O/C

adani

Ports and
Logistics

APSEZL/EnvCell/2019-20/44

Date: 26.11.2019

To
Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (WZ), E-5, Kendriya
Paryavaran Bhawan, Arera Colony,
Link Road No. – 3, Bhopal – 462 016.
E-mail: rowz.bpl-mef@nic.in

Sub : Half yearly Compliance report of Environment and CRZ Clearance for "Handling facility of General Cargo / LPG /Chemicals and their storage terminal at Navinal Island, Mundra taluka of Kutch district, Gujarat"

Ref : Environment and CRZ clearance granted to M/s Adani Ports & SEZ Limited vide letter dated 25th August, 1995 bearing no. J-16011/13/95-IA.III

Dear Sir,

Please refer to the above cited reference for the said subject matter. In connection to the same, it is to state that copy of the compliance report for the Environmental and CRZ Clearance for the period of April – 2019 to September – 2019 has been submitted through mail communication dated 26.11.2019 and acknowledge of the same with CD (Soft Copy of Compliance Report) is attached here for your records.

Thank you,
Yours Faithfully,
For, **M/s Adani Ports and Special Economic Zone Limited**

Recieved
26/11/19

Avinash Rai
Chief Executive Officer
Mundra & Tuna Port

कार्यालय/OFFICE
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forests & Climate Change,
क्षेत्रीय कार्यालय (पश्चिम क्षेत्र)/Regional Office(Western Zone)
भोपाल (म.प्र.)/BHOPAL-462016

Encl: As above
Copy to:

1) The Director (IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003
2) Zonal Officer, Regional Office, CPCB – Western Region, Parivesh Bhawan, Opp. VMC Ward Office No. 10, Subhanpura, Vadodara – 390 023
3) Member Secretary, GPCB – Head Office, Paryavaran Bhavan, Sector 10 A, Gandhi Nagar – 382 010
4) Deputy Secretary, Forests & Environment Department, Block – 14, 8th floor, Sachivalaya, Gandhi Nagar – 382 010
5) Regional Officer, Regional Office GPCB (Kutch-East), Gandhidham, 370201

Adani Ports and Special Economic Zone Ltd
Adani House,
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Mundra, Kutch 370 421
Gujarat, India

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Fax +91 2838 25 5110
info@adani.com
www.adani.com

Environmental Clearance Compliance Report

Multi-Purpose Jetty and Storage Facilities at Navinal Island, Mundra, Dist. Kutch, Gujarat

of

Adani Ports and Special Economic Zone Limited

For the Period of:

April-2019 to September-2019

Index

EC Compliance Report

Half yearly Compliance report of Environment and CRZ Clearance for "Handling facility of General Cargo / LPG /Chemicals and their storage terminal at Navinal Island, Mundra taluka of Kutch district, Gujarat" issued vide letter no. J-16011/13/95-IA.III dated 25th Aug., 1995.

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td>2(i)</td><td>All construction designs / drawings relating to various project activities should have the approval of the concerned State Government departments / Agencies.</td><td>Complied.

All construction and operation activities are being carried out in line with the CRZ recommendation and permissions granted.

All construction and operation activities are being carried out in line with the CRZ recommendation and permissions granted.</td></tr>
<tr><td>2(ii)</td><td>To prevent discharge of bilge wastes, sewage and other liquid wastes from the oil tankers / ships into marine environment, adequate system for collection, treatment and disposal of liquid wastes including shore line installation and special hose connections for ships to allow for discharge of sewage must be provided.</td><td>Complied.

Ships berthing at Mundra Port comply with MARPOL regulations.

No discharge such as bilge wastes, sewage or any other liquid wastewater is allowed into marine environment inside port limits.

APSEZL does not receive sewage/liquid waste from ship.

As a general practice APSEZ provide facility for receiving slop oil from vessels through hose connection with oil tankers. These tankers divert slop oil to Oil water separator system where water and oil particles are separated. Separated oil is being sold to authorized recycler /re-processor. However, no slope oil was received during the compliance period.</td></tr>
<tr><td>2(iii)</td><td>The quality of treated effluents, solid wastes, emissions and noise levels etc. must confirm to the standards laid down by the competent authorities including the central and State Pollution Control Boards under the Environment (Protection) act, 1986 whichever are more</td><td>Complied.

ETP is provided to treat the wastewater/wash water. Also the sewage generated from port is being treated in designated ETP. Treated water is used for horticultural purposes. Quality of treated water confirm to the standard laid down by Gujarat Pollution Control Board.
<table>
<tr><th>Location</th><th>Capacity</th><th>Quantity of Wastewater (Avg. from Apr'19 to Sep'19)</th><th>Type of ETP / STP</th></tr>
<tr><td>LT</td><td>265 KLD</td><td>82 KLD</td><td>Activated Sludge</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>stringent.</td><td>Third party analysis of the treated water is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Pollucon Laboratory Pvt. Ltd. Summary of the same for duration from Apr'19 to Sep'19 is mentioned below.

<table>
<tr><th>Parameter</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit$</th></tr>
<tr><td colspan="5">Industrial Effluent / Sewage</td></tr>
<tr><td>pH</td><td>--</td><td>7.9</td><td>6.76</td><td>6.5 to 8.5</td></tr>
<tr><td>TSS</td><td>mg/L</td><td>84</td><td>42</td><td>100</td></tr>
<tr><td>TDS</td><td>mg/L</td><td>2096</td><td>1903</td><td>2100</td></tr>
<tr><td>COD</td><td>mg/L</td><td>98</td><td>78</td><td>100</td></tr>
<tr><td>BOD (3 Days @ 27°C)</td><td>mg/L</td><td>30</td><td>18</td><td>30</td></tr>
</table>
$ as per CC&A granted by GPCB

The quality of marine water, treated effluents, air emissions and noise levels are being regularly analyzed by NABL accredited and MoEF&CC approved agency. Please refer Annexure – 1 for detailed analysis reports and accreditation certificate. Approx. INR 11.23 Lakh is spent for all environmental monitoring activities during the FY 2019-20 (Till Sep'19).

<u>Waste Management</u> – APSEZ has adopted 5R concept for environmentally sound management of different types of solid & liquid wastes. Please refer below details about management of each type of waste.

<u>Municipal Solid Waste</u>: A well-established system for segregation of dry & wet waste is in place. All wet waste (Organic waste) is being segregated & utilized for compost manufacturing and/or biogas generation for cooking purpose. The compost is further used by in house horticulture team for greenbelt development. Whereas dry recyclable waste is being sorted in various categories. Presently manual sorting is being done for sorting of different types of solid waste. Segregated recyclable materials such as Paper, Plastic, Cardboard, PET Bottles, Glass etc. are then sent to respective recycling units, whereas remaining non-recyclable waste is bailed and sent to cement plant (M/s. Sanghi Industries Ltd., Kutch and/or M/s. Ambuja Cement Ltd., Kodinar) for Co-processing as RDF (Refused Derived Fuel).</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>
<u>Hazardous Waste</u>:

E – Waste & Used Batteries are being sold to GPCB registered recyclers namely M/s. e-Processing House.
Solid Hazardous Waste is being disposed through co-processing through common facility i.e. M/s. Saurshtra Enviro Projects Pvt. Ltd., Bhachau and/or cement industries of Sanghi Industries Ltd., Kutch and/or Ambuja Cement Ltd., Kodinar. Used/Waste Oil is being sold to GPCB authorized recyclers / re-processors namely M/s. Western India Petrochem Industry, Bhavnagar.
Downgrade chemicals generated from cleaning of storage tanks / pipelines are being sold to authorized solvent recovery facilities namely M/s. Acquire Chemicals, Ankleshwar however during the compliance period, there was no disposal of downgrade chemicals.
Slop Oil received from vessels is treated to separate water and oil particles in Oil Water Separator system. Separated oil from the same is being sold to authorized recycler / reprocessor namely M/s. Western India Petrochem Industry, Bhavnagar and water is sent to ETP for further treatment. However during the compliance period, there was no disposal of Slope Oil.

Details of permissions / agreements of hazardous waste authorized vendors were submitted along with half yearly EC Compliance Report for the period Apr'18 to Sep'18.

The following table summarizes the waste management practice (for Apr'19 to Sep'19) for different types of wastes at APSEZ:
<table>
<tr><th>Type of Waste</th><th>Quantity in MT</th><th>Disposal method</th></tr>
<tr><td colspan="3">Hazardous Waste</td></tr>
<tr><td>Pig Waste</td><td>6.88</td><td rowspan="4">Co-processing at cement industries</td></tr>
<tr><td>Tank Bottom Sludge</td><td>46.26</td></tr>
<tr><td>Oily Cotton waste</td><td>62.11</td></tr>
<tr><td>ETP Sludge</td><td>4.41</td></tr>
<tr><td>Used / Spent Oil</td><td>35.41</td><td rowspan="3">Sell to registered recycler</td></tr>
<tr><td>Discarded Containers</td><td>3.57</td></tr>
<tr><td>E-Waste</td><td>2.07</td></tr>
<tr><td>Bio Medical Waste</td><td>1.38</td><td>To approved CBWTF Site</td></tr>
<tr><td colspan="3">Municipal Solid Waste</td></tr>
<tr><td>Recyclables</td><td>67.82</td><td>After recovery sent for recycling</td></tr>
<tr><td>Refuse Derived Fuel</td><td>174.72</td><td>Co-processing at Cement Industries</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Wet Waste (Food waste + Organic waste)</td><td>441.59</td><td>Converted to Manure for Horticulture use / Biogas for cooking purpose</td></tr>
</table>

<u>Ambient Air Quality</u> (twice in a week) and <u>Noise</u> (once in a month) monitoring are being carried out by NABL accredited and MoEF&CC approved agency namely M/s. Pollucon Laboratories Pvt. Ltd. Quality of Ambient Air and Noise level confirm to the standard laid down by Gujarat Pollution Control Board. Summary of the same for duration from Apr'19 to Sep'19 is mentioned below.

Total Ambient Air & Noise Sampling Locations: 4 Nos.
<table>
<tr><th>Parameter</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit[$]</th></tr>
<tr><td>PM_{10}</td><td>$\mu g/m^3$</td><td>98.3</td><td>44.03</td><td>100</td></tr>
<tr><td>$PM_{2.5}$</td><td>$\mu g/m^3$</td><td>56.36</td><td>16.54</td><td>60</td></tr>
<tr><td>SO_2</td><td>$\mu g/m^3$</td><td>26.5</td><td>5.69</td><td>80</td></tr>
<tr><td>NO_2</td><td>$\mu g/m^3$</td><td>45.36</td><td>14.59</td><td>80</td></tr>
<tr><th>Noise</th><th>Unit</th><th>Max</th><th>Min</th><th>Perm. Limit</th></tr>
<tr><td>Day Time</td><td>dB(A)</td><td>74.2</td><td>47.7</td><td>75</td></tr>
<tr><td>Night Time</td><td>dB(A)</td><td>69.8</td><td>46.6</td><td>70</td></tr>
</table>
[$] as per NAAQ standards, 2009
Values recorded confirms to the stipulated standards.
</td></tr>
<tr><td>2(iv)</td><td>Adequate provision for infrastructure facilities such as water supply, roads, sanitation etc. should be ensured so as to avoid environmental degradation in the surrounding areas. These facilities should be brought into existence during the construction phase and will remain in existence thereafter as part of the infrastructure build up in the area for local developmental purposes.</td><td>Complied.

Construction activity is already completed. Adequate infrastructure facility was provided to labours during construction phase and those are in existence.

The facility for drinking water, toilet and rest shelter are provided for the dignity of operation labours. Photographs of the same were submitted along with the compliance report submission for the period Oct'16 to Mar'17.</td></tr>
<tr><td>2(v)</td><td>Adequate noise control measures should be</td><td>Complied.
Construction phase is completed.</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>ensured in various project activities and due to increase in the traffic which is likely to take place during construction and operational phases.</td><td>For operation phase, following noise control measures are taken:
All DG sets are installed with acoustic enclosure.
Green Belt has been developed at road sides.
Traffic control measures such as signage, speed regulation, traffic guides etc. are in place to reduce the unnecessary honking by cargo vehicles.</td></tr>
<tr><td>2(vi)</td><td>The water quality parameters such as dissolved oxygen, ammonical nitrogen and other nutrients etc. should be measured at regular intervals to ensure adherence to the prescribed standards of water qualities. Suitable ground water monitoring should also be undertaken around the sludge lagoons and regular reports to be submitted to the Ministry for evaluation.</td><td>Complied.

ETP is provided for treatment of wastewater. Treated water is used for horticulture purpose. The watery sludge is transferred to sludge drying bed, where the excess wastewater is recirculated to ETP.

Third party analysis of the treated water is being carried out twice in a month by NABL accredited and MoEF&CC approved agency namely M/s. Pollucon Laboratories Pvt. Ltd. Summary of the same for duration of Apr'19 to Sep'19 is mentioned in compliance condition no. 2(iii) above.

<u>Marine Monitoring:</u>
Marine monitoring is being carried out once in a month by NABL accredited and MoEF&CC approved agency namely M/s. Pollucon Laboratory Pvt. Ltd. Summary of the same for duration from Apr'19 to Sep'19 is mentioned below. Monitoring Reports are attached as Annexure – 1 for the same.

Total Sampling Locations: 09 Nos.
<table>
<tr><th rowspan="2">Parameter</th><th rowspan="2">Unit</th><th colspan="2">Surface</th><th colspan="2">Bottom</th></tr>
<tr><th>Max</th><th>Min</th><th>Max</th><th>Min</th></tr>
<tr><td>pH</td><td>--</td><td>8.3</td><td>8.02</td><td>8.21</td><td>7.97</td></tr>
<tr><td>TSS</td><td>mg/L</td><td>416</td><td>183</td><td>432</td><td>210</td></tr>
<tr><td>BOD (3 Days @ 27 °C)</td><td>mg/L</td><td>6.2</td><td>2.8</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>DO</td><td>mg/L</td><td>6.6</td><td>5.6</td><td>6.2</td><td>5.3</td></tr>
<tr><td>Salinity</td><td>ppt</td><td>37.2</td><td>34.1</td><td>37.7</td><td>34.4</td></tr>
<tr><td>TDS</td><td>mg/L</td><td>38598</td><td>35040</td><td>38914</td><td>35206</td></tr>
</table>
*BDL = Below Detectable Limit

<u>Ground Water Monitoring:</u>
There are no sludge lagoons however, to monitor the ground water quality, bore wells are provided at various location in the port and SEZ areas. Third party analysis of the ground water is being carried out twice a year by NABL accredited and MoEF&CC approved agency namely M/s. Pollucon</td></tr>
</table>

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td></td><td>Laboratories Pvt. Ltd. Summary of the same for duration of Apr'19 to Sep'19 is mentioned below.

Sampling Locations: 5 Nos.
<table>
<tr><th>Parameter</th><th>Unit</th><th>Minimum</th><th>Maximum</th></tr>
<tr><td>pH</td><td>-</td><td>7.7</td><td>8.1</td></tr>
<tr><td>Salinity</td><td>ppt</td><td>4.6</td><td>19.4</td></tr>
<tr><td>Oil & Grease</td><td>mg/L</td><td>2</td><td>3.1</td></tr>
<tr><td>Hydrocarbon</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>Lead as Pb</td><td>mg/L</td><td>0.044</td><td>0.075</td></tr>
<tr><td>Arsenic as As</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>Nickel as Ni</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>Total Chromium as Cr</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>Cadmium as Cd</td><td>mg/L</td><td>0.011</td><td>0.036</td></tr>
<tr><td>Mercury as Hg</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>Zinc as Zn</td><td>mg/L</td><td>0.092</td><td>3.8</td></tr>
<tr><td>Copper as Cu</td><td>mg/L</td><td>BDL*</td><td>BDL*</td></tr>
<tr><td>Iron as Fe</td><td>mg/L</td><td>0.35</td><td>7.2</td></tr>
<tr><td>Insecticides/Pesticides</td><td>--</td><td>Absent</td><td>Absent</td></tr>
<tr><td>Depth of Water Level from GL</td><td>meter</td><td>1.0</td><td>1.25</td></tr>
</table>
*BDL = Below Detectable Limit

Please refer Annexure – 1 for detailed analysis reports. Approx. INR 11.23 Lakh is spent for all environmental monitoring activities during the FY 2019-20 (Till Sep'19).</td></tr>
<tr><td>2(vii)</td><td>Adequate culverts should be provided for smaller creeks so that breeding grounds for crabs, mud snappers and other marine organisms are not cut off by road construction activities.</td><td>Complied.

Adequate culverts are provided on prominent creek system named as (1) Kotdi (2) Baradimata (3) Navinal (4) Bocha (5) Mundra (Oldest port (Juna Bandar) leading to Bhukhi river)

All above creeks are in existence allowing free flow of water and there is no filling or reclamation of any creek area. APSEZL has so far constructed 19 culverts having total length of approx. 1100 m with total cost of INR 20 Crores. Apart from that three RCC Bridges have been constructed over Kotdi creek with total length of 230 m and cost of INR 10 Crores. Photographs of the same were submitted as part of compliance report submission for the duration of Apr'17 to Sep'17.</td></tr>
<tr><td>2(viii)</td><td>A hundred meter wide mangrove belt should be created all along the west of Navinal Creek till its junction up to new road.</td><td>Complied.

24 hectare of Mangrove afforestation was carried out with a cost of INR 25.00 Lac at west of Navinal creek. All</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
	Green belt of 50 M width should also be provided all along the periphery of the plant site and along the roads, storage tanks etc. at 1500 trees per hectare. All details regarding the Mangrove belt and other afforestation work must be worked out in consultation with the State Forest Department, and details sent to the Ministry.	Mangrove plantations were done in consultation with Dr. Maity, Mangrove consultant of India. Green belt was developed 81.37 ha. Total 165912 trees were planted with the density of 2039 trees per hectare within the port area. To enhance the marine biodiversity, till date APSEZ has carried out mangrove afforestation in more than 2850 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 832 lakh. So, far APSEZ has developed more than 467 ha. area as greenbelt with plantation of more than 8.7 Lacs saplings within the APSEZ area. Details on mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as **Annexure – 2**.
2(ix)	Arrangements should be made for ensuring fresh water availability for various project related activities. Special water harvesting programs should be undertaken in the project impact area. Details of these activities should be reported to the Ministry.	Complied. During the project phase, GWIL was the source of water to ensure fresh water availability. Present source of water for various project activities is desalination plant of APSEZ and/or Narmada water through Gujarat Water Infrastructure Limited. Average water consumption for entire APSEZ area is 4.6 MLD during compliance period i.e. Apr'19 to Sep'19. Groundwater recharge cannot be done at the project site since the entire project is in the intertidal / sub tidal areas. Rain water within project area is managed through storm water drainage. We have installed Rain water recharge bore well (4 Nos.) within our township to recharge ground water. Details of the same is attached as **Annexure – 3**. Due to the same approx. 5.6 ML of rain water has been harvested during last monsoon. We have also connected roof top rain water duct of operational building (Tug berth building within MPT) with u/g water tank for utilization of collected rain water for gardening / horticulture purpose. Details of the same were submitted along with last EC Compliance report for the period Oct'18 to Mar'19.

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		However, APSEZ has carried out rainwater harvesting activities in the nearby villages for benefit of the locals. Following measures are taken for the same during the year 2011 – 13 and the same have benefited to the local farmers. 1. Pond deepening activities at villages 2. 18 check dams were constructed under the 'Sardar Patel Sahbhagi Jalsanchay Yojna' Total cost of these efforts was approx. INR 320 lakh. Under Sujlam Suflam project Adani Foundation has successfully completed pond deepening work in Mundra & Abdasa Taluka in record time. 26 pond deepening in Mundra and 7 pond deepening in Abdasa accomplished with all parameters calculated. In Mundra taluka 51723 cum excavation work has been done which increase storage capacity of 51 ML. In Naliya taluka 14550 cum excavation work has been done which increase storage capacity of 15 ML. Total 66 ML storage capacity will be increased. **Participatory Ground Water Management:** Adani foundation has started participatory ground water management project. The objective of the project was to reduce the salinity ingress in and around the coastal regions of Mundra, Kutchh and mitigate the ill-effects of this manmade problem to improve the livelihoods of the rural people. The Project will help to get water table high, also it will help in agricultural activities. As a part of pre monsoon activities with ACT (Arid Communities and Technologies – NGO) under this program, we have carried out following work. But, due to negligible rainfall we are not able to find out outcome of this project. i. Borana – Artificial bore well recharge (work completed) ii. Mangara – Artificial bore well recharge (work completed) iii. Dhrub – Pond deepening work (work completed) iv. Mota Kapaya – abended bore well recharge (work completed) With the objective of to preserve the rain water to reduce the impact of salinity and recharge the ground water (the main source of water) to facilitate the Agricultural activities as well as for drinking water.

Sr. No.	Conditions	Compliance Status as on 30-09-2019
		Under UTHHAN MODEL VILLAGE PROJECT, Salinity ingress issue is well taken with pond deepening, recharge bore well technique and roof top rain water harvesting. Total ground water recharged due to this project 1878 ML. Please refer **Annexure – 4** for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2019-20 is to the tune of INR 2043 lakh. Out of which, Approx. INR 745 lakh are spent during this compliance period Apr'19 to Sep'19.
2(x)	While filling the storage tanks, compatibility of the chemicals should be ensured for chemical safety. Since 5000 MT capacity is proposed to be created for cryogenic conditions, necessary HAZOP study should be initiated and submitted to the Ministry within three months. Calculations carried out on the basis of EFFECT MODEL for this storage should be rechecked for various accident scenarios. Keeping in view the safety aspects, Horton spheres of 1250 MT capacity each should be preferred.	Complied. Risk assessment study was carried out by M/s. Comet Consultancy Services in January 1995 as a part of EIA for storage of various chemicals in tanks for chemical safety and the same was submitted to MoEF&CC while processing EC application. Risk assessment study was carried out by iFluids Engineering for handling and storage of LPG in three parts as mentioned below. 1. QRA for LPG Jetty Area 2. QRA for LPG Pipeline 3. QRA for LPG Tank farm A copy of the same was submitted as part of compliance report for the duration of Apr'17 to Sep'17. Recommendations of the risk assessment have been implemented as part of the construction activity and details of the same were submitted along with last half yearly compliance report for the period Oct'18 to Mar'19.
2(xi)	The measures suggested by the Gujarat State Pollution Control Board in February, 1995 while according "No Objection Certificate" should be strictly followed and authorization certificate required for converting NOC into "consent to operate" should be submitted within three	Complied. Consent to operate (CC&A) has been renewed from GPCB vide consent no. AWH-88317 valid till 20th November, 2021. The same was submitted along with compliance submission for the period of Oct'16 to Mar'17. Consent to Establish (CtE) and Consent to Operate (CtO) are obtained from GPCB and renewed/amended from time to time as per the progress of the project activity. The present in-force CTE & CtO are mentioned below.

Permission	Project	Ref. No. / Order No.	Valid till

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>months.</td><td>
<table>
<tr><td>CtO – Renewal</td><td>Mundra Port Terminal</td><td>AWH-83561</td><td>20.11.2021</td></tr>
<tr><td>CtO - Amendment</td><td>Mundra Port Terminal</td><td>WH-88317</td><td>20.11.2021</td></tr>
<tr><td>CtO - Amendment</td><td>Mundra Port Terminal</td><td>GPCB/CCA-Kutch - 39(5)/ ID-17739/473575</td><td>20.11.2021</td></tr>
<tr><td>CtO - Amendment</td><td>Mundra Port Terminal</td><td>H-98086</td><td>20.11.2021</td></tr>
</table>

The updated permissions were submitted along with last half yearly compliance report for the period Oct'18 to Mar'19 and there is no further change.</td></tr>
<tr><td>2(xii)</td><td>For ensuring the acceptance of the project by the local people, a Resolution of the Official Panchayat of the Region should be obtained offering their concurrence in writing by the project proponents and submitted to the Ministry by 31st October, 1995.</td><td>Complied.

Resolution from the Panchayat has been obtained and submitted to the Ministry of Environment, Forest & Climate Change on 31st July, 2012.</td></tr>
<tr><td>2(xiii)</td><td>A permanent staff structure should be created with latest R&D facilities and suitable equipments for environmental and forestry activities through creation of Environmental cell. Adequate funds should be earmarked for this cell.</td><td>Complied.

APSEZL has a well structured Environment Cell, staffed with permanent qualified manpower for implementation of the Environmental Management Plan. Environment cell organogram is attached as Annexure – 5.

Budget for environmental management measures (including horticulture) for the FY 2019-20 is to the tune of INR 1042 lakh. Out of which, Approx. INR 727 lakh are spent during this compliance period i.e. Apr'19 to Sep'19. Detailed breakup of the expenditures for the past 3 years is attached as Annexure – 6.</td></tr>
<tr><td>2(xiv)</td><td>Landsat imagery should be obtained on a continuous basis covering various seasons to study the change in the land use pattern due to the project and project related activities.</td><td>Complied.

Project is in operation phase since many years and there is no change in the land use pattern during the period from Oct'17 to Mar'18.</td></tr>
</table>

Sr. No.	Conditions	Compliance Status as on 30-09-2019
2(xv)	With a view to providing adequate job opportunities to local people, facilities for technical training and development of skills should be made available in consultation with the state Harbour Department, and to this end it must be ensured that there is allocation of adequate funds. The local people should be involved in the afforestation program proposed for the scheme to ensure public participation and success of vegetation programmes.	Complied. • Adani Skill Development Center (ASDC), Mundra is providing skill development training to the locals for Soft Skill, Technical Training and Carrier Guidance & knowledge based training. • During this year Total 1819 people is given various trainings to enhance socio economic development. Out of which 1294 People are getting employment or Self Employment and average income up to Rs. 5200 per month. Digital literacy training is very helpful in coordinating with today's Digital world. • ASDC-Baroi (Mundra):- Adani skill development Center (ASDC) launched 'SAKSHAM' center at Baroi guest house in Mundra on 16th June 2018 to provide skill development training to youth in the Mundra. During this compliance period following total 643 training given to the local villagers in different different areas. • Preference is given to local people for employment based on their qualification and experience. • All Mangrove plantations are done in consultation with GUIDE and Local forest dept. • 24 hectare of mangrove afforestation at Mundra was done through active participation of local fishermen at the cost of INR 25.0 Lac. • During this compliance period, the foundation provided employment to the fishermen equivalent to 4300 man–days for mangrove plantation, moss cleaning, etc. The Foundation has also supported Pagadiya fishermen as painting labors by providing them with employment and job in various fields. Details on skill development training imparted during financial year of 2019-20 (Till Sep'19) by Adani Foundation are enclosed as **Annexure – 4**.
2(xvi)	Prior clearance must be taken under the Hazardous Chemicals (manufacture, import and storage) Rules 1989, as amended up to date, from the competent authority. Such clearance will have to be taken prior to the commissioning of the	Complied. Permissions for storage of Hazardous Chemicals were obtained from MSIHC against the application made on 01.05.1999 through letter reference no. Kutch-HAZ/CHEM-23(2)/9713 while chemical storage permission against application made on 18.09.1999 was provided through letter reference no. Kutch-HAZ/CHEM-23(2)/9711. Approval from the PESO is taken for import of hazardous

<table>
<tr><th>Sr. No.</th><th>Conditions</th><th>Compliance Status as on 30-09-2019</th></tr>
<tr><td></td><td>project.</td><td>chemicals as per License No. P/HQ/GJ/15/2050 (P12369) dated 18/07/2016 which is valid up to 31/12/2024 for Class A & Class C petroleum. A copy of the same was submitted along with the compliance report submission for the period of Oct'16 to Mar'17 and there is no further change.

Please refer point no. 2 (xi) regarding GPCB permissions.

License under Factories Act is taken dated 07.10.1998 and last renewed vide license no. 0102 on 20.04.2017 (Sr. No. 70707) is valid up to 31.03.2020. The details were submitted along with last half yearly compliance report for the period Oct'18 to Mar'19.</td></tr>
<tr><td>2(xvii)</td><td>A detailed progress report should be submitted to the Ministry on each of the conditions stipulated above in respect of the follow-up action taken every six months. The first of these two reports should be sent in by 31.3.1996.</td><td>Complied.

Compliance report of EC conditions is uploaded regularly. Last compliance report including results of monitoring data for the period of Oct'18 to Mar'19 was submitted to Regional Office of MoEF&CC @ Bhopal, Zonal Office of CPCB @ Baroda, GPCB @ Gandhinagar & Gandhidham and Dept. of Forests & Env., Gandhinagar vide our letter dated 20.05.2019. Copy of the same is also available on our web site https://www.adaniports.com/ports-downloads. A soft copy of the same was also submitted through e-mail on 27.05.2019 to all the concern authorities. Please refer below for the details regarding past six compliance submissions.
<table>
<tr><th>Sr. no.</th><th>Compliance period</th><th>Date of submission</th></tr>
<tr><td>1</td><td>Apr'16 to Sep'16</td><td>01.12.2016</td></tr>
<tr><td>2</td><td>Oct'16 to Mar'17</td><td>30.05.2017</td></tr>
<tr><td>3</td><td>Apr'17 to Sep'17</td><td>01.12.2017</td></tr>
<tr><td>4</td><td>Oct'17 to Mar'18</td><td>29.05.2018</td></tr>
<tr><td>5</td><td>Apr'18 to Sep'18</td><td>30.11.2018</td></tr>
<tr><td>6</td><td>Oct'18 to Apr'19</td><td>31.05.2019</td></tr>
</table></td></tr>
<tr><td>2(xviii)</td><td>Financial requirements for implementation of the above indicated environmental mitigative measures should be worked out and included in the total cost of the project. Provision for enhancing this allocation in future should also be made.</td><td>Complied.

Separate budget for the Environment protection measures is earmarked every year. All the expenses are recorded in advanced accounting system of the organization. Details regarding environmental expenditures are as per compliance condition no. 2(xiii) above.</td></tr>
</table>

Annexure – 1

"HALF YEARLY ENVIRONMENTAL MONITORING REPORT"

FOR

ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED
TAL: MUNDRA, KUTCH, MUNDRA – 370 421

MONITORING PERIOD:

PREPARED BY:

POLLUCON LABORATORIES PVT.LTD.

**PLOT NO.5/6 "POLLUCON HOUSE", OPP. BALAJI INDUSTRIAL SOCIETY,
OLD SHANTINATH SILK MILL LANE, NEAR GAYTRI FARSAN MART,
NAVJIVAN CIRCLE, UDHANA MAGDALLA ROAD, SURAT-395007.
PHONE/FAX – (+91 261) 2455 751, 2601 106, 2601 224.
E-mail: pollucon@gmail.comweb: www.polluconlab.com**

TC - 5945 **ISO 9001:2015** **ISO 14001:2015** **OHSAS 18001:2007**

MARINE WATER MONITORING SUMMARY REPORT

RESULTS OF MARINE WATER [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.16	8.12	8.07	8.13	8.12	8.07	8.18	8.14	8.03	8.11	8.13	8.1	IS3025(P11)83Re.02
2	Temperature	oC	30.9	30.5	31.8	31.6	30.0	29.9	30.4	30	29.8	29.1	29.7	29.3	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	224	246	194	213	328	302	336	350	369	374	304	318	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	4	BDL*	4.3	BDL*	4.2	BDL*	2.9	BDL*	BDL*	BDL*	3.5	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.2	5.5	5.6	5.4	6.2	5.3	6	5.5	6.1	5.8	5.8	5.9	IS3025(P38)89Re.99
6	Salinity	ppt	36.2	36.5	37	37.5	36.4	36.9	36.8	37.5	34.8	35.2	34.5	34.6	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520 D
8	Nitrate as NO_3	µmol/L	4.53	3.27	3.14	2.9	3.56	3.1	2.56	2.3	2.16	1.94	2	2.13	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.7	0.62	0.54	0.45	0.87	0.64	0.45	0.32	0.32	0.26	0.25	0.28	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.54	1.46	1.60	1.52	1.98	1.60	1.7	1.4	1.56	1.27	1.76	1.89	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.56	1.39	1.24	1.1	2.1	2.04	1.83	1.63	1.71	1.42	1.34	1.4	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	6.78	5.35	5.28	4.87	6.41	5.34	4.71	4.02	4.04	3.47	4.01	4.3	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	9.3	6.4	5.9	3.6	5.1	3	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37780	37993.0	38452	38894	37941	38310	37216	37312	35940	36213	35040	36102	IS3025(P16)84Re.02
15	COD	mg/L	15.7	7.3	11.9	6.4	15.2	7.5	9.4	BDL*	8.6	BDL*	13	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	5.73	4.72	5.62	4.61	9.67	5.4	9.9	6.3	8.32	7.42	7.65	6.61	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	1.97	1.49	2.88	2	2.83	2.29	2.93	2.61	2.83	2.56	1.97	1.49	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

17.2	Phaeophytin	mg/m^3	2.7	3.0	1.2	2.0	2.0	1.9	2.11	1.83	0.95	1.29	2.7	3.0	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x 10^3/L	172	58	156	70	172	56	148	50	134	42	172	58	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Cyclotella sp. Biddulphia sp. Coscinodiscus sp. Thallassiosira sp.*	*Melosira sp. Rhizosolenia sp. Navicula sp.* --	*Navicula sp. Melosira sp. Thallassiosira sp. Cyclotella sp.* ---	*Nitzschia sp. Thallasionema sp. Navicula sp.* --- ---	*Thallassiosira sp. Rhizosolenia sp. Coscinodiscus sp. Nitzschia sp.* --	*Nitzschia sp. Coscinodiscus sp. Navicula sp.* -- --	Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp. Skeletonema sp. --	Navicula sp. Rhizosolenia sp. Fragillaria sp. -- --	*Coscinodiscus sp. Thallassiosira sp. Rhizosolenia sp. pediastrum sp.*	*Ceratium Fragillaria sp. Synedra sp.* --	*Navicula sp. Rhizosolenia sp. Coscinodiscus sp. Amphipora sp.*	*Ceratium sp. Cyclotella sp. Biddulphia sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	32		36		40		46		42		51		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Foraminiferans Chaetognathes Polychaetes		Polychaetes Crustaceans Decapods		Polychaetes Gastropods --		Gastropods Ostracods Polychaetes		Amphipods Decapods Polychaetes		Copepods Mysids Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.8		2.9		2.6		2.7		2.1		3.2		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1750		1800		1840		1900		1850		1780		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22nd Edi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4 (2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.52	0.7	0.63	0.57	0.5	0.62	FCO:2007
2	Phosphorus as P	µg/g	234	284	343	490	436	412	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.15	5.2	5.1	4.8	5.1	5.32	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	192	170	124	102	170	210	AAS 3111B
5.3	Manganese as Mn	µg/g	1320	1390	1168	1048	1031	1068	AAS APHA 3111 B
5.4	Iron as Fe	%	4.95	4.9	4.9	4.64	4.8	5.1	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	22.6	19.6	34	18.2	20.3	27	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	28.4	20.4	19.8	15.9	25.1	29	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	216	312	224	183	203	231	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	1.83	1.27	3.6	2.8	1.74	1.64	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaetes Decapods --	Crustaceans Polychaetes --	Crustaceans Polychaetes --	Polychaetes Gastropods --	Polychaetes Bivalves Crustaceans	Polychaetes Crustacean Brachyurans	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Gastropods --	Gastropods Bryozoans --	Nematodes Foraminiferans --	Foraminiferans -- --	Nematodes --	Nematods --	APHA (22nd Edi) 10500-C
6.3	Population	no/m2	618	733	704	765	617	735	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M2 MOUTH OF BOCHA & NAVINAL CREEK - N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.19	8.16	8.10	8.15	8.19	8.14	8.20	8.15	8.02	7.97	8.16	8.13	IS3025(P11)83 Re.02
2	Temperature	oC	30.8	30.5	31.7	31.5	30.4	30.0	30.3	30.1	29.7	29.3	29.8	29.5	IS3025(P9)84R e.02
3	Total Suspended Solids	mg/L	193	210	218	236	315	368	329	350	356	382	394	410	IS3025(P17)84 Re.02
4	BOD (3 Days @ 27 °C)	mg/L	5.1	BDL*	4.6	BDL*	3.4	BDL*	3.0	BDL*	BDL*	BDL*	3.4	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.9	5.6	6.0	5.9	5.9	5.6	5.9	5.7	6.1	5.9	5.9	5.8	IS3025(P38)89 Re.99
6	Salinity	ppt	36.3	36.5	37.1	37.4	36.4	36.8	36.1	36.5	34.7	35	34.6	35.1	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5 520D
8	Nitrate as NO_3	µmol/L	5.61	5.04	3.0	2.84	3.3	3	2.5	2.76	2.11	1.92	2.5	2.42	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.71	0.63	0.55	0.51	0.6	0.51	0.38	0.47	0.26	0.18	1.7	1.83	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.60	1.43	1.70	1.66	1.87	1.62	1.27	1.41	0.9	0.8	2.2	2.2	IS3025(P34)88 Cla.2.3
11	Phosphates as PO_4	µmol/L	1.47	1.2	1.3	1.14	2.28	2	1.83	1.99	1.57	1.28	1.7	1.83	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.93	7.10	5.25	5.01	5.73	5.13	4.15	4.64	3.29	2.86	5.07	5.22	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	11.2	BDL*	6.8	3.2	7.7	4.9	10.4	BDL*	BDL*	BDL*	13.6	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37824	37989	38550	38894	37143	37790	37118	37284	36812	37126	35524	35376	IS3025(P16)84 Re.02
15	COD	mg/L	14.2	6.3	17.8	7.4	10.4	7.0	14.6	6.3	9.6	BDL*	15.2	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/ L/day	5.85	4.05	7.76	5.28	9.22	6.3	9	6.52	7.87	6.3	7.42	6	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/ m^3	3.2	2.67	2.83	2.56	2.94	2.34	2.77	2.24	2.45	2.13	2.72	1.65	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/ m^3	1.1	1.1	1.7	1.3	1.5	1.6	1.8	1.87	1.4	1.64	1.3	1.22	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x 10^3/L	159	50	141	56	173	60	146	50	123	37	114	41	APHA (22nd Edi) 10200-H

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

17.4	Name of Group Number and name of group species of each group	--	*Thallasiosira sp. Fragillaria sp. Biddulphia sp. Rhizosolenia sp.*	*Nitzschia sp. Pleurosigma sp. Ceratium* --	*Navicula sp. Biddulphia sp. Thallasionema sp. Melosira sp.* --	*Nitzschia sp. Coscinodiscus sp. Biddulphia sp.* -- --	*Nitzschia sp. Coscinodiscus sp. Synedra sp. Biddulphia sp. Thallasiosira sp.*	*Navicula sp. Rhizosolenia sp. Nitzschia sp.* -- --	*Navicula sp. Synedra sp. Pleurosigma sp. pediastrums sp.* --	*Nitzschia sp. Fragillaria sp. Biddulphia sp.* -- --	*Ceratium Thallasionema sp. Nitzschia sp. Melosira sp.*	*Melosira sp. Fragillaria sp. Navicula sp.* --	*Ceratium sp. Skeletonema sp. Navicula sp. Rhizosolenia sp.*	*Melosira sp. Nitzschia sp. Pleurosigma sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**													
18.1	Abundance (Population)	noX10^3/ 100 m^3	48		42		55		39		32		39	APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Chaetognathes Polychaetes Gastropods		Polychaetes Crustaceans --		Polychaetes Bivalves Crustaceans		Ostracods Nematodes Chaetognathes		Polychaetes Ostracods Bivalves		Foraminiferans Ostracods Decapods	APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.71		1.63		1.8		1.5		1.25		1.95	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**													
19.1	Total Bacterial Count	CFU/ml	1550		1620		1660		1700		1760		1850	IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent	APHA(22nd Edi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M2 MOUTH OF BOCHA & NAVINAL CREEK – N 22°44'239" E 069°43'757"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.65	--	--	0.44	0.48	0.5	FCO:2007
2	Phosphorus as P	µg/g	231	--	--	384	403	412	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	--	--	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	--	--	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.96	--	--	4.84	4.7	4.93	AAS APHA 3111 B
5.2	Total Chromium as Cr+3	µg/g	236	--	--	102	168	208	AAS 3111B
5.3	Manganese as Mn	µg/g	1245	--	--	978	993	1014	AAS APHA 3111 B
5.4	Iron as Fe	%	5.2	--	--	4.96	4.83	5.16	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	22.6	--	--	44	30	26	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	40.2	--	--	25	22.8	30.2	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	193	--	--	177	169	198	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	1.83	--	--	1.5	1.24	1.35	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	--	--	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaetes Crustaceans --	--	--	Amphipods Isopods --	amphipods Polychaetes --	Polychaetes Gastropods --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans --	--	--	Copepods Brozoans	Forminiterans --	Nematods Ostracodes	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	557	--	--	170	440	471	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M3 EAST OF BOCHAISLAND - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.14	8.10	8.13	8.09	8.17	8.11	8.24	8.16	8.05	7.99	8.11	8.09	IS3025(P11)83Re.02
2	Temperature	oC	30.4	30.1	31.8	31.9	30.1	30.0	30.9	30.3	29.9	29.3	29.8	29.5	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	198	223	240	278	310	291	330	304	368	390	302	315	IS3025(P17)84Re.02
4	BOD (3 Days @ 27°C)	mg/L	4.9	BDL*	4.0	BDL*	5.2	BDL*	3.2	BDL*	BDL*	BDL*	4.2	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.0	5.8	5.9	5.7	6.0	5.8	6	5.7	6.1	5.9	5.8	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	36.4	36.6	37.2	37.5	36	36.5	36.3	36.4	34.8	35.2	34.3	34.8	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	5.29	4.03	3.26	2.9	2.98	2.68	2.64	2.4	2.2	2.0	2.3	2.5	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.75	0.62	0.54	0.46	0.24	0.2	0.21	0.18	0.33	0.21	0.25	0.29	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.48	1.29	1.60	1.54	1.83	1.66	1.46	1.1	1.6	1.3	1.6	1.7	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.81	1.58	1.26	1.18	1.58	1.32	1.29	1.12	1.83	1.46	1.39	1.52	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.52	5.9	5.40	4.9	5.05	4.5	4.31	3.68	4.12	3.51	4.16	4.43	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	10.4	BDL*	11.6	BDL*	8.3	BDL*	BDL*	BDL*	BDL*	BDL*	10.9	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37958	38057	38598	37924	37310	37864	36781	36894	36718	38017	35843	35210	IS3025(P16)84Re.02
15	COD	mg/L	13.4	BDL*	15.6	BDL*	19.2	BDL*	13.6	BDL*	10	BDL*	14	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	7.65	5.28	6.52	5.4	10.35	8.32	8.88	7.31	7.87	6.75	7.31	5.96	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	3.25	2.18	2.83	2.4	3.25	2.72	2.88	2.34	2.93	2.72	2.61	2.13	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.4	2.7	1.7	2.4	1.4	1.8	2.05	2.6	2.78	1.8	2.32	2.1	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	162	70	150	60	170	62	148	56	116	50	130	56	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Navicula sp. Thallasiosira sp. Biddulphia sp. cymbella sp*	*Fragillaria sp. Nitzschia sp. Melosira sp.* --	*Thallasionema sp. Biddulphia sp. Cyclotella sp. Melosira sp.* --	*Rhizosolenia sp. Thallasiosira sp. Nitzschia sp.* -- --	*Rhizosolenia sp. Thallasiosira sp. Cyclotella sp. Biddulphia sp. Navicula sp.*	*Navicula sp. Nitzschia sp. Coscinodiscus sp.* -- --	*Melosira sp.* Thallasiosira sp. Rhizosolenia sp. *Peridinium* --	*Nitzschia sp. Navicula sp. Cheatoceros sp.* -- --	*Melosira sp. Closterium sp. Fragillaria sp. Coscinodiscus sp.*	*Navicula sp. Thallasiosira sp. Synedra sp.* --	*Melosira sp. Biddulphia sp. Coscinodiscus sp. Cheatoceros sp.*	*Navicula sp. Biddulphia sp. Amphipora sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	41		51		56		50		39		31		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Foraminiferans Mysids Gastropods		Polychaetes Crustaceans --		Polychaetes Bivalves Crustaceans		Hydrozoa Echinoderms Ostracods		Polychaetes Decapods Ctenophores		Ctenophores Ostracods Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.05		2.6		3.1		2.9		1.2		1.8		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1720		1800		1780		1870		1740		1800		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22nd Edi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M3 RIGHT SIDE OF BOCHA CREEK - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.6	0.48	0.64	0.57	0.6	0.59	FCO:2007
2	Phosphorus as P	µg/g	201	258	350	430	457	376	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.8	5.15	4.88	4.78	4.58	4.86	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	172	206	139	104	157	213	AAS 3111B
5.3	Manganese as Mn	µg/g	1260	1174	1206	1068	1076	1106	AAS APHA 3111 B
5.4	Iron as Fe	%	4.91	5.05	4.75	4.84	4.65	4.98	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	27.3	23.9	27	47.93	25.4	31	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	22.4	30.9	20.2	25.52	23.6	26	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	203	256	218	203	249	227	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	1.52	1.65	3.2	3.7	1.63	2.14	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaete worms Chaetognaths --	Crustaceans Polychaetes --	Polychaetes Gastropods --	Crustaceans Decapods --	Polychaetes Bivalves --	Crustaceans Bivalves --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Nematodes Foraminiferans --	Hydrozoans -- --	Nematodes Branchyurans --	Foraminiferans Hydrozoans --	Nematodes Gastropods	Foraminiferans --	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	735	618	765	733	674	557	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.13	8.20	8.11	8.16	8.10	8.21	8.17	8.07	8.1	8.13	8.07	IS3025(P11)83Re.02
2	Temperature	oC	30.9	30.7	31.9	31.5	30.2	30.0	30.8	30.1	29.8	30	29.8	29.6	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	183	210	236	259	330	354	349	326	394	413	316	334	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	6.2	BDL*	4.4	BDL*	3.5	BDL*	3.8	BDL*	3.0	BDL*	4.0	BDL*	IS 3025 (P44)1993Re.03 Edition2.1
5	Dissolved Oxygen	mg/L	5.9	5.7	6.4	6.0	6.1	5.8	6	5.7	5.9	5.6	5.9	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	36.4	36.7	37.2	37.5	36.3	36.4	35.9	36.9	34.7	35.2	34.2	34.5	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	4.63	3.57	6.1	5.85	3.85	3.64	3.14	2.96	2.26	1.98	2.13	2.28	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.9	0.75	0.6	0.8	0.74	0.61	0.52	0.36	0.42	0.29	0.3	0.34	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.86	1.79	2.80	3.40	1.94	1.80	1.7	1.47	1.5	1.3	1.5	1.6	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.56	1.26	1.82	1.44	2	1.91	1.83	1.52	1.36	1.18	1.64	1.76	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.39	6.12	9.50	10.10	6.53	6.05	5.36	4.79	4.17	3.58	3.95	4.21	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	15	BDL*	12	BDL*	8	4.0	BDL*	BDL*	BDL*	BDL*	12.8	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37934	38194	38144	38602	37684	38142	36312	36814	36517	36984	35703	35206	IS3025(P16)84Re.02
15	COD	mg/L	21.3	7.6	16	BDL*	12	6.4	10.3	BDL*	11.2	BDL*	13.8	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	Flora and Fauna														
16	Primary productivity	mgC/L/day	5.28	3.78	6.97	4.72	9.9	7.2	8.77	7.4	7.65	6	7.44	5.7	APHA (22nd Edi) 10200-J
B	Phytoplankton														
17.1	Chlorophyll	mg/m^3	3.15	2.56	3.25	2.99	3.2	2.5	2.83	2.67	2.5	2.08	2.72	2.29	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.6	2.1	1.4	1.9	1.3	1.8	2.48	2.26	2.13	1.73	1.91	1.52	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	146	50	173	41	158	72	142	64	120	48	132	48	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Nitzschia sp. Rhizosolenia sp. Cheatoceros sp. Coscinodiscus sp.*	*Navicula sp. Rhizosolenia sp. Biddulphia sp.* --	*Nitzschia sp. Thallasiosira sp. Cheatoceros sp. Fragillaria sp.*	*Gyrosigma sp. Navicula sp. Coscinodiscus sp.* --	*Navicula sp. Thallasiosira sp. Biddulphia sp. Coscinodiscus sp.*	*Nitzschia sp. Synedra sp. Rhizosolenia sp.* --	*Melosira sp.* Rhizosolenia sp. Thallasiosira sp. Fragillaria sp.	*Navicula sp. Biddulphia sp.* Synedra sp. --	*Melosira sp. Fragillaria sp. Rhizosolenia sp. Coscinodiscus sp.*	*Navicula sp. Synedra sp. Pleurosigma sp.* --	*Thallasiosira sp. Nitzschia sp. Biddulphia sp. Melosira sp.*	*Navicula sp. Ceratium sp. Pleurosigma sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	56		61		65		59		39		30		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Foraminiferans Gastropods		Polychaetes Foraminiferans Decapods		Hydrozoans Polychaetes Gastropods		Crustaceans Bivalves --		Polychaetes Copepods Decapods		Ostracods Gastropods Polychaetes		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	3.1		3.2		3.5		3.2		1.55		1.7		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1780		1840		1800		1920		1860		1740		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22nd Edi)9 221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi .2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.48	0.66	0.62	0.4	0.62	0.59	FCO:2007
2	Phosphorus as P	µg/g	198	230	336	484	456	373	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.83	5.17	5.14	4.72	4.85	4.92	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	131	183	132	166	142	157	AAS 3111B
5.3	Manganese as Mn	µg/g	1214	1420	1218	1041	1118	1068	AAS APHA 3111 B
5.4	Iron as Fe	%	4.9	5.1	4.88	4.8	5.18	4.97	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	53	39.4	34.1	20.48	17.6	29	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	29	37.4	24.6	32.4	37.4	43	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	246	344	220	276	212	284	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	2.24	1.1	2.14	2.46	1.8	2.1	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Gastropods Decapods --	Polychaetes Bivalves --	Gastropods Crustaceans Bivalves	Gastropods Polychaetes --	Polychaetes Crustaceans --	Crustaceans Polychaetes --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Bryozoans --	Foraminiferans Nematodes --	Foraminiferans -- --	Hydrozoans Nematodes --	Nematodes --	Nematods Harpacticoids	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	706	796	733	676	588	647	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.13	8.09	8.11	8.03	8.18	8.15	8.22	8.14	8.1	8.14	8.14	8.11	IS3025(P11)83Re.02
2	Temperature	oC	30.3	30.0	31.8	31.6	30.1	30.0	30.7	30.2	29.8	30	29.8	29.6	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	210	234	256	271	319	346	338	359	386	403	316	335	IS3025(P17)84Re.02
4	BOD (3 Days @ 27 °C)	mg/L	3.8	BDL*	3.0	BDL*	3.4	BDL*	BDL*	BDL*	BDL*	BDL*	4.1	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.0	5.8	6.1	5.6	6.0	5.9	6.1	5.7	6.1	5.9	5.9	6.0	IS3025(P38)89Re.99
6	Salinity	ppt	36.5	36.8	36.9	36.4	36.3	36.6	36.4	36.7	35.2	35.5	34.2	34.4	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	4.41	3.57	5.6	3.9	3.57	3.34	2.7	2.28	2.37	2.18	2.31	2.39	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.85	1.7	5.1	4.5	0.68	0.42	0.54	0.42	0.41	0.35	0.35	0.5	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.43	1.24	1.70	1.30	2.11	1.98	1.66	1.52	1.32	1.1	2.1	2.26	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.17	1.1	1.96	1.32	2.98	2.79	1.98	1.74	1.5	1.32	1.64	1.78	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.68	6.55	12.40	9.70	6.36	5.74	4.9	4.22	4.1	3.6	4.76	5.09	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	8.2	BDL*	22.0	BDL*	15.0	BDL*	BDL*	BDL*	BDL*	BDL*	13.2	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	38090	38280	38184	37920	37912	38198	36974	37011	36118	36827	35640	35818	IS3025(P16)84Re.02
15	COD	mg/L	17.3	6.4	15.4	BDL*	10.8	BDL*	10.6	BDL*	9.4	BDL*	14.8	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	6.3	5.62	6	5.4	9.67	6.75	9.78	7.2	7.87	6.52	7.31	5.94	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	2.5	2.18	2.24	2.08	3.2	2.34	2.4	2.08	2.18	2.02	2.61	2.13	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.3	2.0	1.8	1.9	1.0	1.7	1.78	2.14	1.7	1.82	1.64	2.16	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

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Dr. Arun Bajpai

Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	178	58	150	44	168	58	162	50	1.4	36	118	42	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Nitzschia sp. Rhizosolenia sp. Biddulphia sp. Thallasiosira sp.*	*Navicula sp. Thallasiosira sp. Fragillaria sp.* --	*Navicula sp. Thallasiosema sp. Nitzschia sp. Coscinodiscus sp. Biddulphia sp.*	*Nitzschia sp. Coscinodiscus sp. Navicula sp.* -- --	*Thallasiosema sp. Coscinodiscus sp. Cheatoceros sp. Fragillaria sp. Rhizosolenia sp.*	*Navicula sp. Thallasiosira sp. Pleurosigma sp.* -- --	*Navicula sp.* Coscinodiscus sp. Thallasiosema sp. Biddulphia sp. --	*Biddulphia sp.* Navicula sp. Nitzschia sp. -- --	*Rhizosolenia sp. Thallasiosira sp. Pleurosigma sp. ceratium sp*	*Navicula sp. Fragillaria sp. Biddulphia sp.* --	*Nitzschia sp. Rhizosolenia sp. Cyclotella sp. Biddulphia sp.*	*Navicula sp. Nitzschia sp. Cheatoceros sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	42		48		51		57		49		41		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Gastropods Nematodes		Polychaetes Gastropods Mysids		Hydrozoans Crustaceans Foraminiferans		Crustaceans Foraminiferans Gastropods		Polychaetes Copepods Decapods		Chaetognathes Mysids Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	1.35		1.6		1.8		1.7		1.3		2		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1800		1760		1720		1840		1800		1740		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.71	0.48	0.56	--	0.65	0.62	FCO:2007
2	Phosphorus as P	µg/g	225	284	324	--	433	370	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	--	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	--	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	4.92	5.14	4.82	--	4.96	5.1	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	138	216	142	--	162	246	AAS 3111B
5.3	Manganese as Mn	µg/g	1172	1498	1210	--	1120	1093	AAS APHA 3111 B
5.4	Iron as Fe	%	5.14	4.96	5.2	--	4.8	5.18	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	18.2	25.6	21.6	--	19.36	31.2	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	29.4	30.4	25.4	--	33.4	27.4	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	218	218	230	--	244	208	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	2.4	1.85	2.12	--	1.6	2.17	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	--	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Gastropods Echinoderms	Gastropods Polychaetes	Gastropods Echinoderms	--	Polychaetes amphipods	Brachyurans Polychaetes	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans --	Nematodes Foraminiferans	Nematodes Turbellaria	--	Nematodes --	Nematods Hydroza	APHA (22nd Edi) 10500-C
6.3	Population	no/m2	676	740	674	--	618	706	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M7 EAST PORT N 22°47'120" E 069°47'110"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.15	8.25	8.15	8.18	8.12	8.24	8.17	8.07	8.14	8.19	8.15	IS3025(P11)83Re.02
2	Temperature	oC	31.0	30.8	31.7	37.6	30.2	30.0	30.4	30	29.8	30.2	30	30.2	IS3025(P9)84Re.02
3	Total Suspended Solids	mg/L	244	268	258	296	340	379	350	369	369	405	347	356	IS3025(P17)84Re.02
4	BOD (3 Days @ 27°C)	mg/L	4	BDL*	5.0	BDL*	3.9	BDL*	3.1	BDL*	4.3	BDL*	3.8	BDL*	IS 3025 (P44)1993Re.03Edition2.1
5	Dissolved Oxygen	mg/L	6.4	6.0	6.6	5.8	6.4	5.8	6.1	5.7	5.9	5.7	5.8	5.9	IS3025(P38)89Re.99
6	Salinity	ppt	36	36.3	35.9	36.2	36.2	36.7	36.5	37	35	35.3	34.3	34.8	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)5520D
8	Nitrate as NO_3	µmol/L	6.4	4.2	4.9	3.1	3.12	2.84	2.7	2.49	2.41	2.32	2.33	2.38	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	1.35	1.56	1.5	1.65	0.83	0.68	0.63	0.38	0.26	0.14	0.39	0.46	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	2.10	1.98	1.80	1.44	2.14	2.00	1.74	1.43	1.37	1.18	2.2	2.31	IS3025(P34)88Cla.2.3
11	Phosphates as PO_4	µmol/L	1.64	1.4	1.75	1.5	1.99	1.81	1.52	1.36	1.64	1.4	1.57	1.68	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	9.85	7.74	8.20	6.20	6.09	5.52	5.07	4.3	4.04	3.64	4.92	5.15	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	11.0	BDL*	16.0	BDL*	14.3	BDL*	BDL*	BDL*	BDL*	BDL*	12.9	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37103	37814	36812	37610	37214	37984	36972	37321	36816	37058	35728	35824	IS3025(P16)84Re.02
15	COD	mg/L	12.0	BDL*	24	BDL*	16	BDL*	13.2	BDL*	15.6	8.4	12.6	BDL*	APHA(22ndEdi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	6.63	4.95	6.75	4.16	8.77	6.3	9.33	7.2	8.1	6.52	7	5.71	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	3.31	2.13	2.99	2.29	2.61	2.39	2.93	2.5	2.67	2.34	2.5	2.08	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	1.3	2.1	1.9	1.9	2.6	1.4	1.7	2.01	1.55	1.91	1.6	1.84	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x	184	62	168	72	150	60	136	54	104	50	114	46	APHA (22nd Edi)

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H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

		10^3/L												10200-H
17.4	Name of Group Number and name of group species of each group	--	*Coscinodiscus sp. Rhizosolenia sp. Navicula sp. Biddulphia sp.*	*Synedra sp. Navicula sp. Rhizosolenia sp.* --	*Thallasionema sp. Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp.* --	*Navicula sp. Thallasionema sp.* -- -- --	*Pleurosigma sp. Nitzschia sp. Rhizosolenia sp. Thallasionema sp. Coscinodiscus sp.*	*Navicula sp. Synedra sp. Rhizosolenia sp.* -- --	*Nitzschia sp. Coscinodiscus sp. Rhizosolenia sp. Skeletonema sp.* --	*Navicula sp.* Nitzschia sp. *Thallasionema sp.* -- --	*Synedra sp. Pleurosigma sp. Nitzschia sp. Rhizosolenia sp.*	*Thallasiosira sp. Nitzschia sp.* -- --	*Ceratium sp. Biddulphia sp. Skeletonema sp. Coscinodiscus sp.*	*Cyclotella sp. Fragillaria sp. Navicula sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**													
18.1	Abundance (Population)	noX10^3/ 100 m^3	42		49		53		48		43		46	APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Copepods Ostracods Polychaetes		Polychaetes Gastropods --		Polychaetes Ctenophores Chaetognathes		Polychaetes Crustaceans Bivalves		Polychaetes Decapods Isopods		Ostracods Gastropods Mysids	APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.6		2.75		2.9		2.1		1.9		2.1	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**													
19.1	Total Bacterial Count	CFU/ml	1850		1840		1780		1800		1750		1820	IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent	APHA(22nd Edi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS:1622:1981Edi.2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.11	8.09	8.22	8.15	8.19	8.12	8.25	8.19	8.04	7.99	8.17	8.2	IS3025(P11)83Re .02
2	Temperature	oC	30.9	30.6	31.7	31.4	30.1	30.0	30.5	30.1	29.8	30	29.9	29.5	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	196	214	252	226	302	324	326	341	370	402	317	326	IS3025(P17)84Re .02
4	BOD (3 Days @ 27 °C)	mg/L	4.9	BDL*	3.6	BDL*	4.6	BDL*	3.7	BDL*	2.8	BDL*	3.9	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	5.9	5.7	6.4	6.2	6.0	5.9	6	5.7	6	5.8	5.9	6.1	IS3025(P38)89Re .99
6	Salinity	ppt	36.5	36.8	36.9	37.2	36.2	36.6	36.6	37.3	34.8	35.2	34.1	34.4	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)552 0D
8	Nitrate as NO_3	µmol/L	4.28	3.52	5.6	3.9	3.36	3.1	2.84	2.57	2.13	1.9	2.1	2.17	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.8	0.74	1.4	1.1	0.92	0.79	0.81	0.64	0.48	0.62	0.29	0.35	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.97	1.65	2.16	1.50	1.76	1.48	1.52	1.31	1.27	1.1	1.53	1.61	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.76	1.57	1.98	1.75	1.86	1.55	1.7	1.49	1.4	1.31	1.28	1.34	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.05	4.40	9.16	6.50	6.04	5.37	5.17	4.52	3.88	3.62	3.92	4.13	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	12.6	BDL*	16.0	BDL*	13.2	BDL*	BDL*	BDL*	BDL*	BDL*	7.4	3.6	PLPL-TPH
14	Total Dissolved Solids	mg/L	38019	38349	37410	37676	37514	37912	36844	37542	36358	36756	35698	35718	IS3025(P16)84Re .02
15	COD	mg/L	14.3	9.6	15.0	BDL*	13.2	BDL*	10.3	BDL*	8.7	BDL*	12.4	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	Flora and Fauna														
16	Primary productivity	mgC/L /day	6.52	5.0	6	5.0	18.55	7.4	8.66	7.8	7.65	6.9	7.29	6.16	APHA (22nd Edi) 10200-J
B	Phytoplankton														
17.1	Chlorophyll	mg/m^3	2.62	2.56	2.72	2.24	3.15	2.83	2.67	2.24	3.04	2.56	2.77	2.5	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.0	1.9	1.9	2.3	1.5	1.7	2.26	2.69	1.29	1.47	1.78	1.42	APHA (22nd Edi) 10200-H

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

17.3	Cell Count	No. x 10^3/L	202	82	176	60	188	50	172	58	124	46	136	54	APHA (22nd Edi) 10200-H
17.4	Name of Group Number and name of group species of each group	--	*Rhizosolenia sp. Thallasiosira sp. Coscinodiscus sp. Synedra sp.*	*Synedra sp. Cyclotella sp. Biddulphia sp.* --	*Navicula sp. Cyclotella sp. Coscinodiscus sp. Rhizosolenia sp.*	*Nitzschia sp. Biddulphia sp. Coscinodiscus sp.* --	*Nitzschia sp. Cyclotella sp. Thallasionema sp. Rhizosolenia sp.*	*Navicula sp. Biddulphia sp. Cyclotella sp.* --	Navicula sp. *Thallasionema sp.* Coscinodiscus sp. *Amphipora sp.*	Nitzschia sp. *Pleurosigma sp.* Synedra sp. --	*Cyclotella sp. Skeletonema sp. Nitzschia sp. Rhizosolenia sp.*	*Nitzschia sp. Fragillaria sp. Synedra sp.* --	*Thallasiosira sp. Amphipora sp. Pleurosigma sp. Cheatoceros sp.*	*Pleurosigma sp. Nitzschia sp. Biddulphia sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	36		50		53		62		45		55		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Ostracods Decapods		Crustaceans Polychaetes Foraminiferans		Polychaetes Crustaceans Bivalves		Polychaetes Bivalves Decapods		Polychaetes Isopods Amphipods		Gastropods Mysids Ostracods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.4		2.55		2.7		2.65		2.1		3.4		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1900		1880		1820		1760		1700		1810		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22nd Edi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF SEDIMENT ANALYSIS [M8 RIGHT SIDE OF BOCHA CREEK – N 22°45'987" E 069°43'119"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019	MAY 2019	JUNE 2019	JULY 2019	AUGUST 2019	SEPTEMBER 2019	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1	Organic Matter	%	0.68	0.8	0.72	0.6	0.68	0.61	FCO:2007
2	Phosphorus as P	µg/g	278	312	412	483	432	376	APHA(22nd Edi) 4500 C
3	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	--
4	Petroleum Hydrocarbon	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	PLPL-TPH
5	**Heavy Metals**								
5.1	Aluminum as Al	%	5.12	4.86	5.14	4.7	4.75	4.95	AAS APHA 3111 B
5.2	Total Chromium as Cr^{+3}	µg/g	203	244	138	164	142	213	AAS 3111B
5.3	Manganese as Mn	µg/g	1180	1350	1203	1036	1025	1054	AAS APHA 3111 B
5.4	Iron as Fe	%	5.15	5.26	5.1	4.88	5.15	5.2	AAS APHA(22nd Edi)3111 B
5.5	Nickel as Ni	µg/g	36.8	42.6	29	17.83	21.8	26	AAS APHA(22nd Edi)3111 B
5.6	Copper as Cu	µg/g	31.4	41.6	26.4	25.4	16.4	37	AAS APHA(22nd Edi)3111 B
5.7	Zinc as Zn	µg/g	226	239	240	210	254	210	AAS APHA(22nd Edi)3111 B
5.8	Lead as Pb	µg/g	2.4	1.62	2.29	1.97	1.5	1.93	AAS APHA(22nd Edi)3111 B
5.9	Mercury as Hg	µg/g	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	AAS APHA- 3112 B
6	**Benthic Organisms**								
6.1	Macrobenthos	--	Polychaetes Crustaceans --	Polychaetes Echinoderms --	Bivalves Gastropods Polychaetes	Bivalves Gastropods ---	Bivalues Polychaetes --	Polychaetes Decapods --	APHA (22nd Edi) 10500-C
6.2	MeioBenthos	--	Foraminiferans Nematodes	Foraminiferans Hydrozoans	Gastropods Nematodes	Nematodes Hydrozoans	Nematodes --	Ostracodes Ciliates	APHA (22nd Edi) 10500-C
6.3	Population	no/m^2	618	540	706	765	674	616	APHA (22nd Edi) 10500-C

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'278" E 069°43'450"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.13	8.09	8.17	8.09	8.19	8.13	8.24	8.17	8.1	8.03	8.12	8.07	IS3025(P11)83Re .02
2	Temperature	oC	30.5	30.3	31.6	31.4	30.1	29.9	30.2	30	30	30.2	29.9	29.7	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	203	226	272	251	239	258	308	313	384	419	416	432	IS3025(P17)84Re .02
4	BOD (3 Days @ 27 °C)	mg/L	5.2	BDL*	4.0	BDL*	3.7	BDL*	3.2	BDL*	BDL*	BDL*	3.2	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	6.0	5.9	6.2	6.0	6.0	5.8	6.0	5.7	6.0	5.8	5.8	5.9	IS3025(P38)89Re .99
6	Salinity	ppt	36.4	36.7	36.9	37	36.3	36.7	36.7	37	35.4	35.9	34.2	34.6	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)552 0D
8	Nitrate as NO_3	µmol/L	4.71	3.57	4.95	4.1	2.84	2.69	2.46	2.24	1.7	1.56	1.92	2.12	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.89	0.75	1.18	1.25	0.72	0.56	0.51	0.36	0.48	0.29	0.3	0.46	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.88	1.26	1.90	1.60	1.84	1.71	1.68	1.43	1.33	1.12	1.28	1.36	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.6	1.39	1.75	1.56	2.36	2.14	1.97	1.7	1.64	1.36	1.58	1.65	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	7.48	5.59	8.00	7.00	5.40	4.96	4.65	4.03	3.51	2.97	3.5	3.94	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	10.3	BDL*	BDL*	BDL*	6.2	BDL*	10.41	BDL*	BDL*	BDL*	10.6	5.2	PLPL-TPH
14	Total Dissolved Solids	mg/L	37918	38910	37916	37514	37580	38287	36902	37124	36252	36817	35314	35284	IS3025(P16)84Re .02
15	COD	mg/L	17.3	6.3	18	BDL*	11	BDL*	9.2	BDL*	8.1	BDL*	15	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	3.52	5.17	5.85	5.28	9.9	8.32	8.78	7.53	8.1	7.42	7.65	5.96	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	3.52	2.93	3.31	2.61	3.52	2.77	2.8	2.50	3.31	2.40	2.83	2.56	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.2	2.4	2.5	2.9	2.0	2.6	1.75	2.42	1.03	2.01	1.84	1.92	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x	153	64	141	57	154	41	136	50	123	44	117	50	APHA (22nd Edi)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

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Lab Manager (Q)

		10^3/L													10200-H
17.4	Name of Group Number and name of group species of each group	--	*Rhizosolenia sp. Coscinodiscus sp. Biddulphia sp. Navicula sp.*	*Nitzschia sp. Biddulphia sp. Synedra sp.* --	*Rhizosolenia sp. Biddulphia sp. Thallasionema sp. Navicula sp.*	*Nitzschia sp. Rhizosolenia sp. Coscinodiscus sp.* --	*Navicula sp. Rhizosolenia sp. Coscinodiscus sp. Cyclotella sp.*	*Nitzschia sp. Coscinodiscus sp. Rhizosolenia sp.* --	*Nitzschia sp. Navicula sp. Thallasionema sp. Coscinodiscus sp.*	*Navicula sp. Synedra sp. Rhizosolenia sp.* --	*peridinium sp Melosira sp. Nitzschia sp. Cheatoceros sp.*	*Nitzschia sp. Pleurosigma sp. Fragillaria sp.* --	*Melosira sp. Rhizosolenia sp. Skeletonema sp. Fragillaria sp.*	*Cheatoceros sp. Nitzschia sp. Biddulphia sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**														
18.1	Abundance (Population)	noX10^3/ 100 m^3	46		52		49		53		48		56		APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Gastropods Mysids		Crustaceans Gastropods Decapods		Polychaetes Crustaceans --		Polychaetes Gastropods Decapods		Ostracodes Hydrozoans Polychaetes		Polychaetes Mysids Gastropods		APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	2.1		2.55		2.10		1.9		1.6		2.1		APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**														
19.1	Total Bacterial Count	CFU/ml	1780		1750		1790		1850		1750		1880		IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent		IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF MARINE WATER [M12 SPM N 22°40'938" E 069°39'191"]

SR. NO.	TEST PARAMETERS	UNIT	APRIL 2019		MAY 2019		JUNE 2019		JULY 2019		AUGUST 2019		SEPTEMBER 2019		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1	pH	--	8.17	8.12	8.30	8.21	8.19	8.14	8.24	8.18	8.12	8.07	8.15	8.11	IS3025(P11)83Re .02
2	Temperature	oC	30.6	30.3	31.9	31.5	30.2	30.0	30.3	30	30	30.3	29.9	29.6	IS3025(P9)84Re. 02
3	Total Suspended Solids	mg/L	202	231	227	248	317	351	328	349	392	424	370	384	IS3025(P17)84Re .02
4	BOD (3 Days @ 27°C)	mg/L	5.1	BDL*	6.0	BDL*	3.9	BDL*	3.3	BDL*	BDL*	BDL*	3.5	BDL*	IS 3025 (P44)1993Re.03E dition2.1
5	Dissolved Oxygen	mg/L	5.9	5.7	6.2	5.9	5.8	6.0	6.0	5.7	6.1	5.8	6.0	5.9	IS3025(P38)89Re .99
6	Salinity	ppt	36.2	36.5	36.9	37.1	37.1	37.6	37	37.7	35.5	36	34.6	35.1	APHA (22nd Edi) 2550 B
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	APHA(22nd Edi)552 0D
8	Nitrate as NO_3	µmol/L	2.9	2.32	2.5	2.1	3.14	3	2.98	2.7	1.64	1.32	1.9	2.03	IS3025(P34)88
9	Nitrite as NO_2	µmol/L	0.95	0.82	1.1	0.9	0.83	0.69	0.74	0.59	0.51	0.29	0.34	0.42	IS3025(P34)88 NEDA
10	Ammonical Nitrogen as NH_3	µmol/L	1.90	1.72	1.70	1.60	2.10	1.97	1.83	1.64	1.32	1.1	1.56	1.62	IS3025(P34)88Cla .2.3
11	Phosphates as PO_4	µmol/L	1.28	1.01	1.58	1.34	2.16	2.1	2	1.83	1.56	1.19	1.48	1.57	APHA(22nd Edi) 4500 C
12	Total Nitrogen	µmol/L	5.74	4.86	5.40	3.90	6.07	5.66	5.55	4.93	3.47	2.71	3.8	4.07	IS3025(P34)88
13	Petroleum Hydrocarbon	µg/L	10.4	BDL*	13.0	BDL*	8.2	BDL*	10.3	BDL*	BDL*	BDL*	12.9	BDL*	PLPL-TPH
14	Total Dissolved Solids	mg/L	37610	37913	37847	38013	38103	38914	36902	37124	35917	36318	35390	36298	IS3025(P16)84Re .02
15	COD	mg/L	17.2	9.8	23	BDL*	16	6.2	10.4	BDL*	9.2	BDL*	15	BDL*	APHA(22nd Edi) 5520-D Open Reflux
A	**Flora and Fauna**														
16	Primary productivity	mgC/L /day	4.95	3.15	4.72	3.6	8.55	7.42	9.2	6.97	8.3	6.75	7.69	7	APHA (22nd Edi) 10200-J
B	**Phytoplankton**														
17.1	Chlorophyll	mg/m^3	2.64	2.40	2.48	2.29	2.69	2.24	3.09	2.61	2.77	2.34	2.83	2.4	APHA (22nd Edi) 10200-H
17.2	Phaeophytin	mg/m^3	2.0	2.1	2.3	2.3	1.9	2.7	1.8	2.06	2.53	2.29	2.48	2.23	APHA (22nd Edi) 10200-H
17.3	Cell Count	No. x	146	73	134	69	188	76	204	68	196	54	182	68	APHA (22nd Edi)

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

		10^3/L												10200-H
17.4	Name of Group Number and name of group species of each group	--	*Coscinodiscus sp. Fragillaria sp. Biddulphia sp. Thallasiosira sp.*	*Nitzschia sp. Coscinodiscus sp. Synedra sp.* --	*Coscinodiscus sp. Nitzschia sp. Thallasionema sp.* -- --	*Navicula sp. Synedra sp. Thallasionema sp.* -- --	*Nitzschia sp. Coscinodiscus sp. Thallasionema sp. Pleurosigma sp. Navicula sp.*	*Navicula sp. Thallasionema sp. Synedra sp.* -- --	*Nitzschia sp. Thallasionema sp. Coscinodiscus sp. Rhizosolenia sp. Synedra sp.*	*Navicula sp. Nitzschia sp. Coscinodiscus sp.* -- --	*Biddulphia sp. Pleurosigma sp. Skeletonema sp. Synedra sp.*	*Nitzschia sp. Fragillaria sp. Biddulphia sp.* --	*Thallasiosira sp. Skeletonema sp. Coscinodiscus sp. Biddulphia sp.*	*Nitzschia sp. Rhizosolenia sp. Pleurosigma sp.* --	APHA (22nd Edi) 10200-H
C	**Zooplanktons**													
18.1	Abundance (Population)	noX10^3/ 100 m^3	39		43		50		56		46		51	APHA (22nd Edi) 10200-G
18.2	Name of Group Number and name of group species of each group	--	Polychaetes Crustaceans Mysids		Polychaetes Gastropods Foraminiferans		Gastropods Crustaceans Mysids		Polychaetes Crustaceans Bivalves		Polychaetes Decapods Ostracodes		Ostracods Mysids Ctenophores	APHA (22nd Edi) 10200-G
18.3	Total Biomass	ml/100 m^3	1.6		1.8		1.95		2.0		1.6		2.0	APHA (22nd Edi) 10200-G
D	**Microbiological Parameters**													
19.1	Total Bacterial Count	CFU/ml	1750		1860		1810		1790		1700		1780	IS 5402:2002
19.2	Total Coliform	/ml	Absent		Absent		Absent		Absent		Absent		Absent	APHA(22ndEdi)9221-D
19.3	Ecoli	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS:1622:1981Edi. 2.4(2003-05)
19.4	Enterococcus	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 15186 :2002
19.5	Salmonella	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 5887 (P-3)
19.6	Shigella	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 1887 (P-7)
19.7	Vibrio	/ml	Absent		Absent		Absent		Absent		Absent		Absent	IS : 5887 (P-5)

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

RESULTS OF ETP WATER OUTLET

SR. NO.	PARAMETERS	UNIT	RESULTS OF ETP WATER OUTLET						GPCB Limit	TEST METHOD
			05/04/2019	05/07/2019	04/06/2019	03/07/2019	06/08/2019	06/09/2019		
1	Colour	Co-pt	70	50	40	50	40	50	**100**	IS3025(P4)83Re.02
2	pH	--	7.32	7.90	7.01	7.65	7.08	6.76	**6.5 TO 8.5**	IS3025(P11)83Re.02
3	Temperature	°C	31.9	32	31.9	31.5	31.3	32	**40**	IS3025(P9)84Re.02
4	Total Suspended Solids	mg/L	52	84	70	56	42	64	**100**	IS3025(P17)84Re.02
5	Total Dissolved Solids	mg/L	1903	2041	2096	2084	2060	1976	**2100**	IS3025(P16)84Re.02
6	COD	mg/L	80	84	98	88	78	92	**100**	APHA(22nd Edi) 5520-D Open Reflux
7	BOD (3 Days @ 27 °C)	mg/L	24	28	30	24	18	24	**30**	IS 3025 (P44)1993Re.03Edition2.1
8	Chloride as Cl	mg/L	572	559	598	584	539	589	**600**	IS3025(P32)88Re.99
9	Oil & Grease	mg/L	3.8	2.4	2.9	3.4	5.2	3.2	**10**	APHA(22nd Edi)5520D
10	Sulphate as SO_4	mg/L	156	480	502	455	392	412	**1000**	APHA(22nd Edi)4500 SO_4 E
11	Ammonical Nitrogen as NH_3	mg/L	10.2	6.8	11.1	14.8	10.6	7.4	**50**	IS3025(P34)88Cla.2.3
12	Phenolic Compound	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**1**	IS3025(P43)92Re.03
13	Copper as Cu	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**3**	AAS APHA(22nd Edi)3111 B
14	Lead as Pb	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**0.1**	AAS APHA(22nd Edi)3111 B
15	Sulphide as S	mg/L	1.6	2.4	1.6	1.2	1.4	1.2	**2**	APHA(22nd Edi) 4500-S
16	Cadmium as Cd	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*	**2**	AAS APHA(22nd Edi)3111 B
17	Fluoride as F	mg/L	0.6	0.55	0.70	0.55	0.6	0.75	**2**	APHA(22nd Edi) 4500 F D SPANDS

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI PORT – T1 TERMINAL NR.MARINE BUILDING								
Sr. No.	Date of Sampling	Particulate Matter (PM10) $\mu g/m^3$	Particulate Matter (PM 2.5) $\mu g/m^3$	Sulphur Dioxide (SO2) $\mu g/m^3$	Oxides of Nitrogen (NO2) $\mu g/m^3$	Carbon Monoxide as CO mg/m^3	Hydrocarbon as CH_4 mg/m^3	Benzene as C_6H_6 $\mu g/m^3$
1	02/04/2019	81.68	41.24	15.65	35.64	0.50	BDL*	BDL*
2	03/04/2019	94.36	52.77	11.69	21.35	0.81	BDL*	BDL*
3	08/04/2019	77.51	49.27	8.46	18.67	0.47	BDL*	BDL*
4	10/04/2019	80.33	35.64	10.36	37.63	0.62	BDL*	BDL*
5	15/04/2019	96.24	56.36	13.72	31.58	0.68	BDL*	BDL*
6	17/04/2019	75.67	42.68	20.36	41.30	0.79	BDL*	BDL*
7	22/04/2019	86.36	36.50	24.29	39.47	0.30	BDL*	BDL*
8	24/04/2019	78.45	45.36	21.39	34.57	0.63	BDL*	BDL*
9	29/04/2019	92.42	39.26	18.36	30.45	0.98	BDL*	BDL*
10	01/05/2019	78.32	46.35	20.33	31.50	0.66	BDL*	BDL*
11	06/05/2019	83.50	38.31	17.52	39.30	0.55	BDL*	BDL*
12	09/05/2019	94.36	54.38	22.51	45.36	0.71	BDL*	BDL*
13	13/05/2019	98.30	44.53	13.43	22.59	0.89	BDL*	BDL*
14	15/05/2019	84.32	47.87	11.26	40.24	0.34	BDL*	BDL*
15	20/05/2019	79.58	37.53	24.43	36.41	0.65	BDL*	BDL*
16	22/05/2019	87.58	43.59	21.19	32.42	0.72	BDL*	BDL*
17	27/05/2019	95.43	52.73	16.53	38.61	0.54	BDL*	BDL*
18	29/05/2019	80.65	40.25	19.62	43.56	0.82	BDL*	BDL*
19	03/06/2019	74.31	42.60	11.60	34.34	0.26	BDL*	BDL*
20	05/06/2019	88.69	37.53	20.33	40.25	0.72	BDL*	BDL*
21	10/06/2019	71.63	40.29	17.44	27.64	0.56	BDL*	BDL*
22	17/06/2019	92.48	36.29	21.53	30.24	0.50	BDL*	BDL*
23	19/06/2019	76.31	39.55	18.25	28.58	0.58	BDL*	BDL*
24	24/06/2019	96.38	45.36	23.49	39.46	0.55	BDL*	BDL*
25	26/06/2019	82.56	50.55	19.54	37.56	0.64	BDL*	BDL*
26	01/07/2019	94.38	55.53	20.31	44.29	0.85	BDL*	BDL*
27	03/07/2019	85.38	45.36	23.69	37.59	0.48	BDL*	BDL*
28	08/07/2019	68.71	38.48	16.32	33.66	0.65	BDL*	BDL*
29	10/07/2019	77.55	47.34	21.25	39.27	0.73	BDL*	BDL*
30	15/07/2019	69.62	35.47	12.72	36.05	0.29	BDL*	BDL*

Continue …

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI PORT – T1 TERMINAL NR. (MARINE BUILDING)								
Sr.No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
31	17/07/2019	90.42	52.48	25.68	41.27	0.62	BDL*	BDL*
32	22/07/2019	88.65	34.28	22.67	31.84	0.31	BDL*	BDL*
33	24/07/2019	79.80	42.35	17.64	40.68	0.79	BDL*	BDL*
34	29/07/2019	66.54	39.22	19.55	29.47	0.63	BDL*	BDL*
35	31/07/2019	81.29	44.25	15.59	34.27	0.87	BDL*	BDL*
36	05/08/2019	83.63	44.37	14.15	30.40	0.74	BDL*	BDL*
37	07/08/2019	92.92	50.30	10.53	33.50	0.68	BDL*	BDL*
38	12/08/2019	88.67	35.68	18.65	38.23	0.76	BDL*	BDL*
39	14/08/2019	69.86	31.85	20.24	35.31	0.87	BDL*	BDL*
40	19/08/2019	81.34	40.83	15.41	39.51	0.64	BDL*	BDL*
41	21/08/2019	78.65	43.38	22.26	43.58	0.39	BDL*	BDL*
42	26/08/2019	67.56	36.34	17.53	37.55	0.52	BDL*	BDL*
43	28/08/2019	80.34	39.38	23.56	36.26	0.50	BDL*	BDL*
44	03/09/2019	80.33	42.60	12.68	27.64	0.50	BDL*	BDL*
45	05/09/2019	70.36	29.25	18.57	31.61	0.58	BDL*	BDL*
46	09/09/2019	62.70	36.58	14.57	34.25	0.46	BDL*	BDL*
47	11/09/2019	75.67	32.67	24.66	39.31	0.26	BDL*	BDL*
48	16/09/2019	64.39	38.27	17.64	42.67	0.40	BDL*	BDL*
49	18/09/2019	87.70	47.29	9.68	29.68	0.47	BDL*	BDL*
50	23/09/2019	77.68	37.61	21.54	32.52	0.34	BDL*	BDL*
51	25/09/2019	89.33	43.55	16.65	37.56	0.62	BDL*	BDL*
52	30/09/2019	79.39	39.67	19.68	35.67	0.49	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

NEAR FIRE STATION								
Sr. No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	02/04/2019	52.74	22.65	22.70	32.44	0.44	BDL*	BDL*
2	03/04/2019	60.32	32.60	18.64	16.29	0.60	BDL*	BDL*
3	08/04/2019	70.67	40.62	14.37	26.33	0.73	BDL*	BDL*
4	10/04/2019	58.43	26.82	21.65	30.57	0.82	BDL*	BDL*
5	15/04/2019	74.56	44.51	7.61	23.42	0.57	BDL*	BDL*
6	17/04/2019	67.81	39.42	15.61	34.36	0.66	BDL*	BDL*
7	22/04/2019	55.44	23.64	19.67	31.59	1.00	BDL*	BDL*
8	24/04/2019	72.66	41.56	13.57	27.52	0.69	BDL*	BDL*
9	29/04/2019	82.60	34.26	10.54	36.35	0.93	BDL*	BDL*
10	01/05/2019	74.38	42.69	11.66	38.36	0.95	BDL*	BDL*
11	06/05/2019	65.34	29.34	24.36	35.53	0.50	BDL*	BDL*
12	09/05/2019	81.24	47.27	17.56	40.21	0.68	BDL*	BDL*
13	13/05/2019	79.68	39.30	20.27	17.49	0.74	BDL*	BDL*
14	15/05/2019	58.83	28.68	13.48	32.54	0.47	BDL*	BDL*
15	20/05/2019	82.32	45.25	6.61	29.27	0.87	BDL*	BDL*
16	22/05/2019	66.34	36.36	15.37	25.36	0.78	BDL*	BDL*
17	27/05/2019	86.80	48.64	8.36	19.54	0.85	BDL*	BDL*
18	29/05/2019	61.35	27.36	16.26	34.59	0.69	BDL*	BDL*
19	03/06/2019	49.32	27.60	15.57	27.51	0.37	BDL*	BDL*
20	05/06/2019	70.29	34.30	18.62	23.42	0.65	BDL*	BDL*
21	10/06/2019	65.31	39.34	11.51	19.32	0.78	BDL*	BDL*
22	17/06/2019	85.33	40.21	5.69	25.61	0.66	BDL*	BDL*
23	19/06/2019	56.53	32.56	13.58	22.69	0.36	BDL*	BDL*
24	24/06/2019	80.34	41.86	14.99	34.22	0.46	BDL*	BDL*
25	26/06/2019	74.38	21.61	9.65	28.45	0.57	BDL*	BDL*
26	01/07/2019	70.54	32.65	18.64	36.50	0.60	BDL*	BDL*
27	03/07/2019	65.41	28.43	8.09	25.50	0.55	BDL*	BDL*
28	08/07/2019	50.64	25.50	14.49	23.43	0.37	BDL*	BDL*
29	10/07/2019	67.68	33.27	10.40	30.29	0.64	BDL*	BDL*
30	15/07/2019	54.25	21.20	17.55	29.42	0.40	BDL*	BDL*

Continue …

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

NEAR FIRE STATION								
Sr.No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2019	74.59	35.37	15.60	37.50	0.50	BDL*	BDL*
32	22/07/2019	82.48	37.10	12.38	26.76	0.72	BDL*	BDL*
33	24/07/2019	63.96	31.24	19.56	24.43	0.71	BDL*	BDL*
34	29/07/2019	58.35	36.45	21.30	34.37	0.86	BDL*	BDL*
35	31/07/2019	76.29	41.24	11.54	22.67	0.58	BDL*	BDL*
36	05/08/2019	67.55	40.25	10.50	20.52	0.23	BDL*	BDL*
37	07/08/2019	72.65	45.66	15.20	26.30	0.30	BDL*	BDL*
38	12/08/2019	68.26	31.53	22.37	35.65	0.48	BDL*	BDL*
39	14/08/2019	60.51	27.52	9.26	27.63	0.73	BDL*	BDL*
40	19/08/2019	75.28	38.39	11.51	23.44	0.57	BDL*	BDL*
41	21/08/2019	58.35	26.12	7.22	30.56	0.45	BDL*	BDL*
42	26/08/2019	79.39	42.36	16.23	39.57	0.29	BDL*	BDL*
43	28/08/2019	69.48	32.44	21.59	34.53	0.41	BDL*	BDL*
44	03/09/2019	64.58	36.65	9.15	18.40	0.60	BDL*	BDL*
45	05/09/2019	54.36	25.37	6.71	15.37	0.52	BDL*	BDL*
46	09/09/2019	71.36	33.64	11.72	20.58	0.39	BDL*	BDL*
47	11/09/2019	52.68	20.41	7.70	26.24	0.31	BDL*	BDL*
48	16/09/2019	76.24	42.73	12.61	35.73	0.30	BDL*	BDL*
49	18/09/2019	67.58	41.20	15.73	22.64	0.55	BDL*	BDL*
50	23/09/2019	65.42	29.67	18.63	30.69	0.37	BDL*	BDL*
51	25/09/2019	73.52	31.57	22.48	32.79	0.32	BDL*	BDL*
52	30/09/2019	68.35	35.58	16.59	29.45	0.36	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI HOUSE								
Sr. No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	02/04/2019	68.30	31.55	11.54	21.67	0.86	BDL*	BDL*
2	03/04/2019	52.32	26.20	19.64	28.62	0.70	BDL*	BDL*
3	08/04/2019	60.49	37.52	18.55	33.67	0.61	BDL*	BDL*
4	10/04/2019	76.33	22.29	9.67	17.51	0.96	BDL*	BDL*
5	15/04/2019	54.33	29.70	10.28	29.34	0.84	BDL*	BDL*
6	17/04/2019	62.35	35.63	13.63	26.65	0.94	BDL*	BDL*
7	22/04/2019	73.65	32.47	7.70	23.42	0.48	BDL*	BDL*
8	24/04/2019	64.53	36.55	16.42	22.23	0.40	BDL*	BDL*
9	29/04/2019	75.64	30.54	21.64	24.32	0.64	BDL*	BDL*
10	01/05/2019	67.33	39.50	24.38	26.71	0.77	BDL*	BDL*
11	06/05/2019	87.33	25.78	13.27	23.55	1.00	BDL*	BDL*
12	09/05/2019	75.76	40.30	15.65	35.43	0.81	BDL*	BDL*
13	13/05/2019	85.67	46.27	23.43	30.24	0.27	BDL*	BDL*
14	15/05/2019	78.55	35.63	9.71	18.69	0.56	BDL*	BDL*
15	20/05/2019	68.40	42.52	18.57	24.50	0.73	BDL*	BDL*
16	22/05/2019	72.66	29.40	16.37	37.57	0.37	BDL*	BDL*
17	27/05/2019	62.84	31.55	11.78	31.39	0.64	BDL*	BDL*
18	29/05/2019	86.34	36.72	14.57	25.36	0.79	BDL*	BDL*
19	03/06/2019	66.52	31.55	8.56	15.65	0.49	BDL*	BDL*
20	05/06/2019	76.36	39.50	15.25	28.48	0.22	BDL*	BDL*
21	10/06/2019	60.52	36.26	19.42	23.43	0.63	BDL*	BDL*
22	17/06/2019	69.26	30.50	13.57	22.65	0.74	BDL*	BDL*
23	19/06/2019	50.20	25.66	16.25	32.62	0.29	BDL*	BDL*
24	24/06/2019	66.62	34.58	11.30	26.52	0.68	BDL*	BDL*
25	26/06/2019	79.86	32.39	7.59	21.64	0.34	BDL*	BDL*
26	01/07/2019	82.42	41.89	7.60	27.51	0.53	BDL*	BDL*
27	03/07/2019	73.63	26.37	10.68	30.23	0.61	BDL*	BDL*
28	08/07/2019	55.21	29.40	6.54	20.49	0.32	BDL*	BDL*
29	10/07/2019	71.23	37.27	8.63	23.44	0.39	BDL*	BDL*
30	15/07/2019	59.32	27.51	22.43	33.53	0.47	BDL*	BDL*

Continue …

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

ADANI HOUSE								
Sr. No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2019	62.47	32.22	18.23	28.51	0.74	BDL*	BDL*
32	22/07/2019	74.38	28.46	13.52	22.41	0.84	BDL*	BDL*
33	24/07/2019	69.45	38.23	20.23	32.47	0.24	BDL*	BDL*
34	29/07/2019	52.42	30.24	17.53	26.67	0.69	BDL*	BDL*
35	31/07/2019	70.66	36.26	21.20	31.41	0.52	BDL*	BDL*
36	05/08/2019	62.51	35.58	19.22	24.51	0.42	BDL*	BDL*
37	07/08/2019	77.50	38.82	21.53	29.53	0.37	BDL*	BDL*
38	12/08/2019	65.35	41.56	11.25	26.59	0.40	BDL*	BDL*
39	14/08/2019	56.20	20.57	13.62	19.34	0.60	BDL*	BDL*
40	19/08/2019	70.69	34.28	18.29	28.55	0.18	BDL*	BDL*
41	21/08/2019	64.23	23.64	9.76	22.60	0.46	BDL*	BDL*
42	26/08/2019	72.41	29.44	7.56	31.53	0.25	BDL*	BDL*
43	28/08/2019	57.31	30.45	16.90	30.22	0.58	BDL*	BDL*
44	03/09/2019	56.22	29.70	17.59	23.41	0.36	BDL*	BDL*
45	05/09/2019	62.39	34.62	14.57	24.43	0.44	BDL*	BDL*
46	09/09/2019	50.42	26.42	16.51	30.35	0.13	BDL*	BDL*
47	11/09/2019	60.54	23.77	12.70	20.26	0.48	BDL*	BDL*
48	16/09/2019	69.35	27.68	7.59	27.57	0.21	BDL*	BDL*
49	18/09/2019	74.62	36.68	20.50	37.64	0.25	BDL*	BDL*
50	23/09/2019	53.69	25.41	15.66	25.44	0.41	BDL*	BDL*
51	25/09/2019	78.32	39.16	10.40	21.61	0.29	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

CT-3 DG HOUSE								
Sr.No.	Date of Sampling	Particulate Matter (PM10) µg/m³	Particulate Matter (PM 2.5) µg/m³	Sulphur Dioxide (SO2) µg/m³	Oxides of Nitrogen (NO2) µg/m³	Carbon Monoxide as CO mg/m³	Hydrocarbon as CH_4 mg/m³	Benzene as C_6H_6 µg/m³
1	02/04/2019	64.36	25.41	20.33	29.64	0.78	BDL*	BDL*
2	03/04/2019	77.69	40.31	23.39	33.50	0.92	BDL*	BDL*
3	08/04/2019	80.42	46.18	11.68	37.41	0.37	BDL*	BDL*
4	10/04/2019	71.65	32.48	6.56	20.55	0.89	BDL*	BDL*
5	15/04/2019	60.47	35.30	15.66	34.38	0.41	BDL*	BDL*
6	17/04/2019	81.26	47.22	9.40	23.43	0.72	BDL*	BDL*
7	22/04/2019	65.34	27.52	14.56	26.62	0.65	BDL*	BDL*
8	24/04/2019	87.54	54.37	17.35	30.47	0.49	BDL*	BDL*
9	29/04/2019	68.67	26.57	13.49	19.66	0.87	BDL*	BDL*
10	01/05/2019	88.67	50.24	15.48	21.67	1.01	BDL*	BDL*
11	06/05/2019	70.33	35.67	21.52	30.48	0.88	BDL*	BDL*
12	09/05/2019	86.37	45.31	10.51	25.33	0.48	BDL*	BDL*
13	13/05/2019	74.33	29.42	26.29	37.21	0.63	BDL*	BDL*
14	15/05/2019	63.47	25.66	7.55	22.62	0.76	BDL*	BDL*
15	20/05/2019	87.35	51.23	19.58	32.49	1.02	BDL*	BDL*
16	22/05/2019	78.39	40.18	13.56	40.27	0.58	BDL*	BDL*
17	27/05/2019	67.86	39.44	18.41	36.70	0.36	BDL*	BDL*
18	29/05/2019	75.32	30.33	12.20	29.38	0.94	BDL*	BDL*
19	03/06/2019	55.17	20.32	6.49	19.21	0.61	BDL*	BDL*
20	05/06/2019	63.28	25.37	23.52	32.76	0.52	BDL*	BDL*
21	10/06/2019	78.37	44.32	13.80	17.56	0.80	BDL*	BDL*
22	17/06/2019	74.27	45.40	18.39	27.51	0.84	BDL*	BDL*
23	19/06/2019	68.42	35.79	11.55	35.63	0.48	BDL*	BDL*
24	24/06/2019	72.56	43.53	9.36	22.67	0.38	BDL*	BDL*
25	26/06/2019	90.56	54.37	12.52	25.64	0.77	BDL*	BDL*
26	01/07/2019	88.62	46.35	14.51	30.64	0.78	BDL*	BDL*
27	03/07/2019	78.48	42.33	16.61	33.48	0.30	BDL*	BDL*
28	08/07/2019	62.53	34.26	12.28	38.44	0.54	BDL*	BDL*
29	10/07/2019	81.63	49.41	17.53	26.46	0.82	BDL*	BDL*
30	15/07/2019	70.46	38.28	20.33	20.27	0.66	BDL*	BDL*

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF AMBIENT AIR QUALITY MONITORING

CT-3 DG HOUSE								
Sr.No.	**Date of Sampling**	**Particulate Matter (PM10) µg/m³**	**Particulate Matter (PM 2.5) µg/m³**	**Sulphur Dioxide (SO2) µg/m³**	**Oxides of Nitrogen (NO2) µg/m³**	**Carbon Monoxide as CO mg/m³**	**Hydrocarbon as CH_4 mg/m³**	**Benzene as C_6H_6 µg/m³**
31	17/07/2019	80.36	43.45	26.50	36.51	0.89	BDL*	BDL*
32	22/07/2019	69.61	30.42	18.63	29.25	0.94	BDL*	BDL*
33	24/07/2019	58.43	24.21	22.39	34.54	0.57	BDL*	BDL*
34	29/07/2019	72.43	45.64	15.64	18.90	0.90	BDL*	BDL*
35	31/07/2019	90.47	52.35	19.65	28.64	0.41	BDL*	BDL*
36	05/08/2019	74.32	37.49	16.24	23.42	0.33	BDL*	BDL*
37	07/08/2019	86.34	55.66	19.51	35.64	0.54	BDL*	BDL*
38	12/08/2019	90.22	45.35	13.55	27.60	0.61	BDL*	BDL*
39	14/08/2019	72.34	41.59	15.36	24.54	0.71	BDL*	BDL*
40	19/08/2019	61.84	46.35	21.46	31.22	0.47	BDL*	BDL*
41	21/08/2019	70.36	39.73	24.53	39.21	0.24	BDL*	BDL*
42	26/08/2019	62.34	31.28	11.46	33.42	0.44	BDL*	BDL*
43	28/08/2019	76.35	34.68	25.33	38.23	0.72	BDL*	BDL*
44	03/09/2019	72.63	33.77	14.71	20.72	0.23	BDL*	BDL*
45	05/09/2019	65.41	37.62	12.72	22.62	0.63	BDL*	BDL*
46	09/09/2019	56.43	41.26	18.74	28.46	0.33	BDL*	BDL*
47	11/09/2019	66.72	29.50	22.62	33.62	0.18	BDL*	BDL*
48	16/09/2019	58.29	32.53	10.52	29.48	0.56	BDL*	BDL*
49	18/09/2019	80.31	50.40	17.54	31.33	0.38	BDL*	BDL*
50	23/09/2019	70.57	34.64	23.51	34.63	0.53	BDL*	BDL*
51	25/09/2019	84.37	47.34	15.46	24.40	0.45	BDL*	BDL*
52	30/09/2019	75.40	40.26	20.55	26.45	0.37	BDL*	BDL*
	TEST METHOD	**IS:5182(Part 23):Gravimetric CPCB - Method (Vol.I,May-2011)**	**Gravimetric-CPCB - Method (Vol.I,May-2011)**	**IS:5182(Part II):Improved West and Gaeke**	**IS:5182(Part VI):Modified Jacob & Hochheiser (NaOH-NaAsO2)**	**NDIR Digital Gas Analyzer**	**SOP: HC: GC/GCMS/Gas analyzer**	**IS 5182 (Part XI):2006/CPCB Method**

*Below detection limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	T1 TERMINAL NR.MARINE BUILDING					
		Result [Leq dB(A)]					
	Sampling Date & Time	19/04/2019	06/05/2019	14/06/2019	19/07/2019	16/08/2019	23/09/2019
1	6:00-7:00	64.2	65.2	64.1	68.3	56.3	68.1
2	7:00-8:00	67.1	62.7	68.8	64.4	60.4	62.8
3	8:00-9:00	67.8	73.4	65.1	62.4	59.4	63.4
4	9:00-10:00	66.3	73.1	72.1	68.4	62.6	69.9
5	10:00-11:00	70.3	70.6	71.4	64.4	65.4	72.4
6	11:00-12:00	68.3	71.4	68.9	64.2	68.4	74.1
7	12:00-13:00	63.5	68.4	72.4	68.5	68.9	70.1
8	13:00-14:00	67.3	62.8	68.8	68.4	67.3	66.4
9	14:00-15:00	63.6	63.2	68.2	68.9	65.5	68.4
10	15:00-16:00	65.2	66.4	72.6	72.5	62.3	62.8
11	16:00-17:00	68.4	66.9	70.2	65.3	65.3	65.6
12	17:00-18:00	64.2	69.4	69.2	63.9	64.2	68.8
13	18:00-19:00	67.3	65.8	71.8	66.8	62.3	64.1
14	19:00-20:00	70.2	66.4	74.2	65.4	65.4	63.4
15	20:00-21:00	65.2	63.8	68.1	68.3	61.3	68.9
16	21:00-22:00	64.5	67.6	62.5	64.4	64.4	66.8
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	T1 TERMINAL NR.MARINE BUILDING					
		Result [Leq dB(A)]					
1	Sampling Date & Time	19/04/2019	06/05/2019	14/06/2019	19/07/2019	16/08/2019	23/09/2019
2	22:00-23:00	68.7	63.8	60.4	63.1	63.4	68.4
3	23:00-00:00	65.1	65.7	58.1	60.4	60.1	65.5
4	00:00-01:00	62.8	64.1	55.1	59.1	62.4	62.4
5	01:00-02:00	68.4	62.8	59.5	65.4	60.4	63.1
6	02:00-03:00	64.9	63.7	60.4	63.1	60.8	61.4
7	03:00-04:00	69.1	63.9	62.1	64.4	59.4	68.4
8	04:00-05:00	65.5	69.8	60.8	64.9	60.3	64.2
9	05:00-06:00	68.2	62.7	62.7	62.8	62.1	63.1
Night Time Limit*		70 Leq dB(A)					

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	NEAR FIRE STATION					
		Result [Leq dB(A)]					
	Sampling Date & Time	24/04/2019	17/05/2019	17/06/2019	10/07/2019	14/08/2019	09/09/2019
1	6:00-7:00	68.4	63.7	62.4	68.4	68.3	65.7
2	7:00-8:00	65.0	61.8	64.2	65.1	64.4	68.3
3	8:00-9:00	67.3	65.4	62.8	63.4	62.4	65.2
4	9:00-10:00	63.5	69.4	68.2	65.1	68.4	65.1
5	10:00-11:00	74.2	74.1	65.1	72.1	64.4	73.3
6	11:00-12:00	71.3	72.5	66.1	68.8	64.2	70.3
7	12:00-13:00	69.3	68.4	72.1	65.1	68.5	65.3
8	13:00-14:00	67.1	65.4	70.1	69.8	68.4	70.2
9	14:00-15:00	70.3	61.5	69.1	67.2	68.9	69.3
10	15:00-16:00	65.2	60.4	65.1	65.3	72.5	64.3
11	16:00-17:00	61.3	69.1	68.1	62.1	65.3	67.2
12	17:00-18:00	63.2	62.4	62.4	63.4	63.9	64.0
13	18:00-19:00	65.3	62.9	66.3	65.8	66.8	67.1
14	19:00-20:00	68.2	67.1	63.4	66.9	65.4	62.1
15	20:00-21:00	60.1	62.8	61.4	71.4	68.3	65.2
16	21:00-22:00	65.2	65.1	62.8	72.8	64.4	61.9
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	NEAR FIRE STATION					
		Result [Leq dB(A)]					
1	Sampling Date & Time	24/04/2019	17/05/2019	17/06/2019	10/07/2019	14/08/2019	09/09/2019
2	22:00-23:00	63.2	64.1	63.4	68.4	65.1	67.4
3	23:00-00:00	59.4	63.4	68.4	65.5	62.4	64.3
4	00:00-01:00	60.3	62.1	65.2	62.4	59.4	58.4
5	01:00-02:00	60.3	60.4	62.7	63.1	61.7	66.3
6	02:00-03:00	65.3	68.4	69.4	60.4	62.1	64.3
7	03:00-04:00	62.3	63.4	65.1	61.8	65.4	62.1
8	04:00-05:00	60.2	65.4	62.8	63.7	66.1	57.2
9	05:00-06:00	62.4	67.1	66.6	62.8	60.4	62.2
Night Time Limit*		70 Leq dB(A)					

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

H. T. Shah
Lab Manager

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	ADANI HOUSE					
		Result [Leq dB(A)]					
	Sampling Date & Time	15/04/2019	03/05/2019	04/06/2019	03/07/2019	05/08/2019	04/09/2019
1	6:00-7:00	60.3	67.2	61.7	65.4	65.4	64.3
2	7:00-8:00	63.4	65.9	67.3	68.1	66.3	68.8
3	8:00-9:00	62.3	68.1	65.2	62.5	66.9	65.7
4	9:00-10:00	67.4	62.4	70.3	73.1	67.4	70.1
5	10:00-11:00	65.6	62.8	73.2	70.5	63.2	72.4
6	11:00-12:00	68.4	61.8	68.3	69.9	62.4	63.4
7	12:00-13:00	70.4	68.4	68.1	66.4	67.4	60.4
8	13:00-14:00	65.3	68.7	62.4	62.1	65.3	67.9
9	14:00-15:00	69.4	68.2	69.3	68.4	62.5	67.5
10	15:00-16:00	69.7	64.1	66.9	63.4	68.4	62.4
11	16:00-17:00	67.3	69.1	70.2	68.1	68.3	70.3
12	17:00-18:00	65.3	73.1	63.2	66.8	68.7	71.9
13	18:00-19:00	63.8	70.4	64.0	63.1	64.3	68.8
14	19:00-20:00	64.3	64.1	61.0	62.9	62.7	62.1
15	20:00-21:00	67.4	62.8	68.0	65.4	65.8	60.1
16	21:00-22:00	63.8	60.8	65.5	66.7	63.6	64.1
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	ADANI HOUSE					
		Result [Leq dB(A)]					
1	Sampling Date & Time	15/04/2019	03/05/2019	04/06/2019	03/07/2019	05/08/2019	04/09/2019
2	22:00-23:00	60.4	65.7	67.3	65.5	60.4	62.4
3	23:00-00:00	65.1	67.1	59.5	62.1	62.4	67.3
4	00:00-01:00	65.4	61.5	63.1	63.4	68.7	64.3
5	01:00-02:00	61.8	60.4	61.0	68.1	60.1	67.4
6	02:00-03:00	63.4	60.3	61.3	62.7	63.1	60.3
7	03:00-04:00	62.4	62.8	63.4	60.1	60.8	62.3
8	04:00-05:00	65.7	64.1	68.3	60.9	61.4	65.3
9	05:00-06:00	67.1	62.9	66.2	63.1	64.1	68.4
Night Time Limit*		70 Leq dB(A)					

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF NOISE LEVEL MONITORING

Result of Noise level monitoring [Day Time]

SR. NO.	Name of Location	CT-3 DG HOUSE					
		Result [Leq dB(A)]					
	Sampling Date & Time	29/04/2019	13/05/2019	24/06/2019	26/07/2019	28/08/2019	18/09/2019
1	6:00-7:00	68.9	61.5	65.3	56.3	62.4	61.2
2	7:00-8:00	70.3	59.4	67.2	60.4	64.5	68.7
3	8:00-9:00	65.3	63.4	70.2	59.4	67.3	65.2
4	9:00-10:00	64.3	65.5	66.4	62.6	66.0	64.3
5	10:00-11:00	64.2	62.3	62.6	65.4	69.9	63.8
6	11:00-12:00	62.1	63.8	60.3	68.4	72.4	69.9
7	12:00-13:00	68.3	64.1	65.2	68.9	67.3	62.7
8	13:00-14:00	73.7	62.8	68.3	67.3	70.3	62.3
9	14:00-15:00	69.9	69.2	66.4	65.5	72.3	65.1
10	15:00-16:00	67.3	67.2	61.4	62.3	67.3	65.4
11	16:00-17:00	68.3	66.1	65.2	65.3	63.2	65.3
12	17:00-18:00	65.7	68.4	68.3	64.2	65.7	68.1
13	18:00-19:00	63.8	68.3	66.2	62.3	69.2	64.2
14	19:00-20:00	63.8	62.4	72.6	65.4	64.1	62.8
15	20:00-21:00	64.9	64.3	70.2	61.3	64.2	65.1
16	21:00-22:00	65.8	63.8	69.3	64.4	67.3	63.4
Day Time Limit*		75 Leq dB(A)					

Result of Noise level monitoring [Night Time]

SR. NO.	Name of Location	CT-3 DG HOUSE					
		Result [Leq dB(A)]					
1	Sampling Date & Time	29/04/2019	13/05/2019	24/06/2019	26/07/2019	28/08/2019	18/09/2019
2	22:00-23:00	62.1	68.7	61.1	67.5	62.4	60.4
3	23:00-00:00	65.0	65.1	65.1	65.2	61.8	62.4
4	00:00-01:00	58.3	62.8	62.8	63.1	60.4	60.4
5	01:00-02:00	59.4	68.4	63.6	60.4	57.1	65.2
6	02:00-03:00	63.4	64.9	63.9	65.1	59.8	63.1
7	03:00-04:00	67.8	69.1	65.1	62.8	60.4	64.5
8	04:00-05:00	60.4	61.4	60.4	61.2	60.8	68.4
9	05:00-06:00	62.4	68.2	61.8	62.8	62.1	62.1
Night Time Limit*		70 Leq dB(A)					

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULT OF STACK MONITORING

SR. NO.	TEST PARAMETERS	UNIT	STD. LIMIT	THERMIC FLUID HEATER (BITUMEN-01)	THERMIC FLUID HEATER (BITUMEN-02)	HOT WATER SYSTEM-1	HOT WATER SYSTEM-2	TEST METHOD
				APRIL 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	19.83	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	6.74	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	39.32	--	IS:11255 (Part-VII):2005
				MAY 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	21.81	14.37	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	6.68	5.53	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	34.27	28.75	IS:11255 (Part-VII):2005
				JUNE 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	23.74	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	5.45	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	36.56	--	IS:11255 (Part-VII):2005
				JULY 2019				
1	Particulate Matter	mg/Nm^3	**150**	--	--	--	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	--	--	--	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	--	--	--	--	IS:11255 (Part-VII):2005
				AUGUST 2019				
1	Particulate Matter	mg/Nm^3	**150**	12.33	--	20.41	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	3.62	--	6.98	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	23.61	--	32.61	--	IS:11255 (Part-VII):2005
				SEPTEMBER 2019				
1	Particulate Matter	mg/Nm^3	**150**	18.75	--	--	--	IS:11255 (Part-I):1985
2	Sulfur dioxide	ppm	**100**	4.24	--	--	--	IS:11255 (Part-II):1985
3	Oxides of Nitrogen	ppm	**50**	28.47	--	--	--	IS:11255 (Part-VII):2005

*Below detection limit
Results on 11 % O_2 Correction when Oxygen is greater than 11 %. And 12% CO_2correction when $CO_2$is less thsn 12%

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

RESULTS OF D.G. STACK MONITORING

16/05/2019					
SR. NO.	**TEST PARAMETERS**	**Unit**	**Adani Port**	**GPCB Limit**	**Test Method**
			D.G. Set – 6, 7 & 8* (1250 KVA, each)		
1	Particulate Matter	mg/Nm^3	17.36	150	IS:11255 (Part-I):1985
2	Sulphur Dioxide	ppm	5.26	100	IS:11255 (Part-II):1985
3	Oxide of Nitrogen	ppm	32.39	50	IS:11255 (Part-VII):2005
4	Carbon Monoxide	mg/m3	4.9	Not Specified	Digital Gas Analyzer
5	Hydro Carbon NMHC	ppm	BDL*	Not Specified	Gas Chromatography

*DG sets are used as standby, so stack monitoring is done on quarterly basis. Results on 15 % O2 Correction when Oxygen is greater than 15 %

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

Minimum Detection Limit [MDL]

Ambient Air Parameters		
Sr. No.	**Test Parameter**	**MDL**
1	Particulate Matter (PM10) (µg/m^3)	10
2	Particulate Matter (PM 2.5) (µg/m^3)	10
3	Sulphur Dioxide (SO_2) (µg/m^3)	5
4	Oxides of Nitrogen (µg/m^3)	5
5	Hydrogen Sulphide as H_2S (µg/m^3)	6

Stack Parameters		
Sr.No.	**Test Parameter**	**MDL**
1	Particulate Matter (mg/Nm^3)	10
2	Sulphur Dioxide (ppm)	1.52
3	Oxides of Nitrogen (ppm)	2.65
4	Carbon Monoxide (mg/Nm^3)	0.1
5	Haydro Carbon NMHC (ppm)	1.0

Sea Water Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	pH	--	2
2	Temperature	°C	2
3	Total Suspended Solids	mg/L	2
4	BOD (3 Days @ 27 °C)	mg/L	1
5	Dissolved Oxygen	mg/L	0.1
6	Salinity	ppt	1
7	Oil & Grease	mg/L	2
8	Nitrate as NO_3	µmol/L	0.5
9	Nitrite as NO_2	µmol/L	0.01
10	Ammonical Nitrogen as NH_3	µmol/L	0.2
11	Phosphates as PO_4	µmol/L	0.5
12	Petroleum Hydrocarbon	µg/L	1
13	Total Dissolved Solids	mg/L	10
14	COD	mg/L	3
15	Primary productivity	mgC/L/day	0.1
16	Chlorophyll	mg/m^3	0.1
17	Phaeophytin	mg/m^3	0.1
18	Cell Count	No. x 10^3/L	1

Sea Sediment Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	Organic Matter	%	0.1
2	Phosphorus as P	µg/g	1
3	Petroleum Hydrocarbon	µg/g	1
4	Aluminum as Al	%	0.1
5	Manganese as Mn	µg/g	1
6	Mercury as Hg	µg/g	0.1

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

STP Water parameter(mg/L)		
Sr. No.	**Test parameter**	**MDL**
1	pH	2
2	Total Suspended Solids (mg/L)	2
3	BOD (3 days @ 270 C) (mg/L)	1
4	Residual Chlorine (mg/L)	0.2
5	Fecal Coliform (MPN INDEX/100 mL)	1.8

ETP Water Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	Colour	Co-pt	2
2	pH	--	2
3	Temperature	^{o}C	2
4	Total Suspended Solids	mg/L	2
5	Total Dissolved Solids	mg/L	10
6	COD	mg/L	3
7	BOD (3 Days @ 27 ^{o}C)	mg/L	1
8	Chloride as Cl	mg/L	1
9	Oil & Grease	mg/L	2
10	Sulphate as SO_4	mg/L	1
11	Ammonical Nitrogen as NH_3	mg/L	0.2
12	Phenolic Compound	mg/L	0.005
13	Copper as Cu	mg/L	0.01
14	Lead as Pb	mg/L	0.01
15	Sulphide as S	mg/L	0.1
16	Cadmium as Cd	mg/L	0.002
17	Fluoride as F	mg/L	0.05

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

"HALF YEARLY ENVIRONMENTAL MONITORING REPORT"

FOR

BORE HOLE WATER
ADANI PORTS AND SPECIAL ECONOMIC ZONE LIMITED
TAL: MUNDRA, KUTCH, MUNDRA – 370 421

MONITORING PERIOD:
APRIL 2019 TO SEPTEMBER 2019

PREPARED BY:

POLLUCON LABORATORIES PVT.LTD.

**PLOT NO.5/6 "POLLUCON HOUSE", OPP. BALAJI INDUSTRIAL SOCIETY,
OLD SHANTINATH SILK MILL LANE, NEAR GAYTRI FARSAN MART,
NAVJIVAN CIRCLE, UDHANA MAGDALLA ROAD, SURAT-395007.
PHONE/FAX – (+91 261) 2455 751, 2601 106, 2601 224.
E-mail: pollucon@gmail.com Web: www.polluconlab.com**

TC - 5945 ISO 9001:2015 ISO 14001:2015 OHSAS 18001:2007

RESULTS OF BORE HOLE WATER

SR. NO	TEST PARAMETERS	UNIT	RESULTS			TEST METHOD
			PUMP HOUSE-1	PUMP HOUSE-2	PUMP HOUSE-3	
	GPS Location		N 22° 44.554' E 069° 41.453'	N 22° 44.554' E 069° 41.453'	N 22° 44.554' E 069° 41.453'	
	Sampling Date		20/06/2019	20/06/2019	20/06/2019	
1	pH	--	7.70	8.10	8.06	IS3025(P11)83Re.02
2	Salinity	ppt	13.2	4.6	7.1	APHA 2520B
3	Oil & Grease	mg/L	BDL*	BDL*	2.0	APHA(22ndEdi)5520D
4	Hydrocarbon	mg/L	BDL*	BDL*	BDL*	GC/GC-MS
5	Lead as Pb	mg/L	0.048	0.056	0.075	AAS APHA(22ndEdi)3111 B
6	Arsenic as As	mg/L	BDL*	BDL*	BDL*	AAS APHA 3114 B
7	Nickel as Ni	mg/L	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
8	Total Chromium as Cr	mg/L	BDL*	BDL*	BDL*	AAS 3111B
9	Cadmium as Cd	mg/L	0.011	0.036	0.025	AAS APHA(22ndEdi)3111 B
10	Mercury as Hg	mg/L	BDL*	BDL*	BDL*	AAS APHA- 3112 B
11	Zinc as Zn	mg/L	3.80	2.1	0.48	AAS APHA(22ndEdi)3111 B
12	Copper as Cu	mg/L	BDL*	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
13	Iron as Fe	mg/L	7.2	6.2	3.10	AAS APHA(22ndEdi)3111 B
14	Insecticides/Pesticides	mg/L	Absent	Absent	Absent	GC/GC-MS
15	Depth of Water Level from Ground Level	meter	1.1	1.05	1.0	--

*BDL: Below Detection Limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

SR. NO	TEST PARAMETERS	UNIT	RESULTS		TEST METHOD
			NEAR ETP OFFICE	NEAR PUMP HOUSE -1	
	GPS Location		N 22° 44.549' E 069° 41.464'	N 22° 44.50' E 069° 41.42'	
	Sampling Date		20/06/2019	20/06/2019	
1	pH	--	7.95	7.95	IS3025(P11)83Re.02
2	Salinity	ppt	19.4	8.60	APHA 2520B
3	Oil & Grease	mg/L	3.1	BDL*	APHA(22ndEdi)5520D
4	Hydrocarbon	mg/L	BDL*	BDL*	GC/GC-MS
5	Lead as Pb	mg/L	0.044	0.062	AAS APHA(22ndEdi)3111 B
6	Arsenic as As	mg/L	BDL*	BDL*	AAS APHA 3114 B
7	Nickel as Ni	mg/L	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
8	Total Chromium as Cr	mg/L	BDL*	BDL*	AAS 3111B
9	Cadmium as Cd	mg/L	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
10	Mercury as Hg	mg/L	BDL*	BDL*	AAS APHA- 3112 B
11	Zinc as Zn	mg/L	0.092	BDL*	AAS APHA(22ndEdi)3111 B
12	Copper as Cu	mg/L	BDL*	BDL*	AAS APHA(22ndEdi)3111 B
13	Iron as Fe	mg/L	0.35	5.1	AAS APHA(22ndEdi)3111 B
14	Insecticides/Pesticides	mg/L	Absent	Absent	GC/GC-MS
15	Depth of Water Level from Ground Level	meter	1.0	1.25	--

*BDL: Below Detection Limit

H. T. Shah
Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai
Lab Manager (Q)

Borehole Water Parameters			
SR. NO.	**TEST PARAMETERS**	**UNIT**	**MDL**
1	pH	--	2
2	Salinity	mg/L	0.5
3	Oil & Grease	mg/L	2
4	Hydrocarbon	mg/L	0.01
5	Lead as Pb	mg/L	0.01
6	Arsenic as As	mg/L	0.001
7	Nickel as Ni	mg/L	0.02
8	Total Chromium as Cr	mg/L	0.025
9	Cadmium as Cd	mg/L	0.002
10	Mercury as Hg	mg/L	0.005
11	Zinc as Zn	mg/L	0.06
12	Copper as Cu	mg/L	0.01
13	Iron as Fe	mg/L	0.1
14	Insecticides/Pesticides	mg/L	0.1

H. T. Shah

Lab Manager

POLLUCON LABORATORIES PVT. LTD. SURAT-7.

Dr. Arun Bajpai

Lab Manager (Q)

Annexure – 2

Details of Greenbelt development at APSEZ, Mundra

LOCATION	Total Green Zone Detail Till Up to Sept - 2019				
	Area (In Ha.)	Trees (Nos.)	Palm (Nos.)	Shrubs (SQM)	Lawn (SQM)
SV COLONY	69.53	32480.00	7298.00	68327.00	95019.00
PORT & NON SEZ	81.37	146692.00	19220.00	75061.78	61937.38
SEZ	116.60	227120.00	20489.00	220583.60	28162.03
MITAP	2.48	8168.00	33.00	3340.00	4036.00
WEST PORT	94.33	206587.00	63331.00	24112.00	22854.15
AGRI PARK	8.94	17244.00	1332.00	5400.00	2121.44
SOUTH PORT	14.45	27530.00	3470.00	3882.00	3327.26
Samudra Township	55.93	53672.00	11834.00	20908.89	47520.07
Productive Farming (Vadala Farm)	23.79	27976.00	0.00	0.00	0.00
TOTAL (APSEZL)	**467.40**	**747469.00**	**127007.00**	**421615.27**	**264977.33**
		874476.00			

Details of Mangrove Afforstation done by APSEZ

Sl. no.	Location	Area (ha)	Duration	Species	Implementation agency
1	Mundra Port	24.0	-	Avicennia marina	Dr. Maity, Mangrove consultant of India
2	Mundra Port	25.0	-	Avicennia marina	Dr. Maity, Mangrove consultant of India
3	Luni/Hamirmora (Mundra, Kutch)	160.8	2007 - 2015	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GUIDE, Bhuj
4	Kukadsar (Mundra, Kutch)	66.5	2012 - 2014	Avicennia marina	GUIDE, Bhuj
5	Forest Area (Mundra)	298.0	2011 - 2013	Avicennia marina	-
6	Jangi Village (Bhachau, Kutch)	50.0	2012 - 2014	Avicennia marina	GUIDE, Bhuj
7	Jakhau Village (Abdasa, Kutch)	310.6	2007-08 & 2011-13	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GUIDE, Bhuj
8	Sat Saida Bet (Kutch)	255.0	2014-15 & 2016-17	Avicennia marina & Bio diversity	GUIDE, Bhuj
9	Dandi Village (Navsari)	800.0	2006 - 2011	Avicennia marina, Rhizophora mucronata, Ceriops tagal	SAVE, Ahmedabad
10	Talaza Village (Bhavnagar)	50.0	2011-12	Avicennia marina	SAVE, Ahmedabad
11	Narmada Village (Bhavnagar)	250.0	2014 - 2015	Avicennia marina	SAVE, Ahmedabad
12	Malpur Village (Bharuch)	200.0	2012-14	Avicennia marina	SAVE, Ahmedabad
13	Kantiyajal Village (Bharuch)	50.0	2014-15	Avicennia marina	SAVE, Ahmedabad
14	Devla Village (Bharuch)	150.0	210-16	Avicennia marina	SAVE, Ahmedabad
15	Village Tala Talav (Khambhat, Anand)	100.0	2015 - 2016	Avicennia marina	SAVE, Ahmedabad
16	Village Tala Talav (Khambhat, Anand)	38.0	2015 - 2016	Avicennia marina	GEC, Gandhinagar
17	Aliya Bet, Village Katpor (Hansot, Bharuch)	62.0	2017-18	Avicennia marina & Rhizophora spp.	GEC, Gandhinagar
Total Mangrove Plantation:		**2889.90 Ha**			

Annexure – 3

Rain Water Recharging System

Annexure – 4

adani
Foundation

SIX MONTHLY REPORT 2019-20

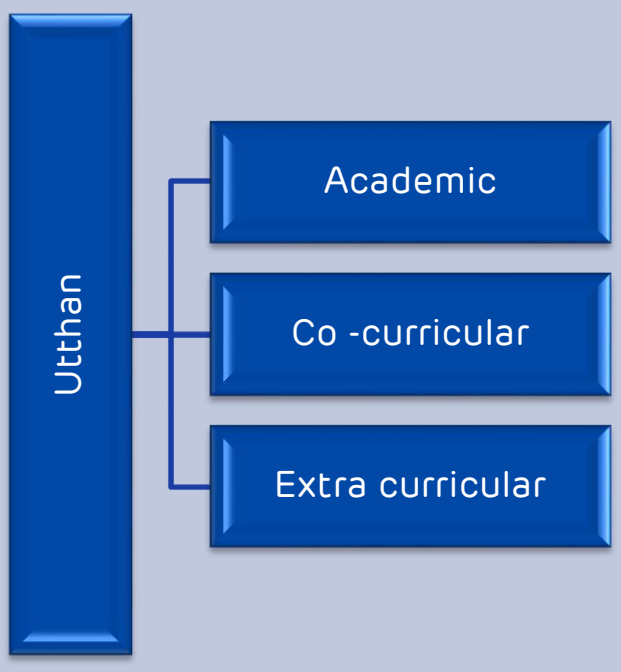
Education
Community Infrastructure Development
Kutch
Community Health
CSR
Sustainable Livelihood Development

Sustainable Growth With Goodness

Adani Foundation
Adani House, Port Road, Mundra – Kutch 370 421
[info@adanifoundation.com] [www.adanifoundation.com]

INDEX

Project: Utthan



Majority of Indians are the products of Government schools. These schools are a linchpin of the Indian educational system, accounting for 70% of Pre-Primary and Primary Schools and Secondary Schools. They have a great penetration into the very interiors of our country. We find them in hilly areas, unreachable islands, tribal areas and everywhere.

For the academic year 2018-19, Adani Foundation leveraging their experience, to intervene in Government Schools. These interventions will aim to enhance the quality of primary education in Government schools and result in around 3000 of children benefiting from a meaningful education. 17 Primary Government schools of Mundra taluka of Kutch district have been adopted to take up various initiatives aimed at improving quality in these schools. The project titled is 'UTTHAN'. In this holistic educational project we are focusing on:

Project: Utthan

Academic

- One teacher – One school + Sports teacher + IT teacher
- 'IT on Wheel' Van with 35 laptops and computer instructor make students more tech savvy and spreading the digital and technology knowledge amongst the younger generation
- To achieve academic excellence of Priya Vidyarthi, Utthan Shikshak implies various alternative method to make their classroom more friendly and interesting.
- English is to be taught to the students from the early classes so that they will be equipped with ample resources during their further studies.
- Training cum Induction Program on various topic like teaching methodology of progressive learner, assessment pattern of slow learnr, multiple intelligence etc.

Co - Curricular

- Every Saturday Library activity with the Book issue were planned and executed in a meaningful manner
- Sports are a crucial part of a student's growth and development. Through participation in sports and games, a student gains various skills, experience and confidence. With the intervene of our Sports teacher in all Utthan Schools successfully enrolled 500+ students in Khel Mahakumbh

Project: Utthan

Extra - Curricular

- Utthan Sahayak + 1222 students from High school & Higher secondary of 6 villages celebrate Fifth International Yoga Day
- On International Plastic Bag Free Day, Awareness were spread through Effective speech, Soft board decoration, Video and Newspaper clipping in all Utthan school.
- Celebration of Gurupurnima in all Utthan Schools during morning special.
- 363 students from 17 schools got an opportunity to visit Adani West port. Main port , Willmar, power & power through project Udaan.
- Tree plantation in all the Utthan School. Adani Foundation align with the circular passed by the Government of Gujarat "Ek baal Ek Jhhad" distributed 100 trees in each school. Students not only planted the trees in fact they adopt each tree with giving their own names.

Adani Vidya Mandir Bhadreshwar

provide "cost-free" education to meritorious students coming from challenging economic background, who have priceless treasures but have been under achievers due to situation. In year 2019-20 450 students are studying.

Activities Covered

- Science Fair – Block level
- Drawing Competition under the P.C.R.A. National level competition
- Assembly on every Saturday.
- International Yoga Day Celebration
- Guru Purnima celebration
- Independence Day Celebration
- Teacher's day Celebration
- Children's Day Celebration
- Educational Tour for each standard
- Festival Celebration
- Awareness Street Play organized at various villages

Adani Vidya Mandir Bhadreshwar

92% - Result SSC Board Exam

Shala Pravestosav of Std.-1 Students

Parents Teachers Meeting

Healthy Food

Festival Celebration

Various Competitions

Project Udaan

With a vision to familiarize, educate and inspire the future generations, Adani Foundation organizes Education Exposure visits to Mundra for High schools and educational institutes in Various parts of Gujrat.

250 institutes and 15,329 beneficiaries have made inspirational visit during this six months

Community Health

Health is the basic need for development of community. Adani Foundation focuses on ensuring good health for batter contribution to growth and progress and improving access to quality healthcare service in remote area.

Rural Clinic & Mobile healthcare unit

11 Rural Clinic

8 from mundra 3 from Anjar block treated ; **10889 patients**.

31 villages covered througfh Mobile healthcare unit

7902 patients benefited during six month

Community Health

19 General Health Camp conducted -

12 General & 7 under Utthan project ;

2873 patients treated

Community Health

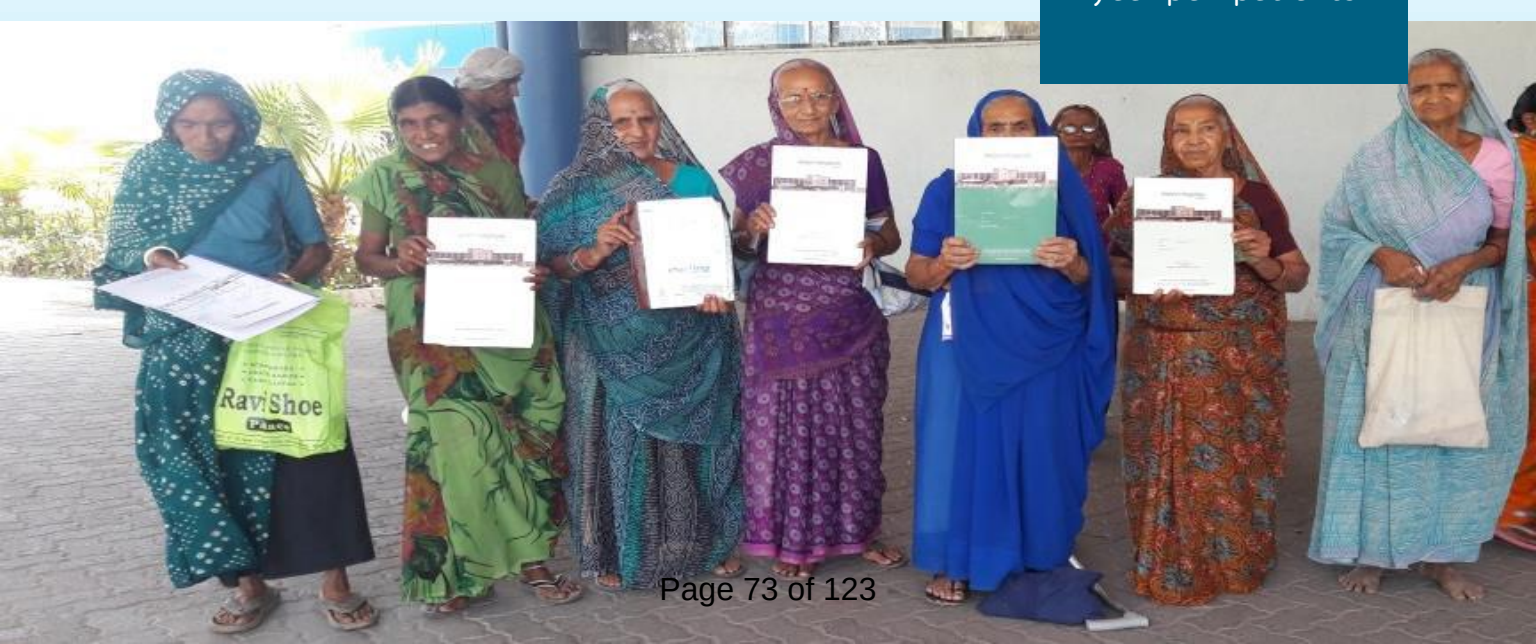
206 Dialysis patients

498 Needy patient benefited through Medical support Total amount of support is **Rs.4,02,201/-**

Sr. Citizen project 8672 Card holders of 68 villages get benefit under this project .

4713 sr. citizen patients benefited during six month

30000 limit for three year per patients



Gujarat Adani Institute of Medical Science (GAIMS) - Bhuj

First Medical College of Kutch district based on PPP model. It started from 2009.
Affiliate with "Krantiguru Shyamji Krishna Verma Kutch University"

750 bed – Largest Multi Specialty Hospital in kutch

Adani Foundation Team has initiated coordination with GKGH hospital and established a reception area for the smooth patient coordination and preparation for the social networking Programme.

Community Health

Health - Bhuj

3075 Beneficiaries of 27 General Health camps.

2629 Golden card enrolled in 18 Health camps in Interior villages & Mahiti Setu as well.

322 death bodies Reached at various locations of Kutchh with dignity and respect.

258 Poor patient supported in GKGH(Rs.2,84,321/-)

4242 People helped through Mahiti Setu for various government schemes

37450 Patinets benefitted though 11 camps towards Mata Madh

Celebration of various days like - World No tobacco day, Kargil Vijay divas, Health week on independence day, 5 years completion ceremony of GKGH, Teachers day,

Awareness
for Health & hygiene

Mahiti
setu

Support
Poor patient

General
Health camps

Arogya Saptah (7th – 14th August 2019)

Adani foundation, Adani Hospital and GAIMS have Jointly Celebrated "Arogya Saptah" 8th to 14th August-2019 in Respect of 73th Independence of our country. Celebration included multi specialty camps, Workshops, truckers health check up, surgical camp on foundation day and adolescent fair at different part of district. Collector, DDO, Minister, MLA and other dignitaries from NGOs had remained present. Objective of the program was to avail health benefits at GKGH and also at Adani Hospital Mundra and Approximately 4500 people will be direct beneficiaries of the program.

Day	Date	Event Name	Beneficiaries
1	07/08/2019	Health check up at Orphan age, Bhuj	101
2	08/08/2019	Blood Donation Camp, Nakhatrana	55
3	09/08/2019	Pregnant Women health check up, Madhapar	50
4	10/08/2019	Surgical Mega Camp, Khavda	223
5	11/08/2019	General Health Camp, Palara Jail	139
6	12/08/2019	Ayushman Health Card Enrolment, Gorevali	52
7	13/08/2019	Awareness on women health, mukt jivan college, Bhuj	250
8	14/08/2019	Blood Donor Appreciation	36

Fisherman Education

To strengthen the standard of pri-primary education, Adani Foundation has constructed 4 BALWADI at different fishermen helmet
Which focuses on the development of basic age-appropriate learning concepts, discipline, regularity, awareness of health & hygiene, cleanliness and also provides nutritious food.

125 children are benefiting from this scheme

115 students are getting benefit of vehicle transportation support from different Bandar.

100% girls 80% boys

providing **scholarship support** to motivate and encourage fishermen boys and girls for higher education

Book support : 49 Fisherman Students of Higher Secondary Standard
(9 to 12) has been benefitted

Vidya Sahay Yojana

SLD Fishermnan

65 Teams

13 villages

750 Fisherman youth`

“Adani Premiere League”

Cricket Tournament organized among fishermen community to promote healthy sportsmanship ,and harmonically transparent community relationship

Awareness Program

Facilitation of Government Fishermen Welfare

Vessel Approach Related Message Intimation to Fishermen.

4 Fishermen VAsahat

983 Families

70000 ltr water per day`

potable water provided to the fishermen communities at different vasaht through water tanker

Sea Weed Culture

Sea Weed Culture is going on. Seed bank preparation is going on under guidance of VRTI.

4300 Man-days

Mangrove plantation at Hamira mora site .

Bio diversity Project:-

Project started with two spices of mangroves which has good survival rate & Plantation at site – 70 % Survival
Total 4 Hector Plantation.

Sustainable Livelihood Development

- The organization has carried out remarkable activities in the agricultural and animal husbandry sectors. We have initiated Programme for Awareness of Farmers in collaboration with KVK. The outreach is approximate 200 farmers of 7 villages
- The purpose of this project is to initiate village wise integrated agricultural & allied development for sustaining agriculture and socio economic situation of farming community of Mundra block.

Sustainable Livelihood Development

After periodic discussions with Village Development Committee, Gram Panchayat and Gau Seva Samiti of Siracha – Adani Foundation had coordinated for Village Gauchar Development. Total 85 Acre Gauchar Land was approved by GP for Development by decision taken in Gram sabha . Among them 22 Acre land Has been Sowed with Sorghum and Remaining land would be Grow with Wild Grass

Siracha

22 Acre – 88000Kg Sorghum

63 Acre- 63000Kg Wild Grass

Total 85 Acre= 151000KG

Bhadreshwar @ 7 Acre= 28000Kg

Kukadsar @ 15 Acre= 60000Kg

UTTHAN MODEL VILLAGE DEVELOPMENT PROJECT

Implementation Process includes

- Meeting with Village Development Committee
- Meeting with SDM for Gauchar Land Details

Sustainable Livlihood Development

With the Objective of to Preserve the rain Water to reduce the Impact of salinity and Recharge the Ground Water (the Main Source of water) to facilitate the Agricultural activities as well as For Drinking water.

Under **UTHHAN MODEL VILLAGE PROJECT.** Salinity ingress issue is well taken with Pond Deepening, Recharge Borewell technique and Roof Top Rain Water Harvesting.

RRWHS: 54

Bore Recharge - 75

Well Recharge- 31

Pond Deepning- 2

Total Ground Water Recharge

- 1878140 cum

Tissue Culture

UTTHAN MODEL VILLAGE DEVELOPMENT PROJECT

Date is the Amrut Fal of Kutchh and Mainly best quality available in some villages in Mundra Taluka. To maintain quality uniformity Adani Foundation is planning for cultivate 4000 tissue cultured plants of elite varieties to the farmers of project area.

Registration is in progress for Farmer's Producer Company with NABARD – 220 Farmers had registered for the same.

Women Empowerment

WOMEN EMPOWERNMENT

An initiative under the Sustainable Livelihoods Development Program to encourage women, take control of their own lives and increase their confidence whether they are single, married or widowed.

Aaarambh SHG "Suf" Handicraft Cluster Seven Women from Pragpar village are doing embroidery and one women from Mundra is looking after design part.

Total Sale more than Rs.3.50 Lacs and women are getting approximately Rs.8500 per month.

Women Empowerment

Tejashvi Saheli

3100 School bags for the Students 300 wall hanging for the project of Swachhagraha and 170 Uniform Pair to the Students of Balwadi.

24 Nos of Women got employment

6 women got Job in Britannia Company (Rs.7500/- per month), 9 women got bank sakhi Yojana, 9 women working in various field in SEZ and other companies

Community Infrastructure Development

Water Conservation Works

- Pond deepening work in Baroi, Luni & Zarpara villages
- Mota Bhadiya Check Dam desilting work
- Lakhpat Godhatal dam desilting work
- Mota Bhadiya artificial bore well recharge - 2 no's

Community Infrastructure Development

Protection Compound wall
at Navinal Village

Garden Development
Hanuman Temple - Baroi

Fixing of street light
30 LED Street light Bhopawandh
20 LED Street light Mundra
50 LED Street Light at Bhorara

Community Infrastructure Development

- Construction of Prayer Shed at AVMB
- Garden Development work at- Bhujpur Village.
- Construction of R.O. Plant Room at Primary School sadau Village
- Drainage maintenance.
- Renovation of ITI at Mundra work in Progress.

Work In progress

- Renovation of Bavadi at Bavadi Bandar
- Development of Community Training Hall at Mundra & Goyarsama
- Fisherman Room at Navinal & Zarpara Vasahat

Adani Skill Development Centre

Adani Skill Development Centre is providing various employment-oriented trainings to the young for become self-reliant, responsible and active citizen.

ASDC is tied up with Pradhan Mantri Kaushalya Vardhan Yojana and Deen Dayal Upadhyaya Grameen Kaushalya Yojana.

Total No of trainee 643

Total No of batch. 33

Digital Literacy 345

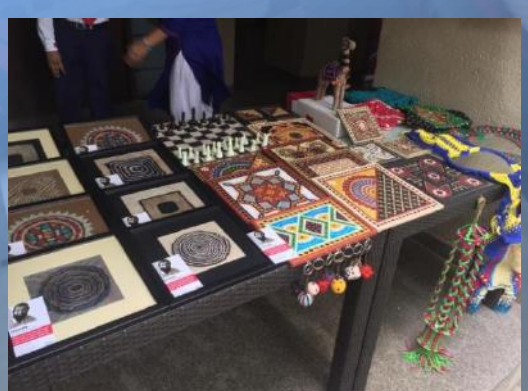
Beauty Therapist 100

Self Employed Tailor 22

Junior Operator Crane 60

Excel training 11

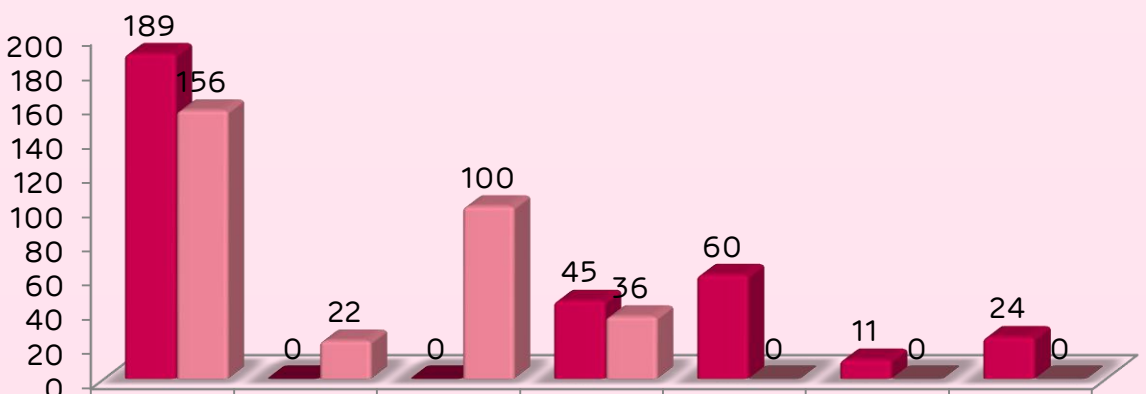
RTG Crane Operator 24



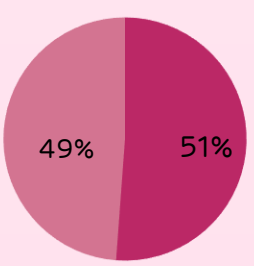
Adani Skill Development Centre

- 42 candidates passed out of 43 people of PMKVY Junior Operator Crane training.
- 21 candidates working in various company with 8000-15000 PM.
- 26 students got job in various company
- 48 women self employed.
- Spoken English class.
- Mobilization activities for SC batch in various village and collage

Completed & Running batch (April to September 2019)



	Digital Literacy	Self Employed Tailor	Beauty Therapist	Spoken English	Junior Operator Crane	Excel Training	RTG Crain Operator
Male	189	0	0	45	60	11	24
Female	156	22	100	36	0	0	0



Adani Skill Development Centre

Recognition of Prior Learning (RPL)


Skill India
कौशल भारत-कुशल भारत

N·S·D·C National Skill Development Corporation
Transforming the skill landscape

CERTIFIED PROVISIONAL TRAINER

This is to certify that
Wilson G Pious (Aadhaar Number - XXXXXXXX7577) with Trainer ID - TR7395
has successfully cleared the assessment as
Provisional Trainer
for the Qualification Pack of **Courier Sorter (LSC/Q3026)- v1.0**
conforming to National Skill Qualification Framework Level - 3
Date of Issue: 28/06/2019 | Valid Upto: 28/12/2019

LSC Logistics Skill Council

R.Dinesh
Chairman
Logistics Skill Council


Skill India
कौशल भारत-कुशल भारत

N·S·D·C National Skill Development Corporation
Transforming the skill landscape

CERTIFIED PROVISIONAL ASSESSOR

This is to certify that
Vijay Kumar Kantilal Chavda (Aadhaar Number - XXXXXXXX4778) with Assessor ID - AR4712
has successfully cleared the assessment as
Provisional Assessor
for the Qualification Pack of **Reach Truck Operator (LSC/Q2111)- v1.0**
conforming to National Skill Qualification Framework Level - 4
Date of Issue: 28/06/2019 | Valid Upto: 28/12/2019

LSC Logistics Skill Council

R.Dinesh
Chairman
Logistics Skill Council

RPL recognizes the value of learning acquired a formal setting and provides a government certificate for an individuals skill.
Candidates received an accidental insurance coverage for three years at free of cost.
Certified 27 assessor, 19 Trainer and 08 Assessor.
Started first loader-Unloader job role in Port.
Total Candidates registration 550

ASDC Mundra team received award for Best Center - Unique Initiatives

Another milestone reached on 12th Sep 2019, ASDC launched its program for schedule caste in the state of Gujarat. This program will train candidates in various vocational training educational course like Self employed tailor and Beauty & Wellness. Total 135 women/Girls participated in this training. This course is sponsored by Department of Social justice and Empowerment .

Adani Skill Development Centre

Skill Development Training Program for Schedule Cast Beneficiaries

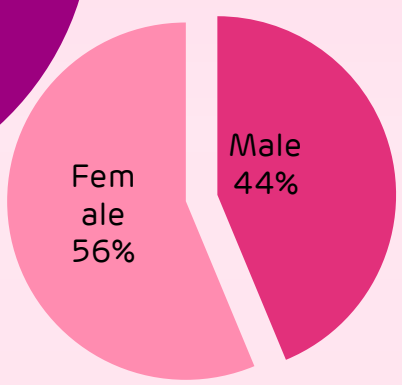
1440 SC beneficiaries from Eight Taluka of Kutchh.

Inauguration in presence of Mr Vinod Chavda (MP, Kutchh and Morabi) Mrs Lata Solanki (Pramukh, Nagar Palika,Bhuj) Mr Rohit (District Social Justice and Empowerment), Mr Jatin Trivedi (Head, ASDC)and Mr solanki (Chairman, social justice commitee Kutchh) we're present

- Hand embroidery
- Self employed stitching
- Mobile Repairing
- Beauty parlor
- Crane operator

460 Training Completed at Centre

441 Training completed outreach



Sr No	Job Role (Write Full Name of Job Role)	Female	Male	Total
1	General Duty Assistant	86	38	124
2	Digital Literacy	239	313	552
3	Spoken English	113	40	153
4	Beauty Therapist	38	0	38
5	Tally erp.9	31	3	34
	Total	507	394	901

Suposhan

The objective of the Project is to reduce occurrence of malnutrition and anemia.

create awareness about malnutrition and anaemia and related factors amongst all stakeholders and role they may play in curbing the issue.

To successful implementation of the project, “Sangini – Village Health Volunteer” plays major role in the Project.

Community Engagement and other Activities

1	No of Sangini	25
2	Total Village Cover	45
3	Total Anganwadi Cover	76
4	SAM to MAM Monitoring Progress	9
5	MAM to Normal Monitoring Progress	20
6	Focus Group Discussion	1111
7	Family Based Counselling	310
8	Village level Events	57
9	Formation of women's groups	15
10	Formation of adolescent's Groups	14
11	No of SAM children referred to CMTC	15
12	No of SAM children provided with EDF	10
13	Total HB screening - RPA	1086
14	Total HB screening - Adolescent girls	1161
15	Total Anthropometric screening	6268
16	Total Family Cover	9038
17	“NATIONAL NUTRITION month Celebration”	1551
18	“WORLD BREASTFEEDING WEEK”celebration	500
19	SuPoshan Melawa	140
20	World menstrual Hygiene Day celebration	220

Swachhagraha

Adani Foundation has launched project "Swachhagraha" Swachhata ka Satyagraha in the year 2015, to support the 'Swachh Bharat Abhiyan'. Falling in line with our Honorable Prime Minister's call for a Clean India, we launched this mass movement towards making our Nation litter free.

Swachhagraha at Kutchh

4 City / town

266 Schools

266 Prerak trained

5000+ Dal members

Swachhagraha

Swachhagraha
Wall

Toilet
Etiquettes

Safai
Ke Sitare

Personal
Hygiene

Large Scale
community events

Swachhagraha
Oath

Activities of Swachhagraha

CSR
Tuna

Adani Kandla Bulk Terminal Port Limited is joint venture of Adani Ports and SEZ Limited as well as Kandla Port. We are going to implement drainage pipeline for Tuna and Wandi with participation of Kandla Port in current year. Survey is done and work will be started soon..

- In Rampar and Tuna Village We are providing Fodder in summer season. Also guiding farmers for modern farming techniques for Organic Farming and sustainable Agriculture
- Praveshotsav Kit is distributed in 8 schools covering 180 Students in Tuna and Surrounding seven villages.. Our efforts were appreciated by community.
- Adani Foundation is bridging the gap between Government Schemes and Beneficiaries. In this Six Months we could able to support 5 widows and 4 differently abled to avail benefits of Government. Tree Plantation and 4 health camp was organized in Tuna and Rampar Village.

CSR
Nakhatrana

As a Part of Integrated Development of any Rural area – Education is the most powerful weapon. Keeping in mind, Utthan Education Project will be start after November at 8 Schools of Nakhatrana.

During Primary Information collection, we received warm welcome from Principals and Government Officials. .

Adani Foundation has initiated UTTHAN programme in Government schools. The programme converges the four pillars of education seamlessly: Students, Teachers, Guardians and Infrastructure.

The Project Relates to Adani Green energy Limited – Mainly Windmills project. First phase is completed.

Adani Foundation is also planning to implement Uthhan Model Village Concept and Bio Diversity – Peacock Conservation will be planned in next Budget.

From Current year We are implementing UTHHAN EDUCATION PROJECT in Eight Schools of Nakhatrana

CSR
Lakhpat

Successfully completion of Public Hearting without any hindrances

Most of the population of Lakhpat Depends upon Livestock for their livelihood. Fodder is the prime requirement of them. Adani Foundation had distributed Jovar seeds after considerable rain to 260 Farmers to motivate them for sustainable Livestock development.

SLD Projects

Total 260 Acre = 200000Kg

Kapurashi @ 130 Acre= 520000Kg

Koriyavi @ 105Acre=480000Kg

Maundhvaiy @25 Acre= 100000Kg

Education Support

Music Kit – 4

Sports Kit - 4

Carpet – 4

Provided to Govt. Schools of Kapurashi, Koriyani and Mundhvay

Linkages with Govt. Scheme

Wheelchair support – 2

Tri cycle support - 3

Divyang Form – 2

Health

Every Friday Specialist Doctor from GKGH are regularly serving at CHC Dayapar. More than 250 beneficiaries per month

CSR
Bitta

Under Adani Solar Limited – 40 MW Solar Panel Power Unit is Situated at Bitta Village in Abdasa Taluka. We are providing Fodder Support and Health Camp Facilities at Bitta. Our Suposhan Project is running successfully at Bitta.. .

Adani Foundation has taken Eco Friendly initiative for whole village. Village street lights, School and GP is provided Solar Panel to save electricity. The unit was conceptualized and implemented by Solar Team.

Under "Sujlam Suflam Jal Abhiyan" Two Pond Deepening was carried out and got appreciation letter from District Magistrate.

As Abdasa is water scared region and very less rain in past years , as per humble request of villagers Adani Foundation has provided 1,13,750 Kg Fodder to Bitta, Dhrufi and Moti Dhrufi village.

Praveshotsav Kit is distributed in 8 schools covering 47 Students in Bitta and Surrounding seven villages.. Our efforts were appreciated by community.

Employee volunteering

- Medical Camp – **23**
- Senior Citizen Home – **17**
- Blood Donation Camp – **1174**
- Plastic Free campaign – **251**
- Bio Diversity – **4**
- Joy of Giving – **13**
- Yoga Day - **538**
- Total – **2020**

Adani Group is deeply involved in all round social and economic development of the areas in and around Mundra. Adani EVP is context driven and employees have taken part in teaching, Medical Camps, giving impetus to national Swachhata Mission and blood donation. The journey continues

Suf Handicraft : Conserving "VIRASAT" of Decades

Parvati Ben's earliest memory of stitching delicate handicrafts is from when she was as little as 5-years-old. Since then, she has followed this art with an immense dedication that shows through her intricate and precise handiwork.

Parvati is a resident of Pragpar-2 village. She lives in a house with 5 other people and is the sole breadwinner. Even so, Parvati is a humble, loving and welcoming individual.

Parvati Ben had been practising her intricate Suf handicraft all along, making scarves, table cloths, garments and more for her fellow villagers and the occasional visitors. Her artwork had consistently been worth more than what she sold it for- her only desire being that her art finds an expression, a space in the world, however small it may be.

One day, Adani Foundation discovered this diligent, rigorous woman. Parvati Ben now works on projects brought to her by Adani Foundation and is hence able to sustain her entire family on her own. She has risen to be an aspirational figure, looked upon as a role model by her fellow village women. Parvati Ben is playing a major role in now setting up a federation for the village women across Mundra district to practise their handicraft work and earn a livelihood.

But more than all the titles and positions, what Parvati Ben deems sacred is the sheer recognition of her art. All she ever wanted was to be known as an artist and now she is the voice of this very own art, inspiring dozens of women like her to become independent.

Healthy children become happy children

Under the initiative of Balwadi at Vasahat (doorstep Early age Education for less Fisher folk), special awareness camps are organized for kids in school in order to imbibe health seeking behavior in the next generation. Various awareness activities based on healthy living are taught to them such as hand-washing steps and healthy eating habits so that they actively participate in adopting methods for personal hygiene in their daily routine.

Yamina is one of the student of Balwadi. She is five years old. Earlier she used to come to Balwadi without taking bath or hair combing. But after regular awareness camps for mother and students now she is coming well dressed and clean – due to maintaining personnel hygiene she remains healthy too..

Every Dark Cloud has Silver Lining

Ms. Ramila Maheswari belongs to village Dhrub. Her father's occupation is farming. She has completed graduation and was searching job but lacking in computer operation skill.

Ramila says one of my friends suggested me to join digital literacy training at Adani Skill Development Centre, Mundra. I visited the center with my friend and joined class. I sincerely attended all classes of the course and learnt basics of computer operation viz; Typing, Paint, MS Office (word, Excel, power point), shortcut Keys and using internet for web browsing like; Gmail, Paytm, amazon, net banking etc.

She is saying with smiling on face that

"Today, I am working with firm "YASH ENTERPRISE" in Nana Kapaya, Mundra as a customer care executive and earning Rs. 7000 per month. I am really thankful to Adani Skill development Center to make 'SAKSHAM'.

Pathways towards bright future !!

Kripalsinh Jadeja comes from Hatadi, Mundra with a family of 5 people, four elder brothers and parents. His father is a farmer and mother help him in farming. The brother is working as truck driver. The economic condition of the family was very poor.

Kripalsinh has completed 12th and was searching job. The team of ASDC Mundra had mobilized in the area where he stays and through which he got to know that Adani Skill Development Centre (ASDC) is providing training for checker-cum-RTG crane operator and this was his dream job.

He performed well during the training and understood how this training would help him to grow in future in the field he desires. He was regular to the classes and always eager to know the process well and he performed well during all the activities.

Kripalsinh says he gained back his confidence after starting the training and was motivated by the trainer to participate in all activities and grab any opportunity where he can showcase his skills.

He says that he got more support by getting additional training of soft skills, public speaking, professional manners and facing interviews with confidence.

While undergoing the ASDC training Kripalsinh never imagined that this additional knowledge and skill up gradation would bring him a bright future.

My Emotional Support

Adani Foundations' Senior Citizen Health Card is like a cure to our emotional, physical and psychological problem; in the times when we are completely lonely and handicap at age."....Says both of them while weeping.

Every human being has specific periods of the life wherein the childhood is for fun and the adulthood is spent for the family; remains old age to take care of health

Adani Foundation is holded hands of the senior citizens of Mundra

Rajendrasinh and his wife stay alone. Their son and daughters stay separately. They earn their living by grazing cattle. he is having severe arthritis and respiratory disorder. The source of income is very meager and that to dependent on rain. He had to borrow money from family friends or at times take on interest for taking basic treatment. His wife Shantaba also has blood sugar and hence she also requires medical assistance at times. The couple took Adani Foundations' Senior Citizen Health Card in 2015 by which they are able to save good amount, which was their medical expense every month

Can any other relationship be as beautiful?"

When you grow old, loneliness is sometimes more painful than physical sickness. During routine visits of Dr Mukesh Parmar – Medical Officer of Medical Mobile Unit in the community as a health volunteer, he met Rahomat Ba (grandmother in Gujrati) who initially appeared as an introvert. She lives in Gundala Village. According to her neighbors, she confined herself within the four walls after her husband's demise. Despite living with her children, she is often seen sitting alone in the corridor of her house, as the family members are apparently busy with their own lives. Financially strained, she refrained from visiting a doctor due to fear of their exorbitant fee.

Mukesh bhai was determined to not only get her to our mobile hospital, but also cultivate a health seeking behavior in her. He would keep on standing outside her house till the time she didn't agree to listen to my request. Do you know something? Ba is his best friend today. They not only share our secrets with each other, but also counsel each other as a mother and a son. Can any other relationship be as beautiful?"

Good Human Beings are Gods Incarnate

While many people talk about water crisis and drought in Kutchh, Rambhai Gadhavi of Zarpara has practically found and tried a solution to it and that is water conservation. Born into a poor farmer's family, he faced water problems in childhood and used to wake up at wee hours to fetch water, which inspired him to find ways of water conservation. Under Guidance and Support of Adani Foundation He practiced non-irrigation agricultural methods as solutions to water crisis which causes drought, thereby leading to Indian farmer suicides every year.

He did Bore well recharge and Farm Bunding to increase capacity of ground water though rain and to prevent run off. Not only that, he gave guidance to other farmers to accept water conservation practices.

Rambhai and his wife Veerbai's enthusiasm is remarkable in micro irrigation, fodder cultivation and Recharge activities. They are real change makers of "Sustainable Agriculture Projects" of Adani Foundation

Every drop that matters!

Kutchh district is a dry temperate zone and rainfall is negligible. Water requirement is met through the reservoirs in which the water decreases during summer months when crop is standing in the field. Whatever irrigation was provided resulted in soil erosion leading to loss of huge quantity of soil every year thereby increasing the farmer's problem in producing good quality crop. Therefore, usage of water and land is to be done sensibly by the farmer. Muljibhai The farmer of Navinal Village attended awareness programme of micro irrigation and organic farming organized by the Adani Foundation and showed interest in adopting the same. He was given every suitable help in subsidy and was persuaded into adopting drip irrigation for field crops.

Not only this, with support of DRDA and Adani Foundation he had adopted Bio gas which is utilized for cooking and organic fertilizer as well.

With the help of drip system, the Muljibhai was able to diversify towards different Horticulture crops like Pomegranate, Jamfal, chikoo etc. in addition to traditionally grown crops like Cotton and Caster.

As a result, he is able to get 40-45% higher yield as compared to flood irrigated crops. Diversification has helped in improving returns from the same area.

Giving Back to the Society

Sharad Sharma is Plant head of Adani Wilmar Limited since six years. During Review meetings he came to know about activities of Adani Foundation. He asked Adani Foundation to start health camps near Wilmar Workforce settlements.

Before three years, when Adani Foundation organized first health camp under dignity of workforce – he came during inauguration. He discussed various issues of workforce during camp and being generous and sensitive – he took a decision to do some concrete work for the workforce.

He started visit of labour vasahat once in a month for interacting with them regarding various issues i.e. deaddiction, sanitation, health issues and education of children. Due to his support, We could able to start "Joy of Giving Week" twice in a year.

Not only this, his wife has also extended great support for Education and Joy of giving Week. In spite of being always occupied Sharad ji is volunteering as a proud adanian.

Adani Foundation is feeling proud to have employee volunteer like Shard Sharma – one of the HEROS AT WORK.

જીવન જીવવાના દરવાજા ખૂલે

ભુજના એક ૨૨ વર્ષના યુવાનની કથા બેકારીના રોદણા રોનારા યુવાનોને પ્રેરણા આપે છે. બાળપણમાં જ, લગભગ બે વર્ષની વયે જ જેને થેલિસિમિયા મેજર હોવાની ખબર પડી હતી, તેવા નખત્રાણા તાલુકાના નાનકડા ગામ દેશલપર(ગુંતલી)ના રાજુ કરસન ચાવડાની સારવાર તો તેનાં માતાપિતા પોતાના ક્ષમતા મુજબ કરાવતાં હતાં પરંતુ દસ વર્ષના રાજુને લઈને માતાપિતા ચોટીલા દર્શન કરવા ગયાં તો ત્યાં ગમખ્વાર અકસ્માતનો ભોગ બન્યાં ને

માતાપિતાને કાળે છીનવી લીધાં અને રાજુને પગમાં કાયમી ખોડ આવી. અનાથ બનેલા રાજુનો સહારો તેના માસી બન્યાં. બે વર્ષ તેમની સાથે રહ્યા બાદ રાજુ એક ચાની રેંકડી પર નોકરી કરીને પેટિયું રળવા લાગ્યો, પરંતુ આશરાનો સવાલ તો ઊભો જ હતો. ત્યાંના શેઠે તેને જાહેર શૌચાલયમાં નોકરીએ રખાવ્યો. આશરો મળતો હોવાથી રાજુ ત્યાં કામ કરવા તૈયાર થઈ ગયો. રાજુ કહે છે, 'મારો પોતાનો કંઈ વિશેષ ખર્ચ નથી. મને રોજ ટિફિન મળે છે, એટલે જમવાનો ખર્ચ થતો નથી. રોટરી ક્લબની સહાયથી જી.કે. જનરલ હોસ્પિટલમાં દર મહિને મારું લોહી બદલાવાય છે. દવા પણ મને નિ:શુલ્ક મળે છે. આમ મારું જીવન ચાલ્યા કરે છે. કોઈ સામે હાથ લાંબો કર્યા વગર જીવાય તેને ભગવાનના આશીર્વાદ ગણું છું.' કામ નથી મળતું કહીને નિરાશ થનારા યુવાનો માટે રાજુ ખરેખર પ્રેરણાસ્ત્રોત સમો છે. ■

True Warrior : We Salute

This is the story of Raju residing at Desalpar village of Nakhatrana Taluka. He is lesser blessed child of the almighty as he got Thalassemia Major and needs blood transfusion regularly.

Not only this - he lost his parents at the age of 10 in accident. He stared work at tea stall for bread n butter for two ends meet. Then he started work at public toilet with the help of Village leaders.

In all this miseries - he says with smile that due to GKGH Hospital he could elongate his life span.

Every Month blood transfusion and free medicine n guidance by thalassemia ward by Rotary saved his life...

We salute this warrior and wish him best wishes.

World Environment Day

World Environment Day was celebrated in Five Talukas by different activities related to conservation of Environment. These Events were organized in coordination with DDO, TDO, SDM and Village Leaders of all Five Talukas. The activities Tree Plantation, Check dam Augmentation work, Inauguration work of Godhatal Dam Deepening work.

555+ Tree plantation in Bhuj, Mundra & Nakhtrana Taluka

9000+ cum Augmentation and deepening work of check dam in Mandvi & Lakhpat Taluka

International Coastal Clean up Day

Mundra Adani foundation MUNDRA has celebrated swachhagraha related International Coastal Clean up Day celebrated with Coast Guard" with theme swachhagraha.. School students, Coast Guard staff and Adani foundation staff had cleaned Mandvi beach and give a message of swachhagraha.. At the end information given about swachhagraha project

Teacher's Day : Guru Vandana

Teachers day celebration in coordination with District Education Office and District Development Office with Adani Foundation - District Level Best teacher Award on this auspicious day.

13 teachers is selected after screening by DEO Office and tofay award will be given in presence of DEO, DPEO and Vasan bhai Ahir Minister Gujarat .

Divine Feelings Towards Mata no Madh

Mata no Madh is a village in Lakhpat Taluka of Kutch district, Gujarat, India. The village lies surrounded by hills on both banks of a small stream and has a temple dedicated to Ashapura Mata. She is considered patron deity of Kutch. The village is located about 105 km from Bhuj, the headquarters of Kutch district.

People used to go by foot to Mata no madh in Navaratri. Total 8 camps at different locations is inaugurated today in way towards Mata no Madh by Adani Foundation Bhuj and GKGH Hospital.

Total 34537 Patients were benefitted in this Camp

“Ayushman Bharat – Celebrating First Birthday !! “

On the first birth anniversary of “AYUSHMAN ENROLMENT CARD” Adani Foundation Bhuj and Mundra had successfully completed 11 Ayushman card enrollment camps in a single Day.

Skill Development Training Program for Schedule Cast Beneficiaries

we could able to fulfil target of training 1440 SC beneficiaries from Eight Talukas from Kutchh for different courses.

Mr Vinod Chavda (MP, Kutchh and Morabi) Mrs Lata Solanki (Pramukh, Nagar Palika,Bhuj) Mr Rohit (District Social Justice and Empowerment), Mr Jatin Trivedi (Head, ASDC)and Mr solanki (Chairman, social justice commitee Kutchh) we're present.

courses

1. Hand embroidery
2. Self employed stitching
3. Mobile Repairing
4. Beauty parlor
5. Crane operator

Apex India CSR Innovation Award 2019

Adani Foundation Mundra received **"Gold Award"** under Apex India CSR Innovation Award 2019 Today at Goa.

Cheif Guest of the event was Shri Prasad (Union Minister Goa,GOI) and Guest of Honour Mr Suri (Former Governer Goa).

From Adani Foundation Mundra - Mr Vijay Gosai (Coordinator SLD Projects) and Mr. Karsan Gadhvi (Sr PO SLD Projects) received the Award.

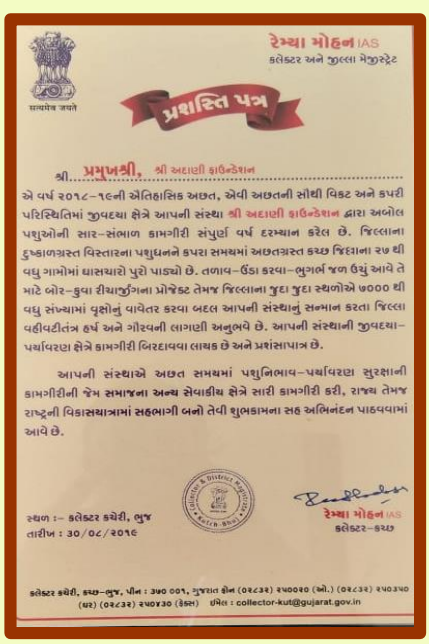
Awards and Accolades

Sharing with Proud that Adani Foundation got felicitation from Mr Vijay Rupani Honrable Cheif Minister Gujarat for

1. Water Conservation works
2. More than 7000 Tree Plantation in Mundra, Anjar, Lakhpat and Mandvi Taluka

Felicitation of 3 CSR from Kutchh district for remarkable scarcity related work.

From Adani Foundation - Mr Karsanbhai Gadhvi received Award.



રેમ્યા મોહન IAS
કલેક્ટર અને જીલ્લા મેજીસ્ટ્રેટ

સત્યમેવ જયતે

પ્રશસ્તિ પત્ર

શ્રી પ્રમુખશ્રી, શ્રી અદાણી ફાઉન્ડેશન

એ વર્ષ ૨૦૧૮-૧૯ની ઐતિહાસિક અછત, એવી અછતની સૌથી વિકટ અને કપરી પરિસ્થિતિમાં જીવદયા ક્ષેત્રે આપની સંસ્થા શ્રી અદાણી ફાઉન્ડેશન દ્વારા અબોલ પશુઓની સાર-સંભાળ કામગીરી સંપુર્ણ વર્ષ દરમ્યાન કરેલ છે. જિલ્લાના દુષ્કાળગ્રસ્ત વિસ્તારના પશુધનને કપરા સમયમાં અછતગ્રસ્ત કચ્છ જિલ્લાના ૨૭ થી વધુ ગામોમાં ઘાસચારો પુરો પાડ્યો છે. તળાવ-ઉંડા કરવા-ભુગર્ભ જળ ઉંચું આવે તે માટે બોર-કુવા રીચાર્જીંગના પ્રોજેક્ટ તેમજ જિલ્લાના જુદા જુદા સ્થળોએ ૭૦૦૦ થી વધુ સંખ્યામાં વૃક્ષોનું વાવેતર કરવા બદલ આપની સંસ્થાનું સન્માન કરતા જિલ્લા વહીવટીતંત્ર હર્ષ અને ગૌરવની લાગણી અનુભવે છે. આપની સંસ્થાની જીવદયા-પર્યાવરણ ક્ષેત્રે કામગીરી બિરદાવવા લાયક છે અને પ્રશંસાપાત્ર છે.

આપની સંસ્થાએ અછત સમયમાં પશુનિભાવ-પર્યાવરણ સુરક્ષાની કામગીરીની જેમ સમાજના અન્ય સેવાકીય ક્ષેત્રે સારી કામગીરી કરી, રાજ્ય તેમજ રાષ્ટ્રની વિકાસયાત્રામાં સહભાગી બનો તેવી શુભકામના સહ અભિનંદન પાઠવવામાં આવે છે.

સ્થળ :- કલેક્ટર કચેરી, ભુજ
તારીખ : ૩૦/૦૮/૨૦૧૯

રેમ્યા મોહન IAS
કલેક્ટર-કચ્છ

કલેક્ટર કચેરી, કચ્છ-ભુજ, પીન : ૩૭૦ ૦૦૧, ગુજરાત ફોન (૦૨૮૩૨) ૨૫૦૦૪૦ (ઓ.) (૦૨૮૩૨) ૨૫૦૩૫૦ (૪૨) (૦૨૮૩૨) ૨૫૦૪૩૦ (રેસ.) ઈમેલ : collector-kut@gujarat.gov.in

Awards and Accolades

Ms. Pankti Shah was invited as a guest of honour for Mission Eco Next "Eco Eureka Training" by ministry of science and technology - Government of India at KSKV Bhuj.

Initiatives of Adani Foundation for Biodiversity and water conservation was shared on this platform.

Ms. Mavajibhai Baraiya was invited as a guest of honor for “Creating Sustainable Farming Villages” by Krushi Research and Development Association by Vagad Visa Oswal Samaj.

Initiatives of Adani Foundation for Fodder Sustainability and water conservation was shared by him.

Beneficiaries

No	Core Area	Beneficiaries	Remarks
1	Utthan (Education)	3000	Uthhan, Labour School, School Enrollment
2	Adani Vidya Mandir	450	School Students
3	UDAAN	15329	250 Institute Visited
4	Adani Skill Dev. Center	1544	Mundra and Bhuj
5	Health Mundra	30336	MHCU, Medical Camps, Senior Citizen
6	Health Bhuj	47526	Health Camps, Mahiti Setu,care
7	SLD Fisherman	5572	Water, Education, Mangroves etc.
8	SLD Agriculture	1232	Drip Irrigation, Bio gas, tissue
9	SLD Women Empowerment	132	Saheli mahila gruh udyog – 12 SHG
10	CID Work	12345	Pond deepening, AKBTPL,
11	Swachhagraha	5266	Mundra, Bhuj, Anjar and Gandhidham
12	Suposhan Mundra	21439	Adolescent, Children and RPA
13	CSR Tuna	745	Health Camp, Cattle feed,
14	CSR NaKhtrana	-	
15	CSR Bitta	2450	Pond Deepening, Fodder, School Praveshotsav
16	CSR Lakhpat	1890	Fodder, School Support, Dam Desilting

TOTAL 1,21,956

Adani Foundation -Mundra

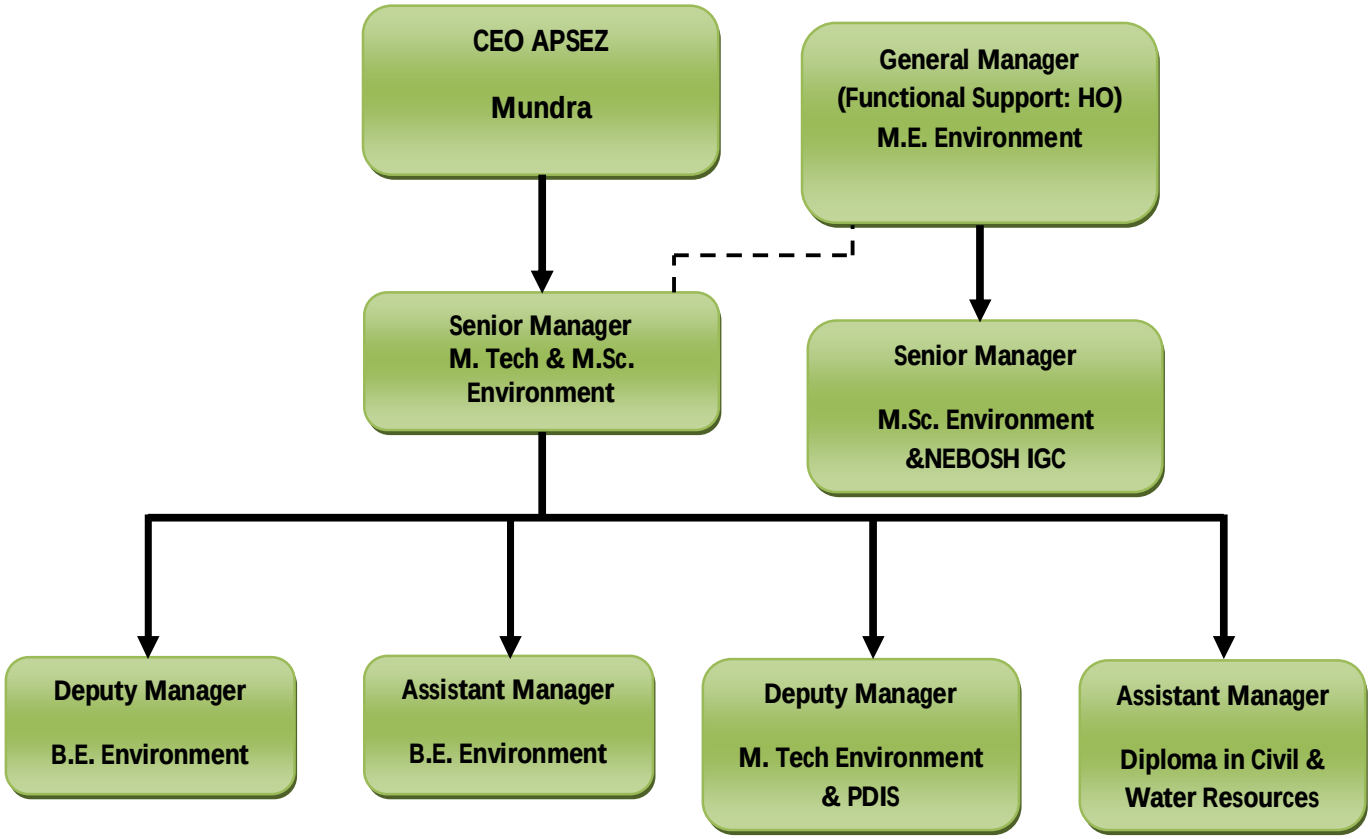
Executive Summary-Budget Utilization up to September 2019

F.Y. 2019-20 (Rs. In Lacs)

Sr. No.	Budget Line Item	CAPEX	OPEX	Budget 2019-20	Expenditure up to Sept.19	% of utilization against FY 2019-20 budget
A	Admin Expense	1.30	70.20	71.50	28.56	39.94%
B.	Education	0.00	57.75	57.75	26.70	46.23%
C.	Community Health	0.60	220.06	220.66	78.91	35.76%
D.	Sustainable Livelihood Development	30.00	387.30	487.80	325.04	66.63%
E	Rural Infrastructure Development	358.93	33.10	321.53	28.53	8.87%
Total AF CSR Budget :		**390.83**	**768.41**	**1159.24**	**487.73**	**42.07%**
F.	Utthan - Education	49.97	58.96	108.93	31.86	29.25%
G.	Model Village	132.93	64.33	197.26	61.52	31.19%
Total Project Utthan Budget		**182.90**	**123.29**	**306.19**	**93.38**	**30.50%**
H.	Adani Vidya Mandir - Bhadreshwar	33.36	170.99	204.35	71.34	34.91%
Total AVMB Budget		**33.36**	**170.99**	**204.35**	**71.34**	**34.91%**
I.	Project Udaan_Mundra	5.00	368.14	373.14	92.41	24.77%
Total Project Udaan Budget		**5.00**	**368.14**	**373.14**	**92.41**	**24.77%**
GRAND TOTAL		**612.09**	**1430.83**	**2042.92**	**744.86**	**36.46%**

Annexure – 5

Organogram of Environment Management Cell, APSEZ, Mundra



Annexure – 6

Cost of Environmental Protection Measures

Sr. No.	Activity	Cost incurred (INR in Lacs)			Budgeted Cost (INR in Lacs)
		2017 – 18	2018 – 19	2019 – 20 (Till Sep'19)	2019 – 20
1.	Environmental Study / Audit and Consultancy	9.0	6.7	1.35	6.0
2.	Legal & Statutory Expenses	5.07	4.42	0.78	5.7
3.	Environmental Monitoring Services	27.02	20.36	11.23	25
4.	Hazardous / Non Hazardous Waste Management & Disposal	65.62	95.72	44.57	78.5
5.	Environment Days Celebration	2.85	0.28	3.5	10
6.	Treatment and Disposal of Bio-Medical Waste	1.13	1.21	0.68	1.5
7.	Mangrove Plantation, Monitoring & Conservation	60.0	47.0	Nil	Nil
8.	Other Horticulture Expenses	547.0	579.32	546.60	696.46
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	70.02	144.29	43.42	116.44
10.	Expenditure of Environment Dept. (Apart from above head)	102.15	109.28	75.13	102.5
	Total	**889.86**	**1008.58**	**727.26**	**1042.10**