MAR SLEEVA®
medicity palai
A Temple of Health

To,

Date: 27/11/2023

The Additional Principal Chief Conservator of Forests (C),
Ministry of Environment Forests & Climate Change,
4th Floor, E&F Wing,
Kendrya Sadan, Koramangala,
Bengaluru – 560034.

Sub: Environmental Clearance for proposed expansion of existing hospital complex project with increase in built-up area from 53,246.10 sqm. to 1,40,907.42 sqm. at Puliyannoor village, Kozhuvanal Panchayat, Meenachil Taluk, Kottayam District, Kerala by M/s Palai Diocesan Medical Education Trust – regarding.

Ref: 1) F.NO. 21-25/2022-IA-III Dated – 20/05/2022 from MoEF, New Delhi
2) EC Identification No. EC22A038KL132864

Sir,

The compliance report on EC conditions for the period ending 09/2023 is attached.

Thanking you,

Yours faithfully,

Msgr. Dr. Joseph Kaniyodickal
Managing Director
Mar Sleeva Medicity Palai
Mob: 9188525940
Email: managingdirector@marsleevamedicity.com

Compliance report on EC conditions for the period ending 09/2023

Sub: Environmental Clearance for proposed expansion of existing hospital complex project with increase in built-up area from 53,246.10 sqm. to 1,40,907.42 sqm. at Puliyannoor Village, Kozhuvanal Panchayat, Meenachil Taluk, Kottayam District, Kerala by M/s Palai Diocesan Medical Education Trust – regarding.

Ref: 1) F.NO. 21-25/2022-IA-III Dated – 20/05/2022 from MoEF, New Delhi

2) EC Identification No. EC22A038KL132864

Sir,

The Pala Diocesan Medical Education Trust was established to undertake charitable activities envisaged by the Catholic Church in the geographical area allotted to it. The Pala Diocesan Medical Education Trust has constructed a hospital on a plot area of 10.0771 hectare. The construction work of 280 bedded hospital is completed with built up area of 53246.10 sqm.

The hospital is having basement, ground floor + 6 floors (total eight floors only). The civil works of the hospital building as well as the electrical, sanitary, water supply, firefighting, air conditioning etc. are completed and is functioning.

There is a proposal for expansion of Hospital complex and after expansion, the total built up area will be 1,40,907.42 sqm and the total 1180 Nos beds.
The construction as per EC Identification No: EC22A038KL132864 has not yet started.

General precautions to reduce the environmental impact during construction phase are indicated below:-

1. Road around the Hospital has already been black topped.
2. Acoustic enclosure is provided with DG set.
3. First Aid facility with medicine, safety gadgets like safety belts, helmets, boots, gloves, pure drinking water, electricity, sanitary facilities etc. are provided at site to labourers including insurance cover.
4. Rain water harvesting tank is provided at site.

The para wise comments as per the above order of MoEF are as under:-

A. Specific Conditions:

i. Abstraction of ground water shall be subject to the permission of Central Ground Water Authority (CGWA). Fresh water requirement shall not exceed 478 KLD during operational phase.

Permission to draw 478 KLD of water has already been received from Ground Water Department, Kerala vide file no: GWK/11582/2022 as per application dated 09/08/2022. Copy attached (Annexure – A)

ii. As proposed, wastewater shall be treated in onsite STPs of total 740KLD capacity and ETP of 30 KLD capacity. At least 550 KLD of treated water from the STP and 23 KLD of treated water from the ETP shall be recycled and re-used for flushing (349 KLD), for gardening (32 KLD),for boiler (40 KL) and for make-up water requirement for cooling towers attached with the HVAC system (129 KLD + 23 KLD). There shall be no discharge of treated water outside the project premises, as committed.

The new construction has not yet been started. All the above points shall be taken care during construction and also on completion of the new constructions. There is no discharge of treated water from STP to the outside premises.

iii. The project proponents would commission a third-party study on the implementation of conditions related to quality and quantity of recycle and reuse of treated water, efficiency of treatment systems, quality of treated water being supplied for flushing (specially the bacterial counts), comparative bacteriological studies from toilet seats using recycled treated waters and fresh waters for flushing, and quality of water being supplied through spray faucets attached to toilet seats.

Officials from KPCB used to inspect the functioning of STP with respect to quality and quantity of recycled water etc. The treated effluent from the STP is utilized for agriculture and gardening purposes. The discharge from the STP confirms to the norms and standards of Kerala State Pollution Board. Online Monitoring System is installed to monitor 5 parameters of treated water of STP. They are COD, BOD, TSS, PH and Oil in Water. The reported values are sent to PCB server every 15 minutes. These values are found to be within the prescribed limits. No odour problem is noticed. The installation of STP has already been certified by Kerala Pollution Control Board.

iv. Area for greenery shall be provided as per the details provided in the project document i.e., area under plantation/greenery will be 30,049 sqm. As proposed, at least 1,600 trees shall be maintained within the site during the operation phase of the project. The landscape planning should include plantation of native species. A minimum of 01 tree for every 80 sqm. of land should be planted and maintained. The existing trees will be counted for this purpose. Plantations to be ensured species (cut) to species (planted). The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.

The new construction as per this MoEF sanction is yet to be started. A minimum of 01 tree for every 80 sqm. of land shall be planned as directed. Water intensive and/or invasive species will not be used for landscaping. Total number of trees already planted from 4/2022 to till date is 546 nos.

v. No tree can be felled/transplanted unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted)

No trees will be cut without absolute necessity

vi. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e., planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.

The area of green belt development shall be taken up as per the details provided in the project document with the land development works.

vii. The local bye-law provisions on rain water harvesting should be followed. If local bye-law provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. As proposed, RWH tank of 4 ML total capacity shall be provided by PP for rain water harvesting after filtration.

Tanks for rainwater harvesting have already been constructed and the capacity is 1668 k litres of U.G sump below shopping complex and 243.50k litres above water tank.

The required quantity of rainwater tank shall be provided as per the local byelaws on taking up the new constructions.

viii. The solid waste shall be duly segregated into biodegradable and non-biodegradable components and handled in separate area earmarked for segregation of solid waste, as per SWM Rules, 2016. As committed, biodegradable waste shall be utilized through the Bio-Gas generation plant/bio-bin unit to be installed within the site. Inert waste shall be disposed off as per norms at authorized site. The recyclable waste shall be sold to authorized vendors/recyclers. Construction & Demolition (C&D) waste shall be segregated and managed as per C&D Waste Management Rules, 2016. Bio-medical wastes shall be disposed as per Bio-Medical Waste (Management & Handling) Rules, 2016.

Wastes are segregated into biodegradable and non – biodegradable components as per SWM Rules, 2016. Recyclable wastes are sold to vendors. Construction wastes are disposed off as per C&D Waste Management Rules, 2016.

ix. The PP shall provide electric charging points in parking areas for vehicles as committed.

The parking area has been partially developed and during further development, provision for charging for electrically operated vehicles (20%) will be provided in each parking areas. Electric charging points as per requirement shall be provided on development of parking area on completion of buildings.

x. As committed, solar energy installation of 1,167 kWp capacity shall be implemented.

Solar energy 205 kWp is provided. Balance requirements of solar energy installation shall be provided on completion of each building.

xi. The Environmental Clearance to the project is primarily under provisions of EIA Notification, 2006. The Project Proponent is under obligation to obtain approvals/clearances under any other Acts/Regulations or Statutes as applicable to the project.

Noted, and the work will started only on getting all approvals.

B. Standard Conditions:

I. Statutory compliance:

i. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.

Noted. The work will be started only on getting necessary clearance from all relevant agencies.

ii. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of firefighting equipment etc. as per National Building Code including protection measures from lightening etc.

Structural safety certificate has already obtained for the old constructions. For the new construction, structural safety shall be obtained during the construction and shall be submitted for record.

Approval from the Fire Fighting Department shall be obtained from the local fire department on completion of each building as per rules.

iii. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project

Not fall under the forest land.

iv. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.

Not fall under the National Board for wildlife

v. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.

The consent from state control board has already obtained and its valid upto 30-06-2024. (Copy attached – Annexure – B)

vi. The project proponent shall obtain the necessary permission for drawl of ground water/surface water required for the project from the competent authority.

Permission to draw 478 KLD of water has already been received from Ground Water Department, Kerala vide file no: GWK/11582/2022 as per application dated 09/08/2022. Copy attached as Annexure - A

vii. 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.

Total projected requirement of power on completion is 9621 KW. Permission for KSEB is available for 4005 KW for the present. Before taking up new construction the permission shall be obtained from KSEB in this regard.

viii. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.

Noted and shall be strictly followed

ix. The provisions of the Solid Waste Management Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste Management Rules, 2016, shall be followed.

Agreement has already been made with M/s Green Worms Eco Solutions LLP (PCB consent No: G19ERRCTON98204) for solid waste, plastics, paper and scrap, pharmaceutical waste, and e-waste, and is valid upto 01/06/2025. (Copy attached – Annexure – C)

x. The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.

Noted and shall be strictly followed.

II. Air quality monitoring and preservation:

i. Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.

Construction work has not been started yet. All precaution shall be taken up during demolition and construction, such as barricading the area, covering the sand etc. with plastic sheets to reduce air pollution.

ii. A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.

Noted. Green area shall be developed to improve the air quality at site.

iii. 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 PM2.5) covering upwind and downwind directions during the construction period.

To monitor the quality of ambient air quality in the project site, the project proponent regularly monitor the PM 10 and PM 2.5 covering upwind and downwind directions during the construction period. This will be submitted along with the Half Yearly Compliance Report.

iv. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.

Enclosed type generator is only provided. Low sulphur diesel is only being used. Location of DG set is approved by Kerala State Pollution Control Board. The height of stack of DG is provided as per rule.

v. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3- meter height). Plastic/tarpaulin sheet covers shall

be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.

These measures shall be strictly followed during construction.

vi. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.

Noted and shall be strictly followed during construction

vii. Wet jet shall be provided for grinding and stone cutting.

Noted and shall be strictly followed.

viii. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.

Noted and shall be strictly followed during construction.

ix. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Management Rules 2016.

All the construction debris shall be disposed off below the road formation.

x. The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.

Low sulphur diesel is only being used for DG sets.

xi. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise

pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.

Noted and is provided as per KPCB Standards. Stack emission monitoring report is attached – Annexure D

xii. For indoor air quality the ventilation provisions as per National Building Code of India

Ventilation shall be provided as per the requirement of National Building Code of India

III. Water quality monitoring and preservation:

i. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.

No change in the topography and contours at site. Hence the existing storm water drain is sufficient. Storm water drains at the required locations at the site with the required capacities are provided around the buildings to cater the need of surface run off.

ii. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.

Noted and shall be strictly followed.

iii. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.

The details of water usage for the period of report is indicated below:-

1) Fresh water – 83430 KL
2) Treated water – 47152 KL
3) Rainwater – 755 KL

Records for the usage of fresh water and recycled water is attached as Annexure – E

iv. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.

Water is not being supplied by Municipality. The test results of water available at site is attached as Annexure – F

v. At least 20% of the open spaces as required by the local building bye- laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.

Noted and shall be strictly followed during constructions.

vi. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc. and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.

Dual plumbing system shall be provided and recycled water shall be used for flushing, landscaping, car washing, irrigation etc.

vii. Use of water saving devices/fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc.) for water conservation shall be incorporated in the building plan.

Low flow flushing fixtures and low flow faucets are provided in the existing hospital and also shall be provided in the New Construction also.

viii. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.

Dual plumbing system will be provided in the building being constructed.

ix. Water demand during construction should be reduced by use of premixed concrete, curing agents and other best practices referred.

Noted and shall be strictly followed during construction.

x. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.

Rainwater storage tank and recharging system shall be provided as per the norms of KBR.

xi. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.

At present the rainwater is being harvested for the use of Hospital. The ground water department has already given approval in this regard (Annexure – A).

xii. All recharge should be limited to shallow aquifer.

Noted

xiii. No ground water shall be used during construction phase of the project.

Noted

xiv. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.

Permission from the Kerala Ground Water Department has already been obtained vide file no: GWK/11582/2022 as per application dated 09/08/2022.

xv. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.

Noted. Records for freshwater and recycled water for 04/23 to 09/23 is attached – Annexure E.

xvi. Sewage shall be treated in the STP with tertiary treatment.

STP of 480 CMD is at present functioning at the site.

xvii. No sewage or untreated effluent water would be discharged through storm water drains.

No sewage/ untreated effluent shall be discharge through the storm water drain.

xviii. Onsite sewage treatment of capacity of treating 100% waste water to be installed. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.

The treated effluent from the STP is utilized for agriculture and gardening and other purposes. The discharge from the STP confirms to the norms and standards of Kerala State Pollution Board. Online Monitoring System is installed to monitor 5 parameters of treated water of STP. They are COD, BOD, TSS, PH and Oil in Water .The reported values are sent to PCB server every 15 minutes. These values are found to be within the prescribed limits. No odour problem is noticed. The installation of STP has already been certified by Kerala Pollution Control Board.

xix. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.

The discharge from the STP confirms to the norms and standards of Kerala State Pollution Board. Online Monitoring System is installed to monitor 5 parameters of treated water of STP. They are COD, BOD, TSS, PH and Oil in Water .The reported values are sent to PCB server every 15 minutes. These values are found to be within the prescribed limits. No odour problem is noticed.

xx. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.

STP is only provided.

IV. Noise monitoring and prevention

i. Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

Air quality is monitored and result is attached. Annexure – G.

ii. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

Noise level is monitored and result is attached. Annexure – H

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.

DGs are provided with Acoustic enclosures. Ear plugs shall be supplied to the operating personals of generators.

V. Energy Conservation measures:

i. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.

Noted and shall be followed strictly

ii. Outdoor and common area lighting shall be LED.

All outdoor and common area lights are provided with LED to reduce the energy consumption.

iii. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.

Noted. The design of the building is as per conservation of Energy.

iv. Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.

LED light is only provided in this campus and in future, LED shall only be provided.

v. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.

Noted and shall be provided on completion of each building.

vi. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

Solar Power plant of 205 KWp capacity is installed in the hospital. Balance as per requirement shall be provided on completion of each building.

Solar water heaters as required shall also be provided on completion of each building.

VI. Waste Management:

i. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.

The Panchayat do not have facility for handling solid wastes. Solid wastes generated from Projects shall be disposed off with in the campus for filling under road formation and undulated areas.

ii. Disposal of muck during construction phase shall not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

Noted. No muck will be generated as no piling work is done at the campus.

iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.

Noted. Separate colour coded waste bins for dry and wet waste are provided in all floors of Hospital.

iv. Organic waste compost/Vermiculture pit/Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.

Organic waste is composted in composting machine.

v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.

All non – biodegradable wastes are collected by the approved agency, Green Worms Eco solutions. The collection report is made available to PCB on quarterly basis.

vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.

Noted.

vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, compressed earth blocks, and other environment friendly materials.

Noted. Environment friendly material shall be used on the works as far as possible.

viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended 11 as on 27thAugust, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.

Noted.

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

Noted.

x. Used 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

LED lights are only used. CFLs and TFLs are not used in the Project.

VII. Green Cover:

i. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

Noted and will be complied with.

VIII. Transport

i. A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.

a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.

b. Traffic calming measures.

c. Proper design of entry and exit points.

d. Parking norms as per local regulation.

Noted. In and out are specifically indicated to control the flow of traffic. Foot path is provided for the pedestrians. Road markings are provided. Parking area is separately defined.

ii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.

Pollution check certificate is mandatory for all vehicles to ply on roads in kerala. Transportation inside the campus shall be regulated during peak hours.

iii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

Mar Sleeva Medicity is situated in a village area and is about 10 km away from Pala town. Sufficient parking area for staffs, out patients etc. are provided in the campus.

The hospital is surrounded by a ring road to avoid this problem. Separate parking facility for Doctors, Handicapped patients, Senior citizens, ladies etc. are provided in the Hospital campus.

IX. Human health issues:

i. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.

Labours shall be provided with dust mask.

ii. For indoor air quality the ventilation provisions as per National Building Code of India.

Noted and shall be provided.

iii. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.

Noted. Fire and safety department, attached to hospital monitors emergency preparedness strictly on daily basis.

iv. 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.

Noted and shall be provided.

v. Occupational health surveillance of the workers shall be done on a regular basis.

Noted and shall be done on regular basis.

vi. A First Aid Room shall be provided in the project both during construction and operations of the project

First Aid box shall be provided at site on start of construction works. Being hospital expansion, all facilities are available nearby.

X. Miscellaneous:

i. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.

Already advertised in The New Indian Express and Deepika on 24-05-2022, and copy attached in the half yearly report ending 09/22.

ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

Copies of EC has already submitted to the local bodies vide letter No: Nil dt; 24-05-2022, details attached as Annexure I.

iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

Noted and is being complied.

iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.

Noted

v. The company 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 as a part of six-monthly report.

Copy of Environmental Policy is attached as Annexure J.

vi. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.

Environment cell at the company head quarter have already been constituted and Managing Director as Chairman.

The Project cell has also been constituted and the Project Director as Chairman.

vii. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report

Noted

viii. 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.

Form – V for the financial year 2022-2023 has already been submitted to KPCB on 16/06/2023 and uploaded in the Hospital Website.

ix. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.

Noted.

x. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.

Noted and shall be strictly followed.

xi. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report and also that during their presentation to the Expert Appraisal Committee.

Noted.

xii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change (MoEF &CC).

Noted.

xiii. 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.

Noted.

xiv. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

Noted.

xv. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

Noted.

xvi. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full Minutes of the 85thMeeting of Expert Appraisal Committee (Infra-2) held during 30-31st March, 2022 cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

Noted.

xvii. The above conditions shall be enforced, inter-alia 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.

xviii. 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

Noted.

Format-V

Annexure - A

GROUNDWATER DEPARTMENT. KERALA

YIELD TESTING OF WELLS

CERTIFICATE

File No	GWK/11582/2022
Date of Application	09.08.2022
Date of Test	03.02.2023
Name of Applicant	Msgr. Dr.Joseph Kaniyodickal
Address	Managing Director Mar Sleeva Medicity Palai (Near Mutholikadavu)

Location	
Lattitude	9.688447
Longitude	76.641817

Panchayath/Municipality/Corporation	Kozhuvanal
Block	Lalam
District	Kottayam
Depth of Well (m)	13.5
Diameter	6.47
Static Water Level (m)	9.4
Fracture zones/well screens	
Rock Type	Gneiss
Type of Well	Open well
Nature of Aquifer	Unconfined
Type of Aquifer	Alluvium
Purpose of Well	Hospital use
Yield of the Well m^3/day	366387 m^3/day
Recommended yield litre/day	478 m3/day

RECOMMENDED PUMPING SCHEDULE

RECOMMENDATION FOR THE SELECTION OF PUMP

Rate of Pumping (1hr)	60000 lph	Recommended H.P	5HP
Pumping Duration	1 Hr	Type of Pump	Submercible
Number of Cycle	8	Diameter of Pump	
Duration of Pumping Cycle	3hr	Depth of Installatoin	
Pumping Intervel	3 hr	Total Head	

Remarks

Suitable artificial structure should be implemented by the firm for the sustainability of the pumping source and other water sources of the area. The firm should analyse the water quality and potable quality should be ensured before implementation of the firm.

The above results are based on the pumping test studies carried out in the well and is based on the evaluation of the scientific data. The recommendations given in the report were based on the actual pumping test performed in the well and by considering the existing groundwater users in the locality. The yield of the well may vary depending upon the discharge - recharge conditions and overall development of aquifer system in future. It may also be possible that the results may vary due to damage of wells, breakage of casing pipes, clogging of wells screens. Hence it is suggested to check the yield of the well once in every 3 years for best performence of the well. For Packaged drinking water projects, and other water intensive Industries It is mandatory to check the yield of the well once in every 3 years for the renewal of licence from the local bodies.

Jr.Hydrogeologist

District officer

Hydrogeologist

Format-V

GROUNDWATER DEPARTMENT. KERALA

YIELD TESTING OF WELLS

CERTIFICATE

File No	GWK/11582/2022
Date of Application	09.08.2022
Date of Test	02.02.2023
Name of Applicant	Msgr. Dr.Joseph Kaniyodickal
Address	Managing Director Mar Sleeva Medicity Palai (Near Meenachil river)

Location	
Lattitude	9.682272
Longitude	76.64447

Panchayath/Municipality/Corporation	Kozhuvanal
Block	Lalam
District	Kottayam
Depth of Well (m)	10.25
Diameter	4.2
Static Water Level (m)	8.12
Fracture zones/well screens	
Rock Type	Gneiss
Type of Well	Open well
Nature of Aquifer	Unconfined
Type of Aquifer	Alluvium
Purpose of Well	Hospital use
Yield of the Well m^3/day	419152 m^3/day
Recommended yield litre/day	478 m3/day

RECOMMENDED PUMPING SCHEDULE

RECOMMENDATION FOR THE SELECTION OF PUMP

Rate of Pumping (1hr)	60000 lph	Recommended H.P	5HP
Pumping Duration	1 Hr	Type of Pump	Submercible
Number of Cycle	8	Diameter of Pump	
Duration of Pumping Cycle	3hr	Depth of Installatoin	
Pumping Intervel	3 hr	Total Head	

Remarks

Suitable artificial structure should be implemented by the firm for the sustainability of the pumping source and other water sources of the area. The firm should analyse the water quality and potable quality should be ensured before implementation of the firm.

The above results are based on the pumping test studies carried out in the well and is based on the evaluation of the scientific data. The recommendations given in the report were based on the actual pumping test performed in the well and by considering the existing groundwater users in the locality. The yield of the well may vary depending upon the discharge - recharge conditions and overall development of aquifer system in future. It may also be possible that the results may vary due to damage of wells, breakage of casing pipes, clogging of wells screens . Hence it is suggested to check the yield of the well once in every 3 years for best performence of the well. For Packaged drinking water projects, and other water intensive Industries It is mandatory to check the yield of the well once in every 3 years for the renewal of licence from the local bodies.

Jr.Hydrogeologist

District officer

Hydrogeologist

Annexure - B

FILE NO : PCB/HO/KTYM/ICO/R17KOT4637467/2019
Date of issue : 31/08/2019

KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974
The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :11201427
Dated:18-07-2019

TO

M/s MAR SLEEVA MEDICITY
Cherupumkal,
Palai,
Kottayam - 686575

Consent No. :PCB/HO/KTYM/ICO/ 06 /2019
Valid Upto :30/06/2024

1. GENERAL

1.1. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make variation in or revoke all or any of the conditions as the Board deems fit.

1	**VALIDITY**	30/06/2024
2	Name and Address of the establishment	MAR SLEEVA MEDICITY CHERUPUMKAL,PALAI,KOTTAYAM 686575
3	Communication	Telephone :04822-202000 Fax :04822-211379 E-mail:aramanapala@gmail.com
4	Occupier Details	Msgr. Fr. Abraham Kollithanathumalayil, President, Palai Diocesan Medical Education Trust, Bishop's House, Palai, Kottayam
5	Local Body	Kozhuvanal Panchayath
6	Survey Number	85/1A,85/3,85/4,85/6,86/1,86/3,86/3A,86/3B,86/4,86/5A,86/5-2,86/6-1,86/7,87/1,87/2,87/4,87/5A1,87/6,87/7,88/4,88/6,88/6/2,98/2,100/5,100/6,100/7,100/8
7	Village	Puliyannoor
8	Taluk	MEENACHIL
9	District	KOTTAYAM
10	Capital Investment(Rs in Lakhs)	15000.00 Rs in Lakhs
11	Scale	Large
12	Category	RED
13	Annual fee(Rs) Total Fee remitted(Rs)	Rs. 3,50,000 /- Rs. 29,58,267/-
14	Activity	• Phase 1 - Hospital Having 280 beds in first phase - 2 ward,10 Theaters, Neurology, Oncology, Cardiology,pediatric, Gastroenterology, Gynecology,etc with total built up area – 53246.10 sq. mtrs. • DG Set 750 KVA- 2 nos.
15	Mode of disposal of Bio Medical Waste	IMAGE

2. CONDITIONS AS PER
The Water(Prevention and Control of Pollution)Act, 1974

2.1 Sewage Treatment Plant (STP) consisting of treatment units having adequate capacity shall be functional/ arrangement for sewage treatment shall be provided, as per the Integrated Consent to Establish, at all times during the operation of the establishment. Additional facilities required, if any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be made along with.

2.2 Water consumption: 126 kLD

2.3 Effluent generation: 100.8 kLD

2.4 The characteristics of effluent after treatment shall confirm to the following tolerance limits:

SI.NO.	Characteristics	Unit	Tolerance Limits	
			Irrigation/ Soak pit	Flushing/ Gardening/ Reuse
1	pH	-	6.5-9	6.5-8.5
2	Bio assay test	-	90% survival of fish after 96 hrs in 100% effluent	-
3	pH	-	6.5-9	6.5-8.5
4	BOD	mg/l	10	3
5	TSS	mg/l	10	-
6	SS	mg/l	-	10
7	Oil & Grease	mg/l	10	1

2.5 Mode of disposal of treated effluent: Treated water will be used for flushing and gardening to the maximum extent and balance shall be disposed through soakpit.

3. CONDITIONS AS PER
The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of the industry. Additional facilities required, if any, to achieve the standards laid down by the Board shall also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	
1	750 kVA DG set * 2 no	-	-	5.5 m	acoustic enclosure

3.2 Emission characteristics shall not exceed the following:

SI.No.	Parameter	Limiting Standards (mg/Nm3)

4. CONDITIONS AS PER
The Environment (Protection) Act, 1986.

4.1 Bio-Medical waste shall be handled, stored and disposed off as per the Bio-Medical Waste Management Rules, 2016.

4.1.1 Activities for which Authorisation is granted:

Collection		**transport**	
Reception		**Storage**	

Treatment		**Reprocessing/Disposal**	

4.1.2 Type, quantity and mode of storage/collection/disposal of hazardous wastes shall be as follows:

SI.No.	**Bio-Medical Waste**	**Schedule Category**	**Quantity Tonne/year**

Mode of	
Storage	**Disposal**

4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules, 2001

4.3 E-waste shall be disposed off safely as per the E-Waste (Management)Rules, 2016.

5. SPECIFIC CONDITIONS

5.1. For renewal of the consent in case of continuance of discharge/operation of the industry, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring system on or before 31.04.2024. Late application will be accepted with a fine or late fee as applicable.

5.2. Bio-medical waste shall be handled in accordance with the provisions of the Biomedical Waste (Management) Rules 2016.

5.3. Effluent Treatment plant (ETP) shall be functional for the treatment and disposal of waste water generated in the unit at all times.

5.4. The location of the structures including ETP shall be as shown in the drawing attached and no change or alteration to the above shall be made

5.5. Annual report shall be submitted in form IV of BMW Management Rules 2016 on or before 31st March every year for the period from January to December of the preceding year.

5.6. Noise generated by diesel generator sets shall be minimized by providing acoustic enclosures and vibration minimizing system.

5.7. Arrangements for collection, segregation, storage, treatment and disposal of solid waste including garbage shall be provided as per Solid Waste Management Rules, 2016.

5.8. Fire protection equipment provided shall be maintained.

5.9. The conditions specified in the Environmental Clearance no. 21-25/2011-I.A.III dated 12/03/2012 shall be strictly complied with.

5.10. Natural drainage of the area shall be protected.

5.11. Solid waste generated shall be disposed off as per the Solid Waste Management Rules,2016.

5.12. Periodic/Annual Reports shall be submitted through the E-Correspondence in the Boards Online Web Portal.

5.13. Renewable sources of energy such as solar energy shall be utilized for lighting and heating wherever possible.

5.14. There shall be easy access to each and every effluent treatment unit and the final outlet for inspection and drawing of effluent samples.

5.15. Energy and water conservation measures shall be adopted as far as possible.

SREEKALA S
Digitally signed by SREEKALA S
Date: 2019.09.07 15:17:59 +05'30'

DATE :31/08/2019

SIGNATURE & SEAL OF ISSUING AUTHORITY
MEMBER SECRETARY

KERALA STATE POLLUTION CONTROL BOARD
KERALA

To

M/s. Mar Sleeva Medicity,
Cherupumkal,
Palai,
Kottayam - 686575

1. This digitally signed document is legally valid as per the Information Technology Act 2000

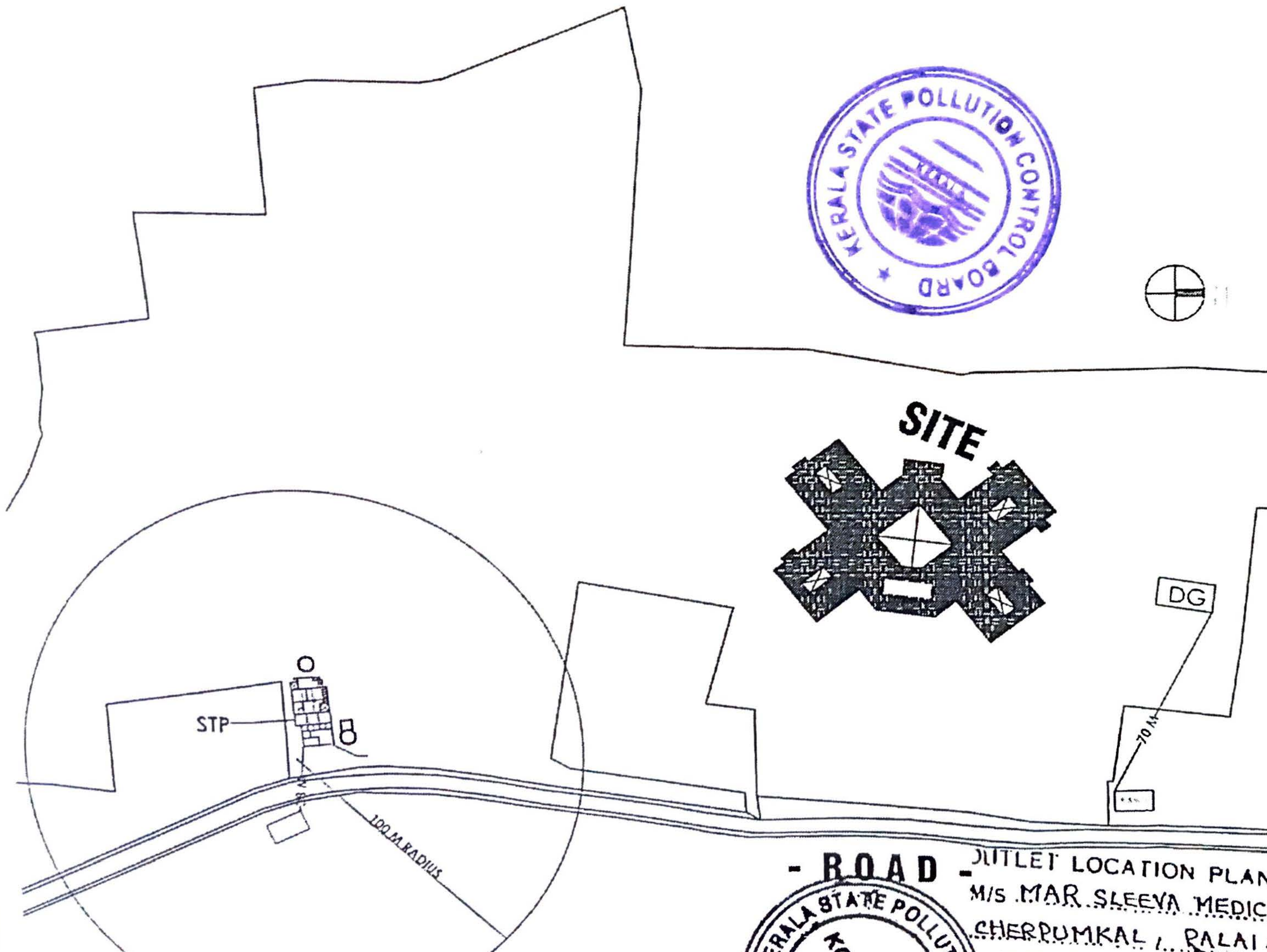
2. For verifying this document please go to krocmms.nic.in and search using date of issue/name of the unit/Application Number in “Consent Granted Applications” link in the home page of the Board’s Online Consent Management and Monitoring System.

COUNTERSIGNED BY.

SREEKALA S
Digitally signed by SREEKALA S
Date: 2019.09.07 15:18:24 +05'30'

MEMBER SECRETARY

KERALA STATE POLLUTION CONTROL BOARD



OUTLET LOCATION PLAN OF
M/S MAR SLEEVA MEDICITY
CHERPUMKAL, PALAI,
KOTTAYAM
ENVIRONMENTAL ENGINEER

KERALA STATE POLLUTION CONTROL BOARD
KOTTAYAM

Client: Mar Sleeva Medicity

Title: Site Plan

Site details

Village	Puliyannoor
Taluk	Meenachil
District	Kottayam
Ward No.	1
Panchayath	Kozhuvanal

LEGEND

SL. NO.	DESCRIPTION	SIZE	QTY
1	SCREEN CHAMBER FOR LAB EFFLUENT	0.80 x 0.60 x 0.70	[illegible]
2	SCREEN CHAMBER FOR LAUNDRY EFFLUENT	1.50 x 0.80 x 0.65	[illegible]
3	SCREEN CHAMBER FOR SEWAGE	1.50 x 0.80 x 0.65	[illegible]
4	SCREEN CHAMBER FOR SULLAGE	1.50 x 0.80 x 0.65	[illegible]
5	GRIT CUM OIL SEPARATOR FOR SULLAGE	4.00 x 1.50 x 1.35 + 0.65 fb	[illegible]
6	COLLECTION TANK FOR LAB	2.50 x 1.30 x 2.50 + 0.40 fb	[illegible]
7	COLLECTION TANK FOR LAUNDRY	23m³ x 2.50 + 1.10 fb	[illegible]
8	FLOCCULATION TANK FOR LAUNDRY	1.20 x 1.20 x 1.50 + 0.30 fb	[illegible]
9	PRIMARY SETTLING TANK FOR LAUNDRY	2.50 x 2.50 x 1.50 swd + 1.20 swd + 0.40 fb	[illegible]
10	PRIMARY SETTLING TANK FOR SULLAGE	3.00 x 3.00 x 1.50 swd + 1.70 swd + 0.40 fb	[illegible]
11	EQUALISATION TANK	100m³ x 3.50 + 0.30 fb	[illegible]
12	ANAEROBIC TANK	4.00 x 4.00 x 4.50	2
13	DENITRIFICATION TANK	4.00 x 4.00 x 4.00 + 0.50 fb	[illegible]
14	AERATION TANK (SPLIT INTO TWO)	4.00 x 2.00 x 4.00 + 0.50 fb	2
15	FLOCCULATION TANK	2.00 x 2.00 x 1.80 + 0.60 fb	[illegible]
16	CLARIFIER	6.00 DIA X 2.50 SWD	[illegible]
17	FILTER FEED TANK	5.20 x 2.80 x 2.50 + 0.20 fb	[illegible]
18	UF FEED TANK	2.60 x 2.50 x 2.50 + 0.20 fb	[illegible]
19	TREATED WATER TANK	32m³ x 3.50	[illegible]
20	SLUDGE DIGESTER	6.00m dia x 3.50 swd	[illegible]
	PLANT ROOM	100m² (Above Tanks 11 & 10)	[illegible]

Scale : NTS

Rev No.	Date		Name	
Rev 00	20.06.19	Drawn	L.G	Jinson
		Appd :	M.N	Muneeb

Green Method Engineering(P)Ltd.
GME
19/95 A1 ATC Building, Madeeppadam Nagar Road, HMT Jn. Kalamassery P.O, Kochi, Kerala 683104
An ISO 9001:2015, 14001:2015 certified company
Email: mail@greenmethodengineering.com Web: www.greenmethodengineering.com
An approved A Class consultant of KSPCB

Annexure - C

FILE NO : PCB/EKM/DO-1/OA-116/19
Date of issue : 04/03/2020

KERALA STATE POLLUTION CONTROL BOARD

CONSENT TO

OPERATE/AUTHORISATION/REGISTRATION

ISSUED UNDER

The Water (Prevention & Control of Pollution) Act, 1974
The Air (Prevention & Control of Pollution) Act, 1981

and

The Environment (Protection) Act, 1986

As per Application No. :12774886
Dated:14-02-2020

TO

M/s GREEN WORMS ECO SOLUTIONS LLP
GREEN WORMS ECO SOLUTIONS LLP
7/537A,NEAR KNM MES
SHCOOL,PUKKATTUMUGALYETHEEMKHANA ROAD,EDATHALA P
O,ALUVA 683561

Consent No. :G19ERRCTON98204
Valid Upto :01/06/2025

1. GENERAL

. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make ariation in or revoke all or any of the conditions as the Board deems fit.

1	**VALIDITY**	01/06/2025
2	Name and Address of the establishment	GREEN WORMS ECO SOLUTIONS LLP 7/537A,NEAR KNM MES SHCOOL,PUKKATTUMUGAL-YETHEEMKHANA ROAD,EDATHALA P O,ALUVA 683561
3	Communication	Telephone :91-8907780555 Fax :- E-mail:infothajudeen@gmail.com
4	Occupier Details	MOHAMMED JAMSHEER CHERUSHOLA HOUSE, EDIVANNA P O,NILAMBUR, MALAPPURAM
5	Local Body	EDATHALA
6	Survey Number	251/2
7	Village	ALUVA EAST
8	Taluk	ALUVA
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	Rs.94.20 LAKHS
11	Scale	Small
12	Category	GREEN
13	Annual fee(Rs) Total Fee remitted(Rs)	Rs.15000.00 Rs.15000.00
14	RAW MATERIAL	PRODUCTS
	DRY WASTE @10000 Kilogram	RECOVERED SORTED MATERIALS: PLASTIC PAPER AND SCRAP PHARMACEUTICAL WASTE E-WASTE TOTAL @10000 Kilogram
15	Total Power Required (HP)	20 HP

2. CONDITIONS AS PER
The Water(Prevention and Control of Pollution)Act, 1974

. This integrated consent is granted subject to the power of the Board to withdraw consent, review and make ıriation in or revoke all or any of the conditions as the Board deems fit.

1	**VALIDITY**	01/06/2025
2	Name and Address of the establishment	GREEN WORMS ECO SOLUTIONS LLP 7/537A,NEAR KNM MES SHCOOL,PUKKATTUMUGAL-YETHEEMKHANA ROAD,EDATHALA P O,ALUVA 683561
3	Communication	Telephone :91-8907780555 Fax :- E-mail:infothajudeen@gmail.com
4	Occupier Details	MOHAMMED JAMSHEER CHERUSHOLA HOUSE, EDIVANNA P O,NILAMBUR, MALAPPURAM
5	Local Body	EDATHALA
6	Survey Number	251/2
7	Village	ALUVA EAST
8	Taluk	ALUVA
9	District	ERNAKULAM I
10	Capital Investment(Rs in Lakhs)	Rs.94.20 LAKHS
11	Scale	Small
12	Category	GREEN
13	Annual fee(Rs) Total Fee remitted(Rs)	Rs.15000.00 Rs.15000.00
14	RAW MATERIAL	PRODUCTS
	DRY WASTE @10000 Kilogram	RECOVERED SORTED MATERIALS: PLASTIC PAPER AND SCRAP PHARMACEUTICAL WASTE E-WASTE TOTAL @10000 Kilogram
15	Total Power Required (HP)	20 HP

2. CONDITIONS AS PER

The Water(Prevention and Control of Pollution)Act, 1974

In case of generation of trade effluent from the industry, effluent treatment system consisting of treatment units having adequate capacity established as per the Integrated Consent to Establish issued shall be operational at all times during which the industry is functional. Additional facilities required, if any, to achieve the standards laid down by the Board u/s 17(1) (g) of the Water Act shall also be made along with.

2.2 Water consumption: -

2.3 Effluent generation: NA

2.4 The characteristics of effluent after treatment shall confirm to the following tolerance limits:

SI.NO.	**Characteristics**	**Unit**	**Tolerance Limit**	
			Sewage	**Trade Effluent**

2.5 Mode of disposal of treated effluent: NA

3. CONDITIONS AS PER
The Air(Prevention and Control of Pollution)Act, 1981

3.1 Adequate air pollution control measures shall be operational at all times during the functioning of the industry. Additional facilities required, if any, to achieve the standards laid down by the Board shall also be made along with.

Stack No.	Sources of Emission	Emission Rate(Nm3/Hr)	Stack Height above		Control Equipment
			Ground Level	Roof Level	

3.2 Emission characteristics shall not exceed the following:

SI.No.	Parameter	Limiting Standards (mg/Nm3)

4. CONDITIONS AS PER
The Environment (Protection) Act, 1986.

4.1 The operation of the industry shall be strictly in compliance with the provisions of the Noise Pollution (Regulation and Control) Rules 2000.

4.2 Used lead acid batteries shall be disposed of as per the Batteries (Management and Handling) Rules, 2001

4.3 Hazardous waste generated, if any, shall be handled as per the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

4.3.1 Activities for which Authorisation is granted

Collection		**transport**	
Reception		**Storage**	
Treatment		**Reprocessing/Disposal**	

4.3.2 Type, quantity and mode of storage/collection/disposal of hazardous wastes shall be as follows:

.No.	Hazardous Waste	Schedule Category	Quantity Tonne/year

Mode of	
Storage	Disposal

4.4 E-waste shall be disposed off safely as per the E-Waste (Management)Rules, 2016.

5. SPECIFIC CONDITIONS

5.2 For renewal of the consent in case of continuance of discharge/operation of the industry, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System 2 months prior to the date of expiry. Late application will be accepted only with fine.

5.3 This consent is granted subject to the power of the Board to review and make variation in or revoke any of the conditions as the Board deems fit as per the relevant Acts/Rules.

5.4 The applicant shall comply with the instructions that the Board may issue from time to time regarding prevention and control of air, water, land and sound pollution

5.5 Arrangements for collection, segregation, storage, handling and disposal of solid Waste including garbage shall be provided and maintained properly.

5.6 Energy and water conservation measures shall be adopted as far as possible.

5.7 Renewable sources of energy such as solar energy shall be utilized for lighting and heating wherever possible

5.8 There shall not be any fugitive emission from the premises.

5.9 Good housekeeping shall be maintained in and around the plant.

5.10 All operations likely to produce dust or noise shall be carried out with appropriate enclosure.

5.11 The consentee shall put up a sign board of size 6x4 ft. near the main entrance of the plant to display the name of the unit and important consent conditions

5.12 No change or alteration of the industrial plant is to be made without the prior written permission of the Board. Any change in the particulars furnished and/or in the identity of the occupier/authorised agent is to be intimated to the Board forthwith.

5.13. There shall be no fugitive emission from the premises.

5.14. Solid waste shall be disposed off scientifically.

5.15. Raw materials and products shall be handled with proper care to prevent spreading of dust.

5.16. There shall not be any trade effluent from the unit.

A M HAREES

Digitally signed by A M HAREES
Date: 2020.03.04 18:58:54 +05'30'

DATE :04/03/2020

SIGNATURE & SEAL OF ISSUING AUTHORITY
ASSISTANT ENVIRONMENTAL ENGINEER

To

MOHAMMED JAMSHEER
CHERUSHOLA HOUSE,
EDIVANNA P O,NILAMBUR,
MALAPPURAM

1. This digitally signed document is legally valid as per the Information Technology Act 2000

2. For verifying this document please go to krocmms.nic.in and search using date of issue/name of the unit/Application Number in "Consent Granted Applications" link in the home page of the Board's Online Consent Management and Monitoring System.

Annexure D

COCHIN TEST HOUSE

ANALYTICAL SERVICES & TESTING LABORATORY

V / 78, Kollanpady, Murungeliparambu Road, Irumpanam P.O., Kochi - 682 309
Mob.: 9446332556, 9846551014, 9387381780. Tel. : 0484 - 2782672
E-mail: cochintesthouse1@gmail.com, info@cochintesthouse.in. Web : www.cochintesthouse.in

TC - 7720

Laboratory Approved by Kerala State Pollution Control Board ('A' Grade)

STACK EMISSION MONITORING REPORT

Report No : CTH/LR/23/10/1509	Issue Date : October 30, 2023
Unique Lab Report Number	***TC772023000001509F***
Name & Address of the customer	**M/s. Mar Sleeva Medicity Palai, Cherupumkal, Kezhuvankulam P. O., Kottayam Dist., Kerala – 686 584**
Monitored By	Cochin Test House
Lab Identification No.	23/10/1509
Identification of Sample	**Stack Emission from 750 KVA**
Monitoring Date	25.10.2023
Dates of analysis	26.10.2023 – 30.10.2023

Sl.No.	Parameters	Unit	Method	Result
1	Particulate Matter	mg/Nm^3	IS : 11255 [Part.01]	44.7
2	Sulphur Dioxide [SO_2]	mg/Nm^3	IS : 11255 [Part.02]	10.6
3	Nitrogen Dioxide [NO_X]	mg/Nm^3	IS : 11255 [Part.07]	38.5
4	Volume of Emission	Nm^3/hr	IS : 11255 [Part.03]	391

End of report.

COCHIN TEST HOUSE Kochi

Verified By

Henry Michel
Authorised Signatory
Chemical
COCHIN TEST HOUSE

NOTE : This test results relate only to the sample submitted for analysis.
The test report shall not be reproduced except in full without the written approval of the laboratory.

Annexure - E

WATER CONSUMPTION MONTHLY 2023			
Sl.No	**Month**	**Raw water (KL)**	**STP Treated Water (KL)**
1)	APRIL	13783	7129
2)	MAY	15018	8037
3)	JUNE	13313	8362
4)	JULY	13296	8477
5)	AUGUST	14396	8023
6)	SEPTEMBER	13624	7124
Total (KL)		**83430**	**47152**

WATER CONSUMPTION DAILY - APRIL 2023

MAR SLEEVA™ medicity palai
A Temple of Health

Sl No.	Date	Raw Water (KL)	STP Treated Water (KL)
1	01-04-2023	494	180
2	02-04-2023	309	177
3	03-04-2023	388	191
4	04-04-2023	440	148
5	05-04-2023	436	210
6	06-04-2023	468	302
7	07-04-2023	273	224
8	08-04-2023	523	200
9	09-04-2023	273	182
10	10-04-2023	377	252
11	11-04-2023	422	230
12	12-04-2023	580	212
13	13-04-2023	584	202
14	14-04-2023	400	306
15	15-04-2023	435	224
16	16-04-2023	662	224
17	17-04-2023	471	277
18	18-04-2023	508	289
19	19-04-2023	474	310
20	20-04-2023	550	287
21	21-04-2023	478	229
22	22-04-2023	552	266
23	23-04-2023	431	256
24	24-04-2023	487	255
25	25-04-2023	475	253
26	26-04-2023	606	258
27	27-04-2023	448	247
28	28-04-2023	352	251
29	29-04-2023	496	285
30	30-04-2023	391	202
Total (KL)		**13783**	**7129**

WATER CONSUMPTION DAILY - MAY 2023

MAR SLEEVA™ medicity palai
A Temple of Health

Sl No.	Date	Raw Water (KL)	STP Treated Water (KL)
1	01-05-2023	403	228
2	02-05-2023	455	267
3	03-05-2023	534	258
4	04-05-2023	494	235
5	05-05-2023	496	295
6	06-05-2023	527	302
7	07-05-2023	486	224
8	08-05-2023	397	200
9	09-05-2023	473	182
10	10-05-2023	452	252
11	11-05-2023	547	264
12	12-05-2023	510	221
13	13-05-2023	533	259
14	14-05-2023	480	286
15	15-05-2023	630	300
16	16-05-2023	507	357
17	17-05-2023	516	302
18	18-05-2023	166	234
19	19-05-2023	677	294
20	20-05-2023	594	287
21	21-05-2023	417	148
22	22-05-2023	579	255
23	23-05-2023	508	302
24	24-05-2023	456	253
25	25-05-2023	423	270
26	26-05-2023	529	267
27	27-05-2023	315	224
28	28-05-2023	523	259
29	29-05-2023	428	273
30	30-05-2023	481	259
31	31-05-2023	482	280
Total (KL)		**15018**	**8037**

WATER CONSUMPTION DAILY - JUNE 2023

MAR SLEEVA™ medicity palai
A Temple of Health

Sl No.	Date	Raw Water (KL)	STP Treated Water (KL)
1	01-06-2023	471	280
2	02-06-2023	493	312
3	03-06-2023	547	277
4	04-06-2023	418	265
5	05-06-2023	396	260
6	06-06-2023	486	283
7	07-06-2023	455	284
8	08-06-2023	389	281
9	09-06-2023	418	237
10	10-06-2023	403	289
11	11-06-2023	451	268
12	12-06-2023	395	265
13	13-06-2023	388	249
14	14-06-2023	407	263
15	15-06-2023	412	188
16	16-06-2023	446	306
17	17-06-2023	450	320
18	18-06-2023	501	290
19	19-06-2023	412	294
20	20-06-2023	460	287
21	21-06-2023	422	225
22	22-06-2023	453	278
23	23-06-2023	444	268
24	24-06-2023	446	286
25	25-06-2023	503	265
26	26-06-2023	473	326
27	27-06-2023	429	296
28	28-06-2023	464	300
29	29-06-2023	454	279
30	30-06-2023	427	341
Total (KL)		**13313**	**8362**

WATER CONSUMPTION DAILY - JULY 2023

MAR SLEEVA™ medicity palai
A Temple of Health

Sl No.	Date	Raw Water (KL)	STP Treated Water (KL)
1	01-07-2023	365	293
2	02-07-2023	240	298
3	03-07-2023	612	282
4	04-07-2023	300	230
5	05-07-2023	335	208
6	06-07-2023	373	211
7	07-07-2023	408	241
8	08-07-2023	354	263
9	09-07-2023	551	254
10	10-07-2023	326	291
11	11-07-2023	435	300
12	12-07-2023	422	276
13	13-07-2023	438	311
14	14-07-2023	438	294
15	15-07-2023	501	318
16	16-07-2023	502	232
17	17-07-2023	422	226
18	18-07-2023	438	267
19	19-07-2023	381	290
20	20-07-2023	449	260
21	21-07-2023	488	302
22	22-07-2023	396	272
23	23-07-2023	512	278
24	24-07-2023	424	273
25	25-07-2023	463	269
26	26-07-2023	428	266
27	27-07-2023	405	271
28	28-07-2023	500	306
29	29-07-2023	463	310
30	30-07-2023	424	290
32	31-07-2023	503	295
Total (KL)		**13296**	**8477**

WATER CONSUMPTION DAILY - AUGUST 2023

MAR SLEEVA™ medicity palai
A Temple of Health

Sl No.	Date	Raw Water (KL)	STP Treated Water (KL)
1	01-08-2023	431	322
2	02-08-2023	453	299
3	03-08-2023	464	265
4	04-08-2023	463	341
5	05-08-2023	427	332
6	06-08-2023	431	283
7	07-08-2023	500	273
8	08-08-2023	469	271
9	09-08-2023	485	292
10	10-08-2023	498	285
11	11-08-2023	555	287
12	12-08-2023	606	256
13	13-08-2023	256	289
14	14-08-2023	452	266
15	15-08-2023	445	296
16	16-08-2023	501	246
17	17-08-2023	451	205
18	18-08-2023	446	255
19	19-08-2023	470	246
20	20-08-2023	442	280
21	21-08-2023	486	254
22	22-08-2023	485	288
23	23-08-2023	488	270
24	24-08-2023	500	239
25	25-08-2023	425	219
26	26-08-2023	408	219
27	27-08-2023	435	248
28	28-08-2023	567	160
29	29-08-2023	439	180
30	30-08-2023	351	181
32	31-08-2023	567	176
Total (KL)		**14396**	**8023**

WATER CONSUMPTION DAILY - SEPTEMBER 2023

MAR SLEEVA™ medicity palai
A Temple of Health

Sl No.	Date	Raw Water (KL)	STP Treated Water (KL)
1	01-09-2023	342	195
2	02-09-2023	464	175
3	03-09-2023	407	213
4	04-09-2023	468	196
5	05-09-2023	433	203
6	06-09-2023	413	216
7	07-09-2023	632	196
8	08-09-2023	445	208
9	09-09-2023	471	188
10	10-09-2023	365	292
11	11-09-2023	489	211
12	12-09-2023	413	296
13	13-09-2023	468	319
14	14-09-2023	474	237
15	15-09-2023	438	241
16	16-09-2023	405	230
17	17-09-2023	455	160
18	18-09-2023	459	105
19	19-09-2023	467	200
20	20-09-2023	499	273
21	21-09-2023	485	219
22	22-09-2023	480	246
23	23-09-2023	457	283
24	24-09-2023	604	474
25	25-09-2023	449	260
26	26-09-2023	421	311
27	27-09-2023	431	289
28	28-09-2023	430	262
29	29-09-2023	427	211
30	30-09-2023	433	215
Total (KL)		**13624**	**7124**

Annexure - F

COCHIN TEST HOUSE

ANALYTICAL SERVICES & TESTING LABORATORY

V / 78, Kollanpady, Murungeliparambu Road, Irumpanam P.O., Kochi - 682 309
Mob.: 9446332556, 9846551014, 9387381780. Tel. : 0484 - 2782672
E-mail: cochintesthouse1@gmail.com, info@cochintesthouse.in. Web : www.cochintesthouse.in

TC - 7720

Laboratory Approved by Kerala State Pollution Control Board ('A' Grade)

TEST REPORT

Report No : CTH/LR/23/10/1508 — Issue Date: October 30, 2023

Unique Lab Report Number	:	***TC772023000001508F***
Name and Address of customer	:	**M/s. Mar SleevaMedicityPalai, Cherupumkal, Kezhuvankulam P. O., Kottayam Dist., Kerala – 686 584**
Sample Drawn By	:	Cochin Test House
Condition of the Sample	:	Acceptable
Particulars of the sample	:	**Drinking Water Sample**
Date of Sampling	:	25.10.2023
Location of Sampling	:	TAP
Sampling Method	:	IS : 17614 [Pt.01] & CTH/MB/SOP/702
Sample Quantity	:	1.25 Litre
Sample code	:	23/10/1508
Date of receipt of sample	:	25.10.2023
Dates of Analysis	:	26.10.2023 – 30.10.2023
Description of the sample by the customer	:	**DRINKING WATER**

Sl.No.	Parameters	Unit	Method	Result	Desirable Limit as per IS 10500:2012
1	Colour	Colour units	IS : 3025 [Pt.04]	2	5 [Max]
2	Odour	---	IS : 3025 [Pt.05]	Agreeable	Agreeable
3	Turbidity	NTU	IS : 3025 [Pt.10]	BDL[MDL-0.8]	1.0 [Max]
4	pH@25°C	---	IS : 3025 [Pt.11]	6.62	6.5 – 8.5
5	Total Hardness as $CaCO_3$	mg/l	IS : 3025 [Pt.21]	40	200 [Max]
6	Iron as Fe	mg/l	IS : 3025 [Pt.53]	BDL[MDL-0.08]	0.3 [Max]
7	Chloride as Cl	mg/l	IS : 3025 [Pt.32]	13.94	250 [Max]
8	Fluoride as F	mg/l	APHA 24th Ed.4500 F D	BDL[MDL-0.1]	1.0 [Max]
9	Total Dissolved Solids	mg/l	IS : 3025 [Pt.16]	70	500 [Max]
10	Sulphate as SO_4	mg/l	APHA 24th Ed.4500 SO_4 E	27.83	200 [Max]
11	Alkalinity as $CaCO_3$	mg/l	IS : 3025 [Pt.23]	27.67	200 [Max]
12	Nitrate as NO_3	mg/l	IS : 3025 [Pt.34]	0.32	45 [Max]
13	Residual Chlorine	mg/l	IS : 3025 [Pt.26]	BDL[MDL-0.2]	0.2 [Min]

Microbiology Parameters

Sl.No.	Parameters	Unit	Method	Result	Desirable Limit as per IS 10500:2012
1	Coliforms	/ 100 ml	IS : 15185 – 2016	Absent	Shall not be detectable in any 100 ml sample
2	*E.coli*	/ 100 ml	IS : 15185 – 2016	Absent	

BDL – Below Detection Limit, MDL – Minimum Detection Limit.

End of report.

Verified By

Drishya
Authorised Signatory
Microbiology
COCHIN TEST HOUSE

COCHIN TEST HOUSE Kochi

Henry Michel
Authorised Signatory
Chemical
COCHIN TEST HOUSE

NOTE : This test results relate only to the sample submitted for analysis.

The test report shall not be reproduced except in full without the written approval of the laboratory.

Annexure -G

COCHIN TEST HOUSE

ANALYTICAL SERVICES & TESTING LABORATORY

V / 78, Kollanpady, Murungeliparambu Road, Irumpanam P.O., Kochi - 682 309
Mob.: 9446332556, 9846551014, 9387381780. Tel. : 0484 - 2782672
E-mail: cochintesthouse1@gmail.com, info@cochintesthouse.in. Web : www.cochintesthouse.in

TC - 7720

Laboratory Approved by Kerala State Pollution Control Board ('A' Grade)

AMBIENT AIR QUALITY MONITORING REPORT

Report No : CTH/LR/23/10/1512		Issue Date : October 30, 2023	
Unique Lab Report Number		***TC772023000001512F***	
Name & Address of the customer		**M/s. Mar Sleeva Medicity Palai, Cherupumkal, Kezhuvankulam P. O., Kottayam Dist., Kerala – 686 584**	
Sampled By	Cochin Test House	Lab Identification No	23/10/1512
Source of monitoring		**Ambient Air Quality Monitoring**	
Environmental Condition		Sunny Day	
Instrument used for Monitoring	Fine Particulate Sampler [CTH/FPS/01] & Resparable Dust Sampler [CTH/RDS/01]		
Mfr. Type/Model	Envirotech, APM 550 & APM 460	Serial No.	36-DTC-2010 & 1810 DTF 2013
Date of Monitoring	25.10.2023 – 26.10.2023	Dates of analysis	27.10.2023 – 30.10.2023

Sl. No.	Parameters	Unit	Method	Results			Limit by CPCB
				Laundry	***Presbytery***	***Main Entrance***	
1	Particulate Matter$_{10}$ [PM_{10}]	$\mu g/m^3$	IS : 5182 [Pt.23]	38.22	24.39	39.54	100
2	Particulate Matter$_{2.5}$ [$PM_{2.5}$]	$\mu g/m^3$	CTH/CH/SOP/462	13.97	13.6	14.1	60
3	Sulphur Dioxide [SO_2]	$\mu g/m^3$	IS : 5182 [Pt.02]	BDL[MDL-4.0]	BDL[MDL-4.0]	BDL[MDL-4.0]	80
4	Nitrogen Dioxide [NO_X]	$\mu g/m^3$	IS : 5182 [Pt.06]	BDL[MDL-6.0]	BDL[MDL-6.0]	BDL[MDL-6.0]	80

BDL – Below Detection Limit; MDL – Minimum Detection Limit.

End of report.

Verified By

COCHIN TEST HOUSE Kochi

Henry Michel
Authorised Signatory
Chemical
COCHIN TEST HOUSE

NOTE : This test results relate only to the sample submitted for analysis.
The test report shall not be reproduced except in full without the written approval of the laboratory.

Annexure - H

COCHIN TEST HOUSE

ANALYTICAL SERVICES & TESTING LABORATORY

V / 78, Kollanpady, Murungeliparambu Road, Irumpanam P.O., Kochi - 682 309
Mob.: 9446332556, 9846551014, 9387381780. Tel. : 0484 - 2782672
E-mail: cochintesthouse1@gmail.com, info@cochintesthouse.in. Web : www.cochintesthouse.in

TC - 7720

Laboratory Approved by Kerala State Pollution Control Board ('A' Grade)

NOISE LEVEL MONITORING REPORT

Report No : CTH/LR/23/10/1513	Issue Date : October 30, 2023
Unique Lab Report Number	***TC772023000001513F***
Name & Address of the customer	**M/s. Mar Sleeva Medicity Palai, Cherupumkal, Kezhuvankulam P. O., Kottayam Dist., Kerala – 686 584**
Monitored By	Cochin Test House
Lab Identification No.	23/10/1513
Identification of Sample	**Ambient Noise Level Measurement**
Method of Measurement	CTH/CH/SOP/467
Monitoring Dates	25.10.2023 – 26.10.2023

Noise Level Values Reported in dB (A) Leq as per the details given below

Sl. No.	Monitoring Location Details	Results				Limit by CPCB
		East Side	West Side	South Side	North Side	
1	Ambient Noise Level measured at a distance of 1.0 meter outside boundary					
	Day Time	43.2	43.0	42.8	42.9	50
	Night Time	36.2	36.6	36.3	36.4	40

End of report.

COCHIN TEST HOUSE Kochi

Verified By

Henry Michel
Authorised Signatory
Chemical
COCHIN TEST HOUSE

NOTE : This test results relate only to the sample submitted for analysis.
The test report shall not be reproduced except in full without the written approval of the laboratory.

Annexure - I

PALA DIOCESAN MEDICAL EDUCATION TRUST

Reg. No. 28/IV/05
BISHOP'S HOUSE, PALAI
Pin - 686 575, KERALA
Tel. 04822-202000, 216350
E-mail address : aramanapala@gmail.com

24-05-2022

The Secretary,
Kozhuvanal Grama Panchayat,
Kozhuvanal Panchayath Office,
Cherpunkal - Kozhuvanal Road,
Kozhuvanal, Kottayam,
Kerala-686573

Sub:- Post Environmental Clearance – Proposed expansion of existing Hospital Complex project at Sy. Nos. 86/5-1, 86/4, 86/7, 86/3-2, 86/3, 86/3-1, 87/7, 87/4, 85/1-1, 85/4, 87/5-1-1, 100/6, 85/6, 87/2, 88/5, 87/6, 85/3, 86/6-1, 88/6-2, 86/5-2, 86/1, 88/6, 88/4, 87/1, 86/6, 88/11-1, 87/3-1, 100/8, 100/7, 98/2, 100/5, Puliyannoor Village, Kozhuvanal Panchayat, Meenachil Taluk, Kottayam District, Kerala – Compliance to the Conditions of E.C. – Reg.

Respected Sir,

1. This has reference to the Environmental Clearance issued to the construction as part of development of proposed expansion of existing Hospital Complex project at Sy. Nos. 86/5-1, 86/4, 86/7, 86/3-2, 86/3, 86/3-1, 87/7, 87/4, 85/1-1, 85/4, 87/5-1-1, 100/6, 85/6, 87/2, 88/5, 87/6, 85/3, 86/6-1, 88/6-2, 86/5-2, 86/1, 88/6, 88/4, 87/1, 86/6, 88/11-1, 87/3-1, 100/8, 100/7, 98/2, 100/5, Puliyannoor Village, Kozhuvanal Panchayat, Meenachil Taluk, Kottayam District, Kerala issued by Ministry of Environment, Forest, and Climate Change (Impact Assessment Division), Govt. of India vide EC Identification No. EC22A038KL132864 & File No. 21-25/2022-IA-III dated 20.05.2022.

2. We hereby submit a self attested copy of the Environmental Clearance Order vide EC Identification No. EC22A038KL132864 & File No. 21-25/2022-IA-III dated 20.05.2022. This is in compliance to the condition of the Environmental Clearance Order.

Kindly acknowledge the receipt of the same.

Thanking you,
Yours respectfully,
For M/s Palai Diocesan Medical Education Trust
For Pala Diocesan Medical Education Trust

Kaniyodickal

Msgr. Dr. Joseph Kaniyodickal
(President) President

Encl: As above

Received application
SECRETARY
Kozhuvanal Grama Panchayat
Pro
Sr. clerk
24/05/2022

OFFICE OF THE KOZHUVANAL GRAMA PANCHAYAT
KOTTAYAM DIST.
PIN: 686 573
KOZHUVANAL P.O.

MAR SLEEVA® medicity palai A Temple of Health	Environmental Policy	Page 1 of 17
		Issue Date:
	/POL/000	Revision No:00
		Revision Date: NA

Purpose:

To manage and protect public health and safety by establishing procedures to limit or eliminate harmful substances entering in to the environment.

Scope:

All Staff including credentialed Specialists, contractors and suppliers will be actively assisted in achieving compliance with this policy.

Policy:

Mar Sleeva Medicity Palai is committed to taking an active role in caring for the environment by demonstrating continuous improvement in its environmental performance.

Abbreviations:

EMP: Environment Monitoring Policy

RO- Reverse Osmosis

HEPA-High Efficiency Particulate Absorbing Filter

OT- Operation Theatre

CSSD- Central Sterile Supply Department

AC- Air Conditioning

ICU- Intensive Care Unit

F & B- Food and Beverages

Objectives

1. Minimise or negate any environmental impacts created by Mar Sleeva Medicity Palai with a focus on and commitment to continual improvement.
2. To comply with all applicable Health, Safety and Environmental laws & legislation.
3. Work with our suppliers and clients to encourage, influence and empower them wherever possible to reduce their environmental impact.
4. Prevent pollution to land, air and water.
5. Reduce water and energy use.
6. Minimize waste and increase recycling wherever possible.
7. Identify and manage environmental risks and hazards.

8. Involve customers, suppliers and contractors in the implementation of our objectives.
9. Promote environmentally responsible purchasing.
10. Provide suitable training to enable employees to deal with their specific areas of environmental control.
11. Improve the environmental efficiency of our transport and travel.
12. Identify a range of mitigation measures which could reduce and mitigate the potential impacts to minimal or insignificant levels
13. To establish a method of monitoring and auditing environmental management practices during all phases of development
14. Detailed specific actions deemed necessary to assist in mitigating the environmental impact of the project
15. Ensure that the construction and operational phases of the project continues within the principles Environmental Management

Related Legislation:

- Water (Prevention and Control of Pollution) Act, 1974
- Air (Prevention and Control of Pollution) Act, 1981
- Atomic Energy Act of 1982
- The Environment (Protection) Act, 1986
- The Wildlife (Protection) Act, 1972, Amendment 1991
- The Forest (Conservation) Act, 1980
- Biomedical Waste (Management and Handling) Rules, 1998

Roles and Responsibilities

- **Project Director** is responsible for ensuring that the EMP is implemented during operation of the Hospital.
- **Project Manager** is responsible for ensuring that the EMP is implemented during the pre-construction and construction phases of the project.

- **Patient safety officer (Non Clinical) and Safety department** is responsible for monitoring and ensuring the implementation of the EMP during the pre-construction and construction phases of the project and operation of the Hospital.

Project Director

The Project Director is responsible for overall management of the EMP implementation during operation of the Hospital Building Facilities. The following tasks will fall within his responsibilities:

a) Be aware of the findings and conclusions of the Environmental Impact Assessment and the conditions stated within the EIA License issued by MoEF.
b) Be familiar with the recommendations and mitigation measures of this EMP, and implement these measures
c) Complying Environment monitoring statutory requirements of KSPCB by periodical testing of samples as recommended by the authorities
d) Disposal of Hospital waste management through Pollution control board approved authorized agencies
e) Implementation of corrective action for the shortcomings if any
f) Ensure all site personnel are fully competent and trained in the tasks to be undertaken
g) Will identify the hazards associated with the works, and put in place control procedures

Project Manager:

Project Manager is responsible for overall management of the project and MP implementation. The following tasks will fall within his responsibilities:

a) Be aware of the findings and conclusions of the Environmental Impact Assessment and the conditions stated within the Environment Clearance issued by MoEF.
b) Be familiar with the recommendations and mitigation measures of this EMP, and implement these measures
c) Monitor site activities on a daily basis for compliance
d) Conduct internal audits of the construction site against the EMP
e) Confine the construction site to the demarcated area

f) Ensure that any work carried out under their control is in accordance with all contract and regulatory requirements, including method statements and risk assessments.
g) Implementation of corrective action for the shortcomings if any
h) Construction waste management as per the regulations
i) Constantly look out for hazards from equipment and materials
j) Will identify the hazards associated with the works, and put in place control procedures
k) Ensure all site personnel are fully competent and trained in the tasks to be undertaken

Patient safety officer (Non Clinical) and Safety department

Hospital Environment safety officer is responsible for Monitoring of the EMP during the pre and construction phase and Operation of the Hospital. The following tasks will fall within his responsibilities:

a) Be aware of the findings and conclusions of the Environmental Impact Assessment and the conditions stated within the EIA Clearance issued by MoEF.
b) Be familiar with the recommendations and mitigation measures of this EMP
c) Conduct monthly audits of the construction site according to the EMP and EIA License conditions
d) Complying Environment monitoring statutory requirements of KSPCB by periodical testing of samples as recommended by the authorities
e) Educate the construction and operation team about the management measures of the EMP and EIA License conditions
f) Regularly liaise with the construction team and the project Manager and Operation team.
g) Recommend corrective action for any environmental non-compliance incidents on the construction site; and
h) Compile a regular report highlighting any Compliance and non-compliance issues and submit report to Environment Monitoring cell.
i) Ensure all site personnel are fully competent and trained in the tasks to be undertaken
j) Will identify the hazards associated with the works, and put in place control procedures

Key environmental management goals include:

- Minimising waste by evaluating operational activities, ensuring they are efficient and effective.
- Actively promoting involvement in sustainability projects and practices both internally and amongst your customers and suppliers
- Improve education, relating to environmental sustainability policies and practices
- Maintain and monitor data on key indicators such as water, energy use and waste

I. Waste Management

Waste management is crucial to promote high quality of healthcare and safe environment within hospitals. Marsleeva Medicity Palai is practicing the biomedical waste management rules 2018. The most important factors that should be considered in waste management systems are

- Collection system in the generation site (i.e. segregation system, type of containers/bags)
- Time and temperature of temporary storage (generation side)
- Transport requirements
- Central storage conditions
- Approved disposal method
- Bio-medical waste is weighed, scanned and handed over to IMAGE.
- Collection of wastes from different areas is scheduled and exclusive lift for transportation arranged.
- Regular monitoring to ensure compliance by HIC team
- Necessary PPE and vaccinations for BMW handlers.
- EPA certified cleaning agents

Refer Bio medical waste management – QSP 03- HIC Manual, QSP 33-Housekeeping Manual

II. Water Management

1. Maintaining water quality

The hospital shall have more than one source of water at all times

- Ground water/ Surface water
- Tanker through external vendors, Owned Bore wells as backup in crisis situations
- City supply

The water shall be tested for hardness regularly as per WHO 10500 norms. The schedule is as follows:

a. Test for hardness –daily
b. Testing for all micro organic and physical parameters –monthly.

The water is filtered through the sand bed filter and then softened by the simple softener and also chlorinate and pumped into the treated water tank. Water is then passed through the U V Filter from the hydro pneumatic circulation system of water supply. The hygiene and quality of water is maintained through a well-defined process which also includes the tank cleaning process. The water from the Reverse Osmosis plant shall be used only for dialysis and the CSSD. The hospital shall ensure water quality shall comply with international norms.
Cleaning of the water tanks are displayed on the tanks itself.

2. Water conservation

Rain Water Harvesting

Kottayam has an average annual rain fall of 3130.33 mm. This will be available in nearly 80 rain days scattered over monsoon spells and a few summer showers.
At present the rainwater is being harvested for the use of Hospital. During rainy days, rainwater will be harvested from the roof top and stored in underground tanks of 1668 cum capacity and ground tank of 256 cum capacity.
Un-stored rain water will be used to charge ground water through recharge pits. Rainwater harvesting system is as per KBR norms.
In areas where ground water recharge is not feasible, the collected rainwater is used after treatment and UV disinfection.

3. Sewage Treatment Plant (STP)

The purpose of the STP is to treat the waste water generated by various users in hospital premises and bring it to within prescribed limits of Kerala State Pollution Control Board the quality and use the water for different purposes like irrigation, Gardening, HVAC cooling tower water and toilet flushing.

Operation & Maintenance of Sewage Treatment plant & Pumps associated to the Plant, assurance the quality of STP filtered out water within prescribed limits of Kerala State Pollution Control Board.

Daily, weekly, monthly and annual maintenance plan of STP.

Refer Sewage Treatment Plant – QSP 18- Engineering Manual

III. Infection Control

Infection control provides a framework for identification of a hazard and development of an action plan to eliminate the hazard or minimise its effect through control measures. Control has been achieved by recognising the means of growth, reproduction and transmission of pathogenic microorganisms. The main components of an effective infection control program are illustrated in Figure 2 and listed as following:

- Education and training
- Surveillance of infection
- Policies, procedures, and guidelines
- Audit processes
- Documented arrangements
- Monitoring of hospital hygiene

Standard precautions include the following items

- Hand washing and antisepsis (hand hygiene)
- Use of personnel protective equipment when handling blood, body substances, and secretions
- Appropriate handling of patient care equipment and soiled linen
- Prevention of needlestick / sharp injuries
- Environmental cleaning and spills-management
- Appropriate handling of waste

Additional (transmission-based) precautions while ensuring standard precautions include Policies and procedures for

- Airborne precautions
- Droplet precautions
- Contact precaution

Procedures with Responsibilities

Sl No	Description	Responsibility
1.	**Environmental Surveillance** a) To Monitor Air Culture in Operating Room on Monthly Basis b) Infection department prepares an annual plan for Air sampling. c) OT In charge/Link Nurse is responsible to take air culture on monthly basis by using Air Sampler.	Infection Control In charge OT In charge/Link Nurse

	d) OT In Charge/link Nurse is responsible to raise zero billing for air sampling. e) Each sample to be billed. f) Air sampler which is battery powered should be checked to ensure the battery status before use g) Air sampler must be subjected to routine calibration by clinical engineering team. h) HEPA filters and AC should be turned on for a minimum of 6 hours after deep scrubbing and cleaning. i) The number and volume of samples taken in each area should be considered. The number of samples will depend on the size and the grade of the area being monitored. In total, a minimum volume of 1000 litres (1 m3) should be sampled. This may be obtained from one sample or in larger areas from a number of samples. • OT in charge collects media from microbiology • Media plates should be examined prior to use for signs of contamination. • The equipment must be sterilised or disinfected prior to transfer into clean areas. • All media plates must be handled carefully to avoid inadvertent contamination. • All media plates must be appropriately labelled by area date and time. • All personnel collecting samples should mandatorily wear PPE. **Sampling Details** The following details should be recorded: 1. Sample location 2. Date and Time sample taken 3. Length of time plate exposed 4. Flow rate adjusted in L/min 5. Operator responsible for exposure of samples. **The following areas should be examined where action levels are repeatedly breached:** **Identify** 1. Possible cause 2. Contaminating microorganisms **Investigate** Whether isolated sample or whole area involved Personnel - operator status (grade), level of training, health, technique, wash p. Cleaning procedures	Clinical Engineering OT In charge/Link Nurse OT In charge/Link Nurse OT In charge/Link Nurse Infection Control In charge Infection Control In charge

	Changing procedure HEPA filter integrity of room/clean air device Processes carried out Previous test results for trends or other identified problems. **Water Sampling** j) RO water culture shall be done in monthly basis on monthly basis in our laboratory. k) Endotoxin shall be done on monthly basis. **Areas** RO ports in Dialysis Department RO ports in all ICUs RO water inlet RO water Out let F&B Feed Preparation area RO port in burns unit RO port in transplant unit Water outlets in Dental chair, Endoscopy, colonoscopy biopsy channel, cystoscopy channel **RO tank Cleaning Process** 1. Dialysis RO tank 2. ICU/CSSD RO Tank 3. NS-43 RO Tank ➢ First week Ns-43 RO tank Cleaning Process ➢ Third Week Dialysis RO Tank Cleaning, cleaning dates are displayed on the tanks. ➢ Fourth Week ICU RO tank Cleaning ➢ Infection control in charge to communicates all areas about RO tank cleaning via mail. ➢ 24 hrs for RO tank Cleaning process ➢ Engineering department sends communication to all departments after processing. **The important points to be considered which should be carried out while sampling:** 1. All Unit in charge and Engineering collects the RO water by the coordination of Infection control team.	Infection control in charge

	2. Engineering department sends water for endotoxin test to approved lab.	Head-Engineering
	Department of Gastroenterology water culture 1. Endoscope, colonoscopy and bronchoscope channel flushed and water send to lab for culture and sensitivity as per the pre-defined schedule. 2. Monthly once all scope samples to be sent	Unit in charge and MEP Technician
	Food Culture 1. Food Culture shall be sent to lab on monthly basis by F & B team 2. Food culture samples are storing for three days.	F & B Manager

Also Refer Construction and Risk assessment in Infection control – QSP 03- HIC Manual

IV. Energy Conservation

1. Upgrading energy efficiency

 Solar Power Plant

Mar Sleeva Medicity has a solar power plant of installed capacity 200kw, which generate 800kwh units per day, and the plant is directly connected to the Hospital electrical grid for utilizing the energy. The solar panels provide a 25+ years of long life with very little maintenance.

By using renewable source of energy, we have to reduce carbon emission.

The functioning of solar power plant daily checked by the Engineering department. The records

are kept with the Engineering department.

 Replacing fluorescent lighting with LED bulbs eliminates the hazards of mercury and other Metals.

2. Energy efficiency / Green building:

- Efforts shall be made for energy conservation in the hospital through judicious use of the resources (water, power) and efficient management of waste water & solid waste.
- The water from ETP are used for gardening purposes.
- Rain water harvesting may reduce the water consumption
- Wherever possible Solar energy utilization shall be put to use – particularly for hot water requirements
- Use of appropriate LED lamps at major patient care areas are likely to result in reduced power consumption.
- Monthly audit of water & power consumption will facilitate focus on high consumption areas thereby resulting in conservation of power & water over a period.
- Appropriate re-designing of lobby areas / patient waiting areas with proper ventilation & natural day light may result in reduced energy consumption for lighting & air circulation

Refer- POL/FMS/01 Safe and Secure Environment

V. Patient Safety Environment

1. Safer biohazard Handling

Biomedical waste are segregated as per hospital policy into colour coded bags and transported to Government approved facility for treatment and disposal.

- Well Defined Bilingual MSDS
- Well established Spill Management
- Hazardous marking at the point of entry itself
- Dedicated Hazmat cupboard in each user end area and at the main storage as well
- Using NFPA guidelines to identify the HAZMAT
- Department wise HAMAT indexing and scoring matrix

2. Reprocessing singe use devices

To save single-use devices (SUDs) from cluttering landfills, Mar Sleeva Medicity has policy for reprocessing them.
Operating room sterile packs are customized with only needed supplies for each surgery in order to reduce the wastage of items. Marsleeva Medicity is committed to provide aseptic surgery to prevent infections to patients. Reprocessing of equipment's is done by following the national and international guidelines like CDC, WHO etc.

3. **Radiation Safety**

Existence of radiation safety program that cover and support the following activities

- Regulatory activities related to radioactive material license
- Safety Layout Approval from Atomic Energy Regulatory Board
- Multilevel relation safety training
- Monitoring of occupational radiation doses of personnel
- Control of radioactive materials
- Active participation in planning of new or remodelled facilities
- Response and investigation of incidents/accidents
- Quality management program.

Refer AAC-POL-11 Radiation Safety Programme

4. **Fire Safety Initiatives**

- Well established system
- Fire Extinguishers -375
- Auto dispense extinguisher in all panel rooms and IT server rooms
- Automated Water Hydrant system with the capacity of 380000 lit
- Evacuation chairs and trolleys 1 in each wing in a floor
- AMCS & PMCs

5. **Electrical Safety Check Lists**

- Protecting Relay testing and record keeping
- Harmonic Analysis
- Thermographic Report
- AMCs & PPMs
- Audiometry Test and Annual health Checkups

6. **Telehealth and E-Health:**
   Virtual consultations and remote monitoring reduce the need for patients to travel, cutting down on carbon emissions and enhancing access to healthcare services, especially in remote areas.

VI. Environmental Conservation

1. Noise

Hospitals have various sources of noise such as alarms, paging systems, telephones, computer printers, televisions, delivery carts, staff conversation, equipment, housekeeping activities, air conditioning systems, doors opening and closing, and sounding systems, Boilers, MRI room, Generator room etc. Physical effect of the noise is human stress which should be avoided in hospital environment.
One form is to measure the noise level periodically to reduce patient exposures to such noises. Another approach is to perform a regular check and maintenance to all systems that are considered as sources of noise.

Employees are provided with necessary hearing aids and annually hearing tests are carrying out. Hospital safety department is doing the site study before the construction processes and when necessary.

2. Pest control

Hospital occupants are vulnerable to pesticides yet pests are unacceptable in such an environment. Therefore, it is vital that the hospital has a pest management program that effectively prevents and controls pest problems using the least hazardous approach. Hospitals experience pest problems ranging from mice, ants, flies, and spiders inside facilities to weeds and other insects on hospital grounds. Pests have the potential to cause harm by spreading disease, triggering allergies or asthma attacks, causing painful stings, which can be life threatening to those with allergies, contaminating food, or causing structural damage. Pest problems usually signal larger problems with a health care facility's sanitation, maintenance and soil health.
Aspects of a pest control program

Education: Educational programs shall emphasize the need for hospital occupants to monitor and report pest problems.

Monitoring: Regular site inspections and pest trappings (e.g. with mousetraps or glue boards) help determine whether pests are present and whether they are present at a level that requires control measures.

Pest Prevention:

Non-chemical prevention shall be the primary means of pest. Buildings should be designed to be as pest resistant as possible by:

- Caulking cracks and gaps in the building to block pest entry
- Grading away from the building to prevent water pooling that fosters mould growth
- Landscaping with indigenous vegetation that is naturally pest resistant
- Avoiding indoor plantings that foster mould growth and can be attractants for pests; and,
- Keeping vegetation away from buildings to reduce mould growth and pests' access to the building

3. Green Belt Development

There will be all efforts for improving the environmental quality of the plant complex through tree planting in organized manner. The trees will be planted in vacant areas, along the banks of the river etc. to improve water percolation in ground, to prevent soil erosion, dust prevention etc.

4. Reduction in the usage of plastics:

All plastics in the hospital are reduced by the usage of sustainable environment friendly options, for eg: all the staff are encouraged to use reusable bottles instead of plastic bottles; Plastic straws in cafeteria are replaced with paper straws.
We also aim at reducing the usage of paper and going digital for all administrative purposes, which in turn results in the reduction of cutting of trees

5. Environmental Safety Initiative

- Safety color codes for pipes and cans
- Marking hazards
- Provision of safety signs (Danger, Caution, and Instruction signs) Lockout/Tag-out (LO/TO)
- Provision of sanitation facilities
- Well established STP
- Regular Water Testing
- EPA certified Cleaning agent

6. Maintaining ambient air quality Facility

Quality air is fundamental to health and well-being. Indoor Air Quality (IAQ) is an important issue from the health and safety point of view. Hospital air conditioning assumes a more important role than just the promotion of comfort. Patients in controlled environment generally have more rapid physical improvement than do those in uncontrolled environment. Air quality at hospitals needs

special precautions during design and maintenance stage to prevent infections from spreading. 50% of all illnesses are either caused by or aggravated by polluted indoor air.
Primary methods of controlling air quality are:

- Elimination: removing potential contaminants from the workplace
- Substitution: replacing materials with alternatives that are less harmful
- Dilution: the reduction in concentration of harmful contaminants through the introduction of less contaminated or uncontaminated air

Refer maintaining ambient air quality Facility – QSP-29 Safety Manual

VII. Engineering Controls

1. Engineering and Maintenance Controls

- Centralised water cooled air conditioning system
- Heat recovery wheel in OT
- HEPA filters in OT
- Building Management system (BMS)
- Preventive maintenance
- Push type tap in public areas
- Aerators to reduce the water flow in taps

Environmental Management Plan during Pre and Construction Phase Table -1

Environmental Component	Remedial Measures	Time frame
Water		
Surface water sources	No disposal of any Wastewater outside.	Throughout Construction Phase
Drinking Water Requirement	Arrange water without affecting local requirement	Throughout Construction Phase
Wastewater from Workers' camp	Ensure proper sanitation and Drainage. No direct wastewater discharge in waterbodies or the rivers	Throughout Construction Phase

Air & Noise		
Dust Generation	Spraying of water wherever required	Throughout Construction Phase
Gaseous Emission from Construction work vehicles	Ensure checking of vehicular emission and obtaining Pollution Under Control Certificate	Throughout Construction Phase
Noise from machineries and construction	Ensure machineries meeting noise level standards	Throughout Construction Phase
Land		
Land Development	Preserve the excavated topsoil to be used for green belt development.	Throughout Construction Phase
Solid Waste from	Ensure dumping at	Throughout
construction work	preselected location	Construction Phase
Others		
Occupational Health	Ensure necessary facilities according to Factories Act	Throughout Construction Phase

Environmental Component	Remedial Measures	Time frame
Wastewater	No discharge of untreated wastewater outside the plant	Throughout Operation
Air Quality	Regular Monitoring according to schedule	Throughout Operation

Emission Quality	Regular Stack emission monitoring according to schedule	Throughout Operation
Water Quality	Monitoring of wastewater quality before Discharge	Throughout Operation
Noise	All machineries would follow relevant noise Regulations.	Throughout Operation
	Regular Monitoring according to schedule	
Solid Waste	Disposal at preselected site within the premises	Throughout Operation
Hazardous and E waste	Disposal through KSPCB/CPCB approved agencies	Throughout Operation
Biomedical waste	Disposal through KSPCB approved agencies	Throughout Operation
Safety	Maintain all safety provisions	Throughout Operation
Statutory Requirements	Meet all Statutory Requirements within time schedule	Throughout Operation