

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: eccompliance-guj@gov.in, iro.gandhingr-mefcc@gov.in

Sub : Half yearly Compliance report for Environment and CRZ Clearance for "Water Front Development Project at Mundra, Dist. Kutch, Gujarat.

Ref : i) Environment and CRZ clearance granted to M/s Adani Ports & SEZ Limited vide letter dated 12th January, 2009 and 19th January, 2009 bearing MoEF letter No. 10-47/2008- IA.III.
ii) Environment and CRZ clearance Extension order granted to Water Front Development Project at Mundra in Kutchh District (Gujarat) vide letter dated 7th October, 2015 bearing MoEF letter No. 10-47/2008- IA.III.
iii) MoEF&CC's Order dated 18.09.2015

Dear Sir,

Please refer to the above cited reference for the said subject matter. In connection to the same, it is to state that copy of the compliance report for the Environmental and CRZ Clearance for the period of April 2024 to September 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**



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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Environmental Clearance Compliance Report



Waterfront Development Project,
Mundra, Dist. Kutch, Gujarat

Adani Ports and SEZ Limited
Mundra, Kutch

For the period of
April-2024 to September-2024

Index

Sr. No.	Particulars	Page Nos.	
1	Environment and CRZ Compliance Report	1-44	
2	Annexures		
	Annexure - A	Compliance of CRZ Recommendation	46-50
	Annexure - B	Compliance of MoEF&CC Order dated 18th Sep, 2015	52-80
	Annexure - 1	Mangroves Conservation Day Celebration Report	82 -86
	Annexure - 2	Adani Foundation – CSR Report for the FY 2023-24	88-113
	Annexure - 3	Details of status of legal cases	115-120
	Annexure - 4	Details on Mangroves afforestation & Green belt development	122-123
	Annexure - 5	Half Yearly Environment Monitoring Summary Report	125-268
	Annexure - 6	GPCB CC&A - Renewal permission copy of LPG Terminal	270-277
	Annexure - 7	Budget spent for environmental protection expenditure	279
	Annexure - 8	Acknowledged copy of reply to the observation of last visit of Regional Office, GPCB	281-282
	Annexure - 9	Compliance report of environmental management plan and mitigation measures proposed as part of the EIA report	284-286
	Annexure - 10	Details of Regional Level Pollution Response exercise and Oil Spill mock drill report	288-294
	Annexure - 11	Fishermen livelihood expenditure	296
Annexure - 12	Compliance report of IGFRI site visit report recommendation	298-310	
Annexure - 13	Compliance Report of CIA EMP	312-412	

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

The name of the company was changed from **"Mundra Port and Special Economic Zone Limited"** to **"Adani Ports and Special Economic Zone Limited"** on 6th January 2012.

Activities/facilities approved, major components completed and proposed future activities as per Environment and CRZ Clearance are as below:

Description (Type of Facility or Berth)	Approved Berths or Length as per Environmental & CRZ Clearance	So far Developed and In Operation
	Nos. of Berths or Length	Nos. of Berths
Multipurpose	4 (550 m + 2 Berths)	4
Container	16 (2680 m + 2000 m)	7 (2110 m)
Ro-Ro	2	-
Coal	6	4
Dry-Bulk Cargo	5	-
Liquid/POL	9*	-
LNG	2	Developed and operated by GSPC LNG Limited as per separate permissions obtained and NOC given by APSEZ
Light & Heavy Engineering	2	-
Port Craft	1 (330 m)	-
Shipyard	2	-

* Liquefied Petroleum Gas (LPG) Terminal has been developed by M/s. Mundra LPG Terminal Pvt. Ltd. under Waterfront Development Project of Adani Ports and SEZ Limited and LPG is being handled at existing Multipurpose Terminal APSEZ. M/s. Mundra LPG Terminal Pvt. Ltd is 100% subsidiary of APSEZ.

In addition to above berths or facilities, following components were also approved.

1. Dredging Quantity: 210 Mm³. Overall dredging to the tune of 123 Mm³ is completed till date.
2. Back-up area, back-up facilities like railway line, rail sidings, rail truck loading, open paved areas, associated buildings, utilities, amenities, etc. and connectivity to rail and road corridor for each port were approved and majority of them are constructed and in operation. Remaining facilities will be developed based on future requirements.
3. Seawater intake channel and outfall channel for power plants, desalination plants (47 MLD is operational out of 300 MLD) and other industrial requirements approved and is already in operation.

 <p>adani Ports and Logistics</p>	<p>Adani Ports and Special Economic Zone Limited, Mundra.</p>	<p>From : Apr'24 To : Sep'24</p>
<p>Status of the conditions stipulated in Environment and CRZ Clearance</p>		

Note:

- APSEZ has applied for EC & CRZ Clearance for expansion of Waterfront Development Project vide dated 7th March 2019.
- MoEF&CC has issued Terms of Reference (ToR) vide Ref. – F. No. 10-24/2019-IA-III dated 17th May 2019 and it is further amended on 27th Sep, 2019, 10th April, 2020 & its latest amendment vide dated 26th Feb, 2024.
- The project proposal has been considered in 364th EAC Meeting held on 15th & 16th May 2024.
- Subsequently, EC & CRZ Clearance for WFDP – Expansion project @ Mundra granted by MoEF&CC vide their Order No. 10-24/2019-1A-III, dated 13th August, 2024.



**Adani Ports and Special Economic
Zone Limited, Mundra.**

**From : Apr'24
To : Sep'24**

Status of the conditions stipulated in Environment and CRZ Clearance

Compliance Report of Environmental and CRZ Clearance

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Half yearly Compliance report for Environment and CRZ Clearance for the project "Waterfront Development Project (WFDP) at Mundra, Dist. Kachchh, Gujarat of M/s. Adani Ports and SEZ Limited"

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
Specific Conditions		
i	No existing mangroves shall be destroyed during construction / operation of the Project.	<p>Complied.</p> <p>As part of the directions given by MoEF&CC vides order dated 18th Sep, 2015, following studies were conducted.</p> <ol style="list-style-type: none"> 1. NCSCM (MoEF&CC promoted Government Agency) study on comprehensive and integrated plan for preservation and conservation of mangroves and associated creeks in and around APSEZ in year 2016-17. The cost of said study was 3.15 Cr, which was incurred by APSEZ. <p>As a part of mangrove conservation plan, APSEZ has done following activities.</p> <ol style="list-style-type: none"> a. Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island through NCSCM, Chennai. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. b. Tidal observation in creeks in and around APSEZ – The cost of the said activity was INR 1.0 Lacs incurred by APSEZ. c. Algal & Prosopis removal from Mangrove area - The cost of the said activity was Rs. 80000 during FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24. d. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 132.0 Lacs during FY 2024-25 till Sep'24 which was incurred by APSEZ. This activity is being done on continuous basis as a part of CSR activity. <p><u>Summary of Conservation of mangroves:</u></p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024				
		Mangrove mapping Year	Monitoring Agency	Mangrove cover total Area (Ha.)	Mangrove cover area Increased	
					Hac.	%
		2011		2094	-	-
		2011 to 2016-17	NCSCM	2340	246	11.75%
		2017 to 2019 till March	NCSCM	2596	256	10.94%
		2019 to 2021 till March	GUIDE	2723	127	4.89%
		Total		2723	629	--

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%)**.

As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.

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 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.

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024																											
			<ul style="list-style-type: none"> 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. <p>Summary of Mangrove mapping and monitoring (from 2011 to 2021):</p> <table border="1" data-bbox="954 1241 1455 1602"> <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>Hac.</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td>2094</td> <td>-</td> <td>-</td> </tr> <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> </tbody> </table>	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	--
Mangrove mapping Year	Mangrove cover total Area (Ha.)	Mangrove cover area Increased																											
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Total	2723	629	--																										
		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. 																										

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024	
			<ul style="list-style-type: none"> 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 during FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24.
		4.	<p>Awareness of mangroves importance in surrounding communities</p> <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 25 Villages. Project is covering total 15005 Cattles and hence enhancing cattle productivity. Dry Fodder 10,90,875 Kg Green – 27,64,920 Kg. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 132.0 Lacs during FY 2024-25 till Sep'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 unauthorized persons allowed within coastal as well as mangrove areas. APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem with coordination of Adani Foundation from 24th to 26th July 2024 to raise awareness of the importance of mangrove ecosystems as "a unique, special and vulnerable ecosystem". The report for the same is attached as Annexure 1. Refer CSR report attached as Annexure 2.

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ has awarded the work order to NCSCM, Chennai vide order no. 4802055905, dated 24/09/2024 with cost 45.87 Lacs for mangrove mapping in and around APSEZ March 2021 to March 2023. The said work will be undertaken by NCSCM shortly.</p> <p>2. A Regional Impact Assessment study through Chola MS, Chennai (NABET accredited consultant) to identify impacts of all the existing as well as proposed project activities in Mundra region inline to ToR issued by GCZMA. The cost of said study was 1.3 Cr, which was incurred by APSEZ.</p>
ii	There shall be no filling up of the creek and reclamation of the creeks.	<p>Complied.</p> <p><u>Conservation of creeks:</u></p> <ul style="list-style-type: none"> • The prominent creek system (main creeks and small branches of creeks) in and around APSEZ are: (1) Kotdi (2) Baradimata (3) Navinal (4) Bocha (5) Mundra (Oldest port (Juna Bandar) leading to Bhukhi river). • All above creek mouths are open allowing free flow of water in to the creeks and surrounding areas and there is no filling or reclamation of any creek area. • This aspect is also confirmed from the study of NCSCM in 2017-18, which highlights the bathymetry data of the entire coast around APSEZ. • From the bathymetry data it can be concluded that there are sufficient depths at the creek mouths and all creek mouths are open allowing flushing of water. • APSEZ has so far constructed 19 culverts having total length of approx. 1100 m with total cost of INR 20 Crores. Three RCC Bridges have also been constructed over Kotdi creek with total length of 230 m and cost of INR 10 Crores. Photographs showing the same were submitted along with half yearly compliance report for the period of Apr'17 to Sep'17. • Please refer condition no. i of EC & CRZ compliance report for further details.
iii	The Project proponent shall comply with all the	Complied.

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	Orders/directions of the Honorable High Court of Gujarat and Supreme Court in the matter.	There are two ongoing matters pending (One is pending at High Court and other is pending at Supreme Court). Details of ongoing legal cases is attached as Annexure 3 .
iv	Adequate safety measures for the offshore structure and ship navigation shall be taken in view of the High Current in the area.	<p>Complied.</p> <p>The hydrodynamic study for the waterfront area has been carried out by HR Wallingford, a maritime design expert. As per the recommendations in their report, the following safety measures are implemented.</p> <ol style="list-style-type: none"> 1. The alignment of the berth has been kept in line with the current flow in order to reduce the effect of current on vessels moored alongside. 2. The breasting dolphins have been designed in such a configuration so as to provide appropriate lead to the vessels mooring ropes. 3. The berth being in line with the current flow will facilitate Pilotage operation and provide better maneuverability of vessels. 4. The strength of the berth structure has been calculated to absorb the energy transferred to fenders while berthing of tanker vessels at the terminal. 5. Navigational buoys and lead lights marking the channel and clearing distance off the breakwater are installed. 6. The strength of the fenders at the berth and the SWL of the bollards / winches are sufficient to absorb the forces of vessels alongside keeping in mind the monsoon weather conditions. 7. Sufficient depths are maintained at all times to ensure 10% UKC at the time of berthing / un-berthing. 8. The capstans / winches / bollards are of adequate strength with respect to the vessels being handled. 9. The berth has been designed at an appropriate distance from the existing berths at MMPT-1 in order to safely allow berthing / un-berthing of vessels at MMPT-1 with vessels berthed at the South Port tanker terminal. 10. Berths have been planned close to the breakwater as there is a reduced strength of current along the coastline.
v	The shore line changes in the area shall be and monitored periodically the report submitted every 6	<p>Complied.</p> <p>Shore line change aspect has been studied in detail as part of following two studies;</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>months to Regional Office Bhopal.</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> <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 last 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</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024																
		<p>carried out.</p> <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="639 615 1472 751"> <thead> <tr> <th rowspan="2">Period</th> <th rowspan="2">Name of the block</th> <th rowspan="2">Average Shoreline Change (M/Year)</th> <th colspan="2">Shoreline Change(M)</th> </tr> <tr> <th>Maximum Accretion</th> <th>Maximum Erosion</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2015-2022</td> <td>West Port</td> <td>-11.43</td> <td>39.86</td> <td>-78.68</td> </tr> <tr> <td>Eastern side</td> <td>-26.60</td> <td>191.32</td> <td>-165.19</td> </tr> </tbody> </table> <p>The Shoreline Change Assessment Study report of GUIDE was submitted along with half yearly compliance report for the period of Oct'22 to Mar'23.</p> <p>The 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 2018. 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 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>	Period	Name of the block	Average Shoreline Change (M/Year)	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
Period	Name of the block	Average Shoreline Change (M/Year)				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														

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<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> <p>Please refer Annexure B (Compliance of MoEF&CC Order dated 18th Sep, 2015) for further details regarding the mentioned studies.</p>
vi	<p>The recommendations of the risk assessment shall be implemented; any change in the design of the project shall come before the committee for seeking necessary approval.</p>	<p>Complied.</p> <p>Risk Assessment was carried out at the time of preparation of the EIA report for the Liquid Berths and LNG terminal. However, it may be noted that liquid berths are not yet developed. Hence recommendations of Risk Assessment will be implemented once the liquid berths & pipelines are developed by APSEZ.</p> <p>The LNG terminal is constructed by GSPC LNG Ltd. and a separate Environment and CRZ clearance is obtained by them. Please refer general condition no ix below for details regarding the same.</p> <p>LPG is being handled from the existing multipurpose terminal. A detailed risk assessment study as per MoEF&CC letter no. F. No. 10-47/2008-IA-III dated 31st May, 2016 was carried out by iFluids Engineering for handling as well as storage activities. Recommendations of the risk assessment have been implemented as part of the construction activity and details of the same were submitted along with half yearly compliance report for the period of Oct'18 to Mar'19. Reports of the same were submitted to MoEF & CC along with half yearly compliance report for the period of Apr'17 to Sep'17. Implantation report of risk assessment study during operation phase was submitted along with half yearly compliance report for the period Oct'19 to Mar'20.</p> <p>There are no other activities which attract requirement of Risk Assessment.</p>
vii	<p>Mangrove plantation of 200 ha to be done in consultation with GEER / GEC of Forest Department, a detailed plan shall be</p>	<p>Complied.</p> <p>APSEZ has consulted Gujarat Institute of Desert Ecology (GUIDE) as they are one of the authorized agencies of Dept. of Forest & Env., Govt. of Gujarat for carrying out mangrove</p>

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>submitted within six months from the date of receipt of this letter.</p>	<p>afforestation. GUIDE has completed mangrove plantation in an area of 200 ha at Jakhau, Gujarat during the year 2012-13. Copy of the mangrove plantation completion certificate was submitted along with EC compliance report for the period Apr'18 to Sep'18. Total expenditure for the said work was INR 40 lakh.</p> <p>To enhance the marine biodiversity, till date 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 Sep'24 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 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, 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> <p>Please refer attached Annexure 2 for CSR activity report carried out by Adani Foundation.</p>
viii	<p>It shall be ensured that during construction and post construction of the proposed jetty the movement of fishermen vessel of the local</p>	<p>Complied.</p> <p>During project proposal, APSEZ proposed to provide four (4) dedicated accesses at Juna Bandar, Luni, Bavdi Bandar and Zarpara for the fishermen to approach the sea for fishing activity. However, during construction as well as operation,</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024				
	<p>communities are not interfered with.</p>	<p>through fishermen consultative process, so far APSEZ has provided seven (7) access roads instead of four (4). Total length of all the approach roads is approx. 23 Kms and expenditure involved is Rs. 637 Lacs. There is no hindrance to the movement of fisherman boats.</p> <p>APSEZ is actively working with local community around the project area and provides required support for their livelihood and other concerns through the CSR arm – Adani Foundation. Adani Foundation is working in main five persuasions as below.</p> <ul style="list-style-type: none"> ❖ Education ❖ Community Health ❖ Rural Infrastructure ❖ Sustainability Livelihood ❖ Skill Development <p>Brief information about activities in the main five persuasions is mentioned below. Activities carried out for the same are summarized as below.</p> <table border="1" data-bbox="634 1203 1468 1898"> <thead> <tr> <th data-bbox="634 1203 841 1251">Area</th> <th data-bbox="841 1203 1468 1251">Activity</th> </tr> </thead> <tbody> <tr> <td data-bbox="634 1251 841 1898">Community Health</td> <td data-bbox="841 1251 1468 1898"> <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 5519 Patients Benefitted FY 24-25 till Sep'24 (direct & indirect) by Mobile van and rural clinic. • 2 financially challenged patients has been supported with Dialysis treatment at 22 Times which added day in their Life. • Provided 27,355 medical health services ❖ Burn & Intensive Care Unit • On August 11 (Adani Foundation Day), the foundation stone for the Burn Ward at GK General Hospital, Bhuj, was laid. • This center will provide comprehensive care for burn victims, from emergency </td> </tr> </tbody> </table>	Area	Activity	Community Health	<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 5519 Patients Benefitted FY 24-25 till Sep'24 (direct & indirect) by Mobile van and rural clinic. • 2 financially challenged patients has been supported with Dialysis treatment at 22 Times which added day in their Life. • Provided 27,355 medical health services ❖ Burn & Intensive Care Unit • On August 11 (Adani Foundation Day), the foundation stone for the Burn Ward at GK General Hospital, Bhuj, was laid. • This center will provide comprehensive care for burn victims, from emergency
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		<p>treatment to long-term rehabilitation. It will benefit 22 lakh population of Kutch.</p> <ul style="list-style-type: none"> ❖ Eye Vision Care: <ul style="list-style-type: none"> • To address these challenges, the Adani Foundation, in collaboration with Vision Spring, is launching a holistic eye care initiative for the community. ❖ This initiative focuses on: <ul style="list-style-type: none"> • Student: See to Learn, SHG Women: See to Earn, Driver of APSEZ: See to be Safe • Total Screening 7476 (Students) + 3958 (Drivers) = 11434 ❖ Vision Aids: 621 (Students) + 1110 (Drivers) = 1731 ❖ Cataract Screening: 366 nos. of peoples ❖ Cataract Surgery: 18 nos. of peoples <p>Medical Services Data April to Sep - 2024:</p> <ul style="list-style-type: none"> • Ayushman Card: 243 beneficiary • Eye Vision Care; 7740 beneficiary • Driver Health Check-up: 2423 beneficiary • Blood Donation Camp: 2902 beneficiary • Specialty Health Camp: 2578 beneficiary • General Health Camp: 1074 beneficiary • Rural Clinic: 5519 beneficiary • Mobile Health Care Unit: 4348 beneficiary • Medical Supports: 1071 beneficiary • Dialysis Support: During this year, 2 patients were supported for regular dialysis with 22 Times which added day in their Life. • 1094 –Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. <p>Animal Husbandry:</p> <ul style="list-style-type: none"> • Fodder support to 25 villages, benefiting 15005 cattle, Dry Fodder Support - 10,90,875 Kg & Green Fodder Support - 27,64,920 Kg

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024	
		Sustainable Livelihood – Fisher folk, Agriculture & Women	<ul style="list-style-type: none"> • Launched a vaccination camp for 20,000 cattle, in collaboration with the Animal Health Department of Bhuj. 6,200+ cattle have been successfully vaccinated, ❖ “CHETNA” - initiative with gender diversity <ul style="list-style-type: none"> • Adani Foundation, in collaboration with Unnati Portal and Adani Solar, launched an initiative to provide equal opportunities for employment and self-development to women from Kutch. • Till Now 167 Female Joined Adani Solar @Pan India, 154 are from Kutch (92.21%) ❖ Saheli Groups: Form 82 Self Help Groups in coordination with National Rural Livelihood Mission (850+ Members). 16 SHG are on pathways of self-reliance their total Corpus Rs. 32,27,100 in 6 months. ❖ 3 women SHGs from Adani Foundation Mundra participated in the prestigious Sathwaro Mela in Ahmedabad, showcasing Mud Art, Bead Art, and Soof Art, along with two artisans specializing in Rabari and Doori work, achieving an impressive turnover of Rs.1,30,000/- <p>Empowering Fisherfolk Community:</p> <ul style="list-style-type: none"> • Education Support: Vehicle transportation facilities to 86 fisherfolk students, Education kits Support to 77 students, Scholarship support of Rs. 3,58,765 to 34 students. • Job Support: Facilitated job placements for 75 fisherfolk as RTG operators, in the HR department, professional painting roles and as supervisors in APSEZ companies. <p>Animal Husbandry:</p> <ul style="list-style-type: none"> • Fodder support to 25 villages, benefiting 15005 cattle, Dry Fodder Support - 10,90,875 Kg & Green Fodder Support - 27,64,920 Kg

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<ul style="list-style-type: none"> • Launched a vaccination camp for 20,000 cattle, in collaboration with the Animal Health Department of Bhuj. 6,200+ cattle have been successfully vaccinated, <p><u>Last Year conducted activities:</u></p> <p><u>Overall Persistent efforts for Fisherman development:</u></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 Ramaotsav Community Engagement • 56,523 Man days Mangroves Plantation <p><u>Empowering Fisherfolk Communities through Education:</u></p> <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 Vasahat, we promote the transformative power of education, with a particular focus on advancing girl-child education. (487 Students motivated for high school Education). • Scholarship Support: Provide scholarship support to 31 deserving students, covering their higher secondary school fees. Emphasizing gender equality, we

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		<p>offer 100% fee support to female candidates and 80% to male candidates.</p> <ul style="list-style-type: none"> • 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 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 Vasahat 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).

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<p><u>Sustainable Livelihood - Agriculture:</u> During compliance period 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.</p> <ul style="list-style-type: none"> • 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 <p><u>Promoting Natural Farming:</u></p> <ul style="list-style-type: none"> • 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.

Status of the conditions stipulated in Environment and CRZ Clearance

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		<ul style="list-style-type: none"> • 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. <p><u>Raj Shakti Prakrutik Kheti Sahkari Mandali:</u></p> <ul style="list-style-type: none"> • 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. • Exposure Visits Certification by GOPCA: Our farmers embarked on three eye-opening exposure visits to Gautech-2023, • Certification by GOPCA: We have successfully certified 28 farmers under the Gujarat Organic Products and Certification Agency (GOPCA). <p><u>Kutch Kalptaru FPO (KKPC) and Prakrutik Mandli</u></p> <ul style="list-style-type: none"> • 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 shareholders. (800 Farmers benefited and ₹ 33.67 lacs Turn over) • 19 nos. of Market Linkage for supporting to Green carnival at Samudra Township & Shantivan colony Now 302+ farmers are collaborated with Mandli. Total Green Carnivals 37, Total Sell 8,623 kg and Revenue generated ₹ 30184805. by connecting directly with consumers,

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		<p>they've seen a remarkable 35% increase in their income.</p> <ul style="list-style-type: none"> • Adani Foundation has also provided 14.38 lacs kg Dry Fodder and 45.85 lacs kg Green fodder in 31 villages of Mundra and Anjar Block to support the resource dependent villagers, to avoid their dependency on mangroves. The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24. • Adani Foundation provides Good Quality dry and green fodder to 24 Villages. Project is covering total 15005 Cattels / 2070 farmers and hence enhancing cattle productivity during FY 2023-24. • Grass Land development: AF converted 18 acres of denuded village common pastureland gauchar into fertile and productive grassland in Zarpara, Siracha, Gundala, Kukadsar village to transform into Fodder Sustain village during FY 2023-24. <p>Women Empowerment:</p> <ul style="list-style-type: none"> • Self Help Groups (SHGs): Established 82 self-help groups in various rural and urban areas to provide financial and social support to women We provided training and capacity building workshops to members of these SHGs to help them develop income generating activities and improve their livelihoods Through this initiative, we have empowered over 850 women to become self-reliant with Savings of more than Rs 35 Lacs. ❖ Making SHG Self Reliant: <ul style="list-style-type: none"> • 16 SHG are on pathways of self-reliance. • Various handicraft, dry and fresh food making, stitching, tie and die etc. • 175+ women - Monthly average income @ 7000 of each member over Month. ❖ Job Sourcing – Govt:

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			<ul style="list-style-type: none"> ● 11 Women supported for application and process of Gram Rakshak Dal, Bank Sakhi, Bima Sakhi and Professional Resource Person. ● Average income 4200 Per Month. ❖ 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 of more than 18 villages. ● Average income 10200 Per 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. ● 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 1460.50 lakh for Fisherfolk Amenities work in different core areas. ● Skill Development and Income Generation –Adani Foundation is working with 82 Self-help group and supporting to develop entrepreneur skills to become self-reliant, sourcing more than 850 women to absorb in various job.
		Education	<p>Key programmatic accomplishments:</p> <ul style="list-style-type: none"> ● 69 Primary schools (10452 Students) ● 8 High schools (1211 Students) ● 12000+ Students ● 2371 Progressive learner ● 3421 IT on Wheels ● 2449 Adani competitive coaching center ● 250 Adani Evening Education center

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			<ul style="list-style-type: none"> • Library Activity: 45000+ Books issued. 300+ Oasis workshop arranged to increase reading habits of students. • Mothers Meet: Mothers' meetings conducted every second Saturday in Utthan schools. 10,000+ mothers have participated. • Vedic maths and Abacus
		Rural Infrastructure & Environmental Sustainability	<p>Adani foundation designed and build various structure and provide service in the Health, Education, agriculture and sustainable livelihood area.</p> <ul style="list-style-type: none"> ❖ Renovation of Zarpara High School - benefit 450+ students/annually ❖ Construction of Madhav seva trust School at Zarpara - benefit 250+ students/annually ❖ Renovation of AVMB school - benefit 640+ students/annually ❖ Vruksh Se Vikas – Massive Drive <ul style="list-style-type: none"> • In the 6 months we establish 3 Adani Van, planting 22,460 trees in 9.5 acres area in N khakhar, Borana, and Dhruh village. Till Date 8 Adani Van 75,078 Trees @28 acres • Prakrutik Rath: Empowering Communities Through Green Initiatives 7,136 saplings distributed and planted in 6 months. • Total 1.79 Lac tree plantation done till date. ❖ Mangrove Nursery Development with 10,000 seeds. ❖ Coastal Cleanup day: At Kashivishvnath Beach, Mandvi, 200+ students and 80 Utthan Sahayaks cleaned a 1 km stretch, collecting significant plastic waste as part of a coastal cleanup and awareness drive.

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		<p>❖ Green Schools: Eco-clubs in 77 Utthan Schools and 12000+ students participate in "No Plastic" activities.</p> <p>Last Year Completed Activities/Projects:</p> <p>Water Conservation Projects:</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="873 1241 1435 1524"> <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>Soil Conservation:</p> <ul style="list-style-type: none"> • 1250 Farmers Awareness Sessions at Village Level: Spreading awareness on natural farming benefits and address their concerns. • 7 exposure of Hands-On Training & Exposures: Arranged Workshop and training to emphasizing on real-world techniques. 	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	-
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			<ul style="list-style-type: none"> • 857 Farmers link with Government Scheme: facilitation of govt. Cow Nurturing scheme to promote eco-friendly farming practices. • 258 Gobardhan Bio-gas Support: Link with Gov Gobar Dhan Biogas Unit Nutrient-rich slurry serves as an essential organic fertilizer for natural farming. • 35 Farmers Natural Farming Certification Process to obtain natural farming certification through the GOPCA for the 35 Farmers who are Members of Raj shakti Sahakrai Mandali. • Rs.9.88 Lacs RG Marketing Assistance: Provide platforms and resources ensuring fair prices and broader consumer reach.
		Skill Development	<p>Empowering Youth: Impact of ASDC in Mundra and Bhuj Center ASDC has significantly enhanced employability in Mundra and Mandvi. Training programs in digital literacy, RTG crane operation, beauty therapy, and advanced Excel have provided practical skills and certifications. Real-time exposure along with the Entrepreneurship Development Program (EDP), has further empowered youth. Successful placements have resulted in well-paying jobs, contributing to regional economic growth. Overall, ASDC's initiatives have transformed the lives of many individuals, fostering both personal and professional development.</p> <p>ASDC Mundra Center Activities & Achievements:</p> <ul style="list-style-type: none"> • Women Empowerment through Skill Training: Provided Mud work training to 180 women in Mundra taluka villages supported by MPL. • RTG Crane Operator Training: Collaborated with APSEZ HR Team to train 79 students. • Dori Work and Hand Embroidery Training: Benefited 90 women in various Mundra villages supported by MPL. • Health Awareness and Career Sessions: 108 Ambulance Department enlightened GDA trainees at Adani Institute of Medical

Status of the conditions stipulated in Environment and CRZ Clearance

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		<p>Sciences. Guest session on career advancement led by Mr. Kapil Goswami.</p> <ul style="list-style-type: none"> • 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. • Women's Related Training Seminar: Held at Matravadana College, Bidada, Mandvi. <p>ASDC Bhuj Center Activities & Achievements:</p> <ul style="list-style-type: none"> • Commendation from Shree Jeet Adani: Received appreciation for supporting the Divyang job fair. • Employee Development Initiatives: Conducted Advanced Excel training for 18 Sumitomo India Ltd employees • Entrepreneurship Development Program: Organized a comprehensive 12- day program with 60 diverse candidates. • New Trainee Orientation: Conducted sessions about SAKSHAM center and LMS registration at the Bhuj Centre. • Civil Defense Training (5 days): Covered essential topics including Disaster Management, First Aid, 181 Mahila Helpline, 108 Emergency Services, and Fire Safety. • F&B & Housekeeping Batch Inauguration: 92 students trained to enhance employability. • Indo-Euro Project Seminar: Arranged at various Nursing Colleges in Kutch District. Focused on German Language training and job placements. • Crucial Meeting with ISAR & UNICEF: Discussed future skill development challenges and transgender equality on 9th December 2023. <p>Please refer Annexure 2 for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2024-25 is to the tune of INR 823.58 lakh. Out of which, Approx. INR 309.11 lakh is spent during the FY 2024-25 (till Sep'24).</p>
ix	Relocation of the fishermen community if any shall be done strictly in	Not Applicable

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	accordance with the norms prescribed by the State Government.	The project was conceptualized in such a way that there are no fishermen settlements in the project proposal. Hence there is no relocation of fishermen communities required.																																																														
x	Marine ecology monitoring shall be done regularly during construction of breakwater and dredging /disposal operation.	<p>Complied.</p> <p>Maintenance dredging is ongoing activity. 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. Summary of the same for duration from Apr'24 to Sep'24 is mentioned below.</p> <p>Total Sampling Locations & frequency: 09 Nos. (Frequency: Once a month)</p> <table border="1" data-bbox="662 835 1448 1100"> <thead> <tr> <th rowspan="2">Parameter</th> <th rowspan="2">Unit</th> <th colspan="3">Surface</th> <th colspan="3">Bottom</th> </tr> <tr> <th>Min</th> <th>Max</th> <th>Avg.</th> <th>Min</th> <th>Max</th> <th>Avg.</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>--</td> <td>7.91</td> <td>8.24</td> <td>8.12</td> <td>7.74</td> <td>8.16</td> <td>7.97</td> </tr> <tr> <td>BOD (3 Days @ 27 °C)</td> <td>mg/L</td> <td>2.2</td> <td>3.4</td> <td>2.89</td> <td>BDL (MDL 1.0)</td> <td>BDL (MDL 1.0)</td> <td>BDL (MDL 1.0)</td> </tr> <tr> <td>TSS</td> <td>mg/L</td> <td>94</td> <td>144</td> <td>127.04</td> <td>76</td> <td>132</td> <td>106.96</td> </tr> <tr> <td>DO</td> <td>mg/L</td> <td>5.73</td> <td>6.69</td> <td>6.23</td> <td>5.48</td> <td>6.49</td> <td>6.04</td> </tr> <tr> <td>Salinity</td> <td>ppt</td> <td>35.31</td> <td>38.82</td> <td>36.07</td> <td>26.76</td> <td>37.54</td> <td>36.86</td> </tr> <tr> <td>TDS</td> <td>mg/L</td> <td>34410</td> <td>36550</td> <td>35858</td> <td>35370</td> <td>37610</td> <td>36873</td> </tr> </tbody> </table> <p>*BDL – Below Detection Limit *MDL – Minimum Detection Limit</p> <p>Approx. INR 6.11 Lakh is spent for all environmental monitoring activities during the FY 2024-25 (till Sep'24) for overall APSEZ.</p> <p>Marine monitoring for west port area is being carried out by M/s. Adani Power (Mundra) Limited (Pre-monsoon & Post-monsoon) through NABL accredited and MoEF&CC authorized agency namely M/s. UniStar Environment & Research Labs Pvt. Ltd. Monitoring reports are also enclosed as Annexure 5.</p> <p>Summary of ecological parameters of M/s. Adani Power (Mundra) Limited is given below:</p> <p>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 the phytoplankton population in the coastal waters of APL-Mundra, was more diverse during the Pre-monsoon season (April 2024) than Post-monsoon</p>	Parameter	Unit	Surface			Bottom			Min	Max	Avg.	Min	Max	Avg.	pH	--	7.91	8.24	8.12	7.74	8.16	7.97	BOD (3 Days @ 27 °C)	mg/L	2.2	3.4	2.89	BDL (MDL 1.0)	BDL (MDL 1.0)	BDL (MDL 1.0)	TSS	mg/L	94	144	127.04	76	132	106.96	DO	mg/L	5.73	6.69	6.23	5.48	6.49	6.04	Salinity	ppt	35.31	38.82	36.07	26.76	37.54	36.86	TDS	mg/L	34410	36550	35858	35370	37610	36873
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		<p>(September 2024). However, the overall phytoplankton abundance was more during post-monsoon than the pre-monsoon season. The detailed species composition reported during both sampling period is given in Annexure I and II. In April 2024, the phytoplankton community was represented with a total of 31 phytoplankton genera belonging to diatoms (26 genera) and dinoflagellates (5 genera). Overall, 31 phytoplankton genera representing diatoms (28 genera) and dinoflagellate (3 genera) reported during September 2024 sampling. Diatoms Species belonged to <i>Amphorprora</i> sp., <i>Asterionella</i> sp., <i>Bacillaria</i> sp., <i>Chaetoceros</i> sp., <i>Corethron</i> sp., <i>Coscinodiscus</i> sp., <i>Cyclotella</i> sp., <i>Cylindrotheca</i> sp., <i>Cymbella</i> sp., <i>Diploneis</i> sp., <i>Guinardia</i> sp., <i>Lauderia</i> sp., <i>Leptocylindrus</i> sp., <i>Licmophora</i> sp., <i>Lithodesmium</i> sp., <i>Navicula</i> sp., <i>Nitzschia</i> sp., <i>Odontella</i> sp., <i>Pinnularia</i> sp., <i>Pleurosigma</i> sp., <i>Pseudonitzschia</i> sp., <i>Rhizosolenia</i> sp., <i>Thalassiosira</i> sp. and <i>Thalassionema</i> sp. were common during both sampling period. Only 3 dinoflagellate genera i.e., <i>Ceratium</i>, <i>Prorocentrum</i> and <i>Protoperidinium</i> were reported during September 2024 as compared to April 2024 (5 genera).</p> <p>The phytoplankton abundance in the study region was higher during the 134 to 218 cells x 10² L⁻¹ during September 2024 as compared to April 2024 (ranged from 87 to 161 cells x 10² L⁻¹). In April 2024, the highest phytoplankton abundance was observed at St-5 in the surface (161 cells x 10² L⁻¹). The lowest phytoplankton abundance (87 cells x 10² L⁻¹) was observed at St-3 in surface water. During September 2024, phytoplankton abundance was higher at St-5 in surface water (218 cells x 10² L⁻¹) and lowest at St-3 bottom water (134 cells x 10² L⁻¹). The diatom genera, <i>Coscinodiscus</i> (up to 42 cells x 10² L⁻¹) during September 2024 (Annexure I), whereas in April 2024, <i>Thalassiosira</i> (up to 22 cells x 10² L⁻¹) was also predominant along with <i>Coscinodiscus</i> (up to 22 cells x 10² L⁻¹) (Annexure II). The study shows that the marine water around was enriched with the diverse phytoplankton population during the same period.</p> <p><u>BENTHIC DIVERSITY:</u></p> <p>Subtidal region:</p>

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<p>The macrobenthic population study revealed large spatiotemporal variation with the benthic population during the study period. Overall, more macrobenthos abundance and biomass were reported at subtidal stations than at intertidal stations. The macrobenthic abundance and biomass were more during the September 2024 than the April 2024 sampling. In April 2024, the macrobenthos density ranged from 575 no./m² to 860 nos./m² at sampling stations (Table 7). The biomass of the macrobenthic community in the study region was ranged from 0.7 g/ m² to 1.0 g/ m² in the study region. The maximum abundance and biomass of benthic microorganisms was reported at St-4 (860 nos./m² and 2.1 g/m²). During September 2024, the macrobenthos density was ranged from 770 to 1260 nos./m². The macrobenthic biomass was ranged from 0.7 to 1.9 g/ m².</p> <p>In species composition, Polychaete species (Phylum Annelida) belonging to the family Paraonidae, Pilargidae, Capitillidae, Cossuridae, Glyceridae, Ciratullidae, Nephthyida, Nereidae, Lumbriconeridae, Spionidae were abundant contributing ~75% to macrobenthic population during April 2024 (Annexure IV). In September 2024, species belongs to family Spionidae were not reported, whereas polychaete species contributed ~82% to macrobenthic population. Overall, the presence of Polychaete, Amphipods, and Nemerteans suggest the availability of food organisms for benthic predators in the area. The macrobenthic population reported during both studies reveals that the large spatial-temporal variation with the benthic population could be due to the change in bottom substratum.</p> <p>Intertidal region:</p>

Status of the conditions stipulated in Environment and CRZ Clearance

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		<p>The sandy substratum with low organic matter affects the occurrence of the macrobenthic community in the intertidal region. In September 2024, the highest biomass was measured (0.05 g/m² to 0.2 g/m²) in the intertidal region (Annexure V). The highest density of macrobenthic organisms was reported at station IT-1 (LW) (224 nos./m²), whereas the lowest density was reported at Station IT-2 (HW) (124 nos./m²). During April 2024, the macrobenthic biomass was ranged from (0.08 to 0.4 g/m²). At St-1 (LW) the higher macrobenthic population (140 nos./m²) and biomass (0.4 g/m²) was reported. No macrobenthic community was observed at St-3 (HW and LW) may be due to sandy sediment during both sampling periods.</p>																																																												
xi	<p>Regular Monitoring of air quality shall be done in the settlement areas around the Project site and appropriate safeguard measures shall be taken.</p>	<p>Complied.</p> <p>Ambient Air Quality and Noise monitoring are being carried out by 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 Apr'24 to Sep'24 is mentioned below:</p> <p>Air sampling locations & frequency: 13 nos. (twice a week including surrounding villages)</p> <table border="1" data-bbox="654 1312 1456 1696"> <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 colspan="6" style="text-align: center;">AAQM</td> </tr> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>36.49</td> <td>87.52</td> <td>64.97</td> <td>100</td> </tr> <tr> <td>PM_{2.5}</td> <td>µg/m³</td> <td>15.47</td> <td>44.72</td> <td>27.90</td> <td>60</td> </tr> <tr> <td>SO₂</td> <td>µg/m³</td> <td>8.65</td> <td>40.42</td> <td>21.54</td> <td>80</td> </tr> <tr> <td>NO₂</td> <td>µg/m³</td> <td>10.68</td> <td>44.27</td> <td>25.22</td> <td>80</td> </tr> <tr> <td colspan="6" style="text-align: center;">Noise</td> </tr> <tr> <th>Noise</th> <th>Unit</th> <th>Leq Min</th> <th>Leq Max</th> <th>Leq Ave.</th> <th>Leq Perm. Limit*</th> </tr> <tr> <td>Day Time</td> <td>dB(A)</td> <td>57.60</td> <td>68.70</td> <td>64.44</td> <td>75</td> </tr> <tr> <td>Night Time</td> <td>dB(A)</td> <td>57.50</td> <td>64.70</td> <td>61.46</td> <td>70</td> </tr> </tbody> </table> <p style="text-align: right;"> ^{\$} as per NAAQ standards, 2009 [*] as per CC&A granted by GPCB Values recorded confirms to the stipulated standards. </p>	Parameter	Unit	Min	Max	Average	Perm. Limit ^{\$}	AAQM						PM ₁₀	µg/m ³	36.49	87.52	64.97	100	PM _{2.5}	µg/m ³	15.47	44.72	27.90	60	SO ₂	µg/m ³	8.65	40.42	21.54	80	NO ₂	µg/m ³	10.68	44.27	25.22	80	Noise						Noise	Unit	Leq Min	Leq Max	Leq Ave.	Leq Perm. Limit*	Day Time	dB(A)	57.60	68.70	64.44	75	Night Time	dB(A)	57.50	64.70	61.46	70
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		<p>Please refer Annexure 5 for detailed analysis reports. Approx. INR 6.11 Lakh is spent for all environmental monitoring activities during the FY 2024-25 (till Sep'24) for overall APSEZ, Mundra.</p> <p>Ambient air quality monitoring in surrounding villages is being carried out by M/s. Adani Power (Mundra) Limited, Mundra through NABL accredited and MoEF&CC authorized agency namely M/s. UniStar Environment & Research Labs Pvt. Ltd. and monitoring reports of the same are also enclosed in Annexure 5.</p> <p>The following safeguard measures are taken for abatement of dust / fugitive emissions.</p> <ul style="list-style-type: none"> • Regular water sprinkling on road and other open area • Regular cleaning of roads through mechanized equipment • 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 with mechanized system • 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 												
xii	<p>Sewage arising in the Port area shall be disposed off after adequate treatment to conform to the standards stipulated by Gujarat State Pollution Control Board and shall be utilized / recycled for Gardening, Plantation and Irrigation.</p>	<p>Complied.</p> <p>Entire quantity of sewage generated is being treated in designated ETP / STP and treated sewage is used for Horticulture purposes.</p> <table border="1" data-bbox="638 1602 1474 1829"> <thead> <tr> <th>Location</th> <th>Capacity</th> <th>Quantity of Treated Water (Avg. from Apr'24 to Sep'24)</th> <th>Type of ETP / STP</th> </tr> </thead> <tbody> <tr> <td>LT</td> <td>265 KLD</td> <td>71.13 KLD</td> <td>Activated Sludge</td> </tr> <tr> <td>West Port</td> <td>55 KLD</td> <td>15.54 KLD</td> <td>FAB</td> </tr> </tbody> </table>	Location	Capacity	Quantity of Treated Water (Avg. from Apr'24 to Sep'24)	Type of ETP / STP	LT	265 KLD	71.13 KLD	Activated Sludge	West Port	55 KLD	15.54 KLD	FAB
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		<p>Third party analysis of the treated water is being carried out once in a month at ETP & twice in a month at West Port by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. Summary of the same for duration from Apr'24 to Sep'24 is mentioned below.</p> <table border="1" data-bbox="634 680 1472 1295"> <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 colspan="6">Industrial Effluent / Sewage (For ETP)</td> </tr> <tr> <td>pH</td> <td>--</td> <td>6.87</td> <td>7.51</td> <td>7.13</td> <td>6.5 – 8.5</td> </tr> <tr> <td>TSS</td> <td>mg/L</td> <td>22</td> <td>46</td> <td>31</td> <td>100</td> </tr> <tr> <td>TDS</td> <td>mg/L</td> <td>629</td> <td>1318</td> <td>914</td> <td>2100</td> </tr> <tr> <td>COD</td> <td>mg/L</td> <td>82.10</td> <td>92.00</td> <td>87.58</td> <td>100</td> </tr> <tr> <td>BOD (3 Days @ 27°C)</td> <td>mg/L</td> <td>24</td> <td>27</td> <td>25.4</td> <td>30</td> </tr> <tr> <td>Ammonical Nitrogen as NH₃-N</td> <td>mg/L</td> <td>15.80</td> <td>34.40</td> <td>28.60</td> <td>50</td> </tr> <tr> <td colspan="6">Domestic Sewage (For STP)</td> </tr> <tr> <td>pH</td> <td>--</td> <td>7.11</td> <td>7.88</td> <td>7.40</td> <td>6.5 – 8.5</td> </tr> <tr> <td>TSS</td> <td>mg/L</td> <td>14.00</td> <td>28.00</td> <td>21.00</td> <td>100</td> </tr> <tr> <td>BOD (3 Days @ 27 °C)</td> <td>mg/L</td> <td>9.00</td> <td>18.00</td> <td>15.08</td> <td>30</td> </tr> <tr> <td>Residual Chlorine</td> <td>ppm</td> <td>0.59</td> <td>0.78</td> <td>0.69</td> <td>Min. 0.5</td> </tr> <tr> <td>Fecal Coliform</td> <td>MPN/ 100 ml</td> <td>50.00</td> <td>90.00</td> <td>70.00</td> <td><1000</td> </tr> </tbody> </table> <p style="text-align: right;">[§] as per CC&A granted by GPCB Values recorded confirms to the stipulated standards.</p> <p>Monitoring and analysis of ETP and STP wastewater and treated water is also being carried out regularly through in-house laboratory for the parameters such as pH, TDS, TSS, COD, Chlorides, and residual chlorine.</p> <p>Please refer Annexure 5 for detailed analysis reports. Approx. INR 6.11 Lakh is spent for all environmental monitoring activities during the FY 2024-25 (till Sep'24) for overall APSEZ, Mundra.</p> <p>It is also noted that GPCB is doing regular site inspection along with wastewater sampling and analysis. The last GPCB sample analysis reports were submitted during half yearly EC Compliance report for the period of Apr'21 to Sep'21 which</p>	Parameter	Unit	Min	Max	Average	Perm. Limit [§]	Industrial Effluent / Sewage (For ETP)						pH	--	6.87	7.51	7.13	6.5 – 8.5	TSS	mg/L	22	46	31	100	TDS	mg/L	629	1318	914	2100	COD	mg/L	82.10	92.00	87.58	100	BOD (3 Days @ 27°C)	mg/L	24	27	25.4	30	Ammonical Nitrogen as NH ₃ -N	mg/L	15.80	34.40	28.60	50	Domestic Sewage (For STP)						pH	--	7.11	7.88	7.40	6.5 – 8.5	TSS	mg/L	14.00	28.00	21.00	100	BOD (3 Days @ 27 °C)	mg/L	9.00	18.00	15.08	30	Residual Chlorine	ppm	0.59	0.78	0.69	Min. 0.5	Fecal Coliform	MPN/ 100 ml	50.00	90.00	70.00	<1000
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		shows all the parameters are well within the permissible limit.
xiii	Adequate Plantation shall be carried out along the roads of the Port premises and a green belt shall be developed.	<p>Complied.</p> <p>APSEZ has developed its own "Dept. of Horticulture" which is taking measures/ steps for terrestrial greening as well as mangrove plantation.</p> <p>The species such as <i>Ficus Infectoria</i>, <i>Ficus religiosa</i>, <i>Terminalia arjuna</i>, <i>Cocos nucifera</i>, <i>Washingtonia fillifera</i>, <i>Casurina spp.</i>, <i>Azadirachta Indica</i>, <i>Eucalyptus spp.</i>, <i>Jatropha curacus</i>, <i>Ficus bengalensis</i>, <i>Subabool spp.</i>, <i>Casia fistula</i>, <i>Date Palm</i> and <i>Delonix regia</i> are grown within APSEZ area.</p> <p>Within the port areas approx. 189.41 hectare of greenbelt having 461349 trees with the density of 2435 trees per hectare is developed till date within port premises. So, far APSEZ has developed 457.99 ha. area as greenbelt with plantation of more than 9.06 Lacs saplings within the APSEZ area.</p> <p>Please refer Annexure 4 for further details regarding greenbelt development, mangrove afforestation and updated green belt development plan. The spent budget of Horticulture Department for the period of financial year 2024-25 is INR 831 lacs and 253 lacs of allocated budget has spent during the FY 2024-25 (till Sep'24).</p>
xiv	There shall be no withdrawal of Ground Water in CRZ area for this Project.	<p>Complied.</p> <p>APSEZ does not draw any ground water for the water requirement. Present source of water for various project activities is desalination plant of APSEZ and/or water through Gujarat Water Infrastructure Limited (GWIL). Average water consumption for entire APSEZ area is 5.34 MLD during compliance period i.e. Apr'24 to Sep'24.</p>
xv	Specific arrangements for rain water harvesting shall be made in the Project design and the rain water so harvested shall be optimally utilized. Details in	<p>Complied</p> <p>Groundwater recharge cannot be done at the project site since the entire project is in the intertidal / sub tidal areas. Rainwater within the project area is managed through storm water drainage.</p>

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>this regard shall be furnished to this Ministry's Regional Office at Bhopal within 3 months.</p>	<p>We have installed Rainwater recharge bore well (4 Nos.) within our township to recharge ground water. Details of the same were submitted along with half yearly EC compliance report for the period Apr'19 to Sep'19. During FY 2024-25 (till Sep'24) Approx. 7.31 ML of rainwater has been recharged to increase the ground water table.</p> <p>We have also connected roof top rainwater duct of operational building (Tug berth building within MPT) with u/g water tank for utilization of collected rainwater for gardening / horticulture purpose. Details of the same were submitted along with EC Compliance report for the period Oct'18 to Mar'19.</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> <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>Our water conservation work is as below. Water Conservation Projects – Water Conservation Projects completed during last 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

Status of the conditions stipulated in Environment and CRZ Clearance

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		<p>of groundwater levels and reduction in water sources in various parts of Kutch district.</p> <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" data-bbox="696 716 1414 1010"> <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>Below tabulated Water Conservation Projects completed during past Compliance period:</p> <table border="1" data-bbox="703 1150 1406 1654"> <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> <p>Earlier Completed Activities/Projects:</p> <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 	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 Checkdam at Bhujpur	1	prevent water runoff into seaside.	35 farmers' 120+Acre Area of Agri land can be Irrigated
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Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<p>built leading to a significant increase in water table and higher returns to the farmers.</p> <ul style="list-style-type: none"> • 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>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>Please refer Annexure 2 for full details of CSR activities carried out by Adani Foundation in the Kutch region. Budget for CSR Activity for the FY 2024-25 is to the tune of INR 823.58 lakh. Out of which, Approx. INR 309.11 lakh is spent during the FY 2024-25 till Sep'24.</p>
xvi	Land Reclamation shall be carried out only to the extent that it is essential for this Project.	<p>Complied.</p> <p>Out of approved reclamation area of 1138 ha for west port, 695 ha area is reclaimed and out of approved reclamation area of 700 ha for south port, 665 ha area is reclaimed. Details of the same were submitted along with half yearly compliance report for the period of Apr'17 to Sep'17 and there is no further change.</p>
xvii	No Product other than those permissible in the Coastal Regulation Zone	Complied.

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	Notification, 1991 shall be stored in the Coastal Regulation Zone area.	No products other than those permissible in the CRZ Notification 1991 are stored in the CRZ area.

General Conditions

i	Construction of Proposed structures, if any in the Coastal Regulation Zone area shall be undertaken meticulously confirming to the existing Central/local rules and regulations including Coastal Regulation Zone Notification 1991 and its amendments. All the construction designs/drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments/ Agencies.	<p>Complied.</p> <p>All construction activities are carried out confirming to the existing rules and regulation and as per the CRZ notification.</p> <p>Further, the requisite permissions from Gujarat Maritime Board (GMB), for carrying out construction activities are taken from time to time. Details of the same are mentioned below:</p> <ul style="list-style-type: none"> • Permission for starting construction work for South port vide letter no GMB/N/PVT/711/870 dated 26.02.2009 • Permission for starting construction work for West port vide letter no GMB/N/PVT/711/871 dated 26.02.2009 <p>The copies of these letters were submitted along with half yearly compliance report for the period of Apr'16 to Sep'16.</p> <p>The project has been developed as per Consent to Establish (CtE) and Consent to Operate (CtO) granted by SPCB. The present in-force CtE & CtO are mentioned below.</p> <table border="1" data-bbox="630 1375 1432 1820"> <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</td> <td>LPG Terminal</td> <td>PC/CCA-KUTCH-1437/PCB ID-53331/473995</td> <td>03.10.25</td> </tr> <tr> <td>2</td> <td>CtE – Amendment</td> <td>LPG Terminal</td> <td>PC/CCA-KUTCH-1437/GPCB ID-53331/587015</td> <td>01.03.26</td> </tr> <tr> <td>3</td> <td>CtE – Amendment</td> <td>WFDP</td> <td>17739 / 15618</td> <td>18.05.27</td> </tr> <tr> <td>4</td> <td>CC&A - Renewal</td> <td>West Port – WFDP</td> <td>AWH-113458</td> <td>01.02.27</td> </tr> <tr> <td>5</td> <td>CC&A – Renewal</td> <td>Mundra Port Terminal</td> <td>AWH-117045</td> <td>20.11.26</td> </tr> </tbody> </table>	S. No.	Permission	Project	Ref. No. / Order No.	Valid till	1	CtE – Amendment	LPG Terminal	PC/CCA-KUTCH-1437/PCB ID-53331/473995	03.10.25	2	CtE – Amendment	LPG Terminal	PC/CCA-KUTCH-1437/GPCB ID-53331/587015	01.03.26	3	CtE – Amendment	WFDP	17739 / 15618	18.05.27	4	CC&A - Renewal	West Port – WFDP	AWH-113458	01.02.27	5	CC&A – Renewal	Mundra Port Terminal	AWH-117045	20.11.26
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Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024				
		6	CC&A - Correction	Mundra Port Terminal	PC/CCA-KUTCH-39(8)/GPCB ID 17739/592900	20.11.26
7	CC&A - Renewal	LPG Terminal	PC/CCA-KUTCH-1437/PCB ID-53331/816485	27.06.2029		
		<p>The permissions mentioned above (Sr. 1 to 6) was submitted along with earlier compliance report submission.</p> <p>The permission copies (Sr. No. 7) attached as Annexure 6.</p>				
ii	Adequate provision for infrastructure facilities such as water supply, fuel, sanitation etc. shall be ensured for construction workers during the construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.	<p>Not applicable</p> <p>Most of the construction labours reside in the nearby villages where all basic facilities are easily available. There are no housing requirements for labours inside the project area.</p>				
iii	The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater treatment plant outside the CRZ area. The quality of treated effluents, solid waste, and noise level etc. must conform to the standards laid down by the competent authorities including the Central/	<p>Complied.</p> <p>Monitoring of environmental attributes viz. Air, Water, Noise, Soil, etc. is being carried out on regular basis by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi and Approx. INR 6.11 Lakh is spent for all environmental monitoring activities during the FY 2024-25 (till Sep'24) for overall APSEZ, Mundra.</p> <p>Please refer Specific Conditions no. x, xi & xii for further details regarding environmental monitoring.</p> <p>Liquid Effluent & Sewage – It is being treated at decentralized treatment plants and treated water confirming</p>				

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>State Pollution Control Board and the Union Ministry of Environment and Forests under the Environment (Protection) Act, 1986, whichever are more stringent.</p>	<p>the stipulated norms is being utilized for horticulture purposes within APSEZ. Please refer specific condition no xii above for details regarding the same.</p> <p>Waste Management – APSEZ has adopted 5R concept for environmentally sound management of different types of solid & liquid wastes. Please refer below details about management of each type of waste.</p> <p>Non-Hazardous Solid Waste: 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, and Glasses, etc. are then sent to respective recycling units, whereas remaining non-recyclable waste is bailed and sent to cement plant (M/s. Ambuja Cement Ltd., Kodinar) for Co-processing as RDF (Refused Derived Fuel).</p> <p>APSEZ, Mundra is certified for Zero Waste to Landfill management system (ZWTL MS 2020) by TUV Rheinland India Pvt. Ltd.</p> <p>Hazardous & Other Waste:</p> <ul style="list-style-type: none"> • Bio medical waste generated from OHCs and Adani Hospital is being disposed at Common Bio Medical Waste Treatment Facility namely M/s. Distromed Kutch Services Pvt. Ltd., Bhuj. • E – Waste is being sold to GPCB registered recyclers namely M/s. Galaxy Recycling, Rajkot. • Used Batteries are being sold to GPCB registered recyclers namely M/s. Sabnam Enterprise, Kutch and M/s. S K Metal Industries, Rajkot. • Solid Hazardous Waste is being disposed through co-processing / incineration through common facility i.e. M/s. Saurashtra Enviro Projects Pvt. Ltd., Bhachau, Safe Enviro Private Limited, Bharuch and/or cement industries of

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
		<p>Ambuja Cement Ltd., Kodinar. Used/Waste Oil is being sold to GPCB authorized recyclers / re-processors namely M/s. Western India Petro Chem Ind - Bhavnagar, Aviation Corporation - Kutch & Aroma Petrochem - Bhavnagar. It is also being reused within organization for lubrication purpose.</p> <ul style="list-style-type: none"> • Discarded drums / barrels are being sold to authorized decontamination facility i.e. M/s. Jawrawala Petroleum, Ahmedabad. It is also being reused within organization for filling hazardous waste. • Solid hazardous waste i.e. Tank bottom sludge was being sold to authorized recycler namely M/s. Mundra Oil Pvt. Ltd., Mundra for recycling. • Expired paint materials was being disposed by incineration through common facility i.e. M/s. Saurashtra Enviro Projects Pvt. Ltd., Bhachau. • Downgrade chemicals generated from cleaning of storage tanks / pipelines were being sold to authorized solvent recovery facilities namely M/s. Acquire Chemicals, Ankleshwar • Slop Oil received from vessels is treated to separate water and oil particles in Oil Water Separator system. Separated oil from the same is being sold to authorized recycler / reprocessor namely M/s. Western India Petro Chem Ind - Bhavnagar, Aviation Corporation - Kutch & Aroma Petrochem – Bhavnagar and water is sent to ETP for further treatment. • However during the compliance period, there was no generation and disposal of Sludge & Filters contaminated with oil, Tank Bottom sludge, Asbestoses Waste, Glass wool Waste (Thermal Insulation Material), Downgrade Chemicals, Waste Oil and Expired Paint Material. • Horticulture waste is collected from various green belt areas and it is using for making of manure and manure is being utilizing in horticulture purpose within plant premises. <p>Details of permissions / agreements of hazardous waste authorized vendors were submitted along with pervious half yearly EC Compliance Reports. And there is no further change.</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024			
		<p>The following table summarizes the waste management practice (from Apr'24 to Sep'24) for different types of wastes at APSEZ:</p>			
		Type of Waste	Name of Waste	Quantity (MT)	Disposal Method
		Hazardous Waste	Discarded Containers / Barrels	0.57	Sell to registered recycler
			ETP/CETP Sludge	15.07	Co-processing at cement industries
			Oily Cotton Waste	39.80	Co-processing at cement industries
			Pig Waste	5.07	Co-processing at cement industries
			Used / Spent / Waste Oil	86.88	Sell to registered recycler
		Hazardous Waste Total		147.39	
		Non-Hazardous Waste	Glass Waste	16.65	After recovery sent for recycling / Reuse within premises
			Horticulture Waste	359.15	Used for making of manure and utilize for horticulture purpose
			Metal Scrap	1418.91	After recovery sent for recycling / Reuse within premises
			Organic / Food Waste	537.95	Converted to Manure for Horticulture use / Biogas for cooking purpose
			Paper Waste	23.57	After recovery sent for recycling / Reuse within premises
			Plastic Waste	159.20	After recovery sent for recycling / Reuse within premises
			RDF (Non Recyclable Waste)	145.88	Co-processing at cement industries
			Rubber Waste	262.47	After recovery sent for recycling / Reuse within premises
			Wooden waste	57.45	After recovery sent for recycling / Reuse within premises
		Non-Hazardous Waste Total		2981.21	

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024			
		Other Waste	Battery Waste		
			3.04	Sell to registered recycler	
			4.81	To approved CBWTF Site and registered recyclers	
			15.07	Sell to registered recycler	
		Other Waste Total	22.92		
		Grand Total	3151.52		
iv	The Proponent shall obtain the requisite consents for discharge of effluents and emissions under the Water (Prevention and Control of pollution) Act, 1974 and the Air (Prevention and Control of pollution) Act, 1981 from the Gujarat Pollution Control Board before commissioning of the Project and copy of each of these shall be sent to this Ministry.	<p>Complied.</p> <p>All construction activities were carried out confirming to the existing rules and regulation and as per the CRZ notification.</p> <p>Please refer General condition no. i for permission granted from state pollution control board regarding the same.</p>			
v	The sand dunes, corals, and mangroves, if any, on the site shall not be disturbed in any way.	<p>Complied</p> <p>There are no sand dunes and corals at the project site. 1254 ha area identified as potential mangrove conservation is being conserved and there is no disturbance to the mangroves in this area.</p> <p>Please refer specific condition no i above for details regarding the same.</p>			
vi	A copy of the clearance letter will be marked to the concerned Panchayat / Local NGO, if any from whom any suggestions /representations has been received while processing the proposal.	<p>Complied.</p> <p>Copy of the clearance letter was marked to the concerned panchayats. A typical proof of the same submitted to Mundra village Panchayat on 21.03.2009 was submitted as a part of compliance report submission for the period Apr'16 to Sep'16.</p>			

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024																					
vii	<p>The funds earmarked for environment protection measures shall be maintained in a separate account and there shall be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards shall be reported to this Ministry's Regional Office at Bhopal and the State Pollution Control Board.</p>	<p>Complied.</p> <p>Separate budget for the Environment protection measures is earmarked every year. All environment and horticulture activities are considered at corporate level and budget allocation is done accordingly. All the expenses are recorded in advanced accounting system of the organization.</p> <p>Budget for environmental management measures (including horticulture) for the FY 2024-25 is to the tune of INR 1340.21 lakh. Out of which, Approx. INR 365.97 lakh are spent during the year FY 2024-25 (till Sep'24).</p> <p>Detailed breakup of the expenditures for the past 3 years is attached as Annexure 7.</p> <p>Details regarding the past six compliance report submissions are mentioned below:</p> <table border="1" data-bbox="704 1096 1406 1358"> <thead> <tr> <th>Sr. no.</th> <th>Compliance period</th> <th>Date of submission</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Apr'21 to Sep'21</td> <td>30.11.2021</td> </tr> <tr> <td>2.</td> <td>Oct'21 to Mar'22</td> <td>30.05.2022</td> </tr> <tr> <td>3.</td> <td>Apr'22 to Sep'22</td> <td>30.11.2022</td> </tr> <tr> <td>4.</td> <td>Oct'22 to Mar'23</td> <td>30.05.2023</td> </tr> <tr> <td>5.</td> <td>Apr'23 to Sep'23</td> <td>29.11.2023</td> </tr> <tr> <td>6.</td> <td>Oct'23 to Mar'24</td> <td>29.05.2024</td> </tr> </tbody> </table>	Sr. no.	Compliance period	Date of submission	1.	Apr'21 to Sep'21	30.11.2021	2.	Oct'21 to Mar'22	30.05.2022	3.	Apr'22 to Sep'22	30.11.2022	4.	Oct'22 to Mar'23	30.05.2023	5.	Apr'23 to Sep'23	29.11.2023	6.	Oct'23 to Mar'24	29.05.2024
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viii	<p>Full support shall be extended to the Officers of this Ministry's Regional Office at Bhopal and the Officers of the Central and State Pollution Control Boards by the Project Proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and</p>	<p>Complied</p> <p>APSEZ is always extending full support to the regulatory authorities during their visit to the project site. All necessary documents are submitted as per the request of the visiting authorities.</p> <p>Last visit of Regional Office, GPCB was done on 09.04.2021 for West Port APSEZL has submitted the reply to the site visit report vide letter dated 12.04.2021. Details of the same were submitted along with half yearly compliance report for the period of Apr'21 to Sep'21.</p> <p>As well as last visit of Regional Office, GPCB was done on</p>																					

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>other environmental Protection activities.</p>	<p>27.06.2024 for APSEZL (West Port) has submitted the reply vide letter dated 03.07.2024. Acknowledged copy for the same is attached as Annexure 8.</p> <p>Inline to the compliance certification process of Environment Clearance condition of Waterfront Development Plan, RO, MoEF&CC Bhopal had visited the site on 27th & 28th January 2020 for compliance verification. APSEZ provided all requisite information and documents required by the Regional Officer MoEF&CC). During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed.</p> <p>Inline to the compliance certification process of Consent to Operates of existing facilities developed under Waterfront Development Plan, RO, GPCB, Gandhidham had visited the site on 17th March, 2021 for compliance verification. APSEZ provided all requisite information and documents required by the Regional Officer GPCB). During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed.</p> <p>Inline to the compliance of MoEF&CC Order dated 18th September, 2015, 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>Inline to the compliance certification process for getting Environment Clearance of Waterfront Development Plan, IRO-MoEF&CC Gandhinagar has lastly visited the site on 18th to 20th December, 2023 for compliance verification. APSEZ provided all requisite information and documents required by the Regional Officer MoEF&CC). During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed. Copy of the same was submitted during the compliance report submission for the period Oct'23 to Mar'24.</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
ix	In case of deviation or alteration in the Project including the implementing agency, a fresh reference shall be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection.	Complied. LNG terminal was initially approved under the Waterfront Development Project. However, the same has been developed by GSPC LNG Ltd. for which, separate EC and CRZ clearance has already been obtained from MoEF&CC by them. Copy of the same was submitted along with compliance report submission for the period Oct'16 to Mar'17. LPG terminal was initially approved under the Waterfront Development Project of Adani Ports and SEZ Limited and the same has been developed by M/s. Mundra LPG Terminal Pvt. Ltd., which is 100% subsidiary of APSEZ. Details of the same were submitted along with half yearly compliance report for the period of Oct'17 to Mar'18.
x	The Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Point noted and agreed.
xi	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary, for environmental protection which shall be complied with.	Complied As part of the directions given by MoEF&CC vide order dated 18 th Sep, 2015, following studies were proposed. <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. Please refer Annexure B for further details regarding the mentioned studies.
xii	The project proponent shall advertise at least in two local newspapers widely circulated in the region around the Project, one of which shall be in the	Complied. The original copy of the EC and CRZ clearance was obtained on 10.03.2009 and advertisement (containing informing that the EC and CRZ clearance is accorded to the proposed project and a copy of clearance letter is available with the SPCB and

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>vernacular language of the locality concerned informing that the Project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen at the website of the Ministry of Environment & Forest at http://www.envfornic.in. The advertisement shall be made within 7 days from the date of issue of the clearance letter and a copy of the same shall be forwarded to the Regional Office of this Ministry at Bhopal.</p>	<p>may also be seen at the website of MoEF&CC) was given in The Indian Express newspaper dated 18.03.2009. Copy of the same was submitted along with compliance report submission for the period Apr'16 to Sep'16.</p>
xiii	<p>The Project proponent shall inform the Regional Office at Bhopal as well as the Ministry the date of financial closure and final approval of the Project by the concerned authorities and the date of start of land development work.</p>	<p>Complied. APSEZ had informed the Regional Office of MoEF&CC at Bhopal as well as MoEF&CC, New Delhi regarding the date of financial closure and the date of start of land development work vide letter sent in August, 2009.</p>
xiv	<p>Any appeal against this environmental clearance shall lie with the National Environment Appellate Authority, if preferred, within period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.</p>	<p>Point noted and agreed. This EC and CRZ clearance was challenged in National Environment Appellate Authority. In this matter, Order has also been passed in favour of APSEZ. Copy of the same was submitted along with compliance report submission for the period Oct'16 to Mar'17.</p>
4.	<p>The above mentioned stipulations will be</p>	<p>Point noted and Agreed</p>

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Conditions as per clearance letter	Compliance Status as on 30-09-2024
	<p>enforced among others under the Water (Prevention & Control of Pollution) Act 1974, the Air (Prevention & Control of Pollution) Act 1981, the Environment (Protection) Act 1986, the Hazardous chemicals (Manufacture, Storage & Import) Rules 1989, the Coastal Regulation Zone Notification 1991 and its subsequent amendments and the Public Liability Insurance Act 1991 and the rules made there under from time to time. The project proponent shall ensure that the proposal complies with the provisions of the approved Coastal Zone Management Plan of Gujarat state and the supreme court's order dated 18 April, 1996 in the writ petition No. 664 of 1993 to the extent the same are applicable to this proposal.</p>	<p>APSEZ is being complied all the conditions said rules and regulations mentioned in EC point no. 4.</p> <p>APSEZ has valid insurance policy under PLI act 1991 as below.</p> <ol style="list-style-type: none"> 1. APSEZ – Liquid Terminal: Valid till 31.03.2025 2. Mundra LPG Terminal Pvt. Ltd.: Valid till 31.03.2025 <p>The copy of updated/renewed PLI policy of APSEZ – Liquid Terminal & Mundra LPG Terminal Pvt. Ltd was submitted along with compliance report submission for the period Oct'23 to Mar'24.</p>

 <p>adani Ports and Logistics</p>	<p>Adani Ports and Special Economic Zone Limited, Mundra.</p>	<p>From : Apr'24 To : Sep'24</p>
<p>Status of the conditions stipulated in Environment and CRZ Clearance</p>		

Compliance Status of CRZ Recommendation given by GCZMA for the Waterfront Development Project

ANNEXURE - A
CRZ Recommendation Compliance
Report of WFDP

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Specific Conditions	Compliance Status as on 30-09-2024
Specific Conditions		
1	The provisions of the CRZ notification of 1991 and subsequent amendments issued from time to time shall be strictly adhered to by the MPSEZL. No activity in contradiction to the provisions of the CRZ Notification shall be carried out by the MPSEZL.	Complied. All construction and operation activities are being carried out in line with the CRZ recommendation and permissions granted.
2	All necessary permissions from different Government Departments/ agencies shall be obtained by the MPSEZL before commencing any activities.	Complied. Necessary permissions from competent authority have been obtained before commencing any the activities. Please refer condition no. i & iv of General Conditions of the EC & CRZ Clearance above.
3	All major creeks shall be protected and no reclamation shall be done in these creeks and entire development along the creek shall be done after carrying out detailed engineering with an objective of environmental protection including protection of all major creeks to ensure adequate free flow of water and drainage of rain water during rainy seasons.	Complied. All major creeks within the APSEZ area are protected. Please refer specific condition no iii of the EC and CRZ clearance for details regarding this point.
4	The project proponent shall conserve the 1254 ha. of area as committed and proposed in their master plan and shall carry out plantation of various mangrove species in the said area.	Complied. Mangrove conservation area of 1254 Ha is conserved as proposed in the master plan. Please refer specific condition no i of the EC and CRZ clearance for details regarding this point.
5	Massive mangroves plantation activity in at least 300 ha. area shall be carried out within a time frame of 5 years as committed by the project proponent. This would be in addition to the earlier commitment	Complied. Mangrove plantation is already completed during the year 2012-13. Please refer specific condition no. vii of the EC and CRZ clearance for further details.

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Specific Conditions	Compliance Status as on 30-09-2024
	for 1200 ha. of mangroves plantation.	
6	All major creeks shall be protected and no reclamation shall be done in these creeks and entire development along the creek shall be done after carrying out detailed engineering with an objective of environmental protection including protection of all major creeks to ensure adequate free flow of water and drainage of rain water during rainy seasons.	<p>Complied.</p> <p>No effluent or sewage is discharged in to the CRZ area.</p> <p>Please refer specific condition no xii of the EC and CRZ clearance for details regarding this point.</p>
7	All the recommendations and suggestions given by NIO in their Environment Impact Assessment report for conservation / protection and betterment of environment shall be implemented strictly by MPSEZL.	<p>Complied.</p> <p>Compliance report of environmental management plan and mitigation measures proposed as part of the EIA report is attached as Annexure 9.</p>
8	The construction and operational activities as well as dredging and reclamation activities shall be carried out in such a way that there is no negative impact on mangroves and other coastal /marine habitat except the proposed approx. 63 ha of area for which the compensation (300 ha.) is proposed.	<p>Complied.</p> <p>All construction and operation activities as well as dredging and reclamation activities are being carried out as per the approvals.</p> <p>1254 ha area identified as mangrove conservation area is being conserved by APSEZ.</p> <p>Please refer specific condition no i of the EC and CRZ clearance for details regarding this point.</p>
9	The construction activities and dredging shall be carried out under the supervision/monitoring of the NIO or any such institute of repute.	<p>Complied.</p> <p>Construction activities are carried out as per EIA study carried out by NIO with all mitigative measures as suggested. Requisite permissions are taken from competent authorities such as GMB and GPCB. Site visits are being carried out by govt. officers from time to time to ensure compliance of the conditions stipulated in respective permissions. No capital dredging activities are carried out during the current compliance period.</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Specific Conditions	Compliance Status as on 30-09-2024
		Please refer condition no. i, iv & viii of General Conditions of the EC & CRZ Clearance above.
10	The dredge material generated during capital dredging shall be used only for reclamation and that to be generated during maintenance dredging shall be disposed of at the place identified by NIO/CWPRS/WAPCOS through appropriate modeling and it shall be ensured that it does not create any negative impacts.	Complied. Entire quantity of dredged material is used for reclamation activities only; no disposal is carried out in the sea. No capital dredging activities are carried out during the current compliance period.
11	Necessary measures including the shore protection activities shall be undertaken to ensure that there are no erosion in surrounding area due to the proposed activities.	Complied. All dredging and reclamation activities are carried out as per EC and CRZ Clearance. For further details regarding the shoreline change study for the Mundra region, please refer specific condition no v of the EC and CRZ clearance.
12	The alignment of the jetties/berths and other structures shall be done after conducting the detailed modeling to ensure that there are no erosion and accretion in the region due to proposed activities.	Complied. Detailed hydrodynamic modeling was carried out by NIO during preparation of the EIA report. All construction activities are being carried out as per the outcome/recommendations of the modeling report. However, a detailed shoreline change assessment study was also carried out. Please refer specific condition no v of the EC and CRZ clearance for further details.
13	The MPSEZL shall contribute financially for any common study or project that may be proposed by this department for environment management / conservation / improvement for the Gulf of Kutchh.	Complied. There are two studies prescribed by MoEF&CC. For further details regarding the same, please refer general condition no xi of the EC and CRZ clearance.
14	The construction debris and /or any other type of waste shall not be disposed of into the sea, creek or in the CRZ areas. The construction is	Complied. All construction and operation activities as well as dredging and reclamation activities are being carried

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Specific Conditions	Compliance Status as on 30-09-2024
	over and shall be disposed off in low lying areas in consultation with NIO, NEERI or any such institute of repute.	out as per the EIA report prepared by NIO. The construction debris, if any, is being used for area development outside CRZ area. For details about management of other types of wastes, please refer general condition no. iii of the EC and CRZ clearance.
15	The construction camps shall be located outside the CRZ area and the construction labour shall be provided with the necessary amenities, including sanitation, water supply and fuel and it shall be ensured that the environmental conditions are not deteriorated by the construction labors.	Compiled. Please refer general condition no ii of the EC and CRZ clearance for further details.
16	The MPSEZL shall regularly update their Local Oil Spill Contingency and Disaster Management Plan in consonance with the National Oil Spill and Disaster Contingency Plan and shall submit the same to this Department after having it vetted through the Indian Coast Guard.	Compiled. Disaster Management Plan is updated regularly and the updated DMP was submitted as a part of compliance report for the period Apr'16 to Sep'16. On Site Emergency Response Plan and Crisis Management Plan is in place and implemented. The updated (Aug'23) Onsite emergency plan was submitted during the compliance period Apr'23 to Sep'23. Oil spill contingency plan 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 Oil spill contingency response plan was submitted along with EC Compliance report for the period Apr'22 to Sep'22. For responding to oil spill, the Indian Coast Guard has developed the National Oil Spill Disaster Contingency Plan NOSDCP which has the approval

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Specific Conditions	Compliance Status as on 30-09-2024
		<p>of the Committee of Secretaries and has been in operation since 1996. Oil Spill Contingency Response Plan (OSCRP) prepared by APSEZ is in accordance with the NOSDCP.</p> <p>Latest Regional Level Pollution Response exercise "SWACHH SAMUDRA-NW 2024" was carried out by Indian Coast Guard on 02nd - 03rd May 2024 at Mundra, Gujarat. All participants from various Oil Handling Agencies and Stakeholders (DPA, HMEL, ICGS and APSEZ, Mundra) participated in this exercise. Details of the same is attached as Annexure 10</p> <p>Mock drills are conducted regularly by APSEZ. Last Oil Spill Mock drill was conducted on 03.05.2024. Oil Spill Mock Drill report is enclosed as Annexure 10.</p>
17	The MPSEZL shall participate and contribute for the Vessel Traffic Management System to be developed for the Gulf of Kutchh being developed.	<p>Complied.</p> <p>A VTMS service for Gulf of Kutch is operated by Directorate General of Lighthouses and Lightships (DGLL), Govt. of India.</p> <p>APSEZ is practicing well defined traffic control procedure. Marine Control of APSEZ provides traffic update to vessels in Mundra Port Limit on VHF Channel- 77. Arrival and departure information in Gulf of Kutch is provided to VTMS information cell through an agent or directly by sending an e-mail to vtsmanagergulfofkutch@yahoo.com and vtsgok@yahoo.com.</p> <p>Mundra port has subscribed and taking VTMS feed from Kandla from link www.vts.gov.in.</p>
18	The MPSEZL shall bear the cost of external agency that may be appointed by this Department for supervision/monitoring of proposed activities and the environmental impacts of the proposed activities.	<p>Complied.</p> <p>There are two studies prescribed by MoEF&CC. For further details regarding the same, please refer general condition no xi of the EC and CRZ clearance.</p>

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Annexure – B Compliance Status of MoEF & CC Order dated 18.09.2015

Based on the report submitted by Sunita Narain committee, MoEF&CC issued a Show Cause Notice (SCN) to APSEZ vide their letter dated 30.09.2013. APSEZ replied to the SCN vide letter dated 14.10.2013. Further, an order (containing 10 directions) was issued by MoEF&CC vide their letter dated 18.09.2015. Compliance to these 10 directions is mentioned below.

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Condition	Compliance Status as on 30-09-2024
i	The proposal of extension of the validity of environmental clearance granted to the North Port vide letter dated 12.01.2009 will be considered separately at later stage.	<p>Point Noted & Complied</p> <p>After receipt of this order, so far APSEZ has not done any application to MoEF&CC for the proposed North port. The expansion of Waterfront Development plan has been proposed excluding North Port area.</p>
ii	Bocha island, ecologically sensitive geomorphological features and areas in the island and creeks around the island will be declared as conservation zone action plan for its conservation must be prepared. M/s. APSEZ should provide necessary financial assistance for this purpose.	<p>Complied</p> <p>This reply covers condition no ii, iv and v.</p> <p>Based on the MoEF&CC directions,</p> <ol style="list-style-type: none"> 1. APSEZ, vide letter dtd. 19th October 2015 had requested GCZMA, for consideration of project for finalization of ToR for NCSCM. 2. Project was considered on 28th GCZMA meeting, scheduled on 22nd April 2016, where ToR was discussed and agreed, upon. 3. APSEZ, vide its letter dtd. 25th April 2016, submitted the proposal to GCZMA along with Scope of work, as submitted by NCSCM. 4. Service Order was issued to NCSCM vide SO dtd. 29th Aug 2016. Cost of the study as per the NCSCM proposal was 315 Lakh and 100% of payment has already paid to NCSCM. 5. NCSCM has carried out number of site surveys during the period, February 2017 – April 2018 as per the defined scope 6. The study report was submitted to GCZMA (with a copy to MoEF&CC vide letter dated 04.06.2018) for their consideration and recommendation if any. 7. A reminder letter was submitted to GCZMA vide letter dated 4th Jan 2019.
iv	A comprehensive and integrated study and protection of creeks/ mangrove area including buffer zone, mapping of co-ordinates, running length, HTL, CRZ boundary, will be put in place. The plan will take note of all the conditions of approvals granted to all the project proponents in this area e.g. the reported case of disappearance of mangroves near navinal creek. The preservation of entire area to maintain the fragile ecological condition will be a part of the plan in relation to the creeks, mangrove conservation and conservation of bocha island up to baradimata and others.	<p>Details of above chronology were submitted along with half yearly compliance report for the period of Apr'19 to Sep'19.</p>
v	NCSCM will prepare the plan in consultation with NIOT, PP and GCZMA. In recognition of the fact that the existing legal	<p>The site survey carried out by NCSCM includes:</p> <ol style="list-style-type: none"> 1. Bathymetry survey of creeks 2. Topography survey of intertidal areas

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
	<p>provisions under the E(P) Act 1986 do not provide for any authority to impose ERF by the government, the plan will be financed by the PP. the implementation will be carried out by GCZMA. The monitoring of the implementation will be carried by NCSCM.</p>	<ol style="list-style-type: none"> 3. Mangrove survey (health and area demarcation) 4. Sampling of soil and water for analysis of physico-chemical and biological parameters 5. Tide and currents data collection (including residence time of tidal water) 6. Focus Group Discussions with the community in the close vicinity of the project area <p>In addition to the site surveys, NCSCM has procured satellite images for analysis of mangrove cover.</p> <p>The data collected (through site surveys and analysis of satellite maps) was used as input for mathematical modelling. The modelling studies were carried out to understand the impacts of the development activities. Based on the outcome of the modelling studies the necessary conservation plan for protection of creeks and mangrove areas is prepared.</p> <p>Based on the final study report, outcome is summarized in to following points :</p> <ol style="list-style-type: none"> 1. There is no obstruction to any water stream (creeks / branches of creeks / rivers) 2. The mangrove cover in and around APSEZ was over 2596 ha. There was substantial growth in mangrove cover to the tune of 502 ha (comparison between 2011 and 2019) 3. Mundra has undergone substantial development during this tenure. Hence it can be interpreted that the infrastructure development has not left any adverse impacts on ecology. <p>Complied.</p> <p>Construction activities are completed and project is in operation phase.</p> <p>As part of the directions given by MoEF&CC vides order dated 18th Sep, 2015, following studies were conducted.</p> <ol style="list-style-type: none"> 3. NCSCM (MoEF&CC promoted Government Agency) study on comprehensive and integrated plan for preservation and conservation of mangroves and

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024																															
		<p>associated creeks in and around APSEZ in year 2016-17. The cost of said study was 3.15 Cr, which was incurred by APSEZ.</p> <p>As a part of mangrove conservation plan, APSEZ has done following activities.</p> <ul style="list-style-type: none"> e. Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island through NCSCM, Chennai. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. f. Tidal observation in creeks in and around APSEZ – The cost of the said activity was INR 1.0 Lacs incurred by APSEZ. g. Algal & Prosopis removal from Mangrove area - The cost of the said activity was Rs. 80000 during FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24. h. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 132.0 Lacs during FY 2024-25 till Sep'24 which was incurred by APSEZ. This activity is being done on continuous basis as a part of CSR activity. <p>Summary of Conservation of mangroves:</p> <table border="1" data-bbox="711 1409 1446 1726"> <thead> <tr> <th rowspan="2">Mangrove mapping Year</th> <th rowspan="2">Monitoring Agency</th> <th rowspan="2">Mangrove cover total Area (Ha.)</th> <th colspan="2">Mangrove cover area Increased</th> </tr> <tr> <th>Hac.</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td rowspan="2">NCSCM</td> <td>2094</td> <td>-</td> <td>-</td> </tr> <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>NCSCM</td> <td>2596</td> <td>256</td> <td>10.94%</td> </tr> <tr> <td>2019 to 2021 till March</td> <td>GUIDE</td> <td>2723</td> <td>127</td> <td>4.89%</td> </tr> <tr> <td>Total</td> <td></td> <td>2723</td> <td>629</td> <td>--</td> </tr> </tbody> </table> <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>	Mangrove mapping Year	Monitoring Agency	Mangrove cover total Area (Ha.)	Mangrove cover area Increased		Hac.	%	2011	NCSCM	2094	-	-	2011 to 2016-17	2340	246	11.75%	2017 to 2019 till March	NCSCM	2596	256	10.94%	2019 to 2021 till March	GUIDE	2723	127	4.89%	Total		2723	629	--
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Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024		
		As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.		
		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 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

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024																											
			<p>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> <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="1008 1125 1430 1482"> <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>Hac.</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td>2094</td> <td>-</td> <td>-</td> </tr> <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> </tbody> </table>	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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	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	<ul style="list-style-type: none"> Algal and Prosopis growth monitoring was done in and 																										

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024	
			<p>growth from mangrove areas</p> <p>around mangrove area and algal encrustation was found in some of the mangrove areas, which has been removed manually.</p> <ul style="list-style-type: none"> The cost of the said activity was Rs. 80000 during FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24.
		4.	<p>Awareness of mangroves importance in surrounding communities</p> <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 25 Villages. Project is covering total 15005 Cattels and hence enhancing cattle productivity. Dry Fodder 10,90,875 Kg Green – 27,64,920 Kg. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 132.0 Lacs during FY 2024-25 till Sep'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. APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem with coordination of Adani Foundation from 24th to 26th July 2024 to raise awareness of the importance of mangrove ecosystems as "a

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024																	
			<p>unique, special and vulnerable ecosystem". The report for the same is attached as Annexure - 1.</p> <ul style="list-style-type: none"> Refer CSR report attached as Annexure - 2. <p>To comply with the GCZMA recommendations regarding mangrove monitoring at every 2 years, presently APSEZ has awarded the work order to NCSCM, Chennai vide order no. 4802055905, dated 24/09/2024 with cost 45.87 Lacs for mangrove mapping in and around APSEZ March 2021 to March 2023. The said work will be undertaken by NCSCM shortly.</p> <p>A Regional Impact Assessment study through Chola MS, Chennai (NABET accredited consultant) to identify impacts of all the existing as well as proposed project activities in Mundra region inline to ToR issued by GCZMA. The cost of said study was 1.3 Cr, which was incurred by APSEZ.</p>																
iii	The violations of specific condition of all the ECs and CRZ clearances, if any, will be examined and proceeded with the provisions of EP Act, 1986 independently.	Complied	<p>During the said site visits from various regulatory authorities and as per the compliance certification received, there was no non-compliance observed.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sr. No.</th> <th style="text-align: center;">Authority</th> <th style="text-align: center;">Date of Visit</th> <th style="text-align: center;">Purpose of Visit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>RO, MoEF&CC, Bhopal</td> <td style="text-align: center;">21st – 22nd Dec, 2016</td> <td>EC Compliance Certification of WFDP</td> </tr> <tr> <td style="text-align: center;">2</td> <td>RO, MoEF&CC, Bhopal</td> <td style="text-align: center;">3rd May, 2018</td> <td>EC Compliance Certification of WFDP & MSEZ</td> </tr> <tr> <td style="text-align: center;">3</td> <td>RO, MoEF&CC, Bhopal</td> <td style="text-align: center;">3rd & 4th Sep, 2019</td> <td>Compliance of the order of the Hon'ble HIGH COURT of Gujarat vide letter dated 22nd Aug, 2019 w.r.t. compliance verification of MoEF&CC order dated 18th Sep, 2015.</td> </tr> </tbody> </table>	Sr. No.	Authority	Date of Visit	Purpose of Visit	1	RO, MoEF&CC, Bhopal	21 st – 22 nd Dec, 2016	EC Compliance Certification of WFDP	2	RO, MoEF&CC, Bhopal	3 rd May, 2018	EC Compliance Certification of WFDP & MSEZ	3	RO, MoEF&CC, Bhopal	3 rd & 4 th Sep, 2019	Compliance of the order of the Hon'ble HIGH COURT of Gujarat vide letter dated 22 nd Aug, 2019 w.r.t. compliance verification of MoEF&CC order dated 18 th Sep, 2015.
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Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024			
		4	RO, MoEF&CC, Bhopal	27 th & 28 th Jan, 2020	EC Compliance Certification of WFDP
		5	SPCB, Gandhinagar	17 th March, 2021	CC&A Compliance Certification of existing facilities developed under WFDP
		6	Joint Review Committee	1 st to 3 rd Sep, 2021	Compliance of the order of the Hon'ble HIGH COURT of Gujarat vide letter dated 22 nd Aug, 2019 w.r.t. compliance verification of MoEF&CC order dated 18 th Sep, 2015.
		7	IRO, MoEF&CC, Gandhinagar	18 th - 20 th Dec, 2023	EC Compliance Certification of WFDP. During the said compliance verification visit and as per the compliance certification received, there was no non-compliance observed. Copy of submitted CCR & action taken report w.r.t. certified compliance was submitted during the compliance report submission for the period Oct'23 to Mar'24.
		<p>It may also be noted that GPCB, Regional Office does regular site visit of APSEZ area and no non-compliance observed.</p> <p>Last visit of Regional Office, GPCB was done on 27.06.2024 for APSEZL (West Port) & has submitted the reply vide letter dated 03.07.2024. Acknowledged copy for the same is attached as Annexure 7.</p>			

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>Last visit of Regional Office, GPCB was done on 23.03.2022 for Main port and APSEZL has submitted the reply report vide letter dated 05.04.2022. Details of the same were submitted along with half yearly compliance period of Apr'22 to Sep'22. No site visit carried out by SPCB during compliance period.</p>
vi	<p>There will be no development in the area restricted by the High court of Gujarat. APSEZ shall abide by the outcome of the PIL 12 of 2011 and other relevant cases.</p>	<p>Complied</p> <p>The order passed by Hon' ble high court in context of PIL 12 of 2011 vide dated 10th Nov 2011. Subject PIL has been disposed off by Hon'ble High Court vide their order dated 17.04.2015 and now there is no restriction on development in the subject area. The order reads as <i>"In view of the aforesaid discussion, we do not find any merit in this writ petition. This writ petition fails and is accordingly dismissed. No order as to cost."</i> Copy of the order was submitted along with half yearly EC Compliance report for the period Apr'18 to Sep'18.</p> <p>Considering the above status and in line to submission of compliance of all the directions under this order, this condition is closed.</p>
vii	<p>APSEZ will submit specific action plan to protect the livelihood of fishermen along with budget.</p>	<p>Complied.</p> <p>Adani Foundation (AF) is the CSR arm of the Adani Group actively working for upliftment of the communities in the surroundings of various project sites of Adani Group. AF has prepared a specific action plan to protect livelihood of fishermen at Mundra.</p> <p>Various initiatives, as stated below are discussed in detail in the report namely "Silent Transformation of Fisher folk at Mundra". Said report also includes the information related to the planned expenses to the tune of approx. 13.5 Cr. INR for various initiatives for the next five years (2016 – 2021) (Budget details provided in Page No. 68 of report). Copy of the same is already submitted to MoEF&CC vide our letter dated 10.09.2016.</p> <p>Till, Sep'24 approx. 15.07 Cr. INR, has already been invested fisherfolk livelihood. Further, details regarding the expenditure incurred against the commitment are attached as Annexure 11.</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>APSEZ is carrying out various initiatives specific to the Fisherfolk community which includes:</p> <ul style="list-style-type: none"> ❖ Vidya Deep Yojana Developing school preparedness programme and empowering balwadis at fisherfolk settlement Under this scheme, 4 balwadis at different settlement has been constructed. This programme includes nutrition food, hygiene, awareness of health, cleanliness, discipline, regularity and development of basic age-appropriate conception ❖ 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 child education, we extend 100% fee support to female candidates and 80% to male candidates." ❖ Adani Vidya Mandir Children of the family with the income of salary less than 1.5 lac/annum are admitted. School focusses on nutrition food, uniform and other services to the children for free. ❖ Fisherman Approach in SEZ After due consultative process, APSEZ has provided 7 fishermen access roads for to approach to the sea for fishing activity. ❖ Machhimar Arogya Yojana

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024				
		<p>The Fisher folk communities are disposed to several water and air abided diseased due to exposure to unhygienic working conditions. Frequently Special Health care Camps are organized at Vasahat. Our Mobile health care unit van regularly visit fisher folk settlements.</p> <ul style="list-style-type: none"> ❖ Machhimar Kaushalya Vardhan Yojana Based on need assessment a number of trades were introduced through the Adani Skill Development Centre in Mundra, where in fisher folk youth could join and get a number of technical and non-technical training ❖ Machhimar Sadhan Sahay Yojana Fishing material support was provided by AF at Mundra as per the requests of Pagadiya fishermen. According to their needs, fishing nets, ropes, buoys, ice boxes, crates, weighing scales, anchors, solar lights etc., were provided. ❖ Machhimar Awas Yojana Shelters, equipped with basic facilities of a toilet. and pure drinking water have been constructed for living while fishing and to provide a healthy and hygienic residence. ❖ Machhimar Shudhh Jal Yojana This scheme of providing potable water has helped in reducing the drudgery of women and contributed largely towards general wellbeing. ❖ Sughad Yojana Toilets for men and women are constructed at all three Vasahats. Infrastructure was accompanied with continuous awareness campaign on hygiene sanitation and use of toilets in particular. ❖ Machhimar Akshay kiran Yojana Solar street lights at each settlement have been installed. For fish landing shed and school extension room have been fitted with solar invertor allowing late evening video shows for awareness and fish sorting work at ease. ❖ Machhimar Suraksha Yojana <table border="1" data-bbox="685 1843 1469 1890"> <thead> <tr> <th data-bbox="685 1843 862 1890">Area</th> <th data-bbox="862 1843 1469 1890">Activity</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Area	Activity		
Area	Activity					

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024	
		Community Health	<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 5519 Patients Benefitted FY 24-25 till Sep'24 (direct & indirect) by Mobile van and rural clinic. • 2 financially challenged patients has been supported with Dialysis treatment at 22 Times which added day in their Life. • Provided 27,355 medical health services ❖ Burn & Intensive Care Unit <ul style="list-style-type: none"> • On August 11 (Adani Foundation Day), the foundation stone for the Burn Ward at GK General Hospital, Bhuj, was laid. • This center will provide comprehensive care for burn victims, from emergency treatment to long-term rehabilitation. It will benefit 22 lakh population of Kutch. ❖ Eye Vision Care: <ul style="list-style-type: none"> • To address these challenges, the Adani Foundation, in collaboration with Vision Spring, is launching a holistic eye care initiative for the community. ❖ This initiative focuses on: <ul style="list-style-type: none"> • Student: See to Learn, SHG Women: See to Earn, Driver of APSEZ: See to be Safe • Total Screening 7476 (Students) + 3958 (Drivers) = 11434 ❖ Vision Aids: 621 (Students) + 1110 (Drivers) = 1731 ❖ Cataract Screening: 366 nos. of peoples ❖ Cataract Surgery: 18 nos. of peoples <p>Medical Services Data April to Sep - 2024:</p> <ul style="list-style-type: none"> • Ayushman Card: 243 beneficiaries • Eye Vision Care; 7740 beneficiary • Driver Health Check-up: 2423 beneficiary • Blood Donation Camp: 2902 beneficiary

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024	
			<ul style="list-style-type: none"> • Specialty Health Camp: 2578 beneficiary • General Health Camp: 1074 beneficiary • Rural Clinic: 5519 beneficiary • Mobile Health Care Unit: 4348 beneficiary • Medical Supports: 1071 beneficiary • Dialysis Support: During this year, 2 patients were supported for regular dialysis with 22 Times which added day in their Life. • 1094 –Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. <p>Animal Husbandry:</p> <ul style="list-style-type: none"> • Fodder support to 25 villages, benefiting 15005 cattle, Dry Fodder Support - 10,90,875 Kg & Green Fodder Support - 27,64,920 Kg • Launched a vaccination camp for 20,000 cattle, in collaboration with the Animal Health Department of Bhuj. 6,200+ cattle have been successfully vaccinated,
	Sustainable Livelihood – Fisher folk, Agriculture & Women		<ul style="list-style-type: none"> ❖ "CHETNA" - initiative with gender diversity <ul style="list-style-type: none"> • Adani Foundation, in collaboration with Unnati Portal and Adani Solar, launched an initiative to provide equal opportunities for employment and self-development to women from Kutch. • Till Now 167 Female Joined Adani Solar @Pan India, 154 are from Kutch (92.21%) ❖ Saheli Groups: Form 82 Self Help Groups in coordination with National Rural Livelihood Mission (850+ Members). 16 SHG are on pathways of self-reliance their total Corpus Rs. 32,27,100 in 6 months. ❖ 3 women SHGs from Adani Foundation Mundra participated in the prestigious

Status of the conditions stipulated in Environment and CRZ Clearance

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		<p>Sathwaro Mela in Ahmedabad, showcasing Mud Art, Bead Art, and Soof Art, along with two artisans specializing in Rabari and Doori work, achieving an impressive turnover of Rs.1,30,000/-</p> <p>Empowering Fisherfolk Community:</p> <ul style="list-style-type: none"> • Education Support: Vehicle transportation facilities to 86 fisherfolk students, Education kits Support to 77 students, Scholarship support of Rs. 3,58,765 to 34 students. • Job Support: Facilitated job placements for 75 fisherfolk as RTG operators, in the HR department, professional painting roles and as supervisors in APSEZ companies. <p>Animal Husbandry:</p> <ul style="list-style-type: none"> • Fodder support to 25 villages, benefiting 15005 cattle, Dry Fodder Support - 10,90,875 Kg & Green Fodder Support - 27,64,920 Kg • Launched a vaccination camp for 20,000 cattle, in collaboration with the Animal Health Department of Bhuj. 6,200+ cattle have been successfully vaccinated, <p>Last Year conducted activities:</p> <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 Ramaotsav Community Engagement

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<ul style="list-style-type: none"> • 56,523 Man days Mangroves Plantation <p><u>Empowering Fisherfolk Communities through Education:</u></p> <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 advancing girl-child education. (487 Students motivated for high school Education). • 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 benefitted)

Status of the conditions stipulated in Environment and CRZ Clearance

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		<ul style="list-style-type: none"> • 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). <p><u>Sustainable Livelihood - Agriculture:</u> During compliance period 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.</p> <ul style="list-style-type: none"> • 2200+ Farmers educated in natural farming • 800+ Farmers embracing natural farming methods • 200 Farmers got financial assistance of Rs. 10,000

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024	
			<ul style="list-style-type: none"> • 3 District level exposure visit • ₹ 36.7 lakh Business done by our benefited Farmers <p>Promoting Natural Farming:</p> <ul style="list-style-type: none"> • 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. <p>Raj Shakti Prakrutik Kheti Sahkari Mandali:</p> <ul style="list-style-type: none"> • Appreciation by Governor: Governor of Gujarat, Shree Acharya Devvratji,

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>encouraged 25 of our farmers practicing natural farming at the Krushi and Dairy Expo event in Bhuj.</p> <ul style="list-style-type: none"> • Exposure Visits Certification by GOPCA: Our farmers embarked on three eye-opening exposure visits to Gautech-2023, • Certification by GOPCA: We have successfully certified 28 farmers under the Gujarat Organic Products and Certification Agency (GOPCA). <p><u>Kutch Kalptaru FPO (KKPC) and Prakrutik Mandli</u></p> <ul style="list-style-type: none"> • 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 shareholders. (800 Farmers benefited and ₹ 33.67 lacs Turn over) • 19 nos. of Market Linkage for supporting to Green carnival at Samudra Township & Shantivan colony Now 302+ farmers are collaborated with Mandli. Total Green Carnivals 37, Total Sell 8,623 kg and Revenue generated ₹ 30184805. by connecting directly with consumers, they've seen a remarkable 35% increase in their income. • Adani Foundation has also provided 14.38 lacs kg Dry Fodder and 45.85 lacs kg Green fodder in 31 villages of Mundra and Anjar Block to support the resource dependent villagers, to avoid their dependency on mangroves. The expenditure for fodder supporting activities was approx. 305.55 Lacs during FY 2023-24. • Adani Foundation provides Good Quality dry and green fodder to 24 Villages.

Status of the conditions stipulated in Environment and CRZ Clearance

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		<p>Project is covering total 15005 Cattels / 2070 farmers and hence enhancing cattle productivity during FY 2023-24.</p> <ul style="list-style-type: none"> ● Grass Land development: AF converted 18 acres of denuded village common pastureland gauchar into fertile and productive grassland in Zarpara, Siracha, Gundal, Kukadsar village to transform into Fodder Sustain village during FY 2023-24. <p>Women Empowerment:</p> <ul style="list-style-type: none"> ● Self Help Groups (SHGs): Established 82 self-help groups in various rural and urban areas to provide financial and social support to women We provided training and capacity building workshops to members of these SHGs to help them develop income generating activities and improve their livelihoods Through this initiative, we have empowered over 850 women to become self-reliant with Savings of more than Rs 35 Lacs. ❖ Making SHG Self Reliant: <ul style="list-style-type: none"> ● 16 SHG are on pathways of self-reliance. ● Various handicraft, dry and fresh food making, stitching, tie and die etc. ● 175+ women - Monthly average income @ 7000 of each member over Month. ❖ Job Sourcing – Govt: <ul style="list-style-type: none"> ● 11 Women supported for application and process of Gram Rakshak Dal, Bank Sakhi, Bima Sakhi and Professional Resouce Person. ● Average income 4200 Per Month. ❖ Job Sourcing – Private: <ul style="list-style-type: none"> ● 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 of more than 18 villages. ● Average income 10200 Per Month.

Status of the conditions stipulated in Environment and CRZ Clearance

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			<p>❖ Social Empowerment:</p> <ul style="list-style-type: none"> • 2 Livelihood Enhancement Training through RSETI. • Financial support for business set up. • Legal rights and domestic violence workshops. • Family counselling for Job sourcing. • 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 1460.50 lakh for Fisherfolk Amenities work in different core areas. • Skill Development and Income Generation –Adani Foundation is working with 82 Self-help group and supporting to develop entrepreneur skills to become self-reliant, sourcing more than 850 women to absorb in various job.
		Education	<p>Key programmatic accomplishments:</p> <ul style="list-style-type: none"> • 69 Primary schools (10452 Students) • 8 High schools (1211 Students) • 12000+ Students • 2371 Progressive learner • 3421 IT on Wheels • 2449 Adani competitive coaching center • 250 Adani Evening Education center • Library Activity: 45000+ Books issued. 300+ Oasis workshop arranged to increase reading habits of students. • Mothers Meet: Mothers' meetings conducted every second Saturday in Utthan schools. 10,000+ mothers have participated. • Vedic maths and Abacus
		Rural Infrastructure & Environment	Adani foundation designed and build various structure and provide service in the Health, Education, agriculture and sustainable livelihood area.

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>tal Sustainability</p> <ul style="list-style-type: none"> ❖ Renovation of Zarpaar High School - benefit 450+ students/annually ❖ Construction of Madhav seva trust School at Zararpa - benefit 250+ students/annually ❖ Renovation of AVMB school - benefit 640+ students/annually ❖ Vruksh Se Vikas – Massive Drive <ul style="list-style-type: none"> • In the 6 months we establish 3 Adani Van, planting 22,460 trees in 9.5 acres area in N khakhar, Borana, and Dhrub village. Till Date 8 Adani Van 75,078 Trees @28 acres • Prakrutik Rath: Empowering Communities Through Green Initiatives 7,136 saplings distributed and planted in 6 months. • Total 1.79 Lac tree plantation done till date. ❖ Mangrove Nursery Development with 10,000 seeds. ❖ Costal Cleanup day: At Kashivishvnath Beach, Mandvi, 200+ students and 80 Utthan Sahayaks cleaned a 1 km stretch, collecting significant plastic waste as part of a coastal cleanup and awareness drive. ❖ Green Schools: Eco-clubs in 77 Utthan Schools and 12000+ students participate in "No Plastic" activities. <p>Last Year Completed Activities/Projects:</p> <p>Water Conservation Projects:</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

Status of the conditions stipulated in Environment and CRZ Clearance

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			<p>reduction in water sources in various parts of Kutch district.</p> <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" data-bbox="860 850 1469 1276"> <thead> <tr> <th data-bbox="868 856 982 976">Block Name</th> <th data-bbox="982 856 1161 976">Water conservation structure</th> <th data-bbox="1161 856 1299 976">Total no. of Structure</th> <th data-bbox="1299 856 1461 976">Total Capacity Created (CUM)</th> </tr> </thead> <tbody> <tr> <td data-bbox="868 976 982 1050">Mundra</td> <td data-bbox="982 976 1161 1050">Check Dam</td> <td data-bbox="1161 976 1299 1050">23</td> <td data-bbox="1299 976 1461 1050">6,07,332.80</td> </tr> <tr> <td data-bbox="868 1050 982 1113"></td> <td data-bbox="982 1050 1161 1113">Pond Deepening</td> <td data-bbox="1161 1050 1299 1113">66</td> <td data-bbox="1299 1050 1461 1113">1,89,121.08</td> </tr> <tr> <td data-bbox="868 1113 982 1144"></td> <td data-bbox="982 1113 1161 1144">RRWHS</td> <td data-bbox="1161 1113 1299 1144">275</td> <td data-bbox="1299 1113 1461 1144">2750</td> </tr> <tr> <td data-bbox="868 1144 982 1207"></td> <td data-bbox="982 1144 1161 1207">Recharge Borewell</td> <td data-bbox="1161 1144 1299 1207">209</td> <td data-bbox="1299 1144 1461 1207">-</td> </tr> <tr> <td data-bbox="868 1207 982 1270"></td> <td data-bbox="982 1207 1161 1270">Percolation Well</td> <td data-bbox="1161 1207 1299 1270">24</td> <td data-bbox="1299 1207 1461 1270">-</td> </tr> </tbody> </table> <p>Soil Conservation:</p> <ul data-bbox="860 1344 1481 1879" style="list-style-type: none"> • 1250 Farmers Awareness Sessions at Village Level: Spreading awareness on natural farming benefits and address their concerns. • 7 exposures of Hands-On Training & Exposures: Arranged Workshop and training to emphasizing on real-world techniques. • 857 Farmers link with Government Scheme: facilitation of govt. Cow Nurturing scheme to promote eco-friendly farming practices. • 258 Gobardhan Bio-gas Support: Link with Gov Gobar Dhan Biogas Unit Nutrient-rich slurry serves as an essential organic fertilizer for natural farming. 			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	-
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			<ul style="list-style-type: none"> • 35 Farmers Natural Farming Certification Process to obtain natural farming certification through the GOPCA for the 35 Farmers who are Members of Raj shakti Sahakrai Mandali. • Rs.9.88 Lacs RG Marketing Assistance: Provide platforms and resources ensuring fair prices and broader consumer reach.
		Skill Development	<p>Empowering Youth: Impact of ASDC in Mundra and Bhuj Center ASDC has significantly enhanced employability in Mundra and Mandvi. Training programs in digital literacy, RTG crane operation, beauty therapy, and advanced Excel have provided practical skills and certifications. Real-time exposure along with the Entrepreneurship Development Program (EDP), has further empowered youth. Successful placements have resulted in well-paying jobs, contributing to regional economic growth. Overall, ASDC's initiatives have transformed the lives of many individuals, fostering both personal and professional development.</p> <p>ASDC Mundra Center Activities & Achievements:</p> <ul style="list-style-type: none"> • Women Empowerment through Skill Training: Provided Mud work training to 180 women in Mundra taluka villages supported by MPL. • RTG Crane Operator Training: Collaborated with APSEZ HR Team to train 79 students. • Dori Work and Hand Embroidery Training: Benefited 90 women in various Mundra villages supported by MPL. • 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. • 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.

Status of the conditions stipulated in Environment and CRZ Clearance

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		<ul style="list-style-type: none"> • Women's Related Training Seminar: Held at Matr Vandana College, Bidada, Mandvi. <p>ASDC Bhuj Center Activities & Achievements:</p> <ul style="list-style-type: none"> • Commendation from Shree Jeet Adani: Received appreciation for supporting the Divyang job fair. • Employee Development Initiatives: Conducted Advanced Excel training for 18 Sumitomo India Ltd employees • Entrepreneurship Development Program: Organized a comprehensive 12- day program with 60 diverse candidates. • New Trainee Orientation: Conducted sessions about SAKSHAM center and LMS registration at the Bhuj Centre. • Civil Defense Training (5 days): Covered essential topics including Disaster Management, First Aid, 181 Mahila Helpline, 108 Emergency Services, and Fire Safety. • F&B & Housekeeping Batch Inauguration: 92 students trained to enhance employability. • Indo-Euro Project Seminar: Arranged at various Nursing Colleges in Kutch District. Focused on German Language training and job placements. • Crucial Meeting with ISAR & UNICEF: Discussed future skill development challenges and transgender equality on 9th December 2023. <p>Distance Alarm Transmission System – DATS' project was introduced in order to promote safety of the fishermen. Forced to be at sea to earn their livelihood puts the lives of many fishermen at risk.</p> <ul style="list-style-type: none"> ❖ Machhimar Ajivika Uparjan Yojana Mangrove plantation in the area as means of alternate income generating activity for the fisher folk community during the non-fishing months. During the non-fishing months, the fishermen under usual circumstances were benefited by other alternate economic activity to sustain them. ❖ Bandar Svachhata Yojana

Status of the conditions stipulated in Environment and CRZ Clearance

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		<p>Waste bins have been provided for proper collection and segregation of waste.</p> <p>Further, APSEZ is actively working with local community around the project area and provides required support for their livelihood and other concerns through the CSR arm – Adani Foundation. Adani Foundation is working in main five persuasions as below.</p> <ul style="list-style-type: none"> ❖ Education ❖ Community Health ❖ Rural Infrastructure ❖ Sustainability Livelihood ❖ Skill Development <p>Brief information about activities in the main five persuasions is mentioned below. Activities carried out for the same are summarized as below.</p> <p>Please refer Annexure 2 for full details of CSR activities carried out by Adani Foundation in the Mundra region. Budget for CSR Activity for the FY 2024-25 is to the tune of INR 823.58 lakh. Out of which, Approx. INR 309.11 lakh is spent during the FY 2024-25 (till Sep'24). Till Sep'24, Adani Foundation has done total expenditure of INR 175.851 Cr. for CSR activities in Kutch region since its inception.</p>
viii	APSEZ will voluntarily return the grazing land, if any, in their possession.	<p>Point noted.</p> <p>All lands are acquired through proper procedure prescribed by State Government. However, APSEZ has agreed for voluntarily giving land back to Zarpara village for the purpose of Gauchar. Land has been identified in the presence and confirmation of Gram Panchayat. Necessary procedure has been initiated by APSEZ vide its letter dated 09th Aug 2012 with concerned revenue authority with respect to surrender of gauchar land at village Zarpara. Same has been taken up by revenue department for necessary procedure of transfer and is under process. Details of the same were submitted along</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>with half yearly compliance report for the period of Apr'19 to Sep'19.</p> <p>As per recommendations given in Joint Review Committee visit report dated 1st December 2021, APSEZ has been approached M/s. Indian Grassland and Fodder Research Institute (IGFRI), Jhansi to get the consultancy work for enhancing / upscaling the forage production in Gauchar Land at Zarpara in 400 acres. Proposal has been received from IGFRI was submitted along with half yearly compliance report for the period of Apr'22 to Sep'22.</p> <p>The officials of M/s. Indian Grassland and Fodder Research Institute (IGFRI), Jhansi have visited at proposed Gauchar Land development site at Zarpara village dated 8th to 10th May 2023 for site survey work and according to guidance & suggestion of IGFRI, APSEZ will start the work for developing the Gauchar Land. IGFRI has provided site visit report with technical recommendation. Final Report with conclusion / recommendations from IGFRI and updated compliance report of its recommendation is attached as Annexure 12.</p>
ix	<p>A regional strategic impact assessment report with a special focus on Mundra region will also be prepared. The cost towards these studies will also be borne by PP.</p>	<p>Complied</p> <p>This reply covers direction no ix and x.</p> <ol style="list-style-type: none"> 1. APSEZ vide its letter dtd. 24th Feb 2014 has submitted draft ToR for preparation of CIA report to GCZMA for their approval. 2. GCZMA vide its letter dtd. 19th Dec 2014, has approved ToR for CIA. 3. Based on the ToR finalized by GCZMA (as per the instructions of MoEF&CC) for carrying out regional impact assessment study, APSEZ awarded the work to NABET accredited consultant M/s. Choramandalam MS Risk Services Ltd. to carry out the studies, vide SO dtd 10th Feb 2016 as stated in these directions. 4. Primary baseline environmental monitoring data collection during March – June 2016 and published secondary data on various environmental attributes. have been considered for the study.
x.	<p>In the subject matter of thermal power plant, the proposed regional strategic Impact assessment analysis will take In to account salinity aspect along with Its potential environmental Impact to suggest future corrective actions as well as the guiding tool on extension and addition of the capacities.</p>	

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>5. The study has been concluded and the final report was submitted to GCZMA and MoEF&CC for their consideration vide our letter dated 30.04.2018.</p> <p>6. Reminder letter has been submitted to GCZMA for their comments and consideration vide letter dated 4th Jan 2019.</p> <p>Details of above chronology were submitted along with half yearly compliance report for the period of Apr'19 to Sep'19.</p> <p>Total cost of the study is approx. INR 1.3 cr. which is financed by APSEZ.</p> <p>The stated study was carried out in following 3 phases.</p> <ul style="list-style-type: none"> • Baseline data collection and review of the past EIA reports and clearances issued to APSEZ. • Mathematical modelling and other technical studies for identification of potential impacts (for the year 2030) of the approved and existing project activities. • Development of macro level EMP for the phase wise implementation of actionable points. <p>As part of the study, following modelling exercises / technical studies have been carried out to study the impacts on all environmental attributes:</p> <ul style="list-style-type: none"> • Ambient air quality • Marine (Hydrodynamic, Thermal & Salinity dispersion, Sediment transport) • Noise level • Traffic assessment • Oil spill contingency plan • Water resource and salinity ingress • Land Use / Land Cover • Socioeconomic, Regional infrastructure • Waste management • Ecology, Bio diversity and Fisheries • Shoreline change assessment <p>Preparation of these reports require extensive use of modelling software and study of the available information / research reports to assess the impacts on</p>

Status of the conditions stipulated in Environment and CRZ Clearance

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>individual attribute of environment. Based on the modelling outcomes and findings of the technical studies, a macro level environment management plan is prepared.</p> <p>Inline to the present stage of the project, APSEZ is already complying, as per Environment Management Plan and further recommendations, applicable to APSEZ as mentioned in the EMP, wrt 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, will be implemented in phase wise manner as per the progress of development within the boundary limits of APSEZ.</p> <p>The final CIA Report was prepared inline to the ToR by Chola MS and the same was submitted to the GCZMA on 30.04.2018. Details of the same were submitted along with half yearly EC Compliance report for the period of Apr'18 to Sep'18. Presentation on the findings of the report was made to GCZMA committee on 4th October 2019 and after detailed discussion, authority has decided to constitute committee to discuss the details of the report further.</p> <p>Reminder Letter vide dated 07.09.2020 & 10.03.2021 submitted to the GCZMA, Gandhinagar for further directives to present the findings of the CIA report in detail. Details were submitted along with half yearly compliance report for the period of Oct'20 to Mar'21.</p> <p>Presentation done before GCZMA on 31.10.2021 and 16.02.2021 to discuss proposed EMP of CIA study in detail and way forward.</p> <p>GCZMA, Gandhinagar issued a letter to co-ordinate with various departments in the matter of CIA with Gujarat Pollution Control Board as Nodal Agency vide dated 12th July, 2022. APSEZ submitted the letter to GPCB for</p>

	Adani Ports and Special Economic Zone Limited, Mundra.	From : Apr'24 To : Sep'24
Status of the conditions stipulated in Environment and CRZ Clearance		

Sr. No.	Condition	Compliance Status as on 30-09-2024
		<p>detailed deliberation and suitable action / way forward vide letter dated 20th July, 2022. The copy of acknowledgement was submitted along with half yearly compliance report for the period of Apr'22 to Sep'22.</p> <p>However, APSEZ is already complying with the Environment Management Plan (applicable to APSEZ) suggested in Cumulative Impact Assessment report. The detailed compliance, applicable to APSEZ is attached as Annexure 13.</p>

Annexure – 1

Report on World Mangroves Day Celebration by Adani Foundation

Mundra, July 24-26, 2024 - Adani Foundation organized a three-day celebration for World Mangroves Day, focusing on raising awareness about the conservation and maintenance of mangroves. The Adani Foundation has been actively working towards community support and development, with key areas including health, education, rural infrastructure, and agriculture and animal husbandry. The Adani Foundation has been actively involved in the conservation and restoration of mangroves, recognizing their crucial role in maintaining coastal ecosystems.

Day 1: Awareness Lecture at Adani Vidya Mandir, Bhadreswar

On July 24, an awareness lecture was conducted by Dr. Mansi Goswami, Biodiversity expert, for the students of Adani Vidya Mandir, Bhadreswar. The lecture aimed to educate the students about the significance of mangroves, their environmental benefits, medicinal properties, and natural resources. Through interactive quizzes and presentations, **more than 50 students** were made aware of the ecological importance of mangroves and their role in maintaining environmental balance.



Awareness Lecture at Adani Vidhya Mandir- Bhadreswar

Day 2: Mangrove Nursery Preparation at Luni Site

On July 25, a nursery for **10,000 mangrove seeds** was established at the Luni site with the active participation of local fishermen. The fishermen were trained in proper planting techniques and the care of mangrove saplings. This initiative aimed to enhance local biodiversity, provide employment opportunities for fishermen, and stabilize coastal areas. The nursery project also served to raise awareness among fishermen about the importance of mangroves and encouraged their active involvement in conservation efforts.



Mangrove Nursery Preparation and training at Luni Coast

Day 3: Workshop on Mangrove Ecosystem

On July 26, a one-day workshop was held at Adani House, involving students from various departments of Kutch University and Government Science College, Mandvi. The workshop aimed to educate students about mangrove ecosystems and conservation strategies. **More than 100 students** were participated in the workshop from different educational institutions.

Key speakers included Dr. Paurav Mehta, Principal of Government Science College, Mandvi, and Dr. Mansi Goswami, Biodiversity Expert at Adani Foundation. Dr. Mehta provided detailed information on the adaptations, characteristics, and

conservation of mangroves, while Dr. Goswami discussed mangrove habitats, their status in India and Gujarat, and their global significance.

The workshop included a quiz competition for students, with prizes awarded to the winners. Additionally, group discussions, project planning, and networking opportunities for future conservation projects were provided. Each student received a certificate of participation.

Through these programs, Adani Foundation - Mundra aimed to foster greater understanding and commitment to mangrove conservation among community members. The foundation has planted mangrove trees over 162 hectares, significantly contributing to marine environmental protection. Such awareness programs by Adani Foundation inspire hope and active participation among various communities, including school children, fishermen, and subject-specific students.

The celebration of World Mangroves Day by Adani Foundation underscores their commitment to environmental conservation and community development, fostering a sustainable future for all.



Mangrove Day Celebration with Subjective students of Kutch University and Government colleges

Annexure – 2



Mundra

Half Yearly update: Apr – Sept 2024

Utilization status

Rs. in Lakhs

Site name: Mundra

Adani Foundation - Mundra Budget Tracking CSR Budget-AF-Mundra_F.Y.-2024-25											
(Amount in Lakhs)											
Sr No	Particulars	Proposed Budget			Salary & Admin Not Req.NFA	NFA Planned	NFA	PR	PO	Utilization	Percentage
		CAPEX	OPEX	Total							
A.	General Management and Administration	1.30	87.61	88.91	41.12	47.79	47.44	39.77	39.50	40.08	45.08%
B.	Education		45.26	45.26	28.66	16.60	16.04	15.69	11.65	27.43	60.60%
B1	Utthan-Education -Mundra		39.26	39.26	28.66	10.60	10.04	9.10	5.36	22.67	57.74%
B2	Utthan : Fisherfolk		6.00	6.00	-	6.00	6.00	6.59	6.29	4.76	79.29%
C.	Community Health		82.22	82.22	53.37	28.85	28.85	33.71	33.21	44.82	54.51%
D.	Sustainable Livelihood		162.68	162.68	37.68	125.00	125.01	124.25	5.49	43.49	26.74%
E.	Climate Action		10.00	10.00	-	10.00	10.00	9.65	7.50	3.92	39.22%
F.	Community Development		42.85	42.85	9.41	33.44	32.94	32.94	12.80	9.59	22.39%
G	EDM Recommended Projects		100.00	100.00	-	100.00	61.94	52.32	37.59	30.79	30.79%
	Total AF CSR Budget :	1.30	530.62	531.92	170.24	361.68	322.21	308.33	147.75	200.13	37.62%
							89.09%	95.69%	47.92%	37.62%	
Fodder Support- 1 Cr +										56.42%	

Key programmatic accomplishments

Community Health

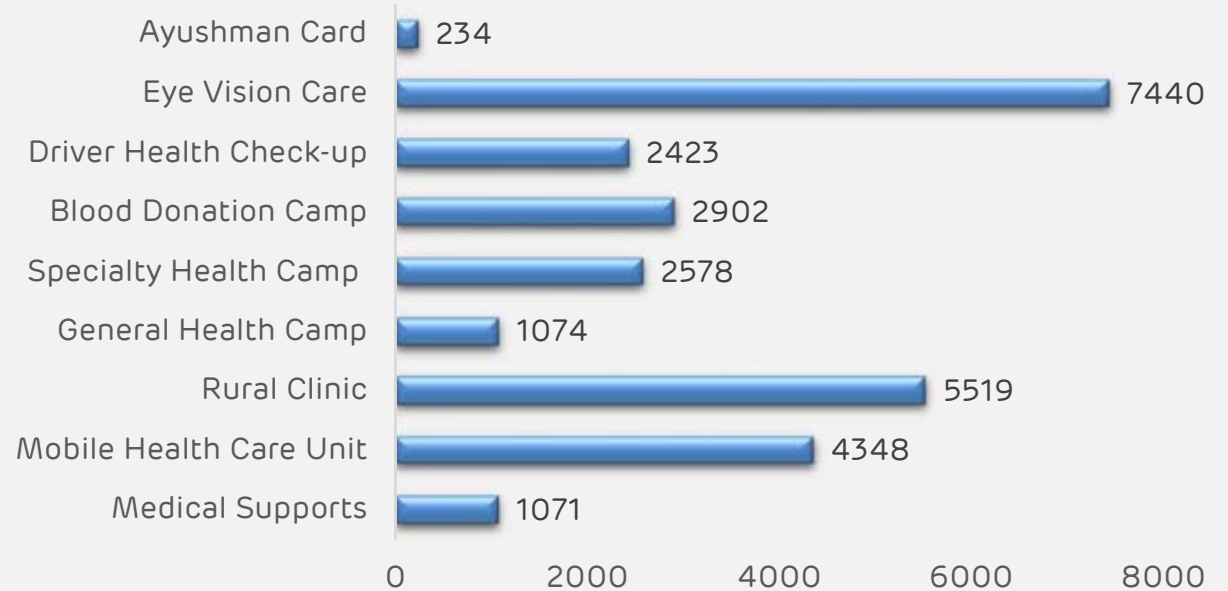
Education

Sustainable Livelihoods

Community Infrastructure

Stakeholder engagement

Medical Services Data April to Sep - 2024



Key programmatic accomplishments

Community Health

Education

Sustainable Livelihoods

Community Infrastructure

Stakeholder engagement

❖ **Burn & Intensive Care Unit**

- On August 11 (Adani Foundation Day), the foundation stone for the Burn Ward at GK General Hospital, Bhuj, was laid.
- This center will provide comprehensive care for burn victims, from emergency treatment to long-term rehabilitation. **It will benefit 22 lakh population of Kutch..**

❖ **Eye Vision Care:**

- To address these challenges, the Adani Foundation, in collaboration with Vision Spring, is launching a holistic eye care initiative for the community.

❖ **This initiative focuses on:**

- Student: See to Learn , SHG Women: See to Earn, Driver of APSEZ: See to be Safe

❖ **Total Screening 7476 (Studnets) + 3958 (Drivers) = 11434**

❖ **Vision Aids 621 (Students) + 1110 (Drivers) = 1731**

❖ **Cataract Screening 366**

❖ **Cataract Surgery 18**

Highlights: Community Health



Eye Vision Care



Cataract Surgery



Nutritional kits to 153 children with thalassemia

Key programmatic accomplishments

Community Health

Education

Sustainable Livelihoods

Community Infrastructure

Stakeholder engagement

- 69 Primary schools (10452 Students)
- 8 High schools (1211 Students)
- 12000+ Students
- 2371 Progressive learner
- 3421 IT on Wheels
- 2449 Adani competitive coaching center
- 250 Adani Evening Education center
- Library Activity: 45000+ Books issued. 300+ Oasis workshop arranged to increase reading habits of students.
- Mothers Meet: Mothers' meetings conducted every second Saturday in Utthan schools. 10,000+ mothers have participated.
- Vedic maths and Abacus

Highlights: Education



Abacus Mathematics



Eye Vision Care in Utthan School



Green School Initiative – plastic collection

Key programmatic accomplishments

Community Health

Education

Sustainable Livelihoods

Community Infrastructure

Stakeholder engagement

- ❖ **"CHETNA"** - initiative with gender diversity
 - Adani Foundation, in collaboration with Unnati Portal and Adani Solar, launched an initiative to provide equal opportunities for employment and self-development to women from Kutch.
 - Till Now 167 Female Joined Adani Solar @Pan India, 154 are from Kutch (92.21%)
- ❖ **Saheli Groups:** Form 82 Self Help Groups in coordination with National Rural Livelihood Mission (850+ Members). 16 SHG are on pathways of self-reliance their total Corpus Rs. 32,27,100 in 6 months.
- ❖ 3 women SHGs from Adani Foundation Mundra participated in the prestigious Sathwaro Mela in Ahmedabad, showcasing Mud Art, Bead Art, and Soof Art, along with two artisans specializing in Rabari and Doori work, achieving an impressive turnover of Rs.1,30,000/-

Key programmatic accomplishments

Community Health

Education

Sustainable Livelihoods

Community Infrastructure

Stakeholder engagement

Empowering Fisherfolk Community:

- Education Support: Vehicle transportation facilities to 86 fisherfolk students, Education kits Support to 77 students, Scholarship support of Rs. 3,58,765 to 34 students.
- Job Support: Facilitated job placements for 75 fisherfolk as RTG operators, in the HR department, professional painting roles and as supervisors in APSEZ companies.

Animal Husbandry:

- Fodder support to 25 villages, benefiting 15005 cattle, Dry Fodder Support - 10,90,875 Kg & Green Fodder Support - 27,64,920 Kg
- Launched a vaccination camp for **20,000 cattle**, in collaboration with the Animal Health Department of Bhuj. 6,200+ cattle have been successfully vaccinated,

Highlights: Sustainable Livelihood



Local women of Kutch confidently working in Adani Solar



SHGs participating in SATHWARO'24 Powering Art, Empowering Artisans



Educational and Job Support to Fisherfolk youth

Key programmatic accomplishments

Community Health

Education

Sustainable Livelihoods

Community Development

Stakeholder engagement

- ❖ Renovation of Zarpaar High School - benefit 450+ students/annually
- ❖ Construction of Madhav seva trust School at Zararpa - benefit 250+ students/annually
- ❖ Renovation of AVMB school - benefit 640+ students/annually



Key programmatic accomplishments

Community Health

Education

Sustainable Livelihoods

Community Infrastructure

Climate Action

❖ **Vruksh Se Vikas – Massive Drive**

- In the 6 months we establish 3 Adani Van, planting 22,460 trees in 9.5 acres area in N khakhar, Borana, and Dhruh village. Till Date 8 Adani Van 75,078 Trees @28 acres
- Prakrutik Rath: Empowering Communities Through Green Initiatives 7,136 saplings distributed and planted in 6 months.
- **Total 1.79 Lac tree plantation done till date.**

❖ **Mangrove Nursery Development with 10,000 seeds.**

- ❖ **Costal Clean up day:** At Kashivishvnath Beach, Mandvi, 200+ students and 80 Utthan Sahayaks cleaned a 1 km stretch, collecting significant plastic waste as part of a coastal cleanup and awareness drive.

- ❖ **Green Schools:** Eco-clubs in 77 Utthan Schools and 12000+ students participate in “No Plastic” activities.

Highlights: Vruksh Se Vikas



Vruksh Se Vikas – Massive Drive: Adani van & Prakrutik Rath

Costal cleanup Day

Adani skill development center

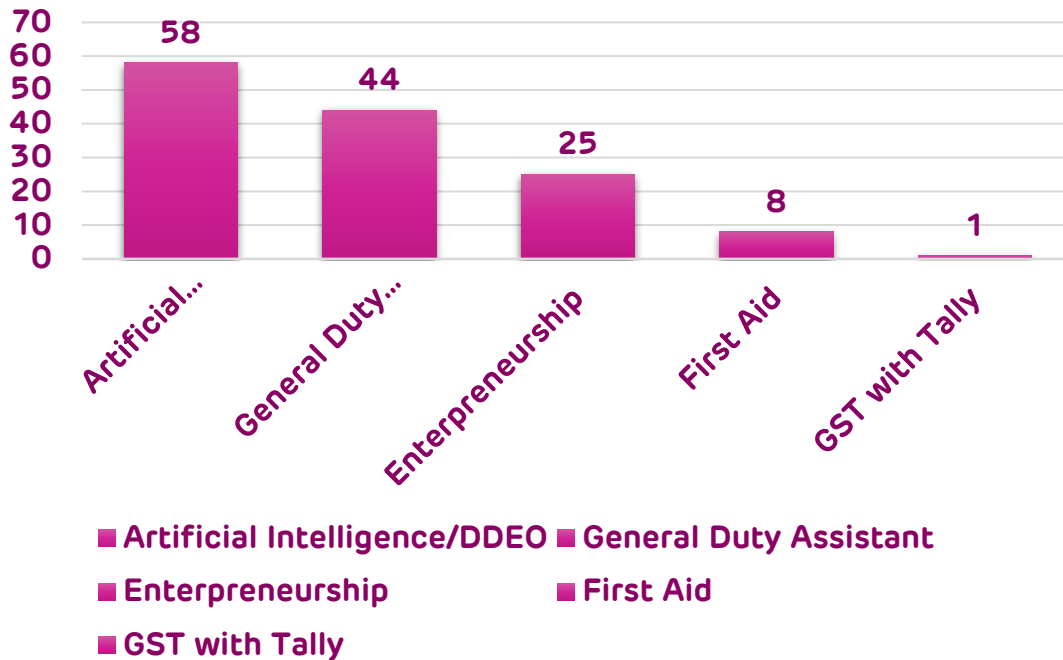


Adani Skill Development Centre (ASDC) plays a pivotal role in empowering individuals through skill enhancement. By offering a wide range of training programs, ASDC aims to bridge the gap between industry requirements and workforce capabilities. This initiative not only helps individuals stay adaptable in a rapidly evolving job market but also opens up opportunities for career advancement and higher productivity. In rural areas, many youth possess degrees but lack the practical skills needed for employment; ASDC addresses this gap by providing targeted training to enhance their employability. Through continuous learning and development, participants can achieve greater job satisfaction and personal fulfillment. On a broader scale, ASDC contributes to economic growth by fostering a skilled workforce that drives innovation and provides businesses with a competitive edge. Ultimately, the Adani Skill Development Centre is dedicated to building a future-ready workforce that supports the overall progress of society.

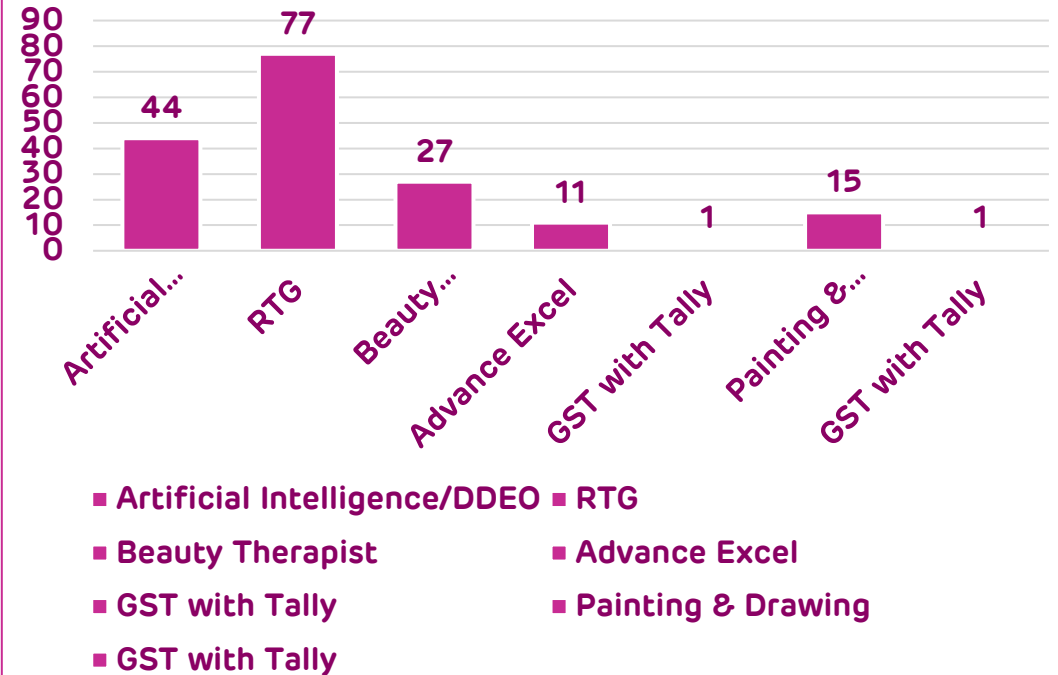
Empowering Youth : Impact of ASDC in Mundra and Bhuj Center

ASDC has significantly enhanced employability in Mundra and Mandvi. Training programs in digital literacy, RTG crane operation, beauty therapy, and advanced Excel have provided practical skills and certifications. Real-time exposure along with the Entrepreneurship Development Program (EDP), has further empowered youth. Successful placements have resulted in well-paying jobs, contributing to regional economic growth. Overall, ASDC's initiatives have transformed the lives of many individuals, fostering both personal and professional development.

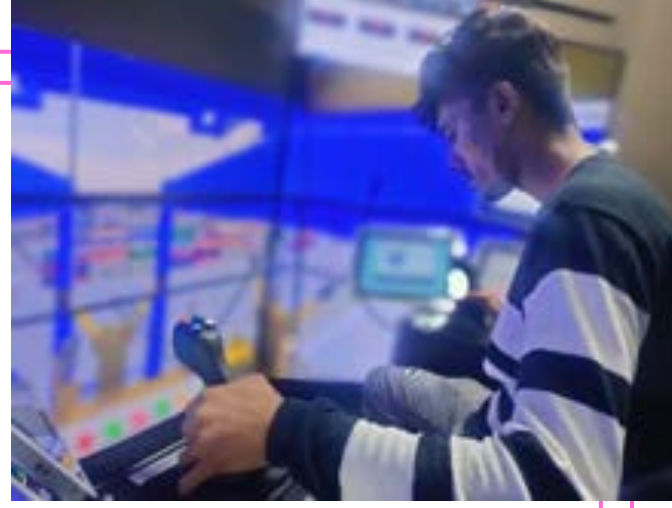
Percentage of Students in course, Bhuj



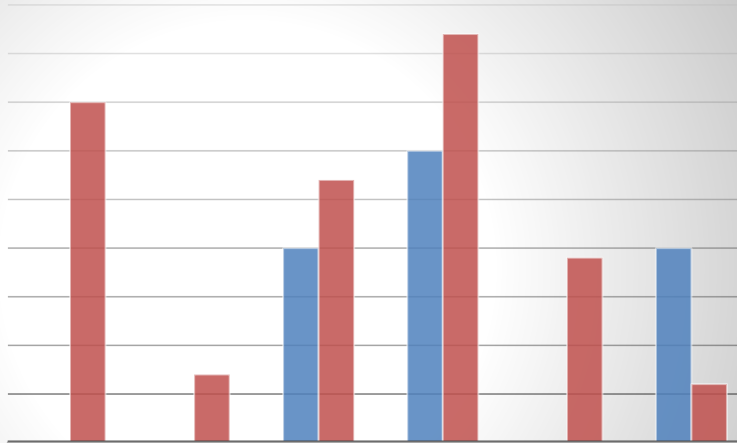
Percentage of Students in course, Mundra



Some glimpse of ASDC Mundra and Bhuj



Half Yearly Target Vs Achievement Bhuj



■ Target

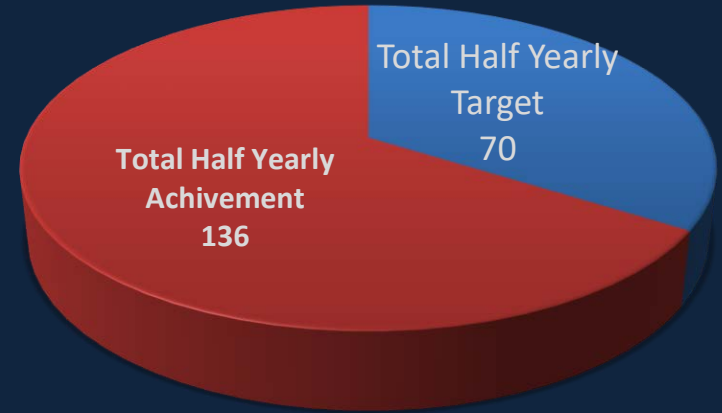
■ Achivement

Apr May Jun Jul Aug Sep

0 0 20 30 0 20

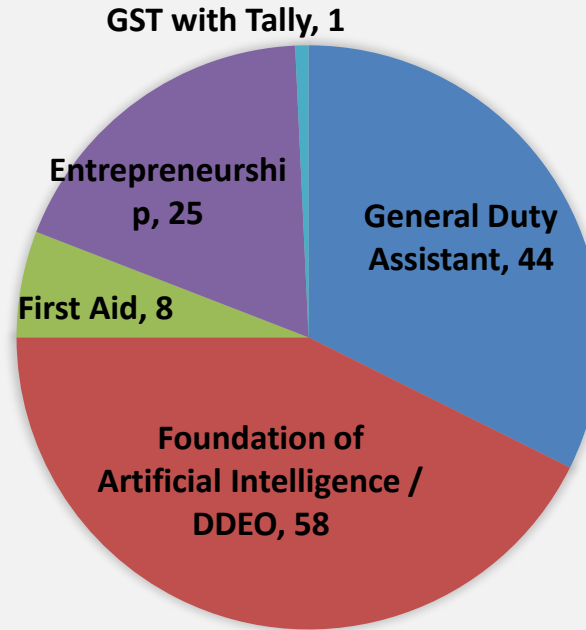
35 7 27 42 19 6

Half Yearly Target Vs Achievement



■ Total Half Yearly Target ■ Total Half Yearly Achievement

JOB ROLE WISE STUDENTS DETAILS, BHUJ



Total Students = 136

Revenue Generation Bhuj _Centre & Tie Up

Job Role	Student Paid	Tie Ups	Any other	Total Income
General Duty Assistant	284500	0	0	284500
Foundation of Artificial Intelligence / DDEO	177000	0	0	177000
First Aid	4792	0	0	4792
Tally with GST	8000	0	0	8000
Total	4,74,292	0	0	4,74,292

Bhuj Center Activities Photos



Bhuj Center Press Notes

કચ્છ સમાચાર 52૨૭ આયસીસ Kutch Ajshais Follow us Dt. 2 August 2024 03



અનુશાસનનું પાલન લક્ષ્યસિદ્ધિનું પ્રથમ સોપાન

જાણીતા અભિયાનકર્તાઓની આગેવાની હેઠળ અનુશાસનનું પાલન ઠીક ઠીક થાય તે માટેની કાર્યકરોની તૈયારી કરવા માટે કચ્છ પ્રદેશના સરકારી અધિકારીઓ દ્વારા આજ રોજ કચ્છના આયસીસ કેન્દ્રોમાં આયોજાયેલા આ ઉજવણીમાં સરકારી અધિકારીઓ દ્વારા કચ્છના આયસીસ કેન્દ્રોમાં આયોજાયેલા આ ઉજવણીમાં સરકારી અધિકારીઓ દ્વારા કચ્છના આયસીસ કેન્દ્રોમાં આયોજાયેલા આ ઉજવણીમાં સરકારી અધિકારીઓ દ્વારા...

જવાનોની જીવનશૈલી અનુરૂપ રાંધણ કલા વિકાસ માટે ૨૪ બહેનોએ તાલીમ લીધી



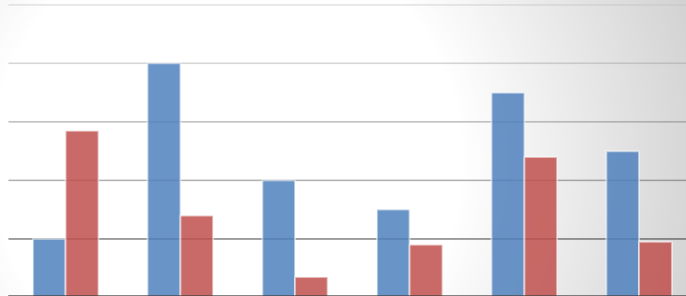
કચ્છ આયસીસ | ભુજ ખાતે અદાણી સ્ટીલ બ્રુજ ખાતે અદાણી સ્ટીલ એવલધમેન્ટ સેન્ટર દ્વારા ચાલતા વિવિધ તાલીમ વર્ગો અંતર્ગત આર્મીના જવાનોની જીવનશૈલીને અનુરૂપ ધોષણ આહાર તૈયાર કરવા માટે જવાનોની પત્નીઓને...

આર્મી મથક ખાતે આદાણી સ્ટીલ એવલધમેન્ટ સેન્ટર દ્વારા સહજતાપૂર્વક ટ્રેનિંગ પૂર્ણ કર્યા બદલ પ્રમાણપત્રો અપાયા

કરતાં આર્મી વેલ્ફેર ઓર્ગેનાઇઝેશનના ચેરપર્સન શાલિની સિંહે જણાવ્યું કે, જવાનોની જીવનશૈલીને અનુરૂપ રાંધણ કલાનો વિકાસ કરવા અને જવાનોના સ્વાસ્થ્ય માટે આ તાલીમ પ્રાપ્ત કરી છે જે એક ઉત્તમ પગલું પુરવાર થશે. તેમણે સંસ્થાનાં પ્રકલ્પનો આભાર માન્યો હતો. ભુજ યુનિટના જુનિ. ઓફિસર ડૉ. પુર્વી ગોસ્વામીએ પ્રમાણપત્રો એનાયત કર્યા હતા. વ્યવસ્થા આર્મી વેલ્ફેરના સેક્રેટરી પ્રિયા સેલ્વમએ તથા સંચાલન માધ્યમી તુરવએ કર્યું હતું.

હેપ્પી મધર્સ ડે : માતૃત્વની વાસ્તવ્યમૂર્તિએ કૌશલ્ય ઉજાગર કરી ટીકરીને પગભર કરી. Includes a photo of a woman and child and text about a maternal health program.

Half Yearly Target Vs Achievement Mundra



■ Target

■ Achivement

Apr May Jun Jul Aug Sep

20 80 40 30 70 50

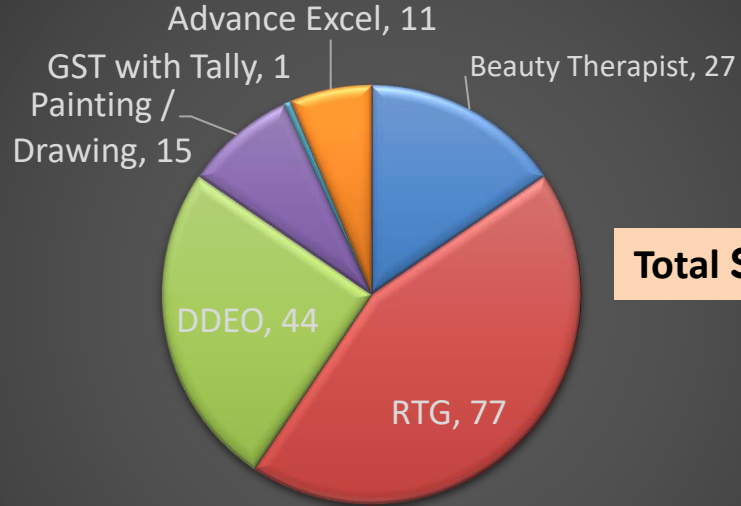
57 28 7 18 48 19

Yearly Target Vs Achievement Mundra



■ Total Half Yearly Target ■ Total Half Yearly Achivement

Job Role Wise Details Mundra



Total Students = 177

- Beauty Therapist
- RTG
- DDEO
- Painting / Drawing
- GST with Tally
- Advance Excel

Revenue Generation Mundra _Centre & Tie Up

Job Role	Student Paid	Tie Ups	Any other	Total Income
RTG	0	756000	0	756000
German Language Training	10000	0	0	10000
Beauty Therapist	54000	0	0	54000
DDEO	28000	0	0	28000
Tally with GST	3000	0	0	3000
Drawing/ Painting	18000	0	0	18000
Total	1,13,000	7,56,000	0	8,69,000

Mundra Center Activities Photos



મુન્દ્રામાં યુવાનો કેન ઓપરેટરની તાલીમ પ્રાપ્ત કરી રોજગાર મેળવવા બન્યા સુસજ્જ અદાણી કૌશલ્ય વિકાસ કેન્દ્ર દ્વારા સફળ તાલીમાર્થીને પ્રમાણપત્રનું કરાયું વિતરણ

ભાસ્કર ન્યૂઝ | મુન્દ્રા

તાજેતરમાં મુન્દ્રા ખાતે અદાણી સ્કીલ ડેવલોપમેન્ટ સેન્ટર દ્વારા નવી બેચના ઉદ્ઘાટન સાથે તાલીમાર્થીઓને આરટીકે કેન ઓપરેટર પ્રમાણપત્રો વિતરિત કરવામાં આવ્યા હતા. આમ સફળતા પૂર્વક તાલીમ પ્રાપ્ત કરનાર યુવાઓ હવે રોજગાર મેળવવા સુસજ્જ બન્યા છે.

એ સી ડી એસ યુવાઓને આત્મનિર્ભર બનાવવાના ઉદ્દેશ્ય સાથે ધોરણ દસ બાદ આઈટીઆઈ અથવા ધોરણ બાર ઉત્તીર્ણ વિદ્યાર્થીઓને તાલીમ આપી રોજગાર અર્થે સક્ષમ બનાવવામાં આવે છે. એસી ડી એસ દ્વારા છેલ્લા બે વર્ષમાં કેન ઓપરેશન ટ્રેડમાં 120 છાત્રોને સફળતાપૂર્વક ટ્રેનિંગ



અપાઈ છે. જેમાંથી 80 ઉમેદવારો અદાણી પોર્ટ પર જ નોકરી મેળવી આત્મનિર્ભર બન્યા છે. નવી બેચમાં 70 ટકા ઉમેદવારો કચ્છ જિલ્લાના અને અન્ય 30 ટકા પ્રમાણપત્ર વિતરણ સમારંભ માં ઉપસ્થિત ખાસ મહેમાનોને પણ સન્માનિત કરવામાં આવ્યા હતા. મુખ્ય અતિથી તરીકે એપીસેકના એચ આર હેડ રનેહાશીષ ભટ્ટાચાર્યએ કેન ઓપરેટર ની ભૂમિકા અંગે વિસ્તૃત માહિતી આપી હતી. અને તાલીમાર્થીઓને અદ્યતન ટેકનોલોજી સાથે અપડેટ રહેવા અને સતત નવું શીખતું રહેવા પ્રોત્સાહિત કર્યા હતા. રાષ્ટ્ર નિર્માણમાં યોગદાનના ઉદ્દેશ્ય થી ભારતના યુવાધન ને સક્ષમ બનાવવા અદાણી કૌશલ્ય વિકાસ કેન્દ્ર ની સ્થાપના 16 મે 2016 ન રોજ કરવામાં આવી હતી. અને હવે તે વર્ટિકલ ભવિષ્ય માટે તૈયાર વ્યાવસાયિકો અન્યાયુનિક ટેકનોલોજી નો ઉપયોગ કરી તાલીમ આપવાના મિશન ને સતત આગળ ધપાવી રહ્યું છે.

અદાણી કૌશલ્ય વિકાસ કેન્દ્ર દ્વારા સફળ તાલીમાર્થીઓને પ્રમાણપત્ર વિતરણ કરાયા એએસડીસી યુવાઓને આત્મનિર્ભર બનાવવાની દિશામાં અગ્રેસર

લોકમાન્ય મુન્દ્રા અદાણી કૌન્ટરેશન યુવા રોજગારીને પ્રાધન્ય આપતા અનેક કાર્યક્રમોમાં પ્રવૃત્ત છે. તાજેતરમાં અદાણી સ્કિલ ડેવલપમેન્ટ સેન્ટર મુન્દ્રા દ્વારા નવી બેચના ઉદ્ઘાટન સાથે તાલીમાર્થીઓને આરટીકે કેન ઓપરેટર પ્રમાણપત્રો વિતરિત કરવામાં આવ્યા હતા. તેમ ઓપરેટરની તાલીમ સફળતાપૂર્વક પૂર્ણ કરનાર યુવાઓ આત્મનિર્ભર બની સમાજમાં તેમની આગવી ઓળખ ઉભી કરશે.



વધારો કરવાનું છે. ધોરણ ૧૦ બાદ આઈટીઆઈ અથવા ધોરણ ૧૨ ઉત્તીર્ણ કરનાર વિદ્યાર્થીઓ એએસડીસીમાં સફળતાપૂર્વક તાલીમ લઈ રોજગાર સક્ષમ બની શકે છે. કચ્છ ક્ષેત્રે સિમ્લિટ ધોરણ ૧૨ પાસ ઉમેદવારોને પ્રતિશ્લિષ્ટ કરવા માટે ભંડોળ ઉપલબ્ધ કરાશે.

એએસડીસી દ્વારા છેલ્લા ૨ વર્ષમાં આરટીકે કેન ઓપરેશન ટ્રેડમાં ૧૨૦ ઉમેદવારોને સફળતાપૂર્વક તાલીમ આપવામાં આવી છે. જેમાંથી ૮૦ ઉમેદવારો અદાણી પોર્ટ પર જ નોકરીઓ મેળવી આત્મનિર્ભર બનાવવાની દિશામાં અગ્રેસર રીએલ્ટી પોર્ટફોલિયો અને રેવેન્યુ સેન્ટરનું ધ્યેય યુવાધનને રોજગારદલ્કથી પ્રશિક્ષણ આપી તેમની કૌશલ્ય શક્તિમાં વધારો કરવાનું છે. ધોરણ ૧૦ બાદ આઈટીઆઈ અથવા ધોરણ ૧૨ ઉત્તીર્ણ કરનાર વિદ્યાર્થીઓ એએસડીસીમાં સફળ તાલીમ લઈ રોજગાર સક્ષમ બની શકે છે. કચ્છ ક્ષેત્રે સિમ્લિટ ધોરણ ૧૨ પાસ ઉમેદવારોને પ્રતિશ્લિષ્ટ કરવામાં આવી હતી. એએસડીસી વર્ટિકલ ભવિષ્ય માટે તૈયાર વ્યાવસાયિકોને અન્યાયુનિક ટેકનોલોજીનો ઉપયોગ કરી તાલીમ આપવામાં આવી છે. જેમાંથી ૮૦ આરટીકે કેન ઓપરેટરની ભૂમિકા વિશે સંક્ષિપ્ત માહિતી આપી હતી. તેમણે તાલીમાર્થીઓને અદ્યતન ટેકનોલોજી સાથે અપડેટ રહેવા અને સતત નવું શીખતું રહેવા માટે પ્રોત્સાહિત કર્યા હતા.

રાષ્ટ્રનિર્માણમાં યોગદાનના દિશાથી ભારતના યુવાધનને સક્ષમ બનાવવા અદાણી કૌશલ્ય વિકાસ કેન્દ્રની સ્થાપના ૧૬ મે, ૨૦૧૬ના રોજ કરવામાં આવી હતી. એએસડીસી વર્ટિકલ ભવિષ્ય માટે તૈયાર વ્યાવસાયિકોને અન્યાયુનિક ટેકનોલોજીનો ઉપયોગ કરી તાલીમ આપવાના મિશનને સતત આગળ ધપાવી રહ્યું છે.

અદાણી કૌશલ્ય વિકાસ કેન્દ્ર દ્વારા કેન ટ્રેડની ૧૨૦ ઉમેદવારને તાલીમ

મુન્દ્રા, તા. ૧૮ : અદાણી કૌન્ટરેશન યુવા રોજગારીને પ્રાધન્ય આપતા અનેક કાર્યક્રમોમાં પ્રવૃત્ત છે. તાજેતરમાં અદાણી સ્કિલ ડેવલપમેન્ટ સેન્ટર મુન્દ્રા દ્વારા નવી બેચના ઉદ્ઘાટન સાથે તાલીમાર્થીઓને આરટીકે કેન ઓપરેટર પ્રમાણપત્રો વિતરિત કરવામાં આવ્યા હતા. આ તાલીમ સફળતાપૂર્વક પૂર્ણ કરનાર યુવાઓ આત્મનિર્ભર બની સમાજમાં તેમની આગવી ઓળખ ઉભી કરશે.

એએસડીસી દ્વારા છેલ્લા ૨ વર્ષમાં આરટીકે કેન ઓપરેશન ટ્રેડમાં ૧૨૦ ઉમેદવારોને સફળતાપૂર્વક તાલીમ આપવામાં આવી છે. જેમાંથી ૮૦ ઉમેદવારો અદાણી પોર્ટ પર જ નોકરીઓ મેળવી આત્મનિર્ભર બનાવવાની દિશામાં અગ્રેસર રીએલ્ટી પોર્ટફોલિયો અને રેવેન્યુ સેન્ટરનું ધ્યેય યુવાધનને રોજગારદલ્કથી પ્રશિક્ષણ આપી તેમની કૌશલ્ય શક્તિમાં વધારો કરવાનું છે. ધોરણ ૧૦ બાદ આઈટીઆઈ અથવા ધોરણ ૧૨ ઉત્તીર્ણ કરનાર વિદ્યાર્થીઓ એએસડીસીમાં સફળ તાલીમ લઈ રોજગાર સક્ષમ બની શકે છે. કચ્છ ક્ષેત્રે સિમ્લિટ ધોરણ ૧૨ પાસ ઉમેદવારોને પ્રતિશ્લિષ્ટ કરવામાં આવી હતી. એએસડીસી વર્ટિકલ ભવિષ્ય માટે તૈયાર વ્યાવસાયિકોને અન્યાયુનિક ટેકનોલોજીનો ઉપયોગ કરી તાલીમ આપવામાં આવી છે. જેમાંથી ૮૦ આરટીકે કેન ઓપરેટરની ભૂમિકા વિશે સંક્ષિપ્ત માહિતી આપી હતી. તેમણે તાલીમાર્થીઓને અદ્યતન ટેકનોલોજી સાથે અપડેટ રહેવા અને સતત નવું શીખતું રહેવા માટે પ્રોત્સાહિત કર્યા હતા.



અદાણી કૌશલ્ય વિકાસ કેન્દ્રના તાલીમાર્થીઓને પ્રમાણપત્ર વિતરણ કર્યાનું દર્શન.

Annexure – 3

Legal Matters- Mudra: November 2024

S.No	Case Detail (No., Parties to the Case, Filed at and on)	Case Brief (Matter)	Last Status (As on.....)	Current Status as on 28.11.2023	Obligation (if any)	Action Taken/Proposed	Remarks (Here we can mention the updates that happened during the intervening period. Depending upon what you need to disclose i.e Comprehensively/brief))
1	<p>SLP 28788 of 2016 Pravinsinh Bhurabhai Chauhan Vs State of Gujarat & Others</p> <p>Petitioner 1. PRAVINSINGH BHURABHA CHAUHAN</p> <p>Respondent 2. State of Gujarat 3. APSEZ 4. MoEF&CC, New Delhi</p>	<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 	Tentatively listed on 09.12.2024	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 are no presence of "Sand dunes", in APSEZ area, inline to the authenticated maps & report available for this area. The Committee visited Mudra 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 	

	<p>5. MOC&I, New Delhi</p> <p>6. Collector, Bhuj</p> <p>7. Principal Secretary, Gujarat</p>	<p>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.</p> <ul style="list-style-type: none"> 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 				<p>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.</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. 	
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		<p>has also been submitted"</p> <ul style="list-style-type: none">• 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 Narayan Committee to relook in to this matter and submit their report.• Committee had visited the site on 3/4.01.2018 and has submitted their detailed report					
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		<p>to Hon'ble Supreme Court.</p> <ul style="list-style-type: none"> Further, based on the findings of the report, the subject land is not classified as Sand dune and therefore allegations are not correct. 					
2.	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 	N.A	Matter pending before Gujarat High Court (not listed since 2021)		<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 	

		<p>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.</p> <ul style="list-style-type: none"> • Further, a Civil Application No. 1 of 2011 in CA 9124 of 2011 				<p>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.</p>	
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		<p>was filed against APSEZ and APL for initiation of contempt proceedings.</p> <ul style="list-style-type: none">• The court ordered the CA to be listed with another matter (WPPIL 121 of 2021)					
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Annexure – 4

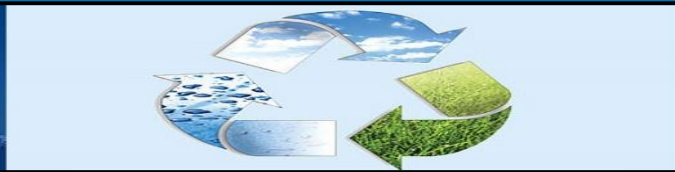
Details of Greenbelt Development at APSEZ, Mundra

	Total Green Zone Detail till Up to September 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	131156	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



“Half Yearly Environmental Monitoring Reports “

For,
adani
Ports and
Logistics

M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port)

PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.

Monitoring Period: April - 2024 to September - 2024

Submitted By



UniStar Environment & Research Labs Pvt. Ltd.

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

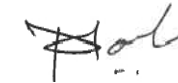


RESULTS OF STP OUTLET WATER

SR.N O.	TEST PARAMETERS	UNIT	WFDP WEST PORT STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Apr-24		May-24		Jun-24			
			11-04-2024	27-04-2024	10-05-2024	24-05-2024	12-06-2024	26-06-2024		
1.	pH @ 25 ° C	--	7.44	7.39	7.46	7.41	7.42	7.42	6.5 to 9	IS 3025 (Part-11):2022
2.	Total Suspended Solids	mg/L	24	28	24	26	22	22	100	APHA 24th Ed.2023,2540 -D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16	18	16.8	16.4	14.8	15.2	30	APHA 24th Ed.2023,5210-B
4.	Residual chlorine	mg/L	0.77	0.72	0.68	0.74	0.72	0.66	0.5 Min.	APHA 24th Ed.2023,4500-CI-G
5.	Fecal Coliform	MPN Index/100 ml	60	80	50	70	60	90	1000	IS 3025 (Part-11):2022



Mr. Nilesh Patel
Sr. Chemist

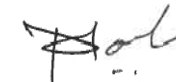
Mr. Nitin Tandel
Technical Manager

RESULTS OF STP OUTLET WATER

SR.NO.	TEST PARAMETERS	UNIT	WFDP WEST PORT STP OUTLET						GPCB Permissible Limit	TEST METHOD
			Jul-24		Aug-24		Sep-24			
			06-07-2024	24-07-2024	13-08-2024	24-08-2024	05-09-2024	20-09-2024		
1.	pH @ 25 ° C	--	7.35	7.28	7.12	7.11	7.88	7.49	6.5 to 9	IS 3025 (Part-11):2022
2.	Total Suspended Solids	mg/L	16	22	18	18	14	18	100	APHA 24th Ed.2023,2540 - D
3.	Biochemical Oxygen Demand (BOD) (5 days at 20 ° C)	mg/L	16	15	16.8	14.9	9	12	30	APHA 24th Ed.2023,5210-B
4.	Residual chlorine	mg/L	0.62	0.63	0.59	0.64	0.72	0.78	0.5 Min.	APHA 24th Ed.2023,4500-CI-G
5.	Fecal Coliform	MPN Index/100ml	50	80	60	90	70	80	1000	IS 3025 (Part-11):2022



Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

MARINE WATER MONITORING SUMMARY REPORT

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
1.	pH	--	8.11	7.94	7.96	7.81	8.05	7.89	7.98	7.74	7.91	7.82	8.12	7.94	IS 3025 (Part 11):2022
2.	Temperature	°C	29.9	29.8	30.5	30.4	30.7	30.6	30.1	30	30	29.9	29.9	29.8	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	138	118	144	120	132	118	98	82	142	126	128	102	APHA 24th Ed.,2023,254 0- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL(MDL :1.0)	3.1	BDL(MDL :1.0)	2.9	BDL(MDL :1.0)	3.1	BDL(MDL :1.0)	2.6	BDL(MDL :1.0)	2.8	BDL(MDL :1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.12	5.92	6.02	5.77	5.93	5.68	6.42	6.22	6.59	6.3	6.69	6.4	APHA 24th Ed.2023,4500 -O, B
6.	Salinity	ppt	35.86	37.11	35.92	37.28	38.82	37.15	36.12	36.88	35.78	36.71	35.87	36.64	By Calculation
7.	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)	BDL(MDL :2.0)	BDL(MDL :2.0)	BDL(MDL :2.0)	BDL(MDL :2.0)	BDL(MDL :2.0)	BDL(MDL :2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.39	3.06	3.55	3.23	3.71	3.39	3.55	3.39	1.94	1.61	2.32	1.72	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.543	0.478	0.609	0.565	0.565	0.522	0.456	0.435	0.174	0.13	0.379	0.312	APHA 24th Ed.2023,4500 NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.22	4.11	4.48	4.37	4.43	4.37	3.8	3.69	3.954	3.85	2.59	2.16	APHA 24th Ed. 2023,4500-NH3 B
11.	Phosphates as PO ₄	µmol/L	1.68	1.58	1.9	1.68	1.16	1.05	1.05	BDL(MDL :0.4)	1.37	1.16	1.47	1.26	APHA 24th Ed.2023,4500 -P, D

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

12.	Total Nitrogen	μmol/L	8.153	7.648	8.639	8.165	8.705	8.282	7.806	7.515	6.068	5.59	5.289	4.192	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	μg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,552 OF
14.	Total Dissolved Solids	mg/L	36410	37180	36550	37210	36480	37180	36120	36980	34970	35960	34740	35830	IS 3025(Part 16):2023
15.	COD	mg/L	23.9	7.9	28.17	12.07	23.9	8	16.1	4	20	8	24.1	12	IS 3025(Part 58):2023

Continue...

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
Phytoplankton															
1.	Chlorophyll	mg/m ³	3.05	3.25	3.06	3.24	3.08	3.26	3.07	3.27	3.08	3.26	3.07	3.07	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	2	1.56	3	1.59	4	1.56	3	1.55	4	1.57	6	6	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	109	90	110	92	114	91	112	92	114	93	112	112	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Coscinodiscus</i>	<i>Odentella</i>	<i>Nitzschia</i>	<i>Biddulphia</i>	<i>Nitzschia</i>	<i>Biddulphia</i>	<i>Thalassiothrix</i>	<i>Dinophysis</i>	<i>Thalassiothrix</i>	<i>Dinophysis</i>	<i>Thalassiothrix</i>	<i>Dinophysis</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Diploneis</i>	<i>Rhizosolenia</i>	<i>Diploneis</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Rhizosolenia</i>	<i>Surirella</i>	<i>Pinnularia</i>	<i>Surirella</i>	<i>Pinnularia</i>	<i>Biddulphia</i>	<i>Pinnularia</i>	
			<i>Rhizosolenia</i>	<i>Coscinodiscus</i>	<i>Rhizosolenia</i>	<i>Coscinodiscus</i>	<i>Rhizosolenia</i>	<i>Coscinodiscus</i>	<i>Navicula</i>	<i>Thalassiothrix</i>	<i>Navicula</i>	<i>Thalassiothrix</i>	<i>Navicula</i>	<i>Thalassiothrix</i>	
			<i>Dinophysis</i>	<i>Grammatophora</i>	<i>Dinophysis</i>	<i>Grammatophora</i>	<i>Dinophysis</i>	<i>Grammatophora</i>	<i>Thalassiosira</i>	<i>Grammatophora</i>	<i>Nitzschia</i>	<i>Grammatophora</i>	<i>Nitzschia</i>	<i>Grammatophora</i>	
			<i>Thalassionema</i>	<i>Thalassiosira</i>	<i>Biddulphia</i>	<i>Navicula</i>	<i>Biddulphia</i>	<i>Navicula</i>	<i>Skeletonema</i>	<i>Ceratium</i>	<i>Skeletonema</i>	<i>Ceratium</i>	<i>Skeletonema</i>	<i>Ceratium</i>	

Zooplankton															
1	Abundance(Population)	noX103/100 m3	66		65		64		66		68		67		APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Crustacean Larvae</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Egg(Fish and Shrimps)</i>		<i>Egg(Fish and Shrimps)</i>		<i>Egg(Fish and Shrimps)</i>		
			<i>Egg(Fish and Shrimps)</i>		<i>Pinnularia</i>		<i>Pinnularia</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		
			<i>Copepods</i>		<i>Copepods</i>		<i>Copepods</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		
			<i>Crustacean</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		<i>Crustacean</i>		<i>Crustacean</i>		<i>Crustacean</i>		
			<i>Bivalve Larvae</i>		<i>Thalassionema</i>		<i>Thalassionema</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		
3	Total Biomass	ml/100 m ³	13.64		13.65		13.64		13.66		13.67		13.67		

Continue...

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

SR. NO	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
			Microbiological												
1	Total Bacterial Count	CFU/ml	100	102	104	106	108	110							APHA 24 th Ed.2023,9215-C
2	Total Coliform	/100ml	12	10	11	12	14	13							APHA 24 th Ed.2023,9222-B
3	Ecoli	/100ml	10	12	9	8	7	8							IS :15185:2016
4	Enterococcus	/100ml	Absent	Absent	Absent	Absent	Absent	Absent							IS:15186:2002
5	Salmonella	/100ml	Absent	Absent	Absent	Absent	Absent	Absent							IS:15187:2016
6	Shigella	/100ml	Absent	Absent	Absent	Absent	Absent	Absent							APHA 24 th Ed.2023,9260-E
7	Vibrio	/100ml	Absent	Absent	Absent	Absent	Absent	Absent							IS: 5887 (Part V):1976



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Mr. Nitin Tandel
Technical Manager

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.43	0.46	0.44	0.48	0.41	0.44	IS: 2720 (Part 22):1972
2.	Phosphorus as P	µg/g	558.4	551.2	558.6	542.2	510.5	524.2	IS: 10158 :1982, Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.2023,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.09	4.05	4.08	3.98	3.82	3.88	IS3025(Part 55):2003
5.2	Total Chromium as Cr+3	µg/g	138.4	132.2	136.4	144.2	120.8	128.7	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.3	Manganese as Mn	µg/g	594.6	580.4	574.2	550.6	610.2	624.3	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.4	Iron as Fe	%	4.12	4.08	3.98	3.86	3.94	3.86	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.5	Nickel as Ni	µg/g	42.06	41.25	41.36	42.35	48.65	44.62	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.6	Copper as Cu	µg/g	42.86	41.94	42.28	43.25	51.25	48.96	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.7	Zinc as Zn	µg/g	122.4	120.2	120.84	116.5	124.6	120.3	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.8	Lead as Pb	µg/g	2.41	2.36	2.48	2.41	2.31	2.22	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.9	Mercury as Hg	µg/g	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 7471B (Extraction &Analytical Method) :2007

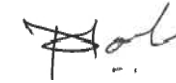
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RESULTS OF SEDIMENT ANALYSIS [M1 LEFT SIDE OF BOCHA CREEK - N 22°45'183" E 069°43'241"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-24 SEDIMENT	May-24 SEDIMENT	Jun-24 SEDIMENT	Jul-24 SEDIMENT	Aug-24 SEDIMENT	Sep-24 SEDIMENT	TEST METHOD
D Benthic Organisms									
1	Macrobenthos	--	<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	APHA (24 th Ed. 2023)10500
			<i>Polychates</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	
			<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Amphipods</i>	<i>Gastropods</i>	<i>Gastropods</i>	
			<i>Amphipods</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Polychates</i>	
2	MeioBenthos	--	<i>Herpectacoids</i>	<i>Gastropods</i>	<i>Herpectacoids</i>	<i>Turbellarians</i>	<i>Turbellarians</i>	<i>Turbellarians</i>	
			<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	
3	Population	no/m ²	364	366	368	367	368	367	



Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.18	7.98	8.06	7.86	8.12	7.94	8.05	7.86	7.96	7.84	8.06	7.94	IS 3025 (Part 11):2022
2.	Temperature	°C	29.8	29.7	30.4	30.3	30.5	30.4	30.2	30.1	30.1	30	29.8	29.7	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	142	118	136	104	142	122	118	96	94	76	114	88	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL(M DL:1.0)	3.2	BDL(M DL:1.0)	2.8	BDL(M DL:1.0)	2.5	BDL(M DL:1.0)	2.6	BDL(M DL:1.0)	2.8	BDL(M DL:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.12	5.82	6.02	5.67	5.93	5.58	6.22	6.03	6.4	6.1	6.49	6.2	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.38	37.13	36.44	37.42	36.35	37.36	35.94	36.84	35.69	36.72	35.59	36.78	By Calculation
7.	Oil & Grease	mg/L	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.39	3.23	3.71	3.55	3.87	3.55	3.39	3.23	2.42	2.1	2.49	2.15	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.5	0.478	0.543	0.522	0.5	0.456	0.478	0.435	0.239	0.196	0.259	0.13	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.27	4.16	4.48	4.43	4.32	4.27	3.74	3.69	4.11	4.014	2.28	1.81	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	1.68	1.47	1.47	1.37	1.26	1.16	1.16	1.05	1.05	BDL(M DL:0.4)	1.16	1.05	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	8.16	7.868	8.733	8.502	8.69	8.276	7.608	7.355	6.769	6.31	5.029	4.09	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36240	37310	36280	37340	36110	37140	35860	36920	35810	36860	35860	36740	IS 3025(Part 16):2023
15.	COD	mg/L	19.9	7.9	32.19	16.1	27.9	12	20.1	8	24	12	28.1	16.1	IS 3025(Part 58):2023

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A															
Phytoplankton															
1.	Chlorophyll	mg/m ³	2.98	2.69	2.97	2.64	2.96	2.63	2.95	2.66	2.98	2.67	2.99	2.68	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	2.09	2.06	2.08	2.07	2.05	2.05	2.06	2.06	2.08	2.05	2.06	2.04	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	95	147	97	146	94	148	95	147	93	148	94	147	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Thalassiothrix</i>	<i>Pinnularia</i>	<i>Thalassiothrix</i>	<i>Pinnularia</i>	<i>Dinophysis</i>	<i>Pinnularia</i>	<i>Navicula</i>	<i>Thalassiothrix</i>	<i>Surirella</i>	<i>Thalassiothrix</i>	<i>Surirella</i>	<i>Thalassiothrix</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Surirella</i>	<i>Biddulphia</i>	<i>Surirella</i>	<i>Biddulphia</i>	<i>Surirella</i>	<i>Biddulphia</i>	<i>Skeletonema</i>	<i>Surirella</i>	<i>Pinnularia</i>	<i>Surirella</i>	<i>Pinnularia</i>	<i>Surirella</i>	
			<i>Navicula</i>	<i>Navicula</i>	<i>Navicula</i>	<i>Navicula</i>	<i>Nitzschia</i>	<i>Navicula</i>	<i>Rhizosolenia</i>	<i>Navicula</i>	<i>Rhizosolenia</i>	<i>Navicula</i>	<i>Melosira</i>	<i>Navicula</i>	
			<i>Thalassiosira</i>	<i>Rhizosolenia</i>	<i>Cyclotella</i>	<i>Rhizosolenia</i>	<i>Cyclotella</i>	<i>Rhizosolenia</i>	<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Dinophysis</i>	<i>Thalassiosira</i>	
			<i>Skeletonema</i>	<i>Skeletonema</i>	<i>Skeletonema</i>	<i>Thalassiosira</i>	<i>Skeletonema</i>	<i>Thalassiosira</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	
B															
Zooplankton															
1	Abundance (Population)	noX10 ³ / 100 m ³	42	44	43	42	43	42	43	42	43	42	43	42	APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	
			<i>Copepods</i>	<i>Oikoplura</i>	<i>Nitzschia</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>							
			<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods</i>	<i>Copepods</i>	<i>Copepods</i>							
			<i>Crustacean</i>	<i>Crustacean</i>	<i>Pinnularia</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Copepods nauplii</i>							
			<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>							
3	Total Biomass	ml/100 m ³	15.74	15.7	15.25	15.5	15.3	15.3	15.3	15.3	15.3	15.3	15.3		

Continue...

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C	Microbiological														
1	Total Bacterial Count	CFU/ml	110		114		116		118		120		122		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	32		34		33		34		35		36		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	13		16		14		13		14		12		IS :15185:2016
4	Enterococcus	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.48	0.44	0.49	0.46	0.52	0.48	IS: 2720 (Part 22):1972
2.	Phosphorus as P	µg/g	574.2	564.8	562.2	550.2	590.5	582.1	IS: 10158 :1982, Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.2023,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.12	4.06	4.11	4.02	3.83	3.84	IS3025(Part 55):2003
5.2	Total Chromium as Cr+3	µg/g	151.4	154.2	148.9	135.4	146.2	152.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.3	Manganese as Mn	µg/g	659	668	672.2	640.5	710.2	685.4	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.4	Iron as Fe	%	4.09	4.02	4.11	4.02	4.16	4.02	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.5	Nickel as Ni	µg/g	43.21	44.13	44.28	39.82	42.44	44.31	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.6	Copper as Cu	µg/g	43.05	42.64	42.86	41.25	48.95	46.36	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.7	Zinc as Zn	µg/g	155.4	146.5	145.6	136.4	142.4	135.4	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.8	Lead as Pb	µg/g	2.33	2.13	1.96	2.05	2.11	2.04	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.9	Mercury as Hg	µg/g	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 7471B (Extraction &Analytical Method) :2007

Continue...

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	<i>Decapods Larvae</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	APHA (24 th Ed. 2023)10500
			<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Gastropods</i>	<i>Gastropods</i>	<i>Gastropods</i>	
			<i>Amphipods</i>	<i>Amphipods</i>	<i>Gastropods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	
			<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Amphipods</i>	<i>Amphipods</i>	
2	MeioBenthos	--	<i>Foraminiferan</i>	<i>Foraminiferan</i>	<i>Decapods Larvae</i>	<i>Herpectacoids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	
			<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Polychates</i>	
3	Population	no/m ²	256	350	321	308	254	307	



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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.22	8.1	8.14	8.06	8.18	8.08	8.07	7.91	8.11	7.89	8.14	7.93	IS 3025 (Part 11):2022
2.	Temperature	°C	29.9	29.8	30.5	30.4	30.4	30.3	30.2	30.1	30.1	30	29.9	29.8	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	136	112	142	116	136	116	128	118	112	94	106	82	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	2.9	BDL(MD L:1.0)	2.4	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	3.1	BDL(MD L:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	5.92	5.72	5.82	5.57	5.73	5.48	6.32	6.22	6.49	6.3	6.59	6.4	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.58	37.28	36.64	37.44	36.55	37.38	36.24	37.21	35.96	36.88	35.88	36.74	By Calculation
7.	Oil & Grease	mg/L	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.23	2.9	3.87	3.55	3.23	2.9	3.06	2.9	2.26	1.94	3.23	2.59	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.435	0.413	0.478	0.456	0.522	0.5	0.435	0.413	0.304	0.261	0.413	0.379	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.37	4.22	4.498	4.32	4.22	4.16	3.64	3.59	3.95	3.85	3.66	2.93	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	1.37	1.16	1.26	1.05	1.37	1.26	1.26	1.05	1.37	1.16	1.05	BDL(MD L:0.4)	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	8.035	7.533	8.846	8.326	7.972	7.56	7.135	6.903	6.514	6.051	7.303	5.899	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36246	37250	36270	37310	36190	37240	35560	36770	35090	36680	35120	36550	IS 3025(Part 16):2023
15.	COD	mg/L	15.9	7.9	28.17	16.1	23.9	12	12	BDL(MD L:2.0)	16	4	20.1	8	IS 3025(Part 58):2023

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD	
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M		
A			Phytoplankton													
1.	Chlorophyll	mg/m ³	2.47	2.47	2.44	2.48	2.42	2.44	2.43	2.46	2.42	2.47	2.41	2.46	APHA (24 th Ed. 2023)10200A-G	
2.	Phaeophytin	mg/m ³	1.66	1.47	1.65	1.42	1.67	1.43	1.68	1.44	1.67	1.42	1.68	1.41	APHA (24 th Ed. 2023)10200A-G	
3.	Cell Count	No. x 10 ³ /L	140	98	142	97	146	96	148	97	150	98	154	99	APHA (24 th Ed. 2023)10200A-G	
4	Name of Group Number and name of group species of each group	--	<i>Pinnularia</i>	<i>Coscino discus</i>	<i>Pinnularia</i>	<i>Coscino discus</i>	<i>Pinnularia</i>	<i>Coscino discus</i>	<i>Melosira</i>	<i>Cyclotella</i>	<i>Melosira</i>	<i>Cyclotella</i>	<i>Melosira</i>	<i>Cyclotella</i>	APHA (24 th Ed. 2023)10200A-G	
			<i>Biddulphia</i>	<i>Pinnularia</i>	<i>Biddulphia</i>	<i>Pinnularia</i>	<i>Biddulphia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>		
			<i>Navicula</i>	<i>Rhizosolenia</i>	<i>Navicula</i>	<i>Rhizosolenia</i>	<i>Navicula</i>	<i>Rhizosolenia</i>	<i>Skeletonema</i>	<i>Skeletonema</i>	<i>Rhizosolenia</i>	<i>Skeletonema</i>	<i>Rhizosolenia</i>	<i>Skeletonema</i>		<i>Skeletonema</i>
			<i>Thalassiosira</i>	<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Thalassiosira</i>	<i>Thalassiosira</i>	<i>Thalassiosira</i>	<i>Thalassiosira</i>	<i>Thalassiosira</i>		<i>Thalassiosira</i>
			<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Thalassionema</i>	<i>Thalassionema</i>	<i>Thalassionema</i>	<i>Thalassionema</i>	<i>Thalassionema</i>	<i>Thalassionema</i>		<i>Thalassionema</i>

B			Zooplankton										TEST METHOD		
1	Abundance (Population)	noX10 ³ /100 m ³	40	41	40	43	45	44							APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Copepods</i>		<i>Copepods</i>		<i>Rhizosolenia</i>		<i>Crustacean</i>		<i>Crustacean</i>		<i>Crustacean</i>		
			<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		<i>Crustacean Larvae</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		
			<i>Egg(Fish and Shrimps)</i>		<i>Egg(Fish and Shrimps)</i>		<i>Egg(Fish and Shrimps)</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		
			<i>Crustacean</i>		<i>Pinnularia</i>		<i>Oikoplura</i>		<i>Crustacean</i>		<i>Crustacean</i>		<i>Egg(Fish and Shrimps)</i>		
3	Total Biomass	ml/100 m ³	<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Thalassionema</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		
			14.48	15.5	15.4	15.6	15.5	15.5							

Continue...

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	126		128		130		132		130		132		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	28		27		29		30		31		30		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	24		23		22		21		22		21		IS :15185:2016
4	Enterococcus	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.42	0.46	0.42	0.48	0.52	0.46	IS: 2720 (Part 22):1972
2.	Phosphorus as P	µg/g	618.2	620.5	611.8	618.6	632.4	610.2	IS: 10158 :1982, Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.2023,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.14	4.36	4.09	4.12	3.94	3.88	IS3025(Part 55):2003
5.2	Total Chromium as Cr+3	µg/g	146.2	154.1	146.5	138.5	124.5	132.4	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.3	Manganese as Mn	µg/g	618.9	620.2	608.5	619.2	520.6	538.4	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.4	Iron as Fe	%	4.09	4.11	4.06	3.98	4.09	4.14	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.5	Nickel as Ni	µg/g	44.6	42.5	44.8	41.62	36.8	35.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.6	Copper as Cu	µg/g	42.05	43.11	43.82	45.08	40.95	36.8	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.7	Zinc as Zn	µg/g	134.6	142.2	143.8	146.7	124.9	115.8	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.8	Lead as Pb	µg/g	2.33	2.16	2.22	2.15	1.96	2.05	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.9	Mercury as Hg	µg/g	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 7471B (Extraction &Analytical Method) :2007

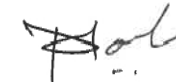
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RESULTS OF SEDIMENT ANALYSIS [M3 EAST OF BOCHAISLANOT DETECTED - N 22°46'530" E 069°41'690"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-24 SEDIMENT	May-24 SEDIMENT	Jun-24 SEDIMENT	Jul-24 SEDIMENT	Aug-24 SEDIMENT	Sep-24 SEDIMENT	TEST METHOD
D			Benthic Organisms						
1	Macrobenthos	--	Polychates	<i>Polychates</i>	<i>Amphipods</i>	<i>Gastropods</i>	<i>Gastropods</i>	<i>Decapods Larvae</i>	APHA (24 th Ed. 2023)10500
			<i>Gastropods</i>	<i>Gastropods</i>	<i>Gastropods</i>	<i>Isopods</i>	<i>Isopods</i>		
			<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Amphipods</i>	<i>Amphipods</i>		
			<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>		
2	MeioBenthos	--	<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Foraminiferan</i>	
			<i>Polychates</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Herpectacoids</i>	<i>Herpectacoids</i>		
3	Population	no/m ²	298	296	298	297	295	294	



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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.19	8.01	8.14	8.04	8.17	8.01	8.12	7.99	8.05	7.92	8.16	7.98	IS 3025 (Part 11):2022
2.	Temperature	°C	29.8	29.7	30.4	30.3	30.6	30.5	30.1	30	30	29.9	29.9	29.8	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	138	122	142	128	144	132	132	114	124	108	132	102	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.8	BDL(MD L:1.0)	3.1	BDL(MD L:1.0)	3.2	BDL(MD L:1.0)	2.6	BDL(MD L:1.0)	2.9	BDL(MD L:1.0)	2.5	BDL(MD L:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.22	6.12	6.12	5.97	6.03	5.88	6.42	6.32	6.59	6.4	6.69	6.49	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	35.94	36.97	36.15	37.22	36.18	37.24	35.84	36.92	35.66	36.78	35.74	36.82	By Calculation
7.	Oil & Grease	mg/L	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.39	3.23	3.55	3.39	3.23	2.9	3.06	2.9	2.1	1.77	2.37	2.16	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.435	0.391	0.478	0.5	0.543	0.522	0.391	0.37	0.239	0.174	0.207	0.189	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.27	4.16	4.22	4.16	4.32	4.27	3.53	3.48	4.01	3.9	2.75	2.62	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	1.79	1.68	1.16	1.05	1.26	1.16	1.05	BDL(MD L:0.4)	1.26	1.05	1.16	BDL(MD L:0.4)	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	8.095	7.781	8.248	8.05	8.093	7.692	6.981	6.75	6.349	5.844	5.327	4.969	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36380	37320	36410	37360	36320	37180	35730	36810	35650	36780	35710	36790	IS 3025(Part 16):2023
15.	COD	mg/L	23.9	7.9	32.19	20.12	27.9	16	16.1	4	20	8	24.1	12	IS 3025(Part 58):2023

RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'57" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD	
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M		
A																
Phytoplankton																
1.	Chlorophyll	mg/m ³	2.36	3.14	2.38	3.17	2.37	3.19	2.35	3.2	2.36	3.1	2.37	3.2	APHA (24 th Ed. 2023)10200A-G	
2.	Phaeophytin	mg/m ³	2.69	2	2.66	3	2.59	4	2.6	5	2.7	4	2.5	6	APHA (24 th Ed. 2023)10200A-G	
3.	Cell Count	No. x 10 ³ /L	154	88	156	86	154	84	155	88	152	89	156	88	APHA (24 th Ed. 2023)10200A-G	
4	Name of Group Number and name of group species of each group	--	<i>Coscino discus</i>	<i>Surirella</i>	<i>Surirella</i>	<i>Surirella</i>	<i>Coscino discus</i>	<i>Surirella</i>	<i>Thalassiosira</i>	<i>Coscino discus</i>	<i>Thalassiosira</i>	<i>Coscino discus</i>	<i>Thalassiosira</i>	<i>Coscino discus</i>	APHA (24 th Ed. 2023)10200A-G	
			<i>Diploneis</i>	<i>Biddulphia</i>	<i>Diploneis</i>	<i>Biddulphia</i>	<i>Diploneis</i>	<i>Biddulphia</i>	<i>Melosira</i>	<i>Diploneis</i>	<i>Melosira</i>	<i>Diploneis</i>	<i>Melosira</i>	<i>Diploneis</i>		
			<i>Rhizosolenia</i>	<i>Navicula</i>	<i>Thalassiothrix</i>	<i>Coscino discus</i>	<i>Skeletonema</i>	<i>Coscino discus</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>		<i>Rhizosolenia</i>
			<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Navicula</i>	<i>Thalassiosira</i>	<i>Navicula</i>	<i>Thalassiosira</i>	<i>Rhizosolenia</i>	<i>Dinophysis</i>	<i>Rhizosolenia</i>	<i>Dinophysis</i>	<i>Rhizosolenia</i>	<i>Dinophysis</i>		<i>Dinophysis</i>
			<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Thalassionema</i>	<i>Skeletonema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>		

B															
Zooplankton															
1	Abundance (Population)	noX10 ³ /100 m ³	37		36		37		36		37		38		APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		
			<i>Copepods nauplii</i>		<i>Rhizosolenia</i>		<i>Rhizosolenia</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		<i>Egg(Fish and Shrimps)</i>		
			<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		<i>Egg(Fish and Shrimps)</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		
			<i>Crustacean</i>		<i>Crustacean</i>		<i>Crustacean</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Copepods nauplii</i>		
			<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		
3	Total Biomass	ml/100 m ³	14.22		14.24		14.23		14.26		14.27		14.27		

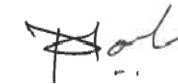
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RESULTS OF MARINE WATER [M4 JUNA BANOT DETECTEDAR N 22°47'57" E 069°43'620"]

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	100		92		94		96		98		100		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	44		42		44		43		42		44		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	12		11		10		11		10		12		IS :15185:2016
4	Enterococcus	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.51	0.52	0.49	0.41	0.49	0.44	IS: 2720 (Part 22):1972
2.	Phosphorus as P	µg/g	619.4	621.4	624.2	612.5	580	560.8	IS: 10158 :1982, Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.2023,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.14	4.06	3.98	3.88	3.92	3.99	IS3025(Part 55):2003
5.2	Total Chromium as Cr+3	µg/g	144.4	138.9	142.2	132.6	122.6	132.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.3	Manganese as Mn	µg/g	611.5	602.5	610.4	589.2	554.6	540.3	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.4	Iron as Fe	%	4.06	4.11	4.08	4.11	4.18	4.06	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.5	Nickel as Ni	µg/g	51.24	52.2	53.1	55.6	48.6	48.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.6	Copper as Cu	µg/g	48.62	48.44	49.02	52.1	46.9	45.3	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.7	Zinc as Zn	µg/g	134.2	136.2	138.4	148.6	138	144.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.8	Lead as Pb	µg/g	2.24	2.22	2.31	2.24	2.11	2.16	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.9	Mercury as Hg	µg/g	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 7471B (Extraction &Analytical Method) :2007

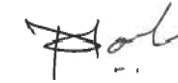
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RESULTS OF SEDIMENT ANALYSIS [M4 JUNA BANOT DETECTEDAR N 22°47'577" E 069°43'620"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-24 SEDIMENT	May-24 SEDIMENT	Jun-24 SEDIMENT	Jul-24 SEDIMENT	Aug-24 SEDIMENT	Sep-24 SEDIMENT	TEST METHOD
D	Benthic Organisms								
1	Macrobenthos	--	<i>Foraminiferan</i>	<i>Amphipods</i>	<i>Amphipods</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	APHA (24 th Ed. 2023)10500
			<i>Gastropods</i>	<i>Gastropods</i>	<i>Gastropods</i>	<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	
			<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Polychates</i>	
2	MeioBenthos	--	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Turbellarians</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Foraminiferan</i>	
			<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Turbellarians</i>	<i>Gastropods</i>	<i>Gastropods</i>	
3	Population	no/m ²	322	341	288	304	308	300	



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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.16	8.06	8.18	8.11	8.21	8.09	8.14	8.04	8.07	7.88	8.18	8.02	IS 3025 (Part 11):2022
2.	Temperature	°C	29.8	29.7	30.5	30.4	30.6	30.5	30.2	30.1	30.1	30	30	29.9	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	134	114	128	112	130	108	138	114	132	108	122	104	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.1	BDL(MD L:1.0)	3.3	BDL(MD L:1.0)	3.1	BDL(MD L:1.0)	2.7	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	2.7	BDL(MD L:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.22	6.02	6.12	5.87	6.03	5.78	6.22	6.13	6.4	6.2	6.49	6.3	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.54	37.1	36.62	37.26	36.55	37.33	35.55	36.28	35.42	36.34	35.31	36.41	By Calculation
7.	Oil & Grease	mg/L	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.87	3.55	4.03	3.87	3.71	3.39	2.9	2.74	2.1	1.94	2.8	2.37	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.456	0.413	0.522	0.5	0.478	0.456	0.435	0.413	0.391	0.348	0.259	0.189	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	3.95	3.8	4.16	4.11	4.11	4.06	3.64	3.59	3.48	3.42	4.05	3.83	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	1.9	1.68	1.37	1.26	1.16	1.05	1.05	BDL(MD L:0.4)	1.16	BDL(MD L:0.4)	1.26	1.16	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	8.276	7.763	8.712	8.48	8.298	7.906	6.975	6.743	5.971	5.708	7.109	6.389	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36210	37300	36250	37340	36190	37240	35640	36930	34680	35880	34720	35910	IS 3025(Part 16):2023
15.	COD	mg/L	23.9	11.9	24.14	20.12	19.9	16	4	BDL(MD L:2.0)	8	4	12	8	IS 3025(Part 58):2023

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

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
Phytoplankton															
1.	Chlorophyll	mg/m ³	3.17	3.15	3.14	3.17	3.11	3.15	3.13	3.16	3.14	3.18	3.12	3.17	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	2.4	1.25	2.3	1.24	2.2	1.23	2.3	1.24	2.4	1.23	2.3	1.22	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	115	105	118	107	120	106	122	108	123	109	122	110	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Diploneis</i>	<i>Navicula</i>	<i>Diploneis</i>	<i>Navicula</i>	<i>Navicula</i>	<i>Navicula</i>	<i>Navicula</i>	<i>Pinnularia</i>	<i>Navicula</i>	<i>Pinnularia</i>	<i>Navicula</i>	<i>Pinnularia</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Rhizosolenia</i>	<i>Skeletonema</i>	<i>Rhizosolenia</i>	<i>Skeletonema</i>	<i>Biddulphia</i>	<i>Skeletonema</i>	<i>Biddulphia</i>	<i>Biddulphia</i>	<i>Biddulphia</i>	<i>Biddulphia</i>	<i>Biddulphia</i>	<i>Rhizosolenia</i>	
			<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Navicula</i>	<i>Nitzschia</i>	<i>Navicula</i>	<i>Odontella</i>	<i>Dinophysis</i>	
			<i>Cyclotella</i>	<i>Dinophysis</i>	<i>Cyclotella</i>	<i>Biddulphia</i>	<i>Cyclotella</i>	<i>Biddulphia</i>	<i>Cyclotella</i>	<i>Thalassiosira</i>	<i>Cyclotella</i>	<i>Thalassiosira</i>	<i>Cyclotella</i>	<i>Coscinodiscus</i>	
			<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Skeletonema</i>	<i>Pleurosigma</i>	<i>Skeletonema</i>	<i>Pleurosigma</i>	<i>Skeletonema</i>	

Zooplankton															
1	Abundance (Population)	noX10 ³ /100 m ³	48	49	48	50	52	51							APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Copepods nauplii</i>	<i>Nitzschia</i>	<i>Nitzschia</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>							
			<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>							
			<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Copepods</i>	<i>Copepods</i>	<i>Copepods nauplii</i>							
			<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>							
			<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>							
3	Total Biomass	ml/100 m ³	14.17	14.15	14.12	14.13	14.12	14.12							

Continue...

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	130		134		134		136		140		144		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	27		30		31		32		33		31		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	15		16		18		17		18		17		IS :15185:2016
4	Enterococcus	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.48	0.49	0.46	0.42	0.53	0.48	IS: 2720 (Part 22):1972
2.	Phosphorus as P	µg/g	728.4	710.5	698.5	650.9	612.1	590.8	IS: 10158 :1982, Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.2023,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	4.06	4.08	4.12	3.91	3.88	3.92	IS3025(Part 55):2003
5.2	Total Chromium as Cr+3	µg/g	142.2	162.4	166.2	156.4	142.3	136.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.3	Manganese as Mn	µg/g	598.4	602.4	609.8	617.2	570.9	560.4	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.4	Iron as Fe	%	4.06	4.14	4.09	4.16	4.19	4.11	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.5	Nickel as Ni	µg/g	44.36	43.36	43.12	42.19	44.36	45.68	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.6	Copper as Cu	µg/g	45.91	45.28	45.11	45.86	41.25	48.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.7	Zinc as Zn	µg/g	121.4	124.4	122.2	120.8	111.6	116.5	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.8	Lead as Pb	µg/g	2.09	1.89	1.94	2.08	1.92	2.11	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.9	Mercury as Hg	µg/g	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 7471B (Extraction &Analytical Method) :2007

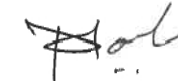
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RESULTS OF SEDIMENT ANALYSIS [M5 TOWARDS WESTERN SIDE OF EAST PORT – N 22°46'041" E 069°47'296"]

SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
D			Benthic Organisms						
1	Macrobenthos	--	Amphipods	Amphipods	Amphipods	Isopods	Isopods	Isopods	APHA (24 th Ed. 2023)10500
			Polychates	Sipunculids	Polychates	Polychates	Polychates	Gastropods	
			Isopods	Isopods	Isopods	Sipunculids	Sipunculids	Sipunculids	
			Gastropods	Gastropods	Gastropods	Amphipods	Amphipods	Amphipods	
2	MeioBenthos	--	Decapods Larvae	Decapods Larvae	Foraminiferan	Polychates	Herpectacoids	Herpectacoids	
			Herpectacoids	Gastropods	Herpectacoids	Foraminiferan	Foraminiferan	Polychates	
3	Population	no/m ²	306	305	304	305	307	302	



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

SR. NO.	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.18	7.98	8.15	8.04	8.19	8.06	8.04	7.88	8.15	7.98	8.16	8.04	IS 3025 (Part 11):2022
2.	Temperature	°C	29.9	29.8	30.5	30.4	30.7	30.6	30.2	30.1	30.1	30	29.8	29.7	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	118	96	124	106	120	108	134	116	122	106	104	78	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.1	BDL(MD L:1.0)	3.4	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	2.5	BDL(MD L:1.0)	3.1	BDL(MD L:1.0)	2.5	BDL(MD L:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.02	5.92	5.92	5.77	5.83	5.68	6.42	6.22	6.59	6.3	6.69	6.4	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.52	37.35	36.58	37.48	36.42	37.21	36.14	36.97	35.97	36.77	35.81	36.58	By Calculation
7.	Oil & Grease	mg/L	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.39	3.23	4.19	4.03	4.03	3.71	3.39	3.23	2.42	2.1	3.66	3.44	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.5	0.456	0.565	0.522	0.564	0.543	0.37	0.348	0.196	0.13	0.413	0.379	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.06	3.9	4.16	4.11	4.27	4.22	3.69	3.59	4.22	4.06	3.96	3.62	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	2.21	2	2.11	1.9	1.9	1.68	1.37	1.26	1.47	1.37	1.58	1.47	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	7.95	7.586	8.915	8.662	8.864	8.473	7.45	7.168	6.836	6.29	8.033	7.439	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36290	37340	36320	37110	36260	37180	35860	36720	35780	36690	35690	36480	IS 3025(Part 16):2023
15.	COD	mg/L	19.9	7.9	36.22	24.14	31.9	19.9	8	4	12	8	16.1	12	IS 3025(Part 58):2023

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
A			Phytoplankton												
1.	Chlorophyll	mg/m ³	3.04	2.3	3.06	2.6	3.08	2.5	3.07	2.4	3.08	2.6	3.07	2.6	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	2.6	1.77	2.7	1.78	2.5	1.77	2.6	1.78	2.7	1.77	2.6	1.78	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	88	122	89	124	87	123	89	122	91	123	92	122	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Nitzschia</i>	<i>Thalassiothrix</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Diploneis</i>	<i>Coscinodiscus</i>	<i>Diploneis</i>	<i>Coscinodiscus</i>	<i>Diploneis</i>	<i>Coscinodiscus</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Pinnularia</i>	<i>Surirella</i>	<i>Pinnularia</i>	<i>Surirella</i>	<i>Odontella</i>	<i>Surirella</i>	<i>Rhizosolenia</i>	<i>Diploneis</i>	<i>Rhizosolenia</i>	<i>Diploneis</i>	<i>Rhizosolenia</i>	<i>Diploneis</i>	
			<i>Odontella</i>	<i>Navicula</i>	<i>Dinophysis</i>	<i>Navicula</i>	<i>Dinophysis</i>	<i>Navicula</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	<i>Nitzschia</i>	<i>Rhizosolenia</i>	
			<i>Dinophysis</i>	<i>Thalassiosira</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Thalassiothrix</i>	<i>Dinophysis</i>	<i>Thalassiothrix</i>	<i>Dinophysis</i>	<i>Thalassiothrix</i>	<i>Dinophysis</i>	
			<i>Surirella</i>	<i>Skeletonema</i>	<i>Surirella</i>	<i>Skeletonema</i>	<i>Cyclotella</i>	<i>Skeletonema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Thalassionema</i>	<i>Cyclotella</i>	<i>Thalassionema</i>	

B		Zooplankton													
1	Abundance (Population)	noX10 ³ /100 m ³	41	42	42	43	42	43	42	43	42	43	42	43	APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Nitzschia</i>	<i>Nitzschia</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	<i>Egg(Fish and Shrimps)</i>	
			<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Coscinodiscus</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	
			<i>Odontella</i>	<i>Odontella</i>	<i>Odontella</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	<i>Copepods nauplii</i>	
			<i>Dinophysis</i>	<i>Dinophysis</i>	<i>Dinophysis</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>	
			<i>Surirella</i>	<i>Surirella</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>		
3	Total Biomass	ml/100 m ³	16.54	16.55	16.57	16.58	16.59	16.59	16.59	16.59	16.59	16.59	16.59		

Continue...

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	90		94		94		92		94		92		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	29		27		25		26		27		26		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	11		13		12		13		14		12		IS :15185:2016
4	Enterococcus	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.14	7.94	8.24	8.11	8.18	8.02	8.1	7.94	8.21	8.06	8.15	8.01	IS 3025 (Part 11):2022
2.	Temperature	°C	29.9	29.8	30.5	30.4	30.7	30.6	30.2	30.1	30.1	30	29.9	29.8	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	114	92	118	104	122	110	108	88	124	98	122	94	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	2.9	BDL(MD L:1.0)	2.4	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	3.2	BDL(MD L:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.02	5.82	5.92	5.67	5.83	5.58	6.42	6.32	6.59	6.4	6.69	6.49	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.42	37.24	35.44	37.37	35.39	37.28	35.44	37.05	35.48	36.82	35.64	36.71	By Calculation
7.	Oil & Grease	mg/L	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.71	3.23	4.03	3.71	4.19	3.87	3.55	3.23	2.74	2.42	3.45	3.02	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.522	0.478	0.565	0.522	0.609	0.543	0.478	0.456	0.239	0.174	0.379	0.328	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.16	4.11	4.11	4.06	4.32	4.27	3.59	3.48	4.37	4.22	3.84	3.62	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	2.21	2	1.9	1.79	1.68	1.58	1.26	1.05	1.26	BDL(MD L:0.4)	BDL(MD L:0.4)	BDL(MD L:0.4)	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	8.392	7.818	8.705	8.292	9.119	8.683	7.618	7.166	7.349	6.814	7.669	6.968	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36540	37610	36410	37480	36220	37340	35760	36520	35110	36460	35260	36180	IS 3025(Part 16):2023
15.	COD	mg/L	23.9	15.9	32.19	28.17	23.9	19.9	8	BDL(MD L:2.0)	12	4	16.1	8	IS 3025(Part 58):2023

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m ³	3.1	3.17	3.2	3.14	3.1	3.12	3.2	3.11	3.3	3.12	3.2	3.11	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	1.8	1.34	1.4	1.38	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.7	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	109	107	112	109	114	107	116	108	117	109	116	108	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Odontella</i>	<i>Cyclotella</i>	<i>Odontella</i>	<i>Cyclotella</i>	<i>Odontella</i>	<i>Cyclotella</i>	<i>Nitzschia</i>	<i>Diploneis</i>	<i>Nitzschia</i>	<i>Diploneis</i>	<i>Nitzschia</i>	<i>Diploneis</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Grammatophora</i>	<i>Rhizosolenia</i>	<i>Grammatophora</i>	<i>Rhizosolenia</i>	<i>Grammatophora</i>	<i>Rhizosolenia</i>	
			<i>Coscinodiscus</i>	<i>Skeletonema</i>	<i>Coscinodiscus</i>	<i>Skeletonema</i>	<i>Coscinodiscus</i>	<i>Skeletonema</i>	<i>Diploneis</i>	<i>Nitzschia</i>	<i>Diploneis</i>	<i>Nitzschia</i>	<i>Diploneis</i>	<i>Nitzschia</i>	
			<i>Grammatophora</i>	<i>Thalassiosira</i>	<i>Grammatophora</i>	<i>Thalassiosira</i>	<i>Grammatophora</i>	<i>Thalassiosira</i>	<i>Thalassiosira</i>	<i>Cyclotella</i>	<i>Thalassiosira</i>	<i>Cyclotella</i>	<i>Thalassiosira</i>	<i>Grammatophora</i>	
			<i>Thalassiosira</i>	<i>Thalassionema</i>	<i>Thalassiosira</i>	<i>Thalassionema</i>	<i>Thalassiosira</i>	<i>Thalassionema</i>	<i>Pleurosigma</i>	<i>Pleurosigma</i>	<i>Pleurosigma</i>	<i>Pleurosigma</i>	<i>Pleurosigma</i>	<i>Pleurosigma</i>	
B			Zooplankton												
1	Abundance (Population)	noX10 ³ /100 m ³	34		33		31		32		33		31		APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Coscinodiscus</i>		<i>Coscinodiscus</i>		<i>Odontella</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		
			<i>Diploneis</i>		Egg(Fish and Shrimps)		Egg(Fish and Shrimps)		<i>Copepods nauplii</i>		<i>Copepods nauplii</i>		Egg(Fish and Shrimps)		
			<i>Rhizosolenia</i>		<i>Rhizosolenia</i>		<i>Rhizosolenia</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		
			<i>Dinophysis</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Crustacean</i>		<i>Crustacean</i>		<i>Crustacean</i>		
<i>Thalassionema</i>		<i>Thalassionema</i>		<i>Thalassionema</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>		<i>Bivalve Larvae</i>			
3	Total Biomass	ml/100 m ³	14.78		14.77		14.78		14.77		14.78		14.78		

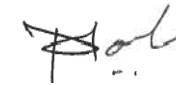
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RESULTS OF MARINE WATER [M8 RIGHT SIDE OF BOCHA CREEK N 22°45'987" E 069°43'119"]

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24	TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM		
C			Microbiological											
1	Total Bacterial Count	CFU/ml	96		98		96		94		98		90	APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	14		16		15		14		12		11	APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	13		14		11		10		11		13	IS :15185:2016
4	Enterococcus	/100ml	8		7		9		8		6		7	IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent	IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent	APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent	IS: 5887 (Part V):1976



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

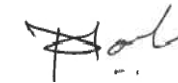
SR. NO.	TEST PARAMETERS	UNIT	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	TEST METHOD
			SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	
1.	Organic Matter	%	0.49	0.42	0.41	0.49	0.53	0.45	IS: 2720 (Part 22):1972
2.	Phosphorus as P	µg/g	602	596	602.4	610.5	564.8	574.2	IS: 10158 :1982, Method B
3.	Texture	--	Sandy	Sandy	Sandy	Sandy	Sandy	Sandy	Lab SOP No. UERL/CHM/LTM/108
4.	Petroleum Hydrocarbon	µg/g	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.2023,5520 F
5.0	Heavy Metals								
5.1	Aluminum as Al	%	3.98	3.94	3.98	4.05	4.19	4.06	IS3025(Part 55):2003
5.2	Total Chromium as Cr+3	µg/g	122.4	128.6	132.2	134.4	142.3	134.2	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.3	Manganese as Mn	µg/g	618.3	606	608.4	612.6	580.5	590.4	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.4	Iron as Fe	%	4.11	4.02	4.06	4.11	4.09	4.12	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.5	Nickel as Ni	µg/g	42.31	43.22	43.84	44.69	39.55	40.85	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.6	Copper as Cu	µg/g	44.86	44.685	44.23	42.36	51.31	52.31	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.7	Zinc as Zn	µg/g	121.2	120.4	122.5	114.6	128.4	122	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.8	Lead as Pb	µg/g	2.44	2.52	2.43	2.31	2.06	1.92	EPA 3050B/7000B (Extraction &Analytical Method):2007
5.9	Mercury as Hg	µg/g	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 7471B (Extraction &Analytical Method) :2007

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24 SEDIMENT	May-24 SEDIMENT	Jun-24 SEDIMENT	Jul-24 SEDIMENT	Aug-24 SEDIMENT	Sep-24 SEDIMENT	TEST METHOD
D			Benthic Organisms						
1	Macrobenthos	--	<i>Polychates</i>	<i>Gastropods</i>	<i>Gastropods</i>	<i>Polychates</i>	<i>Polychates</i>	<i>Polychates</i>	APHA (24 th Ed. 2023)10500
			<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	<i>Decapods Larvae</i>	<i>Amphipods</i>	<i>Amphipods</i>	<i>Amphipods</i>	
			<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Isopods</i>	<i>Sipunculids</i>	
			<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Sipunculids</i>	<i>Herpectacoids</i>	<i>Herpectacoids</i>	
2	MeioBenthos	--	<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Herpectacoids</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	<i>Foraminiferan</i>	
			<i>Turbellarians</i>	<i>Turbellarians</i>	<i>Turbellarians</i>	<i>Turbellarians</i>	<i>Turbellarians</i>	<i>Turbellarians</i>	
3	Population	no/m ²	368	367	365	366	367	368	



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RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'27" E 069°43'45"]

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.21	8.06	8.24	8.16	8.17	8	8.09	7.89	8.02	7.84	8.11	7.91	IS 3025 (Part 11):2022
2.	Temperature	°C	29.8	29.7	30.5	30.4	30.7	30.6	30.2	30.1	30.1	30	29.8	29.7	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	132	108	124	112	130	118	122	104	138	116	142	128	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	2.9	BDL(MD L:1.0)	3.4	BDL(MD L:1.0)	3.1	BDL(MD L:1.0)	2.8	BDL(MD L:1.0)	2.2	BDL(MD L:1.0)	3.4	BDL(MD L:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	6.02	5.92	5.92	5.77	5.83	5.68	6.32	6.22	6.49	6.3	6.59	6.4	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.34	37.33	36.42	37.51	36.34	37.39	35.82	37.08	35.73	37.12	35.84	36.98	By Calculation
7.	Oil & Grease	mg/L	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	BDL(MD L:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.06	2.74	3.39	3.23	3.55	3.39	3.06	2.74	2.42	2.26	3.02	2.59	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.565	0.543	0.652	0.609	0.543	0.522	0.5	0.456	0.413	0.37	0.276	0.215	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.22	4.06	4.32	4.22	4.37	4.27	3.48	3.42	4.43	4.27	3.79	3.36	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	1.9	1.68	1.79	1.68	1.47	1.37	1.16	1.05	1.16	1.05	BDL(MD L:0.4)	BDL(MD L:0.4)	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	7.845	7.343	8.362	8.059	8.463	8.182	7.04	6.616	7.263	6.9	7.086	6.165	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36280	37190	36240	37230	36230	37140	36110	36940	35280	36860	35310	36520	IS 3025(Part 16):2023
15.	COD	mg/L	19.9	11.9	28.17	24.14	19.9	16	8	4	12	8	16.1	12	IS 3025(Part 58):2023

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

SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m ³	2.9	2.8	2.7	2.6	2.6	2.7	2.7	2.8	2.6	2.9	2.9	2.8	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	2.7	1.6	2.6	1.7	2.7	1.5	2.9	1.6	2.8	1.5	2.7	1.6	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	132	117	129	115	128	116	130	117	133	118	132	117	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Dinophysis</i>	<i>Navicula</i>	<i>Odontella</i>	<i>Cyclotella</i>	<i>Cyclotella</i>	<i>Surirella</i>	<i>Odontella</i>	<i>Nitzschia</i>	<i>Odontella</i>	<i>Nitzschia</i>	<i>Odontella</i>	<i>Nitzschia</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Pinnularia</i>	<i>Skeletonema</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Pinnularia</i>	<i>Skeletonema</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	<i>Rhizosolenia</i>	<i>Pinnularia</i>	
			<i>Thalassiothrix</i>	<i>Rhizosolenia</i>	<i>Coscinodiscus</i>	<i>Skeletonema</i>	<i>Thalassiothrix</i>	<i>Rhizosolenia</i>	<i>Coscinodiscus</i>	<i>Odontella</i>	<i>Coscinodiscus</i>	<i>Odontella</i>	<i>Coscinodiscus</i>	<i>Odontella</i>	
			<i>Grammatophora</i>	<i>Dinophysis</i>	<i>Grammatophora</i>	<i>Thalassiosira</i>	<i>Rhizosolenia</i>	<i>Cyclotella</i>	<i>Grammatophora</i>	<i>Dinophysis</i>	<i>Grammatophora</i>	<i>Dinophysis</i>	<i>Pleurosigma</i>	<i>Dinophysis</i>	
			<i>Ceratium</i>	<i>Thalassionema</i>	<i>Thalassiosira</i>	<i>Thalassionema</i>	<i>Ceratium</i>	<i>Thalassionema</i>	<i>Thalassiosira</i>	<i>Surirella</i>	<i>Thalassiosira</i>	<i>Surirella</i>	<i>Thalassiosira</i>	<i>Surirella</i>	
B			Zooplankton												
1	Abundance (Population)	noX10 ³ /100 m ³	31		36		35		34		35		36		APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Diploneis</i>		<i>Diploneis</i>		<i>Diploneis</i>		<i>Decapoda</i>		<i>Decapoda</i>		<i>Decapoda</i>		
			<i>Rhizosolenia</i>		<i>Rhizosolenia</i>		<i>Rhizosolenia</i>		<i>Copepods</i>		<i>Copepods</i>		<i>Oikoplura</i>		
			<i>Nitzschia</i>		<i>Nitzschia</i>		<i>Nitzschia</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		<i>Crustacean Larvae</i>		
			<i>Thalassiothrix</i>		<i>Coscinodiscus</i>		<i>Coscinodiscus</i>		<i>Crustacean</i>		<i>Crustacean</i>		<i>Bivalve Larvae</i>		
		<i>Pleurosigma</i>		<i>Pleurosigma</i>		<i>Pleurosigma</i>		<i>Oikoplura</i>		<i>Oikoplura</i>		<i>Oikoplura</i>			
3	Total Biomass	ml/100 m ³	15.23		15.22		15.23		15.23		15.23		15.25		

Continue...

RESULTS OF MARINE WATER [M11 MPT T1 JETTY N 22°42'27" E 069°43'45"]

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	224		230		230		234		230		232		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	42		40		40		43		44		43		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	32		33		33		33		32		31		IS :15185:2016
4	Enterococcus	/100ml	18		15		15		12		14		13		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	SURFAC E	BOTTO M	
1.	pH	--	8.18	8.03	8.12	7.94	8.15	8.04	8.07	7.94	8.12	7.88	8.16	7.96	IS 3025 (Part 11):2022
2.	Temperature	°C	29.8	29.7	30.4	30.3	30.6	30.5	30.3	30.2	30.2	30.1	29.9	29.8	IS 3025 (Part 9):2023
3.	Total Suspended Solids	mg/L	142	122	130	104	132	112	120	102	110	92	124	88	APHA 24th Ed.,2023,2540- D
4.	BOD (3 Days @ 27°C)	mg/L	3.1	BDL(M DL:1.0)	3.3	BDL(M DL:1.0)	3.1	BDL(M DL:1.0)	2.2	BDL(M DL:1.0)	2.8	BDL(M DL:1.0)	3.4	BDL(M DL:1.0)	IS 3025 (Part 44):2023
5.	Dissolved Oxygen	mg/L	5.92	5.82	5.82	5.67	5.73	5.58	6.42	6.32	6.59	6.4	6.69	6.49	APHA 24th Ed.2023,4500-O, B
6.	Salinity	ppt	36.39	37.44	36.42	37.54	36.12	37.28	35.74	36.91	35.81	36.87	35.67	26.76	By Calculation
7.	Oil & Grease	mg/L	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	BDL(M DL:2.0)	IS 3025 (Part 39):2021
8.	Nitrate as NO ₃	µmol/L	3.06	2.74	3.23	3.06	3.39	3.23	3.23	2.9	2.1	1.77	2.67	2.54	APHA 24th Ed. 2023,4500 NO3-B
9.	Nitrite as NO ₂	µmol/L	0.543	0.5	0.652	0.565	0.609	0.565	0.522	0.478	0.435	0.371	0.414	0.362	APHA 24th Ed.2023,4500NO ₂ B
10.	Ammonical Nitrogen as NH ₃	µmol/L	4.43	4.22	4.37	4.27	4.43	4.32	3.74	3.64	4.16	3.95	3.4	3.32	APHA 24th Ed. 2023,4500- NH3 B
11.	Phosphates as PO ₄	µmol/L	2	1.79	2.11	1.9	1.9	1.68	1.37	1.26	1.26	1.16	1.16	1.05	APHA 24th Ed.2023,4500-P, D
12.	Total Nitrogen	µmol/L	8.033	7.46	8.252	7.895	8.429	8.115	7.492	7.018	6.695	6.091	6.484	6.222	APHA 24th Ed. 2023,4500 NH3 - B
13.	Petroleum Hydrocarbon	µg/L	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	ND	ND	ND	ND	ND	ND	APHA 24th ED.2023,5520 F
14.	Total Dissolved Solids	mg/L	36370	37410	36230	37140	36190	37110	35720	36410	34680	35370	34410	35420	IS 3025(Part 16):2023
15.	COD	mg/L	11.9	7.9	24.14	20.123	16	12	12	8	16	12	20.1	16.1	IS 3025(Part 58):2023

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

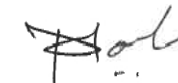
SR. NO.	TEST PARAMETERS	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
A			Phytoplankton												
1.	Chlorophyll	mg/m ³	2.7	2.8	2.6	2.7	2.5	2.5	2.3	2.6	2.2	2.5	2.1	2.4	APHA (24 th Ed. 2023)10200A-G
2.	Phaeophytin	mg/m ³	1.16	1.45	1.17	1.47	1.18	1.48	1.17	1.46	1.18	1.47	1.17	1.46	APHA (24 th Ed. 2023)10200A-G
3.	Cell Count	No. x 10 ³ /L	75	122	77	126	75	127	77	130	78	133	77	132	APHA (24 th Ed. 2023)10200A-G
4	Name of Group Number and name of group species of each group	--	<i>Ceratium</i>	<i>Melosira</i>	<i>Ceratium</i>	<i>Rhizosolenia</i>	<i>Surirella</i>	<i>Rhizosolenia</i>	<i>Skeletonema</i>	<i>Odontella</i>	<i>Skeletonema</i>	<i>Odontella</i>	<i>Skeletonema</i>	<i>Odontella</i>	APHA (24 th Ed. 2023)10200A-G
			<i>Pinnularia</i>	<i>Dinophysis</i>	<i>Pinnularia</i>	<i>Dinophysis</i>	<i>Pinnularia</i>	<i>Dinophysis</i>	<i>Grammatophora</i>	<i>Rhizosolenia</i>	<i>Grammatophora</i>	<i>Rhizosolenia</i>	<i>Grammatophora</i>	<i>Rhizosolenia</i>	
			<i>Odontella</i>	<i>Skeletonema</i>	<i>Odontella</i>	<i>Skeletonema</i>	<i>Grammatophora</i>	<i>Skeletonema</i>	<i>Nitzschia</i>	<i>Coscinodiscus</i>	<i>Nitzschia</i>	<i>Coscinodiscus</i>	<i>Nitzschia</i>	<i>Coscinodiscus</i>	
			<i>Thalassiothrix</i>	<i>Thalassiosira</i>	<i>Thalassiothrix</i>	<i>Thalassiosira</i>	<i>Thalassiothrix</i>	<i>Thalassiosira</i>	<i>Thalassiothrix</i>	<i>Grammatophora</i>	<i>Thalassiothrix</i>	<i>Grammatophora</i>	<i>Coscinodiscus</i>	<i>Pinnularia</i>	
			<i>Thalassiosira</i>	<i>Thalassionema</i>	<i>Thalassiosira</i>	<i>Melosira</i>	<i>Rhizosolenia</i>	<i>Melosira</i>	<i>Pleurosigma</i>	<i>Thalassiosira</i>	<i>Pleurosigma</i>	<i>Thalassiosira</i>	<i>Pleurosigma</i>	<i>Thalassiosira</i>	
B			Zooplankton												
1	Abundance (Population)	noX10 ³ /100 m ³	66	37	68	67	67	70							APHA (24 th Ed. 2023)10200 G
2	Name of Group Number and name of group species of each group		<i>Nitzschia</i>	<i>Nitzschia</i>	<i>Nitzschia</i>	<i>Copepods</i>	<i>Copepods</i>	<i>Copepods</i>							
			<i>Grammatophora</i>	<i>Grammatophora</i>	<i>Grammatophora</i>	<i>Oikoplura</i>	<i>Oikoplura</i>	<i>Oikoplura</i>							
			<i>Diploneis</i>	<i>Diploneis</i>	<i>Egg(Fish and Shrimps)</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>	<i>Crustacean Larvae</i>							
			<i>Thalassiothrix</i>	<i>Thalassiothrix</i>	<i>Thalassiothrix</i>	<i>Crustacean</i>	<i>Crustacean</i>	<i>Crustacean</i>							
			<i>Pleurosigma</i>	<i>Pleurosigma</i>	<i>Pleurosigma</i>	<i>Bivalve Larvae</i>	<i>Bivalve Larvae</i>	<i>Egg(Fish and Shrimps)</i>							
3	Total Biomass	ml/100 m ³	14.56	14.55	14.54	14.57	14.54	14.57							

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

SR. NO	TEST PARAMETER S	UNIT	Apr-24		May-24		Jun-24		Jul-24		Aug-24		Sep-24		TEST METHOD
			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM	
C			Microbiological												
1	Total Bacterial Count	CFU/ml	248		250		254		256		250		254		APHA 24 th Ed.2023,9215 -C
2	Total Coliform	/100ml	50		52		50		52		51		50		APHA 24 th Ed.2023, 9222-B
3	E.coli	/100ml	40		41		44		43		45		44		IS :15185:2016
4	Enterococcus	/100ml	31		30		32		31		32		30		IS:15186:2002
5	Salmonella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS:15187:2016
6	Shigella	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		APHA 24 th Ed.2023,9260 -E
7	Vibrio	/100ml	Absent		Absent		Absent		Absent		Absent		Absent		IS: 5887 (Part V):1976



Mr. Nilesh Patel
Sr. Chemist

Mr. Nitin Tandel
Technical Manager

Results of Ambient Air Quality Monitoring

Name of Location		West Port – West Basin Main Gate						
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.	01-04-2024	80.51	35.37	32.63	36.48	1.16	--	NOT DETECTED
2.	04-04-2024	84.28	38.12	35.84	38.91	1.19	4.83	NOT DETECTED
3.	08-04-2024	82.47	34.93	32.68	36.35	1.15	4.65	NOT DETECTED
4.	11-04-2024	84.83	37.96	34.54	38.68	1.23	4.87	NOT DETECTED
5.	15-04-2024	78.68	32.38	31.27	35.24	1.17	4.57	NOT DETECTED
6.	18-04-2024	80.26	35.82	33.47	36.73	1.14	4.62	NOT DETECTED
7.	22-04-2024	75.42	32.84	30.97	35.02	1.15	4.5	NOT DETECTED
8.	25-04-2024	78.52	33.5	32.25	35.37	1.18	4.64	NOT DETECTED
9.	29-04-2024	81.27	36.59	35.43	37.81	1.21	4.73	NOT DETECTED
10.	02-05-2024	77.82	33.76	30.95	34.81	1.13	4.54	NOT DETECTED
11.	06-05-2024	80.42	36.91	33.54	36.72	1.15	4.78	NOT DETECTED
12.	09-05-2024	76.48	34.57	31.13	34.59	1.14	4.48	NOT DETECTED
13.	13-05-2024	74.38	31.85	29.97	32.25	1.12	4.41	NOT DETECTED
14.	16-05-2024	78.14	33.57	31.38	34.63	1.15	4.56	NOT DETECTED
15.	20-05-2024	80.42	37.12	33.46	36.22	1.17	4.65	NOT DETECTED

Continue...

Name of Location		West Port – West Basin Main Gate						
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.	23-05-2024	77.46	34.52	30.83	33.94	1.14	4.43	NOT DETECTED
17.	27-05-2024	79.53	35.24	32.56	36.25	1.2	4.36	NOT DETECTED
18.	30-05-2024	81.26	37.12	30.36	33.65	1.16	4.53	NOT DETECTED
19.	03-06-2024	78.62	35.12	31.63	35.2	1.15	4.46	NOT DETECTED
20.	06-06-2024	80.13	36.32	32.84	35.96	1.16	4.61	NOT DETECTED
21.	10-06-2024	76.49	33.49	28.73	31.35	1.14	4.53	NOT DETECTED
22.	13-06-2024	79.64	35.18	29.42	32.49	1.15	4.45	NOT DETECTED
23.	17-06-2024	74.16	32.39	28.42	31.81	1.13	4.26	NOT DETECTED
24.	20-06-2024	72.19	30.75	29.21	33.56	1.1	4.17	NOT DETECTED
25.	24-06-2024	43.29	25.74	24.48	28.11	0.82	3.48	NOT DETECTED
26.	27-06-2024	39.65	22.51	21.64	24.78	0.64	3.12	NOT DETECTED
27.	01-07-2024	46.58	21.39	20.76	23.32	0.57	--	NOT DETECTED
28.	04-07-2024	52.39	24.74	23.46	26.13	0.64	3.47	NOT DETECTED
29.	08-07-2024	59.64	27.25	25.47	29.53	0.61	3.65	NOT DETECTED
30.	11-07-2024	55.37	25.48	22.31	25.83	0.64	3.51	NOT DETECTED
31.	15-07-2024	57.13	26.91	24.39	27.36	0.67	3.58	NOT DETECTED

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Name of Location		West Port – West Basin Main Gate						
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.	18-07-2024	62.49	29.64	26.95	30.11	0.68	3.79	NOT DETECTED
33.	22-07-2024	59.35	27.42	25.13	29.47	0.61	3.68	NOT DETECTED
34.	25-07-2024	53.61	24.87	23.5	26.24	0.59	3.57	NOT DETECTED
35.	29-07-2024	49.42	22.46	21.17	24.8	0.56	3.52	NOT DETECTED
36.	01-08-2024	53.53	22.85	21.97	24.65	0.51	3.45	NOT DETECTED
37.	05-08-2024	57.71	25.46	24.28	27.91	0.57	3.53	NOT DETECTED
38.	08-08-2024	55.42	23.19	22.64	25.38	0.53	3.55	NOT DETECTED
39.	12-08-2024	58.51	25.68	23.89	26.17	0.59	3.5	NOT DETECTED
40.	15-08-2024	63.29	27.35	26.06	29.41	0.61	3.63	NOT DETECTED
41.	19-08-2024	61.29	26.34	25.13	29.11	0.56	3.56	NOT DETECTED
42.	22-08-2024	56.46	24.18	22.79	25.47	0.53	3.47	NOT DETECTED
43.	26-08-2024	58.13	23.52	23.24	26.51	0.56	3.52	NOT DETECTED
44.	29-08-2024	60.41	25.22	25.31	29.15	0.58	3.58	NOT DETECTED
45.	02-09-2024	56.48	23.35	24.1	27.32	0.61	3.59	NOT DETECTED
46.	05-09-2024	54.39	22.72	23.37	26.54	0.55	3.57	NOT DETECTED
47.	09-09-2024	56.35	23.49	24.58	27.81	0.58	3.64	NOT DETECTED

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Name of Location		West Port – West Basin Main Gate						
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.	12-09-2024	58.42	25.61	25.05	28.73	0.62	3.66	NOT DETECTED
49.	16-09-2024	61.29	27.02	25.85	29.11	0.63	3.81	NOT DETECTED
50.	19-09-2024	64.11	27.25	26.00	29.73	0.64	3.88	NOT DETECTED
51.	23-09-2024	62.39	25.83	25.23	28.56	0.60	3.72	NOT DETECTED
52.	26-09-2024	58.37	23.19	22.68	25.35	0.56	3.64	NOT DETECTED
53.	30-09-2024	60.25	24.74	23.91	26.18	0.61	3.72	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		West Port – Horti Culture						
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.	01-04-2024	85.61	42.33	33.74	37.12	1.18	--	NOT DETECTED
2.	04-04-2024	82.49	40.85	31.37	35.63	1.22	3.51	NOT DETECTED
3.	08-04-2024	80.75	38.26	30.86	34.1	1.15	3.36	NOT DETECTED
4.	11-04-2024	83.38	40.45	33.31	37.56	1.27	3.59	NOT DETECTED
5.	15-04-2024	85.19	44.72	35.18	40.03	1.21	3.85	NOT DETECTED
6.	18-04-2024	81.36	42.88	34.52	38.26	1.17	3.72	NOT DETECTED
7.	22-04-2024	76.38	38.63	31.31	34.48	1.14	3.46	NOT DETECTED
8.	25-04-2024	79.02	40.25	33.57	37.24	1.11	3.53	NOT DETECTED
9.	29-04-2024	82.16	43.46	35.37	40.15	1.18	3.67	NOT DETECTED
10.	02-05-2024	83.81	39.62	32.96	35.86	1.16	3.67	NOT DETECTED
11.	06-05-2024	78.93	37.89	30.68	35.12	1.1	3.46	NOT DETECTED
12.	09-05-2024	80.15	40.42	31.86	34.63	1.16	3.55	NOT DETECTED
13.	13-05-2024	82.48	42.1	35.24	38.76	1.2	3.71	NOT DETECTED
14.	16-05-2024	79.27	38.51	32.35	37.41	1.15	3.62	NOT DETECTED
15.	20-05-2024	75.39	35.93	29.87	33.26	1.13	3.37	NOT DETECTED

Continue...

Name of Location		West Port – Horti Culture						
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.	23-05-2024	78.73	37.64	31.2	34.76	1.16	3.43	NOT DETECTED
17.	27-05-2024	80.42	40.51	33.45	37.21	1.18	3.57	NOT DETECTED
18.	30-05-2024	81.3	38.63	35.72	39.42	1.17	3.46	NOT DETECTED
19.	03-06-2024	81.53	38.28	30.56	34.13	1.17	3.53	NOT DETECTED
20.	06-06-2024	83.26	41.1	32.71	36.42	1.19	3.65	NOT DETECTED
21.	10-06-2024	78.87	37.11	29.85	33.67	1.15	3.55	NOT DETECTED
22.	13-06-2024	80.14	39.75	30.14	34.13	1.17	3.67	NOT DETECTED
23.	17-06-2024	74.38	36.73	28.61	31.89	1.14	3.39	NOT DETECTED
24.	20-06-2024	71.95	34.89	27.73	31.12	1.11	3.25	NOT DETECTED
25.	24-06-2024	61.12	30.74	24.61	28.47	0.74	2.27	NOT DETECTED
26.	27-06-2024	55.28	27.53	22.76	25.91	0.53	2.14	NOT DETECTED
27.	01-07-2024	60.14	30.63	23.75	26.36	0.61	--	NOT DETECTED
28.	04-07-2024	53.21	28.74	22.24	24.98	0.55	2.38	NOT DETECTED
29.	08-07-2024	59.74	30.42	24.57	28.13	0.64	2.56	NOT DETECTED
30.	11-07-2024	65.14	32.47	26.83	29.42	0.58	2.62	NOT DETECTED
31.	15-07-2024	60.48	29.95	25.46	29.14	0.65	2.58	NOT DETECTED

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Name of Location		West Port – Horti Culture						
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.	18-07-2024	64.37	33.29	28.12	31.74	0.62	2.71	NOT DETECTED
33.	22-07-2024	58.36	29.54	24.57	27.32	0.57	2.63	NOT DETECTED
34.	25-07-2024	61.35	32.42	26.35	29.16	0.62	2.67	NOT DETECTED
35.	29-07-2024	54.91	27.76	24.19	26.88	0.58	2.57	NOT DETECTED
36.	01-08-2024	56.92	27.81	22.58	25.17	0.56	2.34	NOT DETECTED
37.	05-08-2024	58.53	28.58	23.45	26.83	0.59	2.45	NOT DETECTED
38.	08-08-2024	62.38	29.42	22.49	26.31	0.61	2.59	NOT DETECTED
39.	12-08-2024	64.37	32.53	25.41	29.38	0.66	2.48	NOT DETECTED
40.	15-08-2024	60.37	30.48	23.63	26.58	0.59	2.65	NOT DETECTED
41.	19-08-2024	63.21	31.55	24.37	27.15	0.62	2.68	NOT DETECTED
42.	22-08-2024	66.49	33.18	26.62	29.37	0.65	2.73	NOT DETECTED
43.	26-08-2024	59.74	29.53	24.96	27.38	0.58	2.62	NOT DETECTED
44.	29-08-2024	63.27	31.18	25.41	28.36	0.6	2.65	NOT DETECTED
45.	02-09-2024	58.17	29.31	21.93	24.58	0.62	2.41	NOT DETECTED
46.	05-09-2024	59.78	30.52	22.53	25.38	0.57	2.32	NOT DETECTED
47.	09-09-2024	61.38	31.45	24.59	27.15	0.6	2.58	NOT DETECTED

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Name of Location		West Port – Horti Culture						
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.	12-09-2024	62.81	33.27	25.13	27.83	0.62	2.61	NOT DETECTED
49.	16-09-2024	65.38	34.18	25.73	28.12	0.65	2.66	NOT DETECTED
50.	19-09-2024	68.15	35.03	25.97	29.41	0.68	2.75	NOT DETECTED
51.	23-09-2024	66.1	33.59	24.31	27.54	0.63	2.62	NOT DETECTED
52.	26-09-2024	61.38	30.19	22.36	25.62	0.6	2.46	NOT DETECTED
53.	30-09-2024	64.26	32.45	23.61	27.15	0.64	2.53	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		WEST PORT - PMC OFFICE						
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.	01-04-2024	84.24	39.46	37.13	41.64	1.18	--	NOT DETECTED
2.	04-04-2024	87.52	41.38	40.42	44.27	1.23	4.87	NOT DETECTED
3.	08-04-2024	85.17	40.32	38.4	41.32	1.16	4.67	NOT DETECTED
4.	11-04-2024	82.63	37.82	35.75	39.48	1.15	4.5	NOT DETECTED
5.	15-04-2024	80.89	34.47	33.81	38.72	1.12	4.36	NOT DETECTED
6.	18-04-2024	83.41	35.93	37.54	41.36	1.18	4.47	NOT DETECTED
7.	22-04-2024	81.36	34.73	35.1	39.78	1.14	4.26	NOT DETECTED
8.	25-04-2024	85.12	39.57	38.43	41.27	1.21	4.58	NOT DETECTED
9.	29-04-2024	83.37	36.79	35.66	38.34	1.17	4.42	NOT DETECTED
10.	02-05-2024	82.37	37.82	35.12	39.43	1.16	4.58	NOT DETECTED
11.	06-05-2024	80.19	34.98	32.95	36.47	1.14	4.41	NOT DETECTED
12.	09-05-2024	83.48	36.57	37.42	41.94	1.18	4.65	NOT DETECTED
13.	13-05-2024	85.16	39.62	38.98	43.17	1.20	4.81	NOT DETECTED
14.	16-05-2024	81.29	36.51	36.14	40.37	1.15	4.62	NOT DETECTED
15.	20-05-2024	78.64	34.49	34.18	38.32	1.13	4.39	NOT DETECTED

Continue...

Name of Location		WEST PORT - PMC OFFICE						
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.	23-05-2024	80.41	36.29	37.83	41.45	1.17	4.48	NOT DETECTED
17.	27-05-2024	82.39	38.41	35.26	39.31	1.14	4.7	NOT DETECTED
18.	30-05-2024	79.93	35.17	34.03	38.47	1.16	4.51	NOT DETECTED
19.	03-06-2024	83.15	38.28	36.61	40.05	1.17	4.89	NOT DETECTED
20.	06-06-2024	79.94	36.72	34.87	38.73	1.15	4.58	NOT DETECTED
21.	10-06-2024	78.58	33.97	32.46	37.45	1.16	4.49	NOT DETECTED
22.	13-06-2024	81.64	36.25	35.46	39.13	1.19	4.75	NOT DETECTED
23.	17-06-2024	76.19	33.81	33.19	37.82	1.16	4.43	NOT DETECTED
24.	20-06-2024	75.42	32.35	31.89	35.44	1.13	4.27	NOT DETECTED
25.	24-06-2024	57.42	29.31	28.19	31.75	1.03	3.75	NOT DETECTED
26.	27-06-2024	51.48	27.63	25.86	29.53	0.84	3.24	NOT DETECTED
27.	01-07-2024	56.63	26.95	20.48	23.74	0.37	--	NOT DETECTED
28.	04-07-2024	61.37	28.22	22.34	26.41	0.49	3.31	NOT DETECTED
29.	08-07-2024	64.38	30.74	25.28	28.75	0.61	3.57	NOT DETECTED
30.	11-07-2024	62.48	28.65	22.79	25.67	0.66	3.46	NOT DETECTED
31.	15-07-2024	67.48	30.25	25.97	29.26	0.75	3.62	NOT DETECTED

Continue...

Name of Location		WEST PORT - PMC OFFICE						
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.	18-07-2024	60.48	27.81	23.42	26.86	0.65	3.42	NOT DETECTED
33.	22-07-2024	65.13	29.46	25.34	30.13	0.71	3.57	NOT DETECTED
34.	25-07-2024	58.47	26.94	21.43	25.26	0.57	3.45	NOT DETECTED
35.	29-07-2024	55.84	25.76	19.81	24.14	0.48	3.37	NOT DETECTED
36.	01-08-2024	53.29	24.78	20.93	23.75	0.56	3.15	NOT DETECTED
37.	05-08-2024	57.28	25.63	21.75	25.14	0.59	3.42	NOT DETECTED
38.	08-08-2024	55.17	24.91	21.1	24.96	0.57	3.1	NOT DETECTED
39.	12-08-2024	60.14	26.26	23.53	26.42	0.63	3.29	NOT DETECTED
40.	15-08-2024	63.31	27.84	24.81	27.35	0.66	3.48	NOT DETECTED
41.	19-08-2024	59.64	25.16	23.42	26.53	0.64	3.71	NOT DETECTED
42.	22-08-2024	62.39	26.43	24.74	28.11	0.67	3.62	NOT DETECTED
43.	26-08-2024	54.58	24.13	21.84	24.68	0.58	3.37	NOT DETECTED
44.	29-08-2024	58.15	25.47	23.52	27.25	0.63	3.51	NOT DETECTED
45.	02-09-2024	55.19	25.48	21.55	24.82	0.61	3.38	NOT DETECTED
46.	05-09-2024	56.92	24.83	22.08	26.42	0.57	3.14	NOT DETECTED
47.	09-09-2024	58.16	25.91	23.74	27.55	0.59	3.27	NOT DETECTED

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GPCB Recognized Environmental
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ISO 9001 : 2015
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Name of Location		WEST PORT - PMC OFFICE						
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.	12-09-2024	61.49	27.74	25.41	29.15	0.62	3.76	NOT DETECTED
49.	16-09-2024	59.73	26.35	24.25	27.74	0.63	3.46	NOT DETECTED
50.	19-09-2024	63.48	28.12	24.86	28.39	0.66	3.69	NOT DETECTED
51.	23-09-2024	64.73	28.64	25.13	29.42	0.62	3.79	NOT DETECTED
52.	26-09-2024	60.52	25.47	22.59	26.27	0.56	3.37	NOT DETECTED
53.	30-09-2024	63.13	26.46	23.28	27.41	0.58	3.52	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		LPG Terminal Substation						
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.	01-04-2024	74.28	34.92	25.36	29.07	1.1	--	NOT DETECTED
2.	04-04-2024	77.62	36.34	28.13	32.47	1.15	4.91	NOT DETECTED
3.	08-04-2024	72.35	34.11	24.87	28.53	1.12	4.84	NOT DETECTED
4.	11-04-2024	76.91	35.49	26.75	29.87	1.10	4.67	NOT DETECTED
5.	15-04-2024	80.24	38.63	28.59	33.12	1.18	4.79	NOT DETECTED
6.	18-04-2024	78.51	36.23	27.46	31.24	1.15	4.6	NOT DETECTED
7.	22-04-2024	75.89	33.96	26.19	29.68	1.12	4.42	NOT DETECTED
8.	25-04-2024	72.31	32.79	24.56	28.43	1.07	4.46	NOT DETECTED
9.	29-04-2024	77.57	35.68	27.46	31.74	1.13	4.58	NOT DETECTED
10.	02-05-2024	74.29	33.61	23.83	27.79	1.12	4.68	NOT DETECTED
11.	06-05-2024	76.82	34.98	26.12	30.27	1.13	4.73	NOT DETECTED
12.	09-05-2024	78.52	37.03	27.32	31.46	1.15	4.82	NOT DETECTED
13.	13-05-2024	75.43	35.72	24.38	28.56	1.13	4.72	NOT DETECTED
14.	16-05-2024	72.84	32.37	23.21	27.63	1.1	4.63	NOT DETECTED
15.	20-05-2024	76.13	36.72	24.39	28.96	1.14	4.57	NOT DETECTED

Continue...

Name of Location		LPG Terminal Substation						
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.	23-05-2024	78.53	37.12	26.51	30.27	1.15	4.6	NOT DETECTED
17.	27-05-2024	74.37	34.81	23.48	27.33	1.12	4.54	NOT DETECTED
18.	30-05-2024	76.19	35.52	25.27	29.78	1.14	4.7	NOT DETECTED
19.	03-06-2024	76.12	35.41	24.29	29.63	1.14	4.57	NOT DETECTED
20.	06-06-2024	73.49	33.58	22.75	26.85	1.11	4.45	NOT DETECTED
21.	10-06-2024	71.58	32.38	21.84	26.27	1.13	4.32	NOT DETECTED
22.	13-06-2024	74.31	34.67	24.11	29.61	1.14	4.61	NOT DETECTED
23.	17-06-2024	67.48	31.29	21.35	26.42	1.06	4.23	NOT DETECTED
24.	20-06-2024	70.53	32.47	23.36	27.7	1.10	4.41	NOT DETECTED
25.	24-06-2024	44.28	26.39	16.78	20.1	0.64	3.75	NOT DETECTED
26.	27-06-2024	48.74	28.36	19.65	22.37	0.72	3.88	NOT DETECTED
27.	01-07-2024	45.28	24.81	18.64	22.13	0.61	--	NOT DETECTED
28.	04-07-2024	48.69	26.34	16.49	20.73	0.66	3.58	NOT DETECTED
29.	08-07-2024	53.27	29.11	19.25	23.42	0.7	3.63	NOT DETECTED
30.	11-07-2024	51.48	27.35	18.74	22.1	0.67	3.75	NOT DETECTED
31.	15-07-2024	55.49	29.41	20.68	24.36	0.71	3.84	NOT DETECTED

Continue...

Name of Location		LPG Terminal Substation						
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.	18-07-2024	57.37	31.68	23.54	26.49	0.82	3.88	NOT DETECTED
33.	22-07-2024	52.39	29.75	19.68	23.95	0.65	3.72	NOT DETECTED
34.	25-07-2024	47.65	26.31	17.47	21.38	0.57	3.65	NOT DETECTED
35.	29-07-2024	42.39	23.88	14.91	18.77	0.49	3.52	NOT DETECTED
36.	01-08-2024	49.48	25.79	15.81	19.96	0.61	3.55	NOT DETECTED
37.	05-08-2024	51.29	27.18	16.92	20.85	0.63	3.63	NOT DETECTED
38.	08-08-2024	54.38	28.83	17.45	21.62	0.68	3.58	NOT DETECTED
39.	12-08-2024	57.48	29.91	19.2	23.52	0.72	3.69	NOT DETECTED
40.	15-08-2024	53.92	26.54	17.25	21.39	0.65	3.64	NOT DETECTED
41.	19-08-2024	55.73	27.36	18.31	22.78	0.69	3.67	NOT DETECTED
42.	22-08-2024	58.14	28.47	19.1	23.69	0.73	3.71	NOT DETECTED
43.	26-08-2024	56.58	26.29	17.64	21.57	0.68	3.68	NOT DETECTED
44.	29-08-2024	54.37	25.63	16.42	20.73	0.64	3.59	NOT DETECTED
45.	02-09-2024	52.38	26.14	16.82	20.68	0.66	3.6	NOT DETECTED
46.	05-09-2024	55.18	28.61	17.16	21.37	0.69	3.65	NOT DETECTED
47.	09-09-2024	53.48	25.14	16.74	20.61	0.67	3.63	NOT DETECTED

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Name of Location		LPG Terminal Substation						
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.	12-09-2024	57.73	27.64	17.83	21.58	0.73	3.66	NOT DETECTED
49.	16-09-2024	55.49	26.14	17.22	20.94	0.69	3.69	NOT DETECTED
50.	19-09-2024	58.84	27.91	18.53	22.37	0.71	3.74	NOT DETECTED
51.	23-09-2024	61.28	28.91	19.18	23.41	0.76	3.77	NOT DETECTED
52.	26-09-2024	55.43	25.74	16.98	20.49	0.67	3.65	NOT DETECTED
53.	30-09-2024	58.18	27.26	17.42	21.64	0.7	3.68	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.	01-04-2024	80.11	29.53	12.83	16.52	NOT DETECTED
2.	04-04-2024	84.26	30.71	14.32	18.11	--
3.	08-04-2024	79.46	28.47	13.11	17.54	--
4.	11-04-2024	75.27	25.39	12.85	17.03	--
5.	15-04-2024	77.36	27.17	13.26	16.59	--
6.	18-04-2024	73.91	25.48	12.26	15.86	--
7.	22-04-2024	76.84	26.97	12.79	16.44	--
8.	25-04-2024	80.49	28.66	14.52	17.16	--
9.	29-04-2024	82.35	30.42	13.73	16.85	--
10.	02-05-2024	77.39	26.19	13.05	15.89	--
11.	06-05-2024	75.19	25.42	12.73	17.42	--
12.	09-05-2024	78.27	27.49	13.26	16.38	--
13.	13-05-2024	80.52	29.71	14.25	17.36	--
14.	16-05-2024	78.64	27.47	13.64	16.83	--
15.	20-05-2024	74.38	26.16	12.39	16.37	--

Continue...

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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.	23-05-2024	76.73	28.64	13.56	16.98	--
17.	27-05-2024	79.62	30.11	14.01	17.63	--
18.	30-05-2024	75.2	26.85	12.69	15.63	--
19.	03-06-2024	80.12	28.47	14.14	17.21	--
20.	06-06-2024	78.63	27.91	13.85	16.32	--
21.	10-06-2024	75.94	25.38	13.11	15.83	--
22.	13-06-2024	77.53	27.15	13.52	16.14	--
23.	17-06-2024	71.28	24.39	12.25	15.47	--
24.	20-06-2024	68.88	23.64	11.85	14.98	--
25.	24-06-2024	51.25	19.64	9.31	12.46	--
26.	27-06-2024	47.49	17.83	8.65	10.94	--
27.	01-07-2024	44.75	16.94	8.87	10.68	NOT DETECTED
28.	04-07-2024	50.13	18.52	10.12	13.25	--
29.	08-07-2024	54.76	20.47	11.73	13.41	--
30.	11-07-2024	57.39	23.42	13.11	15.87	--
31.	15-07-2024	52.49	19.37	12.36	14.62	--

Continue...

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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.	18-07-2024	55.85	21.52	12.96	15.19	--
33.	22-07-2024	49.72	19.15	11.64	13.29	--
34.	25-07-2024	45.23	16.74	10.21	13.45	--
35.	29-07-2024	51.42	18.31	9.28	11.63	--
36.	01-08-2024	52.37	17.72	10.65	13.28	--
37.	05-08-2024	48.94	16.98	10.11	13.92	--
38.	08-08-2024	55.13	18.42	11.24	14.75	--
39.	12-08-2024	53.49	17.36	10.62	13.46	--
40.	15-08-2024	57.82	19.06	12.11	15.34	--
41.	19-08-2024	54.59	17.71	11.31	13.64	--
42.	22-08-2024	56.1	18.17	11.85	14.42	--
43.	26-08-2024	52.25	16.91	10.73	13.65	--
44.	29-08-2024	54.81	17.42	11.26	13.41	--
45.	02-09-2024	50.93	15.86	11.12	14.07	--
46.	05-09-2024	53.27	16.42	11.48	14.65	--
47.	09-09-2024	55.36	16.83	12.24	15.41	--

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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.	12-09-2024	58.91	17.48	12.52	15.29	--
49.	16-09-2024	55.71	15.47	11.79	14.36	--
50.	19-09-2024	57.28	16.63	12.18	15.36	--
51.	23-09-2024	59.13	18.15	12.86	15.17	--
52.	26-09-2024	53.28	15.93	11.16	14.38	--
53.	30-09-2024	56.16	16.42	11.53	14.31	--
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		CT-4 RMU-2						
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.	01-04-2024	85.13	30.82	27.35	30.15	0.81	--	NOT DETECTED
2.	04-04-2024	82.39	29.25	25.72	29.13	0.78	4.74	NOT DETECTED
3.	08-04-2024	80.18	27.31	24.86	27.35	0.73	4.61	NOT DETECTED
4.	11-04-2024	77.49	29.16	23.12	26.83	0.75	4.53	NOT DETECTED
5.	15-04-2024	81.93	28.38	24.64	28.02	0.86	4.86	NOT DETECTED
6.	18-04-2024	84.13	29.48	25.81	28.37	0.80	4.93	NOT DETECTED
7.	22-04-2024	87.39	32.15	27.68	30.64	0.85	4.75	NOT DETECTED
8.	25-04-2024	83.57	30.57	24.82	27.91	0.78	4.67	NOT DETECTED
9.	29-04-2024	86.12	32.81	27.14	31.25	0.83	4.81	NOT DETECTED
10.	02-05-2024	83.74	29.83	25.24	29.15	0.79	4.75	NOT DETECTED
11.	06-05-2024	85.19	32.53	27.81	31.11	0.85	4.88	NOT DETECTED
12.	09-05-2024	82.37	30.88	25.37	29.42	0.75	4.81	NOT DETECTED
13.	13-05-2024	79.36	28.64	24.93	28.64	0.73	4.73	NOT DETECTED
14.	16-05-2024	82.38	31.27	26.45	29.71	0.83	4.61	NOT DETECTED
15.	20-05-2024	80.91	30.15	25.19	29.37	0.79	4.70	NOT DETECTED

Continue...

Name of Location		CT-4 RMU-2						
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.	23-05-2024	77.37	28.53	23.75	26.89	0.75	4.63	NOT DETECTED
17.	27-05-2024	79.52	29.75	25.29	28.74	0.81	4.68	NOT DETECTED
18.	30-05-2024	81.27	31.43	28.31	31.74	0.84	4.61	NOT DETECTED
19.	03-06-2024	81.84	30.14	24.26	28.74	0.80	4.67	NOT DETECTED
20.	06-06-2024	78.63	28.58	22.19	26.54	0.77	4.58	NOT DETECTED
21.	10-06-2024	80.27	29.18	22.97	27.15	0.72	4.63	NOT DETECTED
22.	13-06-2024	82.36	30.47	23.65	27.14	0.81	4.75	NOT DETECTED
23.	17-06-2024	76.21	27.63	22.1	26.74	0.70	4.67	NOT DETECTED
24.	20-06-2024	74.39	26.84	21.62	25.36	0.68	4.52	NOT DETECTED
25.	24-06-2024	60.67	23.71	18.64	22.37	0.24	3.65	NOT DETECTED
26.	27-06-2024	56.52	20.85	16.39	19.96	0.16	3.32	NOT DETECTED
27.	01-07-2024	58.28	22.31	17.53	20.47	0.38	--	NOT DETECTED
28.	04-07-2024	55.91	21.85	16.48	18.95	0.45	3.64	NOT DETECTED
29.	08-07-2024	61.38	24.62	18.25	22.17	0.49	3.78	NOT DETECTED
30.	11-07-2024	66.38	26.82	19.69	23.53	0.54	3.83	NOT DETECTED
31.	15-07-2024	63.73	25.21	18.14	22.16	0.46	3.71	NOT DETECTED

Continue...

Name of Location		CT-4 RMU-2						
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.	18-07-2024	70.16	27.13	21.36	24.64	0.52	3.77	NOT DETECTED
33.	22-07-2024	67.52	24.31	18.77	21.38	0.47	3.63	NOT DETECTED
34.	25-07-2024	63.1	21.96	16.35	19.13	0.41	3.69	NOT DETECTED
35.	29-07-2024	59.47	20.58	15.19	18.57	0.36	3.59	NOT DETECTED
36.	01-08-2024	61.42	21.86	16.58	20.81	0.52	3.61	NOT DETECTED
37.	05-08-2024	59.47	21.28	15.87	19.38	0.51	3.56	NOT DETECTED
38.	08-08-2024	63.71	22.64	16.95	20.15	0.55	3.68	NOT DETECTED
39.	12-08-2024	67.39	24.47	17.12	21.63	0.51	3.73	NOT DETECTED
40.	15-08-2024	65.28	23.19	16.56	20.06	0.56	3.70	NOT DETECTED
41.	19-08-2024	69.63	25.38	18.19	22.31	0.58	3.76	NOT DETECTED
42.	22-08-2024	63.29	24.37	17.42	21.35	0.57	3.73	NOT DETECTED
43.	26-08-2024	62.11	23.42	16.36	20.81	0.52	3.67	NOT DETECTED
44.	29-08-2024	65.38	24.88	17.15	21.37	0.58	3.71	NOT DETECTED
45.	02-09-2024	64.19	22.47	16.93	21.16	0.55	3.65	NOT DETECTED
46.	05-09-2024	67.28	23.81	17.24	21.72	0.58	3.72	NOT DETECTED
47.	09-09-2024	65.38	22.74	16.69	20.48	0.54	3.62	NOT DETECTED

Continue...

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Name of Location		CT-4 RMU-2						
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.	12-09-2024	63.29	22.53	16.24	21.15	0.50	3.66	NOT DETECTED
49.	16-09-2024	67.63	23.96	17.48	21.95	0.57	3.69	NOT DETECTED
50.	19-09-2024	70.16	25.91	18.37	22.28	0.60	3.74	NOT DETECTED
51.	23-09-2024	68.47	24.63	17.86	21.42	0.57	3.71	NOT DETECTED
52.	26-09-2024	65.28	22.85	16.43	20.57	0.53	3.63	NOT DETECTED
53.	30-09-2024	67.83	23.47	17.12	21.63	0.56	3.59	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 Noise Level Monitoring

Location Name		West Port – West Basin Main Gate					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		18-04-2024	20-05-2024	20-06-2024	18-07-2024	19-08-2024	19-09-2024
1	06:00 to 07:00	64.3	64.1	64.3	62.5	62.4	61.7
2	07:00 to 08:00	64.5	66.4	64.7	64.1	63.5	63.3
3	08:00 to 09:00	65.2	64.8	66.7	63.7	65.7	65.2
4	09:00 to 10:00	66.9	65.7	63.8	65.4	66.5	66.8
5	10:00 to 11:00	67.8	66.3	67.5	64.8	65.8	65.4
6	11:00 to 12:00	67.3	65.4	64.8	67.2	65.3	64.8
7	12:00 to 13:00	65.7	64.7	67.3	65.8	67.2	66.1
8	13:00 to 14:00	68.3	65.7	66.2	67.6	66.5	64.3
9	14:00 to 15:00	66.5	65.4	64.8	65.9	64.6	65.7
10	15:00 to 16:00	64.7	66.7	66.7	65.3	67.6	66.3
11	16:00 to 17:00	65.3	67.1	67.2	66.8	65.4	67.5
12	17:00 to 18:00	64.7	66.3	65.4	63.4	64.1	65.7
13	18:00 to 19:00	66.1	65.4	64.9	63.8	64.6	65.2
14	19:00 to 20:00	65.7	65.7	64.4	65.7	65.4	64.5
15	20:00 to 21:00	64.5	64.9	65.6	64.2	63.8	64.1
16	21:00 to 22:00	62.9	63.7	63.2	62.6	61.5	62.3
Day Time		<75 dB (A)					

Continue...

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Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Location Name		West Port – West Basin Main Gate					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		18-04-2024	20-05-2024	20-06-2024	18-07-2024	19-08-2024	19-09-2024
1	22:00 to 23:00	63.1	63.5	62.8	61.3	62.5	61.4
2	23:00 to 24:00	63.8	62.4	61.4	60.6	61.3	62.3
3	24:00 to 01:00	62.6	64.7	62.2	63.5	63.7	62.5
4	01:00 to 02:00	61.7	63.6	61.8	62.8	63.4	61.8
5	02:00 to 03:00	62.4	61.9	62.5	61.4	62.5	60.9
6	03:00 to 04:00	60.8	62.5	62.1	62.3	61.3	62.4
7	04:00 to 05:00	61.2	60.4	60.8	61.2	59.7	60.3
8	05:00 to 06:00	58.5	59.7	60.2	59.9	60.4	59.6
Night Time		<70 dB (A)					

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		West Port – Horti Culture					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		22-04-2024	23-05-2024	24-06-2024	22-07-2024	22-08-2024	23-09-2024
1	06:00 to 07:00	64.8	63.8	63.2	63.8	63.2	63.5
2	07:00 to 08:00	67.1	65.7	66.2	63.5	65.2	64.7
3	08:00 to 09:00	64.8	66.4	64.3	65.2	64.8	64.9
4	09:00 to 10:00	67.1	68.4	65.8	64.1	65.7	64.3
5	10:00 to 11:00	65.2	65.7	66.4	67.5	66.3	65.7
6	11:00 to 12:00	65.6	66.2	68.2	66.8	65.8	65.4
7	12:00 to 13:00	68.7	67.4	65.4	64.7	66.8	67.5
8	13:00 to 14:00	66.5	65.4	64.3	63.9	64.7	65.7
9	14:00 to 15:00	68.2	67.2	68.3	64.7	66.2	66.8
10	15:00 to 16:00	67.3	65.6	66.8	64.1	65.8	64.3
11	16:00 to 17:00	64.7	66.3	65.2	62.6	64.6	64.2
12	17:00 to 18:00	66.4	65.8	64.8	65.7	63.5	64.6
13	18:00 to 19:00	64.9	63.7	65.1	65.1	65.5	64
14	19:00 to 20:00	67.5	64.5	63.2	64.3	63.1	63.4
15	20:00 to 21:00	65.7	65.2	64.8	63.6	64.6	62.1
16	21:00 to 22:00	64.5	62.9	61.8	60.3	62.1	61.9
Day Time		<75 dB (A)					

Continue...

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Location Name		West Port – Horti Culture					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Night Time					
		22-04-2024	23-05-2024	24-06-2024	22-07-2024	22-08-2024	23-09-2024
1	22:00 to 23:00	57.8	58.2	58.5	58.2	58.6	59.1
2	23:00 to 24:00	60.4	59.6	58.8	59.3	60.5	59.5
3	24:00 to 01:00	61.2	61.3	60.4	61.1	63.4	60.7
4	01:00 to 02:00	63.1	62.7	62.4	60.7	61.6	63.7
5	02:00 to 03:00	61.7	60.4	61.8	62.1	62.9	61.4
6	03:00 to 04:00	59.4	61.6	60.4	59.8	60.3	59.8
7	04:00 to 05:00	60.6	62.3	61.3	60.2	58.6	59.5
8	05:00 to 06:00	59.3	61.3	59.5	58.2	57.5	58.3
Night Time		<70 dB (A)					

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		WEST PORT - PMC OFFICE					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		25-04-2024	27-05-2024	27-06-2024	25-07-2024	26-08-2024	26-09-2024
1	06:00 to 07:00	61.2	61.6	60.9	58.6	57.8	58.2
2	07:00 to 08:00	63.8	64.2	61.8	60.4	59.4	58.8
3	08:00 to 09:00	63.4	65.3	63.2	61.8	60.7	59.6
4	09:00 to 10:00	65.7	66.8	62.5	66.4	62.4	61.7
5	10:00 to 11:00	64.6	64.7	64.3	65.2	64.3	63.2
6	11:00 to 12:00	66.1	65.7	65.8	63.5	63.6	64.7
7	12:00 to 13:00	65.9	66.9	64.3	66.3	65.2	63.8
8	13:00 to 14:00	68.1	65.4	66.3	65.7	63.4	66.1
9	14:00 to 15:00	66.8	63.9	64.7	63.4	64.4	65.3
10	15:00 to 16:00	65.1	66.7	64.3	65.2	63.9	63.7
11	16:00 to 17:00	62.3	64.5	62.8	63.4	65.4	65.1
12	17:00 to 18:00	64.8	64.8	65.2	63.5	64.2	65.4
13	18:00 to 19:00	63.8	62.9	63.4	64.3	63.2	63.8
14	19:00 to 20:00	61.9	63.4	61.9	62.4	60.7	61.3
15	20:00 to 21:00	63.4	62.8	62.4	60.5	62.4	63.7
16	21:00 to 22:00	61.3	61.6	60.3	58.5	59.4	60.2
Day Time		<75 dB (A)					

Continue...

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Location Name		WEST PORT - PMC OFFICE					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Night Time					
		25-04-2024	27-05-2024	27-06-2024	25-07-2024	26-08-2024	26-09-2024
1	22:00 to 23:00	60.8	61.7	60.3	61.5	61.2	60.8
2	23:00 to 24:00	62.7	63.1	61.8	61.8	62.4	62.2
3	24:00 to 01:00	62.9	62.5	63.8	62.4	62.1	63.4
4	01:00 to 02:00	64.5	64.1	63.4	62.9	63.8	62.5
5	02:00 to 03:00	63.2	62.8	62.5	63.2	62.5	63.8
6	03:00 to 04:00	62.6	63.4	62.8	61.7	63.4	62.6
7	04:00 to 05:00	61.2	61.8	61.5	61.4	60.7	60.3
8	05:00 to 06:00	61.6	61.7	61.2	60.4	59.8	60.1
Day Time		<70 dB (A)					

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		LPG Terminal Substation					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		15-04-2024	16-05-2024	17-06-2024	15-07-2024	15-08-2024	16-09-2024
1	06:00 to 07:00	60.1	61.4	63.5	64.1	63.8	63.4
2	07:00 to 08:00	61.8	63.2	61.8	65.7	64.7	64.1
3	08:00 to 09:00	63.5	65.1	63.4	64.3	64.3	64.8
4	09:00 to 10:00	63.6	66.4	65.4	66.8	67.7	65.4
5	10:00 to 11:00	64.8	65.8	64.8	67.3	66.4	67.2
6	11:00 to 12:00	66.6	67.2	66.3	65.2	66.8	67.1
7	12:00 to 13:00	65.4	66.3	64.2	67.4	65.5	65.2
8	13:00 to 14:00	64.1	64.1	65.8	65.8	64.8	65.8
9	14:00 to 15:00	64.9	64.8	68.2	67.1	65.7	64.3
10	15:00 to 16:00	66.3	65.3	67.3	64.3	65.2	64.7
11	16:00 to 17:00	65.8	65.7	64.3	65.8	64.8	65.2
12	17:00 to 18:00	66.3	64.2	66.1	65.2	65.7	64.5
13	18:00 to 19:00	64.8	63.9	65.4	64.1	65.2	64.1
14	19:00 to 20:00	64.5	62.7	63.9	66.4	64.7	62.9
15	20:00 to 21:00	63.3	63.6	63.5	65.2	64.2	63.6
16	21:00 to 22:00	61.7	62.4	61.7	63.8	63.7	63.1
Day Time		<75 dB (A)					

Continue...

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Location Name		LPG Terminal Substation					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		15-04-2024	16-05-2024	17-06-2024	15-07-2024	15-08-2024	16-09-2024
1	22:00 to 23:00	60.5	59.8	59.2	58.5	59.3	58.8
2	23:00 to 24:00	62.3	60.8	59.5	58.8	59.6	60.4
3	24:00 to 01:00	61.7	62.4	60.4	61.2	60.5	60.8
4	01:00 to 02:00	61.9	64.1	62.7	61.6	63.1	63.4
5	02:00 to 03:00	63.4	63.4	63.2	62.5	61.7	62.3
6	03:00 to 04:00	62.7	63.9	61.8	60.4	59.8	60.7
7	04:00 to 05:00	62.9	61.7	61.1	59.6	60.3	58.4
8	05:00 to 06:00	61.8	60.4	59.7	58.7	58.3	57.8
Night Time		<70 dB (A)					

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					
		17-04-2024	22-05-2024	18-06-2024	20-07-2024	17-08-2024	17-09-2024
1	06:00 to 07:00	57.6	58.7	58.9	57.6	58.2	59.4
2	07:00 to 08:00	59.4	60.3	61.3	59.7	60.3	61.5
3	08:00 to 09:00	60.3	59.8	60.3	61.4	60.9	63.4
4	09:00 to 10:00	64.6	62.4	63.2	60.8	62.4	64.7
5	10:00 to 11:00	66.4	65.4	64.6	62.2	63.6	64.2
6	11:00 to 12:00	65.7	66.8	65.2	64.6	63.1	65.7
7	12:00 to 13:00	64.2	65.3	64.3	65.3	64.5	67.1
8	13:00 to 14:00	65.2	64.2	65.8	64.9	65.4	66.4
9	14:00 to 15:00	66.6	65.4	64.3	63.6	66.7	65.6
10	15:00 to 16:00	63.2	64.6	65.8	65.6	65.4	64.8
11	16:00 to 17:00	65.6	65.1	64.2	63.8	64.5	65.7
12	17:00 to 18:00	64.3	63.8	62.9	63.5	64.3	65.1
13	18:00 to 19:00	65.5	63.4	62.5	64.1	65.2	64.3
14	19:00 to 20:00	64.4	65.1	64.3	66.2	65.6	64.7
15	20:00 to 21:00	63.1	62.8	63.8	63.5	62.5	62.3
16	21:00 to 22:00	60.1	60.3	59.8	60.3	61.5	60.7
Day Time		<75 dB (A)					

Continue...

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Location Name		Adani Guest House					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		17-04-2024	22-05-2024	18-06-2024	20-07-2024	17-08-2024	17-09-2024
1	22:00 to 23:00	60.5	60.6	59.9	58.4	57.9	58.1
2	23:00 to 24:00	62.4	61.7	60.4	59.4	59.1	58.8
3	24:00 to 01:00	61.4	63.3	62.4	61.8	59.6	60.4
4	01:00 to 02:00	63.8	62.8	63.1	63.5	60.5	62.6
5	02:00 to 03:00	62.3	62.4	61.4	62.3	61.9	62.4
6	03:00 to 04:00	60.1	61.8	60.8	61.7	62.2	61.3
7	04:00 to 05:00	61.3	60.2	58.7	59.3	60.3	59.7
8	05:00 to 06:00	61.4	59.8	58.3	59.5	59.3	57.6
Night Time		<70 dB (A)					

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		CT-4 RMU-2					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) - Day Time					
		20-04-2024	25-05-2024	22-06-2024	27-07-2024	24-08-2024	21-09-2024
1	06:00 to 07:00	61.3	61.6	61.4	59.8	61.3	60.8
2	07:00 to 08:00	63.6	62.8	63.5	61.3	63.7	63.2
3	08:00 to 09:00	64.8	65.2	63.7	65.5	62.8	65.7
4	09:00 to 10:00	65.2	65.7	64.1	64.2	64.5	65.2
5	10:00 to 11:00	68.7	66.8	65.4	66.1	65.7	66.5
6	11:00 to 12:00	66.1	68.2	66.5	64.7	64.3	64.3
7	12:00 to 13:00	66.7	66.4	65.8	64.9	67.5	66.4
8	13:00 to 14:00	64.7	65.9	64.7	63.6	65.8	65.2
9	14:00 to 15:00	68.9	67.3	65.3	64.2	65.2	66.1
10	15:00 to 16:00	65.4	68.3	67.4	66.8	66.7	67.4
11	16:00 to 17:00	67.3	66.4	65.9	64.7	63.8	64.4
12	17:00 to 18:00	65.4	65.9	66.3	65.3	64.5	63.9
13	18:00 to 19:00	63.6	64.2	63.8	63.9	63.5	65.5
14	19:00 to 20:00	62.7	63.5	65.2	60.8	61.3	62.3
15	20:00 to 21:00	65.4	64.3	64.2	62.4	61.5	64.7
16	21:00 to 22:00	63.4	62.8	62.3	61.6	60.8	69.6
Day Time		<75 dB (A)					

Continue...

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
Auditor (Schedule-11)

ISO 9001 : 2015
Certified Company

ISO 45001 : 2018
Certified Company

Location Name		CT-4 RMU-2					
Sr. No.	Sampling Date and Time	Noise Level Leq. dB(A) – Night Time					
		20-04-2024	25-05-2024	22-06-2024	27-07-2024	24-08-2024	21-09-2024
1	22:00 to 23:00	62.2	61.8	61.3	61.5	60.2	61.3
2	23:00 to 24:00	61.7	63.4	62.7	63.7	61.8	60.6
3	24:00 to 01:00	63.2	64.8	61.3	62.6	62.5	61.6
4	01:00 to 02:00	61.7	63.7	62.8	63.8	62.8	61.8
5	02:00 to 03:00	63.5	63.1	62.7	61.5	63.2	60.6
6	03:00 to 04:00	61.2	62.3	61.6	62.3	61.8	62.7
7	04:00 to 05:00	62.4	61.8	60.4	61.1	59.8	61.4
8	05:00 to 06:00	60.8	61.3	60.8	60.3	60.5	60.8
Night Time		<70 dB (A)					

Test Method	IS: 9989 : 1981
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Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

Results of Stack Monitoring

Sr. No.	Parameter	Unit	Aug – 2024		GPCB LIMIT	Method of Test
			D.G.Set No. S-1 (1500 KVA)	D.G.Set No. S-2 (1500 KVA)		
			14-08-2024	14-08-2024		
1	Particulate Matter	mg/Nm ³	19.73	20.17	150	IS 11255 (Part - 1)
2	Sulfur Dioxide as SO ₂	ppm	16.24	15.37	100	IS 11255 (Part - 2)
3	Oxides of Nitrogen as NO _x	ppm	22.1	21.52	50	IS 11255 (Part - 7)



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

QCI-NABET Accredited EIA
Consultant Organization

GPCB Recognized Environmental
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ISO 9001 : 2015
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ISO 45001 : 2018
Certified Company

Sr. No.	Parameter	Unit	Sep-24	GPCB LIMIT	Method of Test
			D.G. Set-1 (2000 KVA)		
			26-09-2024		
1	Particulate Matter	mg/Nm ³	28.19	150	IS 11255 (Part - 1)
2	Sulphur Dioxide	ppm	11.82	100	IS 11255 (Part - 2)
3	Oxide of Nitrogen	ppm	24.1	50	IS 11255 (Part - 7)
4	Carbon Monoxide	mg/Nm ³	4.6	--	UERL/AIR/SOP/18
5	Non Methyl Hydro Carbon	ppm	Not Detected	--	UERL/AIR/SOP/27



Nikunj D. Patel
(Chemist)




Jaivik S. Tandel
(Manager - Operations)

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	0.01 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 ₂	mg/Nm ³	4 mg/Nm ³
3	Oxides of Nitrogen NO _x	mg/Nm ³	5 mg/Nm ³

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/100	<2

ETP Outlet			
Sr. No.	Test Parameter	Unit	MDL
1	Colour	Pt. Co. Scale	5
2	pH @ 27 ° C	--	2
3	Temperature	0c	5
4	Total Suspended Solids	mg/L	4
5	Total Dissolved Solids	mg/L	4
6	COD	mg/L	2
7	BOD (3 days at 27 °C)	mg/L	1
8	Chloride (as Cl) -	mg/L	1
9	Oil & Grease	mg/L	2
10	Sulphate (as SO ₄)	mg/L	1
11	Ammonical Nitrogen	mg/L	2

QCI-NABET Accredited EIA Consultant Organization		GPCB Recognized Environmental Auditor (Schedule-11)		ISO 9001 : 2015 Certified Company		ISO 45001 : 2018 Certified Company	
12	Phenolic Compound			mg/L		0.1	
13	Copper as Cu			mg/L		0.05	
14	Lead as Pb			mg/L		0.01	
15	Sulphide as S			mg/L		0.05	
16	Cadmium as Cd			mg/L		0.003	
17	Fluoride as F			mg/L		0.2	
18	Residual Chlorine			mg/L		0.1	
19	Percent Sodium			%		--	
20	Sodium Absorption ratio			--		--	

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

: April - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/04/001

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.	02/04/2024	55.2	21.4	15.5	20.6		--
2.	05/04/2024	55.5	27.2	14.2	18.3		--
3.	09/04/2024	54.9	26.8	12.7	16.1	17.4	BDL
4.	12/04/2024	58.0	25.8	17.3	23.8		--
5.	16/04/2024	52.7	20.5	15.1	21.5		--
6.	19/04/2024	70.6	30.7	18.6	24.2		--
7.	23/04/2024	59.9	27.4	13.6	18.9		--
8.	30/04/2024	49.4	18.5	16.5	22.4		--
Average		57.0	24.8	15.4	20.7		--

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 : April - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/04/002

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.	02/04/2024	64.6	26.2	13.7	17.5		--
2.	05/04/2024	70.1	22.1	11.4	15.2		--
3.	09/04/2024	54.9	19.7	16.7	22.9	22.1	BDL
4.	12/04/2024	64.2	17.1	18.3	25.7		--
5.	16/04/2024	42.6	25.2	15.3	21.4		--
6.	19/04/2024	63.2	24.4	13.5	20.1		--
7.	23/04/2024	50.5	19.5	19.4	26.8		--
8.	30/04/2024	61.6	21.7	17.3	23.7		--
Average		59.0	22.0	15.7	21.7		--

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 : April - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/04/003

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.	02/04/2024	58.1	26.1	16.8	22.3		--
2.	05/04/2024	64.8	31.2	14.6	19.4		--
3.	09/04/2024	64.0	30.5	18.0	22.4	26.1	BDL
4.	12/04/2024	67.4	27.2	17.3	23.1		--
5.	16/04/2024	51.2	28.7	15.7	21.3		--
6.	19/04/2024	63.2	29.4	13.5	17.3		--
7.	23/04/2024	66.1	31.9	19.1	25.7		--
8.	30/04/2024	75.2	29.4	18.4	24.8		--
Average		63.7	29.3	16.7	22.0		--

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 & 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 : April - 2024

Name of Location : Nr.20 MLD Plant

ID No. : URA/ID/A-24/04/004

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	18/04/2024	70.2	32.4	19.5	24.2	32.6	BDL
Average		70.2	32.4	19.5	24.2	32.6	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) 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 : April - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/04/005

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	18/04/2024	64.3	26.7	15.6	19.7	29.6	BDL
Average		64.3	26.7	15.6	19.7	29.6	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

: May - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/05/001

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.	03/05/2024	56.9	28.3	14.3	19.8		--
2.	07/05/2024	53.1	17.7	16.2	21.6	17.6	BDL
3.	10/05/2024	65.1	24.1	18.2	25.3		--
4.	14/05/2024	58.3	26.7	15.9	22.6		--
5.	17/05/2024	51.5	16.1	14.5	19.2		--
6.	21/05/2024	60.9	24.0	17.3	23.5		--
7.	24/05/2024	68.4	31.9	13.7	17.2		--
8.	28/05/2024	56.8	28.0	19.5	26.8		--
9.	31/05/2024	50.1	31.6	16.5	24.1		--
Average		57.9	25.4	16.2	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 $\mu\text{g}/\text{m}^3$

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 : May - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/05/002

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.	03/05/2024	68.5	34.4	16.1	22.6		--
2.	07/05/2024	50.0	29.6	14.4	18.3	22.6	BDL
3.	10/05/2024	66.7	32.4	12.1	16.5		--
4.	14/05/2024	52.9	29.8	17.4	23.8		--
5.	17/05/2024	70.8	38.2	20.6	28.1		--
6.	21/05/2024	55.0	33.5	18.2	24.9		--
7.	24/05/2024	53.6	27.8	14.3	21.1		--
8.	28/05/2024	50.2	25.0	19.2	26.5		--
9.	31/05/2024	67.7	33.0	17.5	24.3		--
Average		59.5	31.5	16.6	22.9		--

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 : May - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/05/003

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.	03/05/2024	53.9	23.7	14.3	18.9		--
2.	07/05/2024	56.0	31.5	18.2	24.3	28.9	BDL
3.	10/05/2024	54.8	30.4	17.6	23.6		--
4.	14/05/2024	70.4	30.3	19.3	26.3		--
5.	17/05/2024	73.2	37.5	15.5	21.1		--
6.	21/05/2024	63.7	23.4	13.8	18.5		--
7.	24/05/2024	52.4	28.4	18.9	23.6		--
8.	28/05/2024	73.8	31.9	20.1	27.3		--
9.	31/05/2024	62.3	27.8	16.5	22.4		--
Average		62.3	29.4	17.1	22.9		--

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 $\mu\text{g}/\text{m}^3$

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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

: June - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/06/001

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.	04/06/2024	61.7	29.4	13.2	18.5		--
2.	07/06/2024	60.9	28.1	17.9	24.2		--
3.	11/06/2024	53.4	27.3	15.8	21.1		--
4.	14/06/2024	59.4	28.2	16.3	23.7		--
5.	18/06/2024	45.9	23.0	12.8	16.5	15.1	BDL
6.	21/06/2024	54.8	21.4	15.2	19.7		--
7.	25/06/2024	Due to Rainfall Monitoring not Performed					
8.	28/06/2024	Due to Rainfall Monitoring not Performed					
Average		56.0	26.2	15.2	20.6		--

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 $\mu\text{g}/\text{m}^3$

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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 : June - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/06/002

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.	04/06/2024	50.6	22.0	16.5	21.8		--
2.	07/06/2024	60.5	26.5	15.6	17.2		--
3.	11/06/2024	71.5	31.5	18.9	26.3		--
4.	14/06/2024	54.2	22.1	16.4	22.5		--
5.	18/06/2024	48.8	25.5	15.9	20.7	20.6	BDL
6.	21/06/2024	56.9	24.7	14.7	16.5		--
7.	25/06/2024	Due to Rainfall Monitoring not Performed					
8.	28/06/2024	Due to Rainfall Monitoring not Performed					
Average		57.1	25.4	16.3	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 $\mu\text{g}/\text{m}^3$

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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 : June - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/06/003

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.	04/06/2024	62.5	27.0	17.9	20.4		--
2.	07/06/2024	54.1	28.8	19.5	23.6		--
3.	11/06/2024	54.9	32.0	16.2	19.7		--
4.	14/06/2024	68.5	35.5	17.2	22.9		--
5.	18/06/2024	52.5	23.6	12.7	16.7	21.3	BDL
6.	21/06/2024	62.0	26.9	15.8	21.3		--
7.	25/06/2024	Due to Rainfall Monitoring not Performed					
8.	28/06/2024	Due to Rainfall Monitoring not Performed					
Average		59.1	29.0	16.6	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 $\mu\text{g}/\text{m}^3$

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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 : June - 2024

Name of Location : Nr.20 MLD Plant

ID No. : URA/ID/A-24/06/004

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	17/06/2024	61.3	27.1	15.6	24.1	32.1	BDL
Average		61.3	27.1	15.6	24.1	32.1	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 : June - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/06/005

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	17/06/2024	55.7	22.6	13.8	19.4	26.7	BDL
Average		55.7	22.6	13.8	19.4	26.7	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

: July - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/07/001

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.	02/07/2024	Due to Rainfall Monitoring not Performed					
2.	05/07/2024	55.7	24.4	14.3	19.4	12.3	BDL
3.	09/07/2024	Due to Rainfall Monitoring not Performed					
4.	12/07/2024	50.1	16.4	12.7	15.9		--
5.	16/07/2024	Due to Rainfall Monitoring not Performed					
6.	19/07/2024	Due to Rainfall Monitoring not Performed					
7.	23/07/2024	Due to Rainfall Monitoring not Performed					
8.	26/07/2024	Due to Rainfall Monitoring not Performed					
9.	30/07/2024	Due to Rainfall Monitoring not Performed					
Average		52.9	20.4	13.5	17.7		--

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 : July - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/07/002

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.	02/07/2024	Due to Rainfall Monitoring not Performed					
2.	05/07/2024	53.3	26.7	13.7	18.1	18.5	BDL
3.	09/07/2024	Due to Rainfall Monitoring not Performed					
4.	12/07/2024	55.4	20.8	15.0	17.5		--
5.	16/07/2024	Due to Rainfall Monitoring not Performed					
6.	19/07/2024	Due to Rainfall Monitoring not Performed					
7.	23/07/2024	Due to Rainfall Monitoring not Performed					
8.	26/07/2024	Due to Rainfall Monitoring not Performed					
9.	30/07/2024	Due to Rainfall Monitoring not Performed					
Average		54.3	23.8	14.4	17.8		--

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 : July - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/07/003

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.	02/07/2024	Due to Rainfall Monitoring not Performed					
2.	05/07/2024	60.7	26.2	15.6	19.5	19.7	BDL
3.	09/07/2024	Due to Rainfall Monitoring not Performed					
4.	12/07/2024	51.0	25.4	14.0	17.3		--
5.	16/07/2024	Due to Rainfall Monitoring not Performed					
6.	19/07/2024	Due to Rainfall Monitoring not Performed					
7.	23/07/2024	Due to Rainfall Monitoring not Performed					
8.	26/07/2024	Due to Rainfall Monitoring not Performed					
9.	30/07/2024	Due to Rainfall Monitoring not Performed					
Average		55.9	25.8	14.8	18.4		--

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 : July - 2024

Name of Location : Nr.20 MLD Plant

ID No. : URA/ID/A-24/07/004

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	15/07/2024	58.2	25.2	15.6	22.1	28.9	BDL
Average		58.2	25.2	15.6	22.1	28.9	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 : July - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/07/005

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	15/07/2024	49.8	18.9	13.8	18.5	24.3	BDL
Average		49.8	18.9	13.8	18.5	24.3	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

: August - 2024

Name of Location

: Village - Siracha

ID No.

: URA/ID/A-24/08/001

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.	02/08/2024	Due to Rainfall Monitoring not Performed					
2.	06/08/2024	50.9	25.5	12.1	18.2	13.8	BDL
3.	09/08/2024	Due to Rainfall Monitoring not Performed					
4.	13/08/2024	59.1	27.3	9.2	12.4	--	--
5.	16/08/2024	Due to Rainfall Monitoring not Performed					
6.	20/08/2024	47.9	26.4	10.7	13.5	--	--
7.	23/08/2024	41.8	21.5	12.6	15.7	--	--
8.	27/08/2024	Due to Rainfall Monitoring not Performed					
9.	30/08/2024	Due to Rainfall Monitoring not Performed					
Average		49.9	25.2	11.2	15.0	--	--

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 $\mu\text{g}/\text{m}^3$

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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 : August - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/08/002

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.	02/08/2024	Due to Rainfall Monitoring not Performed					
2.	06/08/2024	52.4	26.0	11.6	17.0	17.2	BDL
3.	09/08/2024	Due to Rainfall Monitoring not Performed					
4.	13/08/2024	61.6	29.6	10.2	12.4	--	--
5.	16/08/2024	Due to Rainfall Monitoring not Performed					
6.	20/08/2024	54.0	22.3	13.8	15.2	--	--
7.	23/08/2024	40.5	21.4	10.3	13.8	--	--
8.	27/08/2024	Due to Rainfall Monitoring not Performed					
9.	30/08/2024	Due to Rainfall Monitoring not Performed					
Average		52.1	24.8	11.5	14.6	--	--

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 $\mu\text{g}/\text{m}^3$

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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 : August - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/08/003

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.	02/08/2024	Due to Rainfall Monitoring not Performed					
2.	06/08/2024	50.0	25.8	15.7	19.2	17.8	BDL
3.	09/08/2024	Due to Rainfall Monitoring not Performed					
4.	13/08/2024	67.5	29.3	11.4	17.6	--	--
5.	16/08/2024	Due to Rainfall Monitoring not Performed					
6.	20/08/2024	55.8	28.6	11.7	14.3	--	--
7.	23/08/2024	50.5	27.0	12.6	15.7	--	--
8.	27/08/2024	Due to Rainfall Monitoring not Performed					
9.	30/08/2024	Due to Rainfall Monitoring not Performed					
Average		56.0	27.7	12.9	16.7	--	--

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 : August - 2024

Name of Location : Nr.20 MLD Plant

ID No. : **URA/ID/A-24/08/004**

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	12/08/2024	60.2	23.6	13.8	19.6	21.2	BDL
Average		60.2	23.6	13.8	19.6	21.2	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 $\mu\text{g}/\text{m}^3$

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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 : August - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/08/005

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	12/08/2024	47.6	20.5	10.7	17.5	20.3	BDL
Average		47.6	20.5	10.7	17.5	20.3	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

: September - 2024

Name of Location

: Village - Siracha

ID No.

: **URA/ID/A-24/09/001**

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.	03/09/2024	56.0	29.9	14.2	16.7	--	--
2.	06/09/2024	40.4	20.7	11.7	14.2	--	--
3.	10/09/2024	54.4	25.6	15.2	19.5	--	--
4.	13/09/2024	47.1	24.4	13.0	16.9	15.2	BDL
5.	17/09/2024	55.4	21.1	12.8	15.4	--	--
6.	20/09/2024	64.5	29.0	10.5	13.9	--	--
7.	24/09/2024	60.2	27.0	13.7	16.2	--	--
8.	27/09/2024	56.3	26.3	15.6	17.8	--	--
Average		54.3	25.5	13.3	16.3	--	--

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 : September - 2024

Name of Location : Village – Kandagara

ID No. : URA/ID/A-24/09/002

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.	03/09/2024	50.5	24.6	10.2	14.5	--	--
2.	06/09/2024	56.3	27.4	11.2	14.6	--	--
3.	10/09/2024	54.5	22.4	14.8	18.5	--	--
4.	13/09/2024	45.8	26.2	12.7	15.3	18.9	BDL
5.	17/09/2024	57.4	30.8	15.6	19.8	--	--
6.	20/09/2024	61.4	26.3	13.5	16.9	--	--
7.	24/09/2024	70.6	33.6	12.7	16.4	--	--
8.	27/09/2024	49.4	21.5	14.3	17.5	--	--
Average		55.7	26.6	13.1	16.7	--	--

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 : September - 2024

Name of Location : Village - Wandh

ID No. : URA/ID/A-24/09/003

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.	03/09/2024	54.2	30.5	13.3	18.5	--	--
2.	06/09/2024	52.6	28.1	16.2	19.6	--	--
3.	10/09/2024	60.1	30.4	15.4	17.1	--	--
4.	13/09/2024	57.1	30.3	13.0	15.7	19.8	BDL
5.	17/09/2024	71.3	34.1	14.9	20.6	--	--
6.	20/09/2024	64.3	29.0	12.7	15.2	--	--
7.	24/09/2024	55.9	24.7	17.6	19.8	--	--
8.	27/09/2024	58.5	26.3	14.9	18.5	--	--
Average		59.2	29.2	14.8	18.1	--	--

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 $\mu\text{g}/\text{m}^3$

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Name and Address of Client : M/s. Adani Power Limited, Mundra

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Monthly Average Report

AMBIENT AIR MONITORING

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

Month of Monitoring : September - 2024
Name of Location : Nr.20 MLD Plant
ID No. : **URA/ID/A-24/09/004**

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	16/09/2024	67.6	25.9	15.2	22.4	25.8	BDL
Average		67.6	25.9	15.2	22.4	25.8	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 : September - 2024

Name of Location : Nr. Shantiniketan - 1

ID No. : URA/ID/A-24/09/005

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	16/09/2024	58.4	23.5	12.8	19.4	22.6	BDL
Average		58.4	23.5	12.8	19.4	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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MARINE MONITORING REPORT

April 2024 - September 2024



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.

215 - Royal Arcade, Near GIDC Office, Char Rasta, Vapi,

District Valsad - 396 195

Gujarat

PREFACE

Adani Power Ltd., Mundra (APL, Mundra) is coal-based Thermal Power plant located near village Tunda and Siracha, Taluka Mundra District Kutch, Gujarat. with capacity of 4620 MW in Phased manner. Currently, APL is a largest coal based Thermal power plant in private sector in INDIA. APL-Mundra has commissioned the first supercritical 660 MW unit (Phase III) 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 April 2024 and September 2024.

Date: 29/10/2024

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

White House, Char Rasta,

Vapi-396 191

Approved by



Mr. Jaivik Tandel
(Authorized By)

TABLE OF CONTENTS

NO.	Contents	Page no.
1.0	Introduction	1
1.1	Overview	1
1.2	Objectives	1
2.0	Study program	2
2.1	Study period	2
2.2	Sampling locations	2
2.3	Sampling strategy	4
2.3.1	Sampling frequency	4
2.3.2	Sampling methodology	4
2.4	Sample analysis method	4
2.4.1	Physicochemical parameter	4
2.4.2	Sediment quality parameter	5
2.4.3	Biological parameter	5
3.0	Water quality monitoring	6
3.1	Result of Physico-chemical water parameter analysis	6
4.0	Sediment quality monitoring	10
5.0	Biological parameters (Biodiversity study)	12
5.1	Planktonic forms	12
5.1.1	Phytoplankton	12
5.1.2	Zooplankton	12
5.2	Significance of (phyto- and zoo-) planktons	13
5.3	Phytoplankton diversity	13
5.4	Phytoplankton pigment (Chlorophyll <i>a</i> and Pheophytin)	15
5.4.a	Chlorophyll <i>a</i> and Pheophytin concentration	16
5.5	Zooplankton diversity	16
5.6	Microbenthic fauna	19
5.6.1	Significance of macrobenthic organisms	20
5.6.2	Benthic biodiversity (Subtidal and intertidal regions)	20
6.0	Conclusion	22
	Sampling photographs	23

Figure No.	Contents	Page No.
Map / Photos / Images/Graph		
1	Map of the study area illustrating the subtidal and intertidal sampling stations	3
2	Microphotographs of phytoplankton reported in the coastal waters of APL-Mundra, during April 2024 and September 2024	15
3	Percent composition of zooplankton groups reported from the marine waters of APL-Mundra during April 2024 and September 2024	18
4	Microphotographs of zooplankton reported along the APL-Mundra coast during April 2024 and September 2024	19
5	Microphotographs of macrobenthic organisms observed in the sediment samples collected in the vicinity of APL-Mundra during April 2024 and September 2024	21
Table No. Contents Page No.		
Tables		
1	Geographic coordinates, water, and sediment parameters at the subtidal sampling stations, APL-Mundra during April 2024 and September 2024	2
2	Geographic coordinates, water, and sediment parameters at the intertidal sampling stations, APL-Mundra during April 2024 and September 2024	3
3a	Water quality parameters reported during April 2024 and their test methods	8
3b	Water quality parameters reported during September 2024 and their test methods	9
4	Subtidal sediment quality parameters and their test methods	11
5	Test methods for phytoplankton and zooplankton analysis	13
6	Different marine biological parameters (phytoplankton abundance, Chlorophyll a, Pheophytin concentrations) reported from the marine waters of APL-Mundra, during April 2024 and September 2024	14
7	Density and biomass of various zooplankton and macrobenthos groups in the coastal waters at the APL-Mundra during April 2024 and September 2024	17
8	Names of the Marine Monitoring Team Members	22
Annexure No. Contents Page No.		
Annexure		
I	Phytoplankton abundance (cells $\times 10^2$ /L) at different sampling stations in the coastal waters of APL-Mundra during April 2024	24
II	Phytoplankton abundance (cells $\times 10^2$ /L) at different sampling stations in the coastal waters of APL-Mundra during September 2024	25
III	Density (nos. $\times 10^3$ /100 m ³) and biomass (ml/100 m ³) of various zooplankton groups in the coastal waters at the APL-Mundra during April 2024 and September 2024	26
IV	Faunal composition, density (no/m ²) and biomass (g/m ²) of the macrobenthos community in the subtidal region at APL-Mundra during April 2024 and September 2024	27
V	Faunal composition, density (no/m ²) 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 April 2024 and September 2024	28

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 supercritical 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 Power plant is situated within “Adani Port Special Economic Zone LTD.” APSEZL, closed to the sea but out of CRZ area. The sea is perennial source of cooling water & other utility for the power plant.

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 **16th-17th April 2024** and **20th-21st September 2024**. 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 April 2024 and September 2024.

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 investigations were carried out on 16th-17th April 2024 (pre-monsoon season) and 20th-21st September 2024 (post-monsoon season). 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 and Figure 1.1.

Table 1: Geographic coordinates, water, and sediment parameters at the subtidal sampling stations, APL-Mundra during April 2024 and September 2024.

Station	Station code	Locations	Coordinates		Water Depth (in m)	
1	St-1	Intake point	22°48'30.50"N	69°32'57.84"E	3.9	3.8
2	St-2	Mouth of intake point	22°47'07.20"N	69°32'06.50"E	4.6	4.2
3	St-3	West port area	22°45'27.70"N	69°34'50.63"E	5.2	4.8
4	St-4	Outfall area	22°44'40.56"N	69°36'26.61"E	4.0	3.9
5	St-5	Outfall area	22°45'12.60"N	69°36'44.54"E	3.8	3.6

Table 2: Geographic coordinates, water, and sediment parameters at the intertidal sampling stations, APL-Mundra during April 2024 and September 2024.

Station	Station code	Tide Level	Coordinates		April 2024		September 2024	
					Intertidal exposed area	Sediment texture	Intertidal exposed area	Sediment texture
I	IT-1 (HW)	High Tidewater level	22°47'07.55" N	69°32'16.91" E	4.8 m	Silty sand	3.9 m	Silty sand
	IT-1 (LW)	Low Tide water level	22°47'06.38" N	69°32'11.62" E		Silty sand		Silty sand
II	IT-2 (HW)	High Tidewater level	22°45'58.72" N	69°34'35.41" E	3.9 m	Silty Sandy	3.6 m	Silty Sandy
	IT-2 (LW)	Low Tidewater level	22°45'57.74" N	69°34'35.05" E		Silty sand		Silty sand
III	IT-3 (HW)	High Tidewater level	22°44'52.21" N	69°36'41.64" E	4.2 m	Sandy	4.0 m	Sandy
	IT-3 (LW)	Low Tidewater level	22°44'51.23" N	69°36'39.28" E		Sandy		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 L 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 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 3a, b.

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 sample was 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 monsoonal influx plays an important role in controlling the variation in the physico-chemical characteristic. Surface and bottom water temperatures observed in the study area were in a range between 28.9°C to 30.2°C in April 2024 (Table 3a) and 29.0°C to 29.5°C during September 2024 (Table 3b). The water temperature generally varied in accordance with the prevailing air temperature, tidal activity, and seasonality. 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 8.1 to 8.3 in April 2024 and 8.2 to 8.3 during September 2024. 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. The turbidity was in a range between 0.1 to 5 NTU in April and 1 NTU during September. 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. In the study area, TSS was 26.9 to 37.1 mg/L during April 2024 and 72.6 to 96.7 mg/ during September 2024. Salinity is an indicator of (saline or freshwater) water masses intrusion within the region. The salinity of seawater may vary with the riverine or inland influx, rains, or evaporation in the region. The salinity variation during the present sampling was 36.9 to 39.4 in April 2024 and 34.6 to 36.4 during September 2024.

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 4.4 to 5.2 mg/L in April 2024 and 4.8 to 5.5 mg/L during September 2024. The average DO value was 5.2 mg/L (in April) and 5.1 (in September), 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 2.4 to 4.3 mg/L in April 2024 and 1.8 to 4.5 mg/L during September 2024. 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 0.5 $\mu\text{mol/L}$ in April 2024 and 0.3 to 0.5 $\mu\text{mol/L}$ in September 2024. Nitrate concentration was range from 1.9 to 3.1 $\mu\text{mol/L}$ during April 2024 and 2.5 to 4.2 $\mu\text{mol/L}$ in September 2024. Nitrite concentration was range from 0.1 to 0.4 $\mu\text{mol/L}$ in April 2024 and 0.4 to 0.7 $\mu\text{mol/L}$ in September 2024. The Phenol compounds and PHc were not detected in the present investigation.

Table 3a: Water quality parameters reported during April 2024 and their test methods.

Sr. No.	Parameters	St-1		St-2		St-3		St- 4		St-5		Test Method Permissible
		S	B	S	B	S	B	S	B	S	B	
PHYSICAL QUALITY												
1	pH @ 25°C	8.3	8.3	8.1	8.3	8.1	8.2	8.2	8.2	8.2	8.1	IS 3025(Part 11)1983
2	Temperature (°C)	29.7	29.2	29.6	28.9	30.2	29.4	30.2	29.7	30	29.7	IS 3025(Part 9)1984
3	Turbidity (NTU)	1	1	1	1	0.1	1	0.1	1	5	1	IS 3025(Part 10)1984
CHEMICAL QUALITY												
1	Total Suspended Solids (mg/l)	26.9	32.9	27.2	37.1	26.9	33.2	27.3	34.1	26.9	33.1	APHA 24th Ed.,2023,2540- D
2	Salinity	38.6	38.6	36.9	37.8	38.6	37.9	37.1	38.2	39.2	39.4	By Calculation
3	Dissolved Oxygen (mg/l)	5.0	4.7	5.2	4.8	4.8	4.4	4.5	4.4	4.6	4.5	APHA 24th Ed.,2023,4500-O, B
4	Biochemical Oxygen Demand (BOD) (mg/l)	4.3	2.4	2.8	2.6	3	2.6	3.2	3	2.7	3.5	IS 3025(Part 44)1993Amd.01
5	Sulphate as SO ₄ (mg/l)	2354	2084	2412	2840	2140	2094	2460	2176	2230	2318	APHA 24th Ed.,2023,4500- SO ₄ E
6	Ammonical Nitrogen (µmol/l)	0.8	0.8	0.4	0.5	0.7	0.8	0.7	0.7	0.8	0.9	APHA 24th Ed.,2023,4500- NH ₃ B
7	Total Nitrogen (µmol/l)	6.2	7.4	5.8	7.0	6.8	8.1	5.6	7.0	7.4	8.9	By Calculation
8	PO ₄ ³⁻ -P (µmol/l)	0.4	0.2	0.3	0.4	0.3	0.2	0.2	0.4	0.4	0.5	APHA 24th Ed.,2023,4500 -P,D
9	(NO ₃ ⁻ -N) (µmol/l)	2.0	1.9	1.9	2.1	2.4	2.4	2.3	3.1	1.9	2.1	APHA 24th Ed.,2023,4500 NO ₃ -B
10	(NO ₂ ⁻ -N) Nitrite (µmol/l)	0.1	0.3	0.1	0.2	0.3	0.4	0.1	0.2	0.2	0.3	APHA 24th Ed.,2023,4500 NO ₂ B
11	Phenol (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part 43):2020
12	PHc (ppb)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th ED,2023,5520 F

Note: St= Station
 S=Surface; B=Bottom
 BDL = Below Detection Limit and N.D. = Not detectable
 BDL(MDL:0.01)
 Turbidity= 0.1=1 to 10 NTU; 1=10 to 40 NTU; 5=40-100 NTU

Table 3b: Water quality parameters reported during September 2024 and their test methods.

Sr. No.	Parameters	St-1		St-2		St-3		St- 4		St-5		Test Method Permissible
		S	B	S	B	S	B	S	B	S	B	
PHYSICAL QUALITY												
1	pH @ 25°C	8.2	8.3	8.2	8.2	8.2	8.2	8.2	8.3	8.2	8.3	IS 3025(Part 11)1983
2	Temperature (°C)	29.5	29.0	29.5	29.0	29.0	29.5	29.0	29.5	29.5	29.5	IS 3025(Part 9)1984
3	Turbidity (NTU)	1	1	1	1	0.1	1	1	1	1	1	IS 3025(Part 10)1984
CHEMICAL QUALITY												
1	Total Suspended Solids (mg/l)	84.3	93.2	86.9	96.7	76.6	90.8	72.6	80.7	76.4	91.3	APHA 24th Ed.,2023,2540- D
2	Salinity	35.5	35.5	35.5	34.6	35.5	35.5	36.4	36.4	35.2	35.7	By Calculation
3	Dissolved Oxygen (mg/l)	5.4	4.9	5.5	5.0	5.1	5.0	4.8	5.2	5.2	5.1	APHA 24th Ed.,2023,4500-O, B
4	Biochemical Oxygen Demand (BOD) (mg/l)	4.4	2.8	3.6	1.8	2.6	4.5	3.8	4.0	3.3	3.2	IS 3025(Part 44)1993Amd.01
5	Sulphate as SO ₄ (mg/l)	1917	2036	1762	1832	1843	1980	1762	1892	1612	2072	APHA 24th Ed.,2023,4500- SO ₄ E
6	Ammonical Nitrogen (µmol/l)	0.54	0.64	0.44	0.78	0.54	0.74	0.44	0.54	0.48	0.68	APHA 24th Ed.,2023,4500- NH ₃ B
7	Total Nitrogen (µmol/l)	7.7	8.3	7.3	7.7	8.2	9.4	9.5	8.2	7.4	9.8	By Calculation
8	PO ₄ ³⁻ -P (µmol/l)	0.4	0.5	0.4	0.5	0.3	0.3	0.4	0.4	0.4	0.4	APHA 24th Ed.,2023,4500 -P,D
9	(NO ₃ ⁻ -N) (µmol/l)	2.7	4.2	2.9	3.8	2.8	3.7	2.8	3.6	2.5	3.8	APHA 24th Ed.,2023,4500 NO ₃ -B
10	(NO ₂ ⁻ -N) Nitrite (µmol/l)	0.5	0.7	0.4	0.6	0.5	0.7	0.4	0.6	0.4	0.7	APHA 24th Ed.,2023,4500 NO ₂ B
11	Phenol (mg/l)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	IS 3025(Part 43):2020
12	PHc (ppb)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th Ed.,2023,5520 F

Note: St= Station
 S=Surface; B=Bottom
 BDL = Below Detection Limit and N.D. = Not detectable
 BDL (MDL:0.01)
 Turbidity= 0.1=1 to 10 NTU; 1=10 to 40 NTU; 5=40-100 NTU

The sediment quality at different sampling stations was analysed only during April 2024 sampling. The results are presented in Table 4. The sediment in the subtidal region was mainly composed of silty sand to loamy sand. The Aluminium was not detected on the surface sediments of subtidal stations. The highest Cobalt content was recorded within range from 7.2 $\mu\text{g/g}$ (at St-1) to 7.0 $\mu\text{g/g}$ (St-5). At St-5, the highest Copper content (9.9 $\mu\text{g/g}$) was recorded, whereas the lowest was detected at St-4 (8.1 $\mu\text{g/g}$). The Zinc content was ranged from 8.6 $\mu\text{g/g}$ (St-1) to 16.1 $\mu\text{g/g}$ (St-3). In the subtidal stations, the phosphorus content was ranged from 376.1 $\mu\text{g/g}$ to 462.3 $\mu\text{g/g}$. Organic carbon content was ranged within 0.4 % to 0.8 %. The Chromium content of marine sediment was ranged from 6.8 $\mu\text{g/g}$ to 17.7 $\mu\text{g/g}$. The highest chromium content was recorded as 17.7 $\mu\text{g/g}$ at St-1. The highest Nickel content (21.6 $\mu\text{g/g}$) was recorded at St-5 and lowest (4.3 $\mu\text{g/g}$) at St-4. In the subtidal region, the highest Manganese content was recorded at St-1 (83.3 $\mu\text{g/g}$). The Iron content was higher at St-4 (1.6 %) and lower at St-3 (0.8%). 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($\mu\text{gm/gm}$)					Test Method Permissible
		St-1	St-2	St-3	St- 4	St-5	
1	Texture	Silty clay	Silty sand	Silty sand	Silty clay	Silty clay	--
2	Aluminium as Al%	2.7	1.9	N.D.	N.D.	N.D.	Spectrophometric Method
3	Cobalt as Co($\mu\text{g/g}$)	7.2	3.7	6.3	4.2	7.0	EPA 3050B :1996/7000B :2007
4	Copper as Cu($\mu\text{g/g}$)	9.7	8.5	9.1	8.1	9.9	EPA 3050B :1996/7000B :2007
5	Zinc as Zn	8.6	11.8	16.14	9.3	11.9	EPA 3050B :1996/7000B :2007
6	Mercury($\mu\text{g/g}$)	BDL	BDL	BDL	BDL	BDL	EPA 7471A Method
7	Phosphorous (Total)($\mu\text{g/g}$)	408	386	462.3	376.1	421.6	IS 10158B (Stannous Chloride Method)
8	C(Org.) %	0.8	0.6	0.6	0.4	0.5	IS: 2720 (Part 22):1972
9	Chromium($\mu\text{g/g}$)	17.7	14.0	8.7	6.8	8.4	EPA 3050B :1996/7000B :2007
10	Nickel($\mu\text{g/g}$)	9.3	15.8	21.6	4.3	21.1	EPA 3050B :1996/7000B :2007
11	Manganese	83.2	44.3	61.3	72.4	49.4	EPA 3050B :1996/7000B :2007
12	Iron%	1.1	0.9	0.8	1.6	1.0	EPA 3050B :1996/7000B :2007
13	PHc($\mu\text{g/g}$)	N.D.	N.D.	N.D.	N.D.	N.D.	APHA 24th ED,2023,5520 F
14	Arsenic($\mu\text{g/g}$)	BDL	BDL	BDL	BDL	BDL	EPA 1998, SW-846, Method 7061A 1992

Note: St= Station

BDL= Below Detectable Limit and N.D. = Not detectable

BDL (MDL: 0.05)

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 5: Test methods for phytoplankton and zooplankton analysis.

Sr. no.	Test performed	Method
1	Phytoplankton	APHA, Edition 24 th , Part 10000, 10200 F
2	Chlorophyll <i>a</i> and Pheophytin	APHA, Edition 24 th , Part 10000, 10200 H (with some modification)
3	Zooplankton	APHA, Edition 24 th , Part 10000, 10200 G
4	Macro benthos	APHA, Edition 24 th , Part 10000,10500 A-10500 D

5.3 PHYTOPLANKTON DIVERSITY:

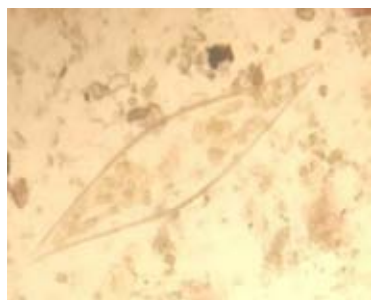
Phytoplankton sampling was carried out at 5 stations. At each station, water samples were collected from surface and bottom waters. During the sampling period the phytoplankton population in the coastal waters of APL-Mundra, was more diverse during the Pre-monsoon season (April 2024) than Post-monsoon (September 2024) (Table 6). However, the overall phytoplankton abundance was more during post-monsoon than the pre-monsoon season. The detailed species composition reported during both sampling period is given in Annexure I and II. In April 2024, the phytoplankton community was represented with a total of 31 phytoplankton genera belonging to diatoms (26 genera) and dinoflagellates (5 genera). Overall, 31 phytoplankton genera representing diatoms (28 genera) and dinoflagellate (3 genera) reported during September 2024 sampling.

Diatoms Species belonged to *Amphorprora* sp., *Asterionella* sp., *Bacillaria* sp., *Chaetoceros* sp., *Corethron* sp., *Coscinodiscus* sp., *Cyclotella* sp., *Cylindrotheca* sp., *Cymbella* sp., *Diploneis* sp., *Guinardia* sp., *Lauderia* sp., *Leptocylindrus* sp., *Licmophora* sp., *Lithodesmium* sp., *Navicula* sp., *Nitzschia* sp., *Odontella* sp., *Pinnularia* sp., *Pleurosigma* sp., *Pseudo-nitzschia* sp., *Rhizosolenia* sp., *Thalassiosira* sp. and *Thalassionema* sp. were common during both sampling period. Only 3 dinoflagellate genera i.e., *Ceratium*, *Prorocentrum* and *Protooperidinium* were reported during September 2024 as compared to April 2024 (5 genera).

The phytoplankton abundance in the study region was higher during the 134 to 218 cells x 10² L⁻¹ during September 2024 as compared to April 2024 (ranged from 87 to 161 cells x 10² L⁻¹). In April 2024, the highest phytoplankton abundance was observed at St-5 in the surface (161 cells x 10² L⁻¹). The lowest phytoplankton abundance (87 cells x 10² L⁻¹) was observed at St-3 in surface water. During September 2024, phytoplankton abundance was higher at St-5 in surface water (218 cells x 10² L⁻¹) and lowest at St-3 bottom water (134 cells x 10² L⁻¹). The diatom genera, *Coscinodiscus* (up to 42 cells x 10² L⁻¹) during September 2024 (Annexure I), whereas in April 2024, *Thalassiosira* (up to 22 cells x 10² L⁻¹) was also predominant along with *Coscinodiscus* (up to 22 cells x 10² L⁻¹) (Annexure II). The study shows that the marine water around was enriched with the diverse phytoplankton population during the same period.

Table 6: Different marine biological parameters (phytoplankton abundance, Chlorophyll a, Pheophytin concentrations) reported from the marine waters of APL-Mundra, during April 2024 and September 2024.

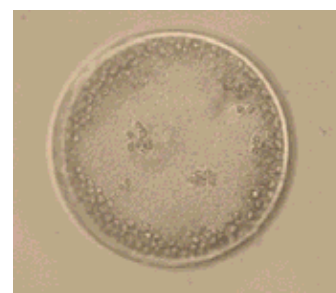
Parameter	Sampling period	Sampling Stations									
		St-1	St-1	St-2	St-2	St-3	St-3	St-4	St-4	St-5	St-5
		S	B	S	B	S	B	S	B	S	B
Phytoplankton (cells x 10 ² L ⁻¹)	April 2024	140	102	151	99	87	122	135	112	161	126
	September 2024	175	165	218	150	168	134	175	143	217	179
Chlorophyll a (µg/L)	April 2024	1.9	1.8	2.2	1.8	2	1.8	2.6	1.7	1.8	1.6
	September 2024	3.1	3.3	2.9	3.4	2.63	2.8	2.4	3	2.9	3.2
Phaeophytin (µg/L)	April 2024	1.2	0.9	1.1	0.9	1.3	0.9	1.3	0.9	0.9	0.8
	September 2024	1.6	1.4	1	1.2	0.9	1.2	0.9	1.02	1.1	1.2



Navicula sp.



Ceratium sp.



Coscinodiscus sp.



Chaetoceros sp.



Odontella sp.



Pleurosigma sp.

Figure 2: Microphotographs of phytoplankton reported in the coastal waters of APL-Mundra, during April 2024 and September 2024.

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, is presented in Table 6. Overall, Chl-*a* and pheophytin concentration was more during the September 2024 (2.4 to 3.4 µg/L and 0.9 to 1.6 µg/L respectively) than the April 2024. The highest Chl-*a* and Pheophytin concentrations were observed at bottom waters of all stations and highest Chl-*a* (3.4 µg/L) was observed at bottom waters of ST-2. In April 2024, the Chl-*a* concentrations in the study region were ranged from 1.6 µg/L to 2.6 µg/L. The Pheophytin content was ranged from 0.8 µg/L to 1.3 µg/L.

The Chl-*a* and Pheophytin concentrations were more in the bottom water as compared to the bottom water during September 2024, whereas not trend was observed in April 2024. The variations observed between the surface and bottom waters could be due to several natural biological variability.

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 2.9. 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 and temporal variation (Table 7). Zooplankton population was more abundant during September 2024 (12.7 to 18.1 nos. $\times 10^3/100 \text{ m}^3$) to than April 2024 (8.0 to 14.3 nos. $\times 10^3/100 \text{ m}^3$). In April 2024, the maximum zooplankton population (14.3 nos. $\times 10^3/100 \text{ m}^3$) and biomass (2.0 ml/ 100 m^3) were recorded at St-4. The lowest zooplankton population (8.0 nos. $\times 10^3/100 \text{ m}^3$) and biomass (1.2 ml/ 100 m^3) (Figure 4) were observed at St-3. During September 2024, the maximum zooplankton population and biomass were observed at Station 5 (18.1 nos. $\times 10^3/100 \text{ m}^3$ and 2.7 ml/ 100 m^3 , respectively).

Overall, Copepods (60.0 to 75.9%) and copepod nauplii (13.0 to 13.6%) dominated the zooplankton assemblage during both sampling periods (Figure 3). Other zooplankton groups such as brachyuran crab larvae, anomuran crab larvae, decapod (shrimps), fish and shellfish eggs, fish larvae, gastropod larvae, chaetognaths, polychaete larvae, siphonophore, ostracods, Oikopleura, Amphipods and Lucifer were also reported at various concentrations. Different groups of identified zooplankton groups are represented in Annexure III.

Table 7: Density and biomass of various zooplankton and macrobenthos groups in the coastal waters at the APL-Mundra during April 2024 and September 2024.

Parameter	Sampling period	Sampling Stations				
		St-1	St-2	St-3	St-4	St-5
Zooplankton						
Population (nos.× 10³/100 m³)	April 2024	9.3	11.5	8.0	14.3	13.0
	September 2024	15.9	12.8	12.7	15.2	18.1
Biomass (ml./100 m³)	April 2024	1.3	1.5	1.2	2.0	1.7
	September 2024	2.0	1.8	1.9	1.9	2.7
Macrobenthos						
Total abundance (nos./m²)	April 2024	595	575	680	860	665
	September 2024	770	990	770	1210	910
Biomass (g/m²)	April 2024	1.6	1.5	1.9	2.1	1.8
	September 2024	1.3	1.5	1.4	1.7	1.9

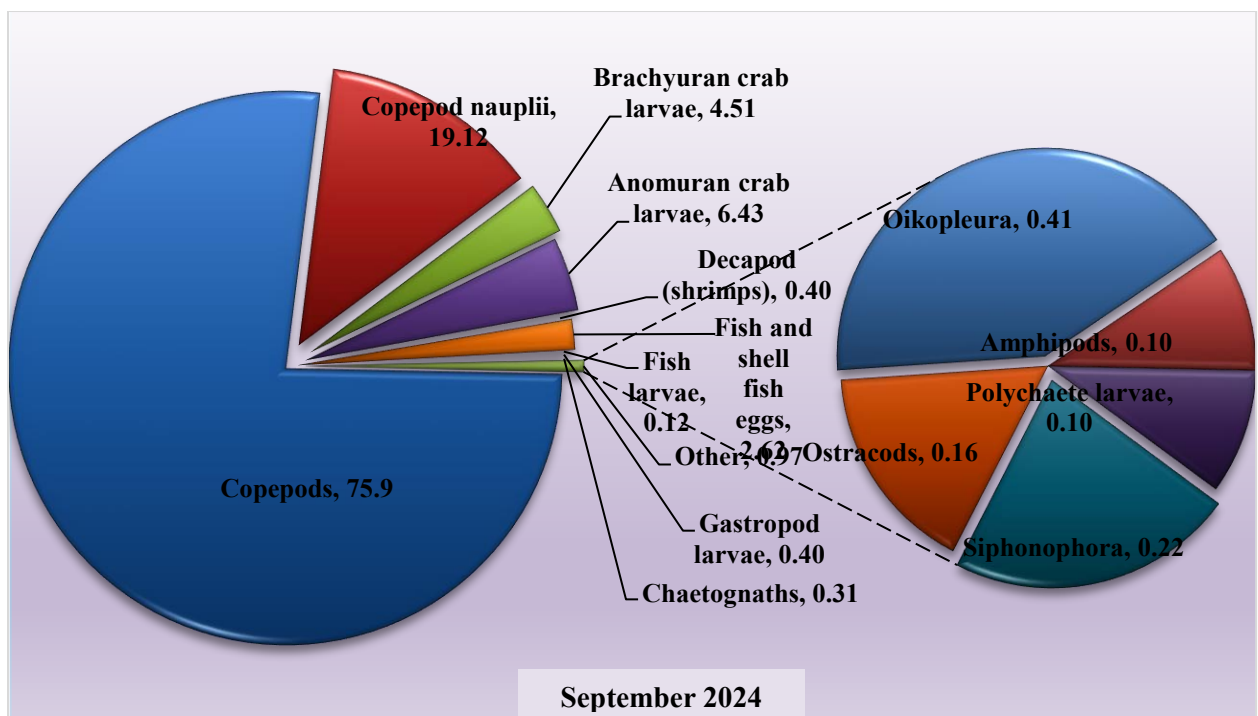
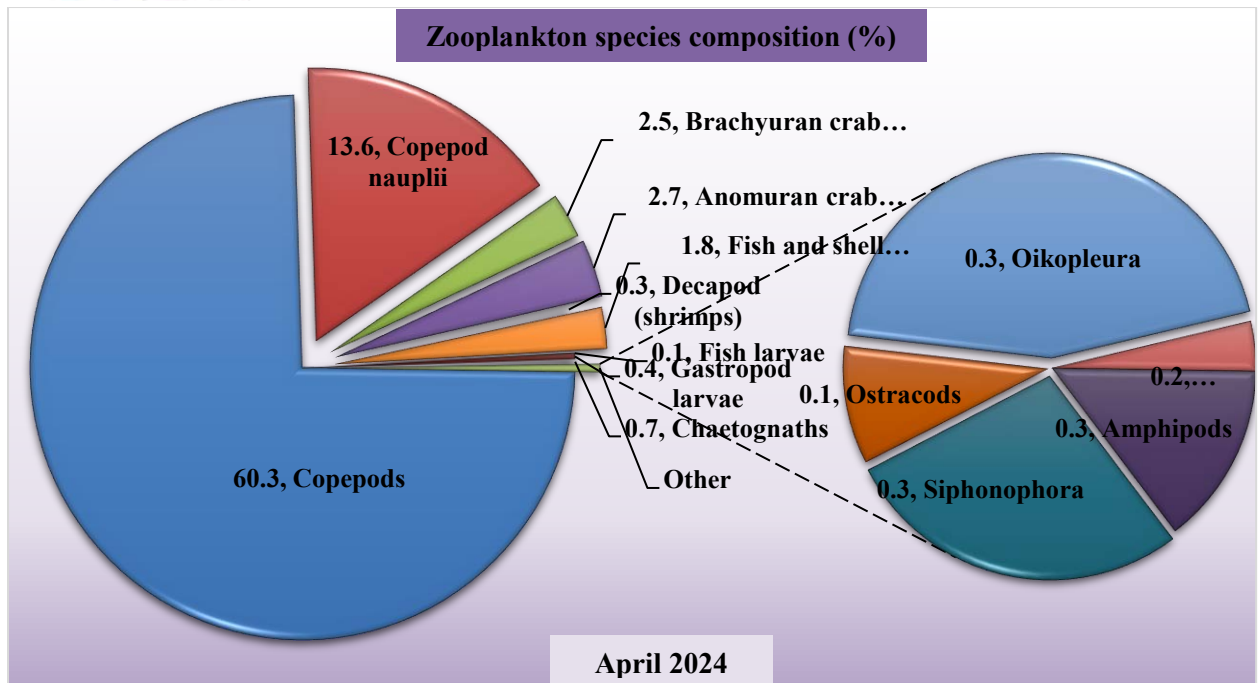


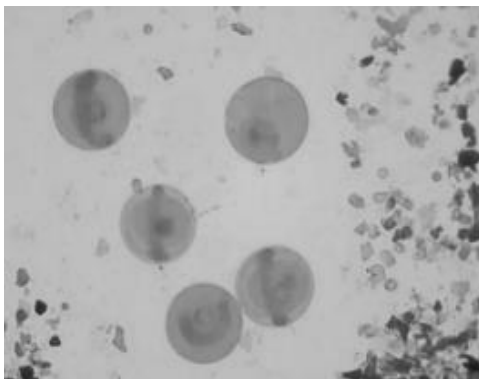
Figure 3: Percent composition of zooplankton groups reported from the marine waters of APL-Mundra during April 2024 and September 2024.



Fish Larvae



Copepods



Fish eggs



Crab larvae

Figure 4: Microphotographs of zooplankton reported along the APL-Mundra coast during April 2024 and September 2024.

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 microhabitats 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:

The macrobenthic population study revealed large spatiotemporal variation with the benthic population during the study period. Overall, more macrobenthos abundance and biomass were reported at subtidal stations than at intertidal stations. The macrobenthic abundance and biomass were more during the September 2024 than the April 2024 sampling. In April 2024, the macrobenthos density ranged from 575 no./m² to 860 nos./m² at sampling stations (Table 7). The biomass of the macrobenthic community in the study region was ranged from 0.7 g/ m² to 1.0 g/ m²

in the study region. The maximum abundance and biomass of benthic microorganisms was reported at St-4 (860 nos./m² and 2.1 g/m²). During September 2024, the macrobenthos density was ranged from 770 to 1260 nos./m². The macrobenthic biomass was ranged from 0.7 to 1.9 g/ m².

In species composition, Polychaete species (Phylum Annelida) belonging to the family Paraonidae, Pilargidae, Capitillidae, Cossuridae, Glyceridae, Ciratullidae, Nephthyida, Nereidae, Lumbriconeridae, Spionidae were abundant contributing ~75% to macrobenthic population during April 2024 (Annexure IV). In September 2024, species belongs to family Spionidae were not reported, whereas polychaete species contributed ~82% to macrobenthic population (Annexure IV).

Overall, the presence of Polychaete, Amphipods, and Nemerteans suggest the availability of food organisms for benthic predators in the area. The macrobenthic population reported during both studies reveals that the large spatial-temporal variation with the benthic population could be due to the change in bottom substratum.

5.6.2b Intertidal region

The sandy substratum with low organic matter affects the occurrence of the macrobenthic community in the intertidal region. In September 2024, the highest biomass was measured (0.05 g/m² to 0.2 g/m²) in the intertidal region (Annexure V). The highest density of macrobenthic organisms was reported at station IT-1 (LW) (224 nos./m²), whereas the lowest density was reported at Station IT-2 (HW) (124 nos./m²). During April 2024, the macrobenthic biomass was ranged from (0.08 to 0.4 g/m²). At St-1 (LW) the higher macrobenthic population (140 nos./m²) and biomass (0.4 g/m²) was reported. No macrobenthic community was observed at St-3 (HW and LW) may be due to sandy sediment during both sampling periods.



Polychaete sp.



Amphipod sp.

Figure 5: Microphotographs of macrobenthic organisms observed in the sediment samples collected in the vicinity of APL-Mundra during April 2024 and September 2024.

6 CONCLUSIONS

During this study, a diverse population of planktonic and benthic organisms was observed along the (APSEZ developed) integrated seawater intake and outfall channels. The diversified phytoplankton and zooplankton population during the pre-monsoon (April 2024) and post-monsoon season (September 2024) emphasises that the water conditions along the channels are favourable for their survival and growth.

The enriched planktonic flora and subtidal benthic fauna could support the fish population in this region, especially along the outfall channel region. Our recent fish bioassay study showed that the fish species *Mugil cephalus* had a 90% survival rate in absolute outfall water, which is consistent with these findings. These fishes for the bioassay study were collected from Kotdi Creek. The (90%) survival of the fish population in bioassay study and the diverse marine biota near outfall channel in the present study indicate that the abiotic characteristics, mainly temperature, of discharge water does not have the adverse biological impact. The scientifically designed 11 km-long outfall channel enables cooling of outfall water. Similarly, an aqueduct constructed over the Kotdi Creek avoids the mixing with outfall water and facilitates the natural flow of creek water as per the compliance condition. The overall physico-chemical and biological characteristics of the marine environment observed in the present seasonal study not significantly varied from the previous baseline marine monitoring study.

Table 8: 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

Annexures I: Phytoplankton abundance (cells×10²/L) at different sampling stations in the coastal waters of APL-Mundra during April 2024.

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>Amphiphora</i> sp.	2	2	3	0	2	2	2	1	4	4
<i>Asterionella</i> sp.	6	3	5	4	0	2	5	4	6	7
<i>Bacillaria</i> sp.	2	2	7	3	1	2	4	2	12	8
<i>Chaetoceros</i> sp.	3	5	8	3	3	7	4	2	11	6
<i>Corethron</i> sp.	2	1	2	1	1	1	2	0	1	1
<i>Coscinodiscus</i> sp.	18	14	22	9	13	12	21	18	20	16
<i>Cyclotella</i> sp.	3	2	2	1	1	1	2	1	8	4
<i>Cylindrotheca</i> sp.	3	2	1	1	1	3	1	1	3	2
<i>Cymbella</i> sp.	1	1	1	1	1	0	0	1	0	2
<i>Diplonis</i> sp.	1	1	1	1	1	2	1	1	2	1
<i>Ditylum</i> sp.	3	1	4	2	1	3	4	2	5	3
<i>Gunardia</i> sp.	3	1	5	5	2	3	2	3	1	2
<i>Lauderia</i> sp.	4	1	4	0	2	2	1	1	3	2
<i>Leptocylindrus</i> sp.	1	1	5	4	2	2	1	3	4	5
<i>Licmophora</i> sp.	4	2	3	1	1	0	1	2	5	1
<i>Lithodesmium</i> sp.	3	1	4	0	1	3	2	5	4	4
<i>Navicula</i> spp.	5	2	8	7	8	4	3	5	4	2
<i>Nitzschia</i> spp.	6	9	7	8	2	3	4	8	7	2
<i>Melosira</i> sp.	5	4	3	2	2	1	6	5	4	2
<i>Odontella</i> sp.	3	3	2	1	2	3	7	5	5	3
<i>Pinnularia</i> sp.	2	0	2	1	2	4	6	0	6	1
<i>Plurosigma</i> spp	9	8	11	5	11	12	4	5	4	4
<i>Pseudo-nitzschia</i> sp.	3	0	4	2	3	4	4	5	5	3
<i>Rhizosolenia</i> sp.	12	8	12	7	6	16	12	8	9	10
<i>Thalassionema</i> sp.	10	7	10	9	7	8	9	8	3	9
<i>Thalassiosira</i> sp.	22	17	8	11	6	16	20	10	18	15
Dinoflagellates										
<i>Scrippsiella</i> sp.	0	1	1	2	1	1	1	1	2	1
<i>Ceratium</i> sp.	1	0	1	3	1	1	2	2	1	2
<i>Gonyaulax</i> sp.	1	1	1	1	1	1	1	1	1	1
<i>Prorocentrum</i> sp.	1	2	1	2	1	1	1	1	1	1
<i>Protoperidinium</i> sp.	1	0	3	2	1	2	2	1	2	2
Total Phytoplankton (cells x 10² L⁻¹)	140	102	151	99	87	122	135	112	161	126

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

Annexures II: Phytoplankton abundance (cells×10²/L) at different sampling stations in the coastal waters of APL-Mundra during September 2024.

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										
Amphora sp.	1	2	1	3	6	1	0	1	5	4
Amphoprora sp.	0	1	1	1	2	3	2	2	1	0
Asterionella sp.	18	22	32	21	18	7	21	3	12	32
Bacillaria sp.	5	3	2	3	6	1	1	1	4	3
Chaetoceros sp.	3	1	0	0	3	4	0	1	2	7
Corethron sp.	0	1	1	1	2	1	2	2	2	1
Coscinodiscus sp.	20	33	42	21	22	15	24	18	37	23
Cyclotella sp.	1	3	7	1	1	3	1	2	4	3
Cylindrotheca sp.	2	0	3	1	4	0	2	5	1	3
Cymbella sp.	1	1	2	0	2	1	1	1	2	1
Diplonis sp.	1	2	1	2	1	2	1	2	2	4
Ditylum sp.	3	5	2	2	1	1	12	9	4	1
Gunardia sp.	14	12	18	15	9	7	2	10	18	0
Gyrosigma sp.	2	1	0	2	3	2	3	1	3	1
Lauderia sp.	0	2	1	1	1	1	2	2	1	0
Leptocylindrus sp.	6	2	2	3	1	2	0	0	2	3
Licmophora sp.	1	3	2	1	1	1	1	0	4	1
Lithodesmium sp.	1	1	0	2	1	5	3	9	5	4
Navicula spp.	23	13	11	6	11	3	16	11	13	16
Nitzschia spp.	5	12	26	17	22	11	12	8	23	20
Odontella sp.	22	20	21	9	10	6	17	11	21	15
Pinnularia sp.	6	1	0	2	1	6	8	1	3	2
Pleurosigma spp	2	9	0	3	6	3	15	9	13	2
Pseudo-nitzschia sp.	1	1	2	0	2	3	4	4	2	0
Rhizosolenia sp.	2	2	8	12	4	8	3	10	3	7
Synedra sp.	3	1	1	0	1	5	2	0	2	1
Thalassionema sp.	14	6	9	6	19	14	11	15	9	18
Thalassiosira sp.	13	2	21	12	2	10	4	0	11	1
Dinoflagellates										
Ceratium sp.	3	2	1	2	3	1	2	3	3	2
Prorocentrum sp.	1	1	1	0	2	4	2	1	2	3
Protoperidinium sp.	1	0	0	1	1	3	1	1	3	1
Total Phytoplankton (cells x 10²L⁻¹)	175	165	218	150	168	134	175	143	217	179

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

Annexures III: Density (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 during April 2024 and September 2024.

Zooplankton Groups	Sampling period									
	April 2024					September 2024				
	St-1	St-2	St-3	St-4	St-5	St-1	St-2	St-3	St-4	St-5
Copepods	6.6	8.3	5.4	11.1	9.1	12.6	10.2	7.7	11.7	15.0
Copepod nauplii	1.6	1.9	1.4	1.7	2.4	1.8	1.5	2.4	2.0	1.9
Brachyuran crab larvae	0.4	0.3	0.2	0.4	0.3	0.4	0.5	0.7	0.4	0.3
Anomuran crab larvae	0.2	0.3	0.3	0.5	0.4	0.5	0.3	1.3	0.6	0.5
Decapod (shrimps)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Fish and shellfish eggs	0.2	0.2	0.2	0.3	0.3	0.3	0.1	0.4	0.2	0.3
Fish larvae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gastropod larvae	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Chaetognaths	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Polychaete larvae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Siphonophora	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ostracods	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oikopleura	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amphipods	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lucifers	6.6	8.3	5.4	11.1	9.1	12.6	10.2	7.7	11.7	15.0
Population (nos. $\times 10^3/100 \text{ m}^3$)	9.3	11.5	8.0	14.3	13.0	15.9	12.8	12.7	15.2	18.1
Biomass (ml./100 m^3)	1.3	1.5	1.2	2.0	1.7	2.0	1.8	1.9	1.9	2.7

Annexures IV: Faunal composition, density (no/m²) and biomass (g/m²) of the macrobenthos community in the subtidal region at APL-Mundra during April 2024 and September 2024.

Taxa	Sampling period									
	April 2024					September 2024				
	St-1	St-2	St-3	St-4	St-5	St-1	St-2	St-3	St-4	St-5
Phylum Polychaeta										
Paraonidae	185	175	280	210	165	260	310	290	460	270
Pilargidae	40	10	30	30	30	80	20	40	40	40
Capitillidae	40	40	90	140	40	40	140	60	120	40
Cossuridae	30	50	50	30	50	60	60	40	30	30
Glyceridae	30	40	30	60	40	30	70	50	40	40
Ciratullidae	50	10	20	20	30	40	40	50	50	50
Nephthyidae	40	0	10	80	70	40	30	20	70	120
Nereidae	30	40	40	50	80	60	70	60	50	80
Lumbriconeridae	10	20	0	70	50	10	30	40	150	60
Spionidae	30	50	30	40	20					
Phylum Nemertea										
Nemertea	10	10	10	30	10	10	10	10	30	10
Phylum Mollusca										
Bivalvia	20	50	10	20	30	40	50	10	40	40
Gastropoda	40	40	30	40	20	40	80	10	50	60
Phylum Arthropoda										
Amphipoda	20	30	30	30	20	40	50	60	30	40
Isopoda	20	10	20	10	10	20	30	30	50	30
Total abundance (nos./m²)	595	575	680	860	665	770	990	770	1210	910
Biomass (g/m²)	0.9	0.7	0.4	1.0	0.8	0.8	0.9	0.7	1.9	1.2

Annexures V: 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 April 2024 and September 2024.

Faunal groups	Sampling period											
	April 2024						September 2024					
	IT-1 (HW)	IT-1 (LW)	IT-2 (HW)	IT-2 (LW)	IT-3 (HW)	IT-3 (LW)	IT-1 (HW)	IT-1 (LW)	IT-2 (HW)	IT-2 (LW)	IT-3 (HW)	IT-3 (LW)
Phylum Annelida												
Polychaetes	56	52	44	36	-	-	56	128	68	124	-	-
Phylum Nemertea												
Nemertea	0	8	0	4	-	-	4	4	8	12	-	-
Phylum Mollusca												
Bivalve	16	8	8	12	-	-	4	20	0	16	-	-
Gastropoda	4	4	4	4	-	-	4	16	4	12	-	-
Phylum Arthropoda												
Amphipoda	12	24	24	20	-	-	32	24	20	24	-	-
Isopoda	28	44	28	20	-	-	32	32	24	16	-	-
Total density (no/m²)	116	140	108	96	-	-	132	224	124	204	-	-
Biomass (g/m²)	0.08	0.4	0.05	0.1	-	-	0.2	0.1	0.05	0.08	-	-

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

Annexure – 6



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,

GANDHINAGAR - 382010,

(T) 079-23232152

By R.P.A.D

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution)-1981 and Authorization under rule 6(2) of the Hazardous and Other Waste (Management and Transboundary) Rules, 2016 framed under the Environmental (Protection) Act-1986.

And whereas Board has received consolidated consent application Inward No.310352 dated 26/04/2024 for the Renewal of Consolidated Consent and Authorization (CO&A) of this Board under the provisions / rules of the aforesaid Acts. Consents & Authorization are hereby granted as under:

CONSENTS AND AUTHORISATION:

(Under the provisions /rules of the aforesaid environmental acts)

To,

M/s. Mundra LPG Terminal Private Limited, (ID-53331).

Survey no. 169/P,

Navinal Island, Mundra,

Tal: Mundra, Dist: Kutch - 370 421.

1. Consent Order No. AWH-134895 Date of issue: 12/06/2024.

2. The consents shall be valid upto 27/06/2029 for the use of outlet for the discharge of trade effluent and emission due to operation of industrial plant for storage & handling of the following items/ products:

Sr No.	Product	Quantity
1.	Handling, Storage & Distribution of LPG	35,60,000 MT/Annum

* Total storage capacity of 2 tanks is 50,000 MT (each capacity of 25,000 MT).

Subject to specific condition:

1. Industry shall comply with Environment Clearance obtained by APSEZ for desalination plant, sea water intake channel, outfall facility & pipeline, Multiproduct SEZ at Mundra vide order no. 10-138/2008-IA.III dated 15/07/2014 issued MoEF & CC.
2. Industry shall not withdrawal ground water without prior NOC of CGWA as per order of Hon. National Green Tribunal.
3. Unit shall obtain fresh water from valid source have permission of the complete authority.
4. Industry shall renew Public Liability Insurance Policy time to time & submit a copy of the same to this office.
5. Industry shall comply with PESO permission issued by competent authority and renew PESO permission time to time & submit a copy of the same to this office.

Page 1 of 8

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6. Industry shall comply with Manufacturing, Storage and Import of Hazardous Chemicals Rules – 1989 framed under the Environment (Protection) Act-1986 including site notification of competent authority for isolated storage & submit acknowledge copy of onsite emergency plan & third party safety audit report time to time.
7. Industry shall comply with circular of the Board dated 27/08/2021 regarding retrofitting of emission control/ equipment in D.G. Set of capacity 125 KVA and above as per system & procedure for emission compliance testing of Retrofit Emission Control Devices (RECD) for D.G. Set issued by CPCB dated 01/02/2022 at the earliest and submit compliance.

3. CONDITIONS UNDER THE WATER ACT:

- 3.1 Source of Water: - GWIL & Desalination Plant.
- 3.2 The quantity of the fresh water consumption for industrial purpose shall not exceed 460.10 KL/Day.
- 3.3 The quantity of the fresh water consumption for domestic purpose shall not exceed 80 KL/Day.
- 3.4 The quantity of the industrial effluent to be generated from the industrial plant and other ancillary industrial operations shall not exceed 217.6 KL/Day.
- 3.5 The quantity of domestic waste water shall not exceed 64 KL/Day.
- 3.6 Industrial effluent shall be conveyed to neutralization tank for pH collection & stored in 1500 KLD tank, which shall be utilized for gardening/ horticulture purpose within APSEZ premises (ID-17739).
- 3.7 Domestic effluent shall be treated into ETP of APSEZ (ID-17739) & discharged on land for gardening and horticulture purpose within APSEZ premises.
- 3.8 Industry shall provide fixed underground pipeline with flow meter for conveyance of industrial & domestic effluent to M/s. Adani Port and Special Economic Zone (ID-17739).
- 3.9 In case of non compliance under Water Act-1974 by any of the units, both industries i.e. M/s. Mundra LPG Terminal Pvt. Ltd., (ID-53331) & M/s. Adani Port and Special Economic Zone (ID-17739) are jointly & severally responsible for action under Water Act-1974 & other Environmental Acts/ Rules.
- 3.10 Disposal system for storm water shall be provided separately. In no case storm water & sewage from port facility shall not be discharge into surface water.

4. Conditions under the Air Act-1981:

- 4.1. The following shall be used as a fuel in Steam Boiler & D.G. Set respectively:

Sr. No.	Utility	Name of Fuel	Quantity
1.	Steam Boiler	LPG	2000 Kg/Hr
2.	D.G. Set	HSD	390 Lit/Hr



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,
GANDHINAGAR - 382010,
(T) 079-23232152

- 4.2. The applicant shall install & operate air pollution control system efficiently in order to achieve prescribed norms.
- 4.3. The flue gas emission through stack attached to Steam Boiler & D.G. Set shall conform to the following standards;

Sr. No.	Stack attached to	Stack height	APCM	Parameter	Permissible Limit
1.	Steam Boiler (Total 2 nos.) (12 TPH (1 nos.) & 14 TPH (1 nos.))	35 mtr common stack	Adequate Stack Height	PM SO ₂ NO _x	150 mg/NM ³ 100 ppm 50 ppm
2.	Steam Boiler (12 TPH (1 nos.))				
3.	D.G. Set (2000 KVA)	11 mtr	Adequate Stack Height		

- 4.4. The process gas emission through stack attached to Flare Stack shall conform to the following standards.

Sr. No.	Stack attached to	Stack height	Parameter	Permissible Limit
1.	Flare Stack	38 mtr	SO ₂ NO _x	100 ppm 50 ppm

- 4.5. The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder as per National Ambient Air Quality Standards issued by MoEF & CC dated 18th November-2009. In addition to following parameters industry shall also carry out AAQ monitoring of all other applicable parameter as per MoEF notification dated 18/11/2009 and submit the report to the Board.

Sr. No.	Pollutant	Time Weighted Average	Concentration in Ambient air in µg/M ³
1.	Sulphur Dioxide (SO ₂)	Annual 24 Hours	50 80
2.	Nitrogen Dioxide (NO ₂)	Annual 24 Hours	40 80
3.	Particulate Matter (Size less than 10 µm) or PM ₁₀	Annual 24 Hours	60 100
4.	Particulate Matter (Size less than 2.5 µm) or PM _{2.5}	Annual 24 Hours	40 60

- 4.6. The applicant shall provide perches, ladder, platform etc. at chimney(s) for monitoring the air emissions and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.

4.7. The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75dB(A) during day time and 70 dB (A) during night time. Daytime is reckoned in between 6a.m. and 10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.

4.8. **D.G. Sets Conditions**

The D.G. Set shall have acoustic enclosure and shall comply with the standards specified at Sr. no. 95 of Schedule-I of the rule-3 of E.P. Rules -1986 and Noise pollution level as per the Air Act-1981.

D.G. Sets standards:-

The flue gas emission through stack attached to D.G. Sets shall conform to the following standards.

- a) The minimum height of stack to be provided with each of the generator set shall be $H = h + 0.2 (KVA)^{1/2}$, where H= Total stack height in meter, h= height of the building in meters where or by the side of which the generator set is installed.
- b) Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.
- c) The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/ acoustic treatment. Such circumstances the performance may be checked for noise reduction up to actual ambient noise level, preferably in the night time). The measurement for insertion loss may be done at different points at 0.5 m from the acoustic enclosure/room, and the averaged.
- d) The D.G. Set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB (A).
- e) All efforts shall be made to bring down the noise level due to the D.G. Set, outside the premises, within the ambient noise requirements by proper siting and control measures.
- f) Installation of a D.G. Sets must be strictly in compliance with the recommendations of the D.G. Set manufacturer.
- g) A proper routine and preventive maintenance procedure for the D.G. Set should be set and followed in consultation with the DG Set manufacture which would help prevent noise levels of the DG Set from deteriorating with use.

5. AUTHORIZATION as per HAZARDOUS AND OTHER WASTE MANAGEMENT AND TRANSBOUNDARY) RULES, 2016 Form-2 [See rule 6 (2)]

Form for grant of authorization for occupier or operator handling Hazardous waste

5.1 Authorization order no:-AWH-184395 Date of issue: 12/08/2024

5.2 M/s. Mundra LPG Terminal Private Limited is hereby granted an authorization based on the enclosed signed inspection report for generation, collection,



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,

GANDHINAGAR - 382010,

(T) 079-23232152

treatment, storage, transport of hazardous waste on the premises situated at Survey no. 189/P, Navinal Island, Mundra, Tal: Mundra, Dist: Kutch.

Sr. No	Waste	Quantity per Annum	Schedule & Category	Facility
1.	Used Oil	7.5 MT	I-5.1	Collection, storage, Transportation, and send to registered recycler.
2.	Discarded Drums & Containers	5 MT	I-33.3	Collection, Storage, Transportation and disposal by selling to authorized decontaminator.
3.	Oily Cotton Rags	5 MT	I-33.2	Collection, storage, transportation & disposed at cement industry for co-processing.
4.	Sludge & Filters Contaminated with Oil	0.2 MT	I-3.3	Collection, storage, Transportation, and send to registered recycler.

5.3 The authorization shall be valid up to 31/03/2025.

5.4 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.

5.5 The authorization is granted to operate a facility for collection, storage within factory premises transportation and ultimate disposal of Hazardous wastes as per condition no 5.2 to the industry having valid CCA of this Board.

5.6 TERMS AND CONDITIONS OF AUTHORIZATION

1. The applicant shall comply with the provisions of the Environment (Protection) Act-1986 and the rules made there under.
2. The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
3. The persons authorized shall not rent, lend, sell, and transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
5. The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillages, leakages, fire etc. and their possible impacts and also carry out mock drill in this regard at regular interval of time;

6. The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on "Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous Wastes and Penalty"
7. It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.
8. An application for the renewal of an authorization shall be made as laid down in rules 6(2) under Hazardous and Other Waste Rules, 2016.
9. The imported hazardous and other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation.
10. The record of consumption and fate of the imported hazardous and other wastes shall be maintained.
11. The hazardous and other wastes which gets generated during recycling or reuse or recovery or pre-processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.
12. The importer or exporter shall bear the cost of import or export and mitigation of damages if any.
13. Any other conditions for compliance as per the Guidelines issued by the Ministry of Environment, Forest and Climate Change or Central Pollution Control Board from time to time.
14. The waste generator shall be totally responsible for (i.e. collection, storage, transportation and ultimate disposal) the wastes generated.
15. Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form-4 by 30th day of June of every year for the preceding period April to March.
16. In case of any accident, details of the same shall be submitted on Form-11 to Gujarat Pollution Control Board.
17. As per "Public Liability Insurance Act-91" company shall get Insurance Policy, if applicable.
18. Empty drums and containers of toxic and hazard material shall be treated as per guideline published for "Management & Handling of discarded containers". Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.
19. In case of transport of hazardous wastes to a facility for (i.e. treatment, storage and disposal) existing in a State other than the State where hazardous wastes are generated, the occupier shall obtain 'No Objection Certificate' from the State Pollution Control Board or Committee of the concerned State of Union Territory Administration where the facility exists.
20. Unit shall take all concrete measures to show tangible results in waste generation, reduction, avoidance, reuse and recycle. Actions taken in this regard shall be submitted within three months and also along with Form-4.



GUJARAT POLLUTION CONTROL BOARD

PARYAVARAN BHAVAN, SECTOR 10-A,
GANDHINAGAR - 382010,
(T) 079-23232152

21. Industry shall have to display the relevant information with regards to hazardous waste as indicated in the Hon. Supreme Court's Order in W.P. No.657 of 1995 dated 14th October, 2003.
22. Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous wastes generated within the factory premises.

6. SPECIFIC CONDITIONS:-

- 6.1 The authorized actual user of hazardous and other wastes shall maintain records of hazardous and other wastes purchased in a passbook issued by the State Pollution Control Board along with the authorization.
- 6.2 Handling over of the hazardous and other wastes to the authorized actual user shall be only after making the entry in the passbook of the actual user.
- 6.3 In case of renewal of authorization, a self-certified compliance report in respect of effluent, emission standards and the conditions specified in the authorization for hazardous and other wastes shall be submitted to SPCB.
- 6.4 The occupier of the facility shall comply Standard operating procedure/guidelines published by MOEF&CC or CPCB or GPCB from time to time.
- 6.5 Unit shall comply provisions of E-Waste Management Rules 2016.
- 6.6 The disposal of Hazardous Waste shall be carried out as per the waste Management hierarchy.
- 6.7 The occupiers of facilities shall not store the hazardous and other wastes for a period not exceeding ninety days. Prior permission of the Board shall be obtained for extension of the storage period.
- 6.8 The occupier shall maintain the records of generation, sale, storage, transport, recycling, re processing and disposal of hazardous waste and make available during the inspection.
- 6.9 The transportation of the hazardous waste shall be carried out in GPS mounted dedicated vehicles.

7. GENERAL CONDITIONS:-

- 7.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 7.2 Applicant shall also comply with the general conditions given in annexure I.
- 7.3 Whenever due to accident or other unforeseen act or event, such emissions occur or is apprehended to occur in excess of standards laid down such information shall be forthwith reported to Board, concerned Police Station Office of Directorate of Health Service, Department of Explosives, Inspectorate of Factories and local body.

19

Page 7 of 8

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- 7.4 In case of failure of pollution control equipments, the production process connected to it shall be stopped. Remedial actions/measures shall be implemented immediately to bring entire situation normal.
- 7.5 The Environmental Management Unit/Cell shall be setup to ensure implementation on and monitoring of environmental safeguards and other conditions stipulated by statutory authorities. The Environmental Management Cell/Unit shall directly report to the Chief Executive of the organization and shall work as a focal point for internalizing environmental issues. These cells/units also coordinate the exercise of environmental audit and preparation of environmental statements.
- 7.6 The Environmental audit shall be carried out yearly and the environmental statements pertaining to the previous year shall be submitting to this State Board latest by 30th September every year.
- 7.7 The Board reserves the right to review and/or revoke the consent and/or make variations in the conditions, which the Board deems, fit in accordance with Section 27 of the Act.
- 7.8 In case of change of ownership/management the name and address of the new owners/ partners/directors/proprietor should immediately be intimated to the Board.
- 7.9 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon. Supreme order in w.p. no. 657 of 1995 dated 14th October 2003.

For and on behalf of
GUJARAT POLLUTION CONTROL BOARD


(T.C. Patel)
Unit Head

Date: - /07/2024

NO: PC/CCA-KUTCH-1437(2)/ GPCB ID-83331/
Issued to:
M/s. Mundra LPG Terminal Private Limited,
Survey no. 169/P,
Navinal Island, Mundra,
Tal: Mundra, Dist: Kutch - 370 421.

Outward No: 816485, 19/07/2024

Annexure – 7

Cost of Environmental Protection Measures

Sr. No.	Activity	Cost incurred (INR in Lacs)			Budgeted Cost (INR in Lacs)
		2022 - 23	2023 - 24	2024 - 25 (till Sep'24)	2024 - 25
1.	Environmental Study / Audit and Consultancy	7.32	22.67	1.88	27
2.	Legal & Statutory Expenses	12.32	8.60	5.00	13
3.	Environmental Monitoring Services	15.32	13.37	6.11	19.20
4.	Hazardous / Non-Hazardous Waste Management & Disposal	104.035	130.11	19.10	172.40
5.	Environment Days Celebration and Advertisement / Business development	2.53	3.42	2.80	4.00
6.	Treatment and Disposal of Bio-Medical Waste	2.29	2.28	1.20	2.28
7.	Mangrove Plantation, Monitoring & Conservation	35.0	15	0	0
8.	Other Horticulture Expenses	956	904	253	831
9.	O&M of Sewage Treatment Plant and Effluent Treatment Plant (including STP, ETP of Port & SEZ & Common Effluent Treatment Plant)	141.33	186.94	74.69	195.41
10.	Expenditure of Environment Dept. (Apart from above head)	90.136	80.39	2.19	75.92
Total		1366.28	1366.78	365.97	1340.21

Annexure – 8

APSEZL/EnvCell/2024-25/044

Date: 03/07/2024

To
The Regional Officer,
Regional Office GPCB (Kutch-East)
Gandhidham, 370201

10/07/24

Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar 382010

Sub : Submission of compliance to observation/suggestion/Instruction made by GPCB officials during inspection.

Reference : GPCB Inspection letter dated 27.06.2024, PCB ID: 35427.

Respected Sir,

With reference to the above-mentioned subject, M/s. Adani Ports and Special Economic Zone Limited (APSEZL) hereby submitting the compliance details w.r.t. your observations as below:

Sr. No.	Inspection Remarks / Observations	Our Response / Compliance status
1.	Coal burning was observed in various places at coal storage yard. Take appropriate mitigation measures to prevent the same.	<ul style="list-style-type: none"> Due to summer season and high temperature as well as based on the imported coal quality, at some places spontaneous ignition occurs in coal storage yard. For that regular water sprinkling is being practiced within the coal stack yard to combat the fire, which was also observed during your site visit. Photographs showing the same are attached as Annexure - A. We have adequate firefighting system such as sprinklers, hydrants, wet riser system, dry riser system, water bowser, water monitor, etc. for firefighting at coal yard. As well as we have placed work order for renovation of DSS with automation system & work is under progress (approx. 25% work completed), it will be helpful to prevent the spontaneous ignition in coal more effectively.
2.	Improve the housekeeping.	<ul style="list-style-type: none"> APSEZ has a dedicated housekeeping staff doing rigorous housekeeping with mechanized sweeping machine as well as increased frequency of housekeeping on internal roads & other area of the premises. Also, administrative control is taken by providing regular awareness training to housekeeping team to educate them proper housekeeping & collection of spill coal particles while doing housekeeping. Photographs of Awareness training programme is attached as Annexure B. As well as APSEZ is exploring the shifting the weighbridge location from other far location to coal yard, which will reduce internal movement of trucks/ dumpers for weighing of loaded coal cargo. Appropriate relocation work for weighbridge is under process. APSEZ is always ensuring good house keeping within plant premises by adopting various cleaner techniques.

Adani Ports and Special Economic Zone Ltd
Adani House,
PO Box No. 1
Mundra, Kutch 370 421
Gujarat, India
CIN: L63090GJ1998PLC034182

Tel +91 2838 25 5000
Fax +91 2838 25 51110
info@adani.com
www.adani.com

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

adani

Ports and
Logistics

We hope that you will find this in order in line with your requirement for further consideration and acknowledge the same.

Thank you
Yours Faithfully,

For, Adani Ports and Special Economic Zone Limited



Bhagwat Swaroop Sharma
Head - Environment

Encl: As above

Copy to:

The Unit Head (Kutch Unit),
GPCB - Head Office,
Paryavaran Bhavan Sector 10 A,
Gandhi Nagar 382010.

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Adani House, Fax +91 2838 25 51110
PO Box No. 1 info@adani.com
Mundra, Kutch 370 421 www.adani.com
Gujarat, India
CIN: L63090GJ1998PLC034182

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

Annexure – 11

Compliance Report of EMP & Mitigation Measures

Sr. No.	Suggested Measures	Compliance Status
✂ Construction Phase:		
1	Proper care is warranted while dredging which should be in a controlled manner. It should also be insured that reclamation, dredging, widening and slop stabilization measures do not significantly alter the stabilized erosional-accretional regime and prevailing rate of exchange of water between the outer area of the intricate creek system as well as the free flow of tidal water, to protect the mangroves.	<p>All construction and operation activities as well as dredging and reclamation activities are being carried out as per the approvals.</p> <p>Please refer condition no. 8 & 9 of the CRZ recommendation compliance report for further details.</p>
2	Good sanitation, water and fuel should be made available to the work force. Labour colonies should be set-up landward of the HTL and away from mangrove.	<p>Most of the construction labours resides in the nearby villages where all basic facilities are easily available. However, for those residing near the construction site, infrastructure facilities such as water supply, fuel, sanitation, first aid, ambulance etc. are provided by APSEZ. Details were submitted as a part of compliance report submission for the period Apr'17 to Sep'17.</p> <p>Please refer general condition no. ii of the EC & CRZ clearance for further details.</p>
✂ Operation Phase:		
1	Wastewater such as generated during cleaning of jetties, floor washing, domestic use etc. should be collected in a settling pond and released to marine environment only after ascertaining that it is free from oil and SS. The toilets on the jetties must have compact sewage treatment facilities.	<p>Entire quantity of sewage generated from APSEZ premises is being treated in designated ETP / STP and treated sewage is used for Horticulture purposes.</p> <p>Please refer specific condition no. xii of the EC & CRZ clearance or further details.</p>
2	Dust should be routinely monitored at the vantage points and corrective measures such as water sprinkling should be practiced if it increases beyond permissible limits.	<p>Ambient Air Quality (twice in a week) monitoring is being carried out by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi.</p> <p>Adequate safeguard measures are being taken for abatement of dust emissions.</p>

Sr. No.	Suggested Measures	Compliance Status
		Please refer specific condition no. xi of the EC & CRZ clearance or further details.
3	It should be ensured that the effluent released into the Gulf meets the prescribed GPCB criteria at all times.	Entire quantity of effluent / sewage generated from APSEZ premises is being treated in designated ETP / STP and treated water is being utilized on land for Horticulture purposes after compliance with GPCB standards. Please refer specific condition no. xii of the EC & CRZ clearance or further details.
4	Appropriate spill response scheme (Tier-1 to Tier-3) should be in place to minimize impacts on marine environment, should a spill occur.	Oil spill contingency plan 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 updated on 31.07.2022 is in place and implemented. Updated Oil spill contingency response plan was submitted in the last compliance period Apr'22 to Sep'22.
5	MPSEZL should commit mangrove restoration programme through afforestation in a defined time frame over larger and promising areas and should monitored periodically and protect from anthropogenic pressures.	APSEZ has carried out mangrove afforestation in 3890 ha. area across the coast of Gujarat. Please refer specific condition no. i & vii of the EC & CRZ clearance or further details.
6	A comprehensive marine quality monitoring programme with periodic investigations at predetermined locations should be undertaken by a specialized agency.	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. Please refer specific condition no. ix of the EC & CRZ clearance or further details.
7	The dust and noise levels at pre-decided locations including the jetty sites should be periodically monitored and remedial action taken if the levels exceed the prescribed norms.	Ambient Air Quality (twice in a week) and Noise (once in a month) monitoring are being carried out by NABL and MoEF&CC accredited agency namely M/s. Unistar Environment and Research Labs Pvt. Ltd., Vapi. Please refer specific condition no. xi of the EC & CRZ clearance or further details.
8	MPSEZL should establish an Environment Management Cell	M/s APSEZL has a well-structured Environment Management Cell, staffed

Sr. No.	Suggested Measures	Compliance Status
	(EMC) directly under the control of the Chief Executive.	with qualified manpower for implementation of the Environment Management Plan at site. Site team report to Sr. Manager (Environment) at Corporate, who heads the Environment Management Cell who directly reports to the top management. Environment Management Cell Organogram were submitted as part of compliance report submission for the duration of Apr'21 to Sep'21. And there is no further change.

Annexure – 10

AREA LEVEL POLLUTION RESPONSE TRAINING/EXERCISE- 2024 REPORT
02-03rd MAY 2024

Date: 02-03 May 2024	Exercise: Area Level PR Exercise
Name: Mr. Shashank Badola	Position: Radio Officer
Contact Number: 9825228673	Location: APSEZL, Mundra

Date: 02 May 2024: Final Planning and Tabletop Exercise

0930-1230 hrs: Tabletop Exercise carried out at Indian Coast Guard Station Mundra. Participants- APSEZ Mundra and HMEL.

Date: 03 May 2024- Mock OSR drill

Location- Near IOCL SPM (22° 41' N 069° 39.2' E)/APSEZL, Mundra

Drill Activity Timeline:

1000 hrs.: ICGS Informed regarding commencement of drill.

1005 hrs.: Tug Ocean Citrine immediately reported to Marine Control and Diving Supervisor that due to internal explosion observed two 6 inches hole in 1st Wing starboard tank but no injury, no casualty and no fire occurred. Maneuvering capability is intact. There are 33 crew on board, head count taken and all present.

1006 hrs.: Marine Control informed Marine HOD/HOS and all concerned departments.

1007 hrs.: Ocean Citrine team was asked to take the sounding of damaged tanks and all other tanks.

1009 hrs.: Ocean Citrine commenced boom deployment.

1010 hrs.: Commenced internal transferring of oil from damaged tank to 3rd Wing starboard tank.

1011 hrs.: Ocean Citrine informed her company DPA about the incident.

1011 hrs.: Marine Control informed all vessels at anchor regarding oil spill near IOCL SPM area. The control room requested all underway vessels to pass 5 miles from IOCL SPM. Unberthing operations suspended.

1012 hrs.: Ocean Citrine requested Marine Control for Barge BB-10, tug and additional boom standby in case more support required.

1013 hrs.: Dredging head informed for the deployment of BB10 and make ready.

1014 hrs.: Marine Control informed Tug Dol 17 & 18 to standby with OSD for spraying.

1015 hrs.: Informed commercial team (Mr. Jagdish Rabadia), environment cell (Mr. Radhe Shyam Singh) and Liquid Control Room by Mr. Sudhakar Singh about the drill/incident to be in immediate readiness.

1016 hrs.: Marine Control informed Barge BB-10 along with Tug Dol 10 to be stand by.

1017 hrs.: Security department were informed to allow entry of authorized persons, emergency vehicles without any delay and OHS/Adani hospital to be on alert.

1018 hrs.: Barge BB-10 underway with Tug Dol 10 to IOCL SPM.

1019 hrs.: Ocean Citrine informed internal transferring in progress and spillage rate getting reduced and hole came up to half meter above water level.

1020 hrs.: Ocean Citrine reported 150m boom deployed and continued to deploy the remaining 100 meters and reported wind speed 12-14 knots and direction westerly.

1021 hrs.: Capt. Girish Chandra informed Commandant Konark Sharma ICGS Mundra about the incident through phone.

1023 hrs.: Marine Control informed jetty team to be stand by with crew for mooring the Barge BB-10 at B-6 berth. Jetty supervisor also informed to deploy one hydra for loading/unloading of OSR equipment at SPM Store and jetty.

1025 hrs.: Ocean Citrine informed that spill is spread in an area of around 35-50 m².

1039 hrs.: Ocean Citrine reported 250 m boom deployment completed and commenced J-formation.

1040 hrs.: Mr. Mahendra Singh Solanki from Corporate affairs informed DM Bhuj office about the incident.

1041 hrs.: Initial intimation mail sent to GMB/MMD Kandla/Coast Guard Station/MRCC.

1050 hrs.: Ocean Citrine reported J-formation completed, and oil containment is in progress and commenced skimmer deployment. And this is HSD so it is volatile in nature, hence deploying resources to contain.

1052 hrs.: Barge BB-10 arrived at IOCL SPM with Tug Dol 10.

1053 hrs.: Skimmer lowered and commenced recovering of spilled oil to floating tank.

1054 hrs.: Barge BB-10 secured P/S of Ocean Citrine and commenced transferring of oil in barge BB-10.

1055 hrs.: Liquid team informed Marine Control that motor pump and other equipment is standby at berth B-6.

1056 hrs.: Liquid team informed Marine Control that 6 no. of Tanker/bowser arrived and standby at berth B-6.

1100 hrs.: Ocean Citrine reported approx. 1 T of recovered oil loaded in barge BB-10.

1105 hrs.: Recovery of spilled oil completed (1 T).

1118 hrs.: Drill called off and at the same time informed all concerns.

1119 hrs.: BB-10 cast off and proceed to B-6 berth for transfer of oil for disposal.

1120 hrs.: Boom recovery started.

1125 hrs.: Area assessed by diving team for recovered oil and confirmed all clear.

1128 hrs.: Informed environment team for water sampling of spillage area.

1145 hrs.: Environment team informed that area is clear of oil and no harm for sea.

1147 hrs.: BB-10 arrived at B-6 berth.

1155 hrs.: Liquid team started loading oil from BB-10 to tankers for disposal.

1210 hrs.: Tanker loaded with oil departed from B-6 for disposal of oil at Oil Water Separator unit.

1235 hrs.: Tanker reached Oil Water Separator unit.

1240 hrs.: Recovered oil transfer from tanker to OWS unit completed.

1255 hrs.: Environment team informed that GPCB approved recycler has executed disposal.

1315 – 1330 hrs.: De-briefing carried out at Adani House in presence of Capt. Santosh Kumar Darokar, Principal Officer MMD Kandla.

Personnel & Boats Participated in Drill

Off Shore

1. Capt. Hemant Dhruv-APSEZL
2. Capt. Sonu Yadav-APSEZL
3. Capt. Lalji Meena - Harbor Master DPA
4. Mr. Vikram Pratap Singh-APSEZL
5. Mr. Ashok Tiwari - HMEL
6. Mr. MP Choudhary, APSEZL
7. Mr. Shashikant Padave-APSEZL
8. Mr Ayush Jha, APSEZL Mundra
9. Mr. Narayan -APSEZL
10. Mr. Dharamveer Yadav-APSEZL
11. Members from M/s Sea Care – 04
12. Crew of Tug Ocean Citrine
13. Crew of Tug KB 48
14. Tug Dol 10 and BB10
15. ICGS Mundra – 02

16. Mr. Abhishek -APSEZL/Environment

Onshore:

1. Capt. Girish Chandra
2. Sudhakar Singh
3. Mr. Shashank Badola
4. Mr. Rajeev Kumar
5. Mr. Om Prakash Yadav

Drill Performance Monitoring:

Sl. No	Activity	Time Taken
1.	Time taken to shift OSR equipment from SPM Store to load on DSV tugs	NA / 200-meter Fence boom and 1- skimmer is kept 24 x 7 on Tug Ocean citrine.
2.	Time taken for Tug cast off from time information given.	NA
3.	Time taken from tug cast off to Reach at Location.	NA
4.	Time taken for deploying 250-meter boom and skimmer after reaching at site.	30 min.
5	Time taken for J/U formation and deployment of skimmer.	11 min.

Observations:

SR. NO	POINTS	ACTION TAKEN	TARGET DATE	RESPONSIBILITY	REMARKS
1	Internal communication on tug should be streamlined specially between deck and bridge.	Point discussed during de-brief	10.05.2024	HMEL	
2	There should be pads on the roller to avoid chafing against metal at aft end of deck where lowering of boom deployment is done.	Point discussed during de-brief	31.07.2024	HMEL	
3	Bow thruster must be made readily available immediately in such emergencies.	Point discussed during de-brief	04.05.2024	HMEL	

Tabletop Exercise- 02 May 2024

Drill Scenario presented by ICG



Table top Discussion with the participants



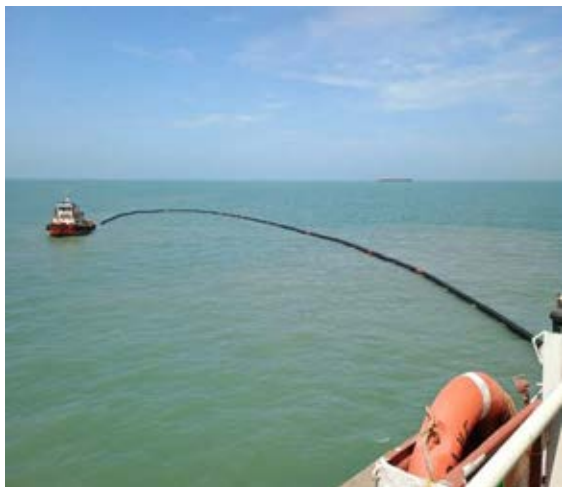
PR Drill snap – 03 May 2024

Area Level Pollution Response Exercise at IOCL SPM

Boom laying from Tug Ocean Citrine



J formation making in progress



Skimmer Operations



Area Level Pollution Response Team on Tug Ocean Citrine



De-briefing at Adani House



Annexure – 11

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	Sep-2024-25	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	476,000	5,496,638	54.97
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	2,783,545	39,654,314	396.54
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	833,000	13,986,780	139.87
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	382,000	16,879,975	168.80
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	-	137,000	10,861,936	108.62
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	4,611,545	150,662,969	1,506.63

Annexure – 12

GRASSLAND DEVELOPMENT PROJECT VILLAGE: ZARPARA, MUNDRA (KUTCH)

ICAR-INDIAN GRASSLAND AND FODDER RESEARCH INSTITUTE, RECOMMENDATION COMPLIANCE

Site Visit Date by IGfRI: 8-10 May, 2023

Places visited: Zarapara Village, Mundra, Gujarat

Purpose: To assess the physical status of site, assess the palatable grass and legume diversity and develop location specific plan for development of grasslands.

Initiated By: Adani Foundation, Mundra

Period of Compliance Report: Apr'24 to Sep'24

Sr. No.	IFgRI Recommendation	Compliance as on 30.09.2024
1.	<p>Area cleaning work: For the removal of <i>Prosopis juliflora</i> (Gando baval), cleaning of bushes should be done at least two consecutive years so that small regenerating bushes should also get removed.</p>	<p>Partially Complied.</p> <p>Phase wise removal of <i>Prosopis juliflora</i> (Gando Baval) and bushes has been done from 10 acre area for grass land development. Project progress report of 10 ha area was submitted during the Compliance report for the period Apr'23 to Sep'23.</p> <p>Balance project area will be clean phase wise & need basis.</p>
2.	<p>Site protection: Fencing either using barbed wire, trenches or bio-fence species (bamboo, bushes and thorny shrubs, etc.) should be carried out to ensure proper establishment of the site. Initial protection from grasslands and pastures ensure better establishment and higher biomass production.</p> <ul style="list-style-type: none"> • Cattle-proof trench should be of 2 m width and 1.5-meter depth. • Bio fence options like bamboo species may also be tried for the long term as it takes 5-6 years for complete protection of the site. 	<p>Partially Complied.</p> <p>Project site has been fenced by barbed wire in 10-acre area as well as Cattle proof trench (1.5 m width & 1.0 m depth) has been provided around 40 acre grass land development project area. Project progress report of 10 ha area was submitted during the Compliance report for the period Apr'23 to Sep'23.</p> <p>Balance project area will be clean phase wise & need basis.</p> <p>And Bio fence work with bamboo or other relevant species will be done phase wise.</p>
3.	<p>Choice of species: Selected species should be suitable for climatic and edaphic conditions. Moreover, they should be fast-</p>	<p>Partially Complied.</p>

GRASSLAND DEVELOPMENT PROJECT VILLAGE: ZARPARA, MUNDRA (KUTCH)

	<p>growing, easy to establish, nutritious, and easy to manage. List of suitable grasses and legumes species for the establishment of grassland and pasture at the site under this region have been provided below:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th colspan="3" style="text-align: center;">Suitable Grass Species</th> </tr> <tr> <th style="width: 5%;">Sr. No.</th> <th style="width: 35%;">Botanical Name</th> <th style="width: 60%;">Common Name</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td><i>Cenchrus ciliaris</i></td> <td>Anjan (H) Buffel Grass (E)</td> </tr> <tr> <td>2.</td> <td><i>Cenchrus setigerus</i></td> <td>Dhaman (H) Bird Wood Grass (E)</td> </tr> <tr> <td>3.</td> <td><i>Dichanthium annulatum</i></td> <td>Chhijhavo (G) Marvel Grass (E)</td> </tr> <tr> <td>4.</td> <td><i>Lasiurus indicus</i></td> <td>Sewan Grass (H)</td> </tr> <tr> <td>5.</td> <td><i>Brachiaria mutica</i></td> <td>Para Grass (E) Buffalo Grass (E)</td> </tr> <tr> <td>6.</td> <td><i>Megathyrus maximus</i></td> <td>Guinea Grass (E)</td> </tr> <tr> <td>7.</td> <td><i>Chloris guyana</i></td> <td>Rhodes Grass (E)</td> </tr> <tr> <td>8.</td> <td><i>Bothriochloa pertusa</i></td> <td>Fulkara (H) Forest blue Grass (E)</td> </tr> <tr> <th colspan="3" style="text-align: center;">Suitable legume Species</th> </tr> <tr> <td>9.</td> <td><i>Desmanthus virgatus</i></td> <td>Dashrath Ghas (H) Hedge lucerne</td> </tr> <tr> <td>10.</td> <td><i>Atylosia scarabaeoides</i></td> <td>Bankulthi (H)</td> </tr> <tr> <td>11.</td> <td><i>Lablab purpureus</i></td> <td>Dolichos (E) Lablab Bean (E) Sem (H)</td> </tr> <tr> <td>12.</td> <td><i>Macroptilium atropurpureum</i></td> <td>Siratro (E)</td> </tr> </tbody> </table>	Suitable Grass Species			Sr. No.	Botanical Name	Common Name	1.	<i>Cenchrus ciliaris</i>	Anjan (H) Buffel Grass (E)	2.	<i>Cenchrus setigerus</i>	Dhaman (H) Bird Wood Grass (E)	3.	<i>Dichanthium annulatum</i>	Chhijhavo (G) Marvel Grass (E)	4.	<i>Lasiurus indicus</i>	Sewan Grass (H)	5.	<i>Brachiaria mutica</i>	Para Grass (E) Buffalo Grass (E)	6.	<i>Megathyrus maximus</i>	Guinea Grass (E)	7.	<i>Chloris guyana</i>	Rhodes Grass (E)	8.	<i>Bothriochloa pertusa</i>	Fulkara (H) Forest blue Grass (E)	Suitable legume Species			9.	<i>Desmanthus virgatus</i>	Dashrath Ghas (H) Hedge lucerne	10.	<i>Atylosia scarabaeoides</i>	Bankulthi (H)	11.	<i>Lablab purpureus</i>	Dolichos (E) Lablab Bean (E) Sem (H)	12.	<i>Macroptilium atropurpureum</i>	Siratro (E)	<p>Land leveling & plowing work has been done 10 Acre land and Zinzwa & Dharaman grass species is being growing with using Organic Manure/Bio-fertilizer with coordination with Adani foundation & Sarpanch of PRI- Zarapara with PRI-Member.</p> <ul style="list-style-type: none"> Per acre 3 to 4 tons organic manure in fodder development plot. Liquid fertilizer – Jivamrut & Gaukrupa Amrutam Per acre 200 to 300 liters
Suitable Grass Species																																															
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4.	<p>Sowing: In the case of legumes, direct sowing is carried out and in case of grasses either rooted slips/nursery raised plants are planted in the field or direct sowing is carried out. If grass legume mixture is to be grown then it is preferred in the ratio 2:1. Grasses should be sown at 50 × 50 cm spacing and when grown as a mixture with legumes spacing should be 100 × 100 cm and in the interspace of two rows of grass; one line of legume is to be sown. Sowing depth is very essential for proper seed germination. Depth of sowing for grasses should be between 0.5- 1.0 cm; for legumes sowing depth should be 2-4 cm. For grasses with light seeds, seed rate is 4-6 kg/ha and for grasses with heavy seeds seed rate is kept as 8-10</p>	<p>For fodder support to village cattle's the Sorgham (Jwar) is being showing in 5 acre area out of 10 acre area (1st phase developing area). Project progress report of 10 ha area was submitted during the Compliance report for the period Apr'23 to Sep'23.</p> <p>Balance project area will be clean phase wise & need basis.</p>																																													

GRASSLAND DEVELOPMENT PROJECT VILLAGE: ZARPARA, MUNDRA (KUTCH)

<p>kg/ha. Sowing of grasses and legumes is carried out during the month of July.</p> <p>Techniques for Grass Nursery Raising: The seed is the primary material for establishing the grasslands (pastures in forage species particularly grasses, and the seed production varies from species to species. When the seed becomes a ting faster seedlings/rooted slips are the only alternate source for establishing the pasture these seeding are raised in nursery.</p> <p>Establishment of Nursery:</p> <ul style="list-style-type: none"> • Nursery beds should carefully be prepared and cleaned from all rank growth including weeds by pulling out and burning. Generally, the nursery is raised during May (5-6 week old seedlings are required) and for this 6m x 6m beds are common. • The bed should be thoroughly ploughed and 30 kg Farm Yard Manure, 0.25 kg urea, 0.5 kg Single Super Phosphate and 50g BHC may be mixed thoroughly as a basal dose in each bed. • The bed is watered for 4 to 6 days, so weeds would come up which are to be removed. About 2g Bavistin is mixed with sun-dried seeds. • For proper sowing sand is mixed with seeds and then the seeds are sown 5-6 mm deep in line. The distance from the line to the line should be 10 cm. • After sowing it may be covered with a thin layer of soil immediately and the bed may be mulched with straw/wet gunny bags or any locally available material for a period of 4-6 days continuously to allow the seed germination. • Watering may be done twice a day in the morning and evening with a rose can. • The germination starts from 3rd day and get completed within a week. After full germination mulch/gunny bags are removed. In places where the day temperature is very high, it may be necessary to provide shade to seed beds in order to protect delicate seedlings The shade may be removed after 30 days of sowing but the beds are watered every alternate day with necessary weeding. • Germination of dehusked seeds is recorded as 94-98 percent as compared to husked seeds, which is 35-42 percent. The stored seeds show better 	<p>The nursery & seed collection work is being under progress by Adani foundation with coordination of Sarpanch of PRI-Zarapara & PRI-Member.</p>
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GRASSLAND DEVELOPMENT PROJECT VILLAGE: ZARPARA, MUNDRA (KUTCH)

	<p>germination as compared to freshly collected ones. About 40-50 g of grass seeds are used for each bed. Such 12 beds are required to provide seedlings for one hectare land.</p> <ul style="list-style-type: none"> For better growth of seedlings the crop should be top dressed with Calcium Ammonium Nitrate (10 kg N/ha) Grass seedlings will be ready for transplanting after 4 to 6 weeks when they attain 15 to 25 cm height. <p>Planting Technique: Seedlings/rooted slips are transplanted in a well-prepared field immediately after the onset of monsoon. Land preparation is done through desi plough, two to three ploughings are sufficient Farm Yard manure @ 10-12 cartloads per hectare and BHC (10%) are mixed at the time of land ploughing.</p>	
5.	<p>Combining grasses and legumes: mixed sowing of grasses and legumes ensures enhanced production per hectare basis and the quality of the feed increases by 4-5 times which is prerequisite for gaining higher livestock production. These legumes in degraded grasslands, pastures, waste and barren lands also increase the duration of availability of green forage biomass from 3-4 to 7-8 months owing to longer growing period of legumes.</p>	<p>Point noted & being complied.</p> <p>Under this activity Jinjawa / Marvel grass is being growing to enhance production of fodder by Adani foundation with coordination of Sarpanch of PRI-Zarapara & PRI-Member. The Fodder Development Report attached as Annexure – a.</p>
6.	<p>Fertilizer application: Initially for grasses and legumes, fertilizers like nitrogen, phosphorus and potassium are applied for ensuring high biomass production. Pelleting of 2-3 grass seeds together with cow dung, tank silt or clay and sand (1:1:3:1) to form a ball of 4-5 mm diameter should be done to facilitate sowing and germination of light seeds of the grasses.</p>	<p>In first phase 10-acre area has been developed for grass land. The Sorghgam (Jwar) is being growing in 10-acre area (1st phase developing area) for fodder support and bio fertilizer (Cow Dung) & Jivamrut Amrutam is being using for growing the fodder.</p>
7.	<p>Weeding: Initial weeding to remove undesired species should be carried out especially just after the germination of grasses and legumes to ensure their proper establishment.</p>	<p>Point noted and is being complied.</p> <p>Presently weeding activity is being done in 1st phase developing area (10 acre).</p> <p>Same activity will be adopted for balance developing area as per phase wise/need basis.</p>
8.	<p>Harvesting and management: Application of recommended doses of N P K Fertilizer for grasses and legumes species is essential. Potassium and phosphorus should be applied as basal dose and nitrogen in two/three split doses. In case of legumes nitrogen can also be applied as a basal dose. Harvesting/Cutting of grasses and</p>	<p>Point noted & will be complied.</p> <p>Presently 10-acre area is being developing for grass land. The Sorghgam (Jwar) is being growing in 5 acre area out of 10</p>

GRASSLAND DEVELOPMENT PROJECT VILLAGE: ZARPARA, MUNDRA (KUTCH)

	<p>legumes should be carried out based on their maturity stage and growth. Harvesting of forage biomass should be carried out before dormancy so that there is sufficient reserve available for ensuring successful re-growth in next 11 season. The frequency of cutting should be species-specific and should be decided based upon species growth, regeneration capacity.</p> <p>If grazing is to be allowed, then rotation grazing should be followed and over stocking should be avoided. During the first year, legume crops should be allowed to set and shed seeds so that a high population of legumes can be ensured in the coming year. After 4-5 years, reseedling of forage legumes should be done as its population declines with age. In case of grasses, reseedling is to be carried out after 7-8 years due to decline in their production.</p>	<p>acre area (1st phase developing area) for fodder support and with using Organic Manure/Bio-fertilizer & Jivamrut Amrutam is being using for growing the fodder.</p> <ul style="list-style-type: none"> • Per acre 3 to 4 tons organic manure in fodder development plot. • Liquid fertilizer – Jivamrut & Gaukrupa Amrutam • Per acre 200 to 300 liters 																
<p>9.</p>	<p>Incorporation of fodder trees on grasslands and pastures: During winter and summer seasons, grasses enter the dormancy phase and there is no green fodder available for livestock. In such a situation, fodder trees owing to their protein, mineral, macro and micronutrient-rich leaves can ensure supply of green fodder. Local fodder tree species can be planted 5-7 meters apart on grasslands during the monsoon season. The fodder from the trees is available after 5-6 years depending on species and location.</p> <p>Suitable Fodder Tree Species</p> <table border="1" data-bbox="321 1113 1015 1428"> <thead> <tr> <th>Botanical Name</th> <th>Common Name</th> </tr> </thead> <tbody> <tr> <td><i>Acacia nilotica</i></td> <td><i>Desi Babul</i></td> </tr> <tr> <td><i>Ailanthus excelsa</i></td> <td><i>Ardu</i></td> </tr> <tr> <td><i>Azadirachta indica</i></td> <td><i>Neem</i></td> </tr> <tr> <td><i>Leucaena leucocephala</i></td> <td>Subabul</td> </tr> <tr> <td><i>Harwickia binata</i></td> <td>Anjan</td> </tr> <tr> <td><i>Prosopis cineraria</i></td> <td>Khejri</td> </tr> <tr> <td><i>Zizyphus numularia</i></td> <td>Indian jujube</td> </tr> </tbody> </table>	Botanical Name	Common Name	<i>Acacia nilotica</i>	<i>Desi Babul</i>	<i>Ailanthus excelsa</i>	<i>Ardu</i>	<i>Azadirachta indica</i>	<i>Neem</i>	<i>Leucaena leucocephala</i>	Subabul	<i>Harwickia binata</i>	Anjan	<i>Prosopis cineraria</i>	Khejri	<i>Zizyphus numularia</i>	Indian jujube	<p>Point noted & will be complied.</p> <p>Under this activity Various types of fodder trees was planted for supporting of fodder availability during the winter & summer season by Adani foundation with corporation of Sarpanch of PRI-Zarapara & PRI-Member.</p>
Botanical Name	Common Name																	
<i>Acacia nilotica</i>	<i>Desi Babul</i>																	
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ANNEXURE - a

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ZARPARA FODDER LAND DEVELOPMENT REPORT

APRIL TO SEPTEMBER 2024





Objectives:

1. Develop fertile land for high-quality fodder production.
2. Provide nutritious grass for cattle, improving their health and productivity.
3. Enhance milk yield and quality for financial benefits to cattle owners.
4. Promote natural fertilizers from improved cattle dung for better soil fertility and organic farming.

OUR VISION

- To enhance the livelihoods of cattle owners in Zarpara village by ensuring sustainable fodder production that supports better cattle health, boosts agricultural productivity, and strengthens rural economies.
- Through the Adani Foundation's CSR initiative, support cattle owners by cultivating nutritious fodder; improving cattle health.



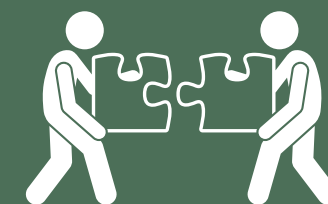
Fodder Cultivation:

Sorghum and Super Napier grass were planted and cultivated in Zarpara village.



Regular Monitoring:

Adani Foundation staff conducted regular visits to oversee fodder growth and ensure best practices.





Land Utilization & Fodder Produce in one Cycle:



Area:
5 acres



Fodder:
15,200 Kg



723 Cattle
benefited

Highlights of work done:



Sorghum and Super Napier grass plantation
in Zarpara village.



Cattle graze on the available fodder, ensuring
efficient use of resources.



Once grazing is complete, the land is thoroughly
cleaned and prepared for future use.

Second Cycle:



Super Napier grass plantation in Zarpara village in 5 acer area.



Tree Plantation:

Additionally, 500+ trees are planted along the entire 10-acre boundary fencing, improving the ecological balance of the area.



SDG Achieved:

Goal 2: Zero Hunger

Goal 3: Good Health and Well-being

Goal 12: Responsible Consumption and Production

Goal 15: Life on Land



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Foundation

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Metals

Thank You!



Annexure – 13

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 87.14 % Occupancies are accommodated within the townships and rest are available for employees working within APSEZ.</p> <p>At present 61 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.						expanded as per requirement. 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.
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	Technical Study - one time, Implementation - Continual process	Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies, 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

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
			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 is attached as Annexure - i . During compliance period FY 2024-25 till Sep'24 total recorded rain fall was 1349 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.

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
			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>1. NCSCM (MoEF&CC promoted Government Agency) study on comprehensive and integrated plan for preservation and conservation of mangroves and associated creeks in and around</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
	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.		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>APSEZ in year 2016-17. The cost of said study was 3.15 Cr, which was incurred by APSEZ.</p> <p>As a part of mangrove conservation plan, APSEZ has done following activities.</p> <ol style="list-style-type: none"> a. Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island through NCSCM, Chennai. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. b. Tidal observation in creeks in and around APSEZ – The cost of the said activity was INR 1.0 Lacs incurred by APSEZ. c. Algal & Prosopis removal from Mangrove area - The cost of the said activity was Rs. 80000 during FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24. d. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 132.0 Lacs during FY 2024-25 till Sep'24 which was incurred by APSEZ. This activity is being done on continuous basis as a part of CSR activity. <p><u>Summary of Conservation of mangroves:</u></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				
							Mangrove mapping Year	Monitoring Agency	Mangrove cover total Area (Ha.)	Mangrove cover area Increased	
									Hac.	%	
							2011	NCSCM	2094	-	-
						2011 to 2016-17	2340		246	11.75%	
						2017 to 2019 till March	NCSCM	2596	256	10.94%	
						2019 to 2021 till March	GUIDE	2723	127	4.89%	
						Total		2723	629	--	
<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>As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.</p>											
							Sr	Recommendations	Compliance		

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		
							No.		
							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 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

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									<p>around APSEZ, Mundra is 502 Ha between 2011 and 2019.</p> <ul style="list-style-type: none"> • 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.

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>Summary of Mangrove mapping and monitoring (from 2011 to 2021):</p> <table border="1"> <thead> <tr> <th data-bbox="1635 721 1740 906" rowspan="2">Mangrove mapping Year</th> <th data-bbox="1740 721 1845 906" rowspan="2">Mangrove cover total Area (Ha.)</th> <th colspan="2" data-bbox="1845 721 1997 802">Mangrove cover area Increased</th> </tr> <tr> <th data-bbox="1845 829 1887 906">Ha. c.</th> <th data-bbox="1887 829 1997 906">%</th> </tr> </thead> <tbody> <tr> <td data-bbox="1635 906 1740 959">2011</td> <td data-bbox="1740 906 1845 959">2094</td> <td data-bbox="1845 906 1887 959">-</td> <td data-bbox="1887 906 1997 959">-</td> </tr> <tr> <td data-bbox="1635 959 1740 1094">2011 to 2016-17</td> <td data-bbox="1740 959 1845 1094">2340</td> <td data-bbox="1845 959 1887 1094">246</td> <td data-bbox="1887 959 1997 1094">11.75%</td> </tr> <tr> <td data-bbox="1635 1094 1740 1256">2017 to 2019 till March</td> <td data-bbox="1740 1094 1845 1256">2596</td> <td data-bbox="1845 1094 1887 1256">256</td> <td data-bbox="1887 1094 1997 1256">10.94%</td> </tr> <tr> <td data-bbox="1635 1256 1740 1414">2019 to 2021 till March</td> <td data-bbox="1740 1256 1845 1414">2723</td> <td data-bbox="1845 1256 1887 1414">127</td> <td data-bbox="1887 1256 1997 1414">4.89%</td> </tr> </tbody> </table>		Mangrove mapping Year	Mangrove cover total Area (Ha.)	Mangrove cover area Increased		Ha. c.	%	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%
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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 FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24. 			
							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 			

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>green fodder to 25 Villages. Project is covering total 15005 Cattels and hence enhancing cattle productivity. Dry Fodder 10,90,875 Kg Green – 27,64,920 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. 132.0 Lacs during FY 2024-25 till Sep'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. • APSEZ has celebrated the International Day for the Conservation of the Mangrove Ecosystem on 24th to 26th July 2024 to raise awareness of the importance of mangrove ecosystems as "a unique, special

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		and vulnerable ecosystem". The report for the same is attached as Annexure - 1.											
		• Refer CSR report attached as Annexure - 2.											
1.4	Development activities along the coast might cause certain changes in hydro-dynamic characteristics along the		Detailed hydro-dynamic modelling and shoreline change prediction for a fully developed APSEZ facility has	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</p>						

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	<p>shoreline. Shoreline of any area also can be influenced by storm surges and other natural processes.</p>		<p>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 ± 0.5 m/year. which reconfirms that the waterfront development activities of APSEZ would pose insignificant impact on the Mundra shoreline.</p>				<p>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> <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>As per GUIDE 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>

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							<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> <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 906 2013 1182"> <thead> <tr> <th rowspan="2">Period</th> <th rowspan="2">Name of the block</th> <th rowspan="2">Average Shoreline Change(M/Year)</th> <th colspan="2">Shoreline Change(M)</th> </tr> <tr> <th>Maximum Accretion</th> <th>Maximum Erosion</th> </tr> </thead> <tbody> <tr> <td rowspan="2">2015-2022</td> <td>West Port</td> <td>-11.43</td> <td>39.86</td> <td>-78.68</td> </tr> <tr> <td>Eastern side</td> <td>-26.60</td> <td>191.32</td> <td>-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</p>	Period	Name of the block	Average Shoreline Change(M/Year)	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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2015-2022	West Port	-11.43	39.86	-78.68																			
	Eastern side	-26.60	191.32	-165.19																			

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							<p>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 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>

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							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.
2	Regional Traffic Management Plan						
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	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	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	APSEZ	As and When Required	Presently, ~ 51.7 % of the total SEZ is developed. Based on technical studies, Existing road/rail/conveyer infrastructure facilities are adequate to evacuate the existing cargo. Further, APSEZ's cargo evacuation through rail / conveyer / pipeline has ~59.01 %. Additional Road facilities will be built as per master plan considering future development. 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.

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	<p>18,300 and 10,400 vehicles per day respectively .</p> <p>There could be a possible increase in traffic congestions on village-highway intersections and road accidents.</p>		<p>in the respective villages. The carrying capacity of the eight 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</p>	network.			

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			were already developed and functional.				
			APSEZ has been imparting Driver Training Programs to all their contractors to enhance awareness on road safety.	APSEZ can undertake technical feasibility of implementing Intelligent Transport System (ITS) for the freight carriers associated with their development activities.	APSEZ & GSRDC*	Long Term	<p>APSEZ is being imparting the regular in-house training awareness program in different mode i.e., classroom, 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 & HVM ✓ 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. 1865 Participants (On roll and contractual manpower) were benefitted from above trainings in compliance period Apr'24 to Sep'24. The same will be continued in future also.</p>

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							<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> <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.

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							<ul style="list-style-type: none"> ✓ 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 license/Speed checks/Documents) is being followed by the drivers. ✓ 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,	No-Impact	APSEZ is meeting the current water	As per the master plan and permissions granted under	APSEZ	As and When Required	Presently there are two fresh water sources available with APSEZ. Desalination Plant – 47 MLD

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	water demand will be in the order of 4,30,000 m ³ /day (430 MLD). APSEZ will be sourcing majority of the water from the captive desalination plants, which will be developed in progressive manner.		demand through Narmada water supply scheme and 47 MLD captive 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.	EC, APSEZ will be developing progressively 4,50,000 m ³ /day (450 MLD) of desalination plants to meet the future demand. Hence stress on regional water resources due to these developmental projects will be less significant.			<p>Gujarat Water Infrastructure Limited (GWIL) – 9 MLD (sanctioned capacity).</p> <p>Current water demand for APSEZ along with SEZ industries including Adani Power Plant is an avg. of 28.78 MLD.</p> <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	Level-2	Adani Foundation has been	Adani Foundation is planning to	APSEZ and CGWB*	Long Term	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

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	<p>the Mundra taluk is estimated as 8500 m³/day (@55 lpcd) and the 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</p>		<p>contributing to various watershed development projects in the Mundra region to 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>implement the various water resource conservation programs in next ten years under various schemes.</p>			<p>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. 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>Water Conservation Projects completed during last Compliance period:</p>

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	<p>communities is met through Narmada water supply system to 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</p>						<p>Water Conservation Projects:</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="1398 922 2011 1203"> <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="1398 1260 2011 1369"> <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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	development, there could be some stress on the ground water resources in future.						<table border="1"> <tr> <td data-bbox="1390 565 1446 760">1</td> <td data-bbox="1446 565 1654 760">Check dam Restrengthening-Nana Kapaya</td> <td data-bbox="1654 565 1711 760">1</td> <td data-bbox="1711 565 1833 760">Water Storage Capacity increased by 48000 Cum</td> <td data-bbox="1833 565 2022 760">60 + farmer's 120+Acre Area of Agri land can be Irrigated</td> </tr> <tr> <td data-bbox="1390 760 1446 979">2</td> <td data-bbox="1446 760 1654 979">Recharge Borewell</td> <td data-bbox="1654 760 1711 979">21</td> <td data-bbox="1711 760 1833 979">Reduce Salinity ingress, and preventing water run</td> <td data-bbox="1833 760 2022 979">150+ farmer's 260+ Acre Area of Agri land for Irrigated</td> </tr> <tr> <td data-bbox="1390 979 1446 1141">3</td> <td data-bbox="1446 979 1654 1141">Pipe Culvert at Checkdamat Bhujpur</td> <td data-bbox="1654 979 1711 1141">1</td> <td data-bbox="1711 979 1833 1141">prevent water runoff into seaside.</td> <td data-bbox="1833 979 2022 1141">35 farmers' 120+Acre Area of Agri land can be Irrigated</td> </tr> </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. 	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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							<ul style="list-style-type: none"> • 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>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 8824.17 lakhs from April – 2018 to September– 2024 for CSR</p>

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							activities which also includes water conservation projects as mentioned above.
3.3	It is estimated that about 60,000 m ³ /day (60 MLD) of sewage will be generated from the APSEZ facility when the project is fully developed.	No Impact	Seven sewage treatment plants with an aggregate capacity of 3.1 MLD have already built at APSEZ. Treated sewage is utilized for greenbelt development and sewage is not discharged into either seasonal natural streams or marine environment.	APSEZ is permitted to develop decentralized sewage treatment plants of total 62 MLD capacities. Existing sewage treatment facilities will be augmented progressively based on the development at APSEZ in future. Similar to existing practices, treated sewage will be utilized for greenbelt development.	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 individual 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 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. 2.52 MLD of wastewater (into ETP, STPs & CETP) is treated and being utilized on land for horticulture purpose within APSEZ premises during Apr'24 to Sep'24. Existing wastewater treatment plants are adequate to treat and handle the total effluent / sewage load considering current</p>

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							development. Existing wastewater treatment facilities will be augmented, or new plants will be developed on modular basis considering future requirement.
4	Air quality management Plan						
4.1	Although all the regulated activities in the study area will be adopting promulgated emission norms, total air emission mass discharge from the study area would increase.	Level-2	APSEZ and other thermal power plants have obtained valid consent to operate and have been operating the facilities as per the emission norms stipulated in respective consent orders. APSEZ and other two power plants	All existing and new industrial establishments will obtain requisite consents from GPCB and adhere to the stipulated emission norms regulations and guidelines issued by authorities from time to time.	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. 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 (Apr'24 to Sep'24) are as below.</p> <p>Locations: 18 Nos. (APSEZ – 15 + APL – 3 including 4 villages)</p>

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			<p>are monitoring the ambient air quality on regular intervals as per GPCB/CPCB guidelines and the data is analyzed and presented to GPCB on monthly basis. Both the thermal power plants located within the study area have installed continuous emission and air quality monitoring instruments</p>				<p>Frequency: Twice in a week</p> <table border="1" data-bbox="1398 602 2013 932"> <thead> <tr> <th>Parameter</th> <th>Unit</th> <th>Min</th> <th>Max</th> <th>Average</th> <th>Per m. Limit⁵</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>30.61</td> <td>87.52</td> <td>64.53</td> <td>100</td> </tr> <tr> <td>PM_{2.5}</td> <td>µg/m³</td> <td>12.84</td> <td>44.72</td> <td>26.20</td> <td>60</td> </tr> <tr> <td>SO₂</td> <td>µg/m³</td> <td>7.13</td> <td>40.42</td> <td>19.17</td> <td>80</td> </tr> <tr> <td>NO₂</td> <td>µg/m³</td> <td>9.63</td> <td>44.27</td> <td>22.82</td> <td>80</td> </tr> </tbody> </table> <p>⁵ as per NAAQ standards, 2009 Values recorded confirms to the stipulated standards.</p> <p>Approx. INR 6.11 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2024-25 till Sep'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</p>	Parameter	Unit	Min	Max	Average	Per m. Limit ⁵	PM ₁₀	µg/m ³	30.61	87.52	64.53	100	PM _{2.5}	µg/m ³	12.84	44.72	26.20	60	SO ₂	µg/m ³	7.13	40.42	19.17	80	NO ₂	µg/m ³	9.63	44.27	22.82	80
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			as per CPCB directive.				<p>last visit was conducted during September, 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 the State Pollution Control Board and district administration to manage regional level emission inventory data that can help to manage regional level air	APSEZ and Other Industries, Stakeholders, District Administration and GPCB*	Long Term And Continual	<p>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:</p> <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

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				quality management goals.			<ul style="list-style-type: none"> • Identify any surrounding villages affected by organization's improper waste disposal mechanism. <p>Last committee meeting was conducted on dated 20.11.2024 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. • 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 & E-waste materials at authorized recycler/vendor.

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							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.
4.2	Release of particulate emissions from handling and storage of coal at the port and power plants would influence PM10 and PM2.5 concentration in the background air. This could pose some health impacts such as	Health Impact	APSEZ has been implementing the following management plan to control emissions as per the applicable regulations and similar practices will be adopted in future: Entire bulk material handling facilities are mechanized. Regular	All industries located in the APSEZ shall adhere to the emissions norms and minimum stack height guidelines issued by CPCB and consent to operate issued by Gujarat Pollution Control Board from time to time.	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 • 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

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	asthma and COPD etc. among the local communities.		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 water mist canon, covered conveyor belts, regular sprinkling on coal heaps,				<ul style="list-style-type: none"> Wagon loading and truck loading through closed silo Optimized the weigh bridge location to reduce the movement of trucks. <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 (Apr'24 to Sep'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>GPC B Limit</th> <th>Min</th> <th>Max</th> <th>Avrg.</th> </tr> </thead> <tbody> <tr> <td>PM</td> <td>mg/N m³</td> <td>150</td> <td>16.11</td> <td>28.19</td> <td>20.61</td> </tr> <tr> <td>SO₂</td> <td>Ppm</td> <td>100</td> <td>5.80</td> <td>16.24</td> <td>8.55</td> </tr> <tr> <td>NO_x</td> <td>ppm</td> <td>50</td> <td>17.31</td> <td>32.26</td> <td>21.65</td> </tr> </tbody> </table> <p>Values recorded confirms to the stipulated standards.</p> <p>Approx. INR 6.11 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2024-25 till Sep'24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p>	Parameter	Unit	GPC B Limit	Min	Max	Avrg.	PM	mg/N m ³	150	16.11	28.19	20.61	SO ₂	Ppm	100	5.80	16.24	8.55	NO _x	ppm	50	17.31	32.26	21.65
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							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.
			covering of other types of dry bulk cargo heaps by protective materials, installation of wind breaking wall, development of greenbelt along the periphery of the storage yards/back up area and mechanized handling system for	An internal Coal Dust Management Working Group shall be formed by APSEZ to effectively coordinate the approach to coal dust management and monitoring	APSEZ and Other Industries, Concerned Stake holders, District Administration*	Long Term	<p>As mentioned above, earlier 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. 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, 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>

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			<p>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 the respective ECs granted. Due to installation of tall stacks as per CPCB guidelines</p>				<p>Last committee meeting was conducted on dated 20.11.2024 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. • Discussed about to increase more green belt area inside plant premises of SEZ units. • Discussed about disposal of minor qty. of generated hazardous waste & E-Waste materials at authorized recycler/vendor.

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			and EC conditions, the relative air pollution impacts due to release of emissions from two power plants is insignificant.				
4.3	Ships are one of the significant sources of SO ₂ and NO _x emissions in the study area. Marine diesel engines on the ships often utilize fuel oils that might contain higher	Level-2	A Standard Operating Procedure (SOP) has been developed to be included as a part of APSEZ environment management plan to verify that all ships	The current global limit for Sulphur content of ships fuel oil is 3.5 % m/m (mass by mass). According to MARPOL, the new global cap on sulphur in the marine vessel fuels will be 0.50% m/m by the 1st January 2025. APSEZ should	APSEZ and Ship Owners	Long Term	The ships coming to the APSEZ is complying with MARPOL and other shipping rules and regulations. 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.

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	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. Due to lower stack heights of the marine diesel engine, ship emissions often gets		anchored at the port are adopting the MARPOL4 regulations.	explore the possibility of providing shore power to the ships at the port to reduce idling stage ship emissions.			

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	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.						
4.4	Road vehicle emissions will be other major contributors to the air pollution in the region	Level-2	Not Applicable	Due to implementation of Bharat VI fuels (MoEF&CC) in near future the vehicular and diesel engine emissions will be reduced by about 50% from the current national levels. APSEZ should develop a	APSEZ and All Industries	Short Term	<p>Presently, cargo evacuation through rail / conveyer / pipeline is ~59.01 % of overall cargo evacuation.</p> <p>Vehicles having valid PUC certificate are only being allowed to enter within APSEZ area.</p> <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>

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	when the facility is fully developed.			robust contractor environmental policy to ensure that Bharat Stage VI emission norms are adopted by all their contractors and sub-contractors.			Electrification of Rail Corridor from Dhrub Railway Station to Adipur Railway Station has completed and movement started by electric locomotive. It will lead to reduce the gaseous emission and increase efficiency of transportation by rail.
5	Noise emissions						
5.1	Noise emissions are envisaged from port operations, industrial operations and power plants in the study area. Any increase in	Level-1	Due to adoption of various mechanized operations at the waterfront development, the noise emissions from the port cargo handling will be minimal. An adequate	APSEZ, all the tenant industries and facilities within APSEZ are required to undertake noise monitoring at their facilities to demonstrate the compliance with the Noise level standards. Continuous noise recording units can be installed	APSEZ	Continual Process	Below Safeguard measures are already taken for abatement of noise emissions. <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. 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.

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																		
	noise levels beyond three decibels from the background levels would be perceived as noise nuisance (USEPA)7.		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 noise levels were found to be well within the designated noise standards for Industrial	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.			<p>The noise monitoring summary for last six months (Apr'24 to Sep'24) are as below.</p> <p>Locations: 15 Nos. Frequency: Once in a month (24 hourly)</p> <table border="1" data-bbox="1398 719 2016 1000"> <thead> <tr> <th>Noise</th> <th>Unit</th> <th>Leq Min</th> <th>Leq Maxn</th> <th>Leq Avr.</th> <th>Leq Perm. Limit^s</th> </tr> </thead> <tbody> <tr> <td>Day Time</td> <td>dB(A)</td> <td>57.90</td> <td>69.60</td> <td>64.42</td> <td>75</td> </tr> <tr> <td>Night Time</td> <td>dB(A)</td> <td>52.60</td> <td>64.80</td> <td>61.21</td> <td>70</td> </tr> </tbody> </table> <p style="text-align: right;">^s as per GPCB standards</p> <p>Approx. INR 6.11 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2024-25 till Sep'24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p> <p>All the results are well within the standards. From this 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</p>	Noise	Unit	Leq Min	Leq Maxn	Leq Avr.	Leq Perm. Limit ^s	Day Time	dB(A)	57.90	69.60	64.42	75	Night Time	dB(A)	52.60	64.80	61.21	70
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			facilities.				confirmed by APSEZ as well as SPCB on regular basis. Further, till date APSEZ has not received any grievances/notice for noise issues from any of the stakeholders.
				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 the specific zones.	APSEZ	Continual Process	As mentioned above, earlier APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited & other member units, having role and responsibilities as defined above. Last committee meeting was conducted on dated 20.11.2024 and below were the point of discussion for way forward. <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.

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							<ul style="list-style-type: none"> 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 & E-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 water quality of streams, estuaries and marine water	Level -1	As per the master plan of APSEZ, 67 MLD of wastewater is expected to be generated from the fully developed project scenario, for which necessary permissions to set up	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 facility should limit the marine discharge of treated industrial wastewater to 16 MLD as per 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 963.72 KLD (Avg.) during this compliance period 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> <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</p>

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	bodies.		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 wastewater from CETP meets the stipulated discharge norms for	permits. Remaining treated wastewater shall be utilized for horticulture purpose.			<p>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. 2.52 MLD (from CETP, ETP & STPs) of treated water is being utilized on land for horticulture purpose within APSEZ premises during period Apr'24 to Sep'24 and no discharge is made to any other source.</p>

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			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 discharged into natural bodies as on date..	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	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. Presently entire quantity of treated water from CETP is used for gardening / horticulture purpose within APSEZ premises.
			Runoff during	Storm water runoff from the			There are provision of drains around coal stack yard to carry to runoff water to dump ponds. This water is

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			monsoon from coal storage yards is collected in sedimentation ponds (dump pond) to remove any residual dust particulates for further disposal into sea	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 shall be discharged into storm water-drains.	APSEZ	Continual	<p>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 (Apr'24 to Sep'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>7.91</td> <td>8.30</td> <td>8.16</td> <td>7.74</td> <td>8.30</td> <td>8.11</td> </tr> <tr> <td>BOD</td> <td>m g/ L</td> <td>2.20</td> <td>4.40</td> <td>3.13</td> <td>BDL(MDL:1 .0)</td> <td>4.50</td> <td>3.04</td> </tr> <tr> <td>TSS</td> <td>m g/ L</td> <td>26.90</td> <td>144.00</td> <td>90.12</td> <td>32.90</td> <td>132.00</td> <td>84.64</td> </tr> <tr> <td>DO</td> <td>m g/ L</td> <td>4.50</td> <td>6.69</td> <td>5.62</td> <td>4.40</td> <td>6.49</td> <td>5.42</td> </tr> </tbody> </table>	TEST PARAMETERS	UNIT	Cumulative Surface			Cumulative Bottom			Min	Max	Average	Min	Max	Average	pH	--	7.91	8.30	8.16	7.74	8.30	8.11	BOD	m g/ L	2.20	4.40	3.13	BDL(MDL:1 .0)	4.50	3.04	TSS	m g/ L	26.90	144.00	90.12	32.90	132.00	84.64	DO	m g/ L	4.50	6.69	5.62	4.40	6.49	5.42
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			Detailed marine hydrodynamic modelling studies revealed that the current and proposed dredged soil disposal practices, sea water intake and outfall facilities and	Good dredging practices shall be adopted by APSEZ: (i).Improving the dredging accuracy (ii).Improving onboard automation and monitoring, (iii). Reduce spill and loss, (iv). evaluating the need for installing silt	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> <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.</p>																								

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			<p>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 on monthly basis.</p>	<p>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 program shall be continued as per the directions of MoEF&CC and GPCB.</p>			<p>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>
7	Groundwater quality and salinity ingress						

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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 might increase in Mundra region. This might increase the	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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	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 ingress.	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 area will not be disturbed. Due to the above reasons, the	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> <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</p>

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			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 2013 to 2016 across the Mundra and Anjar blocks. This aspect confirms				<p>in current year 1.11 mtr ground water table increased as per increased in coastal belt of Mundra as per Government Figures.</p> <p>WORK COMPLETED:</p> <p>Water Conservation Projects completed during last Compliance period:</p> <p>Water Conservation Projects:</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="1396 1136 2011 1412"> <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>	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	-
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			that the overall salinity ingress from the shore into the land due to existing APSEZ facilities and power plant outfalls are less significant.				<p>Earlier Completed Activities/Projects:</p> <table border="1"> <thead> <tr> <th data-bbox="1423 646 1470 751">Sr. No.</th> <th data-bbox="1470 646 1669 751">Project</th> <th data-bbox="1669 646 1724 751">Unit</th> <th data-bbox="1724 646 1839 751">Outcome</th> <th data-bbox="1839 646 2011 751">Impact</th> </tr> </thead> <tbody> <tr> <td data-bbox="1423 751 1470 943">1</td> <td data-bbox="1470 751 1669 943">Check dam Restrengthening-Nana Kapaya</td> <td data-bbox="1669 751 1724 943">1</td> <td data-bbox="1724 751 1839 943">Water Storage Capacity increased by 48000 Cum</td> <td data-bbox="1839 751 2011 943">60 + farmer's 120+Acre Area of Agri land can be Irrigated</td> </tr> <tr> <td data-bbox="1423 943 1470 1161">2</td> <td data-bbox="1470 943 1669 1161">Recharge Borewell</td> <td data-bbox="1669 943 1724 1161">21</td> <td data-bbox="1724 943 1839 1161">Reduce Salinity ingress, and preventing water run</td> <td data-bbox="1839 943 2011 1161">150+ farmer's 260+ Acre Area of Agri land for Irrigated</td> </tr> <tr> <td data-bbox="1423 1161 1470 1323">3</td> <td data-bbox="1470 1161 1669 1323">Pipe Culvert at Checkdamat Bhujpur</td> <td data-bbox="1669 1161 1724 1323">1</td> <td data-bbox="1724 1161 1839 1323">prevent water runoff into seaside.</td> <td data-bbox="1839 1161 2011 1323">35 farmers' 120+Acre Area of Agri land can be Irrigated</td> </tr> </tbody> </table>	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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							<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>With the objective of to preserve the rainwater to</p>

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							<p>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>
				<p>While the individual industries in the study area will continue to undertake ground water quality monitoring as per the</p>	<p>All Concerned Stakeholders, District Administration and CGWB*</p>	<p>Continual Process</p>	<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 (Apr'24 to Sep'24) are as below. Nos. of Location: 09</p>

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							Zinc as Zn	m g/L	0.07	0.14	0.10
							Copper as Cu	m g/L	0.08	0.13	0.10
							Iron as Fe	m g/L	0.12	0.61	0.26
							Insecticides/Pesticides	µ g/L	Absent	Absent	Absent
							Depth of Water Level from Ground Level	m et er	1.95	2.25	2.12
<p style="text-align: right;">BDL – Below Detection Limit MDL – Minimum Detection Limit</p> <p>Approx. INR 6.11 Lakhs is spent by APSEZ for environmental monitoring activities during the FY 2024-25 till Sep'24, which also includes ambient air quality monitoring for overall APSEZ, Mundra.</p> <p>The freshwater requirement of all the industries within SEZ is being satisfied through APSEZ. All the industries are encouraged to monitor ground water quality as per the permissions granted by competent authorities.</p>											

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							As mentioned above, presently, APSEZ has formed Internal Environment Monitoring Committee, involving Officials of APSEZ, Adani Power Limited and other member units, having role and responsibilities as defined above. APSEZ will co-operate and comply with the directions from concerned regulatory authorities for ground water management.
8	Waste Management						
8.1	Solid waste will be generated from industrial activities of APSEZ and other permitted facilities in the study area including Mundra town. These wastes would contain recyclable	Level-2	APSEZ has been adopting Zero waste 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	APSEZ will continue to adopt Zero Waste Initiative 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	APSEZ	Continual Process	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 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

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	<p>material, construction debris, organic waste, inert material and e-waste etc. In the absence of any organized source segregation programs and material recycling strategies and infrastructure facilities, these wastes will enter into environment and would pose long term health impacts.</p>		<p>date.</p>	<p>there by avoiding ecological impacts.</p>			<p>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.</p> <p>APSEZ is being done proper solid waste management in his operational area with 5R principle as per Waste Management Plan.</p> <p>Industries located within the SEZ area are also complying with the waste management rules</p>

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8.2	Considering an average solid waste generation of 0.25 Kg/person/day, the estimated solid waste from facilities within APSEZ will be in the order of 100 TPD (36,500 TPA).	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 Zero Waste Initiatives, no landfill facilities will be installed at APSEZ.	The existing waste segregation and material recycling facilities will be augmented to dispose safely the wastes generated from APSEZ areas. Solid Waste Management Program shall be adopted and implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016	APSEZ	Continual Process	stipulated by statutory authorities and same is also being confirmed by APSEZ as well SPCB on regular basis.
8.3	About 35 TPD (13,000 TPA) of solid	Level-2	As per the MSW Rules 2016 all the	Solid Waste Management Program shall be adopted and	All Industries	Continual Process	

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	waste would be generated from the proposed industrial areas located outside the APSEZ area.		industrial facilities and SEZs are required to adopt waste segregation facilities at the respective properties and non-recyclable waste shall be disposed to landfill sites.	implemented as per Municipal Solid Waste Management Rules 2016 and Construction Waste Management Rules 2016			
9	Ecological aspects (terrestrial and marine)						
9.1	About 1576 ha of shrub forest land contiguous to APSEZ	Level -1	It is noted that the designated forest land is free from any native vegetation	APSEZ has approached concerned authorities for diversion of designated forest land. Suitable compensatory	APSEZ/State Forest Department*	Long Term	Stage – 1 Forest clearance granted for diversion of 1576.81 Ha Forest land. Compliance of stage-1 forest clearance is process. After getting EC & CRZ Clearance, Stage-2 Forest clearance will be obtained. 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

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	<p>area is applied for land diversion for various developmental activities. This might have certain level of changes in the biodiversity in the study area.</p>		<p>and comprises of Prosopis juliflora. It is also noted that no endangered species are present at the shrub forests that are applied 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</p>	<p>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 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</p>			<p>is being carried out through NABET accredited consultant.</p>

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			species reported in the shrub forest. It is also noted that no tribal lands are located in the designated forest land parcel. Hence there will not be any change in biodiversity due to the proposed diversion.	when the project is fully developed.			
9.2	Mangrove conservation areas are located adjacent to	Level -1	No development activities will be undertaken within mangrove	Mangrove footprint and health status shall be	APSEZ	Continual Process	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. 1. NCSCM (MoEF&CC promoted Government Agency)

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	the APSEZ area. Accidental discharges of industrial effluents into the marine environment would pose certain ecological risk.		conservation areas. APSEZ has taken up large scale 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. The Adani Foundation introduced 'Mangrove Nursery Development and	monitored annually			<p>study on comprehensive and integrated plan for preservation and conservation of mangroves and associated creeks in and around APSEZ in year 2016-17. The cost of said study was 3.15 Cr, which was incurred by APSEZ.</p> <p>As a part of mangrove conservation plan, APSEZ has done following activities.</p> <ol style="list-style-type: none"> Monitoring of mangrove distribution in creeks in and around APSEZ and shoreline changes in Bocha island through NCSCM, Chennai. The cost of the said study was INR 23.56 Lacs incurred by APSEZ. Tidal observation in creeks in and around APSEZ – The cost of the said activity was INR 1.0 Lacs incurred by APSEZ. Algal & Prosopis removal from Mangrove area - The cost of the said activity was Rs. 80000 during FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24. Awareness of mangroves importance in surrounding communities & Fodder support - The expenditure for fodder supporting activities was approx. 132.0 Lacs during FY 2024-25 till Sep'24 which was incurred by APSEZ. This activity is being done on continuous basis as a part of CSR activity.

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			Plantation scheme in the area as an alternative income generating activity for the people of the region.				<p>Summary of Conservation of mangroves:</p> <table border="1" data-bbox="1396 625 2005 1136"> <thead> <tr> <th rowspan="2">Mangrove mapping Year</th> <th rowspan="2">Monitoring Agency</th> <th rowspan="2">Mangrove cover total Area (Ha.)</th> <th colspan="2">Mangrove cover area Increased</th> </tr> <tr> <th>Ha.</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2011</td> <td rowspan="2">NCSCM</td> <td>2094</td> <td>-</td> <td>-</td> </tr> <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>NCSCM</td> <td>2596</td> <td>256</td> <td>10.94%</td> </tr> <tr> <td>2019 to 2021 till March</td> <td>GUIDE</td> <td>2723</td> <td>127</td> <td>4.89%</td> </tr> <tr> <td>Total</td> <td></td> <td>2723</td> <td>629</td> <td>--</td> </tr> </tbody> </table> <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>As a part of GCZMA recommendations and NCSCM mangrove conservation action plan, APSEZ has undertaken following activities.</p>	Mangrove mapping Year	Monitoring Agency	Mangrove cover total Area (Ha.)	Mangrove cover area Increased		Ha.	%	2011	NCSCM	2094	-	-	2011 to 2016-17	2340	246	11.75%	2017 to 2019 till March	NCSCM	2596	256	10.94%	2019 to 2021 till March	GUIDE	2723	127	4.89%	Total		2723	629	--
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							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 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

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									<p>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.</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 (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

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									<p>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> <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="1654 1305 1997 1408"> <tr> <td data-bbox="1654 1305 1755 1408">Mangrove</td> <td data-bbox="1755 1305 1856 1408">Mangrove cover</td> <td data-bbox="1856 1305 1997 1408">Mangrove cover area Increased</td> </tr> </table>	Mangrove	Mangrove cover	Mangrove cover area Increased
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							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 FY 2023-24. The algal removal report was submitted during the last compliance report submission Oct'23 to Mar'24.
							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

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									<p>to 25 Villages. Project is covering total 15005 Cattles and hence enhancing cattle productivity. Dry Fodder 10,90,875 Kg Green – 27,64,920 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. 132.0 Lacs during FY 2024-25 till Sep'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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9.3	Outfall from the thermal	Level-1	A detailed marine hydro-dynamic and dispersion	All approved marine outfalls shall be monitored for salinity,	APSEZ and	Continual Process	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.			

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	power plants desalination and CETP would pose certain level of impact on the marine environment.		modelling of the study area indicates 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	temperature and other designated parameters as per consent to establish issued by GPCB. Existing marine environmental monitoring program shall be continued.	Concerned Industry		<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 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>36.4</td> <td>36.6</td> <td>35.2</td> <td>35.2</td> </tr> <tr> <td>Salinity</td> <td>ppt</td> <td>29.5</td> <td>30</td> <td>29</td> <td>29</td> </tr> </tbody> </table> <p>As per above results, it can be seen that there is no deviation in the concentration of parameters and thus indicates that impacts are insignificant.</p>	Parameter	Unit	Max		Min		CIA	Present	CIA	Present	Temp.	°C	36.4	36.6	35.2	35.2	Salinity	ppt	29.5	30	29	29
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			status on monthly basis for the stipulated environmental and ecological parameters.				
9.4	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	Level-1	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.	The compensatory afforestation area to be monitored annually to check the survival rate of the plantation.	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 2024-25 within APSEZ is INR 831 lakhs. and out of which, Approx. INR 253 lakh are spent during the financial year 2024-25 till Sep'24.</p>

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	green-cover/vegetation in the 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	Level-1	Dedicated townships are developed within APSEZ area with necessary community infrastructure such as hospital, school, recreational facilities, sewage treatment and waste collection facilities. Adani Foundation has been undertaking	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 87.14 % 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</p>

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	additional need for public infrastructure in the region.		various CSR programs under the 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				<p>requirement. Other infrastructure facilities have been developed for people are as follows.</p> <ul style="list-style-type: none"> • Multi-Specialty Hospital • 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 8824.17 lakhs from April – 2018 to September – 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>

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			allocation of appropriate budget.				<p><u>Last FY 2023-24 infrastructure development activities:</u></p> <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.

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							<ul style="list-style-type: none"> • 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. <p><u>Previous 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.

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							<ul style="list-style-type: none"> • commissioning of Community Training Centre at Shekhadiya. • Two Pond Deepening at Zarpara under Amrut Sarovar Yojna. • 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.

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							<ul style="list-style-type: none"> Under Dignity of Drivers Project, Adani Foundation has constructed Resting Shed for Drivers entering in SEZ Premises. Total 50 beds are constructed, drinking water and sanitation plus recreational – TV Facilities. <p>Similar community development programs (based on need based assessment) will be continued in future as well with allocation of appropriate budget.</p>								
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	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." Student Benefitted Under Utthan Project: <table border="1"> <thead> <tr> <th>Utthan Initiatives</th> <th>Benefitted</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> </tbody> </table>	Utthan Initiatives	Benefitted	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.
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	continue in future due to induced economic growth in the region.						Providing required resources and facilities Enabling joyful learning spaces Adani Students Development Center (ASDC) Introducing English as a Third Language Enhancing Reading Habits IT on Wheels Promote sports Teachers' & Sahayak Capacity Building Formation of Eco Club Day Celebrations & Collaboration with GoG	Sports Kit, Music Kit, TLM Kit, Science Kit provided in schools. Smart Class with Navneet software+ Bala painting + Activity base learning. 2 Adani Evening Education Center, 5 Adani Competitive Coaching Center, 5 Adani English Coaching Center Students: 5000+ Classes 1-4, Curriculum, Every Friday morning assembly in English Redding corner, 1000+ Oasis workshop, 162780 Books CICO, 100+ Schools partner from 10+ Country in International school library month (ISLM) 2 dedicative van, 2 IT instructors, 55 laptops, 34 schools, Empowering 4170 students, 200+ High schools' students 6 Students selected in District level sports school, Inspiring more 100 Students. Khel Maha Kumbh: 2000+ 3500+ Hours Capacity building program + Webinar + Diksha + 10 full days training. Plastic free village workshop: 1250+ Students, Environment Awareness program & Tree plantation in schools. Summer Camp: 6000+ Students Diwali Mela: 5500+ Students. 1400+ Parents participated.

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							<p>other leaders in year 2017-18. We explained people about the various topics i.e. importance of girl 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.

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							<ul style="list-style-type: none"> • To reduce malnutrition and anemia amongst Children 95 % & adolescent girls and pregnant & lactating women by 70 % in three years • Reduction IMR and MMR • 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 8824.17 lakhs has been spent on various CSR activities in the Mundra region since April 2018 to till September 2024 including cost of community health and education for woman and girl child.</p>

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10.4	Due to economic growth 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	Level-2	Adani hospitals, Mundra is setup by 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.	APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the growth scenario at APSEZ development.	APSEZ	Long Term	<p>Adani hospitals (Multi-specialty), Mundra is having 110 bed facility and same is setup by Adani group near Samudra township.</p> <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 5519 Patients Benefitted FY 24-25 till Sep'24 (direct & indirect) by Mobile van and rural clinic. • 2 financially challenged patients has been supported with Dialysis treatment at 22 Times which added day in their Life. • Provided 27,355 medical health services Burn & Intensive Care Unit • On August 11 (Adani Foundation Day), the foundation stone for the Burn Ward at GK General Hospital, Bhuj, was laid. • This center will provide comprehensive care for burn victims, from emergency treatment to long-term rehabilitation. It will benefit 22 lakh population of Kutch.

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	about 540 beds would be required.						<p>Eye Vision Care:</p> <ul style="list-style-type: none"> To address these challenges, the Adani Foundation, in collaboration with Vision Spring, is launching a holistic eye care initiative for the community. <p>This initiative focuses on:</p> <ul style="list-style-type: none"> Student: See to Learn, SHG Women: See to Earn, Driver of APSEZ: See to be Safe Total Screening 7476 (Students) + 3958 (Drivers) = 11434 <p>Vision Aids: 621 (Students) + 1110 (Drivers) = 1731</p> <p>Cataract Screening: 366 nos. of peoples</p> <p>Cataract Surgery: 18 nos. of peoples</p> <p>Medical Services Data April to Sep - 2024:</p> <ul style="list-style-type: none"> Ayushman Card: 243 beneficiaries Eye Vision Care; 7740 beneficiaries Driver Health Check-up: 2423 beneficiary Blood Donation Camp: 2902 beneficiary Specialty Health Camp: 2578 beneficiary General Health Camp: 1074 beneficiary Rural Clinic: 5519 beneficiaries Mobile Health Care Unit: 4348 beneficiaries Medical Supports: 1071 beneficiary <ul style="list-style-type: none"> Dialysis Support: During this year, 2 patients were supported for regular dialysis with 22 Times which added day in their Life.

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							<ul style="list-style-type: none"> • 1094 –Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. <p>Animal Husbandry:</p> <ul style="list-style-type: none"> • Fodder support to 25 villages, benefiting 15005 cattle, Dry Fodder Support - 10,90,875 Kg & Green Fodder Support - 27,64,920 Kg • Launched a vaccination camp for 20,000 cattle, in collaboration with the Animal Health Department of Bhuj. 6,200+ cattle have been successfully vaccinated, <p>Previously Conducted Community Health Details:</p> <ul style="list-style-type: none"> • 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.

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							<p>Lives Impacted: - 1131</p> <ul style="list-style-type: none"> ➤ Comprehensive Eye Screenings at Village level ➤ Cataract Surgeries to GKGH, Bhuj ➤ 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.

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"> • 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. • 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.

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"> • 2222 –Economically Challenged patients have been supported for operation, OPD, IPD, Medicines and lab-test. • 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.

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
							APSEZ will explore other possibilities to augment the primary and secondary healthcare facilities in future depending on the future development at APSEZ.
10.5	<p>Due to rapid economic 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</p>		<p>APSEZ has been giving 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</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><u>Last FY 2023-24 fishermen livelihood activities development activities:</u></p> <p><u>Overall Persistent efforts for Fisherman development:</u></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).

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
	45% of the total envisaged population in Mundra Taluk by the end of 2030.		livelihood options have been introduced by the Adani Skill 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.				<ul style="list-style-type: none"> • 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). • 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)

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"> • 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). • 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 sherfolk 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.

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"> • Water distribution to Luni & Bavadi Bandar Fishfolk 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 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." • 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.

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>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 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

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
							<ul style="list-style-type: none"> • 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 submitted earlier in detail in the report namely "Silent Transformation of Fisher folk at Mundra",</p> <p>Till, FY 2024-25 approx. 15.06 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 – 11.</p>

TEST REPORT

Report No.	URC /24/07/Water/APL-0001		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	WB/b/h ATT-19
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0001		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
1.	Colour	IS 3025(Part 4):2021	Pt. Co. Scale	20
2.	Odour	IS 3025(Part 5):1983	--	Agreeable
3.	Total Suspended Solids	APHA 24th Ed.,2023,2540 –D	mg/L	60
4.	pH @ 25 ° C	APHA 24th Ed.,2023,4500-H+B	--	7.34
5.	Temperature	IS 3025(Part 9):1984	°C	30
6.	Oil & Grease	IS 3025(Part 39):1991	mg/L	BDL(MDL:2.0)
7.	Total Residual Chlorine	IS 3025(Part 26):2021	mg/L	BDL(MDL:0.1)
8.	Ammonical Nitrogen	IS 3025(Part 34):1988,	mg/L	BDL(MDL:2.0)
9.	BOD (3 days at 27 °C)	IS 3025(Part 44):1993	mg/L	24
10.	COD	IS 3025(Part 58):2006	mg/L	84.5
11.	Arsenic (as As)	APHA 24th Ed.,2023,3114-C	mg/L	BDL(MDL:0.01)
12.	Mercury (as Hg)	APHA 24th Ed.,2023, 3112-B	mg/L	BDL(MDL:0.001)
13.	Lead (as Pb)	IS 3025 (Part 47):1994	mg/L	BDL(MDL:0.01)
14.	Cadmium (as Cd)	IS 3025(Part 41):1992	mg/L	BDL(MDL:0.003)
15.	Hexavalent Chromium	APHA 24th Ed.,2023,3500CrB	mg/L	BDL(MDL:0.05)
16.	Total Chromium (as Cr)	IS 3025 (Part 52):2003	mg/L	BDL(MDL:0.05)
17.	Copper (as Cu)	IS 3025 (Part 42):1992	mg/L	BDL(MDL:0.05)
18.	Zinc (as Zn)	IS 3025(Part 49):1994	mg/L	0.064

Note: This report is subject to terms and conditions mentioned overleaf.

TEST REPORT

Report No.	URC /24/07/Water/APL-0001		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	WB/b/h ATT-19
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0001		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
19.	Selenium (as Se)	IS 3025(Part 56):2003	mg/L	BDL(MDL:0.01)
20.	Nickel (as Ni)	APHA 24th Ed.,2023,3111-B	mg/L	BDL(MDL:0.02)
21.	Cyanide (as CN)	IS 3025(Part 27):1986	mg/L	BDL(MDL:0.05)
22.	Fluoride (as F)	IS 3025(Part 60):2008	mg/L	0.48
23.	Dissolved Phosphate (as P)	APHA 24th Ed.,2023,4500-P, D	mg/L	0.46
24.	Sulphide as S	APHA 24th Ed.,2023,4500 S ² F	mg/L	1.2
25.	Phenolic Compound	IS 3025(Part 43):2020	mg/L	BDL(MDL:0.01)
26.	Bio Assay test (%)	IS:6582-1971	%	90 % survival of fish after 96 hrs. in 100% effluent
27.	Manganese (as Mn)	APHA 24th Ed.,2023, 3500 Mn B	mg/L	BDL(MDL:0.1)
28.	Iron (as Fe)	IS 3025(Part 53):2003	mg/L	0.144
29.	Vanadium (as V)	APHA 24th Ed.,2023-3500 – V	mg/L	N.D.
30.	Nitrate (as NO ₃ -N)	APHA 24th Ed.,2023,4500 NO ₃ -B	mg/L	0.3

Remarks: BDL= Below Detection Limit, MDL = Minimum Detection Limit

Opinion & Interpretation (If required):

*****End of Report *****

Checked By



(Nilesh C. Patel)
(Sr. Chemist)

Authorized By



(Nitin B. Tandel)
(Technical Manager)

Page 2 of 2

UERL/CHM/F-2/05

Note: This report is subject to terms and conditions mentioned overleaf.

TEST REPORT

Report No.	URC /24/07/Water/APL-0002		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	WB/b/h ATT-8
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0002		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
1.	Colour	IS 3025(Part 4):2021	Pt. Co. Scale	50
2.	Odour	IS 3025(Part 5):1983	--	Agreeable
3.	Total Suspended Solids	APHA 24th Ed.,2023,2540 –D	mg/L	38
4.	pH @ 25 ° C	APHA 24th Ed.,2023,4500-H+B	--	7.19
5.	Temperature	IS 3025(Part 9):1984	°C	30
6.	Oil & Grease	IS 3025(Part 39):1991	mg/L	BDL(MDL:2.0)
7.	Total Residual Chlorine	IS 3025(Part 26):2021	mg/L	BDL(MDL:0.1)
8.	Ammonical Nitrogen	IS 3025(Part 34):1988,	mg/L	BDL(MDL:2.0)
9.	BOD (3 days at 27 °C)	IS 3025(Part 44):1993	mg/L	55
10.	COD	IS 3025(Part 58):2006	mg/L	184.7
11.	Arsenic (as As)	APHA 24th Ed.,2023,3114-C	mg/L	BDL(MDL:0.01)
12.	Mercury (as Hg)	APHA 24th Ed.,2023, 3112-B	mg/L	BDL(MDL:0.001)
13.	Lead (as Pb)	IS 3025 (Part 47):1994	mg/L	BDL(MDL:0.01)
14.	Cadmium (as Cd)	IS 3025(Part 41):1992	mg/L	BDL(MDL:0.003)
15.	Hexavalent Chromium	APHA 24th Ed.,2023,3500CrB	mg/L	BDL(MDL:0.05)
16.	Total Chromium (as Cr)	IS 3025 (Part 52):2003	mg/L	BDL(MDL:0.05)
17.	Copper (as Cu)	IS 3025 (Part 42):1992	mg/L	BDL(MDL:0.05)
18.	Zinc (as Zn)	IS 3025(Part 49):1994	mg/L	0.087

Page 1 of 2

UERL/CHM/F-2/05

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TEST REPORT

Report No.	URC /24/07/Water/APL-0002		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	WB/b/h ATT-8
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0002		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
19.	Selenium (as Se)	IS 3025(Part 56):2003	mg/L	BDL(MDL:0.01)
20.	Nickel (as Ni)	APHA 24th Ed.,2023,3111-B	mg/L	BDL(MDL:0.02)
21.	Cyanide (as CN)	IS 3025(Part 27):1986	mg/L	BDL(MDL:0.05)
22.	Fluoride (as F)	IS 3025(Part 60):2008	mg/L	0.36
23.	Dissolved Phosphate (as P)	APHA 24th Ed.,2023,4500-P, D	mg/L	0.4
24.	Sulphide as S	APHA 24th Ed.,2023,4500 S ² F	mg/L	0.5
25.	Phenolic Compound	IS 3025(Part 43):2020	mg/L	BDL(MDL:0.01)
26.	Bio Assay test (%)	IS:6582-1971	%	90 % survival of fish after 96 hrs. in 100% effluent
27.	Manganese (as Mn)	APHA 24th Ed.,2023, 3500 Mn B	mg/L	BDL(MDL:0.1)
28.	Iron (as Fe)	IS 3025(Part 53):2003	mg/L	0.587
29.	Vanadium (as V)	APHA 24th Ed.,2023-3500 – V	mg/L	N.D.
30.	Nitrate (as NO ₃ -N)	APHA 24th Ed.,2023,4500 NO ₃ -B	mg/L	0.6

Remarks: BDL= Below Detection Limit, MDL = Minimum Detection Limit

Opinion & Interpretation (If required):

*****End of Report *****

Checked By



(Nilesh C. Patel)
(Sr. Chemist)

Authorized By



(Nitin B. Tandel)
(Technical Manager)

Page 2 of 2

UERL/CHM/F-2/05

Note: This report is subject to terms and conditions mentioned overleaf.

TEST REPORT

Report No.	URC /24/07/Water/APL-0003		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	WB/b/h ATT-7
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0003		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
1.	Colour	IS 3025(Part 4):2021	Pt. Co. Scale	60
2.	Odour	IS 3025(Part 5):1983	--	Agreeable
3.	Total Suspended Solids	APHA 24th Ed.,2023,2540 –D	mg/L	24
4.	pH @ 25 ° C	APHA 24th Ed.,2023,4500-H+B	--	7.18
5.	Temperature	IS 3025(Part 9):1984	°C	30
6.	Oil & Grease	IS 3025(Part 39):1991	mg/L	BDL(MDL:2.0)
7.	Total Residual Chlorine	IS 3025(Part 26):2021	mg/L	BDL(MDL:0.1)
8.	Ammonical Nitrogen	IS 3025(Part 34):1988,	mg/L	BDL(MDL:2.0)
9.	BOD (3 days at 27 °C)	IS 3025(Part 44):1993	mg/L	70
10.	COD	IS 3025(Part 58):2006	mg/L	232.9
11.	Arsenic (as As)	APHA 24th Ed.,2023,3114-C	mg/L	BDL(MDL:0.01)
12.	Mercury (as Hg)	APHA 24th Ed.,2023, 3112-B	mg/L	BDL(MDL:0.001)
13.	Lead (as Pb)	IS 3025 (Part 47):1994	mg/L	BDL(MDL:0.01)
14.	Cadmium (as Cd)	IS 3025(Part 41):1992	mg/L	BDL(MDL:0.003)
15.	Hexavalent Chromium	APHA 24th Ed.,2023,3500CrB	mg/L	BDL(MDL:0.05)
16.	Total Chromium (as Cr)	IS 3025 (Part 52):2003	mg/L	BDL(MDL:0.05)
17.	Copper (as Cu)	IS 3025 (Part 42):1992	mg/L	BDL(MDL:0.05)
18.	Zinc (as Zn)	IS 3025(Part 49):1994	mg/L	0.086

Page 1 of 2

UERL/CHM/F-2/05

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TEST REPORT

Report No.	URC /24/07/Water/APL-0003		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	WB/b/h ATT-7
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0003		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
19.	Selenium (as Se)	IS 3025(Part 56):2003	mg/L	BDL(MDL:0.01)
20.	Nickel (as Ni)	APHA 24th Ed.,2023,3111-B	mg/L	BDL(MDL:0.02)
21.	Cyanide (as CN)	IS 3025(Part 27):1986	mg/L	BDL(MDL:0.05)
22.	Fluoride (as F)	IS 3025(Part 60):2008	mg/L	0.37
23.	Dissolved Phosphate (as P)	APHA 24th Ed.,2023,4500-P, D	mg/L	0.43
24.	Sulphide as S	APHA 24th Ed.,2023,4500 S ² F	mg/L	1.7
25.	Phenolic Compound	IS 3025(Part 43):2020	mg/L	BDL(MDL:0.01)
26.	Bio Assay test (%)	IS:6582-1971	%	90 % survival of fish after 96 hrs. in 100% effluent
27.	Manganese (as Mn)	APHA 24th Ed.,2023, 3500 Mn B	mg/L	BDL(MDL:0.1)
28.	Iron (as Fe)	IS 3025(Part 53):2003	mg/L	0.858
29.	Vanadium (as V)	APHA 24th Ed.,2023-3500 – V	mg/L	N.D.
30.	Nitrate (as NO ₃ -N)	APHA 24th Ed.,2023,4500 NO ₃ -B	mg/L	0.5

Remarks: BDL= Below Detection Limit, MDL = Minimum Detection Limit

Opinion & Interpretation (If required):

*****End of Report *****

Checked By



(Nilesh C. Patel)
(Sr. Chemist)

Page 2 of 2

Authorized By



(Nitin B. Tandel)
(Technical Manager)

UERL/CHM/F-2/05

Note: This report is subject to terms and conditions mentioned overleaf.

TEST REPORT

Report No.	URC /24/07/Water/APL-0004		
Name & Address of Customer	M/S. ADANI PORTS & SPECIAL ECONOMIC ZONE LTD. (WFDP-West Port) PLOT NO: - NAVINAL ISLAND, Village - MUNDRA, Tal. – Bhuj, DIST. - KUTCH - 370421.	Date of Report	17/07/2024
		Customer's Ref.	As Per W.O.
Sample Details	Pond Water	Location	Nr,yard H
Sample Qty.	5 Lit.	Appearance	Colorless
Sampling Date	10/07/2024	Sample Received Date	11/07/2024
Test Started Date	11/07/2024	Test Completion Date	16/07/2024
Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0004		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
1.	Colour	IS 3025(Part 4):2021	Pt. Co. Scale	10
2.	Odour	IS 3025(Part 5):1983	--	Agreeable
3.	Total Suspended Solids	APHA 24th Ed.,2023,2540 –D	mg/L	44
4.	pH @ 25 ° C	APHA 24th Ed.,2023,4500-H+B	--	7.24
5.	Temperature	IS 3025(Part 9):1984	°C	30
6.	Oil & Grease	IS 3025(Part 39):1991	mg/L	BDL(MDL:2.0)
7.	Total Residual Chlorine	IS 3025(Part 26):2021	mg/L	BDL(MDL:0.1)
8.	Ammonical Nitrogen	IS 3025(Part 34):1988,	mg/L	BDL(MDL:2.0)
9.	BOD (3 days at 27 °C)	IS 3025(Part 44):1993	mg/L	11
10.	COD	IS 3025(Part 58):2006	mg/L	38.8
11.	Arsenic (as As)	APHA 24th Ed.,2023,3114-C	mg/L	BDL(MDL:0.01)
12.	Mercury (as Hg)	APHA 24th Ed.,2023, 3112-B	mg/L	BDL(MDL:0.001)
13.	Lead (as Pb)	IS 3025 (Part 47):1994	mg/L	BDL(MDL:0.01)
14.	Cadmium (as Cd)	IS 3025(Part 41):1992	mg/L	BDL(MDL:0.003)
15.	Hexavalent Chromium	APHA 24th Ed.,2023,3500CrB	mg/L	BDL(MDL:0.05)
16.	Total Chromium (as Cr)	IS 3025 (Part 52):2003	mg/L	BDL(MDL:0.05)
17.	Copper (as Cu)	IS 3025 (Part 42):1992	mg/L	BDL(MDL:0.05)
18.	Zinc (as Zn)	IS 3025(Part 49):1994	mg/L	0.092

Page 1 of 2

UERL/CHM/F-2/05

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TEST REPORT

Report No.	URC /24/07/Water/APL-0004		
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Sampled By	UERL Lab	Sampling Method	UERL/CHM/SOP/116
UERL Lab ID. No.	24/07/Water/APL-0004		

TEST RESULTS:

Sr. No.	Parameters	Test Method Permissible	Unit of Measurement	Results
19.	Selenium (as Se)	IS 3025(Part 56):2003	mg/L	BDL(MDL:0.01)
20.	Nickel (as Ni)	APHA 24th Ed.,2023,3111-B	mg/L	BDL(MDL:0.02)
21.	Cyanide (as CN)	IS 3025(Part 27):1986	mg/L	BDL(MDL:0.05)
22.	Fluoride (as F)	IS 3025(Part 60):2008	mg/L	0.58
23.	Dissolved Phosphate (as P)	APHA 24th Ed.,2023,4500-P, D	mg/L	0.52
24.	Sulphide as S	APHA 24th Ed.,2023,4500 S ² F	mg/L	0.86
25.	Phenolic Compound	IS 3025(Part 43):2020	mg/L	BDL(MDL:0.01)
26.	Bio Assay test (%)	IS:6582-1971	%	90 % survival of fish after 96 hrs. in 100% effluent
27.	Manganese (as Mn)	APHA 24th Ed.,2023, 3500 Mn B	mg/L	BDL(MDL:0.1)
28.	Iron (as Fe)	IS 3025(Part 53):2003	mg/L	0.222
29.	Vanadium (as V)	APHA 24th Ed.,2023-3500 – V	mg/L	N.D.
30.	Nitrate (as NO ₃ -N)	APHA 24th Ed.,2023,4500 NO ₃ -B	mg/L	0.6

Remarks: BDL= Below Detection Limit, MDL = Minimum Detection Limit

Opinion & Interpretation (If required):

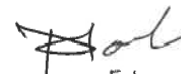
*****End of Report *****

Checked By



(Nilesh C. Patel)
(Sr. Chemist)

Authorized By



(Nitin B. Tandel)
(Technical Manager)

Page 2 of 2

UERL/CHM/F-2/05

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