

Vibhor Srivastava

From: Vibhor Srivastava
Sent: 24 May 2022 12:37
To: Regional Office Bangalore
Cc: monitoring-ec@nic.in; zobangalore.cpcb@nic.in; mail.gspcb@gov.in; goacoastalzone@gmail.com; Environment Cell Mormugao Port Trust; mptgoa@mptgoa.com; Sandeep Jaiswal; Sathish Kumar R; Shabdendu Pathak
Subject: Reg: EC_CRZ Compliance _ AMPTPL- October - 2021 to March - 2022
Attachments: HYC_AMPTPL_Goa_Oct 21_Mar 22_F.pdf

Respected Sir/ Madam,

Please find attached the Half Yearly EC & CRZ Compliance Report for **“Adani Mormugao Port Terminal Pvt. Ltd.”**, Goa for the period **“October-2021 to March-2022”**.

Regards,

Vibhor Srivastava

Assistant Manager – Environment,

Address : Adani Mormugao Port Terminal Pvt. Ltd. Sub Station Building

Near Gate No. 2 of Mormugao Port Trust, Mormugao, Goa, 403803, India

Office: **+91 832 25 79326** | or Mob: **+916359897585** | Email: Vibhor.Srivastava@adani.com



Growth
with
Goodness

Our Values: Courage | Trust | Commitment



Ref: AMPTPL/2022/ 809

Date: 21.05.2022

To

Additional Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (SZ), Kendriya Sadan,
4th Floor, E&F Wings, 17th Main Road,
Koramangala II Block, Bangalore-560034 (Karnataka)
rosz.bng-mefcc@gov.in

Dear Sir,

Sub : Half yearly Compliance report of Environment and CRZ clearance for modernization and operation of Berth – 07 in M/s Mormugao Port for the period of October 2021 to March 2022 – Reg.

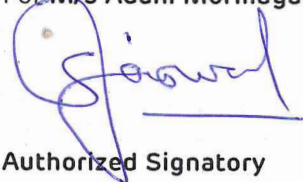
Ref : Environment and CRZ clearance for modernization of Berth No. – 07 for coal handling granted to M/s Mormugao Port Trust vide letter dated 30th December 2013 bearing F. No. 10-39/2009-IA.III.

Adani Mormugao Port Terminal Private Limited is concessionaire of M/s Mormugao Port Trust for Berth No. – 7. Please find enclosed herewith the compliance report to the conditions stipulated in the cited reference for the Half Yearly period **October 2021 to March 2022** in soft copy for your kind reference.

Thanking You

Yours Faithfully,

For **M/s Adani Mormugao Port Terminal Private Limited**



Authorized Signatory

Copy to:

1. **The Director (Monitoring-IA-III Division),** Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh, New Delhi – 110003.
2. **The Zonal Officer,** Central Pollution Control Board, 1st & 2nd Floor, Nisaraga Bhawan, A Block, Thimmaiah Main Road, 7th D Cross, Shivanagar, opposite Pushpanjali theatre, Bengaluru – 560010
3. **The Member Secretary,** Goa State Pollution Control Board, Nr. Pilerne Industrial Estate, Opp. Saligao Seminary, Saligao – Bardez, Goa – 403511
4. **The Member Secretary,** Goa Coastal Zone Management Authority (GCZMA) 1st Floor, Pt. Deendayal Upadhyay Bhavan, Behind Pundalik Devasthan, Parvorim.
5. **The Chairman,** Mormugao Port Trust, Administrative Office, Headland Sada, Mormugao, Goa – 403804.

Adani Mormugao Port Terminal Pvt Ltd.
Sub Station Building,
Near Gate No. 2 of Mormugao Port Trust,
Mormugao, 403 803,
Goa, India

Tel: - +91 832 2579200
Fax: - +91 832 2579299
info@adani.com
www.adani.com

Registered Office: Adani Corporate House, Shantigram, Near Vaishno Devi Circle, S. G.Highway, Khodiyar, Ahmedabad-382421, Gujarat

EC & CRZ Clearance Compliance Report

Environmental Clearance Compliance Report



**Adani Mormugao Port Terminal Private
Limited, Goa**

of


**Adani Ports and Special Economic
Zone Limited**

For the Period of:

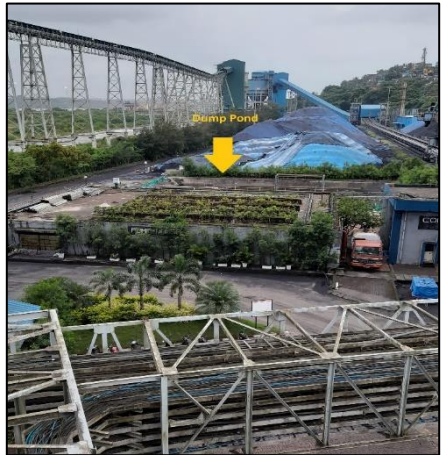

October-2021 to March-2022

Index

| S.No. | Particulars | Page No. |
|-------|--|----------|
| 1 | EC & CRZ Clearance Compliance Report | 2 |
| 2 | Annexures | |
| | Annexure 1: Environmental Monitoring reports for the period Apr'21 to September'21 | 22 |
| | Annexure 2: EMP Compliance report. | 58 |
| | Annexure 3: Environment statement in Form V for FY 20-21 | 68 |
| | Annexure 4: CSR | 73 |

| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |



Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|----------|---|---|
| 6 | Specific Conditions | |
| i | "Consent for Establishment" shall be obtained from Goa Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site. | Complied, Copy of Consent for Establishment (CFE) submitted as annexure no. in six monthly compliance report dated 25 th November, 2014. All construction works completed and terminal is in operation with valid Consent from GSPCB (No.12/2019-PCB/347405/R0002737 dated 24/03/2020 valid up to 31/01/2025) |
| ii | The project proponent shall provide lining for collection of run off from coal stockyard and the leachate shall be treated before disposal. | Complied, Runoff from Coal Stock Yard is being collected in RCC dump pond provided with proper lining. Settled water from dump pond is being reused for dust suppression and settled coal solid particles are sent back to coal stock piles. Dump pond water quality is also monitored. Report of the same is attached as part of Six monthly monitoring report (Annexure 1) <div data-bbox="948 1162 1390 1615" data-label="Image">  </div> <div data-bbox="836 1641 1442 1928" data-label="Image">  </div> |

| | | |
|-----|---|---|
| iii | <p>The project proponent shall provide dry fog and sprinkling systems for effective dust suppression.</p> | <p>Complied</p> <p>For effective dust suppression following measures are provided:</p> <ul style="list-style-type: none"> • 224 Nos. of dry fog dust suppression system have been provided in conveyor system and at all transfer points. • 43 Nos. Automatic Water Sprinklers have been provided at coal stock yard for dust suppression. • 02 Nos. Mist Canon provided (one is mobile canon and other one tyre mounted)    |
|-----|---|---|



| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|---------|--|--|
| | |  |
| iv | Entire transportation of coal shall be in closed conveyor. | <p>Complied. The coal is being transported through covered conveyor from jetty to silo/ stock yard. AMPTPL has provided 2700 meters long covered conveyor system from jetty to silo including 11 closed Transfer Points provided with Dry Fog Dust Suppression (DFDS) nozzles.</p>  |
| v | There shall be no washing of conveyor belt | <p>Complied No washing of Conveyor belt is done.</p> |



| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|---------|---|---|
| vi | <p>The project proponent shall provide wind screen min 15 m height fabric HDPE all along the periphery. The height shall be designed taking into account the wind velocity modelling etc. Also explore creepers in consultation with forest department.</p> | <p>Complied</p> <p>Wind screen of MS structure along with HDPE fabric/ perforated sheet of 15 metres height has been provided along the coal stacking yard facility taking into account the wind velocity. Wind screen has been covered with agronet.</p>  <p>Plantation has also been done all along the wind screens to ensure better wind breaking.</p>  |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|---------|--|---|
| vii | Coal shall be kept under moist conditions using water sprinklers. Transportation shall be in closed conveyors with water spray. | <p>Complied The coal is being stored under the moist condition. Jet Sprinklers are provided for the same. Coal is being transported through covered conveyors with inbuilt dry fog dust suppression system.</p>   |
| viii | All the conditions stipulated by Goa Coastal Zone Management Authority (GCZMA) vide letter No. GCZMA/S/13-14/09/360 dated 07.06.2013, shall be complied with. | Complied. |
| ix | Periodical study on shore line changes shall be conducted and mitigation carried out if necessary. The details shall be submitted along with the six monthly monitoring reports. | This is an old berth within the existing premises of MPT and only modernization activity has been done. |
| x | Oil spills if any shall be properly collected and disposed as per the Rules. Proper Oil Contingency Management Plan shall be put in place. | <p>Complied., AMPTPL is handling dry cargo only such as coal. However, AMPTPL is abiding by the Oil Spill Contingency Management Plan prepared by M/s MPT. (No such incident occurred during the compliance period)</p> |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|----------------|--|---|
| xi | All the conditions stipulated in the earlier Clearances including the recommendations of Environment Management Plan, Disaster Management Plan shall be strictly complied with | Noted and being complied. Compliance of earlier clearance is being submitted by M/s MPT. All recommendations made in the Environment Management Plan as contained in the Environment Impact Assessment of the project are effectively implemented and being followed. EMP Compliance status is attached as Annexure 2. |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |

- xii Cargo shall be unloaded directly into hopper from the ship and transported to the stack yards through closed conveyor system only. Inbuilt dust suppression systems shall be provided at hoppers and all the transfer points / storage yards. Cargo shall not be unloaded directly onto the Berth. Water meters shall be provided at different locations to record the consumption of water used for dust suppression and daily log shall be maintained.

Complied,


Coal is being unloaded directly into hopper from the ship and transported to the stack yards through closed conveyor system. Inbuilt dust suppression system has been provided in hoppers, transfer towers and storage yards to avoid fugitive emissions. Coal cargo is not being unloaded directly onto the berth.

AMPTPL has installed water meters and log sheet is being maintained to record water consumption in dust suppression system.


| Sr. No. | DATE | WATER RECEIVED (KL) | | | | | |
|-------------|-----------|----------------------|--------------------|--------------------|--------------------|-------------------------|---------------------------|
| | | Belt Sump (MPT) | | | | DUMP POND RECYCLED (KL) | TOTAL WATER RECEIVED (KL) |
| | | Initial Reading (KL) | Final Reading (KL) | SETTY Reading (KL) | ADD MPT Rec. water | | |
| | 31-Oct-21 | | | | | | |
| 1 | 1-Nov-21 | 28283 | 28283 | 0 | 0 | 0 | 0 |
| 2 | 2-Nov-21 | 28283 | 28283 | 0 | 0 | 0 | 0 |
| 3 | 3-Nov-21 | 28283 | 28308 | 250 | 0 | 0 | 250 |
| 4 | 4-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 5 | 5-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 6 | 6-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 7 | 7-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 8 | 8-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 9 | 9-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 10 | 10-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 11 | 11-Nov-21 | 28308 | 28308 | 0 | 0 | 0 | 0 |
| 12 | 12-Nov-21 | 28308 | 28340 | 320 | 0 | 0 | 320 |
| 13 | 13-Nov-21 | 28340 | 28340 | 0 | 0 | 0 | 0 |
| 14 | 14-Nov-21 | 28340 | 28340 | 0 | 0 | 0 | 0 |
| 15 | 15-Nov-21 | 28340 | 28340 | 0 | 0 | 0 | 0 |
| 16 | 16-Nov-21 | 28340 | 28379 | 390 | 0 | 0 | 390 |
| 17 | 17-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 18 | 18-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 19 | 19-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 20 | 20-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 21 | 21-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 22 | 22-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 23 | 23-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 24 | 24-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 25 | 25-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 26 | 26-Nov-21 | 28379 | 28379 | 0 | 0 | 0 | 0 |
| 27 | 27-Nov-21 | 28379 | 28408 | 290 | 0 | 0 | 290 |
| 28 | 28-Nov-21 | 28408 | 28408 | 0 | 0 | 0 | 0 |
| 29 | 29-Nov-21 | 28408 | 28408 | 0 | 0 | 0 | 0 |
| 30 | 30-Nov-21 | 28408 | 28408 | 0 | 0 | 0 | 0 |
| Grand Total | | | | 1250 | 0 | 0 | 1250 |



| | | |
|------|---|---|
| xiii | <p>At least 15 m width of green belt along the periphery and 15 m width along the stockyard shall be undertaken including plantation of mangroves in consultation with Forest Department.</p> | <p>Complied/Being Complied</p> <p>Green belt with suitable native species has been developed, along the periphery and coal stock yard. Till date about 29,545 nos. plants have been planted in port premises and survival rate is well maintained (80 trees planted during compliance period). Additionally, AMPTPL has also developed vertical gardens. The plant species includes Conocarpus, Coconut, Palm, etc. There are no mangroves in the vicinity of Berth No. 7.</p>     |
|------|---|---|


| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|---------|--|---|
| iv | The dredge material shall be reused for low level rising wherever possible and excess shall be dumped into sea at the designated dumping areas identified based on mathematical model studies. | Complied, Construction of the project already completed and currently terminal is in operation. There was no dredging during the compliance period. |
| xv | To prevent discharge of sewage and other liquid wastes including ballast into marine environment, adequate system for collection, treatment and disposal of liquid wastes must be provided. | Complied There is no discharge of sewage and other liquid waste into marine environment. The domestic sewage is being collected in septic tanks provided within the premises of AMPTPL and sent to Sewage Treatment Plant of PWD at Baina for further treatment. Ballast water is not being taken by AMPTPL.  |

| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|---------|---|--|
| xvi | Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that the untreated effluents and solid wastes are not discharged into the water or on the beach; and no effluent or solid wastes shall be discharged on the beach. | <p>Complied</p> <p>The domestic sewage is being collected in septic tanks provided within the premises of AMPTPL and sent to Sewage Treatment Plant of PWD at Baina for further treatment. STP inlet & outlet characteristic of water is regularly analyzed by NABL accredited laboratory. The monitoring results for the period October-2021 to March-2022 is enclosed as Annexure 1. Solid waste generated is properly segregated, stored and disposed to local authorities in line to Solid Waste Management Rules 2016 as amended. Food waste is recycled in an OWC and used as manure. No effluent or solid wastes is being discharged into the water or on the beach.</p>  |

| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|---------|--|--|
| xvii | The quality of treated effluents, solid wastes, emissions and noise levels and the like, from project area must conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board under the Environment (Protection) Act 1986 | <p>Complied</p> <p>Regular Environmental Monitoring is carried out, to assess the quality of treated effluents from STP, Ambient Air Quality, Noise level, DG set through NABL accredited and MoEF&CC recognized laboratory. In addition, AMPTPL has also installed CAAQMS at Sada village and the same is connected with servers of GSPCB and data is being transferred at real time basis. Results for all the monitoring parameters are within the prescribed limit. Summary of the monitoring report for the period Oct21-Mar'22 is enclosed as Annexure-1.</p>   |
| xviii | All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO. | <p>Complied</p> <p>All the mitigation measures/EMP submitted in EIA are being followed. EMP Compliance in matrix format is enclosed as Annexure - 2. The same is being submitted as part of Six monthly compliance report to all the concerned authorities</p> |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|---|--|--------|---------------------|-----------------------------|---|---|-------|---|------------------|------|---|------------------------------------|------|---|--|------|---|--------------------------------|------|---|--|------|---|--------------------------------------|------|---|------------------------------|------|---|---|------|---|--------------------|------|--------------|--|--------------|
| xix | The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purpose. | <p>Complied, Separate budget for implementation of Environment Management Plan is in place and it is not diverted for any other purpose. Budget allocated for implementation of EMP for FY 21-22 is 37 Lakhs. A brief summary of environmental expenditure during the compliance period is given below.</p> <table border="1"> <thead> <tr> <th>S. No.</th><th>Description of Work</th><th>Amount lakhs (Rs.) (Approx)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Environment Quality Monitoring (Pollucon)</td><td>14.15</td></tr> <tr> <td>2</td><td>GSPCB Monitoring</td><td>0.63</td></tr> <tr> <td>2</td><td>Tarpaulin and other waste disposal</td><td>2.52</td></tr> <tr> <td>3</td><td>Sponsorships for Pollution awareness program</td><td>0.92</td></tr> <tr> <td>4</td><td>Broad Band for CAAQMS & Camera</td><td>1.44</td></tr> <tr> <td>5</td><td>General Maintenance of air monitoring station (Sada)</td><td>2.02</td></tr> <tr> <td>6</td><td>Green belt Maintenance & Development</td><td>6.84</td></tr> <tr> <td>7</td><td>Electricity charges of AAQMS</td><td>0.56</td></tr> <tr> <td>8</td><td>Zero Waste to Landfill & SUP Certifications</td><td>1.87</td></tr> <tr> <td>9</td><td>ISO Certifications</td><td>1.25</td></tr> <tr> <td colspan="2">Total</td><td>32.19</td></tr> </tbody> </table> | S. No. | Description of Work | Amount lakhs (Rs.) (Approx) | 1 | Environment Quality Monitoring (Pollucon) | 14.15 | 2 | GSPCB Monitoring | 0.63 | 2 | Tarpaulin and other waste disposal | 2.52 | 3 | Sponsorships for Pollution awareness program | 0.92 | 4 | Broad Band for CAAQMS & Camera | 1.44 | 5 | General Maintenance of air monitoring station (Sada) | 2.02 | 6 | Green belt Maintenance & Development | 6.84 | 7 | Electricity charges of AAQMS | 0.56 | 8 | Zero Waste to Landfill & SUP Certifications | 1.87 | 9 | ISO Certifications | 1.25 | Total | | 32.19 |
| S. No. | Description of Work | Amount lakhs (Rs.) (Approx) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Environment Quality Monitoring (Pollucon) | 14.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | GSPCB Monitoring | 0.63 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Tarpaulin and other waste disposal | 2.52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Sponsorships for Pollution awareness program | 0.92 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Broad Band for CAAQMS & Camera | 1.44 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | General Maintenance of air monitoring station (Sada) | 2.02 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Green belt Maintenance & Development | 6.84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Electricity charges of AAQMS | 0.56 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Zero Waste to Landfill & SUP Certifications | 1.87 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | ISO Certifications | 1.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | | 32.19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| xx | The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive | <p>Complied AMPTPL is having well structured Environment Management Cell staffed with qualified manpower and well supported by team at regional office (Chennai) as well as Head Office in Ahmedabad for effective implementation of the stipulated environmental safeguards under the supervision Unit/Business Head AMPTPL.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. General Conditions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i | Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. | <p>Complied, There was no digging activity during the compliance period. Construction activity is completed and project is in operational phase.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|----------------|---|---|
| ii | Full support shall be extended to the officers of this Ministry/Regional Office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities. | Complied. Full support is being extended to the officers of Ministry/Regional Office, as well as officers of Central and State Pollution Control Board during their visit. During compliance period GSPCB officials visited 4 times and 1 time Dr. Murali Krishna, Additional Director (S), Ministry of Environment, Forest & Climate Change, R.O. Bangalore made a visit to port. All the necessary support was extended to them and the same shall be continued in future also. |
| iii | A six-monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions. | Complied Six monthly EC & CRZ clearance Compliance reports of the stipulated conditions are regularly submitted to Regional Office of Ministry at Bengaluru, and other authorities (CPCB, GSPCB, MoEF&CC, GCZMA, MPT etc.). Last Compliance report for the period April 2021 - September 2021 was submitted vide letter no. AMPTPL/2021/729 dated 24.11.2021. |
| iv | Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with. | Noted for Compliance. |
| v | The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry. | Noted. |
| vi | In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests. | Noted. There is no change in project profile or implementation agency. |
| vii | The project proponents shall inform the Regional Office 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. | Complied Financial Closure Date: 14 th May, 2010 Concession agreement date with MPT: 22 nd September, 2009 |

| | | |
|---|---|--|
|  | Adani Mormugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Mormugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance | | | | | | | | | | | | | |
|--------------------|---|--|--------------------|----------------|-------------|-----------|--|---------------|--|---------------|--|---------------|-------------------|----------------------------|---------------|
| viii | A copy of the clearance letter shall be marked to concern Panchayat/local NGO, if any, from whom any suggestion/representation have been made, received while processing the proposal. | Complied Complied by Mormugao Port Trust (MPT). | | | | | | | | | | | | | |
| ix | Goa State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days. | Noted. This condition does not pertain to project proponent. However, it is learnt that Goa State Pollution Control Board has complied with the same. | | | | | | | | | | | | | |
| 8. | These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter. | Noted for Compliance. | | | | | | | | | | | | | |
| 9. | 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. | Complied All applicable clearances from the concerned statutory authorities have been obtained. (This is for kattupalli, to be updated for Goa) <table border="1"> <thead> <tr> <th>Permis sion</th><th>Ref.No.</th><th>Date</th></tr> </thead> <tbody> <tr> <td rowspan="3">GSPCB CTO</td><td>1. No.12/2019-PCB/347405/R00 02737 dt. 24.03.2020,</td><td>1. 24.03.2020</td></tr> <tr> <td>2. Amendment 1 - 12/2019-PCB/347405/HF/T ech/14377 dt. 16.11.2020,</td><td>2. 16.11.2020</td></tr> <tr> <td>3. Amendment 2- 12/2019-PCB/347405/HF/T ech/22761 dt. 31.03.2022</td><td>3. 31.03.2022</td></tr> <tr> <td>NOC Fire & Safety</td><td>DFES/FPNOR/FES930 12021/48</td><td>1. 16.09.2021</td></tr> </tbody> </table> | Permis sion | Ref.No. | Date | GSPCB CTO | 1. No.12/2019-PCB/347405/R00 02737 dt. 24.03.2020, | 1. 24.03.2020 | 2. Amendment 1 - 12/2019-PCB/347405/HF/T ech/14377 dt. 16.11.2020, | 2. 16.11.2020 | 3. Amendment 2- 12/2019-PCB/347405/HF/T ech/22761 dt. 31.03.2022 | 3. 31.03.2022 | NOC Fire & Safety | DFES/FPNOR/FES930 12021/48 | 1. 16.09.2021 |
| Permis sion | Ref.No. | Date | | | | | | | | | | | | | |
| GSPCB CTO | 1. No.12/2019-PCB/347405/R00 02737 dt. 24.03.2020, | 1. 24.03.2020 | | | | | | | | | | | | | |
| | 2. Amendment 1 - 12/2019-PCB/347405/HF/T ech/14377 dt. 16.11.2020, | 2. 16.11.2020 | | | | | | | | | | | | | |
| | 3. Amendment 2- 12/2019-PCB/347405/HF/T ech/22761 dt. 31.03.2022 | 3. 31.03.2022 | | | | | | | | | | | | | |
| NOC Fire & Safety | DFES/FPNOR/FES930 12021/48 | 1. 16.09.2021 | | | | | | | | | | | | | |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance | | | | | | | | | | | | | | | | | | | | | |
|----------------|--|--|-------|-------------------|--------------------|----|------------------|------------|----|------------------|------------|----|------------------|------------|----|------------------|------------|----|------------------|------------|----|------------------|------------|
| 10. | The project proponent shall 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 and CRZ Clearance and copies of clearance letters are available with the Goa State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at http://www.envfor.nic.in . 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 Bangalore. | <p>Complied MPT has given advertisement on 11th January, 2014 in the newspapers mentioned below. 1) Sunaparant 2) Times of India, Goa. Copy of the same has already been submitted to RO-MoEF&CC (Bangalore).</p> <ul style="list-style-type: none"> The details of the past six Half yearly compliance reports are as tabulated below for reference. <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'18 to Mar'19</td><td>27.05.2019</td></tr> <tr> <td>2.</td><td>Apr'19 to Sep'19</td><td>26.11.2019</td></tr> <tr> <td>3.</td><td>Oct'19 to Mar'20</td><td>20.05.2020</td></tr> <tr> <td>4.</td><td>Apr'20 to Sep'20</td><td>28.11.2020</td></tr> <tr> <td>5.</td><td>Oct'20 to Mar'21</td><td>27.05.2021</td></tr> <tr> <td>6.</td><td>Apr'21 to Sep'21</td><td>26.11.2021</td></tr> </tbody> </table> | S.No. | Compliance period | Date of submission | 1. | Oct'18 to Mar'19 | 27.05.2019 | 2. | Apr'19 to Sep'19 | 26.11.2019 | 3. | Oct'19 to Mar'20 | 20.05.2020 | 4. | Apr'20 to Sep'20 | 28.11.2020 | 5. | Oct'20 to Mar'21 | 27.05.2021 | 6. | Apr'21 to Sep'21 | 26.11.2021 |
| S.No. | Compliance period | Date of submission | | | | | | | | | | | | | | | | | | | | | |
| 1. | Oct'18 to Mar'19 | 27.05.2019 | | | | | | | | | | | | | | | | | | | | | |
| 2. | Apr'19 to Sep'19 | 26.11.2019 | | | | | | | | | | | | | | | | | | | | | |
| 3. | Oct'19 to Mar'20 | 20.05.2020 | | | | | | | | | | | | | | | | | | | | | |
| 4. | Apr'20 to Sep'20 | 28.11.2020 | | | | | | | | | | | | | | | | | | | | | |
| 5. | Oct'20 to Mar'21 | 27.05.2021 | | | | | | | | | | | | | | | | | | | | | |
| 6. | Apr'21 to Sep'21 | 26.11.2021 | | | | | | | | | | | | | | | | | | | | | |
| 11. | This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004 as may be applicable to this project. | Noted. | | | | | | | | | | | | | | | | | | | | | |
| 12. | Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website. | <p>Complied Copy of six monthly EC&CRZ compliance report is being regularly uploaded by AMPTPL on company website at https://www.adaniports.com/ports-downloads?port=Murmugao-Terminal</p> | | | | | | | | | | | | | | | | | | | | | |
| 13. | Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010. | Noted. | | | | | | | | | | | | | | | | | | | | | |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa vide F No. 10-39/2009-IA.III dt. 30.12.2013

| Sr. No. | Conditions | Compliance |
|----------------|--|--|
| 14. | A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisaad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by proponent. | Complied The same has been Complied by Mormugao Port Trust. |
| 15. | The proponent shall upload the status of compliance of the stipulated Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. | Complied AMPTPL is regularly uploading the status of compliance of the stipulated clearance condition including results of monitored data in the company website. The same can be viewed at https://www.adaniports.com/ports-downloads?port=Murmugao-Terminal Six monthly compliance report is regularly submitted to Regional office of MoEF&CC at Bangalore, CPCB Zonal office, SPCB and other authorities. Last compliance report for the period April 2021 - September 2021 was submitted vide letter no. AMPTPL/2021/729 dated 24.11.2021. |
| 16. | The environmental statement for each financial year ending 31 st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of Clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail. | Complied Environment Statement in Form V is submitted to Goa State Pollution Control Board as well as MoEF Regional office Bangalore for each financial year. Environment Statement for the year FY 2020-21 has been submitted online on 24.09.2021 vide Application No. 1059985 and has also been uploaded on company website. Copy of the same is enclosed as Annexure-3 . Copy of the same is available on company website at https://www.adaniports.com/ports-downloads?port=Murmugao-Terminal |

| | | |
|---|---|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |

Enclosures:

| Annexure Number | Details of Annexure |
|----------------------------|--|
| Annexure 1: | Environmental Monitoring reports for the period Oct'21 to Mar'22 |
| Annexure 2: | EMP Compliance report. |
| Annexure 3: | Environment statement in Form V for FY 20-21 |

Annexure 1

"ENVIRONMENTAL MONITORING REPORT" FOR



**ADANI MURMUGAO PORT TERMINAL PVT. LTD. (AMPTPL),
GROUND FLOOR, PORT USERS COMPLEX, NEAR STATE BANK OF INDIA,
MORMUGAO HARBOUR, GOA 403802 INDIA – TEL 0832 2594253**

OCTOBER-2021 TO MARCH-2022

PREPARED BY:



M/s POLLUCON LABORATORIES PVT.LTD.

PLOT NO.5/6 "POLLUCON HOUSE",

OPP. BALAJI INDUSTRIAL SOCIETY,

OLD SHANTINATH MILL LANE,

NEAR GAYTRI FARSAN, NAVJIVAN CIRCLE,

UDHANA MAGDALLA ROAD, SURAT-395007

PHONE/FAX – (+91 261) 263 5750, 263 5751.

E-mail: pollucon@gmail.com

Web: www.polluconlab.com



TC-5945



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018

"ENVIRONMENT MONITORING REPORT"

FOR



**ADANI MURMUGAO PORT TERMINAL PVT. LTD. (AMPTPL),
GROUND FLOOR, PORT USERS COMPLEX, NEAR STATE BANK OF INDIA,
MORMUGAO HARBOUR, GOA 403802 INDIA – TEL 0832 2594253**

For and on behalf of Pollucon Laboratories Pvt. Ltd., Surat

Approved by : Dr. Arun Kumar Bajpai

Signed : 

Designation : Lab Manager (Q)



This report has been prepared by Pollucon laboratories Pvt. Ltd. with all reasonable skills, care and diligence, incorporating our General Terms and Conditions of Business and taking account of the resources devoted, flow chart, diagram etc. is provided by the client itself.

CONTENTS

| Sr. No. | Title | Page No. |
|----------------|--|-----------------|
| 1 | AMBIENT AIR QUALITY MONITORING | 4 |
| 2 | SEA WATER & SENDIMENTS MONITORING | 7 |
| 3 | STP WATER MONITORING | 13 |
| 4 | DUMP POND WATER MONITORING | 15 |
| 5 | DRINKING WATER MONITORING | 17 |
| 6 | SOIL QUALITY MONITORING | 20 |
| 7 | NOISE LEVEL MONITORING | 22 |
| 8 | D.G. STACK MONITORING | 29 |
| 9 | WEATHER DATA MONITORING | 31 |

CHAPTER – 1
AMBIENT AIR QUALITY MONITORING
MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of AAQM for Sada Village [OCTOBER-2021 TO MARCH-2022]

| Sr. No. | Date of sampling | Particulate Matter (PM ₁₀) µg/m ³ | Particulate Matter (PM _{2.5}) µg/m ³ | Lead as Pb µg/m ³ | Benzo (a) Pyrene (BaP)-particulate phase only ng/m ³ | Arsenic as As ng/m ³ | Nickel as Ni ng/m ³ | Carbon Monoxide as CO mg/m ³ | Benzene as C ₆ H ₆ µg/m ³ | Ammonia (NH ₃) µg/m ³ | Sulphur Dioxide (SO ₂) µg/m ³ | Oxides of Nitrogen (NO ₂) µg/m ³ | Ozone (O ₃) µg/m ³ |
|---------|------------------|---|--|---------------------------------|--|------------------------------------|-----------------------------------|--|---|---|---|--|--|
| 1 | 04/10/2021 | 66.36 | 34.20 | ND* | ND* | ND* | ND* | 0.25 | ND* | 30.43 | 13.68 | 28.44 | 18.63 |
| 2 | 07/10/2021 | 53.56 | 22.64 | ND* | ND* | ND* | ND* | 0.29 | ND* | 27.68 | 11.37 | 32.36 | 22.34 |
| 3 | 11/10/2021 | 60.24 | 27.65 | ND* | ND* | ND* | ND* | 0.46 | ND* | 21.63 | 16.36 | 24.65 | 26.55 |
| 4 | 14/10/2021 | 83.66 | 42.35 | 0.60 | ND* | 2.22 | 10.41 | 0.71 | ND* | 40.33 | 19.55 | 40.22 | 23.43 |
| 5 | 18/10/2021 | 76.53 | 39.21 | ND* | ND* | ND* | ND* | 0.58 | ND* | 23.48 | 22.35 | 38.61 | 25.54 |
| 6 | 21/10/2021 | 68.46 | 36.29 | ND* | ND* | ND* | ND* | 0.66 | ND* | 25.45 | 18.37 | 31.24 | 15.03 |
| 7 | 25/10/2021 | 86.96 | 45.77 | 0.75 | ND* | 2.26 | 10.53 | 0.44 | ND* | 32.44 | 20.25 | 29.35 | 17.84 |
| 8 | 28/10/2021 | 63.67 | 23.35 | ND* | ND* | ND* | ND* | 0.73 | ND* | 42.62 | 23.71 | 41.86 | 27.49 |
| 9 | 01/11/2021 | 67.57 | 38.66 | ND* | ND* | ND* | ND* | 0.38 | ND* | 16.37 | 14.55 | 26.33 | 11.53 |
| 10 | 04/11/2021 | 59.48 | 32.36 | ND* | ND* | ND* | ND* | 0.30 | ND* | 12.53 | 12.60 | 18.88 | 17.54 |
| 11 | 08/11/2021 | 42.63 | 17.60 | ND* | ND* | ND* | ND* | 0.53 | ND* | 20.36 | 6.58 | 15.65 | 13.72 |
| 12 | 11/11/2021 | 57.53 | 23.44 | ND* | ND* | ND* | ND* | 0.23 | ND* | 15.68 | 9.60 | 17.64 | 21.66 |
| 13 | 15/11/2021 | 66.55 | 26.65 | ND* | ND* | ND* | ND* | 0.47 | ND* | 19.57 | 18.51 | 23.43 | 12.42 |
| 14 | 18/11/2021 | 60.32 | 29.48 | ND* | ND* | ND* | ND* | 0.41 | ND* | 28.94 | 13.45 | 20.33 | 15.61 |
| 15 | 22/11/2021 | 51.52 | 25.36 | ND* | ND* | ND* | ND* | 0.34 | ND* | 14.57 | 8.67 | 14.59 | 18.36 |
| 16 | 25/11/2021 | 46.57 | 22.35 | ND* | ND* | ND* | ND* | 0.18 | ND* | 18.54 | 17.55 | 28.54 | 10.55 |
| 17 | 29/11/2021 | 58.64 | 30.40 | ND* | ND* | ND* | ND* | 0.52 | ND* | 10.34 | 11.66 | 25.69 | 16.22 |
| 18 | 02/12/2021 | 45.36 | 20.35 | ND* | ND* | ND* | ND* | 0.22 | ND* | 23.82 | 13.85 | 18.23 | 12.64 |
| 19 | 06/12/2021 | 50.36 | 24.44 | ND* | ND* | ND* | ND* | 0.40 | ND* | 16.26 | 9.60 | 12.56 | 10.67 |
| 20 | 09/12/2021 | 56.46 | 32.28 | ND* | ND* | ND* | ND* | 0.29 | ND* | 21.23 | 12.48 | 19.57 | 19.45 |
| 21 | 13/12/2021 | 40.36 | 22.56 | ND* | ND* | ND* | ND* | 0.47 | ND* | 13.18 | 7.65 | 22.63 | 14.32 |
| 22 | 16/12/2021 | 51.56 | 29.40 | ND* | ND* | ND* | ND* | 0.53 | ND* | 15.67 | 11.57 | 26.33 | 16.59 |
| 23 | 20/12/2021 | 42.53 | 23.27 | ND* | ND* | ND* | ND* | 0.37 | ND* | 10.26 | 15.67 | 29.55 | 11.57 |
| 24 | 23/12/2021 | 57.58 | 31.57 | ND* | ND* | ND* | ND* | 0.17 | ND* | 19.32 | 18.55 | 23.44 | 13.43 |
| 25 | 27/12/2021 | 35.52 | 15.35 | ND* | ND* | ND* | ND* | 0.24 | ND* | 14.98 | 14.24 | 17.65 | 15.37 |
| 26 | 30/12/2021 | 54.25 | 19.23 | ND* | ND* | ND* | ND* | 0.14 | ND* | 22.24 | 8.30 | 21.52 | 21.26 |
| 27 | 03/01/2022 | 49.55 | 19.48 | ND* | ND* | ND* | ND* | 0.40 | ND* | 14.87 | 16.51 | 21.53 | 16.55 |
| 28 | 06/01/2022 | 55.36 | 25.40 | ND* | ND* | ND* | ND* | 0.60 | ND* | 24.56 | 17.63 | 17.66 | 12.33 |
| 29 | 10/01/2022 | 65.53 | 29.44 | ND* | ND* | ND* | ND* | 0.45 | ND* | 16.52 | 14.21 | 28.43 | 15.74 |
| 30 | 13/01/2022 | 51.54 | 20.64 | ND* | ND* | ND* | ND* | 0.50 | ND* | 10.34 | 10.51 | 24.28 | 18.34 |
| 31 | 17/01/2022 | 46.24 | 18.43 | ND* | ND* | ND* | ND* | 0.27 | ND* | 13.52 | 6.61 | 15.63 | 10.37 |
| 32 | 20/01/2022 | 50.32 | 27.57 | ND* | ND* | ND* | ND* | 0.24 | ND* | 21.48 | 11.49 | 18.48 | 14.53 |
| 33 | 24/01/2022 | 58.45 | 30.36 | ND* | ND* | ND* | ND* | 0.21 | ND* | 17.52 | 9.40 | 22.58 | 11.27 |
| 34 | 27/01/2022 | 66.34 | 24.52 | ND* | ND* | ND* | ND* | 0.32 | ND* | 25.86 | 13.71 | 25.78 | 17.57 |

| | | | | | | | | | | | | | |
|----|------------|-------|-------|-----|-----|-----|-----|------|-----|-------|-------|-------|-------|
| 35 | 31/01/2022 | 42.55 | 21.56 | ND* | ND* | ND* | ND* | 0.37 | ND* | 15.37 | 8.65 | 19.55 | 13.59 |
| 36 | 03/02/2022 | 58.88 | 28.48 | ND* | ND* | ND* | ND* | 0.30 | ND* | 20.32 | 12.65 | 19.56 | 10.21 |
| 37 | 07/02/2022 | 48.53 | 22.44 | ND* | ND* | ND* | ND* | 0.19 | ND* | 15.62 | 15.21 | 24.86 | 16.33 |
| 38 | 10/02/2022 | 52.43 | 30.36 | ND* | ND* | ND* | ND* | 0.13 | ND* | 12.45 | 10.26 | 14.65 | 14.57 |
| 39 | 14/02/2022 | 41.98 | 15.26 | ND* | ND* | ND* | ND* | 0.31 | ND* | 22.44 | 9.54 | 26.54 | 12.67 |
| 40 | 17/02/2022 | 54.33 | 25.48 | ND* | ND* | ND* | ND* | 0.18 | ND* | 19.43 | 16.52 | 20.22 | 17.22 |
| 41 | 21/02/2022 | 49.42 | 19.68 | ND* | ND* | ND* | ND* | 0.15 | ND* | 13.27 | 13.71 | 16.58 | 19.38 |
| 42 | 24/02/2022 | 63.65 | 34.24 | ND* | ND* | ND* | ND* | 0.33 | ND* | 10.57 | 8.58 | 13.42 | 15.62 |
| 43 | 28/02/2022 | 45.48 | 18.68 | ND* | ND* | ND* | ND* | 0.47 | ND* | 16.96 | 17.82 | 23.43 | 13.47 |
| 44 | 03/03/2022 | 54.37 | 23.89 | ND* | ND* | ND* | ND* | 0.27 | ND* | 12.23 | 15.64 | 23.42 | 18.55 |
| 45 | 07/03/2022 | 65.68 | 32.86 | ND* | ND* | ND* | ND* | 0.52 | ND* | 10.55 | 13.52 | 18.26 | 15.39 |
| 46 | 10/03/2022 | 50.97 | 28.46 | ND* | ND* | ND* | ND* | 0.39 | ND* | 13.44 | 7.64 | 21.92 | 10.87 |
| 47 | 14/03/2022 | 45.04 | 21.75 | ND* | ND* | ND* | ND* | 0.23 | ND* | 16.54 | 16.51 | 30.37 | 14.56 |
| 48 | 17/03/2022 | 53.14 | 17.85 | ND* | ND* | ND* | ND* | 0.53 | ND* | 20.14 | 12.67 | 25.69 | 11.28 |
| 49 | 21/03/2022 | 57.54 | 24.85 | ND* | ND* | ND* | ND* | 0.30 | ND* | 14.36 | 8.82 | 14.56 | 13.86 |
| 50 | 24/03/2022 | 64.52 | 27.53 | ND* | ND* | ND* | ND* | 0.49 | ND* | 18.62 | 14.26 | 24.22 | 16.56 |
| 51 | 28/03/2022 | 72.47 | 31.26 | ND* | ND* | ND* | ND* | 0.62 | ND* | 15.36 | 11.20 | 17.58 | 12.66 |
| 52 | 31/03/2022 | 46.56 | 22.84 | ND* | ND* | ND* | ND* | 0.14 | ND* | 22.45 | 9.62 | 27.27 | 17.43 |

ND*: - Not Detected; Detection Limit: Ozone as O₃ (µg/m³): 10

ND*: - Not Detected; Detection Limit - Lead as Pb (µg/m³): 0.5

ND*: - Not Detected; Detection Limit - Carbon Monoxide as CO (mg/m³): 0.01

ND*: - Not Detected; Detection Limit - Ammonia NH₃ (µg/m³): 10

ND*: - Not Detected; Detection Limit - Benzene as C₆H₆ (µg/m³): 2

ND*: - Not Detected; Detection Limit - Benzo (a) Pyrene (BaP) - Particulate Phase only (ng/m³): 0.5

ND*: - Not Detected; Detection Limit - Arsenic as As (ng/m³): 2

ND*: - Not Detected; Detection Limit - Nickel as Ni (ng/m³): 10

CHAPTER – 2

SEA WATER AND SEA SEDIMENTS MONITORING MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of Sea water Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|--|---------------------------------------|---|---|---|--|---|--|
| Sampling Location | | | Near Jetty | | | | | |
| GPS Location | | | 15° 24.748'N, 73° 47.938'E | | | | | |
| Date of sampling | | | 23/10/2021 | | 11/11/2021 | | 16/12/2021 | |
| | | | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 1 | pH | -- | 8.12 | 8.03 | 8.19 | 8.07 | 8.13 | 8.09 |
| 2 | Temperature | °C | 29.9 | 29.8 | 29.6 | 29.5 | 28.9 | 28.7 |
| 3 | Total Suspended Solids | mg/L | 87 | 79 | 81 | 73 | 71 | 65 |
| 4 | BOD (3 Days @ 27 °C) | mg/L | 2.40 | Not Detected | 2.60 | Not Detected | 2.10 | Not Detected |
| 5 | Dissolved Oxygen | mg/L | 6.00 | 5.80 | 5.95 | 5.75 | 5.85 | 5.70 |
| 6 | Salinity | ppt | 31.76 | 32.40 | 33.68 | 34.26 | 34.64 | 35.12 |
| 7 | Oil & Grease | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 8 | Nitrate as NO ₃ | μmol/L | 3.19 | 2.76 | 3.57 | 3.29 | 3.29 | 3.15 |
| 9 | Nitrite as NO ₂ | μmol/L | 0.93 | 0.85 | 0.86 | 0.75 | 0.67 | 0.59 |
| 10 | Ammonical Nitrogen as NH ₃ | μmol/L | 2.34 | 2.27 | 2.61 | 2.53 | 2.73 | 2.56 |
| 11 | Phosphates as PO ₄ | μmol/L | 2.40 | 2.29 | 2.19 | 2.06 | 2.06 | 1.87 |
| 12 | Total Nitrogen | μmol/L | 6.46 | 5.88 | 7.04 | 6.57 | 6.69 | 6.3 |
| 13 | Petroleum Hydrocarbon | μg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 14 | Total Dissolved Solids | mg/L | 33128 | 33764 | 34880 | 35462 | 35768 | 36214 |
| 15 | COD | mg/L | 11.70 | 8.50 | 12.80 | 7.90 | 9.43 | Not Detected |
| 17 | | | | | | | | |
| 17.1 | Primary Productivity | mgC/L/day | 46.80 | | 48.15 | | 48.60 | |
| 18 | | | | | | | | |
| 18.1 | Chlorophyll | mg/m ³ | 2.67 | 2.36 | 2.50 | 2.26 | 2.54 | 2.24 |
| 18.2 | Phaeophytin | mg/m ³ | 0.40 | 0.11 | 0.45 | 0.21 | 0.38 | 0.23 |
| 18.3 | Cell Count | No,x 10 ³ /L | 164 | 114 | 178 | 130 | 184 | 138 |
| 18.4 | Name of Group Number and name of group species of each group | -- | Spirulina sp. Coscinodiscu s sp. Thalassione ma sp. Pleurosigma sp. Rhizosolenia sp. Amphora sp. | Cyclotella sp. Skeletonem a sp. Nitzschia sp. Navicula sp. | Nitzschia sp. Thalassione ma sp. Pleurosigma sp. Biddulphia sp. Cheatocerou s sp. | Coscinodiscu s sp. Rhizosolenia sp. Navicula sp. Ceratiumsp sp. | Thallasiosira sp. Biddulphia sp. Coscinodiscu s sp. Rhizosolenia sp. Navicula sp. | Nitzschia sp. Skeletonem a sp. Synedra sp. Pleurosigm a sp. |
| 19 | | | | | | | | |
| 19.1 | Abundance (Population) | Nox10 ³ /100m ³ | 33 | | 27 | | 32 | |
| 19.2 | Name of Group Number and name of group species of each group | -- | Foraminiferans Fishlarvae Polychaetes Decapods | | Polychaetes Gastropods Decapods Mysids | | Polychaetes Bivalves Isopods Decapods | |

| | | | | | |
|------|-----------------------------------|--------------------------|---------|---------|---------|
| 19.3 | Total Biomass | mL/100 m ³ | 3.10 | 2.60 | 3.15 |
| 20 | Microbiological Parameters | | | | |
| 20.1 | Total Bacterial Count | CFU/mL | 2680 | 2470 | 2510 |
| 20.2 | Total Coliform | /mL | Present | Present | Present |
| 20.3 | E.coli | /mL | Absent | Absent | Absent |
| 20.4 | Enterococcus species | /mL | Present | Present | Present |
| 20.5 | Salmonella species | /mL | Absent | Absent | Absent |
| 20.6 | Shigella species | /mL | Absent | Absent | Absent |
| 20.7 | Vibrio species | /mL | Absent | Absent | Absent |

Results of Sea water Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|--|---------------------------------------|---|---|---|--|---|---|
| Sampling Location | | | Near Jetty | | | | | |
| GPS Location | | | 15° 24.748' N, 73° 47.938' E | | | | | |
| Date of sampling | | | 23/01/2022 | | 17/02/2022 | | 08/03/2022 | |
| | | | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 1 | pH | -- | 7.99 | 7.93 | 8.07 | 8.03 | 8.14 | 8.09 |
| 2 | Temperature | °C | 28.6 | 28.3 | 29.3 | 29 | 30.3 | 30.1 |
| 3 | Total Suspended Solids | mg/L | 68 | 57 | 56 | 47 | 52 | 40 |
| 4 | BOD (3 Days @ 27 °C) | mg/L | 2.96 | 2.10 | 3.60 | 3.00 | 3.54 | 2.96 |
| 5 | Dissolved Oxygen | mg/L | 5.95 | 5.85 | 5.93 | 5.85 | 5.95 | 5.80 |
| 6 | Salinity | ppt | 35.28 | 35.56 | 35.84 | 35.98 | 36.38 | 36.62 |
| 7 | Oil & Grease | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 8 | Nitrate as NO ₃ | μmol/L | 2.98 | 2.9 | 3.69 | 3.52 | 3.92 | 3.81 |
| 9 | Nitrite as NO ₂ | μmol/L | 0.53 | 0.47 | 0.72 | 0.68 | 0.65 | 0.57 |
| 10 | Ammonical Nitrogen as NH ₃ | μmol/L | 2.68 | 2.56 | 1.35 | 1.27 | 2.16 | 2.04 |
| 11 | Phosphates as PO ₄ | μmol/L | 2.47 | 2.39 | 2.56 | 2.40 | 2.37 | 2.31 |
| 12 | Total Nitrogen | μmol/L | 6.19 | 5.93 | 5.76 | 5.47 | 6.73 | 6.42 |
| 13 | Petroleum Hydrocarbon | μg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 14 | Total Dissolved Solids | mg/L | 35910 | 36119 | 36418 | 36984 | 37356 | 37592 |
| 15 | COD | mg/L | 12.64 | Not Detected | 16.93 | 14.20 | 15.78 | 12.30 |
| 17 | | | | | | | | |
| 17.1 | Primary Productivity | mgC/L/day | 45.90 | | 47.70 | | 49.50 | |
| 18 | | | | | | | | |
| 18.1 | Chlorophyll | mg/m ³ | 2.56 | 2.40 | 2.32 | 2.26 | 2.44 | 2.36 |
| 18.2 | Phaeophytin | mg/m ³ | 1.96 | 2.31 | 2.11 | 2.09 | 0.63 | 0.37 |
| 18.3 | Cell Count | No.x 10 ³ /L | 172 | 130 | 162 | 118 | 182 | 126 |
| 18.4 | Name of Group Number and name of group species of each group | -- | Coscinodiscus sp. Nitzschia sp. Thalassionema sp. Pleurosigma sp. Cheatocerous sp. Gyrosigma sp. | Synedra sp. Rhizosolenia sp. Skeletonema sp. Navicula sp. Odontella sp. | Nitzschia sp. Skeletonema sp. Ceratium sp. Cheatocerous sp. Guinardia sp. | Rhizosolenia sp. Odontella sp. Navicula sp. Thalassionema sp. | Coscinodiscus sp. Thalassionema sp. Biddulphia sp. Cheatocerous sp. Synedra sp. | Nitzschia sp. Rhizosolenia sp. Pleurosigma sp. Navicula sp. Odontella sp. |
| 19 | | | | | | | | |
| 19.1 | Abundance (Population) | Nox10 ³ /100m ³ | 25 | | 30 | | 26 | |
| 19.2 | Name of Group Number and name of group | -- | Cyclopodia Gastropods | | Hydrozoa Sagitta | | Sagitta Copepoda | |

| | species of each group | | Decapods Mysis | Polychaetes Ostracods Mysids | Polychaetes Globigerina |
|------|-----------------------------------|--------------------------|-------------------|------------------------------------|----------------------------|
| 19.3 | Total Biomass | mL/100 m ³ | 2.45 | 2.95 | 2.55 |
| 20 | Microbiological Parameters | | | | |
| 20.1 | Total Bacterial Count | CFU/mL | 2420 | 2370 | 2660 |
| 20.2 | Total Coliform | /mL | Present | Present | Present |
| 20.3 | E.coli | /mL | Absent | Absent | Absent |
| 20.4 | Enterococcus species | /mL | Present | Present | Present |
| 20.5 | Salmonella species | /mL | Absent | Absent | Absent |
| 20.6 | Shigella species | /mL | Absent | Absent | Absent |
| 20.7 | Vibrio species | /mL | Absent | Absent | Absent |

Results of Sea Sediment Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|--|-------------------|--|---|--------------------------------------|--|--|--|
| Sampling Location | | | Near Jetty | | | | | |
| GPS Location | | | N 15° 24.748', E 73° 47.938' | | | | | |
| Date of sampling | | | 23/10/2021 | 11/11/2021 | 16/12/2021 | 23/01/2022 | 17/02/2022 | 08/03/2022 |
| 1 | Organic Matter | % | 0.37 | 0.32 | 0.41 | 0.376 | 0.48 | 0.45 |
| 2 | Phosphorus as P | µg/g | 546 | 609 | 638 | 513 | 632 | 579 |
| 3 | Texture | -- | Sandy | Sandy | Sandy | Sandy | Sandy | Sandy |
| 4 | Petroleum Hydrocarbon | µg/g | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 5 | Heavy Metals | | | | | | | |
| 5.1 | Aluminum as Al | % | 4.62 | 4.86 | 4.63 | 4.98 | 4.82 | 4.73 |
| 5.2 | Total Chromium as Cr+3 | µg/g | 124 | 132 | 118 | 139 | 129 | 158 |
| 5.3 | Manganese as Mn | µg/g | 693 | 718 | 614 | 580 | 703 | 669 |
| 5.4 | Iron as Fe | % | 4.82 | 4.92 | 4.76 | 5.16 | 4.92 | 4.87 |
| 5.5 | Nickel as Ni | µg/g | 51.86 | 39.75 | 43.8 | 52.73 | 40.37 | 38.15 |
| 5.6 | Copper as Cu | µg/g | 37.20 | 28.30 | 39.64 | 43.18 | 35.86 | 47.32 |
| 5.7 | Zinc as Zn | µg/g | 119 | 96 | 104 | 116 | 97.32 | 119 |
| 5.8 | Lead as Pb | µg/g | 3.12 | 2.73 | 3.28 | 2.46 | 2.08 | 2.25 |
| 5.9 | Mercury as Hg | µg/g | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 6 | Benthic Organisms | | | | | | | |
| 6.1 | Macrobenthos (No and name of groups present, No and name of species of each group present) | -- | Crustaceans Polychaetes Molluscs | Polychaetes Crustaceans Amphipods | Polychaetes Bivalves Amphipods | Polychaetes Crustaceans Bivalves | Polychaetes Gastropods Crustaceans Bivalves | Polychaetes Gastropods Echinoderms |
| 6.2 | MeioBenthos (No and name of groups present, No and name of species of each group present) | -- | Foraminifera Nematodes | Nematodes | Foraminifera ns | Foraminifera ns Nematodes | Nematodes | Foraminifera ns |
| 6.3 | Population | no/m ² | 439 | 382 | 441 | 471 | 382 | 412 |

CHAPTER – 3

STP WATER MONITORING

MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of STP water quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|------------------------|------|--------------------------------|--------------|--------------|------------|--------------|--------------|
| Sampling Location | | | Baina Sewerage Plant STP Inlet | | | | | |
| Date of sampling | | | 22/10/2021 | 12/11/2021 | 17/12/2021 | 03/01/2022 | 18/02/2022 | 10/03/2022 |
| 1 | pH | -- | 7.91 | 7.58 | 7.35 | -- | 7.5 | 7.69 |
| 2 | Total Suspended Solids | mg/L | 238 | 294 | 248 | -- | 261 | 254 |
| 3 | BOD (3 Days @ 27 °C) | mg/L | 64 | 75 | 69 | -- | 73 | 71 |
| 4 | COD | mg/L | 289 | 340 | 356 | -- | 339 | 325 |
| 5 | Oil & Grease | mg/L | 7.4 | 8.8 | 6.3 | -- | 5.9 | 6.1 |
| 6 | Residual Free Chlorine | mg/L | Not Detected | Not Detected | Not Detected | -- | Not Detected | Not Detected |

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|------------------------|------|---------------------------------|--------------|--------------|--------------|--------------|--------------|
| Sampling Location | | | Baina Sewerage Plant STP Outlet | | | | | |
| Date of sampling | | | 22/10/2021 | 12/11/2021 | 17/12/2021 | 03/01/2022 | 28/02/2022 | 10/03/2022 |
| 1 | pH | -- | 7.82 | 7.75 | 7.62 | 7.73 | 7.59 | 7.56 |
| 2 | Total Suspended Solids | mg/L | 17 | 20 | 25 | 23 | 27 | 23 |
| 3 | BOD (3 Days @ 27 °C) | mg/L | 13 | 12 | 17 | 19 | 15 | 12 |
| 4 | COD | mg/L | 61 | 50 | 75 | 68 | 76 | 65 |
| 5 | Oil & Grease | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected |
| 6 | Residual Free Chlorine | mg/L | 0.7 | 0.8 | 0.6 | 0.8 | 0.7 | 0.8 |

CHAPTER – 4

DUMP POND WATER QUALITY MONITORING MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of Dump Pond Water quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULT | | | | | |
|---------|-------------------------------------|------|------------------------|--------------|-----------------------------|--------------|-------------------------|----|
| | | | Dump Pond-1 Near CT 08 | | Dump Pond-2 Near Pump House | | Dump Pond-3 - Nr. Jetty | |
| | Date of sampling | | 16/12/2021 | 08/03/2022 | 16/12/2021 | 08/03/2022 | 16/12/2021 | -- |
| 1 | pH | -- | 8.13 | 8.04 | 8.26 | 8.17 | 7.82 | -- |
| 2 | Total Dissolved Solids | mg/L | 372 | 356 | 437 | 416 | 473 | -- |
| 3 | Total Suspended Solids | mg/L | 39 | 31 | 51 | 35 | 68 | -- |
| 4 | Turbidity | NTU | 5.7 | 6.2 | 5.6 | 5.9 | 7.8 | -- |
| 5 | BOD (3 Days @ 27 °C) | mg/L | 21 | 25 | 24 | 21 | 32 | -- |
| 6 | Dissolved Oxygen | mg/L | 5.9 | 5.85 | 5.8 | 5.75 | 5.75 | -- |
| 7 | COD | mg/L | 110 | 124 | 124 | 139 | 119 | -- |
| 8 | Salinity | ppt | 0.195 | 0.178 | 0.198 | 0.175 | 0.225 | -- |
| 9 | Oil & Grease | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | -- |
| 10 | Total Hardness as CaCO ₃ | mg/L | 159 | 145 | 12.9 | 123 | 147 | -- |
| 11 | Fluoride as F | mg/L | 0.33 | 0.42 | 0.5 | 0.41 | 0.39 | -- |
| 12 | Chloride as Cl | mg/L | 108 | 99 | 110 | 97 | 125 | -- |
| 13 | Zinc as Zn | mg/L | 0.092 | 0.083 | 0.093 | 0.068 | 0.087 | -- |
| 14 | Cadmium as Cd | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | -- |
| 15 | Lead as Pb | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | -- |
| 16 | Mercury as Hg | mg/L | Not Detected | Not Detected | Not Detected | Not Detected | Not Detected | -- |

CHAPTER – 5

DRINKING WATER QUALITY MONITORING

MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of Drinking Water Quality Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULT | | | |
|-------------------|-------------------------------------|------------------------------|--------------|-----------------------|--------------|--------------|
| Sampling Location | | Sub Station Building Canteen | | Near AMPTPL Exit Gate | | |
| Date of sampling | | 20/12/2021 | 07/03/2022 | 20/12/2021 | 07/03/2022 | |
| 1 | Colour | Hazen | 3 | 4 | 3 | 3 |
| 2 | Turbidity | NTU | 0.37 | 0.35 | 0.42 | 0.46 |
| 3 | Conductivity | µmho/cm | 562 | 521 | 551 | 524 |
| 4 | pH | -- | 7.24 | 7.15 | 7.2 | 7.35 |
| 5 | Chloride as Cl | mg/L | 105 | 83 | 112 | 112 |
| 6 | Total Dissolved Solids | mg/L | 378 | 354 | 369 | 349 |
| 7 | Total Hardness as CaCO ₃ | mg/L | 142 | 129 | 120 | 125 |
| 8 | Iron as Fe | mg/L | 0.18 | 0.11 | 0.098 | 0.068 |
| 9 | Sulphate as SO ₄ | mg/L | 35.6 | 24.86 | 31.72 | 24.78 |
| 10 | Calcium as Ca | mg/L | 39.2 | 32.4 | 26.8 | 31.6 |
| 11 | Magnesium as Mg | mg/L | 10.56 | 11.52 | 12.72 | 11.04 |
| 12 | Fluoride as F | mg/L | 0.28 | 0.36 | 0.25 | 0.23 |
| 13 | Nitrate as NO ₃ | mg/L | 0.41 | 0.57 | 0.43 | 0.59 |
| 14 | Manganese as Mn | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 15 | Copper as Cu | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 16 | Cadmium as Cd | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 17 | Arsenic as As | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 18 | Mercury as Hg | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 19 | Lead as Pb | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 20 | Zinc as Zn | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 21 | Coliform | /100 mL | Absent | Absent | Absent | Absent |
| 22 | E-Coli | /100 mL | Absent | Absent | Absent | Absent |
| 23 | Residual Free Chlorine | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |

Results of Drinking Water Quality Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULT | | | |
|-------------------|-------------------------------------|---------|--------------------|--------------|-----------------------|--------------|
| Sampling Location | | | Near Workshop Area | | Near Amenity Building | |
| Date of sampling | | | 20/12/2021 | 07/03/2022 | 20/12/2021 | 07/03/2022 |
| 1 | Colour | Hazen | 4 | 4 | 3 | 4 |
| 2 | Turbidity | NTU | 0.51 | 0.49 | 0.32 | 0.39 |
| 3 | Conductivity | µmho/cm | 513 | 542 | 540 | 552 |
| 4 | pH | -- | 7.23 | 7.19 | 7.17 | 7.25 |
| 5 | Chloride as Cl | mg/L | 75 | 81 | 82 | 69 |
| 6 | Total Dissolved Solids | mg/L | 339 | 370 | 358 | 368 |
| 7 | Total Hardness as CaCO ₃ | mg/L | 120 | 128 | 134 | 120 |
| 8 | Iron as Fe | mg/L | 0.091 | 0.080 | 0.230 | 0.170 |
| 9 | Sulphate as SO ₄ | mg/L | 28.60 | 24.30 | 24.80 | 20.43 |
| 10 | Calcium as Ca | mg/L | 27.6 | 31.6 | 29.6 | 32.4 |
| 11 | Magnesium as Mg | mg/L | 12.24 | 11.76 | 14.40 | 9.36 |
| 12 | Fluoride as F | mg/L | 0.250 | 0.250 | 0.086 | 0.150 |
| 13 | Nitrate as NO ₃ | mg/L | 0.32 | 0.59 | 0.32 | 0.62 |
| 14 | Manganese as Mn | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 15 | Copper as Cu | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 16 | Cadmium as Cd | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 17 | Arsenic as As | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 18 | Mercury as Hg | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 19 | Lead as Pb | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 20 | Zinc as Zn | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |
| 21 | Coliform | /100 mL | Absent | Absent | Absent | Absent |
| 22 | E-Coli | /100 mL | Absent | Absent | Absent | Absent |
| 23 | Residual Free Chlorine | mg/L | Not Detected | Not Detected | Not Detected | Not Detected |

CHAPTER – 6
SOIL QUALITY MONITORING
MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of Soil quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | |
|-------------------|--------------------------|-----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Sampling Location | | | NEAR CT-1 | | NEAR ADANI SITE | |
| Date of sampling | | | 16/12/2021 | 07/03/2022 | 16/12/2021 | 07/03/2022 |
| 1 | Type | -- | Sandy Loam | Sandy Loam | Sandy Loam | Sandy Loam |
| 2 | Gravel | % | 0.30 | 0.40 | 0.45 | 0.50 |
| 3 | Coarse Sand | % | 4.20 | 3.60 | 4.55 | 3.50 |
| 4 | Medium Sand | % | 3.5 | 25 | 38 | 37 |
| 5 | Fine Sand | % | 53 | 33 | 20 | 18 |
| 6 | Total Sand | % | 61 | 62 | 63 | 59 |
| 7 | Silt & Clay | % | 39 | 38 | 37 | 41 |
| 8 | pH (1:5) | -- | 8.73 | 8.65 | 8.79 | 8.81 |
| 9 | Electricity Conductivity | µmho/cm | 912 | 872 | 903 | 873 |
| 10 | Alkali matter | mg/kg | 340 | 331 | 368 | 412 |
| 11 | Cation Exchange Capacity | meq/100 g | 10.18 | 10.28 | 10.76 | 10.39 |
| 12 | Sodium Absorption Ratio | -- | 8.76 | 8.94 | 9.92 | 9.58 |
| 13 | Organic Matter | mg/kg | 0.39 | 0.35 | 0.35 | 0.31 |
| 14 | Available Nitrogen | meq/100 g | 0.48 | 0.67 | 0.52 | 0.47 |
| 15 | Available Potassium | mg/kg | 5.92 | 8.16 | 4.30 | 5.32 |
| 16 | Available Phosphorus | mg/kg | 6.20 | 5.24 | 0.37 | 0.49 |
| 17 | Available Sodium | % | 4.76 | 3.96 | 4.68 | 6.40 |
| 18 | Permeability | % | 0.65×10^{-6} | 0.62×10^{-6} | 0.55×10^{-6} | 0.58×10^{-6} |

CHAPTER – 7

NOISE LEVEL MONITORING

MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

Results of Day Time Noise level monitoring

| October-2021 | | | | | |
|-----------------------|----------------------|--------------------------|----------------------------|--|---------------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 04/10/2021 | 07/10/2021 | 14/10/2021 | 11/10/2021 |
| 1 | 6:00-7:00 | 47.2 | 48.9 | 46.5 | 47.4 |
| 2 | 7:00-8:00 | 48.7 | 49.1 | 48.2 | 48.8 |
| 3 | 8:00-9:00 | 50.1 | 50.6 | 47.1 | 49.3 |
| 4 | 9:00-10:00 | 54.9 | 52.2 | 49.9 | 50.6 |
| 5 | 10:00-11:00 | 56.5 | 58.9 | 50.7 | 51.9 |
| 6 | 11:00-12:00 | 51.4 | 51.1 | 51 | 52.5 |
| 7 | 12:00-13:00 | 53.8 | 54.7 | 52.4 | 51.2 |
| 8 | 13:00-14:00 | 54.6 | 55.9 | 51.4 | 53.6 |
| 9 | 14:00-15:00 | 55.2 | 59.3 | 50.8 | 52.3 |
| 10 | 15:00-16:00 | 56.9 | 57.7 | 51.6 | 50.4 |
| 11 | 16:00-17:00 | 57.1 | 58.5 | 49.8 | 49.6 |
| 12 | 17:00-18:00 | 54.5 | 54.4 | 50.4 | 51.3 |
| 13 | 18:00-19:00 | 53.0 | 56.8 | 53.1 | 52.4 |
| 14 | 19:00-20:00 | 58.8 | 53.4 | 52.3 | 50.9 |
| 15 | 20:00-21:00 | 57.3 | 50.5 | 53.2 | 51.7 |
| 16 | 21:00-22:00 | 49.1 | 56.3 | 51.2 | 50.3 |
| Day Time Limit | | 75 dB(A)Leq | | | 55 dB(A) Leq |

Results of Night Time Noise level monitoring

| October-2021 | | | | | |
|-------------------------|----------------------|------------------------------------|------------------------------------|--|------------------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 04/10/2021 & 05/10/2021 | 07/10/2021 & 08/10/2021 | 14/10/2021 & 15/10/2021 | 11/10/2021 & 12/10/2021 |
| 1 | 22:00-23:00 | 48.3 | 49.4 | 49.1 | 42.2 |
| 2 | 23:00-00:00 | 50.7 | 51.7 | 47.6 | 40.5 |
| 3 | 00:00-01:00 | 46.8 | 47.9 | 46.3 | 42.3 |
| 4 | 01:00-02:00 | 45.2 | 49.5 | 50.5 | 41.3 |
| 5 | 02:00-03:00 | 48.5 | 45.6 | 44.2 | 42.8 |
| 6 | 03:00-04:00 | 51.1 | 46.2 | 51.8 | 43.4 |
| 7 | 04:00-05:00 | 46.0 | 44.8 | 45.0 | 41.7 |
| 8 | 05:00-06:00 | 49.9 | 43.7 | 49.3 | 40.6 |
| Night Time Limit | | 70 dB(A)Leq | | | 45 dB(A) Leq |

**Limit as per CTO No. is 12/2019-PCB/347405/R0002737 dated 24.03.2020 valid up to 31/01/2025.

Results of Day Time Noise level monitoring

| November-2021 | | | | | |
|----------------|---------------|-------------------|---------------------|-----------------------------------|--------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 19/11/2021 | 16/11/2021 | 06/11/2021 | 25/11/2021 |
| 1 | 6:00-7:00 | 51.3 | 49.2 | 48.2 | 50.2 |
| 2 | 7:00-8:00 | 53.3 | 48.5 | 49.6 | 52.5 |
| 3 | 8:00-9:00 | 52.2 | 50.3 | 50.9 | 51.2 |
| 4 | 9:00-10:00 | 53.7 | 51.9 | 51.1 | 53.9 |
| 5 | 10:00-11:00 | 54.9 | 53.0 | 54.3 | 52.7 |
| 6 | 11:00-12:00 | 56.2 | 53.8 | 58.2 | 54.1 |
| 7 | 12:00-13:00 | 57.6 | 54.8 | 55.1 | 51.7 |
| 8 | 13:00-14:00 | 57.5 | 55.2 | 56.0 | 52.3 |
| 9 | 14:00-15:00 | 58.1 | 57.1 | 57.3 | 50.8 |
| 10 | 15:00-16:00 | 56.3 | 57.0 | 55.5 | 52.4 |
| 11 | 16:00-17:00 | 54.5 | 56.6 | 54.0 | 51.5 |
| 12 | 17:00-18:00 | 55.6 | 58.5 | 51.6 | 53.4 |
| 13 | 18:00-19:00 | 53.1 | 55.3 | 52.1 | 54.2 |
| 14 | 19:00-20:00 | 52.8 | 53.6 | 51.0 | 52.6 |
| 15 | 20:00-21:00 | 51.4 | 50.5 | 49.0 | 51.3 |
| 16 | 21:00-22:00 | 50.1 | 51.8 | 48.1 | 50.0 |
| Day Time Limit | | 75 dB(A)Leq | | | 55 dB(A) Leq |

Results of Night Time Noise level monitoring

| November-2021 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-----------------------------------|-------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 19-11-2021 & 20-11-2021 | 16-11-2021 & 17-11-2021 | 06-11-2021 & 07-11-2021 | 25-11-2021 & 26-11-2021 |
| 1 | 22:00-23:00 | 51.6 | 48.5 | 47.9 | 42.6 |
| 2 | 23:00-00:00 | 48.1 | 49.0 | 51.2 | 43.2 |
| 3 | 00:00-01:00 | 48.3 | 48.0 | 49.6 | 41.3 |
| 4 | 01:00-02:00 | 47.2 | 47.6 | 46.1 | 42.0 |
| 5 | 02:00-03:00 | 50.8 | 46.3 | 47.0 | 41.1 |
| 6 | 03:00-04:00 | 47.1 | 44.3 | 45.1 | 43.3 |
| 7 | 04:00-05:00 | 46.0 | 45.2 | 46.9 | 40.8 |
| 8 | 05:00-06:00 | 45.1 | 48.6 | 45.0 | 41.2 |
| Night Time Limit | | 70 dB(A)Leq | | | 45 dB(A) Leq |

**Limit as per CTO No. is 12/2019-PCB/347405/R0002737 dated 24.03.2020 valid up to 31/01/2025.

Results of Day Time Noise level monitoring

| December-2021 | | | | | |
|----------------|---------------|-------------------|---------------------|-----------------------------------|--------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 02/12/2021 | 07/12/2021 | 13/12/2021 | 22/12/2021 |
| 1 | 6:00-7:00 | 50.3 | 58.3 | 52.4 | 50.6 |
| 2 | 7:00-8:00 | 54.8 | 53.2 | 54.7 | 53.8 |
| 3 | 8:00-9:00 | 55.6 | 46.4 | 47.1 | 48.7 |
| 4 | 9:00-10:00 | 56.9 | 50.9 | 50.8 | 51.3 |
| 5 | 10:00-11:00 | 55.2 | 59.6 | 61.9 | 53.4 |
| 6 | 11:00-12:00 | 58.6 | 56.5 | 48.6 | 49.4 |
| 7 | 12:00-13:00 | 56.3 | 48.0 | 52.7 | 52.0 |
| 8 | 13:00-14:00 | 50.0 | 55.8 | 55.7 | 51.7 |
| 9 | 14:00-15:00 | 55.9 | 58.9 | 56.2 | 47.5 |
| 10 | 15:00-16:00 | 59.9 | 55.1 | 55.4 | 52.1 |
| 11 | 16:00-17:00 | 62.9 | 47.2 | 61.6 | 48.5 |
| 12 | 17:00-18:00 | 54.3 | 51.1 | 49.8 | 53.3 |
| 13 | 18:00-19:00 | 62.8 | 48.8 | 50.4 | 51.6 |
| 14 | 19:00-20:00 | 47.6 | 46.2 | 49.9 | 46.8 |
| 15 | 20:00-21:00 | 51.2 | 50.2 | 60.0 | 51.8 |
| 16 | 21:00-22:00 | 47.4 | 55.3 | 55.5 | 47.3 |
| Day Time Limit | | 75 dB(A)Leq | | | 55 dB(A) Leq |

Results of Night Time Noise level monitoring

| December-2021 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-----------------------------------|-------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 02/12/2021 & 03/12/2021 | 07/12/2021 & 08/12/2021 | 13/12/2021 & 14/12/2021 | 22/12/2021 & 23/12/2021 |
| 1 | 22:00-23:00 | 47.7 | 52.5 | 43.8 | 43.2 |
| 2 | 23:00-00:00 | 48.1 | 48.7 | 47.5 | 41.6 |
| 3 | 00:00-01:00 | 47.0 | 49.7 | 44.7 | 40.8 |
| 4 | 01:00-02:00 | 46.0 | 46.7 | 46.3 | 42.6 |
| 5 | 02:00-03:00 | 47.0 | 48.4 | 43.7 | 40.9 |
| 6 | 03:00-04:00 | 48.1 | 51.5 | 45.1 | 41.8 |
| 7 | 04:00-05:00 | 47.1 | 47.9 | 43.3 | 39.3 |
| 8 | 05:00-06:00 | 46.1 | 50.6 | 46.9 | 42.5 |
| Night Time Limit | | 70 dB(A)Leq | | | 45 dB(A) Leq |

**Limit as per CTO No. is 12/2019-PCB/347405/R0002737 dated 24.03.2020 valid up to 31/01/2025.

Results of Day Time Noise level monitoring

| January-2022 | | | | | |
|----------------|---------------|-------------------|---------------------|-----------------------------------|--------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 25/01/2022 | 11/01/2022 | 05/01/2022 | 17/01/2022 |
| 1 | 6:00-7:00 | 56.2 | 58.4 | 56.5 | 52.4 |
| 2 | 7:00-8:00 | 58.7 | 53.4 | 53.9 | 50.6 |
| 3 | 8:00-9:00 | 55.4 | 60.5 | 56.7 | 53.5 |
| 4 | 9:00-10:00 | 59.1 | 59.6 | 58.5 | 51.7 |
| 5 | 10:00-11:00 | 60.6 | 56.3 | 60.2 | 49.8 |
| 6 | 11:00-12:00 | 56.8 | 60.4 | 63.2 | 52.3 |
| 7 | 12:00-13:00 | 61.4 | 63.8 | 61.9 | 51.8 |
| 8 | 13:00-14:00 | 59.5 | 64.1 | 59.4 | 51.6 |
| 9 | 14:00-15:00 | 60.7 | 62.4 | 57.6 | 48.9 |
| 10 | 15:00-16:00 | 58.2 | 59.8 | 61.3 | 53.2 |
| 11 | 16:00-17:00 | 57.1 | 59.3 | 58.3 | 50.1 |
| 12 | 17:00-18:00 | 56.9 | 61.7 | 56.4 | 51.4 |
| 13 | 18:00-19:00 | 55.2 | 60.3 | 55.8 | 52.5 |
| 14 | 19:00-20:00 | 57.4 | 59.2 | 58.6 | 50.9 |
| 15 | 20:00-21:00 | 58.9 | 55.8 | 53.1 | 51.9 |
| 16 | 21:00-22:00 | 55.6 | 57.2 | 60.8 | 49.7 |
| Day Time Limit | | 75 dB(A)Leq | | | 55 dB(A) Leq |

Results of Night Time Noise level monitoring

| January-2022 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-----------------------------------|-------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 25/01/2022 & 26/01/2022 | 11/01/2022 & 12/01/2022 | 05/01/2022 & 06/01/2022 | 17/01/2022 & 18/01/2022 |
| 1 | 22:00-23:00 | 53.2 | 53.8 | 55.4 | 40.3 |
| 2 | 23:00-00:00 | 50.6 | 56.9 | 50.3 | 41.5 |
| 3 | 00:00-01:00 | 51.9 | 54.1 | 53.7 | 43.8 |
| 4 | 01:00-02:00 | 54.4 | 56.3 | 51.2 | 41.6 |
| 5 | 02:00-03:00 | 55.6 | 52.7 | 54.9 | 42.8 |
| 6 | 03:00-04:00 | 53.1 | 57.6 | 52.4 | 43.1 |
| 7 | 04:00-05:00 | 52.9 | 51.4 | 55.3 | 43.2 |
| 8 | 05:00-06:00 | 50.2 | 53.5 | 51.6 | 42.4 |
| Night Time Limit | | 70 dB(A)Leq | | | 45 dB(A) Leq |

**Limit as per CTO No. is 12/2019-PCB/347405/R0002737 dated 24.03.2020 valid up to 31/01/2025.

Results of Day Time Noise level monitoring

| February-2022 | | | | | |
|----------------|---------------|-------------------|---------------------|-----------------------------------|--------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 11/02/2022 | 08/02/2022 | 03/02/2022 | 05/02/2022 |
| 1 | 6:00-7:00 | 57.9 | 60.0 | 58.2 | 53.8 |
| 2 | 7:00-8:00 | 60.2 | 54.7 | 55.8 | 52.6 |
| 3 | 8:00-9:00 | 57.4 | 62.5 | 58.1 | 54.2 |
| 4 | 9:00-10:00 | 60.8 | 61.4 | 59.9 | 53.6 |
| 5 | 10:00-11:00 | 62.3 | 58.2 | 61.7 | 51.4 |
| 6 | 11:00-12:00 | 58.7 | 62.1 | 65.0 | 53.0 |
| 7 | 12:00-13:00 | 62.9 | 65.3 | 63.5 | 53.7 |
| 8 | 13:00-14:00 | 61.0 | 66.1 | 61.2 | 53.5 |
| 9 | 14:00-15:00 | 62.2 | 64.2 | 59.4 | 50.3 |
| 10 | 15:00-16:00 | 59.9 | 61.3 | 63.1 | 54.3 |
| 11 | 16:00-17:00 | 59.0 | 61.1 | 60.3 | 52.1 |
| 12 | 17:00-18:00 | 58.4 | 63.1 | 58.3 | 52.7 |
| 13 | 18:00-19:00 | 56.9 | 62.0 | 57.7 | 54.4 |
| 14 | 19:00-20:00 | 58.9 | 60.5 | 60.0 | 52.5 |
| 15 | 20:00-21:00 | 60.3 | 57.1 | 54.6 | 53.9 |
| 16 | 21:00-22:00 | 57.3 | 58.7 | 62.6 | 51.5 |
| Day Time Limit | | 75 dB(A)Leq | | | 55 dB(A) Leq |

Results of Night Time Noise level monitoring

| February-2022 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-----------------------------------|-------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 02/02/2022 & 03/02/2022 | 05/02/2022 & 06/02/2022 | 11/02/2022 & 12/02/2022 | 08/02/2022 & 09/02/2022 |
| 1 | 22:00-23:00 | 49.0 | 54.1 | 45.2 | 44.1 |
| 2 | 23:00-00:00 | 50.1 | 50.2 | 49.0 | 42.9 |
| 3 | 00:00-01:00 | 49.0 | 51.6 | 46.5 | 42.1 |
| 4 | 01:00-02:00 | 48.0 | 48.3 | 47.6 | 44.3 |
| 5 | 02:00-03:00 | 48.8 | 50.3 | 45.0 | 42.2 |
| 6 | 03:00-04:00 | 50.1 | 53.1 | 47.0 | 43.5 |
| 7 | 04:00-05:00 | 48.9 | 49.9 | 44.9 | 40.9 |
| 8 | 05:00-06:00 | 48.1 | 52.5 | 48.3 | 44.0 |
| Night Time Limit | | 70 dB(A)Leq | | | 45 dB(A) Leq |

**Limit as per CTO No. is 12/2019-PCB/347405/R0002737 dated 24.03.2020 valid up to 31/01/2025.

Results of Day Time Noise level monitoring

| March-2022 | | | | | |
|----------------|---------------|-------------------|---------------------|-----------------------------------|--------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 11/03/2022 | 22/03/2022 | 14/03/2022 | 02/03/2022 |
| 1 | 6:00-7:00 | 50.6 | 46.1 | 51.7 | 45.9 |
| 2 | 7:00-8:00 | 49.1 | 47.0 | 48.1 | 47.0 |
| 3 | 8:00-9:00 | 55.7 | 48.1 | 50.1 | 48.1 |
| 4 | 9:00-10:00 | 52.0 | 50.0 | 51.3 | 50.7 |
| 5 | 10:00-11:00 | 54.3 | 51.0 | 52.1 | 52.3 |
| 6 | 11:00-12:00 | 53.1 | 52.4 | 54.8 | 54.0 |
| 7 | 12:00-13:00 | 55.1 | 54.0 | 55.4 | 52.2 |
| 8 | 13:00-14:00 | 57.6 | 56.5 | 56.0 | 49.7 |
| 9 | 14:00-15:00 | 57.1 | 56.1 | 57.2 | 51.2 |
| 10 | 15:00-16:00 | 58.1 | 54.0 | 56.8 | 50.5 |
| 11 | 16:00-17:00 | 59.0 | 53.7 | 58.1 | 52.5 |
| 12 | 17:00-18:00 | 57.1 | 54.2 | 57.1 | 53.2 |
| 13 | 18:00-19:00 | 55.1 | 52.9 | 55.6 | 54.1 |
| 14 | 19:00-20:00 | 54.6 | 50.0 | 53.0 | 51.6 |
| 15 | 20:00-21:00 | 53.0 | 54.1 | 51.4 | 50.8 |
| 16 | 21:00-22:00 | 51.8 | 49.3 | 49.1 | 50.1 |
| Day Time Limit | | 75 dB(A)Leq | | | 55 dB(A) Leq |

Results of Night Time Noise level monitoring

| March-2022 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-----------------------------------|-------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Adani Site Office Near Gate No.02 | Sada village |
| | | 11/03/2022 & 12/03/2022 | 22/03/2022 & 23/03/2022 | 14/03/2022 & 15/03/2022 | 02/03/2022 & 03/03/2022 |
| 1 | 22:00-23:00 | 50.0 | 48.9 | 46.8 | 40.6 |
| 2 | 23:00-00:00 | 49.3 | 47.1 | 45.2 | 43.5 |
| 3 | 00:00-01:00 | 47.0 | 46.0 | 51.4 | 40.4 |
| 4 | 01:00-02:00 | 46.5 | 47.5 | 43.1 | 41.1 |
| 5 | 02:00-03:00 | 45.4 | 46.3 | 44.0 | 43.6 |
| 6 | 03:00-04:00 | 46.7 | 52.6 | 45.1 | 42.4 |
| 7 | 04:00-05:00 | 44.6 | 46.2 | 48.3 | 38.6 |
| 8 | 05:00-06:00 | 43.8 | 51.6 | 48.6 | 44.1 |
| Night Time Limit | | 70 dB(A)Leq | | | 45 dB(A) Leq |

**Limit as per CTO No. is 12/2019-PCB/347405/R0002737 dated 24.03.2020 valid up to 31/01/2025.

CHAPTER – 8

D.G. STACK & D.G. STACK NOISE MONITORING

MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

D.G. Stack Monitoring Results

| SR. NO. | TEST PARAMETER | UNIT | DG Stack - 1 (2000 KVA) Make Cummins Sr. No.:25388675 | | LIMIT [#] |
|---------|-----------------------------------|--------------------|--|--------------|--------------------|
| | | | 24/12/2021 | 16/03/2022 | |
| | | | RESULTS | RESULTS | |
| 1 | Particulate Matter | mg/Nm ³ | 25.61 | 27.81 | 75 |
| 2 | Sulfur Dioxide as SO ₂ | Kg/hr | 0.013 | 0.011 | -- |
| 3 | Oxides of Nitrogen as NOX | ppm | 31.42 | 33.44 | 710 |
| 4 | Non Methyl Hydro Carbon (NMHC) | mg/Nm ³ | Not Detected | Not Detected | 100 |
| 5 | Carbon Monoxide (CO) | mg/Nm ³ | 22.51 | 24.54 | 150 |
| 6 | Sulfur Content in fuel | % | 0.020 | 0.022 | < 2.0 |

#: Details Provided by Customer.
Results on 15 % O₂ Correction when Oxygen is greater than 15 %

| SR. NO. | TEST PARAMETER | UNIT | DG Stack - 2 (2000 KVA) Make Cummins Sr. No.: 25390869 | | LIMIT [#] |
|---------|-----------------------------------|--------------------|---|--------------|--------------------|
| | | | 24/12/2021 | 16/03/2022 | |
| | | | RESULTS | RESULTS | |
| 1 | Particulate Matter | mg/Nm ³ | 23.33 | 25.62 | 75 |
| 2 | Sulfur Dioxide as SO ₂ | Kg/hr | 0.011 | 0.009 | -- |
| 3 | Oxides of Nitrogen as NOX | ppm | 28.45 | 30.58 | 710 |
| 4 | Non Methyl Hydro Carbon (NMHC) | mg/Nm ³ | Not Detected | Not Detected | 100 |
| 5 | Carbon Monoxide (CO) | mg/Nm ³ | 18.32 | 21.24 | 150 |
| 6 | Sulfur Content in fuel | % | 0.020 | 0.025 | < 2.0 |

#: Details Provided by Customer.
Results on 15 % O₂ Correction when Oxygen is greater than 15 %

| SR. NO. | TEST PARAMETER | UNIT | DG Stack - 3 (380 KVA) Make Cummins Sr. No.: 25386499 | | LIMIT [#] |
|---------|-----------------------------------|---------|--|--------------|--------------------|
| | | | 24/12/2021 | 16/03/2022 | |
| | | | RESULTS | RESULTS | |
| 1 | Particulate Matter | g/kw-hr | 0.0020 | 0.0025 | 0.3 |
| 2 | Sulfur Dioxide (SO ₂) | Kg/hr | 0.0006 | 0.0006 | 1.8 |
| 3 | Oxides of Nitrogen as NOX | g/kw-hr | 0.0053 | 0.0057 | 9.2 |
| 4 | Hydro Carbon (HC) | g/kw-hr | Not Detected | Not Detected | 1.3 |
| 5 | Carbon Monoxide (CO) | g/kw-hr | 0.0017 | 0.0020 | 3.5 |

#: Details Provided by Customer.
Results on 15 % O₂ Correction when Oxygen is greater than 15 %

D.G. Stack Noise Level Monitoring Results

| SR. NO. | SAMPLING LOCATION | Outside DG Room 1 m distance | |
|---------|---|------------------------------|------------|
| | | 24/12/2021 | 16/03/2022 |
| | | RESULTS | RESULTS |
| 1 | DG Stack - 1 (2000 KVA) Cummins Sr. No.:25388675 | 72.5 | 70.5 |
| 2 | DG Stack - 2 (2000 KVA) Cummins Sr. No.: 25390869 | 71.2 | 72.6 |
| 3 | DG Stack - 3 (380 KVA)Cummins Sr. No.: 25386499 | 71.6 | 69.1 |
| LIMIT** | | 75 dB(A) | |

**as per Noise limit for diesel generator sets (upto 1000 KVA) manufactured on or after the 1st January, 2005

CHAPTER – 9
WEATHER DATA MONITORING
MONITORING PERIOD: OCTOBER-2021 TO MARCH-2022

| Date | Avg Wind Speed (Km/hr) | Temperature (°C) | RH % | Precip. (mm) |
|------------|------------------------|------------------|-------|--------------|
| 01/10/2021 | 3.81 | 29.7 | 79.52 | 6.07 |
| 02/10/2021 | 5.54 | 29.4 | 81.33 | 6.33 |
| 03/10/2021 | 4.81 | 29.3 | 82.31 | 4.55 |
| 04/10/2021 | 4.19 | 28.2 | 75.18 | 2.51 |
| 05/10/2021 | 3.72 | 29.9 | 77.99 | 4.06 |
| 06/10/2021 | 4.13 | 28.0 | 85.39 | 56.91 |
| 07/10/2021 | 6.03 | 28.8 | 82.89 | 17.02 |
| 08/10/2021 | 5.02 | 30.2 | 75.97 | 0.00 |
| 09/10/2021 | 5.29 | 29.9 | 77.88 | 0.00 |
| 10/10/2021 | 4.33 | 30.2 | 77.22 | 0.51 |
| 11/10/2021 | 3.10 | 29.8 | 79.73 | 4.57 |
| 12/10/2021 | 4.66 | 30.2 | 76.06 | 0.00 |
| 13/10/2021 | 6.07 | 29.8 | 78.21 | 0.00 |
| 14/10/2021 | 3.47 | 31.0 | 74.00 | 0.00 |
| 15/10/2021 | 3.16 | 30.3 | 78.88 | 0.76 |
| 16/10/2021 | 2.45 | 30.5 | 77.69 | 0.00 |
| 17/10/2021 | 3.43 | 30.7 | 78.31 | 1.02 |
| 18/10/2021 | 3.24 | 30.6 | 71.26 | 0.00 |
| 19/10/2021 | 5.14 | 29.8 | 73.43 | 0.00 |
| 20/10/2021 | 8.99 | 28.7 | 80.30 | 0.00 |
| 21/10/2021 | 4.85 | 29.0 | 81.60 | 0.00 |
| 22/10/2021 | 5.25 | 29.4 | 79.14 | 0.00 |
| 23/10/2021 | 3.95 | 30.4 | 77.94 | 0.00 |
| 24/10/2021 | 4.36 | 27.9 | 83.44 | 41.40 |
| 25/10/2021 | 6.38 | 28.4 | 79.94 | 0.00 |
| 26/10/2021 | 2.83 | 29.6 | 73.45 | 0.00 |
| 27/10/2021 | 2.51 | 30.1 | 67.80 | 0.00 |
| 28/10/2021 | 3.03 | 29.7 | 64.91 | 0.00 |
| 29/10/2021 | 2.82 | 29.8 | 67.42 | 0.00 |
| 30/10/2021 | 3.56 | 30.4 | 72.48 | 0.00 |
| 31/10/2021 | 2.87 | 30.3 | 75.31 | 0.51 |
| 01/11/2021 | 2.82 | 30.3 | 75.42 | 0.00 |
| 02/11/2021 | 2.91 | 30.2 | 73.51 | 0.00 |
| 03/11/2021 | 3.95 | 29.5 | 75.65 | 0.00 |
| 04/11/2021 | 1.89 | 26.7 | 86.85 | 0.00 |
| 05/11/2021 | 3.73 | 27.6 | 78.57 | 8.63 |
| 06/11/2021 | 4.51 | 29.0 | 74.28 | 0.00 |
| 07/11/2021 | 5.39 | 30.3 | 74.50 | 0.00 |
| 08/11/2021 | 3.07 | 30.6 | 73.79 | 0.00 |
| 09/11/2021 | 2.41 | 29.6 | 66.57 | 0.00 |
| 10/11/2021 | 3.13 | 29.9 | 58.98 | 0.00 |
| 11/11/2021 | 3.16 | 29.0 | 63.22 | 0.00 |
| 12/11/2021 | 2.56 | 29.3 | 63.29 | 0.00 |
| 13/11/2021 | 2.53 | 30.8 | 67.86 | 0.00 |
| 14/11/2021 | 3.11 | 30.1 | 80.87 | 6.10 |
| 15/11/2021 | 3.89 | 29.8 | 83.29 | 0.00 |
| 16/11/2021 | 3.32 | 25.4 | 76.69 | 2.29 |
| 17/11/2021 | 7.02 | 29.2 | 76.36 | 0.00 |
| 18/11/2021 | 3.63 | 22.9 | 57.16 | 0.00 |
| 19/11/2021 | 1.07 | 22.0 | 72.54 | 11.68 |
| 20/11/2021 | 1.44 | 18.8 | 64.75 | 42.92 |

| | | | | |
|------------|------|------|-------|-------|
| 21/11/2021 | 3.53 | 21.2 | 64.45 | 0.51 |
| 22/11/2021 | 2.36 | 25.0 | 78.23 | 0.00 |
| 23/11/2021 | 3.35 | 20.9 | 70.67 | 0.00 |
| 24/11/2021 | 3.49 | 27.8 | 79.67 | 0.00 |
| 25/11/2021 | 2.64 | 27.9 | 71.46 | 0.00 |
| 26/11/2021 | 2.70 | 27.0 | 66.79 | 0.00 |
| 27/11/2021 | 2.43 | 25.9 | 61.21 | 0.00 |
| 28/11/2021 | 2.55 | 25.9 | 63.58 | 0.00 |
| 29/11/2021 | 3.93 | 25.5 | 72.78 | 0.00 |
| 30/11/2021 | 3.71 | 27.4 | 72.25 | 0.00 |
| 01/12/2021 | 7.11 | 24.5 | 84.21 | 5.59 |
| 02/12/2021 | 3.27 | 25.2 | 86.79 | 25.66 |
| 03/12/2021 | 3.67 | 26.3 | 82.75 | 0.00 |
| 04/12/2021 | 2.94 | 26.1 | 83.25 | 0.00 |
| 05/12/2021 | 3.67 | 25.3 | 77.00 | 0.00 |
| 06/12/2021 | 2.80 | 24.7 | 72.92 | 0.00 |
| 07/12/2021 | 2.74 | 24.8 | 71.00 | 0.00 |
| 08/12/2021 | 2.37 | 26.2 | 64.21 | 0.00 |
| 09/12/2021 | 3.22 | 27.3 | 64.29 | 0.00 |
| 10/12/2021 | 2.54 | 27.7 | 65.88 | 0.00 |
| 11/12/2021 | 3.22 | 27.5 | 64.92 | 0.00 |
| 12/12/2021 | 3.11 | 27.4 | 65.96 | 0.00 |
| 13/12/2021 | 3.05 | 27.7 | 62.42 | 0.00 |
| 14/12/2021 | 4.57 | 27.3 | 65.08 | 0.00 |
| 15/12/2021 | 3.58 | 27.3 | 69.17 | 0.00 |
| 16/12/2021 | 3.16 | 26.3 | 67.46 | 0.00 |
| 17/12/2021 | 2.61 | 26.1 | 59.96 | 0.00 |
| 18/12/2021 | 3.38 | 25.5 | 51.83 | 0.00 |
| 19/12/2021 | 2.75 | 25.0 | 47.13 | 0.00 |
| 20/12/2021 | 2.77 | 25.0 | 53.46 | 0.00 |
| 21/12/2021 | 3.09 | 25.3 | 56.83 | 0.00 |
| 22/12/2021 | 2.86 | 24.8 | 60.75 | 0.00 |
| 23/12/2021 | 2.99 | 24.8 | 68.29 | 0.00 |
| 24/12/2021 | 6.08 | 25.5 | 69.54 | 0.00 |
| 25/12/2021 | 7.22 | 24.2 | 71.47 | 0.00 |
| 26/12/2021 | 3.53 | 24.6 | 71.04 | 0.00 |
| 27/12/2021 | 6.09 | 21.2 | 61.76 | 0.00 |
| 28/12/2021 | 3.19 | 25.4 | 72.83 | 0.00 |
| 29/12/2021 | 3.03 | 25.3 | 70.13 | 0.00 |
| 30/12/2021 | 3.60 | 26.1 | 67.38 | 0.00 |
| 31/12/2021 | 4.14 | 27.6 | 59.38 | 0.00 |
| 01/01/2022 | 3.04 | 27.6 | 64.17 | 0.00 |
| 02/01/2022 | 2.90 | 27.7 | 66.75 | 0.00 |
| 03/01/2022 | 3.96 | 26.6 | 62.58 | 0.00 |
| 04/01/2022 | 2.08 | 26.6 | 60.04 | 0.00 |
| 05/01/2022 | 2.72 | 25.6 | 57.21 | 0.00 |
| 06/01/2022 | 3.31 | 25.3 | 64.67 | 0.00 |
| 07/01/2022 | 2.18 | 24.7 | 69.42 | 0.00 |
| 08/01/2022 | 2.50 | 25.0 | 69.33 | 0.00 |
| 09/01/2022 | 3.24 | 24.6 | 69.63 | 0.00 |
| 10/01/2022 | 8.05 | 24.0 | 68.92 | 0.00 |
| 11/01/2022 | 7.75 | 22.5 | 70.25 | 0.00 |
| 12/01/2022 | 2.19 | 22.5 | 67.25 | 0.00 |

| | | | | |
|------------|-------|------|-------|------|
| 13/01/2022 | 1.96 | 22.5 | 69.50 | 0.00 |
| 14/01/2022 | 2.66 | 23.5 | 70.00 | 0.00 |
| 15/01/2022 | 2.11 | 23.7 | 72.75 | 0.00 |
| 16/01/2022 | 2.52 | 25.3 | 68.79 | 0.00 |
| 17/01/2022 | 2.67 | 26.5 | 66.88 | 0.00 |
| 18/01/2022 | 3.16 | 26.5 | 62.54 | 0.00 |
| 19/01/2022 | 1.97 | 25.6 | 62.79 | 0.00 |
| 20/01/2022 | 3.18 | 25.4 | 61.00 | 0.00 |
| 21/01/2022 | 4.25 | 24.6 | 69.21 | 0.00 |
| 22/01/2022 | 2.65 | 24.2 | 76.67 | 0.00 |
| 23/01/2022 | 4.97 | 24.2 | 69.58 | 0.00 |
| 24/01/2022 | 1.93 | 23.0 | 60.92 | 0.00 |
| 03/02/2022 | 3.10 | 24.6 | 70.00 | 0.00 |
| 07/02/2022 | 4.81 | 25.6 | 73.50 | 0.00 |
| 08/02/2022 | 8.74 | 24.4 | 74.83 | 0.00 |
| 09/02/2022 | 11.62 | 24.0 | 69.88 | 0.00 |
| 10/02/2022 | 6.98 | 25.0 | 62.00 | 0.00 |
| 11/02/2022 | 3.73 | 27.0 | 57.92 | 0.00 |
| 12/02/2022 | 3.48 | 26.6 | 53.33 | 0.00 |
| 13/02/2022 | 2.95 | 26.7 | 55.88 | 0.00 |
| 14/02/2022 | 3.44 | 26.3 | 60.21 | 0.00 |
| 15/02/2022 | 4.64 | 24.9 | 62.38 | 0.00 |
| 16/02/2022 | 5.11 | 24.9 | 67.00 | 0.00 |
| 17/02/2022 | 8.41 | 25.7 | 54.75 | 0.00 |
| 18/02/2022 | 5.60 | 25.5 | 56.33 | 0.00 |
| 19/02/2022 | 3.29 | 26.3 | 64.63 | 0.00 |
| 20/02/2022 | 2.06 | 26.3 | 60.50 | 0.00 |
| 21/02/2022 | 2.87 | 25.3 | 63.83 | 0.00 |
| 22/02/2022 | 3.22 | 25.2 | 67.46 | 0.00 |
| 23/02/2022 | 4.36 | 26.5 | 72.13 | 0.00 |
| 24/02/2022 | 2.09 | 27.0 | 74.08 | 0.00 |
| 25/02/2022 | 3.68 | 27.1 | 67.79 | 0.00 |
| 26/02/2022 | 3.46 | 26.6 | 61.00 | 0.00 |
| 27/02/2022 | 2.86 | 26.6 | 57.21 | 0.00 |
| 28/02/2022 | 3.24 | 26.7 | 53.00 | 0.00 |
| 01/03/2022 | 2.96 | 26.9 | 56.38 | 0.00 |
| 02/03/2022 | 3.79 | 26.7 | 65.63 | 0.00 |
| 03/03/2022 | 3.69 | 27.9 | 51.46 | 0.00 |
| 04/03/2022 | 3.53 | 28.3 | 47.54 | 0.00 |
| 05/03/2022 | 3.29 | 28.8 | 47.71 | 0.00 |
| 06/03/2022 | 3.28 | 28.3 | 54.71 | 0.00 |
| 07/03/2022 | 3.41 | 28.3 | 56.96 | 0.00 |
| 08/03/2022 | 4.76 | 28.3 | 67.38 | 0.00 |
| 09/03/2022 | 3.77 | 28.6 | 72.46 | 0.00 |
| 10/03/2022 | 4.12 | 27.8 | 76.25 | 0.00 |
| 11/03/2022 | 3.45 | 28.5 | 77.96 | 0.00 |
| 12/03/2022 | 2.74 | 29.3 | 62.71 | 0.00 |
| 13/03/2022 | 3.00 | 30.4 | 48.75 | 0.00 |
| 14/03/2022 | 5.18 | 29.7 | 59.50 | 0.00 |
| 15/03/2022 | 3.64 | 28.8 | 69.33 | 0.00 |
| 16/03/2022 | 3.72 | 27.8 | 74.21 | 0.00 |
| 17/03/2022 | 4.14 | 28.2 | 77.46 | 0.00 |
| 18/03/2022 | 5.10 | 28.2 | 76.88 | 0.00 |



| | | | | |
|------------|------|------|-------|------|
| 19/03/2022 | 4.59 | 29.1 | 72.71 | 0.00 |
| 20/03/2022 | 3.26 | 28.3 | 70.38 | 0.00 |
| 21/03/2022 | 2.22 | 28.6 | 71.33 | 0.00 |
| 22/03/2022 | 3.65 | 28.3 | 74.21 | 0.00 |
| 23/03/2022 | 4.01 | 28.7 | 74.17 | 0.00 |
| 24/03/2022 | 3.71 | 28.5 | 74.54 | 0.00 |
| 25/03/2022 | 4.00 | 28.9 | 74.42 | 0.00 |
| 26/03/2022 | 3.17 | 29.2 | 75.29 | 0.00 |
| 27/03/2022 | 4.26 | 29.1 | 65.25 | 0.00 |
| 28/03/2022 | 5.70 | 28.7 | 71.54 | 0.00 |
| 29/03/2022 | 2.56 | 28.8 | 77.21 | 0.00 |
| 30/03/2022 | 3.16 | 28.7 | 75.23 | 0.00 |
| 31/03/2022 | 3.30 | 28.4 | 73.33 | 0.00 |

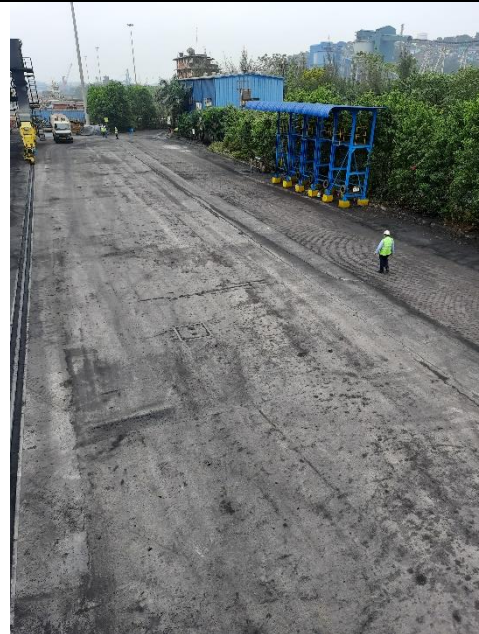
NOTE : Instrument was not in operation during 24th January, 2022 at 02:00 PM to 31st January, 2022 at 11:59 PM, 1st February, 2022 at 00:01 AM to 3rd February, 2022 at 17:59 PM and 3rd February, 2022 at 19:01 to 7th February, 2022 at 14:59 due to maintenance work.

*Some random value of rainfall was received on 27/12/2021 while rectifying the instrument but actual value was zero.

ANNEXURE 2

EMP – COMPLIANCE STATUS

| SI. NO | MEASURES | STATUS |
|--------|---|--|
| 1 | Proposed roads in coal terminal shall be black topped to avoid entertainment of fugitive dust | <p>Complied.</p> <p>Both internal and external roads are paved with Cement Concrete and black top.</p>  <p>In addition, following is practised to control/minimise fugitive dust</p> <ul style="list-style-type: none"> Facility is using road sweeping machines for house-keeping apart from manual labours.  |

Compliance to the conditions stipulated in Environment and CRZ clearance.


- Advanced Suction Type Road Sweeping machine is also deployed
- Regular house-keeping is carried out
- It is ensured that trucks remain covered with tarpaulin and properly fastened during transportation of cargo.



- There's speed restriction for vehicles entering the premises.
- Truck wheel washing arrangement is made inside the port to minimize dust emission.

Compliance to the conditions stipulated in Environment and CRZ clearance.



- PUC Certification for vehicles is ensure.



- Cargo is kept covered with tarpaulin all the time (Except during loading & unloading)









2

The Municipal waste generated at the terminal is to be disposed along with the solid waste being disposed at present by the MPT.




Being complied.

Municipal waste generated is properly segregated, stored and disposed along with Solid Waste to local authorities in line to Solid Waste Management Rules 2016 as amended. Dispatch register is maintained. Food waste is being fed to OWC for composting.



| | | |
|---|--|---|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |
| | |  |
| 3 | Adequate numbers Toilets shall be constructed in terminal office and office area. The sewage shall be treated in septic tank. The treated sewage from septic tank shall be disposed into existing sewage network of MPT. | <p>Complied.</p> <p>Toilet has been constructed at berth, office and workshop area. Sewage from the septic tank is transported by sewage tankers to STP located at PWD Baina. STP inlet & outlet characteristic of water is regularly analyzed by NABL accredited laboratory. The monitoring results for the period Oct 21-Mar 22 is enclosed as Annexure 1</p> |
| 4 | Drinking water facilities and waste disposal facilities shall be located away from each other. | <p>Complied.</p> |
| 5 | The water Effluent from coal stock yard to be settled in a settling tank | <p>Complied.</p> <p>Port has constructed three water dump ponds. Water effluent from coal stock yard is collected & settled in these dump ponds. Baffle walls have been constructed in all 3 dup ponds to enhance sedimentation of Cargo.</p>  |
| 6 | Efficient pollution control technique for dust control to be utilized at open stock piles, conveyor transfer points, dump hopper loading points and other such dust generation locations. | <p>Complied.</p> <p>A. Dry fog dust suppression system has been provided in conveyor and 224 no's of transfer points.</p> |

| | | |
|---|--|---|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |
| | | <p>B. 43 Nos water sprinklers have been provided at coal stock yard for dust suppression.</p> <p>C. 2 Nos of Mist Canon systems are provided. (one is mobile canon and other one tire mounted)</p> <p>D. Covered conveyor belts are being used for transportation.</p>  |
| 7 | The stacker can operate from distance with boom to keep the stack pile surface to a minimum. | Complied. |
| 8 | All the regularly used roadways at site must be swept daily with a tank mounted road sweeper and washed by a truck mounted cart. | Being Complied. <p>Water tanker equipped with mist cannon arrangement is used to spray water on road to ensure the entrapment of fugitive emission. Also, vacuum sweeping machine and Bob cat have been deployed to remove dust from roads.</p>  |
| , 9 | All the transport shall be properly covered at the bottom and top with perfect sealing of plastic/tarpaulin sheets. | Complied. <p>It is ensured that trucks/ rakes remain covered with tarpaulin and properly fastened during transportation of cargo.</p> |



Compliance to the conditions stipulated in Environment and CRZ clearance.

| | | |
|----|---|--|
| | |   |
| 10 | The stock yard should be covered with screens/ wall of height of at least 7 to 8 mtr. | <p>Complied.</p> <p>Wind screen of MS structure along with HDPE fabric/ perforated sheet of 15 metres height has been provided along the coal stacking yard.</p>  |
| 11 | The will be properly covered with tarpaulin and overloading will not allowed to avoid spillage of loose material on the roads. Regular maintenance and washing of wheel to be done. | <p>Being complied.</p> <p>All the loaded trucks are covered with tarpaulin. Truck wheel washing arrangement is made inside the port to minimize dust emission.</p> |
| 12 | Ambient noise level due to vehicular traffic to be controlled by developing green belt. | <p>Complied.</p> <p>Green belt developed along the periphery and coal stock yard. Currently about 29,545 plants</p> |


Compliance to the conditions stipulated in Environment and CRZ clearance.

| | | |
|----|--|--|
| | | <p>are planted in port premises and are maintained well.</p> <p>Besides Ambient Noise levels are being monitored on a regular basis and reports of the same is being submitted to MoEF&CC as part of Six monthly compliance report and to GSPCB on regular basis. Ambient Noise levels for the period Oct'21 – Mar'22 is attached as Annexure 1</p> |
| 13 | Noise level from air compressor to be reduced by fitting exhaust muffler and intake mufflers | <p>Complied.</p> <p>Air compressor is kept in an acoustic enclosure to minimize noise from these machines. Exposures of workers to high noise level are minimized by job rotation and use of ear muff.</p>  |
| 14 | Green belt development. | <p>Complied.</p> <p>Green belt developed along the periphery and coal stock yard. Currently about 29,545 plants are planted in port premises and are maintained well.</p>  |

Compliance to the conditions stipulated in Environment and CRZ clearance.

| | | |
|----|--|---|
| | |  |
| 15 | <p>For controlling fire from coal stock following measures to be adopted.</p> <ol style="list-style-type: none"> 1. 3 No. of mobile fire tender to be placed at coal stack pile area. 2. Autogenous combustion of coal stock to be prevented by limiting stock height not more than 6 M. 3. Lump size of coal to be restricted to 20mm which will not lead to formation of air voids, eliminating the possibility of combustion | <p>Complied.</p> <ol style="list-style-type: none"> 1. Installed fixed fire fighting system (49 fire hydrants & 28 hose reels) at coal stack pile & all CT's  |

Compliance to the conditions stipulated in Environment and CRZ clearance.

| | | |
|----|---|--|
| | |  <p>2. Stack height is being maintained at 11 meters as per the current CTO. Regular sprinkling of water is carried out to control autogenous combustion.</p> <p>3. Being complied.</p> <p>Also there are 14 No. of water monitors (used for high water volume during fire) are provided around coal stock area.</p> |
| 16 | Implementation of Environmental Monitoring Programme. | <p>Being complied.</p> <p>Regular Environmental Monitoring is carried out to assess the quality of treated effluents from STP, Ambient Air quality, Noise level are being monitored through NABL accredited laboratory M/s Pollucon Laboratories Pvt Ltd. regularly and confirming the standards. Also CAAQMS is installed & running successfully. Monitoring reports are being submitted to MoEF&CC as part of Six monthly compliance report and to GSPCB on regular basis. Environment Monitoring Report for the period Oct 21 – Mar'22 is attached as Annexure 1.</p> |



Adani Murmugao Port Terminal Pvt. Ltd.

**From : October 2021
To : March 2022**

Compliance to the conditions stipulated in Environment and CRZ clearance.





GOA STATE POLLUTION CONTROL BOARD

FORM V

(See Rule 14)

Environmental Statement for the financial year ending on 31st March on or before 30th of September every year.

PART A

- (i) Name and address of the owner/ occupier of the industry operation or process : ADANI MURMUGAO PORT TERMINAL PVT. LTD
- (ii) Industry category Primary-(STC Code) : RED, Ports and harbour, jetties and dredging operations
Secondary-(STC Code)
- (iii) Production capacity : Mili Liter

| Production Name | Production Capacity | Production Unit |
|------------------|---------------------|---------------------|
| Handling of Coal | 5.2 | Million Tonnes/Year |

- (iv) Year of establishment : 2013
- (v) Date of the last environment statement submitted : 21/09/2020

PART B

1. Water consumption m³/ d

Process :

Cooling :

Domestic :

| Name of products | Process water consumption per unit of product output | |
|------------------|--|-----------------------------------|
| | During the previous financial year | During the current financial year |
| Handling of Coal | 0.027 m ³ /MT | 0.013 m ³ /MT |

2. Raw material consumption

| Name of raw materials | Name of products | Consumption of raw material per unit | |
|-----------------------|------------------|--------------------------------------|-----------------------------------|
| | | During the previous financial year | During the current financial year |
| NIL | NIL | NIL | NIL |

*Industry may use codes if disclosing details of raw materials would violate contractual obligations, otherwise all industries have to name the raw material used.

PART C

Pollution discharged to environment/ unit of output.

| Pollution | Quantity of pollutants discharged(mass/day) | Concentration of pollutants in discharges(mass/volume) | Percentage of variation from prescribed standards with reasons |
|------------------|--|--|---|
| Water | | | |
| Water | No pollutant discharged to environment | - | - |
| Air | | | |
| Air | DG sets are provided as standby power source and were used during power failure. The height of DG stacks are as per CPCB/GSPCB standards. All the monitored parameters are within standards. | | |
| Air | | | |
| Air | DG STACK 1 (2000 KVA) - June 2020 | PM - 16.75 mg/Nm ³ , NO _x - 30.76 ppm, CO - 16.59 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.018% | - |
| Air | DG STACK 1 (2000 KVA) - Sep 2020 | PM - 26.52 mg/Nm ³ , NO _x - 36.35 ppm, CO - 18.63 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.020% | - |
| Air | DG STACK 1 (2000 KVA) - Dec 2020 | PM - 23.41 mg/Nm ³ , NO _x - 30.4 ppm, CO - 20.14 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.020% | - |
| Air | DG STACK 1 (2000 KVA) - Mar 2021 | PM - 27.52 mg/Nm ³ , NO _x - 34.5 ppm, CO - 19.29 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.018% | - |
| Air | DG STACK 2 (2000 KVA) - June 2020 | PM - 15.41 mg/Nm ³ , NO _x - 28.54 ppm, CO - 13.26 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.010% | - |
| Air | DG STACK 2 (2000 KVA) - Sep 2020 | PM - 20.83 mg/Nm ³ , NO _x - 32.85 ppm, CO - 17.18 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.016% | - |

| | | | |
|-----|----------------------------------|--|---|
| Air | DG STACK 2 (2000 KVA) - Dec 2020 | PM - 18.76 mg/Nm ³ , NO _x - 13.54 ppm, CO - 22.51 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.016% | - |
| Air | DG STACK 2 (2000 KVA) - Mar 2021 | PM - 21.44 mg/Nm ³ , NO _x - 30.45 ppm, CO - 23.29 mg/Nm ³ , NMHC - BDL, Sulfur in fuel - 0.016% | - |
| Air | DG STACK 3 (380 KVA) - June 2020 | PM - 0.0016 g/kw-hr, NO _x - 0.0058 g/kw-hr, CO - 0.0013 g/kw-hr, HC - BDL, SO ₂ Kg/hr - 0.0007 | - |
| Air | DG STACK 3 (380 KVA) - Sep 2020 | PM - 0.0019 g/kw-hr, NO _x - 0.0059 g/kw-hr, CO - 0.0014 g/kw-hr, HC - BDL, SO ₂ Kg/hr - 0.0009 | - |
| Air | DG STACK 3 (380 KVA) - Dec 2020 | PM - 0.016 g/kw-hr, NO _x - 0.0053 g/kw-hr, CO - 0.0019 g/kw-hr, HC - BDL, SO ₂ Kg/hr - 0.0007 | - |
| Air | DG STACK 3 (380 KVA) - Mar 2021 | PM - 0.0019 g/kw-hr, NO _x - 0.0061 g/kw-hr, CO - 0.0020 g/kw-hr, HC - BDL, SO ₂ Kg/hr - 0.0008 | - |

Name of Pollutants : .

PART D Hazardous Wastes

(as specified under Hazardous Wastes (Management and Handling) Rules, 1989)

| Hazardous Wastes | Total Quantity (Kg) | |
|---------------------------------------|--|---|
| | During the previous financial year | During the current financial year |
| (a) From process | A). Cat. 5.1 Used Oil – 1.62 MT B). Cat. 5.2 Cotton Waste contaminated with Oil - 0.226 MT | A). Cat. 5.1 Used Oil – 2.95 MT B). Cat. 5.2 Cotton Waste contaminated with Oil – 1.08 MT |
| (b) From pollution control facilities | Nil | Nil |

PART E Solid Wastes

| | Total Quantity | |
|--|------------------------------------|-----------------------------------|
| | During the previous financial year | During the current financial year |
| (a) From process | Nil | Nil |
| (b) From pollution control facility | Nil | Nil |
| (c)(1) Quantity recycled or re-utilised within the unit | Nil | 0.379 MT |

| | | |
|--------------|-----|----------|
| (2) Sold | Nil | Nil |
| (3) Disposed | Nil | 1.203 MT |

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 •Hazardous waste includes used oil (Cat 5.1) and cotton waste contaminated with oil (Cat 5.2). Used oil and the oil soaked cotton waste generated during various maintenance activities are collected in barrels kept in earmarked covered hazardous waste storage area as per the provisions of Hazardous Waste Management Rules, 2016 as amended & disposed of through GSPCB authorized / registered recycler.

- The used batteries and E -waste also stored in workshop storage area and disposed through approved vendor in line to E-waste Management Rules, 2016 as amended..
- Hazardous waste return in Form 4 was submitted in line with the Hazardous and Other Wastes (Management & Trans boundary Movement) Rules, 2016.
- E-waste return in Form 3 was submitted in line with the E-waste Management Rules 2016
- Solid Waste includes mainly domestic waste (office & kitchen waste) which is disposed through Mormugao Municipal Council and also fed in Organic Waste Composter (In FY 20-21 - 1.203 MT of food waste was disposed to MMC and 0.379 MT was fed into OWC).

PART G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production All the domestic waste water generated at site is treated at existing sewage treatment plant located at PWD Baina. Unit has developed adequate green belt within port premises. .

PART H

Additional measures/ investment proposal for environmental protection abatement of pollution, prevention of pollution •Unit is undertaking Regular Environmental Monitoring at port & surrounding area through MoEF&CC recognized laboratory. All the monitored environmental parameters are found well within the standards prescribed & the details of monitored data is regularly submitted to GSPCB, CPCB, MoEF&CC and other concerned authorities.

- Unit has also installed Continuous Ambient Air Quality Monitoring System (CAAQMS) for the parameters SO₂, NO_x, PM₁₀ & PM_{2.5} and the monitored real time data is connected with GSPCB server.
- Coal Stacks are kept covered with tarpaulin at all time, except during loading & unloading operations and adequate water Sprinkling is carried out regularly during loading and unloading operations.
- Unit has also provided dump pond and conveyance channel for collection of runoff generated from the coal yard.
- Unit has provided Sprinklers at coal yard & conveyor system and carrying out regular water sprinkling to control the fugitive dust. Wind screen covered with agronet/ jute cloth is provided around the periphery of coal yard.
- Unit has installed 2 cameras in coal stack yard and its online connectivity has been provided to GSPCB.
- As a precautionary measure an anemometer has been installed along with a hooter on Substation building and three different alert levels have been configured in PLC based on the Wind speed as follows:
 - For 25km/h to 27.99km/h - Hooter blows for 5 Seconds followed by a 1 Second Stop and the same repeats.
 - For 28km/h to 29.99km/h - The Hooter blows for 2 Seconds followed by a 1 second stop and the same repeats.
 - For Above 30km/h - The Hooter continuously blows without any stop.

Unit has taken continuous steps for developing green belt area within port premises. Vertical garden has also

been developed as part of Environment Initiatives.

.

PART I

Any other particulars for improving the quality of the environment •Integrated housekeeping management is undertaken at top priority to maintain neat and clean working environment in the plant area.

•Integrated Management System (ISO 9001:2015, 14001:2015, 45001:2018 and ISO 50001:2018) certified Port.

•Port has been certified as “Single Use Plastic Free Port” by CII Delhi.


•AMPTPL is 5S Certified Port by National Productivity Council (NPC).

•Baffle walls have been constructed in Dump ponds to increase sedimentation of Cargo.

•Working towards achieving “Zero Waste Inventory” as per our Group Environment Policy and all wastes are being handled in line with 5R Principle.

.

Remarks : .

| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |


CSR Activities

AMPTPL Has been contributing towards the society. During reporting period, AMPTPL was involved in below mentioned activities:

1. **Supply of Interactive Panels to a local school:** AMPTPL supplied two interactive, touch screen panels to a local school at a cost of 3.30 Lakhs. The Benq Interactive panels shall enable students to access informative and educational material on an online and interactive platform.



2. **Contribution towards sustainable development initiative:** AMPTPL has made a contribution of Rs. 1.5 Lakh towards a Goa Government notified plantation scheme. Wherein, approx. 40 plants shall be planted in the nearby Chicalim village. Villagers shall maintain the plantations and also bear the fruit for at least 25 years. Such plantation will remove 35.4 tCO₂e of Carbon in 25 years as shown in below table.

| | | |
|---|--|--|
|  | Adani Murmugao Port Terminal Pvt. Ltd. | From : October 2021 To : March 2022 |
| Compliance to the conditions stipulated in Environment and CRZ clearance. | | |

| Carbon Sequestretion Coconut trees (25 years) | | | | |
|--|-------------------------------------|--------------|--------------|------------------------------------|
| Age of Tree | Carbon Sequestretion (Kg/Year/Tree) | No. Of Trees | No. of years | Total carbon sequestered (Kg/Year) |
| 0-5 | 19 | 40 | 5 | 3800 |
| 5-10 | 28 | 40 | 5 | 5600 |
| 10-15 | 30 | 40 | 5 | 6000 |
| 15-20 | 44 | 40 | 5 | 8800 |
| 20-25 | 56 | 40 | 5 | 11200 |
| Total sequestration in 25 years (KgCO₂/Year) | | | | 35400 |
| Total sequestration in 25 years (tCO₂/Year) | | | | 35.4 |

Ref: *International Journal of Environment and Climate Change* 10(12): 618-624, 2020; Article no.IJECC.66105 - *Assessing the Carbon Sequestration Potential of Coconut Plantation in Vellore District of Tamil Nadu, India*