

To,

Shri Shrawan Kumar Verma, IFS
Deputy Director General of Forests (C)
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Ministry of Environment, Forest and Climate Change,
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Subject: Six monthly compliance report (April, 2023 to September, 2023) of Environment Clearance (EC) for the project activities "Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat by M/s Mundra Petrochem Limited.

Reference : 1). EC Identification no EC22A009GJ154137, File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022.
2). F.No.IA-J-11011/423/2021 - IA - II(Ind-I) Dated 23/12/2022.
3). MPL/ENV/MoEF&CC/2023-May/01 Dated 29/05/2023.

Respected Sir,

With reference to above subject, MoEF&CC vide above refer letter dated 26/09/2022 has granted environment clearance for the project activities "Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat by M/s Adani Enterprises Limited". Followed by, MoEF&CC vide above refer letter dated 23/12/2022 has transferred the Environment Clearance on the name of M/s Mundra Petrochem Limited from M/s Adani Enterprises Limited.

Presently, the coal to PVC Project is still under process design & detailed engineering stage. However, we are hereby submitting a soft copy of the six-monthly EC compliance report for the period April, 2023 to September, 2023.

The six-monthly compliance report for the period October, 2022 to March, 2023 was submitted on 29th May 2023 vide letter No. MPL/ENV/MoEF&CC/2023-May/01.

We hope you will find the above in order.

Thanking you,
Yours faithfully,


Vinay Kumar Singh
Head - Environment & Sustainability

Copy to : 1. Reginal Directorates, CPCB, Vadodara : praseon.cpcb@nic.in
2. Member Secretary, GPCB : ms-gpcb@gujarat.gov.in
3. Regional Office, GPCB (Kutch East): ro-gpcb-kute@gujarat.gov.in

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Mundra Petrochem Limited

Introduction:

Mundra Petrochem Limited, wholly owned stepdown subsidiary of Adani Enterprises Limited (AEL) intends to setup a Coal to PVC Project at Mundra, Kachchh, Gujarat. The PVC Production capacity of the proposed project is 2000 KTPA (Kilo Tons Per Annum). PVC grades such as Suspension PVC (Resin), Chlorinated PVC (C-PVC), Mass PVC (bulk) and Emulsion PVC (paste) would be produced at the proposed Coal to PVC Project.

For implementation of this project, various plants such as Semi-Coke Plant, Calcium Carbide Plant, Acetylene Plant, Caustic Soda (Chlor-Alkali process) Plant, VCM Plant, PVC Plant, Ethylene Glycol Plant and Cement Plant are proposed to be established.

PVC Produced from the facility will cater to the domestic market and replace imports in the domestic market. By- Products from the plant would be marketed in either in domestic market or export market depending upon market conditions.

Ministry of Environment Forest and Climate Change has granted Environment Clearance for proposed project "Coal to Poly-Vinyl Chloride (PVC) comprising of IND-I projects i.e. Semi Coke- 2030 KTPA, Cement-6 MTPA; Clinker-4 MTPA, IND-II projects i.e. VCM- 2002 KTPA, PVC- 2000 KTPA, Ethylene Glycol- 400 KTPA and IND-III projects i.e. Acetylene-860 KTPA & Caustic Soda-1310 KTPA) and Calcium Carbide-2900 KTPA (Not Specified in EIA Notification)) in land notified as Industrial area of APSEZ, Ta-Mundra, Dist-Kachchh, Gujarat." vide –

Industry – I activity: EC identification no. EC22A009GJ154137 and file no. IA-J-11011/423/2021-IA-II(IND-I) dated 26/09/2022

Industry – II activity: EC Identification No. - EC22A020GJ133762, File No. - IA-J-11011/149/2021-IA-II(I) dated 31/08/2022.

Industry – III activity: EC Identification No. - EC22A013GJ127411, File No. - IA-J-11011/149/2021-IA-II(I) dated 31/08/2022

Considering the company's long term business strategy, the proposed project is transferred from M/s Adani Enterprises Limited (AEL) to M/s Mundra Petrochem Limited (MPL). MPL is a wholly owned stepdown subsidiary company of M/s Adani Enterprises Limited (AEL), incorporated under the provision of Company Act, 2013 for carrying out various business activities for Semi-Coke, Calcium

Carbide, Cement & Clinker, VCM, PVC, Ethylene Glycol, Chlor-alkali and acetylene plants and associated products in phased manner. Further above granted Environment Clearances have been transferred in the name of M/s Mundra Petrochem Limited (MPL) by Ministry of Environment Forest and Climate Change (MOEFCC) vide their letter no.

- 1. Industry – I activity: - File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 23/12/2022.**
- 2. Industry – II activity: - File no. J-11011/149/2021-IA-II(I) Dated 27/12/2022.**
- 3. Industry – III activity: - File no. IA-J-11011/149/2021-IA-II(I) Dated 28/11/2022.**

Further, the Consent to Establish (CTE) is granted by the Gujarat Pollution Control Board (GPCB)

Presently, the Coal to PVC project is under basic & detailed engineering and process design stage, however, initial site preparation activities have been started at the project site & Financial Closure is yet to be achieved.

Point wise Compliance of Environmental Clearance for Industrial activity-I- Proposed Semi Coke–2030 KTPA, Calcium Carbide–2900 KTPA, Cement–6 MTPA; Clinker–4 MTPA vide EC Identification No: EC22A009GJ154137, File No: IA-J-11011/423/2021-IA-II(IND-I) Date: 26/09/2022 & subsequent EC Transfer vide File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 23/12/2022

S. No	Conditions	Status
A	Specific Conditions	
(i)	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project. Project proponent shall abide by all the orders and judicial pronouncements, made from time to time, passed by Hon'ble High Court of Gujarat in PIL No. 36 of 2022.	Noted & agreed with requirement
(ii)	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.	Noted & agreed with requirement. Consent to establish has been obtained from GPCB.
(iii)	The project proponent shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, and risk mitigation measures relating to the project shall be implemented.	Noted and shall be complied with. Remarks – Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Environmental protection measures and safeguards in line with the applicable regulatory requirements and best available technologies are being considered in the detailed project engineering design and same will be implemented accordingly during execution of work.

S. No	Conditions	Status
(iv)	<p>The project proponent shall utilize modern technologies for capturing of carbon emitted and shall also develop carbon sink/carbon sequestration resources capable of capturing more than emitted. The implementation report shall be submitted to the IRO, MoEF&CC in this regard.</p>	<p>Noted and shall be complied with.</p> <p>Remarks- Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Best available practices will be adopted to develop the carbon sink/carbon sequestration resources for capturing of carbon emitted. The implementation report for the same will be submitted to the IRO, MoEF&CC at the time of operation.</p>
(v)	<p>The activities and the action plan proposed by the project proponent to address the issues raised during public hearing and socio-economic issues in the study area shall be completed as per the schedule presented before the Committee and as described in the EIA report in letter and spirit.</p>	<p>Noted and being complied with the requirements.</p> <p>Remarks – Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Action plan proposed to address the issues raised during public hearing and socio-economic issues in the study area shall be implemented as project progresses at site.</p> <p>However, MPL has already initiated CER activities in all villages surrounding to project area and total CER expenditure incurred in various community welfare & eco-development activities during the period from April, 2023 to September, 2023 approx. INR 50.91 Lakhs with cumulative CER expenditure of approx. 500 Lakhs in line with project CAPEX incurred till September 2023. The detailed CER activities with expenditures are summarized in Annexure – I.</p>

S. No	Conditions	Status
(vi)	<p>There are many water bodies including Jarpara Lake, Khari River, Nagavanti River, Dhanesri River, Phot River, Gulf of Kuchchh, Baradi Mata Creek, Kotdi Creek, Modhva Coast exists within the project site. A robust Drainage Conservation scheme to protect the natural drainage and its flow parameters; along with Soil conservation scheme and multiple Erosion control measures shall be implemented.</p>	<p>Noted and shall be complied with.</p> <p>Remarks – water bodies like Jarpara Lake, Khari River, Nagavanti River, Dhanesri River, Phot River, Gulf of Kuchchh, Baradi Mata Creek, Kotdi Creek, Modhva Coast are outside of the project site. The Coal to PVC project is being established on land already notified as industrial land of APSEZ and there is no river or creek passing through the allotted industrial land to Coal to PVC project.</p> <p>Moreover, APSEZ has already developed the industrial land (SEZ) in such a way that no river course modification is required to be carried out. All the rivers passing through SEZ area are maintained through proper path for area drainage.</p>
(vii)	<p>As all the natural drainage including the micro drainage flows into the Gulf of Kutch, a drainage conservation plan shall be implemented. An adequate robust Erosion control and Soil Conservation Program (like Storm water diversion; Storm water drains with catch pits to trap run off material; Garland drains; Retention walls; Settling Ponds; Wheel washing arrangement; Silt removal from settling ponds and utilization; Greening & Paving; Excavated soil preservation for landscaping) shall be implemented.</p>	<p>Noted and shall be complied with.</p> <p>Remarks – The Coal to PVC project is being established on land already notified as industrial land of APSEZ and there are no natural drains i.e., no river or creek are passing through the allotted industrial land to Coal to PVC project.</p> <p>A robust storm water drainage system is being designed for soil and water conservations.</p>
(viii)	<p>The Efforts shall be made to achieve power consumption of 70 units/tonne of Portland Pozzolona cement (PPC) and 95 units/tonne of cement for Ordinary Portland Cement and thermal energy consumption of 670 kcal/Kg of Clinker.</p>	<p>Noted and shall be complied with.</p>
(ix)	<p>Most of the transportation of raw material is by road, the distance of which is within 10 km. Project Proponent shall use overhead belt conveyor wherever possible. Action plan shall be prepared and implemented in a time bound manner from the date of issue of Environment Clearance after obtaining requisite statutory</p>	<p>Noted and shall be complied with.</p> <p>Presently, Coal to PVC project is under development of basic & detail design and engineering stage with consideration of conveying system (overhead belt conveyor, pipe conveyor system etc.) to the extent possible.</p>

S. No	Conditions	Status
	permissions from the concerned competent authority.	A detailed timebound action plan for implementation of environment friendly conveying system for transportation of raw material will be prepared after finalization of plant design & engineering.
(x)	The project proponent shall develop Greenbelt over an area at least 107.14 ha by planting 2,67,600 number of trees in 5 years from the grant of EC. The saplings selected for the plantation should be of sufficient height, preferably 6-ft. In addition to this as committed by the PP, Industry shall deploy a uniform greenbelt of equal width all-round the plant boundary, it will reduce the width of the green belt by 15 to 25 meters on seaward side of the project and will increase the width of the greenbelt on landward side of the project maintaining the total 33% of the greenbelt. The budget earmarked for the plantation shall be ₹75 crore and shall be kept in separate account and should be audited annually. The PP should annually submit the audited statement along with proof of activities viz. photographs (before & after with geolocation date & time), details of expert agency engaged, details of species planted, number of species planted, survival rate, density of plantation etc. to the Regional Office of MoEF&CC before 1st July of every year for the activities carried out during previous year.	<p>Noted and shall be complied with the requirements.</p> <p>Remark: Project is under detailed designing stage. However, Greenbelt having requisite width will be developed in phased manner, mainly along the plant periphery, in downward wind direction, and along roadsides etc. Selection of plant species will be done in consultation with the State Forest Department. Further, adequate width of greenbelt will be developed in the plant side adjacent to the Mangrove Forest. In addition to this, tree plantation at nearby villages have been initiated. Copy of the same is enclosed as Annexure – II.</p> <p>Further, budget earmarked for the same will be kept in separate account and shall be audited annually and report on the same shall be submitted once activities started.</p>
(xi)	The total water requirement for Coal to PVC project will be 222.875 MLD. This will be met by internal recycling of 62 MLD and makeup water of 160.053 MLD from APSEZL Seawater Desalination plant. No groundwater extraction is permitted	<p>Noted and shall be complied with the requirements.</p> <p>Remarks: No groundwater will be extracted for construction as well as operational activities. Water requirement will be fulfilled through APSEZ limited – Seawater Desalination plant.</p>
(xii)	All stockyards shall be having impervious flooring and shall be equipped with water spray system for dust suppression. Stock yards shall also have garland drains to trap the runoff material.	<p>Noted and shall be complied with the requirements.</p> <p>Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Adequate facilities for dust control will be installed to arrest the dust or to prevent the generation of air born</p>

S. No	Conditions	Status
		at stockyards area. Also, garland drains will also be provided to trap the runoff materials at stockyards.
(xiii)	Slip roads shall be provided at the gates and along crossings on main roads. All internal and connecting road to the Highway shall be black topped/ concreted with suitable load in term of Million Standard Axle (MSA) as per IRC guidelines.	Noted and shall be complied with the requirements. Remarks: internal and connecting road to highway for proposed project will be constructed as per IRC guidelines.
(xiv)	Performance monitoring of pollution control equipment shall be taken up yearly and compliance status in this regard shall be reported to the concerned Regional Office of the MoEF&CC.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. During operation phase, performance monitoring of pollution control equipment will be conducted at prescribed interval and report on the same will be submitted to R.O. of the MoEF&CC.
(xv)	Project Proponent shall implement the recommendations of CSIR-CIMFR on the Report which was conducted on validation of technology proposed for Semi-Coke Unit to evaluate all the environmental concerns arising out of the project activities and their conformity to the Indian Standards issued vide G.S.R. 277 (E) dated 31 March 2012 pertaining to Coke -Oven Plant.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Recommendation by CSIR-CIMFR for Semi coke plant shall be implemented for meeting the requirements of G.S.R. 277 (E) dated 31 March 2012 pertaining to Coke -Oven Plant.
(xvi)	Coke Oven Gas shall be desulfurized.	Noted. The project is under detailed design stage.
(xvii)	Coke oven plant shall be equipped with modified wet quenching system.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage.
(xviii)	Dioxin and furans shall be monitored twice a year during co-processing of hazardous waste and report shall be submitted to the Regional Office of the MoEF&CC.	Noted and shall be complied with the requirements. Remarks: Dioxin and furans will be monitored twice a year during coprocessing of hazardous waste (if any) and report will be submitted to the Regional Office of the MoEF&CC.
(xix)	Project proponent shall develop separate drainage system for storm water and industrial waste water and effectively prevent the pollution of natural waterbody.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Drainage system will

S. No	Conditions	Status
		be designed considering "Zero Liquid Discharge" concept. So, there will be no impact on natural waterbody through industrial waste water. A separate drainage system for storm water shall also be developed.
(xx)	Particulate matter emissions from cement mill stacks shall be less than 20 mg/Nm ³ .	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Adequate APCM equipment will be installed to comply the statutory norms.
(xxi)	Entire waste water shall be treated and reused for plantation and dust suppression within the premises. Also, STP water shall be reused in plantation with a view to conserve fresh water.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Proposed project will be on "Zero Liquid Discharge" concept and treated water will be re-used for cooling water, gardening, or other industrial activities to conserve the fresh water. Also, treated water from STP will be used for irrigation purpose for horticulture & greenbelt development.
(xxii)	As committed by the project proponent to adopt the 15 villages, where habitation exists within the study area of the project site, namely Vandh, Tunda, Kandagara, Shiracha, Navinal, Jarpara, Mota Bhadiya, Tragadi, Nana Bhadiya, Nani Khakar, Moti Khakar, Deshalpar, Moti Bhujpur, Nani Bhujpur and Modhva, Project Proponent shall adopt these villages and prepare and implement a robust plan to develop them into model villages in next 10 years.	Noted and being complied with the requirements. Remarks: In order to know the present social status and needs of the local community, a "Baseline & Need Assessment Study" is also carried out through third party professional agency involving various stakeholders- local villagers, administration etc. and the recommendation of the study is further included in the CER plan for implementation in phased manner. MPL has already initiated CER activities in all villages surrounding project area and total CER expenditure approx. INR 50.91 Lakhs. incurred in various community welfare & eco-development activities for the period from April, 2023 to September, 2023 with cumulative CER expenditure of approx. 500 Lakhs in line with project CAPEX incurred till September 2023. . The

S. No	Conditions	Status
		detailed CER activities with expenditures are summarized in Annexure-I .
(xxiii)	Hot air dryer shall not be installed. Flue gases of preheater shall be used to dry the slag/bottom ash.	Noted and shall be complied with the requirements. Remarks: project is under detailed designing stage.
(xxiv)	DeSOx system shall be provided dry type. NOx level shall be maintained below 600 mg/Nm ³ by using best available technology.	Noted and shall be complied with the requirements. Remarks: project is under detailed designing stage. Adequate APCM will be taken to control the pollutant withing the stipulated emission norms.
(xxv)	Petcoke dosing shall be controlled automatically to control SO ₂ emission from chimney within the prescribed limits.	Noted and shall be complied with the requirements. Remarks: project is under detailed design/engineering stage. Adequate APCM will be provided to control the pollutant within the stipulated emission norms.
(xxvi)	The PP shall develop a control strategy and mitigation plan that incorporates the pollution control measures. The Clean Air practices shall be adopted like mechanical collectors, wet scrubbers, fabric filters (baghouses), electrostatic precipitators, combustion systems (thermal oxidizers), condensers, absorbers, adsorbers, and biological degradation.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Adequate APCM will be provided to control the pollutant within the stipulated emission norms.
(xxvii)	Sufficient numbers of additional truck mounted Fog/Mist water cannons shall be operated regularly inside the project premises and also in the surrounding villages to arrest suspended dust in the atmosphere. The PP to this effect shall implement a time bound Action Plan, and the compliance shall be submitted to IRO, MoEFCC.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Necessary AAQM shall be conducted in project and nearby community area and in case of higher level of suspended dust observed, necessary actions shall be implemented to control the suspended dust particles in the atmosphere & action taken report will be submitted to IRO, MoEF&CC once project execution activities started at site.

S. No	Conditions	Status
(xxviii)	A proper action plan must be implemented to dispose of the electronic waste generated in the industry	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage.
(xxix)	The total quantity of particulate matter generated (kg/month) and the percentage of this captured by pollution control units, must be reported every six months.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. During operation stage, half yearly report incorporating details of total generation of particulate matter and captured quantity will be submitted to concerned authority.
(xxx)	The project proponent shall take utmost importance in protecting, conserving and enhancing the wildlife fauna in areas falling under their operational activities, especially the aquatic/ marine/ estuarine ecosystems. The recommendations of the approved Site-Specific Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.	Noted and shall be complied with the requirements. Remark: The project is under detailed design stage. Consultation process with the Forest Department, Kachchh, Bhuj, is also initiated for implementation of wildlife conservation plan. Details of activities performed as per approved site-specific wildlife management plan is attached as Annexure - III . The copy of the same report is being furnished to the Regional Office of the MoEF&CC along with six monthly compliance report.
(xxxii)	The project proponent shall not disturb the nearby Mangrove Forest and shall take necessary steps to protect, conserve and enhance them.	Noted and shall be complied with the requirements. Remarks: Project is under detailed designing/engineering stage. Utmost priority will be given to conserve and protect the nearby mangroves forest during construction as well as operation phase.
(xxxiii)	The project proponent shall implement the Disaster/ Risk Management SOPs and protocols, as the Kutch area is prone to periodic cyclone storms. All the recommendations made in the risk assessment report shall be implemented and compliance status in this regard shall be furnished to the Regional Office of the MoEF&CC along with the six monthly compliance report.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. At present, HAZOP review for the process plants is being carried out for all process units under Coal to PVC complex for identifying all potential hazard and operability problems and access the associated risks and safeguards along

S. No	Conditions	Status
		with risk reduction measures with help of guide words by structured review. Moreover, a detailed Risk Assessment study for entire Green PVC Complex will also be carried out and Emergency Preparedness Plan and Disaster Management Plan will be prepared for further implementation. Further compliance status of the same will be submitted to the Regional Office of the MoEF&CC along with the six monthly compliance report."
(xxxiii)	The project proponent shall comply with all the mitigation measures suggested by other divisions of MoEF&CC including Industry-II, Industry-III, Infra-I and also state departments like SPCB in the instant inter-linked PVC to Coal project.	Noted and shall be complied with the requirements.
(xxxiv)	The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022. In this regard, CPCB has issued a direction to all the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) on 30/06/2022 to ensure the compliance of Notification published by Ministry on 12/08/2021. The technical guidelines issued by the CPCB in this regard is available at https://cpcb.nic.in/technical-guidelines-3/ . All the project proponents are hereby requested to sensitize and create awareness among people working within the Project area as well as its surrounding area on the ban of SUP in order to ensure the compliance of Notification published by this Ministry on 12/08/2021. A report, along with photographs, on the measures taken shall also be included in the six monthly compliance report being submitted by the project proponents.	Noted and shall be complied with the requirements. Remarks: awareness Programme has been conducted at nearby village for ban on single use plastic. Copy of the same is enclosed as Annexure - IV .

S. No	Conditions	Status
B	General Conditions	
I.	Statutory compliance:	
(i)	The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.	Agreed with requirements
II.	Air quality monitoring and preservation	
(i)	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. No. 612 (E) dated 25 th August, 2014 (Cement) and subsequent amendment dated 9 th May, 2016 (Cement) and 10 th May, 2016 (in case of Co-processing Cement) as amended from time to time; S.O. 3305 (E) dated 7 th December 2015 (Thermal Power Plants), as amended from time to time), G.S.R 277 (E) dated 31 st March 2012 (Coke Oven Plants) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Necessary OCEMS / CEMS will be installed for respective parameters prescribed in CPCB guideline and same will be connected to SPCB and CPCB servers for 24 x7 real time data transfer during operation phase.
(ii)	The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.	Noted and shall be complied with the requirements during operation phase. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Moreover, ambient

S. No	Conditions	Status
		air quality monitoring (AAQM) is being conducted at selected location of project site and surrounding villages through third party NABL accredited laboratory and result of AAQM is found well with in NAAQM standard.
(iii)	The project proponent shall install system carryout to Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM2.5 in reference to PM emission, and SO2 and NOx in reference to SO2 and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each), covering upwind and downwind directions.	Noted and shall be complied with the requirements. Remarks: Project is under detailed designing and engineering stage. CAAQMS will be installed as per the requirement during operation phase. However, Ambient Air quality monitoring have been carried out through NABL accredited laboratory at suitable locations & and result of AAQM is found with in NAAQM standard. The Environment Monitoring report of the same is enclosed as Annexure - V .
(iv)	The project proponent shall submit monthly summary report of continuous stack emission and air quality monitoring and results of manual stack monitoring and manual monitoring of air quality /fugitive emissions to Regional Office of MoEF&CC, Zonal office of CPCB and Regional Office of SPCB along with six-monthly monitoring report.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage. Moreover, ambient air quality monitoring (AAQM) is being conducted at selected location of project site and surrounding villages through third party NABL accredited laboratory and result of AAQM is found well with in NAAQM standard.
(v)	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed stack emission and fugitive emission standards.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(vi)	The project proponent shall provide leakage detection and mechanised bag cleaning facilities for better maintenance of bags.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.

S. No	Conditions	Status
(vii)	Pollution control system in the cement plant shall be provided as per the CREP Guidelines of CPCB.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(viii)	Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(ix)	Ensure covered transportation and conveying of raw material to prevent spillage and dust generation; Use closed bulkers for carrying fly ash	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(x)	Provide wind shelter fence and chemical spraying on the raw material stock piles	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(xi)	Provide Low NOX burners as primary measures and SCR / NSCR technologies as secondary measure to control NOX emissions.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(xii)	Have separate truck parking area and monitor vehicular emissions at regular interval.	Noted and shall be complied with the requirements. Remarks: Project is under detailed designing and engineering stage.
(xiii)	Efforts shall be made to reduce impact of the transport of the raw materials and end products on the surrounding environment including agricultural land by the use of covered conveyor belts / railways as a mode of transport	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(xiv)	Ventilation system shall be designed for adequate air changes as per ACGIH document for all tunnels, motor houses, cement bagging plants.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(xv)	Facilities for spillage collection shall be provided for coal and coke on wharf of coke oven batteries (Chain conveyors, land based industrial vacuum cleaning facility).	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(xvi)	Land-based APC system shall be installed to control coke pushing emissions.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.

S. No	Conditions	Status
(xvii)	Monitor CO, HC and O2 in flue gases of the coke oven battery to detect combustion efficiency and cross leakages in the combustion chamber.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(xviii)	Vapor absorption system shall be provided in place of vapour compression system for cooling of coke oven gas in case of recovery type coke ovens.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
III.	Water quality monitoring and preservation	
(i)	The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 vide G.S.R. No. 612 (E) dated 25 th August, 2014 (Cement) and subsequent amendment dated 9thMay, 2016 (Cement) and 10th May, 2016 (in case of Co-processing Cement) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants), as amended from time to time), G.S.R 277 (E) dated 31st March 2012 (Coke Oven Plants) and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(ii)	The project proponent shall regularly monitor ground water quality at least twice a year (pre and post-monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognized under Environment (Protection) Act, 1986 and NABL accredited laboratories	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage. Moreover, Ground water analysis of the adjacent area was conducted through third party lab laboratory recognized under Environment (Protection) Act, 1986 and NABL accredited and Environment

S. No	Conditions	Status
		Monitoring report of same is enclosed as Annexure – V.
(iii)	Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.	Modular STP has been installed for construction phase and Environment Monitoring report of the same is enclosed as Annexure – V. Sewage Treatment Plant (STPs) will be designed with best available technology for further implementation at site prior to full-fledged operations for treatment of domestic effluent during operational phase.
(iv)	Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(v)	Water meters shall be provided at the inlet to all unit processes in the cement plant.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(vi)	The project proponent shall make efforts to minimize water consumption in the cement plant complex by segregation of used water, practicing cascade use and by recycling treated water.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(vii)	The project proponent shall provide the ETP for coke oven and by-product to meet the standards prescribed in G.S.R 277 (E) dated 31st March 2012 (Integrated iron & Steel); G.S.R 414 (E) dated 30th May 2008 (Sponge Iron) as amended from time to time; S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time as amended from time to time.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
IV.	Noise monitoring and prevention	
(i)	Noise quality shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and report in this regard shall be submitted to Regional	Noted Project is under detailed designing and engineering stage. Moreover, ambient noise quality monitoring (ANQM) is being conducted at selected locations of project site and surrounding

S. No	Conditions	Status
	Officer of the Ministry as a part of six-monthly compliance report.	villages through third party NABL accredited laboratory and result of ANQM conforms to the standards prescribed under E(P)A Rules, 1986. The Environment Monitoring report is enclosed as Annexure - V.
(ii)	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.	Noted Project is under detailed designing and engineering stage. Moreover, ambient noise quality monitoring (ANQM) is being conducted at selected locations of project site and surrounding villages through third party NABL accredited laboratory and result of ANQM conforms to the standards prescribed under E(P)A Rules, 1986. The Environment Monitoring report is enclosed as Annexure - V.
V.	Energy Conservation measures	
(i)	Waste heat recovery system shall be provided for kiln and cooler.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(ii)	The project proponent makes efforts to achieve power consumption less than 65 units/ton for Portland Pozzolona Cement (PPC) and 85 units/ton for Ordinary Portland Cement (OPC) production and thermal energy consumption of 670 Kcal/Kg of clinker.	Noted and shall be complied with the requirements during operational phase. Remarks: Project is under detailed designing and engineering stage.
(iii)	Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly	Noted and shall be complied with the requirements. Remarks: Project is under detailed designing and engineering stage. Possibilities are being explored to use more renewable energy including provision of solar power generation on roof tops of buildings, for solar light system for all common areas, streetlights, parking around project area, wherever possible during in the project execution phase.
(iv)	Provide the project proponent for LED lights in their offices and residential areas.	Noted and shall be complied with the requirements.

S. No	Conditions	Status
		Remarks: Project is under detailed designing and engineering stage. Energy efficiency measures are being considered in the project design. Best available lighting equipment/LED will be provided at offices and residential area.
VI.	Waste management	
(i)	Used refractories shall be recycled as far as possible.	Noted and shall be complied with the requirements. Remarks: Project is under detailed designing and engineering stage. However, used refractories will be recycled."
VII.	Green Belt	
(i)	The project proponent shall prepare GHG emissions inventory for the plant and shall submit the program for reduction of the same including carbon sequestration by trees in the plant premises.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. A detailed Life cycle assessment study is being carried out through third party professional agency. On finalization of project design and LCA study, GHG emissions inventory for the plant will be prepared along with reduction strategy by incorporating carbon sequestration scheme through plantation Programme after commissioning of the project."
(ii)	Project proponent shall submit a study report within six months on De-carbonisation program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitorable with defined time frames.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. A detailed decarbonization program shall be prepared after design & detailed engineering of the different processes. An action plan for the same will be prepared, implemented, monitored and same shall be submitted."

S. No	Conditions	Status
VIII.	Public hearing and Human health issues	
(i)	Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. At present, HAZOP review for the process plants is being carried out for all process units under Coal to PVC complex for identifying all potential hazard and operability problems and access the associated risks and safeguards along with risk reduction measures with help of guide words by structured review. Moreover, a detailed Risk Assessment study for entire Green PVC Complex will also be carried out and Emergency Preparedness Plan and Disaster Management Plan will be prepared for further implementation. "
(ii)	The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. It will be ensured that all workmen are equipped with necessary PPEs. Further, heat stress analysis for the workmen who work in high temperature work zone will be carried out in operation phase & necessary PPEs will be provided.
(iii)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. On commencement of operations, Occupational health surveillance of the workers will be done on a regular basis in operation phase and records of the same shall be maintained.
IX.	Environment Management	
(i)	The project proponent shall comply with the provisions contained in this Ministry's	Noted and is being complied with the requirements.

S. No	Conditions	Status
	<p>OM vide F.No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed</p>	<p>Remark: To improve the socio-economic conditions of the study area, various eco-developmental measures including community welfare activities are initiated in phased manner under Corporate Environmental Responsibility by involving local villages and administration.</p> <p>In order to know the present social status and needs of the local community, a "Baseline & Need Assessment Study" is also carried out through third party professional agency involving various stakeholders- local villagers, administration etc. and the recommendation of the study is further included in the CER plan for implementation in phased manner.</p> <p>MPL has already initiated CER activities in all villages surrounding project area and total CER expenditure approx.. INR 50.91 Lakhs. incurred in various community welfare & eco-development activities for the period from April, 2023 to September, 2023 approx. INR 50.91 Lakhs with cumulative CER expenditure of approx. 500 Lakhs in line with project CAPEX incurred till September 2023.. The detailed CER activities with expenditures are summarized as Annexure - I.</p>
(ii)	<p>The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/ violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake</p>	<p>A group level "Environmental policy" of the organization is framed and Mundra Petrochem Limited (MPL) is committed to follow the group level environment policy requirement. The group level "Environmental policy" of the organization is enclosed as "Annexure - VI".</p>

S. No	Conditions	Status
	holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.	
(iii)	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.	Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Further, A separate Environmental Management Cell having qualified persons with specialization in Environmental Science / Engineering has been developed in which EMC head is directly reporting to Head of Organization i.e. CEO as per company hierarchy. Furthermore, full-fledged environment laboratory will be developed at site to carryout environmental monitoring activities.
X.	Miscellaneous	
(i)	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently	The advertisement stating the project has been accorded environmental clearance by MoEF&CC and also displayed on company website was published on following news papers on 30 th September, 2022. (i.e within 7 days of grant of Environmental Clearance). 1. Kutch Mitra (Gujarati Language) 2. Gujarat Samachar (Gujarati Language) 3. The Times of India (English Language). Copies of the same have already been submitted to concerned authorities through vide our letter no. AEL/MPL/ENV/MoEF&CC/2022 - September/11 dated 30/09/2022. Copy enclosed as Annexure - VII. "
(ii)	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.	The copies of the Environmental Clearance letter vide our following letter nos. have been submitted to concerned panchayats (all 15 villages) & The Taluka Development Officer (Rural Local Body), The District Development Officer, District Industries Center and the local NGO / trust from whom suggestions / representations received during public hearing.

S. No	Conditions	Status
		1. AEL/MPL/ENV/MoEF&CC/2022-September/08 Dated 28/09/2022. 2. AEL/MPL/ENV/MoEF&CC/2022-September/09 Dated 28/09/2022. 3. AEL/MPL/ENV/MoEF&CC/2022-September/11 Dated 30/09/2022." Copies of the same is enclosed as Annexure - VIII.
(iii)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.	Six monthly compliance report of stipulated environment clearance conditions including results of monitored data being uploaded on company's website i.e https://www.adanienterprises.com . A soft copy of the same is also being submitted to concerned authorities. Last six-monthly compliance was submitted to concerned authorities on 29 th May 2023.
(iv)	The project proponent shall monitor the criteria pollutants level namely, PM ₁₀ , SO ₂ , NO _x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company	Noted and shall be complied with the requirements after commissioning of the project. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage.
(v)	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.	Six monthly compliance report on stipulated environmental conditions being uploaded on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal. A soft copy of the same is also being submitted to concerned authorities. Last six-monthly compliance was submitted to concerned authorities on 29 th May 2023.
(vi)	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.	Presently, Coal to PVC project is under development of basic & detail design and engineering stage. However, Environmental Statement for the year 2022-2023 have been submitted to Gujarat Pollution Control Board through vide our letter no. MPL/ENV/GPCB – Form – V/ 2023 – June/01 dated 29/06/2023 i.e

S. No	Conditions	Status
		within stipulated time period and same is also available on Company Website i.e https://www.adanienterprises.com . Copy of the same is enclosed as Annexure – IX .
(vii)	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.	Noted and shall be complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage.
(viii)	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.	Noted and being complied with the requirements. Remarks: Presently, Coal to PVC project is under development of basic & detail design and engineering stage. However, CER Activities have been initiated and status of the same in enclosed as " Annexure - I ".
(ix)	The PP shall put all the environment related expenditure, expenditure related to Action Plan on the PH issues, and other commitments made in the EIA/EMP Report etc. in the company web site for the information to public/public domain. The PP shall also put the information on the leftover funds allocated to EMP and PH as committed in the earlier ECs and shall be carried out and spent in next three years, in the company web site for the information to public/public domain.	Noted and being complied with the requirements. Remarks - Presently, Coal to PVC project is under development of basic & detail design and engineering stage. Action plan proposed to address the issues raised during public hearing and socio-economic issues in the study area shall be implemented as project progress at site. However, MPL has already initiated CER activities in all villages surrounding to project area and total CER expenditure incurred in various community welfare & eco-development activities during the period from April, 2023 to September, 2023 is approx. INR 50.91 Lakhs with cumulative CER expenditure of 500 Lakhs in line with project CAPEX incurred till September 2023. Further, the capital cost & annual recurring cost towards the environmental protection measures is earmarked and expenditures related to environmental protection measures will be separately tracked and

S. No	Conditions	Status
		<p>reported as part of EC compliance and same will be made available in company website.</p> <p>The detailed CER activities with expenditures are summarized in Annexure-I.</p>
(x)	<p>No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).</p>	<p>Agreed with requirement.</p>
(xi)	<p>The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.</p>	<p>Agreed with requirement.</p>

Annexure	Name
I	CER Activities
II	Tree Plantation Activities
III	Activities as per approved Wild Life Conservation Plan.
IV	Awareness Program on “Ban on Single use Plastic”
V	Environment Monitoring Report
VI	Environment Policy
VII	Letter for submission of News paper and EC copy to concern authorities
VIII	Letter for submission of EC copy to Concern Local Authorities
IX	Environment Statement – Form – V

Annexure – I

Activities of Corporate Environmental Responsibility

In line with the proposed Corporate Environment Responsibility (CER) plan as per EIA study and Environment Clearance (EC), Mundra Petrochem Limited has planned phase wise implementation of the various community & eco-development activities in all 15 villages surroundings to the project activity as part of extended Environment Management Plan (EMP). A total amount of INR 123 Cr has been proposed as CER expenditure in 5 years for community developmental activities focused in all 15 nearby villages in coordination with district administration for the entire Coal to PVC project of CAPEX INR 34900 Cr. Since the project is being developed in phased manner, it is proposed to expend INR 67.53 Cr in 5 years from the initiation of project construction/execution activity at site-proportionate to total CAPEX of the project in phase-I. Thus, the amount of INR **67.53 Cr** will spend for community initiative as CAPEX of Phase I (as part of extended EMP) within the project period before commissioning and CER expenditure of remaining INR **55.47 Cr** shall be planned when the Phase II activities initiated.

Accordingly, MPL has already initiated CER activities in all villages surrounding project area and total CER expenditure incurred in various community welfare & eco-development activities during the period from April, 2023 to September, 2023 approx. INR 50.91 Lakhs with cumulative CER expenditure of approx. 500 Lakhs in line with project CAPEX incurred till September 2023 as project is still in detail engineering & design stage.

Also, in order to know the present socio-economic status and needs of the local community, a "Baseline & Need Assessment Study" was also carried out through third party professional agency i.e. M/s Saline Area Vitalisation Enterprise Pvt. Ltd., involving various stakeholders – local villagers, administration etc. and the recommendation of the study is further being included in the CER plan for implementation in phased manner.

Further, following activities have been completed for the period from April, 2023 to September, 2023.

Sr. No.	Details / Descriptions	Budget Utilized (INR)
A	Education Initiatives	3,25,952
B	Monitoring and Reporting.	8,16,427
C	Sustainable Livelihood and women Empowerment	2,47,675
D	Community Rural Infrastructure Development	37,01,557
	Total (INR)	50,91,611

A. Education Initiatives:

Adani Foundation set out an innovative intervention through project “**Utthan**” to improve students' learning capabilities, provide facilities to schools to improve environment and achieve better learning outcomes at the grassroots level with the help of “**Utthan sahayak**”. The main objectives of “Utthan” are adopting government primary schools, Main streaming progressive learners, Enhancing Learning outcomes, arresting dropout rates, introducing English as a third language, enabling joyful leaning spaces and collaborating for teachers capability building.

Teachers support under “Utthan Sahayak” Program

As part of education initiative, Mundra Petrochem Limited has provided “Shikshan Sahayak” (support of qualified & trained teachers) to Siracha Govt Primary School to continue education in school in absence of permanent teachers.

Fisherfolk Livelihood & Skill Development

Vehicle Transportation Facilities:

Mundra Petrochem Limited, extended vehicle transportation services to School – going children from Luni and Randh Fisherman Settlements to the AVMB School, Bhadreshwar.

Education Kits Support:

Education kits including notebooks, guides and bags have been provided to fisherfolk students studying in 9th to 12th standard for enhancing their learning experience.

The above initiatives helped in increasing turn-out of students in the schools through parental engagement including enhancement in learning & cultural shift.

Education awareness sessions :

Education awareness sessions were conducted in four fisherfolk Vasahat of nearby villages to highlight the importance of education, particularly girl-child education. Approximate 500 students were benefited from this awareness sessions.



Photo: Vehicle support, education Kits serving and Education awareness program at fisherfolk community.

Youth employment:

The main objective of this initiative is to offer sustainable employment opportunities to the local fishing community in Mundra. We bridge the gap between industries and Fisherfolk youth by facilitating job placements. Total of 12 fisherfolk youths have been successfully engaged in this endeavor during the reporting period.

Scholarship support:

The scholarship support (covering actual school fees etc.) has been provided to 30 Nos. deserving students under the committed corporate key initiative to empower the future of fisherfolk communities through education.

. This unwavering commitment not only provide support in education but also promoting gender equality and advancing girl child education though extending 100% fee support to female candidates and 80% to male candidates.

Natural Farming

Natural farming is an urgent need of the hour, Mundra Petrochem limited and Adani Foundation team have comprehensive approach to promote natural farming practices through a variety of activities aiming to minimize and /or eliminate pesticides and chemicals usage, lead to producenutritious, chemicals free produce which is benefitting both farmers and consumers by providing healthier and more sustainable food options as well as plays significant role to flourishing environment and balanced ecosystem.

Regular awareness sessions related to “Natural Farming” are being organized for the farming communities aiming to increase agricultural productivity, use of real world class techniques.

Further, support to obtain natural farming certification through the Gujarat Organic Product Certification Agency (GOPCA) so that farmers could achieve higher earning by selling certified organic agriculture produce.

The usage of Jivamrut, Vormi compost bed, Nimastra Agnistra Dasparni ark, Gaukrupa Amrutam becteria and Biogas etc under natural faming not only improve the soil fertility (quality) but also great reduction in soil, water & air pollution by eliminating chemicals fertilizers & pesticides. This initiative also helping in improvement of health conditions of the farmers communities.

Total 60 farmers participated in a comprehensive natural farming training program- organised through collaboration with the Center for Agricultural Sciences.





Photo: Natural Farming Practices to cell natural farming product.

World Environment Day Celebration:



Photo: Awareness cum kitchen garden kits distribution programs for farming communities of nearby villages.

Mundra Petrochem Limited & Adani foundation in collaboration with Govt Agri. Dept organized celebration of "World Environment Day on 5th June, 2023. This program was organized to spread awareness cum distribution of kitchen garden kits for farmer resident at nearby villages. More than 500 farmers with the aim to enable them to grow fresh and nutritious, chemical free vegetables. This initiative will enhance food security and promote self – reliance.

Plastic Free Village Awareness

The central aim of the plastic – free drive is to empower and enlighten students as key agents of change, enabling them to disseminate awareness and instill the practice of reducing single use plastic within their community.

1. Educate: Spread awareness about the harmful effects of plastic on the environment, marine life, soil health and human wellbeing.
2. Engage: Mobilize community members, especially the youth and family members to actively participate in plastic waste reduction activities.
3. Implement: Introduce sustainable alternatives to ensure proper disposal and recycling.

About 10,000 students of primary school and 990 students of secondary schools of nearby villages have been enlightened through plastic free awareness programs.



Photo: Awareness Program on "Plastic free Drive"

B. Community Health Initiative

Regular health camps being organized by Adani Group to bridge healthcare gaps in underserved regions, offering a holistic approach for community wellbeing with combining preventive and precautionary measure through awareness session, Health Check camp, screening and treatment.



Mobile health care units and rural clinic services by Adani Group have made significant strides in delivering essential healthcare to remote rural area and underserved populations since the inception.

C. Sustainable Livelihood and Women empowerment:

Date restoration:

In the aftermath of the devastating Biporjoy cyclone, farming community faced a severe setback as numerous Date, Mango and other fruits trees which served as a vital source of income for farmer were left in shambles.

To address this crisis and provide a ray of hope, MPL embarked on the Dates Restoration Project in collaboration with Krishi Vigyan Kendra (KVK) and other agricultural experts. This project aimed to rejuvenate and review the fallen Date plants. Approximately 615 Date plants have been successfully restored. These plants are now on the path to recovery and are expected to bear fruit in the upcoming season which will providing significant financial relief to the farmers community.



Photo: Date restoration activities.

Home Biogas Plants:

Mundra Petrochem Limited (MPL) in association with the Adani Foundation actively involving local farming communities around the Coal to PVC project for usage of sustainable energy & organic manure. Objective of this initiative is to educate farmer community on utilizing biogas from the cattle dung (i.e usage of clean sustainable energy for cooking). In addition to this, organic compost generated from the biogas plants supports natural farming.

As part of "Corporate Environment Responsibility (CER)", Mundra Petrochem Limited planned to support 240 farmers by providing the technical know-how, guidance & financial support in purchase & installation of Bio-gas plant in the surrounding villages of the Coal to PVC project which will helps farmers to access the self sustained & clean source of energy for cooking and will also get the organic manure for natural farming. The initiative will further helps in enhancing the farmer's economy.



Photo: Home Bio-gas system to farming communities.

Women empowerment:

Mundra Petrochem Limited has initiated various initiatives through Adani Foundation for empowerment of women through Self Help Group (SHG) for self-employment and also engaging women farmers in various trainings programs i.e. operations of farming equipment's, supporting for understanding Government Schemes/various Subsidies on agriculture/horticulture/cattle's etc., awareness on home biogas, cattle feed or NB21 promotion etc.

Water Conservation:

As part of "Corporate Environment Responsibility (CER)", Mundra Petrochem Limited has constructed through Adani Foundation Rainwater harvesting system to collect, convey and store rain for later use from the surfaces during rainy season. Rainwater Harvesting is a simple method of collecting rainwater and deploying the same for further usage, a step towards water conservation aiming towards fulfillment of Corporate Environment Responsibility.

These efforts have led to enhancement in water storage, water quality consistency water access for drinking and agricultural use.

Sr. No.	Project	Unit	Out Come	effectiveness
1	Check dam strengthening at Nana Kapaya	1	Water storage capacity increased by 48,000 Cum	60+ Farmer's, 120+ acres area of Agri land can be irrigated.
2	Recharge Borewell	21	Reduce salinity ingress and preventing water run	150+ farmer's 260+ Acres area of Agri land can be irrigated.
3	Pipe culvert at Checkdam located at Bhujpur	1	Prevent water runoff into sea side.	35 farmer's 120+ acres of Agri land can be irrigated.





Photo: Pond deepening, rainwater recharging borewell and pipe culvert activities at nearby villages.

Tree plantation:

Launching Prakrutirath-is an initiative for trees distributions among the peoples of nearby villages. It is about fostering a sense of responsibility toward the surrounding environment. Through sapling distribution to individuals, we have empowered communities to take ownership of their surroundings, leading to a heightened consciousness about the environment's significance.

Enhancing the landscape and improving environment, local species of trees with heights ranging from 6ft to 8ft along the 18km stretch of road from Zarpara to Nana Bhadiya village have been planted. This green initiative adds beauty and promotes environmental wellbeing.





Photo: Tree plantation alongside the road from Zarpara to Nana Bhadiya.

Further, large scale tree plantation activities have been initiated at village Desalpar community area.





Photo: Tree plantation activities initiated at village Desalpar.

Imparting Skill development trainings through "Skill Development Centre (SDC)":

Mundra Petrochem Limited (MPL) has initiated skill development activities for youth of the nearby villages through Adani Skill Development Centre (ASDC). In this regard, MPL has identified the interested youths for various skill development programs namely- Solar Technician (Solar Panel Manufacturing Technician), Domestic Data Entry Operator, Assistant Electrician. These courses are designed as per National Skills Qualifications Framework (NSQF). These skill development training will helps youths in getting employment in

industries nearby. Training on Mudwork is also planned for the people having interest in activities related to craft of mud work. The course will provide the desired skill set to the trained personal leading to self-employment etc.

D. Community Rural Infrastructure Development:

Cyclone Biparjoy left a trail of substantial losses in Mundra and surrounding villages. Adani Foundation collaborated with panchayats and Government bodies, playing a pivotal role in relief and recovery efforts. More than 17,000 people benefited from various efforts. Adani foundation consider this as ethical responsibility and source of satisfaction.

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

The work have been performed as under:

Pre – cyclone	During Cyclone	Post – cyclone
✓ Team distribution	✓ Food and Shelter provision	✓ Temporary housing
✓ Workforce migration	✓ Fodder support	✓ Food Packets
✓ Basic amenities	✓ Awareness messages	✓ Excavator support
✓ Awareness efforts	✓ Vehicle / Ambulance support	✓ Transfer of affected individuals.
✓ Meeting with Government	✓ Coordination with Panchayat	✓ Provision of fodder





Photo: Support during Biparjoy Cyclone.

E. Bio-Diversity:



Coastal Biodiversity :

Mundra Petrochem Limited is in a process of multi species Mangrove Biodiversity Park with collaboration of Gujarat Institute of Desert Ecology (Bhuj, Kachchh Total 20 hector area have been developed with multi species Mangrove plantation at Luni coast, Mundra. Avicenna Marina, Rhizophora Mucronata Ceriops Tagal, Ceripos decandra are the spices of Biodiversity Park Due to this massive costal plantation, different birds, crabs, fishes and other insects will be attracted towards the coast.

Terrestrial Biodiversity:

In 16 villages with coordination of Village Development Committee, in 2 acre land biodiversity park will be developed which will be divided in 4 compartments i.e fruit bearing trees, medicinal trees, oxygen trees and native spices which will be connected by paver pathways Terrestrial habitats are ones that are found on land, like forests, grasslands, deserts, shorelines, and wetlands Terrestrial habitats also include man made habitats, like farms, towns, and cities, and habitats that are under the earth, like caves and mines Discussion with village development committee regrading provision of land This initiative will attract various flora and fauna.

On July 26th, Mundra Petrochemical Limited has celebrated Mangrove Day with spreading awareness over 9th & 10th Grade students and fisherfolk. The session ended with Mangrove plantation. Approximately more than 150 participants were participated.



Photo: Mangrove species awareness and plantation program.

Other community and eco-developmental activities in villages by Adani Group

In addition to above, Adani Foundation has carried out various socio-economic & eco developmental activities at villages of Taluka: Mundra and Mandavi. Adani Foundation helping community by facilitating quality education, enabling the youth with income-generating skills, promoting a healthy society and supporting infrastructure development. With an aim to contribute to the holistic development of communities, the Adani Foundation is contributing to the global agenda of meeting Sustainable Development Goals (SDGs).

Few activities are listed as:

1. Native species plantation in the 2 acres area at Nana Kapaya village creating a flourishing mini forest with 5,508 trees.
2. Barren spaces were transformed into lush green havens through our massive public plantation drives. One notable example is the Bhupur Visri Mata temple where 25,000 trees have been planted.
3. About 57,065 numbers of trees have been distributed among the villagers of nearby villages under Prakruti Rath during the monsoon season.
4. Activities under "Utthan – Flagship Education Program of Adani Foundation".
 - a) 2541 numbers of progressive learner and Assessment of 6314 students (3rd to 7th Standard)
 - b) More than 400 mothers were personally engaged and more than 10,000 mothers actively participated in the mother meet program.
 - c) 877 students are preparing for competitive exams i.e 354 JNV, 273 PSE & 250 NMMS.
 - d) More than 5000 students of class 1st to 4th were facilitated for making English as third language.
 - e) More than 72000 books were issued under Library activities.
 - f) 4170 students empowered with digital skills & knowledge.
 - g) More than 4300 students of primary & high schools participated under Summer camp.
5. Diverse health care initiatives are making society healthier. We facilitated the participation of numerous attendees for the health care activities
 - a. 1007 numbers of medical support.
 - b. 58 numbers of Dialysis.
 - c. 4690 numbers of Mobile Van users.
 - d. 5939 numbers of users at Rural clinic centers.
 - e. 1448 numbers of users at health camp.
 - f. 1489 numbers of users at specialty health camp.
 - g. 5584 numbers of Ayushman card.
 - h. 1598 numbers of donators at blood donation camp.
6. Dialysis Support: In Mundra, where water quality challenges contribute to a higher prevalence of urinary infection lead to kidney failure cases. Our Dialysis Support Program is designed to assist those in extreme need and Financial weaker. The program is not only alleviating their financial burden but also enabling them to lead healthier lives.
7. The initiative is a dedicated effort to eradicate cataract – related vision impairments specially focused on senior citizen through Meticulous planning as 473 patient of 9 villages benefited with comprehensive Eye Screenings, Cataract Surgeries and post operative care and follow – up.

8. Arranged gynecological and ophthalmic and general health camp at village level.
9. Adani Foundation has started 100% Ayushman Card coverage in all villages of Mundra in coordination with the District Health Department. 5584 Ayushman cards have been issued among the 25 villages. Further, more than 2230 women among 18 villages were check up under Gynec Health check up program.
10. We have 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.
11. 15,000 kilo liter of drinking water have been distributed at Luni bandar having 401 numbers of population in the village.
12. 20,000 kilo liter of drinking water have been distributed at Bavdi bandar having 535 numbers of population in the village.
13. Under the "*Project Sahel*", comprehensive training programs are being conducted in which 850 numbers of women across more than 82 Self Help Group have been trained.
14. Empowering communities through Menstrual Hygiene Awareness, Adani Foundation have conducted sessions in 18 villages. A total of 1587 women and 494 girls from schools actively participated in these enlightening sessions at the grassroot level.
15. In the Millet Program, 545 numbers of women were participated and they have prepared 236 numbers of delectable millet dishes.
16. 195 stalls have been constructed for vegetable market for promoting local entrepreneurship under community development program .
17. Skill development program serve the skills on Digital literacy, RTG Crane operator, Beauty therapist, mud work, Advance Excell training, real time exposure, hydrography training, entrepreneurship development program, placement opportunity etc.
18. Utthan Sahayak played a pivotal role in supporting taluka level science fair and sports activities, resulting in the selection of 6 students for the district level sports competitions.

Grassland Development Program:

Mundra Petrochem Limited have started Grass land development with a primary objective to create a self sustaining village by converting common pastureland (Gauchar) into fertile and productive grasslands to ensure a reliable source of fodder for the community, especially during challenging times. Total 213 acres of Gauchar (Pastureland) has been cleaned and allotted for grass land development with strong community contribution and mobilization at villages like Zarpara, Siracha, Gundala, Kukadsar.

Cattle Health Camp:

Cattle health camp had been arranged in coordination with Government Veterinary doctors and the Animal Husbandry Department, dedicated to ensuring the crucial veterinary care to a significant number of cattle, effectively addressing their immediate health needs. Approximately more than 500 cattle were treated successfully with ensuring their health and vitality.



Photo: Cattle health camp and Fodder support at nearby villages.



Photo: Community Tree Plantation at nearby villages



Photo: Community health center and education center for villages



Photo: Aayushman Card distribution program



Photo: Drinking water distribution and women empowerment programme at near by villages.



Photo: Vegetable market – stalls under community infrastructure development.



Photo: News highlights on the Corporate Environment Responsibility (CER) activities by Mundra Petrochem Limited in nearby villages through Adani Foundation (a CSR Arm of Adani Group)

adani

Ref: MPL/ENV/CER/2023 - July/02

Date: 29/07/2023

To,
The District Development Officer,
Jilla Panchayat, Opp - Surmandir Multiplex
Bhuj-Kutch, Gujarat - 370 001

Subject Community developmental activities in all 16 villages surrounding the Coal to PVC project as part of Corporate Environment Responsibility (CER) activities by Mundra Petrochem Limited. - Reg.

Reference 1. Environment Clearance (EC) vide ref. no. F.No.IA-J-11011/423/2021 - IA - II (Ind - I) Dated 23/12/2022.
2. EC vide ref. no. F.No.-J-11011/149/2021 - IA - II(i), 27/12/2022.
3. EC vide ref. no. F.No.IA-J-11011/149/2021 - IA - II(i), 28/11/2022.

Respected Sir,

We would like to draw your kind attention that being an environmentally & socially responsible corporate, Adani Group always give priority to community development along with any project establishment.

As you are aware that M/s Mundra Petrochem Limited (A subsidiary of Adani Enterprises) has planned to set-up Coal to PVC project at Mundra site and MoEF/BCC vide above refer letter dated 23/12/2022, 27/12/2022 and 28/11/2022 has already granted Environmental Clearances for Industrial activities under Industrial project - 1, 2 & 3 respectively for Coal to PVC project.

As per our commitments, we have already initiated community developmental activities as part of our Corporate Environment Responsibility (CER) in all 16 villages surrounding the Coal to PVC project.

You will kindly appreciate that to apply a systematic approach for community development initiative, a detailed baseline and need assessment study was carried out through a reputed third-party agency by involving community (i.e identification of needs by involvement of community) for further implementation identified needs as part of CER initiatives. In the same line, the activities being planned and initiated in present FY 2023 - 2024 have been enclosed as Annexure-I for your perusal.

This is for your information and record, please.

Thanking you,

For M/s Mundra Petrochem limited

Vinay Kumar Singh
General Manager - Environment & Sustainability.

Encl: Annexure-I

Copy to: The Taluka Development Officer, Taluka Panchayat, Mundra

Mundra Petrochem Limited
"Adani Corporate House",
Shantigram, Near Valuhra Devi Circle,
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Handwritten notes in Gujarati: સરકારી કાર્યાલય, તાલુકા પંચાયત, મુન્દરા

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Annexure-I: Activities under Corporate Environment Responsibility (CER) being carried out in FY 23-24

Sr. No.	Activities
1	Land, Vegetation, Water & Air
A	Soil & Water Conservation
A.1	Rooftop Rainwater Harvesting System
A.2	Pond Deepening & Beautification, River Cleaning
A.3	Check dam Strengthening
A.4	Percolation Well
B	Participatory Ground Water Management
B.1	Water Management Project
C	Natural Farming
C.1	Farmer Awareness Meeting & Seed Support, Training
C.2	Agriculture Equipment Support I.e Weed Cutter
D	Biodiversity
D.1	Tree plantation at Roadside with Tree Guard
D.2	Community Place / Green Belt Development
D.3	Horticulture Saplings distribution
2	Segar Sathi
2.1	Motivation Support
2.2	Women Awareness Program (De-addiction, Menstrual hygiene, parenting, Noncommunicable diseases)
3	Basic Infra
3.1	Approach Roads of Vasahat and Vadi vistar
4	Skill Development
4.1	Technical Training

List of 16 Villages Surrounding to the Coal to PVC Project -

1	Nani Bhujpar	5	Desaipar	9	Nana Bhadiya	13	Siracha
2	Pratappar	6	Moti Bhujpar	10	Mota Bhadiya	14	Nani Khakhar
3	Vandh	7	Targadi	11	Zarpara	15	Kandagara Mota
4	Navihal	8	Moti Khakhar	12	Modhava	16	Tunda

Mundra Petrochem Limited
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Photo: Communication letter with Government authorities to execute the CER activities at nearby villages.

Annexure – II Tree Plantation Activities

Prakrutirath is an initiative for trees distributions among the peoples of nearby villages. It is about fostering a sense of responsibility toward the surrounding environment. Through sapling distribution to individuals, we have empowered communities to take ownership of their surroundings, leading to a heightened consciousness about the environment's significance.

Enhancing the landscape and improving environment, local species of trees with heights ranging from 6ft to 8ft along the 18km stretch of road from Zarpara to Nana Bhadiya village have been planted. This green initiative adds beauty and promotes environmental wellbeing.



Photo: Tree plantation alongside the road from Zarpara to Nana Bhadiya.

Further, as an environment responsible organization, Mundra Petrochem Limited has also planned to carry out plantation activities as part of Eco development drives in surrounding village (Deshalpar Village) of the Coal to PVC project at Mundra which will lead to achieve green belt development.





Photo: Tree plantation activities initiated at village Desalpar.

Annexure – III Activities for Wildlife Conservation Plan

Awareness program for "Wildlife conservation" for surrounding area has been conducted at near by village. These awareness program comprises the need of wild life conservation, definition, importance, methods of wildlife conservations and actions taken by Adani foundations for at near by villages.

On July 26th, Mundra Petrochemical Limited has celebrated Mangrove Day with spreading awareness over 9th & 10th Grade students and fisherfolk. The session ended with Mangrove plantation. Approximately more than 150 participants participated.



Photo: Mangrove species awareness and plantation program.

Annexure – IV

Awareness Program on “Ban on Single Use Plastic”



Awareness program for “Ban on Single use plastic” has been conducted at Government Schools and Self Help Groups of nearby villages as per The Plastic Waste Management Rules 2016, inter-alia, mandated banning of identified Single Use Plastic (SUP) items with effect from 01/07/2022.

Awareness Program has covers CPCB Notifications, prohibited plastic items, complications created by plastic waste, awareness on plastic waste, plastic recycling numbers and its meaning.

The central aim of the plastic – free drive is to empower and enlighten students as key agents of change, enabling them to disseminate awareness and instill the practice of reducing single use plastic within their community.

1. **Educate:** Spread awareness about the harmful effects of plastic on the environment, marine life, soil health and human well – being.
2. **Engage:** Mobilize community members, especially the youth and family members to actively participate in plastic waste reduction activities.
3. **Implement:** Introduce sustainable alternatives to ensure proper disposal and recycling.

10,000 students of primary school and 990 students of secondary schools of nearby villages have been enlightened through plastic free awareness programs.



Photo: Awareness Program on “Plastic free Drive”

Annexure - V



SIX MONTHLY ENVIRONMENTAL MONITORING REPORT,
MUNDRA PETROCHEM LIMITED



M/S. MUNDRA PETROCHEMICAL LIMITED (MPL)

**Six Monthly Environmental Monitoring Report
Mundra Petrochemicals Limited (MPL) Located at near
Village Vandh & Tunda, Taluka Mundra, District Kachchh,
Gujarat**

Month: April to September - 2023

Submitted By



**UniStar Environment & Research Labs Pvt. Ltd.
White House, Near GIDC Office, Char Rasta, Vapi,
Gujarat, India – 396195**

M/S. MUNDRA PETROCHEM LIMITED (MPL)

Six Monthly Environment Monitoring Report for Coal to PVC Project near Village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat

This report is released for the use of Mundra Petrochem Limited (MPL), Regulators and relevant stakeholders solely as part of the subject project's Environmental Compliance Process. Information provided, unless attributed to referenced third parties, is copyrighted, and shall not be used for any other purpose without the written consent from Mundra Petrochemical Limited (MPL).

QUALITY CONTROL							
Name of Publication	Six Environmental Monitoring Report for Coal to PVC Project near Village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat						
SO No.	Service Order	Issue No.	1	Revision No.	01	Released	October, 2023
Prepared & Managed By	Mr. Deelip Brahmin		Approved by		Mr. Jaivik Tandel		
Released By	Unistar Environment and Research Labs Pvt. Ltd.						

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ABBREVIATIONS AND ACRONYMS

MPL	:	Mundra Petrochemicals Limited
APL	:	Adani Power Limited.
APSEZL	:	Adani Ports & Special Economic Zone Limited
UERL	:	UniStar Environment and Research Labs Private Limited
CPCB	:	Central Pollution Control Board
EIA	:	Environment Impact Assessment
EMP	:	Environmental Management Plan
ETP	:	Effluent Treatment Plant
KLD	:	Kilo Liter Day
MOEFCC	:	Ministry of Environment, Forest & Climate Change
C ₂ H ₂	:	Acetylene
CaC ₂	:	Calcium Carbide
C ₂ H ₃ Cl	:	Vinyl chloride
GoI	:	Government of India
GPCB	:	Gujarat Pollution Control Board
PVC	:	Polyvinyl chloride
VCM	:	Vinyl Chloride Monomer

1 EXECUTIVE SUMMARY

1.1 Introduction

1.1.1 About ADANI Group

Adani Group is India's fastest growing corporate catering to a billion aspirations. Adani Group is a diversified organization comprising of 7 publicly traded companies in India. Adani Group has headquartered in Ahmedabad, in the state of Gujarat, India. Over the years, Adani Group has positioned itself to be the market leader in its transport logistics and energy utility portfolio businesses focusing on large scale infrastructure development in India with O & M practices benchmarked to global standards, with key businesses across Resources -Coal mining & trading, Logistics – shipping, rail and airport terminals, Energy – Gas (LNG, City Gas), Thermal power generation, Renewables (Solar & Wind) and transmission energy infrastructure, Agro commodities, Ancillary industries and Real estate etc. Adani Group is the largest private power producer in India.

Adani owes its success and leadership position to its core philosophy of 'Nation Building' driven by '*Growth with Goodness*' - a guiding principle for sustainable growth. Adani is committed to improve its ESG footprint by re-aligning its businesses with emphasis on climate protection and increasing community outreach through its CSR programme based on the principles of sustainability, diversity and shared values.

Adani group is now executing green PVC project (Coal to PVC) at near Village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat

1.1.2 About UniStar Environment and Research Labs Private Limited (UERL)

UniStar Environment and Research Labs Private Limited is a company which provide efficient and economical services in the areas of environmental pollution control/monitoring and chemical analysis & research activities to various industries and institutions. UniStar provides technical consultancy backed by well-established sophisticated analytical laboratories, to comply with Statutory requirements and directives of the Pollution Control Board/ Committees under various Environment Pollution Control Acts. and Rules. We also carry out post Environmental Clearance monitoring and assist our valued customers in preparation of Half-yearly Environmental Clearance Compliance report.

- Ministry of Environment, Forest and Climate Change (MOEFCC), GOI recognized the Laboratory under the Environment Protection Act-1986 which is valid up to – 22/09/2024.
- ISO/IEC 17025 Accredited Laboratory by National Accreditation Board for Testing and Calibration Laboratories (NABL) which is valid up to – 22/09/2024.
- Recognized Environmental Auditor Laboratory by Gujarat Pollution Control Board, Gandhinagar, Gujarat, India which is valid up to 31/12/2023.

Copy of relevant certificates are attached as Annexure I.

1.2 Brief Description of Project

The proposed Green PVC Project is having various major units such as, Semi-coke Plant, Calcium Carbide Plant, Acetylene Plant, VCM Plant, PVC Plant, Caustic Soda Plant, Ethylene Glycol Plant & Cement Plant. The associated infrastructure facilities such as boiler, final/intermediate product storages etc, utilities, pipelines, ancillary facilities for interconnecting /transferring of materials between pockets, loading/unloading, roads, drainages, pipe racks, trenches, cable trays, non-plant buildings, laboratories, fabrication yards, batching Plant, dispatch section, general stores/warehouse, fire & safety department, maintenance workshop, occupational health centre etc. will also be established.

2 ENVIRONMENTAL MONITORING

2.1 General Philosophy & Scope of Work

The environmental monitoring encompassed various disciplines and environmental attributes, including air quality, water quality, noise levels, and soil conditions. As per the given scope of work for environmental monitoring by MPL, we have prepared Environmental Monitoring Plan as per below.

Sr. No	Discipline	Location	Parameter	Frequency
1.	Ambient Air Quality Monitoring	Five Locations	As per NAAQMS, 2009	Monthly
2.	Ambient Noise Monitoring	Five Locations	Day Time & Nighttime - Noise Levels in Leq dB(A)	Monthly
3.	Treated Sewage water	One Location	pH, Bio-Chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Faecal Coliform (FC) (Most Probable Number per 100 millilitre, MPN/100ml, Nitrogen-Total, Phosphorus-Total	Monthly
4.	Ground water	Two Location	pH, Temperature, Turbidity, conductivity, Total Dissolved Solids, Bio-Chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Salinity, Ammonical Nitrogen, Total Alkalinity, Total Hardness, Calcium, Magnesium, Chloride, Sulphate, Nitrate, Fluoride, Phenolic Compound, Sodium, Potassium, Calcium Hardness, Magnesium Hardness, Lead, Iron, Cadmium, Manganese, Copper, Arsenic, Chromium, Mercury, Nickel, Zinc, Total Nitrogen, Cyanide, Total Phosphorous, Sodium Absorption Ratio (SAR)	Half Yearly
5.	Surface Water	Two Location	pH, Colour, Conductivity, Total Dissolved Solids, Bio-Chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Dissolved Oxygen, Total Hardness, Calcium Hardness, Magnesium Hardness, Chloride, Sulphate, Nitrate, Fluoride, Phenolic Compound, Ammonical Nitrogen, Lead, Iron, Cadmium, Manganese, Copper, Arsenic, Chromium, Boron, Mercury, Zinc, Cyanide, Sodium Absorption Ratio (SAR)	Half Yearly
6.	Surface Water (Marine)	Two Location	pH, Colour, Odour, turbidity, Total Suspended Solids, Total Dissolved Solids, Bio-Chemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Dissolved Oxygen, Oil & Grease, Lead, Iron, Cadmium, Manganese,	Half Yearly

2.2 Sampling & Analysis

The selection of methods for sampling, preservation, and analysis holds significant importance in environmental monitoring. To ensure the highest quality in environmental sampling and analysis, the Central Pollution Control Board (CPCB) has established guidelines for these processes. Adhering to these guidelines, specific methods for sampling and analysis of environmental samples have been chosen and implemented. Instrument used in sampling are calibrated from NABL accredited Laboratory. Details are as follows:

Sr. No	Name of Instrument Used	ID No./Sr. No	Make/Model	Calibration Date	Cal. Valid up to
1.	Respirable Dust Sampler PM 10	UERL/AIR/RDS/47/1816-DTJ-2013	Envirotech/ APM 460-BL	27/06/2023	26/06/2024
2.	Fine Particulate Sampler PM 2.5	UERL/AIR/FPS/22/ 44-DTC-2012	Envirotech/ APM 550-MINI	27/06/2023	26/06/2024
3.	Respirable Dust Sampler PM 10	UERL/AIR/RDS/34/1768-DTB-2013	Envirotech/ APM 460-BL	02/08/2023	01/08/2024
4.	Fine Particulate Sampler PM 2.5	UERL/AIR/FPS/21/ 20-DTC-2012	Envirotech/ APM 550-MINI	02/08/2023	01/08/2024
5.	Sound Level Meter	UERL/AIR/SLM/09C	Extech / SDL 600	26/06/2023	25/06/2024

***Calibration certificates are attached in Annexure II**

2.2.1 Ambient Air Quality Sampling and Analytical Techniques

The techniques used for ambient air quality monitoring and its permissible limit are given in following table.

Sr. No.	Parameter	Technique	Technical protocol	Permissible Limit (As per NAAQS)
1.	Particulate Matter as PM10	Respirable Dust Sampler (Gravimetric method)	IS - 5182, Part - 23	100
2.	Particulate Matter as PM2.5	fine particular Sampler (Gravimetric method)	IS - 5182, Part - 24	60
3.	Sulphur Dioxide as SO2	Modified West and Gaeke	IS - 5182, Part - 2	80
4.	Nitrogen Dioxide as NO2	Jacob &Hochheiser	IS - 5182, Part - 6	80
5.	Carbon Monoxide as CO	Gas Analyser (CO)	IS - 5182, Part - 10	4.0
6.	Ozone as O3	UV Spectrophotometer	IS - 5182, Part - 9	180
7.	Ammonia as NH3	Titrimetric Method	IS - 5182, Part - 25	400
8.	Lead as Pb	AAS Method	IS - 5182, Part - 22	1.0
9.	Nickel as Ni	AAS Method	IS - 5182, Part - 26	20
10.	Arsenic as As	AAS Method	IS - 5182, Part - 22	6.0
11.	Benzene as C6H6	GC Method	IS - 5182, Part - 11	5.0
12.	Benzo (a) Pyrene (BaP)	GC Method	IS - 5182, Part - 12	1.0

2.2.2 Ambient Noise Level Sampling Techniques

The techniques used for ambient air quality monitoring and its permissible limit are given in following table.

Sr. No.	Parameter	Technique	Technical protocol	Permissible Limit (As per CPCB)
1.	Ambient Noise Level Monitoring at Industrial Area	Noise Meter (Leq)	IS : 9989 : 1981	Day Time – 75 dB Night Time – 70 dB
2	Ambient Noise Level Monitoring at Residential Area	Noise Meter (Leq)	IS : 9989 : 1981	Day Time – 55 dB Night Time – 45 dB

2.2.3 Ground Water Sampling & Analysis Techniques

Sr. No.	Parameter	Technical protocol	IS 10500 Standard Limits for drinking water	
			Desirable limit	Per. Limit in the Abs. of Alt. Source
1	pH	IS 3025(Part 11):2022	6.5-8.5	NR
2	Temp	IS 3025(Part 9):1984	NS	NS
3	Turbidity	IS 3025(Part 10):1984	1	5
4	TDS	IS 3025(Part 14):1984	500	2000
5	Electrical Conductivity	IS 3025(Part 16):2023	NS	NS
6	COD	IS 3025(Part 58): 2006	NS	NS
7	BOD	IS 3025(Part 44): 1993	NS	NS
8	Phenol	IS 3025(Part 43): 2020	0.001	0.002
9	Chlorides	IS 3025(Part 32): 1988	250	1000
10	Sulphate	IS 3025(Part 24): 2022	200	400
11	Total Hardness	IS 3025(Part 21): 2009	200	600
12	Ca++ Hardness	APHA 23rd Ed,2017,3500 Ca. B	NS	NS
13	Mg++ Hardness	APHA 23rd Ed,2017,3500 Mg. B	NS	NS
14	Total Alkalinity	IS 3025(Part 23): 1986	200	600
15	Nitrate	APHA 23rd Ed,2017,4500 NO3-B	45	NR
16	Fluoride	IS 3025(Part 60): 2008	1	1.5
17	Sodium	APHA 23rd Ed,2017,3500 Na. B	NS	NS
18	Potassium	APHA 23rd Ed,2017,3500 Mg. B	NS	NS
19	Calcium	APHA 23rd Ed,2017,3500 Ca. B	75	200
20	Magnesium	APHA 23rd Ed,2017,3500 Mg. B	30	100
21	Salinity	APHA 23rd Ed,2017,2520-B, 2-60	NS	NS
22	Total Nitrogen	APHA 23rd Ed,2017,4500 NH3 - B	0.5	NR
23	Total Phosphorous	APHA 23rd Ed,2017,4500-P, D	NS	NS
24	Dissolved Oxygen	APHA 23rd Ed,2017,4500-O, B	NS	NS
25	Ammonical Nitrogen	IS 3025(Part 34) (ISE Method):1988	NS	NS
26	SAR	By Calculation	NS	NS
	Heavy Metals			
27	Arsenic (as As)	APHA 23rd Ed,2017,3114-C	0.01	0.05
28	Cadmium (as Cd)	IS 3025(Part 41): 1992	0.003	NR
29	Chromium (as Cr)	APHA 23rd Ed,2017,3111-B	0.05	NR
30	Copper (as Cu)	APHA 23rd Ed,2017,3111-B	0.05	1.5
31	Cyanide (as CN)	IS 3025(Part 27): 1986	0.05	NR
32	Iron (as Fe)	IS 3025(Part 53): 2003	0.3	NR
33	Lead (as Pb)	IS 3025(Part 47): 1994	0.01	NR
34	Mercury (as Hg)	APHA 23rd Ed,2017,3112-B	0.001	NR

Sr. No.	Parameter	Technical protocol	IS 10500 Standard Limits for drinking water	
			Desirable limit	Per. Limit in the Abs. of Alt. Source
35	Manganese (as Mn)	APHA 23rd Ed,2017,3500 Mn. B	0.1	0.3
36	Nickel (as Ni)	IS 3025(Part 54): 1994	0.02	NR
37	Zinc (as Zn)	IS 3025(Part 49): 1994	5	15
38	Total Coliform	IS 1622:1981	Shall not be detectable	
39	Faecal Coliforms	IS 1622:1981	Shall not be detectable	

2.2.4 Surface Water Sampling & Analysis Techniques

Sr. No.	Parameter	Technical protocol	Classification for Inland Surface Water (CPCB)
			Class E
1	pH	IS 3025(Part 11):2022	6.5 to 8.5
2	Dissolved Oxygen	APHA 23rd Ed,2017,4500-O, B	NA
3	TDS	IS 3025(Part 14):1984	2100
4	Electrical Conductivity	IS 3025(Part 16):2023	2250
5	BOD	IS 3025(Part 44): 1993	NA
6	Colour	IS 3025(Part 4):2021	-
7	Total Hardness	IS 3025(Part 21): 2009	NA
8	Ca++ Hardness	APHA 23rd Ed,2017,3500 Ca. B	NA
9	Mg++ Hardness	APHA 23rd Ed,2017,3500 Mg. B	NA
10	Chlorides	IS 3025(Part 32): 1988	600
11	Sulphate	IS 3025(Part 24): 2022	1000
12	Nitrate	APHA 23rd Ed,2017,4500 NO3-B	NA
13	Fluoride	IS 3025(Part 60): 2008	-
14	Phenol	IS 3025(Part 43): 2020	NA
15	Ammonical Nitrogen	IS 3025(Part 34) (ISE Method):1988	NA
16	SAR	By Calculation	26
17	Copper (as Cu)	APHA 23rd Ed,2017,3111-B	NA
18	Iron (as Fe)	IS 3025(Part 53): 2003	NA
19	Manganese (as Mn)	APHA 23rd Ed,2017,3500 Mn. B	NA
20	Mercury	APHA 23rd Ed,2017,3112-B	NA
21	Cadmium (as Cd)	IS 3025(Part 41): 1992	NA
22	Arsenic (as As)	APHA 23rd Ed,2017,3114-C	NA
23	Cyanide	IS 3025(Part 27): 1986	NA
24	Lead (as Pb)	IS 3025(Part 47): 1994	NA
25	Zinc	IS 3025(Part 49): 1994	NA
26	Chromium (as Cr)	APHA 23rd Ed,2017,3111-B	NA
27	Boron	IS 3025(Part 49): 1994	NA
28	Total Coliform	IS 1622:1981	2
29	COD	IS 3025(Part 57): RA 2021	-

2.2.5 Surface Water (Marine) Sampling & Analysis Techniques

Sr. No.	Parameter	Technical protocol	Classification for Coastal marine water (CPCB)
			SW-I
1	pH	IS 3025(Part 11):2022	6.5 to 8.5
2	Dissolved Oxygen	APHA 23rd Ed,2017,4500-O, B	5

Sr. No.	Parameter	Technical protocol	Classification for Coastal marine water (CPCB)
			SW-I
3	Colour & Odour	IS 3025(Part 4):2021 & IS 3025(Part 5):1983	No Colour No Odour
4	Floating Matters	-	None
5	Total Suspended Solid	APHA 23rd Ed,2017,2540-D	None from Sewage or Industrial waste Origin
6	Turbidity	IS 3025(Part 10):1984	-
7	BOD	IS 3025(Part 44): 1993	-
8	Oil & Grease	IS 3025(Part 39): 1991	0.1
9	Mercury as Hg	APHA 23rd Ed,2017,3112-B	0.001
10	Lead (as Pb)	IS 3025(Part 47): 1994	0.001
11	Cadmium (as Cd)	IS 3025(Part 41): 1992	0.01
12	Iron (as Fe)	IS 3025(Part 53): 2003	-
13	Manganese (as Mn)	APHA 23rd Ed,2017,3500 Mn. B	-
14	Total Coliform	IS 1622:1981	-
15	Sludge Deposits, Solid refuse floating Solids, Oil Grease and Scum	-	-
16	COD	IS 3025(Part 57): RA 2021	-

2.2.6 Treated Water Sampling & Analysis Techniques

The techniques used for waste water Sampling and analysis its permissible limit is given in following table.

Sr. No.	Parameter	Technical protocol	Permissible Limit (As per CPCB)
1.	Treated Effluent from STP		
	pH	IS 3025(Part 11):2022	6.5 to 9.0
	BOD	APHA 23 rd Ed,2017,5210-B	<30
	COD	IS 3025(Part 58): 2006	-
	TSS	APHA 23rd Ed.,2017, 2540 – D	<50
	Nitrogen Total	APHA 23rd Ed,2017,4500-B, C	--
	Phosphorous Total	APHA 23rd Ed,2017,4500-P, D	--
	Faecal Coliform	IS 1622:1981	<1000

2.3 Location (map showing general location, Monitoring location and project boundary) with coordinates & Monitoring details.

The general location of the project is shown in **Map 2-1** shows the study area of 10 Km radius around the project site on Google Earth downloaded image.

The sampling location used for monitoring purpose is taken after due consideration with baseline monitoring location, availability of power & weather condition etc. Also In order to evaluate the quality of sewage water, samples were acquired from the sewage water treatment plant for comprehensive analysis. These analyses encompassed physico-chemical, general-chemical, and microbiological parameters.

Sr. No.	Sampling Type	Sampling Location	Type of Area	Coordinates
1.	Ambient Air & Noise	Village - Zarpara	Rural Area	22.837942° N, 69.646225° E
2.	Ambient Air & Noise	Village - Navinal	Rural Area	22.829246° N, 69.598332° E

3.	Ambient Air & Noise	Village - Vandh	Rural Area	22.809106° N, 69.53562° E
4.	Ambient Air & Noise	Outside Fabrication & Batching Plant	Industrial Area	22.807563° N, 69.704170° E
5.	Ambient Air & Noise	Project Site (Pocket – 1)	Industrial Area	22.785943° N, 69.566645° E
6.	Ground Water (GW-5)	Navinal	Rural Area	22.829246° N, 69.598332° E
7.	Ground Water (GW-7)	Nana Bhadiya	Rural Area	22.833943° N, 69.486339° E
8.	Surface Water (SW-4)	Nagavanti Nadi	Rural Area	22.836757° N, 69.486339° E
9.	Surface Water (SW-7)	Siracha	Rural Area	22.835496° N, 69.621600° E
10.	Surface Water (Marine) (SW-2)	Kotdi Creek	Industrial Area	22.806976° N, 69.559314° E
11.	Surface Water (Marine) (SW-3)	Bardi Mata Creek	Industrial Area	22.812261° N, 69.561134° E
12.	Trade Effluent - STP	Project Site (Pocket – 1)	Industrial Area	22.784881° N, 69.566798° E

Photograph 2-1: Proposed Project Site (Current Status of Land)



Photograph 2-2: Photographs of monitoring



Zarapra Village



Navinal Village



Vandh Village



Project Site (Pocket - 1)



Outside Fabrication & Batching Plant



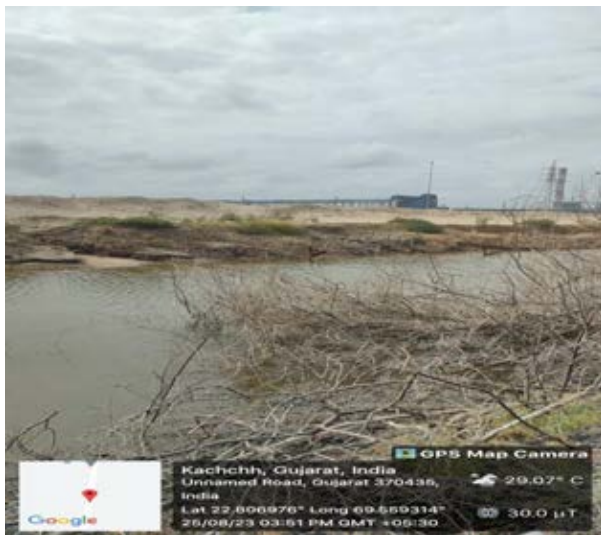
Ground Water (GW-7) Nana Bhadiya



Surface Water (Marine) (SW-3) - Baradi mata creek



Surface Water (SW-4) - Nagavanti Nadi



Surface Water (Marine) (SW-2) - Kotadi Creek water



STP Treated Water Sample Collection

Map 2-1: Project site and Study Area of 10 Km radius on Google Earth Downloaded Images



3 CLIMATIC CONDITON

3.1 Climatic data from secondary sources

For the coal to PVC project secondary data for weather conditions in the region is available for the period of April 2023 to September 2023. This table gives useful information about a region's weather condition. Meteorological data was analysed/reviewed for important parameters like Temperature, Humidity, BP, Wind speed, Wind direction, Solar radiation and Rainfall.

Average meteorological condition recorded at is as given in below table.

Table 3-1: Average meteorological condition

Weather Monitoring Data							
Month	Scale	Temp. (°C)	RH (%)	BP (mmHg)	Wind Direction	Wind speed (Km/ Hr.)	Total Rainfall (mm)
April - September 2023	Max.	44.1	100.3	760.2	360.0	82.0	690.5
	Min	21.2	10.6	737.0	0.0	0.1	
	Average/ Total	31.3	75.6	751.6	238.8	10.3	

4 ANALYSIS & INTERPRETATION

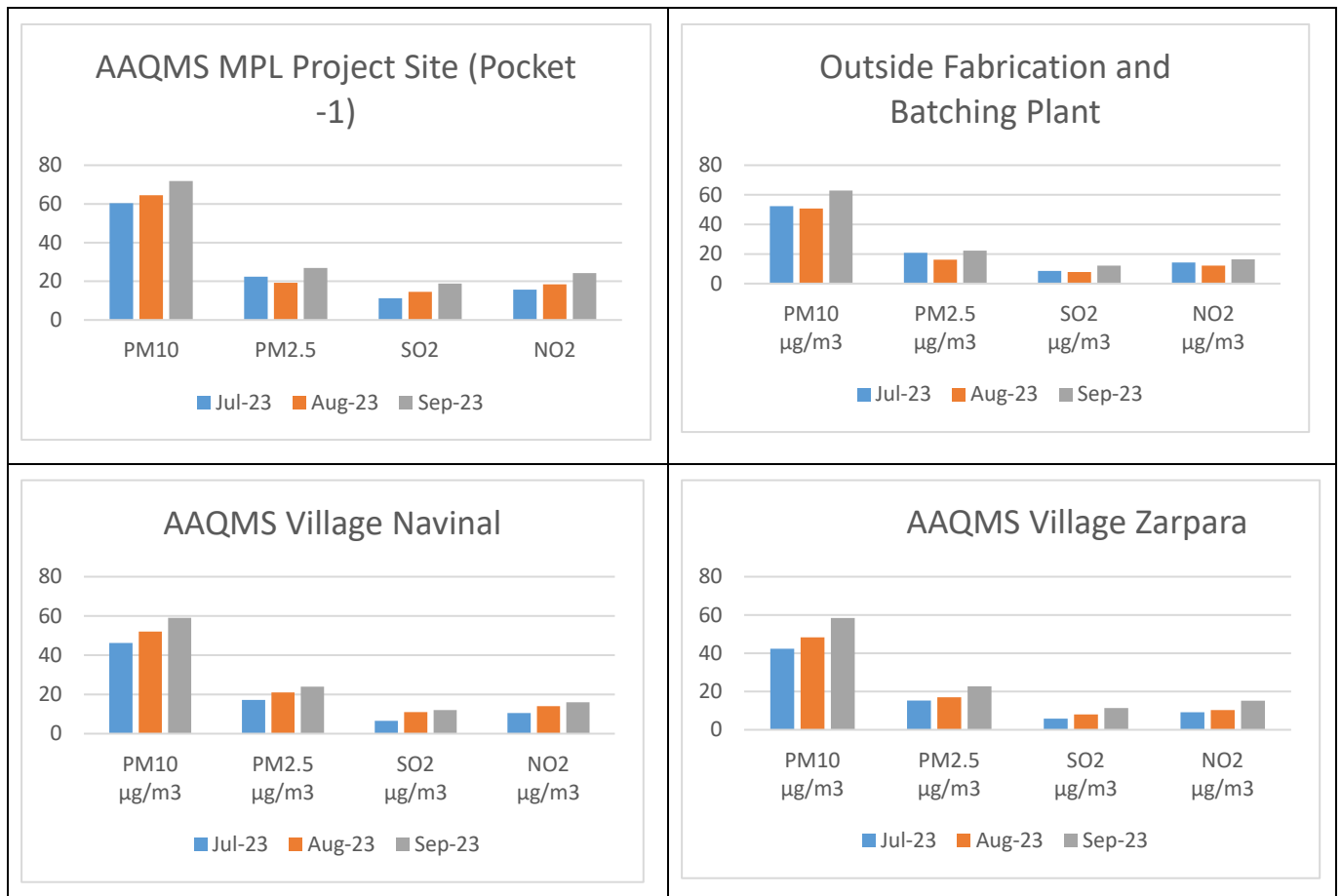
4.1 Ambient Air

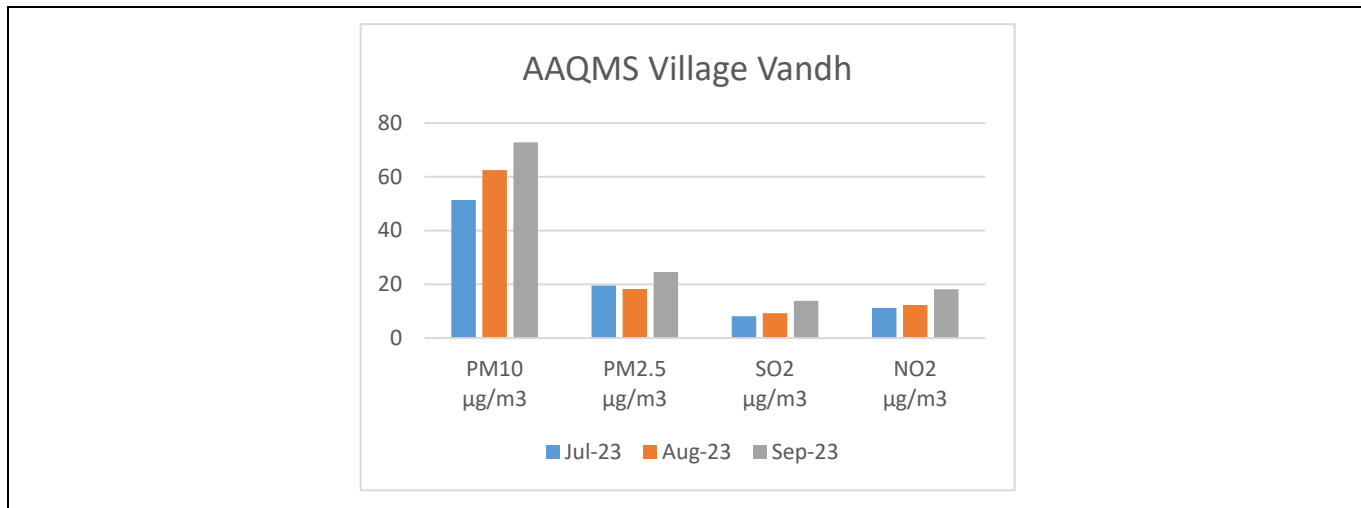
Sr. No.	Month	Parameter with Results											
		PM10	PM2.5	SO2	NO2	CO	O3	NH3	Pb	Ni	As	Benzene	Benzo (a) Pyrene
		µg/m3	µg/m3	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	µg/m3	ng/m3	ng/m3	µg/m3	ng/m3
		Permissible Limit As per NAAQS – 2009 Notification.											
		100	60	80	80	2	400	100	1	6	20	5	1
Location : Project Site (Near to Pocket -1)													
1	Jul-23	60	22	11	16	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
2	Aug-23	65	19	15	18	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
3	Sep-23	72	27	19	24	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
Report Reference No. - URA/23/08/A-054 dt. 25/07/2023, URA/23/08/A-066 dt. 31/08/2023, URA/23/09/A-MPL075 dt. 03/10/2023													
Location : Outside Fabrication and Batching Plant													
1	Jul-23	52	21	9	14	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
2	Aug-23	51	16	8	12	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
3	Sep-23	63	22	12	16	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
Report Reference No. - URA/23/08/A-053 dt. 25/07/2023, URA/23/08/A-067 dt. 31/08/2023, URA/23/09/A-MPL070 dt. 03/10/2023													
Location : Village Navinal													
1	Jul-23	46	17	7	11	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
2	Aug-23	52	21	11	14	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
3	Sep-23	59	24	12	16	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
Report Reference No. - URA/23/08/A-056 dt. 25/07/2023, URA/23/08/A-073 dt. 31/08/2023, URA/23/09/A-069 dt. 03/10/2023													
Location : Village Zarpara													
1	Jul-23	42	15	6	9	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
2	Aug-23	48	17	8	10	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
3	Sep-23	58	23	11	15	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
Report Reference No. - URA/23/08/A-058 dt. 25/07/2023, URA/23/08/A-062 dt. 31/08/2023, URA/23/09/A-MPL060 dt. 03/10/2023													
Location : Village Vandh													
1	Jul-23	51	20	8	11	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
2	Aug-23	63	18	9	12	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
3	Sep-23	51	20	8	11	<0.01	<5.0	<5.0	<0.5	<1.0	<1.0	<1.0	<0.1
Report Reference No. - URA/23/08/A-057 dt. 25/07/2023, URA/23/08/A-009 dt. 31/08/2023, URA/23/09/A-MPL082 dt. 03/10/2023													

Observations

- The concentration of PM10 ranged from 73 $\mu\text{g}/\text{m}^3$ at the Project Site (Pocket -1) to 42 $\mu\text{g}/\text{m}^3$ in the Village of Zarpara, with an average concentration of 57 $\mu\text{g}/\text{m}^3$.
- The concentration of PM2.5 ranged from 27 $\mu\text{g}/\text{m}^3$ at the Project Site - Pocket 1 to 15 $\mu\text{g}/\text{m}^3$ in the Village of Zarpara, with an average concentration of 20.5 $\mu\text{g}/\text{m}^3$.
- The concentration of SO2 ranged from 19 $\mu\text{g}/\text{m}^3$ at the Project Site - Pocket 1 to 6.0 $\mu\text{g}/\text{m}^3$ in the Village of Zarpara, with an average concentration of 10.6 $\mu\text{g}/\text{m}^3$.
- The concentration of NO2 ranged from 24 $\mu\text{g}/\text{m}^3$ at the Project Site - Pocket 1 to 9.1 $\mu\text{g}/\text{m}^3$ in the Village of Zarpara, with an average concentration of 14.5 $\mu\text{g}/\text{m}^3$.
- The concentrations of CO were below $<0.01 \text{ mg}/\text{m}^3$, & NH3 were below $<5.0 \mu\text{g}/\text{m}^3$, O3 were below $<5.0 \mu\text{g}/\text{m}^3$ at all the locations.
- The concentrations of Lead (Pb) were below $<0.5 \mu\text{g}/\text{m}^3$, Arsenic (As) were below $<1.0 \text{ ng}/\text{m}^3$ & Nickel (Ni) were all below $<1.0 \text{ ng}/\text{m}^3$ at all the locations.
- The concentrations of Benzene were below $<1.0 \mu\text{g}/\text{m}^3$ & BaP were all below $<0.1 \text{ ng}/\text{m}^3$ at all the locations.

The concentrations of all monitored air quality parameters were found to be within the permissible limits as defined by the National Ambient Air Quality (NAAQ) Standards set by the Ministry of Environment, Forest and Climate Change (MoEF&CC).



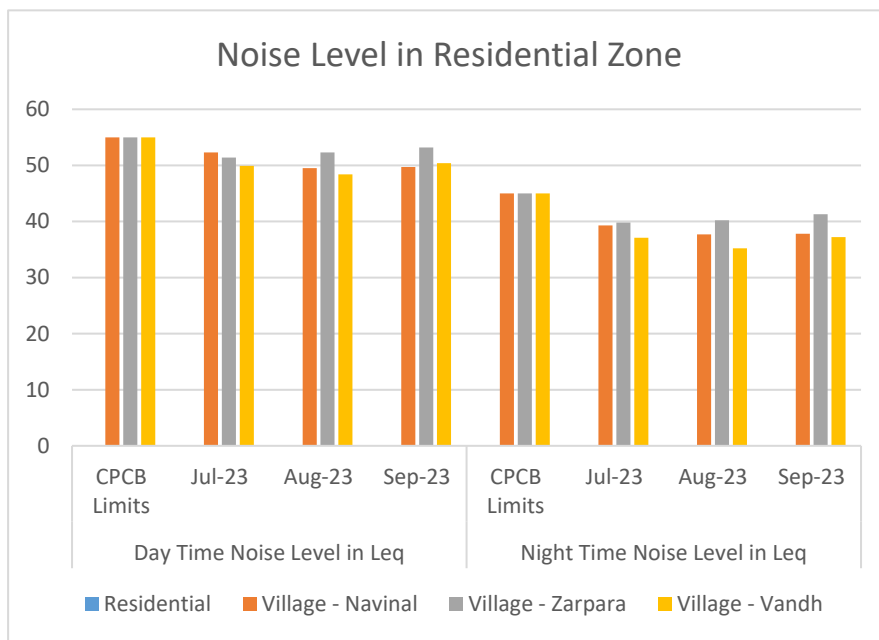
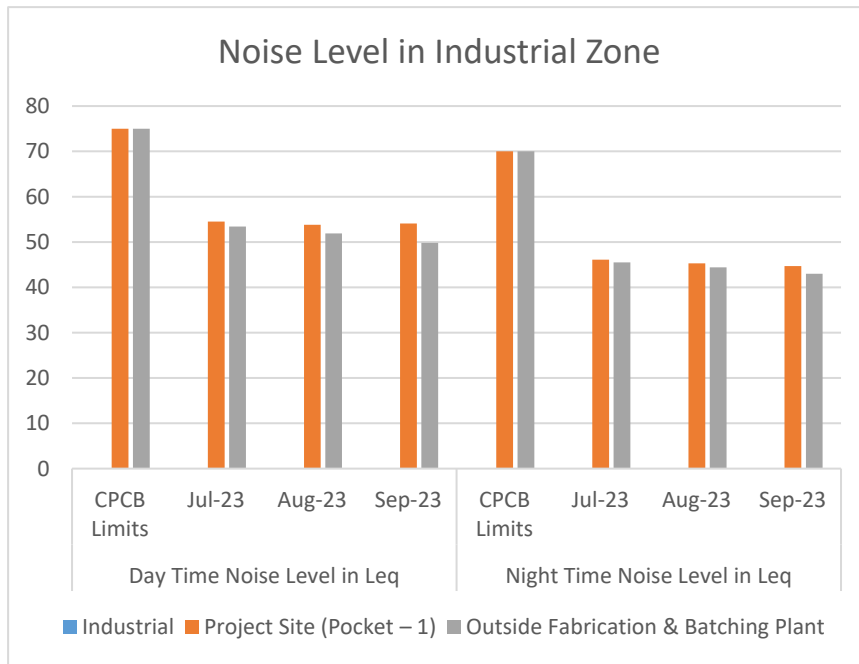


4.2 Ambient Noise

The ambient noise levels measured and analysed for equivalent noise levels viz. Leq (24hrly), Leq day, Leq night at all the noise monitoring locations.

Ambient Noise Level in Leq

Sr. No.	Location	Day Time Noise Level in Leq				Night Time Noise Level in Leq			
		CPCB Limits	Jul-23	Aug-23	Sep-23	CPCB Limits	Jul-23	Aug-23	Sep-23
Industrial									
1	Project Site (Pocket – 1)	75	54.5	53.8	54.1	70	46.1	45.3	44.7
2	Outside Fabrication & Batching Plant		53.4	51.9	49.8		45.5	44.4	43
Residential									
3	Village - Navinal	55	52.3	49.5	49.7	45	39.3	37.7	37.8
4	Village - Zarpara		51.4	52.3	53.2		39.8	40.2	41.3
5	Village - Vandh		49.9	48.4	50.4		37.1	35.2	37.2
Report Reference No. –									
<ul style="list-style-type: none"> Project Site (Pocket – 1) – Report 2 dt. 17/07/2023, URA/23/08/AN-003 dt. 31/08/2023, URA/23/09/AN-043 dt. 03/10/2023 Outside Fabrication & Batching Plant - Report 1 dt. 15/07/2023, URA/23/08/AN-004 dt. 31/08/2023, URA/23/09/AN-040 dt. 03/10/2023 Navinal - Report 3 dt. 19/07/2023, URA/23/08/AN-005 dt. 31/08/2023, URA/23/09/AN-039 dt. 03/10/2023 Zarpara - Report 5 dt. 21/07/2023, URA/23/08/AN-002 dt. 31/08/2023, URA/23/09/AN-036 dt. 03/10/2023 Vandh - Report 4 dt. 20/07/2023, URA/23/08/AN-001 dt. 31/08/2023, URA/23/09/AN-047 dt. 03/10/2023 									



Observations

Industrial Zone

The Average Leq (equivalent continuous sound level) during the day for the industrial zone ranged from 54.5 dB(A) at Project Site - Pocket 1 to 49.8 dB(A) at Outside Fabrication & Batching Plant. Similarly, the Leq during the night ranged from 46.1 dB(A) at Project Site - Pocket 1 to 43 dB(A) at Outside Fabrication & Batching Plant. Importantly, all these values remained within the CPCB (Central Pollution Control Board) limits specified for the industrial zone, both during daytime and night time.

Residential Zone

The Average Leq (equivalent continuous sound level) during the day in the residential zone varied from 53.2 dB(A) in Village Zarpara to 48.4 dB(A) in the village Vandh. Meanwhile, the Leq during the night ranged from 41.3 dB(A) in Village Zarpara to 35.2 dB(A) in Village Vandh. It's worth noting that the ambient noise levels in these villages are affected by the local environment, and all the Leq values are compliant with permissible limits across all the villages.

4.3 Water Quality

4.3.1 Ground Water Quality

Ground water was collected as grab samples from two location Navinal & Nana Bhadiya & sent to laboratory for analysis for various parameters.

The water quality findings from the ground water samples are outlined in the following table:

Sr. No.	Parameter	Unit	IS 10500 Standard Limits for drinking water		GW 05 Navinal	GW 07- Nana Bhadiya
			Desirable limit	Permissible Limit in the Absence of Alternate Source	Aug-23	Aug-23
1	pH	pH scale	6.5-8.5	NR	7.96	8.4
2	Temp	o C	NS	NS	29.5	29.5
3	Turbidity	NTU	1	5	BDL (MDL: 0.1)	BDL (MDL: 0.1)
4	TDS	mg/l	500	2000	1820	604
5	Electrical Conductivity	µmhos/cm	NS	NS	2750	990
6	COD	mg/l	NS	NS	20.4	<2
7	BOD	mg/l	NS	NS	2.5	<1
8	Phenol	mg/l	0.001	0.002	BDL (MDL: 0.001)	BDL (MDL: 0.001)
9	Chlorides	mg/l	250	1000	667.8	96.3
10	Sulphate	mg/l	200	400	38	73.3
11	Total Hardness	mg/l	200	600	236.1	118.9
12	Ca++ Hardness	mg/l	NS	NS	138.6	75.3
13	Mg++ Hardness	mg/l	NS	NS	97.5	43.6
14	Total Alkalinity	mg/l	200	600	289	242.2
15	Nitrate	mg/l	45	NR	1.1	0.6
16	Fluoride	mg/l	1	1.5	0.98	1.39
17	Sodium	mg/l	NS	NS	410	45.5
18	Potassium	mg/l	NS	NS	34	2.1
19	Calcium	mg/l	75	200	55.6	30.2
20	Magnesium	mg/l	30	100	23.7	10.6
21	Salinity	mg/l	NS	NS	1.206	0.174
22	Total Nitrogen	mg/l	0.5	NR	BDL (MDL: 2.0)	BDL (MDL: 2.0)
23	Total Phosphorous	mg/l	NS	NS	0.38	0.29
24	Dissolved Oxygen	mg/l	NS	NS	4.1	2.9
25	Ammonical Nitrogen	mg/l	NS	NS	BDL (MDL: 0.2)	BDL (MDL: 0.2)
26	SAR	-	NS	NS	11.6	1.4
	Heavy Metals					
27	Arsenic (as As)	mg/l	0.01	0.05	BDL (MDL: 0.01)	BDL (MDL: 0.01)
28	Cadmium (as Cd)	mg/l	0.003	NR	BDL (MDL: 0.003)	BDL (MDL: 0.003)
29	Chromium (as Cr)	mg/l	0.05	NR	BDL (MDL: 0.05)	BDL (MDL: 0.05)
30	Copper (as Cu)	mg/l	0.05	1.5	BDL (MDL: 0.05)	BDL (MDL: 0.05)
31	Cyanide (as CN)	mg/l	0.05	NR	BDL (MDL: 0.05)	BDL (MDL: 0.05)

32	Iron (as Fe)	mg/l	0.3	NR	BDL (MDL: 0.1)	BDL (MDL: 0.1)
33	Lead (as Pb)	mg/l	0.01	NR	BDL (MDL: 0.01)	BDL (MDL: 0.01)
34	Mercury (as Hg)	mg/l	0.001	NR	BDL (MDL: 0.001)	BDL (MDL: 0.001)
35	Manganese (as Mn)	mg/l	0.1	0.3	BDL (MDL: 0.1)	BDL (MDL: 0.1)
36	Nickel (as Ni)	mg/l	0.02	NR	BDL (MDL: 0.02)	BDL (MDL: 0.02)
37	Zinc (as Zn)	mg/l	5	15	BDL (MDL: 0.05)	BDL (MDL: 0.05)
38	Total Coliform	MPN	Shall not be detectable		Absent	Absent
39	Faecal Coliforms	MPN	Shall not be detectable		Absent	Absent
Report Reference No.					URC/23/08/0551 URB/23/08/0531	URC/23/08/0552 URB/23/08/0529

Observations :

These analysed results were subsequently compared against the IS:10500 Standard Limits for drinking water & are found well within Limits.

4.3.2 Surface Water Quality

Surface water was collected as grab samples from two location Nagavanti Nadi & Siracha village pond. Same has been sent to laboratory for analysis for various parameters.

The water quality findings from the surface water samples are outlined in the following table:

Sr. No.	Parameter	Unit	Classification for Inland Surface Water (CPCB)	SW 04 Nagavanti Nadi	SW 07 Siracha village pond
			Class E	Aug-23	Aug-23
1	pH	pH Scale	6.5 to 8.5	7.62	7.7
2	Dissolved Oxygen	mg/l	NA	6.1	5.9
3	TDS	mg/l	2100	410	198
4	Electrical Conductivity	µmohs/cm	2250	661	305.3
5	BOD	mg/l	NA	2.3	2
6	Colour	Pt.co	-	BDL (MDL: 5.0)	BDL (MDL: 5.0)
7	Total Hardness	mg/l	NA	73.3	59.4
8	Ca++ Hardness	mg/l	NA	39.6	33.7
9	Mg++ Hardness	mg/l	NA	33.7	25.7
10	Chlorides	mg/l	600	19	15.4
11	Sulphate	mg/l	1000	10.4	8.9
12	Nitrate	mg/l	NA	0.5	BDL (MDL: 0.1)
13	Fluoride	mg/l	-	BDL (MDL: 0.2)	BDL (MDL: 0.2)
14	Phenol	mg/l	NA	BDL (MDL: 0.001)	BDL (MDL: 0.001)
15	Ammonical Nitrogen	mg/l	NA	BDL (MDL: 0.2)	BDL (MDL: 0.2)
16	SAR		26	1.52	1.89
17	Copper (as Cu)	mg/l	NA	BDL (MDL: 0.05)	BDL (MDL: 0.05)
18	Iron (as Fe)	mg/l	NA	BDL (MDL: 0.1)	BDL (MDL: 0.1)
19	Manganese (as Mn)	mg/l	NA	BDL (MDL: 0.1)	BDL (MDL: 0.1)
20	Mercury	mg/l	NA	BDL (MDL: 0.001)	BDL (MDL: 0.001)
21	Cadmium (as Cd)	mg/l	NA	BDL (MDL: 0.003)	BDL (MDL: 0.003)
22	Arsenic (as As)	mg/l	NA	BDL (MDL: 0.01)	BDL (MDL: 0.01)

23	Cyanide	mg/l	NA	BDL (MDL: 0.05)	BDL (MDL: 0.05)
24	Lead (as Pb)	mg/l	NA	BDL (MDL: 0.01)	BDL (MDL: 0.01)
25	Zinc	mg/l	NA	BDL (MDL: 0.05)	BDL (MDL: 0.05)
26	Chromium (as Cr)	mg/l	NA	BDL (MDL: 0.05)	BDL (MDL: 0.05)
27	Boron	mg/l	NA	BDL (MDL: 0.5)	BDL (MDL: 0.5)
28	Total Coliform	MPN/100ml	2	Absent	Absent
29	COD	mg/l	-	16.4	12.1
Report Reference No.				URC/23/08/0553 URB/23/08/0533	URC/23/08/0554 URB/23/08/0535

Observations :

These analysed results were subsequently compared against the **Classification for Inland Surface Water (CPCB)** Class E & are found well within Limits.

4.3.3 Surface Water (Marine) Quality

Surface water (Marine) was collected as grab samples from two location Kotadi Creek & Baradi mata creek. Same has been sent to laboratory for analysis for various parameters.

The water quality findings from the surface water (marine) samples are outlined in the following table:

Sr. No.	Parameter	Unit	Classification for Coastal Marine Water (CPCB)	SW 2- Kotadi Creek water	SW 3- Baradi Mata Creek
			SW-I	Aug-23	Aug-23
1	pH	pH scale	6.5 to 8.5	7.2	8.07
2	Dissolved Oxygen	mg/l	5	6.22	6.02
3	Colour & Odour	-	No Colour No Odour	10	10
4	Floating Matters	-	None	None	None
5	Total Suspended Solid	mg/l	None from Sewage or Industrial waste Origin	14	18
6	Turbidity	mg/l	-	0.1(3.9)	0.1(5.4)
7	BOD	NTU	-	3.1	3.2
8	Oil & Grease	mg/l	0.1	BDL (MDL : 5.0)	BDL (MDL : 5.0)
9	Mercury as Hg	mg/l	0.001	BDL (MDL : 0.001)	BDL (MDL : 0.001)
10	Lead (as Pb)	mg/l	0.001	BDL (MDL : 0.01)	BDL (MDL : 0.01)
11	Cadmium (as Cd)	mg/l	0.01	0.08	0.089
12	Iron (as Fe)	mg/l	-	0.14	0.15
13	Manganese (as Mn)	mg/l	-	BDL (MDL : 0.1)	BDL (MDL : 0.1)
14	Total Coliform	ml (MPN)	-	<2 Absent	<2 Absent
15	Sludge Deposits, Solid refuse floating Solids, Oil Grease and Scum	-	-	None	None
16	COD	mg/l	-	24.2	36.2
Report Reference No.				URC/23/08/0577 URB/23/08/0580	URC/23/08/0578 URB/23/08/0581

Observations :

These analysed results were subsequently compared against the **Classification for Coastal marine water (CPCB)** Class SW I & are found well within Limits.

4.3.4 Sewage Water Quality

Sewage water samples were collected as grab samples from STP outlet situated in Pocket 1. This STP has a capacity of 5 KLD and samples were sent to laboratory for analysis for various parameters.

The water quality findings from the sewage water sampling locations are outlined in the following table:

Sr. No.	Location	CPCB/GPCB Limits	STP Pocket I		
			Jul-23	Aug-23	Sep-23
1	pH @25°C	6.5 – 9.0	7.33	7.05	7.18
2	Total Suspended Solid	<50	14	6	22
3	Chemical Oxygen Demand (COD)	-	42.3	44.5	36.1
4	Biochemical Oxygen Demand (BOD) (5 days at 20 °C)	<30	12	13	17
5	Total Nitrogen	-	4.8	4.1	3.8
6	Total Phosphorus	-	0.8	2.2	1.8
7	Faecal Coliform	<1000	50	27	21
Report Reference No.			URC/23/07/MPL-0340 URB/23/07/MPL-0120	URC/23/08/579 URB/23/08/575	URC/23/09/537 URC/23/09/538

Observations :

These analysed results were subsequently compared against the standards set by the Central Pollution Control Board (CPCB) and are found well within limits.

Annexure 2: Calibration Certificates

ENPRO Enviro Tech and Engineers Pvt. Ltd.
Calibration and Validation Laboratory
Service Provider | Dimension, Electrical, Flame, Mass, Pressure, Thermal, Volume
Plot No. D/29/16-17, Road No. 17, Highwala Industrial Estate, Gate No. 3,
Sector-Palawa Road, Sachin, Surat - 394 230, Gujarat, INDIA.
Calibration Lab Ph. : +91-93275 09920 E-mail : cal@enpro.co.in

CALIBRATION CERTIFICATE

Calibration Certificate No.: ENP2302019684-B I/LR No.: CC2302019684B-01
Date of Receipt: 27-08-2023 Name of Customer and Address: Unistar Environment & Research Labs Pvt. Ltd, White House, Plot No. 10/24, Se. GIDC Office, Chir Road, Vapi-395105
Date of Calibration: 27-08-2023
Due Date of Calibration (Standardized by Customer): 26-09-2024
Date of Issue: 29-08-2023
Format No.: ENP/01/001

Details of SUC to be Calibrated:

Manufacturer of SUC	I.D. No. / S. No.	Make / Model	Least Count	Range	Accuracy	Type
Respirable Dust Sampler PM 10	UR/LAB/RS/047 / 1818-DP-2013	Envirotech / AFM 400 SL	See Calibration Result	As per Calibration Result	See in Calibration Result	NA

Description of Standard Instrument Used:

Manufacturer	I.D. No. / S. No.	Certificate No.	Certified By	Valid Up To
Top Loading Office Calibrator	ENP/FCR/01-0119	PCAL/1222P/130	PI Calibration Laboratory	14-12-2023
Time Calibration Standard	ENP/FCR/01-020018	FCO/2013/01/0002	ENPC	30-10-2024
Air Flow Calibrator	ENP/FCR/01-0112	PCAL/1222P/117	PI Calibration Laboratory	04-12-2023

Environmental Condition:

Parameter	Value	Condition of Use	Condition of Use
Temperature (°C)	24.5	Condition of Use:	ON Site
Relative Humidity (% RH)	55.3	Calibration Location:	On Site
Parameter:	Fluct-Free	Calibration Procedure:	ENP/01/001
Pressure (atm)	1013.2	Calibration Standard Used:	IS 1142 Part 23:2009

Company Location: ---

Refer Page No - 2,3,4

Notes:
1. The reported uncertainty associated with a coverage probability of approximately 95% of normal distribution.
2. The Certificate is issued subject to conditions stated elsewhere.
3. Standards are Traceable to International Standards.
4. Recommended due date is suggested by customer.
5. The calibration results reported in this certificate are valid at the time and under stated condition of measurement.
6. No. Downloaded & Digitally Signed and does not require Signature.

Approved and Received By: Technical Manager
Vishal Kapadia

Calibrated By: Shival Patel

ENP/23/047 2928

ENPRO Enviro Tech and Engineers Pvt. Ltd.
Calibration and Validation Laboratory
Service Provider | Dimension, Electrical, Flame, Mass, Pressure, Thermal, Volume
Plot No. D/29/16-17, Road No. 17, Highwala Industrial Estate, Gate No. 3,
Sector-Palawa Road, Sachin, Surat - 394 230, Gujarat, INDIA.
Calibration Lab Ph. : +91-93275 09920 E-mail : cal@enpro.co.in

CALIBRATION CERTIFICATE

Calibration Certificate No.: ENP2302019684-B I/LR No.: CC2302019684B-01
Date of Receipt: 27-08-2023 Name of Customer and Address: Unistar Environment & Research Labs Pvt. Ltd, White House, Plot No. 10/24, Se. GIDC Office, Chir Road, Vapi-395105
Date of Calibration: 27-08-2023
Due Date of Calibration (Standardized by Customer): 26-09-2024
Date of Issue: 29-08-2023
Format No.: ENP/01/001

Details of SUC to be Calibrated:

Manufacturer of SUC	I.D. No. / S. No.	Make / Model	Least Count	Range	Accuracy	Type
Flow Particle Sampler PM 2.5	UR/LAB/FP/02 / 44-OTC-2012	Envirotech / AFM-500	See Calibration Result	As per Calibration Result	See in Calibration Result	NA

Description of Standard Instrument Used:

Manufacturer	I.D. No. / S. No.	Certificate No.	Certified By	Valid Up To
Air Flow Meter (AFE)	ENP/FCR/01-0118	PCAL/1222P/129	PI Calibration Laboratory	14-12-2023
Time Calibration Standard	ENP/FCR/01-020018	FCO/2013/01/0002	ENPC	30-10-2024

Environmental Condition:

Parameter	Value	Condition of Use	Condition of Use
Temperature (°C)	24.5	Condition of Use:	ON Site
Relative Humidity (% RH)	55.7	Calibration Location:	On Site
Parameter:	Fluct-Free	Calibration Procedure:	ENP/01/001
Pressure (atm)	1013.3	Calibration Standard Used:	IS 1142 Part 23:2009 & 1.45 CTR PART 30 Appendix 3.

Company Location: ---

Approved and Received By: Technical Manager
Vishal Kapadia

Calibrated By: Shival Patel

ENP/23/047 2928

Calibration Certificate for RDS

Calibration Certificate for PM 2.5

UniStar
Environment and Research Labs Pvt. Ltd.

Calibration Certificate

Instrument Name: Respirable Dust Sampler
Instrument ID No.: UR/LAB/RDS/34
Instrument Fr. No. Supplier: I/ASB DIB 2013, 114/ 111/ 2013
Calibration Certificate No.: UR/LAB/RDS-34/SB/23-25-24
Date of Calibration: 02/06/2023
Next Calibration due Date: 01/06/2024

Sr. No.	Name of Unit Calibrated	Calibrator Traceable to	Calibration Certificate No. / Date of Calibration
1.	Flow Meter ID No. (UR/LAB/RDS/17/24)	Pressure Indicator Envirotech Calibration Laboratory	PC/AFM/R/2013-7791CW/758 Date of Cal.: 02/06/2021 ECL/UR/LP/2023-25/WCCH/2353 Date of Cal.: 22/10/2022
2.	Flow Turbine ID No. (UR/LAB/RDS/17/24)	Envirotech Calibration Laboratory	ECL/UR/LP/2023-25/EET/2351 Date of Cal.: 25.10.2022
3.	Rotameter ID No. (UR/LAB/RDS/17/24)	Envirotech Calibration Laboratory	ECL/UR/LP/2023-25/P/01/2355 Date of Cal.: 22.10.2022

UNCERTAINTY MEASUREMENT: Flow Meter : ± 0.061 m³/min
UNCERTAINTY MEASUREMENT: Flow Turbine : ± 0.0211 hour
UNCERTAINTY MEASUREMENT: Rotameter : ± 4.0 LBS LPM

The reported uncertainty is the expanded uncertainty in measurement at 95% Confidence level with coverage factor k = 2 which corresponds to coverage probability of approximately 95% of normal distribution.

Prepared By: Senior Chemist
Approved By: Manager - Operations

Page 1 of 1

UniStar
Environment and Research Labs Pvt. Ltd.

Calibration Certificate

Instrument Name: Flow Particle Sampler
Instrument ID No.: UR/LAB/FP/02
Instrument Fr. No. Supplier: AFM - 500/75H/1C/0107
Calibration Certificate No.: UR/LAB/FP-02/SB/23-25/ST/23-24
Date of Calibration: 02/06/2023
Next Calibration due Date: 01/06/2024

Sr. No.	Name of Unit Calibrated	Calibrator Traceable to	Calibration Certificate No. / Date of Calibration
1.	Rotameter ID No. (UR/LAB/FP/02/01)	Envirotech Calibration Laboratory (New Dots)	ECL/UR/LP/2023-25/PLC/0759 Date of Cal.: 07/06/2021
2.	Flow Turbine ID No. (UR/LAB/FP/02/01)	Envirotech Calibration Laboratory	PC/AFM/PL/2023-25/ST/2351 Date of Cal.: 25.10.2022

UNCERTAINTY MEASUREMENT: Rotameter : ± 0.025 LPM
UNCERTAINTY MEASUREMENT: Flow Turbine : ± 0.0211 hour

The reported uncertainty is the expanded uncertainty in measurement at 95% Confidence level with coverage factor k = 2 which corresponds to coverage probability of approximately 95% of normal distribution.

Prepared By: Senior Chemist
Approved By: Manager - Operations

Page 1 of 1

Calibration Certificate for RDS

Calibration Certificate for PM 2.5

Matrix
CERTIFIED CALIBRATION & VALIDATION SERVICES

CALIBRATION CERTIFICATE

SUBJECT: CALIBRATION OF SOUND LEVEL METER		CERTIFICATE NO.: ML/NOV/2023/0023-04	
Certificate Issue Date: 20/10/2023		Page 1 of 1	

1. Scope

1.1 Service Request No.	ML/2023/0234
1.2 Service Request Number (SR No.)	15/09/2023
1.3 Service Request Number (SR No.)	0220443000036629
1.4 Customer / Client	Mechanical / Acoustics
1.5 Name & Address of Organization	UNSTAR ENVIRONMENT RESEARCH LABS PVT. LTD. White House, 3rd Floor, Near S.I.D.C. Office, Char Rasta, Vapi, Gujarat, India, 390 105.

1.2 Item Details

1.2.1 Condition of the Item: Working

1.2.2 Name/Model of the Item: Sound Level Meter			
Manufacturer	Extech	Model No.	105-600
Q.No.	ML/NOV/2023/0023	Sr. No.	---
Range	30 to 130 dB (2.5 Hz)	Type	Digital
Lower Limit	0.1 dB @ 1 kHz	Accuracy	±2 dB
Department	---	Location	---

1.3 Item Received On: 01/10/2023

1.4 Details of Test Equipment Used

Instrument Name	Lot No.	Certificate No.	Valid	Exp. Date
Sound Level Calibrator	ML/ML/0202	FCN/02/02/21283	Within	11/06/2024

1.5 Operating Procedures Used: ML/NOV/ML/003

1.6 Reference Standard: IS: 3779:2002

1.7 Date of Calibration: 09 June 2023

1.8 Recommended Due Date of Calibration: 05 June 2024

1.9 Laboratory Address: Temperature: 29.3 °C (264) Humidity: 58.0 %RH (24.02)

1.10 Parameter: 60 dB (1 kHz)

1.11 Calibration Results

No.	Calibration Point	Set Value on Master (A)	Measured Value on SUT (B)	Error (B - A)	% Expanded Uncertainty
1	94	94	94.6	0.6	±1.1 dB @ 94 dB
2	114	114	114.9	0.9	±1.1 dB @ 114 dB

1.12 General Remarks:

- The reported uncertainty is the expanded uncertainty as measurement obtained by multiplying the standard uncertainty by the coverage factor (k=2), which corresponds to a coverage probability of approximately 95.45% for a normal distribution.
- Uncertainty is not calculated at Max Error - Full Range of CC.
- Any equipment/Component in the certificate should be brought to our notice within 30 days from the date of issue Certificate.
- ISO/IEC 17025:2017 (Calibration)
- The Measurements are metrologically traceable to applicable national/International Standards.
- Any hard written corrections (except g) or photographs of the report invalidates this certificate.
- The results reported to the item calibration.

Calibrated by: Ravi Kumar, Calibration Engineer

AUTHORIZED SIGNATORY

Head of Quality Control Manager

Head of Calibration Unit

0-200 & 0-210 2nd Floor, "B" Wing, 96 Colaba The Business Hub, Opp. Tidelift Building, Bandra - West, Mumbai - 400 050, Gujarat, India. Call: 022-2523 17475, 08 907120 20079

Website: www.matrixlab.in, E-mail: info@matrixlab.in, matrixlab@matrixlab.com

Matrix
CERTIFIED CALIBRATION & VALIDATION SERVICES

CALIBRATION CERTIFICATE

SUBJECT: CALIBRATION OF SOUND LEVEL METER		CERTIFICATE NO.: ML/NOV/2023/0023-04	
Certificate Issue Date: 20/10/2023		Page 1 of 1	

1. Scope

1.1 Service Request No.	ML/2023/0234
1.2 Service Request Number (SR No.)	15/09/2023
1.3 Service Request Number (SR No.)	0220443000036629
1.4 Customer / Client	Mechanical / Acoustics
1.5 Name & Address of Organization	UNSTAR ENVIRONMENT RESEARCH LABS PVT. LTD. White House, 3rd Floor, Near S.I.D.C. Office, Char Rasta, Vapi, Gujarat, India, 390 105.

1.2 Item Details

1.2.1 Condition of the Item: Working

1.2.2 Name/Model of the Item: Sound Level Meter			
Manufacturer	Extech	Model No.	105-600
Q.No.	ML/NOV/2023/0023	Sr. No.	---
Range	30 to 130 dB (2.5 Hz)	Type	Digital
Lower Limit	0.1 dB @ 1 kHz	Accuracy	±2 dB
Department	---	Location	---

1.3 Item Received On: 01/10/2023

1.4 Details of Test Equipment Used

Instrument Name	Lot No.	Certificate No.	Valid	Exp. Date
Sound Level Calibrator	ML/ML/0202	FCN/02/02/21283	Within	11/06/2024

1.5 Operating Procedures Used: ML/NOV/ML/003

1.6 Reference Standard: IS: 3779:2002

1.7 Date of Calibration: 15-09-2023

1.8 Recommended Due Date of Calibration: 14 Sep 2024

1.9 Laboratory Address: Temperature: 19.5 °C (267) Humidity: 58.0 %RH (24.02)

1.10 Parameter: 94 dB (1 kHz)

1.11 Calibration Results

No.	Calibration Point	Set Value on Master (A)	Measured Value on SUT (B)	Error (B - A)	% Expanded Uncertainty
1	94	94	94.1	0.1	±1.1 dB @ 94 dB
2	114	114	114.5	0.5	±1.1 dB @ 114 dB

1.12 General Remarks:

- The reported uncertainty is the expanded uncertainty as measurement obtained by multiplying the standard uncertainty by the coverage factor (k=2), which corresponds to a coverage probability of approximately 95.45% for a normal distribution.
- Uncertainty is not calculated at Max Error - Full Range of CC.
- Any equipment/Component in the certificate should be brought to our notice within 30 days from the date of issue Certificate.
- ISO/IEC 17025:2017 (Calibration)
- The Measurements are metrologically traceable to applicable national/International Standards.
- Any hard written corrections (except g) or photographs of the report invalidates this certificate.
- The results reported to the item calibration.

Calibrated by: Ravi Kumar, Calibration Engineer

AUTHORIZED SIGNATORY

Head of Quality Control Manager

Head of Calibration Unit

0-200 & 0-210 2nd Floor, "B" Wing, 96 Colaba The Business Hub, Opp. Tidelift Building, Bandra - West, Mumbai - 400 050, Gujarat, India. Call: 022-2523 17475, 08 907120 20079

Website: www.matrixlab.in, E-mail: info@matrixlab.in, matrixlab@matrixlab.com


Calibration Certificate for Sound Level Meter



UniStar Environment & Research Labs Pvt. Ltd.

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



	<p style="text-align: center;">Adani Enterprises Ltd. (AEL)</p> <p style="text-align: center;">Environment Policy</p>
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At Adani Enterprises Ltd. (AEL), we are committed to continuously improve our environmental performance by implementing a robust environmental management system across our businesses, to eliminate or minimize any adverse environmental impacts. Further, we aspire to achieve environmental excellence and leadership when compared with our peers. The policy is applicable to all AEL business operations, facilities, offices, manufacturing units and related activities.

AEL, its subsidiaries and joint ventures shall keep its commitment to:

- Comply with all the applicable national, regional, and local environment regulations and statutory obligations and endeavour to go beyond compliances.
- Reduce our impact on environment and climate change by taking appropriate mitigation & adaptation measures
- Continually improve the environmental performance by setting goals, targets, and processes for efficient use of natural resources, waste minimization, emission reduction and pollution prevention and product stewardship.
- Conserve and protect biodiversity in and around of our operational sites in cooperation with relevant stakeholders
- Achieve No-Net Loss at our project operations by implementing the mitigation hierarchy by avoiding, minimizing, and restoring the direct impacts and offsetting the residual impacts.
- Conduct environmental due diligence for new and expansion of existing projects, by set procedures.
- Create environmental awareness through continuous engagement with internal and external stakeholders to adopt principles and practices in alignment with this policy and industry best practices.
- Monitor, measure and report the progress on environmental performance in compliance with national and internationally recognized protocols and communicate approach and achievements to relevant stakeholders.
- Undertake internal and third-party audits at regular intervals to assess the environmental performance and subsequent mitigative actions.
- This policy will be communicated to all persons working for or on behalf of the company and will also be made available on the website of the company.

This Policy must be viewed in conjunction with other policies implemented by AEL, including – but not limited to – [Energy Management Policy](#), [Biodiversity Policy](#), [Water Stewardship Policy](#), [Waste Management Policy](#), [Resource Conservation Policy](#), [Climate Change Policy](#), [ESG Policy](#).

The policy shall be reviewed periodically for its appropriateness and updated as necessary.

Annexure - VII



Ref: AEL/MPL/ENV/MoEF&CC/2022 – September/11

Date: 30/09/2022

To,
Shri Shrawan Kumar Verma, IFS (Addl. Charge)
Deputy Director General of Forests (C)
Integrated Regional Office, Gandhinagar,
Ministry of Environment, Forest and Climate Change,
A-Wing-407 & 409, Aranya Bhawan, Near CH-3 Circle,
Sector-10A, Gandhinagar – 382010

Subject: Environmental Clearance (EC) for proposed project activities "**Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat** by M/s Adani Enterprises Ltd.

Reference: EC Identification no EC22A009GJ154137, File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022

Respected Sir,


With reference to above subject, this is to inform that Ministry of Environment Forest and Climate Change has granted Environment Clearance for our project "Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA (as a part of Proposed Coal to Poly-Vinyl Chloride (PVC) Project of AEL in land notified as Industrial area of APSEZ, Ta-Mundra, Dist-Kutch, Gujarat" comprising of IND-I projects i.e. Semi Coke-2030 KTPA, Cement-6 MTPA; Clinker-4 MTPA, IND-II projects i.e. VCM- 2002 KTPA, PVC-2000 KTPA, Ethylene Glycol- 400 KTPA and IND-III projects i.e. Acetylene-860 KTPA & Caustic Soda-1310 KTPA) and Calcium Carbide-2900 KTPA (Not Specified in Any EIA Notification) by M/s Adani Enterprises Ltd" vide EC Identification no EC22A009GJ154137, File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022.

Accordingly, in compliance of Miscellaneous condition no. (i) & (ii) of Environmental clearance, we are submitting herewith copy of environmental clearance as **Annexure - A** along with copies of newspaper publications (**Annexure - B**) stating "the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB (GPCB) and may also be seen at Website of the Ministry at <https://parivesh.nic.in/> as well as on Company website at <https://www.adanienterprises.com/-/media/4BAE7363F8C843B8B659F4AC21587F8A.ashx>" for your reference and record please.

Adani Enterprises Ltd
"Adani Corporate House",
Shantigram, Near Vaishno Devi Circle,
S. G. Highway, Khodiyar
Ahmedabad 382 421
Gujarat, India
CIN: L51100GJ1993PLC019067

Tel. + 91 79 2656 5555
Fax + 91 79 2555 5500
info@adani.com
www.adani.com

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


Integrated Regional Office, Gandhinagar
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय,
Ministry of Environment, Forest & Climate Change,
Govt. of India / भारत सरकार
कक्ष क्र. 407 व 409 ए विंग अरुण्य भवन
Room No.407 & 409, A wing Aranya Bhawan
गान्धिनगर (गुजरात) / Gandhinagar(Gujarat)

The details of the newspaper publication are given below:

Sr. no.	Name of News Paper	Language	Date of Publication
1	Kutch Mitra	Gujarati	30/09/2022
2	Gujarat Samachar	Gujarati	30/09/2022
3	The Times of India	English	30/09/2022

Thanking You,
Yours Faithfully,

Authorized Signatory for Adani Enterprises Ltd,



Prodyut Maji (Project - Head)

Encl: As Above

Copy to:

1). **The Member Secretary,**
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector – 10
A, Gandhinagar 382 010

2). **The Regional Officer,**
Gujarat Pollution Control Board
(Kuchchh East).
Room no.215,216 & 217, Second floor,
Administration Office Building,
Deendayal Port Trust, Sector – 08,
Gandhidham – Kuchchh, 370 201



અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ

શાંતિગ્રામ, એસ. જી. હાઈવે, અમદાવાદ - ૩૮૨૪૨૧. (ગુજરાત)

જાહેર નોટિસ

મેં. અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ, APSEZ ઔદ્યોગિક જમીન, વાંટ ઇ ટૂંડા ગામ નજીક, તા: મુન્દ્રા, જી: કચ્છ, ગુજરાત ખાતે પ્રસ્તાવિત "એક્ટીવીટી જેવીકે સેમી ઠોક -૨૦૩૦ કે.ટી.પી.એ.; કેલ્સિયમ કાબહિડ - ૨૯૦૦ કે.ટી.પી.એ; સિમેન્ટ - ૬ એમ.ટી.પી.એ; ક્લિનકર - ૪ એમ.ટી.પી.એ. (જે સૂચિત કોલ ટુ પોલી-વિનાયલ (પી.વી.સી.) પ્રોજેક્ટ ના ભાગ રૂપે મેં. અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ દ્વારા પ્રસ્તાવિત, APSEZ ઔદ્યોગિક જમીન, વાંટ ઇ ટૂંડા ગામ નજીક, તા: મુન્દ્રા, જી: કચ્છ, ગુજરાત, જેમાં ઇન્ડસ્ટ્રી-૧ પ્રોજેક્ટ-સેમી કોક-૨૦૩૦ કે.ટી.પી.એ.; સિમેન્ટ-૬ એમ.ટી.પી.એ; ક્લિનકર-૪ એમ.ટી.પી.એ; ઇન્ડસ્ટ્રી-૨ પ્રોજેક્ટ-વી.સી.એમ-૨૦૦૨ કે.ટી.પી.એ., પી.વી.સી.-૨૦૦૦ કે.ટી.પી.એ., ઇથીલીન ગ્લાયકોલ-૪૦૦ કે.ટી.પી.એ, અને ઇન્ડસ્ટ્રી-૩ પ્રોજેક્ટ-એસિટિલિન-૮૬૦ કે.ટી.પી.એ. અને કોસ્ટિક સોડા-૧૩૧૦ કે.ટી.પી.એ અને કેલ્સિયમ કાબહિડ-૨૯૦૦ કે.ટી.પી.એ. (EIA નોટિફિકેશન માં દર્શાવેલ નથી) ના ભાગ રૂપે સમાવેશ થાય છે.)" માટે ની પર્યાવરણીય મંજૂરી મિનિસ્ટ્રી ઓફ એન્વિરોમેન્ટ, ફોરેસ્ટ અને ક્લાઇમેટ ચેન્જ, નવી દિલ્લી ના પત્ર ક્રમાંક : EC Identification No. - EC22A009GJ154137, File No. - IA-J-11011/423/2021-IA-II(IND-I) dated 26/09/2022 ના રોજ પ્રાપ્ત થયેલ છે. સદરહુ માન્યતા અંગેનો પત્ર ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડ ની ઓફિસ માં તેમજ મિનિસ્ટ્રી ઓફ એન્વિરોમેન્ટ, ફોરેસ્ટ અને ક્લાઇમેટ ચેન્જ ની વેબ સાઈટ <https://parivesh.nic.in> પરથી પણ જોઈ શકાશે. તદ્ ઉપરાંત એન્વિરોમેન્ટ ફલીયરન્સ ની કોપી કંપનનીની વેબસાઈટ <https://www.adanienterprises.com/-/media/4BAE7363F8CB4388B659F4AC21587F8A.ashx> પણ જોઈ શકાશે.

sd.

પ્રોદ્યુત માજી (પ્રોજેક્ટ હેડ)

મેં. અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ

અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ

શાંતિગ્રામ, એસ. જી. હાઇવે, અમદાવાદ - ૩૮૨૪૨૧. (ગુજરાત)

જાહેર નોટિસ

મેં. અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ, APSEZ ઔદ્યોગિક જમીન, વાંટ ૯ ટૂંડા ગામ નજીક, તા: મુન્દ્રા, જી: કચ્છ, ગુજરાત ખાતે પ્રસ્તાવિત "એકટીવીટી જેવીકે સેમી કોક -૨૦૩૦ કે.ટી.પી.એ.; કેલ્શિયમ કાર્બાઇડ - ૨૯૦૦ કે.ટી.પી.એ; સિમેન્ટ - ૬ એમ.ટી.પી.એ; ક્લિનકર - ૪ એમ.ટી.પી.એ. (જે સૂચિત કોલ ટુ પોલી-વિનાયલ (પી.વી.સી.) પ્રોજેક્ટ ના ભાગ રૂપે મેં. અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ દ્વારા પ્રસ્તાવિત, APSEZ ઔદ્યોગિક જમીન, વાંટ ૯ ટૂંડા ગામ નજીક, તા: મુન્દ્રા, જી: કચ્છ, ગુજરાત, જેમાં ઇન્ડસ્ટ્રી-૧ પ્રોજેક્ટ-સેમી કોક-૨૦૩૦ કે.ટી.પી.એ.; સિમેન્ટ-૬ એમ.ટી.પી.એ.; ક્લિનકર-૪ એમ.ટી.પી.એ.; ઇન્ડસ્ટ્રી-૨ પ્રોજેક્ટ-વી.સી.એમ-૨૦૦૨ કે.ટી.પી.એ., પી.વી.સી.-૨૦૦૦ કે.ટી.પી.એ., ઈથીલીન ગ્લાયકોલ-૪૦૦ કે.ટી.પી.એ, અને ઇન્ડસ્ટ્રી-૩ પ્રોજેક્ટ-એસિટિલિન-૮૬૦ કે.ટી.પી.એ. અને કોસ્ટિક સોડા-૧૩૧૦ કે.ટી.પી.એ અને કેલ્શિયમ કાર્બાઇડ-૨૯૦૦ કે.ટી.પી.એ. (EIA નોટિફિકેશન માં દર્શાવેલ નથી) ના ભાગ રૂપે સમાવેશ થાય છે.)" માટે ની પર્યાવરણીય મંજૂરી મિનિસ્ટ્રી ઓફ એન્વિરોમેન્ટ, ફોરેસ્ટ અને ક્લાઇમેટ ચેન્જ, નવી દિલ્લી ના પત્ર ક્રમાંક : EC Identification No. - EC22A009GJ154137, File No. - IA-J-11011/423/2021-IA-II(IND-I) dated 26/09/2022 ના રોજ પ્રાપ્ત થયેલ છે. સદરહુ માન્યતા અંગેનો પત્ર ગુજરાત પ્રદુષણ નિયંત્રણ બોર્ડ ની ઓફિસ માં તેમજ મિનિસ્ટ્રી ઓફ એન્વિરોમેન્ટ, ફોરેસ્ટ અને ક્લાઇમેટ ચેન્જ ની વેબ સાઇટ <https://parivesh.nic.in> પરથી પણ જોઈ શકાશે. તદ્ ઉપરાંત એન્વિરોમેન્ટ ક્લીયરન્સ ની કોપી કંપનનીની વેબસાઇટ <https://www.adanienterprises.com/-/media/4BAE7363F8C843B8B659F4AC21587F8A.ashx> પણ જોઈ શકાશે.

sd-

પ્રોદ્યુત માજી (પ્રોજેક્ટ હેડ)

મેં. અદાણી એન્ટરપ્રાઇઝીસ લિમિટેડ

Adani Enterprises Limited

Shantigram, S.G. Highway, Ahmedabad-382421. (Gujarat)

PUBLIC NOTICE

M/s Adani Enterprises Limited, APSEZ Industrial Land, Near Village Vandh & Tunda, Taluka Mundra, District – Kachchh, Gujarat has been accorded Environmental Clearance (EC) for project **"Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA** (as a part of Proposed Coal to Poly-Vinyl Chloride (PVC) Project of AEL in land notified as Industrial area of APSEZ, Ta.-Mundra, Dist-Kachchh, Gujarat" comprising of IND-I projects i.e. Semi Coke-2030 KTPA, Cement-6 MTPA; Clinker-4 MTPA, IND-II projects i.e. VCM- 2002 KTPA, PVC-2000 KTPA, Ethylene Glycol-400 KTPA and IND-III projects i.e. Acetylene-860 KTPA & Caustic Soda-1310 KTPA and Calcium Carbide-2900 KTPA (Not Specified in EIA Notification)) by M/s Adani Enterprises Ltd." by Ministry of Environment, Forest and Climate Change, Government of India vide **EC Identification No. - EC22A009GJ154137, File No. - IA-J-11011/423/2021-IA-II(IND-I) dated 26/09/2022.** The said clearance letter is available at website of the Ministry of Environment, Forest and Climate Change at <https://parivesh.nic.in> and also available at office of the Gujarat Pollution Control Board (GPCB). Copy of EC is also kept at website of the company at <https://www.adanienterprises.com/-/media/4BAE7363F8CB4388B659F4AC21587F8A.ashx>

sd-

Prodyut Maji (Project Head)
M/s Adani Enterprises Limited

**News Paper: The Times of India, Page no:13, Date:30/09/2022,
Language: English**

adani

o/c

Ref: AEL/MPL/ENV/MoEF&CC/2022 – September/08

Date: 28/09/2022

To,

Ms. Praveena D.K. (IAS),
Collector & DM,
Collector Office, Jilla Seva Sadan,
Bhuj – Kuchchh, 370 001

Subject: Environmental Clearance (EC) for proposed project activities "**Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat** by M/s Adani Enterprises Ltd.

Reference: EC Identification no. EC22A009GJ154137 File No. IA-J-11011/423/2021-IA-II(IND-I)
Dated 26/09/2022

Respected Ma'am,

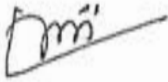
With reference to above subject, this is to inform that Ministry of Environment, Forest and Climate Change has granted Environment Clearance (EC) for our project "**Semi Coke-2030 KTPA; Calcium Carbide-2900 KTPA; Cement-6 MTPA; Clinker-4 MTPA** (as a part of Proposed Coal to Poly-Vinyl Chloride (PVC) Project of AEL in land notified as Industrial area of APSEZ, Ta-Mundra, Dist-Kachchh, Gujarat, comprising of IND-I projects i.e. Semi Coke-2030 KTPA, Cement-6 MTPA; Clinker-4 MTPA, IND-II projects i.e. VCM- 2002 KTPA, PVC-2000 KTPA, Ethylene Glycol- 400 KTPA and IND-III projects i.e. Acetylene-860 KTPA & Caustic Soda-1310 KTPA) and Calcium Carbide-2900 KTPA (Not Specified in EIA Notification)) by M/s Adani Enterprises Ltd." Vide EC Identification no. EC22A009GJ154137, File No. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022.

Accordingly, as required under Miscellaneous condition No. ii of EC, we are submitting herewith copy of Environment Clearance for the said project for your reference and further necessary action, please.

Thanking You.

Yours Faithfully,

Authorized Signatory for Adani Enterprises Ltd,



Prodyut Maji (Project - Head)

Encl: As Above

Copy to:

- 1). **The District Development Officer,**
Jilla Pachayat, Opposite Surmandir Multiplex,
Bhuj – Kuchchh, 370 001
- 2). **The Taluka Development Officer,**
Taluka Panchayat, Mundra
Ta: Mundra Dist: Kuchchh, 370 421
- 3). **The General Manager,**
District Industries Center, Near New Green
Hospital, Bhuj – Kuchchh, 370 001
- 4). **The Regional Officer,**
Gujarat Pollution Control Board (Kuchchh East),
Room no.215,216 & 217, 2nd Floor, Administration
Office Building, Deendayal Port Trust, Sector - 08,
Gandhidham – Kuchchh, 370 201

Adani Enterprises Ltd
"Adani Corporate House",
Shantigram, Near Vaishno Devi Circle,
S. G. Highway, Khodiyar
Ahmedabad 382 421
Gujarat, India
CIN: L51100GJ1993PLCO19067

Tel. + 91 79 2656 5555
Fax + 91 79 2555 5500
info@adani.com
www.adani.com

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

31/09/22
આવક કારકુન
જિલ્લા પંચાયત, કચ્છ-ભુજ

31/09/22
ઇન્ડિયા ક્લાર્ક
જિલ્લા ઉદ્યોગ કેન્દ્ર
ભુજ-કચ્છ

To,

Ms. Praveena D.K. (IAS),
Collector & DM,
Collector Office, Jilla Seva Sadan,
Bhuj - Kuchchh, 370 001

Subject: Environmental Clearance (EC) for proposed project activities "**Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat** by M/s Adani Enterprises Ltd.

Reference: EC Identification no. EC22A009GJ154137 File No. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022

Respected Ma'am,

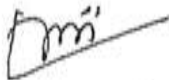
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Thanking You.

Yours Faithfully,

Authorized Signatory for Adani Enterprises Ltd,



Prodyut Maji (Project - Head)

Encl: As Above

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1). **The District Development Officer,**
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4). **The Regional Officer,**
Gujarat Pollution Control Board (Kuchchh East),
Room no.215,216 & 217, 2nd Floor, Administration
Office Building, Deendayal Port Trust, Sector - 08,
Gandhidham - Kuchchh, 370 201

Adani Enterprises Ltd
"Adani Corporate House",
Shantigram, Near Vaishno Devi Circle,
S. G. Highway, Khodiyar
Ahmedabad 382 421
Gujarat, India
CIN: L51100GJ1993PLC019067

Tel. + 91 79 2656 5555
Fax + 91 79 2555 5500
info@adani.com
www.adani.com

To,
The Sarpanch, Shri / Talati Cum Mantri, Shri
Gram Panchayat,
Village: _____
Ta: _____, Dist: Kachchh (List Attached)

Subject: Environment Clearance (EC) for proposed Project "**Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat** by M/s Adani Enterprises Ltd.

Reference: EC Identification no. EC22A009GJ154137 File No. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022

Respected Sir / Ma'am,

With reference to above subject, this is to inform that Ministry of Environment, Forest and Climate Change has granted Environment Clearance (EC) for our project "**Semi Coke-2030 KTPA; Calcium Carbide-2900 KTPA; Cement-6 MTPA; Clinker-4 MTPA** (as a part of Proposed Coal to Poly-Vinyl Chloride (PVC) Project of AEL in land notified as Industrial area of APSEZ, Ta-Mundra, Dist-Kachchh, Gujarat, comprising of IND-I projects i.e. Semi Coke-2030 KTPA, Cement-6 MTPA; Clinker-4 MTPA, IND-II projects i.e. VCM- 2002 KTPA, PVC-2000 KTPA, Ethylene Glycol- 400 KTPA and IND-III projects i.e. Acetylene-860 KTPA & Caustic Soda-1310 KTPA) and Calcium Carbide-2900 KTPA (Not Specified in EIA Notification)) by M/s Adani Enterprises Ltd." Vide EC Identification no. EC22A009GJ154137 File No. IA-J-11011/423/2022-IA-II(IND-I) Dated 26/09/2022.

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Thanking You,
Yours Faithfully,

Authorized Signatory for Adani Enterprises Ltd.

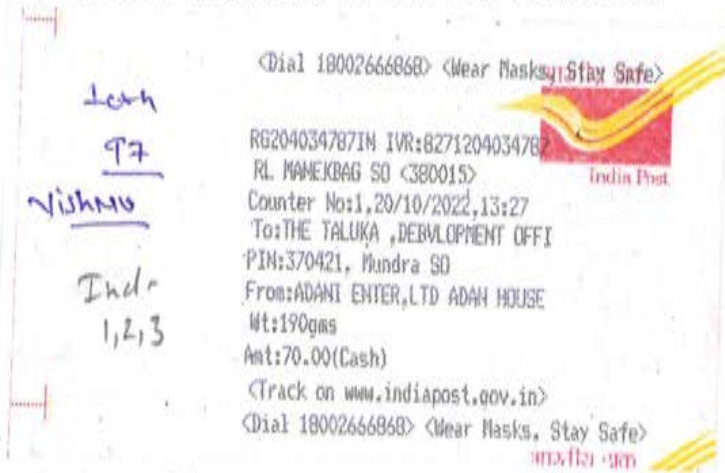


Prodyut Maji (Project - Head)

Encl: As Above
Copy to:

1). **The Taluka Development Officer,**
Taluka Panchayat, Mundra
Ta: Mundra Dist: Kachchh, 370 421

2). **The Regional Officer,**
Gujarat Pollution Control Board (Kachchh East),
Room no.215,216 & 217, 2nd Floor, Administration
Office Building, Deendayal Port Trust,
Sector - 08, Gandhidham - Kachchh, 370 201





Ref: AEL/MPL/ENV/MoEF&CC/2022 – September/11

Date: 30/09/2022

To,
Shri Shrawan Kumar Verma, IFS (Addl. Charge)
Deputy Director General of Forests (C)
Integrated Regional Office, Gandhinagar,
Ministry of Environment, Forest and Climate Change,
A-Wing-407 & 409, Aranya Bhawan, Near CH-3 Circle,
Sector-10A, Gandhinagar – 382010

Subject: Environmental Clearance (EC) for proposed project activities "**Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA near village Vandh & Tunda, Taluka Mundra, District Kachchh, Gujarat** by M/s Adani Enterprises Ltd.

Reference: EC Identification no EC22A009GJ154137, File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022

Respected Sir,


With reference to above subject, this is to inform that Ministry of Environment Forest and Climate Change has granted Environment Clearance for our project "Semi Coke-2030 KTPA, Calcium Carbide-2900 KTPA, Cement-6 MTPA; Clinker-4 MTPA (as a part of Proposed Coal to Poly-Vinyl Chloride (PVC) Project of AEL in land notified as Industrial area of APSEZ, Ta-Mundra, Dist-Kutch, Gujarat" comprising of IND-I projects i.e. Semi Coke-2030 KTPA, Cement-6 MTPA; Clinker-4 MTPA, IND-II projects i.e. VCM- 2002 KTPA, PVC-2000 KTPA, Ethylene Glycol- 400 KTPA and IND-III projects i.e. Acetylene-860 KTPA & Caustic Soda-1310 KTPA) and Calcium Carbide-2900 KTPA (Not Specified in Any EIA Notification) by M/s Adani Enterprises Ltd" vide EC Identification no EC22A009GJ154137, File no. IA-J-11011/423/2021-IA-II(IND-I) Dated 26/09/2022.

Accordingly, in compliance of Miscellaneous condition no. (i) & (ii) of Environmental clearance, we are submitting herewith copy of environmental clearance as **Annexure - A** along with copies of newspaper publications (**Annexure - B**) stating "the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB (GPCB) and may also be seen at Website of the Ministry at <https://parivesh.nic.in/> as well as on Company website at <https://www.adanienterprises.com/-/media/4BAE7363F8C843B8B659F4AC21587F8A.ashx>" for your reference and record please.

Adani Enterprises Ltd
"Adani Corporate House",
Shantigram, Near Vaishno Devi Circle,
S. G. Highway, Khodiyar
Ahmedabad 382 421
Gujarat, India
CIN: L51100GJ1993PLC019067

Tel. + 91 79 2656 5555
Fax + 91 79 2555 5500
info@adani.com
www.adani.com

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


Integrated Regional Office, Gandhinagar
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय,
Ministry of Environment, Forest & Climate Change,
Govt. of India / भारत सरकार
कक्ष क्र. 407 व 409 ए विंग अरुण्य भवन
Room No.407 & 409, A wing Aranya Bhawan
गान्धिनगर (गुजरात) / Gandhinagar(Gujarat)

The details of the newspaper publication are given below:

Sr. no.	Name of News Paper	Language	Date of Publication
1	Kutch Mitra	Gujarati	30/09/2022
2	Gujarat Samachar	Gujarati	30/09/2022
3	The Times of India	English	30/09/2022

Thanking You,
Yours Faithfully,

Authorized Signatory for Adani Enterprises Ltd,



Prodyut Maji (Project - Head)

Encl: As Above

Copy to:

1). **The Member Secretary,**
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector – 10
A, Gandhinagar 382 010

2). **The Regional Officer,**
Gujarat Pollution Control Board
(Kuchchh East).
Room no.215,216 & 217, Second floor,
Administration Office Building,
Deendayal Port Trust, Sector – 08,
Gandhidham – Kuchchh, 370 201

Ref: MPL/ENV/GPCB – Form – V/2023 –June/01

Date: 29/06/2023

To,
The Unit Head, (Kutch District)
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector-10A,
Gandhinagar – 382010
E-mail : kut-uh-gpcb@gujarat.gov.in

PCB ID:86184

Subject: Environment Statement (Form – V) for the year 2022-2023 for the Project
"Coal to Poly-vinyl Chloride (PVC)" near Village Vandh & Tunda, Taluka
Mundra, District Kachchh, Gujarat by M/s Mundra Petrochem Limited –
Reg.

Reference : 1) CTE no. 59301 granted by GPCB vide letter no. GPCB/(PCB ID:
86184)/ 16246 dated 13/12/2022.
2) Amended CTE letter no. PC/CCA-KUTCH-2104/GPCB ID
86184/738939 Dated 12/04/2023.

Respected Sir,

With reference to the Consent to Establish issued by GPCB vide above refer
letter dated 13/12/2022, amended vide letter dated 12/04/2023 for the project
"Coal to Poly-vinyl Chloride (PVC)" near Village Vandh & Tunda, Taluka Mundra,
District Kachchh, Gujarat by M/s Mundra Petrochem Limited.

Presently, the coal to PVC Project is under basic/detail engineering and
process design stage i.e construction activities yet to be initiated. The soft copy of
the Environment Statement (Form – V) for the year 2022 -2023 is attached for your
ready reference & record please.

Thanking you,



Vinay Kumar Singh
General Manager – Environment & Sustainability

Encl: As Above

Copy to : 1. Member Secretary, GPCB : ms-gpcb@gujarat.gov.in
3. Regional Office, GPCB (Kutch East): ro-gpcb-kute@gujarat.gov.in

Mundra Petrochem Limited
"Adani Corporate House",
Shantigram, Near Vaishno Devi Circle,
S. G. Highway, Khodiyar
Ahmedabad 382 421
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Registered Office: "Adani Corporate House", Shantigram, Near Vaishno Devi Circle, S. G. Highway, Khodiyar, Ahmedabad - 382421

FORM – V
(See Rule 14)

From :
M/s Mundra Petrochem Limited,
Survey no.180/Part (Unsurveyed Land),
Mundra Forest (Diverted for SEZ),
Vill: Tunda, Ta:Mundra, Dist: Kutch 370421

To,
Gujarat Pollution Control Board,
Sector 10 – A,
Gandhinagar 382 043
Environmental Statement for the financial year ending the 31st March 2023.

PART – A

i	Name and address of the owner / occupier of the industry operation or process	Mr. K. S. Lakshminarayana (Site – Head) M/s Mundra Petrochem Limited, Survey no.180/Part (Unsurveyed Land), Mundra Forest (Diverted for SEZ), Vill: Tunda, Ta:Mundra, Dist: Kutch 370421
ii	Industry Category – Primary – STC Code Secondary – STC Code	Red (Large Scale)
iii	Production Capacity Units	As per Annexure - I
iv	Year of establishment	Under Construction Stage - The Coal to PVC project is under basic & detail engineering and process design stage,
v	Date of the last Environmental Statement Submitted	N/A

PART – B

Water and Raw material Consumption

i	Water Consumption M ³ /day	80*	
	Process	0	
	Cooling	0	
	Domestic	80	
	Name of Product	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year	
	As per Annexure - I	NIL	NIL

ii Raw Material Consumption			
Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the previous Financial year	During the current financial year
NIL	NIL	NIL	NIL

* Presently, the Coal to PVC project is under basic & detail engineering and process design stage, water consumption is mainly for domestic & greenery development.

PART - C

Pollution Discharged to environment / unit of output
(Parameter as specified in the consent issued)

Pollutant	Quantity of Pollutants discharged (Mass / day)	Concentration of pollutants in discharges (Mass/Volume)	Percentage of variation from prescribed standards with reasons
(a) Water	NIL*	NIL*	NIL*
(b) Air	NIL*	NIL*	NIL*

* : The Coal to PVC project is under basic & detail engineering and process design stage,

Part - D

Hazardous Wastes

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

Hazardous Wastes	Total Quantity (KG)	
	During the Previous Financial Year	During the Current Financial Year
(a) From Process	NIL*	NIL*
(b) From pollution control facilities.	NIL*	NIL*

* : The Coal to PVC project is under basic & detail engineering and process design stage,

Part - E

Solid waste

	Total Quantity (KG)	
	During the Previous Financial Year	During the Current Financial Year
(a) From Process	NIL*	NIL*
(b) From pollution control facilities.	NIL*	NIL*
(c) 1 - Quantity recycled OR re-utilized within the unit.	NIL*	NIL*
2 - Sold	NIL*	NIL*
3 - Disposed	NIL*	NIL*

* : The Coal to PVC project is under basic & detail engineering and process design stage,

Part – F

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

Hazardous Waste:

Presently, the Coal to PVC project is under basic & detail engineering and process design stage. However, M/s Mundra Petrochem Limited has taken membership of Common TSDF site operated by M/s Saurashtra Enviro Projects Private Limited, Kutch for safe disposal of following hazardous waste during construction and operation phase.

Name of Hazardous Waste	Category as per HWMR,2016 and amended	Schedule as per HWMR,2016 and amended	Authorized total generation Quantity (MT / year)	Mode of Disposal
Spent Catalyst and Molecular Sieves	1.6	I	1565	To be sent to an approved / authorized vendor for recovery / Disposal to authorized TSDF/ Recycler / Co-processing
Used OR Spent Oil	5.1	I	300	To be sent to registered Oil re-processor.
Empty barrels/containers/liners contaminated with hazardous chemicals /wastes	33.1	I	50	Disposed to authorized TSDF / recycler / Co-processing.
Spent ion exchange resin containing toxic metals	35.2	I	50	Disposed to authorized TSDF / recycler / Co-processing.
Chemical Sludge from Wastewater treatment	35.3	I	138601	Disposed to authorized TSDF / recycler / Co-Processing.

Solid Waste:

Presently, the Coal to PVC project is under basic & detail engineering and process design stage. However, following practices will be adopted during construction as well as operational phase of the project.

Type of Solid waste	Composition of Waste	Quantity (MT/Annum)	Mode of Transportation	Mode of Treatment / Disposal
Brine Sludge	Brine Sludge	17030	Truck	Disposal to authorized TSDF / Sanitary Landfill site / Sale to authorized brick manufacturers.
Carbon from coke drying tail gas dust removal system	Coke / Carbon fine particles	120000	Truck	To be Used in in-house cement plant as fuel along with coal OR Sent to TSDF if found hazardous after characterization.
Residues from Lime kiln cinder and shaker gravel	Lime stone, Lime and dust	108000	Truck	To be Used in in-house Cement plant / offsite cement plant as fuel along with coal OR sent to TSDF if found hazardous after characterization.
Residues from furnace gas purifies dust of dust collector	Carbon Fines	215000	Truck	To be Use in in-house Cement plant / offsite cement plant as fuel along with coal OR Sent to TSDF if found hazardous after characterization.
Calcium Carbide furnace slag	SiO ₂ , MgO etc.	400	Truck	To be Used in in-house cement plant / offsite cement plant as fuel along with coal OR sent to TSDF if found Hazardous after characterization.
Coke fine from sieve and dust collector	Coke	100000	Truck	To be Used in in-house cement plant / offsite cement plant as fuel along with Coal OR sent to TSDF if found hazardous after characterization.
Lime fines from sieve and dust collector	Lime	120000	Truck	To be Used in in-house cement plant / offsite cement plant as fuel along with coal OR sent to TSDF if found hazardous after characterization.
Boiler Ash	Boiler Ash	43200	Fly Ash Bulk trailer	To be Used in in-house cement plant
	Bottom Ash	21600	Fly Ash Bulk trailer	To be used in in-house cement plant.

Sewage Treatment Plant Sludge	Biological Sludges	602	Within site premises	Will be used as manure for gardening.
Municipal Solid waste	Canteen waste, scraped office stuff	~1270	Bags / Bins/ Dedicated area in scrap yard	Disposal to authorized sanitary landfill site / sale to recyclers of segregated wastes.
Biomedical Waste	Waste generated from Hospital activities.	As & when generated	Authorized collection vehicle	Bio medical waste to be sent to authorized common TSDF site.
Used lead acid batteries	Acid and other chemicals	As & when generated	Authorized collection vehicle	100 % buy - back policy implemented at site for collection and disposal of such type of waste.
Electronic waste	Damaged / obsolescence Electronic items	As & when generated	Vehicle of authorized recycler	To be sent to authorized recycler.
Construction and Demolition waste	Sand, cement, etc.	As & when generated	Truck	To be used for leveling of low laying area within the plant premises.

Part – G

Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.

Presently, the Coal to PVC project is under basic & detail engineering and process design stage. However, following pollution control measures will be taken on conservation of natural resources and on the cost of production.

Aspect	Mitigation Measures
Air	<p>Construction phase:</p> <ul style="list-style-type: none"> • Periodic checking of vehicles and construction machinery to ensure compliance to emission standards • Water sprinkling on haul roads <p>Operation Phase:</p> <ul style="list-style-type: none"> • Adequate stack height will be provided to all flue gas stack. • Highly efficient Air Pollution Control Equipment will be installed to proposed process stacks & flue gas stack. • Installation of Online CEMS as applicable

	<ul style="list-style-type: none"> • Closed loop system will be proposed for transfer of liquid / solid raw material from storage / tank farm area to processing areas. • Greenbelt area will be developed at the facility. • Attenuation of pollution/protection of receptor through greenbelt/green cover. • Regular monitoring of air pollutant concentrations will be done. • All trucks shall be PUC Certified from time to time. • Vehicles with applicable Bharat Stage exhaust emission norms will be used.
Noise	<p>Construction Phase:</p> <ul style="list-style-type: none"> ▪ Regular preventive maintenance of vehicles and construction equipment will be done. <p>Operation Phase:</p> <ul style="list-style-type: none"> ▪ The high noise generating equipment's like ID Fans, Compressors, DG Sets shall be provided with noise insulation, Acoustic laggings and silencers to ensure that the noise level at 1 meter from the machine is <85dB(A) or minimum 25dB(A) noise attenuation. ▪ Proper PPEs will be provided to the workers working in the high noise area within the plant and compliance will be done with applicable regulations. ▪ Job Rotation of workers working in the high noise area. ▪ Implement good working practices (equipment selection) to minimize noise and reduce its impacts on human health (earmuffs, safe distances, and enclosures). ▪ Development of thick Green belt within the plant premises and along project boundary to screen noise.
Water	<ul style="list-style-type: none"> ▪ No impact on Ground Water as there is no Ground water use. ▪ Only desalinated sea water supplied by APSEZL, will be used for Industrial and domestic purposes. ▪ No adverse impacts on surface water, ground water or soil. There will be no disposal of effluent outside project premises. ▪ All effluent will be reduced at source by recycling and reuse after proper treatment to achieve the Zero Liquid Discharge. <p>Mitigation measures and ZLD Scheme</p> <ul style="list-style-type: none"> ▪ ETP and STPs will be installed for treatment of effluents. ▪ The ETPs will consists of primary, biological & tertiary treatment process. After tertiary treatment, treated water is made to pass through UF, RO System and MEE. RO permeate and MEE condensate are recycled back for utilization in utility areas. Hence, ETPs works on Zero Liquid Discharge (ZLD) concept. ▪ Similarly, treated sewage will be reused in gardening, reducing the overall freshwater demand. ▪ The Solids waste generated from ETP will be disposed through TSDF and Bio sludge from STP will be disposed by using it as manure in green belt

Soil	<ul style="list-style-type: none"> ▪ Measures for site development will be minimum as project site is already identified as industrial area of APSEZ. ▪ Free area will be paved. ▪ Tree plantation will be carried out. ▪ Shrubs and grass to be planted wherever open land available. ▪ Top soil to be kept aside and reused in Greenbelt development wherever possible.
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Part – H

Additional measures /investment proposal for environmental protection including abatement of pollution / prevention of pollution.

Presently, the Coal to PVC project is under basic & detail engineering and process design stage. However, following measures / activities have been initiated / completed for the betterment of environment.

- Mundra Petrochem Limited has completed mangrove plantation in an area of 1 Ha. Due to this, coastal plantation, different birds, crabs, fishes and other insects will be attracted towards coast.
- Conducted Awareness program at nearby villages for "Ban on Single Use plastic" and "Wildlife conservation and it's benefit".

Part – I

Any other particulars for improving the quality of the environment.

Presently, the Coal to PVC project is under basic & detail engineering and process design stage. However, following measures / activities have been initiated for betterment of environment.

- Mundra Petrochem Limited & Adani foundation in collaboration with Govt Agriculture dept organized at district level workshop at Mundra as a part of the "Bharat Ka Amrut Mahotsav". The workshop was aimed to bringing all together to promote, implement and ensure convergence of natural farming to village level by involving "Gram Sevak" of kutch region.
- MPL has also organized training program on "Jivamrut preparation". More than 150 Gram Sevak across Kutch had participated and made aware about systematic and scientific way for effective Natural farming practices and ensure to incorporate it to Farm.
- Various awareness program on wetland restoration and coastal biodiversity was organized involving students. On this occasion, representative from Gujarat Pollution Control Board and Gujarat Institute of Desert Ecology (GUIDE) were present and addressed.

- Mundra Petrochem Limited (MPL) in association with the Adani Foundation engaged various farming communities in villages surrounding to Coal to PVC project activity to spread awareness about the use of biogas generated from the cattle dung from Bio-gas plant which provide farmer's a sustainable solution for energy security for cooking and compost generated form the biogas plan will be used as organic fertilizer for natural farming.



Signature of a person carrying out
an industry – operation or Process
Name: Mr. Vinay Kumar Singh

Designation: General Manager – Environment &
Sustainability

Address: M/s Mundra Petrochem Limited,
"Adani Corporate House",
Shantigram, Near Vaishno Devi Circle,
S. G. Highway, Khodiyar
Ahmedabad 382 421
Gujarat, India

Annexure – I

List of Product

Plant	Product Details	Capacity
Industry Project – 1		
Semi-Coke Plant	Coke	2030 KTPA
	Tar	370 KTPA
	Crude Benzene	26 KTPA
	Ammonium Sulphate	18 KTPA
	Sulphur	5 KTPA
	Coking Gas	1360 MNm ³ /A
Cement Plant	Ordinary Portland Cement, Portland Pozzolona Cement, Portland Slag Cement, Portland Composite Cement	6000 KTPA
	Clinker	4000 KTPA
Calcium Carbide	Calcium Carbide	2900 KTPA
	Lime fines and lime residues	2870 KTPA
Industry Project – 2		
PVC Plant	Polyvinyl Chloride (PVC Grades: Suspension, Mass Emulsions, Chlorinated PVC etc.)	2000 KTPA
VCM Plant	Vinyl Chloride Monomer	2002 KTPA
Ethylene Glycol Plant	Ethylene Glycol (EG) (Superior Grade EG, Qualified Grade EG, MEG, DEG, TEG)	400 KTPA
	Dimethyl Carbonate	13 KTPA
	Crude Ethanol	10 KTPA
	Alkanol	7 KTPA
Industry Project – 3		
Caustic Soda Plant (Chlor-Alkali Process)	Caustic Soda	1310 KTPA
	Caustic Soda (50% wt)	810 KTPA
	Hydrochloric Acid	1232 KTPA
	Sodium Hypochlorite	16 KTPA
	Caustic Potash	130 KTPA
	Potassium Carbonate	33 KTPA
	Sodium bi-carbonate	66 KTPA
	Caustic Soda flakes	600 KTPA
	Liquid Chlorine	60 KTPA
	Sodium Sulphate	75 KTPA
Acetylene Plant	Acetylene	860 KTPA
	Carbide Lime Sludge	5700 KTPA