



Validity expires on 17.10.2026

**PROCEEDINGS OF THE STATE ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY, KERALA
THIRUVANANTHAPURAM**

*Present: Dr. H. Nagesh Prabhu IFS (Retd), Chairman; Dr. V. Venu IAS, Member
Secretary and Dr. Jayachandran K, Member*

**Sub: - SEIAA – Environmental Clearance for the Capacity Enhancement of Secured
Landfill Facility at Existing Common Hazardous Waste Treatment, Storage and
Disposal Facility (TSDF) site proposed by KEIL at Block No. 37, Survey No. 205
of Puthenkurusu, Kunnathunad taluk, Ernakulam district, Kerala – Granted -
Orders issued.**

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY

Proposal No: SIA/KL/MIS/42326/2018

File No: 1458/EC3/2019/SEIAA

dated, Thiruvananthapuram: 18.10.2021

- Read: 1. Application received on 18/09/2019 through PARIVESH from Dr. N. K. Pillai, Authorized signatory, Chief Executive officer, Kerala Enviro Infra Structure Limited
2. Minutes of the 108th SEAC meeting held on 13th & 14th January, 2020
 3. Minutes of the 110th SEAC meeting held on 11th & 12th February, 2020
 4. Minutes of the 118th SEAC meeting held on 1st, 2nd & 3rd February, 2021
 5. Minutes of the 122nd SEAC meeting held on 15th, 16th, 17th & 18th June 2021
 6. Minutes of the 123rd SEAC meeting held on 27th, 28th, 29th & 30th July 2021
 7. Minutes of the 111th SEIAA meeting held on 17th & 18th August 2021
 8. G.O (Rt.)No.29/2019/Envtd dated 12.04.2019.

ENVIRONMENTAL CLEARANCE NO. 65 /2021

Dr. N. K. Pillai, Authorized Signatory, Chief Executive Officer, Kerala Enviro Infra Structure Limited submitted an application in SEIAA through PARIVESH on 18/09/2019 for Environmental Clearance for the Capacity Enhancement of Secured Landfill Facility at Existing Common Hazardous Waste Treatment, Storage and

Disposal Facility (TSDF) site proposed by KEIL at Block No. 37, Survey No. 205 of Puthenkurusu, Kunnathunad taluk, Ernakulam district, Kerala. The details of the project are as follows:

SL. No.	Particulars	Details
1	Name of the Project	Kerala Enviro Infrastructure Limited-Capacity Enhancement of Secured Landfill Facility at Existing Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF)
2	Proposed Activity	Expansion of existing hazardous waste land fill from 10 Lakh MT to 27.5 Lakh MT
3	Name of the Sector & Schedule No. (in the EIA Notification, 2006)	INFRA-2 Schedule No: 7(d) Common Hazardous Waste Treatment, Storage and Disposal facilities (TSDFs) of EIA Notification, 2006.
4	Name & Address of the Project Proponent	Dr. N. K. Pillai, Authorized Signatory, Chief Executive Officer, M/s Kerala Enviro Infra Structure Limited
5	Project Location	
	a) Re-Survey Nos:	Block No: 37 Survey No: 205
	b) Revenue Village	Puthenkurusu Village
	c) Taluk	Kunnathunad
	d) District	Ernakulam
6	Geo Co-ordinates	Latitude : 9°58'56.05"N to 9°59'1.16"N Longitude :76°21'41.93"E to 76°21'46.73"E
7	Total plot area	50 Acres
8	Water requirement	50 KLD
9	Power requirement	11 KV HT power supply sourced from KSEB (Max. demand 70 KV)
10	CER details	The estimated capital expenditure for the proposed expansion of landfill is Rs 25 lakhs and 1% (Rs. 25000) of expansion of landfill cost has been earmarked for the Corporate Environment Responsibility (CER) to meet expenditures for the commitments made to the stakeholders.
11	Field Inspection Details	02-01-2021
12	Project Cost (in Lakh)	Rs 17.63 crore-Including the existing facility
13	Validity	5 years from the date of EC

2. The ToR for the project was approved vide letter No.1197/A1/2018/SEIAA dated 16-2-2021. The proposal was placed in various meetings read as paper (2) to (6) including the 123rd SEAC meeting held on 27th – 30th July 2021. The Committee scrutinized all the additional documents submitted by the proponent. The Committee decided to recommend the issuance of EC subject to the General Conditions and with the following Specific Conditions:

- a. *Action for avoiding stockpiling of Hazardous Waste in temporary holding areas (covered with roof) during monsoon months.*
- b. *Action for keeping landfill areas capped with final cover/intermediate cover / rain protection cover, and action for suspending landfill operations, during monsoon period ,to reduce infiltration of rain water into the landfill. This action is very important as water body is situated only 290 m away from the boundary of SLF.*
- c. *Action for providing proper maintenance of surface water drainage system comprising of drains, channels, catch drains, culverts and basins of the SLF and in the surrounding areas.*
- d. *Action for full covering / closure of waste collected and deposited the Landfill, from various flood affected areas in the State, during the 2018 Floods and this portion of the SLF should be properly compacted and protected from rains to avoid further leachate generation.*
- e. *Action for harnessing solar energy, to meet partial power requirement in the SLF and providing post type, solar yard lighting system, within the SLF and adjoining areas.*
- f. *Action for planting of local species of trees (non -fruit bearing type trees) ,in the Green Belt area, as well as, in available open spaces, for maintaining a minimum Greenbelt width of 20 m all around, and ensure proper land scape for the compound and Office premise.*
- g. *Provide suitable compensatory afforestation area, if additional area is available, including avenue plantations with local species of trees of non-fruit bearing type trees, within the compound.*

h. Action for filling the gaps in the fencing / compound wall, provided in all around the compound of the existing as well as proposed SLF, for the protection of the area.

i. Action for collecting rain water falling on active tipping areas separately and managing it as leachate, via the leachate collection drain and leachate collection sumps and finally lead to the leachate treatment for treatment and disposal/ reuse.

j. Action for installing proper fire hydrants, in and around the SLF, as fires in hazardous waste landfill sites are not uncommon, and provide training / MOC drills, engaging the Plant Operators, for effectively addressing the problems associated with fire in consultation with Fire and safety Department.

k. Action for periodic monitoring of ground water quality by establishing Monitoring Wells, at the existing as well as in the proposed SLF, located at specified horizontal distance interval, as well as in vertical positions, for touching four underground geographic zones of (a) on and within the landfill; (b) in the unsaturated subsurface zone (vadose zone) beneath and around the landfill; (c) in the groundwater (saturated) zone beneath and around the landfill and (d) in the atmosphere/local area air above and around the landfill, as stipulated in the Guidelines on Hazardous Waste Management issued by the CPCB and KSPCB.

3. The proposal was placed in the 111th SEIAA meeting held on 17th & 18th August 2021. Authority accepted the recommendation of SEAC and decided to issue EC for 5 years for Capacity Enhancement of Secured Landfill Facility at Existing Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) at Puthenkurisu, Kunnathunad taluk, Ernakulam subject to the following Specific Conditions in addition to the General Conditions.

i. Action for avoiding stockpiling of Hazardous Waste in temporary holding areas (covered with roof) during monsoon months.

ii. Action for keeping landfill areas capped with final cover/intermediate cover / rain protection cover, and action for suspending landfill operations, during monsoon period, to reduce infiltration of rain water into the landfill. This action is very important as water body is situated only 290 m away from the boundary of SLF.

- iii. Action for providing proper maintenance of surface water drainage system comprising of drains, channels, catch drains, culverts and basins of the SLF and in the surrounding areas.
- iv. Action for full covering / closure of waste collected and deposited the Landfill, from various flood affected areas in the State, during the 2018 Floods and this portion of the SLF should be properly compacted and protected from rains to avoid further leachate generation.
- v. Action for harnessing solar energy, to meet partial power requirement in the SLF and providing post type, solar yard lighting system, within the SLF and adjoining areas.
- vi. Action for planting of local species of trees (non -fruit bearing type trees) ,in the Green Belt area, as well as, in available open spaces, for maintaining a minimum Greenbelt width of 20 m all around, and ensure proper land scape for the compound and Office premise.
- vii. Provide suitable compensatory afforestation area, if additional area is available, including avenue plantations with local species of trees of non-fruit bearing type trees, within the compound.
- viii. Action for filling the gaps in the fencing / compound wall, provided in all around the compound of the existing as well as proposed SLF, for the protection of the area.
- ix. Action for collecting Rain Water falling on active tipping areas separately and managing it as leachate, via the leachate collection drain and leachate collection sumps and finally lead to the leachate treatment for treatment and disposal/ reuse.
- x. Action for installing proper Fire Hydrants, in and around the SLF, as fires in hazardous waste landfill sites are not uncommon, and provide training / MOC drills, engaging the Plant Operators, for effectively addressing the problems associated with fire in consultation with Fire and safety Department.
- xi. Action for periodic monitoring of ground water quality by establishing Monitoring Wells, at the existing as well as in the proposed SLF, located at specified horizontal distance interval, as well as in vertical positions, for touching four underground geographic zones of (a) on and within the landfill; (b) in the unsaturated subsurface zone (vadose zone) beneath and around the landfill; (c) in the groundwater (saturated) zone beneath and around the landfill and (d)

in the atmosphere/local area air above and around the landfill, as stipulated in the Guidelines on Hazardous Waste Management issued by the CPCB and KSPCB.

4. In this circumstance, Environmental Clearance is granted to Dr. N. K. Pillai, Authorized Signatory, Chief Executive officer, Kerala Enviro Infra Structure Limited, for Environmental Clearance for the Capacity Enhancement of Secured Landfill Facility at Existing Common Hazardous Waste Treatment, Storage and Disposal Facility (TSDF) site proposed by KEIL at Block No. 37, Survey No. 205 of Puthenkurusu, Kunnathunad taluk, Ernakulam district, Kerala, subject to the condition in Para 3 of this order and the usual General Conditions for projects other than mining appended hereto.

5. The Environmental Clearance will also be subject to full and effective implementation of all the undertakings given in the Application Form, all the environmental impact mitigation and management measures undertaken by the project proponent in the documents submitted to SEIAA, and the mitigation measures and waste management proposal as assured in the Form -1 and Form-1A, Environment Management Plan as submitted. The assurances and clarifications given by the proponent in the application and related documents will be deemed to be part of these proceedings as conditions as undertaken by the proponent, as if incorporated herein.

6. Validity of the Environmental Clearance will be for **Five years** from the date of issuance of E.C, subject to inspection by SEIAA on annual basis and compliance of the conditions, subject to earlier review of E.C in case of violation or non-compliance of any of the conditions stipulated herein or genuine complaints from residents within the scrutiny area of the project.

7. Compliance of the conditions herein will be monitored by the State Environment Impact Assessment Authority or its agencies and also by the Regional Office of the Ministry of Environment and Forests, Govt. of India, Bangalore. Necessary assistance for entry and inspection by the concerned officials and staff should be provided by the project proponents.

8. Instances of violation if any shall be reported to the District Collector, Ernakulam to take legal action under the Environment (Protection) Act 1986.

9. The Half Yearly Compliance Report (HYCRs) with its contents of a covering letter, compliance report and environmental monitoring data has to be in PDF format merged into a single document. The email should clearly mention the Name of the Project, EC No and Date, period of submission and to be sent to the Regional Office of MoEFF & CC and

SEIAA by email only at email ID rosz.bng-mefcc@gov.in and seacseiaakerala@gmail.com .
Hardcopy of HYCRs shall not be acceptable.

10. The given address for correspondence with the authorized signatory of the project is
Dr. N. K. Pillai, Authorized signatory, Chief Executive officer, Kerala Enviro Infra
Structure Limited, Inside Fact-CD Campus, Ambalamedu, Ernakulam, Kerala.

Anil P. Antony
Administrator, SEIAA
For Member Secretary, SEIAA

To,

✓ Dr. N. K. Pillai,
Authorized signatory,
Chief Executive officer,
Kerala Enviro Infra Structure Limited,
Inside Fact-CD Campus, Ambalamedu,
Ernakulam – 682 303

Copy to:

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034.(through e-mail: rosz.bng-mefcc@gov.in)
2. The Additional Chief Secretary to Government, Environment Department
3. The Director, Directorate of Environment & Climate Change, 4th Floor KSRTC Bus Terminal, Thampanoor, Thiruvananthapuram, Kerala 695001
4. The District Collector, Ernakulam
5. The District Town Planner, Ernakulam
6. The Tahsildhar, Kunnathunad Taluk, Ernakulam District
7. The Member Secretary, Kerala State Pollution Control Board
8. The Secretary, Puthenkurisu Panchayath, Kochi, Kerala - 682308
9. Chairman, SEIAA, Kerala
10. Website
11. Stock file
12. O/c



**STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY (SEIAA),
KERALA**

**GENERAL CONDITIONS FOR ENVIRONMENTAL CLEARANCE FOR THE
CAPACITY ENHANCEMENT OF SECURED LANDFILL FACILITY (SLF)**

I. Statutory Compliance

- i. Consent to Establish and Consent to Operate from Kerala State Pollution Control Board under Water and Air Act(s) and other relevant acts/rules should be obtained before initiating activity. All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities. Copies of statutory clearance obtained shall be enclosed along with first half yearly compliance report.
- ii. The project proponents shall adhere to all conditions as prescribed in the Protocol for 'Performance Evaluation and Monitoring of the Common Hazardous Waste Treatment, Storage and Disposal Facilities' published by the CPCB in May, 2010.
- iii. A Certificate of adequacy of available power from the Agency supplying power to the project along with the load allowed for the project should be obtained.
- iv. Permission to draw ground water/surface water shall be obtained from the competent Authority prior to construction/operation of the project.

II. Air quality Monitoring and Preservation

- i. The project proponent shall install system to carryout Ambient Air Quality Monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM₁₀ and PM_{2.5} in reference to Particulate Matter emission, and SO₂ and NO_x in reference to SO₂ and NO_x emissions) within and outside the Plant area at least at four locations (one within and three outside the Plant area at an angle of 120⁰ each), covering upwind and downwind directions.
- ii. The project proponent shall submit monthly summary report of air quality monitoring to Regional Office of MoEF & CC, SEIAA & Regional Office of KSPCB along with six- monthly compliance report. Gas generated in the land fill

should also be reported.

iii. The air pollutant levels namely, SPM, RSPM, SO₂, NO_x or critical sectoral parameters, indicated for the project shall be displayed at a convenient location near the main gate of the company and in the public domain.

III. Water Quality Monitoring and Preservation

- i. The project proponent shall submit monthly summary report of the results of effluent analysis and monitoring of ground water quality to Regional Office of MoEF & CC, SEIAA & KSPCB along with six-monthly compliance report.
- ii. No discharge of leachates/waste water in nearby river(s)/pond(s).
- iii. The depth of the landfill site shall be decided based on the ground water table at the site.
- iv. The company shall ensure proper handling of all spillages by introducing spill control procedures for various chemicals/solvents.
- v. All leachates arising from premises should be collected and treated in the ETP and discharged/recycled as per CPCB standards. Toxicity Characteristic Leaching Procedure (TCLP) test to be performed on leachates.
- vi. The Company shall review the unit operations provided for the treatment of effluents. The scheme for treatment of effluents shall be as permitted by the Pollution Control Board under the provisions of Consent to Establish.
- vii. Scrubber water, leachate water or wheel wash effluent shall be treated in the advanced Effluent Treatment Plant to achieve Zero Liquid Discharge.
- viii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.
- ix. The ground water level and its quality should be monitored regularly in consultation with State Groundwater Department/Central Ground Water Authority.
- x. Storm water control and its re-use measures as per CGWB and CPCB standards shall be followed for various applications.

IV. Noise Monitoring and Prevention

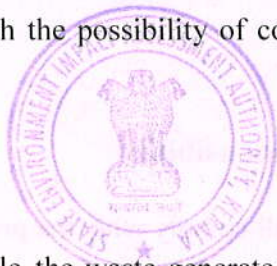
- i. Noise level survey shall be carried as per the prescribed guideline and report in this regard shall be submitted to Regional Office of the Ministry and SEIAA as a part of six-monthly

compliance report.

- ii. The ambient noise levels should conform to the Standards prescribed under Noise Pollution Rules as prescribed by CPCB. Adequate measure should be taken to reduce ambient air & noise pollution.
- iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

V. Energy Conservation Measures

- i. Low sulphur diesel shall be used as fuel in DG sets. The location of the DG sets may be decided in consultation with Kerala State pollution Control Board. DG sets should not be housed in sub-basement levels.
- ii. Energy conservation measures like installation of LED /CFLs/TFLs for the lighting the areas outside the building should be an integral part of the project design and should be in place before project commissioning. Used LED/CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the Regulatory Authority to avoid mercury contamination. Solar energy may be used to the extent possible.
- iii. The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the power grid and consumption in future.



VI. Waste management

- i. The TSDF should only handle the waste generated from the member units.
- ii. Periodical soil monitoring to check the contamination in and around the site shall be carried out.
- iii. No non-hazardous wastes, other than the wastes as defined under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, shall be handled in the premises.
- iv. The Project proponent shall not store the Hazardous Wastes more than the quantity that has been permitted by the CPCB/SPCB.
- v. The solid wastes shall be segregated, managed and disposed as per the norms of the

Solid Waste Management Rules, 2016.

- vi. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.

VII. Human health issues

- i. Traffic congestion near the entry and exit points from the roads adjoining the project site shall be avoided. Parking should be fully internalized and no public space should be utilized for parking.
- ii. Emergency preparedness plan based on the Hazard Identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- iii. Occupational health surveillance of the workers shall be done on a regular basis.
- iv. A First Aid Room shall be provided at the project site.
- v. All required sanitary and hygienic measures should be in place before starting the activities.
- vi. Adequate drinking water and sanitary facilities should be provided for construction workers at the site, Provision should be made for mobile toilets. Safe disposal of wastewater and solid wastes generated including piling debris during the construction phase should be ensured.

VIII Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65/2017-IA.111 dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The conditions specified in the EIA Notifications 2006 and subsequent amendments, the specific directions given by SEIAA/SEAC should be followed under Corporate Environment Responsibility. The activities carried out under CER should be listed with details in Half Yearly Compliance Report along with status of implementation and certificates from the beneficiaries and photographs.
- iii. The proponent shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard

operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental/forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF & CC and SEIAA as a part of six-monthly report.

- iv. A separate Environmental Monitoring Committee both at the project and company Head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the Head of the Organization. Environmental Monitoring Committee with defined functions and responsibility should foresee post operational environmental problems (eg. increase in traffic congestion, power failure, increase in noise level, natural calamities, and pollution related matter etc.) and action taken to solve these immediately with mitigation measures.
- v. The proponent shall submit Half Yearly Compliance Reports on the status of compliance of the stipulated EC conditions including results of monitored data (by e-mail) and upload the same on Company website and shall update the same periodically. The compliance report shall be simultaneously sent to the Regional Office of Ministry of Environment, Forests and Climate Change, Govt. of India at Bengaluru and also to SEIAA.
- vi. Self- environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

IX. Other Conditions

1. The proponent should provide notarized affidavit indicating the number and date of Environmental Clearance proceedings that all the conditions stipulated in the EC shall be scrupulously followed.
2. 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 Environmental Clearance and copies of clearance letters are available

on the website of SEIAA www.seiaakerala.in. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.

3. The proponent shall send a copy of the Clearance letter to the concerned Grama Panchayath/District Panchayath/Municipality/Corporation/Urban Local Body and also to the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The Environmental Clearance shall also be uploaded on the website of the company.
4. The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40.
5. The project proponent shall submit the Environmental Statement for each financial year in Form- V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
6. The stipulations/conditions issued by Statutory Authorities under different Acts and Notifications should be complied with, including 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, Solid Waste Management Rules, 2016 Plastic Waste Management and Handling Rules, 2016, Construction and Demolition Waste Management Rules 2016, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
7. Safety measures should be implemented as per the Fire and Safety Regulations/SDMA guidelines.
8. The project proponent is responsible for implementing all the provisions of labour laws applicable from time to time. Provision should be made for providing cooking facilities and supply of kerosene or cooking gas to the labourers.
9. The proponent shall co-operate with and provide facilities and documents/data to the Agencies including the Officials from the Regional of Ministry of Environment, Forests and Climate Change, Bengaluru and SEIAA during their inspection as part of monitoring

the implementation of environmental safeguards.

10. In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.
11. In case of transfer of EC, the matter shall be intimated and approval from the Authority shall be obtained as per the existing norms.
12. The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the Environment Clearance under the provisions of the Environment (Protection) Act 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
13. Unless provided otherwise, all the topsoil excavated during construction phase should be stored and re-used for backfilling/ horticulture/landscaping purposes within the project site.
14. Concealing factual data or submission of false/fabricated data may result in revocation of this Environmental Clearance and attract action under the provisions of Environment (Protection) Act, 1986.
15. The SEIAA may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
16. Any appeal against this EC 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.



Administrator, SEIAA

