காமராஜர் துறைமுக நிறுவனம்
காமராजர் पोर्ट लिमिटेड
Kamarajar Port Limited
(A Company of Chennai Port Authority)
(Ministry of Ports, Shipping and Waterways - Government of India)

KPL/MS/HSE/MoEF&CC/2023 **Date: 14.08.2023**

To
Dr. M.R.G. REDDY, IFS,
Addl. Principal Chief Conservator of Forests (C),
Ministry of Env., Forest and Climate Change
Regional Office (SEZ), Ist and IInd Floor,
Handloom Export Promotion Council,

Sir,

Subject: Submission of Half-yearly compliance report on the conditions stipulated vide Environmental Clearance letters issued to various projects of Kamarajar Port – January to June 2023 - reg.

Please find enclosed herewith the compliance reports for the period of January to June 2023, on the conditions put forth by Ministry of Environment & Forests and Climate change, in the environmental clearances issued for the following projects.

1. Construction of new Satellite Port at Ennore, near Madras. Ministry's letter Ref: J-16011/9/87-IA, III dated 28.9.1992.

2. Development of Terminals for marine liquids, coal, iron and containers in second phase and associated capital dredging at Ennore port. Ministry's letter F. No. 10-28/2005-1A-III dated 19th May, 2006.

3. Development of Terminals for marine liquids, coal, iron and containers in second phase and associated capital dredging at Ennore port. Ministry's letter F. No. 10-28/2005-1A-III dated 10th September, 2007.

4. CRZ and Environmental clearance for the construction of General Cargo Berth at Ennore port cargo terminal project. MoEF Letter F.No.11-21/2009-IA-III dated 23.7.2009.

5. Expansion and modernization of existing handling of Multicargo container terminal at Kamarajar Port by M/s. Kamarajar Port Limited - Environmental and CRZ clearance (Development of Multicargo berth (270m) and container terminal (730m). MoEF's letter F.No. 10-28/2005-IA-III dated 24.12.2014.

14/08/2023

Registered Office :
No.17, Jawahar Building,
Rajaji Salai, Chennai - 600 001.
Phone : 044-2525 1666-70
Fax : 044-2525 1665
CIN : U45203TN1999PLC043322

पंजीकृत कार्यालय :
न. 17, जवाहर बिल्डिंग,
राजाजी सालै, चन्नै - 600 001.
फोन : 044-2525 1666-70
फैकस : 044-2525 1665

Port Office :
Vallur Post, Chennai - 600 120.
Ph : 044-2795 0030-40 Fax : 044-2795 0002
पोर्ट कार्यालय : वल्लूर, पोस्ट, चन्नै - 600 120.
फोन : 044-2795 0030-40 फैकस : 044-2795 0002
टोल फी सस्या / TOLL FREE NUMBER : 1800 - 425 - 1203

website : www.kamarajarport.in

6. Development of additional coal berths (CB3 and CB4) at Kamarajar Port, Tamil Nadu by M/s. KPL Environmental and CRZ clearance –MoEF's Letter F.No. 11-51/2012–IA-III dated 12.03.2015.

7. Development of facilities envisaged in the Port Master Plan (Phase-III) by M/s Kamarajar Port Limited – MoEF's letter F. No. 11-51/2012-IA-III dated 30.10.2018.

8. CRZ Clearance for Establishment of 1MLD RO Desalination Plant at M/s.Kamarajar Port Ltd., by M/s. M/s.Kamarajar Port Ltd., Vallur Post, Chennai, Tamilnadu.

While the modification of iron ore terminal to handle coal by M/s SICAL Iron Ore Terminal Ltd, was in progress after grant of Environmental Clearance from Ministry, the Lender to the project M/s YES Bank Ltd, has given notice for 'Event of financial default on M/s SICAL Iron Ore Terminal Ltd., to KPL on 07.11.2020. Accordingly, in line with the License agreement, KPL has served *"Notice of Intent to Terminate"* to M/s SICAL Iron Ore Terminal Ltd on 20.12.2020. Subsequent to that, the License Agreement No. 20 of 2016 dated 11.7.2016 executed between KPL and M/s SIOTL stands terminated with effect from 19.6.2021 consequent to issuance of Termination Notice dated 22.3.2021 by KPL. As directed by the Committee of Creditors, the liquidation process of M/s SICAL Iron Ore Terminal Ltd., is in progress.

Consequent to that, the project *'Modification of Iron Ore Terminal to handle Coal'* is presently stalled due to the above said reasons; hence the half-yearly compliance report for the said project is not included in the above list.

This is for kind information and records please.

Yours faithfully,

14/08/2023

Chief Manager (HSE)
Encl: As above.

Cc to: 1. Regional Director, Scientist-E, Central Pollution Control Board, Regional Office, Chennai, Email:vlaxmi@cpcb.nic.in

2. The District Environmental Engineer, 88/A, SIPCOT Industrial Area, Gummidipoondi, Thiruvallur-601201, Email:dcegummidipoondi@gmail.com

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines

for

"CONSTRUCTION OF NEW SATELLITE PORT AT ENNORE"

CONDITIONS COMPLIED AS PER THE GUIDELINES OF THE MINISTRY OF ENVIRONMENT AND FOREST ISSUED VIDE LETTER DATED 28/09/1992

Ref: J-16011/9/87-IA, III dated 28.9.1992

Ennore Port has been planned and developed for receiving coal exclusively for Thermal Power stations of Tamil Nadu Electricity Board (TANGEDCO). Ennore Port was declared as major port on March 23, 1999. Ennore Port is the first Major Port incorporated as a company under the Companies Act, 1956 on October 11, 1999. Ennore Port has been renamed as Kamarajar Port in the year 2017.

The commercial operation of Port was started on June 22, 2001.

S.No	MoEF Guidelines	Compliance report
(i)	The total land area of the Project should be limited to 400 Ha as proposed	As per Environment clearance letter issued by Ministry of Environment & Forests for the "Construction of new satellite port at Ennore near Madras in Tamilnadu" vide letter dated 28.9.1992, the total land area accorded was 400 ha. Subsequently port has developed new projects under Phase-II and port has developed various new projects phase wise. Port has acquired 950 Acres of land from TIDCO during the year 2002 and was shown for obtaing Environment & CRZ clearance for the development of second phase project at KPL. The stock yard for the coal, iron ore, tank farm for Marine Liquid Terminal were developed in these lands. Ministry of Environment & Forests had accorded Environment and CRZ clearances vide No. 10-28/2005–IA-III dated 19th May 2006. For subsequent developments, Port has acquired 679 Acres of land from Salt Department during the year 2010 & 2014. The lands were meant for the development of stackyard for additional Coal berths (CB3&4). Ministry of Environment & Forests had accorded Environment and CRZ clearances vide letter No. F.No.11-

		51/2012-IA.III dated 12th March 2015. The total land area of port is 2787.29 Acres. The remaing portion of the land is shown in the Development of facilities envisaged in the Port master plan project, for which Environment & CRZ clearance is sought. At present, the total Port area is 1128.45 Ha. The details of land procured by KPL is tabulated enclosed as **Annexure-I.**
(ii)	Hill features of Karikkal and Bodiparai hills should not be destroyed for the construction of breakwater since this will drastically change the landscape.	No quarrying operation was carried out in Bodaparai hill. After completion of construction of the breakwaters, the quarry was handed over to District Collector, Vellore District by the Chennai Port vide its letter No.11/6828/96/E dated 07.01.2002, along with abandonment certificate for closure of Karikkal quarry issued by Directorate of Mines, Safety Oorgaum.
(iii)	Quarrying operations must be carried out with utmost care giving consideration to the topography, vegetation and drainage system in consultation with expert institutions like Centre for Mining Environment, Indian School of Mines, Dhanbad. Quarrying site must be rehabilitated properly keeping in view such measures as proper terracing, additional top soil and reforestration. Major blasting in the port area should not be undertaken;	**Complied with.** The Chennai Port Trust authorities have informed that rehabilitation of the quarry site was taken up and restored. Director of Mines safety, Oorgaum has issued Abandonment Certificate for closure of Karikkal quarry.
(iv)	A detailed Environment Management Plan should be prepared for each of the quarry site proposed and proper landscaping should form part of these operations. This should be included as a condition in the contracts. Its full implementation is the responsibility of the project authorities;	**Noted and complied with.**

(v)	Alternate sources of water supply other than tapping of ground water through bore wells must be explored to avoid intrusion of salt water since fresh water is scare in the island. A specific study should be undertaken on the ground water potential, recharge capacity, present drawl and future plans in an integrated manner. State/central ground Water Board should be fully involved in this study. The report should be submitted within one year.	**Complied with.** The water for construction, drinking, etc., is brought in the trucks and no deep bore wells are constructed in the project area.
(vi)	Dredging operations must be undertaken in stages in consultation with some expert institution like CWPRS, in such a way as to ensure that these operations do not deteriorate the surface water quality which must be maintained within the prescribed standards. Water parameters should be measured on regular intervals to monitor water quality. Dredging material should not be used for filling up any water body;	**Complied with.**
(vii)	Large scale dumping of waste shall not be undertaken by the Project Authorities without clearance from the environment angle. This is to ensure that marine ecology of the area is not affected by dumping in the marshy lagoon/low level areas;	**Complied with.**

(viii)	A green belt of appropriate width (say 200 meters) must be provided along the periphery of the port excluding the water area. Adequate provision for the initial cost for greening and maintenance has to be made in the project cost and subsequent annual budget for the port;	**Complied.** In 1992 the port was conceived as a satellite port to handle coal through two coal berths. Environment clearance was issued to develop green belt in an area of 15 Hectares. However, the port diversified into a multi-cargo port and subsequently a land use plan was developed. At present port is having a green belt area of 636.14 acres which includes a green belt (planted) 210.74 acres, green cover (natural) 349.26 and mangroves in an area of 76.14 acres. Port is continuously developing green belt area. The expenditure incurred during last three years for the development of green belt are as below. 2020-21= Rs. 53,23,979 2021-22= Rs.75,16,786 2022-23= Rs.53,90,877 Port has planned for the development of green belt of 68.66 acres inside the custom bound area and 621.91 Acres outside the custom bound area. The total green belt area of the port will be 690.77Acres.
(ix)	Green belt development of 50 ha of land instead of 25 ha proposed inside the port should be developed. This may spread in different pockets in vacant areas and need not be concentrated on one area. Apart from this green belt area of about 5.00 million sq m available in the island should be sustained by providing proper maintenance. Appropriate fund allocation towards initial cost for greening and maintenance of 50 ha of land and 5.00 million sq m available in the island has to be	Port has acquired additional land from various Government authorities only like TIDCO, TNEB, salt Department, except 31.97 Acres of land which was transferred from private party (patta land). At present total Port area is 1128.45 Ha. At present port is having a green belt area of 636.1 acres which includes a green belt (planted) 210.74 acres, green cover (natural) 349.26 and mangroves in an area of 76.14 acres. Port has planned for the development of green belt of 68.66 acres inside the custom

	provided in the project cost and in the subsequent annual budget of the port;	bound area and 621.91 Acres outside the custom bound area. The total green belt area of the port will be 690.77Acres.
(x)	Suitable low lying areas should be identified for mangrove plantation and provision of the required amount must be made for this purpose in the project cost by the project authorities;	**Complied with.** Port in association with Tamilnadu Forest Department had identified and planted mangroves along the coast line between Ennore and Pulicat. Tamilnadu Forest Department vide letter no. D2/6240/99 dated 05.09.2003 has informaed about to dig channels and plantoing of mangrove species at Thangal Perungalam (7.75ha) and at Kalanchi (7.5ha)respectively. The same are complied with.
(xi)	The project authorities must ensure that no cutting of trees take up place in the project area.	No cutting of trees was done.
(xii)	With the operation of Ennore Port as a measure of decongestion of Madras port the traffic in Madras port must be gradually reduced. Ministry of Surface Transport, Madras Port Trust and Ennore Port Trust must ensure that adequate measures in this regard are taken.	**Complied with.** Handling of Thermal coal for TNEB is completely shifted from Chennai port to Kamarajar Port (Ennore port).
(xiii)	To control dust pollution from coal, following measures must be adopted. (a) Totally enclosed continuous loaders / un-loaders and conveyor system should be adopted (b) Dust extraction system should be provided at all transfer points to minimize dust generation during stacking, loading, transferring operations as well as to minimize wind blown dust from the stack yard, proper water spraying should be done.	**Complied with.** The following measures are taken to control the dust. Dust pollution preventive measures have been taken up by TNEB, the operators of the Berths. Coal from the ship is unloaded through shore based gantry cranes with grab un-loaders and fed to the conveyor system to the thermal power plant. No coal

		is stored inside the port. In addition to the covered conveyor system, water sprinklers have been provided in the hoppers for suppression of coal dust emanating while discharging coal from the vessels. Cleaning up of the operational area/jetty after every unloading operation to prevent pilling up of material is being done. The coal is stored inside North Chennai Thermal Power Station.
(xiv)	Air pollution monitoring stations at strategic locations must be set up in the port area and in the neighborhood for monitoring dust/particulate matter at regular intervals. Adequate funds must be allocated towards this in the project cost.	**Complied with.** Kamarajar Port is continuously monitoring the environmental air pollution. KPL has engaged M/s. Nitya Laboratories (MoEF & CC and NABL accredited laboratory) to carry out the periodical monitoring, testing and analysis of Ambient air quality, Marine water quality, creek water quality, Noise levels in the port area. Adequate funds are allocated in this project.
(xv)	To contain noise levels within the prescribed standards roofed conveyor belts should be deployed. Noise pollution in the port area should be reduced by putting up sound barriers at suitable locations. To protect the workers from high noise levels ear muffs/plugs should be provided.	**Complied with.** The coal is unloaded from the ships and transferred to the thermal power station through elevated closed conveyor system. There is no generation of noise pollution during the operations. Noise levels at the work zones were monitored regularly. However workers working in the berth area are also provided PPE like hard hat, ear muffs/plugs etc.

(xvi)	Water pollution monitoring stations at strategic points must be set up in the project area to monitor water quality and marine pollution at regular intervals.	**Complied with.** Kamarajar Port is continuously monitoring the environment. KPL has engaged M/s. Hubert Enviro Care Systems Pvt. Ltd. Chennai (MoEF & CC/NABL certified) to carry out the periodical monitoring, testing and analysis of Marine water quality, creek surface water quality in the port area.
(xvii)	To contain accidental spillage of oil, the project authorities should deploy oil booms, multipurpose anti pollution craft, oil recovery cum reception craft, chemical dispersant and other equipment such as shovels, swabs, waste collection bags, etc.	**Complied with.** KPL falls under category B. Port is having oil spill contingency plan prepared in line with NOS-DCP. Necessary chemicals, booms, dispersants, etc. are readily available for containment of any accidental spill of Tier-I category.
(xviii)	An environment division must be set up in Ennore port headed by Environment Manager with appropriate strength of Environment Engineers, Forest officers, forest guards and other laboratory staff. An environmental laboratory for Air Water and solid waste monitoring must be set up with adequate equipment and qualified staff. Adequate fund for establishment of laboratory must be provided in the project cost. The annual recurring cost for the laboratory and Environmental Division must be provided for in the annual budget of the port.	**Complied with.** Port is equipped with HSE division which is a part of the Marine Services department headed by General Manager (MS). The HSE division is exclusively headed by an officer in the rank of Chief Manager(HSE). At present, the Environmental Cell comprises of the following officers. (i) Chief Manager(HSE), (ii) Sr. Manager(HSE) and (iii) Executive (HSE). to take care of the environmental requirements of the port. Port has engaged M/s. Nitya Laboratories, an MoEF & CC recognized and NABL accredited laboratory to carry out the regular sampling and testing of various environmental parameters. Tamilnadu Pollution Control Board also monitors the Ambient Air Quality and Noise levels inside the port. The air quality level are found well within the limits. A copy of the report is enclosed herewith.

		The details of expenditure incurred by KPL towards Environmental management during the compliance period is Rs. 29,29,120/-, furnished herewith as below: 1. Environmental Monitoring = Rs. 7,09,120/- (Excl. GST). 2. Solid Waste Management = Rs. 22,20,000/- (Excl. GST).
(xix)	The Ennore Port Trust authorities must draw up a Disaster Management Plan and get it approved by the nodal department of the state Government and forwards it to the Ministry for approval.	**Complied with.** Port is having a Crisis Management Plan and Disaster management Plan. However, with the subsequent development of various new projects phase wise, Port has updated the Disaster Management Plan in line with National Disaster Management Authority Guidelines 2019 and forwarded it to Indian Register of Shipping for vetting.
(xx)	Adequate measure must be taken to protect the Pulicat Lake, a bird sanctuary for several species of resident and migratory water birds and having potential for fishing as an important economic activity of the area.	**Complied with.** The Pulicat lake is situated about 20KM away from the location of the Kamarajar port.
(xxi)	A Monitoring Committee will be set up by the project authorities to review the implementation of the above conditions with representatives from MoEF, State forest Department, Sate pollution Control Board and representative of Port Authority.	**Complied with.** A monitoring committee with representatives from MoEF, State Forest department, State Pollution Control Board, Tamilnadu Electricity Board and Port officials was constituted then. They conducted ten Environmental Monitoring committee meetings and reviewed the implementation of MoEF conditions.
(xxii)	The quality of treated effluents, solid wastes, emissions and noise levels, etc., must confirm to the standards laid down by the competent authorities including Central/State	**Complied with.** KPL has engaged M/s. Nitya Laboratories, an MoEF & CC recognized and NABL accredited laboratory to carry out the periodical monitoring, testing and analysis

	Pollution Control Board and under the Environment (Protection) Act 1986 whichever area more stringent.	of Air, Noise, Marine water quality, creek water quality, sediment quality and ground water quality in the port area. The environmental parameters are found to be well within the standards prescribed by Central / State Pollution Control Boards. Tamilnadu Pollution Control Board is also monitoring the Ambient Air Quality and Noise levels inside the port. All the parameters are found to be well within the limits. A copy of the report is enclosed herewith.
(xxiii)	The project authorities must ensure that project out sees if any must be adequately compensated and rehabilitated.	**Complied with**. The Project outsees were properly compensated and rehabilitated at the time of land acquisition by the TNEB, Govt of Tamilnadu.
3.	Adequate financial provision must be made in the Project estimates and the annual budget to meet the financial requirement for the implementation of aforesaid safeguards. The funds so provided item wise should not be diverted for any other purpose.	**Complied with.** The details of expenditure incurred towards Environmental management by KPL during the compliance period is Rs.29, 29,120/-, furnished herewith as below: 1. Environmental Monitoring = Rs. 7,09,120/- (Excl. GST). 2. Solid Waste Management = Rs. 22,20,000/- (Excl. GST).
4.	In case of any deviations/alterations in the project proposal from those submitted to this Ministry for clearance and on the basis of EIA findings these stipulations may be modified and/or new ones imposed for ensuring environmental protection.	The deviations / alterations in the approved Project proposal have been ratified by the MoEF. A report was sent to MoEF on 17.02.2001.The deviation was ratified by MoEF & CC vide letter no. J-16001/9/87-IA-III, dated 03.01.2001.

Annexure-I

KAMARAJAR PORT LIMITED

(A company of Chennai Port Trust)

Details of Land Owned by Kamarajar Port Limited

S.No	Descriptions	Extent	Handed over on
1.	Land transferred from Tamil Nadu Electricity Board	995.05 Acres	28.10.1994
2.	Poramboke land (Govt. of Tamilnadu) TNEB	97.15 Acres	28.10.1994
3.	Poramboke land (Govt. of Tamilnadu) TIDCO	2.36 Acres	29.05.2002
4.	Land transferred from TIDCO	947.65 Acres	29.05.2002
5.	Land transferred from Private Party (Patta land) Vallur village	31.97 Acres	08.03.2005
6(i).	Land transferred from Salt Department	29.76 Acres	07.09.1996
6(ii).	Land transferred from Salt Department	35.00 Acres	31.05.2010
6(iii).	Land transferred from Salt Department	647.66 Acres	28.02.2014
7.	Land transferred railway siding (Athipattu Village)	0.69 Acres	21.10.2014
	Total	**2787.29 Acres (1128.45 Ha)**	

[FORM – V]

KAMARAJAR PORT LIMITED – COAL BERTHS CB1 & CB2
ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH-2023

PART – A

S. No	Description	Remarks
1.	Name and address	Kamarajar Port Limited, Vallur Post, Near NCTPS, Chennai-120.
2.	Type of Cargo handled	Coal for Thermal Power Plants of TANGEDCO
3.	Industry category Primary (STC Code) Secondary (SIC Code)	Major port under the administrative control of Ministry of shipping, GOI.
4.	Cargo handling capacity as per CTO	16 Million Metric Tons Per Annum
5.	Date of start of commercial operation	22.06.2001

PART – B

(1) Water and Raw Material Consumption

Water consumption m3/d: 7KL per Day for this terminal.

Process/sprinkling: Water sprinklers are put in place to suppress the dust rises if any. The cargo unloaded from the ships is directly transferred to the stackyards of NCTPS (TANGEDCO units) through closed elevated conveyors. No process is takes place inside the port.

Cooling: Nil.

Domestic: Nil

Any other: Nil

Name of Cargo handled	Process water consumption per unit of product output.(per Annum)	
	During the previous financial year (2021-22)	During the Current financial year (2022-23)
Thermal Coal	Coal is handled at the terminal for the exclusive use of Thermal Power Plants of TANGEDCO	

(2) Raw Material Consumption (if applicable)

*Name of raw materials	Name of Products	Consumption of raw material per unit of output	
		During the financial year 2021-22	During the financial Year 2022-23
Coal	Coal	13.52 MTPA	15.53 MTPA

*Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART - C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
Water	No wastes are discharged into the marine/surface water bodies. Port is monitoring the surface and marine water quality through M/s. Hubert Enviro Care Systems Pvt. Ltd. Chennai (MoEF & CC/ NABL certified laboratory) on quarterly basis. The results of analysis are found to be well within the prescribed standards by the CPCB. The reports are submitted to Tamilnadu Pollution Control Board.		
Air	No stacks are there in port. The cargo unloaded from the ships is directly transferred to the stackyards of NCTPS (TANGEDCO units) through closed elevated conveyors. All dust suppression measures are put in place to control dust emissions if any. KPL is monitoring the various environmental parameters through M/s. Hubert Enviro Care Systems Pvt. Ltd., Chennai, an MoEF & CC recognised and NABL accredited labaoratory). The ambient air quality is monitored at eight different locations inside the port area. The results of analysis are found to be well within the prescribed standards by the CPCB. The monthly monitoring reports are submitted to Tamilnadu Pollution Control Board. Tamil Nadu Pollution Control Board is also monitors the Ambient Air Quality and Noise Quality standards in the terminal annually. The results of analysis are found to be well within the prescribed standards by the CPCB.		

PART – D

Hazardous Wastes

(As specified under Hazardous and other wastes Transboundary Rules, 2016)

Hazardous Wastes	Total Quantity (Kg.)	
	During the previous Financial Year 2021-22	During the Financial year 2022-23
Source of Hazardous waste generation	No hazardous wastes are generated.	
Disposal procedure	Not Applicable.	
Quantity disposed	Not Applicable.	
Any other details	The cargo unloaded from the ships is directly transferred to the stackyards of NCTPS (TANGEDCO units) through closed elevated conveyors. Water sprinklers are put in place to suppress the dust rises if any.	

PART – E

Solid Wastes

Solid Wastes	Total Quantity (M^3)	
	During the Financial Year period Apr'21 to Mar'22.	During the Financial Year Apr'22 to Mar'23.
Quantity collection	The total collected quantity from terminal and ships calling at the terminal is about 250 Cu.M (Apr'21 to Mar'22).	The collected total quantity from terminal and ships calling at the terminal is about is 262 Cu.M (Apr'22 to Mar'23).
a) Source of solid waste generation	Solid waste generated in the port is of domestic wastes likes, paper, packing material, water bottles, etc. Ship generated wastes include paper, plastic cans, metal drums, e-wastes, food waste, ropes, wooden packing material, etc.,	
Disposal procedure	As per MARPOL regulations, every port has to provide reception facility for the disposal of ship generated wastes. Accordingly port has engaged a contractor for the collection of wastes from the ships. The collected wastes are segregated into different species and sent to various recyclers for further beneficial use.	
Quantity disposed	The disposed quantity from port and ships is 250 Cu.M (Apr'21 to Mar'22).	The disposed quantity from port and ships is 262 Cu.M (Apr'22 to Mar'23).
Any other details	NIL	

PART – F

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

Port has Waste Oil, sewage & Other Wastes Reception Facilities Policy, 2019. The generated oily wastes from the ships are disposed off through CPCB/SPCB approved recyclers.

Solid waste generated in the port is of domestic wastes like paper, packing material, water bottles, etc. and ship generated wastes including paper, plastic cans, metal drums, e-wastes, food waste, ropes, wooden packing material, etc.

As per MARPOL regulations, reception facility port has facilitated for the collection and disposal of ship generated wastes. The collected waste are segregated into different categories and sent to various recyclers for further beneficial use.

PART – G

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

The cargo unloaded from the ships is directly transferred to the stackyards of NCTPS (TANGEDCO units) through closed elevated conveyors system operated by electrical power rather than the conventional mode of transportation through trucks operated by diesel power thereby reducing the fossil fuel consumption.

Moreover, Port has developed a green belt of 636.14 acres inside and outside the custom bound areas which acts as barrier for dust emissions and pollutants.

PART – H

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

Port's Environmental Management Plan (EMP) is aimed at mitigating the possible adverse impacts of projects and for ensuring to maintenance of the existing environmental quality.

Port has facilitated the ships with reception facilities as per MARPOL regulations for ships for disposal of wastes under Annexure- I (oil) and Annexure- V (Garbage). The septic wastes are disposed through waste through tanks/soak pits.

Workers are provided with PPEs like ear protection devices, masks, gloves and helmets. Emergency/Crisis Response Plan that covers situations such as cyclones, marine accidents, bomb threats, fire, explosion and accidents is in place. Port is having oil spill contingency plan prepared in line with National Oil Spill Disaster Contingency plan (NOS-DCP).

PART – I

Any other particulars for improving the quality of the environment.

Nil

KAMARAJAR PORT LIMTED

Compliance Report

On

Ministry's guidelines for

"EXPANSION PROPOSALS - DEVELOPMENT OF TERMINALS FOR MARINE LIQUIDS, COAL, IRON AND CONTAINERS IN SECOND PHASE AND ASSOCIATED DREDGING AT ENNORE PORT"

Point wise compliance report on Ministry's guidelines for the Ennore Port Expansion Proposals-Development of Terminals for marine liquids, coal, iron and containers in Second phase and associated dredging at Ennore Port Environmental clearance.

Ref: MoEF's Notification No. 10-28/2005–IA-III dated 19th May 2006

Ministry of Environment & Forests had accorded Environmental clearance for the development of satellite port at Ennore near Madras vide letter No. J16011/9/87-IA.III dated 28.9.1992. After commissioning of the satellite port in June 2001, Kamarajar Port Limited, KPL (erstwhile Ennore Port Limited) had proposed for expansion for development of the following projects. Subsequently MoEF & CC had accorded clearance vide letter No. 10-28/2005–IA-III dated 19th May 2006 for the following projects.

i. Marine Liquid Terminal to handle 3 MTPA.

ii. Coal Terminal other than TNEB Users to handle 8 MTPA.

iii. Iron Ore Terminal to handle 12 MTPA.

iv. Container Terminal for a quay length of 730m to handle 12 MTPA.

v. Associated Capital Dredging of 15.50 Million cubic metres.

Status of various projects accorded clearance by MoEF

Marine liquid terminal:

The project was developed on BOT basis to handle Marine liquids and chemicals to a capacity of 3 MTPA. The license Agreement was signed during November 2004 with Ennore Tank Terminals Private Limited. The project was commissioned on 18.1.2009.

Coal Terminal

Kamarajar Port (KPL) has awarded license to M/s. Chettinad International Coal terminal Private Limited (CICTPL) to develop a terminal on design, build, operate, market and transfer basis in 2006 as a common user coal terminal. The terminal was completed with equipment and conveyor systems, yard and evacuations systems with capacity to handle **8 Million Metric Tons Per Annum (MMTPA)** and commenced the operation in the year 2011.

In the year 2020, M/s. CICTPL was acquired by M/s. JSW Infrastructure Limited, the infrastructure arm of the JSW group, one of the biggest steel producer in the private sector. Subsequent to acquisition of CICTPL terminal by JSW Infrastructure Limited in the year 2020, the terminal was rechristened as M/s. Ennore Coal Terminal Private Limited (ECTPL).

Iron Ore Terminal

The project was developed on BOT basis and the agreement was signed with M/s. SICAL Iron Ore Terminals Limited at an approved project cost of Rs.480 crores with a capacity of 12 MTPA. Constructions were completed. However, due to the ban on the Iron ore mining from Bellary-Hospet region, the Licensee could not perform the trail run and the terminal was lying idle without any operation since then. It was decided to convert the terminal to handle coal.

KPL submitted application to MoEF&CC for "Modification of existing iron ore terminal to handle coal". Ministry of Environment & Forests (MoEF) has accorded Environmental Clearance vide letter No. 10-28/2005–IA-III dated 9th May 2018. Presently the project is in stalled condition.

Container Terminal

KPL has subsequently modified this environment clearance for the development of container terminal. MoEF & CC has accorded Environment Clearance vide Letter No. 10-28/2005-IA-III dated 10th September 2007.

Further Environment Clearance was modified to handle container (16.8 MTPA) in quay length of 730m and Multi Cargo berth (2.0 MTPA) in a quay length of 270 m. MoEF&CC has accorded Environment Clearance vide Letter No. 10-28/2005–IA-III dated 24.12.2014.

Dredging

KPL has carried out capital dredging for the development of marine liquids, coal, iron ore and container terminals in second phase. As stipulated in EC, about 6 million cubic meters of dredge material from the basin has been dredged. Out of this about 4 million cubic meters dredge material was used for reclamation of low lying areas within the port limits, 3 million cubic meters has been put up for the beach nourishment and remaining 8.5 million cubic meters of dredged material has been dumped into the sea at designated dumping locations. Presently, port is carrying out maintenance dredging for the above said terminals and the work is in progress. The dredge material is being disposed into sea at designated locations.

Compliance Report

S.No	MoEF Guidelines	Compliance Status
1	All the conditions stipulated in the No Objection Certificate from "Tamil Nadu State Pollution Control Board vide their letter No.T12/TNPCB/Misc/F.3322/TVLR /05 dt. 7/12/06 should be strictly implemented.	Complied with all conditions stipulated in the No Objection Certificate obtained from "Tamil Nadu State Pollution Control Board. The status report is enclosed as **Annexure-I**
2	Groins and other suitable structures should be constructed to prevent the closing of the mouth of Ennore creek.	Kamarajar Port had requested State Public Works Dept. vide letter dated 09.05.2017 to carry out the groynes construction works on deposit basis. In response, the state Public works

		Department, Araniyar Basin Division vide letter No. F6/AEE/ASE/2017 dated 09.11.2017 communicated their willingness for carrying out the works on deposit basis. Subsequently, the State PWD requested NIOT, Chennai to conduct the study and submit the estimate for the work. Based on the NIOT report, state PWD has submitted their estimate for an amount of Rs.141.05 Crores. KPL had scrutinized the estimate and sanctioned an amount of Rs.115.04 crores and the same will be executed through state PWD on deposit basis. KPL has released an amount of Rs.6.76Crores to PWD for transportation of tetrapods to the site.
3	The DPR and the technical details to be awarded to the BOT operators should be provided to MoEF for post project monitoring within 6 months from the date of receipt of this letter.	**Complied with.** The DPR for Iron ore and Coal terminals were submitted to Regional Office, MoEF Bangalore vide Ltr .No EPL/MS/49/2008 dated 13/3/2008. The DPR for the Marine Liquid Terminal had submitted vide letter no. EPL/MS/49/2007 dated 03.07.2007.
4	The marine terminal should be set up outside CRZ area	**Complied with.** The terminal areas are developed outside CRZ area as stipulated.

5	Recommendations of Risk analysis report should be strictly implemented and a comprehensive quantitative Risk Analysis should be carried out before operationalizing the project.	**Complied with.** M/s. Ennore Tank Terminals Pvt. Ltd (ETTPL), one of the BOT operator operating petroleum products and chemicals had carried out Risk Analysis through M/s. ROOT THINKER PVT. LTD., during 2017. The firm has also carried out third party Safety Audit during 2021. Recommendations of Risk analysis were implemented by M/s. ETTPL. The relevant certification copies of the report are enclosed herewith. With regard to M/s. Ennore Coal Terminal Pvt. Ltd, the terminal has carried out risk analysis during the year 2011 and the recommendations were implemented. With regard to M/s AECTPL, Operational Risk assessment was carried out and recommendations are being implemented. Operation al Risk Assessment report submitted vide letter No. AECTPL/KPL/ EC-compliance/Env/02/dtd 13.07.2018.
6	Approval from Chief Controller of Explosives should be obtained for hazardous chemicals storage, transfer and related activities.	**Complied with.** For the Marine Liquid Terminal, license was obtained for the Storage Terminal from the Chief Controller of Explosives vide Licence No. P/HQ/TN/15/4648 (P191324), dated 18/10/08 and the same was renewed during 2022; validity of the above said licence is till 31.12.2027. With regard to M/s. Ennore Coal Terminal Pvt. Ltd, the terminal has obtained License 'B-Class' petroleum for operational use. License No. P/SC/TN/14/6874 (P285092) and valid upto 31.12.2023. With regard to M/s AECTPL, the terminal is not storing any hazardous chemicals.

7	The reclamation of the port area should be carried out with the dredged materials. Dredged material should not be dumped into the sea. No reclamation should be carried out outside the port limits.	**Complied with.** The dredged material was used for beach nourishment and filling up of low lying area within the port limits. However, MoEF & CC vide letter dated 6th September, 2006 has directed subsequently that dredged material not suitable for reclamation and beach nourishment should be disposed off in the sea. No reclamation is carried outside the port limits.
8	The coastal protection works should be carried out after detailed hydrodynamic modeling studies and it should be ensured that no erosion or accretion takes place in other areas due to the shore protection works.	KPL has carried out the study through Central Water and Power Research Station, Pune. The study reports were submitted to MoEF vide our letter No. EPL/49/MS/2007 dated 8.12.2009. The copy of the is enclosed as **Annexure-E** As per the report, construction of sand trap beach nourishment etc., was carried out.
9	Reclamation of 500 acres should be carried out only for port development. The height of the reclaimed area will be maintained above the maximum flood level.	**Complied with.** Reclamation carried out for the creation of stock yards for coal and iron ore are upto 4.5 m height, which is about 2 m above the flood level.
10	The wave tranquility study and the ship maneouvering studies carried out should be taken into account while operating the port.	**Complied with.** Wave tranquillity study and ship manoeuvring studies were carried out and the port is in operation.
11	The project proponent should ensure that during construction and operation of the port, there will be no impact on the livelihood of the fishermen. The fishermen should be provided free access to carry out the fishing activity.	**Complied with.** Due to port operations, there is no adverse impact on fishing activities.
12	All necessary precaution while undertaking construction and operation of the port should be taken up keeping in view, the bathymetric changes caused due to tsunami.	There was no bathymetry change due to Tsunami. After Tsunami bathymetry survey was carried out and confirmed.

13	All development in the port should be carried out in accordance with the Coastal Regulation Zone Notification, 1991 and approved Coastal Zone Management Plan of Tamil Nadu.	**Complied with.** All development activities are carried out in accordance with the CRZ Notification.
14	The project proponent should undertake a comprehensive hydrodynamic modeling study with regard to river diversion and submit the report to the Ministry within 6 months from the date of receipt of this letter. Further, the unit should comply with all the findings/recommendations of the study.	**Complied with.** Hydrodynamic modelling study with regard to river diversion works was carried out by NIOT, Chennai and submitted to MoEF vide our letter No. EPL/49/MS/2007 dated 5/8/2008. The study was made based on the present site conditions. MoEF vide letter dated 15.12.2008 had communicated to comply with the recommendation of the study. The copy of the letters are enclosed as **Annexure-F&G** Accordingly, the works was commenced on 24.11.2016 and completed on 23.08.2018. The works of formation of protection bunds along the sides of the river are completed.
15	Construction of labour camps should be located outside Coastal Regulation Zone areas and should be provided with adequate cooking and sanitation facilities.	**Complied with.** No labour camps were established inside the port. Construction of the terminals is completed and the terminals are in operation.
16	The project-affected people, of any should be properly compensated and rehabilitated.	**Complied with.** The land has been transferred from TNEB, TIDCO and Salt Department, Government of India. Hence no direct project affected people by Kamarajar Port Limited.
B	**General conditions**	**Compliance Status**
1	Development of the proposed channel should be undertaken meticulously conforming to the applicable Central/ local rules and regulations including Coastal Regulation Zone Notification, 1991 and its amendments. All the construction designs/drawings relating to the proposed	**Complied with.** Port being a regulatory authority by itself, All constructions and plans are approved by port itself.

	development activities must have approvals of the concerned State Government Department/Agencies.	
2	A well equipped laboratory with suitable instruments to monitor the quality of air and water shall be set up as to ensure that the quality of ambient air and water conforms to the prescribed standards. The laboratory will also be equipped with qualified manpower including a marine biologist so that the marine water quality is regularly monitored in order to ensure that the marine life is not adversely affected as a result of implementation of the said project. The quality of ambient air and water shall be monitored periodically in all the seasons and the results should be properly maintained for inspection of the concerned pollution control agencies. The periodic monitoring reports at least once in 6 months must be send to this Ministry (Regional Office at Bangalore) and Pollution Control Committee.	**Being complied with.** Kamarajar Port is monitoring the environment. Port has engaged M/s. Hubert Enviro Care Systems (P) Ltd, an MoEF and NABL accredited laboratory for sampling and testing of various environmental parameters inside the port. M/s. ETTPL, the BOT operator handling POL projects is monitoring the environment by engaging a laboratory M/s. Green Chem Solution (P) Ltd. once in month and ensuring that it meets as per TNPCB norms. Further, TNPCB also visits the terminal for monitoring of air once in a year. The analysis reports are enclosed herewith. The operator of the coal terminal M/s. Ennore Coal Terminal Pvt Ltd., is monitoring the environment by engaging laboratories for sampling and testing of parameters. The reports are submitted to TNPCB regularly. M/s AECTPL has awarded Environmental Monitoring services to NABL accredited laboratory. Ambient Air Quality, Noise Level, DG Stack emission, Marine & Surface water, sea sediment analysis are carried out on regular basis. The reports are being submitted to TNPCB also as part of the six monthly compliance reports. Monitoring reports are properly maintained and made available for inspection to Pollution Control Agencies, as and when required. Environmental Monitoring report for the compliance period is enclosed herewith.

3	Adequate provisions for infrastructure facilities such as water supply, fuel for cooking, sanitation etc. Must be provided for the laborers during the construction period in order to avoid damage to the environment. Colonies for the laborers should not be located in Coastal Regulation Zone area. It should also be ensured that the construction workers do not cut trees including mangroves for fuel wood purpose.	**Complied with.** No labour camps were established inside the port. Construction of the terminal is completed and the terminals are in operation.
4	To prevent discharge of sewage and other liquid wastes into the water bodies, adequate system for collection and treatment of the wastes must be provided. No sewage and other liquid wastes without treatment should be allowed to enter into the water bodies.	**Complied with.** Port handles coal, POL products and exports of automobiles. No effluent or liquid wastes are generated due to the above said operations. Solid waste generated from the ships are collected, segregated and sent to various recyclers for further beneficial use. No wastes are dumped into the water bodies. The operator M/s. ECTPL has installed a Sewage Treatment Plant at the stack-yard and is in operation. The outlet water is reused for gardening purpose. The results of analysis report is enclosed herewith. M/s. ETTPL had taken adequate precautions to ensure that no sewage and other liquid waste are entering into the water bodies. The monitoring reports are enclosed herewith. With regard to M/s AECTPL, the terminal operators had installed and operating 25KLD capacity sewage treatment plant and the entire treated water is being used for horticulture purpose. The monitoring reports are enclosed herewith. The summary of results of STP treated water analysis is as below.

<table>
<tr><td></td><td></td><td>
<table>
<tr><td>Parameter</td><td>Unit</td><td>Min</td><td>Max</td><td>TNPCB Limit</td></tr>
<tr><td>pH</td><td>-</td><td>7.08</td><td>7.92</td><td>6.5-9.0</td></tr>
<tr><td>TSS</td><td>mg/l</td><td>21</td><td>26</td><td>30</td></tr>
<tr><td>BOD</td><td>mg/l</td><td>14</td><td>18</td><td>20</td></tr>
<tr><td>COD</td><td>mg/l</td><td>58</td><td>88</td><td>100</td></tr>
<tr><td>Faecal Coliform</td><td>MPN/ 100ml</td><td>110</td><td>130</td><td><1000</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>Appropriate facility should be created for the collection of solid and liquid wastes generated by the barges/vessels and their safe treatment and disposal should be ensured to avoid possible contamination of the water bodies.</td><td>Complied with.

Kamarajar port is having Port “Waste Oil, Sewage and Other Waste Disposal Policy-2019” for the disposal of waste oil through empanelled list of CPCB approved waste oil recyclers.
Port has engaged a contractor for the collection, segregation and disposal of solid wastes generated inside the port and from ships. The collected wastes like plastics, metals, wood, paper, cans, etc are segregated and sent to approved re-cyclers/industries for further beneficial use or for re-cycling. Hazardous wastes are sent to TSDF at Gummidipoondi.</td></tr>
<tr><td>6</td><td>Necessary navigational aids such as channel markers should be provided to prevent accidents. Internationally recognized safety standards shall be applied in case of barge/vessel movements.</td><td>Complied with.

Navigational aids are available. The channel length has been increased and additional navigational aids were provided.</td></tr>
<tr><td>7</td><td>The project authorities should take appropriate community development and welfare measures for villagers in the vicinity of the project site, including drinking water facilities. A separate fund should be allocated for this purpose.</td><td>Complied with.

As a part of community development and welfare measures, KPL, through its CSR activities, is undertaking construction of school buildings, community buildings, sanitation, R.C.C streets, and drinking water supply facilities to the nearby villages.

Port also engaged Self Help Group women workers belonging to Attipattu and Kattupalli for taking up of plantation and maintenance of green belt.

The amount spent on CSR activities</td></tr>
</table>

during last four years is as below.

2018-19 is Rs. 4.69 crores
2020-21 is Rs. 8.28 crores
2021-22 is Rs. 5.57 crores
2022-23 is Rs.9.44 crores

With regard to M/s ECTPL, the firm has incurred an amount of Rs.35.5lakhs towards CSR activities during the year 2022-23 (upto Dec'22).

The breakup of details is as below.

S. No	**Description**	**Amount Rs. in Lakhs.**
1	Environment	5.0
2	Health Camps	10.0
4	Community Infrastructure Development	20.5
	Total	**35.5**

With regard to M/s AECTPL, the terminal has implemented CSR activities like Evening Education centre(638 Students benefited), Computer SMAR Lab for +1 & +2 Students with 20 computer systems, Mobile Health Care Unit, Comprehensive Eye camps, Suposhan Program to support organic farming to 300 farmers, constructed technical workshops for farmers, Constructed community toilets, RO Plant, De-siltation of Kattupalli pond, etc., in the vicinity of the Port area.

Expenses incurred for CSR during the compliance period is Rs.164.47 Lakhs and the breakup details are as follows;
The breakup of details is as below.

S.No	**Description**	**Amount Rs. in Lakhs.**
1	Education	24.01
2	Health	29.97
3	Sustainable Livelihood Development	90.38
4	Community Infrastructure Development	20.11
	Total	**164.47**

8	The quarrying material required for the construction purpose shall be obtained only from the approved quarries/borrow areas. Adequate safeguard measures shall be taken up to ensure that the overburden and rocks at the quarry side do not find their way into water bodies.	**Complied with.** There was no requirement of quarrying the material for the Port. The construction of the terminals was carried out well within the breakwaters, the same was completed and they are in operation.
9	For employing unskilled, semi-skilled and skilled workers for the project, preference shall be given to local people.	M/s AECTPL has engaged the local people also during construction phase & also during the operation phase through contracts. M/s ETTPL has given preference to the local people in employment. M/s ECTPL has engaged local people during construction phase & also in the operation phase.
10	The recommendations made in the Environmental Management Plan and Disaster Management Plan, as contained in the Environmental Impact Assessment and Risk analysis Reports of the project shall be effectively implemented.	Port is having a Crisis Management Plan and Disaster management Plan. However, with the subsequent development of various new projects phase wise, Port has updated the Disaster Management Plan (DMP) in line with National Disaster Management Authority Guidelines 2019. Indian Register of Shipping has vetted the DMP prepared by the Port.
11	A separate Environmental Management Cell with suitable qualified staff to carry out various environments should be set up under the charge of a senior Executive who will report directly to the Chief Executive of the Company.	Port is equipped with HSE division which is a part of the Marine Services department headed by General Manager (MS). The HSE division is exclusively headed by an officer in the rank of Chief Manager(HSE). At present, the Environmental Cell comprises of the following officers. (i) Chief Manager(HSE), (ii) Sr. Manager(HSE) and (iii) Executive(HSE) With regard to M/s ECTPL, a separate Environment team is established at H.O to take care of all environmental activities. With regard to M/s AECTPL, a separate EMC with suitable qualified staff has

<table>
<tr><td></td><td></td><td>been put in place by AECTPL for taking care of various day to day environmental monitoring compliance and allied activities. Environmental Department headed by Senior Manager-Environment, who is well supported by Environmental Management Team at H.O.

M/s ETTPL has appointed the safety officer by taking care of safety and environment. ETTPL has engaged a NABL accredited laboratory M/s. Green Chem Solution (P) Ltd. laboratory for sampling and testing for various Environmental parameters inside the terminal premises.</td></tr>
<tr><td>12</td><td>The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to this Ministry.</td><td>The details of expenditure incurred by KPL towards Environmental management during the compliance period is as below:

1. Environmental Monitoring = Rs. 7,09,120/- (Excl. GST).

2. Solid Waste Management = Rs. 22,20,000/- (Excl. GST).

The expenditure by M/s. ETTPL for the Marine Liquid Terminal during the compliance period is Rs. 31.35 Lakhs.

The expenditure incurred by M/s. ECTPL for Environment Management during the compliance period is Rs. 54.08 Lakhs.

With regard to M/s AECTPL, the Environmental Expenditure carried out during the compliance period is Rs. 19.03 Lakhs. Breakup details are as follows;

<table>
<tr><th>S. No</th><th>Description</th><th>Amount Rs. in Lakhs</th></tr>
<tr><td>1</td><td>Environmental Monitoring</td><td>6.97</td></tr>
<tr><td>2</td><td>Greenbelt</td><td>2.44</td></tr>
<tr><td>3</td><td>STP-O&M</td><td>2.38</td></tr>
<tr><td>4</td><td>Housekeeping</td><td>4.22</td></tr>
<tr><td>5</td><td>IWMS</td><td>3.26</td></tr>
<tr><td colspan="2">Total</td><td>19.25</td></tr>
</table>
</td></tr>
</table>

13	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the officers of the Central and State Pollution Control Boards by the Project proponent during this inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect if mitigate measures and other environmental protection activities.	**Being complied with.** All necessary support is being extended during the visit of officials of TNPCB & MoEF. With regard to M/s ECTPL, TNPCB officials inspect the terminal on monthly basis. All the necessary support is being provided during their site visit. With regard to M/s AECTPL, TNPCB officials are visiting the terminal on monthly basis. All the necessary support is being provided during the site visit. With regard to M/s ETTPL, necessary support is being extended by the terminal operators during the visit of officials.
14	In case there is an intention of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection. The project proponent should be responsible for implementing the suggested safeguard measures.	**Complied with.** (a) The specific condition (vii) was amended as *"the dredged material not suitable for reclamation of the low lying areas of the port land and beach nourishment should be disposed off in the sea at the designated disposal site"* vide MoEF&CC letter No. 10-28/2005-IA-III, dated 06.09.2006. (b) The quay length of the container terminal was increased from 700m to 1000m vide MoEF&CC letter No. 10-28/2005-IA-III, dated 10.09.2007 and again modified into 730m for container and 270m for multipurpose cargo terminal vide MoEF&CC letter No. 10-28/2005-IA-III, dated 24.12.2014
15	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.	**Noted** please.
16	This Ministry or any other competent authority may stipulate	**Noted for compliance**.

	any additional conditions subsequently, if deemed necessary for environmental protection, which shall be complied with.	
17	The Project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and the copies of clearance letters are available with the state pollution Control Board and may also be seen at web site of the Ministry of Environment & Forests at http://www.envfor.nic.in. The advertisement should be forwarded to the Regional office of this Ministry at Bangalore.	**Complied with.** It was advertised in the vernacular Tamil and English newspapers on 02/06/2006. This was communicated to regional office of MOEF & CC vide EPL letter No. EPL/74/2005 dated 29/5/2006. The copies of the newspaper advertisement in Tamil and English languages are enclosed herewith as **Annexure-H & I**
18	The project proponents should inform the Regional Office as well as Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of development work.	**Noted.** The details are as given below.

The details of financial closure of the projects are as below.

Project	**Date of approval by Competent Authority**	**Date of Financial Closure**	**Date of start of development work**
Marine Liquid Terminal	16-02-2004	September 2006	Work commenced on 09-06-2006 and the terminal commissioned on 18.1.2009
Coal Terminal	04-07-2006.	27 September 2007	06.02.2007
Iron ore Terminal	20-06-2006.	27 September 2007 (in-principal approval accorded)	06.02.2007
Container Terminal	14.2.2014	15.3.2014	20.10.2014
Capital Dredging (Phase – I)	16-04-2007	---	Dredging ommenced on 16/2/2008 and completed on 31.01.09
Capital Dredging (Phase – IIA)	05-12-2009	---	Dredging commenced on 22.02.2011 and completed on 20.04.2014.
Deepening of ECTPL, CB1 & CB2	18.10.2014	---	Work completed.

and its approaches			

Annexure- I

S. No	Guidelines issued by Tamil Nadu State Pollution Control Board vide their letter No.T12/TNPCB/Misc/F.3322/TVLR/05 dated 7/12/2006.	Compliance status
1	The unit shall provide adequate sewage Treatment Plant to treat the sewage generated.	**Complied with.** The sewage generated is of sanitary waste in nature and the buildings in the port are provided with soak pits and septic tanks. With regard to M/s. ETTPL, the sewage generated is of sanitary waste in nature and is cleaned at once in 6 months. Effluent treatment plant of capacity 20KLD is installed. M/s. ECTPL has installed a Sewage treatment Plant and it is in operation. The outlet water is reused for garden purpose. Samples are being drawn by TNPCB every month and the results of the same are enclosed.
2	Adequate dust control measures shall be provided for controlling the dust emanating from large stock piles of bulk cargoes such as coal, iron ore and other dusty cargoes.	**Complied with.** Adequate dust control measures are provided for controlling the dust emanating from large stock piles of bulk cargoes such as coal. The bulk cargos are transported through elevated closed conveyor system installed with required dust extraction system at all transfer points, junction towers, etc. Water sprinkler systems are in place for minimizing dust at the stack yards. The details of dust control measures provided at the coal handling terminal (M/s. ECTPL) are as below. *a) Water sprinklers, are installed around the stock yard to suppress the dust emission.* *b) Wind shield has been installed in the*

		predominant wind direction of North and South side at 12Mts height to mitigate the dust emission. *c) Varieties of trees are planted around the stock yard to suppress the dust.* *d) At all the coal transfer towers, an in build high efficient water sprinkler system are installed to mitigate the dust emission.* *e) The conveyor is totally covered with bare galvalume sheet to protect the emission of coal during coal conveying process.* *f) In the Stacker / Re-claimer water spraying nozzles are installed to reduce the dust emission with exclusive water tanks and pumps. This is in-build dust suppression system incorporated in the basic design itself.* *g) A compound wall of sufficient height is constructed as all sides of the coal stock yard to protect the dust emission* *h) Bulldozer grader / pay-loader are being used for coal compression to avoid dust at elevated levels.* *i) Coal is dampened by using water to reduce the dust dispersion.*
3	The unit shall provide the following measures to control dust pollution from coal / iron ore handling activity, a) Totally enclosed continuous loaders / unloaders and conveyor system should be adopted.	The coals from berths (CB1 & CB2) are directly transported to North Chennai Thermal Power Station (NCTPS). Coal is not stored inside the port. The details of dust control measures provided at the M/s. ECTPL coal handling terminal are as below. a) The conveyor is totally covered with bare galvalume sheet to protect the emission of coal during coal

	b) Dust extraction system should be provided at all transfer points. c) To minimize dust from the stack yard, proper water spraying should be done d) Compound wall of adequate height shall be made around the stack yard area	conveying process. b) At all the coal transfer towers an in build high efficient water sprinkler system is installed to mitigate the dust emission. c) Water sprinklers, are installed all around the stock yard to suppress the dust emission. d) A compound wall of sufficient height is constructed on all sides of the coal stock yard to protect the dust emission.
4	Continuous Ambient Air Quality Monitoring Stations with computer printing arrangements shall be installed at strategic locations inside Port and neighbour hood for monitoring dust and shall be displayed online at the Main gate.	M/s. ECTPL has installed Continuous Ambient Air Quality Monitoring stations installed and it is connected to CARE air center – TNPCB. With regard to M/s. ETTPL, the operator has engaged M/s Green Chem Solution Pvt. Ltd. The air and water quality monitoring is being carried out by M/s Green Chem Solution Pvt. Ltd once in a month and ensured that it meets as per TNPCB norms. Apart from that Tamilnadu Pollution Control Board also visits the terminal for monitoring the air quality once in a year. Online VOC monitoring system has been installed at critical locations for continuous monitoring of VOC levels.
5	To contain noise levels within the prescribed standards roofed conveyor belts should be deployed. Noise pollution in the port area should be reduced by putting up sound barriers at suitable locations. To protect the workers from high noise levels ear muffs / plugs should be provided.	**Complied with.** M/s. ETTPL has provided ear muffs/ plugs to Workers. Moreover DG power backup are with acoustic arrangements and other DGA set have silencer to reduce noise level. With regard to M/s ECTPL, the conveyor is totally covered to protect the emission of coal and noise.

6	The unit has to furnish the ROA of the split coal collected from seabed during annual maintenance / periodic maintenance dredging analyzed for heavy metals and other toxic metals.	**Being complied with.** Kamarajar Port is carryout the analysis of seabed for heavy and toxic metals during the periodic maintenance dredging. Heavy metals are also monitored in the seawater and also in the sediments during dredging activities.
7	Water quality monitoring stations at strategic points must be set up in the project area to monitor water quality and marine pollution at regular intervals.	**Complied with.** Port has engaged M/s. Hubert Enviro Care Systems Pvt. Ltd. Chennai (MoEF & CC/ NABL certified) to carry out regular sampling and testing of various environmental parameters which includes marine water quality and ground water. ROA is submitted to TNPCB on monthly basis. M/s. ECTPL has installed 20 Nos. of piezometric well installed around the stack yard at ECTPL to monitor the ground water quality. ROA is submitted to TNPCB on monthly basis. With regard to M/s. ETTPL, there is no discharge from the unit.
8	The quality of treated effluents solid wastes, emissions and noise level etc must confirm to the standards laid down by the competent authorities including Central/State pollution Control Board and under the Environmental (Protection Act) 1986 whichever are more stringent.	**Complied with.** Port is regularly monitoring the emission and noise levels inside the port premises and it is found to be within the standards prescribed by Tamil Nadu Pollution Control Board. With regard to M/s. ETTPL, there is no generation of effluent by terminal. Noise level inside the terminal premises are monitored regularly and found to be within the standards prescribed by Pollution Control Board. DG power backup which is with an acoustic arrangement and other DGA sets have silencer to reduce noise level. M/s. ECTPL effluents, emission level and noise are within the limit. The

		results are enclosed.
9	Dredging operations must be undertaken in stages in consultation with some expert institution like CWPRS, in such a way as to ensure that these operations do not deteriorate the surface water quality which must be maintained within the prescribed standards. Water parameters should be measured on regular intervals to monitor water quality. Dredging material should not be used for filling up any water body.	**Complied with.** Port is monitoring the water quality and sediment quality, pre-dredging, during dredging and post dredging operations.
10	The port shall ensure that no spillage of POL/Chemicals handled is occurred in sea while unloading them either from ship or barge vessels to pipeline/road vessels.	**Complied with.** Port ensures that no spillage of POL/Chemicals in sea during the operations. The terminal where the POL/Chemicals, are being transferred from the ships to the terminal tank yard through unloading arms/hoses having leak proof systems. Any eventual spill will be tackled with required booms and skimmers. The POL/Chemicals are transferred to the tank farms through dedicated pipelines. KPL is having a dedicated Oil Spill Response team working 24 x 7 basis. Vessels berthed at Kamarajar Port Limited are being garlanded by booms to prevent the spread of oil spills (if any) during operations. To prevent spillage from loading arm connection, collection trays are provided. Dock line integrity is maintained by hydraulics test once in year and pneumatic tests are conducted before each discharge operation from ocean tanker and thickness tests are also carried out for the pipeline regularly. With regard to M/s ECTPL, the terminal is not handling POL/Chemicals.

11	The port shall have adequate contamination boom facility with skimmer to contain and recover the spillage of POL in the sea if any.	**Complied with.** With regard to the oil spill contingencies, KPL falls under **category B**. Port is having oil spill contingency plan prepared in line with NOS-DCP. Necessary chemicals, booms, dispersants, etc. are readily available for containment of any accidental spill of Tier-I category. KPL is having a dedicated Oil Spill Response team working 24 x 7 basis. Vessels berthed at Kamarajar Port Limited are being garlanded by booms to prevent the spread of oil spills (if any) during operations. BOT operator M/s. Ennore Tank Terminals Pvt. Ltd has provided facilities like booms, skimmers etc., to contain any eventual oil spill. Port is equipped with facility to contain Tier – I oil spills. With regard to M/s ECTPL, the terminal is maintaining OIL SPILL CONTROL KIT.
12	A proper safety audit should be carried out by specialized agency and their recommendations should be implemented.	**Complied with.** M/s. Ennore Tank terminals Pvt. Ltd., one of the BOT operator operating petroleum products and chemicals has carried out the safety audit through M/s.BUREAUVERITAS for the year of 2021. Safety audit recommendations are implemented. KPL had carried out safety audit of the terminals through National Safety Council during the year 2021, and requested the terminal operators to comply with the shortcomings; the terminal operators are in the process of compliance to the shortcomings.

13	An environment division must be set up in Ennore port headed by Environment Manager with appropriate strength of Environment Engineers, Forest officers, forest guards and other laboratory staff. An environmental laboratory for Air Water and solid waste monitoring must be set up with adequate equipment and qualified staff.	At present KPL is having an Environmental Division with the following officers. (i) Chief Manager(HSE), (ii) Sr.Manager(HSE) and (iii) Executive (HSE) to take care of the environmental requirements of the port. Port has engaged M/s. Nitya Laboratories (MoEF & CC/NABL accredited) to carry out the regular environmental monitoring. TNPCB is also monitoring the Ambient Air Quality and Noise Levels at various locations inside the port. The operator of the coal terminal M/s. Ennore Coal Terminal Pvt Ltd., is monitoring the environment by engaging laboratories for sampling and testing of parameters. The reports are submitted to TNPCB regularly. With regard to M/s ETTPL, the terminal operator has appointed the safety officer to take care of safety and environment. ETTPL has engaged M/s Green Chem Solutions Pvt Ltd, a laboratory for monitoring various environmental parameters inside the terminal premises.
14	The unit must ensure that all activities carried out in the area falling under coastal Regulation Zone are regulated as per the provision contained in the CRZ Notification 1991 as amended.	**Complied with.** KPL is following all the provisions contained in the Coastal Regulation Zone Notification.
15	The unit has to implement Environmental Management Plan as envisaged under Environmental Impact assessment study as Per EIA Notification, 1994 as amended by the Ministry of Environment and Forest, Government of India.	**Noted** and being complied with.
16	The port shall maintain the marine eco system.	**Complied with.** Port is maintaining the marine eco

		system by way of regular monitoring.
17	The project authorities must ensure that no cutting of trees takes place in the project area and shall develop green belt.	**Complied with.** No trees were cut in the project area. In case cutting becomes essential, equivalent plantation will be made.
18	No reclamation of water bodies should be undertaken in CRZ using dredged materials.	**Noted.** No reclamation of water bodies is undertaken in the CRZ areas using dredged material.
19	The nature of drainage of the terrain should not be affected by filling of low lying areas with dredged material.	**Noted and complied with.**
20	The possibilities of dumping the dredged spoil north of northern breakwaters in areas prone to sea erosion by creating sand dunes and/or for beach nourishment may also be explored.	**Complied with.** About 4.0 million m^3 of dredged material are dumped in the north of north break water as beach nourishment.
21	Wherever mangroves are present within the project area, it should not be disturbed.	**Noted and complied with.** Mangroves present in the project area are not disturbed.
22	The Ennore Port Limited shall develop additional green belt in an area of 150 hectares and install additional air quality monitoring stations with continuous display as assured vide letter dated 7.11.2005.	**Complied with.** Green belt being developed inside the port in a phased manner. Port has engaged M/s L&T Infrastructure Engineering Ltd., for the preparation of Bio-Diversity Management Plan. Based on the green belt map submitted by the firm, port has planned for the development of green belt of 68.66Acres inside the custom bound area and 621.91 Acres outside the custom bound area.
23	The Port shall adopt the additional dust suppression measures in iron ore and coal handling areas as assured vide letter adted 7.11.2005	The details of dust suppression system adopted are mentioned at S.No 2 and 3 of this report.

Point wise compliance report on the conditions issued by Tamil Nadu State Coastal Zone Management vide Letter No. 30060/EC.3/2005-1 dated 06.12.2005

1	No reclamation of water bodies should be undertaken.	**Complied with.** KPL has not reclaimed any water bodies for the development of above terminals.
2	To ensure that the natural drainage of the terrain is not affected by filling of low lying areas with dredge spoils thus leading to inundation or water logging.	**Complied with.** The dredge spoil was used for the reclamation of 500 acres of land owned by port for the development of coal and iron ore stackyards. It is informed that, in the application (Form-A) submitted to MoEF, for obtaining Environmental Clearance for Ennore Port Expansion proposals, Port has mentioned in the application that it would make use of the available materials to raise about 500 acres of low lying lands to (+) 2.50 M level for developing it as stack yards for coal and iron ore. Accordingly, the stock yard for the coal, iron ore, were developed in these lands.
3	To explore the possibilities of dumping the dredged spoil north of northern breakwaters in areas prone to sea erosion by creating sand dunes and/or for beach nourishment.	**Complied with.** About 4.0 million m3 of dredged material was dumped in the north of northern breakwater for beach nourishment.
4	The mangroves present near the project area should not be disturbed and action plan to conserve them may be indicated	While executing the project it was ensured that no mangroves were disturbed due to the construction of conveyor belt. KPL has conducted a study “Action plan and Ecological studies for Kamarajar Port” through National Centre for Sustainable Coastal Management, a unit of MoEF&CC, during May 2017. The report has identified the mangroves and

		also suggested various mitigation measures. Further, KPL has prepared Bio-Diversity Management Plan for Kamarajar Port Limited" through M/s L&T Infrastructure Engineers Ltd., and submitted to Tamilnadu Biodiversity Board (TNBB) for validation and approval. TNBB has accorded the approval vide their letter dated 31.12.2021. **The copy of the letter is enclosed herewith as Annexure-J.** The Bio-Diversity Management Plan will be implemented as per the timelines indicated.

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.50 /AAQS/2022-23 Date: 12.04.2023

1. Name of the Industry : **M/s. Ennore Coal Terminal Pvt Ltd.,**
2. Address of the Industry : 143, Puzuthivakkam Village, Chennai – 600 120.
3. Date of Survey : **22.03.2023**
4. Duration of Survey : **8 Hours** / 24 hours
5. Category : **Red** / Orange / Green – **Large** / Medium / Small
6. Land use classification : **Industrial** / Commercial / Residential / Sensitive

Meteorological Conditions

Ambient Temperature (^{0} C)	Min	Max	Relative Humidity (%)	Min	Max
	29	33		66	89
Weather Condition	Partially Cloudy		Rain Fall (mm)	Nil	
Predominant Wind Direction	SSE – NNW		Mean Wind Speed (km/hr)	14.8	

Ambient Air Quality Survey Results

Sl. No	Location	Direction *	Distance (m) *	Height Form GL (m)	Pollutants Concentration (microgram / m^3)			
					PM 2.5	PM 10	SO_2	NO_2
1	On top of Platform near BTLS	NE	300	4.0	32	57	11	16
2	On top of Scaffolding near Port Office (Coal unloading Area)	E	100	4.0	--	54	9	13
3	On top of Platform Adjacent to Wagon Gate	SE	350	4.0	--	50	8	11
4	On top of Platform near Sub Station –I	SW	350	4.0	28	65	10	12
5	On top of Platform near Admin building	W	100	4.0	--	68	12	18
6	On top of Scaffolding near North Wind Shield	NW	350	4.0	--	73	14	21

Note: * With respect to major emission sources. The analytical results are restricted to the sampling period of **8 hrs**/24hrs

T. Thamaraselvi 12.4.23

Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Gaeke / IS 5182 : (Part 2) – 2001 RA: 2012
NO2	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

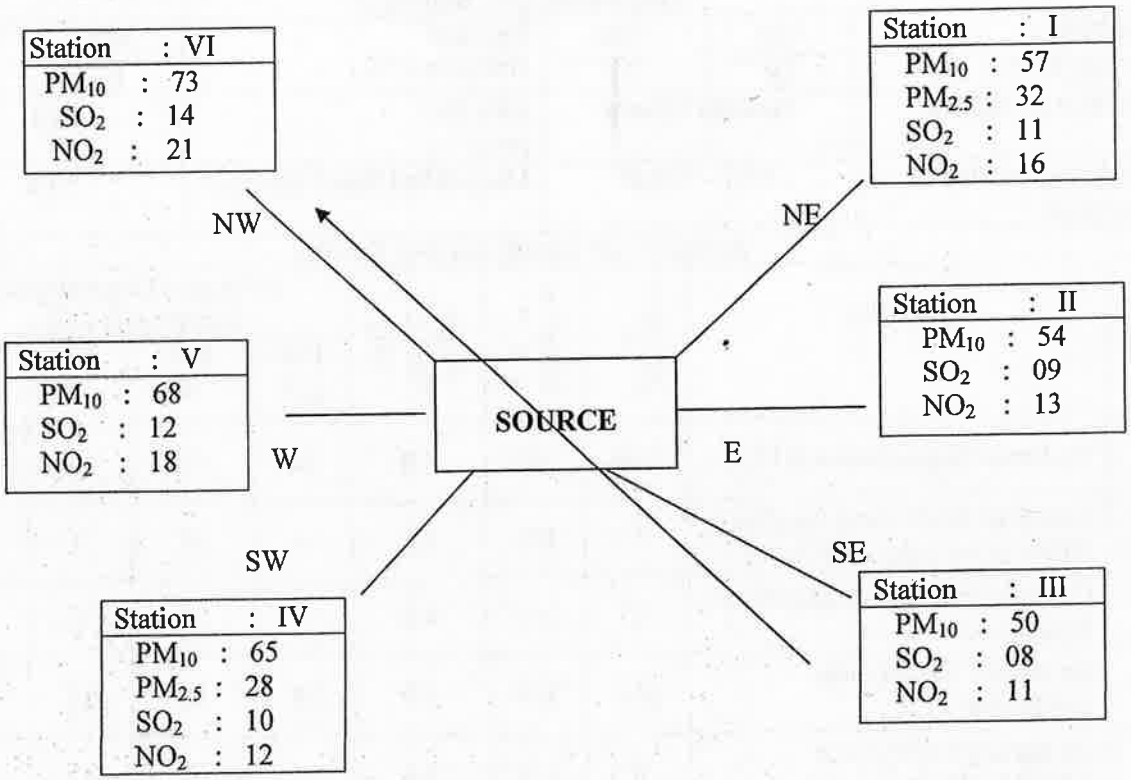
TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

AMBIENT AIR QUALITY SURVEY
Schematic Diagram Showing Location of Sampling

Report No. 50/AAQ/SM/2022-23

Name and Address of the Industry : **M/s. Ennore Coal Terminal Pvt.Ltd.,**
143, Puzuthivakkam Village, Chennai – 600 120.

Date of Survey : **22.03.2023**



Note: All the values are expressed in $\mu g/m^3$ and restricted to sampling period of **8 hrs**/24hrs

Meteorological Conditions:	
Predominant Wind Direction	SSE - NNW
Wind Speed (Km/hr)	14.8
Weather Condition	Partially Cloudy
Rainfall	Nil

T. Thamaraiselvi 12.4.23
Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

STACK MONITORING SURVEY – Report of Analysis

Report No. 50 / SM/2022-23 Date: 12.04.2023

1. Name of the Industry : **M/s. Ennore Coal Terminal Pvt Ltd.,**
2. Address of the Industry : 143, Puzuthivakkam Village, Chennai – 600 120.
3. Date of Survey : **22.03.2023**
4. Type of Industry : **Coal handling** /Chemical/Sugar/Paper & Pulp/ Power plant / Textile Processing

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Fuel used	Stack .Temp ^0K	Velocity in .(m/ sec)	Discharge rate In Nm^3/hr	Pollutants (mg / Nm^3)		
						PM	SO_2	NO_x
1	DG – 500 KVA (SUB STATION-I) (Idling Condition)	HSD	458	23.59	1769	17	4	238
2	DG – 500 KVA- Shipunloader (PORT) (Idling Condition)	HSD	448	24.19	1862	15	3	242

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Gaeke / IS 5182 : (Part 2) – 2001 RA: 2012
NOx	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

T. Thamaraisel 12.4.23
Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

Stack Details

Report No. 50/AAQ/SM/2022-23

1. Name and Address of the Industry : **M/s. Ennore Coal Terminal Pvt Ltd.,**
143, Puzuthivakkam Village, Chennai – 600 120.

2. Date of Survey : **22.03.2023**

Sl. No.	Particulars		1	2
1.	Stack attached to		Sub-station -1 DG-500 KVA	Ship unloader (PORT) DG-500 KVA
2.	Details of process stack		Emergency for Lighting	Emergency for Lighting
3.	Height from G Level in (m)		12	12
4.	Diameter in (m)		0.2	0.2
5.	Port hole height from Ground Level or sbends or ducts in (m)		10	10
6.	Fuel Used (with % Sulphur content)		Liquid HSD	Liquid HSD
7.	Fuel Consumption rate per hr (mention units)		--	--
8.	Type of Stack and capacity		Round	Round
9.	Production detail as on 22.03.2023		35448 MT Coal Dispatched	
10.	APC Measures provided		Acoustic enclosures	Acoustic enclosures
11.	APC functional status		Good	Good
12.	Composition of flue gas mg/m^3	CO (mg/m^3)	--	--
		CO_2 %	--	--
		O_2 %	--	--
13.	Moisture content in %		--	--
14.	Ambient temp in °K		304	305
15.	Temp of flue gas in °K		458	448
16.	Velocity of flue gas in m/sec		23.59	24.19
17.	Volume of flue gas sampled in m^3		0.9821	1.002
18.	Gaseous Discharge rate per day in Nm^3/hr		1769	1862
19.	Combustion efficiency %		--	--

T. Thamaraiselvi 12.4.23

Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

STACK MONITORING SURVEY – Additional details

Report No. 50/SM/2022-23 Date: 12.04.2023

1. Name of the Industry : **M/s. Ennore Coal Terminal Pvt Ltd.,**
2. Address of the Industry : 143, Puzuthivakkam Village, Chennai – 600 120.
3. Date of Survey : **22.03.2023**
4. Type of Industry : **Coal handling** /Chemical/Sugar/Paper & Pulp/ Power plant / Textile Processing

Stack Monitoring Additional details

Sl. No.	Details of stack mentioned in the Air Consent order	Details of stack available and in working condition	Details of stack for which stack Emission sampling have been done	Justification for the left out of stack Emission Sampling
1.	DG-500 KVA (SUB STATION-I) (Idling Condition)	Working	Sampling Done	--
2.	DG-500 KVA Shipunloader (PORT) (Idling Condition)	Working	Sampling Done	--

T. Thamaraiselvi 12.4.23
Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

AMBIENT/SOURCE NOISE LEVEL SURVEY - Report of Analysis

Report No. 50 / NLS/2022-23 Date: 12.04.2023

1.	Name of the Industry	**M/s. Ennore Coal Terminal Pvt Ltd.,**
2.	Address of the Industry	143, Puzuthivakkam Village, Chennai – 600 120.
3.	Date of Survey	**22.03.2023**

Category	**RL**	**Land use Classification**	Industrial
Type of Survey	**Ambient**/Source	**Time of Survey**	Day
Meteorological conditions		**Calm/Windy/Rainy**	Windy

Logging Parameters

Instrument Used	CESVA Model SC310			Serial No	T243103
Logging Interval	10 Minutes each point			**Measuring Range**	20-110 dB(A)
Weighting	**" A"**	**Peak Weighting**	**"C"**	**Time Weighting**	FAST
Sound Incidence	RANDOM			**Time in hrs**	14.00 – 16.00

Report of Noise Level Monitoring

Sl. No	Location	Duration (min)	Distance (m)	Direction	Sound Level –dB(A)		
					L_{eq}	Min	Max
1	Near BTLS	10	350	NE	54.3	52.8	61.4
2	Near Wagon Gate	10	350	SE	66.3	60.9	72.4
3	Near Sub Station	10	250	SW	50.7	48.4	55.6
4	Near Admin	10	200	W	54.4	51.3	64.3
5	Near North Wind Shield	10	350	NW	53.2	50.4	70.8
6	Near Port Gate **	10	250	E	63.4	59.7	72.5
7	Near Port Office **	10	150	ENE	60.2	56.3	65.0
8	Near Rig Point **	10	50	E	53.1	51.1	66.7

** - The Direction & Distance are from the centre of coal unloading point.

Note: Leq value is the average energy for the measured period.

T. Thanarajan 12.4.23

Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali

INFERENCE REPORT ON A.A.Q.S./ S.M.

1. Name of Industry : **M/s. Ennore Coal Terminal Pvt Ltd.,**
   143, Puzuthivakkam Village, Chennai – 600 120.
2. Pollution Category : Red Large
3. Date of A.A.Q. Survey : **22.03.2023**
4. Predominant Wind Direction : SSE - NNW
5. Weather condition : *Partially Cloudy*

STATUS OF POLLUTANTS LEVEL

I. AMBIENT AIR QUALITY :-

1. Total No. of A.A.Q. stations monitored : 6
2. No. of A.A.Q. stations in which Pollutants Level exceeded the Boards standards : Nil

Maximum and Minimum values of Pollutants Level observed:

Sl. No.	POLLUTANT	Values in microgram/m^3		BOARD's STANDARD (As per consent order)
		Maximum	Minimum	
1.	PM_{10}	73	50	100
	PM.2.5	32	28	60
2.	GASEOUS POLLUTANTS:-			
	(i) SO2	14	08	80
	(ii) NO2	21	11	80

II. STACK MONITORING:-

1. Total No. of Stacks Monitored : 2
2. No. of Stacks in which Pollutants level Exceeded the Boards standards : Nil

T. Thamaraiselvi 12.4.23

Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Boar
Manali

TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali

BILL

Report No. 50/AAQ/SM/2022-23

Bill No.	50/2022-23
Date	12.04.2023

To

M/s. Chettinad International Coal Terminal Pvt. Ltd.,
143, Puzuthivakkam Village, Chennai – 600 120.

Ref: 1. B.PMs.No.6 Dt.31.03.2009.
2. This office Lr.No. TNPCB/DEL/MNL/AAQS/SM/NLS/F.No.10/2022-23 dt. 26.12.2022
3. Your Lr.No.ECTPL/HR & ADMIN/TNPCB/22-23/ dt. 23.01.2023
4. Cash Receipt No. 153860 dt. 24.01.2023 Rs.1,00,500/-

******

Sl. No.	Description	Rate (Rs.)	No. of Stations/ Stacks	Amount (Rs.)
1.	SAMPLING CHARGES:			
	(i) Ambient Air Quality monitoring PM_{10}	3500	6	21,000
	(ii) Source Emission Monitoring (PM, SO_2, NO_x etc.,)	13100	2	26,200
	(iii) Ambient Air Quality monitoring $PM_{2.5}$	3500	2	7,000
2.	ANALYTICAL CHARGES:			
	(i) Ambient Air Samples PM_{10}, SO_2, NO_2 (each Rs. 600/-)	3150	6	18,900
	(ii) Ambient Air Samples $PM_{2.5}$	1800	2	3,600
	(iii) Source Emission Samples PM, SO_2, NO_x, (each Rs.600/-)	3150	2	6,300
3.	AMBIENT NOISE MONITORING CHARGES:			
	(i) For first 5 stations	1400	5	7,000
	(ii) Addl point (3)	3500	3	10,500
Total				**1,00,500**
Received Vide Axis Bank DD No.034545 dated 20.01.2023 Our CR.No. 153860 dated 24.01.2023				**1,00,500**
Balance				**Nil**

T. Thamaraiselvi 12.4.23

Deputy Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

FORM –V

(See rule 14 of Environment (Protection) Rules, 1986)

Environmental Statement for the financial year ending with 30th June 2023

PART -A

i) Name and Address of the owner/occupier of the Industry operation or process	:	Mr. Rashmi Ranjan Patra Director, S.F. 143, Puzhidhivakkam Village, Near NCTPS Quarters, Vallur - Post, Chennai -600 120
ii) Industry Category		Primary : Red Secondary : 1065-Ports and Harbour, Jetties and Dredging Operations.
iii) Year of Establishment		2011
iv) Date of the last environmental statement submitted		

PART-B

Water and Raw Material Consumption:

i) Water consumption in m3/d

Process	:	16500(Re-used - Zero Discharge)
Cooling	:	-
Domestic	:	8

Name of Products	Process water consumption per unit of products (KL/MT)	
	During the previous Year 2022-23	During the current Year 2023
1. Coal (Handling Only) (Unloading, transfer, storage and loading of Coal)	0.55	0.55

ii. Raw Material consumption

Name of Materials*	Name of the Products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial Year
N/A	N/A	N/A	N/A
The unit does not undergo any manufacturing process. The water consumed is mainly for Firefighting, greenbelt development, domestic and maintenance, etc.,			

PART-C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons.
(a) Water	ZERO DISCHARGE	ZERO DISCHARGE	ZERO DISCHARGE
(b) Air	1) DG 500 KVA - 2 Nos. 2) DG 400 KVA - 2 Nos. 3) DG 200 KVA - 1 No. **Used for Lighting**		

PART -D

HAZARDOUS WASTES

(as specified under Hazardous Wastes (Management & Handling Rules, 1989)

Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
1. From Process	N/A	N/A
2. From Pollution Control Facilities	N/A	N/A

PART-E

SOLID WASTES

Solid Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
a. From Process	N/A	N/A
b. From Pollution Control Facilities	N/A	N/A
c. Quantity recycled or re-utilized within the unit.	N/A	N/A

PART -F

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

PART - G

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

- All the domestic wastewater being generated at coal stack yard is treated at existing sewage treatment plant and the treated water is being re-used for gardening/horticulture purpose.
- Sewage Treatment Plant (STP) is in continuous operation and the treated effluent water quality is meeting the TNPCB norms.
- Regular Environmental monitoring is being carried out through NABL accredited laboratory. All the monitored environmental parameters are well within the prescribed norms & the details of monitored data is being submitted regularly to TNPCB.
- The unit is continuously developing and maintaining Greenbelt within the coal stack yard.

PART-H

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

Regular Expenditure (Cost in INR lakhs /year)		
Sl. No.	Description	Cost
1	AAQMS & Environmental Monitoring of MoEF recognized third party	2.78
2	Green Belt Horticulture development (Water)	5.33
3	Annual Maintenance cost of STP	0.11

PART - I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel : 044 42612103

Website : www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/NLM/ 2156 /2022-2023		Report Date		24.01.2023
Customer Name & Address	**M/s.ENNORE TANK TERMINALS PRIVATE LIMITED** **Inside Ennore Port, Vallur Post,** **Thiruvallur District,** **Chennai – 600 120.**				
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 / 2012				
Description	Noise Level Monitoring		Monitoring Date		17.01.2023
Monitored by	GCSPL		Data Received On		18.01.2023
S.No.	Locations		Day Time		Night Time	
			Maximum	Minimum	Maximum	Minimum
1	Near Security Gate		67.9	63.3	57.5	52.8
2	Weigh Bridge		72.0	65.6	60.8	55.1
3	TLF IV		63.7	57.2	56.0	49.3
4	TLF I		65.3	59.5	53.2	47.0
5	Pump House – II		67.8	60.1	61.7	56.9
6	Near DG set		73.4	66.0	63.6	58.2
Unit			dB(A)		dB (A)	
TNPCB Standards (Industrial Area)			75.0		70.0	
Reference Method			Instruments Manual			

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

**** End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Ekambaram Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056

Tel 044 42612103

Website: www.greenchemsolutions.in

Email info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

GREEN CHEM SOLUTIONS PVT LTD

Report of Analysis

MICROMETEOROLOGY SURVEY

Report No: GCS/S/MM/ 2157 /2022-2023 Date - 24.01.2023

Name and Address of the industry	:	M/s.ENNORE TANK TERMINALS PVT LTD , Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.	
Date of Survey	:	17.01.2023	
Duration of Survey	:	24 hours	
Pollution Category	:	Red	
Industry Classification	:	Large	
Weather Condition	:	Clear Sky	
Ambient Temperature	:	Max: 28 °C	Min - 21°C
Relative Humidity	:	Max : 70 %	Min 49 %
Predominant Wind Direction	:	NE	
Wind Speed (km/hr)	:	14.0	
Rainfall (mm)	:	Nil	

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056

Tel: 044 4261 2103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2154 A /2022-2023	Report Date	24.01.2023
Customer Name & Address	**M/s.ENNORE TANK TERMINALS PRIVATE LIMITED** **Inside Ennore Port, Vallur Post,** **Thiruvallur District,** **Chennai – 600 120.**		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Ambient Air Quality Monitoring	Sample Received on	18.01.2023
Survey Conducted by	GCSPL	Test Commenced on	18.01.2023
Survey Conducted on	17.01.2023	Test Completed on	19.01.2023

S. No.	Locations	Pollutants						
		PM_{10}	$PM_{2.5}$	SO_2	NO_X	Pb	CO	O_2
1	Near Main Gate	57	24	6.8	15.4	BDL(D.L: 0.6)	BDL(D.L: 1.0)	20.5
2	Weigh Bridge	66	28	7.4	16.8	BDL(D.L: 0.6)	BDL(D.L: 1.0)	20.5
3	Near Power House	42	17	5.3	13.1	BDL(D.L: 0.6)	BDL(D.L: 1.0)	20.5
4	Near Fire Engine Plant	45	16	4.9	11.0	BDL(D.L: 0.6)	BDL(D.L: 1.0)	20.5
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	%
NAAQ Standards (Industrial, Residential & Rural Area)		100	60	80	80	1.0	4	-
Reference Method - IS : 5182		Part 23	Part 24	Part 2	Part 6	Part 22	Part 10	IS 13270

PM_{10}	Particulate Matter (Size less than 10µm)	NO_x	Oxides of Nitrogen
$PM_{2.5}$	Particulate Matter (Size less than 2.5µm)	CO	Carbon Monoxide
SO_2	Sulphur Di-Oxide	Pb	Lead
O_2	Oxygen	BDL: Below Detection Limit D.L: Detection Limit	

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.1, Rajiv Gandhi Street, Balaji Avenue, A.N.Extension Road (Old Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42012103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2154 B /2022-2023			Report Date	24.01.2023
Customer Name & Address	M/S.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vellar Post, Thiruvallur District, Chennai – 600 120.				
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012				
Survey Description	AAQ Monitoring – TLF I			Sample Received on	18.01.2023
Survey Conducted by	GCSPL		Test Commenced on		18.01.2023
Survey Conducted on	17.01.2023		Test Completed on		20.01.2023

S.No	PARAMETER	UNITS	RESULTS	REFERENCE METHOD	NAAQ Standards (Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	47	IS 5182 – Part 23	100
2	$PM_{2.5}$	$\mu g/m^3$	18	IS 5182 – Part 24	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	6.4	IS 5182 – Part 2	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	14.6	IS 5182 – Part 6	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 – Part 22	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 – Part 10	2
7	Ozone as O_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 9	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 25	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1.0)	IS 5182 : Part 11	5
10	Benzene (o) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12	1
11	Arsenic as As	ng/m^3	BDL (DL: 1.0)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5.0)	IS 5182 – Part 26	20

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorised Signatory

*** *End of Report* ***

Note: The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.A, Rajiv Gandhi Street, Balaji Avenue, A.N.Chinnaiah Road (Old Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SW / 2155 A /2022-2023		Report Date	24.01.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED. Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.			
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012			
Survey Description	Stack Monitoring		Sample Received on	18.01.2023
Survey Conducted by	GCSPL		Test Commenced on	18.01.2023
Survey Conducted on	17.01.2023		Test Completed on	20.01.2023

S.No.	Descriptions	Unit	DG 250 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	----
2	Total Stack Height From 'G'Level	m	7.0	10.0	----
3	Stack Diameter	m	0.10	0.20	----
4	Ambient Temperature	°C	28	28	----
5	Stack Temperature	°C	127	214	----
6	Flue gas velocity	m/sec	13.14	18.96	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	276	1408	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	13.2	20.4	IS.11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	5.4	7.0	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	32	109	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Chinnalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42612703

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2155 B /2022 2023	Report Date	24.01.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12 13 /2012		
Survey Description	Stack Monitoring	Sample Received on	18.01.2023
Survey Conducted by	GCSPL	Test Commenced on	18.01.2023
Survey Conducted on	17.01.2023	Test Completed on	20.01.2023

S.No.	Descriptions	Unit	DG 180 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	----
2	Total Stack Height Form 'G' Level	m	7.0	10.0	----
3	Stack Diameter	m	0.10	0.20	----
4	Ambient Temperature	°C	28	28	----
5	Stack Temperature	°C	124	176	----
6	Flue gas velocity	m/sec	10.35	18.21	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	219	1364	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	12.4	20.6	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	3.9	6.4	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	30	82	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
[Laboratory Division]

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel : 044 42617703

Website : www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCS/W/ 2234 /2022-2023	Report Date	24.01.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Survey Description	ETP Outlet	Sample Received On	17.01.2023
Sample Drawn By	GCSPL	Test Commenced On	17.01.2023
Sample Collected Date	17.01.2023	Test Completed On	24.01.2023

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	TNPCB Norms for Treated Effluent
1.	pH @ 25°C	--	7.42	IS:3025/P11/2022	5.5 – 9.0
2.	Total Dissolved Solids	mg/l	524	IS:3025/P16/1984Reaff 2017	2100
3.	Total Suspended Solids	mg/l	8.0	IS:3025/P17/2022	100
4.	Chemical Oxygen Demand	mg/l	46	IS:3025/P58/2006Reaff 2017	250
5.	BOD (for 3 days at 27°C)	mg/l	7.5	IS:3025/P44/1993Reaff 2019	30
6	Oil & Grease	mg/l	BDL(D.L:1.0)	IS:3025/P39/2021	10

BDL: Below Detection Limit D.L: Detection Limit

For GREEN CHEM SOLUTIONS PVT LTD
(Laboratory Division)

Authorized Signatory

** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel. 044 42612103
Website: www.greenchemsolutions.in

E-mail: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2246 A /2022-2023	Report Date	03.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Ambient Air Quality Monitoring	Sample Received on	01.03.2023
Survey Conducted by	GCSPL	Test Commenced on	01.03.2023
Survey Conducted on	28.02.2023	Test Completed on	03.03.2023

S. No	Locations	Pollutants						
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	Pb	CO	O_2
1	Near Main Gate	52	20	7.6	14.3	BDL(D.L: 0.5)	BDL(D.L : 0)	20.7
2	Weigh Bridge	62	25	7.9	16.0	BDL(D.L: 0.5)	BDL(D.L : 0)	20.7
3	Near Power House	44	16	5.8	13.7	BDL(D.L: 0.5)	BDL(D.L : 0)	20.7
4	Near Fire Engine Plant	49	18	5.4	13.1	BDL(D.L: 0.5)	BDL(D.L : 0)	20.7
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	%
NAAQ Standards (Industrial, Residential & Rural Area)		100	60	80	80	1.0	4	-
Reference Method - IS : 5182		Part 23	Part 24	Part 2	Part 6	Part 22	Part 10	IS 13270

PM_{10}	Particulate Matter (Size less than 10µm)	NO_x	Oxides of Nitrogen
$PM_{2.5}$	Particulate Matter (Size less than 2.5µm)	CO	Carbon Monoxide
SO_2	Sulphur DI-Oxide	Pb	Lead
O_2	Oxygen	BDL: Below Detection Limit D.L: Detection Limit	

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Old Mel Road), Iyyappanthangal, Chennai - 600056.

Tel. 044 42612103

Website : www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCS/S/AAQ/2246 B /2022-2023		Report Date	03.03.2023
Customer Name & Address	M/s. ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vellur Post, Thiruvallur District, Chennai - 600 120.			
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012			
Survey Description	AAQ Monitoring – TLF I		Sample Received on	28.02.2023
Survey Conducted by	GCSPL	Test Commenced on		28.02.2023
Survey Conducted on	28.02.2023	Test Completed on		03.03.2023

S.No	PARAMETER	UNITS	RESULTS	REFERENCE METHOD	NAAQ Standards (Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	43	IS 5182 – Part 23	100
2	$PM_{2.5}$	$\mu g/m^3$	14	IS 5182 – Part 24	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	5.9	IS 5182 Part 2	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	12.0	IS 5182 – Part 6	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 – Part 22	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 – Part 10	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 Part 9	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 25	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1.0)	IS 5182 : Part 11	5
10	Benzene (α) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12	1
11	Arsenic as As	ng/m^3	BDL (DL: 1.0)	GCS/Lab/SOP/089	5
12	Nickel as Ni	ng/m^3	BDL (DL: 5.0)	IS 5182 – Part 25	20

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorised Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions. n

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2248 A /2022-2023	Report Date	03.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WC/DD2/12-13 /2012		
Survey Description	Stack Monitoring	Sample Received on	28.02.2023
Survey Conducted by	GCSPL	Test Commenced on	28.02.2023
Survey Conducted on	28.02.2023	Test Completed on	03.03.2023

S.No.	Descriptions	Unit	DG 250 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	.....
2	Total Stack Height From 'G' Level	m	7.0	10.0	.....
3	Stack Diameter	m	0.10	0.20	.....
4	Ambient Temperature	°C	30	30	.....
5	Stack Temperature	°C	132	240	.....
6	Flue gas velocity	m/sec	14.78	19.72	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	307	1294	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	15.0	22.9	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	6.1	8.3	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	37	177	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No 4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Off Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2248 B /2022-2023	Report Date	03.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12 13 /2012		
Survey Description	Stack Monitoring	Sample Received on	28.02.2023
Survey Conducted by	GCSPL	Test Commenced on	28.02.2023
Survey Conducted on	28.02.2023	Test Completed on	03.03.2023

S.No.	Descriptions	Unit	DG 180 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	----
2	Total Stack Height Form 'G' Level	m	7.0	10.0	----
3	Stack Diameter	m	0.10	0.20	----
4	Ambient Temperature	°C	29	29	----
5	Stack Temperature	°C	128	170	----
6	Flue gas velocity	m/sec	11.42	17.25	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	239	1309	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	14.0	22.8	IS.11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	4.3	6.9	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	37	86	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory
The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Off Ist Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCS/W/ 3356 /2022-2023	Report Date	03.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Survey Description	ETP Outlet	Sample Received On	28.02.2023
Sample Drawn By	GCSPL	Test Commenced On	28.02.2023
Sample Collected Date	28.02.2023	Test Completed On	03.03.2023

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	TNPCB Norms for Treated Effluent
1.	pH @ 25°C	--	7.09	IS:3025/P11/2022	5.5 – 9.0
2.	Total Dissolved Solids	mg/l	382	IS:3025/P16/1984Reaff 2017	2100
3.	Total Suspended Solids	mg/l	4.8	IS 3025/P17/2022	100
4.	Chemical Oxygen Demand	mg/l	32	IS:3025/P58/2006Reaff 2017	250
5.	BOD (for 3 days at 27°C)	mg/l	6.0	IS:3025/P44/1993Reaff 2019	30
6.	Oil & Grease	mg/l	BDL(D.L:1.0)	IS:3025/P39/2021	10

BDL: Below Detection Limit D.L: Detection Limit

For GREEN CHEM SOLUTIONS PVT LTD
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

GREEN CHEM SOLUTIONS PVT LTD

Report of Analysis

MICROMETEOROLOGY SURVEY

Report No: GCS/S/MM/ 2749 /2022-2023 Date : 03.03.2023

Name and Address of the Industry	:	**M/s.ENNORE TANK TERMINALS PVT LTD ,** Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.
Date of Survey	:	28.02.2023
Duration of Survey	:	24 hours
Pollution Category	:	Red
Industry Classification	:	Large
Weather Condition	:	Clear Sky
Ambient Temperature	:	Max: 30 °C Min : 22°C
Relative Humidity	:	Max : 62 % Min : 41 %
Predominant Wind Direction	:	SE
Wind Speed (km/hr)	:	11.6
Rainfall (mm)	:	Nil

**** End of Report****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056

Tel: 044 42012100
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/NL(V)/ 2247 /2022-2023	Report Date	03.03.2023
Customer Name & Address	**M/s.ENNORE TANK TERMINALS PRIVATE LIMITED** **Inside Ennore Port, Vallur Post,** **Thiruvallur District,** **Chennai – 600 120.**		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 / 2012		
Description	Noise Level Monitoring	Monitoring Date	28.02.2023
Monitored by	GCSPL	Data Received On	28.02.2023

S.No.	Locations	Day Time		Night Time	
		Maximum	Minimum	Maximum	Minimum
1	Near Security Gate	72.3	64.0	66.5	57.1
2	Weigh Bridge	73.8	67.3	68.0	61.5
3	TLF IV	63.6	58.4	57.9	52.7
4	TLF I	65.4	59.7	58.1	53.9
5	Pump House – II	72.0	55.2	64.6	55.4
6	Near DG set	73.1	67.5	67.8	62.3
Unit		dB(A)		dB(A)	
TNPCB Standards (Industrial Area)		75.0		70.0	
Reference Method		Instruments Manual			

For **Green Chem Solutions Pvt Ltd**
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.E.Ismailai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2293 4 /2022-2023	Report Date	20.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TFR/GCSPL/WO/002/12-13 /2012		
Survey Description	Ambient Air Quality Monitoring	Sample Received on	16.03.2023
Survey Conducted by	GCSPL	Test Commenced on	16.03.2023
Survey Conducted on	15.03.2023	Test Completed on	20.03.2023

S. No.	Locations	Pollutants						
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	Pb	CO	O_2
1	Near Main Gate	59	23	7.1	16.8	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.8
2	Weigh Bridge	67	28	8.4	17.5	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.8
3	Near Power House	40	17	6.5	12.0	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.8
4	Near Fire Engine Plant	46	15	5.0	13.7	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.8
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	%
NAAQ Standards (Industrial, Residential & Rural Area)		100	60	80	80	1.0	4	-
Reference Method - IS : 5182		Part 23	Part 24	Part 2	Part 6	Part 22	Part 10	IS 13270

PM_{10}	Particulate Matter (Size less than 10µm)	NO_x	Oxides of Nitrogen
$PM_{2.5}$	Particulate Matter (Size less than 2.5µm)	CO	Carbon Monoxide
SO_2	Sulphur Di-Oxide	Pb	Lead
O_2	Oxygen	BDL: Below Detection Limit D.L: Detection Limit	

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N. Gunalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42612103 | Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in | greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2293 0 /2022-2023	Report Date	20.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	AAQ Monitoring – TLF I	Sample Received on	15.03.2023
Survey Conducted by	GCSPL	Test Commenced on	16.03.2023
Survey Conducted on	15.03.2023	Test Completed on	20.03.2023

S.No	PARAMETER	UNITS	RESULTS	REFERENCE METHOD	NAAQ Standards (Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	49	IS 5182 – Part 23	100
2	$PM_{2.5}$	$\mu g/m^3$	18	IS 5182 – Part 24	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	6.7	IS 5182 – Part 2	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	14.3	IS 5182 – Part 6	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 – Part 22	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL: [illegible])	IS 5182 – Part 10	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 9	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 25	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1.0)	IS 5182 : Part 11	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12	1
11	Arsenic as As	ng/m^3	BDL (DL: 1.0)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5.0)	IS 5182 – Part 26	20

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Off Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/NLM/ 2295 /2022-2023		Report Date	20.03.2023	
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.				
Customer Reference	JMC/TEP/GCSPL/WO/002/12-13 / 2017				
Description	Noise Level Monitoring		Monitoring Date	15.03.2023	
Monitored by	GCSPL		Data Received On	15.03.2023	
S.No	Locations		Day Time		Night Time	
			Maximum	Minimum	Maximum	Minimum
1	Near Security Gate		71.0	62.9	64.2	55.7
2	Weigh Bridge		72.4	65.2	66.7	60.1
3	TLF V		66.9	60.5	59.4	51.6
4	TLF I		63.2	58.0	56.6	52.4
5	Pump House – II		70.8	63.1	62.5	54.0
6	Near DG set		73.5	66.7	65.0	58.9
Unit			dB(A)		dB (A)	
TNPCB Standards (Industrial Area)			75.0		70.0	
Reference Method			Instruments Manual			

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N Elumalai Road (Oil Mill Road), Iyyapuri (Nangi), Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2294 A /2022-2023	Report Date	20.03.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Stack Monitoring	Sample Received on	15.03.2023
Survey Conducted by	GCSPL	Test Commenced on	16.03.2023
Survey Conducted on	15.03.2023	Test Completed on	20.03.2023

S.No.	Descriptions	Unit	DG 250 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	.....
2	Total Stack Height From 'G'Level	m	7.0	10.0	.....
3	Stack Diameter	m	0.10	0.20	.....
4	Ambient Temperature	°C	31	30	.....
5	Stack Temperature	°C	147	249	.....
6	Flue gas velocity	m/sec	13.62	18.59	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	273	1200	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	17.2	24.8	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	6.5	8.7	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	89	130	IS:11255 - P7
11	Carbon monoxide, CO	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Raja Gan[illegible] Street, Balaji Avenue, A.N.Elumalai Road (Old Mill Road), Iyyappanthangal, Chennai - 600056

Tel: 044 4251210[illegible]

Website : www.[illegible]solutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCS/S/SM/[illegible]/2022-2023	Report Date	20.03.2023
Customer Name & Addr[illegible]	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	NIC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Stack Monitoring	Sample Received on	15.03.2023
Survey Conducted by	GCSPL	Test Commenced on	16.03.2023
Survey Conducted on	[illegible].3.2023	Test Completed on	20.03.2023

S.No.	Descriptions	Unit	DG 180 KVA	DG 500 KVA	Reference Method
1	APC Measures [illegible]ed	-	Silencer	Silencer	----
2	Total Stack Hei[illegible] m 'G' Level	m	7.0	10.0	----
3	Stack Diamete[illegible]	m	0.10	0.20	----
4	Ambient Temp[illegible]	°C	29	29	----
5	Stack Temperat[illegible]	°C	121	179	----
6	Flue gas velocit[illegible]	m/sec	10.35	15.91	IS:11255 - P3
7	Gaseous Em[illegible]s	Nm³/hr	221	1185	IS:11255 - P3
8	Particulate Ma[illegible]	mg/ Nm³	16.3	25.2	IS:11255 - P1
9	Sulphur Di-Ox[illegible]	mg/ Nm³	4.7	7.7	IS:11255 - P2
10	Oxides of Nitr[illegible])	mg/ Nm³	34	95	IS:11255 - P7
11	Carbon mono[illegible]	%	< 0.2	< 0.2	IS:13270
12	Chlorine as C[illegible]	mg/Nm³	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/ Nm³	150.0		

For Green Chem Solutions Pvt Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.A, Rajiv G ... ct, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42012 ...

Website: www. ... .co.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCW/ 2505 /2022-2023	Report Date	20.03.2023
Customer Name & Address	M/s. ENNORE TANK TERMINALS PRIVATE LIMITED Near Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Survey Description	Outlet	Sample Received On	15.03.2023
Sample Drawn By	GCPL	Test Commenced On	16.03.2023
Sample Collected Date	15.03.2023	Test Completed On	20.03.2023

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	TNPCB Norms for Treated Effluent
1.	pH @ 25°C	--	7.64	IS:3025/P11/2022	5.5 – 9.0
2.	Total Dissolved Solids	mg/l	478	IS:3025/P16/1984Reaff 2017	2100
3.	Total Suspended Solids	mg/l	7.3	IS:3025/P17/2022	100
4	Chemical Oxygen Demand	mg/l	47	IS:3025/P58/2006Reaff 2017	250
5.	BOD (for 3 days at 27°C)	mg/l	9.6	IS:3025/P44/1993Reaff 2019	30
6	Oil & Grease	mg/l	BDL(D.L:1.0)	IS:3025/P39/2021	10

BDL: Below Detection Limit ... Lower Limit

For GREEN CHEM SOLUTIONS PVT LTD
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREE CHEM SOLUTIONS PVT LTD
(ISO 14001:2015 Certified)
Laboratory Division
Plot No.4, Rajiv G ... el, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyapanthangal, Chennai - 600056,
Tel: 044-42612 ... Email: info@greenchemsolutions.in
Website: www... ...nsolutions.in greenchemsolutions@gmail.com

Test Report

GREEN CHEM SOLUTIONS PVT LTD

Report of Analysis

MICROMETEOROLOGY SURVEY

Report No: GCS/S...	...16 /2022-2023	Date : 20.03.2023
Name and Address	...dustry :	M/s.ENNORE TANK TERMINALS PVT LTD , Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.
Date of Survey	:	15.03.2023
Duration of Survey	:	24 hours
Pollution Category	:	Red
Industry Classificat...	:	Large
Weather Condition	:	Clear Sky
Ambient Temper...	:	Max. 31 °C Min : 24°C
Relative Humidity	:	Max : 60 % Min : 44 %
Predominant Wi...	...n :	NNE
Wind Speed (km/...	:	13.4
Rainfall (mm)	:	Nil

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Old Mail Road),, Iyyappanthangal, Chennai - 600056.

Tel: 044 4261 2103

Email: info@greenchemsolutions.in
green.chemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2407 A /2023-2024	Report Date	12.04.2023
Customer Name & Address	**M/s.ENNORE TANK TERMINALS PRIVATE LIMITED** **Inside Ennore Port**, Vallur Post, **Thiruvallur District,** **Chennai – 600 120.**		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Ambient Air Quality Monitoring	Sample Received on	06.04.2023
Survey Conducted by	GCSPL	Test Commenced on	07.04.2023
Survey Conducted on	06.04.2023	Test Completed on	10.04.2023

S. No.	Locations	Pollutants						
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	Pb	CO	O_2
1	Near Main Gate	63	26	8.1	18.3	BDL(D.L: 0.5)	BDL(D.L: 1.0)	21.7
2	Weigh Bridge	65	27	8.7	18.9	BDL(D.L: 0.5)	BDL(D.L: 1.0)	21.7
3	Near Power House	55	20	7.3	17.3	BDL(D.L: 0.5)	BDL(D.L: 1.0)	21.7
4	Near Fire Engine Plant	51	18	6.6	15.2	BDL(D.L: 0.5)	BDL(D.L: 1.0)	21.7
Unit		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	mg/m^3	%
NAAQ Standards (Industrial, Residential & Rural Area)		100	60	80	80	1.0	4	-
Reference Method - IS : 5182		Part 23	Part 24	Part 2	Part 6	Part 22	Part 10	IS 13270

PM_{10}	Particulate Matter (Size less than 10µm)	NO_x	Oxides of Nitrogen
$PM_{2.5}$	Particulate Matter (Size less than 2.5µm)	CO	Carbon Monoxide
SO_2	Sulphur Di-Oxide	Pb	Lead
O_2	Oxygen	BDL: Below Detection Limit D.L: Detection Limit	

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** End of Report ***

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyanpanthangal, Chennai - 600056.

Tel: 044-42612103

Website : www.greenchemsolutions.in

Email : info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2407 B /2023-2024		Report Date	12.04.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai - 600 120.			
Customer Reference	IMC/TEN/GCSPL/WO/002/12-13 /2012			
Survey Description	AAQ Monitoring – T.P.T		Sample Received on	06.04.2023
Survey Conducted by	GCSPL		Test Commenced on	07.04.2023
Survey Conducted on	06.04.2023		Test Completed on	10.04.2023

S.No	PARAMETER	UNITS	RESULTS	REFERENCE METHOD	NAAQ Standards (Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	54	IS 5182 - Part 23	100
2	$PM_{2.5}$	$\mu g/m^3$	23	IS 5182 – Part 24	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	8.7	IS 5182 – Part 2	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	17.5	IS 5182 – Part 6	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 – Part 22	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 – Part 10	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 9	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 25	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1.0)	IS 5182 - Part 11	5
10	Benzene (α) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 - Part 12	1
11	Arsenic as As	ng/m^3	BDL (DL: 1.0)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5.0)	IS 5182 – Part 26	20

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Gunalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/NLM/ 2408 /2023-2024		Report Date			12.04.2023	
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.						
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 / 2012						
Description	Noise Level Monitoring		Monitoring Date			06.04.2023	
Monitored by	GCSPL		Data Received On			06.04.2023	
S.No.	Locations		Day Time			Night Time	
			Maximum	Minimum		Maximum	Minimum
1	Near Security Gate		70.9	65.2		64.5	58.3
2	Weigh Bridge		72.0	66.8		65.2	60.8
3	TLF IV		64.3	59.7		59.5	53.2
4	TLF I		63.2	58.5		57.0	51.5
5	Pump House – II		70.3	64.0		62.9	55.4
6	Near DG set		73.7	68.4		66.5	63.9
Unit			dB(A)			dB (A)	
TNPCB Standards (Industrial Area)			75.0			70.0	
Reference Method			Instruments Manual				

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

**** End of Report ****

Note: The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Udayi Avenue, A.N.Gounabi Road (Off Ali Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 4761 2403

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2409 A/2023 2024	Report Date	12.04.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13/2012		
Survey Description	Stack Monitoring	Sample Received on	06.04.2023
Survey Conducted by	GCSPL	Test Commenced on	07.04.2023
Survey Conducted on	06.04.2023	Test Completed on	10.04.2023

S.No	Descriptions	Unit	DG 250 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	.....
2	Total Stack Height Form 'G'Level	m	7.0	10.0	.....
3	Stack Diameter	m	0.10	0.20	.....
4	Ambient Temperature	°C	32	32	.....
5	Stack Temperature	°C	142	218	.....
6	Flue gas velocity	m/sec	14.52	22.84	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	296	1587	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	17.8	26.4	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	5.4	8.3	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	61	135	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, II Cross Avenue, S.R.E.M. Industrial Estate (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 4201 2103

email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2409 H /2023-2024		Report Date	12.04.2023
Customer Name & Address	M/s ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.			
Customer Reference	MC/TER/GCSPL/WO/002/12-13/2012			
Survey Description	Stack Monitoring		Sample Received on	06.04.2023
Survey Conducted by	GCSPL		Test Commenced on	07.04.2023
Survey Conducted on	06.04.2023		Test Completed on	10.04.2023

S.No.	Descriptions	Unit	DG 180 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	.....
2	Total Stack Height From 'G' Level	m	7.0	10.0	.....
3	Stack Diameter	m	0.10	0.20	.....
4	Ambient Temperature	°C	32	32	.....
5	Stack Temperature	°C	123	213	.....
6	Flue gas velocity	m/sec	19.18	20.62	IS:11255 - P3
7	Gaseous Emission	Nm³/Hr	272	1480	IS:11255 - P3
8	Particulate Matter (PM)	mg/ Nm³	15.8	22.5	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/ Nm³	5.0	8.4	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/ Nm³	48	108	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/ Nm³	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/ Nm³	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Chinnalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

GREEN CHEM SOLUTIONS PVT LTD

Report of Analysis

MICROMETEOROLOGY SURVEY

Report No: GCS/S/MM/ 2430 /2023-2024 Date : 12.04.2023

Name and Address of the Industry : M/s. ENNORE TANK TERMINALS PVT LTD ,
Inside Ennore Port, Vallur Post,
Thiruvallur District,
Chennai 600 120

Date of Survey	:	06.04.2023	
Duration of Survey	:	24 hours	
Pollution Category	:	Red	
Industry Classification	:	Large	
Weather Condition	:	Clear Sky	
Ambient Temperature	:	Max: 32 °C	Min : 25°C
Relative Humidity	:	Max : 72 %	Min : 51 %
Predominant Wind Direction	:	NNE	
Wind Speed (km/hr)	:	10.5	
Rainfall (mm)	:	Nil	

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 9001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.K. Ramalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056

Tel: 044 42612100

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCS/W/ 2673 /	Report Date	12.04.2023
Customer Name & Address	M/s.ENNORE [illegible] SIGNALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Survey Description	ETP Outlet	Sample Received On	06.04.2023
Sample Drawn By	GCSPL	Test Commenced On	07.04.2023
Sample Collected Date	06.04.2023	Test Completed On	10.04.2023

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	TNPCB Norms for Treated Effluent
1.	pH @ 25°C	—	7.5*	IS:3025/P11/2022	5.5 – 9.0
2.	Total Dissolved Solids	mg/l	576	IS:3025/P16/1984Reaff 2017	2100
3.	Total Suspended Solids	mg/l	4.4	IS 3025/P17/2022	100
4.	Chemical Oxygen Demand	mg/l	28	S:3025/P58/2006Reaff 2017	250
5.	BOD (For 3 days at 27°C)	mg/l	10	S:3025/P44/1993Reaff 2019	30
6.	Oil & Grease	mg/l	BDL(DL:1.0)	S:3025/P39/2021	10

BDL: Below Detection Limit, D.L: Detection Limit

For GREEN CHEM SOLUTIONS PVT LTD
(Laboratory Division)

Authorized Signatory

*** End of Report ***

ENNORE TANK TERMINALS PRIVATE LIMITED
3rd Floor, P.T. Lee Chengalvaraya Naicker Maaligai, No.23, Rajaji Salai, Chennai - 600001.
Tel.: 044 - 4348 8686, Fax: 044 - 2521 8686, URL : www.ettpl.net.in

DNV

Ref. No.:ETTPL/TNPCB/005/23
Date : 25th May, 2023

The District Environmental Engineer
Tamil Nadu Pollution Control Board
Anthoni Pillai Nagar, Gummudipoondi,
Tamilnadu – 601201

Dear Sir,

Ref : a) Consent Order No. 17087 dated 17/07/2014 – Under Sec. 21 of the Air (Prevention & Control of Pollution) Act, 1981.

b) Consent Order No.21050 dated 17/07/2014 – Under Sec. 25 of the Water (Prevention and Control of Pollution) Act, 1974

We are enclosing herewith copies of the following reports for the tests done in the month of May 2023 for your perusal and records.

1. Air
2. Stack

Thanking you,

Yours faithfully,
For Ennore Tank Terminals Pvt Ltd.

26/5/23
C.P. Viswa **Mohan**
Vice President

Encl : a/a

30 MAY 2023

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N Elumalai Road (Off MRC Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	SCS/S/AAQ/ 2473 A /2023-2024	Report Date	11.05.2023
Customer Name & Address	**M/s.ENNORE TANK TERMINALS PRIVATE LIMITED** **Inside Ennore Port, Vallur Post,** **Thiruvallur District,** **Chennai – 600 120.**		
Customer Reference	IMC/TER/GCSPL/WO/002/22-23 /2012		
Survey Description	Ambient Air Quality Monitoring	Sample Received on	07.05.2023
Survey Conducted by	GCSPL	Test Commenced on	08.05.2023
Survey Conducted on	06.05.2023	Test Completed on	09.05.2023

S. No	Locations	Pollutants						
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	Pb	CO	O_2
1	Near Main Gate	65	27	8.6	19.1	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.9
2	Welgh Bridge	69	28	8.9	18.7	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.9
3	Near Power House	53	19	7.4	17.5	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.9
4	Near Fire Engine Plant	54	20	6.8	15.9	BDL(D.L: 0.5)	BDL(D.L: 1.0)	20.9
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	%
NAAQ Standards (Industrial, Residential & Rural Area)		100	60	80	80	1.0	4	-
Reference Method - IS : 5182		Part 23	Part 24	Part 2	Part 6	Part 22	Part 10	IS 13270

PM_{10}	Particulate Matter (Size less than 10µm)	NO_x	Oxides of Nitrogen
$PM_{2.5}$	Particulate Matter (Size less than 2.5µm)	CO	Carbon Monoxide
SO_2	Sulphur Di-Oxide	Pb	Lead
O_2	Oxygen	BDL: Below Detection Limit D.L: Detection Limit	

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

**** End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2473 B /2023-2024		Report Date	11.05.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.			
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012			
Survey Description	AAQ Monitoring – TLT I		Sample Received on	06.05.2023
Survey Conducted by	GCSPL		Test Commenced on	08.05.2023
Survey Conducted on	06.05.2023		Test Completed on	09.05.2023

S.No	PARAMETER	UNITS	RESULTS	REFERENCE METHOD	NAAQ Standards (Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	61	IS 5182 – Part 23	100
2	$PM_{2.5}$	$\mu g/m^3$	25	IS 5182 – Part 24	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	8.7	IS 5182 – Part 2	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	18.2	IS 5182 – Part 6	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 – Part 22	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 – Part 10	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 9	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 – Part 25	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1.0)	IS 5182 : Part 11	5
10	Benzene (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12	1
11	Arsenic as As	ng/m^3	BDL (DL: 1.0)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5.0)	IS 5182 – Part 26	20

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory. The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2016 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056

Tel: 044 42612103

Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

GREEN CHEM SOLUTIONS PVT LTD

Report of Analysis

MICROMETEOROLOGY SURVEY

Report No: GCS/S/M.W/ 2476 /2023-2024 Date : 11.05.2023

Name and Address of the industry	:	**M/s.ENNORE TANK TERMINALS PVT LTD ,** Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.	
Date of Survey	:	06.05.2023	
Duration of Survey	:	24 hours	
Pollution Category	:	Red	
Industry Classification	:	Large	
Weather Condition	:	Clear Sky	
Ambient Temperature	:	Max: 34 °C	Min : 27°C
Relative Humidity	:	Max : 89 %	Min : 63 %
Predominant Wind Direction	:	EAST	
Wind Speed (km/hr)	:	10.7	
Rainfall (mm)	:	Nil	

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42012103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No	GCS/W/ 2743 /2023-2024	Report Date	11.05.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Survey Description	ETP Outlet	Sample Received On	05.05.2023
Sample Drawn By	GCSPL	Test Commenced On	07.05.2023
Sample Collected Date	06.05.2023	Test Completed On	11.05.2023

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	TNPCB Norms for Treated Effluent
1	pH @ 25°C	--	7.32	IS:3025/P11/2022	5.5 – 9.0
2	Total Dissolved Solids	mg/l	558	IS:3025/P16/1984ReaII 2017	2100
3.	Total Suspended Solids	mg/l	9.6	IS:3025/P17/2022	100
4.	Chemical Oxygen Demand	mg/l	64	IS:3025/P58/2006 Reaff 2017	250
5.	BOD (for 3 days at 27°C)	mg/l	12	IS:3025/P44/1993 Reaff 2019	30
6.	Oil & Grease	mg/l	BDL(D.L.1.0)	IS 3025/P39/2021	10

BDL: Below Detection Limit D.L: Detection Limit

For GREEN CHEM SOLUTIONS PVT LTD
(Laboratory Division)

Authorized Signatory

** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No 4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website : www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2475 A /2023 2024	Report Date	11.05.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Stack Monitoring	Sample Received on	06.05.2023
Survey Conducted by	GCSPL	Test Commenced on	08.05.2023
Survey Conducted on	06.05.2023	Test Completed on	09.05.2023

S No.	Descriptions	Unit	DG 250 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	.....
2	Total Stack Height Form 'G' Level	m	7.0	10.0	.....
3	Stack Diameter	m	0.10	0.20	.....
4	Ambient Temperature	°C	31	31	.....
5	Stack Temperature	°C	132	236	.....
6	Flue gas velocity	m/sec	13.64	20.84	IS:11255 P3
7	Gaseous Emission	Nm^3/hr	283	1375	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	18.4	25.2	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	5.7	8.1	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	67	126	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.A, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Old Mill Road), Ayyappanthangal, Chennai - 600056.

Tel: 044 42812100

Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2475 B /2023-2024	Report Date	11.05.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Stack Monitoring	Sample Received on	06.05.2023
Survey Conducted by	GCSPL	Test Commenced on	08.05.2023
Survey Conducted on	06.05.2023	Test Completed on	09.05.2023

S No	Descriptions	Unit	DG 180 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	----
2	Total Stack Height From 'G' Level	m	7.0	10.0	----
3	Stack Diameter	m	0.10	0.20	----
4	Ambient Temperature	°C	32	32	----
5	Stack Temperature	°C	116	246	----
6	Flue gas velocity	m/sec	12.96	19.73	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	250	1279	IS:11255 - P3
8	Particulate Matter (PM)	mg/ Nm^3	14.9	23.4	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	4.8	8.6	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/ Nm^3	45	119	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 2	odometric Method
TNPCB Standards – PM		mg/ Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

**** End of Report****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.1 Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/KLM/ 2474 /2023-2024	Report Date	11.05.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 / 2012		
Description	Noise Level Monitoring	Monitoring Date	06.05.2023
Monitored by	GCSPL	Data Received On	06.05.2023

S.No.	Locations	Day Time		Night Time	
		Maximum	Minimum	Maximum	Minimum
1	Near Security Gate	71.4	66.1	64.0	57.9
2	Weigh Bridge	72.5	67.2	65.5	60.4
3	TLF IV	64.1	58.3	59.0	53.9
4	TLF I	62.9	59.4	56.8	52.1
5	Pump House – II	71.2	64.5	63.1	55.9
6	Near DG set	73.1	68.9	67.4	63.2
Unit		dB(A)		dB (A)	
TNPCB Standards (Industrial Area)		75.0		70.0	
Reference Method		Instruments Manual			

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue A N Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056

Tel: 044 42612103

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/AAQ/ 2572 A /2023-2024	Report Date	29.06.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/22-13 /2012		
Survey Description	Ambient Air Quality Monitoring	Sample Received on	25.06.2023
Survey Conducted by	GCSPL	Test Commenced on	26.06.2023
Survey Conducted on	24.06.2023	Test Completed on	27.06.2023

S. No.	Locations	Pollutants						
		PM_{10}	$PM_{2.5}$	SO_2	NO_X	Pb	CO	O_2
1	Near Main Gate	62	24	8.2	19.5	BDL(D.L 0.5)	BDL(D.L 1.0)	20.9
2	Weigh Bridge	71	29	8.7	19.1	BDL(D.L 0.5)	BDL(D.L 1.0)	20.9
3	Near Power House	51	18	7.2	16.9	BDL(D.L 0.5)	BDL(D.L 1.0)	20.9
4	Near Fire Engine Plant	56	21	6.7	15.6	BDL(D.L 0.5)	BDL(D.L 1.0)	20.9
Unit		µg/m³	µg/m³	µg/m³	µg/m³	µg/m³	mg/m³	%
AAQ Standards (Industrial, Residential & Rural Area)		100	60	80	80	1.0	4	-
Reference Method - IS : 5182		Part 23	Part 24	Part 2	Part 6	Part 22	Part 10	IS 13270

PM_{10}	Particulate Matter (Size less than 10µm)	NO_x	Oxides of Nitrogen
$PM_{2.5}$	Particulate Matter (Size less than 2.5µm)	CO	Carbon Monoxide
SO_2	Sulphur Di-Oxide	Pb	Lead
O_2	Oxygen	BDL: Below Detection Limit D.L: Detection Limit	

For Green Chem Solutions Pvt Ltd
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No 4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Old Mill Road), Iyyappanthangal, Chennai - 600056.

Tel. 044 42612103 | Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

[illegible]

Test Report

Report No.	GCS/S/AAQ/ 2572 B /2023-2024	Report Date	28.06.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	AAQ Monitoring – TLF.	Sample Received on	24.06.2023
Survey Conducted by	GCSPL	Test Commenced on	26.06.2023
Survey Conducted on	24.06.2023	Test Completed on	27.06.2023

S.No	PARAMETER	UNITS	RESULTS	REFERENCE METHOD	NAAQ Standards (Industrial, Residential & Rural Area)
1	PM_{10}	µg/m³	63	IS 5182 – Part 23	100
2	$PM_{2.5}$	µg/m³	26	IS 5182 – Part 24	60
3	Oxides of Sulphur as SO_2	µg/m³	8.9	IS 5182 – Part 2	80
4	Oxides of Nitrogen as NO_2	µg/m³	17.6	IS 5182 – Part 6	80
5	Lead as Pb	µg/m³	BDL (DL 0.5)	IS 5182 – Part 22	1
6	Carbon monoxide as CO	mg/m³	BDL (DL 1.0)	IS 5182 – Part 10	4
7	Ozone as O_3	µg/m³	BDL (DL: 2.0)	IS 5182 – Part 9	180
8	Ammonia as NH_3	µg/m³	BDL (DL: 2.0)	IS 5182 – Part 25	400
9	Benzene as C_6H_6	µg/m³	BDL (DL: 1.0)	IS 5182 : Part 11	5
10	Benzo (a) pyrene	ng/m³	BDL (DL: 0.1)	IS 5182 : Part 12	1
11	Arsenic as As	ng/m³	BDL (DL: 1.0)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m³	BDL (DL: 5.0)	IS 5182 – Part 26	20

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A N Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel : 044 42612103

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2571 A /2023-2024	Report Date	29.06.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2012		
Survey Description	Stack Monitoring	Sample Received on	24.06.2023
Survey Conducted by	GCSPL	Test Commenced on	26.06.2023
Survey Conducted on	24.06.2023	Test Completed on	27.06.2023

S.No.	Descriptions	Unit	DG 250 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	.....
2	Total Stack Height Form 'G' Level	m	7.0	10.0	.....
3	Stack Diameter	m	0.10	0.20	.....
4	Ambient Temperature	^{o}C	30	30	.....
5	Stack Temperature	^{o}C	140	228	.....
6	Flue gas velocity	m/sec	14.32	20.26	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	292	1360	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	28.9	24.5	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	5.8	7.9	IS:11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	71	132	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS:13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No 4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/S/SM/ 2574 B /2023-2024	Report Date	29.06.2023
Customer Name & Address	M/s.ENNORE TANK TERMINALS PRIVATE LIMITED, Inside Ennore Port, Vallur Post, Thiruvallur District, Chennai – 600 120.		
Customer Reference	IMC/TER/GCSPL/WO/002/12-13 /2022		
Survey Descript on	Stack Monitoring	Sample Received on	24.06.2023
Survey Conducted by	GCSPL	Test Commenced on	26.06.2023
Survey Conducted on	24.06.2023	Test Completed on	27.06.2023

S.No.	Descriptions	Unit	DG 180 KVA	DG 500 KVA	Reference Method
1	APC Measures Attached	-	Silencer	Silencer	----
2	Total Stack Height Form 'G'Level	m	7.0	10.0	----
3	Stack Diameter	m	0.10	0.70	----
4	Ambient Temperature	^{o}C	31	32	----
5	Stack Temperature	^{o}C	121	259	----
6	Flue gas velocity	m/sec	12.37	20.43	IS:11255 - P3
7	Gaseous Emission	Nm^3/hr	264	1292	IS:11255 - P3
8	Particulate Matter (PM)	mg/Nm^3	15.8	24.6	IS:11255 - P1
9	Sulphur Di-Oxide (SO_2)	mg/Nm^3	4.7	8.9	IS 11255 - P2
10	Oxides of Nitrogen (NO_x)	mg/Nm^3	49	125	IS:11255 - P7
11	Carbon monoxide(CO)	%	< 0.2	< 0.2	IS.13270
12	Chlorine as Cl_2	mg/Nm^3	< 1	< 1	Iodometric Method
TNPCB Standards – PM		mg/Nm^3	150.0		

For Green Chem Solutions Pvt. Ltd.
(Laboratory Division)

Authorized Signatory

*** End of Report ***

ETTPL

(FORM-V)

ENVIRONMENTAL STATEMENT REPORT

FORM-V

See Rule-14

Environmental Statement Report for the financial year ending the March 31, 2023

PART- A

i	Name and address of the owner /Occupier of Industry operation or process	Mr. A.M.RAO Managing Director 'Neeladri', 3rd Floor No.9, Cenotaph Road Alwarpet, Chennai 600 018
I a	Authorized person for the occupier	Mr. C.P.VISWAMOHAN, Sr. General manager Ennore Tank Terminals Pvt Ltd Inside Kamarajar Port Vallur Post, Chennai 600120.
ii.	Industry Category Primary (STC CODE) Secondary (STC CODE)	Red industry
iii.	Production Capacity (Units)	3 MMTPA of Bulk Liquid Products
iv.	Year of establishment	2007
v.	Date of last environmental statement submitted	----

PART- B

Water and Raw material consumption

A. Water

(i) Water consumption m^3/day

Process m^3/day : Not applicable

Domestic m^3/day : 27.0

(ii) Consumption per unit of production

Name of product	Process water consumption per unit of product-output (KL/MT)	
	During the previous financial Year (2021-2022)	During the current financial year (2022-2023)
	Not applicable.	

B. Raw material consumption

Name of the raw material	Name of product	Consumption of raw material per unit product output (MT of Cement)	
		During the previous financial year (2021-2022)	During the current financial year (2022-2023)
	No raw materials are to be procured and here only handling of storage of Bulk Liquid Products.		

PART –C

Pollutant discharge to environment/unit of output
(Parameter as specified in the consent issued)

S.N	Pollutants	Quantity of pollutants discharged (Mass/day)	Concentrations of pollutants in discharged (mass/volume) ($kg/m^{3)}$	Percentage of variation from prescribed standard with reason
a	Water	Here no waste water is generated. Water is used for cooling tower and it is recycled and also which is evaporated in summer days.		
b	Air	Air and stack monitoring is being carried out by **M/s Green Chem Solution Pvt Ltd** once in a month and every month we are submitting the Environment report to Kamarajar Port Ltd. and also to TNPCB. Tamil Nadu Pollution Control Board visiting ETTPL site once in a year and doing the air quality and stack monitoring indifferent places for DG sets and the results meet PCB norms.		

PART-D
HAZARDOUS WASTES
(As specified under Hazardous wastes/management& handling rule, 1989)

Hazardous waste	Total Quantity (Kg)	
	During the previous financial year (2021-2022)	During the current financial year (2022-2023)
(a) From process	**ADDITIVE EMPTY BARRELS**- 1.511 T (90 Nos)	**1.Used foam pig** - 1.76 MT/Annum **2.Empty additive barrels –** 2.7 MT/Annum
(b) From pollution control facility	Not applicable.	

PART-E

SOLID WASTE

S.No	Solid waste	Total Quantity (Kg.)	
		During the previous financial year (2021-2022)	During the financial year(2022-2023)
a	From Process	Nil	Nil
b	From Pollution control facility	Not applicable	
c	Quantity recycled or reused	Not applicable	
	i. Sold	Not applicable	Send to authorized recycler (RAJA RAJESWARI TRADERS).
	ii. disposed	Not applicable	Not applicable

PART –F

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

As Per Authorization No.19HFC17900791, Proceeding No. T2/TNPCB/F.0320GMP/HWA/RL/GMP/2019, DT. 05.11.2019.				
Type of hazardous waste (with category No.)	**Sources of generation**	**Authorized**	**Generated**	**Waste Disposed**
3.1 - oil containing cargo residue, waste water and sludge	Tank cleaning	0.4 T/Y	NIL	NIL
33.2 –Contaminated cotton rags or other cleaning materials	From pipe cleaning	24 t/Annum	**Used foam pig -** 1.76 MT /Annum	Send to TAMILNADU WASTE MANAGEMENT LTD, Gummudipoondi.
5.1 Used or spend oil	From process	0.3 KL/Y	NIL	NIL
33.1 –Empty barrels/Containers/liners contaminated with hazardous chemicals/wastes	From process/Empty additive barrels and used foam pig	21.6 t/Annum	**Empty additive barrels –** 2.7 MT/Annum	Send to authorized recycler (RAJA RAJESWARI TRADERS).

PART – H

Additional Measures /investments proposed for environmental protection including abatement of pollution, prevention of pollution.

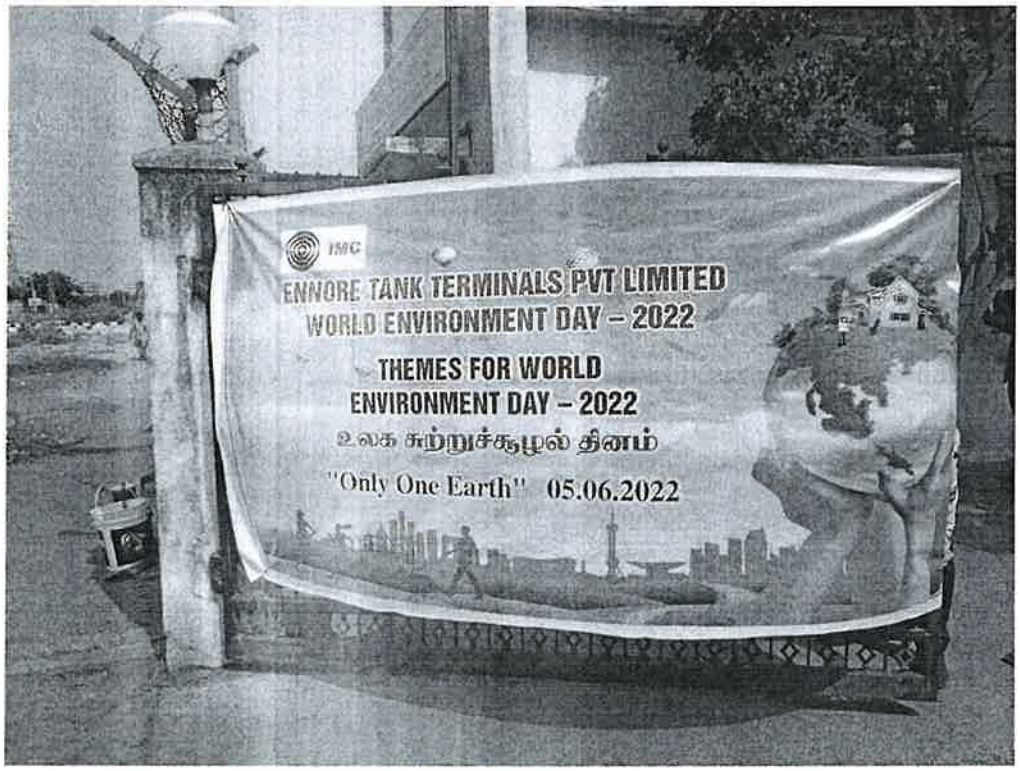
Air and water expenditure for environmental protection is: **Rs.9715000.00**

PART –I

Any other particulars for improving the quality of environment

- Here only PUC certified vehicles are allowed.
- Training on EMS to all employees and contract worker to create awareness.
- Environmental day were celebrated every year on 05th June

Environmental day 05th June 2022



****

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines for

"EXPANSION PROPOSALS - DEVELOPMENT OF TERMINALS FOR MARINE LIQUIDS, COAL, IRON AND CONTAINERS IN SECOND PHASE AND ASSOCIATED DREDGING AT ENNORE PORT"

Point wise compliance report on Ministry's guidelines for the Ennore Port Expansion Proposals-Development of Terminals for marine liquids, coal, iron and containers in Second phase and associated dredging at Ennore Port Environmental clearance

Ref: MoEF Letter No. 10-28/2005-IA-III dated 10th September 2007.

Back ground information

MoEF had accorded environmental clearance vide letter No. 10-28/2005–IA-III dated 19th May 2006 for the following projects:-

1. Marine Liquid Terminal to handle 3 MTPA.
2. Coal Terminal other than TNEB Users to handle 8 MTPA.
3. Iron Ore Terminal to handle 12 MTPA.
4. Container Terminal for a quay length of 700m to handle 12 MTPA.
5. Associated Capital Dredging of 15.50 million cubic meters.

Kamarajar Port Limited requested for modification of the above environmental clearance **with respect to the Container Terminal**, for the following reasons:

Reason for Modification of Environmental Clearance

i. The draft policy for maritime sector (Ports, merchant Shipping and IWT) suggested that Port Planning for the Development of Container Terminal should have a quay length of 1000m and capacity of 1.50 million TEUs.

ii. In accordance the NMDP prepared by Dept. of Shipping included the Development of Container Terminal at Ennore Port with 1000 meters.

iii. Department of Shipping has formulated an Action Plan for development of 18 Berths in various major Ports, which includes the Container Terminal of 1000 m quay length at Ennore Port during the financial year, 2007-08.

iv. Accordingly, it was proposed to reconfigure the container Terminal from 700 m to 1000m.

v. Reconfiguration of the quay length of the proposed container Terminal from 700 m to 1000 m would require an associated capital dredging of additional 4 million cu.m

vi. Reconfiguration would revise the capacity of the Container Terminal from 1.0 million TEUs to 1.50 million TEUs.

MoEF had accorded environmental clearance vide letter No. 10-28/2005-IA-III dated 10th September 2007

Status of the project:

Further KPL modified the above Environment Clearance for the development of Container Terminal and Multi Cargo Terminal.

Modified Environmental clearance from MoEF&CC

MoEF&CC has accorded environmental clearance for the development of container terminal in the 730m quay length and multi cargo berth in the 230m quay length vide its communication No. 10-28/2005-IA.III dated 24.12.2014.

Compliance report on MoEF Letter No. 10-28/2005-IA-III dated 10th September 2007:

S. No	(A) Specific Conditions	Compliance Status
(i)	It should be ensured that no mangroves are destroyed during reclamation.	**Complied with.** No mangroves are present at container project site inside the port.
(ii)	The proposed extension to the project should not cause any shoreline change abutting Ennore Port.	**Complied with.** The proposed extension of the project was addition of 300m to the quay length of 700m. (The container terminal will be developed to handle 11.68 MTPA in the 730m quay length and multi cargo berth of 2.0 MTPA in the 230m quay length). The alignment of the berth is in the N-S direction abutting the land side which is within the existing break-waters; hence, no shoreline changes are caused.
(iii)	Adequate provision for beach nourishment and sand by pass should be provided.	**Complied with.** The dredge material was used as beach nourishment in the north of north break water and filling up of back up area.
(iv)	The dredged material obtained should be utilized for filling up of	**Complied with.** About 2.0 million cubic meter of dredge

	backup area.	material was used as filling up of back up area.
(v)	All conditions stipulated in the environmental clearance letter of even number dated 19.5.2006 should be strictly complied with.	**Complied with.** All stipulated conditions applicable in the environmental clearance letters are being complied with and the compliance reports are submitted to Regional Office of MoEF & CC, Chennai.
(vi)	The additional dredged material of 4 million cubic meters obtained from the project should not be disposed of into the sea.	**Complied with.** The dredge material was used as beach nourishment and filling up of back up area.
(vii)	The reclaimed area should be used as container stackyards only.	**Complied with.** Reclaimed area was used as container stack yard.
(viii)	Adequate drainage facilities should be provided in the reclaimed area along with collection and treatment system for treating the run-off from the container stackyard.	**Complied with.** The drainage facilities are provided.
(ix)	Necessary approvals/clearances should be obtained from the Tamil Nadu Coastal Zone Management Authority and Tamil Nadu Pollution Control Board before implementing the project.	**Complied with.** Tamil Nadu Coastal Zone Management Authority has recommended the project vide letter No. 17250/EC-3/2009-1 dated 26.10.2009. TNPCB has accorded the renewal of Consent To Operate (CTO) for the facility vide their orders nos. 2108136876855 & 2108236876855 dated 24.08.2021 under Water and Air Acts., valid till 31.03.2026.
B. General Conditions		**Compliance report**
(i)	Construction of the proposed structures should be undertaken meticulously conforming to the	**Noted and complied with.**

	existing Central/local rules and regulations including Coastal Regulation Zone Notification 1991 & its amendments. All the construction designs/drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments/ Agencies.	
(ii)	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation, etc. should be ensured for construction workers during the construction phase of the project so as to avoid felling of trees/mangroves and pollution of water and the surroundings.	**Complied with.** Construction of the Terminals was completed and the projects are under operation.
(iii)	The project authorities must make necessary arrangements for disposal of solid wastes and for the treatment of effluents by providing a proper wastewater treatment plant outside the CRZ area. The quality of treated effluents, solid wastes and noise level etc. must conform to the standards laid down by the competent authorities including the Central/State Pollution Control Board and the Union Ministry of Environment and Forests under the Environment (Protection) Act, 1986, whichever are more stringent.	**Complied with.** M/s. AECTPL has installed and operating 25 KLD sewage treatment plant to collect and treat the sewage generated from the terminal. The entire treated water is being used for horticulture purpose. M/s AECTPL has implemented integrated waste management system-waste segregation yard. All the solid waste generated is being handled in line to Solid Waste Management Rules' 2016 as amended. M/s AECTPL vision is based on adoption of 5R principle of Solid Waste Management i.e reduce, Reuse, Reprocess, Recycle & recover. All waste is being handled inline to 5R principle.
(iv)	The proponent shall obtain the requisite consents for discharge of	**Complied with.**

	effluents and emissions under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 from the Tamil Nadu Pollution Control Board before commissioning of the project and a copy of each of these shall be sent to this Ministry.	The quay length 1000m was bifurcated into 730m quay length to handle containers of 11.68 MTPA and in the remaining 270m to develop Multi Cargo terminal to handle 2.0 MTPA of cargo. Environmental clearance for the above was obtained from MoEF&CC vide letter dated 10-28/2005-IA.III dated 24.12.2014. TNPCB has accorded the renewal of Consent To Operate (CTO) for the facility, vide their orders nos. 2108136876855 & 2108236876855 dated 24.08.2021 under Water and Air Acts., valid till 31.03.2026.
(v)	The proponents shall provide for a regular monitoring mechanism so as to ensure that the treated effluents conform to the prescribed standards. The records of analysis reports must be properly maintained and made available for inspection to the concerned State/Central officials during their visits.	**Complied with.** M/s AECTPL has awarded Environmental monitoring services to a NABL accredited laboratory. Monitoring of Ambient Air Quality, Noise, Stack, STP, Drinking water, Marine Surface Water, Sea Sediment is carried out on regular basis. The reports are being submitted to Tamilnadu Pollution Control Board on monthly basis and also as part of six monthly compliance report. Environment Monitoring report for the compliance period is enclosed herewith. Reports are made available for the inspection to the concerned State/central officials during their visits.
(vi)	In order to carry out the environmental monitoring during the operational phase of the projects, the project authorities should provide an environmental laboratory well equipped with standard equipment and facilities	**Complied with.** Environmental Monitoring is being carried out through NABL accredited laboratory. Monitoring of Ambient Air Quality, Noise, Stack and STP is carried out on regular basis.

<table>
<tr><td></td><td>and qualified manpower to carry out the testing of various environmental parameters.</td><td>The reports are being submitted to Tamilnadu Pollution Control Board on monthly basis and also as part of six monthly compliance reports. Environment Monitoring report for the period compliance period is enclosed herewith.</td></tr>
<tr><td>(vii)</td><td>The sand dunes and mangroves, if any, on the site should not be disturbed in any way.</td><td>Complied with.

No sand dunes or mangroves are present inside the port of this project site.</td></tr>
<tr><td>(viii)</td><td>A copy of the clearance letter will be marked to the concerned Panchayat/local NGO, if any, from whom any suggestion/ representation has been received while processing the proposal.</td><td>Complied with.

No suggestion or representation was received from Panchayat/local NGO while processing the proposal.</td></tr>
<tr><td>(ix)</td><td>The Tamil Nadu Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industries centre and Collectors Office/Thasildhar office for 30 days.</td><td>Complied with.

No action needed as far as KPL is concerned.</td></tr>
<tr><td>(x)</td><td>The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year-wise expenditure on environmental safeguards should be reported to this Ministry’s Regional Office at Bangalore and the State Pollution Control Board.</td><td>The environmental expenditure carried out by M/s AECTPL during the compliance period is Rs. 19.03 Lakhs.

The breakup details are as follows.

<table>
<tr><th>S. No</th><th>Description</th><th>Amount (Rs. in Lakhs)</th></tr>
<tr><td>1</td><td>Environmental Monitoring</td><td>6.97</td></tr>
<tr><td>2</td><td>Greenbelt</td><td>2.44</td></tr>
<tr><td>3</td><td>STP-O&M</td><td>2.38</td></tr>
<tr><td>4</td><td>Housekeeping</td><td>4.22</td></tr>
<tr><td>5</td><td>IWMS</td><td>3.24</td></tr>
<tr><td colspan="2">Total</td><td>19.25</td></tr>
</table>
</td></tr>
</table>

(xi)	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the officers of the Central and State Pollution Control Boards by the Project proponent during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect if mitigative measures and other environmental protection activities.	**Being complied with.** TNPCB officials are visiting the terminal on monthly basis. There was no visit from RO-MoEF & CC during the compliance period. All the necessary support is being provided during the site visit.
(xii)	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection.	**Complied with.** The quay length of the container terminal of 1000m length was bifurcated into 730m quay length to handle containers of 11.68 MTPA and in the remaining 230m to develop Multi Cargo terminal to handle 2.0 MTPA of cargo. Environmental clearance for the above was obtained from MoEF&CC vide letter dated 10-28/2005-IA.III dated 24.12.2014.
(xiii)	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.	**Noted.**
(xiv)	This Ministry or any other competent authority may stipulate any other additional conditions subsequently, if deemed necessary for environmental protection, which shall be complied with.	**Noted.**

(xv)	The Project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and the copies of clearance letters are available with the state pollution Control Board and may also be seen at web site of the Ministry of Environment & Forests at //http:www.envfor.nic.in. The advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bangalore.	**Complied with.** It was advertised in the vernacular Tamil and English newspapers on 17/9/2008.
(xvi)	The project proponents should inform the Regional Office at Bangalore as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of Land Development Work.	**Complied with.**

Point wise compliance report on the conditions issued by Tamil Nadu State Coastal Zone Management vide Letter No. 17250/EC-3/2009-1 dated 26.10.2009

1.	The composition of the dredged materials should be duly analyzed and examined to find out the availability of any toxic contents.	• Port has carried out a study through Institute of Ocean Management, Anna University, Chennai entitled "Assessment of Water, Sediment & Biota in Ennore Port" during January 2009. • The study revealed that the toxic heavy metals are found to be well within the safety limits and as such do not pose any problem to the marine environment. • Sediment quality is also monitored during dredging operations. • Port is also monitoring monthly marine water quality for various physio-chemical parameters including heavy metals.
2.	Based on the analysis, a suitable methodology for the disposal of dredging material has to be evolved out.	National Institute of Ocean Technology (NIOT), Chennai has carried out EIA and Risk assessment for the second phase expansion proposals, which is inclusive of Modeling studies has identified a marine disposal area (5 km x 5 km area) for disposal of dredged material. The study has identified a location for the safe disposal of dredged material with a holding capacity of 18.0 million cubic meters.
3.	A permanent air quality monitoring station should be established to check and maintain the air quality within the permissible level.	Port has engaged M/s. Hubert Enviro Care Systems (P) Ltd, a MoEF an NABL accredited laboratory, for sampling and testing of various environmental parameters inside the port premises. Port is monitoring ambient air quality (PM10 & PM2.5). All the monitored parameters are well within the standard limits. The analysis reports are regularly submitted to TNPCB & Regional Office of MoEF&CC.

		District Environmental Laboratory, Tamil Pollution Control Board also monitors annually, the air quality at different locations inside the port. The results of analysis reveal that ambient air quality and noise levels inside the port are well within standards during the survey carried out.
4.	A study should be carried out to ascertain the occurrence of coastal erosion/coastal accretion due to the dredging/dumping of dredged materials in the low lying coastal areas and if so, its extent of implication and the steps required to prevent erosion, mitigate the adverse impacts, etc.	• Desk studies for shoreline management for the proposed phase –II development at Ennore Port" CWPRS, (September 2009; Technical Report- 4658). • The study recommended creation of sand trap at the entrance • Regular dredging of the sand trap and dredging the sand accumulated at the mouth of the Ennore creek would be required to keep the inlet open. • This would enable minimizing further accretion / stabilization of land already formed on the south of the south breakwater. Regular dredging of sand accumulated at the creek mouth is being carried out by TNEB.

REPORT ON

COMPREHENSIVE ENVIRONMENTAL MONITORING
FOR

ADANI ENNORE CONTAINER TERMINAL PRIVATE LIMITED

(AECTPL) (WITHIN KAMARAJAR PORTLIMITED)
VALLUR POST, PONNERI TALUK,
CHENNAI -600120

JANUARY TO JUNE 2023

Index for Table

List of Figures

I. INTRODUCTION

M/s. Adani Ennore Container Terminal Pvt Ltd (AECTPL) located inside Kamarajar Port, Ennore is operating container berth and handling containerized Import/Export cargoes.

AECTPL have engaged M/s. Green Chem Solutions (P) Ltd, an Accredited Consultant by NABL to carry out the Comprehensive Environmental monitoring studies in the AECTPL continuously as per the statutory requirement. This report covers the monitored environmental data for the month of January to June 2023.

II. LOCATION OF THE PROJECT

The Project site is located at Port area inside the Kamarajar Port Limited.

The location map is shown in Fig - 1

Fig – 1 – Location Map

III. SCOPE OF WORK

The scope of Comprehensive Environmental monitoring includes the following environmental components.

1. Meteorological data
2. Ambient Air Quality.
3. Ambient Noise Level
4. Marine Sampling
5. Treated STP Water
6. Portable Water
7. DG Set emission

The parameters covered under the scope for each of the above attributes are given below:

SCOPE OF WORK

S. No	Attribute	Scope	Frequency
1.	Meteorological Data	Collection of micrometeorological data on hourly basis by installing an auto weather monitoring station at plant site covering the following parameters: • Wind speed • Wind direction • Rainfall • Relative Humidity • Temperature • Barometric pressure • Solar Radiation	Daily
2.	Ambient Air Quality	Sampling of ambient air at 03 stations for analyzing the following parameters: • PM10 • PM2.5 • SO2 • NO2 • CO • Lead • Ozone • Ammonia • Benzene • Benzo Pyrene • Arsenic • Nickel	Weekly Twice
3.	Ambient Noise	Collection of Noise levels on hourly basis at 3 locations • Leq – Day (Max and Min) • Leq – Night (Max and Min)	Monthly Once
4.	Marine sampling		
4a.	Surface and Bottom Water	Collection of Surface and Bottom Water analyzed for -1location • Temperature • pH @ 25°C • Total Suspended Solids • BOD at 27 ºC for 3 days • Dissolved oxygen • Salinity at 25 ºC	

		• Oil & Grease • Nitrate as No_3 • Nitrite as No_2 • Ammoniacal Nitrogen as N • Total phosphates as PO_4 • Total Nitrogen, • COD • Turbidity • Total Iron as Fe • Colour • Odour • Mercury as Hg • Cadmium as Cd • Total Chromium as Cr • Copper as Cu • Lead as Pb • Nickel as Ni • Iron • Zinc • Particulate Organic Carbon • Petroleum Hydrocarbons	
4b.	Sea Sediment	Collection of sea sediment analyzed for - 2 location • pH • Organic Matter • Moisture Content • Conductivity • Iron • Sodium • Copper • Nickel • Zinc • Manganese • Lead • Boron • Phosphate • Chloride • Sulphate • Sulphide • Pesticide • Potassium • Total Chromium • Petroleum Hydrocarbon • Aluminium • Total Nitrogen • Organic Nitrogen • Phosphorus	

		• Texture	
4c.	Phytoplankton Monitoring	• Total Count • No. of species • Chlorophyll-a • Major Species	Monthly Once
4d.	Zooplankton Monitoring	• Total Count • No. of species • Major	Monthly Once
4e.	Microbiological Monitoring	• Total Bacteria count • Total Coliform • Faecal Coliform • E.Coli • Enterococcus • Salmonella • Sheigella • Vibrio Cholera • Vibrio parahaemolyticus	Monthly Once
4f.	Primary Productivity Monitoring	• Gross primary productivity • Net Primary productivity	Monthly Once
4g.	Phytobenthos Monitoring data	• Fungus • Total Count • No. of species • Diversity Index • Major species	Monthly Once
4h.	Total Fauna Monitoring	• Name of phylum • Class • Number of Individuals encountered • Total no. of species encountered • Total fauna	Monthly Once
5	STP Treated Water	Collection of STP Treated water analyzed for – 1 locations • pH • TSS • BOD • Faecal Coliforms	Monthly Once
6	Potable Water analysis	Collection of Drinking water analyzed for – 1 location - As per IS 10500 2012 – 36 Parameters	Monthly Once
7	DG Set Emissions	Sampling of Emission at 03 stations for analyzing the following parameters: • PM • Carbon Monoxide • NOx – NO2 • SO2	Monthly Once

IV. METHODOLOGY

Methodologies adopted for sampling and analysis for each of the above parameters are detailed below.

1	**Meteorological parameters**	
	Auto weather station	
2	**Ambient Air Quality**	
	Parameters	**Method**
	Respirable Suspended Particulate Matter (PM10)	IS5182 Part23:2006(Reaff.2017)
	Particulate Matter PM2.5	IS5182 Part24:2019
	Sulphur di-oxide as SO_2	IS5182 Part02:2001(Reaff.2017)
	Oxides of Nitrogen as NO_2	IS5182 Part06:2006(Reaff.2017)
	Lead as Pb	IS5182 Part22:2004(Reaff.2019)
	Arsenic as As	GCS/Lab/SOP/089, CPCB Guidelines
	Nickel as Ni	IS5182 Part26:2020
	Carbon monoxide as CO	IS5182 Part10:1999(Reaff.2019)
	Ozone as O_3	IS5182 Part09:1974(Reaff.2017)
	Ammonia as NH_3	IS5182 Part25:2018
	Benzene (α) pyrene	IS5182 Part12: 2004 (Reaff.2017)
	Benzene as C_6H_6	IS5182 Part11:2006(Reaff.2019)
3	**Ambient Noise Monitoring**	
	L_{eq} Day& Night	Instrument Manual, GCS/LAB/SOP/Noise/001
4	**Marine Sampling**	
	Surface and Bottom Water	APHA Methods 23rd Edition, 2017 Standard Methods for examination of Water and Wastewater and IS 3025 & USEPA Test Methods
	Sea Sediment	
	Phytoplankton Monitoring	
	Zooplankton Monitoring	
	Microbiological Monitoring	
	Primary Productivity Monitoring	
	Phyto benthos Monitoring data	
	Total Fauna Monitoring	
5	**STP Water Analysis**	
	pH, TSS, BOD, Faecal Coliforms	APHA Methods 23rd Edition, 2017 Standard Methods for examination of Water and Wastewater and IS 3025
6	**Emission Monitoring**	
	PM, Carbon Monoxide, NO_x – NO_2, SO_2	IS 11255 Methods of measurement of emissions from Stationary source

S.No	ATTRIBUTE	SCOPE
1.	Meteorological parameters	Collection of micrometeorological data at project site on daily basis with hourly frequency
2.	Ambient Air Quality	Collection of ambient air at 3 locations.
3.	STP water	Collection of STP Inlet and outlet water at one location
4.	Ambient Noise	Collection of Ambient noise levels for day and night at 3 locations
5.	Marine Water and Marine Sediments	Collection of Marine water and Marine Sediments at One location
6.	DG Set Emissions	Collection of DG Set Emission at 4 locations.

i. METEOROLOGICAL DATA

Meteorological data was collected on hourly basis by installing an auto weather monitoring station at Plant site. The report depicted hereunder presents the data for January to June 2023.

The following parameters were recorded.

- Wind speed
- Wind direction
- Temperature
- Pressure
- Relative humidity
- Rainfall

January 2023

Date	Ambient Temperature (oC)			Atmospheric Pressure (mbar)			Predominant Wind Direction (Blowing from)	Wind Speed (m/s)			Relative Humidity (%)			Rainfall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
01.01.2023	-	-	-	1004	1010	1007	E	0	10.8	2.46	-	-	-	0.0
02.01.2023	-	-	-	1004	1010	1007	E	0	10.8	2.56	-	-	-	0.0
03.01.2023	-	-	-	1004	1010	1007	E	0	13.3	3.47	-	-	-	0.0
04.01.2023	-	-	-	1009	1014	1011	NNE	0	22	6.58	-	-	-	0.0
05.01.2023	-	-	-	1004	1009	1006	E	0	19.8	7.95	-	-	-	0.0
06.01.2023	-	-	-	1005	1011	1008	NNE	0.36	20.5	7.29	-	-	-	0.0
07.01.2023	-	-	-	1010	1004	1007	NNE	0	18.9	7.39	-	-	-	0.0
08.01.2023	-	-	-	1004	1009	1006	NNE	0	17.8	5.11	-	-	-	0.0
09.01.2023	-	-	-	1005	1010	1007	NNE	0	15.8	5.95	-	-	-	0.0
10.01.2023	-	-	-	1004	1010	1007	NNE	0	15.8	6.63	-	-	-	0.0
11.01.2023	-	-	-	1002	1008	1005	NNE	0	13.9	4.2	-	-	-	0.0
12.01.2023	-	-	-	1001	1007	1004	W	0	13	2.97	-	-	-	0.0
13.01.2023	-	-	-	1002	1009	1006	E	0	9.72	1.44	-	-	-	0.0
14.01.2023	26	34.25	30.77	1004	1010	1007	E	0	16	2.86	67.6	99.9	82	0.0
15.01.2023	25.4	33.65	30.11	1003	1009	1006	E	0	11.2	2.21	72.2	99.9	85.8	0.0
16.01.2023	25.8	34	30.49	1004	1010	1007	E	0	12.6	3.44	71.5	99.9	85.4	0.0
17.01.2023	30.8	34.5	32.6	1005	1010	1008	E	0	11.2	4.34	69.2	80.5	75.4	0.0
18.01.2023	27	34.6	31.37	1006	1012	1009	E	0	13	3.68	69.6	99.9	82.5	0.0
19.01.2023	-	-	-	1006	1012	1009	NNE	0	10.8	3.31	-	-	-	0.0
20.01.2023	28.2	34.5	31.39	1005	1011	1008	E	0	15.8	4.19	84.4	99.9	93.8	0.0
21.01.2023	31.3	35.4	32.62	1005	1010	1007	E	0.54	16.9	6.72	75.7	96.9	88.2	0.0
22.01.2023	31	35	32.31	1004	1010	1007	E	0.18	20.2	5.69	73.9	90.4	83.4	0.0
23.01.2023	31.1	35.25	32.43	1003	1009	1006	E	0	19.8	6.32	78.3	94.6	89.4	0.0
24.01.2023	31.35	34.9	32.54	1004	1009	1006	E	0	14.8	5.64	70.8	94.1	83.3	0.0
25.01.2023	31.7	35	33.05	1004	1008	1006	E	0	13.5	5.57	70.5	86.3	78.5	0.0
26.01.2023	27.2	34.2	31.41	1004	1009	1006	NNE	0	17.3	5.74	76.6	99.9	89.3	0.0
27.01.2023	27.5	34.85	31.95	1003	1009	1006	NNE	0	13.3	4.09	71.3	99.9	82.7	0.0
28.01.2023	27.4	33.75	31.07	1003	1009	1006	NNE	0	16.2	5.85	86.6	99.9	95.3	0.0
29.01.2023	29.4	35.5	32.55	1001	1007	1004	E	0	20.2	6.32	80.5	99.9	92.3	0.0
30.01.2023	31.6	35.7	33.08	1003	1008	1005	E	0	19.8	6.91	84.3	99.9	95.2	0.0
31.01.2023	31.7	35.3	32.67	1002	1008	1005	NNE	1.08	21.1	9.8	85.5	99.9	97.1	0.0

Remark: Temp sensor problem in 01.01.2023 to 13.01.2023

February 2023

Date	Ambient Temperature (oC)			Atmospheric Pressure (mbar)			Predominant Wind Direction (Blowing from)	Wind Speed (m/s)			Relative Humidity (%)			Rainfall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
01.02.2023	30.5	34.7	32.6	1002	1007	1005	NNE	0	23	10	88.6	99.9	96.8	0.0
02.02.2023	32.2	34.8	32.9	1003	1008	1005	NNE	0	22.1	8.7	83.7	98.5	91	0.0
03.02.2023	28.6	35.4	31.4	1002	1009	1006	NEN	0	18.4	6.3	70	99.4	85	0.0
04.02.2023	27.8	31.7	29.1	1002	1007	1005	NNE	0	15.1	5.1	63	75.1	69.7	0.0
05.02.2023	23.8	31.2	28.2	1002	1007	1005	E	0	11.5	3.3	62.3	88.9	72.3	0.0
06.02.2023	23.8	31.5	27.8	1002	1008	1005	E	0	13.5	3.2	67.4	90.7	78.5	0.0
07.02.2023	24.0	31.9	28.2	1002	1008	1005	ESE	0	14.4	4.3	64.4	93.7	76.2	0.0
08.02.2023	23.9	30.8	27.9	1002	1008	1005	E	0	11.5	3	61.5	90.8	71.9	0.0
09.02.2023	23.6	31.2	27.5	1003	1008	1006	ESE	0	14	2.7	60.8	87.8	73.5	0.0
10.02.2023	23.4	31.5	27.9	1003	1009	1006	ESE	0	12.8	3.7	57.1	89.6	71.9	0.0
11.02.2023	23.5	31.0	27.4	1004	1010	1007	E	0	12.2	2.8	60.7	86	74.8	0.0
12.02.2023	22.9	32.3	27.3	1004	1010	1007	WSW	0	11	3.4	59.8	92.8	76	0.0
13.02.2023	22.2	31.2	27.2	1004	1010	1007	East	0	13.7	3.5	62.6	91.1	76.2	0.0
14.02.2023	22.8	30.9	27.4	1003	1010	1007	East	0	13	4.2	62.2	90.9	76.9	0.0
15.02.2023	23.1	31.1	27.7	1003	1008	1005	East	0	14	3.9	67.6	91.2	77.9	0.0
16.02.2023	23.3	31.0	27.6	1003	1009	1006	ESE	0	13.3	2.7	64.4	95.6	77.3	0.0
17.02.2023	23.4	31.5	25.6	1004	1009	1006	W	0	8.28	1.3	62	93.2	84.9	0.0
18.02.2023	23.0	32.1	26.4	1005	1010	1007	ESE	0	10.8	1.8	64.7	92.9	81.4	0.0
19.02.2023	25.0	31.8	28.3	1005	1010	1007	ESE	0	14	3.5	65.6	92.4	78.8	0.0
20.02.2023	23.6	31.8	28.4	1004	1009	1006	ESE	0	15.5	4	63.2	94.2	75.1	0.0
21.02.2023	23.6	32.7	28.2	1004	1009	1006	WSW	0	16.6	4.9	58.6	92.7	76.1	0.0
22.02.2023	24.2	33.0	28.4	1003	1009	1006	ESE	0	11.9	3.5	52.7	96.6	77.3	0.0
23.02.2023	23.4	31.5	28.2	1003	1009	1006	ESE	0	15.8	4.8	64	94.5	76.1	0.0
24.02.2023	24.2	33.3	28.4	1004	1010	1007	ESE	0	16.9	4.1	59.2	94.4	75.3	0.0
25.02.2023	23.4	31.4	27.6	1005	1011	1008	E	0	14	3.3	66.7	95	78.9	0.0
26.02.2023	23.7	31.8	27.9	1007	1012	1009	E	0	13.5	3.4	64.9	95.7	79.1	0.0
27.02.2023	23.3	32.1	28.0	1007	1013	1010	W	0	14.9	4.6	65.6	96	80	0.0
28.02.2023	24.8	32.7	29.3	1007	1013	1009	E	0	14	4.8	69.5	93.9	79.5	0.0

March 2023

Date	Ambient Temperature (oC)			Atmospheric Pressure (mbar)			Predominant Wind Direction (Blowing from)	Wind Speed (m/s)			Relative Humidity (%)			Rainfall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
01.03.2023	28.6	32.9	30.7	1007	1012	1010	E	1.1	17.6	5.8	66.4	77.8	72.3	0.0
02.03.2023	24.5	32.6	29.6	1007	1013	1010	E	0.0	13.0	4.5	60.3	92	70.2	0.0
03.03.2023	24.0	32.5	28.9	1007	1013	1010	NNE	0.0	13.9	3.6	57.2	91.8	73.9	0.0
04.03.2023	27.1	31.9	29.5	1007	1013	1010	E	0.0	13.3	4.0	66.9	84.1	75.4	0.0
05.03.2023	25.3	32.2	29.2	1007	1013	1009	NNE	0.0	15.8	4.7	74.4	97.7	83.9	0.0
06.03.2023	24.3	32.1	28.8	1005	1011	1008	WNW	0.0	10.8	2.9	70.0	99.9	83.6	0.0
07.03.2023	24.9	32.3	29.2	1005	1010	1008	E	0.0	12.2	4.1	66.9	97	78	0.0
08.03.2023	26.0	32.4	29.7	1005	1010	1007	E	0.0	17.8	5.6	66.8	90.5	77.8	0.0
09.03.2023	28.1	32.4	29.9	1004	1010	1007	E	0.0	15.1	5.0	70.6	85.8	78.9	0.0
10.03.2023	25.9	32.5	29.4	1003	1009	1006	E	0.0	14.8	4.0	67.5	98.7	80.8	0.0
11.03.2023	28.5	33.0	30.2	1004	1009	1006	E	0.0	15.8	5.5	67.8	84.6	76.7	0.0
12.03.2023	25.2	32.9	29.6	1003	1009	1006	E	0.0	15.5	4.7	74.4	99.4	85.5	0.0
13.03.2023	25.8	32.6	29.4	1002	1008	1005	E	0.0	14.4	4.0	76.8	99.9	88.5	0.0
14.03.2023	25.3	32.0	28.8	1001	1007	1004	E	0.0	10.8	3.0	58.5	99.9	83.6	0.0
15.03.2023	26.4	33.5	30.1	1001	1006	1003	W	0.0	17.3	3.9	59.3	84.4	71.8	0.0
16.03.2023	29.1	34.3	31.0	1001	1007	1004	ESE	0.0	17.6	4.8	59.5	79.5	71.1	0.0
17.03.2023	25.4	33.6	29.7	1003	1009	1006	E	0.0	23.0	4.7	63.9	99.9	88.4	0.0
18.03.2023	29.0	34.3	30.9	1002	1008	1005	ESE	0.0	19.4	3.8	84.5	99.9	96	0.0
19.03.2023	26.9	33.4	29.7	1001	1008	1004	WNW	0.0	8.8	2.2	83.6	99.9	97.1	0.0
20.03.2023	26.1	34.1	29.7	1001	1007	1004	WSW	0.0	14.9	2.8	81.6	99.9	96.6	0.0
21.03.2023	27.6	34.6	30.7	1001	1006	1004	W	0.0	8.5	2.0	87.8	99.9	97.1	0.0
22.03.2023	29.1	34.9	31.4	1001	1008	1004	WSW	0.0	9.7	2.7	83.6	99.9	96.8	0.0
23.03.2023	28.2	33.9	30.9	1002	1007	1004	WSW	0.0	9.5	2.3	91.3	99.9	99.2	0.0
24.03.2023	27.3	34.9	30.9	1002	1007	1005	WSW	0.0	17.8	3.4	84.5	99.9	95.9	0.0
25.03.2023	29.7	34.5	31.5	1004	1008	1006	WSW	0.0	11.5	2.8	88.3	99.9	96.7	0.0
26.03.2023	28.6	34.8	31.4	1002	1008	1005	WSW	0.0	12.2	2.6	83.1	99.9	96.2	0.0
27.03.2023	29.2	34.7	31.6	1002	1007	1004	WSW	0.0	13.3	3.8	83.1	99.9	95.8	0.0
28.03.2023	29.5	34.6	31.5	1002	1007	1005	WSW	0.0	11.3	3.2	88.0	99.9	96.7	0.0
29.03.2023	29.2	35.0	31.5	1004	1009	1006	WSW	0.0	11.9	3.2	79.6	99.9	93.1	0.0
30.03.2023	28.1	34.6	31.2	1002	1008	1005	WSW	0.0	15.8	3.4	79.1	99.9	92.8	0.0
31.03.2023	27.9	34.8	31.2	1001	1007	1004	WSW	0.0	15.8	3.4	80.5	99.9	93.7	0.0

April 2023

Date	Ambient Temperature (oC)			Atmospheric Pressure (mbar)			Predominant Wind Direction (Blowing from)	Wind Speed (m/s)			Relative Humidity (%)			Rainfall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
01.04.2023	29.0	35.2	31.6	1001	1007	1004	WSW	0.0	19.1	4.5	79.4	99.9	95.9	0.0
02.04.2023	30.3	34.9	32.1	1001	1007	1004	WSW	0.0	14.8	4.3	84.6	99.9	96.1	0.0
03.04.2023	30.3	35.5	32.1	1002	1006	1004	WSW	0.0	21.6	4.1	83.1	99.9	95.2	0.0
04.04.2023	30.2	35.7	32.1	1003	1008	1005	WSW	0.0	17.6	4.3	81.1	99.9	94.6	0.0
05.04.2023	29.7	35.4	32.0	1002	1007	1005	WSW	0.0	12.2	3.4	82.3	99.9	95.8	0.0
06.04.2023	29.6	35.8	32.1	1002	1008	1005	WSW	0.0	11.7	3.2	80.3	99.9	94.6	0.0
07.04.2023	28.3	35.1	31.7	1005	1010	1007	WSW	0.0	15.1	3.1	80.4	99.9	92.9	0.0
08.04.2023	27.8	34.3	31.4	1006	1011	1009	E	0.0	14.8	4.3	81.6	99.9	90.8	0.0
09.04.2023	30.2	33.8	31.7	1007	1012	1009	E	0.0	12.6	4.3	82.1	95.8	89.8	0.0
10.04.2023	29.9	34.1	31.6	1005	1010	1007	ESE	0.0	14.8	4.4	78.5	99.9	91.1	0.0
11.04.2023	26.5	33.9	30.7	1005	1009	1007	WSW	0.0	13.3	2.9	82.5	99.9	94.4	0.0
12.04.2023	26.4	36.5	31.2	1004	1009	1006	WSW	0.0	12.1	2.6	65.3	99.9	91.0	0.0
13.04.2023	26.4	36.2	31.4	1003	1008	1006	WSW	0.0	9.5	2.7	64.8	99.9	04:31	0.0
14.04.2023	26.9	36.8	31.6	1002	1008	1005	WSW	0.0	10.4	3.4	68.9	99.9	91.9	0.0
15.04.2023	26.6	36.7	31.6	1003	1008	1005	WSW	0.0	10.8	2.2	73.6	99.9	93.4	0.0
16.04.2023	27.3	36.8	31.7	1001	1006	1003	WSW	0.0	9.9	2.9	74.2	99.9	93.5	0.0
17.04.2023	27.2	37.2	31.8	1002	1006	1004	WSW	0.0	10.1	3.1	68.3	99.9	92.0	0.0
18.04.2023	27.1	35.5	31.4	1003	1008	1005	WSW	0.0	10.1	3.1	83.2	99.9	95.3	0.0
19.04.2023	27.6	36.8	31.9	999	1006	1003	WSW	0.0	14.8	3.3	78.1	99.9	94.6	0.0
20.04.2023	29.8	38.9	32.8	997	1003	1000	WSW	0.0	23.8	5.3	58.6	99.9	93.1	0.0
21.04.2023	30.5	37.4	33.0	998	1003	1000	SW	0.0	20.2	4.0	76.3	99.9	94.8	0.0
22.04.2023	30.5	36.4	32.6	999	1004	1001	WSW	0.0	9.7	2.6	85.4	99.9	97.6	0.0
23.04.2023	30.9	36.1	32.9	998	1005	1001	WSW	0.0	12.2	4.1	85.2	99.9	96.6	0.0
24.04.2023	28.0	36.1	31.7	1001	1006	1003	WSW	0.0	22.5	3.3	83.3	99.9	97.6	0.0
25.04.2023	30.9	36.2	32.7	1000	1006	1004	ESE	0.0	16.9	3.0	82.9	99.9	95.2	0.0
26.04.2023	29.8	34.6	31.8	1000	1006	1004	ESE	0.0	14.4	4.1	88.3	99.9	97.7	0.0
27.04.2023	28.8	35.7	32.2	1001	1006	1003	ESE	0.0	14.4	2.5	84.2	99.9	95.7	0.0
28.04.2023	29.2	36.0	32.4	1000	1007	1004	W	0.0	16.2	3.7	84.2	99.9	95.4	0.0
29.04.2023	29.2	36.2	32.3	1000	1006	1003	WSW	0.0	13.1	2.4	83.5	99.9	96.2	0.0
30.04.2023	28.8	36.3	32.2	998	1004	1002	WSW	0.0	14.8	3.7	75.9	99.9	93.9	0.0

May 2023

Date	Ambient Temperature (oC)			Atmospheric Pressure (mbar)			Predominant Wind Direction (Blowing from)	Wind Speed (m/s)			Relative Humidity (%)			Rainfall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
01.05.2023	26.5	33.2	30.35	999	1005	1002	E	0	0.87	4.61	87.9	99.9	98.2	26.0
02.05.2023	26.3	32.9	29.11	1000	1006	1003	WSW	0	12.2	0.88	90.8	99.9	99.5	52 mm
03.05.2023	28	32.8	30.27	1000	1006	1003	West	0	18	0.79	90.8	99.9	98.9	0.0
04.05.2023	28.7	33.95	31.3	999	1004	1002	ESE	0	13.3	2.92	89.6	99.9	97.4	0.0
05.05.2023	27.9	35.2	30.91	999	1004	1001	WSW	0	14.6	3.39	80.4	99.9	96.7	0.0
06.05.2023	28.1	33.8	30.95	998	1003	1001	SW	0	12.2	2.43	95.3	99.9	85.3	0.0
07.05.2023	28.7	33.9	31.13	997	1003	1000	WSW	0	12.6	4.45	90.9	99.9	97.4	0.0
08.05.2023	27.4	34.8	31.12	997	1001	1000	ESE	0	15.5	4.23	82.2	99.9	96.3	0.0
09.05.2023	28.9	34.8	31.99	997	1002	1000	ESE	0	16.4	4.43	80.7	99.9	95.2	0.0
10.05.2023	29.5	35.1	32.21	997	1002	1000	WSW	0	12.2	3.44	79.7	99.9	94.9	0.0
11.05.2023	28.9	34.8	31.53	998	1002	1000	WSW	0	15.1	1.96	83.8	99.9	98	0.0
12.05.2023	29.8	38.6	33.22	996	1001	999	WSW	0	11.3	2.93	64.1	99.9	93.7	0.0
13.05.2023	31.3	39.75	34.85	996	1001	999	SW	0	20.2	7.71	63.9	99.9	84.8	0.0
14.05.2023	32.1	40.75	34.97	994	1000	997	WSW	0	21.6	6.18	57.9	99.9	83.2	0.0
15.05.2023	31.4	39.7	34.34	996	1001	999	SW	0	18	4.61	63.4	99.9	91.4	0.0
16.05.2023	31.7	40.6	34.66	998	1002	1000	SW	0	19.4	5.53	60.2	99.9	91.5	0.0
17.05.2023	31.35	36.5	33.7	999	1005	1002	SW	0	14.6	4.79	86.9	99.9	96	0.0
18.05.2023	31.1	36.9	32.96	1000	1005	1003	WSW	0	16.6	4.07	86.2	99.9	97	0.0
19.05.2023	31.15	36.5	33	999	1004	1002	WSW	0	20	4.03	83.1	99.9	94.4	0.0
20.05.2023	30.6	36.6	32.8	998	1003	1001	WSW	0	14.9	3.78	86.1	99.9	96.6	0.0
21.05.2023	29.2	35.3	32.09	999	1004	1002	WSW	0	18.7	3.77	85.8	99.9	98.2	0.0
22.05.2023	30.6	35.95	32.52	16.7	841	253	W	0	11.5	3.36	87	99.9	97.6	0.0
23.05.2023	30.4	36.25	32.8	1000	1006	1003	WSW	0	10.6	3.1	80.5	99.9	94.8	0.0
24.05.2023	31.2	37.3	33.19	999	1005	1002	SW	0	22	4.53	76	99.9	92.7	0.0
25.05.2023	31.4	38.1	32.97	999	1004	1002	SW	0	16.4	4.34	66.9	99.9	91.1	0.0
26.05.2023	31.5	39.25	33.45	1000	1004	1002	SW	0	30.2	6.97	61.6	99.9	88.1	0.0
27.05.2023	30.3	39.7	34.17	998	1002	1000	SW	0	17.6	4.86	62.2	99.9	86.2	0.0
28.05.2023	30.3	39.6	33.4	997	1002	1000	SW	0	18.7	4.03	61.2	99.9	92.2	0.0
29.05.2023	31.4	37.8	33.74	998	1004	1000	WSW	0	13.9	2.8	73.5	99.9	94	0.0
30.05.2023	28.2	36.85	32.23	999	1004	1002	WSW	0	23.2	3.56	82.4	99.9	95.3	0.0

June 2023

Date	Ambient Temperature (oC)			Atmospheric Pressure (mbar)			Predominant Wind Direction (Blowing from)	Wind Speed (m/s)			Relative Humidity (%)			Rainfall (mm)
	Min	Max	Avg	Min	Max	Avg		Min	Max	Avg	Min	Max	Avg	
01.06.2023	29.0	36.4	31.1	--	896	279	SW	0	14.2	3.6	74.0	99.9	0.3	0.0
02.06.2023	32.8	39.8	35.0	996	1001	998	SW	0	14.4	3.9	64.2	99.9	88.1	0.0
03.06.2023	32.3	39.3	34.9	996	1000	998	WSW	0	14.9	3.5	66.5	99.9	91.1	0.0
04.06.2023	31.5	40.6	34.3	996	1000	998	SW	0	20.5	5.0	60.9	99.9	88.6	0.0
05.06.2023	31.7	41.5	35.4	995	1001	998	WSW	0	19.1	4.8	54.3	99.9	83.4	0.0
06.06.2023	31.1	39.7	34.3	996	1000	998	SW	0	19.4	5.4	59.6	99.9	81.0	0.0
07.06.2023	30.1	42.7	34.7	994	999	997	WSW	0	21.1	7.9	52.2	99.9	80.9	0.0
08.06.2023	29.8	39.2	33.4	994	1001	998	SW	0	18.4	5.7	66.0	99.9	90.3	0.0
09.06.2023	32.0	40.4	34.3	995	999	997	WSW	0	15.7	5.5	54.7	99.9	84.6	0.0
10.06.2023	31.3	39.4	34.4	994	998	996	WSW	0	22.0	6.3	61.0	99.9	82.2	0.0
11.06.2023	31.2	39.7	33.9	994	999	996	SW	0	22.5	6.5	59.8	96.5	82.0	0.0
12.06.2023	30.5	40.0	33.6	994	999	996	WSW	0	31.5	6.0	57.3	96.9	81.6	0.0
13.06.2023	30.7	40.6	33.9	993	999	996	SW	0	23.0	6.5	59.8	99.9	88.5	0.0
14.06.2023	30.4	40.8	34.1	994	999	997	WSW	0	17.8	6.3	60.3	97.6	84.2	0.0
15.06.2023	29.9	39.8	33.5	996	1000	998	WSW	0	30.4	6.5	57.9	99.9	87.4	0.0
16.06.2023	30.9	40.8	34.4	995	1000	998	WSW	0	14.8	4.4	57.3	99.9	84.7	0.0
17.06.2023	31.5	39.1	34.6	994	999	997	WSW	0	15.1	5.0	62.0	99.9	87.1	0.0
18.06.2023	31.6	36.2	33.3	996	1000	998	WSW	0	14.8	5.2	69.7	99.9	88.3	0.5
19.06.2023	26.9	30.7	28.6	995	1001	997	SW	0	24.3	9.2	89.9	99.9	99.5	0.5
20.06.2023	27.1	34.4	30.8	994	998	996	SW	0	28.4	10.0	82.3	99.9	94.2	0.5
21.06.2023	26.6	33.7	30.1	996	1000	998	SW	0	16.7	4.2	85.2	99.9	98.0	0.0
22.06.2023	29.2	35.6	31.9	996	1000	998	SW	0	12.1	2.9	78.6	99.9	96.3	0.0
23.06.2023	29.9	35.4	32.0	996	1000	998	SW	0	17.6	4.0	80.5	99.9	95.2	0.0
24.06.2023	25.7	36.2	31.6	996	1000	998	WSW	0	28.3	3.8	76.9	99.9	94.5	0.0
25.06.2023	30.6	35.3	32.1	996	999	998	SW	0	15.5	5.3	77.6	99.9	92.6	0.0
26.06.2023	30.0	35.1	32.2	995	1000	998	WSW	0	16.6	3.9	79.1	99.9	93.6	0.0
27.06.2023	30.0	36.5	32.9	996	1001	998	SW	0	17.6	5.1	70.4	99.9	88.9	0.0
28.06.2023	30.1	37.3	32.8	997	1002	999	WSW	0	15.8	5.6	66.9	99.9	88.9	0.0
29.06.2023	30.0	37.5	33.0	997	1002	1000	WSW	0	23.4	6.3	68.8	99.9	90.5	0.0
30.06.2023	28.7	37.5	32.2	996	1002	1000	WSW	0	16.6	5.3	69.0	98.5	88.4	0.0

METEOROLOGICAL DATA

Meteorological data was collected on hourly basis by installing an auto weather monitoring station at Plant site. The report depicted hereunder presents the data for Mar - 2023.

The following parameters were recorded.

- Wind speed
- Wind direction
- Temperature
- Pressure
- Relative humidity
- Rainfall

WIND PATTER Jan to Jun 2023

Marine Infrastructure Developer Pvt Ltd

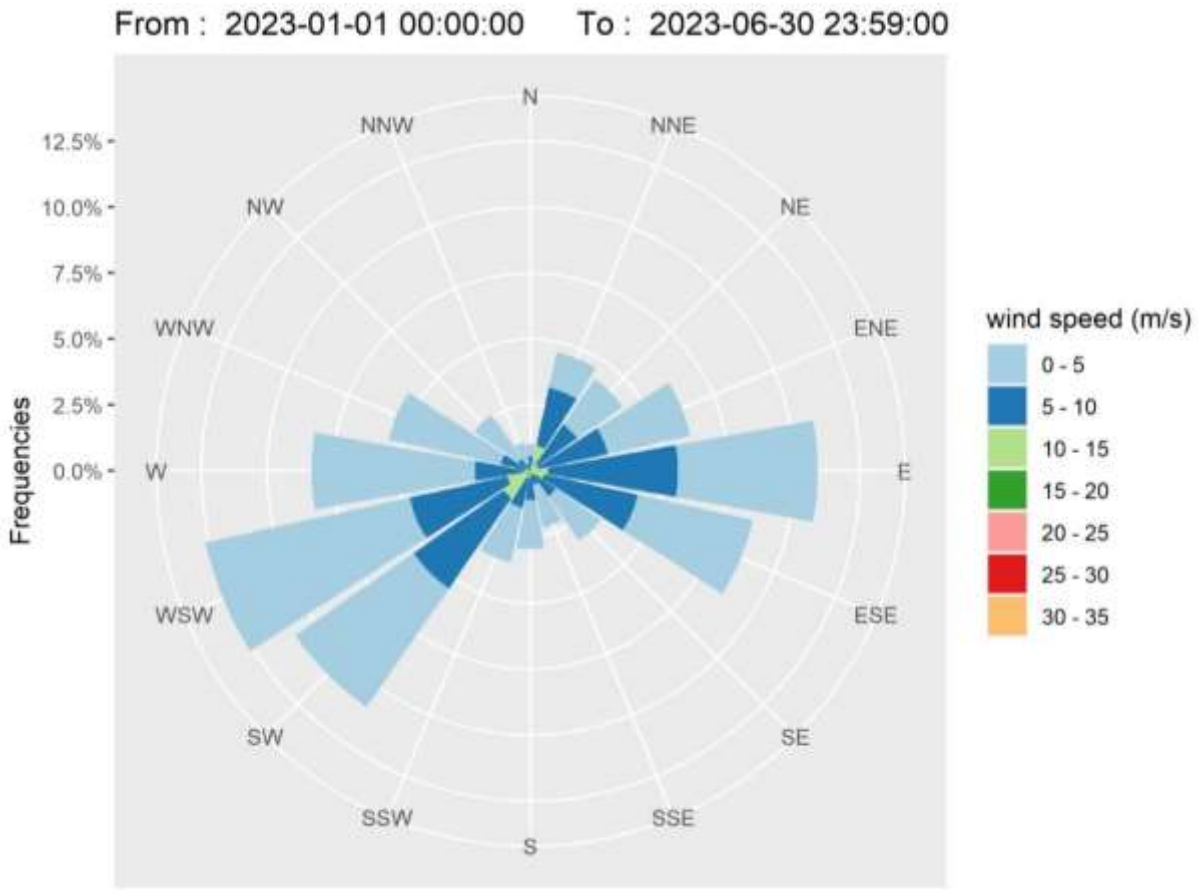
Report Type: Wind Rose Report- Static Details and Interval: min | Time Range: 2023-01-01 00:00:00 to 2023-06-30 23:59:43 | Station Name: AQMS

Average Wind Speed :4.36 km/h | Average Wind Direction:181.99 Degree| Calm: 11.33 %| Blowing From: North

Report Created by Marine on 2023-07-06 11:19:08

Direction	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	30 - 35	Summary	Min	Max	Avg
N	0.47	0.38	0.15	0.02	0	0	0	1.02	0	0.47	0.15
NNE	1.38	2.23	0.89	0.12	0	0	0	4.62	0	2.23	0.66
NE	2.09	1.87	0.28	0.02	0	0	0	4.26	0	2.09	0.61
ENE	3.21	2.7	0.29	0.02	0	0	0	6.22	0	3.21	0.89
E	5.31	4.92	0.64	0.03	0	0	0	10.9	0	5.31	1.56
ESE	4.47	3.62	0.51	0.03	0	0	0	8.63	0	4.47	1.23
SE	2.04	1.01	0.16	0.01	0	0	0	3.22	0	2.04	0.46
SSE	1.69	0.51	0.03	0	0	0	0	2.23	0	1.69	0.32
S	1.84	0.88	0.22	0.02	0	0	0	2.96	0	1.84	0.42
SSW	2.1	1.17	0.24	0.03	0	0	0	3.54	0	2.1	0.51
SW	5.46	4.16	1.06	0.17	0.03	0	0	10.88	0	5.46	1.55
WSW	7.93	3.78	0.8	0.11	0.01	0	0	12.63	0	7.93	1.8
W	6.19	1.89	0.22	0.02	0	0	0	8.32	0	6.19	1.19
WNW	4.33	1.08	0.09	0.01	0	0	0	5.51	0	4.33	0.79
NW	2.03	0.52	0.05	0.01	0	0	0	2.61	0	2.03	0.37
NNW	0.84	0.25	0.03	0	0	0	0	1.12	0	0.84	0.16

Fig -1. Windrose diagram for Jan to Jun 2023.



AMBIENT AIR QUALITY

Ambient air quality monitoring is required to determine the existing quality of air, evaluation of the effectiveness of control system and to identify areas in need of restoration and their prioritization. In order to generate background data, air quality monitoring is conducted to assess existing level of contamination and to assess possible effects of air contamination occurring in future.

Frequency of Monitoring

The frequency of monitoring that has been followed for sampling of ambient air quality is that one sample per weekly twice at three locations.

DETAILS OF AMBIENT AIR QUALITY MONITORING LOCATIONS

Station code	Location	Geographical location	Environmental setting
AAQ1	Port operating building	13^0 16'12" N 80^0 20' 5" E	Industrial
AAQ2	RMU Building	13^0 16'25" N 80^0 20' 16" E	Industrial
AAQ3	In Terminal Gate	13^0 16'25" N 80^0 20' 0" E	Industrial

Fig – 6. AMBIENT AIR SAMPLING STATION LOCATION MAP

Fig.3.AMBIENT AIR SAMPLINGS STATIONS WITH RESPECT TO WIND

TECHNIQUES USED FOR AMBIENT AIR QUALITY MONITORING

S. No	Parameter	Technique	Unit	Minimum Detectable Limit
1	PM_{10}	Respirable Dust Sampler (Gravimetric method)	$\mu g/m^3$	1.0
2	$PM_{2.5}$	Fine particle Sampler (Gravimetric method)	$\mu g/m^3$	5.0
3	Sulphur Dioxide	Modified West and Gaeke method	$\mu g/m^3$	4.0
4	Nitrogen Oxide	Jacob & Hochheiser method	$\mu g/m^3$	6.0
5	Lead	Atomic Absorption Spectrometry	$\mu g/m^3$	0.5
6	Carbon Monoxide	Draggers Tube	mg/m^3	0.1
7	Ozone	UV Photometric	$\mu g/m^3$	2.0
8	Ammonia	Indophenol blue method	$\mu g/m^3$	2.0
9	Benzene	Gas Chromatography	$\mu g/m^3$	1.0
10	Benzene (α) pyrene	Gas Chromatography	ng/m^3	0.1
11	Arsenic	Atomic Absorption Spectrometry	ng/m^3	1.0
12	Nickel	Atomic Absorption Spectrometry	ng/m^3	5.0

Results and Discussion

The results of the ambient air quality for the study period are presented and discussed. The minimum, maximum 98^{th} percentile and average values have been computed from the observed raw data for all the AAQ monitoring stations. The summary of these results for all the locations is presented in the Table and the detailed analytical results are shown in Annexure - 2. These are compared with the standards prescribed by Central Pollution Control Board (CPCB) for “Industrial, Rural, Residential and other areas”.

Annexure 1 Summary of Ambient Air Quality Status

January - 2023

Parameters		AAQ-1	AAQ-2	AAQ-3	Std*
PM_{10}	Minimum	42.0	43.0	53.0	100
	Maximum	61.0	58.0	53.0	
	98th percentile	60.4	57.9	61.9	
	Average	53.3	57.9	61.9	
$PM_{2.5}$	Minimum	15.0	14.0	19.0	60
	Maximum	28.0	28.0	27.0	
	98th percentile	27.7	27.7	26.9	
	Average	21.5	20.0	22.4	
SO_2	Minimum	5.40	4.90	6.10	80
	Maximum	7.70	7.90	8.60	
	98th percentile	7.67	7.86	8.60	
	Average	6.58	6.55	7.71	
NO_2	Minimum	14.50	14.10	15.70	80
	Maximum	17.8	18.0	18.6	
	98th percentile	17.7	17.94	18.57	
	Average	16.54	16.25	17.55	
CO mg/m3	Result	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	4.0
NH3	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	400
Ozone	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	180
Pb	Result	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	1.0
C6H6	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	5.0
All the values are expressed in ng/m3					
Benzene (α) pyrene	Result	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	1
As	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	6
Ni	Result	BDL (DL: 5.0)	BDL (DL: 5.0)	BDL (DL: 5.0)	20
AAQ1: PORT OPERATING BUILDING, AAQ2: RMU BUILDING, AAQ3: IN TERMINAL GATE					

February -2023

Parameters		AAQ-1	AAQ-2	AAQ-3	Std*
PM_{10}	Minimum	45	47	52	100
	Maximum	60	62	65	
	98th percentile	59.9	61.7	64.7	
	Average	54.4	54.0	58.9	
$PM_{2.5}$	Minimum	15	17	19	60
	Maximum	31	24.0	26.0	
	98th percentile	30.7	23.7	25.9	
	Average	22.6	20.1	23.1	
SO_2	Minimum	4.50	5.40	6.90	80
	Maximum	7.50	7.40	8.20	
	98th percentile	7.44	7.36	8.17	
	Average	6.28	6.56	7.59	
NO_2	Minimum	15.70	13.90	14.90	80
	Maximum	17.50	17.40	17.80	
	98th percentile	17.49	17.37	17.79	
	Average	16.46	16.33	16.54	
CO mg/m3	Result	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	4.0
NH3	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	400
Ozone	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	180
Pb	Result	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	1.0
C6H6	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	5.0
All the values are expressed in ng/m3					
Benzene (α) pyrene	Result	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	1
As	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	6
Ni	Result	BDL (DL: 5.0)	BDL (DL: 5.0)	BDL (DL: 5.0)	20
AAQ1: PORT OPERATING BUILDING, AAQ2: RMU BUILDING, AAQ3: IN TERMINAL GATE					

March -2023

Parameters		AAQ-1	AAQ-2	AAQ-3	Std*
PM_{10}	Minimum	43.0	50.0	47.0	100
	Maximum	61.0	65.0	63.0	
	98th percentile	60.6	64.9	62.7	
	Average	52.5	55.4	57.1	
$PM_{2.5}$	Minimum	17.0	18.0	21.0	60
	Maximum	30.0	27.0	28.0	
	98th percentile	29.6	26.7	27.6	
	Average	23.8	21.6	23.4	
SO_2	Minimum	5.1	5.3	6.2	80
	Maximum	7.8	7.0	8.1	
	98th percentile	7.72	6.99	8.09	
	Average	6.39	6.21	7.20	
NO_2	Minimum	15.0	13.7	13.1	80
	Maximum	17.9	17.2	17.5	
	98th percentile	17.84	17.14	17.43	
	Average	16.44	15.58	15.78	
CO mg/m3	Result	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	4.0
NH3	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	400
Ozone	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	180
Pb	Result	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	1.0
C6H6	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	5.0
All the values are expressed in ng/m3					
Benzene (α) pyrene	Result	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	1
As	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	6
Ni	Result	BDL (DL: 5.0)	BDL (DL: 5.0)	BDL (DL: 5.0)	20
AAQ1: PORT OPERATING BUILDING, AAQ2: RMU BUILDING, AAQ3: IN TERMINAL GATE					

April -2023

Parameters		AAQ-1	AAQ-2	AAQ-3	Std*
PM_{10}	Minimum	49.0	50.0	48.0	100
	Maximum	63.0	63.0	62.0	
	98th percentile	62.6	62.7	61.9	
	Average	55.0	57.0	56.8	
$PM_{2.5}$	Minimum	20.0	18.0	19.0	60
	Maximum	31.0	33.0	32.0	
	98th percentile	30.6	32.6	31.9	
	Average	25.1	26.1	26.1	
SO_2	Minimum	5.1	5.2	5.3	80
	Maximum	7.5	7.1	7.0	
	98th percentile	7.47	7.07	6.97	
	Average	6.43	6.18	6.24	
NO_2	Minimum	13.8	13.1	14.2	80
	Maximum	17.8	16.6	16.6	
	98th percentile	17.67	16.57	16.59	
	Average	15.95	15.13	15.68	
CO mg/m3	Result	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	4.0
NH3	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	400
Ozone	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	180
Pb	Result	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	1.0
C6H6	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	5.0
All the values are expressed in ng/m3					
Benzene (α) pyrene	Result	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	1
As	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	6
Ni	Result	BDL (DL: 5.0)	BDL (DL: 5.0)	BDL (DL: 5.0)	20
AAQ1: PORT OPERATING BUILDING, AAQ2: RMU BUILDING, AAQ3: IN TERMINAL GATE					

May -2023

Continuous Ambient Air Quality Monitoring system data

Parameter	AQMS PM10 (ug/m3)	AQMS PM2.5 (ug/m3)	AQMS SO2 (ug/m3)	AQMS NO2 (ug/m3)	AQMS Benzene (ug/m3)
Prescribed Standard	100	60	80	80	5
Avg	30.85	13.86	4.88	12.46	0.2
Min	4.32	1.78	3.04	7.17	0
Max	53.95	29.45	5.81	19.74	5.78

June - 2023

Parameters		AAQ-1	AAQ-2	AAQ-3	Std*
PM_{10}	Minimum	45.8	43.6	47.5	100
	Maximum	59.2	65.8	64.8	
	98th percentile	59.0	64.8	64.7	
	Average	52.6	53.6	56.6	
$PM_{2.5}$	Minimum	21.1	19.7	21.6	60
	Maximum	30.3	28.1	32.6	
	98th percentile	30.1	27.8	32.2	
	Average	25.3	23.3	26.0	
SO_2	Minimum	5.5	4.8	5.1	80
	Maximum	8.1	7.8	6.6	
	98th percentile	8.0	7.7	6.6	
	Average	6.5	6.4	5.9	
NO_2	Minimum	14.3	13.6	14.7	80
	Maximum	18.3	16.2	17.5	
	98th percentile	18.2	16.1	17.4	
	Average	15.9	15.0	16.0	
CO mg/m3	Result	BDL (DL:1.0)	BDL (DL:1.0)	BDL (DL:1.0)	4.0
NH3	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	400
Ozone	Result	BDL (DL: 2.0)	BDL (DL: 2.0)	BDL (DL: 2.0)	180
Pb	Result	BDL (DL:0.5)	BDL (DL:0.5)	BDL (DL:0.5)	1.0
C6H6	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	5.0
All the values are expressed in ng/m3					
Benzene (α) pyrene	Result	BDL (DL: 0.1)	BDL (DL: 0.1)	BDL (DL: 0.1)	1
As	Result	BDL (DL: 1.0)	BDL (DL: 1.0)	BDL (DL: 1.0)	6
Ni	Result	BDL (DL: 5.0)	BDL (DL: 5.0)	BDL (DL: 5.0)	20
AAQ1: PORT OPERATING BUILDING, AAQ2: RMU BUILDING, AAQ3: IN TERMINAL GATE					

NATIONAL AMBIENT AIR QUALITY STANDARDS
CENTRAL POLLUTION CONTROL BOARD
NOTIFICATION

New Delhi, the 18th November, 2009

No.B-29016/20/90/PCI-L—In exercise of the powers conferred by Sub-section (2) (h) of section 16 of the Air (Prevention and Control of Pollution) Act, 1981 (Act No. 14 of 1981), and in super session of the Notification No(s). S.O. 384(E), dated 11th April, 1994 and S.O. 935(E), dated 14th October, 1998, the Central Pollution Control Board hereby notify the National Ambient Air Quality Standards with immediate effect, namely:-

NATIONAL AMBIENT AIR QUALITY STANDARDS

S. No.	Pollutant	Time Weighted average	Concentration in Ambient Air		Methods of Measurement
			Industrial, Residential, Rural and Other Area	Ecologically sensitive area (notified by Central Govt.)	
(1)	(2)	(3)	(4)	(5)	(6)
1	Sulphur Dioxide (SO_2), µg/m^3	Annual*	50	20	• Improved West and Geake • Ultraviolet fluorescence
		24 hours**	80	80	
2	Nitrogen Dioxide (NO_2), µg/m^3	Annual*	40	30	• Modified Jacob & Hochheiser (Na-Arsenite) • Chemiluminescence
		24 hours**	80	80	
3	Particulate Matter (size less than 10 µm) or PM_{10}µg/m^3	Annual*	60	60	• Gravimetric • TOEM • Beta attenuation
		24 hours**	100	100	
4	Particulate Matter (size less than 2.5 microns) or $PM_{2.5}$ µg/m^3	Annual*	40	40	• Gravimetric • TOEM • Beta attenuation
		24 hours**	60	60	
5	Ozone (O_3) µg/m^3	8 hours **	100	100	• UV photometric • Chemiluminescence • Chemical method
		1 hour **	180	180	
6	Lead (Pb) µg/m^3	Annual*	0.5	0.5	• ASS / ICP method after sampling on EPM 2000 or equivalent filter paper • ED – XRF using Teflon filter
		24 hours**	1.0	1.0	
7	Carbon Monoxide (CO) mg/m^3	8 hours**	2	2	Non Dispersive Infra RED (NDIR) Spectroscopy
		1 hour**	4	4	
8	Ammonia (NH_3) µg/m^3	Annual*	100	100	• Chemiluminescence • Indophenol blue method
		24 hours**	400	400	
9	Benzene (C_6H_6) µg/m^3	Annual*	5	5	• Gas chromatography based continuous analyser • Adsorption and desorption followed by GC analysis
10	Benzo (a) Pyrene (BaP) – particulate phase only ng/m^3	Annual*	1	1	Solvent extraction followed by HPLC / GC analysis
11	Arsenic (As) ng/m^3	Annual*	6	6	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper
12	Nickel (Ni) ng/m^3	Annual*	20	20	AAS / ICP method after sampling on EPM 2000 or equivalent filter paper

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly or 8 hourly or 1 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

i. AMBIENT NOISE LEVEL INTENSITY

Collection of ambient noise levels at four locations. Spot noise levels were measured with a pre-calibrated Noise Level Meter – SL- 4023 SD for day and night periods.

DETAILS OF NOISE MONITORING LOCATIONS

STATION CODE	LOCATIONS	GEOGRAPHICAL LOCATION	Environmental setting
N1	In Terminal Gate	13^0 16' 25" N 80^0 20' 0" E	Industrial
N2	RMU Building	13^0 16'25" N 80^0 20' 16" E	Industrial
N3	Port operating building	13^0 16' 12" N 80^0 20' 5" E	Industrial

Fig – 9. Ambient Noise Level Monitoring Locations

The ambient noise levels monitored during the study period are given hereunder in form of Leq day, Leq night compared with CPCB Standards.

Annexure 2 Ambient Noise Level Monitoring Report Jan- Jun 2023

Location: 1 - In Terminal Gate

Location	In Terminal Gate					
Month	Jan	Feb	Mar	Apr	May	Jun
Unit	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
06.00 - 07.00 (Day)	64	65.2	62.4	60.7	-	60.1
07.00 -08.00	63.4	64.2	61.4	61.5	-	60.9
08.00 - 09.00	65.6	65.8	61.8	62	-	61.2
09.00 - 10.00	63.3	64.6	64.6	64.1	-	62.4
10.00 - 11.00	61.9	63.7	62.5	63.2	-	62.8
11.00 - 12.00	62.5	65.5	65.7	64.8	-	63.5
12.00 - 13.00	63	62	66.2	65.9	-	62.1
13.00 - 14.00	65	64.2	66	65.3	-	61.5
14.00 - 15.00	64.1	65.4	66.2	66.1	-	62.9
15.00 - 16.00	65.6	63.3	64	65.1	-	63.1
16.00 - 17.00	66.4	65.7	63.5	64.9	-	64.3
17.00 - 18.00	63.7	64.4	60.7	61.5	-	61.6
18.00 - 19.00	60.9	62.6	60.5	62.6	-	60.8
19.00 -20.00	63.8	63.4	64.9	61.4	-	61.4
20.00 - 21.00	62.4	65.2	65.2	64.4	-	62.3
21.00 - 22.00	61.2	63.5	62.3	63.8	-	60.7
22.00 - 23.00 (Night)	61.9	62.4	61.2	61.9	-	59.1
23.00 - 00.00	62.7	63.3	63.6	62.7	-	61.2
00.00 - 01.00	59.4	60.1	63.3	59.9	-	58.4
01.00 - 02.00	58.6	59.9	61.7	62.5	-	60.9
02.00 - 03.00	60.5	60.9	62.1	60.7	-	59.1
03.00 - 04.00	62	61.3	60.8	61.2	-	60.3
04.00 - 05.00	60.8	62.4	59.7	60.3	-	59.4
05.00 - 06.00	63.5	61.9	61.5	59.9	-	58.6

Location: 2 - RMU Building

Location	RMU Building					
Month	Jan	Feb	Mar	Apr	May	Jun
Unit	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
06.00 - 07.00 (Day)	56.8	60.4	62.6	63.1	-	61.2
07.00 -08.00	60.7	61.6	60.7	61.4	-	60.1
08.00 - 09.00	56.7	59.8	61.9	61.8	-	60.9
09.00 - 10.00	60.4	61.7	63	62.9	-	61.8
10.00 - 11.00	60.4	62	64.2	64	-	62.5
11.00 - 12.00	58.3	60.8	61.1	63.5	-	61.9
12.00 - 13.00	59.5	58.7	59	62.2	-	63.6
13.00 - 14.00	56.6	59.4	59.5	61.3	-	62.4
14.00 - 15.00	55.8	57.8	57.8	63.8	-	61
15.00 - 16.00	57.7	59.4	60.2	62.6	-	63.1
16.00 - 17.00	56.6	60.4	61.3	61.3	-	62.7
17.00 - 18.00	55.8	62.1	63.1	62.4	-	61.3
18.00 - 19.00	55.5	59.9	62	63.1	-	62
19.00 -20.00	56.7	58.5	59.6	61	-	60.3
20.00 - 21.00	56.9	59.7	59.3	2.8	-	61.1
21.00 - 22.00	58.2	60.8	61.2	62.4	-	60.5
22.00 - 23.00 (Night)	53.1	59.2	60.4	61.6	-	60.2
23.00 - 00.00	54	58.9	59.9	60.7	-	59.5
00.00 - 01.00	54.2	59.7	59.5	61.9	-	58.6
01.00 - 02.00	53.3	61.1	60.8	61.1	-	59.1
02.00 - 03.00	50.4	59.8	59.5	61	-	58.3
03.00 - 04.00	53.2	62	59.2	59.8	-	58.9
04.00 - 05.00	53.5	60.6	59.4	60.1	-	59.7
05.00 - 06.00	53	62	59.6	63.5	-	60.8

Location: 3 - RMU Building

Location	Port operating building					
Month	Jan	Feb	Mar	Apr	May	Jun
Unit	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)	Leq dB(A)
06.00 - 07.00 (Day)	57.7	62.4	60.5	60.6	-	61.8
07.00 -08.00	57.1	60.1	61.7	61.1	-	62.4
08.00 - 09.00	56.7	59.4	62.9	63	-	62.9
09.00 - 10.00	55.4	60.3	60.8	63.8	-	64.3
10.00 - 11.00	61.5	63.6	65.5	63.5	-	65.1
11.00 - 12.00	59.2	60.6	62.7	65.3	-	65.9
12.00 - 13.00	58.8	63.4	65.1	64.7	-	66.3
13.00 - 14.00	62.1	60.7	63.6	63.1	-	64.8
14.00 - 15.00	62.5	61.1	61.3	64.3	-	65.7
15.00 - 16.00	60.3	58.7	60.9	64.7	-	66.4
16.00 - 17.00	58.4	59.6	60.6	65.2	-	65.5
17.00 - 18.00	59.8	61.7	65.7	63.9	-	62.4
18.00 - 19.00	60.8	62.3	63.4	62.7	-	64.6
19.00 -20.00	58.1	60.6	62.1	62.1	-	63.1
20.00 - 21.00	61.6	59.7	60.8	63.8	-	65.3
21.00 - 22.00	57.6	60.1	60.4	62.9	-	64.6
22.00 - 23.00 (Night)	56.7	58.4	60.7	62.4	-	59.2
23.00 - 00.00	56.3	57.2	58.3	61.9	-	58.8
00.00 - 01.00	57.6	59.3	59.6	60.2	-	59.6
01.00 - 02.00	57.8	60.2	61.5	61.7	-	60.2
02.00 - 03.00	55.2	59.4	61	60.5	-	59.8
03.00 - 04.00	55.7	61.1	59.5	59.5	-	60.4
04.00 - 05.00	53.5	59.9	59.1	60.6	-	60.9
05.00 - 06.00	58	60.4	59.3	60	-	61.7

Ambient Air Quality Standards in respect of Noise

Area Code	Category of Area / Zone	Limits in dB(A) Leq*	
		Day Time	Night Time
(A)	Industrial area	75	70
(B)	Commercial area	65	55
(C)	Residential area	55	45
(D)	Silence Zone	50	40

Note:- 1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
3. Silence zone is an area comprising not less than 100 metres around hospitals, educational institutions, courts, religious places or any other area which is declared as such by the competent authority
4. Mixed categories of areas may be declared as one of the four above mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A "decibel" is a unit in which noise is measured.

"A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

DG SET EMISSIONS

Sampling of Flue gas emission level at 4 no's of DG Sets were carried out and its emissions were determined along with its noise intensity. The Detailed report has been enclosed as Annexure – 4.

DETAILS OF EMISSION MONITORING LOCATIONS

STATION CODE	LOCATIONS	Geographical Location
SM-01	DG – 1 1500 KVA (Near MRSS)	13°16'13.40"N 80°20'8.15"E
SM-02	DG – 2 1500 KVA (Near MRSS)	13°16'13.40"N 80°20'8.15"E
SM-03	DG – 3 1500 KVA (Near MRSS)	13°16'13.40"N 80°20'8.15"E
SM-04	DG - 4 125 KVA (Near MRSS)	13°16'13.16"N 80°20'7.19"E

Annexure 4 Source Emission Monitoring Report Jan to Jun 2023

S. No	Capacity	1500 KVA - 1					
	Month / Parameters	Jan	Feb	Mar	Apr	May	Jun
1	Stack Temperature, °C	-	210	-	219	-	215
2	Flue Gas Velocity, m/s	-	22.78	-	21.37	-	19.68
3	Sulphur Dioxide, mg/Nm3	-	6.4	-	6.9	-	6.4
4	NOX (as NO2) in ppmv	-	92	-	83	-	79
5	Particular matter, mg/Nm3	-	8.5	-	9.6	-	13.8
6	Carbon Monoxide, mg/Nm3	-	30	-	34	-	37
7	Gas Discharge, Nm3/hr	-	6346	-	5844	-	17191

S. No	Capacity	1500 KVA - 2					
	Month / Parameters	Jan	Feb	Mar	Apr	May	Jun
1	Stack Temperature, °C	-	231	-	226	-	10
2	Flue Gas Velocity, m/s	-	20.96	-	22.15	-	20.92
3	Sulphur Dioxide, mg/Nm3	-	7.8	-	7.2	-	6.9
4	NOX (as NO2) in ppmv	-	96	-	95	-	91
5	Particular matter, mg/Nm3	-	7	-	10.8	-	16.1
6	Carbon Monoxide, mg/Nm3	-	36	-	37	-	40
7	Gas Discharge, Nm3/hr	-	5595	-	5972	-	18052

S. No	Capacity	1500 KVA - 3					
	Month / Parameters	Jan	Feb	Mar	Apr	May	Jun
1	Stack Temperature, °C	214	-	207	-	-	-
2	Flue Gas Velocity, m/s	20.72	-	22.62	-	-	-
3	Sulphur Dioxide, mg/Nm3	7.3	-	6.3	-	-	-
4	NOX (as NO2) in ppmv	93	-	87	-	-	-
5	Particular matter, mg/Nm3	8.6	-	11.3	-	-	-
6	Carbon Monoxide, mg/Nm3	31	-	41	-	-	-
7	Gas Discharge, Nm3/hr	5720	-	6340	-	-	-

S. No	Capacity	125 KVA - 4					
	Month	Jan	Feb	Mar	Apr	May	Jun
	Parameters						
1	Stack Temperature, °C	129	-	125	-	-	-
2	Flue Gas Velocity, m/s	12.91	-	13.17	-	-	-
3	Sulphur Dioxide, mg/Nm3	5.3	-	6.1	-	-	-
4	NOX (as NO2) in ppmv	65	-	76	-	-	-
5	Particular matter, mg/Nm3	5.8	-	9.7	-	-	-
6	Carbon Monoxide, mg/Nm3	21	-	32	-	-	-
7	Gas Discharge, Nm3/hr	608	-	626	-	-	-

Parameter		Area Category	Total engine rating of the plant (includes existing as well as new generator sets)	Generator sets commissioning date		
				Before 1.7.2003	Between 1.7.2003 and 1.7.2005	On or after 1.7.2005
NO_X (as NO_2) (At 15% O_2, dry basis, in ppmv		A	Up to 75 MW	1100	970	710
		B	Up to 150 MW			
		A	More than 75 MW	1100	710	360
		B	More than 150 MW			
NMHC (as C) (at 15% O_2), mg/Nm^3		Both A and B		150	100	
PM (at 15% O_2), mg/Nm^3	Diesel Fuels- HSD & LDO	Both A and B		75	75	
	Furnace Oils- LSHS & FO	Both A and B		150	100	
CO (at 15% O_2), mg/Nm^3		Both A and B		150	150	

[1] Inserted by Rule 2(b) of the Environment (Protection) Second Amendment Rules, 2008 notified by G.S.R.280(E), dated 11.4.2008.

[2] Serial No.96 and entries relating thereto inserted by Rule 2 of the Environment (Protection) Third Amendment Rules, 2002 notified vide Notification G.S.R.489(E), dated 9.7.2002.

STP WATER SAMPLE ANALYSIS

Water samples were collected at the following points.

- 25 KLD Treated Water Outlet

DETAILS OF STP WATER LOCATIONS

STATION CODE	LOCATIONS	GEOGRAPHICAL LOCATION
STP-1	25 KLD	130 16' 12" N 800 20' 8" E

Analysis results of the water sample collected from the above location are enclosed as Annexure - 5.

STP - INLET WATER							
Capacity		STP 25KLD					
Month		Jan	Feb	Mar	Apr	May	Jun
S.No.	Parameters					-	
1	pH @ 25°C	7.31	7.56	7.19	7.05	-	7.12
2	Total Suspended Solids	145	128	121	103	-	110
3	BOD at 27°C for 3 days	131	110	135	124	-	132
4	Fecal Coliform	840	840	920	940	-	1100
5	COD	378	332	363	325	-	356
6	Oil & Grease	8.4	7.5	7.9	6.6	-	6.9
7	Total Dissolved Solids	1316	1518	906	837	-	870
8	Chlorides (as Cl)	530	634	421	398	-	410
9	Sulphates (as SO4)	43	47	53	52	-	60

STP - OUTLET WATER							
Capacity		STP 25KLD					
Month		Jan	Feb	Mar	Apr	May	Jun
S.No.	Parameters					-	
1	pH @ 25°C	7.88	7.92	7.34	7.08	-	7.18
2	Total Suspended Solids	24	21	26	23	-	26.0
3	BOD at 27°C for 3 days	16	14	17	15	-	18
4	Fecal Coliform	120	110	130	110	-	130
5	COD	88	58	82	59	-	65.0
6	Oil & Grease	BDL	BDL	BDL	BDL	-	<1.0
7	Total Dissolved Solids	1028	1142	742	751	-	768
8	Chlorides (as Cl)	588	618	386	346	-	355
9	Sulphates (as SO4)	44	41	45	40	-	45

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 13th October, 2017

G.S.R. 1265(E).—In exercise of the powers conferred by sections 6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. **Short title and commencement.**—(1) These rules may be called the Environment (Protection) Amendment Rules, 2017.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. In the Environment (Protection) Rules, 1986, in Schedule – I, after serial number 104 and the entries relating thereto, the following serial number and entries shall be inserted, namely:—

Sl. No.	Industry	Parameters	Standards	
1	2	3	4	
		Effluent discharge standards (applicable to all mode of disposal)		
"105	Sewage Treatment Plants (STPs)		Location	Concentration not to exceed
			(a)	(b)
		pH	Anywhere in the country	6.5-9.0
		Bio-Chemical Oxygen Demand (BOD)	Metro Cities*, all State Capitals except in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammu and Kashmir, and Union territory of Andaman and Nicobar Islands, Dadar and Nagar Haveli Daman and Diu and Lakshadweep	20
			Areas/regions other than mentioned above	30
		Total Suspended Solids (TSS)	Metro Cities*, all State Capitals except in the State of Arunachal Pradesh, Assam, Manipur, Meghalaya Mizoram, Nagaland, Tripura Sikkim, Himachal Pradesh, Uttarakhand, Jammu and Kashmir and Union territory of Andaman and Nicobar Islands, Dadar and Nagar Haveli Daman and Diu and Lakshadweep	<50
			Areas/regions other than mentioned above	<100
		Fecal Coliform (FC) (Most Probable Number per 100 milliliter, MPN/100ml	Anywhere in the country	<1000
*Metro Cities are Mumbai, Delhi, Kolkata, Chennai, Bengaluru, Hyderabad, Ahmedabad and Pune.				

vi. DRINKING WATER SAMPLE ANALYSIS

Drinking Water samples were collected at the Canteen or Office Building. Analysis results of the water sample collected from the above location are enclosed as Annexure – 6.

Annexure 6 Drinking Water test report Jan to Jun 2022

S.No.	Parameters	Unit	Jan	Feb	Mar	Apr	May	Jun
1	Color	Hazen	BDL (DL :1.0)	BDL (DL :1.0)	-	BDL (DL :1.0)	-	0
2	Odour	-	Unobjectionable	Unobjectionable	-	Unobjectionable	-	Unobjectionable
3	Taste	-	Agreeable	Agreeable	-	Agreeable	-	Agreeable
4	Turbidity	N.T.U	BDL(DL 0.5)	BDL(DL 0.5)	-	BDL(DL 0.5)	-	<0.01
5	pH @ 25°C	-	6.96	7.08	-	6.52	-	6.66
6	Total Hardness as CaCo3	mg/L	8.0	12.0	-	11.0	-	12.9
7	Iron as Fe	mg/L	BDL(DL 0.05)	BDL(DL 0.05)	-	BDL(DL 0.05)	-	BDL(DL 0.05)
8	Chloride as Cl	mg/L	6.3	14	-	9	-	11.3
9	Total Residual Chlorine	mg/L	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)	-	<0.1
10	Total Dissolved Solids	mg/L	38	52	-	32	-	40
11	Calcium as Ca	mg/L	2.0	3.2	-	2.7	-	3.26
12	Copper as Cu	mg/L	BDL(DL 0.05)	BDL(DL 0.05)	-	BDL(DL 0.05)	-	BDL(DL 0.05)
13	Manganese as Mn	mg/L	BDL(DL 0.05)	BDL(DL 0.05)	-	BDL(DL 0.05)	-	BDL(DL 0.05)
14	Sulphate as SO4	mg/L	BDL (DL :1.0)	BDL (DL :1.0)	-	BDL (DL :1.0)	-	BDL (DL :1.0)
15	Nitrate as No3	mg/L	BDL (DL :1.0)	BDL (DL :1.0)	-	BDL (DL :1.0)	-	BDL (DL :1.0)
16	Fluoride as F	mg/L	BDL (DL :0.1)	BDL (DL :0.1)	-	BDL (DL :0.1)	-	BDL (DL :0.1)
17	Phenolic compounds as C6H5OH	mg/L	BDL(DL 0.001)	BDL(DL 0.001)	-	BDL(DL 0.001)	-	BDL(DL 0.001)
18	Mercury as Hg	mg/L	BDL (DL : 0.001)	BDL (DL : 0.001)	-	BDL (DL : 0.001)	-	BDL (DL : 0.001)
19	Cadmium as Cd	mg/L	BDL (DL : 0.003)	BDL (DL : 0.003)	-	BDL (DL : 0.003)	-	BDL (DL : 0.003)
20	Selenium as Se	mg/L	BDL (DL : 0.01)	BDL (DL : 0.01)	-	BDL (DL : 0.01)	-	BDL (DL : 0.01)
21	Arsenic as As	mg/L	BDL (DL : 0.01)	BDL (DL : 0.01)	-	BDL (DL : 0.01)	-	BDL (DL : 0.01)
22	Lead as Pb	mg/L	BDL (DL : 0.01)	BDL (DL : 0.01)	-	BDL (DL : 0.01)	-	BDL (DL : 0.01)
23	Zinc as Zn	mg/L	BDL (DL : 0.05)	BDL (DL : 0.05)	-	BDL (DL : 0.05)	-	BDL (DL : 0.05)
24	Anionic Detergents	mg/L	Nil	Nil	-	Nil	-	Nil
25	Total Chromium as Cr	mg/L	BDL (DL : 0.05)	BDL (DL : 0.05)	-	BDL (DL : 0.05)	-	BDL (DL : 0.05)
26	Phenolphthalein Alkalinity as CaCo3	mg/L	Nil	Nil	-	Nil	-	Nil
27	Total Alkalinity as CaCo3	mg/L	22	27	-	24	-	19
28	Aluminium as Al	mg/L	BDL (DL : 0.03)	BDL (DL : 0.03)	-	BDL (DL : 0.03)	-	BDL (DL : 0.03)
29	Boron as B	mg/L	BDL (DL :0.1)	BDL (DL :0.1)	-	BDL (DL :0.1)	-	BDL (DL :0.1)
30	Magnesium as Mg	mg/L		0.97	-	9.93	-	1.15
31	Mineral Oil	mg/L	Nil	Nil	-	Nil	-	Nil
32	Polynuclear Aromatic Hydrocarbons	mg/L	Nil	Nil	-	Nil	-	Nil
33	Pesticides	mg/L	Nil	Nil	-	Nil	-	Nil
34	Cyanide as CN	mg/L	BDL (DL: 0.01)	BDL (DL: 0.01)	-	BDL (DL: 0.01)	-	BDL (DL: 0.01)
35	E. coli	MPN/100ml	Absent	Absent	-	Absent	-	Absent
36	Total Coliform	MPN/100ml	Absent	Absent	-	Absent	-	Absent

VII. MARINE SAMPLING:

Marine Water samples and sediment samples were collected at locations South side berth and North side berth. Analysis data of Marine and sediments as represented in Annexure – 7 & 8.

STATION CODE	LOCATIONS	Geographical Location
MW – 1 / MS – 1	**Bollard / Berth area**	**130 16’ 25” N 800 20’ 16” E**

Water and Marine Sampling Locations

Annexure 7 Marine Water sample test report Jan to Jun 2023

Month			Jan		Feb		Mar		Apri		May		Jun	
S.No	Physicochemical Parameters		Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
1	Colour	Hazan	20	45	15	40	20	40	20	35	-	-	23	38
2	Odour	-	Unobjectionable								-	-	Unobjectionable	
3	pH @ 25°C	-	8.07	8.25	7.91	8.13	7.58	6.86	8.03	8.01	-	-	8.09	8.05
4	Temperature	°C	29	29	28	28	28	28	29	29	-	-	28.8	28.6
5	Turbidity	NTU	27	40	16	32	31	42	18	26	-	-	22	30
6	Total Suspended Solids	mg/L	24	31	21	37	35	39	37	38	-	-	33	41
7	BOD at 27 oC for 3 days	mg/L	4.2	4.9	4	4.5	4.7	5.1	4.2	4.9	-	-	3.6	3.9
8	COD	mg/L	116	150	108	129	112	147	115	127	-	-	101	120
9	Dissolved oxygen	mg/L	2.9	2.7	3	2.6	2.7	2.5	2.8	2.3	-	-	3.5	3.1
10	Salinity at 25 °C	ppt	34.5	35.2	33.8	34.7	37.1	36.3	36.4	34.8	-	-	36.1	36.4
11	Oil & Grease	mg/L	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
Nutrient Parameters														
12	Nitrate as No3	mg/L	5.86	8.18	6.73	9.05	5.83	8.17	6.42	8.56	-	-	7.11	9.42
13	Nitrite as No2	mg/L	2.56	3.12	2.81	3.9	2.54	3.12	3.03	3.65	-	-	3.16	3.8
14	Ammonical Nitrogen as N	mg/L	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
15	Total Nitrogen	mg/L	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)	BDL (DL : 1.0)
16	Inorganic phosphates as PO4	mg/L	4.86	7.81	4.05	6.99	4.87	7.85	4.69	6.71	-	-	4.95	7.03
17	Silica as SiO2	mg/L	3.71	5.91	5.82	7.17	3.82	5.73	6.13	7.58	-	-	6.39	7.71
18	Particulate Organic Carbon	µgC/L	11	15	14	19	12	14	13	17	-	-	15	19
19	Pertoleum Hydrocarbons	µg/L	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)	BDL (DL : 0.01)
Heavy Metals														
20	Cadmium as Cd	mg/L	BDL (DL : 0.003)	BDL (DL: 0.003)	BDL (DL : 0.003)	BDL (DL: 0.003)	BDL (DL : 0.003)	BDL (DL: 0.003)	BDL (DL : 0.003)	BDL (DL: 0.003)	BDL (DL : 0.003)	BDL (DL: 0.003)	BDL (DL : 0.003)	BDL (DL: 0.003)
21	Copper as Cu	mg/L	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)
22	Total Iron as Fe	mg/L	0.6	0.77	0.6	0.77	0.6	0.77	0.75	0.83	-	-	0.79	0.87
23	Zinc as Zn	mg/L	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)
24	Lead as Pb	mg/L	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)	BDL (DL : 0.01)	BDL (DL: 0.01)
25	Mercury as Hg	mg/L	BDL (DL : 0.001)	BDL (DL: 0.001)	BDL (DL : 0.001)	BDL (DL: 0.001)	BDL (DL : 0.001)	BDL (DL: 0.001)	BDL (DL : 0.001)	BDL (DL: 0.001)	BDL (DL : 0.001)	BDL (DL: 0.001)	BDL (DL : 0.001)	BDL (DL: 0.001)
26	Nickel as Ni	mg/L	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)
27	Total Chromium as Cr	mg/L	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)	BDL (DL : 0.05)	BDL (DL: 0.05)
Bacteriological Parameters														
28	Escherichia Coli (ECLO)	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
29	Faecal Coliform (FCLO)	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
30	Pseudomonas aeruginosa	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
31	Streptococcus faecalis	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
32	Shigella (SHLO)	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
33	Salmonella (SLO)	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
34	Total Coliform (TC)	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
35	Total Viable Count (TVC)	cfu/ml	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	6	11
36	Vibrio cholera	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst
37	Vibrio parahaemolyticus	Per 100ml	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst	Abst

Month & Year			Jan		Feb		Mar		Apr		May		Jun	
S.No.	Parameters	Unit	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom
38	Primary Productivity	mg C/m3 /hr	9.47	10.58	8.89	9.87	8.95	9.76	8.76	9.14	-	-	8.72	9.11
39	Chlorophyll a	mg /m3	7.03	6.45	6.04	7.11	7.04	6.43	6.12	6.74	-	-	6.1	6.72
40	Phaeopigment	mg /m3	3.56	3.92	2.78	3.79	3.26	3.87	2.91	3.56	-	-	2.89	3.53
41	Total Biomass	ml /100 m3	2.05	1.97	1.86	2.21	2.01	1.94	1.89	2.17	-	-	1.86	2.15
PHYTOPLANKTON														
42	Bacteriastrum hyalinum	nos/ml	16	20	19	17	15	19	17	16		-	15	13
43	Bacteriastrum varians	nos/ml	18	17	21	19	19	16	20	17	-	-	17	20
44	Chaetoceros didymus	nos/ml	15	12	17	13	17	13	16	14	-	-	13	11
45	Chaetoceros decipiens	nos/ml	14	16	15	18	12	16	14	18	-	-	11	15
46	Biddulphia mobiliensis	nos/ml	17	19	19	16	15	18	17	14	-	-	20	17
47	Ditylum brightwellii	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
48	Gyrosigma sp	nos/ml	7	8	9	6	8	8	9	7			5	3
49	Cladophyxis sps	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
50	Coscinodiscus centralis	nos/ml	14	13	16	11	12	14	15	12	-	-	17	15
51	Coscinodiscus granii	nos/ml	12	10	15	12	10	11	14	11	-	-	10	7
52	Cylcotella sps	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
53	Hemidiscus hardmanianus	nos/ml	18	15	20	14	16	13	19	16	-	-	17	13
54	Laudaria annulata	nos/ml	14	18	16	11	12	17	16	13	-	-	19	15
55	Pyropacus horologicum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
56	Pleurosigma angulatum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
57	Leptocylindrus danicus	nos/ml	22	21	21	19	24	22	22	18	-	-	19	16
58	Guinardia flaccida	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
59	Rhizosolenia alata	nos/ml	6	7	8	5	5	8	7	6	-	-	10	8
60	Rhizosolena impricata	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
61	Rhizosolena semispina	nos/ml	20	17	19	16	21	19	20	15	-	-	18	17
62	Thalassionema nitzschioides	nos/ml	20	24	21	20	18	22	20	20	-	-	22	19
63	Triceratium reticulatum	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
64	Ceratium trichoceros	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
65	Ceratium furca	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
66	Ceratium macroceros	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
67	Ceracium longipes	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
ZOOPLANKTONS														
68	Acrocalanus gracilis	nos/ml	14	18	16	20	11	15	17	19	-	-	15	16
69	Acrocalanus sp	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
70	Paracalanus parvus	nos/ml	9	12	7	10	7	10	6	8	-	-	8	11
71	Eutintinus sps	nos/ml	10	8	9	6	8	6	8	5	-	-	6	3
72	Centropages furcatus	nos/ml	8	14	10	13	7	12	10	11	-	-	12	10
73	Corycaeus dana	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
74	Oithona brevicornis	nos/ml	11	15	12	18	10	14	11	16	-	-	13	19
75	Euterpina acutifrons	nos/ml	15	14	11	16	14	15	10	15	-	-	9	14
76	Metacalanus aurivilli	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
77	Copipod nauplii	nos/ml	11	10	10	12	12	11	10	13	-	-	12	12
78	Cirripede nauplii	nos/ml	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	Nil	Nil
79	Bivalve veliger	nos/ml	17	14	19	16	18	15	17	13	-	-	15	12
80	Gastropod veliger	nos/ml	13	17	11	19	14	18	15	17	-	-	13	15

Annexure 8 MARINE SEDIMENT QUALITY ANALYSIS REPORT Jan to Jun 2023

S.NO	PARAMETER	UNITS	Jan	Feb	Mar	Apr	May	Jun
1	Total organic matter	%	0.68	0.63	0.79	0.71	-	0.66
2	% Sand	%	20	20	20	15	-	19
3	% Silt	%	30	30	30	30	-	34
4	% Clay	%	50	50	50	55	-	47
5	Iron (as Fe)	mg/kg	17.1	15.9	18.2	19.4	-	21.2
6	Aluminium (as Al)	mg/kg	9608	9314	9472	8936	-	9010
7	Chromium (as Cr)	mg/kg	19	15	17	51	-	54
8	Copper (as Cu)	mg/kg	41	47	40	46	-	49
9	Manganese (as Mn)	mg/kg	52	40	49	53	-	55
10	Nickel (as Ni)	mg/kg	20	18	25	48	-	51
11	Lead (as Pb)	mg/kg	25	23	26	18	-	21
12	Zinc (as Zn)	mg/kg	183	171	181	232	-	239
13	Mercury(as Hg)	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
14	Total phosphorus as P	mg/kg	104	101	109	135	-	141
15	Octane	mg/kg	BDL	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
16	Nonane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
17	Decane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
18	Undecane	mg/kg	0.55	0.63	0.53	0.61	-	0.63
19	Dodecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
20	Tridecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
21	Tetradecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
22	Pentadecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
23	Hexadecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
24	Heptadecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
25	Octadecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
26	Nonadecane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)
27	Elcosane	mg/kg	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	BDL (DL : 0.1)	-	BDL (DL : 0.1)

S.NO	BENTHOS SPECIES	UNITS	Jan	Feb	Marc	Apr	May	June
I.Nematoda								
1	Oncholaimus sp	nos/m^2	13	16	14	15	-	17
2	Tricoma sp	nos/m^2	15	12	13	23	-	21
II.Foraminifera								
1	Ammoniabeccarii	nos/m^2	9	8	7	18	-	20
2	Quinqulina sp	nos/m^2	14	16	15	23	-	25
3	Discorbinella sp.,	nos/m^2	11	13	12	20	-	18
4	Bolivinaspathulata	nos/m^2	12	15	11	9	-	11
5	Elphidiumsp	nos/m^2	24	21	22	17	-	14
6	Noniondepressula	nos/m^2	18	20	19	19	-	21
III.Molluscs-Bivalvia								
1	Meretrixveligers	nos/m^2	22	21	20	22	-	19
2	Anadoraveligers	nos/m^2	10	9	13	23	-	21
3	Total No. of individuals	nos/m^2	148	151	146	189	-	212
4	Shanon Weaver Diversity Index (SWDI)		2.25	2.26	2.26	2.27	-	2.28

Form-V

(See rule 14 of Environment (Protection) Rules, 1986)

Environmental Statement for the financial year ending 31st March 2022

PART – A

i) **Name and Address of the owner / occupier of the industry operation or process**	:	**Mr. G.J. Rao** **Chief Executive Officer** **Adani Ennore Container Terminal Private Limited** **C/O Kamarajar Port Limited** **Vallur Post, Ennore** **Thiruvallur District– 600 120** **Tamil Nadu, India**
ii) Industry Category	:	**Primary** : Red **Secondary** : 1065 – Ports and Harbour, Jetties and Dredging Operations.
iii) Production Capacity	:	**Cargo Handling Capacity :** 11.68 MMTPA of Container cargo
iv) Year of establishment	:	2016
v) Date of the last environmental statement submitted	:	Vide our Letter No. AECTPL/TNPCB/2021-22/79 dated 23.09.2021

Adani Ennore Container Terminal Pvt. Ltd. Chennai

PART – B

WATER AND RAW MATERIAL CONSUMPTION

(i) Water Consumption

S. No	Water Consumption (m^3/Calendar Day)	2020-2021	2021-2022
1.	Process	NIL	NIL
2.	Cooling	NIL	NIL
3.	Domestic	13.8	12.6

(ii) Raw Material Consumption

S. No.	Name of Raw Material	Name of Products	Consumption of Raw Material per Unit of output	
			During the previous financial year (2020-21)	During the current financial year (2021-22)
1	Not Applicable	Not Applicable	NIL	NIL
The unit does not undergo any manufacturing process. Hence, there is no raw material consumption.				

Adani Ennore Container Terminal Pvt. Ltd. * Chennai

PART – C

POLLUTION DISCHARGE TO ENVIRONEMENT/ UNIT OF OUTPUT

(Parameters as specified in the consent issued)

<table>
<tr><th>Pollutants</th><th>Quality of Pollutants Discharged (Mass/day)</th><th>Concentration of Pollutants discharges (mass/volume)</th><th>Percentage of variation from prescribed standards with reason</th></tr>
<tr><td>a) Water</td><td colspan="3">STP Treated Water Characteristics: -
<table>
<tr><th>Parameter</th><th>Consent Limit</th><th>Actual</th><th>% Variation with prescribed standard</th></tr>
<tr><td>pH</td><td>5.5-9</td><td>7.44</td><td>-Nil-</td></tr>
<tr><td>Total Suspended Solids (mg/l)</td><td>30</td><td>18.62</td><td>-Nil-</td></tr>
<tr><td>BOD (3 days at 27°C) (mg/l)</td><td>20</td><td>12.59</td><td>-Nil-</td></tr>
<tr><td>Fecal Coliform (MPN/100ml)</td><td>1000</td><td>177.08</td><td>-Nil-</td></tr>
</table></td></tr>
<tr><td>b) Air</td><td colspan="3">DG sets are provided as standby power source and are used during power failure only. The Height of DG stacks as per CPCB/ TNPCB Standards. All the monitored parameters are within standards.

All the DG Sets are retrofitted to reduce the Particulate Matter emission level. Efficiency of the retrofitting equipment is observed above 90% against the TNPCB requirement of >70%.

All the monitored parameters are well within the prescribed standards.</td></tr>
<tr><td>Particulate Matter (mg/Nm3)</td><td colspan="3" rowspan="3">DG stack emission report is enclosed as Annexure 1</td></tr>
<tr><td>Sulphur Dioxide (mg/Nm3)</td></tr>
<tr><td>Nitrogen Oxide (ppm)</td></tr>
</table>

PART-D

HAZARDOUS WASTES

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

Hazardous Wastes	Total Quantity (Kg)	
	During the previous Financial Year (2020-21)	During the current Financial Year (2021-22)
(a) From Process	-Nil-	• Used/Spent Oil (5.1) – 2500 Liters (2.268 Tons) • Wastes or residue containing oil (5.2) - 800 Liters (0.72 Tons)
(b) From Pollution control facilities	NA	NA

PART-E

SOLID WASTES

TOTAL QUANTITY GENERATED			
Solid Waste		During the previous Financial Year (2020-21)	During the current Financial Year (2021-22)
a)	From process	NIL	NIL
b)	From pollution control facilities- STP	63.42 kgs	99.3 kgs
c)	1. Quantity recycled or reutilized within the Unit	63.42 kgs	99.3 kgs
	2. Sold	NIL	NIL
	3. Disposed	NIL	NIL

PART-F

Please specify the characterization (in terms of Composition and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes:

- **"Zero Waste to Landfill" Initiative** – No waste is being sent to landfill or incineration facility. AECTPL is having Integrated Waste Management System (IWMS) to proper segregate & recover the materials and are handled as per 5R (Reduce, Reuse, Recycle, Recover and Reprocess) principle.

- AECTPL has awarded with Zero Waste to Landfill Management System (ZWTL MS 2020) from TÜV Rheinland India Pvt. Ltd (Annexure – 2).

- Hazardous wastes include Used oil, Filters contaminated with Oil and Empty barrels / containers contaminated with hazardous wastes. All the hazardous wastes are collected and stored properly in Integrated Waste Management Shed & are being disposed to TNPCB authorized /registered recyclers in line with Hazardous and other Wastes (Management and Transboundary Movement) Rules, 2016 (As amended).

- The used batteries and E –wastes are also stored in Integrated Waste Management Shed and disposed off through approved vendor in line to E-Waste Management Rules 2016 (as amended).

- Hazardous waste Annual returns in Form 4 was submitted in line with the Hazardous and Other Wastes (Management & Trans boundary Movement) Rules, 2016.

- E-waste returns in Form 3 was submitted in line with the E-waste Management Rules, 2016.

- 100% utilization of STP sludge for greenbelt maintenance as manure.

- AECTPL certified as "Single Use Plastic (SUP) Free" site from CII –ITC Centre of Excellence for Sustainable Development.

Adani Enterprise Container Terminal Pvt. Ltd. * Chennai

PART-G

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

- Adani Ennore Container Terminal Private Limited is having electrified cranes only and hence the diesel consumption by the cranes is eliminated completely.
- All the DG Sets are retrofitted to reduce the Particulate Matter emission level. Efficiency of the retrofitting equipment is observed above 90% against the TNPCB requirement of >70%.
- All the domestic wastewaters being generated at port is treated at existing sewage treatment plant and the treated water is being reused within port premises for gardening/horticulture purpose.
- Sewage Treatment Plant (STP) is in continuous operation and the treated effluent water quality is meeting the TNPCB norms. The total cost spent on STP operation during the year 2021-22 is Rs. 4.56 Lakhs.
- Regular Environmental monitoring is being carried out through NABL accredited laboratory. All the monitored environmental parameters are well within the prescribed norms & the details of monitored data is being submitted regularly to TNPCB, CPCB, MoEF&CC and other concerned authorities.
- Unit is continuously developing and maintaining Greenbelt within the port premises.
- Implemented Integrated Waste Management System (IWMS) for managing all types of wastes in line with 5R (Reduce, Reuse, Recycle, Recover and Reprocess) principle.

PART-H

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

Regular Expenditure (Cost in INR lakhs/year)		
S. No.	**Description**	**Cost**
1	Environmental monitoring & Environment Studies	7.86
2	Green belt & Horticulture development	4.87
3	Annual maintenance contractor of STP operation	4.56
4	Operation & Maintenance of Integrated Waste Management System	2.89
5	Housekeeping	37.20

PART-I

ANY OTHER PARTICULARS IN RESPECT TO ENVIRONMENT

- Handling of all types of wastes in line with 5R (Reduce, Reuse, Recycle, Recover and Reprocess) Principle.
- Paperless Operation is in place (Except for Statutory requirements) using application tools and Software – Terminal Info Gateway (TIG).
- Energy Conservation Committee to measure the amount of energy consumed and take actions to reduce the energy consumed through port operations
- Water Warriors committee to identify and reduce the water consumption. The committee would propose innovative water solutions.
- Integrated Management System (ISO 9001:2015, 14001:2015, 45001:2018 and 50001:2018) certified Port.
- Obtained "5S" Certification at MIDPL
- AECTPL is bestowed with the top honors and the details of accolades received during the year 2021-22 are mentioned here under (photos attached at Annexure-3):
    - "21st Annual Greentech Environment & Sustainability" Award 2021' organized by Greentech Foundation, New Delhi for outstanding achievements in **"Environment Protection"** category

- **"Platinum Award"** under **Apex India Green Leaf Award 2021** for Energy Efficiency category

- **Community Development:**

Kattupalli Port has been propagating the community development through a broad based Corporate Social Responsibility (CSR) program in the project area through Adani Foundation since 2018 to ensure inclusive growth and catering to the developmental needs of the community at the grassroots level. The *project area encompasses 11 panchayats covering about 46 villages within 10 Km radius of the Kattupalli Port.* The key interventions introduced in the project area are as under:

- Education
- Community Health
- community Infrastructure facility
- Sustainable Livelihood development
- Tree Plantation & Bio-Diversity development program
- Special Focus Groups
- COVID / Cyclone relief measures

Date: 22.09.2022

(Signature of a person carrying out an industry operation or process)

Name : **G.J. Rao**
Designation: **Chief Executive Officer**
Address : Adani Ennore Container Terminal Pvt Ltd
C/O Kamarajar Port Limited
Vallur post, Ennore
Thiruvallur District– 600 120.

Adani Ennore Container Terminal Pvt. Ltd. Chennai-

Adani Ennore Container Terminal Pvt. Ltd. Chennai-

ANNEXURE - 1

AECTPL- STACK MONITORING (April'2021 to March'2022)

Location		DG - 1 1500KVA											
Month & Year		Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
S.No.	Parameters	20.04.21	21.05.21	19.06.21	21.07.21	19.08.21	16.09.21	22.10.21	16.11.21	27.12.21	24.01.22	17.02.22	24.03.22
1	Stack Temperature, °C	230.0	237.0	-	237.0	223.0	213.0	218.0	226.0	234.0	229.0	-	230.0
2	Flue Gas Velocity, m/s	22.6	21.3	-	20.2	21.4	22.1	21.5	22.0	21.0	22.9	-	22.6
3	Gas Discharge, Nm3/hr	6053.0	5606.0	-	5316.0	5794.0	6107.0	5877.0	5926.0	5581.0	6143.0	-	5606.0
4	Sulphur Dioxide, mg/Nm3	8.9	8.2	-	7.9	8.1	8.9	7.3	7.9	8.2	7.6	-	8.2
5	NOX (as NO2) in ppmv	126.0	129.0	-	152.0	140.0	152.0	128.0	135.0	140.0	134.0	-	131.0
6	Particular matter, mg/Nm3	34.8	32.8	-	32.0	34.1	37.3	11.0	10.0	9.4	11.0	-	9.2
7	Carbon Monoxide, mg/Nm3	81.0	84.0	-	87.0	83.0	80.0	65.0	69.0	75.0	40.0	-	40.0

Location		DG-2 1500KVA											
Month & Year		Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
S.No.	Parameters	20.04.21	21.05.21	19.06.21	21.07.21	19.08.21	16.09.21	22.10.21	16.11.21	27.12.21	24.01.22	17.02.22	24.03.22
1	Stack Temperature, °C	221.0	228.0	220.0	242.0	235.0	228.0	235.0	-	218.0	223.0	-	235.0
2	Flue Gas Velocity, m/s	21.0	21.4	19.5	21.6	23.0	21.0	21.6	-	22.5	21.5	-	23.1
3	Gas Discharge, Nm3/hr	5714.0	5755.0	5327.0	5632.0	6094.0	5634.0	5728.0	-	6154.0	5830.0	-	5755.0
4	Sulphur Dioxide, mg/Nm3	8.0	7.8	8.3	8.9	8.1	7.5	6.7	-	7.8	7.2	-	7.8
5	NOX (as NO2) in ppmv	115.0	122.0	118.0	164.0	155.0	139.0	120.0	-	129.0	131.0	-	127.0
6	Particular matter, mg/Nm3	33.1	35.4	32.1	34.7	32.0	34.4	8.2	-	9.5	10.0	-	8.8
7	Carbon Monoxide, mg/Nm3	75.0	80.0	74.0	85.0	88.0	85.0	61.0	-	68.0	42.0	-	36.0

Location		DG-3 1500KVA											
Month & Year		Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
S.No.	Parameters	20.04.21	21.05.21	19.06.21	21.07.21	19.08.21	16.09.21	22.10.21	16.11.21	27.12.21	24.01.22	17.02.22	24.03.22
1	Stack Temperature, °C	225.0	214.0	-	-	218.0	224.0	217.0	205.0	223.0	-	220.0	214.0
2	Flue Gas Velocity, m/s	22.0	21.0	-	-	22.5	21.4	22.1	20.7	22.4	-	22.2	21.2
3	Gas Discharge, Nm3/hr	5951.0	5796.0	-	-	6151.0	5785.0	6057.0	5835.0	6068.0	-	6050.0	5796.0
4	Sulphur Dioxide, mg/Nm3	8.4	7.1	-	-	7.4	7.9	6.5	6.1	7.5	-	8.1	7.1
5	NOX (as NO2) in ppmv	120.0	110.0	-	-	130.0	135.0	124.0	120.0	136.0	-	127.0	120.0
6	Particular matter, mg/Nm3	32.3	30.6	-	-	30.6	33.1	4.1	6.8	11.0	-	9.6	10.4
7	Carbon Monoxide, mg/Nm3	79.0	73.0	-	-	79.0	83.0	64.0	56.0	64.0	-	35.0	33.0

Location		DG-4 125KVA											
Month & Year		Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22
S.No.	Parameters	20.04.21	21.05.21	19.06.21	21.07.21	19.08.21	16.09.21	22.10.21	16.11.21	27.12.21	24.01.22	17.02.22	24.03.22
1	Stack Temperature, °C	127.0	122.0	125.0	-	121.0	125.0	130.0	126.0	121.0	-	126.0	122.0
2	Flue Gas Velocity, m/s	12.1	11.4	12.2	-	11.8	12.5	12.9	12.1	11.7	-	12.1	12.9
3	Gas Discharge, Nm3/hr	568.0	547.0	580.0	-	568.0	592.0	606.0	606.0	563.0	-	571.0	571.0
4	Sulphur Dioxide, mg/Nm3	4.6	4.4	4.7	-	5.0	5.4	4.2	4.0	4.5	-	4.9	5.3
5	NOX (as NO2) in ppmv	87.0	80.0	86.0	-	81.0	87.0	73.0	68.0	61.0	-	67.0	60.0
6	Particular matter, mg/Nm3	13.9	14.5	13.0	-	14.3	16.0	9.4	8.5	5.3	-	4.6	5.3
7	Carbon Monoxide, mg/Nm3	30.0	33.0	36.0	-	29.0	33.0	26.0	29.0	25.0	-	23.0	21.0

Annexure - 2

TÜVRheinland®
Precisely Right.

Certificate

Standard: **Zero Waste to Landfill Management System (ZWTL MS 2020)**

Certificate Holder: **Adani Ennore Container Terminal Private Limited**
Ennore Terminal, C/O Kamarajar Port Ltd,
Tiruvallur - 600120,Tamil Nadu,India

Scope: **Providing Port facilities for Handling and Storage of Containerized Cargo**

Proof has been furnished by means of an audit that the Requirements of ZWTL MS 2020 are met, with the achievement of waste diversion rate of above 99%

Validity: This certificate is valid from 01-06-2021 until 31-05-2024
Subject to satisfactory annual surveillance audits.

Certificate No. TUV/ZWLMS/2021/Adani Ports/0503

New Delhi, 01-06-2021

TÜV Rheinland India Pvt. Ltd.
Office 610, 6th Floor, iThum
Tower, A–40, Sector-62,
Noida- 201301, India

Accolades

Annexure - 3

Greentech Foundation Winner Awards –2021

APEX India Green Leaf Platinum Award - 2021

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines for

"CONSTRUCTION OF GENERAL CARGO BERTH AT ENNORE PORT CARGO TERMINAL PROJECT"

Point wise compliance report on Ministry's guidelines for the CRZ and Environmental clearance for the construction of General Cargo Berth at Ennore port cargo terminal project.

Ref: MoEF Letter No. 11-21/2009-IA-III dated 23.7.2009

Back ground information

MoEF had accorded environmental clearance vide letter No. 11-21/2009–IA-III dated 23rd July, 2009 for the development of a general cargo berth. The length of the berth is 250m length and 35m width to handle about 2 lakh cars per year and project cargoes & finished cargo of 0.5 million tons per year.

Status of the project:

A General Cargo Berth with Car parking area was developed for the export of automobiles and handling project cargo, etc. The terminal is under operational.

S.No.	Specific Conditions	Compliance Status
(i)	As the Ennore expressway is very busy. It is suggested to examine the details of traffic analysis and incorporate necessary improvement study the impact of additional traffic due to the proposed development	**Complied with**. The copy of report on traffic analysis carried out by M/s. Wilber Smith Association Pvt. Ltd., was sent to MoEF vide our letter dated 17.2.2010.
(ii)	No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	**Complied.** No construction works other than those permitted in the Coastal Regulation Zone Notification are carried out in Coastal Regulation Zone area.
(iii)	Oil spills if any shall be properly collected and disposed as per the Rules.	**Noted for compliance.**
(iv)	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	**Complied.** Port is equipped with HSE division which is a part of the Marine Services department headed by General Manager (MS). The HSE division is exclusively headed by an officer in the rank of Chief Manager(HSE). At present, the Environmental Cell comprises of the following officers.

		(i) Chief Manager(HSE), (ii) Sr. Manager(HSE) and (iii) Executive. Port is monitoring the environment. Port has engaged M/s. Nitya Laboratories (MoEF & CC/ NABL certified) for sampling and testing of various environmental parameters.
(v)	The project proponent shall take up mangrove plantation/green belt in the project area, wherever possible. Adequate budget shall be provided in the Environment Management Plan for such mangrove development.	At present, port is having a green belt of 636.14 Acres, including a green belt (planted) of 210.74 acres, green cover natural 349.26 acres and mangroves in an area of 76.14 acres. However, KPL has proposed to utilize the existing operational area in the custom bound area for future development projects/infrastructure activities. As per approved Biodiversity Management Plan of Port, it is planned to develop the green belt of 68.66Acres inside the custom bound area and 621.91 Acres outside the custom bound area. Upon implementation of the plan, the total green belt area of the port will be 690.77Acres.
(vi)	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	The details of expenditure incurred by KPL towards Environmental management during the compliance period is as below: 1. Environmental Monitoring = Rs. 7,09,120/- (Excl. GST). 2. Solid Waste Management = Rs. 22,20,000/- (Excl. GST).

General Conditions:

S No.	General Conditions	Compliance Status
(i)	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	**Complied with.** All constructions and plans are approved by port itself as port is a regulatory authority by itself.

	Coastal Regulation Zone Notification dated 19.02.1991 and the approved Coastal Zone Management Plan of Tamil Nadu.	
(ii)	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 with.** Local labors were engaged during the construction and the labour camps were located outside the CRZ area.
(iii)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	**Complied with.** Digging activities were carried out during the construction of berth. Marine water quality was monitored to notice any degradation of water quality.
(iv)	*Borrow sites for each quarry sites for road construction material and dump sites must be identified keeping in view the following:*	
	a. No excavation or dumping on private property is carried out without written consent of the owner.	**Complied with.** No excavation was carried out in the project area or any material dumped in any private property. Concrete structure on pile foundation was carried out.
	b. No excavation or dumping shall be allowed on wetlands, forest areas or other ecologically valuable or sensitive locations.	No excavation or dumping was carried out on wetlands or any ecologically sensitive areas during the development of the project.
	c. Excavation work shall be done in close consultation with the Soil Conservation and Watershed Development Agencies working in the area, and	**Complied with.** No excavation work was carried in the project area.
	d. Construction spoils including bituminous material and other	**Complied with.**

	hazardous materials must not be allowed to contaminate water courses and the dump sites for such materials must be secured so that they shall not leach into the ground water.	No construction spoils or any other hazardous materials such as bituminous were generated during the construction process.
(v)	The construction material shall be obtained only from approved quarries. In case new quarries are to be opened, specific approvals from the competent authority shall be obtained in this regard.	**Complied with.** Construction material does not involve any quarry materials other than blue granite. Only iron & metal steel are used for RCC.
(vi)	Adequate precautions shall be taken during transportation of the construction material so that it does not affect the environment adversely.	**Complied with.** Adequate measures like covering the material etc. were undertaken during the transportation of construction material.
(vii)	Full support shall be extended to the officers of this Ministry/ Regional Office at Bangalore by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	**Being complied.**
(viii)	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	**Noted.**
(ix)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry	**Noted.**
(x)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of	**Noted.**

	Environment and Forests.	
(xi)	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	**Complied with.** KPL has informed MoEF&CC and RO of MoEF&CC vide its letter No. EPL/MS/Env/GCB/1/08, dated 07.12.2009.
(xii)	Tamil Nadu State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/ Tehsildar's Office for 30 days.	**Complied with.**
7	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 (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.	KPL is enforcing the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981 and the Environment (Protection) Act, 1986. With regard to the Public Liability Insurance, Port has obtained Public Liability Insurance through Oriental Insurance Company Ltd.' vide Policy No:411400/22/2023/1, valid till 05/11/2023.
8	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 Wild (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	**Complied with.** The terminal is exclusively for export/import of brand new assembled automobiles; hence the said clearances are not applicable to this terminal.
9	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the	**Complied with.** The receipt of the environment and CRZ clearance was

	project has been accorded Environmental Clearance and copies of clearance letters 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.	advertised in two local news papers on 6.8.2009. The copies of the advertisements were forwarded to MoEF, RO, Bangalore vide our letter No.EPL/MS/Env/GCB/01/2008 dated 25.8.2009. 1. 'The Dinamani dated: 06.08.2009 2. The New Indian Express' Dated: 06.08.2009.
10	Environmental Clearance is subject to final order of the Hon'ble Supreme 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.**
11	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.	There is no appeal against this EC was made with National Environment Appellate.
12	A copy of the Clearance letter shall be sent by the proponent to concerned Panchayat, ZillaParishad/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.	**Complied with.** No public hearing was conducted as the same was not recommended by MoEF & CC in the ToR. No suggestions / representations were received while processing the proposal. The clearance letter was put on the KPL website.

13	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 sect oral parameters, indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	**Complied with.** Only brand new cars (Green Cargo) are handled in this terminal. The status of compliance of the stipulated EC conditions and the results of the monitored data are being sent to Regional office of MoEF. The result of the monitoring data carried out by the Port is uploaded in the company's website.
14	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 as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	**Complied with.** The reports are regularly submitted to Regional Office of MoEF & CC. The same is being uploaded in MoEF & CC and KPL websites also.
15	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 with.** The environmental statement (Form-V) is enclosed herewith as **Annexure-I.**

Point wise compliance report on the conditions issued by Tamil Nadu State Coastal Zone Management vide Letter No. 151/EC3/2009-1 dated 24.02.2009

1	There should not be any extraction of ground water in Coastal Regulation Zone	**Complied with.** No ground water is extracted in the CRZ area. Open dug wells are provided beyond the CRZ area in the port exclusively for watering of plants.

2	The project activity should not affect the coastal ecosystem including marine flora and fauna	**Complied with.** Only automobiles (green cargo) are handled in the project. No sewage or wastes are dumped in the port waters. KPL is monitoring marine water quality inside the port. Monitoring reports are regularly submitted to R.O of MoEF&CC. Port waters conform to SW Class IV standards.
3	The composition of the dredged materials should be duly analyzed and examined to find out the availability of any toxic contents.	• Port has carried out a study through Institute of Ocean Management, Anna University, Chennai entitled "Assessment of Water, Sediment & Biota in Ennore Port" during January 2009. • The study revealed that the toxic heavy metals are found to be well within the safety limits and as such do not pose any problem to the marine environment. • Sediment quality is also continuously monitored during dredging operations. • Port is also monitoring monthly marine water quality for various physio-chemical parameters including heavy metals.
4	Based on the analysis, a suitable methodology for the disposal of dredging material has to be evolved out.	National Institute of Ocean Technology (NIOT), Chennai has carried out EIA and Risk assessment for the second phase expansion proposals, which is inclusive of Modelling studies and identified a marine disposal area (5 KM x 5 KM area) for disposal of dredged material. The study has identified a location for the safe disposal of dredged material with a holding capacity of 18.0 million cubic meters.

5	No blasting activities in Coastal Regulation Zone is permissible	**Complied with.** No blasting activity was carried out during the construction phase. Berth constructions are made up of RCC super structure on pile foundation.
6	The proponent shall not undertake any activity, which is violative of the provisions of Coastal Regulation Zone Notification 1991 and the subsequent amendments.	**Noted.** No activity in violation of the provisions of CRZ Notification will be carried out.
7	The coastal Regulation Zone clearance will be revoked if any of the condition stipulated is not complied with	**Noted.**

[FORM – V]

KAMARAJAR PORT LIMITED - GENERAL CARGO BERTH (GCB)
ENVIRONMENTAL STATEMENT FOR THE FINANCIAL YEAR ENDING THE 31ST MARCH-2021

PART – A

S. No	Description	Remarks
1.	Name and address	Kamarajar Port Limited, Vallur Post, Near NCTPS, Chennai-120.
2.	Type of Cargo handled	Auto mobiles (green cargo) & Project cargo
3.	Industry category Primary (STC Code) Secondary (SIC Code)	Major port under the administrative control of Ministry of shipping, GOI.
4.	Cargo handling capacity as per CTO	2Lakh cars/year and project/finished cargo of 0.5 MTPA. All these cargo are green cargo.
5.	Date of start of commercial operation	28.01.2011

PART – B

(1) Water and Raw Material Consumption

Water consumption m3/d: 2KL per Day for this terminal.

Process/ sprinkling: Nil. Only brand new and assembled automobiles (green cargo) are handled (export/import) in this terminal.

Cooling: Not applicable.

Domestic: 2KLD

Any other: Nil

Name of Cargo handled	Process water consumption per unit of product output.(per Annum)	
	During the previous financial year (2021-22)	During the Current financial year (2022-23)
Auto mobiles	Only brand new assembled automobiles (green cargo) are handled in this terminal.	

(2) Raw Material Consumption (if applicable)

*Name of raw materials	Name of Products	Consumption of raw material per Unit of output	
		During the financial	During the financial Year

		year 2021-22	2022-23
Auto mobiles & Project cargo	Auto mobiles & Project cargo	1,56,000	1,93,672

*Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

PART - C

Pollution discharged to environment/unit of output

(Parameter as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/volume)	Percentage of variation from prescribed standards with reasons
Water	Not Applicable. Only brand new assembled automobiles (green cargo) are handled (export/import) in this terminal. No wastes are discharged into the marine/surface water bodies. Port is monitoring the surface and marine water quality through M/s. Nitya Laboratories (MoEF & CC recognised and NABL accredited laboratory). The results of analysis are found to be well within the prescribed standards by the CPCB. The reports are submitted to Tamilnadu Pollution Control Board.		
Air	Not Applicable. Only brand new assembled automobiles (green cargo) are handled (export/import) in this terminal. No stacks are there in port. KPL is monitoring the various environmental parameters through M/s. Hubert Enviro Care Systems Pvt. Ltd. Chennai (MoEF & CC/ NABL certified labaoratory). The ambient air quality is monitored at eight different locations inside the port area. The results of analysis are found to be well within the prescribed standards by the CPCB. The monthly monitoring reports are submitted to Tamilnadu Pollution Control Board.		

PART – D

Hazardous Wastes

(As specified under Hazardous and other wastes Transboundary Rules, 2016)

Hazardous Wastes	Total Quantity (Kg.)	
	During the previous Financial Year 2021-22	During the Financial year 2022-23
Source of Hazardous waste generation	Only brand new assembled automobiles (Green Cargo) are handled (export/import) in this terminal. No hazardous wastes are generated.	
Disposal procedure	Not Applicable.	
Quantity disposed	Not Applicable.	

Any other details	Port has formulated 'Waste Oil, Sewage & Other Wastes Disposal Policy, 2019'. The Policy is uploaded in the KPL website for the easy access of the port users. The ship generated oily wastes are being disposed off through CPCB/SPCB approved recyclers. The list of empanelled recyclers is made available in 'swchh sagar' portal of Director General of Shipping and KPL website.

PART – E

Solid Wastes

Solid Wastes	Total Quantity (M^3)	
	During the Financial Year 2021-22	During the Financial Year 2022-23
Quantity collection	The total collected quantity from the terminal and ships calling at the terminal is about 141.4 Cu.M (Apr'21 to Mar'22).	The collected total quantity from the terminal and ships calling at the terminal is about port and ships is about 167.2 Cu.M (Apr'22 to Mar'23).
a) Source of solid waste generation	Solid waste generated in the port is of domestic wastes likes, paper, packing material, water bottles, etc. Ship generated wastes include paper, plastic cans, metal drums, e-wastes, food waste, ropes, wooden packing material, etc.	
Disposal procedure	As per MARPOL regulations, every port has to provide reception facility for the disposal of ship generated wastes. Accordingly port has engaged a contractor for the collection of wastes from the ships. The collected wastes are segregated into different species and sent to various recyclers for further beneficial use.	
Quantity disposed	The disposed quantity from port and ships is 141.4 Cu.M (Apr'21 to Mar'22).	The disposed quantity from port and ships is 167.2 Cu.M (Apr'22 to Mar'23).
Any other details	NIL	

PART – F

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

Port has Waste Oil, sewage & Other Wastes Reception Facilities Policy, 2019. The generated oily wastes from the ships are disposed off through CPCB/SPCB approved recyclers.

No hazardous wastes are generated. Solid waste generated in the terminal is of domestic wastes like paper, packing material, water bottles, etc. and ship generated wastes including paper, plastic cans, metal drums, e-wastes, food waste, ropes, wooden packing material, etc.,

As per MARPOL regulations, reception facility port has facilitated for the collection and disposal of ship generated wastes. The collected waste are segregated into different categories and sent to various recyclers for further beneficial use.

PART – G

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

Only brand new assembled automobiles (Green Cargo) are handled (export/import) in this terminal. Therefore, there is no pollution generated from the operations in this terminal.

Moreover, Port has developed a green belt of 636.14 acres inside and outside the custom bound areas which acts as barrier for dust emissions and pollutants.

PART – H

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

Port's Environmental Management Plan (EMP) is aimed at mitigating the possible adverse impacts of projects and for ensuring to maintenance of the existing environmental quality. Port has facilitated the ships with reception facilities as per MARPOL regulations for ships for disposal of wastes under Annexure- I (oil) and Annexure- V (Garbage). Port generated domestic wastes are disposed off at approved dumping yards. The domestic sewage wastes are disposed through septic tank & soak pits.

Workers are provided with ear protection devices, masks and helmets. Emergency/Crisis Response Plan that covers situations such as cyclones, marine accidents, bomb threats, fire, explosion and accidents is in place. Port is having oil spill contingency plan prepared in line with National Oil Spill Disaster Contingency plan (NOS-DCP).

PART – I

Any other particulars for improving the quality of the environment.

Nil

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines for

"EXPANSION AND MODERNIZATION OF EXISTING HANDLING OF MULTICARGO CONTAINER TERMINAL AT KAMARAJAR PORT, TAMIL NADU"

Expansion and modernization of existing handling of Multicargo container terminal at Kamarajar Port, Tamil Nadu by M/s. Kamarajar Port Limited- Environmental and CRZ Clearance.

Ref: MoEF's Notification No. 10-28/2005–IA-III dated 24.12.2014

KPL has awarded the development of Multi Cargo Terminal on DBFOT basis for a capacity of 2MTPA with an estimated cost of Rs.151 crores to M/s Chettinad International Bulk Terminal Pvt. Ltd. Concession agreement was signed on 28.03.2014. Award of Concession was granted to the Concessionaire from 27.02.2015. The Concessionaire has completed the berth construction, utility, back yard etc. and started operation.

Cargoes to be handled

Development of multi cargo container terminal is to handle Project clean cargoes like Granite, timber logs, Grains, bagged cargoes including sugar, cobble stone, steel cargoes, project cargo and small quantity of containers of about 2 Million tonnes per annum.

Development of Container Terminal at KPL on DBFOT basis was awarded to M/s. Adani Ennore Container Terminal Private Limited (AECTPL). The quantity handled will be 11.68 MTPA.

S.No	Specific Conditions	Compliance Status
1	"Consent for Establishment" for the present project, shall be obtained from State Pollution Control Board under Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974.	Kamarajar Port has obtained "Consent to Establish" from Tamilnadu Pollution Control Board (TNPCB) for handling container cargo of 16.8 MMTPA vide consent order No. 170126235691 (Air Act) and 170116235691 (Water Act) dated 21.04.2017 valid till 31.03.2024. TNPCB has accorded renewal of Consent To Operate for the terminal vide their orders nos. 2108136876855 & 2108236876855 under Water and Air Acts., vide till 31.03.2026. With regard to M/s Ennore Bulk Terminal (EBTPL), TNPCB accorded Consent To Establish vide order No. 15012566008 & 15011566008, dated 25.05.2015 and Consent to operate vide Order No.1808212438509 (Air) and 1808112438509 (Water) dtd 20.09.2018, valid upto 31.03.2023.

2	Quantity of cargo should be handled in accordance with the details provided in the Form-1	**Complied with.**
3	All the recommendations and conditions stipulated by Tamil Nadu Coastal Zone Management Authority (TNCZMA) No. 30060/EC.3/2005-1 dated 06.12.2005, shall be complied with.	**Complied with.**
4	All the conditions as prescribed in the earlier Clearance letter no. 10-28/2005-IA-III dated 19.05.2006 and 10.09.2007, shall be complied.	**Complied with.**
5	All the recommendation of the EIA/EMP & Risk Assessment and Disaster Management Report shall be complied with letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation submitted in the EIA report shall be submitted to MoEF&CC along with half yearly compliance report to MoEF&CC-RO	EIA/EMP report in a matrix format is enclosed as **Annexure -I.**
6	The commitment made by the Proponent to the issue raised during Public Hearing shall be implemented by the Proponent.	No direction was given to conduct public hearing for the project.
7	**Corporate Environment Responsibility:** a) The Company shall have a well laid down Environment Policy approved by the Board of Directors. b) The Environment Policy shall prescribe for standard operating	With regard to M/s. AECTPL, the firm is having approved QHSE policy. With regard to M/s EBTPL, the firm is in the process of deriving the Environmental Policy. However, the firm has Group Environmental Policy. M/s. AECTPL is having approved SOPs.

	process/producers to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.	With regard to M/s EBTPL, the firm is in the process of deriving the Environmental Policy.
	c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished.	**Noted.**
	d) To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	M/s. AECTPL is having Standard procedures to address corrective, preventive, deviations and violations.

General Conditions

S.No	Environmental Clearance Conditions	Compliance Status
(i)	Appropriate measures must be taken while understanding digging activities to avoid any likely degradation of water quality.	**Complied with.** Construction completed and the project is under operation.
(ii)	Full support shall be extended to the officers of this Ministry/Regional Office at Chennai by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	**Noted for compliance.** Full supported is being extended to the officers of IRO, MoEF & CC, Chennai, CPCB & TNPCB during their inspection and site visits. During the compliance period, monthly visits were made by TNPCB officials and all necessary support were extended.

(iii)	A six-monthly monitoring report shall need to be submitted by the project proponent to the Regional Office of this Ministry at Chennai regarding the implementation of the stipulated conditions.	**Complied with.** The six-monthly compliance status report on the conditions stipulated vide Environmental clearance letters is being sent to Regional Office of MoEF & CC and Tamilnadu Pollution Control Board.
(iv)	Ministry of Environment, Forest & Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	**Noted for compliance.**
(v)	The Ministry reserves the right to revoke this clearance if any of the condition stipulated are not complied with the satisfaction of the Ministry.	**Noted.**
(vi)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest & Climate Change.	**Noted.**
(vii)	The project proponent shall inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	**Noted.**
(viii)	A copy of the clearance letter shall be marked to concern Panchayat/local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	No suggestion / representation were received from the Panchayat/NGO while processing the proposal. However a copy of the clearance letter was forwarded to local Panchayat.
(ix)	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior	**Complied with.** With regard to M/s AECTPL, a separate EMC with suitable qualified staff has been put in place by AECTPL

<table>
<tr><td></td><td>Executive.</td><td>for taking care of various day to day environmental monitoring compliance and allied activities. Environmental Department headed by Senior Manager-Environment, who is well supported by Environmental Management Team at H.O.

With regard to M/s. EBTPL, a separate environmental team at HO is taking care of all environmental activities.</td></tr>
<tr><td>(x)</td><td>The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any purposes.</td><td>Complied with.

The environmental expenditure carried out by M/s AECTPL during the compliance period is Rs. 36.68 Lakhs. The breakup details are as follows.

<table>
<tr><th>S. No</th><th>Description</th><th>Amount (Rs. in Lakhs)</th></tr>
<tr><td>1</td><td>Environmental Monitoring</td><td>6.97</td></tr>
<tr><td>2</td><td>Greenbelt</td><td>2.44</td></tr>
<tr><td>3</td><td>STP-O&M</td><td>2.38</td></tr>
<tr><td>4</td><td>Housekeeping</td><td>4.22</td></tr>
<tr><td>5</td><td>IWMS</td><td>3.24</td></tr>
<tr><td colspan="2">Total</td><td>19.25</td></tr>
</table>

Environmental Expenditure carried out by M/s EBTPL during the compliance period is Rs.1,63,916/-.</td></tr>
<tr><td>5</td><td>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 (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.</td><td>Noted.</td></tr>
</table>

6	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 authority.	**Noted.** Approvals shall be obtained as applicable. M/s EBTPL has obtained Fire Service License from Tamil Nadu Fire & Rescue Service under Section 13 of the Tamil Nadu Fire Services Act 1985 and in accordance with Tamil Nadu Fire service Rules 1990 Appendix III) Lic.No.3589/2019 dtd.30.10.2019.
7	The project proponent shall advertise in atleast two local Newspaper widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ clearance and copies of clearance letters are available with the Tamil Nadu State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest & Climate Change at http://www.envfor.nic.in. The advertisement should be made within Seven 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 Chennai.	The advertisement was given in the local Tamil newspaper Dinamani & New Indian Express paper on 04.02.2015 intimating the accordance of Environmental & CRZ clearance for the project. The copy of the same was forwarded to MoEF&CC.
8	This clearance is subject to final order of the Hon'ble Supreme 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.**
9	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	**Noted.**

10	Status of compliance to the various stipulated environmental conditions and environment safeguards will be uploaded by the project proponent in its website.	M/s AECTPL has uploaded the status of compliance in its website.
11	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad /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.	**Complied with**. The copy of the clearance letter was forwarded to local Panchayat.
12	The proponent shall upload the status of compliance of the stipulated Clearance 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.	**Complied with.**
13	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respect Zonal of CPCB and SPCB.	Port is submitting the bi-annual compliance report to Regional Office of MoEF & CC.
14	The environment 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 Clearance conditions and shall be sent to the respective Regional Office of MoEF&CC by e-mail.	**Noted and will be complied with.** The environmental statements of M/s.AECTPL and M/s.EBTPL are enclosed herewith.

Annexure -I

Environmental Mitigation Measures in Matrix format

S.No	Component	Impact	Mitigation Measures
Construction Phase			
1.	Land	• Change in topography of inner dock basin, which will be dredged and converted into marine berthing area. • Land pollution due to discharge of sewage and solid waste onto land.	• Use of removed soil (top soil only) for green belt development. • No change in land use land cover as the proposed project site is located within the existing break waters. • Disposal of solid waste through authorized recyclers/ contractors. • Local labours are engaged.
2.	Water	• Water pollution due to disposal of sewage and construction waste into water body.	• No construction waste is disposed off into the water body.
3.	Air	• Generation of PM2.5, PM10,CO, SO2, NO2	• Raw materials for construction will be brought inside the port in trucks with proper covers. • Regular servicing of vehicles and DG sets. • Compulsory wearing of Personal Protective Equipment (PPE) like dust mask etc by workers.
4.	Noise and Vibration	• Increase in the noise level due to movement of vehicles and construction activities. • Vibration due to movement of vehicles and construction activities.	• Regular servicing and maintenance of construction Machineries, equipments and vehicles is carried out to control noise. • Compulsory wearing of Personal Protective Equipment (PPE) like ear plugs or ear muff by workers. • The impact due to vibration from vehicular movement is insignificant.
5.	Marine	• Increase in suspended solid	• Usage of silt curtains to

	Environment	concentration due to dredging in the marine water body. • Change in shoreline.	contain spread of suspended sediment in marine water body. • Since, the construction of the berth is inside the breakwaters hence no changes in shoreline.
6.	Biological • Flora • Fauna	• Site clearance. • Disturbance due to increase in noise.	• The activities do not create any disturbance to flora and fauna. • No operations of heavy machinery.
7.	Socio-Economic	• Employment generation.	• Local people were engaged by the contractors during construction.
Operation Phase			
8.	Land	• Pollution due to discharge of sewage. • Generation of ship and port generated solid wastes	• Sanitation facilities were provided. • Sewage will be collected in septic tank, which will be emptied regularly by contractor. • Port has facilitated the ships with reception facilities for the disposal of solid wastes as required under MARPOL regulations.
9.	Water	• Consumption of water. • Contamination of water body by discharge of untreated sewage. • Contamination of water body due to discharge of contaminated storm water runoff.	• Water consumption is only for domestic purpose. No process or manufacturing is taking place. • Sewage will be collected in septic tank, which will be emptied regularly by contractor. • Storm water drainage system.
10.	Air	• Emission of air pollutantslike CO, SO2, NOx from vehicles, heavy machineries and DG sets.	• Cargo is handled in closed containers. In the Multi cargo berth only green cargo are handled. • Regular servicing and

			maintenance of DG set and vehicles are carried out. • Air quality is regularly monitored.
11.	Noise and Vibration	• Operation of heavy machineries will result in generation of noise and vibration.	• Ear muffs are provided for workers.
12.	Marine Environment	• Contamination of marine water and bottom sediment due to discharge/ disposal of untreated sewage/garbage from the ships/port area into the marine environment.	• No garbage is disposed off into the sea. The same is collected by the port and disposed off.
13.	Biological • Flora • Fauna	• Disturbance due to increase in noise.	• The activities do not create any disturbance to flora and fauna. • No operations of heavy machinery.
14.	Socio-Economic	• Employment opportunity.	• Generation of Employment opportunity.
15.	Occupational Health and Safety	• Storage of materials and handling.	• Materials are stored in either closed shed or in closed containers. • Usage of personal protective equipment like dust mask and safety goggle. • Safety training.

TAMIL NADU POLLUTION CONTROL BOARD

District Environmental Laboratory

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No. 68 /AAQS/2019-2020 Date: 15.05.2020

1. Name of the Industry : **M/s. Chettinad International Bulk Terminal Pvt. Ltd.,**
2. Address of the Industry : Ponneri Taluk, Thiruvallur Dt., Chennai - 120
3. Date of Survey : 06.03.2020
4. Duration of Survey : **8 Hours** / 24 hours
5. Category : **Red** / Orange / Green – **Large** / Medium / Small
6. Land use classification : **Industrial** / Commercial / Residential / Sensitive

Meteorological Conditions

Ambient Temperature (^{0} C)	Min	Max	Relative Humidity (%)	Min	Max
	28	31		66	79
Weather Condition	Partially Cloudy		Rain Fall (mm)	Nil	
Predominant Wind Direction	SE - NW		Mean Wind Speed (km/hr)	18.8	

Ambient Air Quality Survey Results

Sl. No.	Location	Direction *	Distance (m) *	Height Form GL (m)	Pollutants Concentration (microgram / m^3)			
					PM 2.5	PM 10	SO_2	NO_2
1	On top of platform near Himast No. I	NE	100	3.0	--	54	6	11
2	On top of platform near Himast No. III	SE	100	3.0	15	66	8	13
3	On top of platform near Admin	SW	100	3.0	--	59	5	12
4	On top of platform near Himast No. VII	NW	100	3.0	18	77	7	15

Note: * With respect to major emission sources.

13/5/2020
ES

15/5/2020

Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Gaeke / IS 5182 : (Part 2) – 2001 RA: 2012
NO2	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

TAMIL NADU POLLUTION CONTROL BOARD

District Environmental Laboratory

STACK MONITORING SURVEY – Report of Analysis

Report No. 68/ SM/2019-2020 Date: 15.05.2020

1. Name of the Industry : **M/s. Chettinad International Bulk Terminal Pvt. Ltd.,**
2. Address of the Industry : Ponneri Taluk, Thiruvallur Dt., Chennai - 120
3. Date of Survey : 06.03.2020
4. Type of Industry : Coal/Chemical/Sugar/Paper & Pulp/ Power plant / Textile Processing/**Multi cargo container terminal**

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Fuel used	Stack .Temp ^{0}K	Velocity in (m/ sec)	Discharge rate In Nm^3/hr	Pollutants (mg / Nm^3)		
						PM	SO_2	NO_x
1	**DG – 500 KVA**	HSD	528	25.64	1636	19	8	227

Test Performed	Test Method
PM10	IS 5182 : (Part 23) – 2006
SO2	Modified West – Gaeke / IS 5182 : (Part 2) – 2001 RA: 2012
NOx	Jacobs – Hochheiser / IS 5182 : (Part 6) – 2006 RA:2012

15/5/2020
ES

15/5/2020

Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory

AMBIENT/SOURCE NOISE LEVEL SURVEY - Report of Analysis

Report No. 68/ NLS/2019-2020 Date: 15.05.2020

1.	Name of the Industry	**M/s. Chettinad International Bulk Terminal Pvt. Ltd.,**
2.	Address of the Industry	Ponneri Taluk, Thiruvallur Dt., Chennai - 120
3.	Date of Survey	06.03.2020

Category	**RL**	**Land use Classification**	Industrial
Type of Survey	**Ambient**/Source	**Time of Survey**	Day
Meteorological conditions		**Calm/Windy/Rainy**	Windy

Logging Parameters

Instrument Used	CESVA Model SC310			Serial No	T243103
Logging Interval	10 Minutes each point			**Measuring Range**	50-110 dB(A)
Weighting	**" A"**	**Peak Weighting**	**"C"**	**Time Weighting**	FAST
Sound Incidence	RANDOM			**Time in hrs**	14.00 – 15.00

Report of Noise Level Monitoring

Sl No	Location	Duration (min)	Distance (M)	Direction	Sound Level – dB (A)		
					L_{eq}	Min	Max
1	Near Himast No. I	10	100	NE	52.7	46.6	57.9
2	Near Himast No. III	10	100	SE	54.9	51.4	58.6
3	Near Admin	10	100	SW	51.0	49.7	56.2
4	Near Main Gate	10	100	NW	51.9	42.0	62.8
5	Near Ware House	10	100	N	53.2	50.9	61.2

Note: L90 Value refers to background noise: L50 Value refers to mean noise.
L10 value refers to nuisance or annoyance level : Leq value is the average energy for the measured period.

ES 15/5/2020

15/5/2020

Chief Scientific Officer,
District Environmental Laboratory
Tamil Nadu Pollution Control Board
Manali

FORM –V

(See rule 14 of Environment (Protection) Rules, 1986)

Environmental Statement for the financial year ending with 30th June 2023

PART - A

i	Name and Address of the owner/occupier of the Industry operation or process	:	Mr. K. Sameer Bhatnagar Director, S.F. 143, Puzhidhivakkam Village, Near NCTPS Quarters, Vallur - Post, Chennai -600 120
ii	Industry Category	:	Primary : Red Secondary : 1065-Ports and Harbour, Jetties and Dredging Operations.
iii	Year of Establishment	:	2017
iv	Date of the last environmental statement submitted	:	

PART- B

Water and Raw Material Consumption:

i **Water consumption in m3/d**

Process : NIL

Cooling : -

Domestic : 20

Sl. No.	Name of Products	Process water consumption per unit of products (KL/MT)	
		During the previous	During the current financial Year
1	It is the Multi cargo container terminal for handling of clean cargoes like granite, timber logs, grains, bagged cargoes including sugar, cobble stone, steel cargoes, project cargo	0.50 KL	0.56KL

ii Raw Material consumption

Name of Materials*	Name of the Products	Consumption of raw material per unit of output	
N/A	N/A	N/A	N/A

The unit does not undergo any manufacturing process. The water consumed is mainly for Firefighting, greenbelt development, domestic and maintenance, etc.,

PART- C

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

Pollutants	Quantity of pollutants discharged (mass/day)	Concentration of Pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons.
(a) Water	ZERO DISCHARGE	ZERO DISCHARGE	ZERO DISCHARGE
b) Air	DG 500 KVA – 1 Nos. (Used for Lighting)		

PART- D
HAZARDOUS WASTE
(as specified under Hazardous Wastes (Management & Handling Rules, 1989)

Sl. No.	Hazardous Wastes	Total Quantity (Kg)	
		During the previous financial year	During the current financial year
1	From Process	N/A	N/A
2	From Pollution Control Facilities	N/A	N/A

PART- E
SOLID WASTES

Sl. No.	Solid Wastes	Total Quantity (Kg)	
		During the previous financial year	During the current financial year
a	From Process	N/A	N/A
b	From Pollution Control Facilities	N/A	N/A
c	Quantity recycled or re-utilised within the unit.	N/A	N/A

PART- F

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

PART- G

Impact of the pollution control measures taken on conservation of natural resources and consequently on the cost of production

* • All the domestic wastewater being generated is treated at existing sewage treatment plant and the treated water is being re-used for gardening/horticulture purpose.
* Sewage Treatment Plant (STP) is in continuous operation and the treated effluent water quality is meeting the TNPCB norms.
* The unit is continuously developing and maintaining Greenbelt within the coal stack yard.

PART-H

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

PART-I

MISCELLANEOUS:

Any other particulars in respect of environmental protection and abatement of pollution.

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines for

Development of additional Coal Berths (CB3 and CB4) at Kamarajar Port, Tamil Nadu by M/s. Kamarajar Port Ltd.,

Point wise compliance report on Ministry's guidelines for the Kamarajar Ports project "Development of additional coal berths (CB3 and CB4) at Kamarajar Port, Tamil Nadu by M/s. Kamarajar Port Limited (Formerly known as Ennore Port Limited)- Environmental and CRZ clearance-reg.

Ref: MoEF's Notification F.No.11-51/2012-IA.III dated 12th March 2015

Construction of Coal Berth No. 3

Construction of Coal berth No 3 for TNEB was planned for a capacity of 9 MTPA at an estimated cost of 209.68 crores. The agreement was signed between M/s ITD Cementation India Ltd., on 20th January 2015, and the work was commenced on 02nd June 2015 and completed on 13.12.2017. Though the berth construction was completed on 13.12.2017, since the other berth infrastructure being constructed, the terminal is yet to commission.

Construction of Coal Berth No. 4

Construction of Coal berth No 4 for TNEB was planned for a capacity of 9 MTPA at an estimated cost of 255.79 crores. The agreement was signed between M/s Afcons Infrastructure Ltd., on 20th July 2015, and the work was commenced on 19th August 2015 and completed on 31.05.2018. Though the berth construction was completed on 31.05.2018, since the other berth infrastructure being constructed, the terminal is yet to commission.

S.No	Specific Conditions	Compliance Status
A (i)	"Consent for Establishment" shall be obtained from State Pollution Control Board under Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974.	**Complied with.** Tamil Nadu Pollution Control Board has accorded consent to Establish for the project vide Consent Order No. 15061355540 dated 31.8.2015 and Proceedings No. T6/TNPCB/ F.0044AMB/RL/AMB/W/2015 dated 31.8.2015 for Water and Proceedings No. T6/TNPCB/F.0044AMB/RL/AMB /A/2015 dated 31.8.2015 for Air.
(ii)	Dust screens shall be provided with a height of 2 meter above the maximum stack height. Water sprinkling shall be carried out for settling dust. Three layers of green belt of all growing trees shall be provided on all sides.	**Will be complied** during operation phase.

(iii)	Water sprinkler should be provided in the area of coal loading and unloading, storage and vehicle path/roads.	**Noted.**
(iv)	Energy conservation measures shall be provided which may include use of solar panels, wind mill etc.	**Complied with.** At present, port has installed solar panels with a total capacity of 20 KV.
(v)	There shall be no washing of conveyor belt.	**Noted** for compliance.
(vi)	All the conditions stipulated by Tamil Nadu Coastal Zone Management Authority (TNCZMA) vide letter No. 23187/EC.3/2014-1,dated 16.12.2014, shall be complied with.	**Noted** for compliance.
(vii)	All the recommendation of the EIA/EMP, Disaster Management Plan shall be strictly complied within letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF & CC along with half yearly compliance report to MoEF & CC - RO.	**Noted** for compliance.
(viii)	Cargo shall be unloaded directly into hopper from the ship and transportation of coal shall be through covered/closed trucks/ rail only. Closed conveyor belt shall be used for loading the product in the barges.	The project is yet to be commissioned. Cargo shall be unloaded directly into hopper from the ships and transported through elevated closed conveyor systems to the stack yard/thermal power plant.
(ix)	The dredge material shall be reused for low level rising wherever possible and excess shall be dumped into sea at the designated dumping areas identified based on mathematical model studies.	**Noted.** Portion of the dredged material was dumped in the sea.
(x)	To prevent discharge of sewage and other liquid waste including ballast into marine environment, adequate system for collection, treatment and disposal of liquid waste must be provided.	**Noted for compliance.**

(xi)	Necessary arrangements for the treatment of the effluents and solid waste must be made and it must be ensured that the untreated effluents and solid wastes are not discharged into the water or on the beach; and no effluent or solid waste shall be discharged on the beach.	**Noted for compliance.**
(xii)	The quality of treated effluents, solids wastes, emission and noise levels and the like, from the project area must conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986.	**Being complied with.** Monitoring of ambient air, marine water, noise levels were carried out during construction phase. The same will be continued during operation phase too.
(xiii)	The project proponent shall set up separate Environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Port is equipped with HSE division which is a part of the Marine Services department headed by General Manager (MS). The HSE division is exclusively headed by an officer in the rank of Chief Manager(HSE). At present, the Environmental Cell comprises of the following officers. (i) Chief Manager(HSE), (ii) Sr. Manager(HSE) and (iii) Executive (HSE) Port has engaged M/s. Nitya Laboratories (MoEF&CC recognized and NABL accredited laboratory to carry out regular environmental monitoring.
(xiv)	The commitment made by the proponent to the issues raised during Public Hearing shall be implemented by the Proponent.	**Noted for compliance.**
(xv)	Corporate Environment Responsibility: a) The Company shall have a well laid down Environment Policy	Kamarajar Port Limited is having an Environmental Management System Policy. **Noted.**

	approved by the Board of Directors. b) The Environment Policy shall prescribe for standard operating process/producers to bring into focus any infringements / deviation / violation of the environmental or forest norms/conditions. c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions shall be furnished. To have proper checks and balances, the company shall have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.	**Noted.** **Noted.**

B. General conditions

S.No	General Conditions	Compliance Status
(i)	Appropriate measures must be taken while understanding digging activities to avoid any likely degradation of water quality.	**Noted.** Port is regularly monitoring the marine water quality during the construction activities.
(ii)	Full support shall be extended to the officers of this Ministry/Regional Office at Chennai by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	**Noted.** Full support will be extended to the officers of the Ministry/Regional office at Chennai.

(iii)	A six-Monthly monitoring report shall need to be submitted by the project proponent to the Regional Office of this Ministry at Chennai regarding the implementation of the stipulated conditions.	**Complied with.**
(iv)	Ministry of Environment, Forest & Climate Change or any other component authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	**Noted.**
(v)	The Ministry reserves the right to revoke this clearance if any of the condition stipulated are not complied with the satisfaction of the Ministry.	**Noted.**
(vi)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest & Climate Change.	There is no change in the project profile.
(vii)	The project proponent shall inform the Regional Office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	**Construction of Coal Berth No. 3** Coal berth No 3 for TNEB was planned for a capacity of 9 MTPA at an estimated cost of 209.68 crores. The agreement was signed with M/s. ITD Cementation India Ltd., **Date of financial closure- internal resources:** Date of final approval of the project by concerned authorities- KPL Board approved it on 9.6.2015 Date of start of land development works- 2.6.2015. **Construction of Coal Berth No. 4** Construction of Coal berth No 4 for

		TNEB was planned for a capacity of 9 MTPA at an estimated cost of 255.79 crores. The agreement was signed between M/s Afcons Infrastructure Ltd., **<u>Date of financial closure - internal resources:</u>** Date of final approval of the project by concerned authorities- KPL Board approved it on 21.2.2015 Date of start of land development works-19.8.2015.
(viii)	A copy of the clearance letter shall be marked to concern Panchayat/local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	**Complied with.** KPL has advertised in two local Newspapers informing that the project has been accorded with Environmental and CRZ clearance. The copy of the clearance letter was forwarded to the local Panchayat vide letter dated 26.3.2015.
(ix)	Full support should be extended to the officers of this Ministry's Regional Office at Chennai and the offices of the Central and Tamil Nadu 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.	Full support will be extended to the officers of Ministry of Environment & Forests.
(x)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.	**Noted for compliance.**
5	These stipulations would be enforced	KPL is enforcing the provisions of

	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 (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.	Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981 and the Environment (Protection) Act, 1986. With regard to the Public Liability Insurance, Port has obtained 'Public Liability Insurance' through Oriental Insurance Company Ltd., vide Policy No:411400/22/2023/1, valid till 05/11/2023.
6	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 authority.	Presently, no diesel is stored inside the project area. Clearances from Fire Department, Chief Controller of explosives, Civil Aviation Department, Forest conservation Act are not applicable for the above project.
7	The project proponent shall advertise in at least two local Newspaper widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ clearance and copies of clearance letters are available with the Tamil Nadu State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest & Climate Change at http://www.envfor.nic.in. The advertisement should be made within Seven 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 Chennai.	**Complied with.** It was advertised in the vernacular Tamil and English newspapers on 25.3.2015 in the New Indian Express and Tamil Paper Dinamani.
8	This clearance is subject to final order	**Noted.**

	of the Hon'ble Supreme 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.	
9	Status of compliance to the various stipulated environmental conditions and environment safeguards will be uploaded by the project proponent in its website.	**Complied with.**
10	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	There is no appeal against this EC was made with National Green Tribunal. However, a case was filed before the Hon'ble National Green Tribunal [NGT] (SZ) vide application nos. 8/2016, 152/2016 & 198/2016 regarding dumping of dredged soil/ debris in the CRZ area. The proceedings on the case are in progress.
11	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZillaParisad/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.	**Complied with.** The copy of the clearance letter was forwarded to local body. The copy of the clearance letter was also uploaded in KPL website.
12	The proponent shall upload the status of compliance of the stipulated Clearance 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 compliance reports are sent to Regional office of MoEF&CC, O/o of District Environment Engineer, TNPCB and Member Secretary, TNPCB.
13	The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to	**Noted for compliance.**

	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 Clearance conditions and shall be sent to the respective Regional Office of MoEF&CC by e-mail.	

Point wise compliance report to the conditions given in the Tamil Nadu Coastal Zone Management Authority letter No. 23187/EC.3/2014-1, dated 16.12.2014 for additional coal berths (CB3 & CB4), which are under construction.

1	There should not be any sea water intrusion or erosion on the adjacent coastal areas due to the proposed construction of two additional berths, dredging and also due to the dumping of dredged material.	**Complied with.** There is no seawater intrusion. The berths are constructed inside the already existing two break waters.
2	Dredged material should be dumped on the landward side and should not be dumped into sea (CRZ IV)., intertidal area (CRZIB) of the Buckingham canal and also in the salt pan areas as the salt pan areas are declared as CRZ-IB (intertidal zone) as per approved coastal Zone management plan of Tamil Nadu.	During the development of terminals and capital dredging process, KPL has dumped a quantity of 73000 cum of dredged materials at the south side of NCTPS road and at the west of Port Access Road. A case was filed before the Hon'ble National Green Tribunal [NGT] (SZ) vide application nos. 8/2016, 152/2016 & 198/2016 regarding dumping of dredged soil/ debris in the CRZ area. After hearing, Hon'ble NGT directed KPL to remove the dumped earth in the above said areas. KPL has removed the dumped material and informed the same to the Hon'ble NGT. However, the petitioner has raised objection before the Hon'ble NGT that KPL has not removed the materials fully. National Green Tribunal (NGT) vide order dated 20.05.2019 had

		constituted a committee to inspect and ascertain the present status of the unit (north Chennai Thermal Power station) in respect of fly ash disposal, the damage caused to the environment. The committee inspected the dredged material dumped area and submitted an assessment report to NGT on 17.01.2020. Based on assessment report of the committee, NGT vide orders dated 20.01.2020 had imposed the environmental compensation to KPL to the tune of Rs.8,34,60,000/- (Rupees Eight Crores Thirty Four Lakhs and Sixty Thousand only). KPL filed a petition for reviewing the above order dated 20.01.2020. Hon'ble NGT vide order dated 06.11.2020 reviewed and imposed an interim compensation of Rs.4,00,00,000/- (Rupees Four Crore only) instead of Rs.8,34,60,000/- and directed to deposit the amount within a period of 2 (Two) months with the Central Pollution Control Board (CPCB). KPL has filed a civil appeal before the Hon'ble Supreme Court of India. Hon'ble Supreme Court has issued stay on the petition vide its order dated 05.01.2021.
3	There should not be any impact of dispersal of dredged material on the adjacent L&T shipyard area especially the navigational channels of that shipyard.	National Institute of Ocean Technology (NIOT) had conducted modelling study to identify the marine disposal area for Ennore Port in 2004. NIOT had re-validated the impact of dredged material for further development in 2010. 'Outcome of the 2010 Re-validation Study is as below. *'The effect of dredge spoil is in line*

		with earlier model with the plume moving in NNE-SSW direction and generally parallel to the coast line. The boundaries of L&T shipyard are sufficiently away from the path of modeled plume drift'. The modeled sedimentation rate is 0.3m at dumping site and 0.1m after spreading at 11km away from dump site.
4	A continuous proper air quality monitoring station should be under taken around the project area to implement corrective, mitigate measures immediately on the noticing of any adverse impact.	**Noted for compliance** during operation phase.
5	Necessary adequate preventive measures should be undertaken to maintain the air quality PM10 level at Ennore Port within the standards and it should not cross the prescribed limit and suitable plan on handling of coal in the project area shall be implemented.	Adequate pollution control measures will be implemented during the operational stage.
6	Necessary measures should be taken to control the noise level within the prescribed standard levels.	Adequate pollution control measures will be implemented during the operational stage.
7	Closed conveyor system with latest technology should be established for coal handling as indicated in the report.	**Noted for compliance**.
8	Green belt development shall be implemented.	**Complied with.**
9	There shall be no extraction of ground water	**Complied with.** No ground water is extracted inside the port for construction or for operational purpose. Only open dug well are made for horticulture purpose.

10	As indicated in the revised report sufficient allocation of funds should be made to carryout outdoor Environment Social welfare activities.	**Noted.**

			Annexure-I
Environmental Mitigation Measures in Matrix format			
S. No	**Component**	**Impact**	**Mitigation Measures**
Construction Phase			
1.	Land	• Change in topography of inner dock basin, which will be dredged and converted into marine berthing area. • Land pollution due to discharge of sewage and solid waste onto land.	• Use of removed soil (top soil only) for green belt development. • No change in land use land cover is done as the proposed project site is located within port area, adjacent to the existing coal berths CB 1 and CB2. • Disposal of solid waste through authorized recyclers/ contractors. • Local labours are engaged.
2.	Water	• Water pollution due to disposal of sewage and construction waste into water body.	• No construction waste is disposed off into the water body.
3.	Air	• Generation of PM2.5, PM10, CO, SO2, NO2	• Use of water sprinklers. • Covering of construction and with sheets while transportation and storage. • Low sulphur content diesel for DG sets. • Regular servicing of vehicles and DG sets done. • Compulsory wearing of Personal Protective Equipment (PPE) like dust mask by workers ensured.
4.	Noise and Vibration	• Increase in the noise level due to movement of vehicles and construction activities.	• Regular servicing and maintenance of construction machineries, equipments and vehicles done to control noise.

		• Vibration due to movement of vehicles and construction activities.	• Compulsory wearing of Personal Protective Equipment ensured. PPE like ear plugs or ear muff by workers ensured. • The impact due to vibration from vehicular movement is insignificant. • Anti-vibration gloves made of visco-elastic material will be compulsorily worn by workers exposed to hand vibration due to continuous hammering etc.
5.	Marine Environment	• Increase in suspended solid concentration due to dredging in the marine water body. • Change in shoreline.	• Usage of silt curtains to contain spread of suspended sediment in marine water body. • Construction of coal berths are within the two breakwaters. Aspects relating to sediment cell and coastal erosion are not relevant. • No change in shoreline.
6.	Biological • Flora • Fauna	• Site clearance. • Disturbance due to increase in noise.	• Green belt development. • No operations of heavy machinery.
7.	Socio-Economic	• Employment generation.	• Local people were engaged by the contractors during construction.
Operation Phase:			
8.	Land	• Pollution due to discharge of sewage.	• Sanitation facilities will be provided. • Sewage will be collected in septic tank, and will be emptied regularly by the contractor.

9.	Water	• Consumption of water. • Contamination of water body by discharge of untreated sewage. • Contamination of water body due to discharge of contaminated storm water runoff.	• Water consumption is only for domestic purpose. No process or manufacturing is taking place. • Sewage will be collected in septic tank, which will be emptied regularly by contractor. • Storm water drainage system.
10.	Air	• Coal dust generation. • Emission of air pollutants like CO, SO2, NOx from vehicles, heavy machineries and DG sets.	• Installation of coal dust suppression mechanism. • Transportation of coal in closed conveyor system. • Dust masks for workers. • Regular servicing and maintenance of DG set and vehicles. • Air quality will be monitored.
11.	Noise and Vibration	• Operation of heavy machineries will result in generation of noise and vibration.	• Ear muffs for workers working near noisy environment.
12.	Marine Environment	• Contamination of marine water and bottom sediment due to discharge/disposal of untreated sewage/garbage from the ships/port area into the marine environment. • Any spillage/ runoff from the coal unloading/handling area, windblown dust might also contaminate the marine water quality and sediment quality.	• Coal will be transferred through elevated closed conveyer belt to the stack yard. • Water sprinkler will be installed at the unloading points. • No garbage will be disposed into the sea. The same will be collected by the port and disposed off.
13.	Biological • Flora • Fauna	• Dust emission due to storage and handling of coal.	• Coal dust suppression. • Green belt development.
14.	Socio-	• Employment opportunity.	• Employment opportunity.

	Economic	• Increase in thermal power generation.	• The coal is supplied to thermal power station for the generation of power.
15.	Occupational Health and Safety	• Generation of dust during handling and storage of coal leading to respiratory ailments. • Fire hazard due to coal handling and storage.	• Usage of personal protective equipment like dust mask and safety goggle. • Safety training. • Display of visible signages at places of fire hazard. • Cordoning of coal handling area, transportation area and Storage area as No Smoking Zone.

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines for

"DEVELOPMENT OF THE FACILITIES ENVISAGED IN THE PORT MASTER PLAN (PHASE III) BY M/S KAMARAJAR PORT LIMITED"

Point wise compliance report on Ministry's guidelines for Development of the facilities envisaged in the Port Master Plan(Phase Ill) by M/s Kamarajar Port Limited-Environmental clearance.

Ref: MoEF's Ltr No. F.No.11-51/2012-1A-111, dated 30.10.2018

Present expansion proposals- Phase III

Due to cargo demand and to effectively use the facilities already created, port proposed to develop the following projects (as shown in Table below) as envisaged in the Kamarajar Port master plan. The projects will be developed in a phased manner in line with the market requirements, well within the existing break waters and in the lands owned by Kamarajar Port.

Phase III projects

S.No	Description	Qty	Capacity
1	Automobile export/import terminal-	2Nos.	6 MTPA
2	Container terminal-1000m quay length(3berths)	1Nos.	24 MTPA
3	Marine Liquid Terminal	1No.	5 MTPA
4	IOC captive jetty	1No.	5 MTPA
5	Bulk terminal (coal/ore/other type)	2Nos.	18 MTPA
6	Multi cargo berth	1No.	2 MTPA
7	Associated capital dredging for the above projects	33.0 Million M^3	
Total No. of Projects		**8 Nos.**	**60 MTPA**

Present status:

Port has obtained Consent To Establish for the following terminals:-

1. Automobile Export/Import Terminal-3MMTPA capacity-1Nos. (Consent Nos.2101138790505 & 2101238790505, dated 02.08.2021) under Air & Water Acts.

2. IOC captive jetty-5MMTPA-1Nos. (Consent Nos.2101131814699 & 2101231814699, dated 10.04.2021) under Air & Water Acts.

The consent To Establish for the above said terminal mentioned at Sl.No.1 is inclusive of the associated dredging of 33 million cubic meters for all the Master Plan Projects.

The preparatory works for the commencement of construction of the above said projects are being carried out. The terminals are expected to put in operation in the 2024.

Remaining projects as stipulated in the Environmental Clearance letter will be taken in phased manner.

Compliance report to the Conditions stipulated vide Ltr No. F.No.11-51/2012-1A-111, dated 30.10.2018

S.No	MoEF Guidelines	Compliance Status
A.	**Specific Conditions**	
(i)	The project is recommended for grant of Environmental and CRZ Clearance subject to final outcome of cases [Shri R. Ravimaran, Chennai (NGT Case No.8 of 2016) and Meena Thanthai K. R. Selvaraj Kumar, Chennai (NGT Case No.152 of 2016)] which are sub-judice in the Hon'ble National GreenTribunal (NGT) South Zone, Chennai, Tamil Nadu.	**Noted.** During the development of terminals and capital dredging process, KPL has dumped a quantity of 73000 cum of dredged materials at the south side of NCTPS road and at the west of Port Access Road. A case was filed before the Hon'ble National Green Tribunal [NGT] (SZ) vide application nos. 8/2016, 152/2016 & 198/2016 regarding dumping of dredged soil/ debris in the CRZ area. After hearing, Hon'ble NGT directed KPL to remove the dumped earth in the above said areas. KPL has removed the dumped material and informed the same to the Hon'ble NGT. However, the petitioner has raised objection before the Hon'ble NGT that KPL has not removed the materials fully. National Green Tribunal (NGT) vide order dated 20.05.2019 had constituted a committee to inspect and ascertain the present status of the unit (north Chennai Thermal Power station) in respect of fly ash disposal, the damage caused to the environment. The committee inspected the dredged material dumped area and submitted an assessment report to NGT on 17.01.2020. Based on assessment report of the committee, NGT vide orders dated 20.01.2020 had imposed the environmental compensation to KPL to the tune of Rs.8,34,60,000/- (Rupees Eight Crores Thirty Four Lakhs and Sixty Thousand only). KPL filed a petition for reviewing the above order dated 20.01.2020. Hon'ble NGT vide order dated 06.11.2020 reviewed and imposed an interim compensation of

		Rs.4,00,00,000/- (Rupees Four Crore only) instead of Rs.8,34,60,000/- and directed to deposit the amount within a period of 2 (Two) months with the Central Pollution Control Board (CPCB). KPL has filed a civil appeal before the Hon'ble Supreme Court of India. Hon'ble Supreme Court has issued stay on the petition vide its order dated 05.01.2021.
(ii)	Construction activity shall be carried out strictly according to the provisions of the CRZ Notification, 2011. No construction work other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	**Noted and being complied with.**
(iii)	All the recommendations and conditions specified by the Tamil Nadu Coastal Zone Management Authority who has recommended the project vide letter No. 12311/EC.3/2017-1 dated 20.07.2017 shall be complied with.	Please find enclosed the compliance report as **Annexure-1**
(iv)	The project proponent shall ensure that the project is in consonance with the new CZMP prepared by the State Government under the provisions of CRZ Notification, 2011.	**Noted.**
(v)	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	**Noted.** Consent To Establish for the following terminals were obtained from TNPCB. 1. Automobile Export/Import Terminal-3MMTPA capacity-1Nos. (Consent No.2101138790505, dated 02.08.2021) 2. IOC captive Jetty-5MMTPA-1Nos. (Consent No.2101231814699,

		dated 10.04.2021) The consent To Establish for the above said terminal mentioned at Sl.No.1 is inclusive of the associated dredging of 33 million cubic meters for all the Master Plan Projects.
(vi)	As per the latest map no development zone shall be maintained 100m on either side of the Kosasthalaiyar river. Besides 50m buffer zone shall be maintained from the mangrove boundary as marked in the combined map indicating the actual field position taking into consideration both the maps i.e. CRZ Map of Anna University prepared for KPL in 2016 and draft CZMP of TNCZMA 2018.	**Noted and being complied with.**
(vii)	Though the area including the portion of Kosasthalaiyar river has been transferred to KPL, no activity shall be carried out in this zone by maintaining a buffer of 100m since water bodies and wet lands are more important than the development activity.	**Noted** and will be complied with.
(viii)	The area in the southern side meant for Commercial building, office and parking terminal shall be relocated to some other area on the northern side (within the existing port limit where sufficient land is available).	**Noted.**
(ix)	The referred Culverts i.e. C1 to C6 as marked in the combined map indicating the actual field position taking into consideration both the maps i.e. CRZ Map of Anna University prepared for KPL in 2016 and draft CZMP of TNCZMA2018 shall be widened to facilitate the free flow of	**Noted.**

	water.	
(x)	The Project proponent shall ensure that no creeks or rivers are blocked due to any activities at the project site and free flow of water is maintained.	**Noted.**
(xi)	Dredging shall not be carried out during the fish breeding season.	**Noted.**
(xii)	Dredging, etc shall be carried out in the confined manner to reduce the impacts on marine environment including turbidity.	**Noted.**
(xiii)	Dredged material shall be disposed safely in the designated areas.	**Noted.** Port has identified an area of 6000m x 6000m in the open sea through mathematical modeling studies for the disposal of dredged material.
(xiv)	Shoreline should not be disturbed due to dumping. Periodical study on shoreline changes shall be conducted and mitigation carried out, if necessary. The details shall be submitted along with the six monthly monitoring report.	**Noted.**
(xv)	While carrying out dredging, an independent monitoring shall be carried out by Government Agency/Institute to check the impact and necessary measures shall be taken on priority basis if any adverse impact is observed.	**Noted.**
(xvi)	The fresh water requirement (1000 KLD) for the present project will be met from Chennai Metro water supply. However if additional quantity is required the same will be met through	**Noted.** With IOCL Captive Jetty, water for domestic use and construction purpose is being procured from

	outsourced external agency. However Rain water harvesting shall be followed as per local byelaw and harvested water shall be stored, treated and reused to reduce the additional water requirement since Chennai is a water deficient area, besides use of water efficient appliances.	outsourced external agency by the construction contractor. Rain Water Harvesting system is being provided at 5acres plot for the proposed facilities being constructed therein.
(xvii)	The concerns expressed during the public hearing held by the Kamarajar Port Limited needs to be addressed during the project implementation. These would also cover socio-economic and ecological and environmental concerns, besides commitment by the management towards employment opportunities.	**Noted**
(xviii)	Marine ecological studies as carried out by the accredited consultant (Indomer Coastal Hydraulics Pvt Ltd), Chennai and its mitigation measures for protection of phytoplankton, zooplanktons, Macrobenthos etc as given in the EIA-EMP Report shall be complied with in letter and spirit.	**Noted.**
(xix)	A copy of the Marine and riparian biodiversity management plan duly validated by the State Biodiversity Board shall be submitted before commencement of implementation.	A copy of the duly validated Bio-Diversity Management Plan was submitted to RO, MoEF&CC, vide letter dated.02.06.2022.
(xx).	A continuous monitoring programme covering all the seasons on various aspects of the coastal environs need to be undertaken by a competent organization available in the State or by entrusting to the National Institutes/renowned Universities/accredited Consultant	**Being carried out.** The same will be continued for the present project also during construction and operation phases.

	with rich experiences in marine science aspects. The monitoring should cover various physicochemical parameters coupled with biological indices such as microbes, plankton, benthos and fishes on a periodic basis during construction and operation phase of the project. Any deviations in the parameters shall be given adequate care with suitable measures to conserve the marine environment and its resources.	
(xxi)	Continuous online monitoring of for air and water covering the total area shall be carried out and the compliance report of the same shall be submitted along with the 6 monthly compliance report to the regional office of MOEF&CC.	**Noted** and will be complied with once the projects are implemented. With regard to IOCL Captive Jetty, monthly water quality, AAQ and stack monitoring test reports pertaining to IOCL projects are attached herewith.
(xxii)	Effective and efficient pollution control measures like covered conveyors/ stacks (coal, iron ore and other bulk cargo) with fogging/back filters and water sprinkling commencing from ship unloading to stacking to evacuation shall be undertaken. Coal and iron ore stack yards shall be bounded by thick two tier green belt with proper drains and wind barriers wherever necessary.	**Noted** and the same will be complied with.
(xxiii)	Marine ecology shall be monitored regularly also in terms of sea weeds, sea grasses, mudflats, sand dunes, fisheries, echinoderms, shrimps, turtles, corals, coastal vegetation, mangroves and other marine biodiversity components as part of the management plan. Marine ecology shall be monitored regularly also in terms of all micro, macro and mega floral and faunal components of marine biodiversity.	**Noted** and will be complied with. KPL has prepared Bio-Diversity KPL has prepared Bio-Diversity Management Plan and submitted to Tamilnadu Biodiversity Board (TNBB) for validation and approval. TNBB has accorded the approval vide their letter dated 31.12.2021. The Bio-Diversity Management Plan will be implemented as per the timelines indicated.

(xxiv)	The project proponents would also draw up and implement a management plan for the prevention of fires due to handling of coal.	**Will be complied with.** With regard to IOCL captive Jetty, only POL/LPG products are handled in the facility. Fire prevention for the IOCL Jetty is covered under QRA studies carried out. The jetty has been carried out as per the requirements of OISD 156, 2017 revision.
(xxv)	Spillage of fuel / engine oil and lubricants from the construction site are a source of organic pollution which impacts marine life, particularly benthos. This shall be prevented by suitable precautions and also by providing necessary mechanisms to trap the spillage.	**Noted** necessary precautions will be taken to trap and combat spillage.
(xxvi)	Necessary arrangements for the treatment of the effluents and solid wastes/facilitation of reception facilities under MARPOL must be made and it must be ensured that they conform to the standards laid down by the competent authorities including the Central or State Pollution Control Board and under the Environment (Protection) Act, 1986. The provisions of Solid Waste Management Rules, 2016. E- Waste Management Rules, 2016, and Plastic Waste Management Rules, 2016 shall be followed.	Being carried out and the same will be extended to the other projects also during construction and operation.
(xxvii)	Compliance to Energy Conservation Building (ECBC-2017) shall be ensured for all the building complexes. Solar/wind or other renewable energy shall be installed to meet energy demand of 1% equivalent.	**Noted.** With regard to IOCL Captive Jetty, the project comprises of Solar plant of capacity 100KW peak which is more than 1% of energy demand (830KVA) of IOCL.
(xxviii)	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety	**Noted.**

	guidelines shall be implemented.	
(xxix)	Measures should be taken to contain, control and recover the accidental spills of fuel and cargo handle.	**Noted.**
(xxx).	Necessary arrangement for general safety and occupational health of people should be done in letter and spirit.	**Noted** and being complied with.
(xxxi)	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to the RO, MoEF&CC along with half yearly compliance report.	**Noted** and will be complied with.
(xxxii)	KPL will strengthen their Environmental Management Cell.	Port is equipped with HSE division which is a part of the Marine Services department headed by General Manager (MS). The HSE division is exclusively headed by an officer in the rank of Chief Manager(HSE). At present, the Environmental Cell comprises of the following officers. (i) Chief Manager(HSE), (ii) Sr. Manager(HSE) and (iii) Executive (HSE) Port is monitoring the environment. Port has engaged M/s. Nitya Laboratories (MoEF& CC recognized and NABL accredited laboratory) for sampling and testing of various environmental parameters.
(xxxiii)	KPL Shall consider more employment opportunities to the local people.	**Noted.**
(xxxiv)	As per the Ministry's Office Memorandum F.No. 22-65/2017-IA.III dated 1stMay 2018, and proposed by	**Noted** and will be complied with.

	the project proponent, an amount of Rs. 15 Crore (@0.25% of project Cost) shall be earmarked under Corporate Environment Responsibility (CER) for the activities such as strengthening of environmental cell by new recruitments, development of green fields, environmental monitoring surveys, solid waste management, sanitation and sewage facilities, widening of culverts etc. The activities proposed under CER shall be restricted to the affected area around the project. The entire activities proposed under the CER shall be treated as project and shall be monitored. The monitoring report shall be submitted to the regional office as a part of half yearly compliance report, and to the District Collector. It should be posted on the website of the project proponent.	
(xxxv)	The project is recommended for grant of Environmental and CRZ Clearance subject to final outcome/legal opinion on the order dated 22nd November, 2017 of Hon'ble NGT in the Original Application No. 424 of 2016 (Earlier O.A.No. 169 of 2015) and Original Application No. 11 of 2014 in the matter of M/s. Mehdad & Anr. Vs. Ministry of Environment, Forests & Climate Change & Ors. and Shamsunder Shridhar Dalvi & Ors. Vs. Govt. of India & Ors.	**Noted.**

B. General Conditions:

(i)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water	Appropriate measures are being undertaken to avoid degradation of the water quality.

	quality.	
(ii)	Full support shall be extended to the officers of this Ministry/ Regional Office at Chennai by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	**Will be complied with.**
(iii)	A six-monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Chennai regarding the implementation of the stipulated conditions.	Being complied with.
(iv)	Ministry of Environment, Forest and Climate Change or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	**Noted** and shall be complied with.
(v)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	**Noted.**
(vi)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment, Forest and Climate Change.	**Noted.**
(vii)	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the	**Noted** and will be informed accordingly.

	concerned authorities and the date of start of land development work.	
(viii)	A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal.	**Complied with.** It was Advertised in two local Newspapers informing that the project has been accorded Environmental and CRZ clearance. the Commissioner, Minjur panchayat unio, Ponneri taluk, vide KPL letter dated 22.11.2018.
(ix)	A copy of this clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The Clearance letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.	**Noted.**
6	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.	Presently, no diesel is stored inside the project area. Clearances from Fire Department, Chief Controller of explosives, Civil Aviation Department, Forest conservation Act are not applicable for the above project. However, one of the project operator M/s.IOCL has obtained the PESO License for the terminal vide approval No. G-22(47)183, dated 17.08.2021.
7	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest and Climate	**Complied with.** It was advertised in the vernacular Tamil and English newspapers on 14.11.2018 in the Indian Express and Tamil paper Dinamani.

	Change at http://www.envfor.nic.in. The advertisement should be made within Seven 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 Chennai.	
8	This clearance is subject to final order of the Hon'ble Supreme 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.**
9	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	**Noted.**
10	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	**Noted.**
11	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/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.	**Complied with.** The copy of the clearance letter was forwarded to the Commissioner, Minjur panchayat union, Ponneri Taluk vide KPL letter dated 22.11.2018.
12	The proponent shall upload the status of compliance of the stipulated Clearance conditions, including results of monitored data on their website and shall update the same periodically. It	**Noted.** The compliance reports shall be sent to Regional office of MoEF & CC, O/o District Environment Engineer, TNPCB

	shall simultaneously be sent to the Regional Office of MoEF&CC, the respective Zonal Office of CPCB and the SPCB.	and Member Secretary, TNPCB.
13	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office ofMoEF&CC, the respective Zonal Office of CPCB and the SPCB.	**Noted.**
14	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 Clearance conditions and shall also be sent to the respective Regional Office of MoEF&CC by e-mail.	**Noted.**
15	The above 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 (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.	Port has obtained Public Liability Insurance through 'The Oriental Insurance Company Ltd.', vide PolicyNo:411400/22/2023/1, valid till 05/11/2023.
16	These issues with the approval of the Competent Authority.	**Noted.**

	Directions of TNSCZMA	Annexure-I
1	The proposed activities involve capital dredging in port basin and Navigational channel resulting in a quality of 33 MCM of dredged material and the dredging is proposed to be carried out for a period of 5 years. A dredge disposal site at a depth of 25-50m depth has been identified for disposal of dredged material amounting to 30 MCM and the disposal will be made in a phased manner for a period of 5 years. The disposal site measures about 30 sq km and the dumbed dredged material is expected to rise the sea bed level from 0.5 to 1 m after completion of the dumping. The Authority felt that blanketing of 30 sq km seabed area with a cover of dredge soil upto 1m may affect drastically the benthic fauna of the area. Using the models, the dump area size should be designed in such a way that it extends from 20km or more from the 50m depth in the offshore area with a narrow band of dumping area say 100-200m width and low discharge rate, leading to marginal increase of sea bed level. Such an arrangement may minimize the damaging effect on fauna. Find scale bathymetry data should be collected before initiation of dumping in the proposed site and repeated annually till completion of the dumping. A report in this regard has to be submitted to the Authority as a part of Compliance report that will be submitted to the MoEF & CC, GoI after obtaining Environmental Clearance.	The area for offshore disposal was extended to 6000m x 6000m spread over the depth of 25 to 55m CD as per the revised study and recommendation of State Coastal Zone management Authority.

2	It should be ensured that the proposed construction of Truss does not affect free flow of water.	**Noted** and the same will be complied with.
3	No interference of any kind to be done in Mangroves and Salt marsh areas, including construction of coal conveyor belt.	**Noted.**
4	Area under wetlands as elaborated by the EIA report need to be considered and managed as wetlands, and not reclaimed or built up in future.	**Noted.**
5	In addition to the mangroves, the existing patch of sand dune/beach vegetation within the Kamarajar Port Limited (KPL) premises needs to be scientifically studied, covering aspects such as checklist of flora and fauna, diversity, representativeness, population trends, regeneration and recruitment trends, percentage coverage of invasive alien species and presence of breeding populations. The proposed afforestation/greenbelt programme needs to be based on the above assessment, with habitat specific greening plans being developed and implemented.	KPL has prepared Bio-Diversity Management Plan for Kamarajar Port Limited" through M/s L&T Infrastructure Engineers Ltd., and submitted to Tamilnadu Biodiversity Board (TNBB) for validation and approval. TNBB has accorded the approval vide their letter dated 31.12.2021. The Bio-Diversity Management Plan will be implemented as per the timelines indicated.
6	The afforestation/greenbelt programme needs to be representative of the typical vegetation of the Ennore estuary, covering all the major habitat types including salt marshes. It is further recommended that a set of biological indicators be identified based on the scientific assessment and be used for monitoring the efficiency of the afforestation/greening programme.	KPL has prepared Bio-Diversity Management Plan for Kamarajar Port Limited" through M/s L&T Infrastructure Engineers Ltd., and submitted to Tamilnadu Biodiversity Board (TNBB) for validation and approval. TNBB has accorded the approval vide their letter dated 31.12.2021. The Bio-Diversity Management Plan will be implemented as per the timelines indicated.

7	It is also recommended that impact assessment studies be commissioned that cover a select number of species as also the different phases of project execution. The Kamarajar Port Limited shall develop and implement ecological restoration programme with the support of the Tamil Nadu Forest Department, especially addressing wetlands and wetland bio-diversity.	KPL has prepared Bio-Diversity Management Plan for Kamarajar Port Limited" through M/s L&T Infrastructure Engineers Ltd., and submitted to Tamilnadu Biodiversity Board (TNBB) for validation and approval. TNBB has accorded the approval vide their letter dated 31.12.2021. The Bio-Diversity Management Plan will be implemented as per the timelines indicated.
8	In view of the location of the project within the landscape that encompasses a perennial river and its estuarine complex, it is recommended that a dedicated programme be developed and implemented on the hydrological services of the landscape, notably flood mitigation.	Noted.
9	The concerns expressed during the public hearing that was held by the kamarajar Port need to be addressed during the project implementation. These would cover socio-economic as also ecological and environmental concerns.	Noted.
10	Oil Spill Contingency Plan should be prepared and a team of trained men formed to be available 24 X 7 to tackle any disasters.	KPL has prepared an Oil Spil Contignecy plan in line with NOS-DCP. Port is also having a team of trained manpower available on 24 x 7 being to tackle any disasters.
11	A detailed plan for the source segregation and disposal of solid waste(Bio-degradable/non- degradable etc.,) generated shall be formulated. Further solid wastes such as plastics may be collected and disposed as per rules. ETP should be provided and treatment done meticulously.	Kamarajar Port has engaged a contractor for collection, segregation and disposal of solid wastes. Solid waste including plastic generated from the port and ships are being collected, segregated and sent to various approved recyclers for further beneficial use. ETP/STP shall be provided as per the requirements in accordance with TNPCB norms.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2158 A /2022 - 2023	Report Date	24.01.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Plot – 1	Sample Received on	20.01.2023
Survey conducted by	GCSPL	Test Commenced on	20.01.2023
Survey conducted on	19.01.2023 to 20.01.2023 (24hrs)	Test Completed on	23.01.2023
Ambient Temperature °C	28	% Relative Humidity	68

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	52	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	20	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	5.9	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	13.5	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001 2015 Certified)

Laboratory Division

[illegible] Gandhi Street, [illegible] Avenue, [illegible] Road [illegible], Chennai [illegible]

Tel: 044 [illegible]

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No	GCS/AAQ/ 2158 C /2022 - 2023	Report Date	24.01.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Land Fall	Sample Received on	20.01.2023
Survey conducted by	GCSPL	Test Commenced on	20.01.2023
Survey conducted on	19.01.2023 to 20.01.2023 (24hrs)	Test Completed on	23.01.2023
Ambient Temperature °C	28	% Relative Humidity	68

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	µg/m³	40	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	µg/m³	15	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	µg/m³	5.8	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	µg/m³	13.6	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	µg/m³	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m³	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	µg/m³	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	µg/m³	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	µg/m³	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m³	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m³	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m³	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd
(Laboratory Division)

Authorized Signatory

End of Report

Note : The results relate only to the samples tested. This test report shall not be reproduced without approval of the laboratory.
The samples will not be retained for more than one Month from the date of issue of test report.

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2160 A /2022 - 2023	Report Date	24.01.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - Plot – 1 – DG Set 320 KVA	Sample Received on	20.01.2023
Sample Collected by	GCSPL	Test Commenced on	20.01.2023
Sample Collected Date	19.01.2023	Test Completed on	23.01.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	29	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	184	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	18.73	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	775	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.040	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	7.1	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x +HC)	g/kw-hr	0.67	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_x +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2160 C /2022 - 2023	Report Date	24.01.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - 5 Acre – DG Set 320 KVA	Sample Received on	20.01.2023
Sample Collected by	GCSPL	Test Commenced on	20.01.2023
Sample Collected Date	19.01.2023	Test Completed on	23.01.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	29	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	191	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	18.61	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	759	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.041	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/Nm^3	8.0	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_X)	g/kw-hr	0.64	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_X +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2160 E /2022 - 2023	Report Date	24.01.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring – Land Fall – DG Set 200 KVA	Sample Received on	20.01.2023
Sample Collected by	GCSPL	Test Commenced on	20.01.2023
Sample Collected Date	19.01.2023	Test Completed on	23.01.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.10	.....	--
4.	Ambient Temperature	°C	29	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	141	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	14.98	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	304	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.032	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	4.7	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x)	g/kw-hr	0.59	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_x + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit
Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2238 A /2022 - 2023	Report Date	03.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Plot – 1	Sample Received on	28.02.2023
Survey conducted by	GCSPL	Test Commenced on	28.02.2023
Survey conducted on	27.02.2023 to 28.02.2023 (24hrs)	Test Completed on	02.03.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	57	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	24	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	6.6	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	14.9	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2238 C /2022 - 2023	Report Date	03.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Land Fall	Sample Received on	28.02.2023
Survey conducted by	GCSPL	Test Commenced on	28.02.2023
Survey conducted on	27.02.2023 to 28.02.2023 (24hrs)	Test Completed on	02.03.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	48	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	19	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	6.5	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	14.7	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103 Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2240 A /2022 - 2023	Report Date	03.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - Plot – 1 – DG Set 320 KVA	Sample Received on	28.02.2023
Sample Collected by	GCSPL	Test Commenced on	28.02.2023
Sample Collected Date	27.02.2023	Test Completed on	02.03.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	192	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	17.28	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	703	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.046	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	7.4	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_X +HC)	g/kw-hr	0.61	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_X +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited

(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2240 C /2022 - 2023	Report Date	03.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - 5 Acre – DG Set 320 KVA	Sample Received on	28.02.2023
Sample Collected by	GCSPL	Test Commenced on	28.02.2023
Sample Collected Date	27.02.2023	Test Completed on	02.03.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	198	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	18.05	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	724	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.037	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	8.6	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_X)	g/kw-hr	0.69	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_X +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited

(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2240 E /2022 - 2023	Report Date	03.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring – Land Fall – DG Set 200 KVA	Sample Received on	28.02.2023
Sample Collected by	GCSPL	Test Commenced on	28.02.2023
Sample Collected Date	27.02.2023	Test Completed on	02.03.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.10	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	147	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	15.82	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	317	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.029	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	5.1	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_X)	g/kw-hr	0.50	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_X + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/W/ 3349 /2022-2023	Report Date	06.03.2023
Company Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Water – Land Fall – Sea Water	Sample Received on	28.02.2023
Sample Collected by	GCSPL	Test Commenced on	28.02.2023
Sample Collected Date	27.02.2023	Test Completed on	06.03.2023

S.no	Parameter	Units	Results	Reference method
21	Nickel as Ni	mg/L	BDL (DL : 0.05)	APHA 23rd Edition 3111 B
22	Total Chromium as Cr	mg/L	BDL (DL : 0.05)	APHA 23rd Edition 3111 B
23	Hexavalent Chromium as Cr^{6+}	mg/L	BDL (DL : 0.05)	APHA 23rd Edition 3500-Cr
24	Selenium as Se	mg/L	BDL (DL : 0.01)	APHA 23rd Edition 3114 B
25	Boron as B	mg/L	0.45	APHA 23rd Edition 4500 B/B
26	Percent Sodium	%	80	GCS/LAB/SOP/040
27	Residual Sodium Carbonate	me/L	Nil	IS 11624 – 1986
28	Cyanide as CN	mg/L	BDL (DL : 0.01)	APHA 23rd Edn 4500-CN
29	Fluoride as F	mg/L	4.17	IS 3025 Part 60.2008 (Reaff.2019)
30	Dissolved Phosphate as PO_4	mg/L	BDL (DL : 0.01)	IS 3025 Part 31 - 1988 (Reaff.2019)
31	Sulphide as S	mg/L	BDL (DL : 0.5)	IS 3025 Part 29 - 1986 (Reaff.2019)
32	Pesticides	mg/L	Nil	USEPA
33	Phenolic compounds as C_6H_5OH	mg/L	BDL (DL : 0.001)	IS 3025 Part 43 - 1992 (Reaff.2019)
	Bacteriological Parameters			
34	Fecal Coliform	MPN/100ml	<1.8	APHA 23rd Edn 9221 E

For Green Chem Solutions PVT LTD
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No 4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2341 A /2022 - 2023	Report Date	31.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Plot – 1	Sample Received on	30.03.2023
Survey conducted by	GCSPL	Test Commenced on	30.03.2023
Survey conducted on	29.03.2023 to 30.03.2023 (24hrs)	Test Completed on	31.03.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residentlal & Rural Area)
1	PM_{10}	$\mu g/m^3$	61	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	23	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	7.2	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	17.5	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd

(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2341 C /2022 - 2023	Report Date	31.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Land Fall	Sample Received on	30.03.2023
Survey conducted by	GCSPL	Test Commenced on	30.03.2023
Survey conducted on	29.03.2023 to 30.03.2023 (24hrs)	Test Completed on	31.03.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	54	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	22	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	8.6	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	18.0	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd

(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2342 A /2022 - 2023	Report Date	31.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - Plot – 1 – DG Set 320 KVA	Sample Received on	30.03.2023
Sample Collected by	GCSPL	Test Commenced on	30.03.2023
Sample Collected Date	30.03.2023	Test Completed on	31.03.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	182	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	20.5	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	834	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.042	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	8.5	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x +HC)	g/kw-hr	0.58	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_x +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit
Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

End of Report *

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2342 C /2022 - 2023	Report Date	31.03.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring – Land Fall – DG Set 200 KVA	Sample Received on	30.03.2023
Sample Collected by	GCSPL	Test Commenced on	30.03.2023
Sample Collected Date	30.03.2023	Test Completed on	31.03.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.10	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	162	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	15.10	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	305	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.032	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	5.6	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x)	g/kw-hr	0.49	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_x + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit
Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

End of Report *

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103 Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2341 A /2023 - 2024	Report Date	28.04.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Plot – 1	Sample Received on	25.04.2023
Survey conducted by	GCSPL	Test Commenced on	25.04.2023
Survey conducted on	24.04.2023 to 25.04.2023 (24hrs)	Test Completed on	27.04.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	65	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	23	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	7.8	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	17.0	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd

(Laboratory Division)

Authorized Signatory

End of Report *

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Website: www.greenchemsolutions.in

Test Report

Report No.	GCS/AAQ/ 2341 C /2023 - 2024	Report Date	28.04.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Land Fall	Sample Received on	25.04.2023
Survey conducted by	GCSPL	Test Commenced on	25.04.2023
Survey conducted on	24.04.2023 to 25.04.2023 (24hrs)	Test Completed on	27.04.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	58	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	21	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	7.5	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	16.7	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd
(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103 Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2342 A /2023 - 2024	Report Date	28.04.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - Plot – 1 – DG Set 320 KVA	Sample Received on	25.04.2023
Sample Collected by	GCSPL	Test Commenced on	25.04.2023
Sample Collected Date	25.04.2023	Test Completed on	27.04.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	196	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	19.34	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	780	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.056	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	7.3	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x +HC)	g/kw-hr	0.49	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_x +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited

(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel. 044 42612103 Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2342 C /2023 - 2024	Report Date	28.04.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring – Land Fall – DG Set 200 KVA	Sample Received on	25.04.2023
Sample Collected by	GCSPL	Test Commenced on	25.04.2023
Sample Collected Date	25.04.2023	Test Completed on	27.04.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.10	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	151	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	16.32	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	324	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.046	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	5.2	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x)	g/kw-hr	0.40	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_x + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited

(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2487 A /2023 - 2024	Report Date	16.05.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Plot – 1	Sample Received on	12.05.2023
Survey conducted by	GCSPL	Test Commenced on	12.05.2023
Survey conducted on	11.05.2023 to 12.05.2023 (24hrs)	Test Completed on	15.05.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	68	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	25	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	8.4	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	18.5	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd
(Laboratory Division)

Authorized Signatory

*** *End of Report* ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2487 C /2023 - 2024	Report Date	16.05.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Land Fall	Sample Received on	12.05.2023
Survey conducted by	GCSPL	Test Commenced on	12.05.2023
Survey conducted on	11.05.2023 to 12.05.2023 (24hrs)	Test Completed on	15.05.2023
Ambient Temperature °C	30	% Relative Humidity	62

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	55	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	20	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	7.9	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	17.2	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd

(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2489 A /2022 - 2023	Report Date	16.05.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - 5 Acre – DG Set 200 KVA	Sample Received on	12.05.2023
Sample Collected by	GCSPL	Test Commenced on	12.05.2023
Sample Collected Date	12.05.2023	Test Completed on	15.05.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	2.74	.....	--
2.	Port Hole Height From 'G'Level	m	2.74	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	168	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	15.7	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	674	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.042	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	7.3	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x)	g/kw-hr	0.64	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_x + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit
Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2489 C /2023 - 2024	Report Date	16.05.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring – Plot – 1 – DG Set 200 KVA	Sample Received on	12.05.2023
Sample Collected by	GCSPL	Test Commenced on	12.05.2023
Sample Collected Date	12.05.2023	Test Completed on	15.05.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	--
2.	Port Hole Height From 'G'Level	m	3.66	.....	--
3.	Stack Diameter	m	0.15	.....	--
4.	Ambient Temperature	°C	30	IS:11255 Part 3 : 2008 (Reaff:2018)	--
5.	Stack Temperature	°C	148	IS:11255 Part 3 : 2008 (Reaff:2018)	--
6.	Flue gas velocity	m/sec	15.32	IS:11255 Part 3 : 2008 (Reaff:2018)	--
7.	Gaseous Emission	Nm^3/hr	689	IS:11255 Part 3 : 2008 (Reaff:2018)	--
8.	Particulate Matter (PM)	g/kw-hr	0.040	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	6.7	IS:11255 Part 2:1985 (Reaff:2019)	--
10.	Oxides of Nitrogen (NO_x)	g/kw-hr	0.48	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_x + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit
Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Email: info@greenchemsolutions.in

Website: www.greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/W/ 2747 /2023-2024	Report Date	16.05.2023
Company Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Water – Land Fall – Sea Water	Sample Received on	12.05.2023
Sample Collected by	GCSPL	Test Commenced on	12.05.2023
Sample Collected Date	12.05.2023	Test Completed on	15.05.2023

S.no	Parameter	Units	Results	Reference method
21	Nickel as Ni	mg/L	BDL (DL : 0.05)	APHA 23rd Edition 3111 B
22	Total Chromium as Cr	mg/L	BDL (DL : 0.05)	APHA 23rd Edition 3111 B
23	Hexavalent Chromium as Cr^{6+}	mg/L	BDL (DL : 0.05)	APHA 23rd Edition 3500-Cr
24	Selenium as Se	mg/L	BDL (DL : 0.01)	APHA 23rd Edition 3114 B
25	Boron as B	mg/L	0.49	APHA 23rd Edition 4500 B/B
26	Percent Sodium	%	82	GCS/LAB/SOP/040
27	Residual Sodium Carbonate	me/L	Nil	IS 11624 – 1986
28	Cyanide as CN	mg/L	BDL (DL : 0.01)	APHA 23rd Edn 4500-CN
29	Fluoride as F	mg/L	4.20	IS 3025 Part 60.2008 (Reaff.2019)
30	Dissolved Phosphate as PO_4	mg/L	BDL (DL : 0.01)	IS 3025 Part 31 - 1988 (Reaff.2019)
31	Sulphide as S	mg/L	BDL (DL : 0.5)	IS 3025 Part 29 - 1986 (Reaff.2019)
32	Pesticides	mg/L	Nil	USEPA
33	Phenolic compounds as	mg/L	BDL (DL : 0.001)	IS 3025 Part 43 - 1992 (Reaff.2019)
	Bacteriological Parameters			
34	Fecal Coliform	MPN/100ml	<1.8	APHA 23rd Edn 9221 E

For Green Chem Solutions PVT LTD
(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2569 A /2023 - 2024	Report Date	27.06.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Plot – 1	Sample Received on	24.06.2023
Survey conducted by	GCSPL	Test Commenced on	24.06.2023
Survey conducted on	23.06.2023 to 24.06.2023 (24hrs)	Test Completed on	26.06.2023
Ambient Temperature °C	31	% Relative Humidity	65

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	64	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	23	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	7.8	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	17.2	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd

(Laboratory Division)

Authorized Signatory

***End of Report ***

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/AAQ/ 2569 C /2023 - 2024	Report Date	27.06.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Survey Description	AAQ Monitoring – Land Fall	Sample Received on	24.06.2023
Survey conducted by	GCSPL	Test Commenced on	24.06.2023
Survey conducted on	23.06.2023 to 24.06.2023 (24hrs)	Test Completed on	26.06.2023
Ambient Temperature °C	31	% Relative Humidity	65

S.No	PARAMETERS	UNITS	RESULTS	REFERENCE METHODS	NAAQ Standards(Industrial, Residential & Rural Area)
1	PM_{10}	$\mu g/m^3$	58	IS 5182 : Part 23 - 2006	100
2	$PM_{2.5}$	$\mu g/m^3$	22	IS 5182 : Part 24 - 2019	60
3	Oxides of Sulphur as SO_2	$\mu g/m^3$	7.5	IS 5182 : Part 2 – 2001	80
4	Oxides of Nitrogen as NO_2	$\mu g/m^3$	16.9	IS 5182 : Part 6 – 2006	80
5	Lead as Pb	$\mu g/m^3$	BDL (DL:0.5)	IS 5182 : Part 22 - 2004	1
6	Carbon monoxide as CO	mg/m^3	BDL (DL:1.0)	IS 5182 : Part 10 – 1999	4
7	Ozone as O_3	$\mu g/m^3$	BDL (DL:2.0)	IS 5182 – Part 9 - 1974	180
8	Ammonia as NH_3	$\mu g/m^3$	BDL (DL: 2.0)	IS 5182 : Part 25 - 2018	400
9	Benzene as C_6H_6	$\mu g/m^3$	BDL (DL: 1)	IS 5182 : Part 11 - 2006	5
10	Benzo (a) pyrene	ng/m^3	BDL (DL: 0.1)	IS 5182 : Part 12 - 2004	1
11	Arsenic as As	ng/m^3	BDL (DL: 1)	GCS/Lab/SOP/089	6
12	Nickel as Ni	ng/m^3	BDL (DL: 5)	IS 5182 : Part 26 - 2020	20

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above sample tested parameters are within the CPCB Limits.

For Green Chem Solutions Pvt. Ltd

(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103

Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in

greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2571 A /2023 - 2024	Report Date	27.06.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring - 5 Acre – DG Set 320 KVA	Sample Received on	23.06.2023
Sample Collected by	GCSPL	Test Commenced on	24.06.2023
Sample Collected Date	23.06.2023	Test Completed on	26.06.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	–
2.	Port Hole Height From 'G'Level	m	3.66	.....	–
3.	Stack Diameter	m	0.15	.....	–
4.	Ambient Temperature	°C	31	IS:11255 Part 3 : 2008 (Reaff:2018)	–
5.	Stack Temperature	°C	174	IS:11255 Part 3 : 2008 (Reaff:2018)	–
6.	Flue gas velocity	m/sec	16.87	IS:11255 Part 3 : 2008 (Reaff:2018)	–
7.	Gaseous Emission	Nm^3/hr	714	IS:11255 Part 3 : 2008 (Reaff:2018)	–
8.	Particulate Matter (PM)	g/kw-hr	0.046	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	8.2	IS:11255 Part 2:1985 (Reaff:2019)	–
10.	Oxides of Nitrogen (NO_X)	g/kw-hr	0.59	IS:11255 Part 7 : 2005 (Reaff:2017)	4.0 (NO_X +HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL: Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited

(Laboratory Division)

Authorized Signatory

****End of Report ****

GREEN CHEM SOLUTIONS PVT LTD

(ISO 14001:2015 Certified)

Laboratory Division

Plot No.4, Rajiv Gandhi Street, Balaji Avenue, A.N.Elumalai Road (Oil Mill Road), Iyyappanthangal, Chennai - 600056.

Tel: 044 42612103
Website: www.greenchemsolutions.in

Email: info@greenchemsolutions.in
greenchemsolutions@gmail.com

Test Report

Report No.	GCS/SM/ 2571 C /2023 - 2024	Report Date	27.06.2023
Customer Name & Address	**M/s. ITD Cementation India Limited Captive POL / LNG Jetty Site, IOCL, KPL, Ennore (DM051922)**		
Sample Description	Stack Monitoring – Plot – 1 – DG Set 200 KVA	Sample Received on	23.06.2023
Sample Collected by	GCSPL	Test Commenced on	24.06.2023
Sample Collected Date	23.06.2023	Test Completed on	26.06.2023

Sl.No	Description	Unit	Results	Reference Method	Limits as per CPCB Specification
1.	Total Stack Height From 'G'Level	m	3.66	.....	–
2.	Port Hole Height From 'G'Level	m	3.66	.....	–
3.	Stack Diameter	m	0.15	.....	–
4.	Ambient Temperature	°C	31	IS:11255 Part 3 : 2008 (Reaff:2018)	–
5.	Stack Temperature	°C	154	IS:11255 Part 3 : 2008 (Reaff:2018)	–
6.	Flue gas velocity	m/sec	15.86	IS:11255 Part 3 : 2008 (Reaff:2018)	–
7.	Gaseous Emission	Nm^3/hr	703	IS:11255 Part 3 : 2008 (Reaff:2018)	–
8.	Particulate Matter (PM)	g/kw-hr	0.042	IS:11255 Part 1:1985 (Reaff:2019)	≤ 0.2
9.	Sulphur Di-Oxide (SO_2)	mg/ Nm^3	6.3	IS:11255 Part 2:1985 (Reaff:2019)	–
10.	Oxides of Nitrogen (NO_x)	g/kw-hr	0.45	IS:11255 Part 7 : 2005 (Reaff:2019)	4.0 (NO_x + HC)
	Total Hydro Carbon (HC)		BDL(D.L:1.0)	EPA 429	
11.	Carbon Monoxide	g/kw-hr	BDL(D.L:0.2)	IS:13270 : 1992 (Reaff:2019)	≤ 3.5

BDL Below Detection Limit DL: Detection Limit

Remarks: The above tested parameters are within the CPCB Limits.

For Green Chem Solutions Private Limited
(Laboratory Division)

Authorized Signatory

*** End of Report ***

KAMARAJAR PORT LIMITED

Compliance Report

On

Ministry's guidelines for

"ESTABLISHMENT OF 1MLD RO DESALINATION PLANT AT KAMARAJAR PORT, VALLUR POST, CHENNAI-120"

BY

M/s. KAMARAJAR PORT LIMITED

Point wise compliance report on Ministry's guidelines for Establishment of 1MLD RO Desalination Plant at Kamarajar Port by M/s Kamarajar Port Limited - CRZ clearance.

Ref: MoEF's Ltr No. F.No.11-51/2012-1A-111, dated 22.04.2022

Brief Description of the Project:

Port is obtaining water of 250 KLD against the sanctioned 1 MLD form CMWSB for potable purpose. During summer season, acute shortage of potable water is envisaged. To overcome the water crisis, it was decided to install a Sea Water RO desalination plant of 1 MLD capacity within the port based on the meeting held on 03-03-2018 under the chairmanship of Hon'ble Ministry of Shipping, Road Transport & Highways, Water Resources and Ganga Rejuvenation.

The proposed desalination process will make use of Reverse Osmosis (RO) technology to remove salt from sea water, thereby producing fresh product water. The Sea Water based RO desalination plant is proposed with intake well for withdrawing sea water, intake and outfall conveyance lines, RO plant building to house 2 X 0.5 MLD production units and Outfall disposal unit. The sea water intake structure is proposed at water depth of 4m and the intake pipeline of around 350m connects the sea water intake to the plant. The plant is designed with recovery efficiency of 40% and the total water requirement of the desalination plant is about 117 m 3 /hr, out of which 46 m 3 /hr of fresh water will be produced and 71 m 3 /hr of brine will be disposed into the sea through buried pipe line of diameter 150mm HDPE pipe.

Brine of high salinity will be discharged into the sea and hence Brine dispersion model using Cornell Mixing Zone Expert System (CORMIX) was carried out to ensure proper dispersion. The study indicated that the salinity concentration reduced from 60 ppt to 35.6ppt with 100% dilution within 16m in 5.12 seconds. Hence, the water quality in the environment is not disturbed.

The geographical location of the desalination plant is (13°15'27.67" N, 80°20'8.09" E), intake structure (13°15'28.32"N, 80°20'18.08"E), outfall (13°15'27.34"N, 80°20'39.03"E).

Ministry of Environment, Forests & Climate Change has accorded clearance under CRZ Notification vide letter No. F.No.11-10/2022-IA.III dated 22.04.2022.

Compliance report to the Conditions stipulated vide Ltr No. F.No.11-10/2022-IA.III dated 22.04.2022.

S.No	MoEF Guidelines	Compliance Status
A.	**Specific Conditions**	
(i)	All construction shall be strictly in accordance with the provisions of CRZ Notification, 2011 and as amended from time to time.	**Noted.**
(ii)	No storage reservoir for sea water shall be permitted and only a pipelines conveyance system shall be installed	**Noted.**
(iii)	No groundwater shall be extracted within the CRZ area to meet water requirements during the construction and/or operational phase of the project.	**Noted for compliance.**
(iv)	No excavated material during the construction shall be dumped in water bodies or adjacent areas. The site shall be restored to its near original condition after completion of construction	**Noted for compliance.**
(v)	Any physical infrastructure set up during construction period shall be removed simultaneously with the completion of laying of each segment of the project.	**Noted for compliance.**
(vi)	All the conditions stipulated by the Tamil Nadu Coastal Zone Management Authority vide its Letter No. 22895/EC.3/2021-1 dated 08/02/2022, and commitments made by the PP before the CZMA and EAC shall be followed in letter and spirit.	**Noted for compliance.**
(vii)	All necessary clearance from the concerned authority, as may be	

	applicable should be obtained prior to commencement of the project or activity.	
General Conditions		
(i)	Management of solid waste by the Solid Waste Management Rules, 2016 shall be strictly implemented.	**Noted for compliance.**
(ii)	'Consent to Establish' and /or 'Consent to Operate' shall be obtained from State Pollution Control Board under the provisions of the Air (Prevention and Control of Pollution) Act, 1981 and/or the Water (Prevention and Control of Pollution) Act, 1974, as may be applicable.	Consent To Establish for the project accorded to the project vide consent order Nos. 2201148160108 & 2201248160108, dated 03.11.2022. The installation process is yet to commence. Consent To Operate will be obtained after completion of installation of all the units of Desalination Plant in all aspects.
(iii)	Disposal of muck during the construction phase should not create any adverse effect on the neighbouring communities and be disposed of taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of Competent Authority.	**Noted for compliance.**
(iv)	All liquid waste arising from the proposed development will be disposed of as per the norms prescribed by the Central/ State Pollution Control Board. There shall not be any disposal of untreated effluent into the sea/coastal water bodies. It shall be ensured that the wastewater generated is treated in the STP as committed by the project proponent. The treated waste water shall be reused for landscaping,	**Noted for compliance.**

	flushing and/or HVAC cooling purposes etc. within the development. The project proponent should also make alternate arrangements for situations arising due to malfunctioning STP. There shall be regular monitoring of standard parameters of the effluent discharge from STP under intimation to the SPCB.	
(v)	Any hazardous waste generated during the construction phase, shall be disposed off as per applicable rules and norms with the necessary approvals of the State Pollution Control Board.	**Noted for compliance.**
(vi)	A copy of the clearance letter shall be uploaded on the website of the concerned State Coastal Zone Management Authority/State Pollution Control Board. The Clearance letter shall also be displayed at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's Office for 30 days.	**Noted.**
(vii)	A six-monthly monitoring report shall need to be submitted by the project proponent to the concerned Regional Office of this Ministry regarding the implementation of the stipulated conditions.	**Being complied with.**
(viii)	The Ministry of Environment, Forest & Climate Change or any other Competent Authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of the environment and the	**Noted.**

	same shall be complied with.	
(ix)	Full co-operation shall be extended to the officials from the Regional Office of MoEF&CC, during monitoring of the implementation of environmental safeguards stipulated. It shall be ensured that documents/data sought pertinent is made available to the monitoring team. A complete set of all the documents submitted to MoEF&CC shall be forwarded to the concerned Regional Office of MoEF&CC.	**Noted for compliance.**
(x)	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Ministry.	**Noted.**
(xi)	The Ministry reserves the right to add additional safeguard measures subsequently, if considered necessary, and to take action to ensure effective implementation of the suggested safeguard measures in a time-bound and satisfactory manner, including revoking the environment clearance under the provisions of the Environmental (Protection) Act, 1986, for non-compliance.	**Noted for compliance.**
(xii).	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 proponent from the respective Competent Authorities.	**Noted for compliance.**

(xiii)	The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board (SPCB) and may also be seen on the website of the Ministry of Environment, Forest and Climate Change at https://parivesh.nic.in/. The advertisement should be made within seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the concerned Regional Office of this Ministry.	**Complied with.** The clearance to the project was advertised in two local news papers dated 05.05.2022.
(xiv)	A copy of the clearance letter shall be sent by the proponent to the concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.	Complied with. The copy of the CRZ clearance letter was forwarded to the Commissioner, Greater Chennai Corporation vide KPL's letter dated 30.04.2022. No representations were received against the project clearance.
(xv)	The proponent shall upload the status of compliance of the stipulated 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&CC, the respective Zonal Office of CPCB and the SPCB.	**Being complied with.**
(xvi)	The environmental statement for each financial year ending 31st March in	**Complied with.**

	Form-V 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 project proponent along with the status of compliance of clearance conditions and shall also be sent to the respective Regional Office of the Ministry by e-mail.	
6	This Clearance is subject to the final order of the Hon'ble Supreme 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.**
7	The Ministry reserves the right to stipulate additional conditions if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time-bound manner. The Ministry may revoke or suspend the CRZ clearance if the implementation of any of the above conditions is not found satisfactory.	**Noted.**
8	Concealing factual data or submission of false / fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.	**Noted.**
9	Any appeal against this CRZ clearance lies with National Green Tribunal, if	**Noted.**

	preferred within a period of 30days as prescribed under Section 16 of the National Green Tribunal Act, 2010	
10	The above conditions shall be enforced, inter-alga under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.	**Noted.**

Conditions stipulated by the Tamil Nadu Coastal Zone Management Authority vide its Letter No. 22895/EC.3/2021-1 dated 08/02/2022

S.No	**Special Conditions**	**Compliance Status**
(i)	All the provisions of the CRZ Notification, 2011 shall be adhere with.	**Noted for compliance.**
(ii)	The project proponent shall undertake the establishment only after getting the required Clearances from Competent authorities such as Planning Permission, Plan Approval etc., including the clearance under CRZ Notification, 2011 and other statutory clearances.	Consent To Establish for the project accorded to the project vide consent order Nos. 2201148160108 & 2201248160108, dated 03.11.2022. The installation process is yet to commence. Consent To Operate will be obtained after completion of installation of all the units of Desalination Plant in all aspects.

(iii)	The clearances/approvals from the Revenue Department and Tamil Nadu Maritime Board for laying of pipeline in the areas under their control shall be obtained before the commencement of the establishment.	Consent To Establish for the project accorded to the project vide consent order Nos. 2201148160108 & 2201248160108, dated 03.11.2022. The installation process is yet to commence.
(iv)	The project proponent shall not draw any groundwater in CRZ area, under any circumstances.	**Noted for compliance.**
(v)	No excavated material during the construction shall be dumped in water bodies or adjacent areas.	**Noted for compliance.**
(vi)	The project proponent shall adhere to the Construction and Demolition Waste Management Rules, 2018	**Noted for compliance.**
(vii)	The project proponent shall ensure that the temporary structures installed for laying of pipe lines are removed within one months of accomplishment of the work.	**Noted for compliance.**
(viii)	No storage reservoir for sea water shall be permitted and only pipelines conveyance system shall be installed.	**Noted for compliance.**
(ix)	The project proponent shall ensure that an inbuilt mechanism appropriate for the management of solid waste is in place which shall be pre-requisite for obtaining CTO under Air and Water Acts from the TNPCB.	**Noted for compliance.**
(x)	The proponent shall furnish the HTL map from Institute of Remote Sensing (IRS), Anna University or from any authorized Institute, authenticated by the Govt. of India for this purpose in the village level 1:4000 Scale, duly marking the proposed project features in the	The HTl map was submitted to TNSCZMA and MoEF & CC during proposal called for review. The respective authorities have examined the details and recommended the proposal for CRZ

	approved CZMP map of Tamil Nadu.	clearance.
(xi)	The Project Proponent has submitted the compliance report with reference to the above conditions and submitted the HTL Demarcation map obtained from the NIOT who is one of the authorized agency for preparation of HTL Demarcation map. With reference to the NoC from the State Pollution Control Board, the Project Proponent has stated that the TNPCB has informed that NoC will be issued in the form of Consent To Establish (CTE) after obtaining CRZ Clearance from the MoEF8s CC, GoI.	**Being complied with.**
B	**General Conditions**	**Compliance Status**
(a)	The Project Proponent should ensure that the salinity of the output water does not affect the environment and the organisms.	**Noted for compliance.**
(b)	The Project Proponent should check the quality of the intake water especially for oil and heavy metals contamination.	**Noted for compliance.**
(c)	The Project Proponent should ensure that the dredging activity should not hinder with the outlet pipe of the desalination plant.	**Noted for compliance.**
(d)	The project proponent shall undertake the establishment only after getting all the required Clearances such as Planning Permission, CTE from TNPCB, Clearance under CRZ Notification, 2011 etc., from Competent authorities.	Consent To Establish for the project accorded to the project vide consent order Nos. 2201148160108 & 2201248160108, dated 03.11.2022. The installation process is yet to commence.
(e)	The project proponent shall not draw any groundwater in CRZ area, under any circumstances.	**Noted for compliance.**

(f)	The temperature of water at the outfall point should be maintained within the prescribed levels. This may be monitored regularly through an institute and fact may be reported to Department of Environment.	**Noted for compliance.**
(g)	The Project should not affect the fishing activities in any way and also should not hinder the livelihood of the Fishermen.	**Noted for compliance.**
(h)	All the provisions of the CRZ Notification, 2011 shall he adhered with.	**Noted for compliance.**
(i)	The project proponent shall undertake the establishment only after getting the required Clearances from Competent authorities such as Planning Permission, Plan Approval etc., including the clearance under CRZ Notification, 2011 and other statutory clearances.	MoEF&CC has accorded the CRZ clearance for the project, vide F.No.11-51/2012-1A-111, dated 22.04.2022. TNPCB has accorded the Consent To Establish for the project, vide consent order Nos. 2201148160108 & 2201248160108, dated 03.11.2022. The installation process is yet to commence.
(j)	The clearances/approvals from the Revenue Department and Tamil Nadu Maritime Board for laying of pipeline in the areas under their control shall be obtained before the commencement of the establishment.	MoEF&CC has accorded the CRZ clearance for the project, vide F.No.11-51/2012-1A-111, dated 22.04.2022. TNPCB has accorded the Consent To Establish for the project, vide consent order Nos. 2201148160108 & 2201248160108, dated 03.11.2022. The installation process is yet to commence.
(k)	No excavated material during the construction shall be dumped in water bodies or adjacent areas.	**Noted for compliance.**

(l)	The project proponent shall adhere to the Construction and Demolition Waste Management Rules, 2018	**Noted for compliance.**
(k)	The project proponent shall ensure that the temporary structures installed for laying of pipe lines are removed within one month of accomplishment of the work.	**Noted for compliance.**
(m)	No storage reservoir for sea water shall be permitted and only pipelines conveyance system shall be installed.	**Noted for compliance.**
(n)	The project proponent shall ensure that an inbuilt mechanism appropriate for the management of solid waste is in place which shall be pre-requisite for obtaining CTO under Air and Water Acts from the TNPCB.	**Noted for compliance.**
(o)	The Project Proponent should remit 2% on the total project cost to Environment Management Agency of Tamil Nadu (EMAT) account, towards carrying out need based CER activities.	**Complied with.** An amount of 36lakhs was remitted to Environment Management Agency of Tamil Nadu (EMAT) account, towards carrying out CER activities.