SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENTAL & CRZ CLEARANCES

2X600 MW COAL BASED THERMAL POWER PLANT

at

Melamarudur Village, Ottapidaram Taluk,
Tuticorin – 628 105
Tamil Nadu

Submitted to:

Ministry of Environment, Forest and Climate Change
Government of India
सत्यमेव जयते

Central Pollution Control Board
Ministry of Environment, Forest & Climate Change
(Govt of India)

TAMIL NADU POLLUTION CONTROL BOARD

Submitted By:

C&O GROUP

Coastal Energen Private Limited

PERIOD: JANUARY 2023 – JUNE 2023

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CIN : U40102TN2006PTC060009

(Under Corporate Insolvency Resolution Process vide order of Hon'ble NCLT dated 04.02.2022)

CEPL/ENV/2023 -24/01 July 27, 2023

The Director
Ministry of Environment, Forest & Climate Change,
Paryavaran Bhavan,
CGO Complex, Lodhi Road,
New Delhi - 110 003.

Dear Sir,

Sub: Submission of Half yearly MoEF & CC Clearances Compliance Report for the period January 2023 to June 2023 - Reg.

Ref: 1.Environment Clearance No.J-13011/41/2008-IA.II(T) dated 05.05.2009

2.Coastal Regulation Zone Clearance No. 11/32/2009-IA.III dated 10.08.2009

3.MoEF office memorandum No.F.No.J-13012 /8/2009-IA.II(T) dated 11.11.2020

This has reference to the captioned subject and cited references; we are herewith enclosing the Compliance Report of Environmental Clearance, Coastal Regulation Zone Clearance and MoEF office memorandum for the period January 2023 to June 2023.

This is for your kind information and records.

Thanking You

For **COASTAL ENERGEN PRIVATE LIMITED**

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

MK Parameswaran

Station Director

10/08/2023

Copy to: 1. Director (S), MoEF &CC, Regional Office (South Eastern Zone), Chennai - 600 003.
2. Central Pollution Control Board, Bangaluru - 560 079.
3. District Environmental Engineer, TNPCB, Tuticorin - 628 002.

Integrated Energy Solutions

Ministry of Environment Forest & Climate Change Clearance Compliance

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE ENVIRONMENTAL CLEARANCE No.J-13011/41/2008-IA.II(T) dated 10.12.2008

Period: January 2023 to June 2023

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
1	Environment clearance is subject to obtaining clearance under the wildlife (protection) Act, 1972 from the competent authority.	No Objection Certificate is obtained from principal Chief Conservator of Forests and chief wild life warden, Chennai vide Ref. No.WL5/74098/2007 dated 03.03.2009. As communicated by Principal Chief Conservator of Forest & Chief Wild Life Warden vide their Lr. No. Ref. No. WL5/7774/2013 dated 16.04.2016, we have applied online in the MOEF & CC web portal on 17th Oct 2017 for obtaining Wild Life Clearance from National Board for Wildlife and we are following. Screen Shot of the Web portal is enclosed as Annexure - 9.
2	Environment clearance is subject to final order of the hon'ble court of India in the matter of Goa foundation vs union of India in writ petition (civil) no.460 of 2004 as may be applicable to this project.	Noted for Compliance.
3	The total land acquired shall not be more than 875 acres for all the activities / facilities of the power project put together.	Complied. The total land acquired is 875 acre.
4	Prior CRZ clearance for the activities / facilities to be located in the CRZ area shall be obtained before start of the project.	Complied. CRZ clearance received from MoEF vide No.11-32/2009-IA-III dated 10.08.2009.
5	Ash and sulphur content in the imported coal to be used in the project shall not exceed 12% and 1.5 % respectively.	Complied. Ash and Sulphur content in the imported coal has not exceed 12% and 1.5 % respectively.
6	A multi-flue stack of 275m height shall be provided with continuous online monitoring equipments for Sox, NOx and particulate (heavy metals like Hg, Cr, As, Pb periodically). Exit velocity of atleast 22 m/s shall be maintained.	Complied. Multi Flue Stack is provided with Continuous online monitoring analyzers for measuring SO_x, NO_X and SPM and heavy metals like Hg, Cr, As, Pb are being monitored periodically
7	High efficiency Electro static precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50mg/Nm3.	Complied. High efficiency ESPs has been installed and the particulate emission does not exceed 50mg/Nm3.
8	CFBC technology with lime injection having efficiency of SO2 removal atleast 90% shall be installed.	Not applicable MoEF clearance obtained for Sub Critical Pulverized fuel Boilers vide clearance No.J-13011/41/2008-IA.II(T) dated 05.05.2009
9	Space provision shall be made for flue gas de-sulphurisation (FGD) unit, if required ata later stage.	Complied. Necessary space provision made for FGD Unit.
10	Adequate dust extraction system such as cyclone /bag filters and water spray system in dusty area such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Complied. ▪ Automatic water sprinklers provided in the coal storage yard. ▪ Closed conveyors provided for coal conveying ▪ Bag filters/ dust extraction system provided at all transfer points in the junction towers ▪ Ventilation system provided in all coal bunkers ▪ Bag filters provided in the ash silos ▪ Closed conveyors provided for bottom ash conveying

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11	Fly ash shall be collected in dry form and storage facility (silos) shall be provided 100% utilization of fly ash shall be achieved from day one. Unutilized fly ash in emergency and bottom ash shall be disposed off in the ash pond. Supernatant effluent from ash pond and leachates collected will be monitored for heavy metals (Hg, Cr, As, Pb etc.).	Complied. Fly Ash is collected in dry form and 100% utilization is being complied. There is no supernatant effluent generated from the ash pond as of now due to 100% ash utilization.
12	Ash pond shall be lined with HDPE lining. Adequate safety measure shall also be implemented to protect the ash dyke from getting breached.	Complied. Ash pond is lined with HDPE lining and Adequate safety measures are being taken to protect the ash dyke from getting breached.
13	Closed cycle cooling system with cooling towers as per the recommendations of chief wildlife warden shall be ensured.	Complied. Closed cycle cooling system with cooling towers is installed.
14	Continuous monitoring of coastal waters as per the recommendations of chief wildlife warden shall be ensured.	Complied. Continuous monitoring of coastal waters as per the recommendations of chief wildlife warden is being done.
15	Rain water harvesting shall be practiced. A detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with central ground water authority / state ground water and a copy of the same shall be submitted within three months to the ministry.	Storm water drains are already in place. Since, the existing ground water is more saline and not potable; recharging the storm water will not improve the existing ground water quality. Hence, the collected storm water is routed to nearby village pond for their domestic usage.
16	The treated effluents conforming to the prescribed standards only shall be discharged from cold water side in the sea. The temperature of the discharged effluents shall not exceed 5°C over and above the ambient water temperature of sea and it will be reduced to 0.5°C within 50m of the discharge point. The temperature of the discharge water shall be monitored continuously and records maintained.	▪ Cooling water blow down discharged from the cold water side of the induced draft cooling system. ▪ Dilution of discharge, using fresh sea water to reduce the temperature to 0.5^0 C within 50 m of the discharge point is being carried out. ▪ Temperature of the discharge water is being monitored continuously.
17	A sewage treatment plant shall be provided and the treated sewage conforming to the standards prescribed by SPCB shall be used for raising green belt/ plantation.	Complied. Sewage Treatment Plant is provided and functional at site premises. Treated water from STP is being used for gardening and Green belt development only.
18	Regular monitoring of ground water in and around the ash pond area shall be carried out, records maintained and 6 monthly reports shall be submitted to the regional office of this ministry.	Complied. Regular monitoring of ground water in and around the ash bund area is being carried out. Copy of the report is enclosed as Annexure - 3.
19	Greenbelt of adequate width shall be developed all around the plant area, other utilities and ash pond covering 270acres of area preferably with local species.	Complied. Greenbelt (Approximately 79,504 trees) of adequate width is developed all around the plant area, other utilities and ash bund covering 270 acres of land with local species. Latest Photos of the developed greenbelt is enclosed as Annexure - 4.
20	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Complied First aid and sanitation arrangements were made for the drivers and other contract workers during construction phase.
21	Noise levels emanating from turbines, air compressors, steam leakage and other moving parts of the machine should be controlled in such a way that the ambient noise levels in the working environment do not exceed 75dBA. For people working in high noise area especially during maintenance phase or due to leakage of steam	Complied. • Turbine & air compressors are provided with acoustic enclosures. • Provided silencer in safety valve • Provided earplugs and ear muffs to workers

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	etc., if it is not possible to control noise by adopting engineering methods including acoustical treatment, noise barriers etc., requisite personal protective equipment like ear plugs/ ear muffs etc., shall be provided. Workers engaged in noisy areas such turbines, air compressors etc shall be periodically examined and their audiometric records maintained and should be treated for any hearing loss including shifting to non noisy/less noisy areas.	• Workers engaged in noisy areas are being periodically examined and their audiometric records are being maintained and also shifted in rotational basis.
22	Regular monitoring of ground level concentration of SO2, NOx, SPM, RSPM and mercury shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. 6 monthly reports shall be submitted to the regional office of this ministry at Bangalore.	Complied. The monitoring of ground level concentration data for the period from January 2023 to June 2023 is enclosed as Annexure - 1. The Six months report on Environment monitoring are being submitted to Regional office of MoEF& CC on regular basis.
23	Adequate funds shall be ear marked for the activities under CSR and details of these activities shall also be submitted to the regional office of the ministry, SPCB and the ministry.	Complied. Separate funds earmarked for implementation of CSR activities. Details of CSR activities carried out during January 2023 to June 2023 are enclosed as Annexure - 5.
24	Storage facilities for this liquid fuel such as LDO and HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster management plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modification required, if any, shall be incorporated in the DMP.	Complied. LDO/HFO storage tanks are provided with dyke wall, automatic foam and water sprinkler system. Disaster Management plan is available and regular mock drills are being carried out.
25	Adequate safety measures shall be provided in the plant area to check/ minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the ministry as well as to the regional office of the ministry at bangalore.	Complied. Automatic water sprinkler system provided in the coal stock yard
26	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality/ municipal area /gram panchayat concerned and on the company's website within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the state pollution control board / committee and may also be seen at website of the ministry of environment and forest at http://envfor.nic.in.	Complied
27	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied during construction phase.

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28	A separate environment monitoring cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Complied. Environment Cell with qualified staffs are in place for the Environmental monitoring, Marine monitoring, Green belt development activities, etc.
29	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this ministry, its regional office at Bangalore, CPCB and SPCB.	Complied. Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards is being submitted to this ministry, its regional office at Bangalore, CPCB and SPCB.
30	Regional office of the ministry of environment & forests located at Bangalore will monitor the implementation of the stipulated conditions. A complete set of documents plan along with the additional information submitted from time to time shall be forwarded to the regional office for their use during monitoring.	Complied. Compliance status of the all the stipulated conditions in the environment clearance letter is being communicated from time to time to the Regional office of the ministry of environment & forests located at Bangalore
31	Adequate funds shall be allocated for implementation of environmental protection measures along with item-wise breakup. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year - wise expenditure should be reported to the ministry.	Complied during construction phase.
32	Full cooperation shall be extended to the scientists/officer from the ministry / regional office of ministry at Bangalore/ the CPCB the SPCB who would be monitoring the compliance of environmental status.	Complied. Full Co-operation is being extended to the scientists/officer from the ministry / regional office of ministry at Bangalore/ the CPCB the SPCB who visits the plant for monitoring.
33	The project authorities shall inform the regional as well as the ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Complied. UNIT-01 - Date of Commissioning - 02/12/2014 UNIT-02 - Date of Commissioning - 02/01/2016
34	Compliance status of the stipulated conditions shall be displayed in website of the industry/company.	The Compliance status of stipulated conditions is uploaded in the company website. Screen shot of company website is attached as Annexure - 2.

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE ENVIRONMENTAL CLEARANCE No.J-13011/41/2008-IA.II(T) dated 05.05.2009

Period: January 2023 to June 2023

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
1	Regular monitoring of ground water in and around the ash pond area including heavy metals (Hg,Cr,As,Pb) shall be carried out, records maintained and six monthly reports shall be furnished to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	Complied. Regular monitoring of ground water in and around the ash bund area is being carried out regularly. Analysis report for the period of January 2023 to June 2023 is attached as Annexure -3.
2	Regular monitoring of ground level concentration of SO2, NOx,Hg,SPM and RSPM shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data so monitored shall also be put on the website of the company.	Complied. The monitoring of ground level concentration data for the period January 2023 to June 2023 is enclosed as Annexure - 1 and the same is uploaded in the company website. Screen shot of company website is attached as Annexure - 2.
3	Space for FGD shall be provided at planning stage for the units.	Complied. Necessary space provision made for FGD Unit.
4	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local Body and the Local NGO, is any from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied
5	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the project shall be monitored and displayed at a convenient location near the man gate of the company in the public domain.	Complied. The Six months report on Ambient Air Quality monitoring are being submitted to Regional office of MoEF / TNPCB on regular basis and the same is uploaded in the company website. Print Screen of company website is attached as Annexure - 2. Online scrolling Display System provided at the main gate of the company.
6	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied. The Six monthly Compliance report are being submitted to Regional office of MoEF& CC /CPCB/ TNPCB on regular basis.

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COMPLIANCE TO THE ADDITIONAL CONDITIONS LAID BY MoEF VIDE OFFICE MEMORANDUM No.J-11013/41/2006-IA.II(I) dated 06.04.2011

Period: January 2023 to June 2023

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
1	Continuous monitoring of stack emissions as well as ambient air quality (as per notified standards) shall be carried out and continuous records maintained. Based on the monitored data, necessary corrective measures as may be required from time to time shall be taken to ensure that the levels are within permissible limits. The results of monitoring shall also be submitted to the respective Regional Office of MoEF regularly. Besides, the results of monitoring will also be put on the website of the company in the public domain.	Continuous Stack emission and ambient air quality monitoring are being carried out and records are being maintained. The monitored data for the period of January 2023 to June 2023 is enclosed as Annexure - 1. The results are well within the prescribed norms. The Six months report on Ambient Air Quality monitoring are being submitted to Regional office of MoEF& CC on regular basis and the same is uploaded in the company website. Screen Shot of company website is attached as Annexure - 2.
2	The six monthly monitoring report as well as the monitored data on various parameters as stipulated in the environment clearance conditions shall be put on the website of the company and also regularly updated. The monitored data shall also be submitted to respective State Pollution Control Board / UTPCCs and the Regional office of MoEF.	The Six months report on Ambient Air Quality monitoring are being submitted to Regional office of MoEF& CC / TNPCB on regular basis and the same is uploaded in the company website. F Screen Shot of company website is attached as Annexure - 2.
3	The ambient air quality data as well as the stack emission data will also be displayed in public domain at some prominent place near the main gate of the company and updated in real time.	Complied. Online scrolling Display System provided at the main gate of the company.

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Coastal Regulation Zone Clearance Compliance

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE CRZ CLEARANCE No.11/32/2009-IA.III dated 10.08.2009

Period: January 2023 to June 2023

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIENCE
Specific Conditions :		
1.	All the Conditions stipulated by Tamilnadu Coastal Zone Management Authority vide letter dated 03.04.2009 shall be strictly complied with.	All the Conditions stipulated by Tamilnadu Coastal Zone Management Authority vide letter dated 03.04.2009 is Complied. Compliance Status enclosed as Annexure - 6
2.	Sufficient dilution shall be carried out to meet the ambient parameters within 50m distance.	Complied. Sufficient dilution is being carried out to meet the ambient parameters within 50m distance.
3.	Independent monitoring shall be undertaken through a authorized agency.	Complied. Comprehensive Marine Environmental Monitoring is being carried out through M/s.Suganthi Devadasan Marine Research Institute, Thoothukudi, one of the identified institutions for coastal baseline studies and monitoring by the Tamil Nadu State Coastal Zone Management Authority.
4.	Filters in the way of extruders shall be provided at the intake point to prevent fishes entering in to the system. Fish culture shall be developed at the outfall point.	Complied. Fish Cage culture installed and monitoring is in progress. Report on Fish Cage culture monitoring is covered in Annexure -7.
5.	Regular monitoring especially for temperature and salinity shall be carried out at disposal site and six monthly reports shall be submitted to the ministry.	Complied. Monitoring data for the period January 2023 to June 2023 is enclosed as Annexure - 7.
6.	All the recommendations of EIA and DMP shall be strictly complied with	All the recommendations of EIA and DMP is complied
7.	There shall be no reclamation in Coastal Regulation Zone area.	Complied. No Reclamation done at CRZ area.
8.	The pipeline shall be buried at least 2m depth in the onshore area and 4 mts in the offshore area. Necessary permission with regard to the pipeline burial and laying shall be obtained from concerned authorities to ensure that the pipeline route does not fall in the navigation channel.	Complied. All the requirements has been fulfilled and necessary permission has been obtained with regard to the pipeline burial.
9.	The Project shall be implemented in such a manner that there is no damage whatsoever to the mangroves/other sensitive coastal ecosystems. If any damage to mangroves is anticipated / envisaged as a result of project activities then the clearance shall stand cancelled and the proponents shall seek fresh approval from the Ministry.	Not applicable. No mangroves are found in the project site.
10.	Consent shall be obtained from the Tamilnadu Pollution Control Board for the disposal of effluent into sea. The effluent shall meet the standards prescribed by Tamil Nadu Pollution Control Board before disposal.	Complied. Consents are obtained from TNPCB and being ensured that the effluent meet the standards prescribed by TNPCB before disposal.
11.	A continuous and comprehensive post - project marine quality monitoring programme shall be taken up. This shall include monitoring of water quality, sediment quality and biological characteristics and report	Complied. Monitoring data for the period January 2023 to June 2023 is enclosed as Annexure - 7.

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	submitted every 6 months to Ministry's Regional Office at Bangalore.	
12.	It shall be ensured that there is no displacement of people, houses or fishing activity as a result of the project.	Complied. No displacement of people, houses or fishing activity is involved.
13.	There shall be display boards at critical locations along the pipeline viz. road/rail/river crossings giving emergency instructions. This will ensure prompt information regarding location of accident during any emergency. Emergency information board shall contain emergency instructions in addition to contact details. Proper lighting shall be provided all along the road.	Complied.
14.	There shall be no withdrawal of ground water in CRZ, area, for this project.	Complied. No Withdrawal of Ground water is being done for the project.
15.	Necessary provisions shall also be made to develop a nursery for mangroves and the area should be demarcated specifically for the development of mangroves within the complex.	• The project site is not suitable for the development of mangroves as mangroves requires special environmental factors including fresh water sources along with marine (i.e) Esturain conditions. • Hence, this condition is not applicable to us.
16.	Arrangement for treatment of liquid effluents shall be made so as to ensure that the untreated effluents are not allowed to be discharged into the sea/marine water.	Complied. Effluent Treatment Plant is provided in the Main plant and is in operation.
17.	Appropriate safety devices such as masks shall be provided for use by the workers at the site and their usage by them shall be ensured.	Complied and the same is being ensured continuously.
18.	Necessary provisions shall be made for emergency evacuation during natural and man-made disasters like floods, cyclone, tsunami and earthquake etc.	Complied. Adequate Provisions made for emergency evacuation during Natural and manmade disasters.
19.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health case, crèche etc. The house may be in the form of temporary structures to be removed after the completion of the project.	Complied. Necessary Infrastructure were provided during Project Phase.
20.	A First Aid Room will be provided in the project both during construction and operation of the project.	Complied. First Aid Center with ambulance facilities available at site on 24 x 7 basis.
21.	All the topsoil excavated during construction activities should be stored for use in horticulture / landscape development within the project site.	Complied.
22.	Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.	Complied.
23.	Any Hazardous Waste Generated During Construction Phase, Should Be Disposed Off As Per Applicable Rules And Norms With Necessary Approvals Of The Andhara Pradesh Pollution Control Board.	No Hazardous waste generated during Construction Phase.
24.	The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environment (protection) Rules prescribed for air and noise emission standards.	Complied during Construction phase.

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25.	The Diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.	Complied during Construction phase.
26.	Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.	Complied during Construction Phase.
27.	Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/ TNPCB.	Complied during Construction Phase.
28.	Storm water control and its-re-use as per CGWB and BIS standards for various applications.	Not applicable.
29.	Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.	Complied during Construction Phase.
General Conditions:		
1.	The construction of the structures should be undertaken as per the plans approved by the concerned local authorities/local administration, meticulously conforming to the existing local and central rules and regulations including the provisions of Coastal Regulation Zone Notification dated 19.02.1991 and the approved Coastal Zone Management Plan of Tamil Nadu.	Complied during Construction Phase.
2.	In the event of any change in the project profile a fresh reference shall be made to the Ministry of Environment and Forests.	No Change in Project Profile
3.	This Ministry reserves the right to revoke this clearance, if any, of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Agreed for Compliance.
4.	This Ministry or any other competent authority may stipulate any additional conditions subsequently, if deemed necessary, for environmental protection, which shall be complied with.	Agreed for Compliance.
5.	Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.	Complied. Noise Levels are within the Permissible Limits
6.	The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise.	Complied. Landscape developed in front of Sea water Pump house.
7.	The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.	Not applicable.
8.	The sand dune, if any, on the site should not be disturbed in any way.	No sand dune exists.
9.	The mangroves, if any, on the site should not be disturbed in any way.	No mangroves exists.
10.	The environment safeguards contained in the EIA Report should be implemented in letter and spirit.	Complied. The environment safeguards contained in the EIA Report has been implemented.

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11.	A separate Environment Management Cell with suitably qualified staff to carry out various environment related Executive who will report directly to the Chief Executive of the Company.	Complied. Environment Cell with qualified staffs are in place for the Environmental monitoring, Marine monitoring, Green belt development activities, etc.
12.	The funds earmarked for environment protection measures shall be maintained in a separate account and there shall be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards shall be reported to this Ministry's Regional Office to Bangalore.	Fund for environmental protection measures is being allotted and no diversification of funds being done.
13.	In case of deviation or alteration in the project including the implementing agency, a fresh reference shall be made to this Ministry for modification in the clearance conditions or imposition of new one for ensuring environmental projection. The project proponents shall be responsible for implementing the suggested safeguard measures.	No Deviation/Alteration in the Project.
14.	This Ministry reserves the right to revoke this clearance, if any of the conditions stipulated are not complied with to the satisfaction of this Ministry.	Agreed.
15.	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the offices of the Central and State Pollution Control Board by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	Agreed and being Complied.
16.	These Stipulations Would Be Enforced Among Others Under The Provisions Of Water (Prevention And Control Of Pollution) Act, 1974 The Air (Prevention And Control Of Pollution) Act 1981, The Environment Municipal Solid Wastes (Management and Handling) Rules, 2000 including the amendments and rules made thereafter.	Agreed.
17.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) act, 1972 etc, shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied. All other applicable statutory clearances has been Obtained.
18.	The project proponent should advertise in at least two local Newspapers widely circulated in the regions, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letter are available with the Tamil Nadu State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at Http://www.envfor.nic.in. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bangalore.	Complied.
19.	Any appeal against this Environmental Clearance shall lie with the national Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.	Noted.
20.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZillaParisad /	Complied.

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

	Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	
21.	The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MoEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM, So2, Nox (ambient levels as well as stack emissions) or critical sectoral parameters, indicated ror the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	The Compliance status of stipulated conditions is uploaded in the company website. Screen Shot of company website is attached as Annexure - 2.
22.	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored date (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied. Submitting the six monthly reports on the status of compliance of the stipulated EC conditions including results of monitored date to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.
23.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Complied.

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

ANNEXURE - 1

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.01.2023 to 31.01.2023

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02
	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³
1-Jan-23	10.0	8.0	26.0	18.0	0.7	6.0	10.0	39.0	32.0	1.0	8.0	7.0	52.0	10.0	0.9	8.0	7.0	34.0	28.0	0.7
2-Jan-23	10.0	8.0	34.0	24.0	0.8	6.0	10.0	48.0	30.0	1.0	8.0	6.0	52.0	13.0	0.9	8.0	7.0	45.0	40.0	0.8
3-Jan-23	10.0	8.0	49.0	34.0	0.9	6.0	10.0	34.0	31.0	1.0	0.0	16.0	51.0	15.0	0.9	8.0	7.0	63.0	59.0	0.8
4-Jan-23	10.0	8.0	59.0	44.0	0.8	6.0	10.0	33.0	35.0	1.0	0.0	16.0	51.0	15.0	0.9	8.0	7.0	71.0	68.0	0.9
5-Jan-23	10.0	8.0	50.0	36.0	0.9	6.0	10.0	61.0	30.0	1.0	0.0	16.0	51.0	15.0	1.0	8.0	7.0	68.0	25.0	0.8
6-Jan-23	10.0	8.0	56.0	38.0	0.8	6.0	10.0	*	32.0	1.1	7.0	16.0	51.0	15.0	1.0	8.0	7.0	69.0	15.0	0.9
7-Jan-23	10.0	8.0	53.0	38.0	0.8	6.0	10.0	52.0	30.0	1.1	8.0	16.0	43.0	17.0	1.0	8.0	7.0	70.0	16.0	0.9
8-Jan-23	10.0	8.0	89.0	68.0	0.8	6.0	10.0	88.0	40.0	1.2	8.0	16.0	33.0	27.0	1.0	8.0	7.0	110.0	69.0	1.1
9-Jan-23	10.0	8.0	78.0	49.0	0.8	6.0	10.0	67.0	34.0	1.2	8.0	16.0	36.0	25.0	1.0	8.0	7.0	94.0	42.0	1.1
10-Jan-23	10.0	8.0	46.0	6.0	0.78	6.0	10.0	13.0	32.0	1.0	8.0	16.0	44.0	16.0	1.0	8.0	7.0	60.0	*	0.9
11-Jan-23	10.0	8.0	43.0	19.0	0.77	6.0	10.0	*	31.0	1.1	8.0	10.0	43.0	17.0	1.0	8.0	7.0	62.0	5.0	1.0
12-Jan-23	10.0	8.0	43.0	49.0	0.76	6.0	10.0	56.0	30.0	1.1	8.0	9.0	49.0	15.0	1.0	8.0	7.0	56.0	*	1.0
13-Jan-23	10.0	8.0	34.0	37.0	0.75	6.0	10.0	27.0	29.0	1.1	8.0	9.0	52.0	12.0	1.0	8.0	7.0	40.0	*	1.0
14-Jan-23	10.0	8.0	25.0	22.0	0.7	6.0	10.0	36.0	28.0	1.0	8.0	7.0	50.0	18.0	1.0	8.0	7.0	33.0	12.0	0.9
15-Jan-23	10.0	8.0	22.0	20.0	0.7	6.0	10.0	34.0	28.0	1.0	8.0	6.0	45.0	36.0	1.0	8.0	7.0	27.0	7.0	0.9
16-Jan-23	10.0	13.0	0.0	10.0	0.7	7.0	8.0	0.0	7.0	1.0	30.0	0.0	1.0	0.0	1.0	8.0	7.0	27.0	7.0	0.9
17-Jan-23	10.0	8.0	21.0	20.0	0.7	6.0	10.0	34.0	28.0	1.0	8.0	5.0	49.0	27.0	1.0	8.0	7.0	31.0	11.0	0.8
18-Jan-23	10.0	8.0	39.0	32.0	0.7	6.0	10.0	49.0	29.0	1.0	8.0	5.0	45.0	25.0	1.0	8.0	7.0	43.0	29.0	0.9
19-Jan-23	10.0	8.0	49.0	42.0	0.69	6.0	10.0	35.0	30.0	1.0	8.0	4.0	41.0	29.0	1.0	8.0	7.0	62.0	51.0	0.9
20-Jan-23	10.0	8.0	58.0	49.0	0.68	6.0	10.0	20.0	33.0	1.1	8.0	4.0	37.0	33.0	1.0	8.0	7.0	44.0	49.0	1.0
21-Jan-23	10.0	8.0	74.0	35.0	0.7	6.0	10.0	97.0	35.0	1.1	8.0	5.0	32.0	38.0	1.0	8.0	7.0	14.0	19.0	1.1
22-Jan-23	10.0	8.0	77.0	21.0	0.7	0.0	10.0	97.0	35.0	1.2	8.0	7.0	35.0	40.0	1.0	8.0	7.0	*	*	1.1
23-Jan-23	10.0	8.0	72.0	18.0	0.8	7.0	10.0	*	41.0	1.2	7.0	8.0	43.0	38.0	1.0	8.0	7.0	1.0	*	1.1
24-Jan-23	10.0	8.0	24.0	*	0.6	9.0	10.0	33.0	27.0	1.1	8.0	6.0	56.0	25.0	1.0	8.0	7.0	54.0	*	1.0
25-Jan-23	10.0	8.0	41.0	40.0	0.7	9.0	10.0	54.0	30.0	1.1	8.0	6.0	53.0	22.0	1.0	8.0	7.0	71.0	47.0	1.0
26-Jan-23	10.0	8.0	74.0	71.0	0.7	9.0	10.0	60.0	36.0	1.1	7.0	7.0	39.0	36.0	1.0	8.0	7.0	50.0	100.0	1.1
27-Jan-23	10.0	8.0	42.0	15.0	0.7	9.0	10.0	64.0	35.0	1.1	8.0	7.0	44.0	35.0	1.0	8.0	7.0	35.0	51.0	1.1
28-Jan-23	10.0	8.0	36.0	9.0	0.7	9.0	10.0	47.0	28.0	1.1	8.0	7.0	51.0	27.0	1.0	8.0	7.0	35.0	*	1.1
29-Jan-23	10.0	8.0	76.0	51.0	0.7	9.0	10.0	55.0	35.0	1.2	8.0	7.0	39.0	37.0	1.0	8.0	7.0	35.0	60.0	1.3
30-Jan-23	10.0	8.0	58.0	41.0	0.7	10.0	10.0	53.0	38.0	1.2	8.0	7.0	43.0	33.0	1.0	8.0	7.0	35.0	31.0	1.3
31-Jan-23	10.0	8.0	58.0	34.0	0.7	10.0	10.0	67.0	32.0	1.2	8.0	8.0	40.0	33.0	1.0	8.0	7.0	35.0	5.0	1.4

Remarks: * Due to Communication Problem, Data Not Transferred

For Coastal Energen Pvt. Limited,

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Mela tudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.02.2023 to 28.02.2023

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02
	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³
1-Feb-23	10.0	8.0	51.0	32.0	0.3	10.0	10.0	39.0	30.0	1.0	8.0	8.0	46.0	32.0	1.0	8.0	7.0	35.0	31.0	0.6
2-Feb-23	10.0	8.0	40.0	24.0	0.6	10.0	10.0	30.0	31.0	1.0	8.0	10.0	52.0	29.0	1.0	8.0	7.0	69.0	48.0	0.8
3-Feb-23	10.0	8.0	42.0	28.0	0.7	10.0	10.0	53.0	32.0	1.0	8.0	13.0	49.0	32.0	1.0	8.0	7.0	71.0	48.0	1.0
4-Feb-23	4.0	2.0	46.0	6.0	1.0	10.0	10.0	57.0	36.0	1.0	6.0	35.0	47.0	24.0	1.0	8.0	7.0	35.0	35.0	1.0
5-Feb-23	10.0	8.0	53.0	33.0	0.6	10.0	10.0	3.0	32.0	1.0	7.0	12.0	46.0	32.0	1.0	8.0	7.0	35.0	28.0	1.0
6-Feb-23	10.0	8.0	44.0	25.0	0.6	10.0	10.0	44.0	33.0	1.0	8.0	13.0	47.0	26.0	1.0	8.0	7.0	35.0	50.0	1.0
7-Feb-23	9.0	8.0	42.0	23.0	0.6	10.0	10.0	20.0	31.0	1.0	7.0	13.0	53.0	28.0	1.0	8.0	7.0	35.0	33.0	1.0
8-Feb-23	8.0	8.0	34.0	13.0	0.6	10.0	10.0	14.0	29.0	1.0	7.0	12.0	54.0	25.0	1.0	8.0	7.0	35.0	36.0	0.8
9-Feb-23	8.0	9.0	21.0	9.0	0.7	10.0	10.0	34.0	29.0	1.0	7.0	12.0	57.0	6.0	1.0	8.0	7.0	37.0	38.0	0.8
10-Feb-23	6.0	10.0	26.0	14.0	0.7	6.0	10.0	26.0	14.0	1.0	7.0	12.0	57.0	7.0	1.0	8.0	7.0	35.0	55.0	0.8
11-Feb-23	5.0	10.0	53.0	31.0	0.6	9.0	10.0	39.0	31.0	1.0	7.0	12.0	52.0	11.0	0.8	8.0	7.0	35.0	35.0	1.0
12-Feb-23	5.0	10.0	69.0	44.0	0.6	9.0	10.0	58.0	35.0	1.0	7.0	13.0	52.0	17.0	1.0	8.0	7.0	35.0	33.0	1.0
13-Feb-23	5.0	10.0	58.0	36.0	1.0	9.0	10.0	7.0	30.0	1.0	7.0	16.0	56.0	14.0	1.0	8.0	7.0	45.0	50.0	1.0
14-Feb-23	5.0	10.0	36.0	17.0	1.1	9.0	10.0	3.0	29.0	1.0	7.0	16.0	59.0	7.0	1.0	9.0	7.0	68.0	48.0	1.0
15-Feb-23	5.0	8.0	54.0	31.0	1.2	9.0	10.0	14.0	30.0	1.0	7.0	43.0	50.0	11.0	1.0	9.0	7.0	71.0	28.0	1.0
16-Feb-23	5.0	9.0	61.0	35.0	1.0	9.0	10.0	12.0	31.0	1.0	8.0	4.0	41.0	15.0	1.0	9.0	7.0	72.0	6.0	1.0
17-Feb-23	6.0	9.0	50.0	31.0	1.0	9.0	10.0	18.0	31.0	1.0	8.0	4.0	45.0	11.0	1.0	9.0	7.0	72.0	37.0	1.0
18-Feb-23	6.0	9.0	36.0	20.0	1.0	9.0	10.0	14.0	30.0	1.0	8.0	6.0	46.0	9.0	1.0	9.0	7.0	67.0	50.0	1.0
19-Feb-23	6.0	9.0	30.0	15.0	1.0	9.0	10.0	11.0	27.0	1.0	0.0	0.0	0.0	0.0	1.0	9.0	7.0	66.0	7.0	1.0
20-Feb-23	6.0	9.0	25.0	15.0	1.0	9.0	10.0	14.0	28.0	1.0	0.0	0.0	0.0	0.0	1.0	9.0	7.0	65.0	34.0	1.0
21-Feb-23	3.0	7.0	27.0	11.0	1.0	9.0	10.0	37.0	26.0	1.0	0.0	0.0	0.0	0.0	1.0	6.0	7.0	66.0	35.0	0.8
22-Feb-23	6.0	8.0	40.0	18.0	0.6	9.0	13.0	11.0	17.0	1.0	7.0	20.0	59.0	3.0	1.0	6.0	7.0	70.0	35.0	0.8
23-Feb-23	6.0	14.0	29.0	14.0	0.6	9.0	15.0	4.0	7.0	1.0	8.0	7.0	50.0	19.0	1.0	6.0	7.0	70.0	35.0	0.8
24-Feb-23	6.0	8.0	27.0	16.0	1.0	9.0	15.0	1.0	2.0	1.0	8.0	15.0	48.0	16.0	1.0	6.0	7.0	67.0	38.0	1.0
25-Feb-23	6.0	7.0	22.0	11.0	1.0	9.0	15.0	62.0	8.0	1.0	8.0	15.0	53.0	15.0	1.0	6.0	7.0	66.0	40.0	1.0
26-Feb-23	6.0	10.0	28.0	14.0	1.0	9.0	15.0	29.0	5.0	1.0	8.0	15.0	47.0	16.0	1.0	6.0	7.0	68.0	35.0	1.0
27-Feb-23	6.0	10.0	40.0	23.0	1.0	9.0	15.0	54.0	7.0	1.0	8.0	15.0	44.0	19.0	1.0	6.0	7.0	70.0	40.0	1.0
28-Feb-23	6.0	10.0	43.0	27.0	1.0	9.0	15.0	63.0	26.0	1.0	8.0	15.0	48.0	20.0	1.0	6.0	7.0	70.0	36.0	1.0

Remarks: NIL

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.03.2023 to 31.03.2023

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02
	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³
1-Mar-23	6.0	10.0	47.0	29.0	1.1	9.0	15.0	20.0	51.0	1.0	8.0	15.0	46.0	21.0	1.0	8.0	11.0	72.0	42.0	1.0
2-Mar-23	6.0	10.0	50.0	31.0	0.9	9.0	15.0	49.5	49.0	1.0	8.0	15.0	42.0	21.0	1.0	6.0	7.0	72.0	33.0	1.0
3-Mar-23	5.0	10.0	52.0	30.0	1.0	9.0	9.0	54.0	47.0	1.0	8.0	15.0	42.0	23.0	1.0	6.0	10.0	73.0	23.0	1.0
4-Mar-23	6.0	10.0	55.0	29.0	1.0	9.0	13.0	49.0	50.0	1.0	8.0	15.0	41.0	21.0	1.0	6.0	7.0	73.0	23.0	1.0
5-Mar-23	6.0	10.0	43.0	27.0	0.8	9.0	13.0	43.0	49.0	1.0	8.0	15.0	47.0	21.0	1.0	8.0	7.0	72.0	23.0	1.0
6-Mar-23	5.0	10.0	49.0	29.0	1.0	9.0	13.0	38.0	49.0	1.0	8.0	15.0	43.0	19.0	1.0	10.0	7.0	72.0	23.0	1.0
7-Mar-23	6.0	10.0	47.0	29.0	1.0	8.0	13.0	41.0	43.0	1.0	*	*	*	*	*	6.0	8.0	73.0	23.0	1.0
8-Mar-23	6.0	10.0	49.0	31.0	0.9	8.0	13.0	46.0	40.0	1.0	*	*	*	*	*	6.0	7.0	74.0	39.0	1.0
9-Mar-23	8.0	12.0	57.0	37.0	0.8	8.0	12.0	49.0	29.0	1.0	8.0	11.0	14.0	27.0	1.0	7.0	8.0	63.0	30.0	1.0
10-Mar-23	11.0	21.0	54.0	44.0	0.9	8.0	8.0	41.0	20.0	1.0	6.0	10.0	34.0	25.0	1.0	8.0	8.0	48.0	43.0	1.0
11-Mar-23	13.0	17.0	45.0	35.0	0.9	8.0	11.0	40.0	20.0	1.0	7.0	11.0	49.0	26.0	1.0	9.0	9.0	45.0	37.0	1.0
12-Mar-23	14.0	15.0	44.0	58.0	1.0	8.0	11.0	41.0	20.0	1.0	7.0	13.0	49.0	25.0	1.0	8.0	11.0	47.0	41.0	1.0
13-Mar-23	12.0	11.0	55.0	52.0	0.8	5.0	11.0	43.0	20.0	1.0	7.0	11.0	42.0	27.0	1.0	9.0	12.0	64.0	48.0	1.0
14-Mar-23	7.0	3.0	50.0	41.0	1.0	7.0	11.0	51.0	20.0	1.0	7.0	13.0	29.0	29.0	1.0	10.0	13.0	62.0	47.0	1.0
15-Mar-23	*	*	*	*	*	9.0	11.0	47.0	20.0	1.0	8.0	16.0	35.0	30.0	1.0	11.0	5.0	77.0	53.0	1.0
16-Mar-23	5.0	11.0	88.0	25.0	1.0	8.0	13.0	39.0	27.0	1.0	8.0	15.0	32.0	27.0	1.0	11.0	6.0	50.0	35.0	1.0
17-Mar-23	7.0	8.0	54.0	20.0	1.0	8.0	16.0	46.0	25.0	1.0	7.0	13.0	38.0	25.0	1.0	11.0	7.0	48.0	31.0	1.0
18-Mar-23	7.0	8.0	30.0	14.0	1.0	8.0	13.0	43.0	26.0	1.0	7.0	13.0	47.0	22.0	1.0	11.0	9.0	45.0	29.0	1.0
19-Mar-23	7.0	8.0	36.0	15.0	1.0	8.0	10.0	55.0	25.0	1.0	8.0	12.0	44.0	22.0	1.0	10.0	8.0	53.0	30.0	1.0
20-Mar-23	6.0	9.0	36.0	17.0	0.9	8.0	10.0	44.0	26.0	1.0	7.0	15.0	38.0	24.0	1.0	11.0	9.0	46.0	32.0	1.0
21-Mar-23	7.0	13.0	40.0	20.0	0.8	8.0	11.0	54.0	29.0	1.0	8.0	14.0	39.0	25.0	1.0	10.0	8.0	55.0	35.0	1.0
22-Mar-23	6.0	11.0	56.0	30.0	1.0	8.0	12.0	62.0	28.0	1.0	8.0	14.0	29.0	29.0	1.0	11.0	9.0	73.0	42.0	1.0
23-Mar-23	8.0	19.0	58.0	33.0	1.0	8.0	13.0	48.0	45.0	1.0	8.0	13.0	42.0	31.0	1.0	10.0	7.0	41.0	39.0	1.0
24-Mar-23	5.0	16.0	32.0	29.0	0.9	8.0	13.0	74.0	42.0	1.0	9.0	11.0	58.0	26.0	1.0	11.0	9.0	59.0	36.0	1.0
25-Mar-23	7.0	13.0	41.0	42.0	1.0	8.0	13.0	48.0	41.0	1.0	9.0	11.0	32.0	23.0	1.0	11.0	12.0	45.0	27.0	1.0
26-Mar-23	6.0	13.0	31.0	38.0	1.0	8.0	13.0	49.0	39.0	1.0	9.0	11.0	39.0	23.0	1.0	11.0	11.0	49.0	24.0	1.0
27-Mar-23	5.0	13.0	26.0	38.0	0.9	8.0	14.0	39.0	18.0	1.0	9.0	11.0	50.0	21.0	1.0	11.0	13.0	53.0	29.0	1.0
28-Mar-23	6.0	13.0	48.0	47.0	0.8	9.0	15.0	63.0	26.0	1.0	11.0	12.0	47.0	20.0	1.0	10.0	9.0	37.0	31.0	1.0
29-Mar-23	6.0	14.0	48.0	46.0	1.0	9.0	15.0	66.0	38.0	1.0	14.0	13.0	25.0	28.0	1.0	11.0	11.0	57.0	34.0	1.0
30-Mar-23	7.0	13.0	54.0	48.0	1.0	9.0	15.0	68.0	35.0	1.0	13.0	12.0	34.0	29.0	1.0	8.0	12.0	51.0	36.0	1.0
31-Mar-23	7.0	14.0	57.0	47.0	0.8	9.0	15.0	65.0	33.0	1.0	13.0	11.0	37.0	24.0	1.0	9.0	18.0	65.0	37.0	1.0

Remarks: * Due to problem in network, Data not Received.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.04.2023 to 30.04.2023

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02
	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³
1-Apr-23	6.0	13.0	35.0	37.0	0.8	9.0	17.0	51.0	15.0	0.7	12.0	14.0	48.0	41.0	0.5	7.0	14.0	51.0	29.0	1.2
2-Apr-23	7.0	14.0	36.0	46.0	0.3	8.0	15.0	71.0	26.0	0.4	13.0	19.0	42.0	54.0	0.7	8.0	18.0	64.0	34.0	0.7
3-Apr-23	7.0	14.0	24.0	47.0	0.6	8.0	15.0	76.0	29.0	0.7	13.0	19.0	42.0	54.0	0.6	7.0	18.0	53.0	36.0	1.0
4-Apr-23	7.0	14.0	58.0	49.0	0.9	9.0	15.0	79.0	25.0	0.9	13.0	21.0	30.0	57.0	0.6	6.0	19.0	54.0	36.0	1.3
5-Apr-23	8.0	14.0	35.0	37.0	0.8	9.0	15.0	45.0	25.0	0.9	10.0	23.0	44.0	51.0	0.5	11.0	18.0	13.0	26.0	1.2
6-Apr-23	7.0	14.0	38.0	41.0	0.8	8.0	15.0	46.0	26.0	0.9	13.0	25.0	21.0	54.0	0.4	12.0	18.0	57.0	31.0	1.2
7-Apr-23	7.0	14.0	36.0	39.0	0.8	9.0	15.0	32.0	23.0	0.8	11.0	30.0	41.0	54.0	0.5	12.0	19.0	48.0	26.0	1.2
8-Apr-23	6.0	14.0	42.0	37.0	0.8	8.0	15.0	35.0	26.0	0.8	13.0	30.0	35.0	51.0	0.4	11.0	17.0	34.0	24.0	1.2
9-Apr-23	7.0	13.0	52.0	38.0	0.9	8.0	15.0	37.0	24.0	0.9	14.0	30.0	57.0	50.0	0.4	11.0	20.0	28.0	26.0	1.2
10-Apr-23	7.0	11.0	52.0	38.0	0.9	9.0	19.0	37.0	27.0	0.9	13.0	25.0	52.0	50.0	0.4	9.0	22.0	36.0	27.0	1.2
11-Apr-23	7.0	9.0	58.0	41.0	0.9	8.0	22.0	46.0	28.0	0.9	14.0	20.0	57.0	38.0	0.4	6.0	24.0	38.0	31.0	1.2
12-Apr-23	6.0	9.0	61.0	39.0	0.4	9.0	22.0	47.0	27.0	0.3	13.0	21.0	48.0	33.0	0.4	6.0	24.0	36.0	31.0	0.7
13-Apr-23	6.0	9.0	70.0	47.0	0.7	8.0	22.0	56.0	31.0	0.7	14.0	26.0	50.0	33.0	0.5	6.0	25.0	45.0	35.0	0.8
14-Apr-23	6.0	9.0	78.0	53.0	1.1	9.0	22.0	72.0	29.0	1.0	13.0	18.0	36.0	35.0	0.6	6.0	26.0	63.0	43.0	0.7
15-Apr-23	6.0	14.0	74.0	42.0	0.7	8.0	15.0	66.0	48.0	0.8	14.0	12.0	40.0	24.0	0.4	9.0	13.0	24.0	23.0	0.8
16-Apr-23	6.0	14.0	69.0	36.0	1.0	9.0	15.0	84.0	33.0	1.0	11.0	12.0	52.0	19.0	0.6	8.0	15.0	32.0	18.0	0.3
17-Apr-23	6.0	14.0	62.0	31.0	1.0	8.0	13.0	58.0	35.0	1.0	13.0	12.0	54.0	19.0	0.8	8.0	15.0	35.0	19.0	0.3
18-Apr-23	6.0	14.0	60.0	28.0	1.1	8.0	12.0	67.0	38.0	1.1	7.0	12.0	59.0	17.0	0.7	8.0	15.0	34.0	17.0	0.3
19-Apr-23	7.0	13.0	73.0	35.0	1.1	9.0	12.0	55.0	49.0	1.1	8.0	14.0	63.0	27.0	1.0	8.0	16.0	49.0	23.0	0.4
20-Apr-23	8.0	13.0	67.0	35.0	1.2	9.0	12.0	64.0	34.0	1.0	7.0	12.0	67.0	39.0	0.7	8.0	15.0	39.0	17.0	0.4
21-Apr-23	6.0	13.0	68.0	31.0	1.1	9.0	12.0	71.0	28.0	1.1	5.0	12.0	53.0	37.0	0.6	8.0	16.0	36.0	14.0	0.4
22-Apr-23	6.0	13.0	67.0	32.0	1.2	9.0	12.0	73.0	33.0	1.1	8.0	12.0	31.0	42.0	1.1	8.0	17.0	52.0	20.0	0.5
23-Apr-23	7.0	13.0	59.0	39.0	1.1	9.0	12.0	79.0	36.0	1.1	7.0	12.0	54.0	39.0	0.9	8.0	16.0	35.0	16.0	0.4
24-Apr-23	*	*	*	*	*	8.0	19.0	62.0	32.0	0.1	7.0	12.0	69.0	34.0	0.6	8.0	14.0	24.0	23.0	0.6
25-Apr-23	9.0	13.0	35.0	22.0	0.7	9.0	18.0	37.0	22.0	1.0	12.0	12.0	64.0	30.0	0.7	8.0	16.0	27.0	40.0	0.7
26-Apr-23	11.0	19.0	47.0	21.0	0.8	9.0	29.0	29.0	23.0	1.0	11.0	19.0	49.0	25.0	0.6	8.0	18.0	21.0	38.0	0.6
27-Apr-23	8.0	23.0	41.0	15.0	0.9	9.0	21.0	43.0	22.0	1.1	12.0	23.0	56.0	32.0	0.4	8.0	14.0	39.0	43.0	0.8
28-Apr-23	8.0	23.0	42.0	26.0	1.1	9.0	21.0	27.0	27.0	1.1	10.0	23.0	51.0	29.0	0.5	7.0	16.0	23.0	35.0	0.6
29-Apr-23	7.0	18.0	36.0	11.0	1.5	9.0	20.0	27.0	31.0	1.0	11.0	18.0	66.0	29.0	0.3	7.0	19.0	23.0	34.0	0.4
30-Apr-23	7.0	13.0	32.0	16.0	1.4	10.0	16.0	30.0	27.0	1.0	12.0	12.0	51.0	28.0	0.3	8.0	21.0	22.0	32.0	0.4

Remarks: * Due to network problem data not Received.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.05.2023 to 31.05.2023

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02
	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³
1-May-23	7.0	13.0	17.0	5.0	1.1	10.0	16.0	25.0	20.0	1.0	12.0	12.0	54.0	28.0	0.3	8.0	26.0	26.0	32.0	0.3
2-May-23	7.0	8.0	16.0	6.0	1.1	7.0	21.0	24.0	12.0	0.7	14.0	21.0	39.0	18.0	0.6	9.0	16.0	30.0	26.0	0.4
3-May-23	7.0	13.0	13.0	5.0	1.2	10.0	21.0	23.0	15.0	1.0	17.0	20.0	23.0	18.0	0.5	*	*	*	*	*
4-May-23	8.0	12.0	46.0	12.0	1.3	9.0	16.0	48.0	15.0	1.1	11.0	20.0	22.0	21.0	0.4	12.0	19.0	42.0	24.0	0.4
5-May-23	7.0	14.0	31.0	11.0	1.4	10.0	10.0	37.0	15.0	1.0	16.0	23.0	28.0	21.0	0.2	11.0	16.0	34.0	26.0	0.6
6-May-23	7.0	15.0	31.0	13.0	1.1	8.0	9.0	41.0	15.0	1.0	13.0	21.0	22.0	22.0	0.2	10.0	21.0	38.0	29.0	0.7
7-May-23	7.0	15.0	46.0	19.0	1.3	10.0	9.0	48.0	15.0	1.1	16.0	22.0	29.0	25.0	0.2	11.0	21.0	43.0	31.0	1.0
8-May-23	7.0	15.0	36.0	15.0	1.2	9.0	9.0	15.0	15.0	1.1	14.0	19.0	32.0	22.0	0.3	10.0	21.0	40.0	31.0	1.0
9-May-23	7.0	16.0	26.0	13.0	1.1	10.0	11.0	39.0	15.0	0.5	16.0	18.0	37.0	21.0	0.2	11.0	22.0	33.0	29.0	0.5
10-May-23	7.0	15.0	28.0	12.0	1.1	8.0	12.0	51.0	15.0	1.1	11.0	19.0	36.0	16.0	0.4	10.0	22.0	36.0	26.0	1.0
11-May-23	7.0	15.0	47.0	15.0	1.4	10.0	12.0	51.0	10.0	0.8	12.0	17.0	21.0	24.0	0.4	11.0	21.0	46.0	31.0	0.7
12-May-23	7.0	15.0	44.0	14.0	1.4	9.0	12.0	47.0	15.0	0.8	14.0	16.0	44.0	20.0	0.6	11.0	21.0	45.0	29.0	0.8
13-May-23	7.0	15.0	38.0	11.0	1.7	8.0	12.0	41.0	15.0	1.0	11.0	17.0	44.0	19.0	0.3	10.0	21.0	26.0	23.0	1.0
14-May-23	7.0	16.0	51.0	18.0	1.7	7.0	12.0	55.0	15.0	1.1	12.0	22.0	47.0	22.0	0.5	11.0	22.0	42.0	22.0	1.1
15-May-23	7.0	16.0	55.0	18.0	1.7	8.0	12.0	63.0	15.0	1.1	11.0	22.0	58.0	23.0	1.3	10.0	22.0	42.0	22.0	1.2
16-May-23	7.0	16.0	89.0	28.0	1.8	8.0	12.0	61.0	15.0	1.2	12.0	22.0	63.0	29.0	0.3	11.0	22.0	58.0	22.0	1.3
17-May-23	7.0	16.0	95.0	36.0	1.7	9.0	12.0	72.0	15.0	1.1	11.0	25.0	49.0	32.0	1.1	11.0	22.0	71.0	22.0	1.2
18-May-23	7.0	16.0	59.0	31.0	1.4	8.0	12.0	44.0	15.0	1.1	11.0	27.0	38.0	31.0	0.9	9.0	22.0	76.0	22.0	1.3
19-May-23	7.0	16.0	34.0	21.0	1.2	8.0	12.0	67.0	17.0	1.1	12.0	24.0	64.0	24.0	1.0	6.0	22.0	55.0	22.0	1.3
20-May-23	7.0	16.0	42.0	26.0	1.8	7.0	12.0	78.0	17.0	1.1	11.0	20.0	61.0	27.0	0.3	11.0	21.0	75.0	22.0	1.3
21-May-23	7.0	17.0	26.0	22.0	1.7	8.0	12.0	72.0	16.0	0.9	10.0	11.0	67.0	24.0	0.9	5.0	21.0	55.0	22.0	1.3
22-May-23	7.0	16.0	39.0	22.0	1.7	8.0	12.0	67.0	14.0	1.0	11.0	11.0	26.0	29.0	0.3	10.0	21.0	73.0	22.0	1.3
23-May-23	7.0	16.0	34.0	18.0	1.7	7.0	12.0	68.0	13.0	1.1	11.0	15.0	51.0	25.0	1.1	6.0	22.0	52.0	22.0	1.3
24-May-23	7.0	17.0	45.0	19.0	1.2	10.0	12.0	77.0	24.0	1.0	10.0	16.0	68.0	13.0	0.6	11.0	22.0	46.0	22.0	1.3
25-May-23	6.0	16.0	35.0	13.0	1.1	10.0	12.0	52.0	12.0	1.1	9.0	16.0	39.0	24.0	0.8	6.0	22.0	44.0	22.0	1.4
26-May-23	6.0	14.0	20.0	18.0	1.3	8.0	12.0	37.0	15.0	1.1	11.0	16.0	50.0	20.0	0.7	11.0	22.0	33.0	22.0	1.4
27-May-23	3.0	12.0	32.0	11.0	1.2	10.0	13.0	35.0	16.0	1.1	9.0	15.0	46.0	23.0	0.6	6.0	21.0	39.0	22.0	1.0
28-May-23	3.0	11.0	42.0	15.0	0.9	10.0	14.0	9.0	25.0	1.2	9.0	14.0	60.0	25.0	0.9	6.0	22.0	40.0	22.0	0.8
29-May-23	4.0	12.0	52.0	24.0	0.8	10.0	15.0	16.0	28.0	1.1	9.0	14.0	57.0	26.0	0.4	6.0	19.0	65.0	54.0	0.8
30-May-23	6.0	11.0	74.0	24.0	0.7	10.0	15.0	44.0	27.0	1.0	9.0	15.0	39.0	29.0	0.6	7.0	20.0	77.0	52.0	1.0
31-May-23	6.0	13.0	55.0	21.0	1.0	10.0	15.0	27.0	27.0	1.0	9.0	15.0	60.0	25.0	0.7	7.0	21.0	62.0	52.0	1.0

Remarks: * Due to network problem data not Received.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS AMBIENT AIR QUALITY MONITORING REPORT

Daily Average from 01.06.2023 to 30.06.2023

Date	STATION-1 (Near Main Office)					STATION-2 (Near CHP)					STATION-3 (Near Ash Pond)					STATION-4 (Sea Water Pump House)				
	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO	SO2	NOX	PM10	PM2.5	CO
	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02	80	80	100	60	02
	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³
1-Jun-23	6.0	8.0	57.0	20.0	0.3	10.0	12.0	34.0	27.0	1.1	9.0	14.0	49.0	27.0	0.6	7.0	7.0	65.0	23.0	0.8
2-Jun-23	7.0	6.0	47.0	16.0	0.2	9.0	14.0	26.0	26.0	1.1	9.0	13.0	50.0	26.0	0.7	7.0	7.0	50.0	18.0	0.8
3-Jun-23	7.0	8.0	54.0	20.0	0.4	8.0	13.0	32.0	26.0	0.8	9.0	11.0	51.0	25.0	0.6	7.0	7.0	52.0	19.0	0.7
4-Jun-23	5.0	9.0	35.0	14.0	0.4	9.0	12.0	33.0	25.0	0.9	9.0	12.0	68.0	22.0	0.4	7.0	7.0	42.0	20.0	0.6
5-Jun-23	5.0	9.0	35.0	13.0	0.3	9.0	11.0	38.0	24.0	0.8	9.0	13.0	52.0	23.0	0.5	6.0	7.0	40.0	21.0	0.8
6-Jun-23	5.0	8.0	51.0	21.0	0.3	8.0	10.0	38.0	23.0	1.1	9.0	11.0	55.0	20.0	0.3	7.0	7.0	34.0	23.0	0.9
7-Jun-23	5.0	8.0	46.0	22.0	0.3	8.0	9.0	23.0	21.0	1.0	9.0	12.0	64.0	10.0	0.4	6.0	7.0	33.0	24.0	0.8
8-Jun-23	5.0	6.0	49.0	20.0	0.5	8.0	6.0	28.0	12.0	0.7	9.0	11.0	61.0	17.0	0.4	7.0	7.0	30.0	19.0	0.8
9-Jun-23	5.0	6.0	16.0	23.0	0.4	8.0	10.0	23.0	21.0	0.7	9.0	11.0	52.0	19.0	0.4	6.0	6.0	18.0	34.0	0.8
10-Jun-23	5.0	6.0	17.0	19.0	0.4	8.0	10.0	29.0	21.0	0.7	9.0	12.0	52.0	19.0	0.4	6.0	7.0	31.0	16.0	0.9
11-Jun-23	5.0	7.0	25.0	18.0	0.3	8.0	10.0	30.0	22.0	0.7	9.0	13.0	52.0	18.0	0.4	7.0	7.0	34.0	16.0	0.9
12-Jun-23	5.0	8.0	17.0	19.0	0.4	8.0	10.0	24.0	21.0	0.7	8.0	11.0	58.0	17.0	0.5	6.0	7.0	31.0	16.0	0.9
13-Jun-23	6.0	6.0	20.0	20.0	0.4	8.0	9.0	27.0	22.0	0.7	7.0	10.0	59.0	18.0	0.6	6.0	6.0	32.0	16.0	0.9
14-Jun-23	5.0	5.0	22.0	13.0	0.4	7.0	11.0	31.0	23.0	0.6	7.0	9.0	55.0	20.0	0.6	6.0	5.0	36.0	17.0	0.9
15-Jun-23	6.0	6.0	34.0	13.0	0.5	7.0	9.0	53.0	23.0	0.9	7.0	10.0	41.0	22.0	0.6	6.0	4.0	42.0	20.0	0.8
16-Jun-23	6.0	7.0	36.0	10.0	0.5	7.0	8.0	44.0	23.0	1.0	7.0	7.0	50.0	22.0	0.7	6.0	4.0	41.0	19.0	0.7
17-Jun-23	6.0	9.0	35.0	10.0	0.6	7.0	7.0	43.0	23.0	1.0	7.0	9.0	47.0	21.0	0.9	6.0	5.0	46.0	18.0	0.7
18-Jun-23	6.0	8.0	33.0	16.0	0.6	7.0	7.0	54.0	23.0	1.0	7.0	11.0	52.0	21.0	0.9	6.0	6.0	44.0	16.0	0.3
19-Jun-23	7.0	7.0	31.0	14.0	0.6	7.0	8.0	45.0	24.0	1.1	7.0	12.0	51.0	23.0	0.9	6.0	5.0	42.0	16.0	0.4
20-Jun-23	7.0	8.0	42.0	17.0	0.6	7.0	9.0	64.0	25.0	1.1	8.0	11.0	41.0	23.0	0.9	6.0	5.0	51.0	16.0	0.8
21-Jun-23	7.0	8.0	47.0	19.0	0.7	7.0	12.0	52.0	23.0	1.1	8.0	9.0	45.0	23.0	0.9	6.0	6.0	51.0	19.0	0.8
22-Jun-23	7.0	8.0	53.0	21.0	0.7	7.0	11.0	65.0	21.0	1.2	8.0	7.0	43.0	25.0	0.9	6.0	5.0	60.0	17.0	0.8
23-Jun-23	7.0	7.0	61.0	18.0	0.6	7.0	11.0	66.0	26.0	1.1	7.0	7.0	35.0	26.0	0.9	6.0	5.0	66.0	26.0	0.6
24-Jun-23	7.0	9.0	44.0	19.0	0.7	7.0	12.0	51.0	24.0	1.0	7.0	7.0	43.0	23.0	0.9	6.0	6.0	52.0	21.0	0.8
25-Jun-23	7.0	10.0	53.0	17.0	0.7	7.0	11.0	59.0	23.0	0.9	7.0	7.0	34.0	23.0	0.9	6.0	6.0	56.0	21.0	0.9
26-Jun-23	7.0	8.0	39.0	16.0	0.7	7.0	12.0	34.0	22.0	0.9	8.0	7.0	56.0	18.0	0.3	7.0	7.0	23.0	20.0	0.8
27-Jun-23	5.0	7.0	41.0	21.0	0.6	7.0	10.0	22.0	21.0	0.9	7.0	7.0	59.0	18.0	0.6	7.0	7.0	27.0	18.0	0.7
28-Jun-23	6.0	9.0	47.0	12.0	0.8	6.0	9.0	27.0	22.0	0.9	8.0	8.0	63.0	18.0	0.6	7.0	7.0	47.0	17.0	0.5
29-Jun-23	6.0	9.0	36.0	13.0	0.7	6.0	8.0	24.0	21.0	0.9	8.0	8.0	54.0	17.0	0.8	7.0	7.0	30.0	19.0	0.8
30-Jun-23	6.0	11.0	31.0	14.0	0.7	6.0	9.0	36.0	24.0	1.0	8.0	8.0	55.0	20.0	1.0	7.0	7.0	39.0	15.0	0.6
Remarks:	Nil																			

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003244-P	**Report Date :**	05.07.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-107-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 32.5°C, RH:56.8%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Near Batching Plant		
Instruments Used for Sampling :	AFDS (ID No: EL-IT-F42) with calibration validity due on 12.11.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Ammonia (as NH_3)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	$\mu g/m^3$	<5.0	400
2	Carbon Monoxide (as CO)	SOP No.EL-SOP-ARS-17 Issue No.01 January,1: 2015	mg/m^3	<1.2	2.0 (8 Hours)
3	Oxides of Nitrogen (as NO_2)	IS 5182 (Part 6) :2006	$\mu g/m^3$	16.7	80
4	Particulate Matter 10µ (as PM10)	IS 5182 (Part 23) : 2006	$\mu g/m^3$	42.5	100
5	Particulate Matter 2.5µ (as PM 2.5)	EPA 40 CFR (Part 50) Appendix L : July : 2011	$\mu g/m^3$	21.7	60
6	Oxidants (as Ozone O_3)	IS 5182 (Part IX) :1974	$\mu g/m^3$	<10	100 (8 Hours)
7	Sulphur Dioxide (as SO_2)	IS 5182 (Part 2) :2001	$\mu g/m^3$	8.8	80
Polycyclic Aromatic Hydrocarbons:					
8	Benzo [a] Pyrene (as $C_{20}H_{12}$)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.5	1.0 (Annual)
Trace Metal Parameters:					
9	Arsenic (as As)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.1	6.0 (Annual)
10	Lead (as Pb)	Clause No.5 of IS 5182 (Part 22) :2004	$\mu g/m^3$	<0.5	1.0
11	Nickel (as Ni)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<1.0	20 (Annual)
Volatile Organic Compounds:					
12	Benzene (as C_6H_6)	IS 5182 (Part 11) :2006	$\mu g/m^3$	<0.5	5.0 (Annual)

Statement of Conformity: The concentrations of the parameters tested in the above location are within the prescribed **annual average limits of NAAQs tolerance limits.**

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Excellence Laboratory Madurai-625016

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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003244-P		05.07.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-107-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 32.5°C, RH:56.8%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Near Batching Plant		
Instruments Used for Sampling :	AFDS (ID No: EL-IT-F42) with calibration validity due on 12.11.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991 & AAS-VGA	µg/m³	<1.0	NA
Statement of Conformity: --					

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003245-P	**Report Date :**	05.07.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-108-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 32.5°C, RH:56.5%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Near Crusher House		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F78) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Ammonia (as NH_3)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	$\mu g/m^3$	<5.0	400
2	Carbon Monoxide (as CO)	SOP No.EL-SOP-ARS-17 Issue No.01 January,1: 2015	mg/m^3	<1.2	2.0 (8 Hours)
3	Oxides of Nitrogen (as NO_2)	IS 5182 (Part 6) :2006	$\mu g/m^3$	14.0	80
4	Particulate Matter 10µ (as PM10)	IS 5182 (Part 23) : 2006	$\mu g/m^3$	34.7	100
5	Particulate Matter 2.5µ (as PM 2.5)	EPA 40 CFR (Part 50) Appendix L : July : 2011	$\mu g/m^3$	17.2	60
6	Oxidants (as Ozone O_3)	IS 5182 (Part IX) :1974	$\mu g/m^3$	<10	100 (8 Hours)
7	Sulphur Dioxide (as SO_2)	IS 5182 (Part 2) :2001	$\mu g/m^3$	7.1	80
Polycyclic Aromatic Hydrocarbons:					
8	Benzo [a] Pyrene (as $C_{20}H_{12}$)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.5	1.0 (Annual)
Trace Metal Parameters:					
9	Arsenic (as As)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.1	6.0 (Annual)
10	Lead (as Pb)	Clause No.5 of IS 5182 (Part 22) :2004	$\mu g/m^3$	<0.5	1.0
11	Nickel (as Ni)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<1.0	20 (Annual)
Volatile Organic Compounds:					
12	Benzene (as C_6H_6)	IS 5182 (Part 11) :2006	$\mu g/m^3$	<0.5	5.0 (Annual)

Statement of Conformity: The concentrations of the parameters tested in the above location are within the **prescribed annual average limits of NAAQs tolerance limits.**

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Disclaimer :
1. This test report shall not be reproduce in full or part without the written approval of the Laboratory.
2. The test results relate only to the test item tested and results apply to the sample "as received conditions".
3. This test results does not account the MU value in the statement of conformity unless or otherwise specified in the report.
4. The laboratory is not responsible for information provided by customer and it does not come under the scope of accreditation.
5. This test item will not be retained more than 10 days from date of issue of test reports, unless or otherwise requested by customer.
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10. No additions, deviations or exclusions from the above test methods mentioned unless or otherwise specified in the report.
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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003245-P		05.07.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-108-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 32.5°C, RH:56.5%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Near Crusher House		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F78) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991 & AAS-VGA	$\mu g/m^3$	<1.0	NA
Statement of Conformity: --					

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003246-P	**Report Date :**	05.07.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-109-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 31.8°C, RH:57.0%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Near Watching Tower - 8		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F78) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Ammonia (as NH_3)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	$\mu g/m^3$	<5.0	400
2	Carbon Monoxide (as CO)	SOP No.EL-SOP-ARS-17 Issue No.01 January,1: 2015	mg/m^3	<1.2	2.0 (8 Hours)
3	Oxides of Nitrogen (as NO_2)	IS 5182 (Part 6) :2006	$\mu g/m^3$	12.7	80
4	Particulate Matter 10µ (as PM10)	IS 5182 (Part 23) : 2006	$\mu g/m^3$	44.7	100
5	Particulate Matter 2.5µ (as PM 2.5)	EPA 40 CFR (Part 50) Appendix L : July : 2011	$\mu g/m^3$	22.2	60
6	Oxidants (as Ozone O_3)	IS 5182 (Part IX) :1974	$\mu g/m^3$	<10	100 (8 Hours)
7	Sulphur Dioxide (as SO_2)	IS 5182 (Part 2) :2001	$\mu g/m^3$	6.2	80
Polycyclic Aromatic Hydrocarbons:					
8	Benzo [a] Pyrene (as $C_{20}H_{12}$)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.5	1.0 (Annual)
Trace Metal Parameters:					
9	Arsenic (as As)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.1	6.0 (Annual)
10	Lead (as Pb)	Clause No.5 of IS 5182 (Part 22) :2004	$\mu g/m^3$	<0.5	1.0
11	Nickel (as Ni)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<1.0	20 (Annual)
Volatile Organic Compounds:					
12	Benzene (as C_6H_6)	IS 5182 (Part 11) :2006	$\mu g/m^3$	<0.5	5.0 (Annual)

Statement of Conformity: The concentrations of the parameters tested in the above location are within the prescribed **annual average limits of NAAQs tolerance limits.**

<-- End of Report -->

Report Verified by

Technical Personnel

R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY

Authorized Signatory

R.S.DINAKARAN
Quality Manager

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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003246-P		05.07.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-109-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 31.8°C, RH:57.0%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Near Watching Tower - 8		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F78) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991 & AAS-VGA	µg/m³	<1.0	NA

Statement of Conformity: --

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

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TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003247-P	**Report Date :**	05.07.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-110-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 31.0°C, RH:57.9%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Main Gate		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F75) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Ammonia (as NH_3)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	$\mu g/m^3$	7.1	400
2	Carbon Monoxide (as CO)	SOP No.EL-SOP-ARS-17 Issue No.01 January,1: 2015	mg/m^3	<1.2	2.0 (8 Hours)
3	Oxides of Nitrogen (as NO_2)	IS 5182 (Part 6) :2006	$\mu g/m^3$	21.7	80
4	Particulate Matter 10µ (as PM10)	IS 5182 (Part 23) : 2006	$\mu g/m^3$	39.2	100
5	Particulate Matter 2.5µ (as PM 2.5)	EPA 40 CFR (Part 50) Appendix L : July : 2011	$\mu g/m^3$	18.7	60
6	Oxidants (as Ozone O_3)	IS 5182 (Part IX) :1974	$\mu g/m^3$	<10	100 (8 Hours)
7	Sulphur Dioxide (as SO_2)	IS 5182 (Part 2) :2001	$\mu g/m^3$	12.6	80
Polycyclic Aromatic Hydrocarbons:					
8	Benzo [a] Pyrene (as $C_{20}H_{12}$)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.5	1.0 (Annual)
Trace Metal Parameters:					
9	Arsenic (as As)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.1	6.0 (Annual)
10	Lead (as Pb)	Clause No.5 of IS 5182 (Part 22) :2004	$\mu g/m^3$	<0.5	1.0
11	Nickel (as Ni)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<1.0	20 (Annual)
Volatile Organic Compounds:					
12	Benzene (as C_6H_6)	IS 5182 (Part 11) :2006	$\mu g/m^3$	<0.5	5.0 (Annual)

Statement of Conformity: The concentrations of the parameters tested in the above location are within the prescribed **annual average limits of NAAQs tolerance limits.**

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Disclaimer :
1. This test report shall not be reproduce in full or part without the written approval of the Laboratory.
2. The test results relate only to the test item tested and results apply to the sample "as received conditions".
3. This test results does not account the MU value in the statement of conformity unless or otherwise specified in the report.
4. The laboratory is not responsible for information provided by customer and it does not come under the scope of accreditation.
5. This test item will not be retained more than 10 days from date of issue of test reports, unless or otherwise requested by customer.
6. Total liability of our laboratory is limited to the invoice amount and any dispute arising out of this report is subject to Madurai Jurisdiction only.
7. This report cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
8. Sample is not drawn by laboratory unless stated in the report, if the sample drawn by the customer, the laboratory is not responsible for sampling stage.
9. (BDL) - Below Detectable Limit; (DL) - Detectable Limit; (MU) - Measurement Uncertainty; (NA) - Not Applicable; (CFU) - Colony Forming Unit.
10. No additions, deviations or exclusions from the above test methods mentioned unless or otherwise specified in the report.
11. (#) Mark indicates the tests are subcontracted to other accredited laboratory.

TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003247-P		05.07.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-110-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 31.0°C, RH:57.9%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Main Gate		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F75) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991 & AAS-VGA	$\mu g/m^3$	<1.0	NA
Statement of Conformity: --					

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Excellence Laboratory * Madurai-625016 *

TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003248-P	**Report Date :**	05.07.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ambient Air	**Sample Reference No :**	EL-NL-AA-111-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	24 Hours	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Filter Paper(2 nos) & Approx 25 ml Solution(5 nos)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 31.3°C, RH:58.5%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Salt Area		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F76) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Ammonia (as NH_3)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	$\mu g/m^3$	<5.0	400
2	Carbon Monoxide (as CO)	SOP No.EL-SOP-ARS-17 Issue No.01 January,1: 2015	mg/m^3	<1.2	2.0 (8 Hours)
3	Oxides of Nitrogen (as NO_2)	IS 5182 (Part 6) :2006	$\mu g/m^3$	18.6	80
4	Particulate Matter 10µ (as PM10)	IS 5182 (Part 23) : 2006	$\mu g/m^3$	45.0	100
5	Particulate Matter 2.5µ (as PM 2.5)	EPA 40 CFR (Part 50) Appendix L : July : 2011	$\mu g/m^3$	23.0	60
6	Oxidants (as Ozone O_3)	IS 5182 (Part IX) :1974	$\mu g/m^3$	<10	100 (8 Hours)
7	Sulphur Dioxide (as SO_2)	IS 5182 (Part 2) :2001	$\mu g/m^3$	9.3	80
Polycyclic Aromatic Hydrocarbons:					
8	Benzo [a] Pyrene (as $C_{20}H_{12}$)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.5	1.0 (Annual)
Trace Metal Parameters:					
9	Arsenic (as As)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<0.1	6.0 (Annual)
10	Lead (as Pb)	Clause No.5 of IS 5182 (Part 22) :2004	$\mu g/m^3$	<0.5	1.0
11	Nickel (as Ni)	CPCB Guidelines, Volume I, NAAQMS/36/2012: 2013	ng/m^3	<1.0	20 (Annual)
Volatile Organic Compounds:					
12	Benzene (as C_6H_6)	IS 5182 (Part 11) :2006	$\mu g/m^3$	<0.5	5.0 (Annual)

Statement of Conformity: The concentrations of the parameters tested in the above location are within the prescribed **annual average limits of NAAQs tolerance limits.**

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

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EXCELLENCE LABORATORY
KNOW THE UNKNOWN

ISO 9001:2015 Quality Management System
Implemented & ISO Certified Laboratory
For Food & Environmental (Chemical & Biological)
Testing Service vide Certificate No. QM 09 00478

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www.excellencelaboratory.com 0452-4506252

TEST REPORT

AMBIENT AIR MONITORING

Report / ULR No :	TC6932-23-0-00003248-P		05.07.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
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Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature 31.3°C, RH:58.5%	**Sampling Method / Plan :**	IS 5182
Sample Mark :	Salt Area		
Instruments Used for Sampling :	Mini Combined Sampler (ID No: EL-IT-F76) with calibration validity due on 08.12.2023		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible Limits of NAAQ
Chemical Testing					
1	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991 & AAS-VGA	$\mu g/m^3$	<1.0	NA
Statement of Conformity: --					

<-- End of Report -->

Report Verified by

Technical Personnel

R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY

Authorized Signatory

R.S.DINAKARAN
Quality Manager

Excellence Laboratory Madurai-625016

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS STACK EMISSION MONITORING REPORT

Daily Average from 01.01.2023 to 30.06.2023

UNIT-1

Jan-23				Feb-23				Mar-23				Apr-23				May-23				Jun-23			
Date	SPM 50 mg/Nm³	SO2 200 mg/Nm³	NOx 450 mg/Nm³	Date	SPM 50 mg/Nm³	SO2 200 mg/Nm³	NOx 450 mg/Nm³	Date	SPM 50 mg/Nm³	SO2 200 mg/Nm³	NOx 450 mg/Nm³	Date	SPM 50 mg/Nm³	SO2 200 mg/Nm³	NOx 450 mg/Nm³	Date	SPM 50 mg/Nm³	SO2 200 mg/Nm³	NOx 450 mg/Nm³	Date	SPM 50 mg/Nm³	SO2 200 mg/Nm³	NOx 450 mg/Nm³
1-Jan-23	Plant not in operation			1-Feb-23	Plant not in operation			1-Mar-23	Plant not in operation			1-Apr-23	36	157	132	1-May-23	30	47	26	1-Jun-23	37	163	202
2-Jan-23				2-Feb-23				2-Mar-23				2-Apr-23	38	148	147	2-May-23	38	180	195	2-Jun-23	32	157	212
3-Jan-23				3-Feb-23				3-Mar-23				3-Apr-23	40	154	173	3-May-23	36	157	191	3-Jun-23	30	70	145
4-Jan-23				4-Feb-23				4-Mar-23				4-Apr-23	38	181	120	4-May-23	36	152	207	4-Jun-23	Plant Not in operation		
5-Jan-23				5-Feb-23				5-Mar-23				5-Apr-23	38	194	102	5-May-23	35	153	196	5-Jun-23			
6-Jan-23				6-Feb-23				6-Mar-23				6-Apr-23	38	176	110	6-May-23	33	142	137	6-Jun-23			
7-Jan-23				7-Feb-23				7-Mar-23				7-Apr-23	40	179	135	7-May-23	Plant Not in operation			7-Jun-23	38	185	200
8-Jan-23				8-Feb-23				8-Mar-23				8-Apr-23	39	172	110	8-May-23	35	169	170	8-Jun-23	36	160	184
9-Jan-23				9-Feb-23				9-Mar-23				9-Apr-23	40	154	107	9-May-23	38	159	161	9-Jun-23	32	181	233
10-Jan-23				10-Feb-23				10-Mar-23				10-Apr-23	41	153	116	10-May-23	42	141	153	10-Jun-23	29	197	261
11-Jan-23				11-Feb-23				11-Mar-23				11-Apr-23	36	153	131	11-May-23	42	113	120	11-Jun-23	Plant not in operation		
12-Jan-23				12-Feb-23				12-Mar-23				12-Apr-23	24	175	140	12-May-23	36	129	154	12-Jun-23			
13-Jan-23				13-Feb-23				13-Mar-23				13-Apr-23	36	160	139	13-May-23	Plant not in operation			13-Jun-23			
14-Jan-23				14-Feb-23				14-Mar-23				14-Apr-23	44	161	152	14-May-23				14-Jun-23			
15-Jan-23				15-Feb-23				15-Mar-23				15-Apr-23	45	167	161	15-May-23	43	176	188	15-Jun-23			
16-Jan-23				16-Feb-23				16-Mar-23				16-Apr-23	44	158	162	16-May-23	30	148	176	16-Jun-23			
17-Jan-23				17-Feb-23				17-Mar-23				17-Apr-23	44	173	177	17-May-23	29	150	168	17-Jun-23			
18-Jan-23				18-Feb-23				18-Mar-23				18-Apr-23	34	165	185	18-May-23	23	140	167	18-Jun-23			
19-Jan-23				19-Feb-23				19-Mar-23				19-Apr-23	22	129	168	19-May-23	33	151	161	19-Jun-23			
20-Jan-23				20-Feb-23				20-Mar-23				20-Apr-23	35	143	168	20-May-23	29	118	122	20-Jun-23			
21-Jan-23				21-Feb-23				21-Mar-23				21-Apr-23	20	157	175	21-May-23	45	162	92	21-Jun-23			
22-Jan-23				22-Feb-23				22-Mar-23	36	161	149	22-Apr-23	30	148	166	22-May-23	26	171	194	22-Jun-23			
23-Jan-23				23-Feb-23				23-Mar-23	35	197	147	23-Apr-23	34	122	187	23-May-23	32	113	120	23-Jun-23			
24-Jan-23				24-Feb-23				24-Mar-23	35	181	143	24-Apr-23	34	157	252	24-May-23	38	177	231	24-Jun-23			
25-Jan-23				25-Feb-23				25-Mar-23	35	180	154	25-Apr-23	36	179	203	25-May-23	37	187	235	25-Jun-23			
26-Jan-23				26-Feb-23				26-Mar-23	35	181	133	26-Apr-23	37	147	171	26-May-23	34	151	250	26-Jun-23			
27-Jan-23				27-Feb-23				27-Mar-23	35	165	145	27-Apr-23	35	163	197	27-May-23	28	87	133	27-Jun-23			
28-Jan-23				28-Feb-23				28-Mar-23	35	168	148	28-Apr-23	37	160	203	28-May-23	Plant Not in operation			28-Jun-23			
29-Jan-23								29-Mar-23	36	167	143	29-Apr-23	36	153	200	29-May-23	40	180	251	29-Jun-23			
30-Jan-23								30-Mar-23	34	153	116	30-Apr-23	34	168	199	30-May-23	40	160	260	30-Jun-23			
31-Jan-23								31-Mar-23	35	158	136					31-May-23	36	140	261				
Remarks	-			Remarks	-			Remarks	-			Remarks	-			Remarks	-			Remarks	-		

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

CONTINUOUS STACK EMISSION MONITORING REPORT

Daily Average from 01.01.2023 to 30.06.2023

UNIT-2

Jan-23				Feb-23				Mar-23				Apr-23				May-23				Jun-23			
Date	SPM	SO2	NOx	Date	SPM	SO2	NOx	Date	SPM	SO2	NOx	Date	SPM	SO2	NOx	Date	SPM	SO2	NOx	Date	SPM	SO2	NOx
	50 mg/Nm³	200 mg/Nm³	450 mg/Nm³		50 mg/Nm³	200 mg/Nm³	450 mg/Nm³		50 mg/Nm³	200 mg/Nm³	450 mg/Nm³		50 mg/Nm³	200 mg/Nm³	450 mg/Nm³		50 mg/Nm³	200 mg/Nm³	450 mg/Nm³		50 mg/Nm³	200 mg/Nm³	450 mg/Nm³
1-Jan-23	28	136	152	1-Feb-23				1-Mar-23	24	188	103	1-Apr-23				1-May-23	34	171	160	1-Jun-23	44	143	151
2-Jan-23	27	156	201	2-Feb-23				2-Mar-23	24	190	93	2-Apr-23				2-May-23	34	166	173	2-Jun-23	48	135	154
3-Jan-23	26	181	216	3-Feb-23				3-Mar-23	24	188	85	3-Apr-23				3-May-23	34	145	146	3-Jun-23	47	121	164
4-Jan-23	26	167	189	4-Feb-23				4-Mar-23	24	182	72	4-Apr-23				4-May-23	34	163	168	4-Jun-23	44	105	126
5-Jan-23	26	164	202	5-Feb-23				5-Mar-23	24	187	97	5-Apr-23				5-May-23	34	148	161	5-Jun-23	45	170	136
6-Jan-23	26	187	213	6-Feb-23				6-Mar-23	24	190	131	6-Apr-23				6-May-23	34	156	134	6-Jun-23	45	190	139
7-Jan-23	25	178	199	7-Feb-23				7-Mar-23	24	168	118	7-Apr-23				7-May-23	33	192	145	7-Jun-23	41	167	123
8-Jan-23	24	171	177	8-Feb-23				8-Mar-23	24	161	120	8-Apr-23				8-May-23	33	181	132	8-Jun-23	39	133	155
9-Jan-23	24	174	193	9-Feb-23				9-Mar-23	29	176	89	9-Apr-23				9-May-23	35	107	163	9-Jun-23	42	178	158
10-Jan-23	24	197	177	10-Feb-23				10-Mar-23	34	198	97	10-Apr-23				10-May-23	33	111	149	10-Jun-23	43	191	180
11-Jan-23	24	191	162	11-Feb-23				11-Mar-23	34	199	102	11-Apr-23	*	137	81	11-May-23	35	152	156	11-Jun-23	43	148	168
12-Jan-23				12-Feb-23				12-Mar-23	34	198	93	12-Apr-23	34	130	121	12-May-23	33	156	132	12-Jun-23	42	137	154
13-Jan-23				13-Feb-23				13-Mar-23	34	193	103	13-Apr-23	34	117	136	13-May-23	33	157	111	13-Jun-23	41	146	150
14-Jan-23				14-Feb-23				14-Mar-23	34	143	125	14-Apr-23	34	29	80	14-May-23	27	148	101	14-Jun-23	42	133	127
15-Jan-23				15-Feb-23				15-Mar-23	34	191	122	15-Apr-23				15-May-23	27	130	98	15-Jun-23	43	132	120
16-Jan-23				16-Feb-23				16-Mar-23	34	167	110	16-Apr-23				16-May-23	30	133	89	16-Jun-23	44	180	110
17-Jan-23				17-Feb-23				17-Mar-23	34	163	98	17-Apr-23				17-May-23	29	150	108	17-Jun-23	44	197	115
18-Jan-23				18-Feb-23				18-Mar-23	34	141	114	18-Apr-23				18-May-23	29	154	142	18-Jun-23	45	153	126
19-Jan-23				19-Feb-23				19-Mar-23	34	153	105	19-Apr-23	30	177	150	19-May-23	28	117	132	19-Jun-23	45	163	173
20-Jan-23				20-Feb-23				20-Mar-23	34	166	130	20-Apr-23	34	172	140	20-May-23	28	149	143	20-Jun-23	42	186	127
21-Jan-23				21-Feb-23				21-Mar-23	34	151	101	21-Apr-23	34	145	146	21-May-23	28	155	152	21-Jun-23	40	165	104
22-Jan-23				22-Feb-23	23	166	118	22-Mar-23				22-Apr-23	34	140	170	22-May-23	29	142	149	22-Jun-23	40	176	97
23-Jan-23				23-Feb-23	24	165	82	23-Mar-23				23-Apr-23	34	143	159	23-May-23	29	172	149	23-Jun-23	40	135	80
24-Jan-23				24-Feb-23	24	184	105	24-Mar-23				24-Apr-23	34	152	129	24-May-23	33	164	138	24-Jun-23	40	150	67
25-Jan-23				25-Feb-23	24	189	111	25-Mar-23				25-Apr-23	34	229	169	25-May-23	37	184	163	25-Jun-23	40	174	89
26-Jan-23				26-Feb-23	24	186	107	26-Mar-23				26-Apr-23	34	191	161	26-May-23	35	172	171	26-Jun-23	40	183	111
27-Jan-23				27-Feb-23	24	193	106	27-Mar-23				27-Apr-23	34	155	186	27-May-23	40	166	205	27-Jun-23	40	153	134
28-Jan-23				28-Feb-23	24	191	109	28-Mar-23				28-Apr-23	34	156	192	28-May-23	42	174	247	28-Jun-23	40	154	134
29-Jan-23								29-Mar-23				29-Apr-23	34	154	184	29-May-23	43	163	171	29-Jun-23	40	141	119
30-Jan-23								30-Mar-23				30-Apr-23	34	160	149	30-May-23	46	168	166	30-Jun-23	42	119	95
31-Jan-23								31-Mar-23								31-May-23	40	137	169				
Remarks	-			Remarks	-			Remarks	-			Remarks	-			Remarks	-			Remarks	-		

Plant not in operation

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

EXTERNAL ROA-STACK MONITORING

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TC-6932

TEST REPORT

STACK EMISSION MONITORING

Report / ULR No :	TC6932-23-0-00001406-P	**Report Date :**	03.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Stack Emission	**Sample Reference No :**	EL-NL-SE-87-03-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	28.03.2023
Sampling Time :	30 Minutes	**Sample Received on :**	29.03.2023
Qty of Sample Received :	Thimble(1 no),Approx 50 ml Solution(3 nos) & Gas (1L)	**Test Commenced on :**	29.03.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	03.04.2023
Sampling Environment Condition :	Temperature 33.1°C	**Sampling Method / Plan :**	IS 11255
Sample Mark :	Boiler Unit - 1		
Instruments Used for Sampling :	SM Kit (ID No: EL-IT-F67) with calibration validity due on 29.02.2024		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible TNPCB Norms for Thermal Power Plant & MoEF Climate Notification
Chemical Testing					
1	Ambient Temperature	SOP No.EL-SOP-ARS 15 Issue No 01 Dated 01.01.2015	°C	33.0	NA
2	Carbon Dioxide (as CO_2)	Clause No.4 of IS 13270 : 1992	% (v/v)	9.0	NA
3	Carbon Monoxide (as CO)	Clause No.4 of IS 13270 :1992	ppm	24.0	NA
4	Chromium (as Cr)	USEPA Method 29 : 2017	mg/Nm^3	<0.1	NA
5	Flue Gas Temperature	Clause No.6 of IS 11255 (Part 3) : 2008	°C	125	NA
6	Flue Gas Velocity	Clause No.5 of IS 11255 (Part 3) : 2008	m/S	17.1	NA
7	Lead (as Pb)	USEPA Method 29 : 2017	mg/Nm^3	<0.1	NA
8	Moisture Content (as H_2O)	Clause No.8 of IS 11255 (Part 3) : 2008	%	<0.5	NA
9	Oxides of Nitrogen (as NO_2)	IS 11255 (Part 7) : 2005	mg/Nm^3	214	450
10	Oxygen (as O_2)	Clause No.4 of IS 13270 : 1992	% (v/v)	8.4	NA
11	Particulate Matter (PM)	IS 11255 (Part 1) : 1985	mg/Nm^3	26.2	50
12	Sulphur Dioxide (as SO_2)	IS 11255 (Part 2) : 1985	mg/Nm^3	174	200

Statement of Conformity:-

<-- End of Report -->

Report Verified by

Technical Personnel

R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY

Authorized Signatory

R.S.DINAKARAN
Quality Manager

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TEST REPORT

STACK EMISSION MONITORING

Report / ULR No :	TC6932-23-0-00001406-P	**Report Date :**	03.04.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Stack Emission	**Sample Reference No :**	EL-NL-SE-87-03-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	28.03.2023
Sampling Time :	30 Minutes	**Sample Received on :**	29.03.2023
Qty of Sample Received :	Thimble(1 no),Approx 50 ml Solution(3 nos) & Gas (1L)	**Test Commenced on :**	29.03.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	03.04.2023
Sampling Environment Condition :	Temperature:33.1°C	**Sampling Method / Plan :**	IS 11255
Sample Mark :	Boiler Unit - 1		
Instruments Used for Sampling :	SM Kit (ID No: EL-IT-F67) with calibration validity due on 29.02.2024		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible TNPCB Norms for Thermal Power Plant & MoEF Climate Notification
Chemical Testing					
1	Arsenic (as As)*	USEPA Method 29: 2017 & AAS & VGA Method	mg/Nm^3	<1.0	NA
2	Gaseous Flow Discharge*	Clause No.10 of IS 11255 (Part 3) : 2008	Nm^3/Hr	2087258	NA
3	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991	mg/Nm^3	<0.0003	0.03

Statement of Conformity:--

<-- End of Report -->

Report Verified by

Technical Personnel

R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY

Authorized Signatory

R.S.DINAKARAN
Quality Manager

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TC-6932

TEST REPORT

STACK EMISSION MONITORING

Report / ULR No :	TC6932-23-0-00003249-P	**Report Date :**	05.07.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Stack Emission	**Sample Reference No :**	EL-NL-SE-120-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	35 Minutes	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Thimble(1 no),Approx 50 ml Solution(2 nos) & Gas (1L)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04.07.2023
Sampling Environment Condition :	Temperature:33.1°C	**Sampling Method / Plan :**	IS 11255
Sample Mark :	Boiler Unit - 2		
Instruments Used for Sampling :	SM Kit (ID No: EL-IT-F67) with calibration validity due on 29.02.2024		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible TNPCB Norms for Thermal Power Plant & MoEF Climate Notification
Chemical Testing					
1	Ambient Temperature	SOP No.EL-SOP-ARS-15 Issue No.01 Dated 01.01: 2015	°C	32	NA
2	Carbon Dioxide (as CO_2)	Clause No.4 of IS 13270 : 1992	% (v/v)	11.8	NA
3	Carbon Monoxide (as CO).	SOP No.EL-SOP-SKS-10 Issue No.01 February: 2020	ppm	<1.0	NA
4	Chromium (as Cr)	USEPA Method 29 : 2017	mg/Nm^3	<0.1	NA
5	Flue Gas Temperature	Clause No.6 of IS 11255 (Part 3) : 2008	°C	122	NA
6	Flue Gas Velocity	Clause No.5 of IS 11255 (Part 3) : 2008	m/S	18.9	NA
7	Lead (as Pb)	USEPA Method 29 : 2017	mg/Nm^3	<0.1	NA
8	Moisture Content (as H_2O)	Clause No.8 of IS 11255 (Part 3) : 2008	%	<0.5	NA
9	Oxides of Nitrogen (as NO_2)	IS 11255 (Part 7) : 2005	mg/Nm^3	220	450
10	Oxygen (as O_2)	Clause No.4 of IS 13270 : 1992	% (v/v)	6.8	NA
11	Particulate Matter (PM)	IS 11255 (Part 1) : 1985	mg/Nm^3	26.7	50
12	Sulphur Dioxide (as SO_2)	IS 11255 (Part 2) : 1985	mg/Nm^3	165	200

Statement of Conformity: The concentrations of the parameters tested in the above Stack Emission are within the prescribed limits of **TNPCB tolerance limits & MoEF Climate Change Notification.**

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Disclaimer : 1.This test report shall not be reproduce in full or part without the written approval of the Laboratory.
2.The test results relate only to the test item tested and results apply to the sample "as received conditions".
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9.(BDL) - Below Detectable Limit; (DL) - Detectable Limit; (MU) - Measurement Uncertainty; (NA) - Not Applicable; (CFU) - Colony Forming Unit.
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TEST REPORT

STACK EMISSION MONITORING

Report / ULR No :	TC6932-23-0-00003249 P		05.07.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Stack Emission	**Sample Reference No :**	EL-NL-SE-120-06-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	27.06.2023
Sampling Time :	35 Minutes	**Sample Received on :**	29.06.2023
Qty of Sample Received :	Thimble(1 no),Approx 50 ml Solution(2 nos) & Gas (1L)	**Test Commenced on :**	29.06.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	04 07.2023
Sampling Environment Condition :	Temperature:33.1°C	**Sampling Method / Plan :**	IS 11255
Sample Mark :	Boiler Unit - 2		
Instruments Used for Sampling :	SM Kit (ID No: EL-IT-F67) with calibration validity due on 29.02.2024		

S. No	Name of the Test	Test Method	Units	Results	Max. Permissible TNPCB Norms for Thermal Power Plant & MoEF Climate Notification
Chemical Testing					
1	Arsenic (as As)*	USEPA Method 29: 2017 & AAS & VGA Method	mg/Nm^3	<1.0	NA
2	Gaseous Flow Discharge*	Clause No.10 of IS 11255 (Part 3) : 2008	Nm^3/Hr	2319846	NA
3	Mercury (as Hg)*	EPA Method 29 (Title 40) : 1991	mg/Nm^3	<0.0003	0.03

Statement of Conformity: The concentrations of the parameters tested in the above Stack Emission are within the prescribed limits of TNPCB tolerance limits & MoEF Climate Change Notification.

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METEOROLOGICAL STATION REPORT

Daily Average from 01.01.2023 to 31.01.2023

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Jan-23	20.2	31.9	25.8	1041.0	1045.0	1043.0	East & North West	1.5	19.1	7.7	48.4	98.1	78.2	0.0
2-Jan-23	20.5	31.2	25.5	1041.0	1044.0	1043.0	East & North East	1.2	21.3	8.3	53.2	98.2	76.7	0.0
3-Jan-23	20.3	31.6	25.5	1041.0	1044.0	1043.0	East & North East	1.2	20.7	8.1	49.3	96.3	75.1	0.0
4-Jan-23	21.4	32.2	25.7	1039.0	1044.0	1042.0	East & North East	2.1	22.6	9.4	45.8	90.1	73.0	0.0
5-Jan-23	22.3	32.7	26.6	1040.0	1043.0	1042.0	East & North East	3.0	21.5	10.2	48.3	87.6	71.8	0.0
6-Jan-23	22.8	30.3	25.9	1041.0	1044.0	1042.0	East & South East	2.4	27.6	10.6	54.5	88.7	73.5	0.0
7-Jan-23	23.2	32.2	26.9	1040.0	1044.0	1042.0	East & North East	4.3	26.7	11.8	44.7	85.9	69.8	0.0
8-Jan-23	21.8	31.0	25.3	1040.0	1043.0	1042.0	East & South East	1.2	21.2	8.1	56.9	91.6	79.8	0.0
9-Jan-23	22.2	30.5	25.6	1041.0	1044.0	1043.0	East & North East	1.9	22.8	9.7	57.8	91.2	76.7	0.0
10-Jan-23	19.2	31.3	24.7	1041.0	1044.0	1043.0	East & North East	1.7	24.0	9.4	40.6	91.3	71.5	0.0
11-Jan-23	18.7	31.4	24.9	1039.0	1043.0	1041.0	East & South East	2.5	19.8	8.9	42.8	95.5	73.1	0.0
12-Jan-23	18.7	31.1	24.3	1039.0	1043.0	1041.0	East & North West	1.2	20.8	7.4	48.0	97.2	75.5	0.0
13-Jan-23	18.7	30.9	24.3	1039.0	1043.0	1041.0	East & North West	1.2	22.0	8.0	47.8	97.4	76.5	0.0
14-Jan-23	19.1	30.9	24.4	1039.0	1043.0	1041.0	East & North West	1.8	21.3	7.6	49.5	96.1	75.8	0.0
15-Jan-23	20.0	31.1	24.5	1039.0	1042.0	1041.0	East & North West	1.7	22.5	8.5	48.9	94.5	76.6	0.0
16-Jan-23	19.5	31.0	24.7	1039.0	1043.0	1041.0	East & North West	1.3	23.6	7.8	37.4	95.5	76.4	0.0
17-Jan-23	20.2	31.5	25.6	1040.0	1043.0	1041.0	East & North West	2.2	19.3	8.0	52.3	91.1	74.2	0.0
18-Jan-23	20.5	31.5	25.4	1040.0	1044.0	1042.0	East & North West	1.3	22.5	9.2	49.5	89.0	73.2	0.0
19-Jan-23	19.0	31.7	24.9	1040.0	1044.0	1042.0	East & North East	1.2	24.5	9.4	39.7	95.0	70.2	0.0
20-Jan-23	18.4	32.6	24.9	1040.0	1043.0	1042.0	East & North East	1.4	24.0	8.5	43.8	89.5	69.9	0.0
21-Jan-23	21.5	34.0	26.2	1039.0	1042.0	1041.0	East & North East	3.6	26.8	10.8	35.4	88.3	72.6	0.0
22-Jan-23	22.9	31.0	26.1	1039.0	1042.0	1041.0	North East & East	2.9	27.0	9.5	49.2	86.3	72.0	0.0
23-Jan-23	23.1	29.0	25.4	1039.0	1041.0	1040.0	North East & East	1.2	20.5	8.0	63.7	97.3	80.7	0.0
24-Jan-23	22.8	28.6	25.2	1039.0	1042.0	1040.0	North East & East	1.2	18.2	6.3	69.2	97.9	87.3	0.0
25-Jan-23	21.5	31.2	25.7	1039.0	1042.0	1040.0	East & North West	2.0	22.5	9.7	52.0	92.4	76.4	0.0
26-Jan-23	20.6	31.5	25.4	1038.0	1042.0	1040.0	East & North West	1.5	19.5	8.5	53.9	95.9	77.5	0.0
27-Jan-23	20.5	32.1	25.4	1038.0	1042.0	1040.0	East & North West	1.6	21.8	8.3	47.0	96.3	78.1	0.0
28-Jan-23	20.6	32.1	25.4	1038.0	1041.0	1040.0	East & North East	1.7	22.0	8.6	39.3	98.4	75.4	0.0
29-Jan-23	20.2	31.5	25.4	1037.0	1041.0	1039.0	East to North East	1.2	24.3	8.9	53.1	93.7	75.2	0.0
30-Jan-23	22.0	31.5	25.1	1038.0	1041.0	1040.0	North west & East	1.2	24.7	7.5	57.1	95.6	85.3	2.0
31-Jan-23	23.4	33.4	27.3	1037.0	1041.0	1039.0	East & North East	1.2	23.8	8.6	39.9	95.8	72.0	0.0

Remarks: Total Rainfall for the month 2.0 mm. Rain Fall Recorded on 30.01.23

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.02.2023 to 28.02.2022

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Feb-23	22.9	32.8	27.7	1037.0	1040.0	1039.0	East & South East	1.2	29.4	9.8	48.8	87.4	66.4	0.0
2-Feb-23	23.0	26.6	24.5	1038.0	1041.0	1039.0	South & South West	2.4	31.9	12.4	72.7	96.8	85.9	0.0
3-Feb-23	22.0	31.6	25.9	1038.0	1041.0	1040.0	East & South East	1.2	22.9	9.8	61.6	95.7	81.9	0.0
4-Feb-23	23.5	28.1	25.1	1038.0	1041.0	1040.0	East & South East	1.2	24.8	8.7	71.6	97.3	88.1	0.5
5-Feb-23	21.6	31.3	25.7	1038.0	1041.0	1040.0	East & North East	2.3	23.4	8.8	57.4	97.5	80.8	0.0
6-Feb-23	20.6	31.2	25.2	1038.0	1042.0	1040.0	East & North East	1.2	17.8	6.8	58.2	94.9	82.5	0.0
7-Feb-23	20.9	31.7	25.6	1038.0	1042.0	1040.0	East & North West	1.2	23.9	7.3	53.0	98.7	80.0	0.0
8-Feb-23	21.4	33.1	25.7	1038.0	1042.0	1040.0	East & North West	1.2	25.0	7.3	47.8	98.4	80.8	0.0
9-Feb-23	21.5	32.0	25.8	1039.0	1042.0	1041.0	East&South East	1.2	21.1	6.9	46.8	99.2	78.9	0.5
10-Feb-23	20.4	32.0	25.3	1039.0	1043.0	1040.0	East & North West	1.2	22.8	7.6	52.0	97.5	77.9	0.0
11-Feb-23	19.5	32.0	24.8	1039.0	1043.0	1041.0	East & North West	1.2	25.4	7.4	46.9	97.5	76.1	0.0
12-Feb-23	17.9	31.8	25.3	1039.0	1043.0	1041.0	East & North West	1.2	21.0	7.2	51.7	98.0	74.9	0.0
13-Feb-23	18.8	30.9	24.7	1039.0	1043.0	1041.0	East & North West	1.2	22.9	6.9	54.4	98.3	76.3	0.0
14-Feb-23	19.1	31.0	23.2	1040.0	1043.0	1042.0	North West & North East	1.2	15.5	6.0	44.0	98.4	78.4	0.0
15-Feb-23	16.4	30.8	24.5	1039.0	1042.0	1040.0	East & North West	1.2	22.9	7.9	49.7	93.4	73.7	0.0
16-Feb-23	18.8	31.2	24.8	1039.0	1042.0	1041.0	East & North West	1.2	23.5	8.3	53.0	98.9	76.3	0.0
17-Feb-23	20.2	32.4	25.9	1039.0	1043.0	1041.0	East & North East	1.2	23.6	8.9	42.3	91.7	68.7	0.0
18-Feb-23	19.8	33.1	26.3	1039.0	1043.0	1041.0	East & North West	1.2	18.6	7.4	42.7	96.6	76.4	0.0
19-Feb-23	23.2	33.2	27.4	1039.0	1043.0	1041.0	East & North West	1.2	25.4	9.1	41.1	94.1	74.5	0.0
20-Feb-23	23.2	32.1	27.3	1040.0	1043.0	1041.0	East & South East	1.2	26.3	10.1	50.3	89.9	74.7	0.5
21-Feb-23	21.5	32.1	26.6	1040.0	1043.0	1041.0	East & North West	1.2	25.4	8.4	54.6	90.7	69.3	0.5
22-Feb-23	19.4	31.8	25.6	1039.0	1043.0	1041.0	East & North West	1.2	24.4	8.8	47.5	85.4	66.7	0.0
23-Feb-23	19.8	31.9	25.9	1039.0	1042.0	1041.0	East & North West	1.2	24.2	8.8	40.5	88.0	68.5	0.0
24-Feb-23	21.5	31.5	26.5	1040.0	1043.0	1041.0	East & North West	1.2	24.0	9.1	58.6	93.2	75.7	0.0
25-Feb-23	22.1	32.0	26.7	1040.0	1044.0	1042.0	East & North West	2.5	23.2	9.9	42.1	90.1	71.5	0.0
26-Feb-23	20.4	31.8	25.9	1041.0	1045.0	1043.0	East & North East	2.4	25.6	11.1	51.3	92.1	70.3	0.0
27-Feb-23	19.9	34.2	25.8	1041.0	1045.0	1044.0	East & North East	2.3	23.0	8.9	39.8	85.7	66.2	0.0
28-Feb-23	22.8	32.8	27.2	1041.0	1045.0	1043.0	East & North East	2.9	22.6	10.6	56.0	96.8	77.8	0.5

Remarks: Total Rainfall for the month 2.5 mm. Rain Fall recorded on 04.02.23, 09.02.23, 20.02.23, 21.02.23 & 28.02.23

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.03.2023 to 31.03.2023

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Mar-23	23	32.5	27.2	1041	1044	1043	West & South West	1.2	20.5	9.5	60.5	98	79.5	0.5
2-Mar-23	22.6	31.8	26.6	1041	1045	1043	West & South West	1.5	24.4	10.3	56.8	93.8	76.8	0
3-Mar-23	21.5	32.1	26.3	1041	1046	1043	West & South West	4.0	27.8	11.0	48.5	87.8	67.9	0
4-Mar-23	21.6	33	26.2	1041	1045	1043	West & South West	2.1	30.7	10.9	47.9	88.4	71.4	0
5-Mar-23	*	*	*	1041	1045	1043	West & South West	1.2	23.5	8.7	54.8	90.2	75.5	0
6-Mar-23	*	*	*	1040	1044	1042	West & South West	1.4	23.3	9.5	55.8	91.5	75.6	0
7-Mar-23	*	*	*	1040	1043	1041	West & South West	2.6	24.1	9.6	53.9	90	75.7	0
8-Mar-23	*	*	*	1040	1043	1042	West & South West	3.9	26.9	11.4	54.8	91.7	75.5	0
9-Mar-23	*	*	*	1018	1043	1041	West & South West	3.0	28.8	10.9	52.6	87.7	73.4	0
10-Mar-23	22.9	32.1	26.9	1039	1042	1041	West & South West	2.3	20.4	9.5	57.3	91.8	77.7	0
11-Mar-23	23.9	32.4	27.2	1039	1042	1041	West & South West	2.9	24.7	10.5	58.1	88	77.6	0
12-Mar-23	23.7	32.9	28	1038	1042	1040	West & South West	2.0	27.1	10.4	54	88.2	75.1	0
13-Mar-23	24	33.7	27.9	1038	1042	1040	West & South West	1.3	24.2	8.8	49	89	73	0
14-Mar-23	22.9	24.8	23.6	1039	1040	1039	West & North West	1.2	11.5	3.9	74.7	86.8	83.2	0
15-Mar-23	23.6	32.7	27.8	1037	1041	1039	West & North West	1.2	23.5	8.1	59.7	91.7	79.2	0
16-Mar-23	25.2	32.8	28.3	1038	1041	1040	West & North West	1.2	28.1	7.2	61.3	92.4	81	0
17-Mar-23	24.7	33.1	28.6	1037	1041	1039	West & North West	1.2	26.1	8.0	55.4	89.7	75.5	0
18-Mar-23	24.4	33.3	28.8	1037	1041	1039	North West & West	1.2	27.9	8.5	57.9	87.4	75.3	0
19-Mar-23	24.7	34.6	29.3	1036	1040	1038	North & North West	1.2	37.6	11.9	52.4	91.1	74	0
20-Mar-23	23.7	34.9	27.7	1036	1040	1038	South East & North	1.2	27.0	7.0	53.1	90.4	78	0
21-Mar-23	22.5	33.9	28.1	1037	1040	1038	North West & South East	1.2	24.1	8.4	56.4	96.9	77.9	0
22-Mar-23	24	33.8	29	1036	1040	1038	North West & West	1.2	22.9	8.1	57.9	89.3	74.1	0
23-Mar-23	24.8	34.8	29.5	1037	1040	1039	North West & West	1.2	25.0	8.4	53.5	91.8	71.1	0
24-Mar-23	24.5	34.7	29.2	1037	1041	1039	North West & West	1.2	31.1	9.1	45.3	94.5	73.7	0
25-Mar-23	23.3	34.9	28.8	1038	1041	1040	North West & South East	1.2	25.9	7.9	48.5	85	70.5	0
26-Mar-23	23.1	34.8	29.1	1038	1041	1039	North West & South East	1.2	27.7	8.7	46.1	92	70.6	0
27-Mar-23	23.5	35.5	29.4	1037	1040	1039	North West & South East	1.2	26.1	8.8	44	87.8	70	0
28-Mar-23	24.6	34.8	29.3	1037	1041	1039	North West & West	1.2	26.0	8.0	53.9	87.7	75	0
29-Mar-23	24.5	35.7	29.7	1038	1041	1039	North West & South East	1.2	22.1	7.4	47.9	89.7	72	0
30-Mar-23	24	35.5	29.6	1037	1041	1039	North West & West	1.2	26.2	8.5	47.1	92	72.9	0
31-Mar-23	23	36.2	29.4	1036	1040	1039	West & South East	1.2	24.8	7.8	41.6	94.6	71	0

Remarks: Total Rainfall for the month 0.5 mm. Rain Fall Recorded on 01-03-23. *Due to Comunication Error, Data not transmitted.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.04.2023 to 30.04.2023

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Apr-23	25.2	35.2	29.9	1037	1040	1039	North West & East	1.22	28.19	10.23	48.6	91	72.2	0
2-Apr-23	22.6	35.4	29.5	1036	1040	1038	South East & North West	1.22	29.14	8.93	44.3	88.9	67	0
3-Apr-23	24.4	35.8	29.8	1037	1040	1038	North West & North	1.22	30.71	8.54	47.2	85	68.4	0
4-Apr-23	22.3	35.8	29	984	1041	1039	North West & West	1.22	34.23	7.9	43.4	85.4	69.3	0
5-Apr-23	20.2	34.7	29.1	1037	1041	1039	West & North West	1.22	26.69	9.54	52.1	86.8	71.2	0
6-Apr-23	18.1	35.2	29.4	983	1041	1039	West & South West	1.22	27.34	8.27	57.3	93.4	71.7	0
7-Apr-23	24.6	35.3	29.5	1039	1041	1040	South East & North West	1.22	24.24	6.94	49.4	88.2	71.2	0
8-Apr-23	24.9	34.3	29.1	1040	1043	1041	West & North West	1.23	22.57	8.28	55.2	91.7	71.8	0
9-Apr-23	22.9	33.5	27.9	1040	1043	1041	West & North West	1.22	22.93	6.26	63.8	95.4	81.8	7
10-Apr-23	22	33.9	29.1	971	1042	1040	West & North West	1.23	23.74	8.36	26.1	90.7	74.6	0
11-Apr-23	21.4	34.4	29.6	1016	1042	1040	North West & South East	1.22	24.43	8.36	47.8	92.6	74	0
12-Apr-23	16.8	35.3	29.6	1015	1042	1040	North West & South	1.23	20.16	6.78	48.3	90.4	72.8	0
13-Apr-23	24.3	34.7	29.5	1038	1041	1040	North West & South East	1.22	21.35	7.49	55.7	90.4	74	0
14-Apr-23	23.8	33.7	25.9	1039	1041	1040	North West & South East	1.22	10.47	2.41	58.2	97.1	89.5	0
15-Apr-23	23.1	35.2	29.3	1039	1041	1039	North West & South East	1.22	22.84	7.31	52.8	95.9	76.8	0
16-Apr-23	24.1	36.7	29.8	1037	1040	1038	North West & West	1.22	24.66	7.87	36.7	94.4	73.2	0
17-Apr-23	23.8	36.2	30	1037	1040	1039	North West & West	1.22	22.61	8.37	38.4	94.3	73.2	0
18-Apr-23	24	36.6	30.1	1038	1041	1039	North & North East	1.22	21.98	7.55	42.3	95	72.3	0
19-Apr-23	24.1	36.1	30.4	1036	1040	1038	North West & South East	1.22	27.07	9.21	48.4	92.2	71.2	0
20-Apr-23	26.9	37.1	31.4	1034	1038	1037	North West & West	1.22	31.46	11.62	45.1	85.4	69.2	0
21-Apr-23	27.5	37.9	31.8	1034	1038	1036	North West & West	1.22	29.6	9.3	44.4	84.9	64	0
22-Apr-23	25.3	37.5	31	1035	1038	1036	North West & North	1.22	24.66	8.21	45.6	81.3	67.5	0
23-Apr-23	26.9	38	31.4	1035	1038	1037	North West & South East	1.22	22.91	8.27	49.4	87.1	72.2	0
24-Apr-23	27.2	35.5	30.5	1036	1039	1038	North West & South East	1.22	26.11	9.5	56.6	89.3	76.5	0
25-Apr-23	24.3	35.8	28.9	1037	1040	1039	West & South East	1.22	19.74	6.22	50.5	91.4	73.3	0
26-Apr-23	23	36	28.9	1036	1040	1038	North West & West	1.22	19.98	5.52	49.5	94.4	72.6	0
27-Apr-23	24.7	34.5	28.7	1037	1040	1038	West & South East	1.22	28.08	5.51	58.5	94.6	81.2	0
28-Apr-23	24.3	35	29.4	1037	1040	1039	North West & South East	1.22	21.19	6.69	53	96.1	77.7	1.5
29-Apr-23	23.9	34.2	28.5	1037	1040	1039	West & South East	1.22	36.04	7.78	59.5	97.5	82.5	3
30-Apr-23	24.4	34	28.9	1036	1039	1038	North West & South East	1.22	19.98	6.61	56.6	96.3	78	0

Remarks: Total Rainfall for the month 11.5 mm. Rain Fall Recorded on 07-04-23, 28-04-23 & 29-04-23.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.05.2023 to 31.05.2023

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-May-23	25.6	33.4	28	1036	1039	1038	North West & South East	1.22	31.02	6.53	62	95	83.8	0
2-May-23	23.8	32.9	27.8	1036	1040	1038	West & North West	1.22	25.98	8.09	66.8	98.1	85.5	5
3-May-23	23.9	35.3	27.2	1037	1040	1039	East & South East	1.22	36.48	5.54	55.9	98	85.0	1
4-May-23	24.4	34.2	28.7	1036	1040	1038	North West & South East	1.22	26.21	7.58	57.6	95.9	81.2	0
5-May-23	24.7	32.2	28	1036	1039	1038	South East & West	1.22	15.03	4.44	65.5	95.8	82.4	0
6-May-23	25.7	36.4	29.7	1036	1039	1037	South East & West	1.22	18.59	6.19	49.8	89.2	73.5	0
7-May-23	25.9	33.4	28.6	1036	1039	1038	North West & South East	1.22	14.3	5.55	54.3	89.9	78.8	0
8-May-23	25.5	35.6	29.4	1035	1038	1037	North West & South East	1.22	22.89	6.72	55.3	95.2	78.8	0
9-May-23	24.8	36.8	29.7	1035	1039	1037	South East & North West	1.22	26.38	8.19	47.7	98.2	76.1	0
10-May-23	25	37	30.5	1035	1038	1037	North West & South East	1.22	25.38	7.16	47.1	91.5	72.6	0
11-May-23	27.5	38	31.6	1035	1040	1037	North East & East	1.22	27.46	9.16	44.4	83.9	66.0	0
12-May-23	26.8	37.3	31	1036	1040	1038	North & North East	1.22	27.61	10.37	44.4	82.5	69.9	0
13-May-23	27.7	39.2	31.9	1036	1040	1038	North East & North	2.28	22.87	10.92	42.0	85.6	69.8	0
14-May-23	26.6	37.9	32.2	1035	1039	1037	North East & North	1.22	32.83	10.73	45.3	87	67.1	0
15-May-23	27.5	38.7	32.5	1036	1039	1038	North & North West	1.69	24.72	10.19	38.6	86.5	66.1	0
16-May-23	27.9	39.9	32.5	1037	1040	1038	East & North West	1.22	26.49	8.53	38.4	92.5	66.0	0
17-May-23	26.2	38	31	1037	1040	1039	North West & South East	1.22	30.43	7.26	49.6	89.5	76.9	0
18-May-23	25.8	38.8	31.2	1038	1041	1039	North & North West	1.22	29.74	11.04	44.4	92.4	73.0	0
19-May-23	28.5	37.2	31.1	1037	1041	1039	North & North East	1.74	32.64	13.63	49.7	87.4	75.0	0
20-May-23	26.1	36.3	31.6	1037	1039	1038	North West & North	1.23	28.3	9.94	47.3	88.3	68.6	0
21-May-23	26.9	37.3	31.9	1037	1040	1039	North West & North East	1.22	28.73	8.8	44.1	83.4	66.2	0
22-May-23	27.3	36.4	31	1038	1041	1039	North & North West	1.22	32.46	10.48	52.5	84.6	71.8	0
23-May-23	24.6	37.1	30.5	1038	1041	1040	North & North East	1.22	31.83	10.92	44.4	88.7	68.4	0
24-May-23	26.4	37.2	31.8	1038	1041	1039	North East & North	1.23	35.42	12.86	43.3	85.9	66.3	0
25-May-23	27	38	32.3	1038	1041	1039	North East & East	1.23	29.87	10.57	40.4	82.3	63.1	0
26-May-23	27.8	38.8	32.7	1038	1041	1040	East & North East	1.23	25.73	9.89	37	74.5	58.4	0
27-May-23	25.9	37.2	31.2	1037	1040	1039	North West & East	1.22	24.49	7.72	41.4	81.9	64.3	0
28-May-23	27.5	38	31.3	1036	1039	1038	South East & North West	1.22	21.9	7.49	49.5	76.2	65.2	0
29-May-23	26.8	37.7	31.4	1036	1039	1038	North West & South East	1.22	18.54	6.79	51	77.6	66.7	0
30-May-23	26.3	36.8	31.5	1037	1040	1039	North West & North East	1.22	26.98	8.45	50.4	77.3	65.6	0
31-May-23	27.2	36.9	31.9	1036	1040	1038	North West & South East	1.22	1628	14.03	46.5	83.4	64.8	0

Remarks: Total Rainfall for the month 6.0 mm. Rain Fall Recorded on 02-05-23 & 03-05-23.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

METROLOGICAL STATION REPORT

Daily Average from 01.06.2023 to 30.06.2023

Date	Ambient Temperature (°C)			Barometric Pressure (m.bar)			Predominant Wind direction Blowing from	Wind Speed (Km/Hr)			Relative Humidity (%)			Rain Fall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
1-Jun-23	30.00	38.40	33.40	1036.00	1039.00	1037.00	North East & East	3.31	22.60	12.11	45.60	65.00	56.30	0.0
2-Jun-23	27.80	38.90	32.70	1036.00	1039.00	1038.00	East & North East	1.23	23.09	9.10	35.20	71.50	57.20	0.0
3-Jun-23	29.10	38.50	33.20	1036.00	1039.00	1037.00	North East & East	1.73	28.12	10.13	39.00	72.00	59.60	0.0
4-Jun-23	29.10	39.00	32.60	1036.00	1039.00	1037.00	East & North West	1.26	27.19	9.64	38.10	80.50	60.30	0.0
5-Jun-23	28.60	40.10	32.90	1035.00	1039.00	1037.00	East & North East	1.22	26.73	11.09	33.50	72.20	56.80	0.0
6-Jun-23	26.60	37.70	32.10	1035.00	1038.00	1037.00	East & North West	1.22	26.08	9.23	41.40	75.00	59.70	0.0
7-Jun-23	29.20	40.10	32.80	1035.00	1039.00	1037.00	East & North East	5.12	27.20	12.80	33.60	67.60	54.90	0.0
8-Jun-23	28.20	38.80	32.20	1036.00	1039.00	1037.00	East & North East	1.23	30.34	11.35	33.00	68.70	53.70	0.0
9-Jun-23	27.50	38.90	32.40	1035.00	1038.00	1037.00	East & North East	1.79	26.93	11.35	36.50	72.20	53.90	0.0
10-Jun-23	28.80	40.00	32.80	1034.00	1037.00	1036.00	East & North East	1.22	31.30	11.20	32.20	64.20	51.20	0.0
11-Jun-23	29.20	39.10	32.30	1034.00	1037.00	1036.00	East & North East	3.98	29.61	13.11	36.30	63.60	53.80	0.0
12-Jun-23	28.50	38.80	32.60	1035.00	1038.00	1036.00	East & North East	1.45	36.64	11.60	35.40	69.90	54.60	0.0
13-Jun-23	28.80	37.30	32.20	1035.00	1038.00	1037.00	East & North East	2.70	34.36	12.06	38.40	69.10	54.50	0.0
14-Jun-23	29.20	40.20	33.20	1035.00	1039.00	1037.00	East & North East	2.61	29.64	10.60	28.10	65.90	51.20	0.0
15-Jun-23	27.00	40.30	32.60	1036.00	1039.00	1037.00	East & North West	1.22	24.98	9.08	31.50	71.40	55.00	0.0
16-Jun-23	29.00	40.10	33.10	1035.00	1038.00	1037.00	East & North East	2.26	30.15	11.16	32.70	68.20	53.50	0.0
17-Jun-23	28.10	37.80	31.50	1036.00	1038.00	1037.00	East & North East	1.23	23.14	9.45	36.90	71.50	58.40	0.0
18-Jun-23	28.60	35.80	31.10	1037.00	1039.00	1038.00	East & North West	1.91	21.48	8.63	41.90	79.70	61.80	0.0
19-Jun-23	26.70	36.80	30.90	1035.00	1038.00	1037.00	East & North West	1.22	25.58	8.02	41.70	74.70	61.90	0.0
20-Jun-23	26.30	36.40	31.10	1035.00	1037.00	1036.00	North West & East	1.22	25.73	8.11	45.20	81.20	63.90	0.0
21-Jun-23	25.90	36.10	31.00	1036.00	1038.00	1037.00	East & North West	1.23	18.24	7.42	44.40	80.20	62.20	0.0
22-Jun-23	25.60	37.90	31.20	1035.00	1038.00	1037.00	North West & East	1.22	24.33	8.20	38.40	82.50	62.80	0.0
23-Jun-23	26.80	39.20	32.20	1035.00	1038.00	1037.00	East & North East	1.22	24.57	9.44	30.50	73.80	56.10	0.0
24-Jun-23	26.30	38.50	32.00	1035.00	1038.00	1037.00	East & North East	1.23	20.77	8.65	32.70	70.40	52.40	0.0
25-Jun-23	25.50	37.50	31.00	1035.00	1039.00	1037.00	East & North West	1.22	31.67	10.58	35.80	71.60	58.20	0.0
26-Jun-23	27.50	37.30	31.50	1036.00	1039.00	1037.00	East & North East	4.27	32.19	14.71	34.10	68.80	53.30	0.0
27-Jun-23	27.90	36.50	31.20	1037.00	1039.00	1038.00	East & North East	1.98	33.21	13.38	41.20	64.80	53.20	0.0
28-Jun-23	27.60	37.30	32.10	1037.00	1040.00	1038.00	East & North East	2.05	30.23	12.40	35.20	62.70	50.60	0.0
29-Jun-23	27.90	37.10	32.00	1037.00	1040.00	1039.00	East & North East	2.37	37.39	13.35	33.90	68.50	53.30	0.0
30-Jun-23	27.50	38.30	32.30	1036.00	1040.00	1038.00	East & North East	1.23	26.63	10.78	35.40	70.80	53.80	0.0

Remarks: Total Rainfall for the month 0.0 mm.

For Coastal Energen Pvt. Limited

MK Parameswaran
Station Director

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

ANNEXURE - 2

COASTAL ENERGEN PVT LTD






- Environment Clearance Compliance Status
- Monthly Environment Report
- Monthly Ash Report
- CIRP
- CSR
- List of Directors
- Notice of Annual General Meeting
- Annual Return

Welcome to Coastal Energen Pvt. Ltd.

Coal and Oil Group is a Rs. 2400 crores (US$ 550 million) Integrated Energy Company involved in various aspects of Energy supplies including Coal trading, Mining, Shipping, Logistics and Power Generation.

Coastal Energen Pvt Ltd (ENERGEN), the Power Generating Flagship Company of the Coal and Oil Group, is setting up a 1200 MW coal fired thermal power plant in the district of Tuticorin in the State of Tamil Nadu , India.

Our maiden power project in Tuticorin, Tamil Nadu, South India is a logical extension of our multi disciplinary capabilities building on our diverse strengths and leveraging our varied experiences in "Fuel Management" which gives Coastal Energen a distinct advantage as a low cost Power Producer.

Approximately 60% of the cost of power comprises of fuel cost. Our group is one of the top suppliers of imported coal to some of the leading private and public power producers in India like Tata, Reliance, Torrent Power, Gujarat Electricity Board, Maharashtra State Electricity Board, Calcutta Electric and others. With such experience under our belt and a top notch management team guiding the project, we are in a comfortable position to effectively manage the cost of fuel and finally the cost of power generated.

Our Projects

Tuticorin has been identified by both the Central Government of India and State Government of Tamilnadu as a power generating centre for southern Tamilnadu lying as it does in the middle of the power corridor.

Situated only 13 kms from Tuticorin town, our project enjoys the following advantages:

- Close proximity to a major town (13 kms)
- Within 21 kms of a major port
- Excellent road, Rail & Air connectivity
- Excellent grid connectivity

The project has achieved fast progress since its inception.

- Land fully acquired
- PPA Agreement Signed
- MOEF Clearance issued
- Funding fully tied up and secured
- BTG order finalized
- Discussion with PGCIL for power evacuation

- Engineering Consultants appointed
- Manpower in place
- Site preparation completed
- Geo-technical investigations completed
- Construction water and power in place
- Water allocated by TWAD Board for process requirements

Integrated Energy Solutions

ANNEXURE - 3

INTERNAL ROA-GROUND WATER

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - JANUARY'23

Sample Collected on 05.01.2023

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH	-	7.47	7.12	7.59	7.51
2	Electrical conductivity	(µs/cm)	11060	22600	19040	9640
3	Total Suspended Solids	ppm	60	90	41	42
4	Total Dissolved Solids	ppm	7189	14690	12376	6266
5	Total Hardness	ppm	1190	2560	1900	980
6	Calcium Hardness	ppm	720	1130	890	460
7	Magnesium Hardness	ppm	470	1430	1010	520
8	Total Chloride	ppm	4320	5624	3854	2642
9	Sodium	ppm	860	1230	1350	762
10	Potassium	ppm	32	72	68	28
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.08	0.1	0.12	0.09
13	BOD	mg/l	6.6	7.35	7.26	6.5
14	DO	mg/l	8.8	6.4	4.0	5.1
15	COD	mg/l	60	86	72	28
16	Sulphate	ppm	650	860	790	580
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remarks			Nil			

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

V. SIVAPAUL

SAMPLE COLLECTED BY

(L. Vasanth)

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

LAB CHEMIST

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - FEBURARY'23

Sample Collected on 08.02.2023

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH	-	7.63	7.18	7.26	7.54
2	Electrical conductivity	(µs/cm)	11210	20100	19760	5860
3	Total Suspended Solids	ppm	11.45	289	26	1
4	Total Dissolved Solids	ppm	7286.5	13065	12844	3809
5	Total Hardness	ppm	960	2100	1440	640
6	Calcium Hardness	ppm	624	1540	698	430
7	Magnesium Hardness	ppm	336	560	742	210
8	Total Chloride	ppm	2518	5105	4326	1664
9	Sodium	ppm	740	1160	1260	572
10	Potassium	ppm	26	62	58	24
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.08	0.1	0.12	0.09
13	BOD	mg/l	5.2	4.8	4.2	4.4
14	DO	mg/l	7.2	5.6	6.0	6.4
15	COD	mg/l	56	72	64	26
16	Sulphate	ppm	2210	2429	1862	559
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remarks		Nil				

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

(V. SIVAPAUL)
SAMPLE COLLECTED BY

LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN Melamaruthur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - MARCH'23

Sample Collected on 06.03.2023

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH	-	7.77	7.29	7.32	7.67
2	Electrical conductivity	(µs/cm)	10940	23600	19810	5630
3	Total Suspended Solids	ppm	25	157	32	6
4	Total Dissolved Solids	ppm	7111	15340	12876.5	3659.5
5	Total Hardness	ppm	800	3120	1740	280
6	Calcium Hardness	ppm	540	1700	1030	160
7	Magnesium Hardness	ppm	260	1420	710	120
8	Total Chloride	ppm	1206	5364	5246	709
9	Sodium	ppm	908	1290	1180	620
10	Potassium	ppm	45	78	65	22
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.09	0.11	0.1	0.07
13	BOD	mg/l	5.5	4.4	4.3	4.8
14	DO	mg/l	6.7	5.3	5.8	6.2
15	COD	mg/l	55	68	71	40
16	Sulphate	ppm	710	940	860	400
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remarks		Nil				

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

(V.SIVAPRIYA)
SAMPLE COLLECTED BY

LAB CHEMIST

Coastal Energen Pvt. Ltd. Melamaruthur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - APRIL'23

Sample Collected on 05.04.2023

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH	-	7.8	7.13	7.66	7.6
2	Electrical conductivity	(µs/cm)	11560	24700	20200	5510
3	Total Suspended Solids	ppm	43	51	38	40
4	Total Dissolved Solids	ppm	7514	16055	13130	3581.5
5	Total Hardness	ppm	870	3208	1952	318
6	Calcium Hardness	ppm	624	1812	988	176
7	Magnesium Hardness	ppm	246	1396	964	142
8	Total Chloride	ppm	1412	5685.3	4986.6	678.5
9	Sodium	ppm	884	1320	1256	616
10	Potassium	ppm	35	81	63	20
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.10	0.12	0.11	0.07
13	BOD	mg/l	2.8	3.8	3.2	3
14	DO	mg/l	5.8	6.0	6.2	5.8
15	COD	mg/l	53	65	70	40
16	Sulphate	ppm	694	910	782	430
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remarks		Nil				

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

(V.SIVAPAUL)
SAMPLE COLLECTED BY

(I. Vasanthi)
LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - MAY'23

Sample Collected on 04.05.2023

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH	-	7.59	7.36	7.79	7.8
2	Electrical conductivity	(µs/cm)	11520	23400	15650	6970
3	Total Suspended Solids	ppm	8	119	42	5
4	Total Dissolved Solids	ppm	7488	15210	10172.5	4530.5
5	Total Hardness	ppm	952	2910	2040	442
6	Calcium Hardness	ppm	710	1928	1440	262
7	Magnesium Hardness	ppm	242	982	600	180
8	Total Chloride	ppm	1562	5142	4836	690
9	Sodium	ppm	908	1278	1108	628
10	Potassium	ppm	38	76	61	29
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.10	0.12	0.11	0.08
13	BOD	mg/l	2.1	3.6	3	2.4
14	DO	mg/l	5.2	6.4	5.6	6.2
15	COD	mg/l	48	64	60	34
16	Sulphate	ppm	710	1024	802	454
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remarks		Nil				

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

V. SIVAPAUL
SAMPLE COLLECTED BY

L. Vasantha
LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

COASTAL ENERGEN PRIVATE LIMITED

2 X 600 MW MUTIARA THERMAL POWER PLANT

BOREWELL WATER ANALYSIS REPORT - JUNE'23

Sample Collected on 07.06.2023

S. No	PARAMETERS	UNIT	SAMPLE 1	SAMPLE 2	SAMPLE 3	SAMPLE 4
1	pH	-	8.03	7.21	7.45	7.90
2	Electrical conductivity	(µs/cm)	11240	25300	18200	10180
3	Total Suspended Solids	ppm	48	64	40	35
4	Total Dissolved Solids	ppm	7306	16445	11830	6617
5	Total Hardness	ppm	950	3652	2014	396
6	Calcium Hardness	ppm	688	2120	1045	211
7	Magnesium Hardness	ppm	262	1532	969	185
8	Total Chloride	ppm	2420	6024	5012	1540
9	Sodium	ppm	824	1440	1210	716
10	Potassium	ppm	30	75	62	23
11	Lead	ppm	BDL	BDL	BDL	BDL
12	Boron	ppm	0.09	0.11	0.1	0.07
13	BOD	mg/l	3.1	3.3	2.9	3.0
14	DO	mg/l	5.5	5.8	5.9	5.6
15	COD	mg/l	45	55	51	40
16	Sulphate	ppm	704	946	750	615
17	Oil & Grease	mg/l	BDL	BDL	BDL	BDL
18	Mercury	ppm	BDL	BDL	BDL	BDL
19	Arsenic	ppm	BDL	BDL	BDL	BDL
20	Chromium	ppm	BDL	BDL	BDL	BDL
Remarks		Nil				

Borewell Locations:

Sl.No.	Sample Identification	Borewell Location
1	SAMPLE 1	South West of Ash Bund (Near CAAQMS-3)
2	SAMPLE 2	South of Ash Bund
3	SAMPLE 3	South East of Ash Bund
4	SAMPLE 4	North East of Ash Bund

(V.SIVAPAUL)
SAMPLE COLLECTED BY

(L. Vasanthan)
LAB CHEMIST

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

EXTERNAL ROA-GROUND WATER

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000725-P	**Report Date :**	02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-21-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	01.00 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-1 (South West of Ash Pond		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	<0.003
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	81
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	1090
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	<1.0
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	<0.02
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	1.3
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.11
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part [illegible] :1991	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part [illegible] :1991	mg/L	18
20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part [illegible] :2006	mg/L	<0.01

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TC-6932

TEST REPORT

Report / ULR No : TC6932-23-0-00000725-P

21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	<0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	<1.0
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	6.8
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	633
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	518
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	2900
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	278
39	Turbidity	IS 3025 (Part 10) :1984	NTU	3.6
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	0.71

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory Madurai-625016

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TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000725-P		02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-21-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	01.00 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-1 (South West of Ash Pond		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Excellence Laboratory * Madurai-625016 *

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000726-P	**Report Date :**	02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-22-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	01.45 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-2 (South of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	<0.003
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	223
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	1359
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	<1.0
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	<0.02
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	1.4
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.33
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part [illegible]) :19[illegible]	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part [illegible]) :1994	mg/L	91
20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part [illegible]) :2006	mg/L	<0.01

TEST REPORT

Report / ULR No : TC6932-23-0-00000726-P				
21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	<0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	6.0
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	7.3
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	2648
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	402
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	5610
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	930
39	Turbidity	IS 3025 (Part 10) :1984	NTU	24
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	1.2

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory Madurai-625016

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TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000726-P		02.03.2023
Customer Name & Address :	M/S. Coastal Energen Private Limited 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-22-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	01.45 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-2 (South of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:–

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Excellence Laboratory * Madurai-625016 *

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000727-P	**Report Date :**	02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-23-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	01.35 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1 °C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-3 (South East of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	<0.003
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	98
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	1085
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	<1.0
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	<0.02
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	1.1
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.08
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part 47) :1994	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part 46) :1994	mg/L	18
20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part 59) :2006	mg/L	<0.01

TEST REPORT

Report / ULR No : TC6932-23-0-00000727-P

21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	<0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	<1.0
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	7.5
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	685
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	472
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	2920
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	319
39	Turbidity	IS 3025 (Part 10) :1984	NTU	3.3
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	0.72

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

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TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000727-P		02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-23-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	01.35 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-3 (South East of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Excellence Laboratory * Madurai-625016 *

Disclaimer : 1.This test report shall not be reproduce in full or part without the written approval of the Laboratory.
2.The test results relate only to the test item tested and results apply to the sample "as received conditions".
3.This test results does not account the MU value in the statement of conformity unless or otherwise specified in the report.
4.The laboratory is not responsible for information provided by customer and it does not come under the scope of accreditation.
5.This test item will not be retained more than 10 days from date of issue of test reports, unless or otherwise requested by customer.
6.Total liability of our laboratory is limited to the invoice amount and any dispute arising out of this report is subject to Madurai Jurisdiction only.
7.This report cannot be used as evidence in the court of law and should not be used in any advertising media without our special permission in writing.
8.Sample is not drawn by laboratory unless stated in the report, if the sample drawn by the customer, the laboratory is not responsible for sampling stage.
9.(BDL) - Below Detectable Limit; (DL) - Detectable Limit; (MU) - Measurement Uncertainty; (NA) - Not Applicable; (CFU) - Colony Forming Unit.
10.No additions, deviations or exclusions from the above test methods mentioned unless or otherwise specified in the report.
11.(*) Mark indicates the tests does not comes under scope of accreditation and (#) Mark indicates the tests are subcontracted to other certified laboratory.

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000728-P	**Report Date :**	02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-24-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	03.00 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-4 (North East of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	<0.003
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	212
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	1440
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	<1.0
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	<0.02
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	1.1
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.19
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part 47) :1994	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part 46) :1994	mg/L	70
20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part 59) :2006	mg/L	<0.01

TEST REPORT

Report / ULR No : TC6932-23-0-00000728-P				
21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	<0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	5.2
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	7.7
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	1129
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	360
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	5650
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	817
39	Turbidity	IS 3025 (Part 10) :1984	NTU	17
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	1.7

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory Madurai-625016

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TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00000728-P		02.03.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-24-02-2023
Sample Drawn By :	Laboratory	**Sample Collected Date :**	21.02.2023
Sampling Time :	03.00 PM	**Sample Received on :**	23.02.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	23.02.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	28.02.2023
Sampling Environment Condition :	Temperature:33.1°C,	**Sampling Method / Plan :**	EL-SOP-WRS-01 & 02
Sample Mark :	Bore Well Water-4 (North East of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:–

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		R.S.DINAKARAN Quality Manager

Excellence Laboratory * Madurai-625016 *

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TC-6932

TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001817-P	**Report Date :**	27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-8-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water-1 (South West of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	0.01
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	242
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	1439
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	<1.0
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	0.03
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	0.88
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.25
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part 47) :19	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part 46) :19	mg/L	117

Excellence Laboratory Madurai-625016

TEST REPORT

Report / ULR No : TC6932-23-0-00001817-P

20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part 59) :2006	mg/L	<0.01
21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	3.4
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	7.2
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	2855
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	575
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	5590
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	1084
39	Turbidity	IS 3025 (Part 10) :1984	NTU	3.5
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	0.12

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory Madurai-625016

TEST REPORT — GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001817-P		27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-8-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water-1 (South West of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory * Madurai-625016 *

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TC-6932

TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001818-P	**Report Date :**	27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-9-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water - 2 (South of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	0.02
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	944
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	5168
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	15
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	0.04
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	0.63
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.28
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part [illegible] :1994	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part 46) :1994	mg/L	509

Excellence Laboratory Madurai-625016

TEST REPORT

Report / ULR No : TC6932-23-0-00001818-P

20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part 59) :2006	mg/L	<0.01
21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	3.3
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	6.6
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	0.02
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	2242
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	621
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	12840
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	4448
39	Turbidity	IS 3025 (Part 10) :1984	NTU	16
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	0.20

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory Madurai-625016

TEST REPORT — GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001818-P		27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-9-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water - 2 (South of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory ★ Madurai-625016 ★

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TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001819-P	**Report Date :**	27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-10-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water - 3 (South East of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	0.007
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	480
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	2155
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	20
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	0.03
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	<0.1
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part 53) :2003	mg/L	0.19
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part [illegible] :1994	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part 46) :1994	mg/L	193

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TEST REPORT

Report / ULR No : TC6932-23-0-00001819-P

20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part 59) :2006	mg/L	<0.01
21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	<0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	<1.0
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	6.9
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	1530
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	748
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	10160
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	1991
39	Turbidity	IS 3025 (Part 10) :1984	NTU	30
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	0.35

Statement of Conformity:--

<-- End of Report -->

Report Verified by

Technical Personnel

R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY

Authorized Signatory

T. KARTHIKEYAN
Head - Laboratory

Excellence Laboratory * Madurai-625016 *

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www.excellencelaboratory.com, Tel: 0452-4506252

TEST REPORT — GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001819-P		27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-10-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water - 3 (South East of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Chemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:--

<-- End of Report -->

Report Verified by
Technical Personnel
R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY
Authorized Signatory
T. KARTHIKEYAN
Head - Laboratory

Excellence Laboratory ★ Madurai-625016 ★

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TC-6932

TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001820-P	**Report Date :**	27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-11-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water - 4(North East of Ash Pond)		
Instruments Used for Sampling :	--		

S. No	Name of the Test	Test Method	Units	Results
Biological Testing				
1	Coliforms Bacteria	IS 15185 : 2016	Present/ Absent/ 100mL	Present
2	Escherichia coli	IS 15185 : 2016	Present/ Absent/ 100mL	Absent
Chemical Testing				
3	Aluminium (as Al)	Clause No.5 of IS 3025 (Part 55) :2003	mg/L	<0.02
4	Ammonia (as Total NH_3-N)	Clause No.2.5 of IS 3025 (Part 34) :1988	mg/L	<0.1
5	Anionic Detergents (as MBAS)	Annex K of IS 13428 :2005	mg/L	<0.01
6	Barium (as Ba)	Annex F of IS 13428 :2005	mg/L	<0.1
7	Boron (as B)	Clause No.6 of IS 3025 (Part 57) :2005	mg/L	<0.1
8	Cadmium (as Cd)	Clause No.6 of IS 3025 (Part 41) :1992	mg/L	<0.003
9	Calcium (as Ca)	Clause No.5 of IS 3025 (Part 40) :1991	mg/L	79
10	Chloramines (as Cl_2)	APHA 23rd Edition ,4500-Cl G : 2017	mg/L	<0.1
11	Chlorides (as Cl)	Clause No.2 of IS 3025 (Part 32) :1988	mg/L	690
12	Colour	Clause No.2 of IS 3025 (Part 04) :2021	CU	10
13	Copper (as Cu)	Clause No.6 of IS 3025 (Part 42) :1992	mg/L	<0.02
14	Cyanide (as CN)	Clause No.2 of IS 3025 (Part 27) :1986	mg/L	<0.02
15	Fluoride (as F)	APHA 23rd Edition (4500 F – D) : 2017	mg/L	0.88
16	Free Residual Chlorine (RFC)	APHA 23rd Edition (4500 -Cl – G) : 2017	mg/L	<0.1
17	Iron (as Fe)	Clause No.7 of IS 3025 (Part [illegible] :2003	mg/L	0.15
18	Lead (as Pb)	Clause No.8 of IS 3025 (Part [illegible]	mg/L	<0.01
19	Magnesium (as Mg)	Clause No.6 of IS 3025 (Part [illegible] :1994	mg/L	11

Excellence Laboratory Madurai-625016

TEST REPORT

Report / ULR No : TC6932-23-0-00001820-P

20	Manganese (as Mn)	Clause No.6 of IS 3025 (Part 59) :2006	mg/L	<0.01
21	Mercury (as Hg)	Clause No.5 of IS 3025 (Part 48) :1994	mg/L	<0.001
22	Molybdenum (as Mo)	APHA 23rd Edition (3500 – Mo) : 2017	mg/L	<0.05
23	Nickel (as Ni)	Clause No.7 of IS 3025 (Part 54) :2003	mg/L	<0.02
24	Nitrate (as NO_3)	Clause No.3.3 of IS 3025 (Part 34) :1988	mg/L	1.8
25	Odour	IS 3025 (Part 05) : 2018	--	Agreeable
26	pH value @ 25°C	Clause No.2 of IS 3025 (Part 11) :1983	No.	7.2
27	Phenolic Compounds (as C_6H_5OH)	Clause No.6 of IS 3025 (Part 43) :1992	mg/L	<0.001
28	Phenolphthalein Alkalinity (as $CaCO_3$)	Clause No.8.1 of IS 3025 (Part 23) : 1986	mg/L	Nil
29	Selenium (as Se)	Clause No.6 of IS 3025 (Part 56) :2003	mg/L	<0.01
30	Silver (as Ag)	Annex J of IS 13428 :2005	mg/L	<0.01
31	Sulphates (as SO_4)	Clause No.2 of IS 3025 (Part 24) :1986	mg/L	509
32	Sulphide (as H_2S)	Clause No.3 of IS 3025 (Part 29) :1986	mg/L	<0.05
33	Taste	IS 3025 (Part 8) : 1984	--	Not Conducted
34	Total Alkalinity (as $CaCO_3$)	IS 3025 (Part 23) :1986	mg/L	584
35	Total Arsenic (as As)	Clause No.2 of IS 3025 (Part37) : 1988	mg/L	<0.005
36	Total Chromium (as Cr)	Clause No.7 of IS 3025 (Part52) : 2003	mg/L	<0.05
37	Total Dissolved Solids	IS 3025 (Part 16) :1984	mg/L	2490
38	Total Hardness (as $CaCO_3$)	Clause No.5 of IS 3025 (Part 21) :2009	mg/L	242
39	Turbidity	IS 3025 (Part 10) :1984	NTU	8.1
40	Zinc (as Zn)	Clause No.6 of IS 3025 (Part 49) :1994	mg/L	0.16

Statement of Conformity:--

<-- End of Report -->

Report Verified by		For EXCELLENCE LABORATORY
Technical Personnel		Authorized Signatory
R.REVATHI Technical Manager		T. KARTHIKEYAN Head - Laboratory

Excellence Laboratory * Madurai-625016 *

TEST REPORT

GROUND WATER ANALYSIS

Report / ULR No :	TC6932-23-0-00001820-P		27.04.2023
Customer Name & Address :	**M/S. Coastal Energen Private Limited** 2 x 600 MW, Mutiara Thermal Power Plant, Melamaruthur Village, Ottapidaram (Tk), Tuticorin (Dt) - 628 004. Ph : 9500831401		
Sample Description :	Ground Water	**Sample Reference No :**	EL-NL-GW-11-04-2023
Sample Drawn By :	Customer	**Sample Collected Date :**	19.04.2023
Sampling Time :	01.30 PM - 02.30 PM	**Sample Received on :**	21.04.2023
Qty of Sample Received :	4 Liter (Approximately)	**Test Commenced on :**	21.04.2023
Sample Condition on Receipt :	Good	**Test Completed on :**	27.04.2023
Sampling Environment Condition :	-	**Sampling Method / Plan :**	-
Sample Mark :	Ground Water - 4(North East of Ash Pond)		
Instruments Used for Sampling :	–		

S. No	Name of the Test	Test Method	Units	Results
ıemical Testing				
1	Polynuclear Aromatic Hydrocarbons (as PAH)*	APHA 23rd Edition 2017 (6440)	mg/L	<0.0001

Statement of Conformity:–

<-- End of Report -->

Report Verified by

Technical Personnel

R.REVATHI
Technical Manager

For EXCELLENCE LABORATORY

Authorized Signatory

T KARTHIKEYAN
Head - Laboratory

Excellence Laboratory * Madurai-625016 *

ANNEXURE - 4

Greenbelt Maintenance Photos (January 2023 to June 2023)

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

View of Greenbelt Area

ANNEXURE - 5

CSR ACTIVITIES
(January 2023 to June 2023)

Distribution of Demand Draft to the Melamarudhur village committee by Station Director - CEPL.

Distribution of Demand Draft to the Melamarudhur village committee by Station Director - CEPL.

ANNEXURE - 6

Annexure - 6

COMPLIANCE TO THE CONDITIONS STIPULATED BY TAMILNADU COASTAL ZONE MANAGEMENT AUTHORITY VIDE LETTER DATED 03.04.2009

Period: January 2023 to June 2023

Sl.No.	CONDITIONS STIPULATED BY TNCZM AUTHORITY	COMPLIENCE
a)	The unit should adhere to the norms prescribed by Ministry of Environment and Forests, Government of India and State Pollution Control Board in respect of discharging of cooling water / treated effluent in to sea.	Complied. In respect of discharging of cooling water / treated effluent in to sea, All the norms prescribed by MoEF & CC/ SPCB is being followed.
b)	The unit shall consider adopting the latest technologies such as providing cooling towers to reduce the temperature of the condenser cooling water, so as to safe guard the marine eco-system	Complied. Cooling towers to reduce the temperature of the condenser cooling water is Installed, commissioned and in operation.
c)	Marking the intake and outfall pipelines adequately such that fishing vessels and fishermen are made aware of its presence.	Complied. Marker Buoys Provided.
d)	It may be ensured that mercury concentration is not present in the end product.	Being ensured
e)	The activities such as intake pipeline and outfall line and intake arrangement in sea and the pipeline should not cause hindrance to fishing activities and to boat movement.	Complied. No hindrance for fishing or boat movement.
f)	The proposed activities should not cause coastal erosion and alter the beach configuration	Complied. No Such activities are being carried out which can cause coastal erosion or beach configuration.
g)	No blasting activities in Coastal Regulation Zone is permissible	Complied. No Such activities are being carried out.
h)	The proponent should not prevent public from easy access to the beach.	Complied. Access is not prevented from Public.
i)	Untreated chemical waste generated due to membrane protection activity and the sewage generated should not be discharged into the sea.	Complied. No Untreated chemical waste is being discharged into sea.
j)	The proponent should ensure that the saline water shall not gain access into ground while conveying or processing the sea water	Being Ensured that the saline water is not gaining access into ground while conveying or processing the sea water.
k)	The project activity should not affect the coastal ecosystem including marine flora and fauna.	The project activity does not affect the coastal ecosystem including marine flora and fauna.
l)	There should not be any extraction of ground water in Coastal Regulation Zone.	Complied. Ground Water not extracted in the Coastal Regulation Zone.
m)	The proponent shall not undertake any activity, which is violative of the provisions of Coastal Regulation zone Notification 1991 and the subsequent amendments.	Complied. No Such activities are being carried out.
n)	The Coastal Regulation Zone clearance will be revoked if any of the condition stipulated is not complied with	Agreed.

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

ANNEXURE - 7

Comprehensive Environmental Monitoring for 2 X 600 MW Mutiara Thermal Power Plant at Pattinamaruthoor, Tuticorin

Monitoring Report

(January 2023 - June 2023)

Executive Summary

Submitted to

Mutiara Thermal Power Plant
Melamaruthur Village, Ottapidaram Thaluk
Tuticorin District - 628 105

by

Suganthi Devadason Marine Research Institute (SDMRI)
(Recognized by Manonmaniam Sundaranar University and U.G.C. &
Recognized Scientific and Industrial Research Organization by the DSIR, GOI)
44 - Beach Road, Tuticorin - 628 001, Tamil Nadu
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12 July 2023

Comprehensive Environmental Monitoring for 2 X 600 MW Mutiara Thermal Power Plant at Pattinamaruthoor, Tuticorin

Monitoring Report

Executive Summary

(January 2023 - June 2023)

to

M/S. Mutiara Thermal Power Plant,
Melamaruthur Village, Ottapidaram Thaluk,
Tuticorin District - 628 105

by

Suganthi Devadason Marine Research Institute
(Recognized by Manonmaniam Sundaranar University and U.G.C. &
Recognized Scientific and Industrial Research Organization by the DSIR, GOI)
44 - Beach Road, Tuticorin - 628 001
Tamil Nadu

12 July 2023

Contents

Comprehensive Coastal Environmental Monitoring for 2 X 600 MW Mutiara Thermal Power Plant at Pattinamaruthoor, Tuticorin

1. Background

M/S. Mutiara Thermal Power Plant has started production of its first unit of 2 x 600 MW coal based thermal power plant near Pattinamaruthur village of Tuticorin District, Tamilnadu and comprehensive coastal monitoring has been started from February 2015.

The comprehensive baseline data collection on physical, chemical and biological, covering all marine flora & fauna covering four seasons in each year was conducted for 3 years from 2010 to 2013 and comprehensive data on fish landings and catch details in was collected for one year from 10 coastal villages located within 10 km radius of the project site.

While granting No Objection Certificate to establish the Thermal Power Plant, the Tamil Nadu Forest Department made it compulsory to implement the following Coastal Environmental Management Plan and Monitoring Protocol.

1. Marine Water Quality
2. Marine Sediment Quality
3. Coral Reef Monitoring
4. Seagrass Monitoring
5. Fish Production Monitoring

The details of parameters, monitoring locations and monitoring frequency provided by the Tamil Nadu Forest Department are followed and the present half yearly report provides the results of the monitoring from January 2023 to June 2023.

2. Methodology

2.1. Fixing Permanent Monitoring Locations

Permanent monitoring locations were fixed to study the marine water and sediment quality and to monitor seagrasses and coral reefs. Totally 4 locations were fixed for the analysis of marine water and sediment quality at intake site. Location 1 is on the intake point and locations 2 and 3 are 100 m away in each side of the intake point while location 4 is 200 m away from the intake point into the sea. Totally 12 stations were fixed at discharge point. Locations 2 and 3 occur near the discharge point and locations 1 and 4 are 100 m away from locations 2 and 3 respectively. Locations 5 and 6 occur 25 m away from Location 2 and 3 and locations 7 and 8 fixed at 50m away from location 5 and 6 respectively. Locations 9 and 10 were fixed at 200m away from discharge point and Locations 11 and 12 were located 400m away from discharge point towards marine side. Parameters monitored in water samples were physical parameters such as pH, salinity, temperature, turbidity and total suspended solids; chemical parameters such as dissolved oxygen, nutrients, BOD and COD; heavy metals were Copper, Lead, Nickel, Cadmium, Chromium and Mercury; bacterial parameter coliform count; marine biological parameters such as phytoplankton and zooplankton. Parameters monitored in sediment samples were pH, organic matter and nutrients.

For coral monitoring, totally 13 sites were selected. Three locations were selected around each of the Tuticorin islands Vaan, Koswari, Kariyachalli and Vilanguchalli and one location at Vilanguchalli patch reef. Physical parameters such as temperature, turbidity, total suspended solids and sedimentation were analysed in these locations and biological parameters such as coral status, growth, recruitment, diseases and bleaching were monitored. Temperature loggers will be deployed in these locations also. For seagrass monitoring, totally 13 sites were selected randomly within 3 km radius from the discharge point. Physical parameters such as temperature, turbidity, total suspended solids and sedimentation were assessed. Biological properties such as seagrass status, growth, shoot density, diseases, productivity and biomass were monitored. Fish diversity and abundance were also monitored in all the seagrass monitoring locations.

The details of monitoring locations and GPS coordinates are given in Figs. 1 to 3 and Tables 1 to 3.

The fish landing data and catch details will be collected from 10 landing centres / villages (Thirespuram, Mottaigopuram, Siluvaipatti, Vellapatti, Tharuvaikulam, Pattinamaruthoor, Sippikulam, Vaipar, Periyasamipuram and Vembar) located in and around Pattinamaruthur coast, covering 10 km radius from the project site (Fig.4)

Fig.1: Monitoring Locations Marine Water and Sediment Quality Monitoring

Table 1: GPS Mark for locations for Marine water and sediment quality monitoring

Intake point	**GPS Mark**
Location- 1	N8 55.084 E78 11.229
Location- 2	N8 55.143 E78 11.252
Location- 3	N8 55.046 E78 11.357
Location- 4	N8 55.007 E78 11.198
Discharge point	
Location- 1	N8 55.125 E78 11.252
Location- 2	N8 55.189 E78 11.285
Location- 3	N8 55.266 E78 11.333
Location- 4	N8 55.336 E78 11.374
Location- 5	N8 55.086 E78 11.654
Location- 6	N8 55.067 E78 11.624
Location- 7	N8 55.070 E78 11.666
Location- 8	N8 55.059 E78 11.657
Location- 9	N8 55.112 E78 11.409
Location- 10	N8 55.186 E78 11.461
Location- 11	N8 55.071 E78 11.540
Location- 12	N8 55.168 E78 11.610

Fig.2: Locations for coral reef monitoring

Table 2: Coral reef monitoring locations

Location	GPS Mark
Vaan Island	
Location 1	N8 50.487 E78 12.759
Location 2	N8 50.099 E78 12.974
Location 3	N8 49.729 E78 12.881
Koswari Island	
Location 1	N8 51.829 E78 13.376
Location 2	N8 51.791 E78 13.793
Location 3	N8 52.193 E78 13.909
Vilanguchalli patch reef	
Location 1	N8 54.127 E78 15.391
Vilanguchalli Island	
Location 1	N8 56.606 E78 16.423
Location 2	N8 56.109 E78 16.245
Location 3	N8 56.369 E78 15.936
Kariyachalli Island	
Location 1	N8 57.185 E78 14.921
Location 2	N8 56.950 E78 15.202
Location 3	N8 57.198 E78 15.584

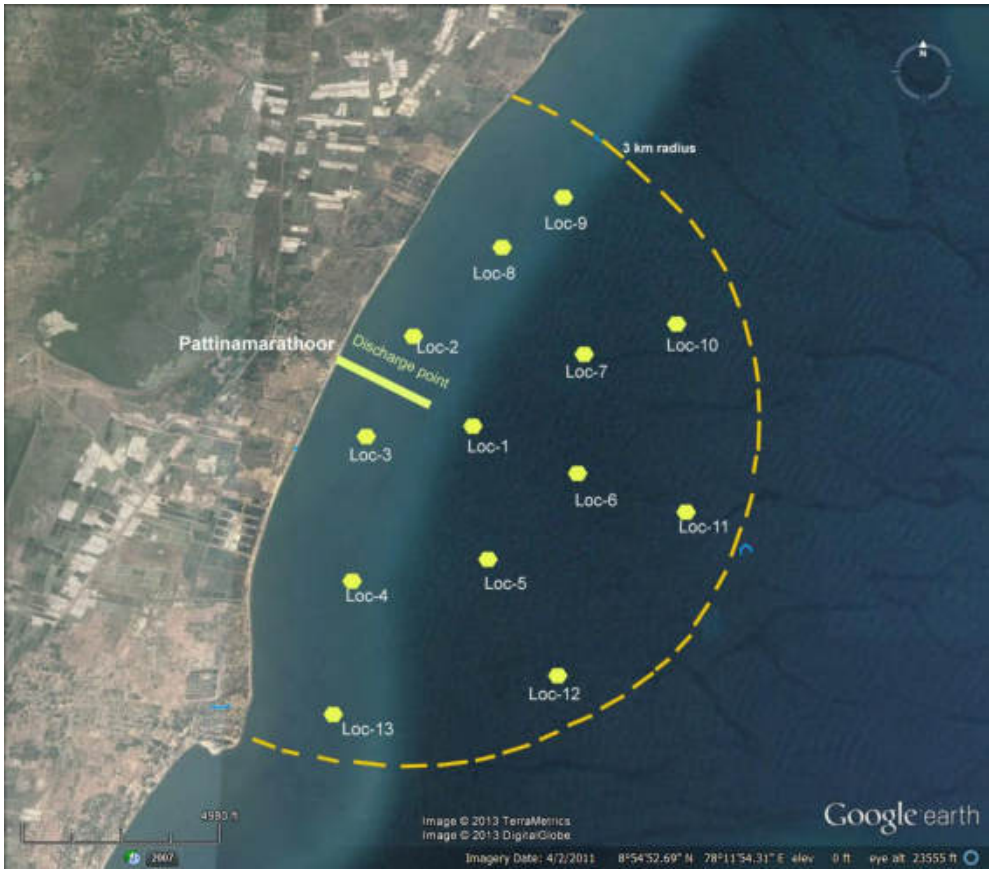

Fig.3: Seagrass and fish population monitoring locations

Table 3: GPS Mark for Seagrass and Fish Population monitoring locations

Location	GPS Mark
Location 1	N8 54.919 E78 11.338
Location 2	N8 55.043 E78 11.244
Location 3	N8 54.589 E78 11.177
Location 4	N8 54.128 E78 11.209
Location 5	N8 54.342 E78 11.921
Location 6	N8 54.652 E78 12.110
Location 7	N8 55.019 E78 11.971
Location 8	N8 55.351 E78 11.618
Location 9	N8 55.701 E78 11.940
Location 10	N8 55.224 E78 12.588
Location 11	N8 54.526 E78 12.508
Location 12	N8 53.885 E78 12.203
Location 13	N8 53.799 E78 11.357

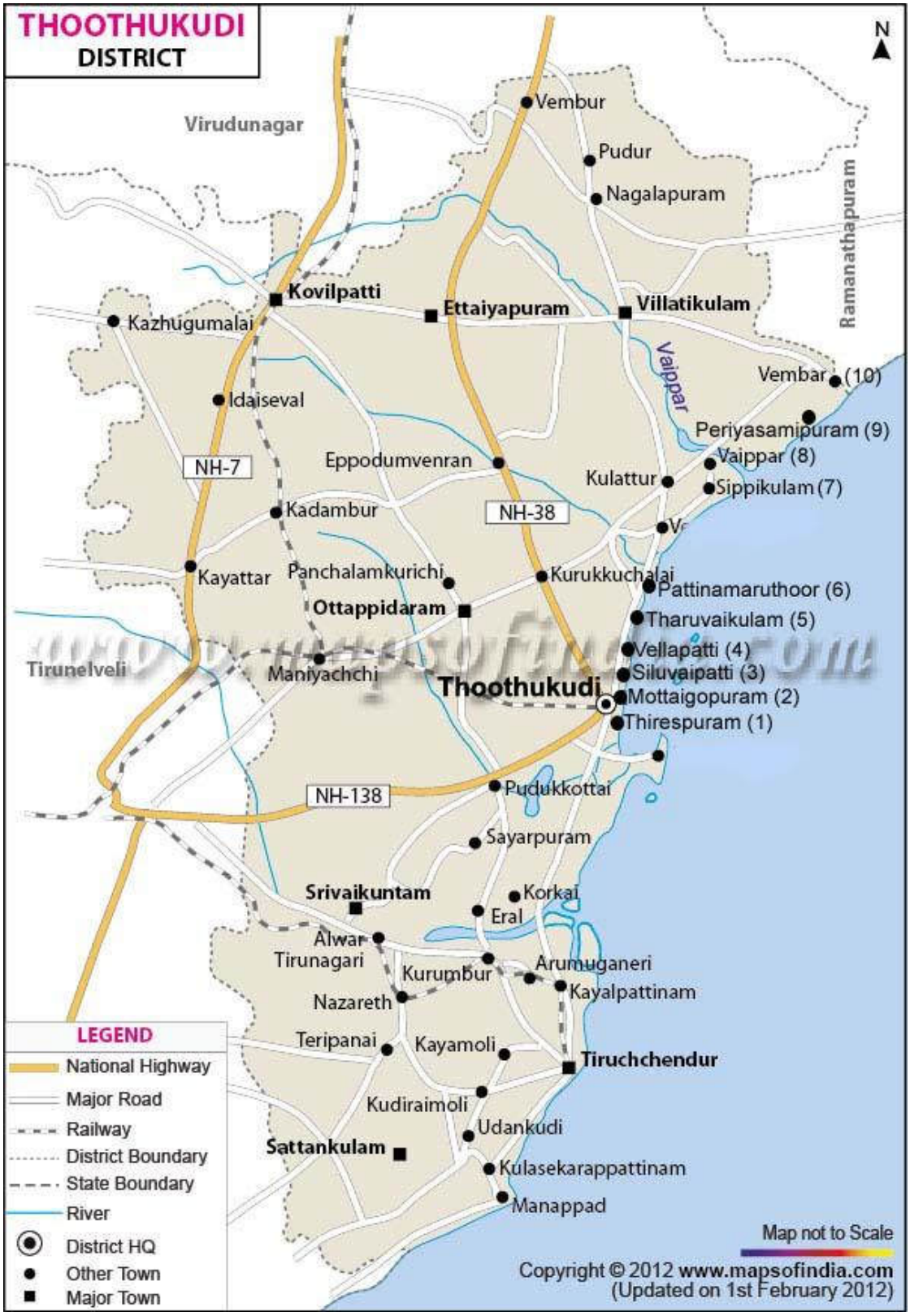

Fig.4: Map showing the 10 coastal villages / fish landing centres for fish landing data and catch details monitoring

2.2. Parameters are being monitored

Marine Water Quality

Physical properties: pH, Salinity, Temperature, Turbidity, Total Suspended Solids
Chemical Properties: Dissolved Oxygen, Nutrients, BOD, COD
Heavy metals: Cu, Pb, Ni, Cd, Cr, Hg
Bacteriological parameters: Coliform Count
Marine Biology: Phytoplankton, Zooplankton
Monitoring frequency - Fortnight Sampling

Marine Sediment Quality

Physical & Chemical properties: pH, Organic Matter, Nutrients
Heavy metals: Cu, Pb, Ni, Cd, Cr, Hg
Bacteriological parameters: Coliform Count
Marine Biology: Macro and meio benthic fauna and Macro flora
Monitoring frequency - Fortnight Sampling

Coral Reef Monitoring

Physical properties: Temperature, Turbidity, Total Suspended Solids, Sedimentation
Biological properties: Status, Coral growth, recruits, disease, bleaching
Monitoring frequency - Fortnight Sampling

Seagrass Monitoring

Physical properties: Temperature, Turbidity, Total Suspended Solids, Sedimentation
Biological properties: Status, Growth, shoot density, disease, Productivity, Biomass
Monitoring frequency - Fortnight Sampling

Fish Population Monitoring

Diversity and Abundance
Monitoring frequency - Fortnight Sampling

Fish Landing and Catch Monitoring

Common fish landed
Seasonal landing pattern
Total fish landing - quantity, species wise, landing as per craft and gear
Monitoring frequency - Daily

2.3. Analysis and monitoring methods

Physico-chemical parameters

Seawater temperature was measured using a standard digital thermometer. Salinity was determined using refracto meter. Seawater pH was measured soon after collection by using pre-calibrated digital pH-meter. Turbidity was measured using Elico water quality analyzer. Total Suspended Solids (TSS) was measured by filtering a known volume of sample through a pre-weighed 0.45µ Whatman glass fibre filter paper (GF/C) using a Millipore filtering system. Dissolved oxygen (DO), Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) were analyzed by following Strickland and Parsons

method (1972). Analyses of calcium (Ca), magnesium (Mg) and chlorides will be done titrimetrically. Nitrates (NO_3) and nitrites (NO_2) were measured spectrophotometrically by following the method of Strickland and Parson (1972). Total coliform bacteria were measured using MPN method.

Sediment samples were collected from all the sites by using Van Veen Grab sampler. Sediment pH was measured using pH meter. Oil and grease in sediment was analysed using separating funnel method. Organic matter in sediment was estimated by the method described by El Wakeel and Riley (1957). Phytoplankton and zoo plankton samples were collected from the surface water at all the stations. For the quantitative estimation, a Sedgewick Rafter Counting Cell was used. The sediment samples pre stained with Rose Bengal was sieved through 1 mm and 63µ mesh sieves by adding copious amount of water for separating macro and meio benthic fauna respectively. The organisms retained in the sieves were preserved in 5% formalin and were identified using standard manuals. Heavy metals such as lead, nickel, cadmium, chromium and mercury in the water samples and heavy metals such as manganese, lead, nickel, cadmium, chromium and mercury in the sediment samples were analysed using Atomic Absorption Spectrophotometer (AAS). Sedimentation rate was measured by deploying sediment traps (English et al, 1997) under the water.

Coral monitoring

The percentage cover of corals and other sessile benthic categories were assessed by Line Intercept Transect (LIT) method following English *et al.,* (1997). The survey was started with mapping of Island reef areas, using manta tow technique (Done *et al.,* 1982). The assessment involved SCUBA diving. Depending on the size of the reefs, 15 to 25 transects were laid on each Island. The percentage cover of each life form category, percentage of bleaching and disease prevalence were calculated following the method of English *et al.,* (1997). Coral recruitment was recorded using haphazardly placed permanent 1 m^2 quadrats. The permanent quadrats, used for long term monitoring of recruits, were placed on substrates suitable for coral settlement, in particular dead reefs (Tamelander, 2002). Linear growth coral of coral colonies were measured by tagging the colony and measuring the distance from the baseline to the end of the branch with flexible plastic ruler (Gladfelter, *et al.,* 1978). Coral diseases were identified by following the coral disease handbook of Raymundo and Harvell, (2008). Disease prevalence in a study location were calculated by a simple formula; percentage of diseases is the proportion of diseased colonies to the total measured population of colonies.

$$\text{Disease prevalence} = \frac{\text{Number of diseased colonies per site}}{\text{Number of colonies examined per site}} \times 100$$

Life form Categories and codes

CATEGORIES		CODE	NOTES / REMARKS
Dead Coral		DC	recently dead, white to dirty white
Dead Coral with Algae		DCA	this coral is standing, skeletal structure can still be seen
Acropora	Branching	ACB	at least 2° branching, e.g. *Acropora palmate*, *A.formosa*
	Encrusting	ACE	usually the base-plate of immature *Acropora* forms, e.g. *A. palifera* and *A. cuneata*
	Sub massive	ACS	robust with knob or wedge-like form e.g. *A. palifera*
	Digitate	ACD	no least 2° branching, typically includes *A. humilis*, *A. digitifera* and *A. gemmifera*
	Tabular	ACT	horizontal flattened plates e.g. *A. hyacinthus*
Non – Acropora	Branching	CB	at least 2° branching e.g. *Seriatopora hystrix*
	Encrusting	CE	major portion attached to substratum as a laminar plate e.g. *Porites vaughani*, *Montipora undata*
	Foliose	CF	Coral attached at one or more points, leaf-like, or plate-like appearance e.g. *Merulina ampliata*, *Montipora aequituberculata*
	Massive	CM	Soild boulder or mound e.g. *Platygyra daedalea*
	Submassive	CS	tends to form small columns, knobs, or wedges e.g. Porites lichen, *Psammocora digitata*
	Mushroom	CMR	solitary, free-living corals of the *Fungia*
	Heliopora	CHL	blue coral
	Millepora	CME	fire coral
	Tubipora	CTU	organ-pipe coral, *Tubipora musica*
Other Fauna:			
Soft Coral		SC	soft bodied coral
Sponge		SP	
Zoanthids		ZO	examples are *Platythoa*, *Protopalythoa*
Others		OT	Ascidians, anemones, gorgonians, giant clams etc.
Algae	Algal Assemblage	AA	consists of more than one species
	Coralline Algae	CA	
	Halimeda	HA	
	Macroalgae	MA	weedy/fleshy browns, reds, etc.
	Turf Algae	TA	lush filamentous algae, often found inside damselfish territories
Abiotic	Sand	S	
	Rubble	R	unconsolidated coral fragments
	Silt	SI	
	Water	WA	fissures deeper than 50 cm
	Rock	RCK	
Other		DDD	Missing data

Seagrass monitoring

Quadrates (50 cm×50 cm) divided into 25 squares (10 cm × 10 cm) were used to study the percentage cover of seagrass species through visual estimation (Saito and Atobe,

1970). 100 m transects were made on the seagrass meadows and transects were separated from each other by a reasonable distance (50 -100 m) and were parallel to each other and perpendicular to the shore. Quadrates were laid at regular intervals (5 m) along each transect. Minimum 2-4 replicates of quadrates were laid depending on the abundance of the seagrass. Individual shoots were also counted randomly at every transect. Each seagrass species was collected and sorted by taxnomical order for further identification (English *et al*., 1997). Biomass was estimated using the method of Mellors (1991). The biomass or standing crop is expressed in dry weight m^2.

Fish population monitoring

Fish density and diversity was assessed by visual census applying Belt Transect method (English et al., 1997).

Fish Landing Data

Fish landing data was collected by following the method of Srinath *et al*., (2005). The following are the steps:

i. Enquiring of the total number of fishing days in the particular village (Sampling will be done normally for 16-18 days per month in each selected village).

ii. Enquiring of the total number of fishing crafts on the particular fishing day.

iii. 1: 6 boats will be surveyed in case of large numbers of boats (Random). A minimum total of 15 boats at least will be surveyed in which 100% of the catch has to be checked.

iv. The different fishing gears will be surveyed. Fish catch by different gears will be noted down if necessary.

v. Species composition of the fish landed will be checked out.

vi. Weight of a group (eg: carangids, groupers) / genus (*Scomberoides, Tylosurus* etc.) / species (*Sardinella longiceps, Rastrelliger kanagurta*) per the fishing crafts surveyed to be calculated. For this the weight of a standard basket will be enquired and the total number of standard baskets in that boat has to be enquired (Eg:- Weight of one standard basket of Grouper in Tuticorin landing center = 10 kg. Total number of standard baskets in the boat 'A' = 5. Groupers landed in boat 'A' = 10 x 5 = 50).

vii. Similarly the weight of groupers in all the boats surveyed is calculated. The resultant data gives the total groupers landed in the given day in the surveyed boats. This data is then made up to the total number of boats gone for fishing in the particular fishing day. The resultant data is further calculated up to one month by multiplying the total number of fishing days during that month.

3. Results - Executive Summary

(January 2023 to June 2023 - Half Yearly Report)

3.1. Marine water and sediment quality

The water temperature was recorded between 26.50 and 31.45^{o}C; Salinity value was recorded between 34.2 and 36.4 ppt; pH level was recorded between 7.68 and 8.55; turbidity level ranged from 5.62 to 8.40 NTU; the TSS level ranged from 112.5 to 162.5 mg/l; dissolved oxygen level was recorded between 4.52 and 6.22 mg/l; BOD level ranged from 1.45 to 2.6 mg/l; COD level ranged from 1.14 to 1.54 mg/l; calcium content varied from 415 to 625 mg/l; magnesium value ranged from 1239 to 1367 mg/l; nitrate level ranged from 1.27 to 1.58 µg at/l; nitrite level ranged from 0.15 to 0.51 µg at/l; chloride level ranged from 17.4 to 17.9 g/l; oil and grease level was recorded between 0.26 and 0.55 mg/l.

In sediment samples, the pH value varied from 7.78 to 8.46; oil and grease level ranged from 0.26 to 0.56 mg/kg; organic matter value ranged from 2.475 to 3.678%; and heavy metal level in water and sediment samples was within the acceptable limits.

No coliform bacteria were recorded in water and sediment samples. The phytoplankton density was recorded between 277.57 and 413.81 cells/l. The zooplankton density was recorded between 182478 and 355434 no/m^3. Among the benthic macro fauna, gastropods and bivalves were the dominant categories.

In coral reef area, the water temperature was recorded between 26.4 and 31.45°C; turbidity level varied from 4.4 to 6.45 NTU; TSS level ranged from 77.5 to 171.5 mg/l and sedimentation rate ranged from 52.36 to 80.75 mg/cm^2/day.

In sea grass area, the water temperature was recorded between 26.25 and 31.4°C; turbidity level varied from 5.55 to 6.97 NTU; TSS level was recorded between 92.71 and 152.44 mg/l and sedimentation rate ranged from 60.06 to 80.91 mg/cm^2/day.

3.2. Coral monitoring

The live coral cover in Vaan Island was 22.59, 32.15 and34.89% respectively in sites 1, 2 and 3 during January 2023; it was 22.61, 32.16 and 34.90 respectively during February 2023; it was 22.62, 32.18 and 34.91% respectively during March 2023; it was 22.63, 32.19 and 34.91% respectively during April 2023; it was 22.64, 32.20 and 34.91% respectively during May2023; it was 21.64, 32.21 and 34.92% respectively in June2023. In January 2023, the soft coral cover was 7.61, 2.01 and 2.27%respectively in sites 1, 2 and 3; it was 7.62, 2.02 and 2.25% respectively during February 2023; it was 7.63, 2.03 and 2.27% respectively during March2023; during April 2023, it was 7.64, 2.03 and 2.28% respectively; during May2023, it was 7.65, 2.03 and 2.30% respectively and it was 7.66, 2.01 and 2.32% respectively during June 2023. CM and ACB were the dominant coral life form categories during January to June 2023. Coral recruitment was highest for the genera *Acropora, Porites* and *Montipora* and most common coral species were *Acropora muricata*, *A.cytherea*, *A. intermedia*, *A. robusta*, *Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. In Vaan Island, eight types of coral health issues were recorded which include bleaching, BBD, BSD, PSD, WBD, WPD, WSD and YBD. Among disease type, BBD was the most dominant category with 3.11%followed by WBD with 2.33% respectively during January to June 2023

mainly in genus Montipora. Totally six coral genera were affected by them which are *Goniastrea, Dipsastrea, Favites, Porites, Turbinaria* and *Acropora*.

The live coral cover in Koswari Island was 21.48, 21.06 and 19.45% respectively in sites 1, 2 and 3 during January 2023; it was 21.50, 21.08 and 19.46% respectively during February2023; it was 21.52, 21.09 and 19.46% respectively during March 2023; during April 2023, it was 21.51, 21.11 and 19.47% respectively; during May2023, it was 21.53, 21.11 and 19.48% respectively and during June 2023, it was 21.54, 21.12 and 19.47% respectively. In January2023, the soft coral cover was 1.83, 3.45 and 2.61% respectively; it was 1.85, 3.48 and 2.62% respectively during February 2023; it was, 1.86, 3.51 and 2.61% respectively during March 2023; during April 2023, it was 1.87, 3.53 and 2.60% respectively; during May 2023, it was 1.88, 3.54 and 2.61% respectively and it was 1.87, 3.55 and 2.62% respectively during June 2023. CM, CF and ACT were the dominant coral life form categories during Januaryto June2023. Coral recruitment was highest for the genera *Turbinaria*, *Acropora* and *Porites* and most common coral species were *Acroporamuricata*, *A.cytherea*, *A. intermedia*, *A. robusta*, *Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. In Koswari Island, ten types of coral health issues were recorded which are BBD, BSD, PSD,WBD, WPD, WSD, YBD, YSD, T and B. Among disease type, PSD was the most dominant category with 2.34% followed by BBD with 2.23% respectively during January to June2023mainly in genus Acropora. Totally six coral genera were affected which are *Goniastrea, Dipsastrea, Favites, Porites, Turbinaria* and *Acropora*.

The live coral cover in Kariyachalli Island was 34.12, 33.50 and 33.97% respectively in sites 1, 2 and 3 during January2023; it was 34.10, 33.49 and 33.95% respectively during February2023; it was 34.08, 33.47 and 33.94% respectively during March 2023; during April2023, it was 34.06, 33.46 and 33.91% respectively; during May 2023, it was 34.08, 33.47 and 33.91% respectively and during June 2023 it was 34.09, 33.46 and 33.92% respectively. The soft coral cover in January 2023 was 4.88, 4.38 and 7.43% respectively; it was 4.89, 4.39 and 7.42% respectively during February2023; it was 4.88, 4.37 and 7.41% respectively during March2023; it was 4.87, 4.36 and 7.42% respectively during April2023; it was 4.88, 4.37 and 7.43% respectively during May2023; and it was 4.87, 4.38 and 7.43% respectively during June2023. The CM and CF were the dominant coral life form categories during January to June2023. Coral recruitment was highest for the genera *Acropora, Turbinaria* and *Porites* and most common coral species were *Acroporamuricata*, *A.cytherea*, *A. intermedia*, *A. robusta*, *Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. Totally nine types of coral health issues were recorded which include bleaching, BBD, BSD, PSD, WBD, WPD, YBD and YSD. Among disease type, BBD was the most dominant category with 3.17% followed by BSD with 2.11% respectively during January to June2023mainly in genus *Acropora*. Totally seven coral genera were affected by them which are *Montipora, Goniastrea, Dipsastrea, Favites, Porites, Turbinaria* and *Acropora*.

The live coral cover in Vilanguchalli Island was 19.64, 20.04 and 25.55% respectively in sites 1, 2 and 3 during January2023; it was 19.63, 20.02 and 26.54% respectively during February2023; it was 19.62, 20.01 and 26.53% respectively during March2023; it was 19.61, 20.02 and 26.51% respectively during April2023; it was 19.60, 20.03 and 26.52% respectively during May2023; and during June2023it was 19.61, 20.04 and 26.51% respectively. In January2023, the soft coral cover was 1.89, 1.78 and 1.83% respectively; it was 1.88, 1.76 and 1.82% during February2023; it was 1.86, 1.75 and 1.81% respectively during March2023; it was 1.85, 1.76 and 1.81% respectively during April2023; 1.84, 1.75 and 1.82% respectively during May2023; and during June2023, it was 1.85, 1.76 and 1.82%

respectively. The CF and CE were the dominant coral life form categories during the period January to June2023. Coral recruitment was highest for the genera *Acropora* and *Turbinaria* while most common coral species were *Acropora muricata*, *A. cytherea*, *A. intermedia*, *A. robusta*, *Pocillopora damicornis* and *Porites* sp. In Vilanguchalli Island, eight types of coral health issues were recorded which are BBD,BSD, PSD, WBD, WPD, WSD, YBD and B. Among disease type, BBD was the most dominant category with 2.19% followed by PSD with 1.86% respectively during January to June2023mainly in genus Acropora. Five coral genera were affected by them which are *Goniastrea, Porites, Montipora*, *Turbinaria* and *Acropora*.

The live coral cover in Villanguchalli Patch reef was 43.37, 43.35, 43.34, 43.35, 43.36 and 43.37% respectively during January, February, March, April, May and June 2023. Soft coral cover was 3.34, 3.32, 3.31, 3.32, 3.32 and 3.34% respectively. The ACB and CF were the dominant coral life form categories during the period between January to June2023. Coral recruitment was highest for the genera *Acropora, Turbinaria, Porites* and *Favites* while most common coral species were *Acropora muricata*, *A.cytherea*, *A. intermedia*, *A. robusta*, *Montipora foliosa*, *Pocillopora damicornis* and *Porites* sp. Totally seven types of coral health issues were recorded which are B, BBD, BSD, PSD, WBD, WPD, and WSD. Among disease type, BBD was the most dominant category with 1.12% respectively during January to June2023mainly in genus *Acropora*. Five coral genera were affected by them *Goniastrea, Porites, Montipora*, *Turbinaria* and *Acropora*.

3.3. Seagrass and fish population monitoring

The overall seagrass percentage cover was observed as 68.89% in February 2023 followed by January 2023 with 68.68%. No diseases were observed. In total, seven seagrass species were recorded and they are *Thalassia hemprichii, Halophila stipulacea, Halophila ovalis, Cymodocea serrulata, Halodule pinifolia, Halodule uninervis* and *Syringodium isoetifolium*. Among the seven seagrass species, dominant shoot density was recorded in *Cymodocea serrulata* as 188.01m^{-2} in March 2023 and the maximum productivity was recorded in *Cymodocea serrulata*as 64.27 $cm^{-2}day^{-1}$ in May 2023 followed by *Halophila stipulacea* as 59.59 $cm^{-2}day^{-1}$ in June 2023. Maximum seagrass biomass was recorded in *Cymodocea serrulata* as 162.76g dry weight m^{-2} in April 2023 followed by *Thalassia hemprichii* as 103.26 g dry weight m^{-2} in May 2023.

A total of 19 fish species were recorded and among them, *Sardinella* sp. was dominant followed by *Terapon* sp. Maximum number of fish density was observed at Station 13 during April 2023 with 228 / 50 m^{-2} followed by Station 10 during February 2023 with 226 / 50 m^{-2}.

3.4. Cage culture of fishes near outfall in Pattinamaruthoor coast

In Pattinamaruthoor fish cage, observations on fish revealed 11 species during January 2023 to June 2023. Among them, *Lujanus* sp. was the dominant followed by *Selaroides* sp. Maximum number of fish density was observed during March and June 2023 with 239Nos.

During the assessment period, climate-induced mild coral bleaching was experienced, however no coral mortality was observed and the bleached corals recovered.

3.5. Fish Landing Data

Study area: Landing areas of ten fishing villages - Thirespuram, Mottaigopuram, Siluvaipatti, Vellapatti, Tharuvaikulam, Pattinamaruthoor, Sippikulam, Vaipar, Periyasamipuram, Vembar.

The major fishery resources of Tuticorin coast are Tuna, Seer fishes, Groupers, Ribbon fishes, Penaeid shrimps, Crabs, lobster and so on. The fish stocks from the coast tend to concentrate along the continental shelf and the biodiversity is substantially higher than in temperate waters. Tuticorin is one of the major fish landing center along the Gulf of Mannar coast by both mechanized as well as traditional crafts. Tuticorin coast has 21 fishing villages which include 2 major landing and 20 minor landing areas. Among the 22 fish landing areas of Tuticorin coast, 10 major and minor landing areas have been randomly surveyed for the fish species and weight of fishes landed from January 2023 to June 2023. Major fishing gears operated in Tuticorin fishing area is Trawl net, Long line fishing, Gill net, Drift net, Purse seine, Trammel net, Stake net, traps and Hand line nets. Fishing activity in Tuticorin region was carried out by Deep Sea, Traditional and mechanized fishing vessels like Trawlers, Kattumaram, Fiber boats and Vallams. Commercial fish species and total catch landed at each village during this period was recorded and illustrated as follows.

The survey recorded maximum landing in Thirespuram with about 947229 Kg. followed by Tharuvaikulam with about 780265 kg during January 2023 to June 2023. The catch yield obtained in all ten landing areas has been illustrated in the table 4 and Fig. 5. During the study, 96 fish genus have been identified under the commercial fishery resource and are illustrated in the following table 5.

Table 4: Total catch in major landing centres during January 2023 to June 2023 in Tuticorin coast

Landing areas	Catch landed / 6 months
Thirespuram	**947229**
Mottaigopuram	**49501**
Siluvaipatti	**42579**
Vellapatti	**150403**
Tharuvaikulam	**780265**
Pattinamaruthoor	**19988**
Sippikulam	**346341**
Vaipar	**423588**
Periyasamipuram	**36108**
Vembar	**447008**
Total catch	**3243010**

Table 5. Species recorded in landing areas - Tuticorin coast					
1	*Ablennes hians*	33	*Euthynnus afffinis*	65	*Portunus pelagicus*
2	*Acanthocybium solandri*	34	*Gerres* sp.	66	*Portunus sannguineolatus*
3	*Acanthurus* sp.	35	*Harpulina* sp.	67	*Rastrelliger kanangurta*
4	*Aetoplatea* sp.	36	*Hemiramphus far*	68	*Rhizoprionodon* sp.
5	*Alectis indicus*	37	*Hilsa keele*	69	*Sardinella albella*
6	*Alopias* sp.	38	*Himantura uarnak*	70	*Sardinella longiceps*
7	*Arius substratus*	39	*Irundichthys* sp.	71	*Sargocentron rubrum*
8	*Atule mate*	40	*Istiophorus* sp.	72	*Saurida tumbil*
9	*Auxis thazard*	41	*Isurus oxyrinchus*	73	*Scarus ghibbus*
10	*Carangoides armatus*	42	*Katsuwonas pelamis*	74	*Scarus ghobban*
11	*Carangoides* sp.	43	*Lates calcarifer*	75	*Scolopsis vosmeri*
12	*Caranx* sp.	44	*Leiognathus equulus*	76	*Scomberoides commersonianus*
13	*Cardisoma canarium*	45	*Lethrinus* sp.	77	*Scomberoides lysan*
14	*Cephalopholis boenack*	46	*Liza tade*	78	*Scomberomorous commerson*
15	*Cephalopholis formosa*	47	*Lobotes surinamensis*	79	*Scylla tranquebarica*
16	*Cephalopholis sonnerati*	48	*Loligo duvauceli*	80	*Sepia pharonis*
17	*Charybdis cruciata*	49	*Lutjanus lutjanus*	81	*Sepioteuthis*
18	*Chichoreus ramosus*	50	*Mene maculata*	82	*Siganus javus*
19	*Chirocentron* sp.	51	*Metapenaeus* sp.	83	*Sphyraena barracuda*
20	*Coryphaena hippurus*	52	*Mobula japanica*	84	*Stolephorus commersonnii*
21	*Cynoglossus* sp.	53	*Mugil Cephalus*	85	*Strongylurus leiura*
22	*Dasyatis kuhlii*	54	*Nemapterus japonicus*	86	*Synatpura* sp.
23	*Dasyatis* sp.	55	*Nemapteryx caelata*	87	*Thunnus albacares*
24	*Dasyatis uarnak*	56	*Octopus aegina*	88	*Thunnus thynnus*
25	*Destodus erumi*	57	*Octopus cyaneus*	89	*Trachurus japonicus*
26	*Diagramma pictum*	58	*Octopus dolfusii*	90	*Trichurrus saavala*
27	*Dorytheuthis* sp.	59	*Pampus pampus*	91	*Turbinella pyrum*
28	*Drepane punctata*	60	*Paniluris homorus*	92	*Tylosurus* sp.
29	*Epinepheleus undulosus*	61	*Panilurus ornatus*	93	*Upeneus vittatus*
30	*Epinephelus areolatus*	62	*Paraupeneus indicus*	94	*Decapterus russelli*
31	*Epinephelus malabaricus*	63	*Penaeus* sp.	95	*Chiloscyllium griseum*
32	*Epinephelus merra*	64	*Plectrohinchus* sp.	96	*Charybdis natator*

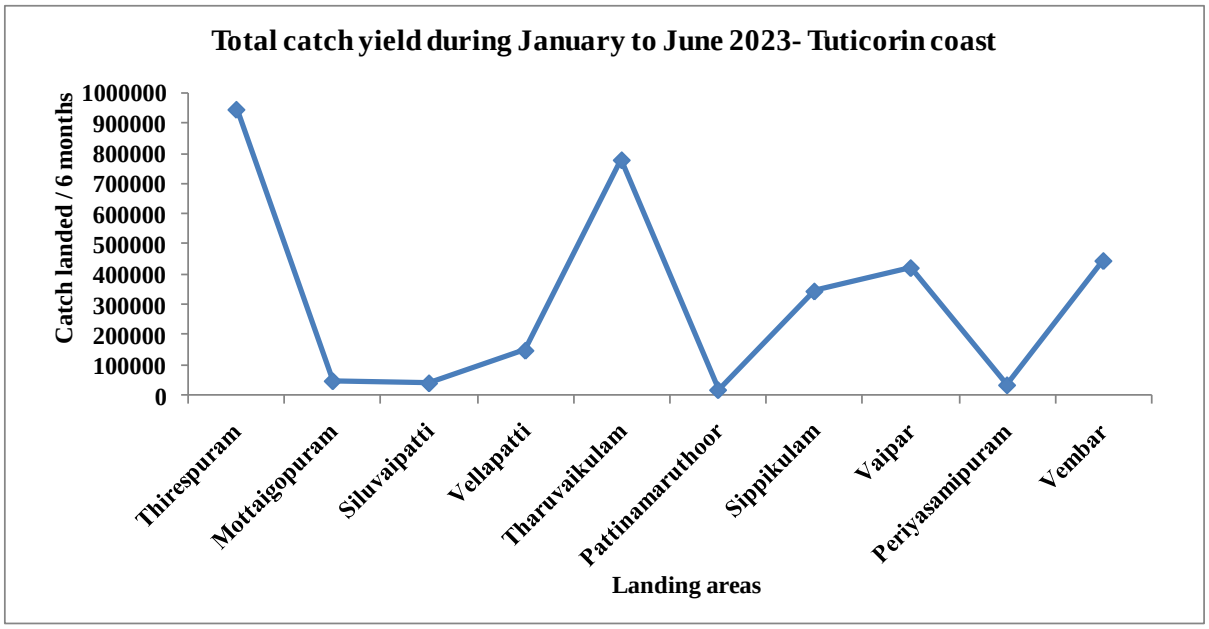

Fig.5: Total catch obtained during January 2023 to June 2023 in Tuticorin coast

Thirespuram

Total landing was recorded as 947229 Kg. Maximum landing was recorded in February 2023 (175909 kg) and minimum landing in May 2023 (123281 kg). Species dominantly observed in this landing area varies according to the season – Jacks (*Caranx* sp.,) dominantly found in March 2023; Emperors (*Lethrinus* sp., and *Lutjanus* sp.,) in June and January 2023; and Seer fish (*Scomberomorous commerson*.,) in February 2023. Species commonly recorded includes *Coryphaena hippurur*. *Sardinella* sp, *Auxis thazard*, etc.

- Dominant species – *Caranx* sp., *Lethrinus* sp., *Lujanus* sp., *Scomberomorous commerson.*
- Maximum catch recorded - February 2023
- Minimum catch recorded - May 2023

Mottaigopuram

Total landing was recorded as 49501 Kg. Maximum landing was recorded in February 2023 to about 9400 kg and minimum in May 2023 to about 6939 kg. Species dominantly recorded varies according to the season – shrimp *(Metapenaeus* sp.,) dominantly found in March 2023; Crustaceans - crab *(Portunus* sp.,) dominantly found in February 2023; and Shrimp (*Penaeus* sp.,) dominant in February 2023. Species commonly observed includes *Lethrinus* sp., *Sepiella* sp., *Loligo* sp., etc.

- Dominant species – *Metapenaeus* sp., *Portunus* sp., *Penaeus* sp.,
- Maximum catch recorded - February 2023
- Minimum catch recorded - May 2023

Siluvaipatti

Total landing was recorded as 42579 Kg. Maximum landing was recorded in February 2023 to about 8609 kg and minimum in June 2023 to about 5239 kg. Species dominantly found varies according to the season – Crustaceans - Crab (*Portunus* sp.,) recorded in April 2023; Shrimp *(Penaeus* sp., and *Metapenaeus* sp.,) in January 2023; and Emperors (*Lethrinus* sp.,) in April 2023. Species commonly observed includes *Sepiella* sp., *Scarus* sp., *Upeneus* sp., etc.

- Dominant species – *Portunus sp., Penaeus* sp., *Meytapenaeus* sp., *Lethrinus* sp.
- Maximum catch recorded - February 2023
- Minimum catch recorded – June 2023

Vellapatti

Total landing was recorded as 150403 Kg. Maximum landing was recorded in January 2023 to about 31374 kg and minimum in April 2023 to about 17601 kg. Species dominantly recorded varies according to the season – Crustaceans – crab (*Portunus pelagicus*., and *Portunus sanguinolentus*.,) dominantly recorded in January and March 2023; and Emperors (*Lethrinus* sp., and *Lutjanus* sp.,) in June 2023. Species commonly recorded includes *Paraupeneus indicus, Ablennes hians, Sepiella* sp., etc.

- Dominant species –*Portunus pelagicus., Portunus sanguinolentus., Lethrinus sp.*
- Maximum catch recorded – January 2023
- Minimum catch recorded – April 2023

Tharuvaikulam

Total landing was recorded as 780265 Kg. Maximum landing was recorded in March 2023 to about 175773 kg and minimum landing in May 2023 to about 62062 kg. Species dominantly recorded varies according to the season – Flat needle fish (*Ablennes hians*) dominantly recorded in February 2023; and Needle fish (*Tylosurus* sp.,) in une 2023. Species commonly observed includes – *Lethrinus* sp, *Thunnus albacares, Euthynnus affinis, Coryphaenae* sp., etc.

- Dominant species –*Ablennes hians., Tylosurus* sp., *Lethrinus* sp., *Thunnus albacares,*. etc..
- Maximum catch recorded – March 2023
- Minimum catch recorded – May 2023

Pattinamaruthoor

Total landing was recorded as 19988 Kg. Maximum landing was recorded in March 2023 to about 4198 kg and minimum landing in May 2023 to about 2304 kg. Species dominantly observed varies according to the season –Crustaceans - crabs *(Portunus pelagicus*., and *Portunus sanguinolentus.*,) dominantly found in March 2023 followed by Emperors (*Lethrinus* sp.,) in June 2023. Species commonly recorded includes – *Hemiramphus far, Lutjanus sp, Sepiella* sp., *Tylosurus* sp., *Carangoides* sp. etc.

- Dominant species – *Portunus pelagicus., Portunus sanguinolentus, Lethrinus* sp., *Hemiramphus far*.

- Maximum catch recorded – March 2023
- Minimum catch recorded – May 2023

Vaipar

Total landing was recorded as 423588 Kg. Maximum landing was recorded in February 2023 to about 82062 kg and minimum landing in March 2023 to about 62605 kg. Species dominantly observed varies according to the season – fin fishes (*Sardinella* sp.,) dominantly found in May 2023; Barracuda (*Sphyraena* sp.,) in June 2023; and Indian mackerel (*Rastrelliger kanangurta*.,) in March 2023. Species commonly recorded includes – *Lethrinus* sp., *Caranx* sp., *Trichurus saavala., Lutjanus* sp., *Tylosurus* sp., etc.

- Dominant species – *Sardinella* sp., *Sphyraena* sp., *Rastrelliger kanangurta., Lethrinus* sp.,, etc.
- Maximum catch recorded – February 2023
  Minimum catch recorded – March 2023

Sippikulam

Total landing was recorded as 346341 Kg. Maximum landing was recorded in May 2023 to about 63415 kg and minimum landing in January 2023 to about 41183 kg. Species dominantly observed varies according to the season – fin fishes (*Sardinella* sp.,) dominantly found in May 2023; Barracuda (*Sphyraena* sp.,) in May 2023; and Needle fish (*Tylosurus* sp*in* February 2023. Species commonly observed includes *Strongylura* sp., *Rastrelliger kanangurta*., *Carangoides* sp., *Lethrinus* sp., *Lutjanus* sp., etc.

- Dominant species – *Sardinella* sp., *Sphyraena* sp., *Tylosurus* sp., *Strongylura* sp.,, etc.
- Maximum catch recorded – May 2023
- Minimum catch recorded – January 2023

Periyasamypuram

Total landing was recorded as 36108 Kg. Maximum landing was recorded in February 2023 to about 7635 kg and minimum landing in June 2023 to about 3995 kg. Species dominantly recorded aries according to the season – Crustaceans – Crab (*Portunus* sp.,) were dominantly observed in February 2023; and Cephalopods (*Loligo* sp., and *Sepiella* sp.,) in February and January 2023 Species commonly observed includes – *Charybdis natator*., *Doryteuthis* sp., *Lethrinus* sp., *Metapenaeus* sp., etc.

- Dominant species –*Portunus* sp., *Loligo* sp., *Sepiella* sp., *Charybdis natator*., etc.
- Maximum catch recorded – February 2023
- Minimum catch recorded – June 2023

Vembar

Total landing was recorded as 447008 Kg. Maximum landing was recorded in January 2023 to about 97477 kg and minimum landing in May 2023 to about 29793 kg. Species dominantly observed varies according to the season – Fin fishes Emperors (*Lethrinus* sp.,), and Sardines (*Sardinella* sp) were dominantly recorded in January 2023; and Goat fish

(Upeneus sp.,) in February 2023. Species commonly found includes *Sphyraena barracuda*., *Atule mate*., *Lutjanus lutjanus*., etc.

- Dominant species –*Lethrinus* sp., *Sardinella* sp., *Upeneus* sp., *Sphyraena barracuda*,. etc.
- Maximum catch recorded – January 2023
- Minimum catch recorded – May 2023

The major dominant fishery resources and the peak landing month in the 10 landing areas are given in Table 6.

. **Table 6: Dominant fishery resources and maximum catch month/s in the 10 landing areas of Tuticorin coast during January 2023 – June 2023**

Landing areas	Dminant fishery resources	Peak season/ month
Thirespuram	Jacks (Caranx sp.,)	March 2023
	Emperors (*Lethrinus* sp.,)	June 2023
	Emperors (Lutjanus sp.,)	January 2023
	Seer fish*(Scomberomorous commerson)*	February 2023
Mottaigopuram	Shrimp *(Metapenaeus* sp.,)	March 2023
	Crustaceans - crab (*Portunus* sp.)	February 2023
	Shrimp (Penaeus sp.,)	February 2023
	Emperors (*Lethrinus* sp.,)	June 2023
Siluvaipatti	Crustaceans - crab (*Portunus* sp.)	April 2023
	Shrimp *(Penaeus* sp.,)	January 2023
	Shrimp *(Metapenaeus* sp.,)	January 2023
	Emperors *(Lethrinus* sp.,)	April 2023
Vellapatti	Crustaceans - crab (*Portunus pelagicus.,)*	January 2023
	Crustaceans - crab (*Portunus sanguinolentus.,)*	March 2023
	Emperors *(Lethrinus* sp.,)	June 2023
	Emperors *(Lutjanus* sp.,)	June 2023
Tharuvaikulam	Flat Needlefish *(Ablennes hians.*,)	February 2023
	Needlefish *(Tylosurus sp.*,)	June 2023
	Emperors *(Lethrinus* sp.,)	June 2023
	Yellowfin tuna (*Thunnus albacares*)	June 2023
Pattinamaruthoo r	Crustaceans - crabs (*Portunus pelagicus.*,)	March 2023
	Crustaceans - crabs (*Portunus sanguinolentus.*,)	March 2023
	Emperors *(Lethrinus* sp.,)	June 2023
	Halfbeak (*Hemiramphus far.*,)	January 2023
Vaipar	Sardines (*Sardinella sp.*,)	May 2023

	Barracuda (Sphyraenae sp.,)	June 2023
	Indian mackerel *(Rastrelliger kanangurta.,)*	March 2023
	Emperors *(Lethrinus* sp.,)	May 2023
Sippikulam	Sardines (*Sardinella* sp.,)	May 2023
	Barracuda (*Sphyraenae* sp.,)	May 2023
	Needlefish *(Tylosurus sp.,)*	February 2023
	Needlefish *(Strongylera* sp.,)	March 2023
Periyasamypuram	Crustaceans – Crab (*Portunus* sp.,)	February 2023
	Cephalopods *(Loligo sp.,)*	February 2023
Vembar	Emperors *(Lethrinus* sp.,)	January 2023
	Sardines (Sardinella sp.,)	January 2023
	Goat fish (*Upeneus* sp.,)	February 2023

4. Remarks

The marine environmental monitoring carried out during the period from January 2023 to June 2023 recorded no impact on the coastal ecology of Pattinamarudur including the coral reefs, seagrasses, associated fish population and other biological resources like macro- and meiobenthos and plankton. Also, there were no notable impacts on the physical and chemical properties and heavy metal concentrations of the marine water and sediment except for the seasonal variations. The monitoring data on the fish population indicates slight deviations from the baseline data, which may be attributed to the seasonal changes and fishing patterns. During the assessment period, climate-induced mild coral bleaching was experienced, however no coral mortality was observed and the bleached corals recovered The monitoring of cage culture of fish shows good fish population within and outside the cages, which indicates that the environment is healthy and fit for marine organisms.

5. References

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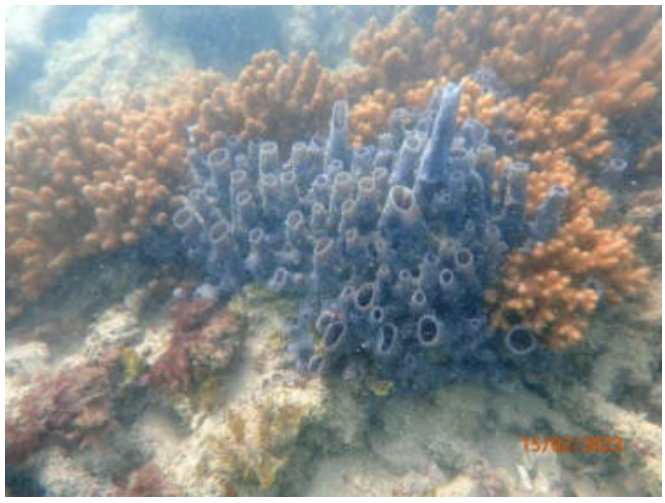
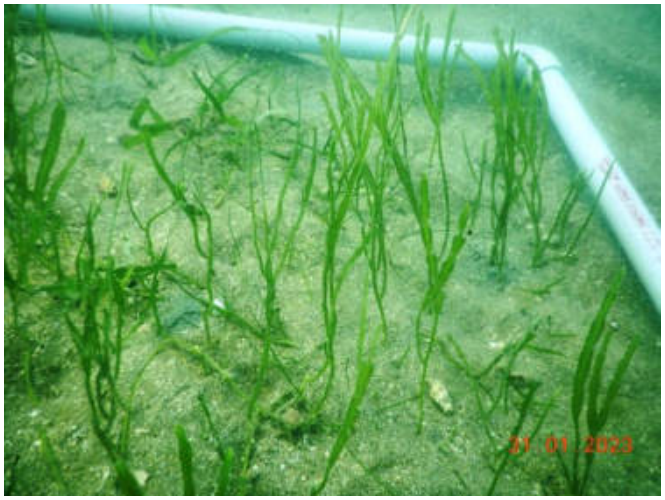
6. Photos

Status of seagrass, corals and fish population

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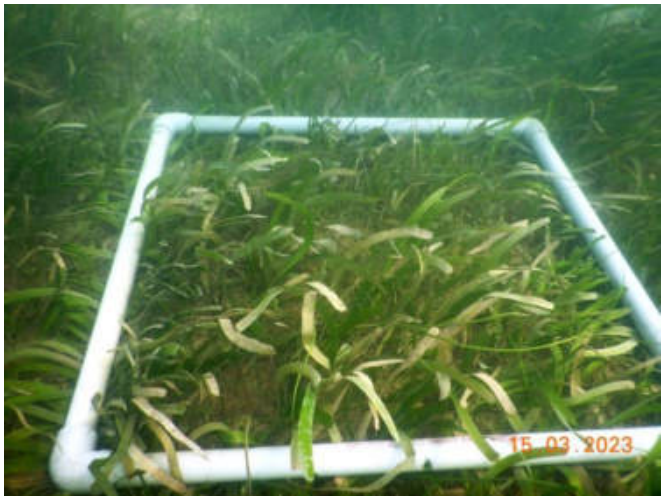
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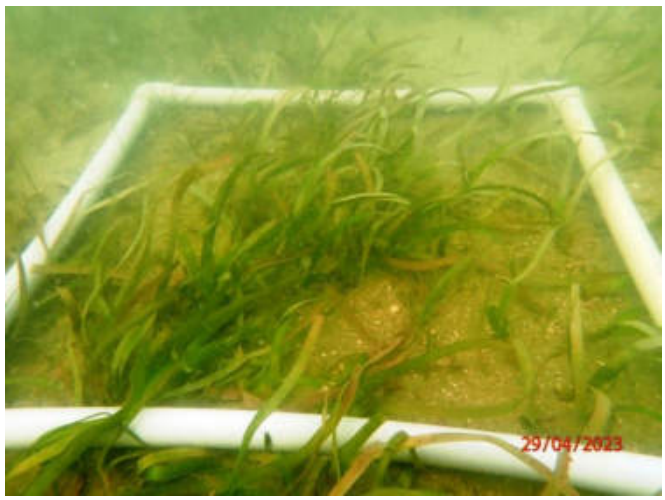
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Fishing Landing & Catch Monitoring

Therespuram

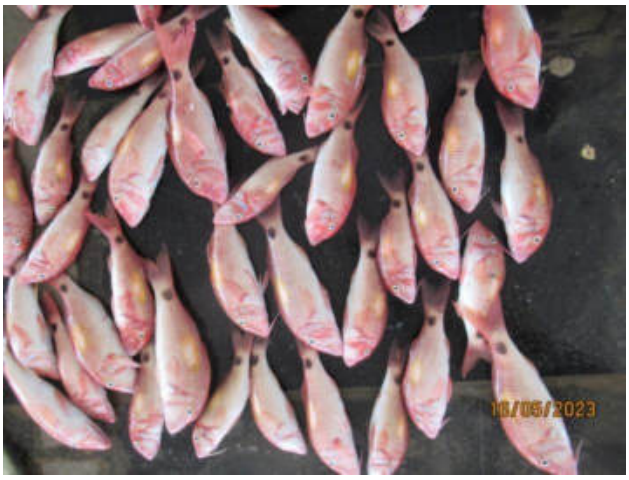





Mottaigopuram

Siluvaipatti

Vellapatti



Tharuvaikulam

Pattinamaruthoor

Sippikulam

Vaipar





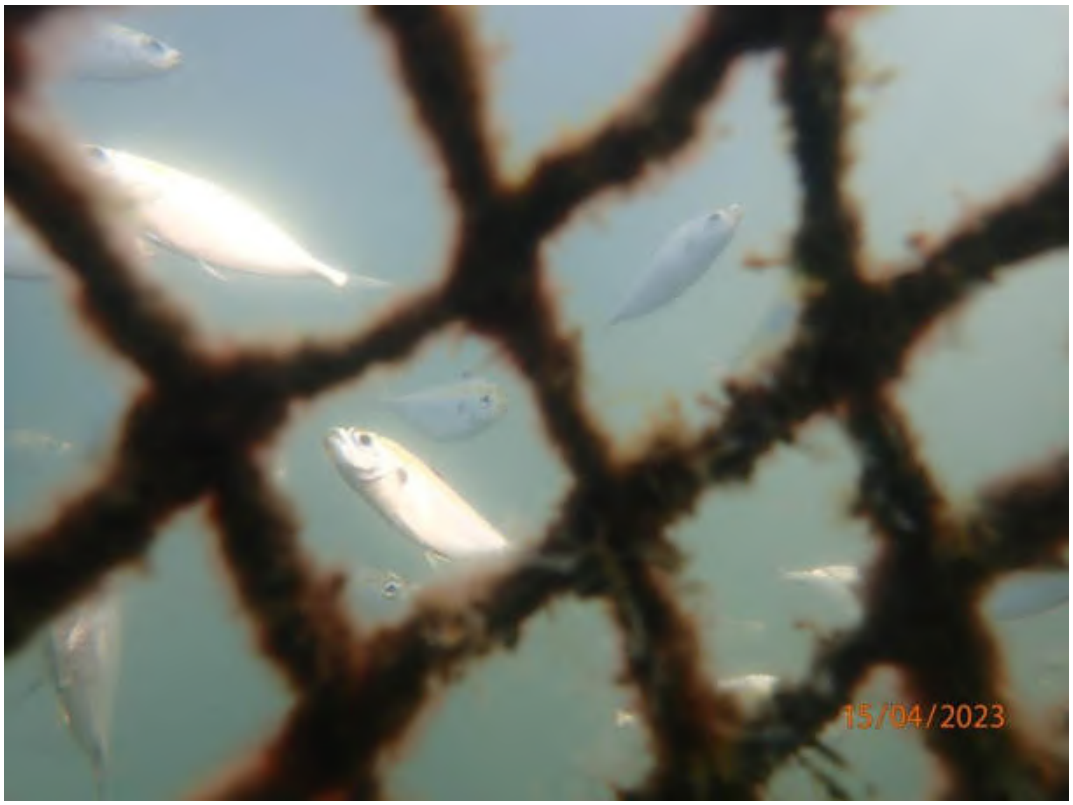

Periyachamypuram

Vembar





Fishing Population in Cage




06/02/2023

ANNEXURE -8

Annexure - 8

COMPLIANCE TO THE CONDITIONS LAID BY MoEF VIDE OFFICE MEMORANDUM No.F.No.J-13012 /8/2009-IA.II(T) dated 11.11.2020

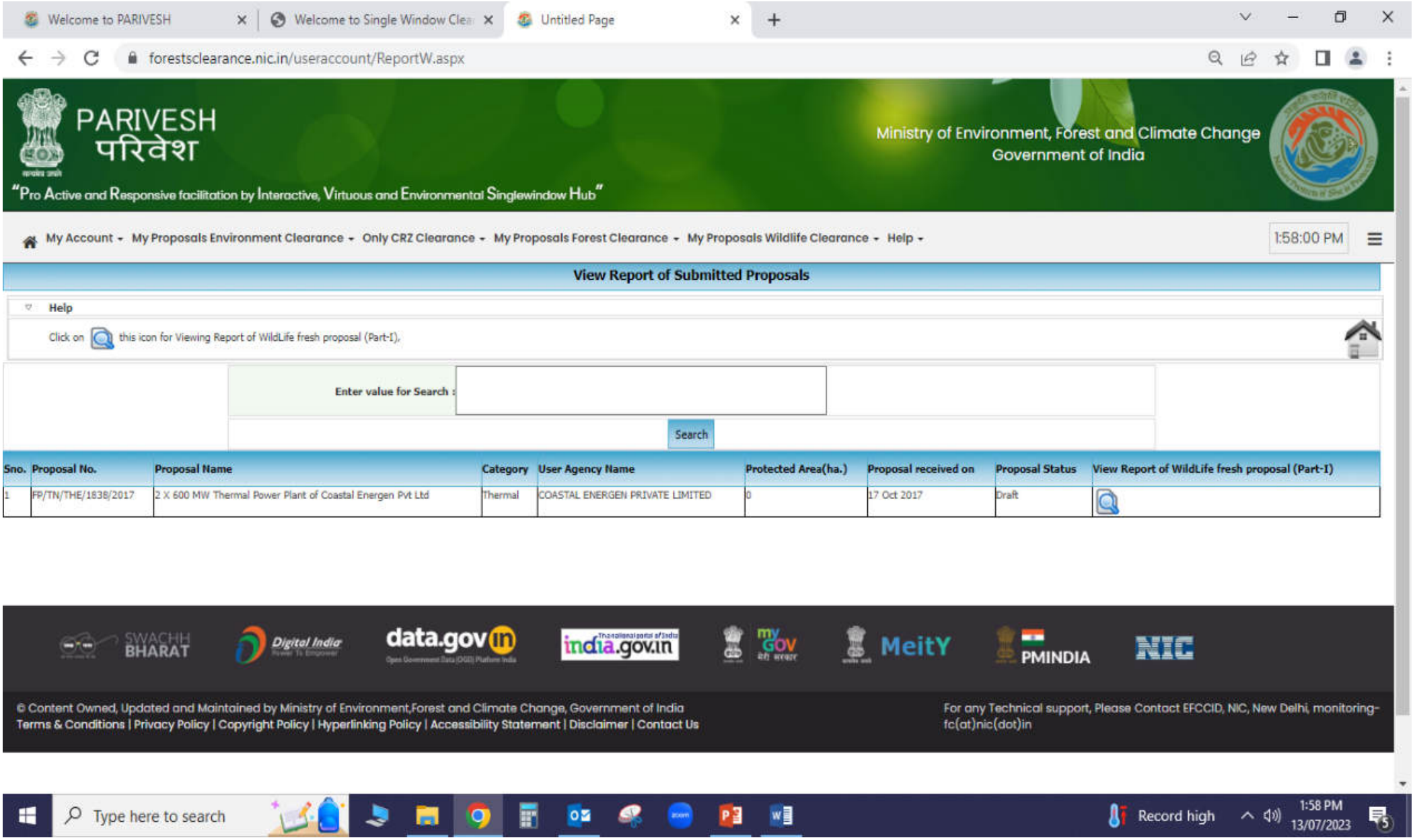
Period: January 2023 to June 2023

Sl.No.	CONDITIONS STIPULATED BY MoEF	COMPLIANCE
a)	Details regarding change in source (Location of the source, Proposed Quantity, Distance from the power plant and mode of transportation), Quality (Ash, Sulphur, Moisture Content and Calorific Value) shall be informed to the Ministry and its Concerned Regional Office .The Quantity of coal transported from each source along with the mode of transportation shall be submitted as part of EC Compliance Report.	Our Boiler is Designed with a blend of 50:50 imported and Indian Coal. We are using imported coal in our plant from Indonesia and we are transporting the coal from port/Melavittan Station to plant by using trucks. The quantity of coal transported for the period from January'23 to June'23 is as mentioned below; **Total -1196845 MT** **Imported Coal (Indonesia) - 1196845 MT** **Indian Coal - Nil**
b)	The Applicable flue gas emissions standards for particulate matter, Sulphur Dioxide, Oxides of Nitrogen and Mercury Shall be complied in line with Ministry's Notification Vide S.O 3305 (E) dated 7.12.2015 and subsequent emissions. A Progress of implementation and its compliance shall be submitted as part of Compliance Report.	Continuous Stack emission and ambient air quality monitoring are being carried out and records are being maintained. The monitored data for the period of January'23 to June'23 is enclosed as Annexure - 1. The results are well within the prescribed norms. FGD Feasibility Study Completed. We have floated Tenders and awaiting Bids for Appointment of Consulting agency for Tender Preparation, Bid Evaluation, and Engineering Support during Execution.
c)	Ash Content in the coal and coal Transportation is governed by the Ministry's Notification Vide S.O 1561(E) dated 21.5.2020.As far as possible, Coal Transportation shall be done by rail/conveyor or other eco-friendly modes. However, road transportation is allowed with tarpaulin covered trucks till the railway / conveyor belt infrastructure is made available. A Progress (Physical and Financial) of rail connectivity from nearest railway siding or conveyor connectivity to the power plant shall be submitted in the EC Compliance Report.	At present Coal is being transported to our plant through trucks which are fully covered with tarpaulin. Railway line laying work is under Progress by Southern Railways close to our Plant. Engineering Scale Plan for "Takeoff line" to our Plant submitted to Southern Railways for Approval.
d)	Additional ash pond is not allowed due to increase in ash content in the raw coal as against the ash pond permitted in the Environment Clearance. The 100% Fly ash utilization is to be achieved within four years in line with fly ash notification dated 14.09.1999, 27.8.2003,03.11.2009 & 25.01.2016 and amended time to time or extant regulation on fly ash utilization.	100 % Fly Ash utilization is being achieved.
e)	In case of exceptional circumstances project proponents may approach the ministry for seeking permission to use an emergency ash pond with cogent reasons if any.	Noted.
f)	The Details Regarding monthly generation , utilization and disposal of fly ash (including bottom ash) shall be submitted to the ministry and its regional office	Complied. Attached as Annexure -10

Coastal Energen Pvt. Ltd. TUTICORIN

ANNEXURE - 9

Annexure - 9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ANNEXURE - 10

ANNEXURE -10

FLY ASH GENERATION & UTTILISATION DETAILS

Name of the Industry: Coastal Energen Private Limited,
2 X 600 MW Coal based Thermal Power Plant,
Thoothukudi District - 628 105.

Period: January'2023 to June'2023

FOR THE YEAR	TOTAL ASH GENERATION		TOTAL ASH GENERATION	USAGE OF FLY ASH		TOTAL FLY ASH UTTILISATION	USAGE OF BOTTOM ASH			TOTAL BOTTOM ASH UTTILISATION	TOTAL ASH UTTLISATION
	FLY ASH GENERATION (LMT)	BOTTOM ASH GENERATION		CEMENT PLANT	BRICK INDUSTRIES		LANDFILL	BRICK INDUSTRIES	CEMENT PLANTS		
JANUARY - 2023	0.1869335	0.0467334	0.2336669	-	0.1869335	0.1869335	0.0467334	-	-	0.0467334	0.2336669
FEBRUARY-2023	0.0184119	0.004603	0.0230149	-	0.0184119	0.0184119	0.004603	-	-	0.004603	0.0230149
MARCH-2023	0.0742881	0.018572	0.0928601	-	0.0742881	0.0742881	0.018572	-	-	0.018572	0.0928601
APRIL-2023	0.0976755	0.0244189	0.1220944	-	0.0976755	0.0976755	0.0244189	-	-	0.0244189	0.1220944
MAY-2023	0.1031306	0.0257827	0.1289133	-	0.1031306	0.1031306	0.0257827	-	-	0.0257827	0.1289133
JUNE-2023	0.0904467	0.0226117	0.1130584	-	0.0904467	0.0904467	0.0226117	-	-	0.0226117	0.1130584

* 100% Utilization of Ash achieved.

Coastal Energen Pvt. Ltd. TUTICORIN Melamarudur

MK Parameswaran
Station Director