/m <sup>3</sup>	Annual*	60	60	<ul style="list-style-type: none"> <li>Gravimetric</li> <li>TOEM</li> <li>Beta attenuation</li> </ul>
		24 hours**	100	100	
4	Particulate Matter (size less than 2.5 microns) or PM <sub>2.5</sub> , µg/m <sup>3</sup>	Annual*	40	40	<ul style="list-style-type: none"> <li>Gravimetric</li> <li>TOEM</li> <li>Beta attenuation</li> </ul>
		24 hours**	60	60	
5	Ozone (O <sub>3</sub> ), µg/m <sup>3</sup>	8 hours**	100	100	<ul style="list-style-type: none"> <li>UV photometric</li> <li>Chemiluminescence</li> <li>Chemical method</li> </ul>
		1 hour**	180	180	
		Annual*	0.5	0.5	
6	Lead (Pb) µg/m <sup>3</sup>	24 hours**	1.0	1.0	<ul style="list-style-type: none"> <li>AAS / ICP method after sampling on EPM 2000 or equivalent filter paper</li> <li>ED - XRF using Teflon filter</li> </ul>

7	Carbon Monoxide (CO) mg/m <sup>3</sup>	8 hours**	2	2	Non Dispersive Infra RED (NDIR) Spectroscopy
		1 hour**	4	4	
8	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Annual*	100	100	<ul style="list-style-type: none"> <li>Chemiluminescence</li> <li>Indophenol blue method</li> </ul>
		24 hours**	400	400	
9	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Annual*	5	5	<ul style="list-style-type: none"> <li>Gas chromatography based continuous analyser</li> <li>Adsorption and desorption followed by GC analysis</li> </ul>
10	Benzo (a) Pyrene (BaP) - particulate phase only ng/m <sup>3</sup>	Annual*	1	1	Solvent extraction followed by HPLC / GC analysis
11	Arsenic (As) ng/m <sup>3</sup>	Annual*	6	6	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni) ng/m <sup>3</sup>	Annual*	20	20	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper

\* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

\*\* 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

**Note:** Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.



### iii. AMBIENT NOISE LEVEL INTENSITY

Collection of ambient noise levels at four locations. Spot noise levels were measured with a precalibrated Noise Level Meter - SL- 4023 SD for day and night periods.

#### DETAILS OF NOISE MONITORING LOCATIONS

STATION CODE	LOCATIONS	Geographical Location
N1	Port main gate	N 13° 18.856' E 080° 19.478'
N2	Marine control tower	N 13° 18.909' E 080° 20.756'
N3	Kattupalli village	N 13° 18.342' E 080° 19.806'
N4	Kalanji village	N 13° 20.156' E 080° 20.023'

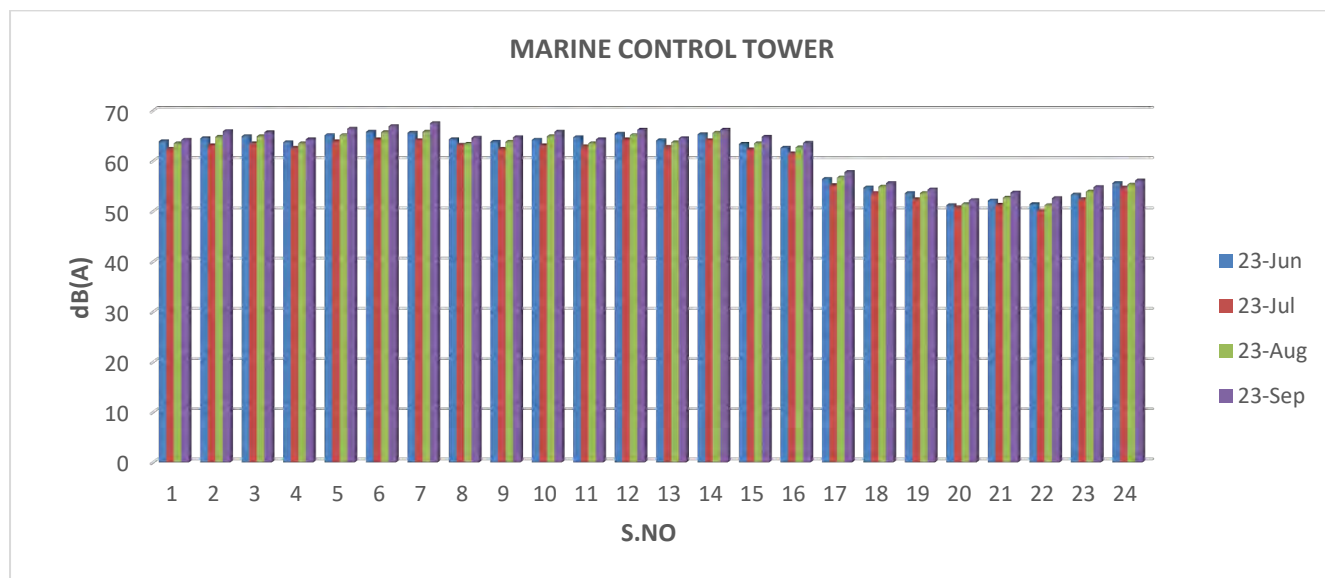
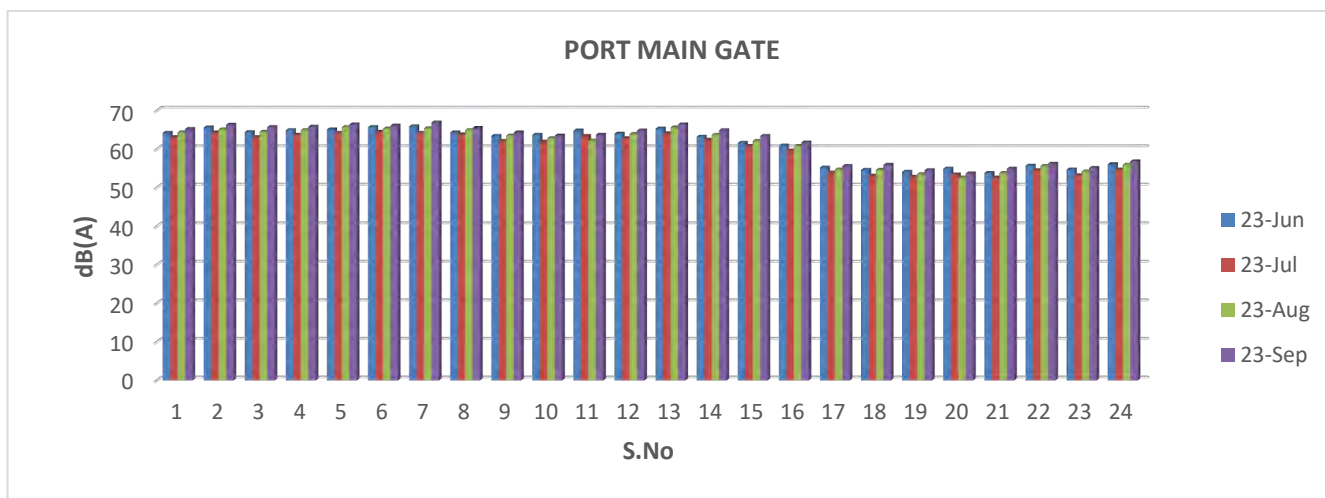
Fig - 4. Noise Level Sampling Locations



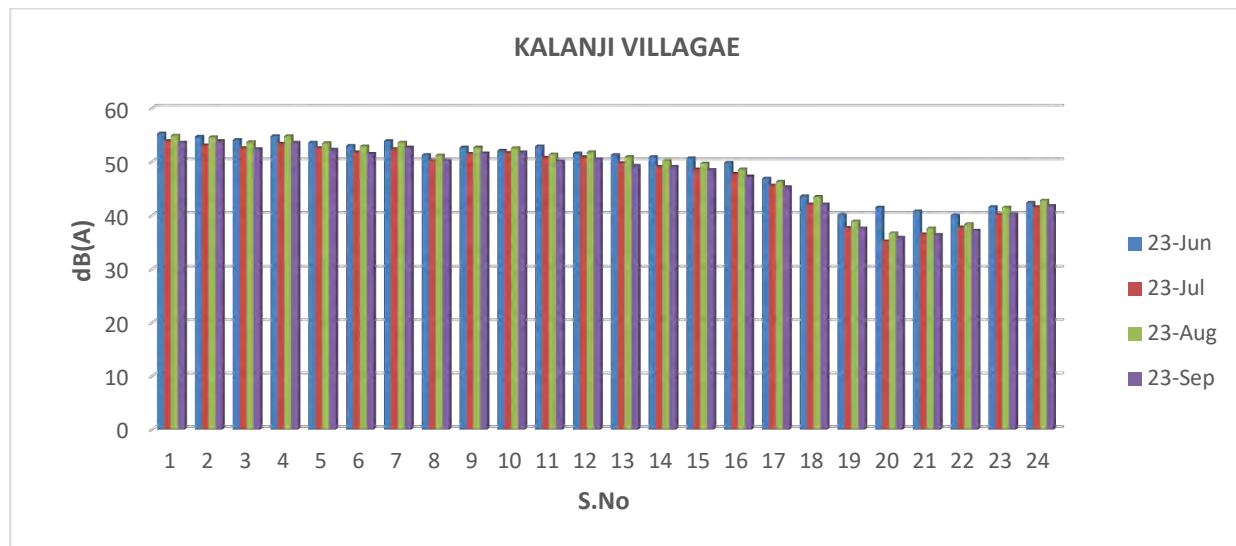
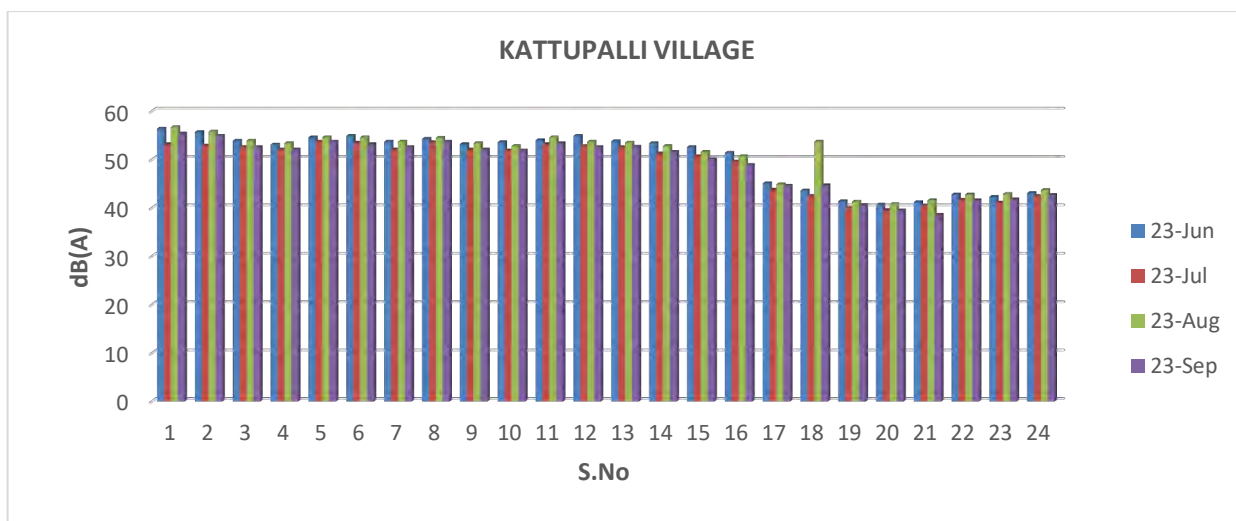
The noise levels monitored during the study period are given hereunder in form of Leq day, Leq night compared with CPCB Standards.

### ANNEXURE - 3 RESULTS OF AMBIENT NOISE LEVEL MONITORING DATA

Location		PORT MAIN GATE						MARINE CONTROL TOWER					
Month & Year		April-23	May-23	June - 23	July - 23	Aug - 23	Sept – 23	April-23	May-23	June - 23	July - 23	Aug - 23	Sept – 23
Parameter & Unit		Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
S.No	Time of Sampling												
1	06.00 – 07.00 (Day)	62.4	-	64.2	63.1	64.3	65.2	62.1	-	63.9	62.4	63.5	64.2
2	07.00 – 08.00	63.1	-	65.6	64.3	65.1	66.3	62.8	-	64.5	63.1	64.8	65.9
3	08.00 – 09.00	62	-	64.4	63.1	64.5	65.7	62.2	-	64.9	63.5	64.9	65.7
4	09.00 – 10.00	62.9	-	64.9	63.7	64.9	65.8	61.8	-	63.7	62.6	63.5	64.3
5	10.00 – 11.00	63.4	-	65.1	64.2	65.7	66.4	62.9	-	65.1	63.9	65.1	66.4
6	11.00 – 12.00	63	-	65.7	64.5	65.3	66.1	63	-	65.8	64.3	65.7	66.9
7	12.00 – 13.00	63.1	-	65.9	64.2	65.4	66.9	63.4	-	65.6	64.1	65.8	67.5
8	13.00 – 14.00	62.7	-	64.3	63.8	64.9	65.5	62.8	-	64.3	63.2	63.4	64.6
9	14.00 – 15.00	61.1	-	63.4	62.1	63.5	64.3	61.7	-	63.8	62.4	63.8	64.7
10	15.00 – 16.00	61.9	-	63.7	61.9	62.8	63.5	62.1	-	64.2	63.1	64.9	65.8
11	16.00 – 17.00	62.7	-	64.8	63.4	62.2	63.7	62.5	-	64.7	62.9	63.5	64.3
12	17.00 – 18.00	62	-	64.0	62.8	63.9	64.8	62.9	-	65.4	64.3	65.1	66.2
13	18.00 – 19.00	62.8	-	65.3	64.1	65.6	66.4	62.7	-	64.1	62.8	63.7	64.5
14	19.00 – 20.00	61.5	-	63.2	62.4	63.7	64.9	62.5	-	65.3	64.1	65.6	66.2
15	20.00 – 21.00	62	-	61.6	60.8	62.1	63.4	61.8	-	63.4	62.3	63.5	64.8
16	21.00 – 22.00	62.3	-	60.9	59.6	60.8	61.7	61.3	-	62.6	61.5	62.7	63.6
17	22.00 – 23.00 (Night)	53.1	-	55.2	53.9	54.7	55.6	54.5	-	56.4	55.2	56.7	57.8
18	23.00 – 00.00	52.7	-	54.6	53.1	54.6	55.9	52.2	-	54.7	53.6	54.9	55.6
19	00.00 – 01.00	52.1	-	54.1	52.8	53.5	54.5	51.1	-	53.6	52.4	53.6	54.3
20	01.00 – 02.00	52.5	-	54.9	53.4	52.6	53.7	49.9	-	51.2	50.8	51.4	52.2
21	02.00 – 03.00	52.8	-	53.8	52.6	53.8	54.9	50.1	-	52.1	51.3	52.7	53.7
22	03.00 – 04.00	53.1	-	55.7	54.5	55.6	56.2	49.5	-	51.4	50.1	51.2	52.6
23	04.00 – 05.00	52.8	-	54.7	53.2	54.2	55.1	51.2	-	53.3	52.4	53.9	54.8
24	05.00 – 06.00	54.6	-	56.1	54.7	55.9	56.8	53.6	-	55.6	54.7	55.3	56.1



Location		KATTUPALLI VILLAGE						KALANJI VILLAGE					
Month & Year		April-23	May-23	June - 23	July - 23	Aug - 23	Sept -	April-23	May-23	June - 23	July - 23	Aug - 23	Sept - 23
Parameter & Unit		Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
S.No	Time of Sampling												
1	06.00 – 07.00 (Day)	54.5	-	56.4	53.2	56.7	55.4	53.2	-	55.3	53.9	54.9	53.6
2	07.00 – 08.00	53.2	-	55.7	52.9	55.8	54.9	52.5	-	54.7	53.1	54.6	53.9
3	08.00 – 09.00	51.5	-	53.9	52.6	53.9	52.6	52.1	-	54.1	52.6	53.7	52.4
4	09.00 – 10.00	51.8	-	53.1	52.1	53.4	52.1	52.4	-	54.8	53.4	54.8	53.6
5	10.00 – 11.00	52.1	-	54.6	53.7	54.6	53.7	51.2	-	53.6	52.6	53.5	52.3
6	11.00 – 12.00	52.6	-	54.9	53.5	54.6	53.2	51.4	-	53.0	51.8	52.9	51.5
7	12.00 – 13.00	51.9	-	53.7	52.1	53.7	52.6	51	-	53.9	52.4	53.6	52.7
8	13.00 – 14.00	52.1	-	54.3	53.6	54.5	53.7	50.3	-	51.3	50.3	51.2	50.3
9	14.00 – 15.00	51.7	-	53.2	52.1	53.4	52.1	50.6	-	52.7	51.5	52.7	51.6
10	15.00 – 16.00	51.5	-	53.6	51.9	52.8	51.9	50.2	-	52.1	51.7	52.6	51.8
11	16.00 – 17.00	52	-	54.0	53.2	54.6	53.4	50	-	52.9	50.8	51.4	50.2
12	17.00 – 18.00	52.8	-	54.9	52.8	53.7	52.6	49.4	-	51.6	50.9	51.8	50.5
13	18.00 – 19.00	51.6	-	53.8	52.6	53.5	52.7	49.1	-	51.3	49.8	50.9	49.3
14	19.00 – 20.00	51.2	-	53.4	51.3	52.8	51.6	49.2	-	50.9	49.1	50.3	49.1
15	20.00 – 21.00	50.8	-	52.6	50.7	51.6	50.2	49	-	50.7	48.6	49.7	48.5
16	21.00 – 22.00	49.5	-	51.4	49.6	50.7	48.9	48.6	-	49.9	47.8	48.6	47.3
17	22.00 – 23.00 (Night)	43.2	-	45.1	43.8	44.9	44.6	44.3	-	46.9	45.6	46.3	45.3
18	23.00 – 00.00	41.1	-	43.6	42.5	53.7	44.7	41.2	-	43.6	42.1	43.5	42.1
19	00.00 – 01.00	39.4	-	41.4	40.1	41.3	40.6	38.8	-	40.2	37.7	38.9	37.6
20	01.00 – 02.00	38.6	-	40.7	39.6	40.8	39.5	39.3	-	41.5	35.2	36.7	35.9
21	02.00 – 03.00	39	-	41.2	40.5	41.6	38.6	38.6	-	40.8	36.5	37.6	36.4
22	03.00 – 04.00	40.5	-	42.8	41.7	42.8	41.6	38.2	-	40.1	37.8	38.4	37.2
23	04.00 – 05.00	40.3	-	42.3	41.1	42.9	41.8	39.7	-	41.6	40.2	41.5	40.3
24	05.00 – 06.00	41.6	-	43.1	42.5	43.7	42.7	40.8	-	42.4	41.6	42.8	41.8



## Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area / Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

- Note:-
1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
  2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
  3. Silence zone is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
  4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

\* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

## iv. DG SET EMISSIONS

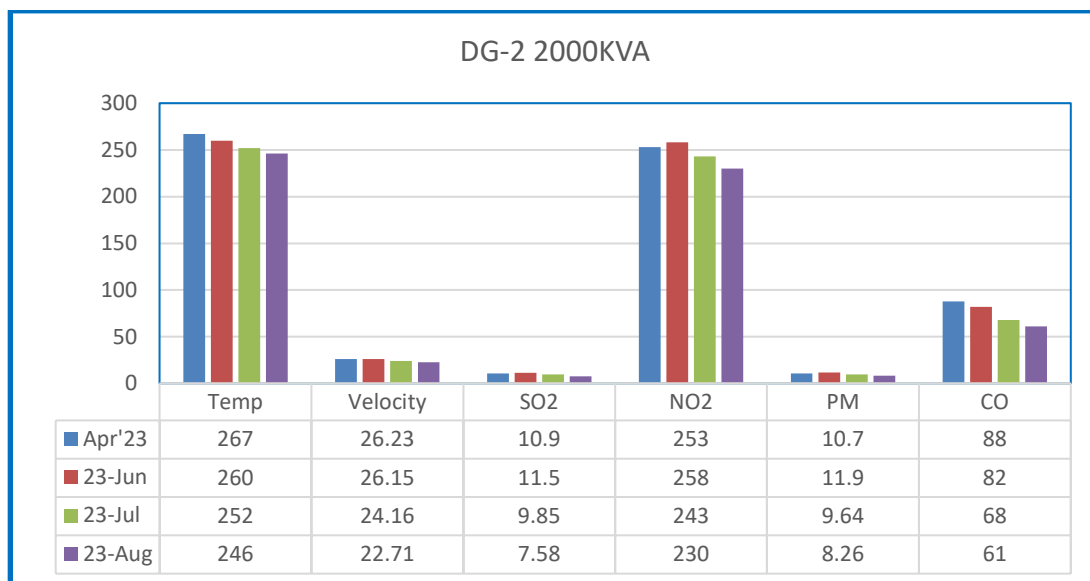
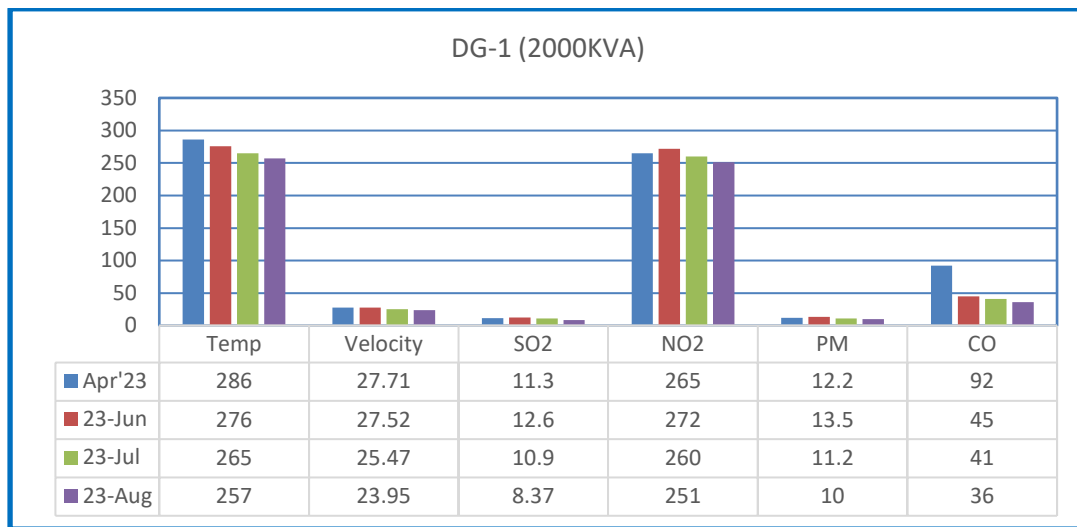
Sampling of Flue gas emission of 2000 KVA DG Set was done and its emissions were determined along with its noise intensity. The Detailed report has been is enclosed as Annexure - 4

## DETAILS OF EMISSION MONITORING LOCATIONS

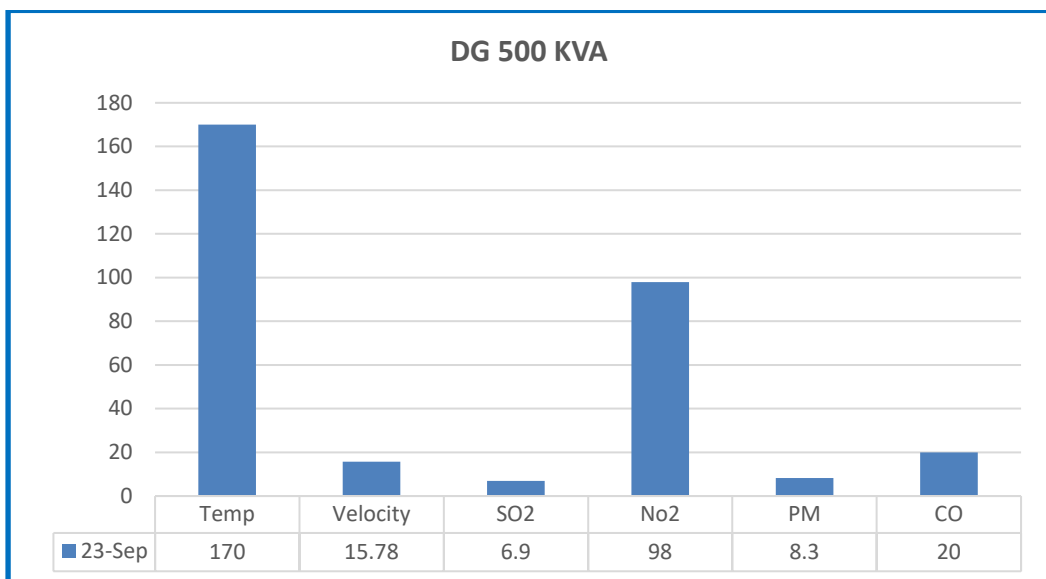
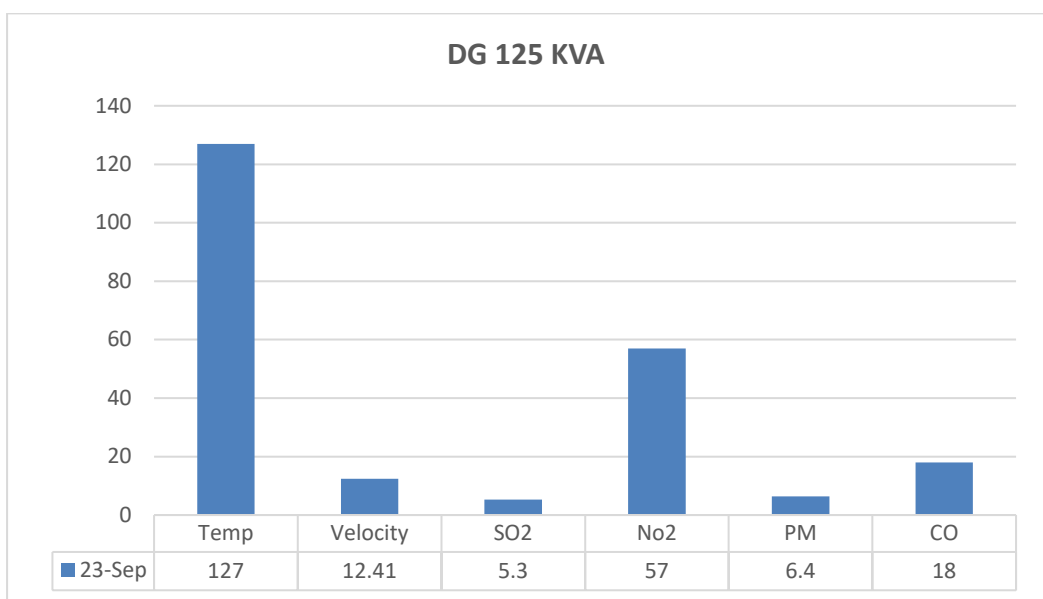
STATION CODE	LOCATIONS	Geographical Location
SM - 01	DG -1: 2000 KVA(Near MRSS)	13°19'6.42"N 80°19'34.35"E
SM - 02	DG -2: 2000 KVA (Near MRSS)	13°19'6.42"N 80°19'34.35"E
SM - 03	DG -3:500 KVA (Near CFS)	13°19'2.72"N 80°19'34.27"E
SM - 04	DG -4:500 KVA (Near QSS)	13°18'53.17"N 80°20'43.87"E
SM - 05	DG -5: 125 KVA (Near Workshop Substation)	13°18'36.04"N 80°20'27.98"E
SM - 06	Liquid Terminal Hot Oil Generator Stack	13°19'2.51"N 80°20'7.05"E

### ANNEXURE - 4 RESULTS OF SOURCE EMISSION MONITORING DATA

		STACK MONITORING							
Location		DG 2000KVA - 1				DG 2000KVA - 2			
Month & Year		Apr-23	June-23	July-23	Aug-23	Apr-23	June-23	July-23	Aug-23
S.No.	Parameters								
1	Stack Temperature, °C	286	276	265	257	267	260	252	246
2	Flue Gas Velocity, m/s	27.71	27.52	25.47	23.95	26.23	26.15	24.16	22.71
3	Sulphur Dioxide, mg/Nm3	11.3	12.6	10.9	8.37	10.9	11.5	9.85	7.58
4	NOX (as NO2) in ppmv	265	272	260	251	253	258	243	230
5	Particular matter, mg/Nm3	12.2	13.5	11.2	10.0	10.7	11.9	9.64	8.26
6	Carbon Monoxide, mg/Nm3	92	45	41	36	88	82	68	61
7	Gas Discharge, Nm3/hr	6669	6799	6328	6040	6535	6654	6151	5849



STACK MONITORING							
Location		DG 125 KVA			DG 500 KVA		
Month & Year		Sept-23	-	-	Sept-23	-	-
S.No.	Parameters						
1	Stack Temperature, °C	127	-	-	170	-	-
2	Flue Gas Velocity, m/s	12.41	-	-	15.78	-	-
3	Sulphur Dioxide, mg/Nm3	5.3	-	-	6.9	-	-
4	NOX (as NO2) in ppmv	57	-	-	98	-	-
5	Particular matter, mg/Nm3	6.4	-	-	8.3	-	-
6	Carbon Monoxide, mg/Nm3	18	-	-	20	-	-
7	Gas Discharge, Nm3/hr	587	-	-	1584	-	-



Parameter	Area Category	Total engine rating of the plant (includes existing as well as new generator sets)	Generator sets commissioning date		
			Before 1.7.2003	Between 1.7.2003 and 1.7.2005	On or after 1.7.2005
NO <sub>x</sub> (as NO <sub>2</sub> ) (At 15% O <sub>2</sub> , dry basis, in ppmv)	A	Up to 75 MW	1100	970	710
	B	Up to 150 MW			
	A	More than 75 MW	1100	710	360
	B	More than 150 MW			
NMHC (as C) (at 15% O <sub>2</sub> ), mg/Nm <sup>3</sup>	Both A and B		150	100	
PM (at 15% O <sub>2</sub> ), mg/Nm <sup>3</sup>	Diesel Fuels- HSD & LDO	Both A and B	75	75	
	Furnace Oils- LSHS & FO	Both A and B	150	100	
CO (at 15% O <sub>2</sub> ), mg/Nm <sup>3</sup>	Both A and B		150	150	

<sup>1</sup> Inserted by Rule 2(b) of the Environment (Protection) Second Amendment Rules, 2008 notified by G.S.R. 280(E), dated 11.4.2008.

<sup>2</sup> Serial No.96 and entries relating thereto inserted by Rule 2 of the Environment (Protection) Third Amendment Rules, 2002 notified vide Notification G.S.R.489(E), dated 9.7.2002.



## v. STP WATER SAMPLE ANALYSIS

Water samples were collected at the following points.

- 30 KLD Treated Water Outlet
- 5 KLD Treated Water Outlet.
- 10 KLD Treated Water Outlet.

## DETAILS OF STP WATER LOCATIONS

STATION CODE	LOCATIONS	Geographical Location
STP - 1	30 KLD	13° 18'36" N 80° 20'25" E
STP - 2	5 KLD	13° 19'6" N 80° 19'35" E
STP - 3	10 KLD	13°19'2.38" N 80° 20'6.81" E

Analysis results of the water sample collected from the above location are enclosed as Annexure - 5.

## ANNEXURE - 5 RESULTS OF STP WATER QUALITY DATA

STP WATER													
Location		STP 10KLD INLET						STP 10KLD OUTLET					
Month & Year		April-23	May-23	June- 23	July - 23	Aug - 23	Sept – 23	April-23	May-23	June- 23	July - 23	Aug - 23	Sept – 23
S.No	Parameters												
1	pH @ 25°C	6.62	-	6.70	7.00	6.73	7.46	6.81	-	6.92	7.71	6.89	7.79
2	Total Suspended	54	-	62	78	50	54	18	-	23	11	17	5.6
3	BOD at 27°C for 3	105	-	114	104	87.0	70	13	-	13	3.8	8	8.0
4	Fecal Coliform	1200	-	1410	810	1280	390	170	-	210	80	170	78
5	COD	283	-	298	368	230	292	51	-	63.3	18	40.2	36
6	Oil & Grease	5.1	-	5.1	3.8	3.6	4.5	BDL	-	BDL	BDL	BDL	BDL
7	Total Dissolved Solids	1527	-	1610	1282	1435	1270	1314	-	1452	724	1281	1074
8	Chlorides (as Cl)	456	-	472	370	442	588	382	-	396	225	368	302
9	Sulphates (as SO <sub>4</sub> )	26	-	31	10	25	20	22	-	25	2.6	18	10

STP WATER													
Location		STP 30KLD INLET						STP 30KLD OUTLET					
Month & Year		April-23	May-23	June- 23	July - 23	Aug - 23	Sept – 23	April-23	May-23	June- 23	July - 23	Aug - 23	Sept – 23
S.No	Parameters												
1	pH @ 25°C	6.53	-	6.59	7.08	6.81	6.73	6.67	-	6.72	7.36	6.97	6.88
2	Total Suspended	53	-	59	54	46	52	8.0	-	11.0	7.1	6.0	9.0
3	BOD at 27°C for 3	132	-	140	98	114	130	15	-	16.0	3.4	10.0	13.0
4	Fecal Coliform	1100	-	1260	930	1150	1210	120	-	140	110	110	130
5	COD	516	-	554	412	496	530	66	-	70.8	16	38.9	49.6
6	Oil & Grease	7.3	-	6.9	4.5	5.4	6.0	BDL	-	BDL	BDL	BDL	BDL
7	Total Dissolved Solids	1682	-	1754	1136	1528	1604	1273	-	1338	1102	1176	1249
8	Chlorides (as Cl)	639	-	650	395	606	621	594	-	610	372	577	589
9	Sulphates (as SO <sub>4</sub> )	27	-	32	38	24	28	18	-	21	13	15	18

## MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

## NOTIFICATION

New Delhi, the 13th October, 2017

**G.S.R. 1265(E).**—In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:—

1. **Short title and commencement.**—(1) These rules may be called the Environment (Protection) Amendment Rules, 2017.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in Schedule – I, after serial number 104 and the entries relating thereto, the following serial number and entries shall be inserted, namely:—

Sl. No.	Industry	Parameters	Standards
1	2	3	4
			Effluent discharge standards (applicable to all mode of disposal)
"105	Sewage Treatment Plants (STPs)		Location Concentration not to exceed
			(a) (b)
		pH	Anywhere in the country 6.5-9.0
		Bio-Chemical Oxygen Demand (BOD)	Metro Cities*, all State Capitals except in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammu and Kashmir, and Union territory of Andaman and Nicobar Islands, Dadar and Nagar Haveli Daman and Diu and Lakshadweep 20
			Areas/regions other than mentioned above 30
		Total Suspended Solids (TSS)	Metro Cities*, all State Capitals except in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammu and Kashmir and Union territory of Andaman and Nicobar Islands, Dadar and Nagar Haveli Daman and Diu and Lakshadweep <50
			Areas/regions other than mentioned above <100
		Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml)	Anywhere in the country <1000

\*Metro Cities are Mumbai, Delhi, Kolkata, Chennai, Bengaluru, Hyderabad, Ahmedabad and Pune.

## vi. DRINKING WATER SAMPLE ANALYSIS

Drinking Water samples were collected at the Canteen or Office Building. Analysis results of the water sample collected from the above location are enclosed as Annexure - 6.

## vii. RAW WATER SAMPLE ANALYSIS

Raw water samples were collected at the Pond. Analysis results of the water sample collected from the above location are enclosed as Annexure - 7.

## ANNEXURE - 6 RESULTS OF WATER SAMPLE (DRINKING WATER) QUALITY DATA

DRINKING WATER								
S.No.	Month & Year	Unit	April - 23	May - 23	June- 23	July - 23	Aug-23	Sept-23
	Parameters							
1	pH @ 25°C	-	8.36	-	7.85	7.72	7.60	7.81
2	Total Hardness as CaCo3	mg/L	12	-	12.4	10.8	8.40	9.96
3	Chloride as Cl	mg/L	19	-	23.5	19.1	16.3	18.3
4	Total Dissolved Solids	mg/L	48	-	44.0	38.0	34.0	42.3
5	Calcium as Ca	mg/L	3.2	-	3.14	2.67	1.98	2.34
6	Sulphate as SO4	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
7	Total Alkalinity as CaCo3	mg/L	15.0	-	19.0	15.6	12.5	17.3
8	Magnesium as Mg	mg/L	1.10	-	1.10	1.01	0.84	0.1
9	Color	Hazen	<1.0	-	<1.0	<1.0	<1.0	<1.0
10	Odour	-	Unobjectionable	-	Unobjectionable	Unobjectionable	Unobjectionable	Unobjectionable
11	Taste	-	Agreeable	-	Agreeable	Agreeable	Agreeable	Agreeable
12	Turbidity	NTU	<0.01	-	<0.01	<0.01	<0.01	<0.01
13	Nitrate as No3	mg/L	BDL(DL:1.0)	-	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)	BDL(DL:1.0)
14	Iron as Fe	mg/L	BDL (D.L.<0.01)	-	BDL (D.L.<0.01)	BDL (D.L.<0.01)	BDL	BDL
15	Total Residual Chlorine	mg/L	BDL (D.L.<0.01)	-	BDL (D.L.<0.01)	BDL (D.L.<0.01)	BDL	BDL
16	Copper as Cu	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
17	Manganese as Mn	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
18	Fluoride as F	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
19	Phenolic compounds as C6H5OH	mg/L	Nil	-	Nil	Nil	Nil	Nil
20	Mercury as Hg	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
21	Cadmium as Cd	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
22	Selenium as Se	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
23	Arsenic as As	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
24	Lead as Pb	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
25	Zinc as Zn	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
26	Anionic Detergents as MBAS	mg/L	Nil	-	Nil	Nil	Nil	Nil
27	Total Chromium as Cr	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
28	Phenolphthalein Alkalinity as CaCO3	mg/L	Nil	-	Nil	Nil	Nil	Nil
29	Aluminium as Al	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
30	Boron as B	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
31	Mineral Oil	mg/L	BDL (D.L.0.01)	-	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)	BDL (D.L.0.01)
32	Polynuclear Aromatic Hydrocarbons as	mg/L	BDL (D.L.0.0001)	-	BDL (D.L.0.0001)	BDL (D.L.0.0001)	BDL (D.L.0.0001)	BDL (D.L.0.0001)
33	Pesticides	mg/L	Absent	-	Absent	Absent	Absent	Absent
34	Cyanide as CN	mg/L	BDL (DL : 0.01)	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
35	E. coli	MPN/100ml	Absent	-	Absent	Absent	Absent	Absent
36	Total Coliform	MPN/100ml	Absent	-	Absent	Absent	Absent	Absent

viii. Marine Sampling

Marine Water samples and sediment samples were collected at locations South side berth and North side berth. Analysis data of Marine and sediments as represented in Annexure - 8 & 9.

DETAILS OF MARINE WATER AND SEDIMENT LOCATIONS

STATION CODE	LOCATIONS	Geographical Location
MW - 1 / MS - 1	CB - 1	13 <sup>0</sup> 18' 50" N 80 <sup>0</sup> 20' 51" E
MW - 2 / MS - 2	CB - 2	13 <sup>0</sup> 18' 46" N 80 <sup>0</sup> 20' 49" E
MW - 3 / MS - 3	BERTH - 3	13 <sup>0</sup> 18' 41" N 80 <sup>0</sup> 21' 4" E

Fig - 5. Water and Marine Sampling Locations



## ANNEXURE – 8 RESULTS OF MARINE WATER QUALITY DATA

MARINE WATER														
S.NO	PARAMETER	UNITS	CB - 1											
			April - 23		May - 23		June - 23		July - 23		Aug - 23		Sept - 23	
Physicochemical Parameters			Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
1	Colour	Hazan	10	10	-	-	10	22	8	20	8	18	7	16
2	Odour	-	Unobjecti	Unobjection	-	-	09	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti
3	pH @ 25°C	-	8.05	8.10	-	-	8.05	8.10	8.09	8.13	8.15	8.17	8.13	8.14
4	Temperature	°C	29	29	-	-	28.8	28.7	28.6	28.5	28.4	28.2	28.3	28.1
5	Turbidity	NTU	11	13	-	-	10	25	7	23	6.0	21	5.5	19
6	Total Suspended Solids	mg/L	16	15	-	-	14	21.0	12	19.0	11	16.0	09	14
7	BOD at 27 oC for 3	mg/L	4.0	4.3	-	-	4.5	4.6	4.3	4.4	4.1	4.3	4.0	4.4
8	COD	mg/L	113	123	-	-	105	110	101	106	98.5	103	95.6	101
9	Dissolved oxygen	mg/L	3.0	2.9	-	-	3.3	2.8	3.4	2.9	3.5	3.0	3.6	3.1
10	Salinity at 25 °C	ppt	36.0	33.7	-	-	36.2	37.4	36.0	37.1	35.8	36.9	35.6	36.7
11	Oil & Grease	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nutrient Parameters														
12	Nitrate as No3	mg/L	5.92	6.33	-	-	7.38	8.01	7.26	7.89	7.18	7.84	6.89	7.70
13	Nitrite as No2	mg/L	2.10	2.36	-	-	3.24	3.60	3.18	3.52	3.11	3.40	2.89	3.28
14	Ammonical Nitrogen as N	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15	Total Nitrogen	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Inorganic phosphates as PO4	mg/L	4.15	4.73	-	-	5.03	5.70	4.95	5.59	4.89	5.50	4.79	5.36
17	Silica as SiO2	mg/L	6.22	6.38	-	-	6.59	8.92	6.54	8.80	6.48	8.69	6.36	8.54
18	Particulate Organic Carbon	µgC/L	17	14	-	-	17	26	15	24	13	23	11	21
19	Pertoleum Hydrocarbons	µg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Heavy Metals														
20	Cadmium as Cd	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21	Copper as Cu	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22	Total Iron as Fe	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Zinc as Zn	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24	Lead as Pb	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25	Mercury as Hg	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26	Nickel as Ni	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27	Total Chromium as Cr	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bacteriological Parameters														
28	Escherichia Coli (E.CLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
29	Faecal Coliform (FCLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
30	Pseudomonas aeruginosa (PALO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
31	Streptococcus faecalis (SFLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
32	Shigella (SHLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
33	Salmonella (SLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
34	Total Coliform (TC)	per100m	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
35	Total Viable Count (TVC)	cfu/ml	<1	<1	-	-	9.0	5.0	12	7	10	5	16	10
36	Vibrio cholera (VC)	per100m	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37	Vibrio parahaemolyticus (VP)	per100m	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

CB - 1														
Month & Year			April - 23		May - 23		June - 23		July - 23		Aug - 23		Sept - 23	
S.No	Parameters	Unit	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
38	Primary Productivity	mg C/m <sup>3</sup> /hr	9.17	9.64	-	-	9.15	9.61	9.17	9.58	9.15	9.55	9.17	9.56
39	Chlorophyll a	mg /m <sup>3</sup>	5.8	6.52	-	-	5.62	6.46	5.64	6.48	5.62	6.46	5.65	6.48
40	Phaeopigment	mg /m <sup>3</sup>	3.11	2.34	-	-	3.07	2.31	3.09	2.34	3.07	2.32	3.08	2.35
41	Total Biomass	ml /100 m <sup>3</sup>	1.79	1.75	-	-	1.75	1.73	1.77	1.75	1.75	1.73	1.76	1.74
PHYTOPLANKTON														
42	Bacteriastrum hyalinum	nos/ml	14	17	-	-	16	19	18	21	21	23	23	24
43	Bacteriastrum varians	nos/ml	12	15	-	-	10	13	11	10	13	11	15	10
44	Chaetoceros didymus	nos/ml	16	19	-	-	15	17	17	19	16	17	18	15
45	Chaetoceros decipiens	nos/ml	11	12	-	-	8	10	9	12	11	14	15	19
46	Biddulphia mobiliensis	nos/ml	10	13	-	-	8	11	7	09	5	7	3	9
47	Ditylum brightwellii	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
48	Gyrosigma sp	nos/ml	12	14	-	-	15	17	18	21	16	20	19	23
49	Cladophysis sps	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
50	Coscinodiscus centralis	nos/ml	11	17	-	-	13	19	14	16	12	14	15	17
51	Coscinodiscus granii	nos/ml	10	13	-	-	11	15	13	17	15	19	17	21
52	Cylcotella sps	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
53	Hemidiscus hardmanianus	nos/ml	15	22	-	-	13	20	15	23	17	25	21	27
54	Laudaria annulata	nos/ml	9	11	-	-	11	13	08	10	10	12	12	14
55	Pyropacus horologicum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
56	Pleurosigma angulatum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
57	Leptocylindrus danicus	nos/ml	18	21	-	-	20	22	23	25	25	27	21	25
58	Guinardia flaccida	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
59	Rhizosolenia alata	nos/ml	12	17	-	-	14	19	16	20	14	18	18	20
60	Rhizosolenia imbricata	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
61	Rhizosolenia semispina	nos/ml	15	19	-	-	17	20	19	21	17	20	21	23
62	Thalassionema nitzschioides	nos/ml	9	7	-	-	6	5	4	3	3	3	2	1
63	Triceratium reticulatum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
64	Ceratium trichoceros	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
65	Ceratium furca	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
66	Ceratium macroceros	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
67	Ceracium longipes	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
ZOOPLANKTONS														
68	Acrocalanus gracilis	nos/ml	10	11	-	-	13	10	16	12	19	15	22	17
69	Acrocalanus sp	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
70	Paracalanus parvus	nos/ml	12	15	-	-	14	16	15	18	13	17	15	21
71	Eutintinus sps	nos/ml	6	6	-	-	8	9	6	8	8	10	11	15
72	Centropages furcatus	nos/ml	11	15	-	-	13	17	15	19	18	21	21	24
73	Corycaeus dana	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
74	Oithona brevicornis	nos/ml	14	12	-	-	12	10	13	12	15	13	11	10
75	Euterpina acutifrons	nos/ml	15	15	-	-	14	13	16	15	12	13	15	17
76	Metacalanus aurivilli	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
77	Copepod nauplii	nos/ml	13	17	-	-	15	19	17	20	15	19	18	21
78	Cirripede nauplii	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
79	Bivalve veliger	nos/ml	10	15	-	-	12	17	14	19	16	21	19	23
80	Gastropod veliger	nos/ml	9	12	-	-	10	14	12	11	14	12	16	14

S.NO	PARAMETER	UNITS	CB - 2											
			April - 23		May - 23		June - 23		July - 23		Aug - 23		Sept - 23	
Physicochemical Parameters			Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
1	Colour	Hazan	10	25	-	-	10	27	9	25	9	24	8	21
2	Odour	-	Unobject	Unobjecti	-	-	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti
3	pH @ 25°C	-	8.10	8.01	-	-	8.13	8.06	8.15	8.09	8.19	8.13	8.16	8.10
4	Temperature	°C	29	29	-	-	28.6	28.5	28.9	28.3	28.7	28.1	28.5	28.0
5	Turbidity	NTU	13	24	-	-	11	27	12	25	10.0	23	9.3	21
6	Total Suspended Solids	mg/L	15	22.0	-	-	12	24.0	10	21.0	08	19.0	06	16
7	BOD at 27 oC for 3	mg/L	4.3	4.7	-	-	4.9	4.5	4.7	4.3	4.5	4.2	4.3	4.3
8	COD	mg/L	123	124	-	-	116	118	112	114	110	112	105	108
9	Dissolved oxygen	mg/L	2.9	2.4	-	-	3.1	2.6	3.2	2.8	3.3	2.9	3.4	3.0
10	Salinity at 25 °C	ppt	33.7	35.4	-	-	34.1	35.6	34.3	35.8	34.1	35.6	34.0	35.3
11	Oil & Grease	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nutrient Parameters														
12	Nitrate as No3	mg/L	6.33	9.32	-	-	9.88	9.52	9.80	9.39	9.62	9.31	9.30	9.20
13	Nitrite as No2	mg/L	2.36	3.90	-	-	3.92	4.05	9.84	3.89	9.75	3.78	9.40	3.64
14	Ammonical Nitrogen	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
15	Total Nitrogen	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
16	Inorganic phosphates as PO4	mg/L	4.15	5.92	-	-	6.74	6.18	6.70	6.10	6.58	6.02	6.40	5.94
17	Silica as SiO2	mg/L	6.22	8.87	-	-	7.90	9.06	7.79	8.95	7.70	8.90	7.60	8.78
18	Particulate Organic Carbon	µgC/L	17	22	-	-	21	23	19	21	17	18	15	16
19	Pertoleum Hydrocarbons	µg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Heavy Metals														
20	Cadmium as Cd	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
21	Copper as Cu	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
22	Total Iron as Fe	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
23	Zinc as Zn	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
24	Lead as Pb	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
25	Mercury as Hg	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
26	Nickel as Ni	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
27	Total Chromium as Cr	mg/L	BDL	BDL	-	-	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bacteriological Parameters														
28	Escherichia Coli (ECLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
29	Faecal Coliform (FCLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
30	Pseudomonas aeruginosa (PALO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
31	Streptococcus faecalis (SFLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
32	Shigella (SHLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
33	Salmonella (SLO)	per100ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
34	Total Coliform (TC)	per100m	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
35	Total Viable Count (TVC)	cfu/ml	<1	<1	-	-	14.0	8.0	16	11	13	9	18	14
36	Vibrio cholera (VC)	per100m	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37	Vibrio parahaemolyticus (VP)	per100m	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

CB - 2														
Month & Year			April - 23		May - 23		June - 23		July - 23		Aug - 23		Sept - 23	
S.N	Parameters	Unit	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
38	Primary Productivity	mg C/m <sup>3</sup> /hr	9.7	10.34	-	-	9.68	10.3	9.64	10.1	9.61	10.0	9.63	10.3
39	Chlorophyll a	mg /m <sup>3</sup>	6.98	7.23	-	-	6.94	7.20	6.95	7.23	6.93	7.20	6.95	7.23
40	Phaeopigment	mg /m <sup>3</sup>	3.31	3.26	-	-	3.27	3.23	3.29	3.25	3.27	3.23	3.29	3.25
41	Total Biomass	ml /100 m <sup>3</sup>	1.96	1.98	-	-	1.92	1.96	1.94	1.98	1.91	1.96	1.93	1.97
PHYTOPLANKTON														
42	Bacteriastrium hyalinum	nos/ml	11	15	-	-	13	17	14	15	17	16	19	14
43	Bacteriastrium varians	nos/ml	9	12	-	-	11	10	13	08	15	10	13	11
44	Chaetoceros didymus	nos/ml	15	17	-	-	13	15	15	13	16	15	15	13
45	Chaetoceros decipiens	nos/ml	10	13	-	-	12	11	10	14	12	16	15	21
46	Biddulphia mobiliensis	nos/ml	12	15	-	-	10	13	08	12	9	10	11	08
47	Ditylum brightwellii	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
48	Gyrosigma sp	nos/ml	09	12	-	-	11	13	15	11	13	10	15	12
49	Cladophyxis sps	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
50	Coscinodiscus centralis	nos/ml	14	20	-	-	17	22	13	20	11	18	10	21
51	Coscinodiscus granii	nos/ml	11	15	-	-	08	12	10	15	12	17	15	19
52	Cylcotella sps	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
53	Hemidiscus hardmanianus	nos/ml	19	23	-	-	17	21	19	23	21	24	20	28
54	Laudaria annulata	nos/ml	8	13	-	-	9	15	7	12	9	14	10	18
55	Pyropacus horologicum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
56	Pleurosigma angulatum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
57	Leptocylindrus danicus	nos/ml	13	14	-	-	15	16	17	19	19	21	17	20
58	Guinardia flaccida	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
59	Rhizosolenia alata	nos/ml	19	23	-	-	21	26	23	27	21	26	15	22
60	Rhizosolenia imbricata	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
61	Rhizosolenia semispina	nos/ml	14	16	-	-	16	19	17	21	15	19	18	21
62	Thalassionema nitzschioides	nos/ml	9	8	-	-	7	4	5	2	5	4	8	3
63	Triceratium reticulatum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
64	Ceratium trichoceros	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
65	Ceratium furca	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
66	Ceratium macroceros	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
67	Ceracium longipes	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
ZOOPLANKTONS														
68	Acrocalanus gracilis	nos/ml	9	10	-	-	07	09	09	11	11	13	10	09
69	Acrocalanus sp	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
70	Paracalanus parvus	nos/ml	13	15	-	-	14	17	15	18	13	16	16	19
71	Eutintinus sps	nos/ml	7	6	-	-	8	7	6	09	5	12	8	17
72	Centropages furcatus	nos/ml	13	18	-	-	15	16	16	17	18	09	19	23
73	Corycaeus dana	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
74	Oithona brevicornis	nos/ml	14	16	-	-	11	14	10	13	12	15	08	13
75	Euterpina acutifrons	nos/ml	14	16	-	-	12	15	10	13	08	11	10	08
76	Metacalanus aurivilli	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
77	Copepod nauplii	nos/ml	12	14	-	-	14	16	16	18	13	21	15	23
78	Cirripede nauplii	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
79	Bivalve veliger	nos/ml	17	18	-	-	20	15	21	16	236	18	23	20
80	Gastropod veliger	nos/ml	10	13	-	-	11	16	14	18	16	20	14	23



S.NO	PARAMETER	UNITS	BERTH - 3											
			April - 23		May - 23		June - 23		July - 23		Aug - 23		Sept - 23	
Physicochemical Parameters			Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
1	Colour	Hazan	15	25	-	-	17	28	15	26	13	22	11	18
2	Odour	-	Unobject	Unobjecti	-	-	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti	Unobjecti
3	pH @ 25°C	-	8.03	8.06	-	-	8.07	8.11	8.05	8.09	8.09	8.15	8.13	8.19
4	Temperature	°C	29	29	-	-	28.8	28.6	28.6	28.4	28.4	28.3	28.2	28.1
5	Turbidity	NTU	10	20	-	-	13	24	11	21	10	18	9	16
6	Total Suspended Solids	mg/L	12	19	-	-	14	22	13	20	11	16	10	14
7	BOD at 27 oC for 3	mg/L	4.6	4.4	-	-	4.4	4.3	4.2	4.1	4.1	4.0	4.0	3.9
8	COD	mg/L	126	131	-	-	118	124	110	116	107	113	105	109
9	Dissolved oxygen	mg/L	2.7	3.1	-	-	2.9	3.2	3.1	3.3	3.2	3.4	3.3	3.5
10	Salinity at 25 °C	ppt	34.8	33.6	-	-	35.0	33.8	34.8	33.6	34.6	33.5	34.4	33.3
11	Oil & Grease	mg/L	BDL	BDL	-	-	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
Nutrient Parameters														
12	Nitrate as No3	mg/L	7.2	7.0	-	-	7.6	7.4	7.4	7.2	7.1	7.0	6.6	6.8
13	Nitrite as No2	mg/L	2.7	3.2	-	-	3.1	3.6	3.0	3.4	2.8	3.2	2.6	3.0
14	Ammonical Nitrogen	mg/L	BDL	BDL	-	-	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
15	Total Nitrogen	mg/L	BDL	BDL	-	-	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
16	Inorganic phosphates as PO4	mg/L	6.11	6.37	-	-	6.20	6.45	6.18	6.41	6.14	6.35	6.05	6.27
17	Silica as SiO2	mg/L	7.64	8.13	-	-	7.75	8.22	7.72	8.18	7.62	8.11	7.58	8.06
18	Particulate Organic Carbon	µgC/L	14	18	-	-	17	22	15	21	13	19	10	15
19	Pertoleum Hydrocarbons	µg/L	BDL	BDL	-	-	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
Heavy Metals														
20	Cadmium as Cd	mg/L	BDL	BDL	-	-	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)	BDL (DL : 0.001)
21	Copper as Cu	mg/L	BDL	BDL	-	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
22	Total Iron as Fe	mg/L	BDL	BDL	-	-	0.75	0.79	0.73	0.76	0.70	0.73	0.64	0.70
23	Zinc as Zn	mg/L	BDL	BDL	-	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
24	Lead as Pb	mg/L	BDL	BDL	-	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
25	Mercury as Hg	mg/L	BDL	BDL	-	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
26	Nickel as Ni	mg/L	BDL	BDL	-	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
27	Total Chromium as Cr	mg/L	BDL	BDL	-	-	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
Bacteriological Parameters														
28	Escherichia Coli (ECLO)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
29	Faecal Coliform (FCLO)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
30	Pseudomonas aeruginosa (PALO)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
31	Streptococcus faecalis (SFLO)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
32	Shigella (SHLO)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
33	Salmonella (SLO)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
34	Total Coliform (TC)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
35	Total Viable Count (TVC)	cfu/ml	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1
36	Vibrio cholera (VC)	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent
37	Vibrio	cfu/ml	Absent	Absent	-	-	Absent	Absent	Absent	Absent	Absent	Absent	Absent	Absent

BERTH - 3														
Month & Year			April - 23		May - 23		June - 23		July - 23		Aug - 23		Sept - 23	
S.N	Parameters	Unit	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
38	Primary Productivity	mg C/m <sup>3</sup> /hr	9.68	9.95	-	-	9.65	9.90	9.67	9.91	9.65	9.89	9.68	9.91
39	Chlorophyll a	mg /m <sup>3</sup>	5.12	6.11	-	-	5.06	6.08	5.08	6.10	5.06	6.07	5.09	6.09
40	Phaeopigment	mg /m <sup>3</sup>	2.79	3.08	-	-	2.75	3.06	2.77	3.08	2.75	3.05	2.78	3.08
41	Total Biomass	ml /100 m <sup>3</sup>	2.03	3.07	-	-	2.01	3.05	2.03	3.07	2.01	3.06	2.03	3.09
PHYTOPLANKTON														
42	Bacteriastrum hyalinum	nos/ml	13	14	-	-	16	12	18	13	21	15	24	17
43	Bacteriastrum varians	nos/ml	15	17	-	-	13	14	15	11	17	13	19	15
44	Chaetoceros didymus	nos/ml	9	11	-	-	7	10	9	8	12	10	10	08
45	Chaetoceros decipiens	nos/ml	9	10	-	-	12	08	15	10	17	12	21	15
46	Biddulphia mobiliensis	nos/ml	15	17	-	-	18	21	20	23	16	20	19	22
47	Ditylum brightwellii	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
48	Gyrosigma sp	nos/ml	7	11	-	-	9	13	10	11	08	10	11	13
49	Cladophysis sps	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
50	Coscinodiscus centralis	nos/ml	16	20	-	-	13	17	15	19	13	17	15	19
51	Coscinodiscus granii	nos/ml	21	25	-	-	23	28	25	31	27	33	31	35
52	Cylcotella sps	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
53	Hemidiscus hardmanianus	nos/ml	16	18	-	-	19	22	21	25	23	27	25	30
54	Laudaria annulata	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
55	Pyropacus horologicum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
56	Pleurosigma angulatum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
57	Leptocylindrus danicus	nos/ml	13	15	-	-	15	18	17	20	19	23	22	26
58	Guinardia flaccida	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
59	Rhizosolenia alata	nos/ml	20	22	-	-	17	15	19	13	16	11	19	13
60	Rhizosolenia imbricata	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
61	Rhizosolenia semispina	nos/ml	18	21	-	-	21	23	23	25	25	29	28	32
62	Thalassionema nitzschioides	nos/ml	16	17	-	-	19	15	21	18	23	20	25	22
63	Triceratium reticulatum	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
64	Ceratium trichoceros	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
65	Ceratium furca	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
66	Ceratium macroceros	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
67	Ceracium longipes	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
ZOOPLANKTONS														
68	Acrocalanus gracilis	nos/ml	10	13	-	-	13	16	15	19	18	21	22	26
69	Acrocalanus sp	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
70	Paracalanus parvus	nos/ml	13	15	-	-	15	17	17	21	19	23	15	20
71	Eutintinus sps	nos/ml	19	21	-	-	22	24	20	21	22	18	24	20
72	Centropages furcatus	nos/ml	13	17	-	-	14	19	17	22	19	25	22	26
73	Corycaeus dana	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
74	Oithona brevicornis	nos/ml	11	13	-	-	13	15	16	14	13	11	15	12
75	Euterpina acutifrons	nos/ml	12	18	-	-	13	21	15	18	17	19	21	23
76	Metacalanus aurivilli	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
77	Copepod nauplii	nos/ml	14	17	-	-	16	19	19	22	21	24	17	21
78	Cirripede nauplii	nos/ml	Nil	Nil	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
79	Bivalve veliger	nos/ml	15	18	-	-	17	15	15	13	17	14	15	12
80	Gastropod veliger	nos/ml	17	20	-	-	15	17	13	16	11	13	10	15


## ANNEXURE - 9 RESULTS OF MARINE SEDIMENT QUALITY DATA

SEA SEDIMENT								
Location		CB - 1						
Month & Year		Unit	April - 23	May - 23	June - 23	July - 23	Aug - 23	Sept - 23
S.No.	Parameters							
1	Total organic matter	%	0.69	-	0.74	0.72	0.69	0.72
2	% Sand	%	15	-	17	19	21	19
3	%silt	%	32	-	34	36	38	35
4	%Clay	%	53	-	49	45	41	46
5	Iron (as Fe)	mg/kg	21.2	-	22.1	21.6	20.9	20.6
6	Aluminium (as Al)	mg/kg	9219	-	9219	9184	9110	9026
7	Chromium (as cr)	mg/kg	37	-	39	36	33	31
8	Copper (as cu)	mg/kg	42	-	45	43	41	39
9	Manganese (as Mn)	mg/kg	33	-	35	33	31	30
10	Nickel (as Ni)	mg/kg	26	-	28	26	25	23
11	Lead (as Pb)	mg/kg	28	-	31	29	27	25
12	Zinc (as Zn)	mg/kg	236	-	242	236	233	230
13	Mercury(as Hg)	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
14	Total phosphorus as P	mg/kg	125	-	128	124	122	120
15	Octane	mg/kg	BDL(DL 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
16	Nonane	mg/kg	BDL(DL 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
17	Decane	mg/kg	BDL(DL 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
18	Undecane	mg/kg	-	-	0.75	0.73	0.70	0.67
19	Dodecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
20	Tridecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
21	Tetradecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
22	Phntadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
23	Hexadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
24	Heptadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
25	Octadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
26	Nonadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
27	Elcosane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
<b>I. Nematoda</b>								
28	Oncholaimussp	nos/m <sup>2</sup>	12	-	15	13	15	18
29	Tricomasp	nos/m <sup>2</sup>	17	-	21	18	21	23
<b>II. Foraminifera</b>								
30	Ammoniaabecarii	nos/m <sup>2</sup>	16	-	19	21	18	17
31	Quinquilinasp	nos/m <sup>2</sup>	12	-	15	18	21	23
32	Discorbinellasp.,	nos/m <sup>2</sup>	18	-	21	22	25	27
33	Bolivinaspathulata	nos/m <sup>2</sup>	15	-	18	19	21	23
34	Elphidiumsp	nos/m <sup>2</sup>	18	-	15	17	19	21
35	Noniondepressula	nos/m <sup>2</sup>	21	-	24	22	24	22
<b>III. Molluscs-Bivalvia</b>								
36	Meretrixveligers	nos/m <sup>2</sup>	23	-	26	24	26	29
37	Anadoraveligers	nos/m <sup>2</sup>	24	-	27	21	23	25
	Total No. of individuals	nos/m <sup>2</sup>	176	-	201	195	213	228
	Shanon Weaver Diversity Index		2.28	-	2.26	2.29	2.28	2.29

Location		CB – 2						
Month & Year		Unit	April - 23	May - 23	June - 23	July - 23	Aug - 23	Sept - 23
S.No.	Parameters							
1	Total organic matter	%	0.75	-	0.79	0.76	0.73	0.75
2	% Sand	%	12	-	14	15	17	15
3	%silt	%	33	-	35	37	39	38
4	%Clay	%	55	-	51	48	44	47
5	Iron (as Fe)	mg/kg	25.8	-	26.5	25.9	25.2	24.9
6	Aluminium (as Al)	mg/kg	9167	-	9167	9135	9085	8980
7	Chromium (as cr)	mg/kg	41	-	44	41	39	37
8	Copper (as cu)	mg/kg	49	-	52	50	48	47
9	Manganese (as Mn)	mg/kg	28	-	30	27	25	23
10	Nickel (as Ni)	mg/kg	17	-	19	17	15	13
11	Lead (as Pb)	mg/kg	23	-	25	23	21	20
12	Zinc (as Zn)	mg/kg	201	-	208	204	201	198
13	Mercury(as Hg)	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
14	Total phosphorus as P	mg/kg	127	-	132	130	128	124
15	Octane	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
16	Nonane	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
17	Decane	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
18	Undecane	mg/kg	0.73	-	0.70	0.67	0.64	0.61
19	Dodecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
20	Tridecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
21	Tetradecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
22	Phntadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
23	Hexadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
24	Heptadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
25	Octadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
26	Nonadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
27	Elcosane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
<b>I. Nematoda</b>								
28	Oncholaimussp	nos/m <sup>2</sup>	12	-	11	10	13	15
29	Tricomasp	nos/m <sup>2</sup>	17	-	15	13	15	17
<b>II. Foraminifera</b>								
30	Ammoniaebecarii	nos/m <sup>2</sup>	16	-	17	19	17	15
31	Quinquinasp	nos/m <sup>2</sup>	12	-	18	20	16	18
32	Discorbinellasp.,	nos/m <sup>2</sup>	18	-	23	25	28	30
33	Bolivinaspathulata	nos/m <sup>2</sup>	15	-	20	22	23	25
34	Elphidiumsp	nos/m <sup>2</sup>	18	-	13	15	17	15
35	Noniondepressula	nos/m <sup>2</sup>	21	-	22	21	22	20
<b>III. Molluscs-Bivalvia</b>								
36	Meretrixveligers	nos/m <sup>2</sup>	23	-	23	18	19	21
37	Anadoraveligers	nos/m <sup>2</sup>	24	-	24	20	18	20
	Total No. of individuals	nos/m <sup>2</sup>	176	-	186	183	188	196
	Shanon Weaver Diversity Index		2.28	-	2.27	2.25	2.29	2.26

Location		BERTH – 3						
Month & Year		Unit	April - 23	May - 23	June - 23	July - 23	Aug - 23	Sept - 23
S.No.	Parameters							
1	Total organic matter	%	0.88	-	0.91	0.89	0.86	0.88
2	% Sand	%	10	-	11	13	14	13
3	%silt	%	35	-	37	39	41	43
4	%Clay	%	55	-	52	48	45	44
5	Iron (as Fe)	mg/kg	22.6	-	23.7	23.4	22.7	22.4
6	Aluminium (as Al)	mg/kg	9345	-	9345	9310	9279	9189
7	Chromium (as cr)	mg/kg	38	-	40	37	35	34
8	Copper (as cu)	mg/kg	56	-	58	56	53	51
9	Manganese (as Mn)	mg/kg	21	-	23	21	19	17
10	Nickel (as Ni)	mg/kg	19	-	21	20	18	15
11	Lead (as Pb)	mg/kg	21	-	23	22	20	18
12	Zinc (as Zn)	mg/kg	198	-	205	203	200	196
13	Mercury(as Hg)	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
14	Total phosphorus as P	mg/kg	119	-	121	118	116	144
15	Octane	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
16	Nonane	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
17	Decane	mg/kg	BDL (DL : 0.1)	-	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)
18	Undecane	mg/kg	0.71	-	0.73	0.71	0.68	0.65
19	Dodecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
20	Tridecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
21	Tetradecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
22	Phntadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
23	Hexadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
24	Heptadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
25	Octadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
26	Nonadecane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
27	Elcosane	mg/kg	BDL(DL 0.1)	-	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)	BDL(DL 0.1)
<b>I. Nematoda</b>								
28	Oncholaimussp	nos/m <sup>2</sup>	13	-	14	12	14	19
29	Tricomasp	nos/m <sup>2</sup>	18	-	23	21	23	26
<b>II. Foraminifera</b>								
30	Ammoniaabecarii	nos/m <sup>2</sup>	15	-	16	20	19	16
31	Quinquinasp	nos/m <sup>2</sup>	13	-	14	16	18	20
32	Discorbinellasp.,	nos/m <sup>2</sup>	17	-	19	21	20	23
33	Bolivinaspathulata	nos/m <sup>2</sup>	15	-	17	18	15	17
34	Elphidiumsp	nos/m <sup>2</sup>	17	-	16	16	20	18
35	Noniondepressula	nos/m <sup>2</sup>	20	-	25	23	21	24
<b>III. Molluscs-Bivalvia</b>								
36	Meretrixveligers	nos/m <sup>2</sup>	21	-	24	21	23	25
37	Anadoraveligers	nos/m <sup>2</sup>	20	-	22	17	19	21
	Total No. of individuals	nos/m <sup>2</sup>	169	-	190	185	192	209
	Shanon Weaver Diversity Index		2.29	-	2.29	2.27	2.27	2.28

**ANNEXURE - 5**  
**(TNCZMA COMPLIANCE)**

	<b>Marine Infrastructure Developer Pvt Ltd</b>	<b>From : April 2023</b> <b>To : September 2023</b>
<b><u>Compliance to Tamil Nadu Coastal Zone Management Authority (TNCZMA)</u></b> <b><u>Conditions vide letter no. 6064/EC.3/2014-1 dated 26.06.2014</u></b>		

**Annexure – V**

<b>Sl. No</b>	<b>Conditions</b>	<b>Compliance</b>
i	The unit shall compliance with all the conditions stipulated in Environment Clearance issued in No. 10-130/2007-IA-III, Ministry of Environment & Forest, Government of India, dated 3rd July 2009	<b>Being complied</b>
ii	The proposed activities should not cause coastal erosion and alter the beach configuration. The shoreline changes shall be monitored continuously	<b>Complied.</b>  MIDPL has engaged Institute of Ocean Management, Anna University, Chennai and carried out Shoreline Change study during December 2022. Report is attached as <b>Annexure - II.</b>
iii	Chemical waste generated and the sewage generated, if any should not be discharged into the sea and shall be properly handled	<b>Complied.</b>  No chemical waste is generated. MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD & 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.  Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet & outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.  All the parameters are well within the prescribed norms.

**Compliance to Tamil Nadu Coastal Zone Management Authority (TNCZMA)  
Conditions vide letter no. 6064/EC.3/2014-1 dated 26.06.2014**

iv	The wastewater generated shall be collected, treated and reused properly	<p><b>Complied.</b></p> <p>MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <p>Average quantity of Sewage water and ETP water treated during the compliance period is as furnished below.</p> <table border="1"> <thead> <tr> <th>Location</th> <th>STP/ETP Capacity</th> <th>Avg. Quantity of Sewage Water Treated (Oct'22 to Mar'23)</th> </tr> </thead> <tbody> <tr> <td>Near IWMS</td> <td>STP 30 KLD</td> <td>12.4 KLD</td> </tr> <tr> <td>Near CFS</td> <td>STP 5 KLD</td> <td>1.3 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>STP 10 KLD</td> <td>1.7 KLD</td> </tr> <tr> <td>Near Liquid Terminal</td> <td>ETP 50 KLD</td> <td>0.2 KLD</td> </tr> </tbody> </table> <p>The monitoring results for the period April 2023 to September 2023 is enclosed as <b>Annexure - IV</b>.</p> <p>Summary of STP &amp; ETP treated water analysis results during compliance period as mentioned below.</p> <p><b>STP Treated Water Analysis report.</b></p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>TNPCB Limit</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>-</td> <td>6.71</td> <td>7.79</td> <td>6.5 to 9</td> </tr> <tr> <td>TSS</td> <td>mg/l</td> <td>5.6</td> <td>23</td> <td>30</td> </tr> <tr> <td>BOD</td> <td>mg/l</td> <td>3.8</td> <td>16</td> <td>20</td> </tr> <tr> <td>COD</td> <td>mg/l</td> <td>16</td> <td>70.8</td> <td>100</td> </tr> <tr> <td>Faecal Coliform</td> <td>MPN/100ml</td> <td>78</td> <td>210</td> <td>&lt;1000</td> </tr> </tbody> </table>	Location	STP/ETP Capacity	Avg. Quantity of Sewage Water Treated (Oct'22 to Mar'23)	Near IWMS	STP 30 KLD	12.4 KLD	Near CFS	STP 5 KLD	1.3 KLD	Near Liquid Terminal	STP 10 KLD	1.7 KLD	Near Liquid Terminal	ETP 50 KLD	0.2 KLD	Parameter	Unit	Min	Max	TNPCB Limit	pH	-	6.71	7.79	6.5 to 9	TSS	mg/l	5.6	23	30	BOD	mg/l	3.8	16	20	COD	mg/l	16	70.8	100	Faecal Coliform	MPN/100ml	78	210	<1000
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**Compliance to Tamil Nadu Coastal Zone Management Authority (TNCZMA)  
Conditions vide letter no. 6064/EC.3/2014-1 dated 26.06.2014**

		<table border="1"> <thead> <tr> <th colspan="5">ETP TREATED WATER ANALYSIS REPORT(AVG)</th> </tr> <tr> <th>Parameter</th> <th>Unit</th> <th>RO-1</th> <th>RO-2</th> <th>TNPCB Limit</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>-</td> <td>8.03</td> <td>8.2</td> <td>6.5 to 9</td> </tr> <tr> <td>TSS</td> <td>mg/l</td> <td>13.6</td> <td>8.6</td> <td>200</td> </tr> <tr> <td>TDS</td> <td>mg/l</td> <td>912</td> <td>825</td> <td>2100</td> </tr> <tr> <td>BOD</td> <td>mg/l</td> <td>5</td> <td>3.4</td> <td>100</td> </tr> <tr> <td>Oil &amp; Grease</td> <td>mg/l</td> <td>BDL</td> <td>BDL</td> <td>10</td> </tr> </tbody> </table> <p>All the parameters are well within the prescribed norms.</p>	ETP TREATED WATER ANALYSIS REPORT(AVG)					Parameter	Unit	RO-1	RO-2	TNPCB Limit	pH	-	8.03	8.2	6.5 to 9	TSS	mg/l	13.6	8.6	200	TDS	mg/l	912	825	2100	BOD	mg/l	5	3.4	100	Oil & Grease	mg/l	BDL	BDL	10
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Oil & Grease	mg/l	BDL	BDL	10																																	
v	The proponent shall implement oil spill mitigation measures without fail	<p><b>Complied.</b></p> <p>Oil Spill contingency Plan (OSCP) is in place and MIDPL is maintaining oil spill equipment as per Coast Guard guidelines and conducting oil spill mock drills at regular intervals.</p> <p>OSCP along with list of Oil spill control equipment already submitted vide our Letter No. MIDPL/TNPCB/GMP/EC-HYC dated 14.05.2018.</p>																																			
vi	Disaster management plan shall be implemented and mock drills shall be carried out properly and periodically.	<p><b>Complied.</b></p> <p>MIDPL is having Emergency Response &amp; Disaster Management Plan to handle any Natural calamities or and incidents at Port.</p> <p>Regular Mock Drills are conducted as per the Disaster Management Plan. The details of drills conducted for the period April 2023 to September 2023 is enclosed as <b>Annexure- VI.</b></p>																																			

**ANNEXURE - 6**  
**(MIDPL MOCK DRILL REPORT)**

**ANNEXURE - 05**

**MOCK DRILL REPORT**

**MOCK DRILL REPORT – April 2023**

<b>Location:</b> MIDPL – LT Project area	<b>Date:</b> 26/04/2023	<b>Duration of Drill: 10 mins</b>	
		<b>Start Time:</b> 1632 hrs	<b>End Time:</b> 16:42 hrs
<b>RESPONSE TIME: 1 min 30 sec</b>			
<b>DSO:</b> Mr. Revanth <b>Paramedic:</b> Mr. Yuvaraj <b>Ambulance Driver:</b> Mr. Raj	<b>Fire crew:</b> Sarath sivan (Fireman) Udhayakumar (Fireman) Pavithran P (Fireman)	<b>Shift in charge:</b> Mr. Sukanta (Soham Foundations)	
<b>Observer's Name:</b> Mr. Revanth B Mr. Vimalnath	1. <b>Type of Scenario:</b> Labour fainted due to Heat stroke	<b>No. of persons involved:</b> 25 nos	
<b>Describe the Event Occurred:</b>	<ol style="list-style-type: none"> <li>1. At 1632 hrs (IP) Mr. Prafull (Soham Foundations) fainted &amp; fallen on the gravel stone while engaged with pile foundation work.</li> <li>2. At 1634 hrs safety received the call through mobile from LT team.</li> <li>3. At 1634 hrs Ambulance started from OHS&amp;F dept.</li> <li>4. At 1635 hrs OHS team convey the scenario to supporting teams.</li> <li>5. At 1636 hrs paramedic reached the spot along with ambulance &amp; first aid given to the IP on-spot.</li> <li>6. At 1637 hrs the Security team reached the spot.</li> <li>7. At 1638 hrs the Ambulance returned from the spot &amp; reached the OHC at 1639 hrs.</li> <li>8. At 1642 hrs IP back to conscious state &amp; mock drill has been completed</li> </ol>		
<b>Equipment's Usage Details:</b>	<ul style="list-style-type: none"> <li>• Duty Mobile</li> <li>• Ambulance</li> </ul>		

**Corrective & Preventive Action Recommended**

S. NO	OBSERVATION	Corrective action	Status
1.	Contract supervisor not having port safety mobile number	On spot advised the driver to save the port safety mobile number	Closed

2	Fan not available in labor rest container	Need to Provide Fan for labor in the labor rest container	<b>Closed</b>
3	No water available for refreshment like face washing (only drinking water available)	Need to Provide separate water for face washing and refreshing	<b>Closed</b>
4	Other than water, no other beverages given to labors	Need to arrange beverages like juice, more at least once in a day to labors	<b>Closed</b>

**IMAGES**





**MOCK DRILL REPORT – May 2023**

<b>Location:</b> MIDPL – XYZ Yard	<b>Date:</b> 21/05/2023	<b>Duration of Drill: 10 mins</b>	
		<b>Start Time:</b> 1632 hrs	<b>End Time:</b> 16:42 hrs
<b>RESPONSE TIME: 1 min</b>			
<b>DSO:</b> Mr. Revanth <b>Paramedic:</b> Mr. Yuvaraj <b>Ambulance Driver:</b> Mr. Raj	<b>Fire crew:</b> Sarath sivan (Fireman) Udhayakumar (Fireman) Pavithran P (Fireman)	<b>Shift in charge:</b> Mr. Rahman (Dry cargo)	
<b>Observer's Name:</b> Mr. Revanth B Mr. Rahman	<b>1. Type of Scenario:</b> During the forklift operation, labor standing on the emergency zone. While performing the turning operation, fork contacted with the labor face.	<b>No. of persons involved:</b> 11 nos	
<b>Describe the Event Occurred:</b>	<ol style="list-style-type: none"> <li>1. At 1632 hrs (IP) Mr. Sahul (Elite Shipping) worked near Forklift. Fork hitted on IP head</li> <li>2. At 1634 hrs safety received the call through mobile from supervisor</li> <li>3. At 1634 hrs Ambulance started from OHS&amp;F dept.</li> <li>4. At 1635 hrs the paramedic reached the spot along with ambulance &amp; first aid given to the IP on-spot.</li> <li>5. At 1636 hrs the Security team reached the spot.</li> <li>6. At 1637 hrs the Ambulance returned from the spot &amp; reached the OHC at 1638 hrs. Treatment given at OHC</li> <li>7. At 1638 hrs IP back to conscious state &amp; mock drill has been completed</li> </ol>		
<b>Equipment's Usage Details:</b>	<ul style="list-style-type: none"> <li>• Duty Mobile</li> <li>• Ambulance</li> </ul>		

**Corrective & Preventive Action Recommended**

S. NO	OBSERVATION	Corrective action	Status
1.	Labours not aware about the safe distance from forklift operation.	Labours must work more than 10ft from forklift operation	Closed
2	Labour, operator do not have port safety mobile number	Immediately made them to store safety dept shift mobile number	Closed

3	No shift common mobile number and VHF for dry cargo supervisor	Need to provide common mobile / VHF for dry cargo supervisor	<b>Closed</b>
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**IMAGES**





**MOCK DRILL REPORT – June 2023**

<b>Location:</b> MIDPL – Liquid terminal project Area	<b>Date:</b> 22/06/2023	<b>Duration of Drill: 25 mins</b>	
		<b>Start Time:</b> 15:00 hrs	<b>End Time:</b> 15:25 hrs
<b>RESPONSE TIME: 03 min</b>			
<b>DSO:</b> Mr.Marimuthu <b>Paramedic:</b> Mr. Rajadurai <b>Ambulance Driver:</b> Mr.Vinoth	<b>Fire crew:</b> Vadivel (Supervisor) Prabaharan (DCPO), Sanal Sunny (Fireman) Mahesh (Fireman) Pavithran (Fireman)	<b>Site Incident Controller:</b> Mr.Parthiban <b>Shift Incharge:</b> Mr.Rahuman Khan Mr.Mukash	
<b>Observer's Name:</b> Mr. Vimalnath Mr.Marimuthu	<b>Type of Scenario:</b> Fire in liquid terminal Tank Farm		
<b>Describe the Event Occurred:</b>	<ol style="list-style-type: none"><li>1. At 15:01 one noticed fire in tank farm</li><li>2. At 15:04 hrs Shift InCharge make a call to safety officer.</li><li>3. At 15:04 hrs Emergency siren activated</li><li>4. At 15:07 hrs Fire tender reached the incident location</li><li>5. At 15:09hrs Fire fighting started</li><li>6. At 15:11hrs Rescue started</li><li>7. At 15:12hrs Fire fighting over and rescue over</li><li>8. at 15:25hrs Emergency call off</li></ol>		
<b>Equipment's Usage Details:</b>	<ul style="list-style-type: none"><li>• VHF</li><li>• Duty Mobile</li><li>• Ambulance</li></ul>		

**Corrective & Preventive Action Recommended**

S. NO	OBSERVATION	Remarks	Images
1	While coming for rescue the Ambulance, Fire tender came without siren	In the next mock drill, the siren will be activated from the safety dept starting	Closed
2	Ambulance reverse horn is not working	We will repair the reverse horn	



**MOCK DRILL REPORT – July 2023**

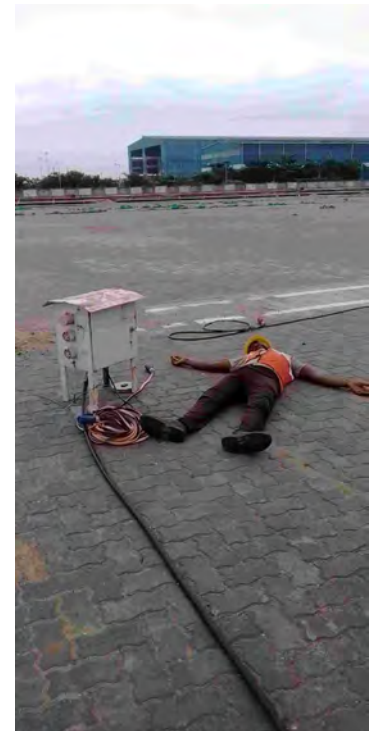
<b>Location:</b> MIDPL –CT yard Extension	<b>Date:</b> 23/07/2023	<b>Duration of Drill: 12 mins</b>	
		<b>Start Time:</b> 1230 hrs	<b>End Time:</b> 12:42 hrs
<b>RESPONSE TIME: 1 min 30 sec</b>			
<b>DSO:</b> Mr. Marimuthu <b>Paramedic:</b> Mr.Vinoth <b>Ambulance Driver:</b> Mr. Raj	<b>Fire crew:</b> Prabakaran (DCPO) Vasanth (Fireman) Jaysuriya (Fireman)	<b>Shift in charge:</b> Mr.Krisharam (Starcon Infra Projects)	
<b>Observer's Name:</b> Mr. Raghu Mr. Madan	1. <b>Type of Scenario:</b> An electric burn to the labour	<b>No. of persons involved:</b> 31 nos	
<b>Describe the Event Occurred:</b>		<ol style="list-style-type: none"> <li>1. At 1230 hrs (IP) Mr.Manoj Matto (Starcon Infra Projects) fainted &amp; fallen due to electric shock.</li> <li>2. At 1232 hrs safety received the call through mobile from Starcon Infra projects Safety Officer.</li> <li>3. At 1233 hrs Ambulance started from OHS&amp;F dept.</li> <li>4. At 1233 hrs OHS team convey the scenario to supporting teams.</li> <li>5. At 1234 hrs paramedic reached the spot along with ambulance &amp; first aid given to the IP on-spot.</li> <li>6. At 1235 hrs the Security team reached the spot.</li> <li>7. At 1238 hrs the Ambulance returned from the spot &amp; reached the OHC at 1639 hrs.</li> <li>8. At 1242 hrs IP back to conscious state &amp; mock drill has been completed.</li> </ol>	
<b>Equipment's Usage Details:</b>		<ul style="list-style-type: none"> <li>• Duty Mobile</li> <li>• Ambulance</li> </ul>	

**Corrective & Preventive Action Recommended**

S. NO	OBSERVATION	Corrective action	Status
1.	There is no emergency assembly point marked at the construction site	Mark an area as emergency assembly point	Closed

	to assemble the people during emergency		
	To alert employees during emergency there is no emergency siren	Have a portable emergency siren to alert employees during emergency	<b>Closed</b>
	Emergency contact numbers is not displayed at the site	Display the emergency contact numbers sign board	<b>Closed</b>

**IMAGES**



**MOCK DRILL REPORT – August 2023**

<p><b>Location:</b>  LT – Project (Tank-17)</p>	<p><b>Date</b>  01/08/2023</p>	<p><b>Duration of Drill</b></p>			
		<p><b>Start Time:</b> 15:35hrs</p>	<p><b>End Time: 16:14hrs</b></p>		
<p><b>RESPONSE TIME: 04 min</b></p>					
<p><b>Port Safety Head: Mr.Ravi Kumar LT Safety Dept.: Mr.Vimalnath</b></p>	<p><b>DSO: Mr.Revanth Fire: Mr.Vadivel OHC: Mr.Berjino Ambulance Driver: Mr.Raj</b></p>	<p><b>Marine Control Tower: Mr.Michal Sasper</b></p>			
<p><b>Observer's Name:</b> Mr. Prathiban seenivasan Mr. Kulandai Samy Mr. Premnath</p>	<p><b>Type of Scenario:</b> Fire at top of the tank in LT- Project Area (Tank –17)</p>		<p><b>No. of persons involved:</b> <b>Total: 40</b></p>		
<table border="0"> <tr> <td style="width: 35%; vertical-align: top;"> <p><b>Describe the Event Occurred:</b></p> </td> <td style="vertical-align: top;"> <ol style="list-style-type: none"> <li>1. At 15.35 hrs. Narayana Engineering safety officer observed fire at LT-project area Tank-17 top roof North side</li> <li>2. At 15:35 hrs. Narayana Engineering contractor Safety officer inform to LT-control room officer.</li> <li>3. At 15:36 hrs. LT-Control room officer activated the Master ESD siren.</li> <li>4. At 15.36 hrs. LT-Control room officer informed to LT – Operation Manager</li> <li>5. At 15:36 hrs. Control room officer inform to Port Safety, Fire team,</li> <li>6. At 15:37 hrs. Control room office inform to Port Security &amp; Marine Control Tower.</li> <li>7. At 15:39hrs. Fire tender &amp; Ambulance arrived at the fire incident location.</li> <li>8. At 15:40 hrs. LT-Fire water monitors No:02 &amp; Fire hydrant both are simultaneously activated to extinguish the fire.</li> <li>9. At 15:45 hrs. Fire was put off completely by fire team</li> <li>10. At 15:46 hrs. Fire team confirmed that the fire was fully extinguished, or not.</li> <li>11. At 15:48 hrs. Everybody assembled nearby at TLF-1 Assembly point.</li> <li>12. At 15:49 hrs. Head count was taken.</li> <li>13. At 15:50 hrs. Briefing was started by LT – Operation Manager, CDU In charge &amp; LT-Safety</li> <li>14. At 16:13 hrs. All Clear siren was activated.</li> </ol> </td> </tr> </table>				<p><b>Describe the Event Occurred:</b></p>	<ol style="list-style-type: none"> <li>1. At 15.35 hrs. Narayana Engineering safety officer observed fire at LT-project area Tank-17 top roof North side</li> <li>2. At 15:35 hrs. Narayana Engineering contractor Safety officer inform to LT-control room officer.</li> <li>3. At 15:36 hrs. LT-Control room officer activated the Master ESD siren.</li> <li>4. At 15.36 hrs. LT-Control room officer informed to LT – Operation Manager</li> <li>5. At 15:36 hrs. Control room officer inform to Port Safety, Fire team,</li> <li>6. At 15:37 hrs. Control room office inform to Port Security &amp; Marine Control Tower.</li> <li>7. At 15:39hrs. Fire tender &amp; Ambulance arrived at the fire incident location.</li> <li>8. At 15:40 hrs. LT-Fire water monitors No:02 &amp; Fire hydrant both are simultaneously activated to extinguish the fire.</li> <li>9. At 15:45 hrs. Fire was put off completely by fire team</li> <li>10. At 15:46 hrs. Fire team confirmed that the fire was fully extinguished, or not.</li> <li>11. At 15:48 hrs. Everybody assembled nearby at TLF-1 Assembly point.</li> <li>12. At 15:49 hrs. Head count was taken.</li> <li>13. At 15:50 hrs. Briefing was started by LT – Operation Manager, CDU In charge &amp; LT-Safety</li> <li>14. At 16:13 hrs. All Clear siren was activated.</li> </ol>
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**Equipment's Usage Details:**

- Walkie talkie
- Duty Mobile
- Fire tender
- Tower Water Monitor
- Fire Hydrant
- Ambulance
- Loudspeaker

**Good Observations:**

1. The communication was passed aptly to the Operation Manager, Port safety department, marine control & security departments.
2. The Fire team responded rapidly to arrive at the incident location & where it is commendable that they are extinguishing the fire.
3. The Incident Controller responded rapidly to arrive the incident location & it is highly commendable that the incident controller Coordinate & leading to Fire team & everyone in a safe & proper manner.

**Corrective & Preventive Action Recommended**

S R N O	OBSERVATION	Action	ACTION BY	TARGET DATE	Status
1.	The incident initiator did not properly communicate the exact location of the Fire incident occurrence to the LT- Control room officer.	To be given the proper training for Emergency preparedness	Project		Closed
2.	The primary route from the OHC office main road to the liquid terminal road is blocked by a concrete barricade thus the reason the Fire hydrant & ambulance reached the incident location by the way of one-way road path (Wrong route) from OHC to LT-incident location.	Provide safe and straight road access to reach LT	Port Safety		Closed
3.	Dry grasses & Project material was placed on roadsides at LT-Tank form	Remove the material to be provide safe access	Project & Operation		Closed

4.	Narayana Engineering Hydra was parked on the road when the ambulance & Fire hydrant reached the incident location.	To be informed don't park any vehicle on the road.	Project		Complied
5.	Project material was stored on LT Assembly point at TLF-1 thus the reason nobody can be unable to stand during an emergency.	To be remove the material from LT – Assembly point at TLF-1	Project		Closed
6.	When the Siren was activated the Project team all persons was not take the safest route to reach at TLF-1 assembly point.	To be instructed how to choose the safest route during an emergency situation.	Project		Complied
7.	While taking the head count, the project team did not provide the required attendance data, and the same report was not matched when we took the head count in the Assembly point.	To be instructed to keep on the attendance report properly	Project		Complied

**Images:**









**MOCK DRILL REPORT – September 2023**

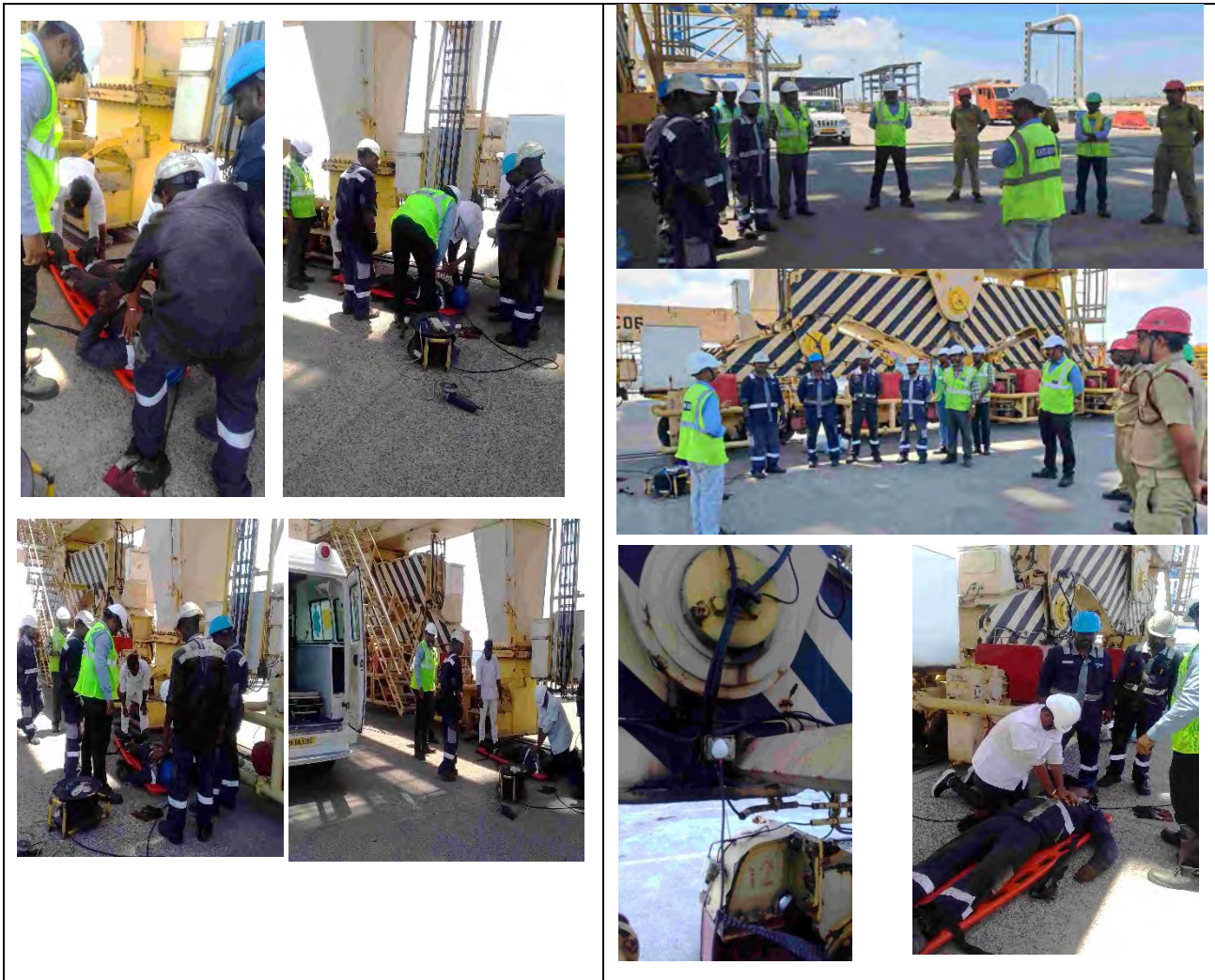
<b>Location:</b>  CB2 QC6	<b>Date</b>  27/09/2023	<b>Duration of Drill</b>	
		<b>Start Time:</b> 11:48hrs	<b>End Time: 11:58hrs</b>
<b>RESPONSE TIME: 01 min</b>			
	<b>DSO: Mr.Marimuthu Fire: Mr.Vadivel OHC: Mr.Vinoth Ambulance Driver: Mr.Vinoth</b>	<b>Engineering Shift InCharge: Mr.Balamurugan</b>	
	<b>Type of Scenario:</b> One technician fainted due to altitude sickness	<b>No. of persons involved: Total: 22</b>	
<b>Describe the Event Occurred:</b>	<ol style="list-style-type: none"> <li>At 11.48 hrs. Duty Safety officer received phone call that a mechanical technician electrically shocked in QC06 CB2</li> <li>At 11. 49hrs.Ambulance reached the location</li> <li>At 11:50 hrs the injured person was isolated from the electrical circuit.</li> <li>At 12.51hrs male nurse started to give CPR for the injured person.</li> <li>At 12:52hrs the injured person started to respond to CPR.</li> <li>At 12:52hrs the injured person was shifted to OHC for further observation.</li> <li>At 12.53 a briefing was given to the engineering team about the response time and corrective action for the deviations.</li> </ol>		
<b>Equipment's Usage Details:</b>	<ul style="list-style-type: none"> <li>Walkie talkie</li> <li>Duty Mobile</li> <li>Fire tender</li> <li>Ambulance</li> <li>Loudspeaker</li> </ul>		
<b>Good Observations:</b>	<ol style="list-style-type: none"> <li>The communication was passed aptly to the Engineering Manager, Port safety department, marine control &amp; security departments.</li> <li>The Fire team responded rapidly to arrive at the incident location &amp; where it is commendable that they are extinguishing the fire.</li> </ol>		

3. The Incident Controller responded rapidly to arrive the incident location & it is highly commendable that the incident controller Coordinate & leading to Fire team & everyone in a safe & proper manner.

**Corrective & Preventive Action Recommended**

S R N O	OBSERVATION	Action	ACTION BY	TARGET DATE	Status
1.	The welding machine was connected with domestic plug.	Provide industrial plug in all electrical supply connection. Corrected	ES Electrical team		Closed

**Images:**

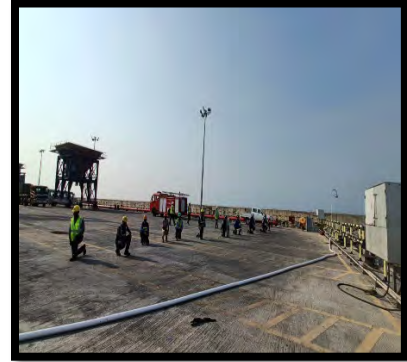
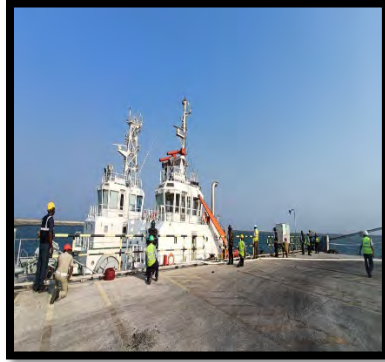


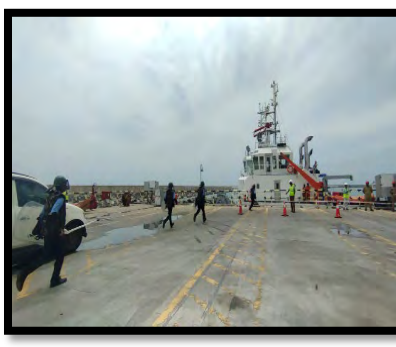
# **SECURITY - MOCK DRILL REPORT**

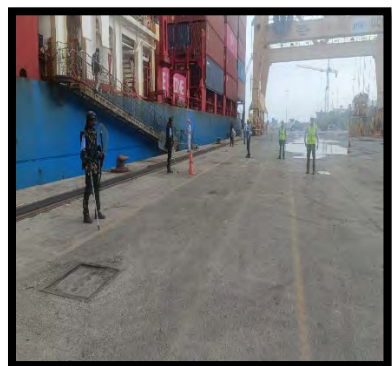
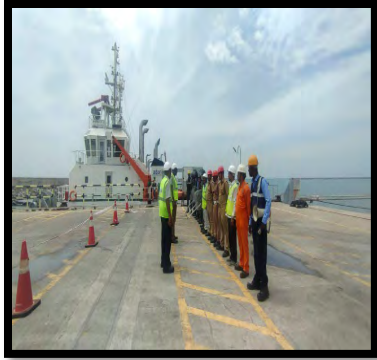
## Marine Infrastructure Developer Pvt. Ltd, Kattupalli Port. Security Mock Drill Report - Apr-22 to Sep-23

SL NO	Date	Time	Scenario	Participants
01	19/04/2023	1330 Hrs.	Patrol party not reporting back for last 2 hours.	20
02	21/04/2023	1530 Hrs.	Smuggling weapons or other equipment's including weapons of mass destruction.	20
03	13/05/2023	1030 Hrs.	Intrusion attempt to penetrate the outer perimeter.	16
04	27/05/2023	1730 Hrs.	An empty carrying parked near generator room for last 03 days	15
05	24/06/2203	1030 Hrs.	Use of ship to carry those intending to cause a security incident and their equipment.	15
06	17/06/2023	1500 Hrs.	Suspicious activity found near the port signal station perimeter area.	20
07	15/07/2023	1600 Hrs.	Bomb threat call received by the telephone.	13
08	27/08/2023	1600 Hrs.	Use of ship itself as weapon for destruction or as means of cause damage of destruction.	20
09	28/08/2023	2200 Hrs.	Failure of total power supply at night.	14
10	17/09/2023	1600 Hrs.	Unscheduled merchant vessel detected by signal station heading towards breakwater	18

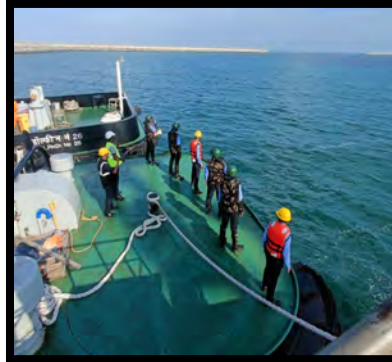
# Mock Drill - Apr-22 to Sep-23(Photos)





















**ANNEXURE - 7**  
**(EMP COMPLIANCE)**

## Environment Management Plan (EMP) – Operational Phase : COMPLIANCE STATUS

S.No.	Activity	Relevant Environmental components likely to be impacted	Proposed Mitigation Measures	Compliance Status
1.	Cargo handling and Inland Cargo movement and storage areas.	Air Quality	<ul style="list-style-type: none"> <li>• Use of dust suppression system etc.,</li> <li>• Use of low Sulphur diesel fuel is proposed</li> <li>• Dust suppression measures at loading/unloading points, storage area and at internal roads</li> <li>• Regularization of truck movement</li> <li>• Periodic cleaning of cargo spills,</li> <li>• Speed regulations for vehicles engaged in transportation</li> <li>• Greenbelt Development</li> </ul>	<p><b>Complied.</b></p> <p>The Major air pollution generated by port activities include vehicle movements, dry cargos operations and other port activities. The following is practiced controlling of air pollutions at port premises:</p> <ul style="list-style-type: none"> <li>• Water sprinkling on truck path</li> <li>• Mobile Hopper during cargo handling</li> <li>• Road cleaning with sweeping machines</li> <li>• Ensuring Tarpaulin cover over the dry cargo materials at open yard</li> <li>• Using the closed warehouse for storage of fine dry cargos materials.</li> <li>• Trucks covered with Tarpaulin for dry cargo vehicle movements</li> <li>• Using low Sulphur diesel fuel for DG sets.</li> <li>• Installed Retrofitting of DG Sets for reduction of emission level to the norms prescribed.</li> <li>• Adequate Greenbelt has been developed &amp; is being maintained in the port area. 35,124 Nos. of trees has been planted as on date.</li> <li>• Internal transfer vehicles (ITVs) are being used extensively in port operations. All the diesel operated ITVs 51nos are replaced with e-ITVs to avoid the carbon emissions and to achieve our carbon neutral mission.</li> </ul>

				 <p>Water sprinkling</p>  <p>Mobile Hopper</p>  <p>Road cleaning</p>  <p>"Pollution Under Check (PUIC)" CENTER</p>  <p>closed warehouse</p>  <p>Covered with Tarpaulin</p>  
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		Noise	<ul style="list-style-type: none"> <li>• Personal Protecting Equipment (PPE)</li> <li>• Greenbelt Development</li> <li>• Counselling and traffic regulation</li> </ul>	<p><b>Complied.</b></p> <p>Traffic and noise level control measures is monitored regularly for all vehicle movements like containers, trucks movements and dumpers &amp; other road equipment operating for import /export of cargos at various locations of port premises. Following control measures are implemented at Kattupalli Port for Noise Control.</p> <ul style="list-style-type: none"> <li>• Adequate Greenbelt development with avenue plantation</li> <li>• DG sets are having acoustic enclosures as per the standard practice.</li> <li>• Musical Horns are completely banned inside the port premises</li> <li>• Vehicle speed limit is restricted to 30 Km/ Hr.</li> </ul>

				<ul style="list-style-type: none"><li>Adopting latest technology operation to restrict the vehicular movements inside terminal</li></ul> 
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		Traffic Addition	<ul style="list-style-type: none"> <li>The existing Kattupalli Port site is well connected by existing road and rail. In addition, port approach road is developed as a part of initial development. All the roads are in good condition to accommodate traffic.</li> </ul>	<p><b>Complied.</b></p> <p>Kattupalli Port is having a dedicated road connectivity connecting State Highways and National Highways. NH-5 (Chennai – Kolkata) is about 30 km from Port. The cargo handled are directly goes to the roads mentioned above which are outside the City Limits of Chennai. Handling of cargo in Kattupalli Port does not affect the regular traffic.</p> <p>The Outer Ring Road from NH-45 connecting NH 4 – NH 205 – NH 5 is getting take-off from Minjur. Further, the Outer ring road is proposed to be connected to Section I (NPAR Project) of Chennai Peripheral Ring Road on an extent of 134 km starting from Kattupalli to Mahabalipuram. The project is getting commenced shortly, which will further enhance the cargo carrying capacity of Kattupalli Port.</p> <p>Kattupalli Port is located Close proximity to majority of CFSs serving immediate hinterland and enabling faster evacuation of cargo.</p>
2	Aqueous discharges in harbour basin	Marine water quality and ecology	<ul style="list-style-type: none"> <li>Ships are prohibited from discharging wastewater, bilge, oil wastes, etc. into the near-shore as well as harbour waters.</li> <li>Ships would also comply with the MARPOL convention.</li> <li>As a part of mitigation measure for accidental spillage of Oil, Construction Contractor/ Kattupalli Port n Oil spill contingency plan is prepared and in place.</li> <li>Provision of waste reception facility Ballast Water</li> </ul>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>Ships/vessels calling at port are not permitted to dump any wastes/bilge water/ballast water during the berthing period. The waste reception facilities developed at Kattupalli Port as per the Guidelines issued by Government of India (GoI) and MARPOL regulation is strictly implemented.</li> <li>Hazardous wastes are handled as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (as amended). Hazardous wastes are disposed through approved TNPCB /CPCB vendor.</li> <li>Oil Spill contingency Plan is in place and MIDPL is maintaining oil spill equipment as per Coast Guard</li> </ul>



			<ul style="list-style-type: none"> <li>Management Guideline as issued by Ministry of Shipping – India Shall be adhered.</li> </ul>	<p>guidelines and conducting oil spill mock drills at regular intervals.</p> <ul style="list-style-type: none"> <li>Management Guideline as issued by Ministry of Shipping – India are being adhered to.</li> <li>Regular monitoring of Marine Water and Sediment quality are being carried out by NABL accredited laboratory.</li> </ul>
3	Cargo and Oil spills	Marine water quality and ecology	<ul style="list-style-type: none"> <li>In case of any cargo spillage during transfer from/to ships, it will be attempted to recover the spills.</li> <li>Oil spill control equipment such as booms / barriers will be provided for containment and skimmers will be provided for recovery.</li> <li>Response time for shutting down the fuelling, containment and recovery will be quicker.</li> </ul>	<p>Oil Spill contingency Plan is in place and MIDPL is maintaining oil spill equipment as per Coast Guard guidelines and conducting oil spill mock drills at regular intervals.</p>   

				
4	Maintenance dredging	Maintenance dredging Marine Ecology	<ul style="list-style-type: none"> <li>Maintenance dredging material is being disposed of at identified disposal location at sea.</li> <li>It will be ensured that dumping of the excess/unusable dredge material would be uniform.</li> <li>Additional Environmental Monitoring Program comprising of monitoring of marine water quality, marine sediment quality and marine ecology will be initiated one week prior to commencement of dredging and will be carried out during the dredging period.</li> </ul>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>No maintenance dredging activity carried out during the compliance period October 2022 to March 2023.</li> <li>However Marine Water, sediment &amp; ecology is being monitored on regular basis and reports of the same are being submitted to all the concerned authorities. Monitoring report for the period Apr'23 to Sep'23 is attached as <b>Annexure- III.</b></li> </ul>
5	Water Supply	Water resources	<ul style="list-style-type: none"> <li>The water requirement proposed activities shall be met by existing water supply as it was considered during initial development</li> </ul>	<p><b>Complied.</b></p> <p>The main source of raw water is from existing Chennai Metropolitan Water Supply and Sewage Board (CMWSSB), Desalination plant, Kattupalli, which is located adjacent to Kattupalli Port.</p>

6	Wastewater Discharge	Water Quality	<ul style="list-style-type: none"> <li>• Collection of runoff from stock piles and directing into settling tanks</li> <li>• Available Sewage treatment plant within port area will be utilized.</li> <li>• Treated wastewater from STP will be used for irrigating the greenbelt</li> </ul>	<p><b>Complied.</b></p> <p>MIDPL is operating ETP of 50 KLD capacity to treat the effluent generated from Liquid Tank Washings and 3 STPs of capacity 30KLD, 10KLD &amp; 5KLD at various locations inside the port premises to treat the maximum wastewater flow of 45KLD.</p> <p>Domestic wastewater generated from various sources such as washing water from canteen and toilet flushing water from office buildings are being collected, treated in STP's and the entire treated sewage water is reused for green belt maintenance within the port premises after confirming permissible limit. Inlet &amp; outlet characteristic of Sewage water is regularly monitored and analysed by NABL accredited laboratory.</p> <p>The monitoring results for the period Apr'23 to Sep'23 is enclosed as <b>Annexure - III.</b></p>
7	Solid Waste Management	Groundwater and Soil quality	<ul style="list-style-type: none"> <li>• Composted biodegradable waste will be used as manure in greenbelt.</li> <li>• Other recyclable wastes will be sold.</li> </ul>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>• 100% utilization of STP sludge for greenbelt maintenance as manure.</li> <li>• All the non-hazardous wastes like paper, wood, metal scraps generated from the terminal are also collected, stored in the Integrated Waste Management Shed (IWMS) and are handled as per 5R principle.</li> <li>• The recyclable and the bio-degradable waste are recycled by the composting method. The compost is used in the nursery and for the gardening purposes.</li> </ul>
8	Handling of hazardous wastes	Fire accidents due to products handling	<ul style="list-style-type: none"> <li>• No Hazardous cargo Handling /storage is envisaged</li> <li>• Hazardous wastes (used oil &amp; used battery if any) will be</li> </ul>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>• No Hazardous cargo is handled at MIDPL.</li> </ul>

			<p>sent to TSDf located at Gummidipoondi, along with other shipyard wastes. The consent for the same was already obtained and the same can be extended.</p> <ul style="list-style-type: none"> <li>• Medical facilities including first aid will be available for attending to injured workers</li> <li>• Emergency alarms, provision of fire hydrant system and fire station.</li> <li>• Effective Disaster Management Plan (DMP) which covers onsite and offsite emergency plans.</li> <li>• Recovery of spills to the extent possible.</li> </ul>	<ul style="list-style-type: none"> <li>• Hazardous wastes are handled as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 (as amended). Hazardous wastes are disposed through approved TNPCB /CPCB vendor. MIDPL has obtained Hazardous Waste Authorization from TNPCB for handling and disposal of the wastes. Details of the same are submitted to TNPCB as a part of Hazardous waste annual return (Form 4) on regular basis. Annual Hazardous Waste Return for FY 2022-23 is attached as <b>Annexure - II</b>.</li> <li>• Occupational Health Centre is available at Kattupalli Port on 24 X 7 basis.</li> <li>• Emergency alarms, fire hydrant system and Fire station equipped with Fire Tender and Fire crew are available at Kattupalli Port.</li> <li>• Disaster Management Plan (DMP) is in place which covers both onsite and offsite emergency plans.</li> <li>• MIDPL is equipped with adequate facility for recovery of spills.</li> </ul>
9	Fishing activity	Fishermen livelihood	<ul style="list-style-type: none"> <li>• The cargo handling activities involved in operation phase are confined to the project area and hence no hindrance to fishing is anticipated Continuing to Educate the fishermen about Port activities</li> </ul>	<p><b>Complied.</b></p> <ul style="list-style-type: none"> <li>• Kattupalli port follows Safe navigation routes which are earmarked for safe movement of fishing vessels and the port cargo ships. Our activities are confined to approved Port Limits and there is no hindrance to fishing activity.</li> </ul>



			<ul style="list-style-type: none"> <li>Regular Interactions will be carried out with the fishing community</li> <li>Conflicts if any with fishing community will be amicably resolved in all cases</li> </ul>	<ul style="list-style-type: none"> <li>Regular interactions are being carried out with the fishing community in order to make fishermen aware of the on-going activities and importance of channel marker buoys and other navigational aids.</li> </ul>
10	Operation of port – Handling of Proposed Traffic	Socio-economic conditions of the region	<p>The present employment potential of Port is around 250 Nos. and Total Shipyard cum Port is around 2000 nos. The employment potential will increase about 20 nos as direct employment due to proposed activity and will also enhance indirect employment potential in the region. Together with this employment potential, project will help to enhance the socio economic conditions of the area with better schooling, communication and transport facilities that will be developed/triggered as a part of overall economic development of the region.</p>	<p><b>Being Complied.</b> Major CSR activities carried out during the compliance period are as follows;</p> <p><b>Education:</b> A total of <b>641</b> students were benefitted through AEEC this month.</p> <p><b>Health:</b> Addressing health issues of rural communities through mobile health care program where villagers get benefit every month through this program.</p> <p><b>Suposhan:</b> Creating awareness and preventing unwanted health issues faced by mothers and children below 5 years of age working closely with government system and ensuring to improve the health condition of the children below 5 years of age.</p> <p><b>Sustainable Livelihood Development:</b> Natural Farming: Ensuring 100 farmers do natural farming by assisting them to ensure to adopt and implement the natural farming protocols as per the norms of government where government will certify them under PGS program. Livelihood Enhancement program for 121 women through group-based entrepreneurship program and providing livelihood support to 30 individuals- widows, destitute and persons with disabilities.</p> <p><b>Community Infrastructure Development:</b> Installed 10 high mast lights in the rural communities, Established 6 RO plants in the community, Government Schools and</p>

			<p>Government Hospitals in addressing to access to drinking water, Community Toilet for women was constructed, Desilted Kattupalli pond and gave life to the pond, built toilet block for girl students of government school students, Pulicat Panchayats which will be benefited by girl students from four panchayats, planned to build a community hall for Satangkuppam and to do Desiltation of boat parking areas of fishermen in 18 locations.</p> <p>CSR Report for the compliance period is attached as <b>Annexure- 6A</b></p>
		Natural Hazards	<p>The existing Disaster Management Plan (DMP) will be implemented at the time of disaster; COO will act as the overall in-charge of the control of educative, protective and rehabilitation activities to ensure least damage to life and property.</p> <p><b>Noted for Compliance.</b></p> <p>Disaster Management Plan (DMP) is in place which covers both onsite and offsite emergency plans. Regular Mock Drills are conducted as per the Disaster Management Plan. The details of drills conducted for the period April'23 to September'23 is enclosed as <b>Annexure- 5.</b></p>
		Induced Development	<p>Offers an efficient and cost effective supply chain/ value proposition to the local importers and exporters in states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka.</p> <p><b>Being Complied.</b></p> <p>Kattupalli Port is having a dedicated road connectivity connecting State Highways and National Highways, which offers an efficient and cost-effective supply chain/ value proposition to the local importers and exporters in the states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka.</p> <p>We are presently moving Inland Container Depot (ICD) rail bound Containers ex Kattupalli through Concor's ICD at Tondiarpet to ICD Bangalore. The containers are road bridged by Concor to/from Kattupalli Port to Tondiarpet and vice versa. This service the customers and facilitate the EXIM trade.</p>

## **ANNEXURE - 7A**

**(CSR ACTIVITIES - APRIL 2023 TO SEPTEMBER 2023)**

**CSR Activities:**

**Reporting Period: April 23 to Sep 23**

**Education:**

- We have 20 Adani Evening Education Centers which is providing academic support as well as soft skill support to 641 students from fishermen, Irulas and farmers communities.
- Periodically we are having a capacity building training program for the tutors to give individual support to students, especially give more attention to slow learners.



**Health:**

- Through the Mobile health care program, we are reaching 14 villages. From April to Sep 2023, we have reached 9457 patients.
- **Suposhan:** Through Suposhan program we have provided our support to 2400 persons: Pregnant women, Lactating Mothers, Adolescent Girls & Children.
- We have provided a Dengue awareness program in Thiruvellaivoyal government Higher Secondary School where 420 students benefited.
- We have got an award as a **Change Maker** in health care in providing medical support for elderly population.



**SLD: Natural Farming Project**

Adani Kattupalli Port through its CSR program is implementing Natural Farming project where 100 farmers from Kattur, AR Palayam, Kadapakkam and Neithavoyal are part of the project. Part of this project, we are working with Organic Certification Department, Government of Tamilnadu, towards organic certification. All the 100 farmers have taken up paddy cultivation for one acre each by using organic protocols which will be guided by a professional team from Adani Foundation. The farmers were provided





awareness on natural farming, training on natural farming and preparation of natural protocols. With close monitoring and guidance, the farmers are ensuring the application of all the natural protocols and whenever they need any technical assistance, the professional team from Adani Foundation will help them.

Through this project we have provided paddy seeds and neem cake. We have also collaborated with the Agriculture Department and accessed subsidy-based government scheme where we got Bio-inputs: Azospirillum, Phosphobacteria, Potash Solubilising Bacteria, Zinc Sulphate and 50 Battery operated Sprayers.

Mr. Sudip Dasgupta, CEO, Adani Kattupalli & Ennore Port and Officials from Adani Foundation Team distributed the bio inputs and Sprayers to farmers.

We are supporting 9 women livelihood groups supporting 89 women focusing on their economic development. 20 Mobile Pull carts were provided last year and periodically we follow up with the beneficiaries and motivate them to improve their business. We have established business units for 5 people with disabilities.

### **Convergence of government welfare schemes to the community:**

We are helping the people to get enrolled in PMJAY- Health insurance where the eligible individual ensured up to INR 500000. So far, we have enrolled 350 persons in this program and the program continues to reach 2000 persons. So far, we have initiated 5918 persons to avail various government schemes.

### **Tree plantation:**

In commemoration of the announcement of Planting of 100 million Tree Saplings (Adani Groups) in our Project areas to regain Local Eco-system, arrangements have been made to take up planting of 4000 Economic Tree Saplings besides 51000 Palmyrah Seeds in the Tank Beds of Kattur Lake covering Kattur, Thathamanni and AR Palayam Panchayats.

Both Planting and Sowing of Seeds of Palmyrah was inaugurated by Mr. Durai Chandrasekar, MLA, Ponneri Constituency and Mr. Sudip Dasgupta, CEO, Adani and Ennore Ports in the presence of Mr. Selvaraman, President, Kattur Panchayat and Ms. Kavitha Manohar, President, Athamancherry Reddipalayam Panchayat besides Ward Members today at Kattur.



Following the Inauguration of the Planting Programme, mass scale Planting of Tree Seedlings and Sowing of Palmyrah Seeds was taken by MGNREGS Workers of respective Panchayats in the Tank Beds.

The details of the Economic Trees planted are as follows:

1. Teak
2. Terminalia

3. Red Sandal
4. Mahagony
5. Pterocarpus
6. Eugenia
7. Guava
8. Rose Wood
9. Amla
10. Jack

**About Palmyrah:**

- It is worth to mention that Palmyrah is the **State Tree of Tamil Nadu** considering its Versatile Uses numbering more than 800. The Palm Products are used for Food, Wood, Shelter and the source of Toddy.
- Leaves are used for Thatching, making Mats, Baskets, Fans, Hats, Umbrellas etc
- The edible Palm Products are Neera, Palm Jaggery, Palm Sugar, Palm Candy, Jam and Chocolates getting popular among the Consumers.

The Village Administration of the 3 Panchayats and Local Community Leaders have thanked Adani Foundation for having initiated the Greenery Project for Preserving the Eco-system and Biodiversity of their Villages.

ASDC: Tailoring training- 42 students and DDO GST with Tally: 26. A total of 68 students are part skilling program.

- We conducted an orientation program on 19th September for SET course 9th batch and chief guest of the program was Mr. Jesuraj Unit CSR head Adani Foundation, Kattupalli.
- We celebrated nutrition week and students cooked healthy food for the event.
- The Tailoring class was conducted to peddle the sewing machine, taught the basic concept of Tailoring course.



- GST with Tally conducted the students learnt about the basics of Computer like Definition of Computer, input and output devices and CPU.
- They also learnt to create a new document, save the document, open an existing document, and close the document. Learnt about How to send an email with proper subject.

**Community Infrastructure Development:**

We have constructed Toilets for girl students from Pulicat Government higher secondary school where 289 girls will get benefited through this initiative.



Chennai: The Adani Foundation, in association with the Adani Kattappall Port team, took a significant step towards improving the educational infrastructure and health facilities for girl students at JS Government Higher Secondary School in Pulicat Panchayat. The team officially handed over a Toilet Block comprising of 6 units dedicated to the girl students of the school.

In addition to the Toilet Block, the Adani Foundation has previously contributed to the school's development by establishing a Computer SMART Lab equipped with 20 computer systems and a learning platform. This lab has been instrumental in benefiting all 380 students by enhancing their digital literacy and educational opportunities. The Adani Foundation remains committed to creating a positive and lasting impact on the lives of individuals and communities they serve. Their initiatives in the education and healthcare sectors continue to uplift the underprivileged and contribute to the overall progress of society.

**Drinking water facilities: RO Plant for RO PLANT Thiruvellaivoyal Panchayat, Minjur Block, Thiruvallur District, Tamilnadu.**

The RO plant has been built by our Adani Foundation to address the drinking water issues of the community. The project was proposed from the request raised by the community and Panchayat. As the village gets salty ground water and it is not advisable to drink the specified water. Each family must spend INR 30 to purchase 20 liters and in a month, they need to allocate towards drinking water of INR 800 to 1000. Most of the members' occupations are farming & daily wages. Hence the water can price is not affordable for them monthly.



In consideration of the request, Adani Foundation agreed to build the RO plant with capacity of 1000 liters for the community that would benefit the 600 families and the neighboring villages.

We ensured that the RO plant once handed over to panchayat, it will be maintained by the panchayat. Rs.5 will be charged for 20 liters that will be helpful for them. The charged amount will be maintained by the panchayat towards the maintenance of the RO plant.

**Community Hall: Sattankuppam: Bhoomi Pooja- Foundation Stone Laying Ceremony: Providing adequate basic infrastructure facilities for the fishing community.**

Sattankuppam belongs to Thangalperumbulam panchayat which has 480 families. The village is situated 5 km away from the mainland where the community does not have proper access to road connectivity to reach the mainland. The village will have challenging time

## Annexure – 6A

during the raining season as the Kosasthalaiyar River and Buckingham Canal will flow four sides of the village hence village does not have access to road to reach the mainland. As it is a traditional community, having all the culture practices, family and events, the community is facing difficulties to access the marriage halls since they are away from the mainland (between 5 KM to 18 KM) where they must spend more amount for the event and transport. Due to their economic condition, they are not able to afford it and it is not accessible for them as well.



The traditional panchayat leaders of Sattankuppam requested Adani Kattupalli Port to construct a community hall through its CSR funds. Understanding the needs of the community Adani Kattupalli Port came forward to build the community hall through its CSR programs.

Today along with the community members, traditional leaders, panchayat administration, Mr. Sudip Dasgupta, CEO, Adani Kattupalli & Ennore Port did the Bhoomi pooja-laid the foundation stone. Adani Foundation will construct the community hall and hand over to the community.



### Udaan Project:

Through Udaan project 40 schools and college institutions – 2100 visited our port as part of their industrial visit and get benefited through this project.

### CSR Spent from April to Sep 2023:

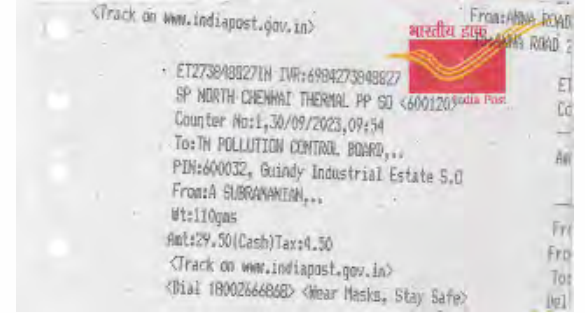
#	Programs	Budget Amount (In Lakhs)
1	Education (Evening Education Learning center and Joyful learning)	6.03
2	Health (Suposhan and Mobile Health Care Unit)	18.55
3	Sustainable Livelihood Development	13.64
4	Community Infrastructure Development	22.48

**ANNEXURE - 8**  
**(MIDPL FORM-V FY 2022-23)**

MIDPL/ENV/TNPCB/ES/2023/32

Date: 23.09.2023

To,  
The Member Secretary,  
Tamil Nadu Pollution Control Board,  
76, Mount Salai,  
Guindy,  
Chennai - 600 032



Dear Sir,

**Sub:** Submission of Environmental Statement (Form V) for the financial year ending 31<sup>st</sup> March, 2023 of Marine Infrastructure Developer Private Limited, Kattupalli Port, Chennai

**Ref:** 1. Consent Order No. 2105136876761 under Water Act dated 13.09.2021  
2. Consent Order No. 2105236876761 under Air Act dated 13.09.2021

With reference to the captioned subject and cited references above, we submit herewith the Environmental Statement of M/s Marine Infrastructure Developer Private Limited, in Form-V prescribed under Rule 14 of the Environment (Protection) Rules 1986 for the financial year ending 31<sup>st</sup> March 2023.

Submitted for your kind information and records.

Thanking you,

For, M/s. Marine Infrastructure Developer Private Limited

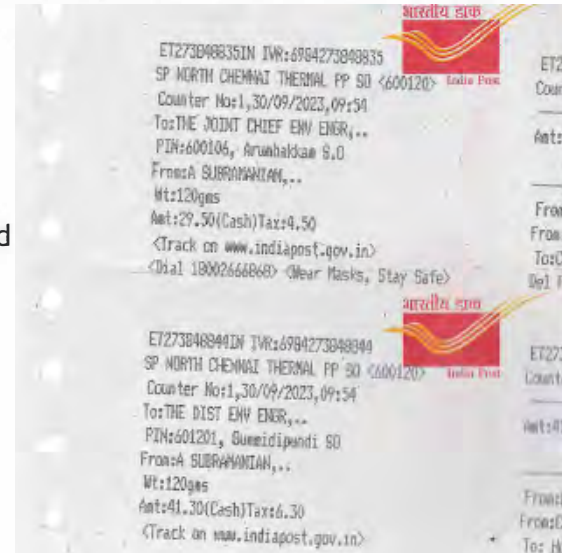
*Sudip Dasgupta*  
**Sudip Dasgupta**  
Chief Executive Officer



Encl: As above

Copy To:

- 1) The Joint Chief Environmental Engineer, Tamilnadu Pollution Control Board, First Floor, 950/1, Poonamallee High Road, Arumbakkam, Chennai-600 106
- 2) The District Environmental Engineer, Tamil Nadu Pollution Control Board, Gummidipoondi - 601201.



## Form-V

(See rule 14 of Environment (Protection) Rules, 1986)

**Environmental Statement for the financial year ending 31<sup>st</sup> March 2023**

### PART - A

<b>i) Name and Address of the owner/occupier of the industry operation or process</b>	<b>:</b>	<b>Mr. Sudip Dasgupta</b> <b>Chief Executive Officer</b> Marine Infrastructure Developer Private Limited Kattupalli Port, Kattupalli Village, Ponneri Taluk, Thiruvallur District – 600 120 Tamil Nadu, India																		
<b>ii) Industry Category</b>	<b>:</b>	<b>Primary : Red</b> <b>Secondary : 1065- Ports &amp; Harbour, Jetties and Dredging Operations.</b>																		
<b>iii) Production Capacity</b>	<b>:</b>	<b>Cargo Handling Capacity: 24.65 MMTPA</b> <table border="1" style="width: 100%;"><thead><tr><th style="width: 10%;">S.No.</th><th style="width: 70%;">Description</th><th style="width: 20%;">Quantity in MMTPA</th></tr></thead><tbody><tr><td>1.</td><td>Containers</td><td>10.28</td></tr><tr><td>2.</td><td>Ro-Ro (Automobiles)</td><td>0.00</td></tr><tr><td>3.</td><td>Project cargo</td><td>0.00</td></tr><tr><td>4.</td><td>Break Bulk / General Cargo (Barytes/ Gypsum/ Limestone/ Granite/ Steel Cargo/ Rock Phosphate/ Bauxite/ Dolomite Cargo)</td><td>0.81</td></tr><tr><td>5.</td><td>Edible oil, CBFS, Base Oil, Lube Oil and Non-Hazardous Liquid Cargo</td><td>0.42</td></tr></tbody></table>	S.No.	Description	Quantity in MMTPA	1.	Containers	10.28	2.	Ro-Ro (Automobiles)	0.00	3.	Project cargo	0.00	4.	Break Bulk / General Cargo (Barytes/ Gypsum/ Limestone/ Granite/ Steel Cargo/ Rock Phosphate/ Bauxite/ Dolomite Cargo)	0.81	5.	Edible oil, CBFS, Base Oil, Lube Oil and Non-Hazardous Liquid Cargo	0.42
S.No.	Description	Quantity in MMTPA																		
1.	Containers	10.28																		
2.	Ro-Ro (Automobiles)	0.00																		
3.	Project cargo	0.00																		
4.	Break Bulk / General Cargo (Barytes/ Gypsum/ Limestone/ Granite/ Steel Cargo/ Rock Phosphate/ Bauxite/ Dolomite Cargo)	0.81																		
5.	Edible oil, CBFS, Base Oil, Lube Oil and Non-Hazardous Liquid Cargo	0.42																		
<b>iv) Year of establishment</b>	<b>:</b>	2009, with the issue of Environmental Clearance to L&T Ship Building. Bifurcation of Environmental Clearance of L&T Ship Building to Marine Infrastructure Developer Private Limited on 09 <sup>th</sup> February 2018.																		
<b>v) Date of the last environmental statement submitted</b>	<b>:</b>	Vide our Letter No. MIDPL/TNPCB/2021-22/119 dated 19.09.2022.																		

**PART - B**

**WATER AND RAW MATERIAL CONSUMPTION**

**(i) Water Consumption**

S. No	Water Consumption (m <sup>3</sup> / Day)	During the Current Financial year (2021-2022)	During the Current Financial year (2022-2023)
1.	Process	NIL	NIL
2.	Cooling	NIL	NIL
3.	Domestic	111.46	130.95

The unit does not undergo any manufacturing process. The water consumed is mainly for Firefighting, dust suppression on roads, Greenbelt development and maintenance, etc.

**(ii) Raw Material Consumption**

S. No	Name of the Raw Material	Name of the Product	Consumption during the financial year 2021-22.	Consumption during the financial year 2022-23.
1	Not Applicable	Not Applicable	NIL	NIL

The unit does not undergo any manufacturing process. Hence, there is no raw material consumption.



**PART - C**

**POLLUTION DISCHARGE TO ENVIRONMENT/ UNIT OF OUTPUT**  
(Parameters as specified in the consent issued)

Pollutants	Quality of Pollutants Discharged (Mass/day)	Concentration of Pollutants discharges (mass/volume)	Percentage of variation from prescribed standards with reasons			
a) Water	STP Treated Water Characteristics: -					
	Parameter	Consent Limit	Actual			% Variation with prescribed standard
			30 KLD	10 KLD	5 KLD	
	pH	5.5-9	7.5	7.7	7.7	-Nil-
	Total Suspended Solids (mg/l)	30	11.3	10.3	12.3	-Nil-
	BOD (3 days at 27°C) (mg/l)	20	18.2	8.8	6.7	-Nil-
Fecal Coliform (MPN/100ml)	1000	154.2	111.7	112.6	-Nil-	
b) Air	<p>DG sets are provided as standby power source and are used during power failure only. The Height of DG stacks as per CPCB/TNPCB Standards. All the DG Sets are retrofitted to reduce the Particulate Matter emission level. Efficiency of the retrofitting equipment is observed above 90% against the TNPCB requirement of &gt;70%.</p> <p>All the monitored parameters are well within the prescribed standards.</p>					
Particulate Matter (mg/Nm3)	DG stack emission report is enclosed as <b>Annexure 1</b> .					
Sulphur Dioxide (ppm)						
Nitrogen Oxide (ppm)						

**PART-D**

**HAZARDOUS WASTES**

(As specified under Hazardous Waste Management and Handling Rules 1989)

Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial Year (2021-22)	During the current financial Year (2022-23)
(a) From Process	<ul style="list-style-type: none"><li>(5.1) Used or Spent Oil - 2.31 KL</li></ul>	<ul style="list-style-type: none"><li>(5.1) Used or Spent Oil - 1.597 KL</li><li>(5.2) Wastes or residues containing oil - 13.05 MT</li></ul>
(b) From Pollution control facilities	NA	NA

**PART-E**

**SOLID WASTES**

TOTAL QUANTITY GENERATED			
Solid Waste		During the previous Financial Year (2021 -22)	During the current Financial Year (2022-23)
a)	From process	NIL	NIL
b)	From pollution control facilities- STP Sludge	278 kgs	246 kgs
c)	1. Quantity recycled or reutilized within the Unit a) STP Sludge b) Horticulture Waste 2. Sold 3. Disposed	1. a) 278 Kgs b) 14.03 MT <b>Annexure - 2</b>	1. a) 246 Kgs b) 79.27 MT <b>Annexure-2</b>

Solid waste generated and disposed detail is enclosed as **Annexure - 2**.

## PART-F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

- **"Zero Waste to Landfill" Initiative** - No waste is being sent to landfill or incineration facility. MIDPL is having Integrated Waste Management System (IWMS) to proper segregate & recover the materials and are handled as per 5R (Reduce, Reuse, Recycle, Recover and Reprocess) principle.
- MIDPL has awarded with Zero Waste to Landfill Management System (ZWTL MS 2020) from TÜV Rheinland India Pvt. Ltd (**Annexure – 3**).
- Hazardous waste includes Cargo residue, washing water and sludge containing oil, Discarded Containers/ Barrels and Used/Waste/ Spent Oil. All the hazardous wastes are collected and stored properly in Integrated Waste Management Shed & are being disposed to TNPCB authorized /registered recyclers in line with the Hazardous and Other Waste (Management & Transboundary Movement) Rules, 2016 (As amended).
- The used batteries and E-waste are stored in Integrated Waste Management Shed and disposed through TNPCB approved recyclers as per the E-waste Management Rules 2016 (as amended).
- Hazardous Waste Annual returns in Form 4 was submitted in line with the Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016.
- 100% utilization of STP sludge as manure for greenbelt maintenance.
- MIDPL completely banned the Single Use Plastic inside the Port premises. MIDPL is certified as "Single Use Plastic (SUP) Free" site from CII –ITC Centre of Excellence for Sustainable Development.

## PART-G

### **Impact on pollution control measures on conservation of natural resources and consequently on the cost of production**

- Roof Top Solar Plant with the solar power generation capacity of 1000 kW were installed at MIDPL. Around 12,60,000 Units per Annum being generated from Solar Plant. MIDPL has invested nearly Rs.4 Crs. for developing this solar plant there by achieved reduction of conventional energy and contributed for resource conservation.
- 15 RTGs retrofitted into Electrical power-driven system at the project cost of Rs.45 Crs. Key Cost benefits includes reduction in diesel consumption and emission level.
- Sewage Treatment Plants (30 KLD, 10 KLD and 5 KLD STPs) are in continuous operation and the treated effluent water quality is meeting the TNPCB norms. STP treated water is used for Gardening purpose, thereby reducing freshwater consumption. The total cost spent on STP operation and maintenance during the year 2022-23 is Rs. 18.77 Lakhs.
- Unit is undertaking Regular Environmental Monitoring in port through NABL accredited laboratory. We have also installed and operating Continuous Ambient Air Quality Monitoring Station (SO<sub>2</sub>, NO<sub>x</sub>, CO, PM<sub>10</sub> & 2.5, BTX analyser to monitor VOC) and Meteorological Station (Wind Speed, Wind Direction, Ambient Temperature, Atmospheric Pressure, Relative Humidity, Rainfall and Solar Radiation). Real time data of CAAQMS is connected to TNPCB server. All the monitored environmental parameters are well within the prescribed standards and the details of monitored data is regularly being submitting to TNPCB, CPCB, MoEF&CC and other concerned authorities.
- All the domestic effluent generated at port is treated at existing Sewage Treatment Plants (30 KLD, 10 KLD and 5 KLD) and the entire treated sewage water is being reused within port premises for gardening.
- Motion sensor and timers installed at buildings to reduce energy consumption.
- RTG Container Stacking monitoring system implemented and achieved energy saving up to 18000 Units per year amounting to Rs. 1.35 L /Year.

- Air conditioners fitted with energy saving device "Eco Plug" and achieved energy saving of around 22.1MWH per year.
- Streetlight and High mast lighting controlled by light intensity sensor. Energy savings achieved around 29,000 units per year amounting to Rs. 2.15 Lakhs/Annum.
- 7,717 trees & 30,525 Shrubs planted as part of Greenbelt development program in the year 2022-23. Drip Line and Sprinkler System is provided at MIDPL for irrigation in Greenbelt and landscape areas.
- 2 no's of E – Cars Procured for Internal employees transportation and the cost is 0.25crs life time is 10 years and Annual monetary saving is 0.13crs.
- 450 KWp - Ground-mounted solar plant installation is under process and the Investment cost is 3crs, expected to complete: Dec 2023 and the estimated annual cost saving is 46L.
- 51 e-ITVs Internal transfer vehicles (ITVs) are used extensively in port operations. These are used for transfer of container cargo from ship to yard and vice versa and investment cost is 55crs. And utilizing renewable energy to charge the vehicles.

#### PART-H

**Additional investment proposal for Environment protection including abatement of pollution, prevention of pollution**

<u>Regular Expenditure (cost in INR lakhs/year)</u>		
S. No	Description	Cost
1	Comprehensive Environmental Monitoring and other Environment related Studies like impact Assessment Study, 3 season monitoring study, etc.	161.53
2	Integrated Waste Management	1.75
3	O&M of STP's & ETP	18.78
4	Housekeeping	95.20
5	Greenbelt Maintenance	41.05
<b>Total</b>		<b>318.31</b>

## PART-I

### **ANY OTHER PARTICULARS IN RESPECT TO ENVIRONMENT**

- Handling of all types of wastes in line with 5R (Reduce, Reuse, Recycle, Recover and Reprocess) Principle.
- Paperless Operation is in place (Except for Statutory requirements) using application tools and Software – Terminal Info Gateway (TIG).
- Energy Conservation Committee to measure the amount of energy consumed and to actions to reduce the energy consumed through port operations.
- Water conservation measures are being adopted to conserve natural resources.
- Integrated Management System (ISO 9001:2015, 14001:2015, 45001:2018 and 50001:2018) certified Port.
- Obtained “5S” Certification at MIDPL
- MIDPL is bestowed with the top honors and the details of accolades received during the year 2022-23 are mentioned here under.
  - EKDKN’s **Diamond Award 2022** under **Energy Efficiency** Category
  - Apex India Green Leaf Award 2022 - **Platinum Award** under **Sustainable Category**

- **Community Development:**

Kattupalli Port has been propagating the community development through a broad based Corporate Social Responsibility (CSR) program in the project area through Adani Foundation since 2018 to ensure inclusive growth and catering to the developmental needs of the community at the grassroots level. The *project area encompasses 11 panchayats covering about 46 villages within 10 Km radius of the Kattupalli Port.* The key interventions introduced in the project area are as under:

- Education
- Community Health
- community Infrastructure facility
- Sustainable Livelihood development
- Tree Plantation & Bio-Diversity development program
- Special Focus Groups
- COVID / Cyclone relief measures

Significant highlights during the year 2022-23 are as follows.

**Education:** 20 Adani Evening Education Centers where 600 students from fishermen, Irulars and other backward communities get benefit through this program.

Established Computer Smart Lab for government school students, where 450 students get benefit through this program, Pulicat Panchyat, Minjur and Tiruvallur, Tamilnadu.

**Health:** Addressing health issues of rural communities through mobile health care program where 1600 persons get benefit every month through this program.

**Suposhan:** Creating awareness and preventing unwanted health issues faced by mothers and children below 5 years of age working closely with government system and ensuring to improve the health condition of the children below 5 years of age.

**Sustainable Livelihood Development:** Natural Farming: Ensuring 100 farmers do natural farming by assisting them to ensure to adopt and implement the natural farming protocols as per the norms of government where government will certify them under PGS program.

Livelihood Enhancement program for 121 women through group based entrepreneurship program and providing livelihood support to 30 individuals- widows, destitute and persons with disabilities.

**Community Infrastructure Development:** Installed 10 high mast lights in the rural communities, Established 6 RO plants in the community, Government Schools and Government Hospitals in addressing to access to drinking water, Community Toilet for women was constructed, Desilted Kattupalli pond and gave life to the pond, built toilet block for girl students of government school students, Pulicat Panchayats which will be benefited by girl students from four panchayats, planned to build a community hall for Satangkuppam and to do Desiltation of boat parking areas of fishermen in 18 locations.

Date: 23.09.2023

(Signature of a person carrying out an industry operation or process)

Name : **Sudip Dasgupta**

Designation: **Chief Executive Officer**

Address : Marine Infrastructure Developer Pvt Ltd (MIDPL)  
Kattupalli Village, Ponneri Taluk,  
Thiruvallur District – 600 120  
Tamil Nadu, India.



MIDPL- STACK MONITORING (April'2022 to March'2023)														
Location		DG-1 2000KVA											Avg	
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23		Mar-23
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	255	264	275	268	247	258	-	247	259	-	251	-	258.2
2	Flue Gas Velocity, m/s	24.72	25.61	27.01	26.36	24.12	26.34	-	24.68	25.42	-	23.98	-	25.4
3	Gas Discharge, Nm3/hr	6299	6416	6632	6557	6241	6675	-	6385	6429	-	6157	-	6421.2
4	Sulphur Dioxide, mg/Nm3	7.5	8.1	8.7	7.9	8.3	9.1	-	8	7.9	-	7.1	-	8.1
5	NOX (as NO2) in ppmv	201	214	230	214	207	230	-	219	206	-	198	-	213.2
6	Particular matter, mg/Nm3	10.2	11.7	10.4	11.7	10.8	11.5	-	9.2	8.7	-	9.5	-	10.4
7	Carbon Monoxide, mg/Nm3	50	54	51	48	45	49	-	46	39	-	32	-	46.0
Location		DG-2 2000KVA											Avg	
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23		Mar-23
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	251	251	267	-	255	251	-	240	241	-	260	-	252.0
2	Flue Gas Velocity, m/s	25.28	26.08	26.83	-	25.96	25.04	-	25.86	23.46	-	24.76	-	25.4
3	Gas Discharge, Nm3/hr	6491	6697	6685	-	6615	6429	-	6782	6142	-	6240	-	6510.1
4	Sulphur Dioxide, mg/Nm3	8	8.9	8.4	-	8.7	8.3	-	7.6	7.1	-	7.5	-	8.1
5	NOX (as NO2) in ppmv	214	223	227	-	221	209	-	205	198	-	204	-	212.6
6	Particular matter, mg/Nm3	11.6	10.1	10.9	-	10.4	9.8	-	9.5	8	-	8.7	-	9.9
7	Carbon Monoxide, mg/Nm3	48	52	55	-	49	44	-	41	34	-	36	-	44.9
Location		DG-4 500 KVA											Avg	
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23		Mar-23
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	-	160	-	155	163	-	170	-	-	159	-	179	164.3
2	Flue Gas Velocity, m/s	-	16.27	-	14.24	14.91	-	15.78	-	-	16.32	-	18.08	15.9
3	Gas Discharge, Nm3/hr	-	1672	-	1480	1520	-	1584	-	-	1682	-	1779	1619.5
4	Sulphur Dioxide, mg/Nm3	-	7.1	-	6.1	6.5	-	6.9	-	-	6.5	-	7.3	6.7
5	NOX (as NO2) in ppmv	-	98	-	87	92	-	98	-	-	87	-	107	94.8
6	Particular matter, mg/Nm3	-	6.5	-	6	7.1	-	8.3	-	-	7.1	-	10.3	7.6
7	Carbon Monoxide, mg/Nm3	-	18	-	14	22	-	20	-	-	18	-	54	24.3



Location		DG-5 125 KVA												Avg
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	126	120	124	-	121	-	127	-	-	124	-	134	125.1
2	Flue Gas Velocity, m/s	11.09	11.79	12.47	-	11.83	-	12.41	-	-	12.09	-	11.23	11.8
3	Gas Discharge, Nm3/hr	525	566	594	-	568	-	587	-	-	576	-	522	562.6
4	Sulphur Dioxide, mg/Nm3	4.2	4.7	5.3	-	4.7	-	5.3	-	-	5.1	-	3.7	4.7
5	NOX (as NO2) in ppmv	55	50	54	-	51	-	57	-	-	23	-	51	48.7
6	Particular matter, mg/Nm3	5	5.3	4.7	-	5.8	-	6.4	-	-	9.4	-	4.6	5.9
7	Carbon Monoxide, mg/Nm3	18	16	13	-	16	-	18	-	-	16	-	19	16.6

Location		FIRE WATER PUMP HOUSE: DG-1 125 KVA												Avg
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	-	-	-	129	-	-	-	-	-	-	-	-	129.0
2	Flue Gas Velocity, m/s	-	-	-	10.46	-	-	-	-	-	-	-	-	10.5
3	Gas Discharge, Nm3/hr	-	-	-	218	-	-	-	-	-	-	-	-	218.0
4	Sulphur Dioxide, mg/Nm3	-	-	-	8.6	-	-	-	-	-	-	-	-	8.6
5	NOX (as NO2) in ppmv	-	-	-	59	-	-	-	-	-	-	-	-	59.0
6	Particular matter, mg/Nm3	-	-	-	16	-	-	-	-	-	-	-	-	16.0
7	Carbon Monoxide, mg/Nm3	-	-	-	32	-	-	-	-	-	-	-	-	32.0

Location		FIRE WATER PUMP HOUSE: DG-2 125 KVA												Avg
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	-	-	-	135	-	-	-	-	-	-	-	-	135.0
2	Flue Gas Velocity, m/s	-	-	-	11.93	-	-	-	-	-	-	-	-	11.9
3	Gas Discharge, Nm3/hr	-	-	-	245	-	-	-	-	-	-	-	-	245.0
4	Sulphur Dioxide, mg/Nm3	-	-	-	15.2	-	-	-	-	-	-	-	-	15.2
5	NOX (as NO2) in ppmv	-	-	-	73	-	-	-	-	-	-	-	-	73.0
6	Particular matter, mg/Nm3	-	-	-	19	-	-	-	-	-	-	-	-	19.0
7	Carbon Monoxide, mg/Nm3	-	-	-	47	-	-	-	-	-	-	-	-	47.0

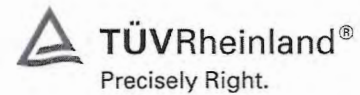
Location		LIQUID TERMINAL: HOT OIL GENERATOR STACK												Avg
Month & Year		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	
S.No.	Parameters	19.04.22	16.05.22	27.06.22	20.07.22	16.08.22	16.09.2022	21.10.2022	17.11.2022	26.12.2022	31.01.2023	20.02.2023	16.03.2023	
1	Stack Temperature, °C	-	-	-	-	-	-	-	-	-	159	-	-	159.0
2	Flue Gas Velocity, m/s	-	-	-	-	-	-	-	-	-	9.97	-	-	10.0
3	Gas Discharge, Nm3/hr	-	-	-	-	-	-	-	-	-	35382	-	-	35382.0
4	Sulphur Dioxide, mg/Nm3	-	-	-	-	-	-	-	-	-	7.4	-	-	7.4
5	NOX (as NO2) in ppmv	-	-	-	-	-	-	-	-	-	23	-	-	23.0
6	Particular matter, mg/Nm3	-	-	-	-	-	-	-	-	-	9.4	-	-	9.4
7	Carbon Monoxide, mg/Nm3	-	-	-	-	-	-	-	-	-	18	-	-	18.0

Environment Statement for 2022-23 for M/s Marine Infrastructure Developer Pvt Ltd

Annexure - 2

Details of Solid Waste Management

Sr. No.	Waste Description	Method of disposal	Unit	Quantity 2021-22	Quantity 2022-23
1	Dry Waste (Recyclable waste Metal, Wood, paper, plastic etc.)	Registered Recyclers	MT	12.00	212.23
2	Horticulture Waste	Reused as manure for greenbelt	MT	14.03	79.3
3	Food Waste	Sent to vendor to reuse as Cattle feed	MT	2.7	2.2
4	E-Waste	Registered Recyclers	MT	1.63	1.9
5	Battery Waste	Registered Recyclers	MT	Nil	8.88



# Certificate

Standard: **Zero Waste to Landfill Management System (ZWTL MS 2020)**

Certificate Holder: **Marine Infrastructure Developer Private Limited**  
Kattupalli Port, Tiruvallur - 600120  
Tamil Nadu, India

Scope: **Providing Port Facilities for Handling and Storage of Bulk Cargo, Containerized Cargo and Liquid Terminal Operations**

Validity: This certificate is valid from 01-06-2021 until 31-05-2024  
Subject to satisfactory annual surveillance audits.

Certificate No. TUV/ZWLMS/2021/Adani Ports/0502

A handwritten signature in black ink, appearing to be 'Gang'.

New Delhi, 01-06-2021

TÜV Rheinland India Pvt. Ltd.  
Office 610, 6<sup>th</sup> Floor, iThum  
Tower, A-40, Sector-62,  
Noida- 201301, India

**ANNEXURE - 9**  
**(CONSENT ORDERS UNDER AIR & WATER ACTS)**



## TAMILNADU POLLUTION CONTROL BOARD

Category of the Industry :

RED

CONSENT ORDER NO. 2105236876761

DATED: 13/09/2021.

PROCEEDINGS NO.T6/TNPCB/F.0491GMP/RL/GMP/A/2021 DATED: 13/09/2021



**SUB:** Tamil Nadu Pollution Control Board –CONSENT TO OPERATE –DIRECT –M/s. MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED , S.F.No. Survey Numbers : 14/18B, 15, 168/1, 168/2, 169, 170/1, 170/2, 171/1, 171/2, 172/1, 172/2, 173/1, 173/2, 174, 175, 176, 177, 178/1, 178/2, 178/3, 178/4, 179/1, 179/2, 179/3, 179/4, 180, 181, 182, 183, 184/1, 184/2, 184/3, 186, 187, 188/1, 188/2A, 188/2B, 188/2C, 189, 190, 191, 192/1, 192/2, 193/1, 193/2, 193/3, 193/4, 194, 195, 196, 197/1, 197/2, 197/3, 199, 200/1, 200/2, 202/1, 202/2, 203, 206/1, 206/2A, 206/2B, 206/3, 206/4A, 206/4B, 207/2B, 208/2, 209/1, 209/2, 209/3, 210/1, 210/2, 211/1, 211/2, 211/3, 211/4, 211/5, 211/6, 211/7, 212, 213, 214/1, 214/2, 214/3, 214/4, 215/1, 215/2, 216, 217, 218/1, 218/2, 218/3, 218/4, 218/5, 219/1, 219/2, 220, 223/1, 223/2, 224/1, 224/2, 224/3, 224/4, 224/5, 225, 226, 227, 228/1, 228/2, 228/3, 228/4, 228/5, 229, 230, 231/1, 231/2, 231/3, 231/4, 231/5, 232, 233/1, 233/2, 233/3, 233/4, 234/1, 234/2, 234/3, 234/4, 235/1B, 235/2, 235/3B, 236/3B, 236/4, 242/1, 242/2, 243/2B, 244/2, 247/1, 248/1, 248/2, 249/1A2, 249/2B, 198/1, 205/1A, 205/1B, 205/2, 205/5, 1/4A1, 1/4A2, 1/4B, 1/5, 16/1, 16/2, 17/1, 17/2, 17/3A, 17/3B, 143, 151/1, 151/2, 151/3, 151/4, 152, 153, 154/1, 154/2, 166, 167/1, 167/2, 204/1, 204/2, 204/3, 221, 221/1, 222/2, 330/1, 330/2, 330/3, 330/4, 12, 16/3, 198/2, 201, 205/3, 205/4., KATTUPALLI village Ponneri Taluk and Tiruvallur District - Consent for operation of the plant and discharge of emissions under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) –Issued- Reg.

- Ref:** 1. Units application for CTO direct dt. 15.02.2021  
2. IR.No : F.0491GMP/RL/DEE/GMP/2021 dated 30/06/2021  
3. Board's (Consent Clearance Committee) Resolution No.281-12 dt: 13.08.2021

CONSENT TO OPERATE is hereby granted under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981 as amended in 1987 (Central Act 14 of 1981) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Chief Executive Officer,

M/s . MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED

S.F No.Survey Numbers : 14/18B, 15, 168/1, 168/2, 169, 170/1, 170/2, 171/1, 171/2, 172/1, 172/2, 173/1, 173/2, 174, 175, 176, 177, 178/1, 178/2, 178/3, 178/4, 179/1, 179/2, 179/3, 179/4, 180, 181, 182, 183, 184/1, 184/2, 184/3, 186, 187, 188/1, 188/2A, 188/2B, 188/2C, 189, 190, 191, 192/1, 192/2, 193/1, 193/2, 193/3, 193/4, 194, 195, 196, 197/1, 197/2, 197/3, 199, 200/1, 200/2, 202/1, 202/2, 203, 206/1, 206/2A, 206/2B, 206/3, 206/4A, 206/4B, 207/2B, 208/2, 209/1, 209/2, 209/3, 210/1, 210/2, 211/1, 211/2, 211/3, 211/4, 211/5, 211/6, 211/7, 212, 213, 214/1, 214/2, 214/3, 214/4, 215/1, 215/2, 216, 217, 218/1, 218/2, 218/3, 218/4, 218/5, 219/1, 219/2, 220, 223/1, 223/2, 224/1, 224/2, 224/3, 224/4, 224/5, 225, 226, 227, 228/1, 228/2, 228/3, 228/4, 228/5, 229, 230, 231/1, 231/2, 231/3, 231/4, 231/5, 232, 233/1, 233/2, 233/3, 233/4, 234/1, 234/2, 234/3, 234/4, 235/1B, 235/2, 235/3B, 236/3B, 236/4, 242/1, 242/2, 243/2B, 244/2, 247/1, 248/1, 248/2, 249/1A2, 249/2B, 198/1, 205/1A, 205/1B, 205/2, 205/5, 1/4A1, 1/4A2, 1/4B, 1/5, 16/1, 16/2, 17/1, 17/2, 17/3A, 17/3B, 143, 151/1, 151/2, 151/3, 151/4, 152, 153, 154/1, 154/2, 166, 167/1, 167/2, 204/1, 204/2, 204/3, 221, 221/1, 222/2, 330/1, 330/2, 330/3, 330/4, 12, 16/3, 198/2, 201, 205/3, 205/4.,

KATTUPALLI Village,

Ponneri Taluk,

Tiruvallur District.

Authorizing the occupier to operate the industrial plant in the Air Pollution Control Area as notified by the Government and to make discharge of emission from the stacks/chimneys.



## TAMILNADU POLLUTION CONTROL BOARD

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2026

**JOSEPHINESAHAYARANI** Digitally signed by JOSEPHINESAHAYARA  
Date: 2021.09.14 07:44:46 +05'30'

For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai

To  
The Chief Executive Officer,  
M/s.MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED,  
Ramcons Fortuna Towers, 4th Floor, No: 1/2 Kodambakkam High Road, Nungambakam,  
Chennai - 600034.  
Pin: 600034

**Copy to:**

1. The Commissioner, MEENJUR-Panchayat Union, Ponneri Taluk, Tiruvallur District.
  2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, GUMMIDIPOONDI.
  3. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Chennai.
  4. File
-



## TAMILNADU POLLUTION CONTROL BOARD

### SPECIAL CONDITIONS

1. This consent to operate is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
<b>Product Details</b>			
1.	Containers	21.60	MMTPA
2.	Ro-Ro – Automobiles	0.07	MMTPA
3.	Project Cargo	0.44	MMTPA
4.	Break Bulk/general cargo (Barytes / Gypsum / Limestone / Granite / Steel Cargo / Rock Phosphate / Bauxite / Dolomite cargoes)	1.82	MMTPA
5.	Edible oil, CBFS, Base Oil, Lube and Non-Hazardous Liquid Cargo	0.72	MMTPA

2. This consent to operate is valid for operating the facility with the below mentioned emission/noise sources along with the control measures and/or stack. Any change in the emission source/control measures/change in stack height has to be brought to the notice of the Board and fresh consent/Amendment has to be obtained.

<b>I Point source emission with stack :</b>				
Stack No.	Point Emission Source	Air pollution Control measures	Stack height from Ground Level in m	Gaseous Discharge in Nm <sup>3</sup> /hr
1	DG Set - 2000 KVA - I	Acoustic enclosures with stack	30	8000
2	DG Set - 2000 KVA - II	Acoustic enclosures with stack	30	8000
3	DG Set - 500 KVA - I	Acoustic enclosures with stack	20	5000
4	DG Set - 500 KVA - II	Acoustic enclosures with stack	20	5000
5	DG Set - 125 KVA	Acoustic enclosures with stack	4	1000
6	Hot Water System (CBFS / Veg Oil Facility)	Wet scrubber with stack	31	50000
7	Hot Oil Generator (Bitumen Facility)	Wet scrubber with stack	31	50000
8	Fire DG Pump Stack - 1	Stack	2.5	
9	Fire DG Pump Stack - 2	Stack	2.5	
10	ETP Boiler Stack	Stack	12	
<b>II Fugitive/Noise emission :</b>				
Sl. No.	Fugitive or Noise Emission sources	Type of emission	Control measures	
1.	DG Set	Noise	Acoustic Enclosures	



## TAMILNADU POLLUTION CONTROL BOARD

3(a). The emission shall not contain constituents in excess of the tolerance limits as laid down hereunder :

Sl.	Parameter	Unit	Tolerance limits	Stacks
-----	-----------	------	------------------	--------

**Annexure enclosed if applicable. :-**

3.(b) The Ambient Air in the industrial plant area shall not contain constituents in excess of the tolerance limits prescribed below.

Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
1.	Sulphur Dioxide (SO <sub>2</sub> )	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	50 80	20 80
2.	Nitrogen Dioxide (NO <sub>2</sub> )	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	40 80	30 80
3.	Particulate Matter (Size Less than 10 micro M) or PM <sub>10</sub>	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	60 100	60 100
4.	Particulate Matter (Size Less than 2.5 micro M) or PM <sub>2.5</sub>	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	40 60	40 60
5.	Ozone (O <sub>3</sub> )	Annual 24 hours	8 Hours 1 Hour	100 180	100 180
Sl. No.	Pollutant	Time Weighted Average	Unit	Tolerance Limits	
				Industrial, Residential, Rural and other area	Ecologically Sensitive Area (notified by Central Govt.)
6.	Lead (Pb)	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	0.5 1.0	0.5 1.0
7.	Carbon Monoxide (CO)	8 Hours 1 Hour	miligram/m <sup>3</sup> miligram/m <sup>3</sup>	02 04	02 04
8.	Ammonia (NH <sub>3</sub> )	Annual 24 hours	microgram/m <sup>3</sup> microgram/m <sup>3</sup>	100 400	100 400
9.	Benzene (C <sub>6</sub> H <sub>6</sub> )	Annual	microgram/m <sup>3</sup>	5	5
10.	Benzo(O) Pyrene (BaP) -particulate phase only	Annual	nanogram/m <sup>3</sup>	01	01
11.	Arsenic (As)	Annual	nanogram/m <sup>3</sup>	06	06
12.	Nickel (Ni)	Annual	nanogram/m <sup>3</sup>	20	20

3(c) The Ambient Noise Level in the industrial plant area shall not exceed the limits prescribed below:

Limits in L.eq.-dB(A)	Day Time	Night Time
<b>Industrial Area</b>	<b>75</b>	<b>70</b>

4. All units of the Air pollution control measures shall be operated efficiently and continuously so as to achieve the standards prescribed in Sl. No.3 above.





## TAMILNADU POLLUTION CONTROL BOARD

5. The occupier shall not change or alter quality or quantity or the rate of emission or replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in change in quality and/or quantity of emissions without the previous written permission of the Board.
6. The occupier shall maintain log book regarding the stack monitoring system or operation of the plant or any other particulars for each of the unit operations of air pollution control systems to reflect the working condition which shall be furnished for verification of the Board officials during inspection.
7. The occupier shall at his own cost get the samples of emission/air/noise levels collected and analyzed by the TNPC Board Laboratory once in every 6 months/once in a year/periodically for the parameters as prescribed.
8. Any upset condition in any of the plants of the factory which is likely to result in increased emissions and result in violation of the standards mentioned in Sl.No.3 shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
9. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.

### Special Additional Conditions:

The unit shall install the approved retrofit emission control device/equipment with at least 70% Particulate matter reduction efficiency on all DG sets with capacity of 125 KVA and above or otherwise the unit shall be shift to gas based generators within the time frame prescribed in the notification No. TNPCB/Labs/DD(L)02151/2019 dated 10.06.2020 issued by TNPCB.

### Additional Conditions:

1. The unit shall operate and maintain the APC measures efficiently and continuously so as to satisfy the Ambient Air Quality / emission standards prescribed by the Board.
2. The unit shall adhere to the Ambient Noise Level standards prescribed by the Board.
3. The unit shall conduct AAQ/ANL/SM emission survey periodically and furnish the ROA to the Board.
4. The unit shall maintain Continuous Ambient Air Quality Monitoring station provided for the parameters PM10, PM2.5 and VOC and shall transfer data to the care Air Centre, TNPCB, Guindy without any interruption.
5. The unit shall utilize the Power obtained from the DG Sets for captive use only and shall not supply Power to Grid.
6. The unit shall maintain adequate dust suppression system and take all measures to ensure that the cargo is handled by taking necessary precautions to avoid spread of fugitive dust while transporting cargo through lorries and containers.
7. The unit shall ensure that the vehicles shall not fit or use any multi toned horn giving a harsh, shrill, loud or alarming noise.
8. The unit shall provide water sprinklers to the internal roads so as to avoid dust emissions due to the vehicular movements inside the premises within a month as committed.
9. The unit shall comply with the conditions imposed in the environmental clearance accorded to the unit from the MoEF, GOI vide Lr.No. 10-130/2007-IAIII dated 09.02.2018.
10. In case of any deviation in the Gross Fixed Assets furnished in future, the unit shall remit the difference in amount to the Board without fail.
11. The unit shall continue to develop adequate green belt by planting tree saplings of native species in and around the unit premises so as to comply with the Board norms.
12. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.
13. The unit shall comply with the conditions imposed in the "No increase in Pollution Load" letter issued to the unit by the Board vide Lr. No: T1/TNPCB/ F.022882/RL/GMP/NIPL/2021 Dated:12.01.2021.

JOSEPHINESAHAYARANI

Digitally signed by  
JOSEPHINESAHAYARANI  
Date: 2021.09.14 07:45:41 +05'30'

For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai



## TAMILNADU POLLUTION CONTROL BOARD

### GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in production quantity and emission.
2. This Consent is given by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished, in the application will also be ground for review/variation/revocation of the Consent Order under Section 21 of the Act.
3. The conditions imposed shall continue in force until revoked under Section 21 of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Air (Prevention and Control of Pollution) Act, 1981 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Air Pollution Control measures sufficient to ensure continuous operation of all pollution control equipments to ensure compliance.
7. The occupier shall provide all facilities to the Board officials for collection of samples in and around the factory at any time.
8. The applicant shall display the flow diagram of the sources of emission and pollution control systems provided at the site.
9. The liquid effluent arising out of the operation of the air pollution control equipment shall also be treated in a manner and to the satisfaction of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 as amended.
10. The air pollution control equipments, location of inspection chambers and sampling port holes shall be made easily accessible at all time.
11. In case of any episodal discharge of emission, the industry shall take immediate action to bring down the emission within the limits prescribed by the Board.
12. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures/plants and properties while handling and storage of hazardous substances.
13. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poramboke lands.
14. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.
15. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
16. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
17. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Air (Prevention and Control of Pollution) Act, 1981, as amended in Form-I alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
18. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.



## TAMILNADU POLLUTION CONTROL BOARD

19. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

JOSEPHINESAHAYARANI Digitally signed by JOSEPHINESAHAY,  
Date: 2021.09.14 07:46:18 +05'30'

For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai



## TAMILNADU POLLUTION CONTROL BOARD

Category of the Industry :

RED

CONSENT ORDER NO. 2105136876761 DATED: 13/09/2021.

PROCEEDINGS NO.T6/TNPCB/F.0491GMP/RL/GMP/W/2021 DATED: 13/09/2021



**SUB:** Tamil Nadu Pollution Control Board –CONSENT TO OPERATE – DIRECT -M/s. MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED , S.F.No. Survey Numbers : 14/18B, 15, 168/1, 168/2, 169, 170/1, 170/2, 171/1, 171/2, 172/1, 172/2, 173/1, 173/2, 174, 175, 176, 177, 178/1, 178/2, 178/3, 178/4, 179/1, 179/2, 179/3, 179/4, 180, 181, 182, 183, 184/1, 184/2, 184/3, 186, 187, 188/1, 188/2A, 188/2B, 188/2C, 189, 190, 191, 192/1, 192/2, 193/1, 193/2, 193/3, 193/4, 194, 195, 196, 197/1, 197/2, 197/3, 199, 200/1, 200/2, 202/1, 202/2, 203, 206/1, 206/2A, 206/2B, 206/3, 206/4A, 206/4B, 207/2B, 208/2, 209/1, 209/2, 209/3, 210/1, 210/2, 211/1, 211/2, 211/3, 211/4, 211/5, 211/6, 211/7, 212, 213, 214/1, 214/2, 214/3, 214/4, 215/1, 215/2, 216, 217, 218/1, 218/2, 218/3, 218/4, 218/5, 219/1, 219/2, 220, 223/1, 223/2, 224/1, 224/2, 224/3, 224/4, 224/5, 225, 226, 227, 228/1, 228/2, 228/3, 228/4, 228/5, 229, 230, 231/1, 231/2, 231/3, 231/4, 231/5, 232, 233/1, 233/2, 233/3, 233/4, 234/1, 234/2, 234/3, 234/4, 235/1B, 235/2, 235/3B, 236/3B, 236/4, 242/1, 242/2, 243/2B, 244/2, 247/1, 248/1, 248/2, 249/1A2, 249/2B, 198/1, 205/1A, 205/1B, 205/2, 205/5, 1/4A1, 1/4A2, 1/4B, 1/5, 16/1, 16/2, 17/1, 17/2, 17/3A, 17/3B, 143, 151/1, 151/2, 151/3, 151/4, 152, 153, 154/1, 154/2, 166, 167/1, 167/2, 204/1, 204/2, 204/3, 221, 221/1, 222/2, 330/1, 330/2, 330/3, 330/4, 12, 16/3, 198/2, 201, 205/3, 205/4., KATTUPALLI village Ponneri Taluk and Tiruvallur District - Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

- Ref:** 1. Units application for CTO direct dt. 15.02.2021  
2. IR.No : F.0491GMP/RL/DEE/GMP/2021 dated 30/06/2021  
3. Board's (Consent Clearance Committee) Resolution No.281-12 dt: 13.08.2021

CONSENT TO OPERATE is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Chief Executive Officer,

M/s . MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED

S.F No.Survey Numbers : 14/18B, 15, 168/1, 168/2, 169, 170/1, 170/2, 171/1, 171/2, 172/1, 172/2, 173/1, 173/2, 174, 175, 176, 177, 178/1, 178/2, 178/3, 178/4, 179/1, 179/2, 179/3, 179/4, 180, 181, 182, 183, 184/1, 184/2, 184/3, 186, 187, 188/1, 188/2A, 188/2B, 188/2C, 189, 190, 191, 192/1, 192/2, 193/1, 193/2, 193/3, 193/4, 194, 195, 196, 197/1, 197/2, 197/3, 199, 200/1, 200/2, 202/1, 202/2, 203, 206/1, 206/2A, 206/2B, 206/3, 206/4A, 206/4B, 207/2B, 208/2, 209/1, 209/2, 209/3, 210/1, 210/2, 211/1, 211/2, 211/3, 211/4, 211/5, 211/6, 211/7, 212, 213, 214/1, 214/2, 214/3, 214/4, 215/1, 215/2, 216, 217, 218/1, 218/2, 218/3, 218/4, 218/5, 219/1, 219/2, 220, 223/1, 223/2, 224/1, 224/2, 224/3, 224/4, 224/5, 225, 226, 227, 228/1, 228/2, 228/3, 228/4, 228/5, 229, 230, 231/1, 231/2, 231/3, 231/4, 231/5, 232, 233/1, 233/2, 233/3, 233/4, 234/1, 234/2, 234/3, 234/4, 235/1B, 235/2, 235/3B, 236/3B, 236/4, 242/1, 242/2, 243/2B, 244/2, 247/1, 248/1, 248/2, 249/1A2, 249/2B, 198/1, 205/1A, 205/1B, 205/2, 205/5, 1/4A1, 1/4A2, 1/4B, 1/5, 16/1, 16/2, 17/1, 17/2, 17/3A, 17/3B, 143, 151/1, 151/2, 151/3, 151/4, 152, 153, 154/1, 154/2, 166, 167/1, 167/2, 204/1, 204/2, 204/3, 221, 221/1, 222/2, 330/1, 330/2, 330/3, 330/4, 12, 16/3, 198/2, 201, 205/3, 205/4.,

KATTUPALLI Village,

Ponneri Taluk,

Tiruvallur District.

Authorising the occupier to make discharge of sewage and /or trade effluent



## TAMILNADU POLLUTION CONTROL BOARD

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This CONSENT is valid for the period ending March 31, 2026

**JOSEPHINESAHAYARANI** Digitally signed by JOSEPHINESAHAYARANI  
Date: 2021.09.14 07:47:28 +05'30'

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**

To  
The Chief Executive Officer,  
M/s.MARINE INFRASTRUCTURE DEVELOPER PRIVATE LIMITED,  
Ramcons Fortuna Towers, 4th Floor, No: 1/2 Kodambakkam High Road, Nungambakam,  
Chennai - 600034,  
Pin: 600034

**Copy to:**

- 1.The Commissioner, MEENJUR-Panchayat Union, Ponneri Taluk, Tiruvallur District .
  2. The District Environmental Engineer, Tamil Nadu Pollution Control Board, GUMMIDIPOONDI.
  3. The JCEE-Monitoring, Tamil Nadu Pollution Control Board, Chennai.
  4. File
-



## TAMILNADU POLLUTION CONTROL BOARD

### SPECIAL CONDITIONS

1. This consent to operate is valid for operating the facility for the manufacture of products (Col. 2) at the rate (Col. 3) mentioned below. Any change in the products and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
<b>Product Details</b>			
1.	Containers	21.60	MMTPA
2.	Ro-Ro – Automobiles	0.07	MMTPA
3.	Project Cargo	0.44	MMTPA
4.	Break Bulk/general cargo (Barytes / Gypsum / Limestone / Granite / Steel Cargo / Rock Phosphate / Bauxite / Dolomite cargoes)	1.82	MMTPA
5.	Edible oil, CBFS, Base Oil, Lube and Non-Hazardous Liquid Cargo	0.72	MMTPA

2. This consent to operate is valid for operating the facility with the below mentioned permitted outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
<b>Effluent Type : Sewage</b>			
1.	Treated Sewage Effluent - 1 (30 KLD)	30.0	On land for gardening
2.	Treated Sewage Effluent - 2 (10 KLD)	10.0	On land for gardening
3.	Treated Sewage Effluent - 3 (5 KLD)	5.0	On land for gardening
<b>Effluent Type : Trade Effluent</b>			
1.	Trade Effluent - 1 (RO Permeate)	41.0	On land for gardening
2.	Trade Effluent - 2 (RO Reject)	9.0	Evaporated in ATFD System

3. The effluent discharge shall not contain constituents in excess of the tolerance Limits as laid down hereunder.



## TAMILNADU POLLUTION CONTROL BOARD

Sl. No.	Parameters	Unit	TOLERANCE LIMITS - OUTLETS -Nos			
			Sewage		Trade Effluent	
			1	2,3	1	2
1.	pH		5.5 to 9	5.5 to 9	5.5 to 9	5.5 to 9
2.	Temperature	oC	-	-	-	shall not exceed 5°C above the receiving water temperature
3.	Particle size of Suspended solids	-	-	-	-	shall pass 850 micron IS sieve
4.	Total Suspended Solids	mg/l	30	30	200	100
5.	Total Dissolved solids (inorganic)	mg/l	-	-	2100	2100
6.	Oil & Grease	mg/l	-	-	10	10
7.	Biochemical Oxygen Demand (3 days at 27oC)	mg/l	20	20	100	30
8.	Chemical Oxygen Demand	mg/l	-	-	-	250
9.	Chloride (as Cl)	mg/l	-	-	600	1000
10.	Sulphates (as SO4)	mg/l	-	-	1000	1000
11.	Total Residual Chlorine	mg/l	-	-	-	1
12.	Ammonical Nitrogen (as N)	mg/l	-	-	50	50
13.	Total Kjeldahl Nitrogen (as N)	mg/l	-	-	-	100
14.	Free Ammonia (as NH3)	mg/l	-	-	-	5
15.	Arsenic (as As)	mg/l	-	-	0.2	0.2
16.	Mercury (as Hg)	mg/l	-	-	0.01	0.01
17.	Lead (as Pb)	mg/l	-	-	1	0.1
18.	Cadmium(as Cd)	mg/l	-	-	1	2
19.	Hexavalent Chromium (as Cr+6)	mg/l	-	-	1	0.1
20.	Total Chromium (as Cr)	mg/l	-	-	2	2
21.	Copper (as Cu)	mg/l	-	-	3	3
22.	Zinc (as Zn)	mg/l	-	-	1.5	1
23.	Selenium (as Se)	mg/l	-	-	0.05	0.05
24.	Nickel (as Ni)	mg/l	-	-	3	3
25.	Boron (as B)	mg/l	-	-	2	2
26.	Percent Sodium	%	-	-	60	-
27.	Residual Sodium Carbonate	mg/l	-	-	5	-
28.	Cyanide (as CN)	mg/l	-	-	0.2	0.2
29.	Fluoride (as F)	mg/l	-	-	2	2
30.	Dissolved Phosphates(as P)	mg/l	-	-	-	5
31.	Sulphide (as S)	mg/l	-	-	2	2
32.	Pesticides	mg/l	-	-		
33.	Phenolic Compounds (as C6H5OH)	mg/l	-	-	5	1
34.	Radioactive materials a) Alpha emitters	micro curie/ml	-	-	10-8	10-7



## TAMILNADU POLLUTION CONTROL BOARD

35.	Radioactive materials b). Beta emitters	micro curie/ml	-	-	10-6	10-6	
36.	Fecal Coliform	MPN/100ml	-	-	-	-	

4. All units of the sewage and Trade effluent treatment plants shall be operated efficiently and continuously so as to achieve the standards prescribed in SI No.3 above or to achieve the zero liquid discharge of effluent as applicable.
5. The occupier shall maintain the Electro Magnetic Flow Meters/water Meters installed at the inlet of the water supply connection for each of the purposes mentioned below for assessing the quantity of water used and ensuring that such meters are easily accessible for inspection and maintenance and for other purposes of the Act.
  - a. Industrial Cooling, Spraying in mine pits or boiler feed.
  - b. Domestic purpose.
  - c. Process.
6. The occupier shall maintain the Electro Magnetic Flow Meters with computer recording arrangement for measuring the quantity of effluent generated and treated for the monitoring purposes of the Act.
7. Log book for each of the unit operations of ETP have to be maintained to reflect the working condition of ETP along with the readings of the Electro Magnetic Flow Meters installed to assess effluent quantity and the same shall be furnished for verification of the Board officials during inspection.
8. The occupier shall at his own cost get the samples of effluent/surface water/ground water collected in and around the unit by Board officials and analyzed by the TNPC Board Laboratory periodically.
9. Any upset condition in any of the plants of the factory which is, likely to result in increased effluent discharge and result in violation of the standards mentioned in SI. No.3 above shall be reported to the Member Secretary / Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
10. The occupier shall always comply and carryout the order/directions issued by the Board in this Consent Order and from time to time without any negligence. The occupier shall be liable for action as per provisions of the Act in case of non compliance of any order/directions issued.
11. The occupier shall develop adequate width of green belt at the rate of 400 numbers of trees per Hectare.
12. The occupier shall provide and maintain rain water harvesting facilities.
13. The occupier shall ensure that there shall not be any discharge of effluent either treated or untreated into storm water drain at any point of time.
14. In the case of zero liquid discharge of effluent units, the occupier shall adhere the following conditions as laid under.
  - i). The occupier shall ensure zero liquid discharge of effluent, thereby no discharge of untreated / treated effluent on land or into any water bodies either inside or outside the premises at any point of time.
  - ii) The occupier shall operate and maintain the Zero liquid discharge treatment components comprising of Primary, Secondary and tertiary treatment systems at all times and ensure that the RO permeate/Evaporator condensate shall be recycled in the process and the final RO reject shall be disposed off with the reject management system ensuring zero liquid discharge of effluents in the premises.
  - iii) The occupier shall operate and maintain the reject management system effectively and recover the salt from the system which shall be reused in the process if reusable or shall be disposed off as ETP sludge.
  - iv) In case of failure to achieve zero discharge of effluents for any reason, the occupier shall stop its production and operations forthwith and shall be reported to the Member Secretary/Joint Chief Environmental Engineer-Monitoring and the concerned District/Assistant Environmental Engineer of the Board by e-mail immediately and subsequently by Post with full details of such upset condition.
  - v) The occupier shall restart the production only after ascertaining that the Zero discharge treatment system can perform effectively for achieving zero discharge of effluents.

**Additional Conditions:**





## TAMILNADU POLLUTION CONTROL BOARD

1. The unit shall operate and maintain the existing STPs efficiently and continuously so as to satisfy the standards prescribed by the Board.
2. The unit shall utilize the treated sewage on its own land for gardening purposes.
3. The unit shall operate and maintain the existing ETP, RO systems, MEE and ATFD for the treatment of trade effluent generated from the unit and the RO permeate shall be utilized for gardening purpose after satisfying the standards prescribed by the Board.
4. The unit shall ensure that operation of the Port activity does not create any impact on the livelihood of the fishermen.
5. The unit shall ensure that the operation of port activity shall not create any adverse effect on the marine eco system or marine water quality of the sea water intake point of M/s. Chennai Water Desalination Plant.
6. The unit shall ensure that the operation activity of the unit shall not create any hindrances to the Kattupalli village under any circumstances.
7. The unit shall comply with the conditions imposed in the environmental clearance accorded to the unit from the MoEF, GOI vide Lr.No. 10-130/2007-IAIII dated 09.02.2018.
8. The unit shall ensure that no oil spill shall occur in the marine coastal areas due to the operation activities.
9. The Port shall ensure that the dredged material arising from dredging operations shall not be dumped in the areas attracting CRZ Notification and the material shall be used for further beneficial use.
10. The Port shall have containment Boom facility with skimmer to contain and recover the spillages of Liquid Cargo in to the sea if any.
11. The unit shall maintain the water quality of Marine Sea so as to meet the Marine Water quality prescribed for Harbour Sea Water and ensure that the marine water quality is monitored at regular intervals by engaging competent agencies.
12. The unit shall furnish carry out impact assessment study once in a year with respect to marine and land environment and the report shall be furnished to Board.
13. The Port shall ensure that adequate oil spill response equipment shall be made available as per the Appendix B of the Tamil Nadu State Oil Spill Disaster Contingency Plan, September 2016.
14. The Port shall ensure participation in the oil spill combating training along with the State Agencies such as Tamil Nadu Maritime Board organised by the Indian Coast Guard time to time.
15. The port shall ensure the formation and regular functioning of dedicated Environment Cell and Oil Spill Contingency Response Cell in order to have timely response to incidents of oil spill and any other contingency in the Port area.
16. In case of revision of consent fee by the Government, the unit shall remit the difference in amount within one month from the date of notification. Failing to remit consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.
17. The unit shall not use 'use and throwaway plastics' such as plastic sheets used for food wrapping, spreading on dining table etc., plastic plates, plastic coated tea cups, plastic tumbler, water pouches and packets, plastic straw, plastic carry bag and plastic flags irrespective of thickness, within the industry premises. Instead unit shall encourage use of eco friendly alternative such as banana leaf, areca nut palm plate, stainless steel, glass, porcelain plates/cups, cloth bag, jute bag etc.
18. The unit shall not undertake any activity in its premises in violation of the CRZ Rules notified by the MoEF & CC, GoI.
19. The unit shall maintain the dedicated reception facilities provided for receiving hazardous waste as per the orders of the Hon'ble NGT (PB) in OA No.804/2017.
20. The unit shall adhere to the International Convention for the prevention of pollution from Ships (MARPOL guidelines) covering the following regulations,
  - (i) Regulations for the prevention of pollution by oil
  - (ii) Regulations for the control of pollution by Noxious liquid substances in bulk
  - (iii) Prevention of pollution by sewage from ships
  - (iv) Prevention of pollution by garbage from ships
  - (v) Prevention of Air pollution from ships
21. The unit shall comply with the conditions imposed in the "No increase in Pollution Load" letter issued to the unit by the Board vide Lr. No: T1/TNPCB/ F.022882/RL/GMP/NIPL/2021 Dated:12.01.2021.
22. In case of any deviation in the Gross Fixed Assets furnished in future, the unit shall remit the difference in amount to the Board without fail.
23. The unit shall not commence its expansion activity before obtaining CTE/CTO expansion from the Board.



**JOSEPHINESAHAYARANI**  
**TAMILNADU POLLUTION CONTROL BOARD**

Digitally signed by JOSEPHINESAHAYARANI  
Date: 2021.09.14 07:48:13 +05'30'

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**





## TAMILNADU POLLUTION CONTROL BOARD

### GENERAL CONDITIONS

1. The occupier shall make an application along with the prescribed consent fee for grant of renewal of consent at least 60 days before the date of expiry of this Consent Order along with all the required particulars ensuring that there is no change in Production quantity and change in sewage/Trade effluent.
2. This Consent is issued by the Board in consideration of the particulars given in the application. Any change or alteration or deviation made in actual practice from the particulars furnished in the application will also be ground for review/variation/revocation of the Consent Order under Section 27 of the Act and to make such variation as deemed fit for the purpose of the Act.
3. The consent conditions imposed in this order shall continue in force until revoked under Section 27(2) of the Act.
4. After the issue of this order, all the 'Consent to Operate' orders issued previously under Water (Prevention and Control of Pollution) Act, 1974 as amended stands defunct.
5. The occupier shall maintain an Inspection Register in the factory so that the inspecting officer shall record the details of the observations and instructions issued to the unit at the time of inspection for adherence.
6. The occupier shall provide and maintain an alternate power supply along with separate energy meter for the Effluent Treatment Plant sufficient to ensure continuous operation of all pollution control equipments to maintain compliance.
7. The occupier shall provide all facilities to the Board officials for inspection and collection of samples in and around the factory at any time.
8. The occupier shall display the flow diagram of the sources of effluent generation and pollution control systems provided at the ETP site.
9. The solid waste such as sweepings, wastage, package, empty containers, residues, sludge including that from air pollution control equipments collected within the premises of the industrial plant shall be collected in an earmarked area and shall be disposed off properly.
10. The occupier shall collect, treat the solid wastes like food waste, green waste generated from the canteen and convert into organic compost.
11. The occupier shall segregate the Hazardous waste from other solid wastes and comply in accordance with Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008.
12. The occupier shall maintain good house-keeping within the factory premises.
13. All pipes, valves, sewers and drains shall be leak proof. Floor washings shall be admitted into the trade effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
14. The occupier shall ensure that there shall not be any diversion or by-pass of trade effluent on land or into any water sources.
15. The occupier shall ensure that solar Evaporation pans shall be constructed in such a way that the bottom of the solar pan is at least 1 m above the Ground level (if applicable).
16. The occupier shall furnish the following returns in the prescribed formats to the concerned District office regularly.
  - a) Monthly water consumption returns of each of the purposes with water meter readings in Form-I on or before 5th of every month.
  - b) Yearly return on Hazardous wastes generated and accumulated for the period from 1st April to 31st March in Form-4 before the end of the subsequent 30th June of every year (if applicable).
  - c) Yearly Environmental Statement for the period from 1st April to 31st March in Form -V before the end of the subsequent 30th September of every year(if applicable).
17. If applicable, the occupier has to comply with the provisions of Public Liability Insurance Act, 1991 to provide immediate relief in the event of any hazard to human beings, other living creatures, plants and properties while handling and storage of hazardous substances.
18. The issuance of this consent does not authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any natural watercourse or in Government Poramboke lands.
19. The issuance of this Consent does not convey any property right in either real personal property or any exclusive privileges, nor does it authorize any injury to private property or Government property or any invasion of personal rights nor any infringement of Central, State laws or regulation.



## **TAMILNADU POLLUTION CONTROL BOARD**

20. The occupier shall forth with keep the Board informed of any accident of unforeseen act or event of any poisonous, noxious or polluting matter or emissions are being discharged into stream or well or air as a result of such discharge, water or air is being polluted.
21. If due to any technological improvements or otherwise the Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any treatment system, either in whole or in part) the Board shall, after giving the applicant an opportunity of being heard, vary all or any of such conditions and thereupon the applicant shall be bound to comply with the conditions as so varied.
22. In case there is any change in the constitution of the management, the occupier of the new management shall file fresh application under Water (Prevention and Control of Pollution) Act, 1974, as amended in Form-II alongwith relevant documents of change of management immediately and get the necessary amendment with renewal of consent order.
23. In case there is any change in the name of the company alone, the occupier shall inform the same with relevant documents immediately and get the necessary amendments for the change of name from the Board.
24. The occupier shall display this consent order granted to him in a prominent place for perusal of the inspecting Officers of this Board.

**JOSEPHINESAHAYARANI**

Digitally signed by JOSEPHINESAHAYA  
Date: 2021.09.14 07:48:57 +05'30'

**For Member Secretary,  
Tamil Nadu Pollution Control Board,  
Chennai**