

Bhagwat Swaroop Sharma

From: Bhagwat Swaroop Sharma
Sent: Wednesday, May 29, 2024 6:54 PM
To: ecompliance-guj@gov.in; iro.gandhingr-mefcc@gov.in
Cc: ec-rdw.cpcb@gov.in; ro-gpcb-kute@gujarat.gov.in; ms-gpcb@gujarat.gov.in; mefcc.ia3@gmail.com; monitoring-ec@nic.in; direnv@gujarat.gov.in; Anil Trivedi; Sujalkumar Shah
Subject: Half Yearly EC Compliance Report Submission -MSEZ 1840 Ha. for Period of Oct.2023 to March 2024
Attachments: EC Compliance Report_2020 MSEZ 1840 Ha_Oct23 to Mar24.pdf



APSEZL/EnvCell/2024-25/015

Date: 29.05.2024

To
The Inspector General of Forest / Scientist C,
Integrated Regional Office (IRO),
Ministry of Environment, Forest and Climate Change,
Aranya Bhawan, A Wing, Room No. 409,
Near CH 3 Circle, Sector – 10A,
Gandhinagar – 382007.
E-mail: ecompliance-guj@gov.in, iro.gandhingr-mefcc@gov.in

Sub : Half Yearly Compliance for Environment and CRZ clearance for 'Expansion of notified Multi-product SEZ by adding 1840 Ha notified SEZ with existing approved area of 6641.2784 ha to make it 8481.2784 ha at Mundra' by M/s Adani Ports and Special Economic Zone Ltd.

Ref : Environmental Clearance granted by Ministry of Environment, Forest and Climate Change, F. No. 10-138/2008-IA.III dated 12th February, 2020.

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 October 2023 to March 2024 is being submitted through soft copy (e-mail communication).

Kindly consider above submission and acknowledge.

Thank you,

Yours Faithfully,

For, M/s Adani Ports and Special Economic Zone Limited

A handwritten signature in blue ink, appearing to read "Bhagwat Swaroop Sharma".

Bhagwat Swaroop Sharma
Head – Environment
Mundra & Tuna Port

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) The Zonal Officer, Regional Office, CPCB – Western Region, Parivesh Bhawan, Opp. VMC Ward Office No. 10, Subhanpura, Vadodara – 390023.
- 3) The Member Secretary, GPCB – Head Office, Paryavaran Bhavan, Sector 10 A, Gandhi Nagar – 382010.
- 4) The Director, Forests & Environment Department, Block – 14, 8th floor, Sachivalaya, Gandhi Nagar – 382010.
- 5) The Regional Officer, Regional Office GPCB (Kutch-East), Gandhidham – 370201.

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Mundra & Tuna Port

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- 5) The Regional Officer, Regional Office GPCB (Kutch-East), Gandhidham – 370201.

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Environmental Clearance Compliance Report



Expansion of notified Multi-product
SEZ by adding 1840 Ha,
Mundra, Dist. Kutch, Gujarat

Adani Ports and SEZ Limited

For the period of
October-2023 to March-2024

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	Adani Ports and Special Economic Zone Limited, Mundra.	From : Oct'23 To : Mar'24
Status of the Conditions Stipulated in Environment and CRZ Clearance		

M/s. Adani Ports and SEZ Limited has been granted Environmental / CRZ clearance vide letter no. 10-138/2008-IA.III, dated 12th February, 2020 for "Expansion of notified Multi-product SEZ by adding 1840 Ha notified SEZ with existing approved area of 6641.2784 ha to make it 8481.2784 ha at Mundra, Dist. Kutch (Gujarat)".

Activities / Facilities approved are as below:

Facilities / Components Approved	Total Approved Area (Ha)	Area (Ha) developed till 31.03.2024	Area under construction (Ha)
Port Back-up and related industrial developments (Requiring Waterfront)	187.22	--	0
Industrial Zone (Chemical, Textile & Apparel, Heavy/Light Engineering, Plastic, Cement)	978.64	--	359.82
Warehousing & Container Freight Station (CFS) Zone	88.33	9.6	0
Green / Renewable Energy	24.15	6.68	0
Open/Green Spaces	607 [§]	3.0	34.65
Facilities / Amenities & Utilities / Transportation	256.2	143.95	7.23
TOTAL AREA	1840	163	401.70

[§]Proposed greenbelt by APSEZ = 305 ha (16.6%) and by industrial units = 302 ha (16.4%)

Note:

Boundary wall is constructed along the project periphery. In some of areas level raising and area development of SEZ area, wherever required is also under progress.

*Inline to the APSEZ's request, Ministry of Commerce & Industry (MoCI) vide Gazette order dtd. 4th July 2019 has de-notified 46.6894 ha from total area of 8481.2784 Ha, thereby making resultant area of notified Multiproduct SEZ as 8434.5890 Ha.

**After that Inline to the APSEZ's request, Ministry of Commerce & Industry (MoCI) vide Gazette order dtd. 29th November, 2021 and 21st September, 2022 has de-notified 200.405 Ha from total area of 8434.5890 Ha, thereby making resultant area of notified Multiproduct SEZ as 8234.184 Ha. Copy of MoCI Gazette Notification dated 21st September, 2022 submitted during the previous compliance period Apr'22 to Sep'22.

Compliance Report of Environmental and CRZ Clearance

Status of the Conditions Stipulated in Environment and CRZ Clearance

Half yearly Compliance report of Environment and CRZ Clearance for "Expansion of notified Multi-product SEZ by adding 1840 Ha notified SEZ with existing approved area of 6641.2784 ha to make it 8481.2784 ha at Mundra, Dist. Kutch (Gujarat)" by M/s Adani Ports and Special Economic Zone Ltd. issued vide letter no. 10-138/2008-IA.III, dated 12th February, 2020.

Sr. No.	Conditions	Compliance Status as on 31.03.2024
(i)	This Environmental and CRZ Clearance for the said expansion shall be subject to the outcome of ongoing court cases.	<p>Point noted and will be complied</p> <p>SLP (Civil) no. 1526 of 2014</p> <ul style="list-style-type: none"> Vide order dated 14.07.2014, the Hon'ble Supreme Court directed MoEF&CC to complete the process of environmental clearance to the MSEZ project of APSEZ within eight weeks. MoEF&CC issued EC and CRZ clearance to the proposed project vide letter dated 15.07.2014. Hence, the SLP (Civil) no. 1526/2014 is deemed closed. Details of the same was submitted during the half yearly EC compliance report submission for the period Oct'21 to Mar'22. <p>SLP (Civil) no. 28788 of 2016</p> <ul style="list-style-type: none"> In view of the affidavits filed by MOEF, and Govt of Gujarat the High Court dismissed the petition on 18.02.2015. The petitioner filed a special leave to appeal before the Supreme Court of India, challenging the order dated 18.02.2015 of Gujarat High Court and the same is pending. Sunita Narayan committee was appointed to study the area. Report was prepared by committee and submitted to Hon'ble Supreme Court. Matter pending at Supreme court. Updated status details is attached as Annexure - 1. <p>APSEZ has taken/proposed following action:</p> <ul style="list-style-type: none"> APSEZ has submitted as part of their submission to the Committee that there are no presence of "Sand dunes", in APSEZ area, inline to the authenticated maps & report available for this area. The Committee visited Mundra on January 3 & 4, 2018 and the core issues to be examined by the Committee were (i) whether sand dunes are allotted in the forest land and whether APSEZL has destroyed/disturbed them and (ii) whether measurement of land was wrongly done? The

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
		<p>Sunita Narain committee filed its report in the Hon'ble Supreme Court of India on 14.9.2018.</p> <ul style="list-style-type: none"> The Committee heard representations from both the parties and concluded that the term "Dhuva" is not synonymous with shifting sand dune. The Committee concluded that there is no incontrovertible evidence that Mor Dhuva was a sand dune and it cannot be said that M/s. APSEZL violated any conditions of the Environmental Clearance. With regards to the issue of measurement of land, the Committee stated that there was no credible evidence to show that Mor Dhuva was not part of the allotment to APSEZ and all measurements were done appropriately.
(ii)	<p>Total area of Multi-product SEZ run by APSEZ Limited will be 8481.2784 ha after this expansion. The geo-coordinates of the additional piece of land (1840 ha) are 22°47'35.41" - 22°47'57.67"N and 69°40'6.15" - 69°32'46.58"E.</p>	<p>Point noted and complied with</p>
(iii)	<p>The proponent shall obtain, wherever applicable, separate Environmental Clearance including Risk Assessment for the Isolated Storage and Handling of Hazardous Chemicals under schedule 6(b) of the EIA Notification, 2006 and subsequent amendments thereto.</p>	<p>Not Applicable</p> <p>As per MoEF&CC Notification dated 13th June, 2019, Item 6(b) and the entries relating thereto has been omitted from EIA Notification – 2006. Hence Project under Category – 6(b) Isolated Storage and Handling of Hazardous Chemicals not attracts EIA Notification – 2006 and subsequent amendments thereafter.</p> <p>However, individual unit will obtain requisite permissions from regulatory authorities in line to EIA Notification, 2006 and subsequent amendments thereto if applicable.</p>
(iv)	<p>The proponent shall prepare and implement the Mangrove Conservation and Management Plan in consultation with the State Forest Department.</p>	<p>Complied.</p> <p>Conservation of Mangroves:</p> <ul style="list-style-type: none"> In and around APSEZ, approx. 1800 ha. Mangrove area was identified by NIO in an EIA report prepared the year 1998.

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024						
	<p>This Plan shall be subject to monitoring by the third party. The implementation report and third-party audit report be submitted to the Regional Office, MoEF&CC and the State Forest Department.</p>	<ul style="list-style-type: none"> • Out of this 1800 ha area, 1254 ha area was further demarcated as potential mangrove conservation by NIO in the year 2008 (as part of the EIA report of WFDP). • It may be noted that the entire area of 1254 ha is not covered with mangroves. • Entire area is being conserved and there is no disturbance to the mangroves in this area. Measures such as restricted entry and regular surveillance have resulted in overall growth of mangroves within this area. <p>As per MoEF&CC directive, APSEZ entrusted NCSCM to demarcate mangroves in and around APSEZ area. As per their study, mangrove cover in and around APSEZ was over 2340 ha. The analysis of the comparison between 2011 and 2016-17 has shown an overall growth of 246 ha.</p> <p>NCSCM final report on comprehensive and integrated plan for preservation and conservation of mangroves and associated creeks in and around was submitted along with half yearly EC Compliance report for the period Apr'19 to Sep'19. The same was further submitted to GCZMA and MoEF&CC for their examination and recommendation vide (with a copy to MoEF&CC vide letter dated 04.06.2018 & reminder letter vide dated 4th Jan, 2019). Presentation on the findings of the report was made to GCZMA committee on 4th October 2019 and the recommendation for the same has been received vide email dtd 22nd Sept, 2020 with conditions, which was submitted as a part of half yearly EC compliance report for the period Oct'20 to Mar'21.</p> <p>As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.</p> <table border="1" data-bbox="618 1535 1474 1583"> <thead> <tr> <th data-bbox="618 1535 691 1583">Sr. No.</th> <th data-bbox="696 1535 938 1583">Recommendations</th> <th data-bbox="943 1535 1474 1583">Compliance</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Sr. No.	Recommendations	Compliance			
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Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024	
		1.	<p>Mangrove mapping and monitoring in and around APSEZ</p> <ul style="list-style-type: none"> • APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. • As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%. • This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of mangroves in a progressive direction. • Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. • The cost of the said study was INR 23.56 Lacs incurred by APSEZ. • According to GUIDE Mangrove monitoring study report November 2023 (The report was submitted during the last compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021. • Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). • The cost of the said study was INR 23.60 Lacs incurred by APSEZ.

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024																													
			<p>Summary of Mangrove mapping and monitoring (from 2011 to 2021):</p> <table border="1" data-bbox="956 468 1455 854"> <thead> <tr> <th data-bbox="961 474 1105 583">Mangrove mapping Year</th> <th data-bbox="1110 474 1255 583">Mangrove cover total Area (Ha.)</th> <th colspan="2" data-bbox="1260 474 1450 583">Mangrove cover area increased</th> </tr> <tr> <td></td> <td></td> <th data-bbox="1260 569 1336 590">Hac.</th> <th data-bbox="1341 569 1450 590">%</th> </tr> </thead> <tbody> <tr> <td data-bbox="961 590 1105 611">2011</td> <td data-bbox="1110 590 1255 611">2094</td> <td data-bbox="1260 590 1336 611">-</td> <td data-bbox="1341 590 1450 611">-</td> </tr> <tr> <td data-bbox="961 611 1105 663">2011 to 2016-17</td> <td data-bbox="1110 611 1255 663">2340</td> <td data-bbox="1260 611 1336 663">246</td> <td data-bbox="1341 611 1450 663">11.75%</td> </tr> <tr> <td data-bbox="961 663 1105 737">2017 to 2019 till March</td> <td data-bbox="1110 663 1255 737">2596</td> <td data-bbox="1260 663 1336 737">256</td> <td data-bbox="1341 663 1450 737">10.94%</td> </tr> <tr> <td data-bbox="961 737 1105 810">2019 to 2021 till March</td> <td data-bbox="1110 737 1255 810">2723</td> <td data-bbox="1260 737 1336 810">127</td> <td data-bbox="1341 737 1450 810">4.89</td> </tr> <tr> <td data-bbox="961 810 1105 854">Total</td> <td data-bbox="1110 810 1255 854">2723</td> <td data-bbox="1260 810 1336 854">629</td> <td data-bbox="1341 810 1450 854">--</td> </tr> </tbody> </table> <p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023.</p>	Mangrove mapping Year	Mangrove cover total Area (Ha.)	Mangrove cover area increased				Hac.	%	2011	2094	-	-	2011 to 2016-17	2340	246	11.75%	2017 to 2019 till March	2596	256	10.94%	2019 to 2021 till March	2723	127	4.89	Total	2723	629	--
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Total	2723	629	--																												
2.	Tidal observation in creeks in and around APSEZ		<ul style="list-style-type: none"> APSEZ carried out the tidal observations at locations similar to 2017 in Kotdi, Baradimata, Navinal, Bocha and Khari creeks under the guidance of NCSCM. The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. The cost of the said activity was INR 1.0 Lacs. 																												
3.	Removal of Algal and Prosopis growth from mangrove areas		<ul style="list-style-type: none"> Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 during the FY 2023-24. The algal removal report is attached as Annexure - 2. 																												
4.	Awareness of mangroves importance in surrounding communities		<ul style="list-style-type: none"> Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattels / 3008 farmers and hence 																												

Status of the Conditions Stipulated in Environment and CRZ Clearance

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			<p>enhancing cattle productivity. Dry Fodder 731230 Kg Green -2359204 Kg.Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ.</p> <ul style="list-style-type: none"> • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land development with strong Community Contribution and Mobilization. • Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas. • APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23. • Since PhD scholars and students frequently visit this area for study, we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist. • Refer CSR report attached as Annexure - 3. <p>Details of activities done as a part of GCZMA recommendations and NCSCM mangrove conservation action plan were submitted as a part of half yearly EC compliance report for the period Oct'20 to Mar'21.</p> <p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial issues work order has been canceled. After that again issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
		<p>order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work was 23.60 Lacs (Including Taxes), which was paid by APSEZ.</p> <p>GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted during the EC compliance report submission Apr'23 to Sep'23.</p> <p>According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradimata, Navinal, Bocha and Khari creeks and also in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019.</p> <p>Now, according to GUIDE Mangrove monitoring study report November 2023, the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021.</p> <p>Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
		<p>(2723 Ha) is 629 Ha (30%).</p> <p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023.</p> <p>Inline to the compliance of MoEF&CC Order dated 18th September, 2015 including Mangrove conservation plan & its implementation, Joint Review Committee (JRC) comprising officials from various competent authorities visited the APSEZ, Mundra from 1st to 3rd September, 2021 to monitor the progress of implementation of the conditions stipulated in the order. APSEZ provided all requisite information and documents required by the JRC. As per the report received by MoEF&CC vide dated 01.12.2021, there was no non-compliance observed.</p> <p>To enhance the marine biodiversity, till Mar'24 APSEZ has carried out mangrove afforestation in 4140 ha. area across the coast of Gujarat. Total expenditure for the same till date is INR 1592.8 lakh.</p> <p>Details on Mangroves afforestation & Green belt development carried out by APSEZ till date is annexed as Annexure - 4.</p> <p>Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE, Gujarat.</p> <p>These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem.</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
		Multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE, Gujarat.
(v)	All the recommendations and mitigation measures as proposed in the Cumulative Impact Assessment report of Waterfront, SEZ and ancillary Developments along Mundra, Kutch District, Gujarat shall be complied in letter and spirit. Proper record of monitoring should be placed along with six monthly compliance report.	<p>Complied.</p> <p>APSEZ is already complying, as per Environment Management Plan and further recommendations, applicable to APSEZ as mentioned in the EMP of Cumulative Impact Assessment Study Report, w.r.t. Traffic Management Plan, Ground water quality management, Salinity ingress programme, Air and Noise quality Management, Surface and Marine water quality management, Ecology and Biodiversity Management, Solid & Hazardous waste management, Socio-economic Management and Shoreline Management as per the progress of development within the boundary limits of APSEZ.</p> <p>The detailed compliance, applicable to APSEZ is attached as Annexure - 5.</p>
(vi)	This environmental clearance is only for the Multi-product SEZ. Any other activity within the Multi-product SEZ would require separate environmental clearance, as applicable under EIA Notification, 2006 and subsequent amendments. For all individual units, environmental clearances, as applicable, shall be obtained from the respective regulatory authorities.	<p>Point Noted and Complied with</p> <p>Separate environment clearance will be obtained by APSEZ or individual unit from regulatory authorities in line to EIA Notification, 2006 and subsequent amendments thereto if applicable.</p>
(vii)	An Emergency Response Centre to be established to take care for prevention of and management of accidents, chemical spills etc. including that during transportation of chemicals with the	<p>Complied.</p> <p>Disaster Management Plan for APSEZ, Mundra is in place and updated regularly. The updated DMP was submitted during the half yearly EC compliance report submission for the period Oct'21 to Mar'22.</p> <p>On Site Emergency Response Plan and Crisis Management</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
	arrangement of antidotes and necessary equipment.	<p>Plan for APSEZ, Mundra is in place and implemented. The last updated Onsite emergency plan was submitted along with compliance report for the period Apr'23 to Sep'23.</p> <p>Oil spill contingency response plan (OSCRP) is in place to handle Tier 1 level oil spills considering different accident scenarios, and the vulnerable areas are identified and mitigation plan is prepared. Oil spill contingency response plan is being updated on regular basis and the same was last updated on 30.07.2022 is in place and implemented. The updated OSCRPs were submitted in last compliance period Apr'22 to Sep'22.</p>
(viii)	All the provisions of the CRZ Notification, 2011 and subsequent amendments shall be strictly complied with, and in case of any change in scope of work, necessary recommendations from the concerned CZMA shall be obtained for further consideration by the concerned regulatory authority.	<p>Point noted and will be complied with.</p> <p>CRZ Recommendations vide Letter No. ENV-10-2010-1601-E dated 27th March, 2012 obtained from GCZMA for Multi-Product SEZ for construction of Intake, Outfall pipeline and Desalination plant.</p> <p>Construction with respect to Desalination Plant, sea water intake and outfall system has not been started yet.</p>
(ix)	The project proponent shall ensure that the project is in consonance with the new Coastal Zone Management Plan prepared by the State Government under the provisions of CRZ Notification, 2011 and subsequent amendments.	<p>Point Noted and Complied with</p> <p>APSEZ ensures that the project is in consonance with the new Coastal Zone Management Plan prepared by the State Government under the provisions of CRZ Notification, 2011 and subsequent amendments.</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
(x)	On the project site physical HTL demarcation has to be compulsorily made with the help of Government of India organizations/Institutions.	<p>Point noted and being complied</p> <p>NCSCM has prepared authorized CRZ maps with HTL and CRZ Boundary as per the approved CZMP of Gujarat state under the provisions of CRZ Notification, 2011 and subsequent amendments. The same maps were submitted during the half yearly EC compliance report submission for the period Oct'21 to Mar'22.</p> <p>As per the approved map of CZMP Kutch region APSEZ has demarcated the HTL boundary line within APSEZ area. Photographs of the demarcated HTL boundary line were submitted along with the EC compliance report for the period Apr'23 to Sep'23.</p>
(xi)	No construction works other than those permitted in CRZ Notification shall be carried out in CRZ area.	<p>Point Noted and Will be complied with</p> <p>No construction works other than those permitted in CRZ Notification – 2011 will be carried out in CRZ area.</p>
(xii)	Non-vegetated mudflats must be clearly demarcated on the map and no artificial plantation to be undertaken on non-vegetated mudflats.	<p>Point Noted and Will be complied with</p> <p>CZMP of Gujarat state under the provisions of CRZ Notification, 2011 and subsequent amendments is finalized and published on website.</p> <p>No work other than those permitted in CRZ Notification – 2011 will be carried out in CRZ area.</p>
(xiii)	The temperature at the discharge point has to be monitored regularly and also the physico-chemical and biological parameters including benthic fauna and flora, primary and secondary productions as well as fishery populations has to be monitored regularly during the construction and operation phase by employing qualified persons.	<p>Point Noted and Will be complied with</p> <p>Construction with respect to Desalination Plant, sea water intake and outfall system has not been started yet.</p>
(xiv)	The project proponent	Point Noted and Will be complied with

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
	shall report to the State Pollution Control Board about the compliance of the prescribed standards for all discharges from the Industrial Area into the sea	Construction with respect to Desalination Plant, sea water intake and outfall system has not been started yet.
(xv)	No New CETP shall be permitted in SEZ area.	<p>Point noted.</p> <p>CETPs of 67 MLD capacities has been approved as part of EC & CRZ Clearance dated 15th July, 2014. And same will serve the purpose of entire SEZ of 8481.2784 Ha area.</p> <p>No new CETP has been proposed as a part of said clearance.</p>
(xvi)	Periodic monitoring of coastal water shall be carried out at outfall location by the project proponent by establishing minimum 3 monitoring stations. Proper record of monitoring should be placed along with six monthly compliance report.	<p>Point noted and will be complied</p> <p>Construction with respect to Desalination Plant, sea water intake and outfall system has not been started yet.</p>
(xvii)	Fund allocation of Rs. 12.50 Crore for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1 st May, 2018 for various activities therein. The report having activity wise detail along with the time frame shall be submitted to this Ministry and its concerned regional office within 3 months.	<p>Point noted and will be Complied with</p> <p>The report having activity wise detail along with the time frame was submitted to the MoEF&CC along with EIA / EMP Report.</p> <p>Fund will be allocated and spent on yearly basis in line with the actual cost spent for respective years on development of common infrastructure facilities within 1840 Ha MSEZ area.</p> <p>However, Adani Foundation – CSR arm of Adani Group is doing various Environment Sustainability Projects in surrounding villages and communities. Details of activities carried out by Adani Foundation during compliance period are as below.</p> <p>ENVIRONMENT SUSTAINABILITY PROJECTS</p> <ul style="list-style-type: none"> • Miyawaki Forest Development, Nana Kapaya - Plantation of 5880 saplings of different 42 species is completed which will result in dense forest within 2 years • Smruti Van – Plantation more than 47,000 sapling with more than 115 species through Miyawaki methodology.

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		<ul style="list-style-type: none"> Ecosystem Restoration, Guneri – Grassland ecosystem restoration and mangrove conservation in 40 Ha area over a period of 4 years. The site visit and soil samplings conducted by GES team. Regular bimonthly meeting conducted to assess the annual phase wise growth of ongoing activities Multi-Species Mangrove Park - Adani Foundation at Mundra's initiated multi-species plantation of mangroves in Kutch association with GUIDE. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hector plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE, These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem. Since PhD scholars and students frequently visit this area for study. we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist. Mangroves Biodiversity Park within one year Home biogas - Under Gram Utthan Project, Adani Foundation is supporting home biogas to farmers to Uthhan Villages phase wise. Total 325 farmers are supported with Biogas as sustainable environment protection. Current year FY 2023-24 upto Sep'23 process to facilitate 258 Gobardhan unit through Govt. As per SORI use of biogas each farmer can save Rs.23400/year. <p>Water Conservation Projects –</p> <p>Below tabulated Water Conservation Projects completed during Compliance period:</p> <p>Swajal Project:</p> <ul style="list-style-type: none"> Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district. Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared for the Seven villages. <table border="1" data-bbox="678 1394 1414 1661"> <thead> <tr> <th>Block Name</th> <th>Water conservation structure</th> <th>Total no. of Structure</th> <th>Total Capacity Created (CUM)</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Mundra</td> <td>Check Dam</td> <td>23</td> <td>6,07,332.80</td> </tr> <tr> <td>Pond Deepening</td> <td>66</td> <td>1,89,121.08</td> </tr> <tr> <td>RRWHS</td> <td>275</td> <td>2750</td> </tr> <tr> <td>Recharge Borewell</td> <td>209</td> <td>-</td> </tr> <tr> <td>Percolation Well</td> <td>24</td> <td>-</td> </tr> </tbody> </table> <p>Earlier Completed Activities/Projects:</p> <table border="1" data-bbox="678 1787 1414 1841"> <thead> <tr> <th>Sr. No.</th> <th>Project</th> <th>Unit</th> <th>Outcome</th> <th>Impact</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Block Name	Water conservation structure	Total no. of Structure	Total Capacity Created (CUM)	Mundra	Check Dam	23	6,07,332.80	Pond Deepening	66	1,89,121.08	RRWHS	275	2750	Recharge Borewell	209	-	Percolation Well	24	-	Sr. No.	Project	Unit	Outcome	Impact					
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		2	Recharge Borewell	21	Reduce Salinity ingress, and preventing water run	150+ farmer's 260+ Acre Area of Agri land for Irrigated
		3	Pipe Culvert at Checkdamat Bhujpur	1	prevent water runoff into seaside.	35 farmers' 120+Acre Area of Agri land can be Irrigated
		<ul style="list-style-type: none"> • Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. • Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. • New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. • Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. • Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. • Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. • Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar. • Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. ✓ Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. <p>Please refer Annexure - 3 for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2023-24 is to the tune of INR 953.50 lakh. Out of which, Approx. INR 940.52lakh are spent during the current FY 2023-24.</p> <p>During the FY 2023-24 INR 11.66 lakh spent under the Corporate Environment Responsibility (CER) projects Mega Plantation in 1.0 ha area of Bhujpur Village Panchayat area.</p>				
xviii)	No groundwater extraction is permitted. The project proponent shall obtain the necessary permission from the competent authority for	Complied. No ground water is used during construction & operation stage of the project. Current sources of water are through GWIL and desalination plant of APSEZ. Average, water consumption for entire APSEZ area is 5.14 MLD during the				

Status of the Conditions Stipulated in Environment and CRZ Clearance

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	use of surface water for the project.	compliance period Oct'23 to Mar'24.																														
(xix)	The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.	<p>Complied.</p> <p>Consolidated Consent & Authorization (CC&A) obtained from SPCB for development of 8481.27 Ha notified SEZ area @ Mundra. The present in-force CtOs are mentioned below.</p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Permission</th> <th>Project</th> <th>Ref. No. / Order No.</th> <th>Valid till</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>CTE-Amendment for Validity Extension</td> <td>Multi-Product SEZ</td> <td>CTE 122249</td> <td>15.07.2025</td> </tr> <tr> <td>2</td> <td>(CC&A) – Renewal Cum Amendment renewal</td> <td>Multi-Product SEZ</td> <td>AWH 122250</td> <td>21.08.2027</td> </tr> </tbody> </table> <p>GPCB has granted CTE-Amendment for Validity Extension vide CTE No.-122249 Valid upto: 15/07/2025. Consolidated Consent & Authorization (CC&A) – Renewal Cum Amendment renewal order granted vide Consent No. AWH-122250 Valid upto: 21/08/2027. Copy of CTE-Amendment & Consolidated Consent & Authorization (CC&A) – Renewal Cum Amendment were submitted during the previous compliance period Apr'22 to Sep'22.</p> <p>All the hazardous wastes generated from project is being managed in line with Hazardous and other Waste Management Rules, 2016.</p>	S. No.	Permission	Project	Ref. No. / Order No.	Valid till	1	CTE-Amendment for Validity Extension	Multi-Product SEZ	CTE 122249	15.07.2025	2	(CC&A) – Renewal Cum Amendment renewal	Multi-Product SEZ	AWH 122250	21.08.2027															
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(xx)	The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the Industrial area at least at four locations (one within and three outside the plant area at an angle of 120° each),	<p>Complied.</p> <p>Ambient Air Quality (considering one location within the project site and outside project site @ an angle of 120°) covering upwind and downwind directions are being carried out through NABL accredited and MoEF&CC authorized agency namely M/s Unistar Environment and Research Labs Pvt. Ltd., Vapi. Summary of the same for duration from Oct'23 to Mar'24 is mentioned below.</p> <p>Air sampling locations & frequency: 10 nos. (twice a week)</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Min.</th> <th>Max.</th> <th>Avg.</th> <th>Perm. Limit[§]</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>40.80</td> <td>85.89</td> <td>69.78</td> <td>100</td> </tr> <tr> <td>PM_{2.5}</td> <td>µg/m³</td> <td>14.49</td> <td>43.06</td> <td>27.71</td> <td>60</td> </tr> <tr> <td>SO₂</td> <td>µg/m³</td> <td>8.35</td> <td>25.63</td> <td>15.72</td> <td>80</td> </tr> <tr> <td>NO₂</td> <td>µg/m³</td> <td>11.21</td> <td>34.10</td> <td>20.59</td> <td>80</td> </tr> </tbody> </table> <p>[§] as per NAAQ standards, 2009 Values recorded confirms to the stipulated standards.</p>	Parameter	Unit	Min.	Max.	Avg.	Perm. Limit [§]	PM ₁₀	µg/m ³	40.80	85.89	69.78	100	PM _{2.5}	µg/m ³	14.49	43.06	27.71	60	SO ₂	µg/m ³	8.35	25.63	15.72	80	NO ₂	µg/m ³	11.21	34.10	20.59	80
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	covering upwind and downwind directions.	Please refer Annexure – 6 for detailed analysis reports. Approx. INR 13.37 Lakh is spent for all environmental monitoring activities including ambient air quality monitoring during the FY 2023-24 for overall APSEZ, Mundra. Please refer Annexure – 7 Environmental Expenditure details for FY 2023-24.
(xxi)	The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured/recorded to ensure the water balance as projected by the project proponent. The record shall be submitted to the concerned Regional Office of the Ministry along with six monthly monitoring reports.	<p>Complied.</p> <p>The quantity of fresh water, water recycling and rainwater harvesting is being recorded and maintained.</p> <p>The data of water consumption, wastewater generation and treated water recycling is also being submitted to SPCB on monthly basis as part of the online submission – Monthly Patrak as well as yearly environmental statement (Form-V).</p> <p>Rainwater within project area is managed through storm water drainage.</p> <p>However, Adani Foundation – CSR arm of Adani Group has carried out rainwater harvesting activities in the nearby villages for benefit of the locals.</p> <p>Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up. Including this a big recharge operation by bunding was taken up for Zarpara village as rainfall was very good during FY 2021-22 & 2022-23.</p> <p>To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch project “Sanrakshan” in coordination with GUIDE and Sahjeevan.</p> <p>Since 10 years considerable Water Conservation Work carried out in Mundra Taluka. Due to satisfactory rain in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures.</p> <p>Adani Foundation water conservation work is as below. Below tabulated Water Conservation Projects completed during Compliance period:</p>

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		<p>Swajal Project:</p> <ul style="list-style-type: none"> ➤ Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district. ➤ Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared for the Seven villages. <table border="1" data-bbox="669 682 1422 940"> <thead> <tr> <th>Block Name</th> <th>Water conservation structure</th> <th>Total no. of Structure</th> <th>Total Capacity Created (CUM)</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Mundra</td> <td>Check Dam</td> <td>23</td> <td>6,07,332.80</td> </tr> <tr> <td>Pond Deepening</td> <td>66</td> <td>1,89,121.08</td> </tr> <tr> <td>RRWHS</td> <td>275</td> <td>2750</td> </tr> <tr> <td>Recharge Borewell</td> <td>209</td> <td>-</td> </tr> <tr> <td>Percolation Well</td> <td>24</td> <td>-</td> </tr> </tbody> </table> <p>Earlier Completed Activities/Projects:</p> <table border="1" data-bbox="669 1018 1422 1444"> <thead> <tr> <th>Sr. No.</th> <th>Project</th> <th>Unit</th> <th>Outcome</th> <th>Impact</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Check dam Restrengthening-Nana Kapaya</td> <td>1</td> <td>Water Storage Capacity increased by 48000 Cum</td> <td>60 + farmer's 120+Acre Area of Agri land can be Irrigated</td> </tr> <tr> <td>2</td> <td>Recharge Borewell</td> <td>21</td> <td>Reduce Salinity ingress, and preventing water run</td> <td>150+ farmer's 260+ Acre Area of Agri land for Irrigated</td> </tr> <tr> <td>3</td> <td>Pipe Culvert at Checkdamat Bhujpur</td> <td>1</td> <td>prevent water runoff into seaside.</td> <td>35 farmers' 120+Acre Area of Agri land can be Irrigated</td> </tr> </tbody> </table> <ul style="list-style-type: none"> ✓ Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. ✓ Ground recharge activities (pond deepening work for 66 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. ✓ New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. ✓ Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. ✓ Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. ✓ Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. ✓ Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar. 	Block Name	Water conservation structure	Total no. of Structure	Total Capacity Created (CUM)	Mundra	Check Dam	23	6,07,332.80	Pond Deepening	66	1,89,121.08	RRWHS	275	2750	Recharge Borewell	209	-	Percolation Well	24	-	Sr. No.	Project	Unit	Outcome	Impact	1	Check dam Restrengthening-Nana Kapaya	1	Water Storage Capacity increased by 48000 Cum	60 + farmer's 120+Acre Area of Agri land can be Irrigated	2	Recharge Borewell	21	Reduce Salinity ingress, and preventing water run	150+ farmer's 260+ Acre Area of Agri land for Irrigated	3	Pipe Culvert at Checkdamat Bhujpur	1	prevent water runoff into seaside.	35 farmers' 120+Acre Area of Agri land can be Irrigated
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xxii)	Provide LED lights in their offices and residential areas.	<p>Complied.</p> <p>LED lighting are being used at various common areas of SEZ as well office buildings and residential townships.</p> <p>It may be noted that the individual industrial units will also be encouraged for provision of LED lights in their offices and other areas.</p>
xxiii)	Used LEDs shall be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the extent possible. Energy conservation measures should be as per Bureau of Energy Efficiency (BEE) standards.	<p>Complied.</p> <p>Used LEDs are collected and sent for recycling through authorized e-waste collection agency.</p> <p>APSEZ has installed & commissioned 8.8 MW roof top solar plants within APSEZ and Township premises. APSEZ has also installed and commissioned 12 MW windmill and whatever electricity generated is being supplied to grid.</p> <p>In additionally 10.4 MW capacity of windmill has been installed by Adani New Energy and as now total capacity of windmill energy is 22.4 MW existed in APSEZ premises.</p> <p>Energy audit of port user buildings of MSEZ (including the details about building materials and technology etc.) is carried out once every three years. The most recent audit was conducted during 18th to 20th Jan-2022 by M/s. ECO ENERGY SOLUTION and report of the same was submitted to Chief Electrical officer, Gandhinagar. The Energy Audit report was</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

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		<p>submitted during the half yearly EC compliance report for the period Oct'21 to Mar'22. Energy Conservation through Installation of Motion Sensor (Occu switch) & AC Temp. controls in few of the buildings are provided.</p> <p>Measures for energy conservation are incorporated at design stage. Few of the buildings in MSTPL are designed as green building. Some features of the same are as below.</p> <ul style="list-style-type: none"> • Used fly ash based cement and bricks • Special types of glasses were used which gives maximum sunlight and less heat • VOC free paint used certified by CII (Certificate of Indian Industries) • Water flow reducer installed in the entire building <p>It may be noted that the individual industrial units will also be encouraged for taking various initiatives with respect to energy conservation (such as LED lightings, installation of renewable energy sources, utilization of energy efficient fixtures etc.).</p>
xxiv)	<p>The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for Standard Operating Procedures (SOP) to have proper checks and balances and to bring into focus any infringements/ deviation/violation of the environmental/ forest/ wildlife norms/conditions. The company shall have defined system of reporting infringements/ deviation/ violation of the environmental/ forest/ wildlife norms /conditions and/ or</p>	<p>Complied.</p> <p>Environment Policy duly approved by the Board of Directors is in place and updated copy of Environment Policy was submitted during the EC compliance report submission for the period Apr'23 to Sep'23.</p>

Status of the Conditions Stipulated in Environment and CRZ Clearance

Sr. No.	Conditions	Compliance Status as on 31.03.2024
	shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	
(xxv)	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.	<p>Complied.</p> <p>M/s APSEZL has a well-structured Environment Management Cell, staffed with qualified manpower for implementation of the Environment Management Plan at site. Site team report to site Chief Executive Officer (CEO) and the CEO directly reports to the top management. The updated Environment Management Cell Organogram is attached as Annexure - 8.</p>
xxvi)	Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.	<p>Will be complied.</p> <p>The last self/internal environment audit was carried out by HO Environment Team on 8th to 10th May, 2023 for the period Apr'22 to Sep'22 compliance period. The Copy of the same was submitted along with EC compliance report submission for the period Apr'23 to Sep'23.</p> <p>No nonconformity is observed during internal self-environment audit and as per improvement suggestion for timely conducting the mangrove mapping study by GUIDE has been done during the compliance period Apr'23 to Sep'23. Please refer condition no. iv of EC & CRZ compliance report for further details.</p> <p>Third party environmental audit was carried out by recognized agency M/s. Marwadi University, Rajkot a GPCB approved schedule-1 auditor for the compliance period Oct'22 to Mar'23 and no non-compliance found during EC compliance verification. The copy EC compliance letter with GPCB order for schedule-1 auditor was submitted along with EC Compliance report submission for the period Apr'23 to Sep'23.</p> <p>Next external environment audit will be carried out after three years as mentioned in the condition.</p>

Annexure - 1

APSEZ ONGOING LEGAL MATTERS

S. No.	Case Detail (No., Parties to the Case, Filed at and on)	Case Brief (Matter)	Last Status (As on date)	Current Status	Action Taken/Proposed
1.	Kheti Vikas Seva Trust Vs Uoi & Others CA 9124 of 2011 in WPPIL 12 of 2011	<ul style="list-style-type: none"> The writ petition has been dismissed by the Gujarat High Court on 17th April 2015. The Hon'ble Supreme Court of India on 18.3.2016 dismissed the appeal against the said order dated 17th April, 2015 of the Gujarat High Court. However, an application was filed by the petitioner alleging non-compliance of an order of the Gujarat HC dated 12th July 2011 prohibiting the cutting of mangroves and other forests during the pendency of the petition without permission of the state forest and environment department in relation to the writ petition. The said Writ Petition before the Gujarat High Court has been disposed of by common order dated 05.09.2022. Further, a Civil Application No. 1 of 2011 in CA 9124 of 2011 was filed against APSEZ and APL for initiation of contempt proceedings. The court ordered the CA to be listed with another matter (WPPIL 121 of 2021) 	Not Listed since October 2021	Matter pending before Gujarat High Court	<ul style="list-style-type: none"> The committee of Mr. Claude Alvaris, Mr. Subrata Maity and Deputy Conservator of Forest, kachchh was appointed and the committee submitted its report on 7.6.2016. The committee suggested various measures like replanting of mangroves in 5333 ha area, GCZMA to re-examine the entire proposal of APSEZL in line with CRZ notification, measures to safeguard Bocha Island and annual uploading of satellite images by APSEZL. APSEZL has challenged the recommendations of the committee stating that it has exceeded its terms of reference and APSEZL has already done mangrove reforestation and is in compliance with the Environment Clearance dated 18.9.2015. the Sunita Narain Committee recommendations have already been captured in the EC conditions and the company is in compliance of the same.
2.	SLP 28788 of 2016 Pravinsinh Bhurabhai Chauhan Vs State of Gujarat & Others Petitioner 1. PRAVINSINGH BHURABHA CHAUHAN Respondent 2. State of Gujarat 3. APSEZ 4. MoEF&CC, New Delhi 5. MOC&I, New Delhi 6. Collector, Bhuj	<ul style="list-style-type: none"> Public Interest Litigation was filed before the Hon'ble Gujarat High Court by Mr. Pravinsingh Bhurubha Chauhan alleging, presence of Sand dunes in the APSEZ project area. APSEZ has submitted its representation that no Sand dunes are present in the project area and same was also verified during the site visit carried out by the Committee, constituted by Collector, Kutch on 25.07.2014 and by Regional Office of MoEF&CC, Bhopal on 25.09.2014. Hon'ble High Court of Gujarat had dismissed the PIL filed by the Petitioner, vide their order dtd. 18.02.2015 stating that, "There is no need of constituting a new committee to look into the alleged violations as there is already a committee constituted by the ministry and a report by the same committee has also been submitted" Later on Special Leave Petition was filed in Supreme Court by the Petitioner vide dated 26.10.2015 against the above said order of the Hon'ble High Court of Gujarat In view of above, Hon'ble Supreme Court vide their order dated 23.08.2017, had requested the earlier formed Sunita 	Last hearing was done on 14th Sept 2018	Matter pending Hon'ble at Supreme Court.	<ul style="list-style-type: none"> APSEZ has already submitted as part of their submission to the Committee that there is no presence of "Sand dunes", in APSEZ area, inline to the authenticated maps & report available for this area. The Committee visited Mundra on January 3 & 4, 2018 and the core issues to be examined by the Committee were (i) whether sand dunes are allotted in the forest land and whether APSEZL has destroyed/disturbed them and (ii) whether measurement of land was wrongly done? The Sunita Narain committee filed its report in the Hon'ble Supreme Court of India on 14.9.2018. The Committee heard representations from both the parties and concluded that the term "Dhuva" is not synonymous with shifting sand dune. The Committee concluded that there is no incontrovertible evidence that Mor Dhuva was a sand dune and it cannot be said that M/s. APSEZL violated any conditions of the Environmental Clearance. With regards to the issue of

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S. No.	Case Detail (No., Parties to the Case, Filed at and on)	Case Brief (Matter)	Last Status (As on date)	Current Status	Action Taken/Proposed
	7. Principal Secretary, Gujarat	<p>Narayan Committee to relook in to this matter and submit their report.</p> <ul style="list-style-type: none"> Committee had visited the site on 3/4.01.2018 and has submitted their detailed report to Hon'ble Supreme Court. Further, based on the findings of the report, the subject land is not classified as Sand dune and therefore allegations are not correct. 			measurement of land, the Committee stated that there was no credible evidence to show that Mor Dhuva was not part of the allotment to APSEZ and all measurements were done appropriately.

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Annexure - 2

ALGAL REMOVAL WORK FROM MANGROVE AREAS

Creek area is regularly observed for checking algal encrustations. On the mangrove recruits & where the algal encrustation is found to be substantial, it is removed manually by deployment of required manpower. This operation is performed during the low tide conditions. The main object is to provide better growing condition for the growth of mangroves. Periodically, spread of *Prosopis* sp towards the mangrove areas is also observed as this species will compete with mangrove plants for growth.

Photographs of removal of algal encrustations:



Annexure - 3

CSR Gujarat

Kutch – Hazira – Dahej

adani
Foundation

pond deepening

A N N U A L R E P O R T 2 0 2 3 - 2 4



Our Journey by Mr. Rakshit Shah, Executive Director APSEZ



From Pledge to Progress Further,

I am happy to share that Adani Foundation continued to make significant strides to elevate the sustainability of our CSR operations. This year We prioritize capacity building and awareness on ESG, as evidenced in 8 employees completing training modules that raise awareness about best practices in ESG. We raised the bar through our environmental initiatives, Water Conservation, Terrestrial and Coastal Biodiversity. We are also spreading awareness for reducing paper usage, Reducing emissions through firewood cooking, diesel free village drive at Surat district and increasing the green cover by planting trees. We enhanced the impact of our social initiatives by empowering women through Enhancing skill and Livelihood, increasing gender diversity and improving inclusivity. We are working for socio economic upliftment marginalized community i.e. Primitive Tribes at Bharuch and Surat district and fisherman at Kutchh district.

Our commitment to sustainable CSR operations has earned the trust of our stakeholders and contributed to our success. It has also helped us build a more resilient, sustainable and profitable business. I thank our Adani Foundation Team for their continued support and dedication to our commitment to sustainable CSR practices, as we remain focused on driving long-term value for our stakeholders, and the communities in which we operate.

With best wishes,

Rakshit Shah

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CSR KUTCH

The Adani group plans to invest over two lakh crore rupees in Kutch over the next five years, creating around 100,000 jobs. The investment is expected to contribute to a Vikshit Gujarat, with the group constructing a world-largest green energy park in Khavda, Kutch, and expanding its green supply chain. Kutch Copper Ltd, a subsidiary of Adani Enterprises Ltd (AEL), the world's largest single-location copper manufacturing plant at Mundra in Gujarat, will start operations of the first phase by March-end and full-scale 1 million tonnes capacity by FY29. Mundra Port, Adani Power Plant, Adani Wilmar and Mundra Solar is reached to remarkable development ! Adani Foundation is instrumental in Mundra from 25 years but for last 3 years, started CSR at Khavda, Nakhtranana, Lakhpat and Abdasa Taluka in Community health care, Women Empowerment and Water conservation core.



Demographic Details

Block	Villages	No. of HHs	Population
Mundra	61 Villages	35192	153179
Anjar	6 Villages	5350	28500
Nakhtrana	22 Villages	14093	36373
Lakhpat	20 Villages	8092	18976
Khavda	22 Villages	8450	35200
Rapar	3 Villages	345	12450
Mandvi	8 Villages	2780	14560
Abdasa	12 Villages	2415	9660

1. Adani Ports and SEZ Limited
2. Adani Power Mundra Limited
3. Adani Wilmar Limited
4. Adani Wilmar – Caster Limited
5. Kutchh Copper Limited
6. Mundra Solar PV Ltd
7. Mundra Petrochem Ltd
8. Adani Kandla Bulk Terminal Private Limited
9. Adani Solar Limited – Bitta, Abdasa
10. Adani Green Energy Limited – Nakhtrana
11. Adani Green Energy Limited - Khavda
12. Adani Energy Solution Limited – Rapar

Environment Sustainability



Water Conservation 

Soil Conservation 

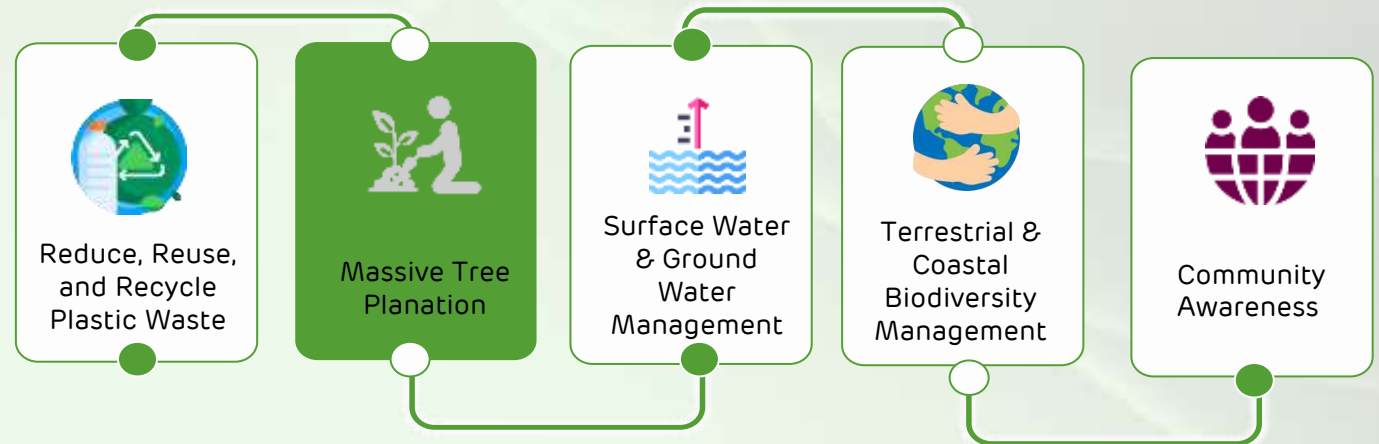
Terrestrial Biodiversity 

Coastal Biodiversity 

Plastic Free Drive 

Environment Sustainability

As per UN Sustainable Development Goal. 13 - The environment and biodiversity serve as the lifeblood of our planet, playing a crucial role in maintaining ecological balance and sustaining life in all its diverse forms. Preserving them is more than a necessity; it is a shared responsibility to secure the health and well-being of both present and future generations. Adani Foundation embodies this commitment through its varied environmental projects. These range from extensive tree plantation and mangrove restoration to innovative biogas provision, drip irrigation, Plastic Free Drive, groundwater recharging, and water conservation.



Action to environment Sustainability



Swajal Project



AIM:

The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district.

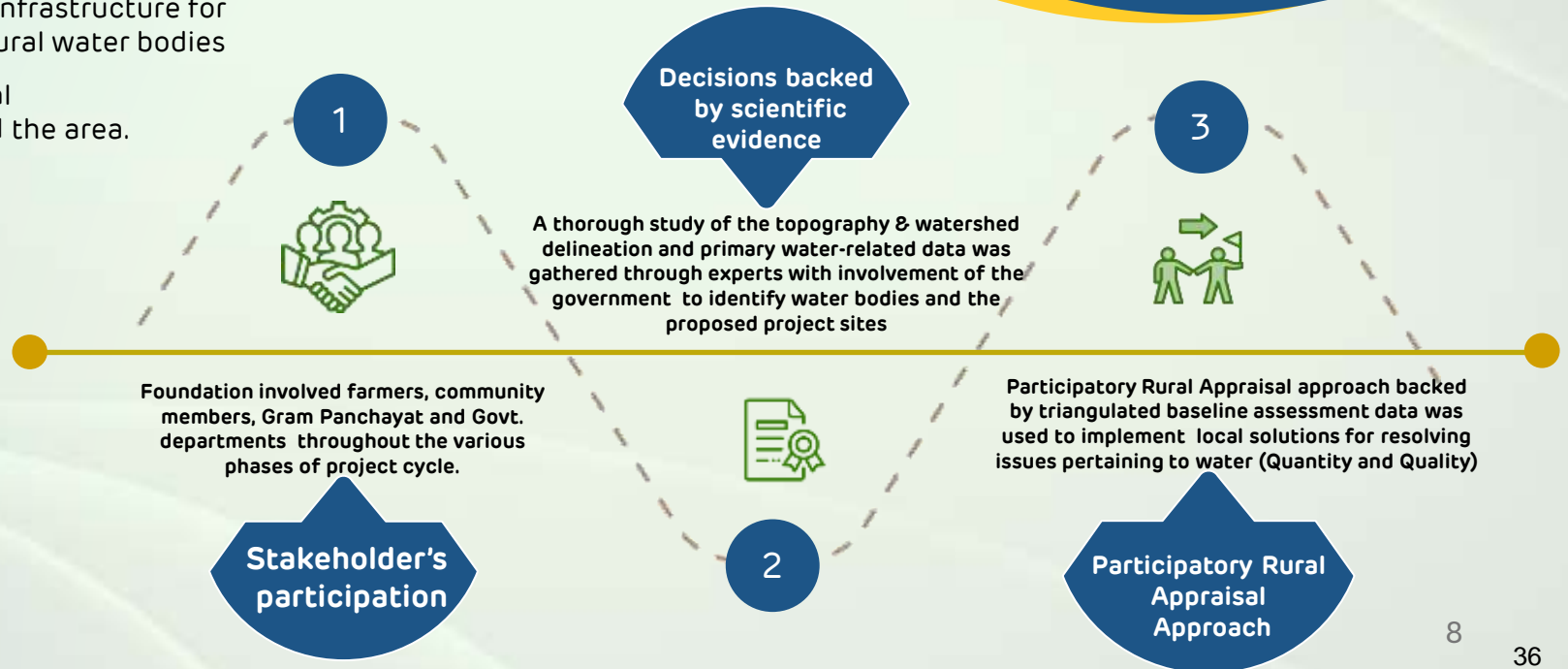


Vision:

Devising eco-friendly and cost-efficient methods of water body rejuvenation, the project works

1. To revive existing water resources,
2. Plan sustainable infrastructure for protection of natural water bodies
3. Improve ecological conditions around the area.

Process:





Water Security Plan

Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared for all the Seven villages.

To prepare water security plan following method has been adopted:

1. Overview of the Project villages through primary field visit and reference of prestudied and reports.
2. Survey of existing surface water resources to assess the potential and further scope of development.
3. Groundwater monitoring in term of storage and quality assessment.
4. Water balance calculation considering water supply and demand estimation.
5. Integrated water resource development and management plan for each village.

Swajal in Kutch – Block wise:

Sr. No.	Block Name	Water conservation structure	Total no. of Structure	Total Capacity Created (CUM)
1	Mundra	Check Dam	23	6,07,332.80
		Pond Deepening	66	1,89,121.08
		RRWHS	275	2750
		Percolation Well	24	-
		Bore & Well Recharge	209	-
2	Dayapar	Pond Deepening	2	9,200
		Check Dam	1	18,000.00
3	Khavda	Pond Deepening	1	2,000
		Check Dam	1	16,000.00
4	Abdasa	Pond Deepening	1	22,000
5	Lakhpatt	Check Dam	1	21,237.64

Swajal - Impact:



28,000
farmers Benefited



7.2%
Increase Revenue



17% TDS reduced



Rs. 1150
Reduce in health expenses/month



Total Water capacity increased

8,87,641 Cum
= 31.35 MCFT

Water Conservation Structure:



Soil Conservation

<p>1250 Farmers</p>	<p>07 exposure</p>	<p>857 Farmers</p>	<p>258 Gobardhan</p>	<p>35 Farmers</p>	<p>Rs.9.88 Lacs RG</p>
<p>•Awareness Sessions at Village Level: Spreading awareness on natural farming benefits and address their concerns.</p>	<p>•Hands-On Training & Exposures : Arranged Workshop and training to emphasizing on real-world techniques.</p>	<p>•Link with Government Scheme: facilitation of govt. Cow Nurturing scheme to promote eco-friendly farming practices.</p>	<p>•Bio-gas Support: Link with Gov Gobar Dhan Biogas Unit Nutrient-rich slurry serves as an essential organic fertilizer for natural farming</p>	<p>•Natural Farming Certification Process to obtain natural farming certification through the GOPCA for the 35 Farmers who are Members of Raj shakti Sahakrai Mandali.</p>	<p>•Marketing Assistance: Provide platforms and resources ensuring fair prices and broader consumer reach.</p>

Natural Farming

Natural farming is an urgent need of the hour, We have initiated a comprehensive approach to promote natural farming practices through a variety of activities aiming to minimize pesticides and chemicals uses ,lead to produce , nutritious, chemical-free produce which is benefitting both farmers and consumers by providing healthier and more sustainable food options as well as plays significant role to flourishing environment and balanced ecosystem.



Home Biogas

Phase	unit	Unit Cost In Rs.	AF in Lac	Support Beneficiaries Contribution in Lac	Gov. Convergence in Lac	Total in Lac
Phase -1	125	23200	29	3.75	0	32.75
Phase -2	100	42000	42.0	5.0	0	47
Phase -3	100	42000	0	5.0	37	42
Phase -4	258	42000	6.45	6.45	95.46	108.36
Total	583	149200	77.45	20.2	132.46	230.11



Home biogas systems, adept at converting organic waste into renewable energy, present a sustainable and eco-friendly solution for cooking. We have started this project in 2020, with farmers contributing 10% towards the cost, that persisted till 2022. Since then, we have scaled our initiative by aligning with government home biogas schemes to amplify the reach and adoption of this eco-friendly technology in wider rural regions.

The deployment of home biogas has been particularly transformative for women, offering a healthier, smoke-free cooking environment reducing greenhouse gas emissions.

Current year we process to facilitate 258 Gobardhan unit through Gov.



Natural farming Workshop with Governor of Gujarat

- To promote natural farming, the Adani Foundation and Shri Rajshakti Natural Farming Cooperative Society Ltd. are making numerous efforts in kutch. In our endeavor to motivate and raise awareness among farmers, we recently organized a significant event inviting the Governor of Gujarat, Shri Acharya Devrath, Mr. V.S. Gadhavi, Executive Director of the Adani Foundation, and other distinguished guests. Addressing a gathering of 2000 farmers, Shri Acharya Devvrat aimed to inspire and enlighten them about the benefits and importance of adopting natural farming practices.
- "The foundation of people's well-being and health lies in the health of the land. Natural farming is the only way for this," said Acharya Devvratji, emphasizing that microscopic organisms in the soil nourish crops with essential elements, providing healthy and nutritious food. Devvratji highlighted the harmful effects of chemical fertilizers and pesticides on the land and urged farmers to adopt natural farming practices.





Revival of Date Palm destroyed by **BIPORJOY** Cyclone



Dates Tree -Restoration

Biparjoy cyclone has damaged huge number plants of Dates, Mango, Sapota. In coordination with Kutch Crop Services and Krishi Vigyan Kendra – more than 615 plants are restored till date and continue. This initiative has created trust and credibility in farmers of Mundra. As for one date tree Average revenue is 25000 INR – this initiative revenue generation will be 1.53 Cr per year which is remarkable.



Go Green – Horticulture Saplings Distribution to Farmers



Objective :

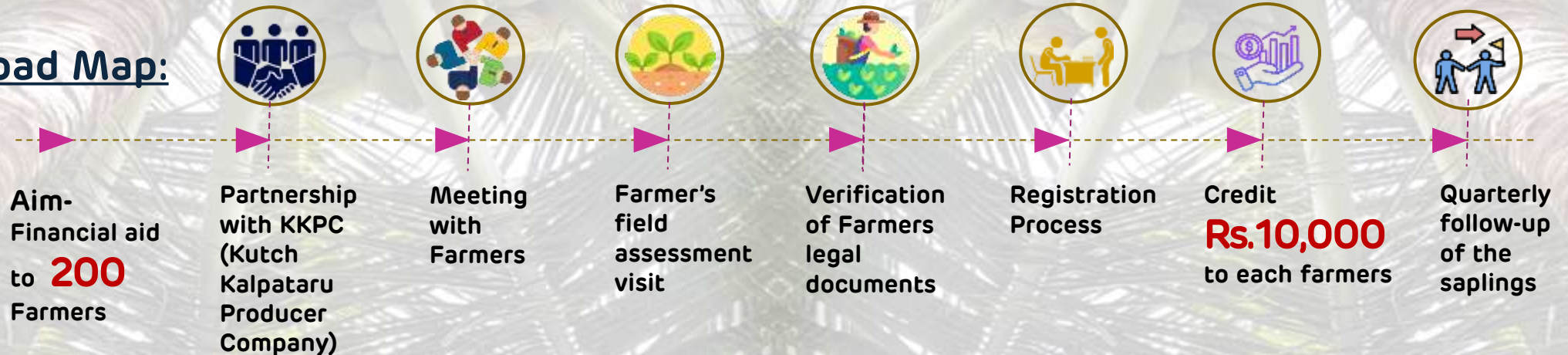
In alignment with a vision for sustainable agriculture and environmental stewardship, MPL aims to empower local farmers and contribute to larger environmental goals. The initiative focuses on providing financial assistance to 200 farmers for cultivating horticultural saplings.



Impacts :

- Environmental sustainability
- Carbon sequestration
- Soil conservation
- Combat climate change
- A healthier ecosystem
- Contributing to a cleaner atmosphere

Road Map:



Go Green – Horticulture Saplings Distribution to Farmers



Carbon sequestration Value :

Supported the plantation of 53,136 fruit bearing trees.

These plants will sequester 1,465.00 MT of CO2 after 5 years as per calculation in Mundra Petrochem villages

Name of Fruit bearing Tree	Co2 Sequ Kg	No of Plants	Total Co2 Seq - Kg
Mango	41.47	33,780	1,400,856.6
Custard Apple	4	1,300	5,200
Dates	12.8	15,856	2,02,956.8
Coconut	26.87	2,200	59,114
Total		53,136	1,465,170.6



Event: Horticulture Sapling Distribution and No Plastic Drive

Noteworthy event unfolded at the serene Sonal Mata Ji Temple in Vakrai - Moti Bhujpur, organized by Adani Foundation and Adani Petrochemicals. The focus of this gathering was giving away horticulture saplings through financial assistance, a symbolic step towards fostering a cleaner and sustainable environment.

Our esteemed guests for this event include R N Parmar, RO GPCB; Javed Sindhi, Mamlatdar Mundra; Vinay Kumar Singh, Head ESG MPL; Bhagwat Swaroop Sharma, Head Environment; Panktiben Shah, Head CSR Gujarat; Vishnu Patidar, ESG expert; and Laxmiben Ninjan, Sarpanch Bhujpur.

Mr. R.N. Parmar addressed the imperative need for cultivating a green and healthy environment for current and future generations. Additionally, he praised the efforts of Adani Petrochemicals and Adani Foundation, emphasizing the importance of sustainable practices.

The primary objective of the event was to extend financial support to 200 farmers, each receiving Rs. 10,000, a transaction gracefully facilitated by Mr. R. N. Parmar, virtually transferring funds to their bank accounts, funded by Adani Petrochemicals. Presently, MPL is aiding over 300 farmers in planting a total of 53,136 fruit-bearing plants.

The event further shone a spotlight on past beneficiaries of drip irrigation and tissue dates distribution, who took the stage to share their experiences and express gratitude for the transformative support received. Adding a touch of artistry, small Utthan students staged a captivating environment protection act.

As the event wrapped up, a strong commitment was made to keep supporting and assessing efforts for a greener environment, contributing to carbon sequestration.



Terrestrial Biodiversity

Vruksh Se Vikas – Massive Drive

Since 2014, we have embarked on a transformative journey to execute a wide range of tree plantation drives in collaboration with local communities and forestry departments.

1. Miyawaki Forest Development: Native species plantation in the 2-acre area at Nana Kapaya village creating a flourishing mini-forest with 5,508 trees.

2. "Adani Van": Barren spaces were transformed into lush green havens through our massive public plantation drives. One notable example is the Bhupur Visri Mata Temple, where 23,000 trees were planted. Second example Momai Mata temple, Desalpar 10,000 trees were planted. Third Example Matiyadada at Bhujpur 8000 trees were planted. Fourth example Rasha pir, Dhruv 2-acre 5000 trees planted. Thus, in PPP Model 4 Adani Van were developed where 46,000 trees were planted.

Prakruti Rath: This initiative goes beyond just planting trees; it is about fostering a sense of responsibility towards our environment. Through 46,750 sapling distribution to individuals, we have empowered communities to take ownership of their surroundings, leading to a heightened consciousness about the environment's significance.

Till the date Total 1.49 Lac tree plantation have been done that has enriched the local ecosystem and significantly contributed to carbon sequestration

Completed the plantation of 1,49,889 trees. These plants will sequester 3180.00 MT of CO₂ after 5 years as per calculation in Mundra Petrochem villages

1.49
Lac tree
plantation





Coastal Biodiversity

Mangrove Biodiversity



In 2010, we initiated a mangrove plantation project at Luni coastal belt, ultimately leading to 162 hectares of dense mangrove forests. Subsequently, we expanded our efforts by planning and implementing a multi-species mangrove plantation across an additional 20 hectares. These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and

migratory bird species, enriching the local ecosystem.. Since PhD scholars and students frequently visit this area for study, we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist

Mangrove Plantation Work Detail				
Sr. No	Year	Number	Person days	Remarks
1	2011-12	50000	3000	
2	2012-13	125000	6943	
3	2013-14	60000	1480	
4	2014-15	125000	6501	
5	2015-16	65000	3533	
6	2016-17	20000	3125	
7	2017-18	100000	3666	
8	2018-19		7539	Algal Removal work
9	2019-20		6261	Algal Removal work
10	2020-21		4830	Algal Removal work
11	2021-22	97000	5200	
12	2022-23	100000	4445	
Total		742000	56523	

4+

Spices of Mangroves

60+

Coastal Spices as habitat preservation

160+

Hector Avicennia marine plantation

20+

Hector Biodiversity park

* Funded by -Mundra Petro chem Limited

Plastic Free Drive

Objective:

The central aim of the Plastic-Free Drive is to empower and enlighten students as key agents of change, enabling them to disseminate awareness and instill the practice of reducing single-use plastics within their community.

1. Educate: Spread awareness about the harmful effects of plastic on the environment, marine life, soil health, and human well-being.

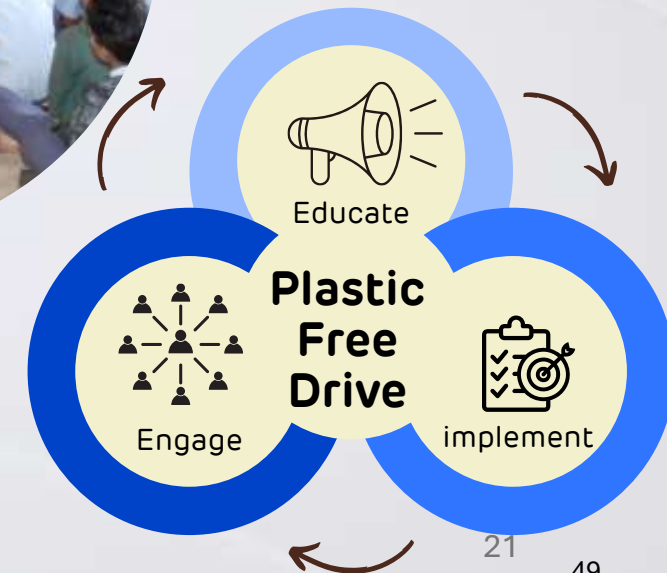
2. Engage: Mobilize community members, especially the youth and family members to actively participate in plastic waste reduction activities.

3. Implement: Introduce sustainable alternatives to ensure proper disposal and recycling. As of now we supply plastic to one NGO to prepare Garden benches. .

Outreach :-

12000 Students of Primary Schools.

990 Students of Secondary Schools of Mundra Block.





5 Years

उत्थाव

2018-2023

adani
Foundation

Celebration

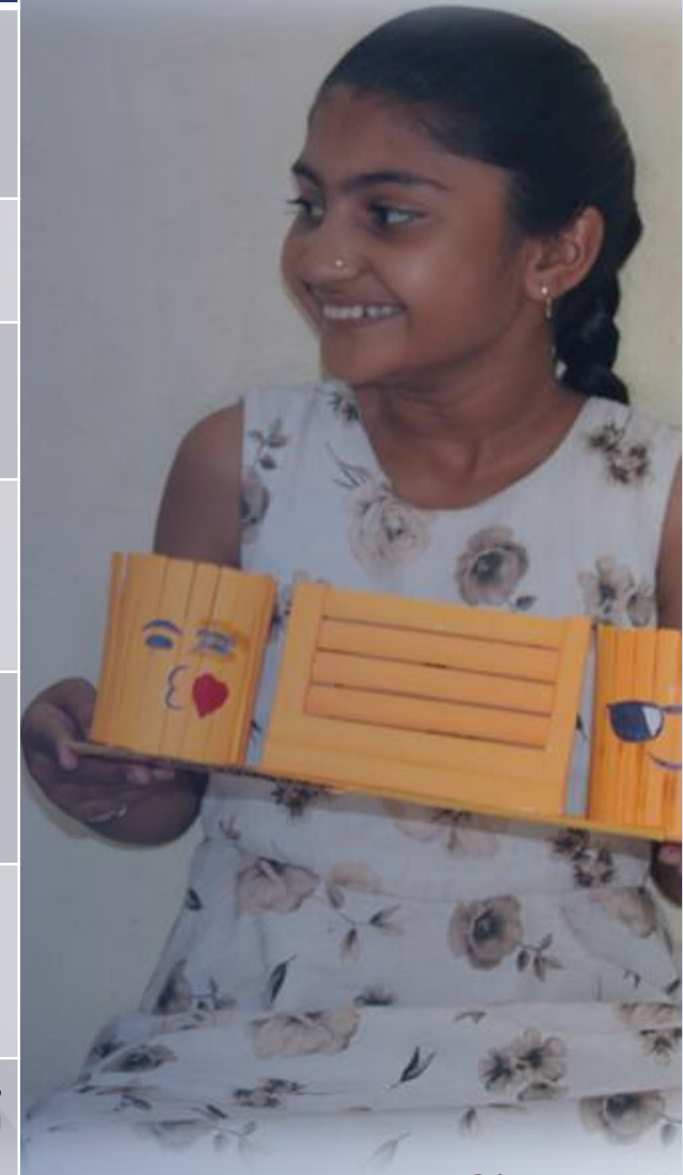


Education: Utthan

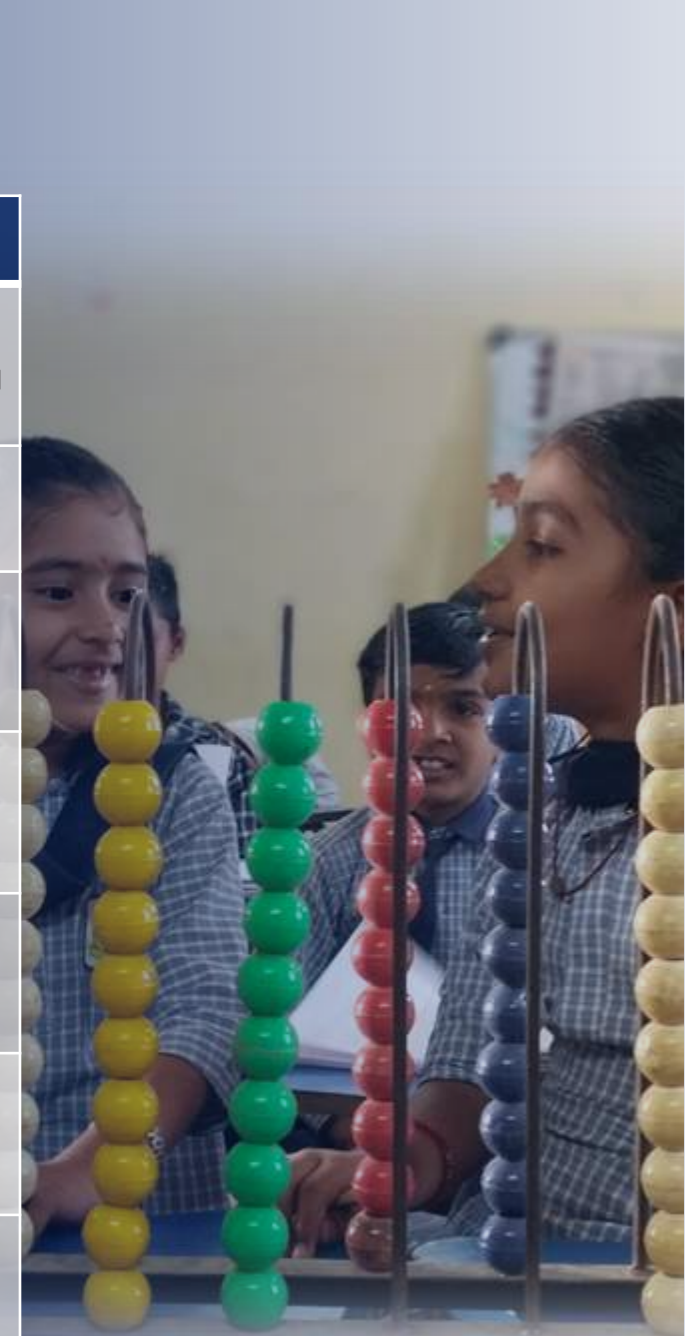
Project Utthan, an innovative initiative by the Adani Foundation by Mou with DEO, which aligns seamlessly with both the National Education Policy 2020 and the Sustainable Development Goal. By adopting government primary schools, Utthan fostering community engagement, it aims to create model schools that empower students and elevate education quality. By providing dedicated teachers and essential facilities, Utthan strive to enhance the Gunotsav results of primary schools and improve the Board results of 10th standard students. Project Utthan takes the lead in initiating various co-curricular activities to ensure the holistic development of students. Through capacity-building programs and collaborative efforts, we envision a future where every child receives holistic and empowering education, paving the way for a brighter tomorrow.



Utthan Initiative	SDG 4	NEP 2020	Benefited
Strengthening government Primary & High schools	Target 4.1.0 suggest to contributes to providing quality education for all.	4.1 and 4.2 - improving primary education.	31 Villages, 77 Schools, 12000+ Students, Efforts for Increase Gunotsav result & Board result.
Appointing an Utthan sahayak	Target 4.1.1 suggest to support students.	5.2 - focus on capacity building and support systems	70+ Utthan sahayak works as catalyst. Students: Teacher ration decrease.
Mainstreamed Progressive learner	Target 4.6.1 suggest fixed level of proficiency in functional	2.1 and 2.2 Mainstream students from progressive learners	Assessment : 6982, Progressive learners : 2541 Mainstreamed : 1278.
Providing required resources and facilities	Target 4.2.1 Suggest the necessary resources for effective learning.	7.4 and 7.5 emphasis on infrastructure development and resource availability.	Sports Kit, Music Kit, TLM Kit, Science Kit provided in schools.
Enabling joyful learning spaces	Target 5.1.2 Suggest positive and engaging learning environments	5.9 & vision of NEP suggest experiential learning to encourages creativity.	Smart Class with Navneet software+ Bala painting + Activity base learning.
Adani Students Development Center (ASDC)	Target 6.1.2 Suggest preparing students for future opportunities.	20.1 and 20.2 NEP's It resonates with the NEP's focus on holistic development and skill-building.	2 Adani Evening Education Center, 5 Adani Competitive Coaching Center, 5 Adani English Coaching Center
Introducing English as a Third Language	Target 5.1.2 Suggest other language learning.	4.13 emphasizes multilingualism and language learning.	Students: 5000+ Classes 1-4, Curriculum, Every Friday morning assembly in English



Utthan Initiative	SDG 4	NEP 2020	Benefited
Enhancing Reading Habits	Target 7.1.2 Promote literacy and a love for reading.	2.8 Supports the NEP's goal of enhancing reading & comprehension skills.	Reading corner , 1000+ Oasis workshop , 162780 Books CICO, 100+ Schools partner from 10+ Country in International school library month(ISLM)
IT on Wheels	Target 4.2.3 Promotes Digital literacy.	5.9 focuses on integrating technology in education.	2 dedicative van, 2 IT instructors, 55 laptops, 34 schools, Empowering 4170 students , 200+ High schools' students
Promote sports	Target 6.1.2 Suggest preparing students for future opportunities	4.8 promoting physical fitness and sports.	6 Students selected in District level sports school, Inspiring more 100 Students. Khel Maha Kumbh : 2000+
Teachers' & Sahayak Capacity Building	Target 4 C Suggest to qualified teachers by cooperation	2.6 emphasizing teacher training and professional development.	3500+ Hours Capacity building program + Webinar + Diksha + 10 full days training.
Formation of Eco Club	Target 5.1.2 Suggest to increase awareness of Environment.	4.44 Promoting environmental awareness.	Plastic free village workshop : 1250+ Students, Environment Awareness program & Tree plantation in schools.
Day Celebrations & Collaboration with GoG	Target 4.2.1 Suggest to inspire Holistic development of students	7.1 children of all ages should learn about arts, sports and careers.	Summer Camp : 6000+ Students Diwali Mela : 5500+ Students. 1400+ Parents participated.
Mothers as catalyst in transformation	Target 4.1.1 Suggest to inspire parents in growth of students	Aligned with NEP's Principles. Page No.6	Mothers meet : 700+ Mothers Joined: 15000+ this year. (Meetings + Home Visit)
Strengthening Stakeholders	Target 4.1.0 suggest to work	Aligned with NEP's Preface, Page No. 4	Support in Taluka, District & state level various initiative with DIRT, BRC, Strengthening SMC Committee.



Utthan Marks 5-Year Milestone

Celebrating the extraordinary five-year journey of Utthan in Mundra, we hosted a remarkable event graced by the presence of distinguished individuals. Among them, the Director of Primary Education, Gujarat, Mr. M. I. Joshi, brought with him not only wisdom but also a sense of grace that elevated the occasion. Standing alongside were the District Development Officer, Mr. Prajapati, and the District Primary Education Officer, Mr. Sanjay Parmar.

Yet, beyond the notable dignitaries, the event witnessed the convergence of more than 2000 students, 416 school principals and teachers, and 145 School Management Committee Members. Their collective presence bore witness to a significant milestone in the enduring journey of Utthan, leaving an indelible mark on our hearts and memories.

In this gracious event, we commend the outstanding contributions of the Principal, Utthan Sahayak, and students who have excelled over the past five years.

During the event, the children showcased their incredible talents. They enthralled the audience with mesmerizing performances, including folk songs, classical dances, and vibrant folk Garba dance. The young talents also graced the stage with captivating dramas and much more.

The event was a true celebration of their skills and abilities, and it was executed with utmost dedication and excellence.





Mother's Meet – Promoting Community Bond

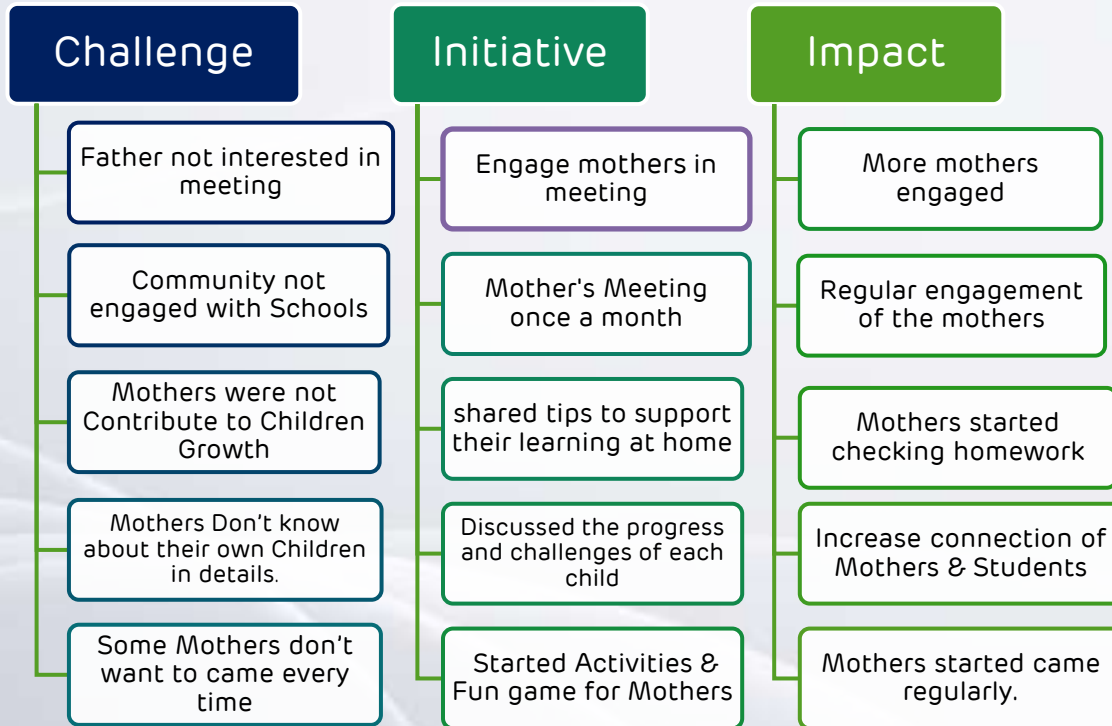
Mother's meet is special intervention of Utthan, This year, more than 15000+ Mothers Joined in 700+ Mothers meet. Some of the challenges and impact of this initiative through out the year is as below:



700+
Mother's meet



15,000+
mother participated

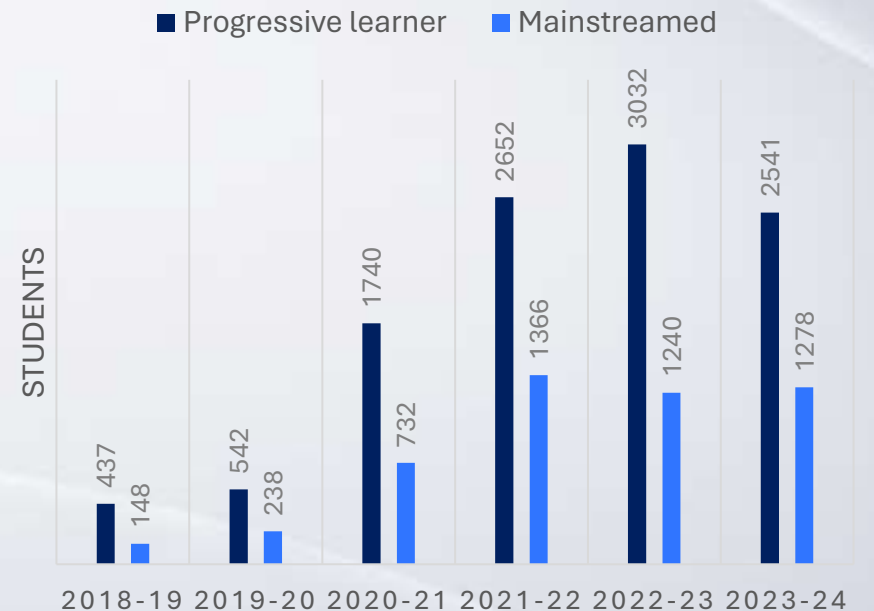


Mainstreaming Progressive learners

Utthan, through its assessment, has identified over 2541 Progressive students out of 6459 from 3rd to 7th standard . Among them, 1278 students have been successfully mainstreamed. The key role played by Utthan Sahayak has been instrumental in achieving this success. Utthan's approach includes a customized syllabus, activity-based learning, and teaching at the right level. Additionally, Utthan actively involves mothers and members of the School Management Committee (SMC) in strengthening progressive learners. Below is the yearly outcome of our hard work:

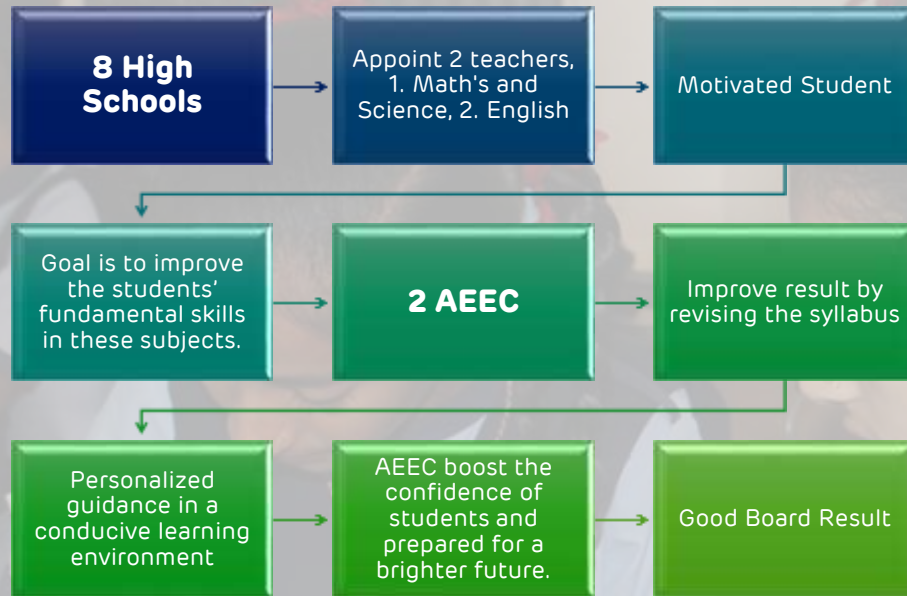


1278 students
mainstreamed

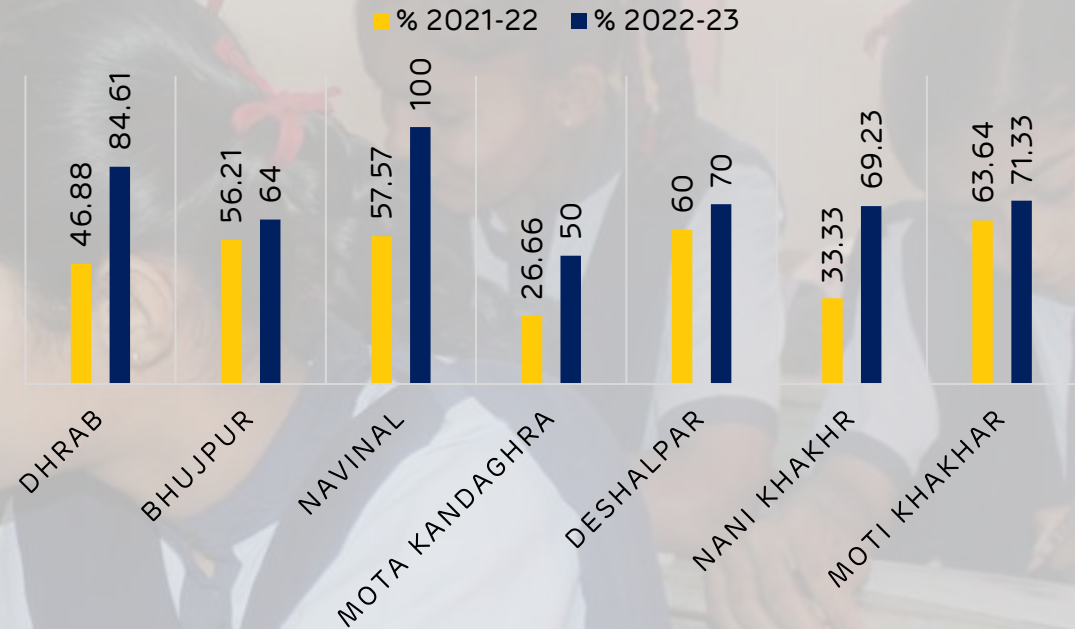




Utthan in High Schools



UTTHAN HIGH SCHOOL RESULT COMPARISON



Utthan other various initiatives & Achievements

- ✓ Utthan won FOKIA Award under the category "Excellence in collaborative CSR Project.
- ✓ Utthan created special syllabus of Maths, Science & English to achieve good result in board exam.
- ✓ The Kutch University has conducted an impact assessment of IT on Wheels, which has been evaluated and certified by the DEO Office.
- ✓ Career Counselling in Utthan High Schools same remedial classes during summer break.
- ✓ Health awareness programs in schools, children of class 6 to 8 were made aware about health.
- ✓ High school girls' students celebrated Rakshabandhan with Shoulder at Boarder.
- ✓ 1000+ Students are preparing for competitive exam. Its more than double from last year.

Adani Vidya Mandir, Bhadreshwar

Empowering Communities through Free and Compulsory Education

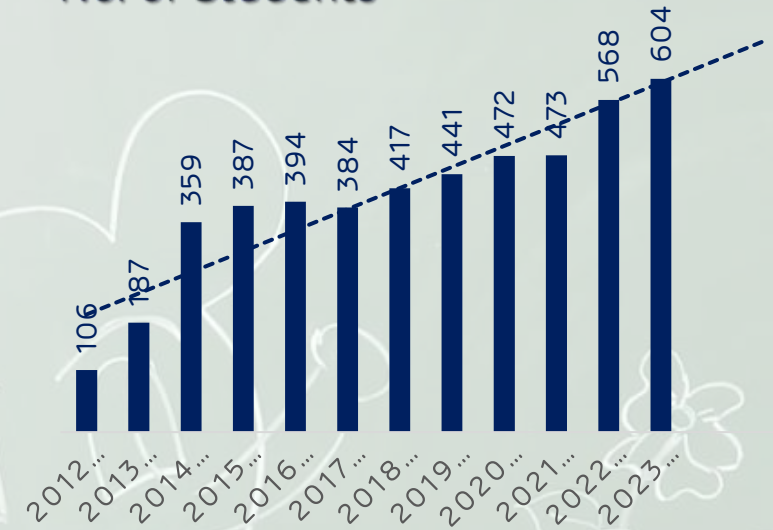
- Established in June 2012, school is a Gujarati Medium, Co-educational institution that adheres to the Gujarat State Board curriculum. It is a school for the students of KG to Class X. Starting its journey in a rented house in Bhadreshwar village, the school commenced operations with 80 students in class-I. Guided by a committed team of six teachers. In the academic year 2023-24, it proudly serves a student population of 604, with 174 students hailing from fisher-folk communities. 24 dedicated teachers are there in school. Committed to providing comprehensive and quality education, the school operates with a unique approach – offering education at no cost. Furthermore, the school extends support by providing complimentary uniforms, books, and stationery. It's noteworthy that all the students belong to the Economically Weaker Sections (EWS), emphasizing dedication to inclusivity and accessible education.
- School stands as a trailblazer, being the first state board school in Gujarat to receive accreditation from NABET under the Quality Council of India.



Adani Vidya Mandir, Bhadreshwar

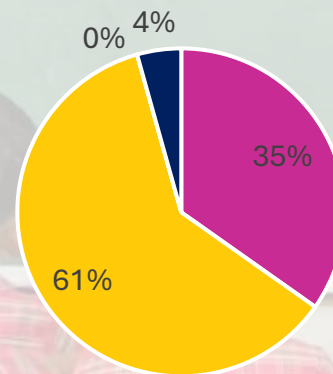


No. of Students



Achievement in sports

- In August 2023, students of AVMB engaged in block-level sports competitions, excelling in Athletics, Kho-Kho, and Yoga. Team of AVMB: U14 & U17 boys secured 1st place in Kho-Kho and progressed to the district level.
- Notably, Abzal Reliva, a Class X student, clinched 1st position in Shot Put, and Hardev Jadeja from Class IX achieved 1st rank in Long Jump earning the opportunity to represent Mundra block at the district level.



■ Districition ■ First Class
■ Second Class ■ Pass Class

AVMB STD 10 – SSC Board Result (2022-23)		
Sr. No.	Grade	Student
1	Above 80%	8
2	Above 70%	8
3	Above 60%	6
4	Above 50%	0
5	Above 40%	1
Total Students		23



100%

**Success in Gujarat Board
Standard 10th Examination.**

Achievement in Arts:

- An Essay and Quiz Competition arranged by TATA BUILDING INDIA was organized on the theme of "Recycle". 81 students of AVMB participated. Winners were recognized and rewarded by Tata Group, Rajkot. Winner students received medals.
- School orchestrated a special moment. Parents were invited to the school where they had the honor of presenting medals and certificates to the winning students. Notably, Ms. Manjaliya Najirhussain Hasam hails from the fisherman community.
- 06 Students of Class VI to VIII appeared in PRARAMBHIK VISHARAD examination conducted by BRIHAD GUJARAT SANGIT SAMITI on 14/12/2023, School is waiting for the result.
- 19 Students of Class V to IX wrote inspirational stories in Gujarati language all the stories were submitted to a publisher name: Jagdish Jepu, among them 01 story of Maheshwari Raj of Class IX title: Importance of Every individual" published in "GULSHAN" magazine in 10th edition on 11/10/2023.



Annual Function in AVMB

- On 5 March 2024, the school celebrated its 12th annual day with a pledge to plant over 25000+ saplings over 3 years in the school premises and in the surroundings, including mangroves in the coastline. The annual day named Utkarsh was aptly linked with the United Nation's Sustainable Development Goals, especially highlighting environmental consciousness.
- Utkarsh gave these students a platform to celebrate the ethos of environmental conservation with a lot of take aways in terms of showcasing learning through models based on SDGs and working models on environment and water conservation. The students presented various sustainability goals through skits, songs, and poetry narration in an enthralling event in AVMB.
- The highlight of Utkarsh 2024 was a pledge that students have taken to plant 25000+ saplings towards greening the region. The fishermen community also came forward to support the children in achieving this pledge. AVMB is committed towards contributing to a secure world. At the event, all 17 SDGs were presented in two sections – 1) Exhibition – through models, charts, and painting and 2) Drama, dance, and songs. The carefully curated event by the teachers under the guidance of the Adani Foundation sensitized the guests on the seriousness of causes, especially the importance of preserving the coastal biodiversity.
- Mr. Jugeshinder ('Robbie') Singh, CFO of Adani Group, chaired the program. He was impressed by the state-of-the-art facilities of the school and especially by the knowledge showcased by the children on the topics which are generally taken up and discussed in higher academics, policy roundtables and corporate chambers. He said, "I am humbled to be here and seeing fantastic knowledge and models presented by these young children. I am sure each of them will make great progress in their lives, become financially independent and help their families, communities and our great nation."







Natural Farming (Cow based Farming):

Adopting sustainable practices i.e., organic pesticides/bio enzymes, Jivamrut, Vermi compost, and bacterial culture to enhance Agri yield.

- First and Second phase Training given to 2200+ Farmers to motivate for Natural Farming
- 2500+ Farmers supported by 25000+ Fruit bearing Saplings. Natural Farming Training will result in 15-20% increase in income after 3 years.



Udaan GET INSPIRED Inspiring Minds



About Project

Udaan is a special project inspired by the life-changing story of Mr. Gautam Adani. As a child, he had visited the Kandla port in Gujarat, and after looking at the expanse of the port, he dreamt of having his own port one day. The rest is history. Under this project, exposure tours are organized wherein school, college students, faculties, employees from corporates are given a chance to visit the Adani Group facilities. Under this project, services are absolutely-free of cost for government schools.

Vision

To create a pool of inspired young minds for nation building at a global scale.

Mission

To motivate young students to dream big by exposing them to world-class industrial facilities.



Total no. of visits

7019

Total no. of participants

447541





Project Site
Mundra, Gujarat
 (Site commenced on Dec 2010)

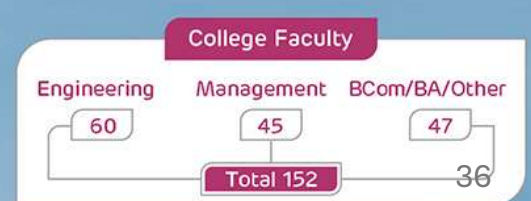
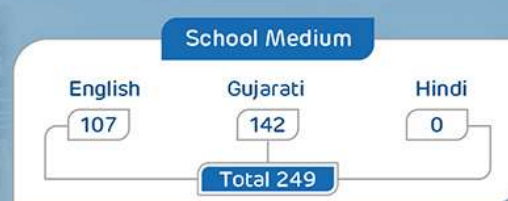
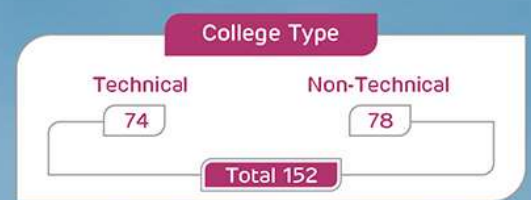
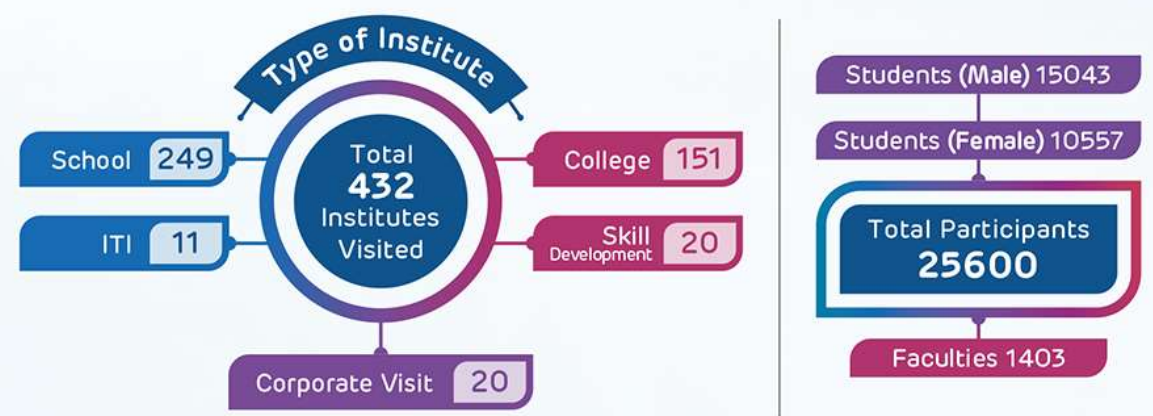
Adani Ports and Special Economic Zone Limited (APSEZ)
 India's largest port operator and SEZ

Adani Power Mundra Limited (APMuL)
 India's largest single location coal based private power plant

Adani Wilmar Limited (AWL)
 Asia's largest single location edible oil refinery

MSPVL - Adani Mundra Solar PhotoVoltaic Limited
 India's first and largest vertically integrated solar company

Mundra Windtech Ltd
 A wind turbine taller than the world's tallest Statue of Unity.





Sustainable Livelihood Projects

Sustainable Livelihood - Animal Husbandry

In the face of dwindling rainfall and increasing salinity in groundwater, agriculture is under threat. Recognizing this challenge, the Adani Foundation has initiated various interventions to foster the holistic development of agriculture and animal husbandry.

Pashudhan initiative:

Two vital pillars of this initiative:

Preventive Health Care & Fodder Support Program

Preventive Health Care: Cattle Health camp

The Adani Foundation, in collaboration with the Animal Husbandry department, organizes cattle health awareness and vaccination programs in 24 villages surrounding our area. These camps bring together government veterinary doctors who conduct check-ups and administer treatments for common ailments. The remaining medicines and vaccines are provided by the Adani Foundation.

These programs are highly effective in maintaining the optimal health of livestock and safeguarding them against deadly diseases like Foot-and-Mouth Disease (FMD) and Clostridial infections. The vaccines used are specifically designed to offer long-lasting immunity against specific diseases, ensuring the continued health of the animals even in harsh environmental conditions.



* Funded by - Kutch Copper Limited

Fodder Support:

Our Fodder Support Program is dedicated to assisting our neighboring villages during the challenging seasons of summer, drought, and crop failures. Through this program, we have provided a significant amount of Green and dry Fodder to ensure the well-being of both the communities.

Adani Foundation provides good quality dry and green fodder to 24 villages in our vicinity, covering 15,005 cattle of 2070 Cattel owners.

Grass Land development:

AF converted 18 acres of denuded village common pastureland (Gauchar) into fertile and productive grassland in Zarpara and siracha village to transform into Fodder Sustain village with Community participation and responsibility for maintain and Monitoring.

Among that 18 Acre of Gauchar land is fenced and sowed with Multispecies Green Fodder with Having Good nutritive value. More than 1500 Cattle will sustain with Improving quality and quantity of milk.

1500 cattle get benefitted by green fodder for 30 days – which increase 0.5-liter milk quantity of 50% cattle.

(750 cattle x 0.5-liter milk quantity Increase x 40 INR per liter=Rs.15,000/day).

This Intervention could benefit ₹ 4,50,000.

14,38,163 Kg Dry Fodder Support
45,85,278 Kg Green Fodder Support
24 Beneficiary Villages
15005 Cattle Benefitted
2070 Cattle Owner Benefitted

“It would be highlighted as best Demonstration and replicate in the other villages as sustainable fodder development project”

* Funded by - Kutch Copper Limited



Sustainable Livelihood - Fisherfolk Community

Persistent efforts for Fisherman development:

598 Education Kit Support

273 Fisherman Shelter Support

1,247 Vehicle transportation support

106 Cycle Support to high school going students

613 Scholarship Support

419 Youth Employment

195 Linkages with Fisheries Scheme

3,534 Ramatotsav Community Engagement

56,523 Man days Mangroves Plantation

Empowering Fisherfolk Communities through Education



Vehicle Transportation Facilities:

Ensure seamless access to education for school-going children from Luni, Randh and Juna Bandar Fisherfolk Students in reaching the nearest School, eliminating barriers to regular attendance.

146 Students supported Mundra Taluka

58 Students supported at Mandvi Taluka



Educational Awareness Sessions:

Through targeted awareness sessions in Fisherfolk Vasahats, we promote the transformative power of education, with a particular focus on advancing girl-child education.

487 Students motivated for high school Education



Cycle Support:

Overcoming transportation obstacles, our cycle support initiative enables six 9th standard fisherfolk students from Juna Bandar to continue their education with ease.



Scholarship Support:

Provide scholarship support to 31 deserving students, covering their higher secondary school fees. Emphasizing gender equality, we offer 100% fee support to female candidates and 80% to male candidates.



Education Kits Support:

Equipping fisherfolk students in grades 9 to 12 with essential tools for academic success, including notebooks, guides, and study bags, we empower them to pursue their educational aspirations with confidence.

15 Students supported at Mundra

42 Students supported by Mandvi



Assisting During Emergencies:

Fisherfolk Home were significantly damaged by the Biporjoy Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery.

336 Fisherfolk house benefited



Fostering Youth Employment:

At APSEZ Mundra, our mission revolves around providing sustainable employment opportunities for the local fishing community. We serve as a bridge between industries and Fisherfolk youth, facilitating job placements to enhance livelihoods. This year, we have successfully engaged 115+ Fisherfolk youth, paving the way for a brighter future.

115+ Fisherfolk youth employed



Strengthening Fisherfolk women:

Through comprehensive health and hygiene initiatives, we empower Fisherfolk women. Our programs include family planning resources, menstrual hygiene workshops, nutrition advocacy, and health awareness sessions covering vaccinations, clean water access, and mental health support.

449 Women benefited



Potable Water Distribution:

Providing potable water facilities to 9 Fisherfolk Vasahats daily, either through water tankers or by establishing linkages with the nearest Gram Panchayat. This initiative benefits over 5000 Fisherfolk, significantly improving their health and productivity.

5000+ Population benefited





Sustainable Livelihood - Agriculture

Sustainable agriculture is a powerful force for good, safeguarding our environment, public health, communities, and the welfare of animals.

Through practices like soil enrichment, diverse crop patterns, eco-friendly cover crops, natural farming methods, orchard development, tissue culture, and water harvesting, sustainable agriculture ensures the well-being of our ecosystem while replacing harmful chemicals with healthier alternatives.

This year, the Adani Foundation continued its strong commitment to advancing natural farming in Mundra. Through various initiatives and partnerships, we provided crucial support to local farmers, empowering them with knowledge and resources to transition to sustainable practices.



2200+

Farmers
educated in
natural
farming

800+

Farmers
embracing
natural farming
methods

200

Farmers got
financial
assistance of
Rs. 10,000

3

District
level
exposure
visit

₹ 36.7 lakh

Business done
by our
benefited
Farmers

*It's more than just a farming practice;
it's a commitment to nurturing our
planet and enhancing lives.*

Promoting Natural Farming

The Adani Foundation is dedicated to advancing natural farming through a cow-based farming initiative. Our interconnected techniques aim to boost farmer yields, with a primary focus on enhancing soil quality. We conduct pre-testing and post-testing to manage soil carbon content effectively. These are our endeavor for promoting natural farming this year:

Training

Conducted training for **1250 farmers in 16 villages**, enlightening them about the harmful effects of chemical fertilizers. Demonstrated how to produce organic fertilizer using household products, emphasizing its benefits and cost-effectiveness. After adopting it, they witnessed its positive effects on their fields.



Kitchen Garden Kit

We have supported vegetable kitchen garden kits to 500 farmers with the aim to enable them to grow fresh and nutritious, chemical-free vegetables. This will enhance their food security and promote self-reliance.



Empowering Farmers

This year, amidst the aftermath of the cyclone, we stood by our farmers and held dedicated meetings with KVK, KCS, and DRC to restore the fallen date trees. Collaboratively, provided JCB, technical support, organic fertilizer etc. Successfully restored **615 trees**. **Each Date trees is projected to yield approximately Rs. 25,000, Total Yield in Next Season:- Rs.1.53 Cr.**

Financial Assistance

Extend financial support to 200 farmers, each receiving Rs. 10,000, a transaction gracefully facilitated by Mr. R. N. Parmar, virtually transferring funds to their bank accounts, funded by Adani Petrochemicals. This fund will help farmers in planting a total of **53,136 fruit-bearing plants**.



Raj Shakti Prakrutik Kheti Sahkari Mandali

The Adani Foundation has taken a proactive step by organizing awakening and awareness sessions to promote natural farming practices in Mundra block Villages. These efforts led to the formation of the "Raj Shakti Prakrutik Kheti Sahkari Mandali," comprised of 35 dedicated farmers who are deeply committed to natural farming. These are the activities done assisting the Mandali this year:

Interaction with Governor

Rajshakti Prakrut sahakari Mandali had Opportunity to meeting with honorable Governor of Gujarat Achrya devvrat at Gandhinagar. They got the valuable knowledge by the him on Natural Farming and gave their farm's vegetables to sir.



Appreciation by Governor

Governor of Gujarat, Shree Acharya Devvratji, encouraged 25 of our farmers practicing natural farming at the Krushi and Dairy Expo event in Bhuj. He motivating them to continue their commendable work for our mother earth.



Exposure Visits

Our farmers embarked on three eye-opening exposure visits to Gautech-2023, Bansi Gir Gaushala, and Narayan Dev Dwisatabdi Mahotsav, where they learned about new agricultural tools, various seeds, organic products, and making of Gau Krupa Amrutam organic fertilizer

Certification by GOPCA

We have successfully **certified 28 farmers** under the Gujarat Organic Products and Certification Agency (GOPCA). Now, they have authentic validation as organic farmers, ensuring they receive the best prices for their farm products.



Kutch Kalptaru FPO (KKPC) and Prakrutik Mandli

To promote horticulture, the Kutch Kalptaru FPO (KKPC) was established in 2020 by farmers from Mundra Block to address various challenges they faced. With an initial 350 shares held by 280 shareholders, the company is now expanding to include up to 5000 farmers and 537 registered share holders.

In the current year, KKPC began selling 10kg capacity packaging boxes at a minimal profit margin of Rs. 29 per box, resulting in a turnover of Rs. 10.5 lakh and a profit of Rs. 75 thousand. This initiative has indirectly supported over 800 farmers.

Regular director board meetings and capacity-building training sessions have been arranged to ensure effective management and growth. Total Turn over is Rs. 33.67 Lacs current year which is four times higher than last year which shows remarkable progress of FPO.



800
Farmers
benefited

₹ 33.67 lacs
Turn over

Green Carnival

Today, finding truly natural, chemical-free food has become a challenge. Our fruits and vegetables are often processed with chemicals, stripping them of their nutritional value. But there's hope. For years, the Adani Foundation has been supporting farmers practicing natural farming methods. However, these farmers lacked a platform to sell their produce. That's why AF has launched the Green Carnival. At Shantivan, Samudra colonies in Mundra, and KCL's Mandvi colony, we've provided a marketplace for these farmers to showcase and sell their agricultural bounty. The response has been overwhelming.

Encouraged by the positive feedback, these farmers have even established an organic produce shop in Mundra, setting an example for sustainable agriculture. Today, over **302 farmers** are part of this initiative.

Previously, these farmers sold their harvest in bulk to vendors. Now, by connecting directly with consumers, they've seen a remarkable **35% increase in their income**.

The communities of both colonies are delighted and eagerly anticipate the Green Carnival every Sunday. Together, we're not just changing food habits, but also supporting the livelihoods of those who cultivate our food, and nurturing a healthier, more sustainable future.

Total Green Carnivals = 37

Total Sell = 8,623 kg

Revenue = ₹ 3,01,805





Sustainable Livelihood - Women Empowerment

Women's empowerment holds a significant place within the Adani Foundation. Since its inception, the foundation has been dedicated to strengthening women by providing training, essential materials, and creating platforms for them to sell their products. Additionally, the foundation collaborates with the government to establish Self-Help Group (SHG) initiatives, enabling women to conduct their

businesses more effectively and encouraging savings. Through various training programs, the Adani Foundation empowers women, fostering their growth and self-reliance. Moreover, the foundation is acutely aware of hygiene and health, actively involving women in initiatives related to these crucial aspects. The holistic development of women is at the core of the foundation's approach and strategy.

We dedicated to empowering women both financially and socially. To that end, a comprehensive training program that has reached 850 women across 82+ Self Help Groups with 35+ Lacks saving Corpus, out of which 5 groups have outstanding revenue generation.

About - Project Saheli



Self Help Groups

- ✓ 82 Self Help Groups in coordination with National Rural Livelihood Mission.
- ✓ 850+ Members
- ✓ Over Rs.35 Lacs Saving Amount Corpus



Job Sourcing - Govt

- ✓ 11 Women supported for application and process of Gram Rakshak Dal, Bank Sakhi , Bima Sakhi and Professional Resouce Person.
- ✓ Average income Rs.4200 Per Month



Making SHG Self Reliant

- ✓ 16 SHG are making strides towards self-reliance.
- ✓ Various handicraft, dry and fresh food making, stitching, tie and die etc.
- ✓ 175+ women - Monthly average income @ Rs.7000 of each member/Month



Social Empowerment

- ✓ 2 Livelihood Enhancement Training through RSETI
- ✓ Financial support for business set up
- ✓ Legal rights and domestic violence workshops
- ✓ Family counselling for Job sourcing



Job Sourcing - Private

- ✓ Coordination for Job by Unnati Portal with Adani Group company companies, Britania, B Medical and Emphazer company
- ✓ 398 Women supported till date for job sourcing.
- ✓ Average income Rs.10200 Per Month

Revenue of each SHG in the FY 2023-24

Name of IG activity of SHG's/JLG/FPC's	Income 2023-24 (INR)	Cumulative income (INR)
Sonal Saheli	480250	3027450
Jay Adhar Saheli	26,500	252,066
Tejasvi Saheli	325000	3,390,150
Umang Saheli	76500	225800
Vishvas Saheli	26300	511400
Jay Momay Saheli	21000	151500
Meghadhanush Saheli	116950	597450
Sanitary Pad Group	71300	746300
Radhe Saheli	31000	870418
Shrddha Saheli	486580	1107580
Chamunda Saheli	21900	1726400
Jay shakti Saheli	2500	605500
Food Sister Sahlei	898250	898250
Jyot Saheli	40800	40800
Pantjanpir gau Saheli	412000	412000
Total	3036830	14563064

Highlights of the Work done by our SHG!



Australia 29th PM visit: Exhibition in Adani Solar

The 29th PM of Australia, Mr. Malcolm Bligh Turnbull and his wife Lucinda Mary Turnbull visited Adani, Mundra. At Adani Solar, they saw our 20+ SHG exhibition stall and interacted with over 180 working women from SHGs. Mr. Turnbull was genuinely thrilled to see women stepping out of their homes, crafting beautiful pieces, and supporting their families. Mr. Malcolm Bligh Turnbull – “It’s empowering to witness women taking charge of their livelihoods and making a difference.”



Sathwaro Mela 2023-24

The event unfolded with the captivating theme of 'Powering Art Empowering Women,' setting the stage for an extraordinary celebration. Held at the prestigious Adani Corporate House in Ahmedabad, the inauguration was graced by the esteemed presence of the Honorable Chairperson of AF, Dr. Preeti G Adani, Mrs. Shilin R Adani, and Shri V.S. Gadhvi. We were delighted to welcome over 500 enthusiastic visitors to our stall, contributing to the resounding success of the event. **Notably, SHG Groups earned a remarkable income of over Rs. 75,000.**



Switzerland delegate visits SHG

Switzerland delegates made a memorable visit to Adani Solar to witness the exceptional craftsmanship showcased by our SHG exhibition. Captivated by the intricate artwork, they engaged with the women, gaining a profound understanding of their skills and purchasing a significant quantity of goods. **Overwhelmed by the quality of workmanship, they graciously extended their support by sponsoring \$100 (90,000 INR) towards our SHG.** This monumental gesture marks a historic milestone for our group.



Handicraft Day Celebration

After 3-day training from Shrujan, hosted an exhibition showcasing handmade crafts by women, alongside interactive workshops on handicraft techniques.



Workshop on Women Health

Aware the women connected to our SHG about mental and menstrual health care, benefited over 130 women, especially those neglecting personal well-being during menstruation.



Gauchar Cleaning Abhiyan

At Bujpur, 31 women initiated the 'Gauchar Cleaning Abhiyan,' with support from AF's Loader Machine. This collaboration aims to enhance environmental preservation and community development.



Women's Day celebration

Celebrated Women's Day with entrepreneur training and mental peace awareness sessions, attracting over 100 participants.



Community Health




Ensuring good health is not just a priority; it's the cornerstone of a thriving community. At the heart of Kutch, the Adani Foundation is dedicated to nurturing well-being and facilitating access to expert medical care. Collaborating closely with G.K General Hospital in Bhuj and Adani Hospital in Mundra, we tirelessly strive to enhance community health standards.

For over a decade, our commitment to community care has been unwavering, manifested through our Mobile Health Care Units, Rural Clinics, and Ayushman Cards linkages with the beneficiaries and THO. In recent years, a concerning trend of Viral, kidney and ortho related diseases has emerged due to salinity ingress. In response, we have orchestrated a series of specialized health camps to address these issues, offering essential treatment support while fostering awareness about preventive measures.

We firmly believe that both preventive and curative healthcare are fundamental pillars for sustaining community well-being and fostering economic prosperity. Our aim is to strike a harmonious balance, paving the way for a journey of longevity, vitality, and fulfilment for all those under the care of the Adani Foundation.

Summary of Healthcare Initiatives for the Year

This year, we provided **41,546** medical health services and conducted health awareness camps for **763 High school students**. Our annual medical facilities have made a significant impact in improving healthcare access and awareness. Here are the direct beneficiaries of our endeavor:


 **2,108** Medical Support to needy patients


 **118** Dialysis Support


 **10,477** Mobile Van

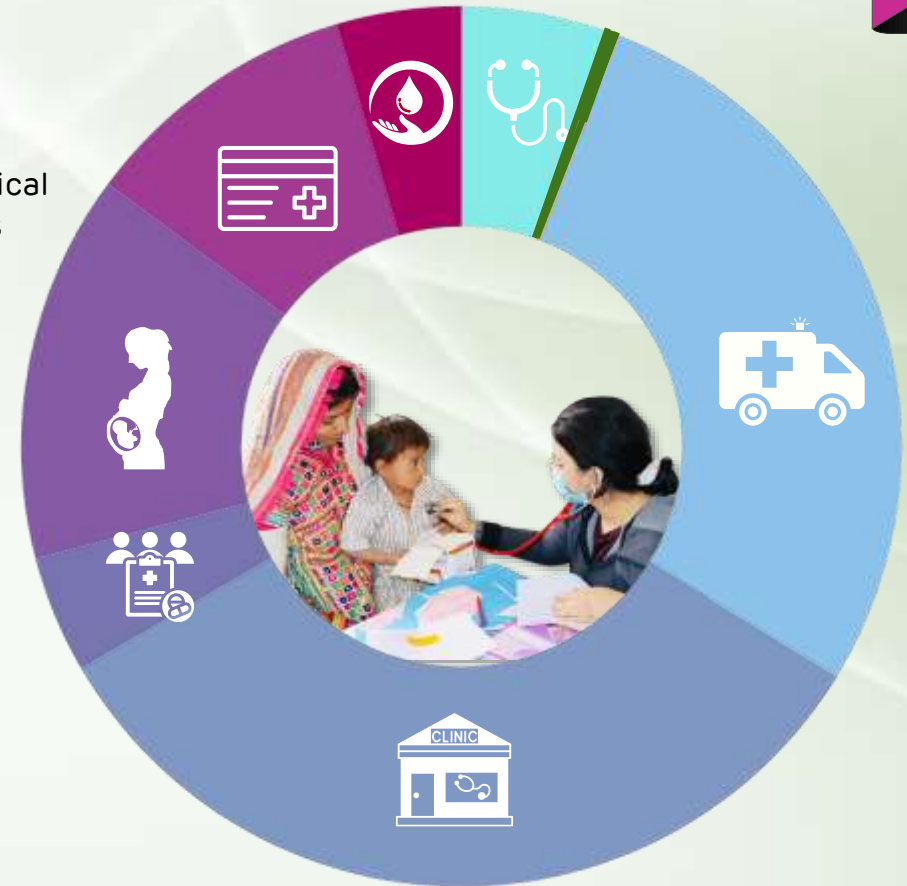
 **12,850** Rural Clinic









 **1,618** Health Camp

 **5,795** Specialty Health Camp

 **6,865** Ayushman Card till date

 **1,715** Blood Donation Camp



-  Medical Support – 5.5%
-  Health Camp – 4.3%
-  Dialysis Support – 0.3%
-  Specialty Health Camp – 15%
-  Mobile Van – 27.2%
-  Ayushman Card – 10.02%
-  Rural Clinic – 33.3%
-  Blood Donation Camp – 4.5%



Rural Clinic & Mobile Health Care Unit

Health stands as the cornerstone for community development, and to revolutionize rural healthcare, the Adani Foundation has launched the 'Mobile Health Care' and 'Rural Clinic Service'. These initiatives aim to offer primary, preventive, and curative healthcare services accessible in remote and inaccessible areas, a commitment upheld for over a decade.

Rural Clinic



Rural clinics extend their services to 5 villages in Mundra and 2 villages of Mandavi Block. The services of both MHCU and Rural Clinics are accessible to patients at token charges of Rs. 20 per visit.



Mobile Healthcare Unit

MHU is equipped with a range of integrated medical devices enabling staff to conduct preliminary check-ups. With over 90 types of essential lifesaving medicines available, the Mobile Health Care Unit covers 29 villages with 7 fishermen settlements. Services provided include blood pressure checking, sugar testing, and ECG assessments.



Ayushman card facilitation

In a world where medical costs are overwhelming, the Ayushman Card offers hope by providing affordable access to quality healthcare. The Adani Foundation bridges the gap between the government and those in need ensuring that 3865 people received this vital resource. Ayushman Bharat PM-JAY provides Rs. 10 lakhs per card owner for secondary and tertiary care, Adani Foundation is aiming to achieve 100% coverage in Mundra's villages.

25 Village

6,865

Ayushman cards Issued

686.50 Cr

Health insurance

** Funded by - Kutch Copper Limited*



Supporting Individuals



The Adani Foundation extends financial assistance to the most economically challenged patients facing life-threatening diseases such as those related to the heart, liver, kidney, and cancer. This support comes with minimum participation requirements, ensuring access to crucial medical care.

In the current year, a total of 2,108 patients from Mundra, Mandavi, and Anjar Block have received support at Adani Hospital, Mundra. This assistance underscores our commitment to providing essential healthcare services to those in need, regardless of economic status. The medical staff of GKGH stood with us in these endeavors.

Dialysis Support



In the arid region of Kutch, particularly in Mundra where saline drinking water is prevalent, cases of urinary stones and kidney failure are significant. To address this issue, a dialysis support project has been initiated to provide essential dialysis treatment to the most vulnerable patients, enabling them to lead healthier lives.

This year, a total of 2 patients have been supported with regular dialysis sessions, twice a week. Regular dialysis sessions have notably improved the patients' conditions, extended their life expectancy and enhanced their quality of life.

Special Camp

Cataract-Free Mundra



The initiative is a dedicated effort to eradicate cataract-related vision impairments specially focused on Senior citizen through Meticulous planning as below.

Lives Impacted :- 1131

- Comprehensive Eye Screenings at Village level
 - Cataract Surgeries to GKGH ,Bhuj
 - Post-Operative Care and Follow-up
 - 5 successful Operation



This year Adani Foundation organized numerous special health camps, such as blood donation camps where 1715 donors contributed, helping save countless lives.



Conducted health programs for students, engaging 763 participants, and held sessions on Personal Health & Hygiene Awareness, addressing critical health issues and promoting overall well-being.



Our camps for pregnant women provided essential prenatal care, ensuring healthier pregnancies and safer deliveries. It benefited 809 pregnant women.



Conducted a pediatric health camp, nurturing the health of 628 children and ensuring their well-being.

GKGH medical staff support in all camps.

Preventive health Campaign

The Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene initiatives and Millet consumption for healthy body.

Sample Survey Report 2023-24

- 55%** Never heard about Menstrual hygiene
- 60%** Are using cloths on regular basis
- 36%** Had never used sanitary pads
- 68%** Had no information about UTI
- 30%** Never used millets in their diet
- 60%** Never heard about millets or it's benefits.



Menstrual & Mental Health Awareness Drive:



We organized impactful awareness camps in various villages, empowering women and adolescent girls with knowledge about menstrual hygiene, ensuring both physical and mental fitness.

Impact:

- 36%** Growing usage of sanitary napkins
- 22%** reduction in UTI
- 2610** women & girls benefited

International year of Millets – 2023



To promote millet culture and raise awareness about its benefits in Mundra, we organized a Millet Competition across nine villages. **Over 715 women took part in the competition, while 2200 benefited from awareness sessions. Through this initiative, 300 indigenous millet recipes were showcased**, highlighting the potential for sustainable and nutritious dishes in our daily diets.

Impact:

- 65%** of women are using millet in their regular diet.
- 17%** Women grappling with obesity and diabetes are experiencing positive transformations in their health, evident in significant weight loss.

Millets Food Festival

In the wake of the "International Year of Millet" in 2023, KCL took decisive steps to promote the nutritional and empower women from remote area of Mundra Taluka.

Across the villages of Mundra Taluka, KCL organized a series of millet awareness camps and a thrilling millet food competition. The response was nothing short of remarkable, with 715 women actively participating and sharing 300 indigenous millet recipes. To commemorate this achievement, we hosted a grand millet festival at Adani House, in which 120 women showcased a diverse array of millet dishes, each one bursting with flavor and nutritional value.

But the significance of the event extended beyond mere culinary delight. Women spoke of how millets had become integral to their lives, aiding them in combating long-term ailments. They are very much grateful for these awareness camps and look forward to such health-promoting events.

At this event, we had the privilege of welcoming esteemed guests, including Mr. Sujal Shah (CEO, APSEZ), Mrs. Rachna Joshi (President, Mundra Nagar Palika), Mr. Pandya (Program officer, ICDS), Mr. Saurabh Shah (Head Corporate Affairs, APSEZ), and Mrs. Nehalben (Nutrition expert). Their presence added immense value to our gathering.



Community Infrastructure Development

Adani Foundation is dedicated to enhancing the quality of life of communities under the Community Infrastructure Development Initiative. It acknowledges the government's role in providing fundamental infrastructure facilities and strives to bridge gaps, ensuring its activities are tailored to meet specific needs and responsive to grassroots requirements.

Some of the initiatives include constructing check dams, deepening ponds to augment water storage capacity, infrastructure support to fisherfolk communities, developing secure education premises and facilitating access to clean drinking water for villagers.



CID endeavor of FY 2023-24



Renovation Check dam and CC road work at Nani Khakhar – 200+ benefited



Renovation of High School at Zaarapa – 2200+ Benefited



Construction of Pipe Culvert – 400+ Benefited



Construction of chain-link fencing at Mangra village – 300 people benefited



Gaushala Shed at Zarapara village – 400 cattle benefited



195 Stall – Vegetable market– 900+ Vegetable vendor benefited



Renovation of approach road, Zarapara – benefiting 400 villagers



Renovation of Civil and Electrical Work at ITI, Mundra - 500 students benefited

CID endeavor of FY 2023-24



Construction of 21 Borewell Recharge in Nagmati River - 150+ farmer benefited



Check dam Desilting and restoration at Nana Bhadiya – 100+ farmers benefited



Renovation of Check dam at Pavadiyara village - 300 people benefited



Renovation of Balwadi at Juna bandar & Luni bandar



185 RRWHS construction is ongoing in various villages - will benefit 1300+ residents



Supply & installation of Solar panel (3.25 KV) at CGP, Mundra – benefiting 1200 people



Development of Model Farm in Zarpara, Siracha & Mangra – Benefiting 300 people



Renovation of approach road at various fisherfolk vasahat

Community Resource Centre



Government Scheme Facilitation				
Sr. No	Scheme Detail	Gov. Support Rs/Month.	Total Beneficiaries	Total Amount per Month (INR)
1	Widow Pension	1250	674	28323150
2	Bal seva Ayog	2000	49	3430000
3	Divyang pension	1000	27	586000
5	Niradhar Pension	1000	126	5178000
6	Palak Mata Pita	3000	5	696000
Total			1439	38213150



Community resource Centre is the bridge between Government Schemes and real Beneficiaries. It is situated at Adani Field Office, Baroi with the motive to be Single window point solution (Online Application & Documentation) to Facilitate Government Schemes leveraged to needy and Eligible people.

Till Date 1439 beneficiaries are getting aid of Widow Pension scheme, Senior Citizen and Divyang pension scheme and Palak Mata Pita Scheme 3.81 Crore Monthly by procedure support of AF.

Key Achievements of Community Resource Center

One time

Sr.No	Gove Scheme one Time	Gov. Support	Total Beneficiaries	Total Amount/Year
1	Covid Support One Time	50000	12	600000
2	Vahali Dikri @ 18 Year	110000	113	12430000
3	Divayang Sadhan Sahay one time	5000	176	880000
4	Manrega (NB21)	22000	32	704000
5	Pagadiya Sadhan Sahay Yojana	9000	9	81000
6	Gau Dattak Yojana	10800	857	9255600
7	Gobardhan Yojana	42000	100	4200000
8	Fishermen Shram Yojna		163	
			1487	28150600





Swavlamban - Project for Divyangs

Adani Foundation's vision extends beyond Aid, focusing on dignity and sustainability through meaningful employment. While equipment support offers mobility, employment bestows the dignity to stand tall in society.

With noble intentions in mind, this year, we organized a mega employment drive. Our goal is to provide job opportunities to over 100 disabled individuals.

We've conducted interviews in three phases, for 250+ divyang candidates engaging 22 companies from Adani Groups and other reputed firms in Mundra.

➤ Roadmap of this incredible vision:



Diwali Celebration

After the successful completion of the 1st phase of the Divyang Employment Fair on November 8th, we gathered to share the joy of Diwali with over 100 remarkable divyangs.

In the spirit of uplifting divyangs, we have also invited advocates dedicated to the well-being of disabled people. Mrs. Anni Rakshit Shah and Mrs. Rupa Kapoor graced us with their presence as chief guests. Our invitation also extended to the HR representatives of Adani Group and SEZL companies.

On this auspicious occasion, we **equipped 32 divyangs with essential tools such as wheelchairs, tricycles, harmoniums, and facilitated 10 divyangs through government schemes.**

To express our gratitude to those who have dedicated their lives to improving the lives of disabled individuals, we honored them with certificates and mementos.

Just as we light up our homes with glowing diyas during Diwali, the smiling faces of these divyang individuals illuminated our Adani House during this event. It was a celebration that went beyond the ordinary, leaving a lasting impression of compassion and unity.



Swavlamban Event

In the spirit of hard work and dedication, the Adani Foundation concluded its Divyang Employment Fair, marking a significant milestone in transforming lives. Through three phases of dedicated effort, the Foundation successfully secured over 100 employments, providing a newfound sense of self-reliance to individuals with disabilities.

Notably, 35 divyangs were equipped with essential employment tools, fostering self-sufficiency. To commemorate this achievement and honour the divyangs, companies, and advocates of inclusivity, the Foundation organized the Swavlamban event on December 5th at GAIMS, Bhuj.

The event garnered the presence of esteemed personalities, including Jeet Adani, Director of Adani Group, V.J. Rajput, Commissioner for Persons with Disabilities, and Nimesh Pandya, Ed. of Kutch collector, among others.

This celebration was a testament to the Foundation's commitment to redefining the narrative around disability and employment.

As the Adani Foundation rejoices in this achievement, it reaffirms its commitment to ongoing efforts that positively impact the lives of differently-abled individuals, embodying a vision of a more inclusive and empowered society.



Our Pride from Divyang Employment Fair !



Bhimaji Maheswari
DEO, Mundra Windtech Ltd



Patani Govind Babu
Document Officer, KCL, Mundra



Arjan Gadhavi
DEO, Adani Solar, Mundra



Govind Maheswari
DEO, Mundra Windtech Ltd



Devangh Gadhavi
DEO, Adani Solar, Mundra



Jadeja Natubha Gangji
KCRC NGO, Bhuj



Arti Nilesh Jethva
Trainer, ASDC, Mundra



Bharat Makwana
CMR, Admin, Adani house

Adani Skill Development

Adani Skill Development Centre (ASDC) is dedicated to enhancing employability and entrepreneurship. This year, ASDC has trained 50,00 individuals across Kutch, resulting in 65% livelihood generation. Their innovative courses cover diverse sectors, and they have played a significant role in empowering marginalized communities in places like Mundra and Bhuj, Gujarat. ASDC's vision is to make everyone skilled and employable, meeting industry demands through trained manpower.



ASDC Mundra Center

Course Name	Gender Category		Total
	Female	Male	
Digital Literacy	04	03	07
Mud Work	180	00	180
JOC (RTG Crane Operator)	00	79	79
Hydrography	00	03	03
Advance Excel	00	18	18
Domestic data entry operator	23	30	53
Tally with GST	02	00	02
Hand Embroidery	170	00	170
Dori/ Macramé Work	90	00	90
Food & Beverage	20	12	32
General Housekeeper	60	00	60
Beauty Therapist	40	00	40
Total	589	145	734

ASDC Bhuj Center

Course Name	Gender Category		Total
	Female	Male	
General duty Assistant	84	20	104
Digital literacy	46	16	62
Hydrography	9	0	09
Industrial Safety	1	0	01
5S	1	0	01
Entrepreneurship Development program	60	0	60
Domestic data entry operator	25	0	25
Financial Literacy	64	0	64
Diet and Nutrition	50	0	50
First aid	18	0	18
Interview skills	11	0	11
Total	369	36	405

ASDC Mundra Center

At Mundra Center ASDC, our mission is to equip young individuals with the skills necessary for success. In the current year, a remarkable 734 youth have undergone comprehensive skill training. Our unwavering commitment extends to ensuring that every aspiring professional receives an opportunity for growth and development. Almost 99% of our fees are tied up with various companies, allowing students to access high-quality training without financial barriers.

Other Activities & Achievements

- i. Women Empowerment through Skill Training: Provided Mud work training to 180 women in Mundra taluka villages supported by MPL.
- ii. RTG Crane Operator Training: Collaborated with APSEZ HR Team to train 79 students.
- iii. Dori Work and Hand Embroidery Training: Benefited 90 women in various Mundra villages supported by MPL.
- iv. Health Awareness and Career Sessions: 108 Ambulance Department enlightened GDA trainees at Adani Institute of Medical Sciences. Guest session on career advancement led by Mr. Kapil Goswami.
- v. Exposure Visit for Women: Women trained in Mud Work, Dori Work, and Hand Embroidery showcased their skills during a visit by foreign delegates to the Solar Plant.
- vi. Women's Related Training Seminar: Held at Matr Vandana College, Bidada, Mandvi.



ASDC Bhuj Center

ASDC Bhuj, established following successful skill development initiatives, is a beacon for aspiring professionals. Driven by youth demand, this center plays a pivotal role in providing crucial training for self-development and enhancing personality traits.

Our mission is clear: to equip young individuals with essential skills that position them for success in the job market. With almost 58% of fees tied up by ASDC through strategic partnerships and 42% of fees contributed by students, we ensure that financial barriers do not hinder skill acquisition.

Other Activities & Achievements

- i. Commendation from Shree Jeet Adani: Received appreciation for supporting the Divyang job fair.
- ii. Employee Development Initiatives: Conducted Advanced Excel training for 18 Sumitomo India Ltd employees
- iii. Entrepreneurship Development Program: Organized a comprehensive 12-day program with 60 diverse candidates.
- iv. New Trainee Orientation: Conducted sessions about SAKSHAM center and LMS registration at the Bhuj Centre.
- v. Civil Defense Training (5 days): Covered essential topics including Disaster Management, First Aid, 181 Mahila Helpline, 108 Emergency Services, and Fire Safety.
- vi. F&B & Housekeeping Batch Inauguration: 92 students trained to enhance employability.
- vii. Indo-Euro Project Seminar: Arranged at various Nursing Colleges in Kutch District. Focused on German Language training and job placements.
- viii. Crucial Meeting with ISAR & UNICEF: Discussed future skill development challenges and transgender equality on 9th December 2023.



AKBPTL - TUNA



CID:

The paver block work at Vandi and Tuna Common Gathering which enhances their usability and convenience for the community. Community hall Room construction at Rampar is completed. It will benefit 1010 fishermen.



Potable Water Distribution:

Potable water (17.5 KL per Day) Distribution to Vandi, Vira and Dhavar varo Bandar on regular base through Water tanker Regularly through **AKBTPL and GWIL**. This initiative **benefited 2230 Fishermen**.



Prakrut Rath -Tree Plantation:

Total 3000 Tree sapling were distributed to individual, And 500 tree have planted at Common place and school with ensure their responsibility for watering and caring.



Fodder Support:

Support of Dry & Green Fodder to Tuna and Rampar Village and Gaushala during Scarcity. That impacted on Cattle health and Milk Productivity.

7410 kg Dry fodder

4,47,473 kg Green fodder

1228 Cattle Benefited



3000
Tree
plantation



193 Benefited by
Mobile Van

56 Benefited by
Medical support

AGEL – Khavda

Adani Green Energy Ltd. Khavda renewable solar plant is a hybrid power project that will use both solar and wind energy to generate electricity. It will be built in the Khavda desert along the Indo-Pak border in Kutch district of Gujarat, having a total capacity of 20,000 megawatts (MW), making it the world's largest hybrid renewable energy park and will be cover an area of 72,600 hectares of waste land. It is expected to play a major role in fulfilling India's vision of generating 450 gigawatts (GW) of renewable power by 2030.

Our Vision for Khavda:



Empowering through Education: Elevate overall academic results, champion girl child education, and ignite a passion for technical streams. We aspire to pave the way for stable employment, fostering a prosperous livelihood for the youth.



Empowering Khavda's Women: Empower 1000+ women socially, economically, and financially through the establishment of a strong federation "Sarhadi Mahila Vikas Sangathan"



Elevating Healthcare: Provide quality healthcare services in 22 villages of Khavda, with a primary focus on enhancing women and child health.



Water Positive Villages: Achieve water positivity in 8 villages of Khavda through our dedicated water conservation structures. We aim to create sustainable solutions for water availability, ensuring a secure and flourishing future for these communities.



Transforming lives in Khavda!

Nestled deep within the remote borderlands of Kutchh, Khavda grapples with the harsh reality of limited access to fundamental necessities: education, healthcare, clean water, and crucial preventive care for women. In response to these pressing challenges, the Adani Foundation has embarked on a transformative journey, launching four visionary projects aimed at illuminating hope and progress across Khavda and its surrounding villages.

Recently, luminaries including Mr. Amit Arora, the Collector of Kutchh, Mr. Verma, Plant Head of AGEL, and Mr. Sanjay Avinash, BSF Head Bt.72, convened with local leaders from 26 villages to honor the Foundation's unwavering commitment.

Amidst accolades and appreciation, Mr. Amit Arora lauded the Foundation's healthcare initiatives and advocated for further support, proposing the launch of an "Arogya Van" to bridge the gap in access.

Echoing this sentiment, Mr. Sanjay Avinash championed the pursuit of higher education, heralding a beacon of hope for the community. As the event culminated with the felicitation of five specialist doctors by the District Collector, it underscored the profound impact of the Adani Foundation's endeavors, igniting a flame of optimism that illuminates the path towards a brighter tomorrow.



Endeavor In Core Areas:



Education – Project Utthan:

Through our Utthan project, we've embraced 8 high schools.

Our mission: Elevate 10th board results, boost attendance, slash dropout rates, promote girls' education, and uplift education quality in Khavda.

At this high schools, we've enlisted 8 dedicated Utthan Sahayaks, equipped with specialized training. They're laser-focused on bolstering core subjects such as Math, Science, and English. Additionally, we've brought on board 2 community mobilizers, tasked with persuading parents to prioritize their children's education, particularly for girls.

Fostering ambition & motivation by facilitating with Industrial visit & notebook distribution



Empowering 364 Students



Health Care:

The community struggles with limited healthcare resources, including just one CHC with a single general doctor, no specialized care for women and children, and insufficient diagnostic equipment. Financial constraints further hinder access to medical services.

To improve healthcare, we're tackling diseases in two ways: through health camps and Adani Arogya Karyakram Khavda CHC for treatment, and dedicated awareness camps for prevention.

Curative Health Camp:

Adani Arogya Karyakram Khavda CHC:

Gynec	Pedia	Physi	Ortho	Optho
555	640	283	206	197

Health Camp:

Gynec	Pedia	Physi	Ortho	Optho
278	455	579	61	139



42 Villages benefited



3433 patients benefited

Preventive Health Camp:

Actively promoting preventive health awareness through family planning education, menstrual hygiene workshops, nutrition advocacy, mental health awareness sessions. Conducted 49 training in 38 villages.



1453 Women Benefited



1300 Pad Distributed

Endeavor In Core Areas:



CID – Water Conservation

In Khavda, water scarcity is critical: supply is weekly, groundwater levels are low, and villagers and animals share a single pond. Students drink unfiltered water at school, and rainwater flows away, unused.

1. Kuran village – Pond deepening & Filter well
2. Tuga village - Check dam maintenance



 **15 lakh cum**


3600+ villagers benefited

Other CID work

1. Roof Shed in khavda High school
2. RO plant in 5 High school

350+ students benefited



Farmer welfare:

In Khavda, agriculture struggles due to limited knowledge and challenges like water scarcity and soil fertility issues, despite 80% of the population being engaged in dairy farming.

To educate farmers we organized an awareness camp for **275 farmers**, encouraging them to join the **ATMA Government Sanstha**. This initiative aims to provide guidance on conventional agriculture techniques and exposure to modern farming methods and tools.



Women Empowerment:

Women empowerment initiatives are underway, emphasizing financial independence and self-reliance.

Conducting awareness camps across 38 villages, we're educating women about the importance of having Saving Accounts, Through awareness camps, established Saving Account Groups, forming 7 SHG with 150 women.



15 SHG formed



150+ Women Economically Empowered

Green Energy



AGEL – Dayapar & Mandvi



Dayapar Adani Wind Energy project is a large-scale wind power project located in the Kutch district of Gujarat, India. It is one of the biggest wind farms in the country, with a total capacity of 575 MW. The project was developed by Adani Group and Inox Wind, its project was commissioned in April 2019 and supplies clean energy to various states in India through power purchase agreements with Maharashtra State Electricity Distribution, NTPC and PTC India.

Our Vision for Dayapar & Mandavi:



Water Positive Villages: Achieve water positivity in 42 villages of Dayapar through our dedicated water conservation structures. We aim to stablish sustainable solutions ensuring reliable water availability.



Improve Animal Husbandry: Focus on the health of cattle by providing vaccinations, medical treatment, and highly nutritious food to cattle. Helping Cattle owners to generate good revenue and sustain their livelihoods.



Enhance Education: Enhance the school's infrastructure and financially support students for educational equipment, providing them with a modern classroom environment equipped with the modern technology.



Health Services: Provide medical services to 3500 people of Dyapar and connect them with government medical schemes.



Endeavor In Core Areas:



CID – Water Conservation

Kutch suffers from a water shortage, particularly in the Dayarpar region, which receives the least amount of rainfall and has high TDS groundwater. To conserve as much water as possible in the AGEL Dayarpar region, the Adani Foundation has initiated various pond deepening and check dam restoration projects.

Sustainable Water Management projects:

1. Pond deepening in 8 Villages
2. Check Dam renovation & deepening in 2 villages
3. Over Head Portable Water Tank in 1 village

10.4 lakh cum
Water capacity

985 acers
Water rich land

1500+
Farmers Benefited

50,000/Ltr
Capacity of Over head water tank



SLD - Kamdhenu:

The Dayapar people rely largely on animal husbandry as their second most important income source, after agriculture. But villagers lack in sufficient knowledge on the dietary needs and vaccinations for cattle.

To educate them we are organizing cattle treatment and vaccination program, workshop on Animal Husbandry, and participating in Krushi Mela providing cattle owners mineral mixers to improve animal health and milk production.



455
cattle owners
provided Mixture
Mineral

1500
cattle Vaccination

Endeavor In Core Areas:



CID - Education:

Committed to improving educational infrastructure to ensure every student in Dayapar has access to safe and quality education environment. Through smart classes and material support, we're easing financial burdens and creating engaging learning environments. For good health of students ensuring portable water facility and tree plantation drive in schools.

Support	School
LED TV for smart class	3
Morden Education tools	2
Education kit support	2
Portable water facility	3
Eco club	1
School renovation	2



Health Care:

In AGEL Dayapar region, the health condition is concerning with major diseases like kidney stones and arthritis are prevalent in the villages. To battle this situation we are conducting health camps and organized Ayushman Bharat card camps. During these events, we distributed medicine free of cost to patients and provided recommendations for optimal treatment to those in need.

AGEL/ Adani foundation have supported 20 different equipment like Cardiac Machine, Semi auto analyzer, and other medical tools at CHC Dayapar which is going to facilitate 56 villages benefiting 62,500+ population.



618 Health camp Beneficiaries

86 Ayushman card Beneficiaries

₹8.6 Cr. Medical Coverage



13
Schools
Benefited



1500+
Students
Empowered

Adani Cement - Sanghi



Adani Cement Plant, prominently located near Moti Ber Village in the Abdasa block of Kutch, Gujarat, stands as a distinguished entity in the cement industry. Our facility is not just a cornerstone of the local economy, but also a pivotal contributor to the community's development. With a robust and integrated manufacturing infrastructure, we boast:

- A 6.6 MMTPA (Million Metric Tones Per Annum) capacity Clinker Plant
- A 6.1 MMTPA capacity Cement Plant
- Power generation facilities with a capacity of 143 MW.

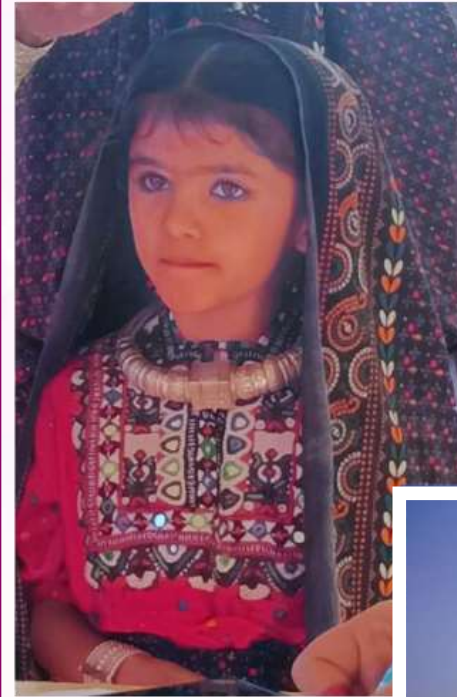
About Abdasa:

Abdasa is a region of Gujarat's Kutch district, defined by its diverse geography and rich cultural tapestry, influenced by different communities, agriculture crops and livestock rearing, particularly cattle and camel husbandry, is integral to the region's livelihoods.

The coastal areas support fishing communities, despite progress in infrastructure and development, Abdasa faces challenges related to water scarcity, education, and healthcare, while its diverse culture and unique landscapes continue to define its identity.

Our vision:

To foster and create a sustainable future for all by providing affordable and accessible facilities at the core of health, education, livelihood, and infrastructure.



Endeavor In Core Areas:



Joyful Beginnings:

Our CSR journey in Sanghi commenced with a joyous Christmas celebration at Adani Cement Abdasa on December 24th. The event, attended by over 500 students and parents, featured cultural performances and dance competitions, spreading festive cheer. Esteemed guests, including Mr. Vivek Misra, Head of Adani Cement Plant, Sanghipuram, Mr. Pushkar Chaudhry, HR Head, and Mrs. Pankti Shah, Gujarat CSR Head, graced the occasion.



Health:



Addressing the pressing healthcare needs of residents near Adani Cement Sanghipuram, a series of specialty health camps were launched. These camps, featuring Pediatric, Gynecological, Ophthalmic, and General medical services, aimed to bridge the gap in access to specialized healthcare. Previously, locals had to travel long distances to Naliya or Bhuj for medical care. By bringing essential health services directly to the communities, these camps have made a significant impact, offering health check-ups, consultations, and treatment for various illnesses and conditions, ensuring better healthcare accessibility for all.



1200 patients benefited



11 Villages benefited

Endeavor In Core Areas:



Road Superheroes:

Introducing the "Road Superheroes" Health Care Program, tailored specifically for the drivers of

Adani Cement Abdasa, dedicated to promoting health awareness and preventive care within our driving community.

This holistic initiative comprises five vital stages:

1. Health Screening
2. Telehealth Services
3. De-addiction Awareness
4. Stress Management & Yoga
5. Regular Health Tracking

A two-day health screening camp held at Adani Cement, offered comprehensive health assessments, including vision tests, blood pressure measurements, ECG, diabetes screenings, and BMI evaluations, alongside expert consultations.

150
Drivers Benefited
& Receive Health Card



Tree Plantation Initiative:

Adani Cement Campus hosted a remarkable tree planting drive as part of our employee volunteer program. More than 50 enthusiastic employees joined forces to plant trees, showcasing our dedication to a greener future. This collective effort exemplifies our commitment to environmental conservation and responsible corporate citizenship.





adani
Cement

NDTV

adani
Foundation

અદાણી ફાઉન્ડેશન દ્વારા

અબડાસા વિસ્તારમાં સામાજિક ઉત્તરદાયિત્વના ભાગરૂપે

શૈક્ષણિક કાર્યનો શુભારંભ

adani
Foundation

અદાણી ફાઉન્ડેશન
આપનું હાર્દિક સ્વાગત કરે છે.



NDTV, or New Delhi Television Limited, stands as one of India's premier news networks, renowned for its steadfast commitment to journalistic integrity and comprehensive coverage. Founded in 1988 by Radhika Roy and Prannoy Roy, NDTV has emerged as a trusted source of news and analysis, shaping public discourse on critical issues both within India and around the world.

At the heart of NDTV's ethos lies an unwavering dedication to delivering unbiased, credible, and impactful journalism



Empowerment through Education:

In Abdasa Block, the AF, partnering with NDTV, is revolutionizing education through CSR initiatives. Faced with low literacy rates and infrastructure challenges, the Foundation conducted a thorough needs analysis. This led to targeted interventions, including:

1. **Smart Classes: Implemented in 10 primary schools for interactive learning.**
2. **School Building & Bala Painting: Creating vibrant learning spaces.**
3. **Educational Kits Distribution: Providing 1,150 students in 15 schools with essential learning materials.**

A momentous **Handing Over Ceremony** unfolded in Moti Ber Village, Abdasa, marking the debut of Smart Classes and vibrant Bala Painting in 15 primary schools.

A notable announcement by Mr. Vivek Mishra, Plant head, Adani cement, Sanghipuram unveiled plans for a forthcoming hospital within Sangji premises, promising enhanced community healthcare access.

In this overwhelming event **1,150 students facilitated with essential education kits** and teachers were honored with memento.



Shree Renuka Sugar Ltd.

Shree Renuka Sugars Limited stands as a globally recognized agribusiness and bio-energy corporation, covering the entire sugar value chain.

As one of India's largest producers of sugar and green energy, Renuka is at the forefront of sugar manufacturing. With eight cutting-edge sugar mills, many equipped with ethanol and power co-generation capabilities, Renuka leads the industry. Additionally, Renuka operates two of India's largest port-based refineries.



Education:

Committed to improving educational infrastructure to ensure every student has access to safe and quality education environment; we are committed to do following work:

- Renovation of 15 Anganwadi in Kidana, Bharapar, Tuna, Rapar and Wandi village benefiting **600+ students**. Also, supporting primary schools with smart class education equipment.
- Bala Panting and construction of stage in Primary school, Rapar.



Water Conservation Project

To support the community with secure and safe water we are dedicated in implementing water project.

Sustainable Water Management projects:

1. **Pond deepening work in Kidana, Bharapar and Tuna Villages. It will benefit 600+ villagers and will have 24,000 CUM water holding capacity.**
2. **Construction of RO plant room with installation of 1000 ltr./ hr RO System.**



AESL



Adani Energy Solutions Ltd, formerly known as Adani Transmission Ltd, is an electric power transmission company.

ATL is the country's largest private transmission company, with a presence across 16 states of India and a cumulative transmission network of 19,800 ckm and 53,000 MVA transformation capacity.

In its distribution business, AESL serves more than 12 million consumers in metropolitan Mumbai and the industrial hub of Mundra SEZ. AESL is ramping up its smart metering business and is on course to become India's leading smart metering integrator.

Course of Action in ATL's Villages:

Upon receiving the CSR responsibility for villages under ATL, the Adani Foundation embarked on a mission to address community challenges. Recognizing the pressing issue of increased salinity affecting water availability for daily needs and agriculture, we initiated work on water conservation structures as a sustainable solution to alleviate the villagers' hardships.

- **Initiated Pond deepening and Check dam restrengthening work in 5 villages of Rapar and Mandvi Taluka.**
- **Additionally, started working for Cattle Health Camp and tree plantation drive.**



27,200 cum
Water Capacity



17,000+ villagers
benefited



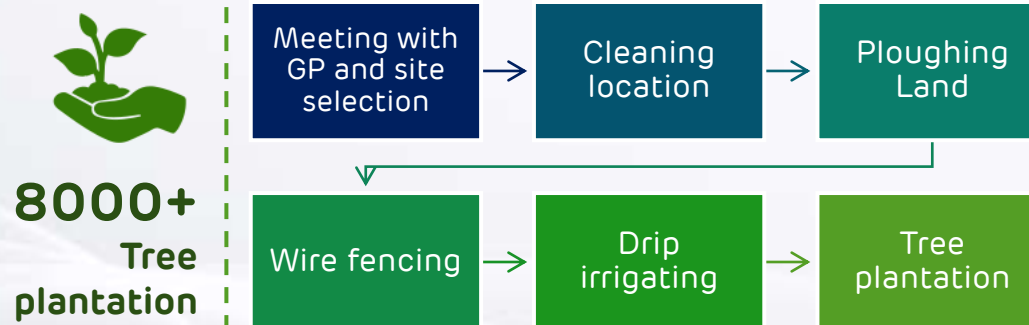
CER – APSEZ



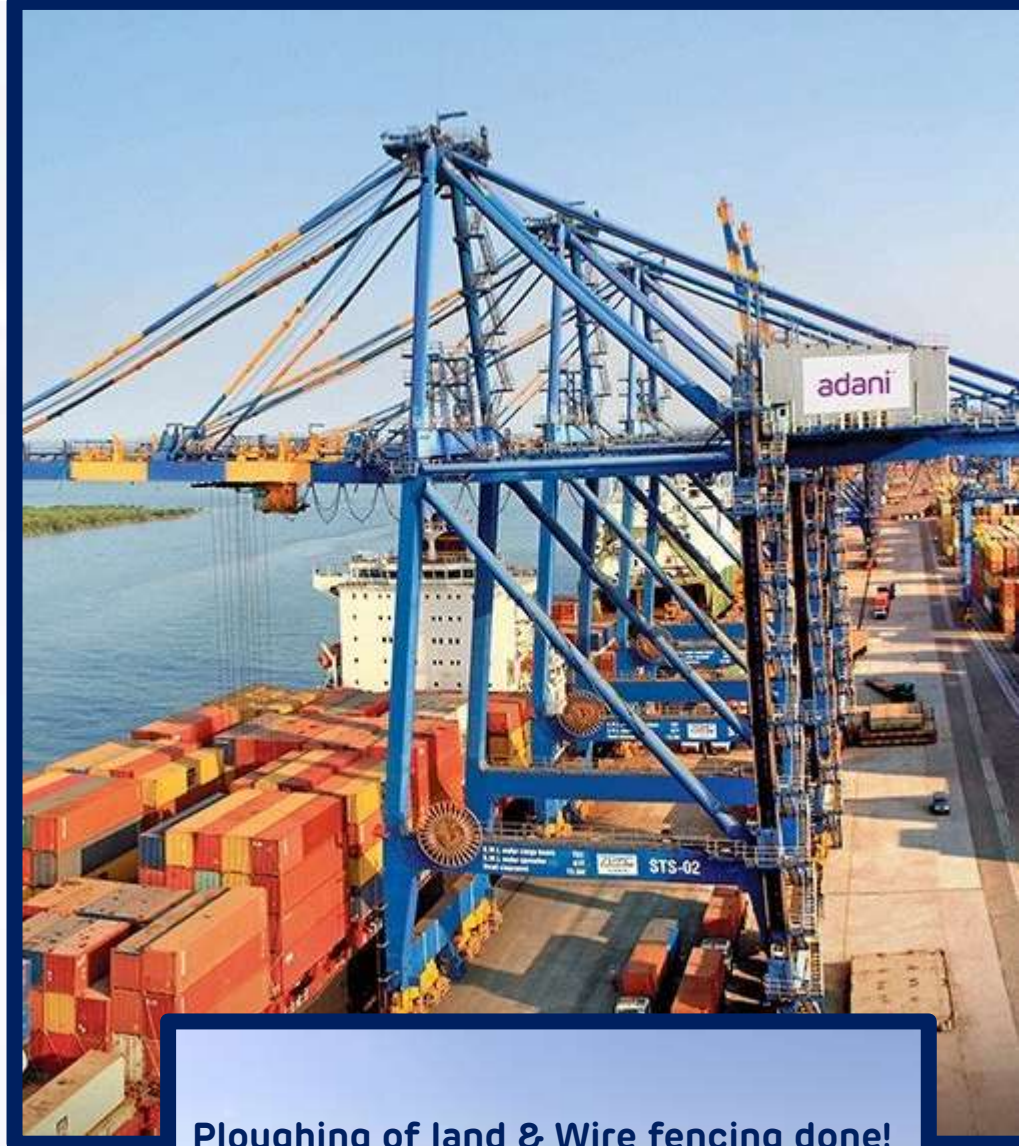
Adani Ports and Special Economic Zone Limited, a subsidiary of Adani Group, is India's largest private port Operator, operating 12 ports and terminals, including India's first deep water Transshipment Port Vizhinjam International Seaport Thiruvananthapuram and India's first port-based SEZ at Mundra.

Course of Action:

Taking on the CER responsibility from APSEZ, the Adani Foundation has undertaken a massive tree plantation drive in Moti Bhujpar. To ensure its success, we have devised a comprehensive six-step plan.



Our initiative represents a sustainable approach to addressing environmental challenges and reducing carbon emissions.



Ploughing of land & Wire fencing done!





Work done during Biparjoy Cyclone

Cyclone Biparjoy caused huge losses in Mundra and nearby villages. Adani Foundation's worked for relief and recovery with Panchayat & Government body. More than 17,000 people benefited from various efforts.

Adani foundation consider this as ethical responsibility and a source of satisfaction. Stakeholders and government bodies also appreciated the efforts.

Meetings with Taluka & District government officials to facilitate assistance and coordination with local authorities.



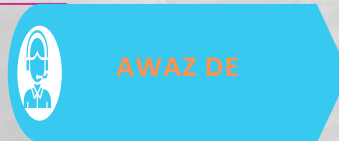
Connect With Government & community

Health teams and ambulances on standby in case of emergency.



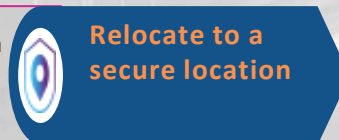
Health Team

Reached to more than 10000 people by Awaz de to aware all, specially for fisherfolk settlement.



AWAZ DE

4500+ Workforce migration with basic amenities.



Relocate to a secure location

100+ Team member distributed for each taluka/Villages as per requirement



Duty delegation



Monitoring

Tracking the cyclone's progress by AF team member.



Connect

Team members in directly touch with 10 Temporary housing & 60 Villages.



Government

Co-ordinating with Government organizations from Talati to Collector.



Panchayat

Co-ordinate with Gram panchayat in case they need any emergency support.

Pre-cyclone preparation



- Team distribution
- Workforce migration
- Basic amenities
- Awareness efforts.
- Meetings with government.

During cyclone



- Food and shelter provision
- Fodder support
- Awareness messages
- Vehicle support.
- Coordination with Panchayat

Post-cyclone relief



- Temporary housing
- Food packets
- Excavator support
- Transfer of affected individuals.
- Provision of fodder

Annexure - 4

Details of Greenbelt Development at APSEZ, Mundra

	Total Green Zone Detail till Up to March 2024					
LOCATION	Area (In Ha.)	Trees (Nos.)	Palm (Nos.)	Shrubs (SQM)	Lawn (SQM)	
SV COLONY	72.29	34920.00	7962.00	69696.00	100646.00	
PORT & NON SEZ	81.61	149359.00	19220.00	75061.78	62966.38	
SEZ	115.70	226120.00	20489.00	220583.60	28162.03	
MITAP	2.47	8113.00	33.00	3340.00	4036.00	
WEST PORT	104.29	248074.00	66816.00	24112.00	16369.00	
AGRI PARK	8.94	17244.00	1332.00	5400.00	2121.44	
SOUTH PORT	14.45	27530.00	3470.00	3882.00	3327.26	
Samundra Township	58.26	63722.00	11834.00	23908.89	47520.07	
Productive Farming (Vadala Farm)	0.00	0.00	0.00	0.00	0.00	
TOTAL (APSEZL)	457.99	775082.00	131156.00	425984.27	265148.18	
		906238.00				

Details of Mangrove Afforestation done by APSEZ

Sl. no.	Location	District	Area (Ha)	Duration	Species	Implementation agency
1	Mundra Port	Kutch	24	-	Avicennia marina	Dr. Maity, Mangrove consultant of India
2	Mundra Port	Kutch	25	-	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)	Kutch	298	2011 - 2013	Avicennia marina	Forest Dept, Bhuj
6	Jangi Village (Bhachau)	Kutch	50	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	2014-15 & 2016-17	Avicennia marina & Biodiversity	GUIDE, Bhuj
9	Dandi Village	Navsari	800	2006 - 2011	Avicennia marina, Rhizophora mucronata, Ceriops tagal	GEC, Gandhinagar
10	Talaja Village	Bhavnagar	50	2011-12	Avicennia marina	Forest Dept, Talaja
11	Narmada Village	Bhavnagar	250	2014 - 2015	Avicennia marina	GEC, Gandhinagar
12	Malpur Village	Bharuch	200	2012-14	Avicennia marina	SAVE, Ahmedabad
13	Kantiyajal Village	Bharuch	50	2014-15	Avicennia marina	SAVE, Ahmedabad
14	Devla Village	Bharuch	150	210-16	Avicennia marina	SAVE, Ahmedabad
15	Village Tala Talav (Khambhat)	Anand	100	2015 - 2016	Avicennia marina	SAVE, Ahmedabad
16	Village Tala Talav (Khambhat)	Anand	38	2015 - 2016	Avicennia marina	GEC, Gandhinagar
17	Aliya Bet, Village Katpor (Hansot)	Bharuch	62	2017-18	Avicennia marina & Rhizophora spp.	GEC, Gandhinagar
18	Kukadsar- (Bhadeswar- Mundra)	Kutch	250	2021-22	Avicennia marina	Shreeji Enterprise, Amreli
19	Kukadsar- (Bhadeswar- Mundra)	Kutch	750	2022-23	Avicennia marina	Shreeji Enterprise, Amreli
20	Kukadsar- (Bhadeswar- Mundra)	Kutch	250	2023-24	Avicennia marina	Shreeji Enterprise, Amreli
Total			4140			

Annexure - 5

Compliance Report of CIA Study Environment Management Plan

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude ¹	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
1	Land Use Change						
1.1	<p>It is predicted that the built up land in the rural areas would increase by an order 50% from the baseline 2015.</p> <p>New settlements near the SEZ area might create slums.</p> <p>Unorganized urban development leading to poor sanitation and proliferation</p>	Level - 1	<p>APSEZ has developed two townships (Shantivan and Samudra) presently accommodating 1668 households. Necessary permissions from concerned authorities were already obtained for the development of townships and Associated infrastructure facilities.</p>	<p>The existing townships will be expanded to accommodate about 4 lakh people when the APSEZ is fully developed.</p>	APSEZ	As and when Required	<p>APSEZ has developed two townships (Shantivan and Samudra) accommodating 2302 households and associated infrastructure facilities. Accommodation is made available for all interested employees working within Adani group & SEZ industries. Out of which 95.57% Occupancies are accommodated within the townships and rest are available for employees working within APSEZ.</p> <p>At present 60 nos. of industries (processing & non-processing) are present within the SEZ (46 nos. are in operation). Township facilities are also made by some of SEZ industries within Mundra town for their employees with basic infrastructure facilities and requirements.</p> <p>Most of the employees working in SEZ industries are residing in Mundra township having all basic requirements and associated facilities.</p> <p>The existing social infrastructure facilities are adequate for present development at APSEZ. The existing townships with associated facilities will be</p>

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
	of vectors and disease.						<p>expanded as per requirement.</p> <p>APSEZ has also been granted permission for receiving domestic sewage @ 2.5 MLD from Mundra village (which was earlier discharged into open area within Mundra region) into wastewater treatment plant for treatment and disposal. APSEZ has already started receiving of domestic sewage from Mundra, which abates the poor sanitation and unhygienic condition within Mundra region. Total project cost for laying domestic sewage underground pipeline with other associated facilities from Mundra to APSEZ is 362 Lacs.</p>
1.2	Once the project is fully developed, due to increase in built up land in the APSEZ area, there will be an increase in the storm water runoff from the facility.	Level-1	The study area experiences scanty rainfall less than 400 mm/year. Considering the natural gradient, APSEZ have designed and implemented storm water	Technical feasibility study can be carried out to explore the possibility of developing storm water collection ponds to utilize maximum possible storm water runoff for dust suppression in the coal yard areas during non-rainy days.	APSEZ	<p>Technical Study</p> <ul style="list-style-type: none"> - one time, Implementation - Continual process 	<p>Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies,</p> <p>At present all existing coal yards are designed with drain, for collection of water during water sprinkling and rainfall, which is carried away to dump pond. Supernatant water from dump pond is being collected and used for dust suppression activities or after sedimentation, discharged to sea. Details of drain and dump pond has been submitted in along with EC compliance report (Oct 19 to March 20). Analysis of said water discharging into sea during monsoon season is being carried out (twice in a year during monsoon) through NABL / MoEF&CC accredited laboratory. Analysis report of the same shows there is</p>

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			drains in the existing facility to meet the peak daily rainfall of 440 mm/hr. Hence flooding of water in the neighboring areas is not envisaged.				no any contamination. The report of the same were submitted during the last compliance period Apr'23 to Sep'23. During compliance period FY 2023-24 total recorded rain fall was 844 mm observed, which was much less than the design capacity of existing storm water drainage system. So our existing storm water management facility is adequate to handle the storm water runoff from the area. Hence flooding of water in the neighboring areas is not envisaged.
			As per the directions given in the environmental clearance issued for the proposed Multi-Product SEZ and CRZ clearance for Desalination, sea water intake, outfall	The channel depth in all the natural streams shall be maintained to accommodate peak flood flow during the monsoon and periodical desilting activities in the natural streams passing through the APSEZ area	APSEZ, District Administration* and Irrigation department	As and When Required	Presently there is no Desalination plant, sea water intake and outfall facility developed as part of EC & CRZ clearance of Multiproduct SEZ. The project will be designed and implemented as per requirement without disturbing the natural flow of rainwater in all the seasonal streams.

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			facility and pipeline project, the master plan of the project was designed and being implemented without disturbing the natural flow of rainwater in all the seasonal streams.				
1.3	Due to conservation and protection of mangroves in the designated conservation area, it has been predicted	Positive Impact with ecological benefits	In addition to conservation of the identified 1254 ha mangrove areas around Mundra port and SEZ, APSEZ has taken up large scale	APSEZ will continue mangrove afforestation as per the commitment made with concerned regulatory authority	APSEZ	Short Term	<p>APSEZ has carried out mangrove afforestation in 4140 ha. area across the coast of Gujarat till date. Total expenditure for the same till date is INR 1592.8 lakh. No further mangrove afforestation is pending w.r.t. commitment made with concerned regulatory authority for APSEZ, Mundra project.</p> <p>As per study conducted by NCSCM, Chennai in 2017, mangrove cover in and around APSEZ, Mundra has increased from 2094 Ha to 2340 ha (as compared between 2011 to 2017). The analysis has shown an overall growth of 246 ha. The cost for said study was</p>

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance						
	<p>that the current mangrove footprint area would marginally increase in next 15 years due to natural growth. This will enhance the overall biodiversity in the local coastal ecosystem.</p>		<p>mangrove afforestation activities in an area of more than 2800 ha at various locations across the coast of Gujarat state in consultation with various organizations</p>				<p>INR 3.15 Cr.</p> <p>Last study was carried out in the year 2019 and based on that there is an increase of mangrove cover between March 2017 (Total 2340) and September 2019 with an extent of 256 Ha (Total 2596 Ha Area) which is about 10.94% rise in growth rate, also It reveals that the mangrove and the tidal system in the creeks remained undisturbed over this period.</p> <p>Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019.</p> <p>Analysis of data between categories indicated that there was an increase in dense mangroves along with the conversion of scattered into sparse, that shows the growth of mangroves in a progressive direction.</p> <p>As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.</p> <table border="1" data-bbox="1396 1258 2016 1399"> <thead> <tr> <th data-bbox="1396 1258 1453 1399">Sr. No.</th> <th data-bbox="1453 1258 1644 1399">Recommendations</th> <th data-bbox="1644 1258 2016 1399">Compliance</th> </tr> </thead> <tbody> <tr> <td data-bbox="1396 1399 1453 1399"></td> <td data-bbox="1453 1399 1644 1399"></td> <td data-bbox="1644 1399 2016 1399"></td> </tr> </tbody> </table>	Sr. No.	Recommendations	Compliance			
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							<p>1. Mangrove mapping and monitoring in and around APSEZ</p> <ul style="list-style-type: none"> • APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. • As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the extent of 256 Ha, which is about 10.94%. • This suggests that the mangroves and the tidal system in the creeks remain undisturbed over this period. Analysis of data between categories indicated that there was an increase in dense mangroves and also conversion of scattered to sparse which also shows that the growth of

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance	
								<p>mangroves in a progressive direction.</p> <ul style="list-style-type: none"> Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. According to GUIDE Mangrove monitoring study report November 2023 (report was submitted during the last compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%)

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									<p>compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021.</p> <ul style="list-style-type: none"> Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%). The cost of the said study was INR 23.60 Lacs incurred by APSEZ. <p>Summary of Mangrove mapping and monitoring (from 2011 to 2021):</p> <table border="1" data-bbox="1656 1162 2011 1390"> <thead> <tr> <th rowspan="2">Mangrove mapping Year</th> <th rowspan="2">Mangrove cover total Area (Ha.)</th> <th colspan="2">Mangrove cover area Increased</th> </tr> <tr> <th>Ha c.</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td>2094</td> <td>-</td> <td>-</td> </tr> </tbody> </table>				Mangrove mapping Year	Mangrove cover total Area (Ha.)	Mangrove cover area Increased		Ha c.	%	2011	2094	-	-
Mangrove mapping Year	Mangrove cover total Area (Ha.)	Mangrove cover area Increased																				
		Ha c.	%																			
2011	2094	-	-																			

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									<table border="1"> <tr> <td>2011 to 2016-17</td> <td>2340</td> <td>246</td> <td>11.75%</td> </tr> <tr> <td>2017 to 2019 till March</td> <td>2596</td> <td>256</td> <td>10.94%</td> </tr> <tr> <td>2019 to 2021 till March</td> <td>2723</td> <td>127</td> <td>4.89%</td> </tr> <tr> <td>Total</td> <td>2723</td> <td>629</td> <td>--</td> </tr> </table>	2011 to 2016-17	2340	246	11.75%	2017 to 2019 till March	2596	256	10.94%	2019 to 2021 till March	2723	127	4.89%	Total	2723	629	--	<p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023.</p>
2011 to 2016-17	2340	246	11.75%																							
2017 to 2019 till March	2596	256	10.94%																							
2019 to 2021 till March	2723	127	4.89%																							
Total	2723	629	--																							
							2.	Tidal observation in creeks in and around APSEZ	<ul style="list-style-type: none"> APSEZ carried out the tidal observations at locations similar to 2017 in Kotdi, Baradimata, Navinal, Bocha and Khari creeks under the guidance of NCSCM. 																	

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									<ul style="list-style-type: none"> The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. The cost of the said activity was INR 1.0 Lacs.
							3.	Removal of Algal and Prosopis growth from mangrove areas	<ul style="list-style-type: none"> Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. The cost of the said activity was Rs. 80000 during the FY 2023-24. The report of algal removal is attached as Annexure - 2.
							4.	Awareness of mangroves importance in surrounding communities	Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattles

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								<p>/ 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg.</p> <ul style="list-style-type: none"> • Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. • Grass Land development: 213 acres of gauchar land has been cleaned and allocated for Grass land development with strong Community Contribution and Mobilization. • Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas.

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								<ul style="list-style-type: none"> • APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as “a unique, special and vulnerable ecosystem”. The report of day celebration was submitted along with half yearly compliance report for the period of Apr’23 to Sep’23. • Since PhD scholars and students frequently visit this area for study. we plan to establish it as a Center of Excellence, serving as a hub to create awareness among students and facilitating research activities for scientist. • Refer CSR report attached as Annexure - 3.

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							<p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, APSEZ earlier awarded work order to NCSCM, Chennai vide order no. 4802018994, dated 29/07/2022 with cost 23.77 Lacs for mangrove mapping in and around APSEZ, but due to some financial disputes and no proper response from NCSCM side regarding resolution, the work order has been revoked.</p> <p>After that as suggested by Joint Review Committee in its report that mangrove related studies may be undertaken by different agencies on a rotation basis for a better review of the mangroves, APSEZ issued work order to the Gujarat Institute of Desert Ecology (GUIDE), Bhuj vide order no. 4802027981, dated 10/04/2023 for mangrove mapping in and around APSEZ, Mundra. The cost of said work is 23.60 Lacs (Including Taxes), which was paid by APSEZ.</p> <p>GUIDE has completed the study of Monitoring and Distribution of the Mangroves along the Creeks in and Around APSEZ, Mundra, Kutch, Gujarat for the duration of year March 2019 to March 2021. Copy of the report of Monitoring and Distribution of the Mangroves was submitted during the last EC compliance report submission Apr'23 to Sep'23</p> <p>According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradi Mata, Navinal, Bocha and Khari creeks and also</p>

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							<p>in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019.</p> <p>According to GUIDE Mangrove monitoring study report November 2023 (Report was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi Mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total</p>

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							<p>mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021.</p> <p>Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%).</p> <p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023.</p> <p>Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hecter plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE,</p> <p>These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem.</p>

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1.4	Development activities along the coast might cause certain changes in hydro-dynamic characteristics along the shoreline. Shoreline of any area also can be influenced by storm surges and other natural processes.		Detailed hydro-dynamic modelling and shoreline change prediction for a fully developed APSEZ facility has been studied. The study reveals that the erosion and accretion in the study area at the end of 15th year will be within the designated criteria of \pm	It is recommended to map the coastal morphology (Shoreline) at least once in three years	APSEZ	Continual Process	<p>Shore line change aspect has been studied in detail as part of following two studies;</p> <ul style="list-style-type: none"> • Bathymetry & Topography study, preparation of plan for protection of creeks/ mangrove area including buffer zone, mapping of co-ordinates, running length, HTL, CRZ boundary. • A Regional Impact Assessment study to identify impacts of all the existing as well as proposed project activities in Mundra region. <p>As per the outcome of these studies, no erosion is observed on the coast of the project area. As part of the Regional Impact Assessment study, the possible changes in shoreline that may occur due to the proposed developments in 10 km area on either side of the waterfront development project have been predicted. It has been inferred from the modelling study that the shift in the shoreline will be less than 0.5 m/year, which reconfirms that the APSEZ facility would pose insignificant impact on the Mundra shoreline. Accretion is observed at South port and at West port due to approved reclamation activities.</p> <p>Based on the study outcome, it is recommended to map the coastal morphology (shoreline change) at least once in three years.</p>

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			<p>0.5 m/year. which reconfirms that the waterfront development activities of APSEZ would pose insignificant impact on the Mundra shoreline.</p>				<p>APSEZ has already awarded work to the agency namely M/s. Gujarat Institute of Desert Ecology, Bhuj for carrying out Shoreline Change Assessment Study for Mundra region vide P.O. No. 4802013270 dated 30.03.2022. The cost of said study was INR 17.39 Lacs. The said study is under progress.</p> <p>Shoreline change study was carried out by M/s. Gujarat Institute of Desert Ecology, Bhuj in 2022 as a part of the Environmental Management Plan (EMP) compliance with the CIA study. The cost of said study was INR 17.39 Lacs.</p> <p>In the present study, the rate of shoreline changes statistics on a time series of multiple shoreline positions of a totally 43 km coastline stretches (16 km on the west side and 27 km on the east side of Adani main port) on either side of Adani Ports and Special Economic Zone Ltd (APSEZL) has been taken into account for the calculation by using satellite images.</p> <p>As a part of the NGT direction, the shoreline change analysis has been carried out for the years 2015-2022 to study the immediate changes after the commissioning of the port and initiation of the activities (September 2015) for short-term variation for the year 2015-2022 using EPR method has been carried out.</p>

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							<p>The details of the rate of shoreline changes (Short interval time) recorded from 2015 to 2022 are summarized in below table.</p> <table border="1" data-bbox="1398 678 2011 987"> <thead> <tr> <th data-bbox="1398 678 1495 781">Period</th> <th data-bbox="1495 678 1623 781">Name of the block</th> <th data-bbox="1623 678 1780 781">Average Shoreline Change(M/Y ear)</th> <th colspan="2" data-bbox="1780 678 2011 781">Shoreline Change(M)</th> </tr> <tr> <td></td> <td></td> <td></td> <th data-bbox="1780 781 1887 883">Maximum Accretion</th> <th data-bbox="1887 781 2011 883">Maximum Erosion</th> </tr> </thead> <tbody> <tr> <td data-bbox="1398 883 1495 987" rowspan="2">2015-2022</td> <td data-bbox="1495 883 1623 935">West Port</td> <td data-bbox="1623 883 1780 935">-11.43</td> <td data-bbox="1780 883 1887 935">39.86</td> <td data-bbox="1887 883 2011 935">-78.68</td> </tr> <tr> <td data-bbox="1495 935 1623 987">Eastern side</td> <td data-bbox="1623 935 1780 987">-26.60</td> <td data-bbox="1780 935 1887 987">191.32</td> <td data-bbox="1887 935 2011 987">-165.19</td> </tr> </tbody> </table> <p>The Shoreline Change Assessment Study report of GUIDE was submitted along with six monthly compliance report for the period Oct'22 to Mar'23.</p> <p>Shoreline change study was carried out by M/s. Chola MS, Chennai (NABET accredited consultant) also as a part of Waterfront Development Project – Expansion EIA study. The summary of the said study are as below.</p> <p>To estimate the shoreline change due to the earlier approved waterfront development plan, a historical shoreline change assessment has been undertaken using the satellite imagery for a period of 2008 to</p>	Period	Name of the block	Average Shoreline Change(M/Y ear)	Shoreline Change(M)					Maximum Accretion	Maximum Erosion	2015-2022	West Port	-11.43	39.86	-78.68	Eastern side	-26.60	191.32	-165.19
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							<p>2018. In order to avoid any major errors in estimating the shoreline, the satellite data for similar tidal condition was considered for 2008, 2013 and 2018. AMBUR Methodology was used to study the historical analysis.</p> <p>10 km radius stretch of shoreline on either side of the APSEZ project boundary has been considered for assessing the historical shoreline change scenario. The baseline shoreline change assessment depicts the influence of both natural causes and also possible changes in the shore due to various development activities in the study area during the designated period. For the purpose of this study, shoreline on left side of APSEZ is termed as West Side Shoreline and that of the right side as East Side Shoreline for ease of recognition.</p> <p>The maximum accretion and erosion rate of the west side shoreline over a period of 10 years during the year 2008 – 2018 are observed to be 4.78 m/yr and 1.93 m/yr respectively.</p> <p>The maximum accretion and erosion rate of the east side shoreline over a period of 10 years during the year 2008 – 2018 are observed to be 05 m/yr and 0.82 m/yr respectively.</p>
2	Regional Traffic Management Plan						

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2.1	The projected traffic data as per the EIA Report of Multi-Product Special Economic Zone, the peak vehicular traffic from the port and SEZ operations (including supporting facilities and colony) could be in the order of 18,300 and 10,400 vehicles per day respectively.	Level-1	As per the master plan of APSEZ, eight artillery roads will be connected to either state highway or national highway for evacuating the goods from APSEZ. None of these roads are passing through settlements, thereby avoiding traffic Congestions in the respective villages. The carrying capacity of the eight	Additional road as per master plan will be built in future based on the overall progress of the project. Currently about 25% of cargo from APSEZ is transported by Rail and the same will be enhanced to 40% when the facility is fully developed in future. This will further reduce the traffic volumes on the regional road network.	APSEZ	As and When Required	<p>Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies,</p> <p>Existing road/rail/conveyer infrastructure facilities are adequate to evacuate the existing cargo. Further, APSEZ's cargo evacuation through rail / conveyer / pipeline has ~23.87%, Additional road facilities will be built as per master plan considering future development.</p> <p>The facilities for transportation of cargo other than road will be enhanced considering future development, which will reduce the traffic volumes on the regional road Network.</p>

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	There could be a possible increase in traffic congestions on village-highway intersections and road accidents.		<p>artillery roads connecting APSEZ is estimated to be about 16,000 PCU/hr as against the envisaged peak traffic volume of 4,500 PCU/hr.</p> <p>Out of eight artillery roads considered in APSEZ master plan, seven roads were already developed and functional.</p>				
			APSEZ has been	APSEZ can undertake	APSEZ &		APSEZ is being imparting the regular in-house training awareness program in different mode i.e., classroom,

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			<p>imparting Driver Training Programs to all their contractors to enhance awareness on road safety.</p>	<p>technical feasibility of implementing Intelligent Transport System (ITS) for the freight carriers associated with their development activities.</p>	<p>GSRDC*</p>	<p>Long Term</p>	<p>on-job training, virtual platform & Assessment by internal & external trainer to all drivers and employees on below topics:</p> <ul style="list-style-type: none"> ✓ Basic induction Training for drivers ✓ ITV Driver Training ✓ ITV Driver Induction for Supervisor ✓ Defensive Driving for LMV & HMV ✓ Defensive Driving & BBS ✓ Driver Assessment ✓ Road accident & rescue ✓ Traffic Management & Road Signage ✓ Driving safety training ✓ RORO Driver training ✓ Road Safety ✓ Defensive Driving & Emergency Action Plan ✓ Drivers Responsibilities & Safe driving ✓ Emergency Rescue (Vehicle) Training <p>Approx. 7530 Participants (On roll and contractual manpower) were benefitted from above trainings in compliance period Oct'23 to Mar'24. The same will be continued in future also.</p> <p>APSEZ has also implemented the Remote traffic management system (RTMS) to manage the traffic movements and capturing the violations to further improve the system.</p>

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							<p>Following steps were taken by APSEZ to reduce the accidents.</p> <ul style="list-style-type: none"> ✓ Handling and escorting of the ODC for ensuring the smooth movement on the roads. ✓ Traffic Awareness programs for the drivers and regular briefing of the drivers in the parking areas. ✓ Incident handling and root cause analysis for taking necessary action in order to avoid such incidents. ✓ BAC checks for the drivers in order to identify the intoxicated drivers and necessary action is being taken against them. ✓ Water spray drive at gates are being conducted on regular basis during night hours to avoid dozing by the driver while driving. ✓ RTMS devices are being installed at 08 critical locations in order to capture speed violations and enforcing road safety regulations. ✓ Display of traffic signages and lane markings on road in coordination with the Civil team for ensuring road safety rules are being followed by the road users. ✓ We have approx. 100+ cameras which are being utilized for monitoring of traffic movement through CCTV and timely response in order to avoid any congestion and during traffic incidents. ✓ Regular traffic checks by Traffic Marshalls in order to ensure road safety rules (Wearing seat belt/Wearing helmet/Carrying driving

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							<p>license/Speed checks/Documents) is being followed by the drivers.</p> <ul style="list-style-type: none"> ✓ Installation of Road furniture's (Cones/Water filled barriers/Cats eye/Spring Posts/Jersey Barriers) for lane segregation, Channelizing the traffic, at Junctions and indicating Caution for the road users. ✓ In case on any Vehicle found breakdown in main roads, we arrange the security crane / lifting machines to remove /relocated the vehicle. Which help for smooth passage to other vehicles. ✓ Ensuring Drivers must wear near necessary PPEs, for that we have arranged a PPE's Stall at APMS parking area (issued on chargeable basis). ✓ Night Patrolling and PA announcement by Traffic DSO to manage traffic condition. ✓ Safety briefing via PA system at Security Gate.
3	Water resources Management and sewage treatment & disposal Plan						
3.1	For a fully developed APSEZ facility, water demand will be in the order of 4,30,000 m ³ /day (430 MLD).	No-Impact	APSEZ is meeting the current water demand through Narmada water supply scheme and 47 MLD captive	As per the master plan and permissions granted under EC, APSEZ will be developing progressively 4,50,000 m ³ /day (450 MLD) of desalination plants to meet	APSEZ	As and When Required	<p>Presently there are two fresh water sources available with APSEZ.</p> <p>Desalination Plant – 47 MLD Narmada water through GWIL – 9 MLD (sanctioned capacity).</p> <p>Current water demand for APSEZ along with SEZ industries including Adani Power Plant is an avg. of 31.49 MLD.</p>

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	APSEZ will be sourcing majority of the water from the captive desalination plants, which will be developed in progressive manner.		desalination plant at site. Necessary water allocation from concerned authorities was obtained and the same will be renewed from time to time as per the directions of state government.	the future demand. Hence stress on regional water resources due to these developmental projects will be less significant.			<p>So presently, these sources are adequate to fulfill the current freshwater requirement of entire APSEZ including member units.</p> <p>The desalination plant of additional capacities will be installed on modular basis considering future requirement of APSEZ.</p>
3.2	Existing water demand in the Mundra taluk is estimated as 8500 m ³ /day (@55 lpcd) and the	Level-2	Adani Foundation has been contributing to various watershed development projects in the Mundra region to	Adani Foundation is planning to implement the various water resource conservation programs in next ten years under various schemes.	APSEZ and CGWB*	Long Term	<p>Water needs of APSEZ is being met through existing Desalination Plant of APSEZ and GWIL which may be further enhanced on modular basis. At present Ground water is not utilized for any activities within APSEZ.</p> <p>However various works are being carried out by Adani Foundation continuously under Water Conservation Work to achieve water security in Mundra region by Adani Foundation. Following works are carried out as a part of water conservation work since April – 2018.</p>

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	<p>potable and sanitation water needs would increase to 37,000 m³/day (@125 lpcd) in future when the area is fully grown into larger municipality due to induced economic growth. Water demand of the local communities is met through Narmada water supply system to</p>		<p>enhance ground water resources in the area. Adani Foundation has contributed about Rs. 300 Lakhs so far for the development of 18 check dams.</p>				<p>Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up.</p> <p>To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch project "Sanrakshan" in coordination with GUIDE and Sahjeevan.</p> <p>Since, 10 years considerable Water Conservation Work carried out in Mundra Taluka. Due to satisfactory rain in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures.</p> <p><u>WORK COMPLETED:</u></p> <p>Below tabulated Water Conservation Projects completed during Compliance period:</p> <p><u>Water Conservation Projects:</u></p> <p><u>Swajal Project:</u></p> <ul style="list-style-type: none"> ➤ Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district.

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	some extent, but largely depending on the ground water in the study area. Mundra block is reported to be a safe ground block as on date. Due to influx of people and rapid urbanization due to the economic development, there could be some stress on the ground water						<p>➤ Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared for the Seven villages.</p> <table border="1"> <thead> <tr> <th>Block Name</th> <th>Water conservation structure</th> <th>Total no. of Structure</th> <th>Total Capacity Created (CUM)</th> </tr> </thead> <tbody> <tr> <td rowspan="5">Mundra</td> <td>Check Dam</td> <td>23</td> <td>6,07,332.80</td> </tr> <tr> <td>Pond Deepening</td> <td>66</td> <td>1,89,121.08</td> </tr> <tr> <td>RRWHS</td> <td>275</td> <td>2750</td> </tr> <tr> <td>Recharge Borewell</td> <td>209</td> <td>-</td> </tr> <tr> <td>Percolation Well</td> <td>24</td> <td>-</td> </tr> </tbody> </table> <p>Earlier Completed Activities/Projects:</p> <table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Project</th> <th>Unit</th> <th>Outcome</th> <th>Impact</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Check dam Restrengthening-Nana Kapaya</td> <td>1</td> <td>Water Storage Capacity increased by 48000 Cum</td> <td>60 + farmer's 120+Acre Area of Agri land can be Irrigated</td> </tr> <tr> <td>2</td> <td>Recharge Borewell</td> <td>21</td> <td>Reduce Salinity ingress, and</td> <td>150+ farmer's 260+ Acre Area</td> </tr> </tbody> </table>	Block Name	Water conservation structure	Total no. of Structure	Total Capacity Created (CUM)	Mundra	Check Dam	23	6,07,332.80	Pond Deepening	66	1,89,121.08	RRWHS	275	2750	Recharge Borewell	209	-	Percolation Well	24	-	Sr. No.	Project	Unit	Outcome	Impact	1	Check dam Restrengthening-Nana Kapaya	1	Water Storage Capacity increased by 48000 Cum	60 + farmer's 120+Acre Area of Agri land can be Irrigated	2	Recharge Borewell	21	Reduce Salinity ingress, and	150+ farmer's 260+ Acre Area
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	resources in future.								preventing water runoff	of Agri land for Irrigated	
							3	Pipe Culvert at Checkdamat Bhujpur	1 prevent water runoff into seaside.	35 farmers' 120+Acre Area of Agri land can be Irrigated	
							<ul style="list-style-type: none"> • Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. • Ground recharge activities (pond deepening work for 66 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. • New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. • Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. • Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. • Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. • Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in 				

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							<p>ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar.</p> <ul style="list-style-type: none"> • Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. • Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. <p>With the objective of to preserve the rainwater 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.</p> <p>Adani foundation has spent approx. INR 8515.06 lakhs from April – 2018 to March– 2024 for CSR activities which also includes water conservation projects as mentioned above.</p>
3.3	It is estimated that about 60,000 m ³ /day (60 MLD) of sewage will be generated from the APSEZ	No Impact	Seven sewage treatment plants with an aggregate capacity of 3.1 MLD have already built at APSEZ. Treated sewage is	APSEZ is permitted to develop decentralized sewage treatment plants of total 62 MLD capacities. Existing sewage treatment facilities will be	APSEZ	As and When Required	<p>Current installed capacity of wastewater treatment plants is 6.255 MLD (ETP, STPs & CETP) for treatment of effluent & sewage generated at various locations of APSEZ excluding wastewater treatment plants installed within indivial member units.</p> <p>Out of 46 only 4 operational industries within the SEZ are sending their partially treated industrial as well as domestic effluent to the CETP conforming to CETP inlet norms for further treatment and final disposal. Other SEZ industries have their own STPs / ETPs for treatment of wastewater generated from their</p>

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	facility when the project is fully developed.		utilized for greenbelt development and sewage is not discharged into either seasonal natural streams or marine environment.	augmented progressively based on the development at APSEZ in future. Similar to existing practices, treated sewage will be utilized for greenbelt development.			<p>industrial operation and discharging the treated water on land for horticulture purpose within their premises as per specific permission granted by SPCB.</p> <p>APSEZ also granted permission to treat 2.5 MLD of sewage generated from Mundra village through CETP and STP.</p> <p>Presently avg. 2.26 MLD of wastewater (in to ETP, STPs & CETP) is treated and being utilized on land for horticulture purpose within APSEZ premises during Oct'23 to Mar'24. Existing wastewater treatment plants are adequate to treat and handle the total effluent / sewage load considering current development.</p> <p>Existing wastewater treatment facilities will be augmented, or new plants will be developed on modular basis considering future requirement.</p>
4	Air quality management Plan						
4.1	Although all the regulated activities in the study area will be adopting promulgate	Level-2	APSEZ and other thermal power plants have obtained valid consent to operate	All existing and new industrial establishments will obtain requisite consents from GPCB and adhere to the stipulated	APSEZ And Other Industries	Continual Process	<p>APSEZ has been granted requisite permissions from the concerned authorities with stipulated norms for air emission (flue gas as well as ambient air).</p> <p>Ambient Air Quality monitoring is being carried out by NABL accredited and MoEF&CC authorized agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi for APL as per NAAQ standards, 2009.</p>

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	d emission norms, total air emission mass discharge from the study area would increase.		and have been operating the facilities as per the emission norms stipulated in respective consent orders. APSEZ and other two power plants are monitoring the ambient air quality on regular intervals as per GPCB/CPCB guidelines and the data is analyzed and presented to GPCB on	emission norms regulations and guidelines issued by authorities from time to time.			<p>Stack emission monitoring is also being carried out on regular basis. Reports of the same are being submitted to the concerned authorities on regular basis.</p> <p>Adani power plant has installed continuous emission and air quality monitoring instruments as per CPCB Directive and submitting the reports also. Another power plant of CGPL is outside APSEZ area.</p> <p>The AAQM summary for last six months (Oct'23 to Mar'24) are as below.</p> <p>Locations: 18 Nos. (APSEZ – 15 + APL – 3 including 4 villages) Frequency: Twice in a week</p> <table border="1" data-bbox="1392 1019 2016 1263"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>Average</th> <th>Perm. Limit[§]</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>40.80</td> <td>87.32</td> <td>74.45</td> <td>100</td> </tr> <tr> <td>PM_{2.5}</td> <td>µg/m³</td> <td>14.49</td> <td>43.22</td> <td>30.97</td> <td>60</td> </tr> <tr> <td>SO₂</td> <td>µg/m³</td> <td>8.35</td> <td>38.91</td> <td>22.12</td> <td>80</td> </tr> <tr> <td>NO₂</td> <td>µg/m³</td> <td>11.21</td> <td>44.25</td> <td>26.73</td> <td>80</td> </tr> </tbody> </table> <p>[§] as per NAAQ standards, 2009 Values recorded confirms to the stipulated standards.</p> <p>Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY</p>	Parameter	Unit	Min	Max	Average	Perm. Limit [§]	PM ₁₀	µg/m ³	40.80	87.32	74.45	100	PM _{2.5}	µg/m ³	14.49	43.22	30.97	60	SO ₂	µg/m ³	8.35	38.91	22.12	80	NO ₂	µg/m ³	11.21	44.25	26.73	80
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			monthly basis. Both the thermal power plants located within the study area have installed continuous emission and air quality monitoring instruments as per CPCB directive.				<p>2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p> <p>Other industries located within the SEZ have obtained requisite permissions from the competent authorities for their respective plant and they also carried out environmental monitoring within their premises to comply with the permission granted. The same has been ensured by APSEZ as well as SPCB during their regular visits. APSEZ carries out regular visits/inspections of member industries within SEZ and last visit was conducted during March, 2024 for EMS & compliance verification. During compliance verification, it was verified that monitoring of air emission was well within the permissible standards based on analysis reports. Same will be continued in future also.</p> <p>The monitoring reports of industries within SEZ are also being submitted to the regulatory authorities as a part of half yearly Compliance report of EC for Multi-Product SEZ.</p>
				A common air quality management committee may be framed under the guidance of	APSEZ and Other Industries, Stakeholders, District Administratio	Long Term And Continual	APSEZ will co-operate and comply with the directions from concerned regulatory authorities for air quality management within APSEZ area. However, at present, APSEZ has formed Internal Environment Monitoring Committee, involving officials from APSEZ, Adani Power Limited and other SEZ member units with following role and responsibilities:

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
				the State Pollution Control Board and district administration to manage regional level emission inventory data that can help to manage regional level air quality management goals.	n and GPCB*		<ul style="list-style-type: none"> • Identification of sources of air & noise emission and its dispersion in surrounding villages • Remedial measures to eliminate, control, reduce or capture air & noise emission. • Identify available resource to abate the air and noise emission. • Required additional resources for control of air and noise emission. • Drinking water and its testing of all the available fresh water sources in surrounding villages • Identify any surrounding villages affected by organization's improper waste disposal mechanism. <p>Last committee meeting was conducted on dated 19/04/2024 and below was the point of discussion for way forward.</p> <ul style="list-style-type: none"> • Brief introduction about the Environment Management Plan (EMP) • All members conveyed his environment management practices, issue & suggestions. • Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. • Discussed about the proper management of the canteen waste.

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							<ul style="list-style-type: none"> • Discussed about the cleaning of outside of the SEZ units. • Discussed about the management of rain water & proper cleaning of the common storm water drainage system. • Discussed about proper segregation & disposal of solid waste material. • Discussed about to increase more green belt area inside plant premises of SEZ units. • Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor. <p>APSEZ and all the industries within SEZ are complying to NAAQS and same is being ensured by APSEZ. The monitoring reports of industries within SEZ are being submitted to the regulatory authorities as part of half yearly Compliance report of EC for Multi-Product SEZ.</p>
4.2	Release of particulate emissions from handling and storage of coal at the port and power plants would	Health Impact	APSEZ has been implementing the following management plan to control emissions as per the applicable	All industries located in the APSEZ shall adhere to the emissions norms and minimum stack height guidelines issued by CPCB and consent to	APSEZ and Other Industries	Continual Process	<p>Following safeguard measures are taken by APSEZ for abatement of dust emissions.</p> <ul style="list-style-type: none"> • Adequate stack heights to the Boilers, D.G. Sets, TFHs & HWGs for proper dispersion of pollutants within APSEZ • Using of liquid & Gaseous fuels instead of solid fuels in Boilers, Thermic fluid heaters and hot water generators. • Regular sprinkling on road and other open area • Regular cleaning of roads

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance												
	influence PM10 and PM2.5 concentration in the background air. This could pose some health impacts such as asthma and COPD etc. among the local communities.		regulations and similar practices will be adopted in future: Entire bulk material handling facilities are mechanized. Regular water sprinkling on road and other open areas, regular cleaning of roads, dry fog dust suppression systems (DSS) in hoppers, transfer towers and conveyor belts, use of	operate issued by Gujarat Pollution Control Board from time to time.			<ul style="list-style-type: none"> • Dry fog Dust Suppression System (DSS) in hopper, transfer towers and conveyor belts • Use of water mist canon • Closed type conveyor belts • Regular sprinkling on coal heaps • Covering other types of dry bulk cargo heaps • Installation of wind breaking wall • Development of greenbelt along the periphery of the storage yards/back up area • Mechanized handling system for coal and other dry bulk cargo • Wagon loading and truck loading through closed silo <p>Adequate air pollution control measures like ESPs, FGDs, Bag Filters, etc. and adequate stack heights provisions are implemented within the thermal power plant.</p> <p>The stack monitoring summary for last six months (Oct'23 to Mar'24) are as below.</p> <p>Total Nos. of Stacks: 23 Nos. Frequency: Monthly / Half Yearly</p> <table border="1"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>GPCB Limit</th> <th>Min</th> <th>Max</th> <th>Avrg.</th> </tr> </thead> <tbody> <tr> <td>PM</td> <td>mg/Nm³</td> <td>150</td> <td>16.27</td> <td>27.23</td> <td>21.61</td> </tr> </tbody> </table>	Parameter	Unit	GPCB Limit	Min	Max	Avrg.	PM	mg/Nm ³	150	16.27	27.23	21.61
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PM	mg/Nm ³	150	16.27	27.23	21.61														

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			water mist canon, covered conveyer belts, regular sprinkling on coal heaps,				<table border="1" data-bbox="1402 574 2011 630"> <tr> <td>SO₂</td> <td>Ppm</td> <td>100</td> <td>6.13</td> <td>15.49</td> <td>8.96</td> </tr> <tr> <td>NO_x</td> <td>ppm</td> <td>50</td> <td>16.92</td> <td>32.62</td> <td>23.06</td> </tr> </table> <p>Values recorded confirms to the stipulated standards.</p> <p>Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p> <p>All other industries located within SEZ are adhere to provide adequate stack height and pollution control measures for proper dispersion of pollutants as per respective permissions granted by the board. The same is being inspected and ensured by APSEZ as well as SPCB officials on regular basis.</p>	SO ₂	Ppm	100	6.13	15.49	8.96	NO _x	ppm	50	16.92	32.62	23.06
SO ₂	Ppm	100	6.13	15.49	8.96														
NO _x	ppm	50	16.92	32.62	23.06														
			covering of other types of dry bulk cargo heaps by protective materials, installation of wind breaking wall, development of greenbelt	An internal Coal Dust Management Working Group shall be formed by APSEZ to effectively coordinate the approach to coal dust	APSEZ and Other Industries, Concerned Stake holders, District Administration*	Long Term	<p>As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, with specific role and responsibilities as defined above.</p> <p>The dry cargo is being handled by mechanized system and transported by covered conveyer system, trucks and rail wagons.</p> <p>Wind breaking wall is provided around the coal storage yards of APSEZ as well as Adani Power Plant.</p> <p>Adequate air pollution control measures like ESPs,</p>												

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
			<p>along the periphery of the storage yards/back up area and mechanized handling system for coal and other dry bulk cargo and Wagon loading and truck loading through closed silo. Both thermal power plants in the study area have installed electrostatic precipitators on the boilers and are meeting the emission norms as per</p>	<p>management and monitoring</p>			<p>FGDs, Bag Filters, etc. and adequate stack heights provisions within the thermal power plant for proper dispersion of pollutants.</p> <p>Green belt / plantation is provided around the periphery of dry cargo storage area and regular water sprinkling is also being done to abate the dust emission from coal hips.</p> <p>Last committee meeting was conducted on dated 19/04/2024 and below were the points of discussion for way forward.</p> <ul style="list-style-type: none"> • Brief introduction about the Environment Management Plan (EMP) • All members conveyed his environment management practices, issue & suggestions. • Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise. • Discussed about the proper management of the canteen waste. • Discussed about the cleaning of outside of the SEZ units. • Discussed about the management of rain water & proper cleaning of the common storm water drainage system. • Discussed about proper segregation & disposal of solid waste material.

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			the respective ECs granted. Due to installation of tall stacks as per CPCB guidelines and EC conditions, the relative air pollution impacts due to release of emissions from two power plants is insignificant.				<ul style="list-style-type: none"> Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor.
4.3	Ships are one of the significant sources of SO ₂ and NO _x emissions in the study area. Marine	Level-2	A Standard Operating Procedure (SOP) has been	The current global limit for Sulphur content of ships fuel oil is 3.5 % m/m (mass by mass). According to MARPOL, the	APSEZ and Ship Owners	Long Term	<p>The ships coming to the APSEZ is complying with MARPOL and other shipping rules and regulations.</p> <p>APSEZ has already started providing shore power supply to the tugs (11 Nos.), dredgers (2 Nos.) and barges (1 No.). The feasibility of shore power will be explored and implemented on large scale for the visiting vessels to reduce idling stage ship emissions.</p>

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	<p>diesel engines on the ships often utilize fuel oils that might contain higher sulphur content. As per the international best practices, these marine diesel engines are designed to meet MARPOL regulations with NOX emissions less than 14.4 gram/Kwhr of engine.</p>		<p>developed to be included as a part of APSEZ environment management plan to verify that all ships anchored at the port are adopting the MARPOL4 regulations.</p>	<p>new global cap on sulphur in the marine vessel fuels will be 0.50% m/m by the 1st January 2025. APSEZ should explore the possibility of providing shore power to the ships at the port to reduce idling stage ship emissions.</p>			

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	Due to lower stack heights of the marine diesel engine, ship emissions often gets dispersed in the local environment and might pose risk of fumigation during the early morning and evening hours due to atmospheric inversion break-up periods.						
	Road			Due to implementation of Bharat VI fuels (MoEF&CC) in near future the			Presently, cargo evacuation through rail / conveyer / pipeline is ~23.87 % of overall cargo evacuation. Vehicles having valid PUC certificate are only being allowed to enter within APSEZ area.

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4.4	vehicle emissions will be other major contributors to the air pollution in the region when the facility is fully developed.	Level-2	Not Applicable	vehicular and diesel engine emissions will be reduced by about 50% from the current national levels. APSEZ should develop a robust contractor environmental policy to ensure that Bharat Stage VI emission norms are adopted by all their contractors and sub-contractors.	APSEZ and All Industries	Short Term	<p>APSEZ, has procured 217 nos. of Electrical Vehicle for internal cargo movement and 183 nos. E-ITV's are in operation.</p> <p>As well as procured 10 nos. LMV E-Vehicles for manpower movement and all are in operation.</p> <p>Electrification of Rail Corridor from Dhrub Railway Station to Adipur Railway Station has completed and movement started by electric locomotive. It will leads to reduce the gaseous emission and increase efficiency of transportation by rail.</p>
5	Noise emissions						
	Noise emissions are envisaged from port		Due to adoption of various mechanized operations at the waterfront	APSEZ, all the tenant industries and facilities within APSEZ are required to undertake noise monitoring at	APSEZ	Continual	<p>Below Safeguard measures are already taken for abatement of noise emissions.</p> <ul style="list-style-type: none"> • Development of greenbelt along the periphery of the operational area. • D.G. Sets having Acoustic enclosures. • Maintenance of plant machineries and equipment's on regular frequency.

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5.1	operations, industrial operations and power plants in the study area. Any increase in noise levels beyond three decibels from the background levels would be perceived as noise nuisance (USEPA)7.	Level-1	development, the noise emissions from the port cargo handling will be minimal. An adequate greenbelt is being developed by APSEZ to further reduce any residual impacts due to noise emissions from the facility. Periodic noise level monitoring programs were adopted by APSEZ. Predicted	their facilities to demonstrate the compliance with the Noise level standards. Continuous noise recording units can be installed by APSEZ at facility boundary to address the community grievances, when ever required. To assess the overall site wide compliance and also to address any community grievances related to noise issues due to operation of APSEZ facilities.		Process	<p>Noise monitoring is being carried out by NABL accredited and MoEF&CC authorized agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi as per permission granted and reports are being submitted to the concerned authorities on regular basis.</p> <p>The noise monitoring summary for last six months (Oct'23 to Mar'24) are as below.</p> <p>Locations: 15 Nos. Frequency: Once in a month (24 hourly)</p> <table border="1"> <thead> <tr> <th>Noise</th> <th>Unit</th> <th>Leq Min</th> <th>Leq Maxn</th> <th>Leq Avr.</th> <th>Leq Perm. Limit⁵</th> </tr> </thead> <tbody> <tr> <td>Day Time</td> <td>dB(A)</td> <td>57.4</td> <td>69.9</td> <td>64.7</td> <td>75</td> </tr> <tr> <td>Night Time</td> <td>dB(A)</td> <td>53.8</td> <td>64.8</td> <td>60.5</td> <td>70</td> </tr> </tbody> </table> <p>⁵ as per GPCB standards</p> <p>Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p> <p>All the results are well within the standards. From this</p>	Noise	Unit	Leq Min	Leq Maxn	Leq Avr.	Leq Perm. Limit ⁵	Day Time	dB(A)	57.4	69.9	64.7	75	Night Time	dB(A)	53.8	64.8	60.5	70
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			noise levels were found to be well within the designated noise standards for Industrial facilities.				<p>it can be inferred that there no impacts on the surrounding community.</p> <p>All other industries located in the APSEZ are adhere to monitor and control the ambient noise level as per permission granted by SPCB and same is being confirmed by APSEZ as well as SPCB on regular basis.</p> <p>Further, till date APSEZ has not received any grievances/notice for noise issues from any of the stakeholders.</p>
				In order to address the public grievances related to noise from the facility, an internal Noise Management Committee can be formed by APSEZ to investigate the root cause and to develop and implement noise mitigation plans in	APSEZ	Continual Process	<p>As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, having role and responsibilities as defined above.</p> <p>Last committee meeting was conducted on dated 19/04.2024 and below were the point of discussion for way forward.</p> <ul style="list-style-type: none"> • Brief introduction about the Environment Management Plan (EMP) • All members conveyed his environment management practices, issue & suggestions. • Discussed about the various ways to improve existing practice to control the emission in terms of Air, Water and Noise.

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				the specific zones.			<ul style="list-style-type: none"> Discussed about the proper management of the canteen waste. Discussed about the cleaning of outside of the SEZ units. Discussed about the management of rain water & proper cleaning of the common storm water drainage system. Discussed about proper segregation & disposal of solid waste material. Discussed about to increase more green belt area inside plant premises of SEZ units. Discussed about disposal of minor qty. of generated hazardous waste materials at authorized recycler/vendor. <p>No grievance received for noise related issues, and it is observed that ambient noise level are well within the permissible standards.</p>
6	Surface water quality (Terrestrial and Marine)						
6.1	In general, release of untreated wastewater from industrial facilities would pose threat to	Level -1	As per the master plan of APSEZ, 67 MLD of wastewater is expected to be generated from the fully developed	As per the master plan of APSEZ, the existing CETP shall be augmented to 67 MLD in progressive manner based on the future demand. The	APSEZ	As and When Required	<p>APSEZ has installed Common Effluent Treatment Plant (CETP) having 2.5 MLD capacities for treatment of partially treated effluent and sewage generated from industries within SEZ.</p> <p>Currently, CETP receives 940.21 KLD (Avg.) hydraulic load and considering the current development scenario, existing CETP is adequate to treat and handle the total effluent load coming from industries within SEZ.</p>

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	water quality of streams, estuaries and marine water bodies.		project scenario, for which necessary permissions to set up decentralized CETPs of various capacities are already obtained. Presently a CETP capacity of 2.5 MLD is in place. Presently member units treat their effluents to meet the CETP inlet norms and then send it to CETP. Treated	facility should limit the marine discharge of treated industrial wastewater to 16 MLD as per the permits. Remaining treated wastewater shall be utilized for horticulture purpose.			<p>Out of 46 operational units only 4 industries within SEZ are sending their partially treated industrial as well as domestic effluent to the CETP confirming CETP inlet norms for further treatment and final disposal. Other industries within SEZ have their own STPs / ETPs for treatment of wastewater generated from their industrial operation and discharging the treated water on land for horticulture purpose within their premises as per permission granted by SPCB.</p> <p>The capacities of CETP will be enhanced on modular basis as per future requirement.</p> <p>Presently avg. 2.26 MLD (from CETP, ETP & STPs) of treated water is being utilized on land for horticulture purpose within APSEZ premises during period Oct'23 to Mar'24 and no discharge is made to any other source.</p>

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			wastewater from CETP meets the stipulated discharge norms for utilization for greenbelt development within the APSEZ areas.				
			Online wastewater quality monitoring systems are installed at CETP to ensure quality of treated effluent meets the requisite discharge norms. No wastewater from CETP is	Efforts shall be made to recycle complete treated wastewater for port operations and industrial operations of APSEZ in future based on a detailed techno-economic feasibility study.	APSEZ	Based on outcome Techno-feasibility Study	<p>Online continuous effluent monitoring system (CEQMS) installed at the discharge point of CETP to track any deviation from discharge norms. CEQMS is connected with CPCB/GPCB server & data is continuous transferring in both servers.</p> <p>Presently entire quantity of treated water from CETP is used for gardening / horticulture purpose within APSEZ premises.</p>

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			discharged into natural bodies as on date..																										
			Runoff during monsoon from coal storage yards is collected in sedimentation ponds (dump pond) to remove any residual dust particulates for further disposal into sea	Storm water runoff from the facility during the first rain shall be sampled and analyzed for the presence of heavy metals or other criteria pollutants to adopt corrective and preventive actions to protect the marine water quality. All red and hazard category industry within APSEZ shall adopt spill prevention and control program and no effluents	APSEZ	Continual	<p>There are provision of drains around coal stack yard to carry to runoff water to dump ponds. This water is either used for dust suppression or after sedimentation (to remove residual dust), is allowed disposal to sea.</p> <p>Presently Marine monitoring is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi for APSEZ & APL both. The analysis reports of the same are being submitted to the concerned authorities on regular basis.</p> <p>The marine water quality monitoring summary for last six months (Oct'23 to Mar'24) is as per below.</p> <p>Locations: 14 Nos. (APSEZ – 9 + APL – 5) Frequency: Once in a Month / Half Yearly</p> <table border="1"> <thead> <tr> <th rowspan="2">TEST PARAMETERS</th> <th rowspan="2">UNIT</th> <th colspan="3">Cumulative Surface</th> <th colspan="3">Cumulative Bottom</th> </tr> <tr> <th>Min</th> <th>Max</th> <th>Average</th> <th>Min</th> <th>Max</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>--</td> <td>7.9</td> <td>8.24</td> <td>8.09</td> <td>7.86</td> <td>8.2</td> <td>8.04</td> </tr> </tbody> </table>	TEST PARAMETERS	UNIT	Cumulative Surface			Cumulative Bottom			Min	Max	Average	Min	Max	Average	pH	--	7.9	8.24	8.09	7.86	8.2	8.04
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				shall be discharged into storm water-drains.			<table border="1" data-bbox="1396 565 2011 950"> <tr> <td>BOD</td> <td>mg/L</td> <td>2.2</td> <td>5.1</td> <td>3.84</td> <td>0</td> <td>5.2</td> <td>4.82</td> </tr> <tr> <td>TSS</td> <td>mg/L</td> <td>76</td> <td>152</td> <td>107.45</td> <td>78</td> <td>128</td> <td>107.46</td> </tr> <tr> <td>DO</td> <td>mg/L</td> <td>5.3</td> <td>6.5</td> <td>5.98</td> <td>4.2</td> <td>6.25</td> <td>5.41</td> </tr> <tr> <td>Salinity</td> <td>ppt</td> <td>35.24</td> <td>39</td> <td>36.94</td> <td>36.15</td> <td>40</td> <td>37.82</td> </tr> <tr> <td>TDS</td> <td>mg/L</td> <td>35864</td> <td>36610</td> <td>36225</td> <td>34500</td> <td>37540</td> <td>37077</td> </tr> <tr> <td>Temperature</td> <td>oC</td> <td>24.7</td> <td>29.8</td> <td>27.38</td> <td>24.2</td> <td>29.7</td> <td>26.92</td> </tr> </table> <p style="text-align: right;">MDL – Minimum Detection Limit</p> <p>Approx. INR 13.37 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2023-24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p>	BOD	mg/L	2.2	5.1	3.84	0	5.2	4.82	TSS	mg/L	76	152	107.45	78	128	107.46	DO	mg/L	5.3	6.5	5.98	4.2	6.25	5.41	Salinity	ppt	35.24	39	36.94	36.15	40	37.82	TDS	mg/L	35864	36610	36225	34500	37540	37077	Temperature	oC	24.7	29.8	27.38	24.2	29.7	26.92
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			Detailed marine hydrodynamic modelling studies revealed that the current and proposed dredged soil	Good dredging practices shall be adopted by APSEZ: (i).Improving the dredging accuracy (ii).Improving onboard automation and	APSEZ	Long Term	<p>No capital dredging has been done, since Apr 2015. Dredged material generated during maintenance dredging is being disposed at designated locations within deep sea as identified by NIO.</p> <p>Dredging Management plan is adopted for carrying out dredging and management of dredge material. Presently there are 3 nos. (2 Nos. Cutter suction + 1 No. Trailer suction) of dredgers are in operation for dredging.</p>																																																

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			disposal practices, sea water intake and outfall facilities and desalination plant outfall etc have shown insignificant impact on the marine eco-system. As part of the comprehensive environmental monitoring program, APSEZ has been adopting marine water and sediment quality	monitoring, (iii). Reduce spill and loss, (iv). evaluating the need for installing silt screens near mangrove areas during the dredging phase operations, (v). Environment friendly dredging activities can be undertaken in such a way that the overall turbidity levels near the mangrove and ecologically sensitive zones shall not exceed 100 NTU or 200 mg/l of TSS (10% lethal level of fish) Existing marine monitoring			<p>Marine monitoring is being carried out once in a month by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. The analysis reports of the same are being submitted to the concerned authorities on regular basis. Summary of marine water for the last six months is as mentioned above.</p> <p>The same practice will be continued in future also as per direction by MoEF&CC as well as GPCB.</p> <p>Monitoring will be focused near ecological sensitive area in case of need to carryout capital dragging near such areas.</p>

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			monitoring on monthly basis.	program shall be continued as per the directions of MoEF&CC and GPCB.			
7	Groundwater quality and salinity ingress						
7.1	While Mundra block is enjoying safe ground water status as on date (based on the data published by CGWB), due to induced economic and population growth, use of ground water resources by the local people	Level-2	APSEZ is not utilizing ground water for any type of use. APSEZ is meeting the current water demand through Narmada water supply scheme and 47 MLD captive desalination plant at site.	A dedicated desalination plant of capacity 4,50,000 m ³ /day (450 MLD) will be developed in progressive manner to meet the APSEZ requirements.	APSEZ	As and When Required	<p>Present source of water for various project activities is desalination plant of APSEZ and/or through Gujarat Water Infrastructure Limited (GWIL) and same is sufficient to meet the present water demand.</p> <p>APSEZ does not draw any ground water.</p> <p>The desalination plant of additional capacities will be installed on modular basis considering future development and requirement.</p>

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	might increase in Mundra region. This might increase the TDS and chloride levels in the ground water in future.						
7.2	Due to induced growth in the region, pressure on the available ground water source would increase and this could pose some threat to salinity	Level-2	Ground water is not drawn by APSEZ for its operations. Natural streams (seasonal rivers) passing through the APSEZ area will not be disturbed, the micro-watershed in	The Govt. of Gujarat, Narmada, Water Resources, Water Supply & Kalpsar Dept.,(WRD)12 has been implementing various salinity ingress prevention projects	District Administration*	Long Term	<p>APSEZ will co-operate and comply with the directions from concerned regulatory authorities.</p> <p>APSEZ does not draw any ground water for the fresh water requirement.</p> <p>However, Adani Foundation – CSR arm of Adani Group has carried out rainwater harvesting activities in the nearby villages for benefit of the locals.</p> <p>Water conservation Projects i.e. Roof Top Rainwater Harvesting, Desilting of Check dams, Bore Well Recharge and Pond deepening were taken up in past years, review and monitoring of all water harvesting structures had been taken up.</p>

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	ingress.		the area will not be disturbed. Due to the above reasons, the possibility of salinity ingress due to APSEZ development is not envisaged. Mundra and Anjar blocks fall under fresh water to medium salinity zones. It can be observed that little variation was observed in the ground water salinity levels from year				<p>To make connections between human actions and the level of biological diversity found within a habitat and/or ecosystem, this year Adani Foundation launch project "Sanrakshan" in coordination with GUIDE and Sahjeevan.</p> <p>Since, 10 years considerable Water Conservation Work carried out in Mundra Taluka. Due to satisfactory rain in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures.</p> <p><u>WORK COMPLETED:</u></p> <p>Below tabulated Water Conservation Projects completed during Compliance period:</p> <p><u>Water Conservation Projects:</u></p> <p><u>Swajal Project:</u></p> <ul style="list-style-type: none"> ➤ Aim: The Foundation's Water Conservation program, SWAJAL, is aimed at addressing the alarming depletion of groundwater levels and reduction in water sources in various parts of Kutch district. ➤ Water Security Plan: Due to arid climatic characters of the Kutch region, it is essential to plan for water security drinking and livelihood purposes. Considering weather condition, rainfall characters, geohydrological condition and water demand, water security plan has been prepared for the Seven villages. <table border="1" data-bbox="1398 1333 2011 1411"> <thead> <tr> <th data-bbox="1398 1333 1520 1411">Block Name</th> <th data-bbox="1520 1333 1688 1411">Water conservation structure</th> <th data-bbox="1688 1333 1822 1411">Total no. of Structure</th> <th data-bbox="1822 1333 2011 1411">Total Capacity Created (CUM)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Block Name	Water conservation structure	Total no. of Structure	Total Capacity Created (CUM)				
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			<p>2013 to 2016 across the Mundra and Anjar blocks. This aspect confirms that the overall salinity ingress from the shore into the land due to existing APSEZ facilities and power plant outfalls are less significant.</p>				<table border="1" data-bbox="1396 565 2001 771"> <tr> <td rowspan="5">Mundra</td> <td>Check Dam</td> <td>23</td> <td>6,07,332.80</td> </tr> <tr> <td>Pond Deepening</td> <td>66</td> <td>1,89,121.08</td> </tr> <tr> <td>RRWHS</td> <td>275</td> <td>2750</td> </tr> <tr> <td>Recharge Borewell</td> <td>209</td> <td>-</td> </tr> <tr> <td>Percolation Well</td> <td>24</td> <td>-</td> </tr> </table> <p>Earlier Completed Activities/Projects:</p> <table border="1" data-bbox="1396 844 2001 1416"> <thead> <tr> <th>Sr. No.</th> <th>Project</th> <th>Unit</th> <th>Outcome</th> <th>Impact</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Check dam Restrengthening- Nana Kapaya</td> <td>1</td> <td>Water Storage Capacity increased by 48000 Cum</td> <td>60 + farmer's 120+Acre Area of Agri land can be Irrigated</td> </tr> <tr> <td>2</td> <td>Recharge Borewell</td> <td>21</td> <td>Reduce Salinity ingress, and preventing water run</td> <td>150+ farmer's 260+ Acre Area of Agri land for Irrigated</td> </tr> <tr> <td>3</td> <td>Pipe Culvert at Checkdam at Bhujpur</td> <td>1</td> <td>prevent water runoff into seaside.</td> <td>35 farmers' 120+Acre Area of Agri land can be Irrigated</td> </tr> </tbody> </table>	Mundra	Check Dam	23	6,07,332.80	Pond Deepening	66	1,89,121.08	RRWHS	275	2750	Recharge Borewell	209	-	Percolation Well	24	-	Sr. No.	Project	Unit	Outcome	Impact	1	Check dam Restrengthening- Nana Kapaya	1	Water Storage Capacity increased by 48000 Cum	60 + farmer's 120+Acre Area of Agri land can be Irrigated	2	Recharge Borewell	21	Reduce Salinity ingress, and preventing water run	150+ farmer's 260+ Acre Area of Agri land for Irrigated	3	Pipe Culvert at Checkdam at Bhujpur	1	prevent water runoff into seaside.	35 farmers' 120+Acre Area of Agri land can be Irrigated
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							<ul style="list-style-type: none"> • Large number of water harvesting structure (18 Nos. of check dams in coordination with salinity department) and Augmentation of 3 check dams. • Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan were built leading to a significant increase in water table and higher returns to the farmers. • New Pond Deepening Under Ajadi ka Amrut Mahotsav done in Goyarsama village Approx Deepening Capacity is 12000 Cum. • Roof Top Rainwater Harvesting 145 Nos. (40 Nos. current FY 2022-23) which is having 10,000 litre storage which is sufficient for one year drinking water purpose for 5 people family. • Recharge Borewell 208 Nos (19 Nos. current FY 2022-23) which is best ever option to direct recharge the soil. • Drip Irrigation approx. 1505 Farmers benefitted in coordination with Gujrat Green Revolution Company till date. • Bund construction on way of Nagmati River could save more than 575 MCFT water quantity which recharged in ground due to which borewell depth decreased by 50-100 Ft in Zarpara, Bhujpur and Navinal Vadi Vistar. • Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. • Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year.

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							<p>With the objective of to preserve the rainwater 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.</p> <p>Narmada Water Resources, Water Supply & Kalpsar Dept., (WRD)1 has been implementing various salinity ingress prevention projects. Under Sardar Sarovar canal project, Govt. of Gujarat has proposed to implement about 8200 Km stretch of water canal and the project is at various stages of implementation. Under this project about 112,000 ha of land in about 180 villages will be benefitted with irrigation needs. This will significantly reduce the pressure on the ground water resources in the region.</p>
				While the individual industries in the study area will continue to undertake ground water quality monitoring as	All Concerned Stakeholders, District Administration and CGWB*	Continual Process	<p>APSEZ (9 Locations – half yearly) & Adani Power Ltd. (5 Locations – quarterly) is carrying out ground water sampling and reports of the same are being submitted to the regulatory authorities on regular basis.</p> <p>The summary of APSEZ ground water quality monitoring for last six months (Oct'23 to Mar'24) are as below.</p> <p>Nos. of Location: 09</p>

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Depth of Water Level from Ground Level	meter	1.90	2.20	2.07								
8	Waste Management											
	Solid waste will be generated from		APSEZ has been adopting Zero waste	APSEZ will continue to adopt Zero Waste Initiative			Presently APSEZ has implemented Zero waste Initiatives as per 5R (Reduce, Reuse, Recycle, Recover & Reprocess) principles of waste management. At present, APSEZ has developed material recovery					

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8.1	industrial activities of APSEZ and other permitted facilities in the study area including Mundra town. These wastes would contain recyclable material, construction debris, organic waste, inert material and e-waste etc. In the absence of any organized source segregation	Level-2	Initiatives and the entire waste generated from existing operations is segregated and disposed to recycling vendors, thereby APSEZ has achieved zero landfill status as on date.	and wastes will be segregated at source and disposed to various recycling vendors, co-processing in cement plants. This initiative helps not only to reduce the waste to landfill significantly, but also to recycle the materials there by avoiding ecological impacts.	APSEZ	Continual Process	<p>facility for 6.0 TPD capacities. 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 plants for Co-processing as RDF (Refused Derived Fuel). The same practice will be continued in future also. APSEZ has also been recognized for Zero Waste to Landfill certification from reputed organization.</p> <p>APSEZ, Mundra is certified for Zero Waste to Landfill management system (ZWTL MS 2020) by TUV Rheinland India Pvt. Ltd. (valid up to 31.05.2024). Details of the same were submitted as part of compliance report submission for the duration of Apr'21 to Sep'21.</p> <p>APSEZ is being done proper solid waste management in his operational area with 5R principle as per Waste</p>

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	programs and material recycling strategies and infrastructure facilities, these wastes will enter into environment and would pose long term health impacts.						Management Plan.
8.2	Considering an average solid waste generation of 0.25 Kg/person/day, the estimated solid waste from facilities	Level-2	APSEZ has made a provision for central waste management facilities within the existing site based on the future needs. As part of the	The existing waste segregation and material recycling facilities will be augmented to dispose safely the wastes generated from APSEZ areas. Solid Waste Management	APSEZ	Continual Process	Industries located within the SEZ area are also complying with the waste management rules stipulated by statutory authorities and same is also being confirmed by APSEZ as well SPCB on regular basis.

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	within APSEZ will be in the order of 100 TPD (36,500 TPA).		Zero Waste Initiatives, no landfill facilities will be installed at APSEZ.	Program shall be adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016			
8.3	About 35 TPD (13,000 TPA) of solid waste would be generated from the proposed industrial areas located outside the APSEZ area.	Level-2	As per the MSW Rules 2016 all the industrial facilities and SEZs are required to adopt waste segregation facilities at the respective properties and non-recyclable waste shall	Solid Waste Management Program shall be adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016	All Industries	Continual Process	

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			be disposed to landfill sites.				
9	Ecological aspects (terrestrial and marine)						
9.1	About 1576 ha of shrub forest land contiguous to APSEZ area is applied for land diversion for various developmental activities. This might have certain level of changes in the	Level -1	It is noted that the designated forest land is free from any native vegetation and comprises of Prosopis juliflora. It is also noted that no endangered species are present at the shrub forests that are applied	APSEZ has approached concerned authorities for diversion of designated forest land. Suitable compensatory afforestation plan shall be adopted based on the recommendations and directions of the concerned authorities. Due to adoption of compensatory afforestation program through a scientific	APSEZ/State Forest Department*	Long Term	Stage – 1 Forest clearance granted for diversion of 1576.81 Ha Forest land. APSEZ has applied for getting EC & CRZ clearance for SEZ / Industrial Park in 1576.81 Ha Forest land. ToR accorded by MoEF&CC on 30.11.2021 and draft EIA is being carried out through NABET accredited consultant.

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	biodiversity in the study area.		for land diversion. It is also noted that no forest produce is reported from this designated forest land parcel due to lack of economic importance of plant species reported in the shrub forest. It is also noted that no tribal lands are located in the designated forest land parcel.	manner, the overall ecological footprint in the district will be increased. Due to plantation of native tree species as part of greenbelt development, the overall biodiversity of the region will increase considerably when the project is fully developed.			

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			Hence there will not be any change in biodiversity due to the proposed diversion.				
9.2	Mangrove conservation areas are located adjacent to the APSEZ area. Accidental discharges of industrial effluents into the marine environment would pose certain ecological risk.	Level -1	No development activities will be undertaken within mangrove conservation areas. APSEZ has taken up large scale mangrove afforestation activities in an area of more than 2800 ha at various locations	Mangrove footprint and health status shall be monitored annually	APSEZ	Continual Process	<p>As per study conducted by NCSCM in 2017, mangrove cover in and around APSEZ, Mundra has increased from 2094 Ha to 2340 ha (as compared between 2011 to 2017). The analysis has shown an overall growth of 246 ha. The cost for said study was INR 3.15 Cr.</p> <p>Last study was carried out in the year 2019 and based on that there is an increase of mangrove cover between March 2017 (Total 2340) and September 2019 with an extent of 256 Ha (Total 2596 Ha Area) which is about 10.94% rise in growth rate, also It reveals that the mangrove and the tidal system in the creeks remained undisturbed over this period.</p> <p>Hence, there is an overall growth of mangroves in creeks in and around APSEZ, Mundra is 502 Ha between 2011 and 2019.</p> <p>Analysis of data between categories indicated that there was an increase in dense mangroves along with</p>

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			<p>across the coast of Gujarat state in consultation with various organizations</p> <p>The Adani Foundation introduced 'Mangrove Nursery Development and Plantation' scheme in the area as an alternative income generating activity for the people of the region.</p>				<p>the conversion of scattered into sparse, that shows the growth of mangroves in a progressive direction.</p> <p>As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.</p> <table border="1" data-bbox="1396 771 2022 1375"> <thead> <tr> <th data-bbox="1396 771 1453 917">Sr. No.</th> <th data-bbox="1453 771 1644 917">Recommendations</th> <th data-bbox="1644 771 2022 917">Compliance</th> </tr> </thead> <tbody> <tr> <td data-bbox="1396 917 1453 1375">1.</td> <td data-bbox="1453 917 1644 1375">Mangrove mapping and monitoring in and around APSEZ</td> <td data-bbox="1644 917 2022 1375"> <ul style="list-style-type: none"> APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the </td> </tr> </tbody> </table>	Sr. No.	Recommendations	Compliance	1.	Mangrove mapping and monitoring in and around APSEZ	<ul style="list-style-type: none"> APSEZ entrusted NCSCM, Chennai to carry out Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island. As a part of this study, overall growth of mangroves in the creeks in and around APSEZ was assessed comparing Google earth images of 2017 & 2019 and it is observed that there was increase in mangrove cover between March 2017 and September 2019 to the
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								mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023.
							2.	<p>Tidal observation in creeks in and around APSEZ</p> <ul style="list-style-type: none"> • APSEZ carried out the tidal observations at locations similar to 2017 in Kotdi, Baradimata, Navinal, Bocha and Khari creeks under the guidance of NCSCM. • The observed tidal ranges indicate that the creeks experience normal tidal ranges, adequate for the growth of mangroves. • The cost of the said activity was INR 1.0 Lacs.
							3.	<p>Removal of Algal and Prosopis growth from mangrove areas</p> <ul style="list-style-type: none"> • Algal and Prosopis growth monitoring was done in and around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually. • The cost of the said activity was Rs. 80000 Lacs during

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								<p>the FY 2022-23 2023-24. The report of algal removal is attached as Annexure – 2.</p> <p>4. Awareness of mangroves importance in surrounding communities</p> <p>Adani Foundation – CSR Arm of Adani group has done awareness camps/activities created in the community regarding importance of mangroves. Adani Foundation provides Good Quality dry and green fodder to 29 Villages. Project is covering total 16000 Cattles / 3008 farmers and hence enhancing cattle productivity. Dry Fodder 731230 Kg Green –2359204 Kg.</p> <ul style="list-style-type: none"> Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24, which was incurred by APSEZ. Grass Land development: 213 acres of gauchar land has been cleaned and

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								<p>allocated for Grass land development with strong Community Contribution and Mobilization.</p> <ul style="list-style-type: none"> • Other than this dedicated security guard with gate system deployed by APSEZ across the coastal area and no any unauthorized persons allowed within coastal as well as mangrove areas. • APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on July 26th 2023 and World Nature Conservation Day on 28th July 2023 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report of day celebration was submitted along with half yearly compliance report for the period of Apr'23 to Sep'23..

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							<p>According to NCSCM Mangrove monitoring study report March 2021, distribution of mangroves in Kotdi, Baradi Mata, Navinal, Bocha and Khari creeks and also in Bocha island was studied using Google earth images (2017 March and 2019 Sep). The data obtained for 2017 i.e., 2398 ha was compared with data reported for 2016 (Dec) - 2017 (Jan & Feb) i.e., 2340 ha in the Conservation plan submitted earlier. The Google earth showed a marginal difference of + 58 ha (compared to earlier 2016-17 data) which shows 2.4% higher and the difference can be considered as insignificant. Further for both the start year (2017 March) and the end year (Sep.2019) Google earth image was used as a source and therefore, the results will be quite acceptable for assessment. With regard to overall health of mangroves in the creeks in and around APSEZ, it was found that there was an increase of mangrove cover between March 2017 and Sep 2019 to an extent of 256 ha which is about 10.7% increase in mangroves. Hence overall mangrove cover was considered as 2596 Ha in year 2019.</p> <p>Now, according to GUIDE Mangrove monitoring study report November 2023 (The Report was submitted during last EC compliance report submission Apr'23 to Sep'23), the distribution of mangroves in Kotadi, Baradi Mata, Navinal, Bocha and Khari creeks as well as in the Bocha island was studied using LISS IV satellite images for the duration of March 2019 to March 2021. The</p>

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							<p>mangrove cover in the creeks in and around APSEZ showed a positive trend from March 2019 to March 2021, with an overall increase of 52.79 ha (1.9%) compared to the cover during the year 2019. The total mangrove cover during 2019 was 2670 ha which has increased to 2723 ha during the year 2021.</p> <p>Hence, overall increase in mangrove cover area in creek system in and around APSEZ from 2011 (2094 Ha) to 2021 (2723 Ha) is 629 Ha (30%).</p> <p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ is in process to carry out the study for Monitoring of Mangrove Distribution of creeks in and around APSEZ area from 2021 to 2023.</p> <p>Other than this Adani Foundation – CSR Arm of Adani Group at Mundra-Kutch has initiated multi-species plantation of mangroves in Luni village in association with GUIDE, Gujarat. During 2018-2019 (Phase-I) multi-species mangrove plantation was carried out in 10 ha, during Phase-II (2019-2020) it was 02 ha and during Phase III (2020-2021) it is 01 ha. During FY 2021-22, 03 ha area coastal stretches have been planted with species. During current FY 2022-23, 04 Hecter plantation has been planted with various species. Total 20 Ha. multi-species mangrove plantation has been carried out till March-23 association with M/s. GUIDE,</p>

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							<p>These plantations are diligently maintained and continually monitored. Notably, these forests have evolved into a thriving habitat for various marine and migratory bird species, enriching the local ecosystem.</p> <p>Mangrove plantation done at Luni Sea coast with school students on "International Day for the Conservation of the Mangrove Ecosystem" on 26th July-2023 and Bhareswar sea coast area with fisher folk community on "World Nature Conservation Day" on 28th July-2023.. Web talk show was organized on the occasion of "International Mangrove days On Multi species Mangrove biodiversity with Joint effort of GUIDE and Adani Foundation, Mundra. 8th June is celebrated as world ocean day. Adani foundation had celebrated the world ocean day by coastal cleaning activity at Mandvi Beach.</p>
9.3	Outfall from the thermal power plants desalination and CETP	Level-1	A detailed marine hydro-dynamic and dispersion modelling of the study area indicates	All approved marine outfalls shall be monitored for salinity, temperature and other designated parameters as	APSEZ and Concerned Industry	Continual Process	<p>Presently marine monitoring is being carried out by the Adani power plant at the marine outfall locations and reports are being submitted to the concerned authorities on regular basis.</p> <p>APSEZ is carrying out Marine monitoring once in a month at 9 locations in deep sea by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. The</p>

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	would pose certain level of impact on the marine environment.		that the background temperature and salinity at mangrove conservation area will not increase from the prevailing background levels as the outfalls are located far away. APSEZ and respective power plants in the study area have been monitoring the marine water quality status on monthly basis for the stipulated	per consent to establish issued by GPCB. Existing marine environmental monitoring program shall be continued.			<p>analysis reports of the same are being submitted to the concerned authorities on regular basis.</p> <p>Adani power plant is also doing marine water quality at 5 locations (2 locations at outfall location) in deep sea by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment & Research Labs Pvt. Ltd. The analysis reports of the same are being submitted to the concerned authorities on regular basis. The summary of marine water quality is shown above.</p> <p>The comparison of marine water results between CIA and current monitoring data are as below.</p> <table border="1"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Unit</th> <th colspan="2">Max</th> <th colspan="2">Min</th> </tr> <tr> <th>CIA</th> <th>Present</th> <th>CIA</th> <th>Present</th> </tr> </thead> <tbody> <tr> <td>Temp.</td> <td>°C</td> <td>29.8</td> <td>30</td> <td>24.2</td> <td>30</td> </tr> <tr> <td>Salinity</td> <td>ppt</td> <td>40</td> <td>36.7</td> <td>35.2</td> <td>4</td> </tr> </tbody> </table> <p>As per above results, it can be seen that there is no major deviation in the concentration of parameters and thus indicates that impacts are insignificant.</p>	Parameter	Unit	Max		Min		CIA	Present	CIA	Present	Temp.	°C	29.8	30	24.2	30	Salinity	ppt	40	36.7	35.2	4
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			environmental and ecological parameters.				
9.4	<p>Terrestrial Ecology: Study area doesn't have any notified national parks or ecological sanctuaries. Since the area falls under dry deciduous shrubs. Due to scanty rains in the area, the overall natural green-cover/vegetation in the</p>	Level-1	<p>APSEZ has developed greenbelt in an area of 550ha as against the committed area of 430ha. A dedicated nursery is set up to promote plantation. APSEZ have undertaken a plantation with about 9.6 Lakh fully grown trees.</p>	<p>The compensatory afforestation area to be monitored annually to check the survival rate of the plantation.</p>	APSEZ	Continual Process	<p>APSEZ has developed its own "Dept. of Horticulture" which is taking measures/ steps for terrestrial plantation/greenbelt development. APSEZ, Individual SEZ Industries and Adani Power Plant has developed approx. 700 Ha. area as greenbelt within the APSEZ area including SEZ industries & Adani Power Plant.</p> <p>Dedicated horticulture department is maintaining and monitoring the terrestrial green belt development on regular basis to check the survival rate of plantation.</p> <p>Total expenditures of the horticulture dept. of APSEZ during the FY 2023-24 within APSEZ is INR 904 lakhs.</p>

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	area is very small.						
10	Socio-economic aspects						
10.1	Population growth in the Mundra region was reported to be in the order of 85% during the past decade (2001-2011). Further expansion of the urban area could be possible due to induced economic growth in the region. Increase in population will have a additional need for public	Level-1	Dedicated townships are developed within APSEZ area with necessary community infrastructures such as hospital, school, recreational facilities, sewage treatment and waste collection facilities. Adani Foundation has been undertaking various CSR programs under the	The existing townships will be expanded to accommodate about 4lakh people when the project activity is fully developed.	APSEZ	As and When Required	<p>APSEZ has developed two townships (Shantivan and Samudra) accommodating 2302 households and associated infrastructure facilities. Accommodation is made available for all interested employees working within Adani group & SEZ industries. Out of which 95.57% Occupancies are accommodated within the townships and rest are available for employees working within APSEZ.</p> <p>At present 46 nos. of industries (processing & non-processing) are operating within the SEZ. Township facilities are also made by SEZ industries within Mundra town for their employees having basic infrastructure facilities and requirements. Most of the employees working in SEZ industries are residing in Mundra township having all basic requirements and associated facilities.</p> <p>The existing social infrastructure facilities are adequate to accommodate the people considering present APSEZ development. The existing townships with associated facilities will be expanded as per requirement. Other infrastructure facilities have been developed for people are as follows.</p> <ul style="list-style-type: none"> Multi-Specialty Hospital

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	infrastructure in the region.		principal themes such as education, community health, sustainable livelihood and rural infrastructure. About Rs. 97 Cr has been spent on various CSR activities in the Mundra region since 2010. Similar community development programs (based on need based assessment) will be continued in future as well with allocation of appropriate budget.				<ul style="list-style-type: none"> • School • Commercial complex • Religious place <p>APSEZ is actively working with local community (including fishermen community) around the project area and provides required support for their livelihood and other concerns through the CSR arm – Adani Foundation in the main five persuasions is mentioned below.</p> <ul style="list-style-type: none"> • Community Health • Sustainability Livelihood – Fisher Folk • Education • Rural Infrastructures • Skill Development <p>Adani foundation has spent approx. INR 8515.06 lakhs from April – 2018 to March – 2024 for CSR activities which also includes cost of rural infrastructure projects.</p> <p>Major works carried out since April 2018 as a part of CSR activities are as below.</p> <p><u>Current FY 2023-24 infrastructure development activities:</u></p>

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							<ul style="list-style-type: none"> • 377 - AC Roof sheet support to Fisherfolk Vasaha 1700+ Benefited. • 2 Development of Common Gathering flooring work – 4000+ Benefited. • 195 Stall – Vegetable market– 900+ Benefited. • Solar Panel System at Mundra – 600+ Benefited. • Maintenance, Fencing & Material Support - 30+ Benefited. Renovation of Shed at Shekranpir Bhopavandh - 2000+ Benefited. • Renovation Check dam and CC road work at Nani Khakhar – 200+ Benefited. • Renovation of High School at Zaarapa – 2200+ Benefited. • Construction of Pipe Culvert – 400+ Benefited. • Construction of chain-link fencing at Mangra village – 300 people benefited. • Gaushala Shed at Zarapara village – 400 cattle benefited. • Renovation of approach road, Zarpara – benefiting 400 villagers. • Renovation of Civil and Electrical Work at ITI, Mundra - 500 students benefited. • Construction of 21 Borewell Recharge in Nagmati River - 150+ farmer benefited. • Check dam Desilting and restoration at Nana Bhadiya – 100+ farmers benefited. • Renovation of Check dam at Pavadiyara village - 300 people benefited.

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							<ul style="list-style-type: none"> • Renovation of Balwadi at Juna bandar & Luni bandar. • 185 RRWHS construction is ongoing in various villages - will benefit 1300+ residents. • Supply & installation of Solar panel (3.25 KV) at CGP, Mundra – benefiting 1200 people. • Development of Model Farm in Zarpara, Siracha & Mangra – Benefiting 300 people. • Renovation of approach road at various fisherfolk vasahat. <p><u>Last FY 2022-23 infrastructure development activities:</u></p> <ul style="list-style-type: none"> • 40 RRWHS structure have been completed • 208 Bore-well recharging activity is completed. • Percolation well Recharging work at Bhadiya & Mota Kandgra village. • Sluice gate Construction to Control Flood during Flooding at Khoydivadi Vistar Bhujpur. • Pond Beatification and Bund Strengthening at Bhujpur village. • Check dam gate valve construction at Bhujpur which controlled more than 350 MCFT water to go into sea and get recharged current year. • commissioning of Community Training Centre at Shekhadiya. • Two Pond Deepening at Zarpara under Amrut Sarovar Yojna.

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							<ul style="list-style-type: none"> • Ground recharge activities (pond deepening work for 61 ponds) individually and 26 ponds under Sujlam Suflam Jal Abhiyan. • Pond Pipeline work at Prasla Vistar Zarpara which increase recharge capacity more than 25% in 100 hector area. • JCB & Hitachi Machine Support for Pre-Monsoon activities. Repairing and Maintenance work of Approach at Luni, Bavdi and Navinal Fishermen Bandar. • 3 Re-strengthening of Approach Road. • Renovate Blood storage Lab CHC Mundra • Renovation Blood storage Lab CHC Mundra. • Constructed 2 nos. of CC Road of 700 mtr. • Constructed Community Training center Shekadiya. • Constructed 2 nos. Disable Widow Toilet Block • Installed R.O. Plant at Mokha with capacity 1000ltr /HR. • Constructed 4 nos. Common gathering Open Shed • Constructed 03 nos. of Water Tank at Luni Bandar. • Developed of Cricket Ground at Hatdi Village • Pond Deepening work at Vadala & Mota Bhadiya • Artificial recharge borewell in Borana, Mangara & Dhruh village. • Under Dignity of Drivers Project, Adani Foundation has constructed Resting Shed for Drivers entering in SEZ Premises. Total 50 beds are constructed,

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10.2	The overall sex ratio was found to reduce by 28% in the Mundra taluk (study area) during the period 2001 - 2011. This could be attributed to increase in influx of working men in the region due to rapid economic development. Similar trend might continue in future due to induced	Level-2	Adani foundation is taking up several girl child education programs as part of CSR activities to create awareness about girl child protection.	Suitable regional level awareness programs on the girl child protection and encouragement programs in line with state and national policies shall be adopted under Corporate Social Responsibility programs in association with district authorities.	APSEZ, Other development projects and District Administration*	Long Term	<p>Major works carried out since April 2018 as a part of CSR activities to create awareness about girl child protection are as below.</p> <ul style="list-style-type: none"> The Adani Foundation provided scholarship support to motivation and encouragement of fishermen boys and girls for higher education under this program. We extend 100% fee support to female candidates and 80% to male candidates."W. Student Benefitted Under Uthhan Project: <table border="1"> <thead> <tr> <th>Utthan Initiatives</th> <th>Benefited</th> </tr> </thead> <tbody> <tr> <td>Strengthening government Primary & High schools</td> <td>31 Villages, 77 Schools, 12000+ Students, Efforts for Increase Gunotsav result & Board result.</td> </tr> <tr> <td>Appointing an Utthan sahayak</td> <td>70+ Utthan sahayak works as catalyst. Students: Teacher ration decrease.</td> </tr> <tr> <td>Mainstreamed Progressive learner</td> <td>Assessment: 6982, Progressive learners: 2541, Mainstreamed: 1278.</td> </tr> <tr> <td>Providing required</td> <td>Sports Kit, Music Kit, TLM Kit, Science Kit provided in schools.</td> </tr> </tbody> </table>	Utthan Initiatives	Benefited	Strengthening government Primary & High schools	31 Villages, 77 Schools, 12000+ Students, Efforts for Increase Gunotsav result & Board result.	Appointing an Utthan sahayak	70+ Utthan sahayak works as catalyst. Students: Teacher ration decrease.	Mainstreamed Progressive learner	Assessment: 6982, Progressive learners: 2541, Mainstreamed: 1278.	Providing required	Sports Kit, Music Kit, TLM Kit, Science Kit provided in schools.
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							<p>child, Sex Ratio, Gender Equality and laws regarding Child abortion. This initiative was well accepted by community and we have observed a visible change in their mindset.</p> <ul style="list-style-type: none"> • During the year various activity like, Covid-19 awareness in village & Slum Area, Menstrual Hygiene Day, Breastfeeding Week, National Deworming Day, National Nutrition Month had been celebrated. • Project Suposhan is initiated with the Motive to focus on adolescent and Reproductive age women nutrition part. Till date covered more than 12500 women and 8700 adolescents under this Project and brought them to considerable status. Curb malnutrition amongst Children, Adolescent girls and Women in our CSR villages. <ul style="list-style-type: none"> ✓ 204 beneficiaries covered in Breastfeeding Week ✓ 320 beneficiaries covered in National Deworming Day ✓ 20 villages covered in celebration of NATIONAL NUTRITION MONTH ✓ 42 FAMILY COUNSELLING ✓ 2059 Women participated in celebration of Women's Day week. • To reduce malnutrition and anemia amongst Children 95 % & adolescent girls and pregnant & lactating women by 70 % in three years • Reduction IMR and MMR

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							<ul style="list-style-type: none"> Support Awareness & Cover 100 % Vaccination taken by Child & women. SuPoshan Thanksgiving program was organized. In this webinar DDO, CDPO Mundra and other dignitaries remained present and appreciated the efforts to overcome malnourishment in Mundra and Bitta. The National girl child day was celebrated with ICDC Department with Vahli Dikri Yojna form filling, paediatric health camp and Baby health kit distribution at Mundra. Mrs. Ashaben-CDPO Mundra was remain present in this event. Total 61 forms has received approval letter from GOG and 15 forms filled upon the same day. Adani Foundation is working with 15 Self-help group and supporting to develop entrepreneur skills to become self reliant, sourcing more than 350 women to absorb in various job –this will give them identity, confidence and right to speak in any decision for home, village and working area. <p>About INR 8515.06 lakhs has been spent on various CSR activities in the Mundra region since April 2018 to till March 2024 including cost of community health and education for woman and girl child.</p>
	Due to economic growth		Adani hospitals, Mundra is setup by	APSEZ will explore other possibilities to augment the primary and	APSEZ	Long Term	Adani hospitals (Multi-specialty), Mundra is having 110 bed facility and same is setup by Adani group near Samudra township.

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10.4	leading to rapid urbanization, which prompts the need for healthcare facilities in the region. For an influx of 6 lakh people from APSEZ operations and additional 3 Lakh from induced growth by the year by 2030 (fully developed scenario), total hospitals facilities with about 540 beds would be required.	Level-2	Adani group near Samudra township with a goal to provide primary and secondary health care services to Adani group employees and the local populace of Mundra. The existing 100 bed Adani hospital at Mundra has been catering the services ranging from wellness and preventative care.	secondary healthcare facilities in future depending on the growth scenario at APSEZ development.			<p>Primary health center and community health center are in place within the Mundra taluka.</p> <p>Other than this Adani foundation is doing various activities as part of community health. The details of last year are as below.</p> <ul style="list-style-type: none"> • Mobile Health Care Units and Rural Clinics • 07 Rural Clinics • 05 villages of Mundra & 02 village Mandvi block has benefited by rural clinic service. • Total Patients Benefitted FY 23-24 : -23327 (direct & indirect) by Mobile van and rural clinic • 2 financially challenged patients has been supported with Dialysis treatment at 124 Times which added day in their Life. • Provided 41,546 medical health services and conducted health awareness camps for 763 High school students. • Cataract-Free Mundra: The initiative is a dedicated effort to eradicate cataract-related vision impairments specially focused on Senior citizen through Meticulous planning as below. <p>Lives Impacted: - 1131</p> <ul style="list-style-type: none"> ➤ Comprehensive Eye Screenings at Village level ➤ Cataract Surgeries to GKGH, Bhuj

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							<ul style="list-style-type: none"> ➤ Post-Operative Care and Follow-up ➤ 5 successful Operation <p>Health camp:</p> <ul style="list-style-type: none"> • Specialty camps, Eye checkup camps, Blood donation camp, Anti-tobacco awareness camp, TB screening, and other are conducted in core villages as well as in labour colonies. • Specialty health (Gynec, ophthalmic, specialty health camp): - 5795 Patients Benefited. • General health camp: - 1618 Patients benefited. • Blood Donation Camp: 1715 people have donated blood. • Conducted health programs for students, engaging 763 participants, and held sessions on Personal Health & Hygiene Awareness, addressing critical health issues and promoting overall well-being. • Women's Health: Provided health services to more than 2610 women benefitted through Menstrual & Mental Health Awareness Drive. • Dialysis Support: During this year, 2 patients were supported for regular dialysis with 124Times which added day in their Life. • Medical Supports: 1007 beneficiary in 35 village. • International year of Millets – 2023: To promote millet culture and raise awareness about its benefits in Mundra, we organized a Millet

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							<p>Competition across nine villages. Over 715 women took part in the competition, while 2200 benefited from awareness sessions. Through this initiative, 300 indigenous millet recipes were showcased, highlighting the potential for sustainable and nutritious dishes in our daily diets.</p> <ul style="list-style-type: none"> • Ayushman card facilitation: Ayushman card issued to 5584 for 25 village of 686.50 Cr. health insurance. • Preventive health Campaign the Adani Foundation is focusing on providing preventive healthcare to women and adolescent girls, raising awareness of Physical and Mental health issues, promoting healthy behaviors, implementing Menstrual hygiene initiatives and Millet consumption for healthy body. • Sample Survey Report 2023-24 <ul style="list-style-type: none"> ○ 55% Never heard about Menstrual hygiene. ○ 60% Are using cloths on regular basis. ○ 36% Had never used sanitary pads. ○ 68% Had no information about UTI. ○ 30% Never used millets in their diet. ○ 60% Never heard about millets or it's benefits. • 2222 –Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test.

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							<ul style="list-style-type: none"> For Preventive health care General and multispecialty camps Pediatric camp, General Health camps in 7 villages and Super specialist camp which benefitted more than 4690 patients of Mundra & Mandvi Taluka. Cattle Health Camp: Adani Foundation and Animal Husbandry department Veterinary Jointly organizing cattle health Awareness and vaccination programs in 24 Villages of our periphery villages with total 18903 cattle benefitted, and 18870 cattle vaccinated. Total 982 cattle owners benefited for Preventive Health Care & Fodder Support Program Present Hospital facilities are adequate to avail the medical treatment for Mundra region considering present development. Other Occupational Health centres, primary health centres and community health centres are also in place in Mundra to take care the people residing in Mundra. Adani group is also operating high quality health care services to the people of Kutch at G. K. General Hospital, Bhuj having 750 beds facilities on public private partnership (PPP) model, which is 60 km far from Mundra. <p>APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the future development at APSEZ.</p>
	Due to rapid economic		APSEZ has been giving				<p><u>Current FY 2023-24 fishermen livelihood activities development activities:</u></p>

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10.5	<p>development in the region, several employment opportunities can be generated to the local people.</p> <p>When the area is fully developed by the end of 2030, the working population of the Mundra taluk would increase from current level of 55,000 to as high as 4,00,000, which will be 45% of the total envisaged population in Mundra Taluk</p>		<p>preferences to people from Gujarat for providing employment opportunities based on eligibility and skills. In Mundra, special programmes have been conducted by Adani Foundation to enhance the employability of youth from fisherfolk communities. Based on the need assessment results, several livelihood options have been introduced by the Adani Skill</p>	<p>APSEZ is committed to provide support for fishermen livelihood activities and has submitted a detailed 5 years plan to MoEF&CC with a total budget of Rs.13.5 Cr.</p>	APSEZ	Short Term	<p>Overall Persistent efforts for Fisherman development:</p> <ul style="list-style-type: none"> • 598 Education Kit Support • 273 Fisherman Shelter Support • 1,247 Vehicle transportation support of Mundra and Mandvi taluka • 106 Cycle Support to high school going students. • 613 Scholarship Support • 419 Youth Employment • 195 Linkages with Fisheries Scheme • 3,534 Ramatotsav Community Engagement • 56,523 Man days Mangroves Plantation <ul style="list-style-type: none"> • Vehicle Transportation Facilities: 146 Students supported Mundra Taluka and 58 Students supported at Mandvi Taluka during the compliance period. • Education Kits Support: Education Kits including notebooks, guides, and bags, to fisherfolk students studying in 9th to 12th standard to enhance their learning experience (57 nos. students benefitted). • Educational Awareness Sessions: Through targeted awareness sessions in Fisherfolk Vasahats, we promote the transformative power of education, with a particular focus on

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	by the end of 2030.		Development Centre, Mundra. In these centres, youth can join and get vocational training for a number of technical and non-technical skills. An industrial Training Institute is set up at APSEZ, Mundra, to enhance the skill levels of the local youth to maximum possible extent.				<p>advancing girl-child education. (487 Students motivated for high school Education).</p> <ul style="list-style-type: none"> • Scholarship Support: Provide scholarship support to 31 deserving students, covering their higher secondary school fees. Emphasizing gender equality, we offer 100% fee support to female candidates and 80% to male candidates. • Cycle Support: Overcoming transportation obstacles, our cycle support initiative enables six 9th standard fisherfolk students from Juna Bandar to continue their education with ease. • Assisting During Emergencies: Fisherfolk Home were significantly damaged by the Biporjoy Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery. (336 Fisherfolk house benefited) • Fostering Youth Employment: At APSEZ Mundra, our mission revolves around providing sustainable employment opportunities for the local fishing community. We serve as a bridge between industries and Fisherfolk youth, facilitating job placements to enhance livelihoods. This year, we have successfully engaged 115+ Fisherfolk youth, paving the way for a brighter future. (115+ Fisherfolk youth employed) • Strengthening Fisherfolk women: Through comprehensive health and hygiene initiatives, we empower Fisherfolk women. Our programs include family planning resources, menstrual

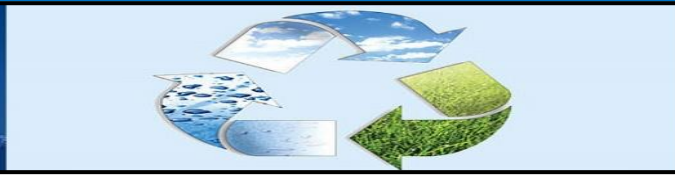
S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							<p>hygiene workshops, nutrition advocacy, and health awareness sessions covering vaccinations, clean water access, and mental health support. (449 Women benefited)</p> <ul style="list-style-type: none"> • Potable Water Distribution: Providing potable water facilities to 9 Fisherfolk Vasahats daily, either through water tankers or by establishing linkages with the nearest Gram Panchayat. This initiative benefits over 5000 Fisherfolk, significantly improving their health and productivity. (5000+ Population benefited). • Cement Roof Sheet Support: fisherfolk Home were significantly damaged by the Bipor Cyclone. In response to that we provided 2696 cement sheets to 336 fisherfolk households of Juna Bandar, Luni, and Randh Bandar to support their recovery." • Potable water Distribution: Providing access of potable Drinking water Facilities to Nine fisherfolk vasahat on Daily bases, either By Water tanker or Linkage with Nearest Gram panchayat. • More than 5000 Fisherfolk Population are getting benefit which impact on their health and efficiency. • Water distribution to Luni & Bavadi Bandar Fisherfolk Vasahat: 35000 KL water for 936 people. • Sagar Mitra Card: Introduced the 'Sagar Mitra Card' to simplify access for Fisherfolk to specific fishing routes within APSEZ. This digital card is

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							<p>connected to a digital punching machine located at designated entry points. Initially, we have implemented this system for Navinal Fisherfolk, and so far, we have issued a total of 57 Sagar Mitra Cards."</p> <ul style="list-style-type: none"> Government scheme Awareness session was held in association with Fisheries department Bhuj to facilitate pagadiya fishermen by providing fishing kits to seven Fishermen. The coordination was made by Adani Foundation to process application. More than 35% of enrolled students in AVMB come from the Fisherfolk community. Youth Employment: Our main objective is to offer sustainable employment opportunities to the local fishing community in APSEZ Mundra. We bridge the gap between industries and Fisherfolk youth by facilitating job placements. Currently, we have successfully engaged a total of 12 Fisherfolk youth in this endeavor. Vidya Sahay Yojana – Scholarship Support: All basic education supportive facilities have been created to promote education in fisher folk community. We are deeply committed to empowering the future of fisherfolk communities through education. To this end, we provide scholarship support to 30 deserving students, covering their actual school fees. In our unwavering commitment to promoting gender equality and advancing girl

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							<p>child education, we extend 100% fee support to female candidates and 80% to male candidates."</p> <ul style="list-style-type: none"> • During FY2023-24 Approx. INR 122.32 lakh were spent for Fisherfolk Amenities work in different core areas • Till FY 2023-24 , Adani Foundation has done total expenditure of INR 1460.51 lakh for Fisherfolk Amenities work in different core areas. <p>APSEZ is carrying out various initiatives specific to the Fisherfolk community which includes:</p> <ul style="list-style-type: none"> • Vidya Deep Yojana • Vidya Sahay Yojana – Scholarship Support • Adani Vidya Mandir • Fisherman Approach in SEZ • Machhimar Arogya Yojana • Machhimar Kaushalya Vardhan Yojana • Machhimar Sadhan Sahay Yojana • Machhimar Awas Yojana • Machhimar Shudhh Jal Yojana • Sughad Yojana • Machhimar Akshay kiran Yojana • Machhimar Suraksha Yojana • Machhimar Ajivika Uparjan Yojana • Bandar Svachhata Yojana <p>These initiatives are planned for the period 2016 – 2021 with a committed expense of INR 13.5 Cr as</p>

S. No.	Identified environmental and social impacts for the fully developed scenario (year 2030)	Type of Impact & Magnitude	Environment management plans adopted or being adopted by APSEZ as per permits, clearances, applicable regulations and guidelines etc.	Additional Risk Mitigation Measures/ESMP	Responsible agency	Timeframe for implementation	Compliance
							<p>submitted earlier in detail in the report namely "Silent Transformation of Fisher folk at Mundra",</p> <p>Till, FY 2023-24 approx. 14.61 Cr. INR, has already been spent in support for fishermen livelihood activities. Further, details regarding the expenditure incurred against the commitment are attached as Annexure - 9.</p>

Annexure - 6



“Half Yearly Environmental Monitoring Reports “

For,
adani
Ports and
Logistics

M/S. ADANI PORTS & SEZ Limited.

Notified SEZ area, Tal. – Mundra, Dist. – Kutch – 370421.

Monitoring Period: October – 2023 to March - 2024

Submitted By



UniStar Environment & Research Labs Pvt. Ltd.

White House, Near GIDC Office, Char Rasta, Vapi, Gujarat, India – 396195



RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	PUB ADANI HOUSE STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Oct-23		Nov-23		Dec-23			
			09-10-2023	23-10-2023	07-11-2023	22-11-2023	07-12-2023	26-12-2023		
1.	pH @ 25 ° C	--	7.42	7.21	7.06	7.16	7.18	7.29	6.5 to 9	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Total Suspended Solids	mg/L	16	18	17	18	16	18	100	APHA 23 rd Ed.,2017,2540-D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	15	16	16	17	15	16	30	APHA 23 rd Ed,2017,5210-B 5-6
4.	Residual chlorine	mg/L	0.84	0.86	0.86	0.76	0.77	0.81	0.5 Min.	APHA 23 rd Ed.,2017,4500-CI-B
5.	Fecal Coliform	MPN Index/100ml	110	110	110	110	110	110	1000	IS 1622: 1981


Continue...

RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	PUB ADANI HOUSE STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Jan-24		Feb-24		Mar-24			
			12-01-2024	27-01-2024	09-02-2024	26-02-2024	06-03-2024	18-03-2024		
1.	pH @ 25 ° C	--	7.22	7.16	7.33	7.42	7.31	7.42	6.5 to 9	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Total Suspended Solids	mg/L	18	16	18	18	16	16	100	APHA 23 rd Ed.,2017,2540-D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16	17	16.8	16.9	16.2	17.5	30	APHA 23 rd Ed,2017,5210-B 5-6
4.	Residual chlorine	mg/L	0.84	0.82	0.86	0.74	0.72	0.82	0.5 Min.	APHA 23 rd Ed.,2017,4500-CI-B
5.	Fecal Coliform	MPN Index/100ml	110	110	70	80	110	90	1000	IS 1622: 1981



Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	SAMUNDRA TOWNSHIP STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Oct-23		Nov-23		Dec-23			
			09-10-2023	23-10-2023	07-11-2023	22-11-2023	07-12-2023	26-12-2023		
1.	pH @ 25 ° C	--	7.29	7.44	7.21	7.44	7.38	7.44	6.5 to 9	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Total Suspended Solids	mg/L	18	20	20	18	18	20	100	APHA 23 rd Ed.,2017,2540-D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16	15.5	16.3	16	16	16	30	APHA 23 rd Ed,2017,5210-B 5-6
4.	Residual chlorine	mg/L	0.82	0.78	0.74	0.82	0.84	0.83	0.5 Min.	APHA 23 rd Ed.,2017,4500-CI-B
5.	Fecal Coliform	MPN Index/100ml	90	90	90	90	90	90	1000	IS 1622: 1981

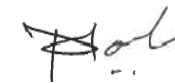
Continue...

RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	SAMUNDRA TOWNSHIP STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Jan-24		Feb-24		Mar-24			
			12-01-2024	27-01-2024	10-02-2024	26-02-2024	07-03-2024	18-03-2024		
1.	pH @ 25 ° C	--	7.34	7.33	7.42	7.35	7.38	7.44	6.5 to 9	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Total Suspended Solids	mg/L	18	18	20	18	20	18	100	APHA 23 rd Ed.,2017,2540-D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16.5	15.9	16.4	16.6	15.5	16.4	30	APHA 23 rd Ed,2017,5210-B 5-6
4.	Residual chlorine	mg/L	0.82	0.83	0.82	0.84	0.75	0.78	0.5 Min.	APHA 23 rd Ed.,2017,4500-CI-B
5.	Fecal Coliform	MPN Index/100ml	90	90	110	90	70	80	1000	IS 1622: 1981



Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	North Gate STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Oct-23		Nov-23		Dec-23			
			09-10-2023	23-10-2023	08-11-2023	22-11-2023	07-12-2023	26-12-2023		
1.	pH @ 25 ° C	--	7.32	7.26	7.34	7.39	7.31	7.36	6.5 to 9	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Total Suspended Solids	mg/L	22	22	23	21	22	20	100	APHA 23 rd Ed.,2017,2540-D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16	15	16.3	16	15	15	30	APHA 23 rd Ed,2017,5210-B 5-6
4.	Residual chlorine	mg/L	0.78	0.76	0.78	0.79	0.81	0.8	0.5 Min.	APHA 23 rd Ed.,2017,4500-CI-B
5.	Fecal Coliform	MPN Index/100ml	50	50	50	50	50	50	1000	IS 1622: 1981

Continue...

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RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	North Gate STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Jan-24		Feb-24		Mar-24			
			12-01-2024	27-01-2024	10-02-2024	26-02-2024	06-03-2024	19-03-2024		
1.	pH @ 25 ° C	--	7.4	7.24	7.33	7.36	7.44	7.45	6.5 to 9	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Total Suspended Solids	mg/L	20	22	22	20	20	22	100	APHA 23 rd Ed.,2017,2540-D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16	16.2	16.1	16	15.5	16.5	30	APHA 23 rd Ed,2017,5210-B 5-6
4.	Residual chlorine	mg/L	0.78	0.8	0.78	0.74	0.75	0.81	0.5 Min.	APHA 23 rd Ed.,2017,4500-CI-B
5.	Fecal Coliform	MPN Index/100ml	50	50	40	34	22	33	1000	IS 1622: 1981



Mr. Nilesh Patel
Sr. Chemist




Mr. Nitin Tandel
Technical Manager

Results of Ambient Air Quality Monitoring

Name of Location		PUB / Adani House						
Sr. No.	Date of Monitoring	Parameter with Results						
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	HC µg/m ³	Benzene µg/m ³
1.	02-10-2023	71.26	28.95	21.30	24.58	0.75	--	NOT DETECTED
2.	05-10-2023	68.79	26.35	20.57	23.97	0.70	2.56	NOT DETECTED
3.	09-10-2023	73.24	26.36	20.75	25.62	0.68	2.87	NOT DETECTED
4.	12-10-2023	76.48	29.60	22.42	27.25	0.70	2.74	NOT DETECTED
5.	16-10-2023	81.63	30.12	21.87	25.64	0.80	2.97	NOT DETECTED
6.	19-10-2023	78.42	28.79	23.55	28.10	0.77	2.87	NOT DETECTED
7.	23-10-2023	75.11	25.38	20.32	25.86	0.71	2.58	NOT DETECTED
8.	26-10-2023	80.65	29.81	22.58	26.84	0.78	3.10	NOT DETECTED
9.	30-10-2023	77.26	27.44	22.93	26.76	0.75	2.89	NOT DETECTED
10.	02-11-2023	74.17	29.55	23.31	28.29	0.78	2.60	NOT DETECTED
11.	06-11-2023	72.35	27.42	22.50	26.95	0.72	2.45	NOT DETECTED
12.	09-11-2023	75.67	29.93	24.82	28.43	0.80	2.76	NOT DETECTED
13.	13-11-2023	78.15	31.48	25.63	30.15	0.85	2.85	NOT DETECTED
14.	16-11-2023	74.51	29.20	23.26	28.73	0.81	2.65	NOT DETECTED
15.	20-11-2023	72.88	27.41	21.85	26.38	0.76	2.46	NOT DETECTED

Continue...

Name of Location		PUB / Adani House						
Sr. No.	Date of Monitoring	Parameter with Results						
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	HC µg/m ³	Benzene µg/m ³
16.	23-11-2023	75.63	30.19	24.48	29.83	0.80	2.71	NOT DETECTED
17.	27-11-2023	70.11	26.54	21.10	26.55	0.72	2.40	NOT DETECTED
18.	30-11-2023	73.26	28.79	23.92	28.37	0.76	2.53	NOT DETECTED
19.	04-12-2023	72.47	27.91	21.82	25.73	0.70	2.39	NOT DETECTED
20.	07-12-2023	76.29	30.31	23.58	28.19	0.75	2.45	NOT DETECTED
21.	11-12-2023	80.53	30.95	24.04	28.97	0.81	2.61	NOT DETECTED
22.	14-12-2023	82.65	31.10	25.31	30.26	0.82	2.78	NOT DETECTED
23.	18-12-2023	78.71	28.27	23.98	28.21	0.79	2.65	NOT DETECTED
24.	21-12-2023	75.20	27.52	21.93	25.67	0.72	2.58	NOT DETECTED
25.	25-12-2023	68.93	26.69	20.86	24.79	0.69	2.36	NOT DETECTED
26.	28-12-2023	71.38	28.61	23.13	28.45	0.73	2.51	NOT DETECTED
27.	01-01-2024	74.54	30.13	22.46	26.21	0.79	--	NOT DETECTED
28.	04-01-2024	77.37	32.59	25.03	29.17	0.84	3.12	NOT DETECTED
29.	08-01-2024	75.19	31.63	23.84	26.96	0.80	2.94	NOT DETECTED
30.	11-01-2024	72.84	28.16	21.69	25.32	0.74	2.8	NOT DETECTED
31.	15-01-2024	76.25	30.54	24.98	28.73	0.83	2.89	NOT DETECTED

Continue...

Name of Location		PUB / Adani House						
Sr. No.	Date of Monitoring	Parameter with Results						
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	HC µg/m ³	Benzene µg/m ³
32.	18-01-2024	69.98	28.63	21.00	25.37	0.73	2.76	NOT DETECTED
33.	22-01-2024	67.37	27.57	20.69	24.15	0.70	2.62	NOT DETECTED
34.	25-01-2024	71.83	30.49	21.76	26.33	0.74	2.78	NOT DETECTED
35.	29-01-2024	73.24	32.73	23.54	28.16	0.77	2.82	NOT DETECTED
36.	01-02-2024	76.57	32.81	23.12	27.37	0.79	2.98	NOT DETECTED
37.	05-02-2024	73.16	30.26	21.68	25.42	0.74	2.86	NOT DETECTED
38.	08-02-2024	70.62	28.96	20.21	24.38	0.69	2.71	NOT DETECTED
39.	12-02-2024	75.84	30.42	22.38	26.71	0.77	2.88	NOT DETECTED
40.	15-02-2024	72.68	29.82	21.45	24.60	0.69	2.64	NOT DETECTED
41.	19-02-2024	66.43	27.19	19.87	22.59	0.68	2.51	NOT DETECTED
42.	22-02-2024	69.15	28.79	20.62	23.10	0.70	2.69	NOT DETECTED
43.	26-02-2024	73.54	31.56	22.84	26.62	0.79	2.82	NOT DETECTED
44.	29-02-2024	70.69	30.11	20.03	24.27	0.72	2.73	NOT DETECTED
45.	04-03-2024	67.50	28.42	20.84	24.15	0.60	2.69	NOT DETECTED
46.	07-03-2024	65.84	25.73	19.87	22.58	0.68	2.45	NOT DETECTED
47.	11-03-2024	63.95	26.45	22.27	26.42	0.60	2.41	NOT DETECTED

Continue...

Name of Location		PUB / Adani House						
Sr. No.	Date of Monitoring	Parameter with Results						
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	HC µg/m ³	Benzene µg/m ³
48.	14-03-2024	67.35	29.13	20.57	24.48	0.65	2.68	NOT DETECTED
49.	18-03-2024	69.54	30.26	22.85	25.92	0.59	2.74	NOT DETECTED
50.	21-03-2024	74.13	27.41	23.36	26.10	0.70	2.85	NOT DETECTED
51.	25-03-2024	70.54	25.95	22.48	24.65	0.67	2.53	NOT DETECTED
52.	28-03-2024	65.48	27.30	19.84	23.39	0.61	2.49	NOT DETECTED
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0	---	5.0
Test Method		IS - 5182, Part-23	UERL/AIR/SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10	Gas analyzer	IS - 5182, Part - 11



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Ambient Air Quality Monitoring

Name of Location		Adani Guest House				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
1.	02-10-2023	70.17	24.68	11.59	16.32	NOT DETECTED
2.	05-10-2023	74.26	25.51	13.64	18.02	--
3.	09-10-2023	77.39	26.91	12.64	17.43	--
4.	12-10-2023	82.17	28.63	13.53	18.11	--
5.	16-10-2023	78.98	27.64	12.76	17.84	--
6.	19-10-2023	80.27	28.56	13.57	18.15	--
7.	23-10-2023	74.68	25.82	12.53	16.94	--
8.	26-10-2023	77.53	28.21	11.98	16.38	--
9.	30-10-2023	71.96	25.31	12.60	17.32	--
10.	02-11-2023	73.54	26.36	11.68	15.26	--
11.	06-11-2023	76.32	27.25	12.59	16.92	--
12.	09-11-2023	74.86	24.19	11.48	15.64	--
13.	13-11-2023	78.10	26.84	13.56	17.88	--
14.	16-11-2023	75.46	24.54	11.47	16.29	--
15.	20-11-2023	77.68	26.91	12.55	15.93	--

Continue...

Name of Location		Adani Guest House				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
16.	23-11-2023	80.15	28.49	13.62	18.1	--
17.	27-11-2023	73.79	23.91	11.76	16.5	--
18.	30-11-2023	78.38	25.32	13.58	17.86	--
19.	04-12-2023	76.13	27.42	12.15	16.48	--
20.	07-12-2023	79.65	28.25	13.48	17.53	--
21.	11-12-2023	75.48	26.83	12.62	15.89	--
22.	14-12-2023	73.58	25.31	11.95	15.13	--
23.	18-12-2023	70.17	23.95	11.47	14.83	--
24.	21-12-2023	75.39	25.42	12.37	16.12	--
25.	25-12-2023	78.53	26.19	13.62	17.11	--
26.	28-12-2023	80.15	28.31	13.68	17.64	--
27.	01-01-2024	83.21	30.56	14.18	18.39	NOT DETECTED
28.	04-01-2024	79.64	27.43	12.91	16.84	--
29.	08-01-2024	75.15	25.61	11.83	15.46	--
30.	11-01-2024	81.37	28.17	13.36	17.21	--
31.	15-01-2024	83.46	30.55	14.28	18.33	--

Continue...

MoEF&CC (GOI) Recognized Environmental Laboratory under the EPA-1986 (31.03.2023 to 22.09.2024)

QCI-NABET Accredited EIA & GW Consultant Organization

GPCB Recognized Environmental Auditor (Schedule-II)

ISO 9001 : 2015 Certified Company

ISO 45001 : 2018 Certified Company

Name of Location		Adani Guest House				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
32.	18-01-2024	78.76	26.23	12.88	17.1	--
33.	22-01-2024	81.28	29.04	13.59	17.95	--
34.	25-01-2024	77.35	26.20	11.89	15.58	--
35.	29-01-2024	79.62	28.78	12.47	16.56	--
36.	01-02-2024	75.36	27.53	12.84	17.16	--
37.	05-02-2024	72.69	26.84	11.92	15.89	--
38.	08-02-2024	77.16	28.69	12.43	17.85	--
39.	12-02-2024	83.29	30.52	14.12	18.31	--
40.	15-02-2024	80.46	28.88	13.75	17.97	--
41.	19-02-2024	78.91	27.96	13.26	17.48	--
42.	22-02-2024	75.91	25.73	11.85	15.67	--
43.	26-02-2024	79.58	28.39	13.64	16.82	--
44.	29-02-2024	75.46	26.12	12.79	15.81	--
45.	04-03-2024	77.48	30.16	13.65	18.13	--
46.	07-03-2024	81.37	30.84	14.63	18.89	--
47.	11-03-2024	75.94	27.83	12.79	16.38	--

Continue...

Name of Location		Adani Guest House				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
48.	14-03-2024	78.53	29.18	13.75	16.96	--
49.	18-03-2024	83.61	25.94	14.57	18.20	--
50.	21-03-2024	80.27	28.63	12.85	16.74	--
51.	25-03-2024	75.39	26.17	12.23	17.11	--
52.	28-03-2024	78.42	29.41	13.76	17.93	--
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0
Test Method		IS - 5182, Part- 23	UERL/AIR/SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Ambient Air Quality Monitoring

Name of Location		WTP- Nr. CETP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
1.	02-10-2023	80.18	34.63	18.42	23.15	NOT DETECTED
2.	05-10-2023	84.64	36.47	19.38	25.31	--
3.	09-10-2023	73.47	39.81	20.64	26.50	--
4.	12-10-2023	78.85	40.15	20.76	26.10	--
5.	16-10-2023	82.96	38.27	21.27	26.42	--
6.	19-10-2023	84.29	35.82	17.49	22.32	--
7.	23-10-2023	71.15	38.94	20.38	25.84	--
8.	26-10-2023	70.12	37.31	18.42	22.94	--
9.	30-10-2023	74.27	34.64	17.58	22.56	--
10.	02-11-2023	75.36	37.65	19.84	24.15	--
11.	06-11-2023	72.59	34.12	17.86	22.36	--
12.	09-11-2023	74.85	35.63	18.95	23.71	--
13.	13-11-2023	76.44	37.84	19.67	25.13	--
14.	16-11-2023	79.30	38.63	18.57	22.98	--
15.	20-11-2023	82.63	39.27	19.48	24.58	--

Continue...

Name of Location		WTP- Nr. CETP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
16.	23-11-2023	80.47	37.88	17.91	21.86	--
17.	27-11-2023	69.36	33.14	18.98	23.61	--
18.	30-11-2023	72.14	35.35	17.58	22.12	--
19.	04-12-2023	71.52	34.26	16.72	21.31	--
20.	07-12-2023	73.64	36.12	17.97	22.41	--
21.	11-12-2023	70.59	31.96	15.78	20.63	--
22.	14-12-2023	72.86	33.48	16.12	21.79	--
23.	18-12-2023	75.13	35.6	17.46	23.42	--
24.	21-12-2023	74.36	35.11	16.74	20.86	--
25.	25-12-2023	77.62	36.43	17.13	22.91	--
26.	28-12-2023	79.15	37.32	17.86	24.15	--
27.	01-01-2024	75.38	33.67	16.11	22.36	NOT DETECTED
28.	04-01-2024	79.51	35.25	17.92	24.1	--
29.	08-01-2024	77.46	34.18	16.37	21.87	--
30.	11-01-2024	81.38	37.49	18.22	23.59	--
31.	15-01-2024	83.62	39.21	19.00	25.03	--

Continue...

Name of Location		WTP- Nr. CETP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
32.	18-01-2024	77.62	36.15	17.24	22.91	--
33.	22-01-2024	79.62	37.53	18.86	24.21	--
34.	25-01-2024	75.41	35.03	16.47	22.54	--
35.	29-01-2024	78.55	37.14	18.52	23.98	--
36.	01-02-2024	80.51	36.79	17.43	21.87	--
37.	05-02-2024	83.11	36.88	18.04	22.95	--
38.	08-02-2024	78.59	34.62	16.97	21.24	--
39.	12-02-2024	75.67	32.31	15.46	19.73	--
40.	15-02-2024	80.31	35.76	17.39	22.14	--
41.	19-02-2024	77.84	33.92	16.12	21.19	--
42.	22-02-2024	72.35	32.47	15.62	19.88	--
43.	26-02-2024	69.92	31.05	14.99	19.27	--
44.	29-02-2024	75.71	33.89	15.92	20.85	--
45.	04-03-2024	77.47	35.12	16.38	20.84	--
46.	07-03-2024	80.73	36.21	17.53	22.15	--
47.	11-03-2024	71.16	32.53	14.93	18.65	--

Continue...

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QCI-NABET Accredited EIA & GW Consultant Organization

GPCB Recognized Environmental Auditor (Schedule-II)

ISO 9001 : 2015 Certified Company

ISO 45001 : 2018 Certified Company

Name of Location		WTP- Nr. CETP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
48.	14-03-2024	78.43	35.82	16.27	20.48	--
49.	18-03-2024	75.28	33.62	16.88	19.43	--
50.	21-03-2024	69.82	30.58	15.47	18.91	--
51.	25-03-2024	72.92	33.65	14.78	19.63	--
52.	28-03-2024	75.87	31.64	16.25	21.42	--
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0
Test Method		IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Ambient Air Quality Monitoring

Name of Location		SAMUDRA TOWNSHIP – STP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
1.	02-10-2023	83.72	23.63	12.2	15.84	NOT DETECTED
2.	05-10-2023	85.89	25.42	13.54	17.42	--
3.	09-10-2023	79.25	26.58	14.66	17.73	--
4.	12-10-2023	82.64	24.83	14.36	18.21	--
5.	16-10-2023	85.38	22.45	12.8	17.36	--
6.	19-10-2023	78.61	26.50	14.40	17.18	--
7.	23-10-2023	80.24	24.63	13.75	18.52	--
8.	26-10-2023	84.76	22.35	12.61	15.47	--
9.	30-10-2023	81.83	22.24	12.42	16.94	--
10.	02-11-2023	76.48	20.65	10.8	14.96	--
11.	06-11-2023	80.52	22.28	11.42	16.95	--
12.	09-11-2023	82.29	23.88	12.45	17.64	--
13.	13-11-2023	79.11	21.75	11.49	16.22	--
14.	16-11-2023	76.73	20.42	10.79	15.86	--
15.	20-11-2023	80.82	22.54	10.98	16.37	--

Continue...

Name of Location		SAMUDRA TOWNSHIP – STP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
16.	23-11-2023	83.57	24.11	12.48	17.14	--
17.	27-11-2023	81.95	22.68	11.74	16.93	--
18.	30-11-2023	78.57	21.86	10.77	15.28	--
19.	04-12-2023	83.21	24.56	13.19	17.21	--
20.	07-12-2023	82.64	23.48	12.85	16.35	--
21.	11-12-2023	80.19	21.87	10.62	14.8	--
22.	14-12-2023	81.47	22.16	11.05	15.26	--
23.	18-12-2023	76.82	19.51	9.82	13.39	--
24.	21-12-2023	78.29	20.76	10.59	14.83	--
25.	25-12-2023	74.94	17.72	9.12	12.86	--
26.	28-12-2023	75.86	18.64	9.92	13.03	--
27.	01-01-2024	78.64	20.18	9.98	13.86	NOT DETECTED
28.	04-01-2024	81.29	21.64	10.36	14.87	--
29.	08-01-2024	84.56	23.58	11.00	15.21	--
30.	11-01-2024	80.17	20.88	10.18	13.59	--
31.	15-01-2024	82.94	22.39	11.12	14.88	--

Continue...

Name of Location		SAMUDRA TOWNSHIP – STP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
32.	18-01-2024	84.67	23.56	11.89	15.1	--
33.	22-01-2024	80.84	24.16	12.06	16.13	--
34.	25-01-2024	82.53	22.71	11.57	15.47	--
35.	29-01-2024	79.37	20.19	10.53	14.91	--
36.	01-02-2024	82.16	22.52	11.35	13.84	--
37.	05-02-2024	79.48	20.61	10.13	12.43	--
38.	08-02-2024	75.82	19.12	9.94	11.86	--
39.	12-02-2024	84.91	23.00	11.65	13.95	--
40.	15-02-2024	78.36	19.84	9.85	12.21	--
41.	19-02-2024	81.49	20.94	11.20	13.57	--
42.	22-02-2024	83.62	22.75	11.72	13.88	--
43.	26-02-2024	76.91	19.11	9.82	12.13	--
44.	29-02-2024	80.53	20.56	10.49	13.35	--
45.	04-03-2024	75.39	18.12	9.74	15.86	--
46.	07-03-2024	81.62	20.35	11.42	17.75	--
47.	11-03-2024	78.46	18.84	10.68	16.49	--

Continue...

Name of Location		SAMUDRA TOWNSHIP – STP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
48.	14-03-2024	80.85	19.62	9.47	18.45	--
49.	18-03-2024	84.38	20.91	10.52	17.87	--
50.	21-03-2024	76.59	18.28	10.89	15.40	--
51.	25-03-2024	72.64	17.85	9.53	16.11	--
52.	28-03-2024	76.29	18.74	11.38	18.29	--
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0
Test Method		IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Ambient Air Quality Monitoring

Name of Location		SAMUDRA TOWNSHIP CUSTOMER CARE				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
1.	02-10-2023	67.53	22.14	15.36	19.13	NOT DETECTED
2.	05-10-2023	66.58	23.68	16.53	20.25	--
3.	09-10-2023	68.41	26.00	14.95	18.65	--
4.	12-10-2023	65.13	24.81	15.98	18.73	--
5.	16-10-2023	67.84	26.12	16.29	20.96	--
6.	19-10-2023	64.18	25.18	15.47	20.81	--
7.	23-10-2023	66.72	23.76	16.38	20.41	--
8.	26-10-2023	68.43	21.5	13.92	17.98	--
9.	30-10-2023	65.97	21.74	14.17	18.83	--
10.	02-11-2023	63.82	21.40	13.79	17.56	--
11.	06-11-2023	65.49	23.54	14.87	18.53	--
12.	09-11-2023	67.32	24.86	15.26	20.54	--
13.	13-11-2023	64.97	24.65	14.27	18.92	--
14.	16-11-2023	66.19	25.32	15.80	20.68	--
15.	20-11-2023	63.90	24.51	13.74	19.51	--

Continue...

Name of Location		SAMUDRA TOWNSHIP CUSTOMER CARE				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
16.	23-11-2023	62.68	22.91	14.36	18.27	--
17.	27-11-2023	57.55	21.16	13.31	17.43	--
18.	30-11-2023	61.36	22.69	14.17	19.11	--
19.	04-12-2023	60.52	22.17	14.21	18.52	--
20.	07-12-2023	63.84	23.56	14.86	19.02	--
21.	11-12-2023	65.97	25.10	16.11	20.43	--
22.	14-12-2023	63.40	24.31	15.42	19.45	--
23.	18-12-2023	62.61	23.97	14.58	18.12	--
24.	21-12-2023	64.12	24.85	15.76	19.87	--
25.	25-12-2023	65.73	25.16	16.11	20.19	--
26.	28-12-2023	67.86	26.54	16.83	21.36	--
27.	01-01-2024	67.89	26.32	16.57	20.21	NOT DETECTED
28.	04-01-2024	64.61	25.43	14.62	18.57	--
29.	08-01-2024	60.13	22.43	13.98	17.96	--
30.	11-01-2024	62.89	23.89	14.21	19.34	--
31.	15-01-2024	65.46	24.57	15.86	20.57	--

Continue...

Name of Location		SAMUDRA TOWNSHIP CUSTOMER CARE				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
32.	18-01-2024	67.13	26.79	16.75	21.64	--
33.	22-01-2024	64.37	23.81	15.26	20.46	--
34.	25-01-2024	66.84	25.76	16.58	21.54	--
35.	29-01-2024	65.92	24.93	14.26	19.18	--
36.	01-02-2024	64.38	25.63	15.26	19.61	--
37.	05-02-2024	66.14	26.59	16.41	20.13	--
38.	08-02-2024	62.61	24.42	14.55	18.48	--
39.	12-02-2024	58.49	21.96	13.57	17.85	--
40.	15-02-2024	63.52	24.13	14.49	18.37	--
41.	19-02-2024	66.16	26.37	16.31	21.14	--
42.	22-02-2024	62.57	23.86	14.67	19.85	--
43.	26-02-2024	59.61	22.18	13.94	17.63	--
44.	29-02-2024	64.79	24.26	15.63	20.07	--
45.	04-03-2024	67.18	25.29	16.1	19.42	--
46.	07-03-2024	64.38	23.42	13.86	17.27	--
47.	11-03-2024	61.29	24.42	15.38	20.15	--

Continue...

Name of Location		SAMUDRA TOWNSHIP CUSTOMER CARE				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
48.	14-03-2024	64.68	23.12	15.84	19.87	--
49.	18-03-2024	58.73	21.82	13.45	17.63	--
50.	21-03-2024	62.35	23.64	15.42	20.14	--
51.	25-03-2024	59.85	22.11	14.64	19.25	--
52.	28-03-2024	56.24	20.85	13.72	17.36	--
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0
Test Method		IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Ambient Air Quality Monitoring

Name of Location		AIR STRIP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
1.	02-10-2023	70.63	26.81	18.52	24.36	0.10
2.	05-10-2023	75.28	28.64	17.93	22.57	0.09
3.	09-10-2023	78.42	27.39	18.46	24.72	0.10
4.	12-10-2023	80.51	31.26	19.32	26.23	0.10
5.	16-10-2023	72.79	29.74	18.11	23.58	0.10
6.	19-10-2023	76.31	30.85	20.13	25.61	0.09
7.	23-10-2023	70.83	31.69	20.36	24.91	0.10
8.	26-10-2023	78.42	28.71	17.83	22.67	0.10
9.	30-10-2023	75.15	26.47	18.65	23.61	0.09
10.	02-11-2023	72.56	27.43	17.89	23.41	0.11
11.	06-11-2023	70.16	25.96	16.29	22.15	0.10
12.	09-11-2023	75.48	28.85	18.92	24.35	0.10
13.	13-11-2023	79.36	30.27	18.97	25.76	0.11
14.	16-11-2023	77.15	29.61	18.37	24.88	0.11
15.	20-11-2023	75.12	27.43	17.02	23.55	0.10

Continue...

Name of Location		AIR STRIP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
16.	23-11-2023	72.16	25.89	16.30	21.79	0.10
17.	27-11-2023	75.62	27.46	17.51	24.36	0.11
18.	30-11-2023	71.23	25.19	16.76	22.42	0.10
19.	04-12-2023	77.16	29.51	19.15	24.62	0.10
20.	07-12-2023	75.60	28.13	18.62	23.48	0.10
21.	11-12-2023	76.43	29.84	19.1	23.14	0.11
22.	14-12-2023	74.36	28.42	18.25	22.89	0.10
23.	18-12-2023	71.52	25.48	17.43	22.36	0.10
24.	21-12-2023	73.64	26.85	17.59	23.06	0.10
25.	25-12-2023	77.31	28.47	19.36	25.87	0.11
26.	28-12-2023	74.89	26.48	18.35	24.71	0.10
27.	01-01-2024	73.68	26.78	17.61	23.83	NOT DETECTED
28.	04-01-2024	81.26	28.58	20.46	25.62	0.09
29.	08-01-2024	78.54	27.46	18.42	23.52	0.10
30.	11-01-2024	80.56	31.57	20.51	26.18	0.10
31.	15-01-2024	74.19	29.89	17.52	23.72	0.10

Continue...

Name of Location		AIR STRIP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
32.	18-01-2024	76.44	31.02	18.91	24.13	0.09
33.	22-01-2024	73.69	31.55	17.86	23.73	0.10
34.	25-01-2024	80.17	28.84	20.16	25.31	0.10
35.	29-01-2024	75.12	26.44	17.26	23.43	0.09
36.	01-02-2024	77.31	28.25	18.36	22.47	0.09
37.	05-02-2024	80.69	29.45	19.74	24.12	0.10
38.	08-02-2024	78.18	28.89	18.64	23.08	0.09
39.	12-02-2024	74.42	26.14	17.92	22.16	0.10
40.	15-02-2024	70.32	24.13	16.55	21.43	0.09
41.	19-02-2024	75.17	26.46	18.03	22.73	0.10
42.	22-02-2024	72.29	24.70	16.81	20.78	0.09
43.	26-02-2024	78.77	27.42	18.13	23.61	0.10
44.	29-02-2024	73.12	25.82	17.53	22.19	0.10
45.	04-03-2024	75.83	26.37	16.82	21.25	0.10
46.	07-03-2024	72.83	24.85	16.10	20.53	0.09
47.	11-03-2024	76.92	26.65	17.31	22.68	0.09

Continue...

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QCI-NABET Accredited EIA & GW Consultant Organization

GPCB Recognized Environmental Auditor (Schedule-II)

ISO 9001 : 2015 Certified Company

ISO 45001 : 2018 Certified Company

Name of Location		AIR STRIP				
Sr. No.	Date of Monitoring	Parameter with Results				
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
48.	14-03-2024	81.54	28.37	15.86	20.41	0.09
49.	18-03-2024	78.54	26.71	16.43	22.56	0.10
50.	21-03-2024	80.73	28.94	17.25	21.86	0.10
51.	25-03-2024	75.49	27.24	15.91	20.17	0.10
52.	28-03-2024	79.74	29.61	16.38	22.63	0.09
Permissible Value as per NAAQMS		100.0	60.0	80.0	80.0	2.0
Test Method		IS - 5182, Part- 23	UERL/AIR/SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6	IS - 5182, Part - 10



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Ambient Air Quality Monitoring

Name of Location		SV2			
Sr. No.	Date of Monitoring	Parameter with Results			
		PM ₁₀ µg/m ³	PM _{2.5} µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³
1.	08-02-2024	71.23	17.48	8.44	11.21
2.	12-02-2024	63.59	15.48	11.23	13.45
3.	15-02-2024	67.42	19.61	9.15	12.28
4.	19-02-2024	56.82	15.23	10.17	12.45
5.	22-02-2024	60.36	17.94	9.23	11.23
6.	26-02-2024	65.41	19.72	8.35	11.67
7.	29-02-2024	74.53	22.67	11.19	14.31
8.	04-03-2024	70.16	20.73	11.37	14.11
9.	07-03-2024	67.48	17.70	10.64	13.27
10.	11-03-2024	64.72	14.49	8.67	11.91
11.	14-03-2024	71.15	18.54	11.38	14.27
12.	18-03-2024	73.59	22.63	13.52	17.49
13.	21-03-2024	67.48	20.63	10.38	14.31
14.	25-03-2024	71.92	23.11	11.84	14.02
15.	28-03-2024	69.26	19.37	9.82	12.47

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GPCB Recognized Environmental Auditor (Schedule-II)

ISO 9001 : 2015 Certified Company

ISO 45001 : 2018 Certified Company

Permissible Value as per NAAQMS	100.0	60.0	80.0	80.0
Test Method	IS - 5182, Part- 23	UERL/AIR/ SOP/11	IS - 5182, Part - 2	IS - 5182, Part - 6



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		PUB / Adani House					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		02-10-2023	02-11-2023	04-12-2023	01-01-2024	01-02-2024	04-03-2024
1	06:00 to 07:00	64.2	62.5	63.1	62.5	63.5	61.9
2	07:00 to 08:00	62.8	65.1	66.3	65.7	65.4	63.2
3	08:00 to 09:00	58.7	68.2	64.8	64.8	64.7	65.7
4	09:00 to 10:00	61.8	63.9	65.3	66.1	65.9	64.3
5	10:00 to 11:00	68.7	67.8	68.2	67.2	66.5	65.7
6	11:00 to 12:00	63.4	65.2	66.5	66.5	67.2	66.3
7	12:00 to 13:00	68.3	61.3	63.7	64.3	65.3	63.7
8	13:00 to 14:00	63.9	65.9	67.4	67.4	66.8	64.2
9	14:00 to 15:00	62.5	62.6	64.6	65.9	66.1	64.8
10	15:00 to 16:00	62.9	63.7	65.1	65.1	66.9	65.7
11	16:00 to 17:00	65.5	65.4	66.4	67.1	67.5	67.9
12	17:00 to 18:00	63.3	65.3	67.3	65.7	64.3	66.2
13	18:00 to 19:00	61.8	69.1	65.9	64.2	63.8	64.6
14	19:00 to 20:00	68.3	65.2	63.2	63.2	62.7	63.8
15	20:00 to 21:00	64.2	63.8	62.6	62.6	63.9	62.3
16	21:00 to 22:00	63.6	61.2	60.8	61.2	62.3	60.8
Day Time		<75 dB (A)					

Continue...

MoEF&CC (GOI) Recognized Environmental Laboratory under the EPA-1986 (31.03.2023 to 22.09.2024)

QCI-NABET Accredited EIA & GW Consultant Organization

GPCB Recognized Environmental Auditor (Schedule-II)

ISO 9001 : 2015 Certified Company

ISO 45001 : 2018 Certified Company

Location Name		PUB / Adani House					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		02-10-2023	02-11-2023	04-12-2023	01-01-2024	01-02-2024	04-03-2024
1	22:00 to 23:00	57.4	60.5	59.7	58.6	59.2	60.7
2	23:00 to 24:00	55.8	63.2	61.3	61.7	60.3	58.4
3	24:00 to 01:00	53.9	61.4	62.3	63.3	62.9	60.7
4	01:00 to 02:00	58.6	64.8	61.9	61.9	60.3	62.1
5	02:00 to 03:00	59.3	60.1	59.7	59.5	57.8	60.5
6	03:00 to 04:00	53.8	58.2	57.6	57.4	56.3	61.3
7	04:00 to 05:00	56.3	57.5	56.3	56.3	56.8	58.6
8	05:00 to 06:00	55.6	59.3	57.5	58.1	57.3	58.1

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		Adani Guest House					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		31-10-2023	29-11-2023	30-12-2023	31-01-2024	24-02-2024	27-03-2024
1	06:00 to 07:00	60.1	59.9	58.7	59.1	60.3	59.5
2	07:00 to 08:00	65.7	62.8	62.3	63.5	63.8	61.8
3	08:00 to 09:00	63.2	66.1	64.8	65.7	64.9	63.8
4	09:00 to 10:00	65.8	64.8	66.5	65.8	66.3	65.5
5	10:00 to 11:00	66.1	68.3	63.7	63.7	62.1	64.6
6	11:00 to 12:00	63.4	66.5	67.9	67.7	65.3	66.2
7	12:00 to 13:00	66.8	64.3	64.3	65.3	64.7	65.3
8	13:00 to 14:00	63.5	66.3	66.3	66.3	65.6	65.6
9	14:00 to 15:00	62.4	67.8	65.2	64.7	65.8	63.8
10	15:00 to 16:00	65.3	63.5	63.5	65.2	64.2	65.7
11	16:00 to 17:00	64.1	62.8	64.6	64.6	65.8	64.3
12	17:00 to 18:00	65.9	65.6	66.7	66.7	66.6	65.7
13	18:00 to 19:00	62.1	62.4	64.5	65.3	63.2	64.1
14	19:00 to 20:00	64.5	61.3	66.4	66.4	63.9	63.8
15	20:00 to 21:00	62.3	63.2	61.3	62.8	64.3	63.5
16	21:00 to 22:00	57.8	61.3	60.4	60.8	61.8	60.4
Day Time		<75 dB (A)					

Continue...

Location Name		Adani Guest House					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		31-10-2023	29-11-2023	30-12-2023	31-01-2024	24-02-2024	27-03-2024
1	22:00 to 23:00	59.3	58.8	59.5	60.2	59.7	60.5
2	23:00 to 24:00	57.4	55.3	58.6	59.6	60.3	63.6
3	24:00 to 01:00	55.4	54.9	60.5	62.3	61.8	62.5
4	01:00 to 02:00	53.9	56.4	59.4	60.7	61.4	61.4
5	02:00 to 03:00	60.5	58.4	57.2	58.4	60.7	60.7
6	03:00 to 04:00	57.5	60.1	55.8	56.3	58.6	60.5
7	04:00 to 05:00	55.9	58.6	57.6	58.7	56.2	58.3
8	05:00 to 06:00	59.6	57.7	56.3	57.1	57.3	56.9

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		WTP- Nr. CETP					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		07-10-2023	04-11-2023	09-12-2023	13-01-2024	10-02-2024	09-03-2024
1	06:00 to 07:00	59.4	63.6	60.9	61.5	63.0	63.4
2	07:00 to 08:00	60.4	66.8	62.3	63.7	62.3	61.9
3	08:00 to 09:00	67.1	58.9	65.8	64.3	63.9	63.9
4	09:00 to 10:00	65.8	62.4	64.3	63.8	65.2	64.7
5	10:00 to 11:00	68.6	67.8	65.7	64.9	63.6	63.6
6	11:00 to 12:00	65.2	69.5	68.3	67.4	66.8	65.8
7	12:00 to 13:00	67.1	68.1	66.3	65.9	66.2	66.2
8	13:00 to 14:00	65.3	65.5	68.9	67.3	64.5	63.8
9	14:00 to 15:00	68.3	62.3	64.5	64.2	67.3	65.8
10	15:00 to 16:00	67.3	66.9	67.8	66.8	65.1	66.8
11	16:00 to 17:00	65.1	67.4	64.2	64.2	66.3	66.3
12	17:00 to 18:00	64.3	60.5	61.3	61.3	64.1	65.1
13	18:00 to 19:00	65.8	61.8	64.5	64.5	65.3	63.7
14	19:00 to 20:00	60.4	60.2	62.8	63	62.1	64.8
15	20:00 to 21:00	63.7	59.3	58.7	58.7	57.9	57.5
16	21:00 to 22:00	61.3	57.7	58.1	59.6	60.2	59.8
Day Time		<75 dB (A)					

Continue...

Location Name		WTP- Nr. CETP					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		07-10-2023	04-11-2023	09-12-2023	13-01-2024	10-02-2024	09-03-2024
1	22:00 to 23:00	60.5	58.6	59.6	59.2	57.7	58.2
2	23:00 to 24:00	58.6	60.2	63.5	62.3	60.3	59.5
3	24:00 to 01:00	56.2	57.6	62.8	64.7	63.5	61.4
4	01:00 to 02:00	60.7	58.2	63.4	61.2	60.8	63.5
5	02:00 to 03:00	58.4	55.5	61.8	61.8	62.7	63.8
6	03:00 to 04:00	60.3	57.8	59.6	60.6	59.6	62.3
7	04:00 to 05:00	56.4	61.2	60.7	61.2	58.9	60.7
8	05:00 to 06:00	57.1	58.9	59.1	60.3	58.7	59.1

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		SAMUDRA TOWNSHIP – STP					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		14-10-2023	11-11-2023	12-12-2023	20-01-2024	14-02-2024	13-03-2024
1	06:00 to 07:00	61.7	61.3	63.1	64.2	62.9	62.9
2	07:00 to 08:00	63.9	63.4	65.7	65.6	65.8	64.3
3	08:00 to 09:00	65.4	66.7	64.5	64.5	65.7	65.7
4	09:00 to 10:00	68.1	63.3	66.1	66.1	67.8	66.2
5	10:00 to 11:00	65.7	68.2	68.2	68.4	65.3	65.3
6	11:00 to 12:00	69.4	65.4	64.7	64.7	63.9	63.8
7	12:00 to 13:00	66.3	63.9	63.9	63.9	65.7	64.7
8	13:00 to 14:00	62.9	67.1	66.5	65.7	65.9	66.7
9	14:00 to 15:00	65.4	64.7	65.9	65.7	64.3	64.3
10	15:00 to 16:00	69.1	65.5	63.7	63.8	62.6	64.1
11	16:00 to 17:00	65.5	62.7	65.1	65.1	64.8	64.8
12	17:00 to 18:00	67.1	69.2	68.7	68.5	67.1	67.4
13	18:00 to 19:00	63.5	64.3	65.2	65.3	64.1	63.9
14	19:00 to 20:00	62.8	62.3	64	65.2	66.3	65.6
15	20:00 to 21:00	65.2	60.6	62.6	63.2	62.8	63.1
16	21:00 to 22:00	63.6	61.5	60.7	61.4	62.4	61.9
Day Time		<75 dB (A)					

Continue...

Location Name		SAMUDRA TOWNSHIP – STP					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		14-10-2023	11-11-2023	12-12-2023	20-01-2024	14-02-2024	13-03-2024
1	22:00 to 23:00	58.2	56.9	57.2	57.6	59.1	60.5
2	23:00 to 24:00	56.7	54.3	59.8	60.1	58.6	58.6
3	24:00 to 01:00	59.9	56.5	60.2	62.5	60.3	61.2
4	01:00 to 02:00	58.9	57.3	62.9	63.8	62.7	63.4
5	02:00 to 03:00	56.3	54.8	60.7	61.2	63.2	62.4
6	03:00 to 04:00	58.7	59.2	57.9	58.9	61.4	61.4
7	04:00 to 05:00	60.5	55.1	60.3	60.3	60.5	59.7
8	05:00 to 06:00	59.5	57.4	58.9	59.7	57.3	57.5

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		SAMUDRA TOWNSHIP CUSTOMER CARE					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		21-10-2023	18-11-2023	16-12-2023	23-01-2024	17-02-2024	16-03-2024
1	06:00 to 07:00	58.5	58.4	59.6	60.7	59.6	57.5
2	07:00 to 08:00	60.2	61.7	63.5	62.8	60.6	60.6
3	08:00 to 09:00	62.6	64.9	66.4	65.7	66.8	63.7
4	09:00 to 10:00	65.8	66.8	64.8	64.8	65.3	65.3
5	10:00 to 11:00	68.9	64.5	67.3	66.6	65.4	63.9
6	11:00 to 12:00	66.4	63.3	65.8	66.3	65.7	65.7
7	12:00 to 13:00	65.6	66.1	64.2	65.1	64.3	62.8
8	13:00 to 14:00	63.2	62.3	68.2	68.2	64.9	64.9
9	14:00 to 15:00	67.8	61.8	63.9	63.7	67.4	66.4
10	15:00 to 16:00	65.4	63.2	65.1	65.1	66.1	65.8
11	16:00 to 17:00	61.9	65.4	67.2	67.2	66.7	66.3
12	17:00 to 18:00	63.7	66.6	65.3	66.8	65.3	65.3
13	18:00 to 19:00	59.9	62.1	64.8	66.2	65.9	64.7
14	19:00 to 20:00	62.4	65.5	63.2	64.3	62.1	62.1
15	20:00 to 21:00	64.5	61.8	60.3	61.8	60.6	58.7
16	21:00 to 22:00	60.8	59.8	58.9	59.6	58.6	60.1
Day Time		<75 dB (A)					

Continue...

MoEF&CC (GOI) Recognized Environmental Laboratory under the EPA-1986 (31.03.2023 to 22.09.2024)

QCI-NABET Accredited EIA & GW Consultant Organization

GPCB Recognized Environmental Auditor (Schedule-II)

ISO 9001 : 2015 Certified Company

ISO 45001 : 2018 Certified Company

Location Name		SAMUDRA TOWNSHIP CUSTOMER CARE					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		21-10-2023	18-11-2023	16-12-2023	23-01-2024	17-02-2024	16-03-2024
1	22:00 to 23:00	55.8	58.1	59.8	60.1	58.5	59.3
2	23:00 to 24:00	58.4	56.4	61.3	62.3	60.1	60.1
3	24:00 to 01:00	60.5	58.1	63.7	63.7	64.3	62.5
4	01:00 to 02:00	57.1	56.9	60.5	61.7	62.4	62.4
5	02:00 to 03:00	58.8	55.4	58.6	58.4	60.7	60.7
6	03:00 to 04:00	55.3	58.2	60.2	61.3	62.3	63.1
7	04:00 to 05:00	57.2	60.3	59.6	59.7	58.6	60.2
8	05:00 to 06:00	58.1	59.3	56.7	57.3	55.8	56.4

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		AIR STRIP					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		28-10-2023	25-11-2023	23-12-2023	27-01-2024	21-02-2024	23-03-2024
1	06:00 to 07:00	61.3	62.7	61.3	61.5	63.1	61.7
2	07:00 to 08:00	63.7	68.5	66.7	65.7	66.3	63.8
3	08:00 to 09:00	65.8	65.5	64.2	64.2	62.5	62.5
4	09:00 to 10:00	61.4	63.3	66.9	66.9	65.8	65.4
5	10:00 to 11:00	63.7	66.8	64.8	64.8	63.2	64.1
6	11:00 to 12:00	65.1	62.8	67.4	64.6	65.6	65.3
7	12:00 to 13:00	67.4	68.2	63.5	66.8	67.1	66.5
8	13:00 to 14:00	68.0	65.6	65.6	65.6	64.3	65.7
9	14:00 to 15:00	63.7	64.2	64.2	65.1	66.9	66.8
10	15:00 to 16:00	62.7	67.8	68.1	68.3	67.3	67.1
11	16:00 to 17:00	65.1	63.6	66.3	66.3	64.2	64.2
12	17:00 to 18:00	63.2	67.2	63.1	63.1	64.5	65.3
13	18:00 to 19:00	61.3	68.7	61.9	61.5	63.7	62.8
14	19:00 to 20:00	58.9	66.7	64.8	63.7	64.6	64.6
15	20:00 to 21:00	60.4	63.5	62.7	63.6	64.8	62.4
16	21:00 to 22:00	61.2	60.9	61.2	61.5	60.2	61.7
Day Time		<75 dB (A)					

Continue...

Location Name		AIR STRIP					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		28-10-2023	25-11-2023	23-12-2023	27-01-2024	21-02-2024	23-03-2024
1	22:00 to 23:00	57.1	60.3	62.3	62.3	60.2	62.1
2	23:00 to 24:00	54.8	58.7	64.3	64.8	62.4	61.8
3	24:00 to 01:00	58.7	63.5	62.8	64.5	63.5	63.8
4	01:00 to 02:00	56.2	60.7	61.7	63.6	63.8	63.1
5	02:00 to 03:00	59.3	58.6	60.4	62.1	61.4	61.4
6	03:00 to 04:00	61.3	61.3	58.9	59.7	60.3	62.7
7	04:00 to 05:00	58.3	59.6	60.1	61.3	59.2	59.2
8	05:00 to 06:00	60.2	61.8	58.5	58.9	57.5	58.2

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Noise Level Monitoring

Location Name		SV2	
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time	
		28-02-2024	30-03-2024
1	06:00 to 07:00	60.3	61.6
2	07:00 to 08:00	62.4	64.3
3	08:00 to 09:00	61.3	65.8
4	09:00 to 10:00	64.4	62.7
5	10:00 to 11:00	63.8	64.2
6	11:00 to 12:00	62.9	66.3
7	12:00 to 13:00	65.2	65.3
8	13:00 to 14:00	63.4	63.8
9	14:00 to 15:00	61.3	62.4
10	15:00 to 16:00	63.5	64.7
11	16:00 to 17:00	64.8	63.6
12	17:00 to 18:00	62.8	64.1
13	18:00 to 19:00	65.5	62.4
14	19:00 to 20:00	63.2	61.9
15	20:00 to 21:00	60.7	60.3
16	21:00 to 22:00	59.3	61.2
Day Time		<75 dB (A)	

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Location Name		SV2	
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time	
		28-02-2024	30-03-2024
1	22:00 to 23:00	58.4	60.1
2	23:00 to 24:00	58.8	59.4
3	24:00 to 01:00	60.3	58.4
4	01:00 to 02:00	61.7	60.3
5	02:00 to 03:00	59.4	61.2
6	03:00 to 04:00	57.5	59.3
7	04:00 to 05:00	57.8	58.3
8	05:00 to 06:00	56.2	57.5

Night Time	<70 dB (A)
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Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Stack Monitoring

Monitoring Period: **October - 2023 to March - 2024**

Sr. No.	Parameter	Unit	Adani Hospital DG Set		GPCB LIMIT	Method of Test
			Nav-23			
			09-11-2023			
1	Particulate Matter	mg/Nm ³	18.54		150	IS 11255 (Part - 1)
2	Sulfur Dioxide as SO ₂	ppm	7.21		100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _x	ppm	24.76		50	IS 11255 (Part - 7)

Sr. No.	Parameter	Unit	WTP Nr CETP D.G.Set No. S-1 (380 KVA)		GPCB LIMIT	Method of Test
			Mar-24			
			08-03-2024			
1	Particulate Matter	mg/Nm ³	21.85		150	IS 11255 (Part - 1)
2	Sulfur Dioxide as SO ₂	ppm	7.80		100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _x	ppm	30.42		50	IS 11255 (Part - 7)



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Stack Monitoring

Monitoring Period: **October - 2023 to March - 2024**

Sr. No.	Parameter	Unit	Adani House D.G.Set No. S-1 (750 KVA)	GPCB LIMIT	Method of Test
			Mar-24		
			26-03-2024		
1	Particulate Matter	mg/Nm ³	20.93	150	IS 11255 (Part - 1)
2	Sulfur Dioxide as SO ₂	ppm	9.25	100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _x	ppm	23.98	50	IS 11255 (Part - 7)

Sr. No.	Parameter	Unit	D.G.Set No. S-2 (500 KVA –PUB)	GPCB LIMIT	Method of Test
			Mar-24		
			26-03-2024		
1	Particulate Matter	mg/Nm ³	20.11	150	IS 11255 (Part - 1)
2	Sulfur Dioxide as SO ₂	ppm	8.40	100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _x	ppm	32.62	50	IS 11255 (Part - 7)



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

RESULTS OF CETP INLET WATER

SR.NO.	TEST PARAMETERS	UNIT	CETP INLET						GPCB Permissible Limit CETP Inlet	TEST METHOD
			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24		
			10-10-2023	22-11-2023	26-12-2023	23-01-2024	02-02-2024	04-03-2024		
1.	pH @ 27 ° C	--	7.95	7.48	7.44	7.83	7.74	7.52	6.5 to 8.5	APHA 23 rd Ed.,2017,4500-H ⁺ B
2.	Temperature	°C	30.5	30	29.5	29	29.5	30	--	IS 3025(Part 9)1984
3.	Colour	Pt. Co. Scale	70	80	70	70	80	70	100	IS 3025(Part 4)
4.	Total SuspeNOT DETECTED Solids	mg/L	50	44	46	48	44	42	800	APHA 23 rd Ed.,2017,2540 –D
5.	Oil & Grease	mg/L	6.5	6	5.8	5.5	5.2	5.3	20	IS 3025(Part39)1991, Amd. 2
6.	Phenolic CompouNOT DETECTED	mg/L	0.74	0.77	0.68	0.67	0.71	0.84	2	IS 3025(Part 43)1992, Amd.2
7.	Fluoride	mg/L	0.94	0.88	0.86	0.92	0.94	1.06	2	APHA 23 rd Ed.,2017,4500 F, D
8.	Iron as Fe	mg/L	0.274	0.281	0.288	0.292	0.284	0.242	3	IS 3025(Part 53)2003,
9.	Zinc as Zn	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	0.131	BDL(MDL:0.05)	0.122	0.111	15	IS 3025(Part 49)1994
10.	Trivalent Chromium	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	3	By Calculation
11.	Sulphide	mg/L	BDL(MDL:0.05)	1.12	1.2	BDL(MDL:0.05)	1.25	1.16	2	APHA 23 rd Ed.,2017,4500-H ⁺ B

Continue...

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GPCB Recognized Environmental Auditor (Schedule-II)

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SR.NO.	TEST PARAMETERS	UNIT	CETP INLET						GPCB Permissible Limit CETP Inlet	TEST METHOD
			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24		
			10-10-2023	22-11-2023	26-12-2023	23-01-2024	02-02-2024	04-03-2024		
12.	Ammonical Nitrogen	mg/L	32.2	27.1	26.9	33.5	30.1	30.2	50	IS 3025(Part 9)1984
13.	BOD (3 days at 27 °C)	mg/L	78	79	80	81	79	82	1000	IS 3025(Part 4)
14.	COD	mg/L	280	283.4	288	292	284.4	290	2000	APHA 23 rd Ed.,2017,2540 –D
15.	Chloride (as Cl ⁻)	mg/L	718.8	824.4	744.2	838.9	810.5	842.2	1000	IS 3025(Part39)1991, Amd. 2
16.	Sulphate (as SO ₄)	mg/L	67.1	70.4	71.2	66	66.6	62	1000	IS 3025(Part 43)1992, Amd.2
17.	Total Dissolved Solids	mg/L	1580	1780	1790	1580	1620	1620	2100	APHA 23 rd Ed.,2017,4500 F, D
18.	Total Residual Chlorine	mg/L	0.74	0.89	0.91	0.92	0.81	0.78	2	IS 3025(Part 53)2003,
19.	Copper as Cu	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	3	IS 3025(Part 49)1994



Mr. Nilesh Patel
Sr. Chemist




Mr. Nitin Tandel
Technical Manager

RESULTS OF CETP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	CETP OUTLET						GPCB Permissible Limit CETP Outlet	TEST METHOD
			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24		
			10-10-2023	22-11-2023	26-12-2023	23-01-2024	02-02-2024	04-03-2024		
1.	pH @ 27 °C	--	7.89	7.44	7.52	7.8	7.52	7.46	6.0 – 9.0	APHA 23 rd Ed.,2017,4500-H+B
2.	Temperature	°C	30.5	30	29.5	29	29.5	30	Shall not exceed more than 5 °C above received water temperature	IS 3025(Part 9)1984
3.	Colour	Pt. Co. Scale	50	50	50	50	45	50	100	IS 3025(Part 4)
4.	Total SuspeNOT DETECTED Solids	mg/L	16	14	14	16	16	14	100	APHA 23 rd Ed.,2017,2540 –D
5.	Oil & Grease	mg/L	BDL(MDL:2.0)	BDL(MDL:2.0)	BDL(MDL:2.0)	BDL(MDL:2.0)	BDL(MDL:2.0)	BDL(MDL:2.0)	10	IS 3025 (Part39)1991, Amd. 2
6.	Phenolic CompouNOT DETECTED	mg/L	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	1	IS 3025(Part 43)1992, Amd.2
7.	Fluoride	mg/L	0.88	0.78	0.82	0.89	0.79	0.88	2	APHA 23 rd Ed.,2017,4500F, D
8.	Iron as Fe	mg/L	0.155	0.16	0.174	0.154	0.16	0.154	3	IS 3025(Part 53)2003,
9.	Zinc as Zn	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	15	IS 3025(Part 49)1994
10.	Trivalent Chromium	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	2	By Calculation

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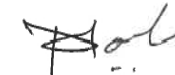
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SR.NO.	TEST PARAMETERS	UNI T	CETP OUTLET						GPCB Permissible Limit CETP Inlet	TEST METHOD
			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24		
			10-10-2023	22-11-2023	26-12-2023	23-01-2024	02-02-2024	04-03-2024		
11.	Sulphide	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	2	APHA 23 rd Ed.,2017,4500-H+B
12.	Ammonical Nitrogen	mg/L	17.2	18.4	18.5	19.2	17.6	19.2	50	IS 3025(Part 9)1984
13.	BOD (3 days at 27 °C)	mg/L	32	34	37	33	32	34	100	IS 3025(Part 4)
14.	COD	mg/L	110	116	134.2	108.6	110.4	118.2	250	APHA 23 rd Ed.,2017,2540 –D
15.	Chloride (as Cl) ⁻	mg/L	709.6	785.9	774.2	766.5	710.4	730.4	1000	IS 3025(Part39)1991, Amd. 2
16.	Sulphate (as SO ₄)	mg/L	66	66.8	67.2	68	62.4	59.4	1000	IS 3025(Part 43)1992, Amd.2
17.	Total Dissolved Solids	mg/L	1560	1598	1600	1574	1654	1612	2100	APHA 23 rd Ed.,2017,4500F, D
18.	Total Residual Chlorine	mg/L	0.72	0.84	0.78	0.84	0.88	0.72	1	IS 3025(Part 53)2003,
19.	Copper as Cu	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	3	IS 3025(Part 49)1994
20.	Bio Assay test (%)	%	90 % survival of fish after 96 hrs. in 100% effluent	90 % survival of fish after 96 hrs. in 100% effluent	90 % survival of fish after 96 hrs. in 100% effluent	90 % survival of fish after 96 hrs. in 100% effluent	90 % survival of fish after 96 hrs. in 100% effluent	90 % survival of fish after 96 hrs. in 100% effluent	90 % survival of fish after 96 hrs. in 100% effluent	IS:6582-1971



Mr. Nilesh Patel
Sr. Chemist

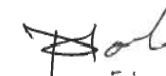
Mr. Nitin Tandel
Technical Manager

RESULTS OF BOREHOLE WATER SAMPLE

Sr. No	Parameters	Method	Unit	12-02-2024	12-02-2024	12-02-2024	12-02-2024
				Nr. PUB Building.	Nr. CETP	Nr.flyover bridge	Dhrub
1	pH @ 25 ° C	IS 3025(Part 11)1983	--	7.14	8.18	7.65	8.12
2	Salinity	APHA 23rd Ed.,2017,2520 B	ppt	18.24	1.77	7.42	1.65
3	Oil & Grease	IS 3025(Part39)1991, Amd. 2	mg/L	BDL(MDL:5.0)	BDL(MDL:5.0)	BDL(MDL:5.0)	BDL(MDL:5.0)
4	Hydrocarbon	GC/GCMS	mg/L	Not Detected	Not Detected	Not Detected	Not Detected
5	Lead as Pb	IS 3025 (PART 47) 1994	mg/L	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)
6	Arsenic as As	APHA 23rd Ed.,2017,3114-C	mg/L	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)	BDL(MDL:0.01)
7	Nickel as Ni	IS 3025 (PART 54) 2003	mg/L	BDL(MDL:0.02)	BDL(MDL:0.02)	0.097	BDL(MDL:0.02)
8	Total Chromium as Cr	IS 3025 (PART 52) 2003	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)
9	Cadmium as Cd	IS 3025(PART 41) 1992	mg/L	0.142	0.036	0.023	BDL(MDL:0.003)
10	Mercury as Hg	APHA 23rd Ed.,2017, 3112-B	mg/L	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)
11	Zinc as Zn	IS 3025(PART 49) 1994	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	0.141	BDL(MDL:0.05)
12	Copper as Cu	IS 3025 (PART 42) 1992	mg/L	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)
13	Iron as Fe	IS 3025(PART 53) 2003	mg/L	0.125	0.322	0.182	BDL(MDL:0.1)
14	Insecticides/Pesticides	USEPA 8081 B	µg/L	Absent	Absent	Absent	Absent
15	Depth of Water Level from Ground Level	--	meter	2.1	2.1	2.1	2.12



Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

RESULTS OF SOIL SAMPLE

SR.NO.	TEST PARAMETERS	UNIT	01-09-2023	01-09-2023	01-09-2023	01-09-2023
			PUB Building	Dhrub	Near Flyover Bridge	Near CETP
1	pH	--	8.86	8.84	8.67	9.08
2	Nitrogen as N	%	0.13	0.38	0.33	0.46
3	Phosphorus as P	mg/kg	1244.6	690.4	868.2	5114.2
4	Potassium as K	mg/kg	46.2	1290	228.4	152.3
5	Baron as B	mg/kg	1.75	2.06	2.14	3.05
6	Calcium as Ca	mg/kg	326.4	3510.2	1012	412.3
7	Magnesium as Mg	mg/kg	155.8	5702.5	441.5	66.4
8	Iron as Fe	%	0.59	1.34	0.86	1.02
9	Moisture	%	0.55	3.15	0.55	1.84
10	Organic Matter	%	0.61	1.62	1.33	1.56
11	Cation exchange capacity (CEC)	meq/100gm	9.68	15.4	10.24	10.11
12	TVC	CFU/gm	2.6x10 ⁶	2.8 x 10 ⁶	2.4 x 10 ⁶	2.2 x 10 ⁶
13	Cadmium as Cd	mg/kg	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)
14	Thorium as Th	mg/kg	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)
15	Antimony as Sb	mg/kg	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)
16	Arsenic as As	mg/kg	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)	BDL(MDL:1.0)

Continue...

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17	Lead as Pb	mg/kg	9.98	9.24	17.64	7.38
18	Chromium as Cr	mg/kg	3.41	9.12	3.88	4.34
19	Cobalt as Co	mg/kg	9.78	10.45	8.69	9.94
20	Copper as Cu	mg/kg	8.11	11.62	30.52	16.2
21	Nickel as Ni	mg/kg	11.8	15.02	13.22	13.92
22	Manganese and Mn	mg/kg	398.6	223.8	218.6	182.24
23	Vanadium as V	mg/kg	7.52	8.02	8.55	8.33



Mr. Nilesh Patel
Sr. Chemist




Mr. Nitin Tandel
Technical Manager

Minimum Detection Limit

Ambient Air Quality Monitoring

Sr. No.	Test Parameter	Unit	MDL
1	Particulate Matter (PM10)	µg/m ³	5 µg/m ³
2	Particulate Matter (PM10)	µg/m ³	5 µg/m ³
3	Sulphur Dioxide (SO ₂)	µg/m ³	4 µg/m ³
4	Nitrogen Dioxide (NO ₂)	µg/m ³	5 µg/m ³
5	Carbon Monoxide (CO)	mg/m ³	1-30 mg/m ³
6	Ammonia (NH ₃)	µg/m ³	5 µg/m ³
7	Ozone (O ₃)	µg/m ³	5 µg/m ³
8	Lead (Pb)	µg/m ³	0.5 µg/m ³
9	Nickle (Ni)	ng/m ³	1 ng/m ³
10	Arsenic (As)	ng/m ³	1 ng/m ³
11	Benzene	µg/m ³	1µg/m ³
12	Benzo(o)Pyrene	ng/m ³	0.1 ng/m ³
14	Hydro Carbon	µg/m ³	1 µg/m ³

Stack Emission Monitoring

Sr. No.	Test Parameter	Unit	MDL
1	Suspended particulate matter	mg/Nm ³	2 mg/Nm ³
2	Sulphur Dioxide SO _X	mg/Nm ³	4 mg/Nm ³
3	Oxides of Nitrogen NO _X	mg/Nm ³	5 mg/Nm ³

CETP water

Sr. No.	Test Parameter	Unit	MDL
1	pH @ 27 ° C	--	2
2	Temperature	OC	5
3	Colour	Pt. Co. Scale	5
4	Total Suspended Solids	mg/L	4
5	Oil & Grease	mg/L	2
6	Phenolic Compound	mg/L	0.1
7	Fluoride	mg/L	0.2
8	Iron as Fe	mg/L	0.1
9	Zinc as Zn	mg/L	0.05
10	Trivalent Chromium	mg/L	0.05
11	Sulphide	mg/L	0.05
12	Ammonical Nitrogen	mg/L	2
13	BOD (3 days at 27 OC)	mg/L	1
14	COD	mg/L	2
15	Chloride (as Cl) ⁻	mg/L	1
16	Sulphate (as SO ₄)	mg/L	1
17	Total Dissolved Solids	mg/L	4
18	Total Residual Chlorine	mg/L	0.1
19	Copper as Cu	mg/L	0.05
20	Bio Assay test (%)	%	--

STP OUTLET

Sr. No.	Test Parameter	Unit	MDL
1	pH @ 25 ° C	--	2
2	Total Suspended Solids	mg/L	4
3	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	1
4	Residual chlorine	mg/L	0.1
5	Fecal Coliform	MPN Index/100ml	

Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client

M/s. Adani Power Limited, Mundra

Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring

: October - 2023

Name of Location

: Village - Siracha

ID No.

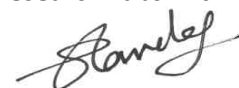
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Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	03/10/2023	56.3	27.0	17.3	24.3		--
2.	06/10/2023	60.5	25.7	13.7	19.0		--
3.	10/10/2023	47.4	18.8	15.3	21.6		--
4.	13/10/2023	63.2	30.9	16.5	23.7		--
5.	17/10/2023	61.1	29.3	12.9	17.7	20.1	BDL
6.	20/10/2023	55.4	27.9	15.1	20.2		--
7.	24/10/2023	61.8	26.1	17.9	18.5		--
8.	27/10/2023	58.0	24.1	14.8	20.6		--
9.	31/10/2023	54.2	23.3	16.3	23.6		--
Average		57.5	25.9	15.5	21.0		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM – IS: 5182 (Part 4), 1999, PM₁₀ – IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ – IS: 5182 (Part 2), 2001, NO_x – IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

**UniStar Environment &
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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : October - 2023

Name of Location : Village – Kandagara

ID No. : URA/ID/A-22/10/002

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	03/10/2023	57.7	27.1	15.8	22.9		--
2.	06/10/2023	54.0	26.6	14.2	16.9		--
3.	10/10/2023	60.6	28.7	18.2	25.1		--
4.	13/10/2023	69.8	28.2	11.5	15.2		
5.	17/10/2023	64.3	30.1	17.5	22.1	18.6	BDL
6.	20/10/2023	44.6	22.6	12.6	19.5		--
7.	24/10/2023	61.8	28.3	15.1	22.6		--
8.	27/10/2023	54.6	26.3	14.3	17.4		--
9.	31/10/2023	66.2	33.1	17.6	25.8		--
Average		59.3	27.9	15.2	20.8		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM– IS: 5182 (Part 4), 1999, PM₁₀– IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂– IS: 5182 (Part 2), 2001, NO_x– IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : October - 2023

Name of Location : Village - Wandh

ID No. : **URA/ID/A-23/10/003**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	03/10/2023	52.3	27.0	15.3	18.7		--
2.	06/10/2023	66.2	30.1	17.9	21.4		--
3.	10/10/2023	73.7	38.9	20.3	34.1		--
4.	13/10/2023	68.7	33.3	18.6	24.0		
5.	17/10/2023	58.9	26.2	13.2	15.3	26.8	BDL
6.	20/10/2023	53.8	27.3	15.7	19.4		--
7.	24/10/2023	62.9	31.9	17.5	23.6		--
8.	27/10/2023	60.7	28.8	22.4	27.6		--
9.	31/10/2023	63.7	29.5	19.6	25.1		--
Average		62.3	30.3	17.8	23.2		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : October - 2023

Name of Location : Nr.20 MLD Plant

ID No. : **URA/ID/A-23/10/004**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	17/10/2023	60.4	28.4	17.3	24.2	21.8	BDL
Average		60.4	28.4	17.3	24.2	21.8	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : October - 2023

Name of Location : Nr. Shantiniketan - 1

ID No. : **URA/ID/A-23/10/005**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	17/10/2023	56.9	23.9	15.6	21.4	18.9	BDL
Average		56.9	23.9	15.6	21.4	18.9	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client

M/s. Adani Power Limited, Mundra

Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring

: November - 2023

Name of Location

: Village - Siracha

ID No.

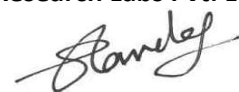
: URA/ID/A-23/11/001

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	03/11/2023	60.3	24.4	16.8	17.5		--
2.	07/11/2023	58.6	23.0	13.8	23.4		--
3.	10/11/2023	50.4	19.7	15.6	20.7		--
4.	14/11/2023	55.9	25.7	12.7	22.6		--
5.	17/11/2023	67.2	29.8	10.5	17.5		--
6.	21/11/2023	53.8	25.5	13.4	18.7		--
7.	24/11/2023	64.1	26.3	14.3	19.5	18.8	BDL
8.	28/11/2023	57.2	24.3	14.5	24.3		--
Average		58.4	24.8	14.0	20.5		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM – IS: 5182 (Part 4), 1999, PM₁₀ – IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ – IS: 5182 (Part 2), 2001, NO_x – IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : November - 2023

Name of Location : Village – Kandagara

ID No. : URA/ID/A-22/11/002

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	03/11/2023	53.8	27.9	13.5	22.5		--
2.	07/11/2023	51.6	24.5	12.1	17.7		--
3.	10/11/2023	60.5	26.0	15.6	23.8		--
4.	14/11/2023	62.2	22.2	14.9	22.5		--
5.	17/11/2023	67.1	23.6	16.2	21.6		--
6.	21/11/2023	52.3	19.7	14.7	18.4		--
7.	24/11/2023	56.9	25.5	13.8	20.7	19.0	BDL
8.	28/11/2023	64.9	24.2	18.4	24.5		--
Average		58.7	24.2	14.9	21.5		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM– IS: 5182 (Part 4), 1999, PM₁₀– IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂– IS: 5182 (Part 2), 2001, NO_x– IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment &
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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : November - 2023

Name of Location : Village - Wandh

ID No. : URA/ID/A-23/11/003

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	03/11/2023	57.2	25.9	15.4	23.2		--
2.	07/11/2023	72.1	34.5	19.7	28.9		--
3.	10/11/2023	69.8	30.7	15.2	20.4		--
4.	14/11/2023	54.5	28.0	11.3	18.1		--
5.	17/11/2023	66.7	34.8	16.1	22.8		--
6.	21/11/2023	61.6	31.1	11.7	19.2		--
7.	24/11/2023	59.0	25.4	18.6	21.9	25.5	BDL
8.	28/11/2023	62.7	30.3	16.2	22.5		--
Average		63.0	30.1	15.5	22.1		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment &
Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : November - 2023

Name of Location : Nr.20 MLD Plant

ID No. : URA/ID/A-23/11/004

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	23/11/2023	65.2	31.1	18.0	26.3	22.9	BDL
Average		65.2	31.1	18.0	26.3	22.9	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : November - 2023

Name of Location : Nr. Shantiniketan - 1

ID No. : **URA/ID/A-23/11/005**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	23/11/2023	60.4	26.4	16.1	23.2	20.4	BDL
Average		60.4	26.4	16.1	23.2	20.4	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment &
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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client

M/s. Adani Power Limited, Mundra

Village: Tunda & Siracha,

Tal. Mundra, Dist.: Kutch.

GUJARAT – 370 435.

Month of Monitoring

: December - 2023

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-23/12/001

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	01/12/2023	60.3	23.2	14.2	19.6		--
2.	04/12/2023	56.6	24.0	13.8	18.9		--
3.	08/12/2023	51.4	21.7	16.4	23.0		--
4.	11/12/2023	63.9	25.2	15.6	19.6		--
5.	15/12/2023	55.2	28.8	17.0	24.7	17.8	BDL
6.	21/12/2023	61.8	24.5	15.4	22.6		--
7.	24/12/2023	68.1	26.3	14.5	20.8		--
8.	25/12/2023	55.2	26.9	17.3	23.7		--
9.	29/12/2023	57.7	27.1	15.2	21.8		--
Average		58.9	25.3	15.5	21.6		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM – IS: 5182 (Part 4), 1999, PM₁₀ – IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ – IS: 5182 (Part 2), 2001, NO_x – IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : December - 2023

Name of Location : Village – Kandagara

ID No. : URA/ID/A-22/12/002

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	01/12/2023	51.8	29.9	14.6	22.0		--
2.	04/12/2023	49.6	24.5	13.0	18.0		--
3.	08/12/2023	62.5	32.0	14.4	19.4		--
4.	11/12/2023	70.2	28.2	10.7	17.2		--
5.	15/12/2023	70.1	29.6	15.3	21.7	19.4	BDL
6.	21/12/2023	50.3	20.7	11.1	18.2		--
7.	24/12/2023	52.9	23.5	14.8	20.8		--
8.	25/12/2023	62.9	30.2	15.4	21.4		--
9.	29/12/2023	52.3	23.2	16.7	23.5		--
Average		58.1	26.9	14.0	20.2		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM– IS: 5182 (Part 4), 1999, PM₁₀– IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂– IS: 5182 (Part 2), 2001, NO_x– IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : December - 2023

Name of Location : Village - Wandh

ID No. : URA/ID/A-23/12/003

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
10.	01/12/2023	64.2	29.4	18.5	24.3		--
11.	04/12/2023	69.1	30.0	15.2	20.7		--
12.	08/12/2023	64.8	31.2	17.2	22.8		--
13.	11/12/2023	56.5	28.5	14.0	24.9		--
14.	15/12/2023	63.7	26.3	17.6	23.7	28.9	BDL
15.	21/12/2023	73.6	31.6	14.7	20.6		--
16.	24/12/2023	68.0	25.9	18.1	21.5		--
17.	25/12/2023	59.7	30.8	17.3	24.5		--
18.	29/12/2023	65.2	31.4	16.7	26.7		--
Average		65.0	29.5	16.6	23.3		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : December - 2023

Name of Location : Nr.20 MLD Plant

ID No. : **URA/ID/A-23/12/004**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	25/12/2023	68.3	33.9	14.2	24.8	24.7	BDL
Average		68.3	33.9	14.2	24.8	24.7	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : December - 2023

Name of Location : Nr. Shantiniketan - 1

ID No. : **URA/ID/A-23/12/005**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	25/12/2023	63.6	28.6	14.2	22.1	22.6	BDL
Average		63.6	28.6	14.2	22.1	22.6	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : January - 2024

Name of Location : Village - Siracha

ID No. : **URA/ID/A-24/01/001**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	02/01/2024	56.1	32.2	13.2	17.8		--
2.	05/01/2024	45.5	23.4	16.9	22.1		--
3.	09/01/2024	59.3	23.3	15.3	23.5		--
4.	12/01/2024	56.4	28.0	12.8	18.5	20.1	BDL
5.	16/01/2024	45.8	22.3	16.2	21.5		--
6.	19/01/2024	60.1	27.0	11.3	17.5		--
7.	23/01/2024	72.3	33.2	15.6	22.7		--
8.	30/01/2024	65.6	29.0	14.7	18.2		--
Average		57.6	27.3	14.5	20.2		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM – IS: 5182 (Part 4), 1999, PM₁₀ – IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ – IS: 5182 (Part 2), 2001, NO_x – IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : January - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/01/002

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	02/01/2024	56.5	25.6	16.5	22.5		--
2.	05/01/2024	62.6	31.1	12.4	16.8		--
3.	09/01/2024	53.9	28.1	18.3	24.5		--
4.	12/01/2024	59.1	33.8	15.7	21.5	21.3	BDL
5.	16/01/2024	52.7	28.2	17.3	24.6		--
6.	19/01/2024	59.0	31.6	14.7	20.3		--
7.	23/01/2024	71.0	33.5	19.3	24.7		--
8.	30/01/2024	60.6	26.0	13.8	19.5		--
Average		59.4	29.7	16.0	21.8		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM– IS: 5182 (Part 4), 1999, PM₁₀– IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂– IS: 5182 (Part 2), 2001, NO_x– IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : January - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/01/003

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	02/01/2024	63.9	33.9	14.7	19.3		--
2.	05/01/2024	56.9	30.2	19.5	26.2		--
3.	09/01/2024	63.1	43.1	16.2	23.5		--
4.	12/01/2024	60.8	41.1	14.2	20.6	27.4	BDL
5.	16/01/2024	75.4	33.4	18.4	24.3		--
6.	19/01/2024	62.3	37.1	17.2	23.8		--
7.	23/01/2024	56.9	34.4	13.4	19.7		--
8.	30/01/2024	73.5	39.3	16.8	22.5		--
Average		64.1	36.5	16.3	22.5		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : January - 2024

Name of Location : Nr.20 MLD Plant

ID No. : URA/ID/A-24/01/004

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	29/01/2024	67.3	29.5	18.7	22.8	24.5	BDL
Average		67.3	29.5	18.7	22.8	24.5	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : January - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/01/005

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	29/01/2024	58.7	24.5	15.2	20.6	19.7	BDL
Average		58.7	24.5	15.2	20.6	19.7	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client

M/s. Adani Power Limited, Mundra

Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring

: February - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/02/001

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	02/02/2024	51.4	29.0	15.3	22.0		--
2.	06/02/2024	40.8	22.9	13.7	19.5		--
3.	09/02/2024	61.6	26.6	12.2	16.5		--
4.	13/02/2024	64.4	27.8	13.5	18.9	18.3	BDL
5.	16/02/2024	60.8	27.5	16.3	15.1		--
6.	20/02/2024	72.4	33.2	13.0	17.9		--
7.	23/02/2024	50.0	29.2	11.4	15.1		--
8.	27/02/2024	53.4	27.2	14.5	20.4		--
Average		56.9	27.9	13.7	18.2		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM – IS: 5182 (Part 4), 1999, PM₁₀ – IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ – IS: 5182 (Part 2), 2001, NO_x – IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : February - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/02/002

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	02/02/2024	57.6	29.6	13.6	18.5		--
2.	06/02/2024	48.3	24.0	12.8	20.9		--
3.	09/02/2024	55.0	29.6	17.5	24.7		--
4.	13/02/2024	56.3	27.0	16.8	23.3	20.1	BDL
5.	16/02/2024	62.5	28.6	15.0	21.5		--
6.	20/02/2024	55.4	29.7	14.1	19.2		--
7.	23/02/2024	71.4	32.3	15.5	24.6		--
8.	27/02/2024	58.6	34.6	13.0	19.6		--
Average		58.1	29.4	14.8	21.5		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM– IS: 5182 (Part 4), 1999, PM₁₀– IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂– IS: 5182 (Part 2), 2001, NO_x– IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : February - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/02/003

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	02/02/2024	64.5	29.4	14.5	17.2		--
2.	06/02/2024	60.6	28.2	16.7	23.6		--
3.	09/02/2024	72.0	38.5	19.1	25.4		--
4.	13/02/2024	67.7	25.4	18.9	17.6	29.8	BDL
5.	16/02/2024	61.2	33.4	15.3	19.5		--
6.	20/02/2024	64.4	33.0	16.2	22.1		--
7.	23/02/2024	78.0	39.7	19.5	27.9		--
8.	27/02/2024	61.3	36.5	16.6	24.5		--
Average		66.2	33.0	17.1	22.2		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : February - 2024

Name of Location : Nr.20 MLD Plant

ID No. : URA/ID/A-24/02/004

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	22/02/2024	70.4	31.2	17.1	24.9	27.8	BDL
Average		70.4	31.2	17.1	24.9	27.8	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : February - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/02/005

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	22/02/2024	62.4	26.7	13.1	20.6	22.5	BDL
Average		62.4	26.7	13.1	20.6	22.5	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment &
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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client

M/s. Adani Power Limited, Mundra

Village: Tunda & Siracha,

: Tal. Mundra, Dist.: Kutch.

GUJARAT – 370 435.

Month of Monitoring

: March - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/03/001

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	01/03/2024	54.7	32.4	13.5	17.3		--
2.	05/03/2024	55.9	28.1	15.2	21.0		--
3.	08/03/2024	53.2	27.3	16.8	23.6		--
4.	12/03/2024	68.6	32.2	15.2	19.3	19.2	BDL
5.	15/03/2024	55.0	30.5	12.8	15.7		--
6.	19/03/2024	60.2	31.1	13.3	19.2		--
7.	22/03/2024	61.3	29.0	11.4	16.2		--
8.	26/03/2024	54.6	26.3	12.9	18.8		--
9.	29/03/2024	55.1	29.1	14.4	22.7		--
Average		57.9	29.6	13.9	18.9		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM – IS: 5182 (Part 4), 1999, PM₁₀ – IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ – IS: 5182 (Part 2), 2001, NO_x – IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



(Authorized Signatory)

Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : March - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/03/002

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	01/03/2024	61.8	28.0	13.6	18.3		--
2.	05/03/2024	54.8	30.5	12.8	17.6		--
3.	08/03/2024	58.5	31.5	12.5	15.5		--
4.	12/03/2024	57.8	28.1	13.6	18.1	22.6	BDL
5.	15/03/2024	56.4	31.2	11.7	15.3		--
6.	19/03/2024	59.9	24.3	15.1	21.6		--
7.	22/03/2024	57.1	26.3	18.5	23.3		--
8.	26/03/2024	63.4	31.6	13.6	16.8		--
9.	29/03/2024	48.3	31.1	14.2	20.6		--
Average		58.7	29.0	13.9	18.3		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM– IS: 5182 (Part 4), 1999, PM₁₀– IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂– IS: 5182 (Part 2), 2001, NO_x– IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : March - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/03/003

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1.	01/03/2024	63.4	25.5	18.2	23.8		--
2.	05/03/2024	54.5	31.3	16.0	21.2		--
3.	08/03/2024	59.7	35.5	12.9	16.5		--
4.	12/03/2024	56.2	28.0	17.5	24.2	26.1	BDL
5.	15/03/2024	63.5	33.7	13.9	18.5		--
6.	19/03/2024	77.3	35.7	16.5	22.0		--
7.	22/03/2024	69.2	32.3	18.7	26.1		--
8.	26/03/2024	60.9	28.0	15.5	19.6		--
9.	29/03/2024	65.0	34.8	17.1	21.3		--
Average		63.3	31.6	16.3	21.5		--

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : **M/s. Adani Power Limited, Mundra**
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : March - 2024

Name of Location : Nr.20 MLD Plant

ID No. : **URA/ID/A-24/03/004**

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	12/03/2024	65.8	29.5	18.9	22.7	30.2	BDL
Average		65.8	29.5	18.9	22.7	30.2	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009 Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment & Research Labs Pvt. Ltd.



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Monthly Average Report

AMBIENT AIR MONITORING

Name and Address of Client : M/s. Adani Power Limited, Mundra
Village: Tunda & Siracha,
Tal. Mundra, Dist.: Kutch.
GUJARAT – 370 435.

Month of Monitoring : March - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/03/005

Sr. No.	Sampling Date	Concentration in Ambient Air ($\mu\text{g}/\text{m}^3$)					
		PM ₁₀ $\mu\text{g}/\text{M}^3$	PM _{2.5} $\mu\text{g}/\text{M}^3$	Sulphur Dioxide (SO ₂) $\mu\text{g}/\text{M}^3$	Nitrogen Dioxide (NO ₂) $\mu\text{g}/\text{M}^3$	Ozone (O ₃) $\mu\text{g}/\text{M}^3$	Mercury (Hg) $\mu\text{g}/\text{M}^3$
GPCB Permissible Limit (TWA for 24 hrs.)		100	60	80	80	100	N.A.
1	12/03/2024	61.2	25.4	15.6	21.4	35.2	BDL
Average		61.2	25.4	15.6	21.4	35.2	BDL

Remark: Calibrated equipment & instruments were used during monitoring & analysis of above identified sample.

Analysis Method Reference: SPM - IS: 5182 (Part 4), 1999, PM₁₀ - IS: 5182 (Part 23), 2006, PM_{2.5}- Guidelines by CPCB (Vol-1), SO₂ - IS: 5182 (Part 2), 2001, NO_x - IS: 5182 (Part 6), 2006, Hg: AAS by VGA Method -3112 B APHA 22 Edison & Hg: 2 ppb O₃: IS – 5182 (Part 9) 2009Ozone BDL limit: 5 $\mu\text{g}/\text{m}^3$

UniStar Environment &
Research Labs Pvt. Ltd.



(Authorized Signatory)

MARINE MONITORING REPORT

December 2023



Submitted to
Adani Power Ltd. (APL), Mundra
Village Tunda & Sirach
Taluka Mundra
District Kutch- 370 435
Gujarat

Prepared by
M/s. UniStar Environment and Research Labs. Pvt. Ltd.
White House, Near GIDC Office, Char Rasta, Vapi,
District Valsad - 396 195
Gujarat

PREFACE

M/s. Adani Power Ltd., Mundra (APL-Mundra) is a subsidiary company of Adani Group engaged in imported coal-based thermal power generation located near village Tunda and Siracha, Taluka Mundra District Kutch, Gujarat. APL-Mundra has commissioned the first supercritical 660 MW unit in the country. This is also the World's First supercritical technology project to have received the 'Clean Development Mechanism (CDM) Project' certification from United Nations Framework Convention on Climate Change (UNFCCC). Currently, the total power production capacity of the APL-Mundra has increased to 4620 MW.

APL-Mundra has engaged **M/s. UniStar Environment and Research Labs Pvt. Ltd., Vapi** to carry out the seasonal Marine Monitoring Study along with the seawater intake and outfall (discharge) channels of Mundra power plant. This marine monitoring study involved the assessment of Physio-chemical parameters at the earlier prescribed locations. The distribution and diversity of marine flora and fauna were assessed through water sampling from sub-tidal regions. Furthermore, the distribution of the benthic community was evaluated from the sediment samples collected along the sub-tidal and inter-tidal regions. The overall objective of this study is to monitor the status of prevailing ecology along the intake and discharge (outfall) channels, in terms of water and sediment quality through assessment of physico-chemical parameters and marine biota. This marine monitoring report provides a comprehensive analysis of the Data obtained through a monitoring study undertaken during December 2023.

Date: 22/12/2023

M/S. UniStar Environment and Research Labs Pvt. Ltd.

White House, Char Rasta,

Vapi-396 191

Approved by



Mr. Jaivik Tandel
(Authorized By)



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1. INTRODUCTION

1.1 OVERVIEW

Adani Power Limited (APL-Mundra) is an imported coal-based thermal power plant located near village Tunda and Siracha, Taluka Mundra, District Kutch, Gujarat, India. APL-Mundra is the largest single location private coal-based power plant in India. Mundra plant capacity is 4620 MW, comprising of 9 units with 4 units of 330 MW (Phase I and II) and 5 units of 660MW (Phase III and IV). The 330 MW units are based on subcritical technology and the 660 MW units are based on supercritical technology. APL-Mundra has created history by synchronizing the first super-critical technology-based 660 MW generating unit. This is not only the first super-critical generating unit in the country but also the fastest project implementation ever by any power developer in the country. The Phase III of the Mundra project, which is based on supercritical technology, has received the ‘Clean Development Mechanism (CDM) Project’ certification from United Nations Framework Convention on Climate Change (UNFCCC).

M/S. UniStar Environment and Research Labs Pvt. Ltd., Vapi, India have carried out the routine Marine Monitoring Study in the vicinity of the APL-Mundra Mundra plant during 29 and 30 December 2023. The sampling was carried out along the integrated sea intake channel (2 stations) and at vicinity of discharge/outfall channel water mixing region (2 stations). These integrated intake and outfall channels were developed and maintained by Adani Port and SEZ (APSEZ). One station was situated in between these two locations. This assessment involves the collection of Physico-chemical parameters from 5 subtidal locations (Table 1). The distribution and diversity of marine microflora (phytoplankton and pigments) and fauna (zooplankton) were assessed from water samples collected from 5 subtidal stations (Table 1). The assemblage of the macrobenthic community was studied from 5 sub-tidal and 3 inter-tidal stations. The present report presents a detailed account of the results observed during the Marine Monitoring Study at the vicinity of the APL-Mundra during December 2023.

1.2 OBJECTIVES

- a) To analyses the Physico-chemical seawater parameter for understanding the water quality in the study area.
- b) Evaluation of the prevailing status of marine biota through the quantitative and qualitative analysis of marine flora (phytoplankton and pigments) and fauna (zooplankton and macrobenthos).
- c) To recommend adequate marine environmental management measures.

2. STUDY PROGRAM

2.1 STUDY PERIOD

The field investigation was carried out on 22 December 2023. The sampling strategy was planned in such a manner as to get a detailed characteristic of the marine environment of the study area. Sampling and analysis for the marine environment have been carried out by **M/s. UniStar Environment and Research Labs Pvt. Ltd, Vapi, India.**

2.2 SAMPLING LOCATIONS

Sampling was carried out at 5 subtidal stations and 3 intertidal transects along with the sea intake and outfall channels. Out of 5 subtidal stations, 2 were in the sea intake channel, 2 along the discharge mixing (outfall channel) region and remaining 1 in between these two locations. One intertidal station was located along the sea intake channel and 2 were along the discharge region. The detailed geographic coordinates of sampling stations are given in Table 1, 2 and Figure 1.1.

Table 1: Geographic coordinates, water, and sediment parameters at the subtidal sampling stations, APL-Mundra during December 2023.

Subtidal station							
Station	Station code	Locations	Coordinates		Water depth	Tide	Sediment texture
1	St-1	Intake point	22°48' 30.'69"N	69°32'55.18"E	5.4 m	Flood	Silty-sand
2	St-2	Mouth of intake point	22°46'51.62"N	69°32'10.89"E	4.5 m	Flood	Silty-sand
3	St-3	West port area	22°45'15.56"N	69°34'43.26"E	5.0 m	Ebb	Silty-sand
4	St-4	Outfall area	22°44' 27.23"N	69°36'19.02"E	4.0 m	Ebb	Silty clay
5	St-5	Outfall area	22°44'45.17"N	69°36'352.74"E	4.2 m	Ebb	Silty clay

Table 2: Geographic coordinates, water, and sediment parameters at the intertidal sampling stations, APL-Mundra during December 2023.

Intertidal transect						
Station	Station code	Tide Level	Coordinates		Intertidal exposed area	Sediment texture
I	IT-1 (HW)	High Tidewater level	22°44'17.44" N	69°38'26.70" E	5.1 m	Silty-sand
	IT-1 (LW)	Low Tide water level	22°45'36.52"N	69°28'51.42"E		Silty-sand
II	IT-2 (HW)	High Tide water level	22°48'50.63" N	69°33'40.52" E	4.0 m	Silty-Sandy
	IT-2 (LW)	Low Tidewater level	22°41'37.54" N	69°32'45.56" E		Silty-sand
III	IT-3 (HW)	High Tidewater level	22°46'52.35" N	69°46'31.50"E	4.5 m	Sandy
	IT-3 (LW)	Low Tidewater level	22°45'44.33" N	69°40'28.31" E		Sandy



Figure 1: Map of the study area illustrating the subtidal and intertidal sampling stations.

2.3 SAMPLING STRATEGY

2.3.1 Sampling frequency

A sampling at the subtidal stations was carried out during the flood to ebb tides. Surface and bottom water samples were collected in duplicate for assessing water quality and marine biota. Intertidal samples were collected in duplicate during low tide at each transect.

2.3.2 Sampling methodology

For estimation of Physico-chemical parameters and marine flora (phytoplankton and pigments), subsurface samples were collected using the Niskin water sampler (5-litre capacity) with a mechanism for closing at the desired depth. Surface water samples were collected using a clean polyethylene bucket. Phytoplankton samples were collected in clean polyethylene bottles (1 L) fitted with inert cap liners and preserved with 4% Lugol's iodine solution. For pigment analysis, water samples were stored in clean, dark polyethylene cans (5 L). Chemical parameters samples were collected in polyethylene or glass bottles. Samples for phenol were collected in polyethylene or glass bottles and Petroleum Hydrocarbon samples collected in glass bottles. Dissolve oxygen (DO) and Biological Oxygen Demand (BOD) samples were collected in glass BOD bottles. The temperature was measured on the field with a calibrated thermometer. Analysis of other parameters was carried out in the laboratory.

For zooplankton, oblique hauls were made using Heron Tranter net attached with calibrated flow meter. Samples were stored in clean polyethylene bottles (0.5 L) and fixed with 5% formaldehyde.

For the analysis of macrobenthos, subtidal sediment samples were collected using a Van Veen grab covering an area of 0.04 m². Intertidal samples were collected using a metal quadrant. Samples were sieved with a 500 µ metal sieve and preserved with Rose Bengal-formalin solution and stored in plastic zip-lock bags.

2.4 SAMPLE ANALYSIS METHODS

2.4.1 Physico-chemical parameter:

Samples were analysed by using different analytical methods for estimations of Temperature, Turbidity, PH, Suspended Solid (SS), Salinity, DO, BOD, COD, Phosphate, Total nitrogen, Nitrite, Nitrate, Phenols and PHc. The standard methods used for the analysis of each parameter are given in Table 3.

2.4.2 Sediment Quality parameters:

Sediment texture, Petroleum Hydrocarbon (PHc), Phosphorus, Organic Carbon, Aluminium, Iron, Chromium, Nickel, Zinc, Lead, Copper, Cobalt, Cadmium, Mercury, Arsenic. The standard methods used for the analysis of each parameter.

2.4.3 Biological parameters:

2.4.3a Phytoplankton:

The Lugol's preserved samples were allowed to settle for 48-72 hrs. The identification and enumeration of phytoplankton cells were carried out under a compound microscope using the Sedgwick Rafter slide. Species were identified to the genus level.

2.4.3b Phytoplankton pigments:

For the estimation of Chlorophyll *a* (Chl *a*) and Pheophytin, a known volume of field-collected water samples were filtered through Whatman glass microfiber filters (GF/F). Then filter paper was macerated in 90% acetone and stored overnight in the dark at 4°C. For estimation of Chl *a* fluorescence of the extract was measured using Turner Fluorometer. For phaeophytin fluorescence was measured after acidification with 0.1 N HCl.

2.4.3c Zooplankton:

Formalin preserved sample was divided into 4 equal portions using the Folsom Plankton Splitter. One portion of the samples was used to determine biomass using the volume displacement method. Another portion was used for enumeration and identification of (25-50%) faunal composition.

For the quantification of zooplankton, 4-5 ml of the sample was taken in a zooplankton counting chamber. The identification was carried out under Stereomicroscope. The zooplankton were identified at the group level.

2.4.3d Benthos:

For enumeration and identification of the macrobenthos, the organisms were handpicked using forceps and a paintbrush. After sorting, organisms were preserved in 10% formalin. Identification of the organisms was done to the group level under a stereomicroscope.

3 WATER QUALITY MONITORING

3.1 RESULT OF PHYSICO-CHEMICAL WATER PARAMETER ANALYSIS

The samples collected during the field visit were brought to the laboratory for further analysis of Physico-chemical parameters. The standard methods used for the analysis of water quality parameters are given in Table 3.

3.1.1 Temperature: Marine water temperature was checked on-site during the sampling. Surface and bottom water temperatures observed in the study area were in a range between 24.2^oC to 25.5^oC. The water temperature generally varied in accordance with the prevailing air temperature, tidal activity, and seasonality.

3.1.2 pH: The pH of the water is generally buffering effect, influenced by the freshwater and anthropogenic discharge from land. The observed pH in the study area was in the range of 7.9 to 8.06 at the surface and bottom water.

3.1.3 Turbidity: Seawater turbidity is the cloudiness caused by large numbers of individual particles such as very fine clay and minute marine organisms. This also varies seasonally due to intrusion of land runoff and/or sediment resuspension. Surface and bottom water turbidity observed in the study area was in a 1 NTU.

3.1.4 Total suspended solids (TSS): The suspended solids generally constitute silt and clay eroded from the land or shore erosions and suspension of the benthic layers from the seabed. Anthropogenic discharges also contribute to suspended solids in the form of contaminants such as oil and solid waste in a polluted area. On a seasonal basis, high TSS in seawater could be observed during the active monsoon season. Suspended solid concentration in the study area was a little variable. In surface water, TSS was 76 to 98 mg/L and in the bottom water, it was ranged from 96 to 118 mg/L.

3.1.5 Salinity: Salinity is an indicator of (saline or freshwater) water masses intrusion within the region. The standard average salinity of seawater is 38.2, which may vary with the riverine or inland influx, rains, or evaporation in the region. The salinity variation during the present sampling was 36 to 39 at surface and 37.9 to 40 at the bottom water.

3.1.6 DO and BOD: High DO level is an indication of good oxidizing conditions in an aquatic environment. In unpolluted waters equilibrium is maintained through oxygen production during photosynthesis, dissolution from the atmosphere consumption by the respiration and decay of organic matter in a manner that DO levels are close to or above saturation value.

The DO level of the study area was varied from 5.3 to 6.5 mg/L at the water surface and 4.2 to 5.7 mg/L at the bottom water. The average DO value was 5.4 mg/L, which indicates the oxygenated conditions in the study region.

BOD is generally indicating the effective consumption of oxidizable matter in that water body. The industrial effluents contain high BOD levels. Thus, high BOD is also an indication of the intrusion of industrial polluted effluent into natural waters. BOD levels in the study area were varied from 3.9 to 5.1 mg/L at surface and 4.5 to 5.2 mg/L at bottom water.

3.1.7 Nutrients: Dissolved phosphorus and nitrogen compounds serve as the nutrients for phytoplankton growth. The high nutrient concentrations in the seawater generally could be attributed to the anthropogenic and industrial influx. This could lead to further eutrophication and further deterioration of the pristine ecosystem. In the present study, Phosphate concentration was range from 0.2 to 0.3 $\mu\text{mol/L}$ on the surface and 0.2 to 0.4 $\mu\text{mol/L}$ bottom water. Nitrite concentration was range from 0.2 to 0.6 $\mu\text{mol/L}$ on the surface and 0.4 to 0.6 $\mu\text{mol/L}$ bottom water. Nitrate concentration was range from 1.96 to 2.24 $\mu\text{mol/L}$ on the surface and 2.24 to 2.9 $\mu\text{mol/L}$ bottom water.

3.1.8 PHc and phenol: The Phenol compounds and PHc were not detected in the present investigation.

Table 3: Water quality parameters and their test methods.

Sr. No.	Parameters	Station 1		Station 2		Test Method Permissible
		Surface	Bottom	Surface	Bottom	
PHYSICAL QUALITY						
1.	pH @ 25°C	8.05	8	7.99	7.98	IS 3025(Part 11)1983
2.	Temperature (°C)	25.5	24.7	25.2	24.4	IS 3025(Part 9) 1984
3.	Turbidity (NTU)	1	1	0.1	1	IS 3025(Part 10) 1984
CHEMICAL QUALITY						
1.	Total Suspended Solids (mg/l)	94	110	98	116	APHA 23rd Ed.,2017,2540- D
2.	Salinity	37	38	36	37.9	By Calculation
3.	Dissolved Oxygen (mg/l)	5.8	5.1	5.9	5.7	APHA 23rd Ed.,2017,4500-O, B
4.	Biochemical Oxygen Demand (BOD) (mg/l)	4.8	4.6	3.9	5.2	IS 3025(Part 44)1993Amd.01
5.	Sulphate as SO ₄ (mg/l)	1840	1908	1926	2080	APHA 23rd Ed.,2017,4500- SO ₄ E
6.	Ammonical Nitrogen (µmol/l)	1.71	1.9	1.6	0.76	APHA 23rd Ed.,2017,4500- NH ₃ B
7.	Total Nitrogen (µmol/l)	5.2	6.4	4.8	6	By Calculation
8.	PO ₄ ³⁻ -P (µmol/l)	0.31	0.26	0.29	0.28	APHA 23rd Ed.,2017,4500 -P,D
9.	(NO ₃ ⁻ -N) (µmol/l)	2.04	2.8	2.14	2.24	APHA 23rd Ed.,2017,4500 NO ₃ -B
10.	(NO ₂ ⁻ -N) Nitrite (µmol/l)	0.24	0.46	0.5	0.6	APHA 23rd Ed.,2017,4500 NO ₂ B
11.	Phenol (mg/l)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	IS 3025(Part 43):2020
12.	PHc (ppb)	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F

Note: MDL = Minimum Detection Limit (MDL: 0.01) and N.D. = Not detectable
 Turbidity= 0.1=1 to 10 NTU; 1=10 to 40 NTU; 5=40-100 NTU

Table 3 (Continued 2)

Sr. No	Parameters	Station 3		Station 4		Test Method Permissible
		Surface	Bottom	Surface	Bottom	
PHYSICAL QUALITY						
1.	pH @ 25°C	8.04	8.06	7.9	8.1	IS 3025(Part 11)1983
2.	Temperature °C	24.7	24.2	25.2	24.4	IS 3025(Part 9)1984
3.	Turbidity (NTU)	0.1	0.1	1	1	IS 3025(Part 10)1984
CHEMICAL QUALITY						
1.	Total Suspended Solids (mg/l)	88	96	76	104	APHA 23rd Ed.,2017,2540- D
2.	Salinity	37	38	39	40	By Calculation
3.	Dissolved Oxygen (mg/l)	6.5	4.6	5.8	4.2	APHA 23rd Ed.,2017,4500-O, B
4.	Biochemical Oxygen Demand (BOD) (mg/l)	5.1	4.5	4.6	5	IS 3025(Part 44)1993Amd.01
5.	Sulphate as SO ₄ (mg/l)	1940	2050	1856	2140	APHA 23rd Ed.,2017,4500- SO ₄ E
6.	Ammonical Nitrogen (µmol/l)	0.9	0.75	0.59	1.01	APHA 23rd Ed.,2017,4500- NH ₃ B
7.	Total Nitrogen (µmol/l)	5.8	7.1	4.6	6	By Calculation
8.	PO ₄ ³⁻ -P (µmol/l)	0.2	0.2	0.3	0.4	APHA 23rd Ed.,2017,4500 –P,D
9.	(NO ₃ ⁻ -N) (µmol/l)	2.4	2.9	1.96	2.38	APHA 23rd Ed.,2017,4500 NO ₃ -B
10.	(NO ₂ ⁻ -N) Nitrite (µmol/l)	0.3	0.5	0.6	0.4	APHA 23rd Ed.,2017,4500NO ₂ B
11.	Phenol (mg/l)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	BDL(MDL:0.001)	IS 3025(Part 43):2020
12.	PHc (ppb)	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F

Note: MDL = Minimum Detection Limit (MDL: 0.01) and N.D. = Not detectable
 Turbidity= 0.1=1 to 10 NTU; 1=10 to 40 NTU; 5=40-100 NTU

Table 3 (Continued 3)

Sr. No.	Parameters	Station 5		Test Method Permissible
		Surface	Bottom	
PHYSICAL QUALITY				
1.	pH @ 25°C	8.1	8.2	IS 3025(Part 11)1983
2.	Temperature (°C)	25.4	24.6	IS 3025(Part 9)1984
3.	Turbidity (NTU)	1	1	IS 3025(Part 10)1984
CHEMICAL QUALITY				
1.	Total Suspended Solids (mg/l)	84	118	APHA 23rd Ed.,2017,2540- D
2.	Salinity	38.5	39	By Calculation
3.	Dissolved Oxygen (mg/l)	5.3	5	APHA 23rd Ed.,2017,4500-O, B
4.	Biochemical Oxygen Demand (BOD) (mg/l)	4.9	4.8	IS 3025(Part 44)1993Amd.01
5.	Sulphate as SO ₄ (mg/l)	1946	2162	APHA 23rd Ed.,2017,4500- SO ₄ E
6.	Ammonical Nitrogen(μmol/l)	1.2	0.94	APHA 23rd Ed.,2017,4500- NH ₃ B
7.	Total Nitrogen (μmol/l)	6.4	7.9	By Calculation
8.	PO ₄ ³⁻ -P (μmol/l)	0.31	0.41	APHA 23rd Ed.,2017,4500 -P,D
9.	(NO ₃ ⁻ -N) (μmol/l)	2.24	2.8	APHA 23rd Ed.,2017,4500 NO ₃ -B
10.	(NO ₂ ⁻ -N) Nitrite (μmol/l)	0.2	0.6	APHA 23rd Ed.,2017,4500 NO ₂ B
11.	Phenol (mg/l)	BDL(MDL:0.001)	BDL(MDL:0.001)	IS 3025(Part 43):2020
12.	PHc (ppb)	N.D.	N.D.	APHA 23rd ED,2017,5520 F

Note: MDL = Minimum Detection Limit and N.D. = Not detectable
 Turbidity= 0.1=1 to 10 NTU; 1=10 to 40 NTU; 5=40-100 NTU

4 SEDIMENT QUALITY MONITORING

The sediment quality at different sampling stations was measured during this investigation. The results are presented in Tables 4 and 5.

- The sediment in the subtidal region was mainly composed of silty sand to loamy sand. In the intertidal region, sediment texture was sandy.
- The **Aluminium** was not detected.
- The highest **Cobalt** content (9.67 µg/g) was recorded at ST-1 and lowest at ST-4 (6.54 µg/g).
- At ST-3, the highest **Copper** content (13.72 µg/g) was recorded, whereas the lowest was detected at ST-4 (8.6 µg/g). In the intertidal region, highest copper content (11.73 µg/g) was found at IT-3 (LWL) and lowest was detected at IT-1 (HWL) (8.24 µg/g).
- The **Zinc** content (67.46 µg/g) was highest at ST-4 and the lowest zinc content (27.22 µg/g) at ST-3. The zinc content in the intertidal region was within range of 9.84 µg/g to 28.4 µg/g.
- In the subtidal stations, the highest **phosphorus** content (502.4 µg/g) was recorded at ST-3 whereas the lowest was at ST-1 (385.4 µg/g). In the intertidal region highest phosphorus content (502.3 µg/g) was recorded at IT-1 (LWL) and lowest at (364.2 µg/g) IT-2(HWL).
- The highest **Organic carbon** content (0.6 %) was recorded at ST-4 .
- The **Chromium** content of marine sediment was ranged from 7.3 µg/g to 12.25 µg/g. The highest chromium content was recorded at ST-3 and the lowest at ST-4. In the Intertidal region, the chromium content was varied from 9.82 µg/g to 15.21 µg/g.
- The highest **Nickel** content (24.94 µg/g) was recorded at ST-1 and lowest (15.76 µg/g) at ST-4. In the intertidal region higher nickel content (21.05 µg/g) was found at IT-2 (LWL) and lowest (16.05 µg/g) at IT-3 (LWL).
- In the subtidal region, the highest **Manganese** content was recorded at ST-4 (354.8 µg/g).
- The **Iron** content was higher at ST-1 (0.95 %) and lower at ST-4 (0.45%). In the Intertidal region, the highest iron content was recorded at IT-1(HWL) (0.21 %) and lowest at IT-3 (LWL) (1.7 %).
- The **PHc, Arsenic & Mercury** was not detected in the sediments during this study.

Table 4: Subtidal sediment quality parameters and their test methods.

No.	Parameters	SUBTIDAL SEDIMENT QUALITY(µg/g)					Test Permissible	Method
		Station 1	Station 2	Station 3	Station 4	Station 5		
1	Texture	Silty sand	Silty-sand	Silty-sand	Silty-clay	Silty-clay	--	
2	Aluminium as Al%	N.D.	N.D.	N.D.	N.D.	N.D.	Spectrophotometer Method	
3	Cobalt as Co(µg/g)	9.67	9.29	7.51	6.54	7.39	EPA 3050B :1996/7000B :2007	
4	Copper as Cu(µg/g)	12.9	10.94	13.72	8.6	12.23	EPA 3050B :1996/7000B :2007	
5	Zinc as Zn	33.19	29.17	27.22	67.46	31.27	EPA 7471A Method	
6	Mercury(µg/g)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	BDL(MDL:0.1)	IS 10158B (Stannous Chloride Method)	
7	Phosphorous (Total)(µg/g)	385.4	436.5	502.4	476.1	492.1	EPA 3050B :1996/7000B :2007	
8	C (Org.) %	0.2	0.4	0.3	0.6	0.4	IS: 2720 (Part 22):1972	
9	Chromium(µg/g)	11.89	10.1	12.25	7.3	8.43	EPA 3050B :1996/7000B :2007	
10	Nickel (µg/g)	24.94	23.07	22.16	15.76	20.49	EPA 3050B :1996/7000B :2007	
11	Manganese	234.5	188.5	224.3	354.8	174.1	EPA 3050B :1996/7000B :2007	
12	Iron%	0.95	0.93	0.68	0.45	0.62	EPA 3050B :1996/7000B :2007	
13	PHc(µg/g)	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 23rd ED,2017,5520 F	
14	Arsenic(µg/g)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	BDL(MDL:0.05)	EPA 1998, SW-846, Method 7061A 1992	

Note: MDL = Minimum Detection Limit (MDL: 0.01) and N.D. = Not detectable

Table 5: Intertidal sediment quality parameters and their test methods.

INTER TIDAL SEDIMENT QUALITY (µg/g)								
Sr. No	Parameters	Transect 1		Transect 2		Transect 3		Test Method Permissible
		High Tide	Low Tide	High Tide	Low Tide	High Tide	Low Tide	
1.	Texture	Silty-sand	Silty-Sand	Silty-sand	Silty-sand	Sandy	Sandy	Spectrophotometer Method
2.	pH	7.41	8.53	8.61	8.46	8.74	8.84	IS: 2720 (Part 26):1987 (By pH Meter)
3.	Copper as Cu	8.24	10.52	9.06	11.55	11.44	11.73	EPA 3050B :1996/7000B :2007
4.	Mercury as Hg	BDL(MDL :0.1)	BDL(MDL :0.1)	BDL(MDL :0.1)	BDL(MDL: 0.1)	BDL(MDL :0.1)	BDL(MDL :0.1)	EPA 7471A Method
5.	Phosphorous as P	472.6	502.3	364.2	452.1	392.5	402.8	IS 10158B (Stannous Chloride Method)
6.	Chromium as Cr	15.21	13.74	12.82	9.82	14.06	14.62	EPA 3050B :1996/7000B :2007
7.	Zinc as Zn	14.26	20.04	27.55	28.4	18.41	9.84	EPA 3050B :1996/7000B :2007
8.	Nickel as Ni	18.71	19.72	19.31	21.05	16.25	16.05	EPA 3050B :1996/7000B :2007
9.	Arsenic as As	BDL(MDL :0.05)	BDL(MDL :0.05)	BDL(MDL :0.05)	BDL(MDL: 0.05)	BDL(MDL :0.05)	BDL(MDL :0.05)	EPA 1998, SW-846, Method 7061A 1992
10.	Cobalt as Co	6.24	7.12	5.26	3.41	5.61	2.43	EPA 3050B :1996/7000B :2007
11.	Iron as Fe	0.44	0.34	0.39	0.29	0.3	0.21	EPA 3050B :1996/7000B :2007
12.	Aluminium as Al	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	Spectrophotometer Method

Note: MDL = Minimum Detection Limit (MDL: 0.01) and N.D. = Not detectable

❖ BIOLOGICAL PARAMETERS:

Phytoplankton:

The Lugol's preserved samples were allowed to settle for 48-72 hrs. The identification and enumeration of phytoplankton cells were carried out under a compound microscope using the Sedgwick Rafter slide. Species were identified to the genus level.

Phytoplankton pigments:

For the estimation of Chlorophyll *a* (Chl *a*) and Pheophytin, a known volume of field-collected water samples were filtered through Whatman glass microfiber filters (GF/F). Then filter paper was macerated in 90% acetone and stored overnight in the dark at 4°C. For estimation of Chl *a* fluorescence of the extract was measured using Turner Fluorometer. For phaeophytin fluorescence was measured after acidification with 0.1 N HCl.

Zooplankton:

Formalin preserved sample was divided into 4 equal portions using the Folsom Plankton Splitter. One portion of the samples was used to determine biomass using the volume displacement method. Another portion was used for enumeration and identification of (25-50%) faunal composition.

For the quantification of zooplankton, 4-5 ml of the sample was taken in a zooplankton counting chamber. The identification was carried out under Stereomicroscope. The zooplankton were identified at the group level.

Benthos:

For enumeration and identification of the macrobenthos, the organisms were handpicked using forceps and a paintbrush. After sorting, organisms were preserved in 10% formalin. Identification of the organisms was done to the group level under a stereomicroscope.

5 BIOLOGICAL PARAMETERS (BIODIVERSITY STUDY)

Marine ecosystems are subject to a multitude of direct human pressures, such as overexploitation, eutrophication, pollution, and species introductions. These stressors can have synergistic effects on marine ecosystems, altering its functioning. Anthropogenic involvements constantly compromise the health of the marine ecosystem by disturbing the ecological balance. Hence the assessment of the biotic components along with abiotic factors is an integral part of environmental assessment and monitoring study. During the present investigation at APL-Mundra, the abundance and distribution of marine organisms (Plankton and benthos) were studied as part of routine environmental monitoring.

5.1 PLANKTONIC FORMS

The name plankton is derived from the Greek word “planktons”, meaning “wanderer” or “drifter”. While some forms of plankton are capable of independent movement and can swim up to several hundred meters in a single day, their position is primarily determined by currents in the body of water they inhabit. As per definition, organisms classified as "plankton" are unable to resist ocean currents. Plankton is primarily divided into two broad functional groups i.e., Phytoplankton and Zooplankton.

5.1.1 Phytoplankton

Phytoplankton are microscopic, single-celled photosynthetic organisms that live suspended in all water niches, including oceans, freshwater, and marine niche. Like the terrestrial ecosystem where plants are an integral part of the ecosystem, phytoplankton play key role in the biogeochemistry of the oceans. As they are dependent on sunlight for energy, they mostly inhabit the euphotic zone. Therefore, they are responsible for production of half of the atmosphere’s oxygen and more than half of the primary production in the oceans. There are many species of phytoplankton, each of which has a characteristic shape, size, and function. Marine species of phytoplankton grow abundantly in oceans around the world and are the foundation of the marine food chain. Marine phytoplankton are the producing (autotrophic) component in the ocean. There are fourteen classes of phytoplankton. Each class of phytoplankton contains unique attributes in size, cell structure, nutrients, and function.

5.1.2 Zooplankton:

Zooplankton occupies second position in the food web of the marine niche. They are the primary consumer’s organisms and generally feed on phytoplankton or small, microscopic group of organisms for they are nutritional needs. They are incapable of making their own food from sun-light or inorganic compounds, and feed on organisms or the remains of other organisms to get the energy necessary for survival.

5.2 SIGNIFICANCE OF PHYTO- AND ZOOPLANKTONS

Phytoplankton are vital to marine ecosystems. They are producers, or autotrophs, that form the foundation of most marine food webs. As photosynthetic organisms, they can convert solar energy into chemical energy and store it in form of sugars. They are responsible for half of the photosynthetic activity on the planet. The significance of zooplanktons is found in their role of transferring biological production from phytoplankton to large organisms in the marine food web and the seafloor. The microscopic protozoan, tunicates, copepods, and other crustaceans

graze upon many phytoplankton species. These in turn become food for other animals further linking the food web. Therefore, variability in reproduction of copepods would affect the survival of young fish that feeds on them.

Table 6: Test methods for phytoplankton, Zooplankton, Benthos, Chlorophyll a and Pheophytin analysis

Sr. no.	Test performed	Method
1	Phytoplankton	APHA, Edition 23, Part 10000, 10200 F
2	Chlorophyll <i>a</i> and Pheophytin	APHA, Edition 23, Part 10000, 10200 H (with some modification)
3	Zooplankton	APHA, Edition 23, Part 10000, 10200 G
4	Macro benthos	APHA, Edition 23, Part 10000,10500 A-10500 D

5.3 PHYTOPLANKTON DIVERSITY:

Phytoplankton sampling was carried out at 5 stations. At each station, water samples were collected from surface and bottom waters. During the sampling period (December 2023) the phytoplankton population in the coastal waters of APL-Mundra was diverse and represented with a total of 33 phytoplankton genera (Table 6) belonging to diatoms (28 genera) and dinoflagellates (5 genera). Diatoms Species belonged to *Asterionella* sp., *Chaetoceros* sp., *Corethron* sp., *Coscinodiscus* sp., *Cyclotella* sp., *Cymbella* sp., *Ditylum* sp., *Guinardia* sp., *Odontella* sp., *Rhizosolenia* sp., *Thalassiosira* sp., *Amphora* sp., *Amphiphora* sp., *Bacillaria* sp., *Cylindrotheca* sp., *Diploneis* sp., *Gyrosigma* sp., *Lauderia* sp., *Leptocylindrus* sp., *Licmophora* sp., *Lithodesmium* sp., *Navicula* spp., *Nitzschia* spp., *Pinnularia* sp., *Pleurosigma* spp, *Pseudo-nitzschia* sp., *Synedra* sp. and *Thalassionema* sp.

The phytoplankton abundance in the study region was ranged from 134 to 262 cells x 10² L⁻¹. The highest phytoplankton abundance was observed at Station 5 in the surface (262 cells x 10² L⁻¹) and then at Station 2 in Surface water (134 cells x 10² L⁻¹). The lowest phytoplankton abundance (134 cells x 10² L⁻¹) was observed at Station 3 in bottom water. The study shows that the marine water around was enriched with the diverse phytoplankton population.

Table 7: Phytoplankton abundance (cells×10² L⁻¹) at different sampling stations in the coastal waters of APL-Mundra, Mundra during December 2023.

Phytoplankton Genera	Sampling Stations									
	St-1	St-1	St-2	St-2	St-3	St-3	St-4	St-4	St-5	St-5
	S	B	S	B	S	B	S	B	S	B
Diatoms										
<i>Amphora sp.</i>	0	2	2	3	5	1	1	2	7	3
<i>Amphiphora sp.</i>	0	0	1	0	1	2	3	1	0	1
<i>Asterionella sp.</i>	20	15	30	18	21	10	19	5	30	21
<i>Bacillaria sp.</i>	4	1	0	4	11	2	2	0	4	4
<i>Chaetoceros sp.</i>	5	8	2	1	2	4	1	4	3	6
<i>Corethron sp.</i>	0	2	1	0	2	1	0	1	1	1
<i>Coscinodiscus sp.</i>	54	25	35	22	20	13	22	16	35	12
<i>Cyclotella sp.</i>	1	2	6	0	0	4	0	0	5	5
<i>Cylindrotheca sp.</i>	2	0	4	0	3	1	3	4	3	2
<i>Cymbella sp.</i>	0	1	1	1	0	0	0	0	0	2
<i>Diploneis sp.</i>	0	1	0	1	1	0	0	1	0	2
<i>Ditylum sp.</i>	4	4	3	1	0	1	11	8	4	2
<i>Guinardia sp.</i>	20	12	21	20	5	2	3	10	16	0
<i>Gyrosigma sp.</i>	3	1	4	0	2	1	2	0	2	0
<i>Lauderia sp.</i>	0	2	0	1	1	0	2	1	0	0
<i>Leptocylindrus sp.</i>	5	10	8	3	1	2	0	1	1	4
<i>Licmophora sp.</i>	0	3	2	0	1	1	1	2	3	1
<i>Lithodesmium sp.</i>	3	1	0	1	1	4	3	8	4	3
<i>Navicula spp.</i>	26	20	21	18	25	15	12	10	35	20
<i>Nitzschia spp.</i>	4	8	18	11	20	19	10	10	22	20
<i>Odontella sp.</i>	12	11	20	8	15	5	15	12	19	14
<i>Pinnularia sp.</i>	3	0	0	2	0	6	10	0	2	2
<i>Pleurosigma spp</i>	1	7	0	2	4	2	16	12	10	5
<i>Pseudo-nitzschia sp.</i>	2	1	5	1	1	5	4	4	2	0
<i>Rhizosolenia sp.</i>	3	10	14	11	10	13	12	8	3	6
<i>Synedra sp.</i>	2	1	1	0	2	4	3	0	2	1
<i>Thalassionema sp.</i>	21	11	20	10	16	11	16	14	10	14
<i>Thalassiosira sp.</i>	20	1	23	10	2	0	20	13	25	13
Dinoflagellates										
<i>Alexandrium sp.</i>	3	1	1	1	2	0	2	1	3	1
<i>Ceratium sp.</i>	3	1	4	2	4	1	3	1	2	2
<i>Gymnodinium sp.</i>	2	2	1	1	2	1	2	4	4	2
<i>Prorocentrum sp.</i>	2	2	1	1	2	2	0	1	4	5
<i>Protoperidinium sp.</i>	1	1	3	0	1	1	0	0	1	1
Total Phytoplankton (Cells x 10² L⁻¹)	226	167	252	154	183	134	198	154	262	175

Note: S=surface; B=bottom; St=station

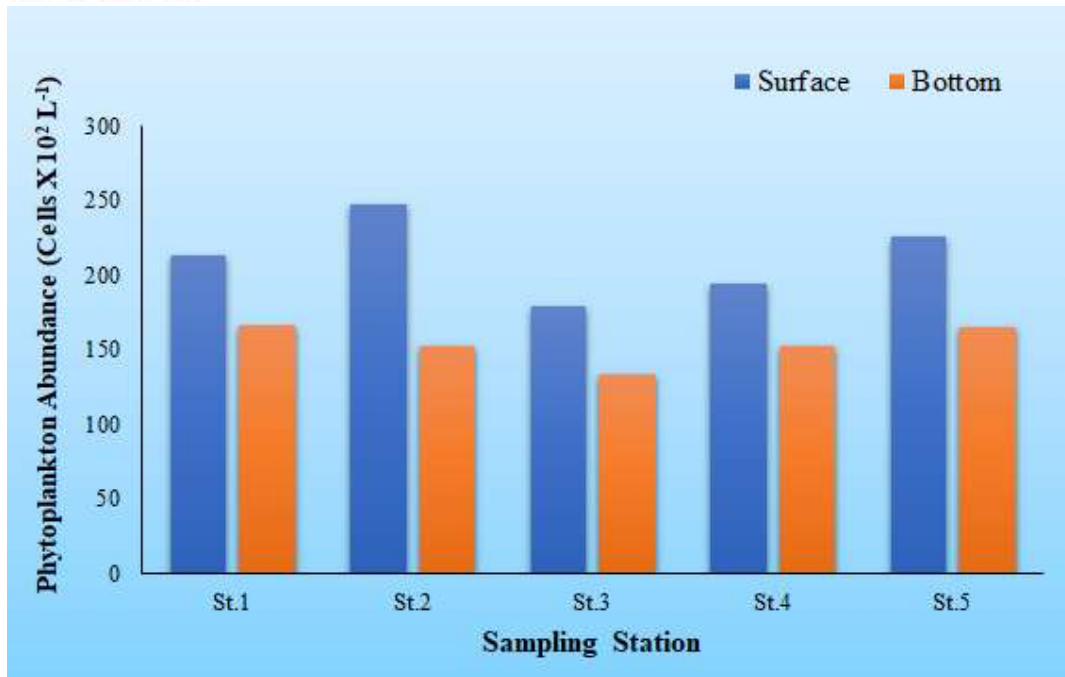


Figure 2: Phytoplankton abundance (cells×10² L⁻¹) reported in the surface and bottom waters along the APL-Mundra coast, Mundra during December 2023. Note: St=Station



Rhizosolenia sp.



Chaetoceros sp.



Ceratium sp.

Figure 3: Microphotographs of phytoplankton reported in the coastal waters of APL-Mundra, Mundra during December 2023.

5.4 PHYTOPLANKTON PIGMENTS (CHLOROPHYLL *a* AND PHEOPHYTIN):

Marine phytoplankton contains essential as well as accessory pigments like that of terrestrial plants. Phytoplankton pigments capture sunlight. The resulting photosynthesis and its products, especially the oxygen and organic compounds, all rely on the light energy captured by the different phytoplankton pigments. Chlorophyll *a* is the major pigment for light harvesting, and plays a significant role in photosynthesis and photoprotection, by extending the light collection

window and protecting the cell from the damage of high irradiance levels or high ultraviolet light exposure.

Algal chlorophyll forms a series of degradation products upon degradation. In addition to Chlorophyll the naturally occurring pigments in algal cells. The nature of these degradation products depends on which part of the chlorophyll molecule is affected. As chlorophyll degrades, the initial step is either the loss of the magnesium from the centre of the molecule or the loss of the phytol tail. This results in the formation of the molecule, phaeophytin. Depending on the parent molecule several distinct molecules like phaeophytins, chlorophyllides, and pheophorbides can be produced. Thus, in addition to Chlorophyll *a* filtered seawater contains colour degradation products of phytoplankton pigments.

5.4a CHLOROPHYLL *a* AND PHAEOPHYTIN CONCENTRATIONS

The phytoplankton biomass distribution expressed in terms of Chlorophyll *a* (Chl-*a*) and Pheophytin at selected stations in the coastal region of APL-Mundra, Mundra is presented in Table 7. The Chl-*a* concentrations in the study region were ranged from 1.7 µg/L to 2.7 µg/L. The Pheophytin content was ranged from 0.7 µg/L to 1.1 µg/L. The Chl-*a* and Pheophytin concentrations were more in the surface water as compared to the bottom water. The variations observed between the surface and bottom waters could be due to several natural biological variability. The highest Chl-*a* and Pheophytin concentrations were observed at surface waters of all stations and highest Chl-*a* (3.0 µg/L) was observed at surface waters of station 1.

Table 8: Chlorophyll *a*, Pheophytin concentrations along with their ratios (Chl-*a*: Pheophytin) in the marine waters of APL-Mundra, Mundra during December 2023.

Sampling stations		Chlorophyll <i>a</i> (µg/L)	Phaeophtin (µg/L)	Chl <i>a</i> :Phaeophtin ratio
St-1	Surface	2.7	0.9	3.00
St-1	Bottom	2.3	1.1	2.09
St-2	Surface	2.5	1.0	2.50
St-2	Bottom	2.2	0.8	2.75
St-3	Surface	1.9	0.8	2.38
St-3	Bottom	1.8	0.7	2.57
St-4	Surface	1.9	1.0	1.90
St-4	Bottom	1.7	0.7	2.43
St-5	Surface	2.7	0.92	2.93
St-5	Bottom	1.8	0.8	2.25

Note: ST= Station

The concentration of Pheophytin is a measure of the dead cells and is an indirect indicator of biotic and abiotic stress conditions of the algae leading to a deterioration of Chl-*a*. The ratio from concentrations of Chl-*a* and Pheophytin in an aquatic ecosystem suggests a balance between the growth and mortality of phytoplankton life. In healthy environments, ratios of Chl-*a* to Pheophytin generally exceed 1.1. In the present study, this ratio was ranged from 1.9 to 3.0 (Table 8). The Chl-*a* and Pheophytin ratio showed marginally elevated levels in the surface waters as compared to the bottom waters. Overall, the ratios of Chl-*a* and Pheophytin concentration in the study region were generally high (>1), indicating that the appropriate conditions prevailed for the phytoplankton growth.

5.5 ZOOPLANKTON DIVERSITY:

Zooplankton standing stock in terms of population and biomass revealed substantial spatial variation within all 5 stations (Table 9). The maximum zooplankton population (18.1 nos. $\times 10^3/100 \text{ m}^3$) and biomass (2.39 ml/ 100 m^3) were recorded at station 1. The lowest zooplankton population (11.3 nos $\times 10^3/100 \text{ m}^3$) was observed at station 3 and biomass (1.82 ml/ 100 m^3) (Figure 4). Different groups of identified zooplankton groups are mentioned in Table 9.

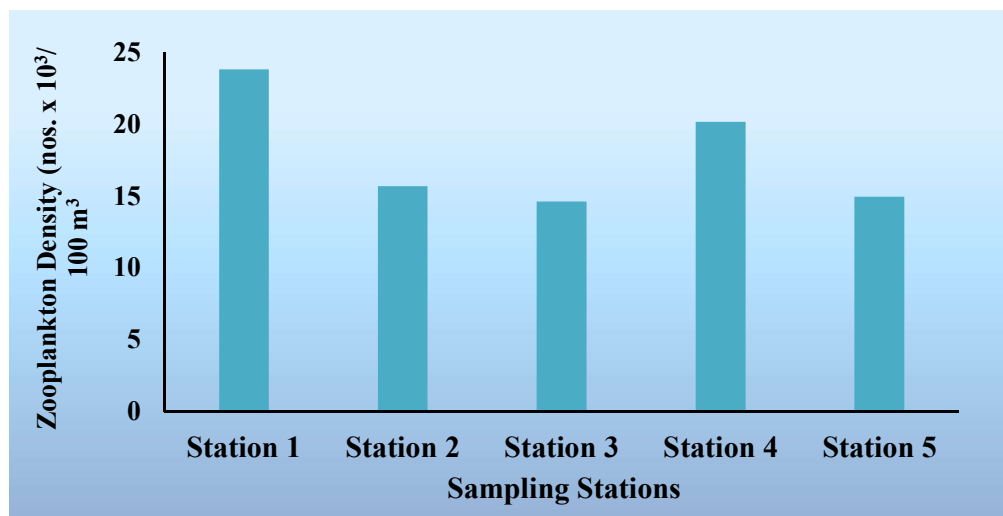


Figure 4: Zooplankton population (nos. $\times 10^3 /100 \text{ m}^3$) reported in the subtidal waters (Station 1 to 5) along the APL-Mundra coast, Mundra during December 2023.

Table 9: Population (nos. $\times 10^3/100 \text{ m}^3$) and biomass (ml/100 m^3) of various zooplankton groups in the coastal waters at the APL-Mundra, Mundra during December 2023.

Zooplankton Groups	St-1	St-2	St-3	St-4	St-5
Copepods	11.4	9.8	7.6	9.3	8.5
Copepod nauplii	2.6	2.5	2.1	3.2	2.9
Brachyuran crab larvae	1.1	0.6	0.4	0.5	0.3
Anomuran crab larvae	1.8	0.5	0.5	0.7	0.6
Decapod (shrimps)	0.1	0.0	0.1	0.1	0.0
Fish and shell fish eggs	0.6	0.2	0.2	0.5	0.4
Fish larvae	0.0	0.0	0.0	0.0	0.0
Gastropod larvae	0.1	0.1	0.0	0.1	0.0
Chaetognaths	0.2	0.1	0.2	0.3	0.2
Polychaete larvae	0.0	0.0	0.0	0.0	0.0
Siphonophora	0.1	0.0	0.0	0.0	0.0
Ostracods	0.0	0.0	0.0	0.0	0.0
Oikopleura	0.1	0.1	0.1	0.0	0.1
Amphipods	0.0	0.0	0.0	0.0	0.0
Population (nos. $\times 10^3/100 \text{ m}^3$)	18.1	14.0	11.3	14.7	13.3
Biomass (ml./100 m^3)	2.39	1.82	1.84	2.16	1.63

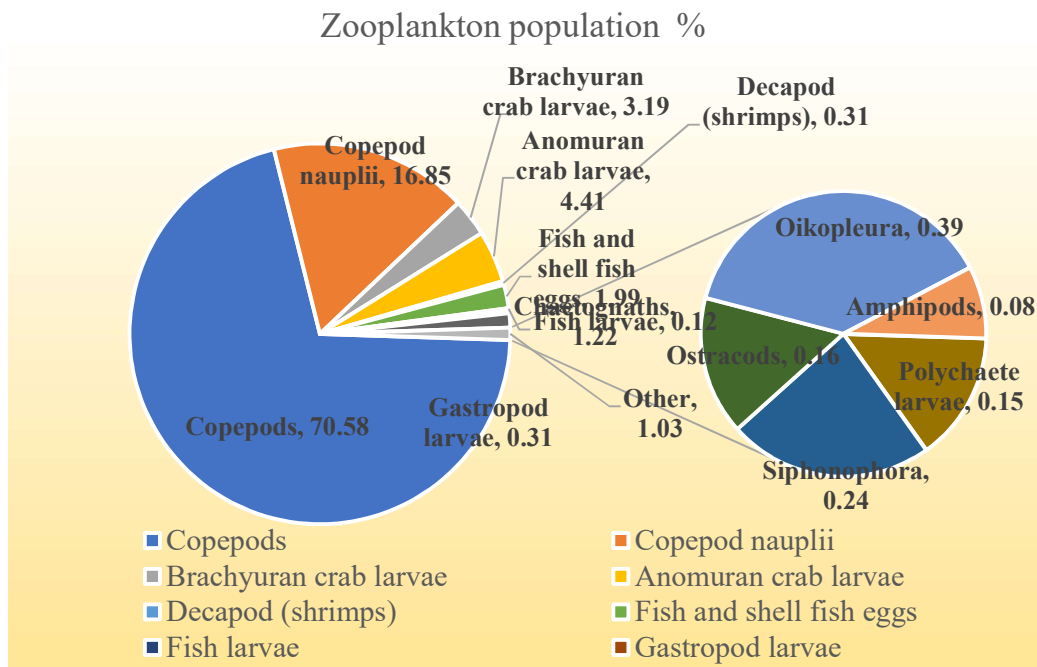


Figure 5: Dominant groups of Zooplankton reported from APL-Mundra coast, Mundra during December 2023.

*Gastropod larvae**Crab larvae**Fish egg*

Figure 6: Microphotographs of zooplankton reported from APL-Mundra coast, Mundra during December 2023

5.6 Macrobenthic fauna

The benthic zone is the lowest ecological zone of a water body which usually involves the sediments at the seafloor. The benthic environment is divided into distinctive ecological zones based on depth, seafloor topography, and vertical gradients of physical parameters. These are the supralittoral, littoral, sublittoral, bathyal, abyssal, and hadal zones. The number of phyla and species of benthic animals exceeds those of pelagic species, at least partly because of the greater physical variety of benthic habitats. Benthic animals are separated into infaunal and epifaunal species, depending upon whether they live within sediments or on the surface of the seafloor, respectively. Size categories of the zoobenthos consist of the larger macrofauna (>1.0 mm), the small meiofauna which is characteristically found in sand and mud, and the microfauna which is made up mostly of protozoans.

Benthic organisms are morphologically different from those planktonic organisms. Many are adapted to live on the substrate (bottom). In benthic habitats, they can be considered dominant creatures. These organisms adapted to deep-water pressure so cannot survive in the upper parts of the water column. Since light does not penetrate very deep ocean water, the benthic organisms often depend on the organic matter falling from the upper water column as their main energy source. This dead and decaying matter sustains the benthic food chain. The most benthic organisms are scavengers or detritivores. These organisms under being relatively stationary, are constantly exposed to changes undergoing in overlying water, and hence, respond very well to aquatic pollution. The macro benthos population is very sensitive to environmental perturbation and is highly influenced by the physicochemical characteristics of

water, the nature of the substratum, food, predation, and other factors. The density of benthic invertebrates also fluctuates widely with the changes in the season.

5.6.1 Significance of macrobenthic organisms

The biomass of macrobenthic organisms in estuaries and coastal embayment is often high. It declines if communities affected by prolonged periods of poor water quality especially when anoxia and hypoxia are common. Burrowing and tube-building by deposit-feeding benthic organisms (bioturbation) help to mix the sediment and enhance the decomposition of organic matter. Nitrification and denitrification are also enhanced because a range of oxygenated and anoxic micro-habitats are created. For example, the area of oxic-anoxic boundaries and the surface area available for diffusive exchange are increased by tube-building macrobenthos. The loss of benthic suspension-feeders can further enhance turbidity levels because these organisms filter suspended particles including planktonic algae, and they enhance sedimentation rates through bio deposition (i.e., voiding of their wastes and unwanted food). Changes in the macro fauna (and flora) cause changes in nutrient storage pools. Macro fauna is also important constituents of fish diets and thus are an important link for transferring energy and nutrients between trophic levels, also driving pelagic fish and crustacean production. For these reasons, the benthic organisms are extremely important indicators of environmental change.

5.6.2 Benthic Diversity

5.6.2a Subtidal region:

During the present study, more macrobenthos abundance and biomass were reported at subtidal stations than at intertidal stations at APL-Mundra. The macrobenthos density ranged from 780 no./m² to 1280 nos./m² at sampling stations (Table 10; Figure 7). The biomass of the macrobenthic community in the study region was ranged from 1.47 g/ m² to 2.1 g/ m² in the study region. The maximum abundance of benthic microorganisms was reported at Station 4 (1280 nos./m²). The highest biomass of macrobenthic species was observed at Station 4 (2.1 g/m²). In species composition, Polychaete species (Phylum Annelida) belonging to the family Glyceridae, Paraonidae, Pilargidae, Capitillidae, Cossuridae, Ciratullidae, Nephthyidae, Nereidae, Lumbriconeridae, Spionidae were abundant contributing ~82% to macrobenthic population. Overall, the presence of Polychaete, Amphipods, and Nemertean suggest the availability of food organisms for benthic predators in the area.

Table 10: Faunal composition, density (no/m²) and biomass (g/m²) of the macrobenthos community in the subtidal region at APL-Mundra, during December 2023.

Taxa	Stations				
	St-1	St-2	St-3	St-4	St-5
Phylum Polychaeta					
Paraonidae	310	390	340	480	280
Pilargidae	60	10	30	30	50
Capitillidae	40	110	120	160	40
Cossuridae	50	70	50	20	50
Glyceridae	30	40	30	60	40
Ciratullidae	50	10	10	10	50
Nephtyidae	40	0	10	110	120
Nereidae	30	60	60	50	80
Lumbriconeridae	10	20	0	120	90
Spionidae	50	50	30	60	40
Phylum Mollusca					
Bivalvia	40	90	30	40	30
Gastropoda	40	40	10	50	30
Phylum Arthropoda					
Amphipoda	50	50	30	30	30
Isopoda	20	30	20	30	10
Phylum Nemertea					
Nemertea	20	10	10	30	20
Total abundance (nos./m²)	840	980	780	1280	960
Biomass (g/m²)	1.54	1.68	1.47	2.1	1.89

Note: ST=Station

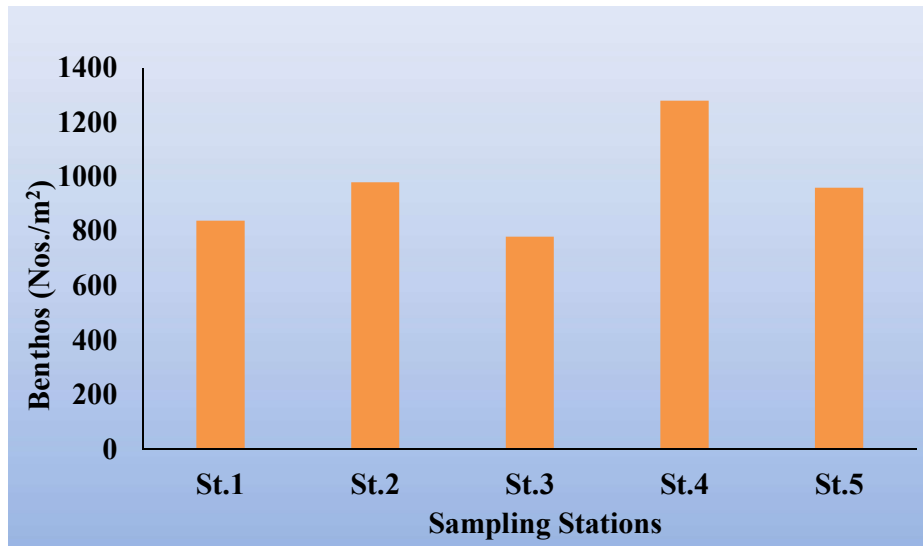


Figure 7: Subtidal macrobenthos abundance (no/m²) at different sampling stations at APL-Mundra, during December 2023

5.6.2b Intertidal region

The sandy substratum with low organic matter affects the occurrence of the macrobenthic community in the intertidal region. Low macrobenthos biomass was measured (0.72 g/m² to 1.12 g/m²) in the intertidal region at the APL-Mundra (Table 11). The lowest density of macrobenthic organisms was reported at station IT-2 (HW) (168 nos. /m²), whereas the highest density was reported at Station IT-1 (LW) (316 nos. /m²). No macrobenthic community was observed at station 3 (HW and LW) may be due to sandy sediment.

Table 11: Faunal composition, density (no/m²) of macrobenthos from the sediments collected at High tide water level (HW) and Low tide water level (LW) in the inter-tidal region at APL-Mundra, during December 2023.

Faunal groups	Intertidal stations					
	IT-1 (HW)	IT-1 (LW)	IT-2 (HW)	IT-2 (LW)	IT-3 (HW)	IT-3 (LW)
Phylum Polychaeta						
Paraonidae	8	44	8	32	-	-
Pilargidae	4	8	4	16	-	-
Capitillidae	8	16	4	12	-	-
Cossuridae	12	12	16	20	-	-
Glyceridae	4	8	12	28	-	-
Ciratullidae	4	44	0	0	-	-
Nephtyidae	8	12	12	24	-	-
Nereidae	4	32	16	20	-	-
Lumbriconeridae	8	16	12	12	-	-
Spionidae	16	24	12	16	-	-
Phylum Mollusca						
Bivalvia	12	16	8	12	-	-
Gastropoda	8	12	4	16	-	-
Phylum Arthropoda						
Amphipoda	44	24	20	28	-	-
Isopoda	32	36	32	16	-	-
Phylum Nemertea						
Nemertea	4	12	8	12	-	-
Total density (no/m²)	176	316	168	264	-	-
Biomass (g/m²)	0.72	1.12	0.72	0.82	-	-

(Note: LW=low water during low tide; HW=high water during high tide; St=Station)

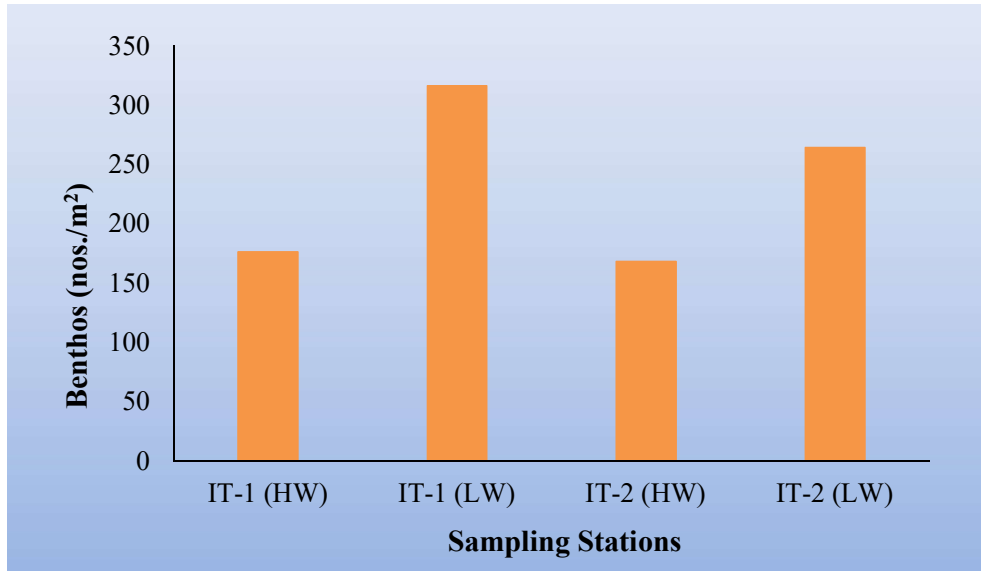


Figure 8: Inter-tidal macro benthos abundance (nos./m²) at different sampling stations at APL-Mundra, during December 2023



Nereidae



Capitellidae



Amphipoda



Paraonidae

Figure 9: Microphotographs of macrobenthic organisms observed in the sediment samples collected in the vicinity of APL-Mundra, during December 2023.

6 CONCLUSIONS

The marine monitoring study conducted during the December 2023 in vicinity of APL, Mundra reveals no adverse change in physical, chemical water parameters and sedimentary heavy metal concentration. Moreover, no unfavourable impact was observed on the biological parameters such as planktonic and macro-benthic population, except some seasonal variability. The enriched biotic population could support the fish population in the region. No notable adverse influence of Outfall seawater discharge was observed on the biotic and abiotic marine components during the present study. Our contemporary fish bioassay study revealed that the fish species *Mugil cephalus* had a 90% survival rate in absolute outfall water, which also supports the findings of present study. Fish for the bioassay study were collected from Kotadi Creek. 90% survival of the *Mugil cephalus* population (in bioassay study) and the diverse biotic population near outfall channel (present study) indicate that the abiotic parameters, such as temperature of discharge water does not have the adverse biological impact. The well-built 11 km-long outfall channel enables cooling of outfall water before intrusion into the sea.

Table 12: Names of the Marine Monitoring Team Members

Sr. No.	Name of Person
1.	Mr. Vijay Thanki (Env. Chemist)
2.	Mr. Pravin Singh (Env. Chemist)
3.	Ms. Shweta A. Rana (Env. Microbiologist)
4.	Mr. Bhavin Patel (Env. Engineer)
5.	Dr. Sushant Sanaye (Marine Biologist)



PHOTOGRAPHS OF DIFFERENT TYPES OF SAMPLING

AMBIENT AIR QUALITY MONITORING RESULTS -- 2023-24

October 2023														
Village : Siracha					Village : Kandagara					Village : wandh				
Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx
10/3/2023	56.3	27.0	17.3	24.3	10/3/2023	57.7	27.1	15.8	22.9	10/3/2023	52.3	27.0	15.3	18.7
10/6/2023	60.5	25.7	13.7	19.0	10/6/2023	54.0	26.6	14.2	16.9	10/6/2023	66.2	30.1	17.9	21.4
10/10/2023	47.4	18.8	15.3	21.6	10/10/2023	60.6	28.7	18.2	25.1	10/10/2023	73.7	38.9	20.3	34.1
10/13/2023	63.2	30.9	16.5	23.7	10/13/2023	69.6	28.2	11.5	15.2	10/13/2023	68.7	33.3	18.6	24.0
10/17/2023	61.1	29.3	12.9	17.7	10/17/2023	64.3	30.1	17.5	22.1	10/17/2023	58.9	26.2	13.2	15.3
10/20/2023	55.4	27.9	15.1	20.2	10/20/2023	44.6	22.6	12.6	19.5	10/20/2023	53.8	27.3	15.7	19.4
10/24/2023	61.8	26.1	17.9	18.5	10/24/2023	61.8	28.3	15.1	22.6	10/24/2023	62.9	31.9	17.5	23.6
10/27/2023	58.0	24.1	14.8	20.6	10/27/2023	54.6	26.3	14.3	17.4	10/27/2023	60.7	28.8	22.4	27.6
10/31/2023	54.2	23.3	16.3	23.6	10/31/2023	66.2	33.1	17.6	25.8	10/31/2023	63.7	29.5	19.6	25.1
Min	47.4	18.8	12.9	17.7	Min	44.6	22.6	11.5	15.2	Min	52.3	26.2	13.2	15.3
Max	63.2	30.9	17.9	24.3	Max	69.6	33.1	18.2	25.8	Max	73.7	38.9	22.4	34.1
Avg	57.5	25.9	15.5	21.0	Avg	59.3	27.9	15.2	20.8	Avg	62.3	30.3	17.8	23.2

November 2023														
Village : Siracha					Village : Kandagara					Village : wandh				
Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx
11/3/2023	60.3	24.4	16.8	17.5	11/3/2023	53.8	27.9	13.5	22.5	11/3/2023	57.2	25.9	15.4	23.2
11/7/2023	58.6	23.0	13.8	23.4	11/7/2023	51.6	24.5	12.1	17.7	11/7/2023	72.1	34.5	19.7	28.9
11/10/2023	50.4	19.7	15.6	20.7	11/10/2023	60.5	26.0	15.6	23.8	11/10/2023	69.8	30.7	15.2	20.4
11/14/2023	55.9	25.7	12.7	22.6	11/14/2023	62.2	22.2	14.9	22.5	11/14/2023	54.5	28.0	11.3	18.1
11/17/2023	67.2	29.8	10.5	17.5	11/17/2023	67.1	23.6	16.2	21.6	11/17/2023	66.7	34.8	16.1	22.8
11/21/2023	53.8	25.5	13.4	18.7	11/21/2023	52.3	19.7	14.7	18.4	11/21/2023	61.6	31.1	11.7	19.2
11/24/2023	64.1	26.3	14.3	19.5	11/24/2023	56.9	25.5	13.8	20.7	11/24/2023	59.0	25.4	18.6	21.9
11/28/2023	57.2	24.3	14.5	24.3	11/28/2023	64.9	24.2	18.4	24.5	11/28/2023	62.7	30.3	16.2	22.5
Min	50.4	19.7	10.5	17.5	Min	51.6	19.7	12.1	17.7	Min	54.5	25.4	11.3	18.1
Max	67.2	29.8	16.8	24.3	Max	67.1	27.9	18.4	24.5	Max	72.1	34.8	19.7	28.9
Avg	58.4	24.8	14.0	20.5	Avg	58.7	24.2	14.9	21.5	Avg	63.0	30.1	15.5	22.1

December 2023														
Village : Siracha					Village : Kandagara					Village : wandh				
Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx
12/1/2023	60.3	23.2	16.8	17.5	12/1/2023	51.8	29.9	13.5	22.5	12/1/2023	64.2	29.4	15.4	23.2
12/4/2023	56.6	24.0	13.8	23.4	12/4/2023	49.6	24.5	12.1	17.7	12/4/2023	69.1	30.0	19.7	28.9
12/8/2023	51.4	21.7	15.6	20.7	12/8/2023	62.5	32.0	15.6	23.8	12/8/2023	64.8	31.2	15.2	20.4
12/11/2023	63.9	25.2	12.7	22.6	12/11/2023	70.2	28.2	14.9	22.5	12/11/2023	56.5	28.5	11.3	18.1
12/15/2023	55.2	28.8	10.5	17.5	12/15/2023	71.1	29.6	16.2	21.6	12/15/2023	63.7	26.3	16.1	22.8
12/21/2023	61.8	24.5	13.4	18.7	12/21/2023	50.3	20.7	14.7	18.4	12/21/2023	73.6	31.6	11.7	19.2
12/24/2023	68.1	26.3	14.3	19.5	12/24/2023	52.9	23.5	13.8	20.7	12/24/2023	68.0	25.9	18.6	21.9
12/25/2023	55.2	26.9	14.5	24.3	12/25/2023	62.9	30.2	18.4	24.5	12/25/2023	59.7	30.8	16.2	22.5
12/29/2023	57.7	27.1	15.2	21.8	12/29/2023	52.3	23.2	16.7	23.5	12/29/2023	65.2	31.4	16.7	26.7
Min	51.4	21.7	10.5	17.5	Min	49.6	20.7	12.1	17.7	Min	56.5	25.9	11.3	18.1
Max	68.1	28.8	16.8	24.3	Max	70.2	32.0	18.4	24.5	Max	73.6	31.6	19.7	28.9
Avg	58.9	25.3	14.1	20.7	Avg	58.1	26.9	15.1	21.7	Avg	65.0	29.5	15.7	22.6

January 2024														
Village : Siracha					Village : Kandagara					Village : wandh				
Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx
1/2/2024	56.1	32.2	13.2	17.8	1/2/2024	56.5	25.6	16.5	22.5	1/2/2024	63.9	33.9	14.7	19.3
1/5/2024	45.5	23.4	16.9	22.1	1/5/2024	62.6	31.1	12.4	16.8	1/5/2024	56.9	30.2	19.5	26.2
1/9/2024	59.3	23.3	15.3	23.5	1/9/2024	53.9	28.1	18.3	24.5	1/9/2024	63.1	43.1	16.2	23.5
1/12/2024	56.4	28.0	12.8	18.5	1/12/2024	59.1	33.8	15.7	21.5	1/12/2024	60.8	41.1	14.2	20.6
1/16/2024	45.8	22.3	16.2	21.5	1/16/2024	52.7	28.2	17.3	24.6	1/16/2024	75.4	33.4	18.4	24.3
1/19/2024	60.1	27.0	11.3	17.5	1/19/2024	59.0	31.6	14.7	20.3	1/19/2024	62.3	37.1	17.2	23.8
1/23/2024	72.3	33.2	15.6	22.7	1/23/2024	71.0	33.5	19.3	24.7	1/23/2024	56.9	34.4	13.4	19.7
1/30/2024	65.6	29.0	14.7	18.2	1/30/2024	60.6	26.0	13.8	19.5	1/30/2024	73.5	39.3	16.8	22.5
Min	45.5	22.3	11.3	17.5	Min	52.7	25.6	12.4	16.8	Min	56.9	30.2	13.4	19.3
Max	72.3	33.2	16.9	23.5	Max	71.0	33.8	19.3	24.7	Max	75.4	43.1	19.5	26.2
Avg	57.6	27.3	14.5	20.2	Avg	59.4	29.7	16.0	21.8	Avg	64.1	36.5	16.3	22.5

February 2024														
Village : Siracha					Village : Kandagara					Village : wandh				
Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx
2/2/2024	51.4	29.0	15.3	22.0	2/2/2024	57.6	29.6	13.6	18.5	2/2/2024	64.5	29.4	14.5	17.2
2/6/2024	40.8	22.9	13.7	19.5	2/6/2024	48.3	24.0	12.8	20.9	2/6/2024	60.6	28.2	16.7	23.6
2/9/2024	61.6	26.6	12.2	16.5	2/9/2024	55.0	29.6	17.5	24.7	2/9/2024	72.0	38.5	19.1	25.4
2/13/2024	64.4	27.8	13.5	18.9	2/13/2024	56.3	27.0	16.8	23.3	2/13/2024	67.7	25.4	18.9	17.6
2/16/2024	60.8	27.5	16.3	15.1	2/16/2024	62.5	28.6	15.0	21.5	2/16/2024	61.2	33.4	15.3	19.5
2/20/2024	72.4	33.2	13.0	17.9	2/20/2024	55.4	29.7	14.1	19.2	2/20/2024	64.4	33.0	16.2	22.1
2/23/2024	50.0	29.2	11.4	15.1	2/23/2024	71.4	32.3	15.5	24.6	2/23/2024	78.0	39.7	19.5	27.9
2/27/2024	53.4	27.2	14.5	20.4	2/27/2024	58.6	34.6	13.0	19.6	2/27/2024	61.3	36.5	16.6	24.5
Min	40.8	22.9	11.4	15.1	Min	48.3	24.0	12.8	18.5	Min	60.6	25.4	14.5	17.2
Max	72.4	33.2	16.3	22.0	Max	71.4	34.6	17.5	24.7	Max	78.0	39.7	19.5	27.9
Avg	56.9	27.9	13.7	18.2	Avg	58.1	29.4	14.8	21.5	Avg	66.2	33.0	17.1	22.2

Mar 2024														
Village : Siracha					Village : Kandagara					Village : wandh				
Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx	Date	PM10	PM2.5	SOx	NOx
3/1/2024	54.7	32.4	13.5	17.3	3/1/2024	61.8	28.0	13.6	18.3	3/1/2024	63.4	25.5	18.2	23.8
3/5/2024	55.9	28.1	15.2	21.0	3/5/2024	54.8	30.5	12.8	17.6	3/5/2024	54.5	31.3	16.0	21.2
3/8/2024	53.2	27.3	16.8	23.6	3/8/2024	58.5	31.5	12.5	15.5	3/8/2024	59.7	35.5	12.9	16.5
3/12/2024	68.6	32.2	15.2	19.3	3/12/2024	57.8	28.1	13.6	18.1	3/12/2024	56.2	28.0	17.5	24.2
3/15/2024	55.0	30.5	12.8	15.7	3/15/2024	56.4	31.2	11.7	15.3	3/15/2024	63.5	33.7	13.9	18.5
3/19/2024	60.2	31.1	13.3	19.2	3/19/2024	59.9	24.3	15.1	21.6	3/19/2024	77.3	35.7	16.5	22.0
3/22/2024	61.3	29.0	11.4	16.2	3/22/2024	57.1	26.3	18.5	23.3	3/22/2024	69.2	32.3	18.7	26.1
3/26/2024	54.6	26.3	12.9	18.8	3/26/2024	63.4	31.6	13.6	16.8	3/26/2024	60.9	28.0	15.5	19.6
3/29/2024	55.1	29.1	14.4	22.7	3/29/2024	48.3	31.1	14.2	20.6	3/29/2024	65.0	34.8	17.1	21.3
Min	53.2	26.3	11.4	15.7	Min	48.3	24.3	11.7	15.3	Min	54.5	25.5	12.9	16.5
Max	68.6	32.4	16.8	23.6	Max	63.4	31.6	18.5	23.3	Max	77.3	35.7	18.7	26.1
Avg	57.6	29.6	13.9	19.3	Avg	57.6	29.2	14.0	18.6	Avg	63.3	31.6	16.3	21.5

Report Ref. No: EE/ENV/2024/01/001

Report Date: 02/01/2024

TEST REPORT
(For the Month of December - 2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/AA1	Sample Location	Near Main Entrance Area
Sampling Date	25/12/2023	Type of Sample	Ambient Air
Sample Received Date	25/12/2023	Sampling Method	IS 5182 (Part 23) : 2022 – PM ₁₀
Analysis Start Date	26/12/2023		EE-WI-7.3-2A (1) – PM _{2.5}
Analysis End Date	29/12/2023		Gaseous Pollutant IS 5182 (Part 5) : 2020
Sample Collection By	Earth Envirotech Team		

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	Reference Method	National Ambient Air Quality Standards
1.	Particulate Matter PM ₁₀	µg/m ³	61.07	IS 5182 (Part 23) : 2022	100
2.	Particulate Matter PM _{2.5}	µg/m ³	26.69	EE-WI-7.2.2A	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	19.33	IS 5182 (Part 2) : 2023	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	21.48	IS 5182 (Part 6) : 2022	80


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/01/002

Report Date: 02/01/2024

TEST REPORT
(For the Month of December - 2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/AA2	Sample Location	Near Workshop Area
Sampling Date	25/12/2023	Type of Sample	Ambient Air
Sample Received Date	25/12/2023	Sampling Method	IS 5182 (Part 23) : 2022 – PM ₁₀
Analysis Start Date	26/12/2023		EE-WI-7.3-2A (1) – PM _{2.5}
Analysis End Date	29/12/2023		Gaseous Pollutant
Sample Collection By	Earth Envirotech Team		IS 5182 (Part 5) : 2020

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	Reference Method	National Ambient Air Quality Standards
1.	Particulate Matter PM ₁₀	µg/m ³	55.62	IS 5182 (Part 23) : 2022	100
2.	Particulate Matter PM _{2.5}	µg/m ³	25.90	EE-WI-7.2.2A	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	17.56	IS 5182 (Part 2) : 2023	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	19.35	IS 5182 (Part 6) : 2022	80


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/01/003

Report Date: 02/01/2024

TEST REPORT
(For the Month of December-2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/ST1	Stack Attached to	Boiler
Sampling Date	25/12/2023	Type of Sample	Stack Emission
Sample Received Date	25/12/2023	Sampling Instrument	Stack Monitoring Kit
Analysis Start Date	26/12/2023	Sampling Method	Guidelines On Methodologies For Source Emission Monitoring LATS/80/2013-14
Analysis End Date	29/12/2023		
Sample Collection By	Earth Envirotech Team		

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	Reference Method	Limit as per GPCB Norms
1.	Suspended Particulate Matter (SPM)	mg/Nm ³	71.42	IS 11255 (Part 1) : 2019	150
2.	Sulphur Dioxide (SO ₂)	ppm	13.75	IS 11255 (Part 2) : 2019	100
3.	Oxides of Nitrogen (NO _x)	ppm	09.53	IS 11255 (Part 7) : 2022	50


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/01/004

Report Date: 02/01/2024

TEST REPORT
(For the Month of December - 2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			

Sample Details			
Sample ID	TGPL/N1-N6	Sampling Location	As per table
Measurement Start Date	25/12/2023	Type of Sample	Noise Monitoring
Measurement End Date	25/12/2023	Sampling Instrument	Sound Level Meter
Measurement Done By	Earth Envirotech Team	Sampling Method	IS 9989 : 2020

ANALYSIS RESULTS

Sr. No.	Location Name	Unit	Day Time	Night Time
			Spot Noise Level dB(A) Maximum	Spot Noise Level dB(B)
Permissible Limit			75.0	70.0
1.	Inside Raw material Area	dB(A)	67.5	60.2
2.	Inside Store Area	dB(A)	64.8	57.5
3.	Inside Recycle Area	dB(A)	73.0	63.4
4.	Inside Lab Area	dB(A)	65.6	54.9
5.	Inside Winder Area	dB(A)	72.5	62.6
6.	Inside Utility Area	dB(A)	70.1	58.2

Day Time: 06:00 AM to 10:00 PM

Night Time: 10:00 PM to 06:00 AM


Analyzed By:



Authorized Signatory:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/01/005

Report Date: 02/01/2024

TEST REPORT
(For the Month of December - 2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/L1-L3	Sampling Location	As per table
Measurement Start Date	25/12/2023	Type of Sample	Lux Monitoring
Measurement End Date	25/12/2023	Sampling Instrument	Lux Meter
Measurement Done By	Earth Envirotech Team	Sampling Method	Lutron – LX-101 Inst. Manual

ANALYSIS RESULTS

Sr. No.	Location Name	In Lux (Day Time)	In Lux (Night Time)
1.	Inside Converting Area	390	218
2.	Inside Recycle Area	312	186
3.	Inside Lab Area	493	302


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/01/006

Report Date: 02/01/2024

TEST REPORT
(For the Month of December - 2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/WW1	Sample Location	STP Outlet
Sampling Date	25/12/2023	Type of Sample	Waste Water
Sample Received Date	25/12/2023	Quantity of Sample	2 Litre
Analysis Start Date	26/12/2023	Sampling Method	APHA 24 th Ed. 1060 B : 2022
Analysis End Date	02/01/2024	Sample Collection By	Earth Envirotech Team

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	GPCB Norms	Reference Method
1.	pH	---	7.15	6.5 - 9.0	IS 3025 (P-11) : 2022
2.	Biochemical Oxygen Demand (5 days at 20°C)	mg/L	16	30	IS 3025 (P-44) : 2023
3.	Total Suspended Solids	mg/L	54.19	< 100	IS 3025 (P-17) : 2022
4.	Fecal coliform MPN/100	MPN/100	22	< 1000	APHA 24 th Ed. 9221 : 2022


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/01/007

Report Date: 02/01/2024

TEST REPORT
(For the Month of December - 2023)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/WW2	Sample Location	ETP Outlet
Sampling Date	25/12/2023	Type of Sample	Waste Water
Sample Received Date	25/12/2023	Quantity of Sample	2 Litre
Analysis Start Date	26/12/2023	Sampling Method	APHA 24 th Ed. 1060 B : 2022
Analysis End Date	02/01/2024	Sample Collection By	Earth Envirotech Team

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	GPCB Norms	Reference Method
1.	pH	---	6.73	6.5 to 8.5	IS 3025 (P-11) : 2022
2.	Temperature	°C	25.2	45	APHA 24 th Ed. 2550 B : 2022
3.	Total Suspended Solids	mg/L	70.85	100	IS 3025 (P-17) : 2022
4.	Oil & Grease	mg/L	1.52	10	IS 3025 (P-39) : 2021
5.	Phenolic Compound	mg/L	0.047	01	IS 3025 (P-43) : 2022
6.	Biochemical Oxygen Demand (5 days at 20°C)	mg/L	22	30	IS 3025 (P-44) : 2023
7.	Chemical Oxygen Demand	mg/L	68	100	IS 3025 (P-58) : 2023
8.	Chlorides	mg/L	512.50	600	IS 3025 (P-32) : 2019
9.	Sulphates	mg/L	430.26	1000	IS 3025 (P-24) : 2022
10.	Total Dissolved Solids	mg/L	1580	2100	IS 3025 (P-16) : 2023
11.	Percentage Sodium	%	14.25	60	IS 3025 (P-45) : 2019

Chir
Analyzed By:



- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

FORM NO.37
(Prescribed under rule 12-B)

Register containing particulars of monitoring of working environment required under section 7-A (a) (e).

- Name of the Unit:** M/s. Terram Geosynthetics Pvt. Ltd.
Location: Plot No.: 5, Block - B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.
- Raw materials:** Poly Propylene Granules, Poly Ethylene Granules, UV Stabilizer pp, UV Stabilizer pe, Antioxidant.


Finished Products:

Products	Quantity (MT/Month)
Non-Woven Geotextile (Thermally Spun Bound)	7640
Geo-Composite, Geo-Cell, Geo Bags (Thermally Spun Bound)	
HDPE Geo-Cell	1100
HDPE Geo-Net	2600

3. Particular of sampling

Date of Sampling: 25/12/2023

Issue Date	02/01/2024
Reff. No	TGPL/F37/008

Sr. No.	Location / Operation Monitored	Identified Contaminant	Sampling Instrument Used	Air Borne Contamination		
				Number Of Sample	Range (mg/m ³)	Average (mg/m ³)
1.	Near Boiler Area	RSPM (Total Dust)	Respirable Dust Sampler	01	5.66	5.66
TWA Concentration (As Given in Second Schedule) mg/m ³		Reference Method	Number of Worker exposed at the Location being Monitored	Remarks	Signature Person taking Samples	Name of taking Person Samples
10		Gravimetric Method	05	--		Mr. Sagar Bhandari

For, Earth Envirotech



Authorized Signatory

Report Ref. No: EE/ENV/2024/03/051

Report Date: 09/03/2024

TEST REPORT

(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/AA1	Sample Location	Near Main Entrance Area
Sampling Date	02/03/2024	Type of Sample	Ambient Air
Sample Received Date	02/03/2024	Sampling Method	IS 5182 (Part 23) : 2022 – PM ₁₀
Analysis Start Date	04/03/2024		EE-WI-7.3-2A (1) – PM _{2.5}
Analysis End Date	07/03/2024		Gaseous Pollutant
Sample Collection By	Earth Envirotech Team		IS 5182 (Part 5) : 2020

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	Reference Method	National Ambient Air Quality Standards
1.	Particulate Matter PM ₁₀	µg/m ³	63.84	IS 5182 (Part 23) : 2022	100
2.	Particulate Matter PM _{2.5}	µg/m ³	29.32	EE-WI-7.2.2A	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	22.45	IS 5182 (Part 2) : 2023	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	25.13	IS 5182 (Part 6) : 2022	80

Chir
Analyzed By:



- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/03/052

Report Date: 09/03/2024

TEST REPORT
(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/AA2	Sample Location	Near Workshop Area
Sampling Date	02/03/2024	Type of Sample	Ambient Air
Sample Received Date	02/03/2024	Sampling Method	IS 5182 (Part 23) : 2022 – PM ₁₀
Analysis Start Date	04/03/2024		EE-WI-7.3-2A (1) – PM _{2.5}
Analysis End Date	07/03/2024		Gaseous Pollutant
Sample Collection By	Earth Envirotech Team		IS 5182 (Part 5) : 2020

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	Reference Method	National Ambient Air Quality Standards
1.	Particulate Matter PM ₁₀	µg/m ³	58.37	IS 5182 (Part 23) : 2022	100
2.	Particulate Matter PM _{2.5}	µg/m ³	28.52	EE-WI-7.2.2A	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	20.14	IS 5182 (Part 2) : 2023	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	23.66	IS 5182 (Part 6) : 2022	80


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/03/053

Report Date: 09/03/2024

TEST REPORT
(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/ST1	Stack Attached to	Boiler
Sampling Date	02/03/2024	Type of Sample	Stack Emission
Sample Received Date	02/03/2024	Sampling Instrument	Stack Monitoring Kit
Analysis Start Date	04/03/2024	Sampling Method	Guidelines On Methodologies For Source Emission Monitoring LATS/80/2013-14
Analysis End Date	07/03/2024		
Sample Collection By	Earth Envirotech Team		

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	Reference Method	Limit as per GPCB Norms
1.	Suspended Particulate Matter (SPM)	mg/Nm ³	66.31	IS 11255 (Part 1) : 2019	150
2.	Sulphur Dioxide (SO ₂)	ppm	10.25	IS 11255 (Part 2) : 2019	100
3.	Oxides of Nitrogen (NO _x)	ppm	07.40	IS 11255 (Part 7) : 2022	50

Cluz
Analyzed By:



- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/03/054

Report Date: 09/03/2024

TEST REPORT

(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/N1-N6	Sampling Location	As per table
Measurement Start Date	02/03/2024	Type of Sample	Noise Monitoring
Measurement End Date	02/03/2024	Sampling Instrument	Sound Level Meter
Measurement Done By	Earth Envirotech Team	Sampling Method	IS 9989 : 2020

ANALYSIS RESULTS

Sr. No.	Location Name	Unit	Day Time	Night Time
			Spot Noise Level dB(A) Maximum	Spot Noise Level dB(B)
Permissible Limit			75.0	70.0
1.	Inside Raw material Area	dB(A)	70.7	62.5
2.	Inside Store Area	dB(A)	65.0	54.1
3.	Inside Recycle Area	dB(A)	69.7	60.7
4.	Inside Lab Area	dB(A)	60.8	57.3
5.	Inside Winder Area	dB(A)	66.4	61.4
6.	Inside Utility Area	dB(A)	68.1	60.5

Day Time: 06:00 AM to 10:00 PM

Night Time: 10:00 PM to 06:00 AM

Bijesh
Analyzed By:



- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/03/055

Report Date: 09/03/2024

TEST REPORT
(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/L1-L3	Sampling Location	As per table
Measurement Start Date	02/03/2024	Type of Sample	Lux Monitoring
Measurement End Date	02/03/2024	Sampling Instrument	Lux Meter
Measurement Done By	Earth Envirotech Team	Sampling Method	Lutron – LX-101 Inst. Manual

ANALYSIS RESULTS

Sr. No.	Location Name	In Lux (Day Time)	In Lux (Night Time)
1.	Inside Converting Area	366	240
2.	Inside Recycle Area	530	311
3.	Inside Lab Area	482	275

Analyzed By: 

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/03/056

Report Date: 09/03/2024

TEST REPORT
(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/WW1	Sample Location	STP Outlet
Sampling Date	02/03/2024	Type of Sample	Waste Water
Sample Received Date	02/03/2024	Quantity of Sample	2 Litre
Analysis Start Date	04/03/2024	Sampling Method	APHA 24 th Ed. 1060 B : 2022
Analysis End Date	09/03/2024	Sample Collection By	Earth Envirotech Team

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	GPCB Norms	Reference Method
1.	pH	---	7.10	6.5 - 9.0	IS 3025 (P-11) : 2022
2.	Biochemical Oxygen Demand (5 days at 20°C)	mg/L	19	30	IS 3025 (P-44) : 2023
3.	Total Suspended Solids	mg/L	60.23	< 100	IS 3025 (P-17) : 2022
4.	Fecal coliform MPN/100	MPN/100	25	< 1000	APHA 24 th Ed. 9221 : 2022


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

Report Ref. No: EE/ENV/2024/03/057

Report Date: 09/03/2024

TEST REPORT
(For the Month of March - 2024)

Client Details			
Name: M/s. Terram Geosynthetics Pvt. Ltd.			
Address: Plot No.: 5, Block – B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.			
Sample Details			
Sample ID	TGPL/WW2	Sample Location	ETP Outlet
Sampling Date	02/03/2024	Type of Sample	Waste Water
Sample Received Date	02/03/2024	Quantity of Sample	2 Litre
Analysis Start Date	04/03/2024	Sampling Method	APHA 24 th Ed. 1060 B : 2022
Analysis End Date	09/03/2024	Sample Collection By	Earth Envirotech Team

ANALYSIS RESULTS

Sr. No.	Parameters	Unit	Results	GPCB Norms	Reference Method
1.	pH	---	8.26	6.5 to 8.5	IS 3025 (P-11) : 2022
2.	Temperature	°C	25.4	45	APHA 24 th Ed. 2550 B : 2022
3.	Total Suspended Solids	mg/L	76.25	100	IS 3025 (P-17) : 2022
4.	Oil & Grease	mg/L	1.81	10	IS 3025 (P-39) : 2021
5.	Phenolic Compound	mg/L	0.053	01	IS 3025 (P-43) : 2022
6.	Biochemical Oxygen Demand (5 days at 20°C)	mg/L	21	30	IS 3025 (P-44) : 2023
7.	Chemical Oxygen Demand	mg/L	60	100	IS 3025 (P-58) : 2023
8.	Chlorides	mg/L	638.94	600	IS 3025 (P-32) : 2019
9.	Sulphates	mg/L	477.52	1000	IS 3025 (P-24) : 2022
10.	Total Dissolved Solids	mg/L	1720	2100	IS 3025 (P-16) : 2023
11.	Percentage Sodium	%	16.23	60	IS 3025 (P-45) : 2019


Analyzed By:

- Analysis is subject to the condition in which the sample is received at laboratory.
- Report cannot be used as evidence anywhere including judiciary purpose without our prior permission.
- Sample will be return till 15 days from the date of sampling.

FORM NO.37
(Prescribed under rule 12-B)

Register containing particulars of monitoring of working environment required under section 7-A (a) (e).

- Name of the Unit:** M/s. Terram Geosynthetics Pvt. Ltd.
Location: Plot No.: 5, Block - B, Sector-12 S, Adani Port & SEZ, Tal: Mundra, Dist.: Kutch.
- Raw materials:** Poly Propylene Granules, Poly Ethylene Granules, UV Stabilizer pp, UV Stabilizer pe, Antioxidant.

Finished Products:

Products	Quantity (MT/Month)
Non-Woven Geotextile (Thermally Spun Bound)	7640
Geo-Composite, Geo-Cell, Geo Bags (Thermally Spun Bound)	
HDPE Geo-Cell	1100
HDPE Geo-Net	2600

3. Particular of sampling

Issue Date	09/03/2024
Reff. No	TGPL/F37/058

Date of Sampling: 02/03/2024

Sr. No.	Location / Operation Monitored	Identified Contaminant	Sampling Instrument Used	Air Borne Contamination		
				Number Of Sample	Range (mg/m ³)	Average (mg/m ³)
1.	Near Boiler Area	RSPM (Total Dust)	Respirable Dust Sampler	01	6.25	6.25
TWA Concentration (As Given in Second Schedule) mg/m ³		Reference Method	Number of Worker exposed at the Location being Monitored	Remarks	Signature Person taking Samples	Name of taking Person Samples
10		Gravimetric Method	03	--	<i>Prijesh</i>	Mr. Prijesh Nakarani





TC-10779

**Royal**

Environment Auditing & Consultancy Service

Plot No. 19 & 20, B/s. The North Star Nest School, Masoom School Road, Mota Mava, RAJKOT - 360 005.
Ph.: +91 9099919954 ■ E-mail : royalservice@live.com ■ admin@royalconsultancy.com**TEST REPORT
(AMBIENT AIR)**Test Report No. : TR/2023-24/10/50
Work Order No : 4504260887Date : 25/10/2023
Job Card No: Ahls/23-24/02Name & Address of Customer : Ahlstrom Fibercomposites India Pvt. Ltd.
Mundra SEZ Integrated Textile & Apparrle Park,
(MITAP), Plot No. - 07, Survey No. -141, Mundra,
Kutch-370421

Attention : Mr. Dipsinh Manek

Date of Sample Receipt : 20/10/2023

Date of Testing : 20th to 23rd Oct. 2023

Type of Sampling : Gravimetric & Wet- Chemical Methods

Lab id : PM 2.5 :PM2.5/2023-24/10/16 SO₂ :A/SO₂/2023-24/10/16
PM 10 :PM10/2023-24/10/16 NO₂ :A/NO₂/2023-24/10/16

Sampling Flow Rate :

PM 10 : 1.10 m³/minPM 2.5 : 17 LPMGasious Sampler: 0.2 LPM

Location of Sampling :

Nr. Security Main gate

Environmental Conditions

Humidity : 38%

Date of sampling : 19/10/2023

Weather : Clear

Time of sampling : 09.50

Barometric Pressure : 750 mmHg

Duration of sampling : 24 Hrs

Dominant Wind Direction (From) : NE

Sr.No.	Measured Concentration	Unit	Permissible Limits	Results	Test Method
01.	PM 2.5	µg/m ³	60	30.0	IS : 5182 (Part-24)-2019
02.	PM 10	µg/m ³	100	56.0	IS : 5182 (Part-23)-2006
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	13.8	IS : 5182 (Part-2)-2001
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	20.5	IS : 5182 (Part-6)-2006

Instrument used : RDS, Gasious Sampler, PM 2.5 Sampler

Calibration done on : 26/12/2022

Authorized Signatory
Parth Godhani, QM/TMReviewed by:
Divya Kothari

* End of Report *

1. The results relate only to the item tested/Sampling.

2. The report shall not be reproduced except in full without approval of the laboratory can provide assurance that parts of a report are not taken out of context.

Doc. No. F/7.8/02, Issue No. 01, Issue Date : 01-01-22 , Ammd No. 01, Ammd Date : 23-05-2022

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Ph.: +91 9099919954 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com**TEST REPORT
(AMBIENT AIR)**Test Report No. : TR/2023-24/10/51
Work Order No. : 4504260887Date : 25/10/2023
Job Card No: Ahls/23-24/02Name & Address of Customer : Ahlstrom Fibercomposites India Pvt. Ltd.
Mundra SEZ Integrated Textile & Apparrle Park,
(MITAP), Plot No. - 07, Survey No. -141, Mundra,
Kutch-370421

Attention : Mr. Dipsinh Manek

Date of Sample Receipt : 20/10/2023

Date of Testing : 20th to 23rd Oct. 2023

Type of Sampling : Gravimetric & Wet- Chemical Methods

Lab id : PM 2.5 :PM2.5/2023-24/10/17 SO₂ :A/SO₂/2023-24/10/17
PM 10 :PM10/2023-24/10/17 NO₂ :A/NO₂/2023-24/10/17

Sampling Flow Rate :

PM 10 : 1.20 m3/min PM 2.5 : 17.0 LPM Gaseous Sampler: 0.2 LPM

Location of Sampling :

Nr. Old Security Gate

Date of sampling : 19/10/2023

Time of sampling : 10:20

Duration of sampling : 24 Hrs

Environmental Conditions

Humidity : 38%

Weather : Clear

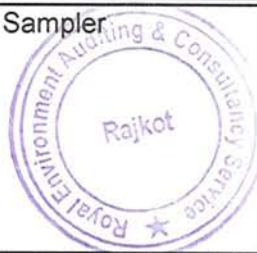
Barometric Pressure : 750 mmHg

Dominant Wind Direction (From) : NE

Sr.No.	Measured Concentration	Unit	Permissible Limits	Results	Test Method
01.	PM 2.5	µg/m ³	60	32	IS : 5182 (Part-24)-2019
02.	PM 10	µg/m ³	100	52.0	IS : 5182 (Part-23)-2006
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	12.5	IS : 5182 (Part-2)-2001
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	20.8	IS : 5182 (Part-6)-2006

Instrument used : RDS, Gaseous Sampler, PM 2.5 Sampler

Calibration done on : 26/12/2022

Authorized Signatory
Parth Godhani, QM/TMReviewed by:
Divya Kothari

* End of Report *

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Plot No. 19 & 20, B/s. The North Star Nest School, Masoom School Road, Mota Mava, RAJKOT - 360 005.
Ph.: +91 9099919954 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Ref.No.: 10005/10/2023-24

Date : 25/10/2023

REPORT OF AMBIENT NOISE LEVEL MEASUREMENT

Name of Company : Ahlstrom Fibercomposites India Pvt. Ltd.

Address: Mundra SEZ Integrated Textile & Apparle Park,
(MITAP), Plot No. - 07
Survey No. -141, Mundra,
Kutch-370421

Date of Sampling : 19/10/2023

Sr. No.	Location of Sampling	Day Time	Night Time
		6:00 AM - 10:00 PM	10:00 PM - 6:00 AM
	Permissible Limits	75 dB(A)	70 dB(A)
01.	Nr. Sec.Main Gate	71.6	56.4
02.	Nr. FO Storage Area	74.5	61.4

CPCB Standards

Area Code	Category of Area / Zone	Limit in dB(A) Leq.	
		Day Time	Night Time
A	Industrial Area	75.0	70.0
B	Commercial Area	65.0	55.0
C	Residential Area	55.0	45.0
D	Silence Zone	50.0	40.0

Instruments used : Sound level meter, Model : SL - 4030 (Lutron)

Calibration Done On : 04/03/2023

Royal Environment Auditing & Consultancy Service



Analyst



TC-10779

**Royal**

Environment Auditing & Consultancy Service

Plot No. 19 & 20, B/s. The North Star Nest School, Masoom School Road, Mota Mava, RAJKOT - 360 005.
Ph.: +91 9099919954 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com**TEST REPORT
(AMBIENT AIR)**Test Report No. : TR/2023-24/01/38
Work Order No : 4504260887Date : 07/02/2024
Job Card No: Ahls/23-24/02Name & Address of Customer : Ahlstrom Fibercomposites India Pvt. Ltd.
Mundra SEZ Integrated Textile & Apparle Park,
(MITAP), Plot No. - 07, Survey No. -141, Mundra,
Kutch-370421**Attention : Mr. Dipsinh Manek**

Date of Sample Receipt : 30/01/2024

Date of Testing : 31st Jan to 2nd Feb 2024

Type of Sampling : Gravimetric & Wet- Chemical Methods

Sampling Flow Rate :PM 10 : 1.29 m³/min

PM 2.5: 17.0 LPM

Gaseous Sampling Flow Rate : 0.2 LPM

Lab id : A/2023-24/01/07**Sample Collected by : Royal Environment****Location of Sampling :****Nr. Security Main gate**

Date of sampling : 29/01/2024

Time of sampling : 09.30

Duration of sampling : 24 Hrs

Environmental Conditions

Humidity : 43%

Weather : Clear

Barometric Pressure : 746 mmHg

Dominant Wind Direction (From) : NE

Sr.No.	Measured Concentration	Unit	Permissible Limits	Results	Test Method
01.	PM 2.5	µg/m ³	60	30.0	IS : 5182 (Part-24)-2019
02.	PM 10	µg/m ³	100	54.0	IS : 5182 (Part-23)-2006
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	13.5	IS : 5182 (Part-2)-2001
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	20.6	IS : 5182 (Part-6)-2006

Instrument used : RDS, Gaseous Sampler, PM 2.5 Sampler

Calibration done on :30/01/2024


 Authorized Signatory
 Parth Godhani, QM/TM


 Reviewed by:
 Shweta Dhanani

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**Royal**

Environment Auditing & Consultancy Service

Plot No. 19 & 20, B/s. The North Star Nest School, Masoom School Road, Mota Mava, RAJKOT - 360 005.
Ph.: +91 9099919954 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com**TEST REPORT
(AMBIENT AIR)**Test Report No. : TR/2023-24/01/39
Work Order No. : 4504260887Date : 07/02/2024
Job Card No: Ahls/23-24/02Name & Address of Customer : Ahlstrom Fibercomposites India Pvt. Ltd.
Mundra SEZ Integrated Textile & Apparell Park,
(MITAP), Plot No. - 07, Survey No. -141, Mundra,
Kutch-370421**Attention : Mr. Dipsinh Manek**

Date of Sample Receipt : 30/01/2024

Date of Testing : 31st Jan to 2nd Feb 2024

Type of Sampling : Gravimetric & Wet- Chemical Methods

Sampling Flow Rate :PM 10 : 1.25 m³/min

PM 2.5: 17.0 LPM

Gaseous Sampling Flow Rate : 0.2 LPM

Lab id : A/2023-24/01/08**Sample Collected by : Royal Environment****Location of Sampling :****Environmental Conditions****Nr. Old Security Gate**

Humidity : 43%

Date of sampling : 29/01/2024

Weather : Clear

Time of sampling : 10:20

Barometric Pressure : 746 mmHg

Duration of sampling : 24 Hrs

Dominant Wind Direction (From) : NE

Sr.No.	Measured Concentration	Unit	Permissible Limits	Results	Test Method
01.	PM 2.5	µg/m ³	60	34	IS : 5182 (Part-24)-2019
02.	PM 10	µg/m ³	100	52.0	IS : 5182 (Part-23)-2006
03.	Sulphur Dioxide (SO ₂)	µg/m ³	80	12.8	IS : 5182 (Part-2)-2001
04.	Nitrogen Dioxide (NO ₂)	µg/m ³	80	19.4	IS : 5182 (Part-6)-2006

Instrument used : RDS, Gaseous Sampler, PM 2.5.Sampler

Calibration done on :30/01/2024


 Authorized Signatory
 Parth Godhani, QM/TM


 Reviewed by:
 Shweta Dhanani

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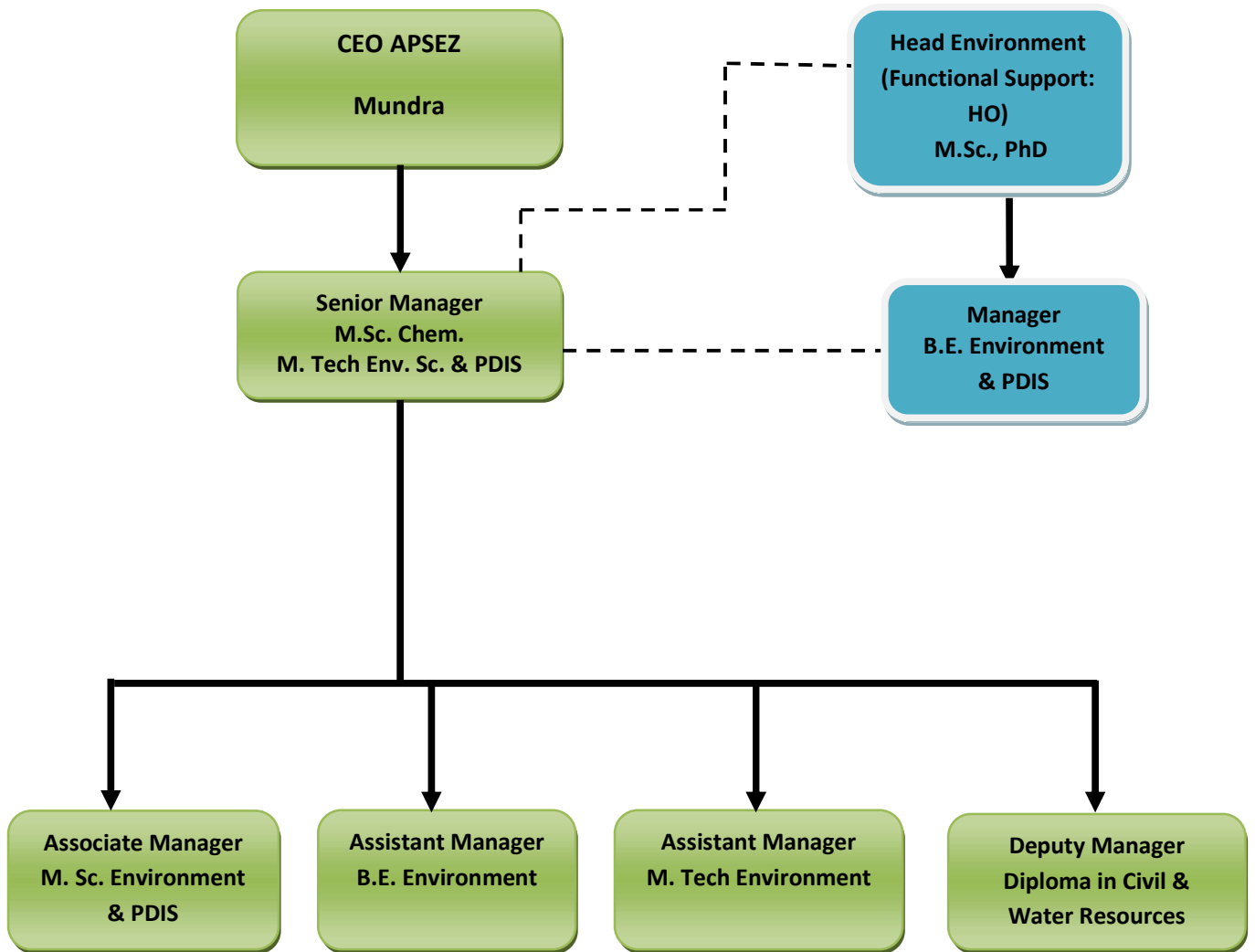
Annexure - 7

Cost of Environmental Protection Measures

Sr. No.	Activity	Cost incurred (INR in Lacs)			Budgeted Cost (INR in Lacs)
		2021 - 22	2022 - 23	2023 - 24	2023 - 24
1.	Environmental Study / Audit and Consultancy	6.82	7.32	22.67	27
2.	Legal & Statutory Expenses	10.52	12.32	8.60	13
3.	Environmental Monitoring Services	14.31	15.32	13.37	19.20
4.	Hazardous / Non-Hazardous Waste Management & Disposal	107.09	104.035	130.11	148.68
5.	Environment Days Celebration and Advertisement / Business development	4.04	2.53	3.42	11.50
6.	Treatment and Disposal of Bio-Medical Waste	2.14	2.29	2.28	2.28
7.	Mangrove Plantation, Monitoring & Conservation	53.6	35.0	15	15.0
8.	Other Horticulture Expenses	921	956	904	904
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	252.27	141.33	186.94	212.9
10.	Expenditure of Environment Dept. (Apart from above head)	149.8	90.14	80.39	182.92
Total		1371.79	1366.28	1366.78	1536.48

Annexure - 8

Updated Organogram of Environment Management Cell, APSEZ, Mundra



Annexure - 9

Expense Details for Fisherfolk Amenities work in different core areas											
Sr. No.	Details	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	TOTAL	AMT IN LACS
Expenditure Details (Amount in Rs.)											
1	Vidya Deep Yojana	2,069,300	193,000	2,087,000	1,771,000	110,225	580,103	969,660	-	7,780,288	77.80
2	Vidya Sahay Yojana	552,580	495,000	691,000	708,000	504,336	659,709	847,013	563,000	5,020,638	50.21
3	Adani Vidya Mandir – Shaping Lives	4,200,000	4,030,000	3,472,000	6,434,020	1,593,805	3,737,700	5,950,854	7,452,390	36,870,769	368.71
4	Senio Citizen Health Card	--	8,430,000	1,750,000	2,975,000	1,750,000	-	-	-	14,905,000	149.05
5	Financial Support to Poor Patients	4,439,507	1,275,000	813,000	1,296,063	763,800	1,255,000	1,691,410	1,620,000	13,153,780	131.54
6	Machhimar Kaushalya Vardhan Yojana	188,708	200,000	397,000	73,000	--	226,000	134,070	-	1,218,778	12.19
7	Machhimar Sadhan Sahay Yojana	--	--	315,000	522,000	--	-	-	-	837,000	8.37
8	Machhimar Awas Yojana	4,592,106	1,165,000	--	2,311,000	2,424,016	2,480,000	712,000	1,227,000	14,911,122	149.11
9	Machhimar Shudhh Jal Yojana	2,236,050	2,700,000	2,038,000	1,773,000	2,348,300	1,936,575	2,096,050	1,370,000	16,497,975	164.98
10	Sughad Yojana	1,367,300	170,000	--	192,000	30,000	-	-	-	1,759,300	17.59
11	Machhimar Akshay kiran Yojana	860,850	100,000	68,000	--	--	-	-	-	1,028,850	10.29
12	Machhimar Ajivika Uparjan Yojana-Mangroves plantation	1,558,800	500,000	1,382,000	1,400,000	1,900,272	2,069,432	1,914,432	-	10,724,936	107.25
13	Bandar Svachhata Yojana	106,400	50,000	--	--	367,000	145,000	25,000	-	693,400	6.93
14	Cricket league and Cycle Marathon	432,000	657,119	638,000	610,800	--	-	-	-	2,337,919	23.38
15	Sports Material For Children & Youth at Vasahats	197,797	--	--	--	--	-	-	-	197,797	1.98
16	New Pilot Initiative for Polyculture	398,240	160,000	--	--	--	-	-	-	558,240	5.58
17	New Pilot Initiative for Cage farming Asian Seabass & Lobster	864,000	660,000	--	--	--	-	-	-	1,524,000	15.24
18	Sea Weed Culture Project	--	--	--	200,000	--	-	-	-	200,000	2.00
19	Mangrove Biodiversity Project	--	--	1,890,000	684,000	499,210	997,642	1,135,000	-	5,205,852	52.06
20	Approach Road restoration at 9 vasahat	--	--	--	--	599,000	942,780	1,011,000	-	2,552,780	25.53
21	Community trening Centor & Maintenance work	--	--	--	--	--	6,022,000	2,051,000	-	8,073,000	80.73
TOTAL		24,063,638	20,785,119	15,541,000	20,949,883	12,889,964	21,051,941	18,537,489	12,232,390	146,051,424	1,460.51