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ITL/TVM/FAC/SEZ/028/2022

23rd Nov 2022

The Administrator,
State Environment Impact Assessment Authority (SEIAA),
K.S.R.T.C Bus Terminal Complex,
4th Floor, Thampanoor,
Thiruvananthapuram - 695 001

Dear Sir,

Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of Apr-2022 to Sep-2022 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.

Reference: ECC No: 647/SEIAA/EC1/4943/2013 dated 16.02.2016

Please find enclosed Six months' report for the project with relevant annexures.

Thanking You,
Yours faithfully

INFOSYS LIMITED SEZ TRIVANDRUM

Devi Padmanabhan Nair
Regional Manager – Facilities

Enclosures:

1. Reports –
   Annexure-1: STP outlet sample analysis report
   Annexure-2: UGR Out sample analysis report
   Annexure-3: Ambient air quality report
   Annexure-4: DG Stack emission report
   Annexure-5: Noise level monitoring report
   Annexure-6: Solar Power generated details

STATE ENVIRONMENT IMPACT ASSESSMENT AUTHORITY, KERALA

23/11/22

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MOEF report for Construction Phase& Operation Phase (SEZ) Apr'22 to Sep'22.

<table>
<tr><th>Sl No.</th><th>Conditions Imposed</th><th>Compliance taken by us</th></tr>
<tr><td colspan="3">Water</td></tr>
<tr><td>1.</td><td>Water requirement & sources</td><td>Water is sourced through Technopark which is treated and stored in Underground reservoir for operation. Sewage water is treated at the STP within the campus.
Roof rainwater is collected, stored & treated to be used for domestic purpose.</td></tr>
<tr><td>2.</td><td>RWH units</td><td>Towards collecting rainwater, 2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desilting.</td></tr>
<tr><td>3.</td><td>Facilities for liquid waste treatment</td><td>Sewage generated in the campus is treated through Sewage Treatment Plant (STP) of capacity 500KLD which is based on Membrane Bio Reactor Technology (MBR). Recycled water from Sewage treatment plant will be utilized for Irrigation, flushing & cooling purposes. Treated water quality confirms to KSPCB prescribed standard (Annexure 1).
STP Outlet Report detail: Sep 2022.
<table>
<tr><th>Parameter</th><th>Stipulated Limit</th><th>Results</th></tr>
<tr><td>Ph</td><td>6.5 to 8.5</td><td>7.12</td></tr>
<tr><td>TSS in MG/L</td><td>20 mg/l</td><td>BDL</td></tr>
<tr><td>Oil and Grease</td><td>1 mg/l</td><td>BDL</td></tr>
<tr><td>BOD in mg/l</td><td>3 mg/l</td><td>2mg/l</td></tr>
<tr><td>E-Coli</td><td>NIL</td><td><2</td></tr>
<tr><td>Residual Chlorine</td><td>1.0 mg/l</td><td>BDL mg/l</td></tr>
<tr><td>COD in mg/l</td><td>20 mg/l</td><td>8.0 mg/l</td></tr>
<tr><td>TDS in mg/l</td><td>Nil</td><td>305 mg/l</td></tr>
<tr><td>Total Nitrogen</td><td>Not more than 10 mg/l</td><td>1.28 mg/l</td></tr>
<tr><td>Ammonia</td><td>Not more than 5 mg/l</td><td>BDL</td></tr>
</table></td></tr>
<tr><td>,4.</td><td>Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers</td><td>No impoundment, damming, realignment or other changes to the hydrology of surface water courses is done.
We have a thodu/canal passing through the campus, which has been maintained and water flow has been enhanced by pitching with additional culvert in the downstream</td></tr>
<tr><td>5.</td><td>Water quality meeting requirements</td><td>Monthly monitoring is carried out through a MOEF approved external agency to ensure that the water quality meets IS 10500 requirement and reports attached for the last 6 months (Apr'22 to Sep'22) and maintained at site. (Annexure 2).</td></tr>
<tr><td>6.</td><td>Provisions for use of recycled water</td><td>Recycled water from STP is utilized for irrigation, flushing and cooling requirements within the campus.</td></tr>
<tr><td colspan="3">LAND</td></tr>
<tr><td>7.</td><td>Access road to the site –Width & Condition</td><td>Main Access Road to the site is through NH-66 by-pass and service road available for easy entry to the site.
For safety movement of the pedestrians and vehicles, crash barriers and traffic signals are placed along the service road and at the NH Sides</td></tr>
<tr><td>8.</td><td>Storage of explosives/hazardous substances</td><td>All precautionary measures have been taken and also obtained valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31st Dec 2030.</td></tr>
<tr><td>9.</td><td>Facility for solid waste management.</td><td>In Operation phase as part of solid waste management, segregation is achieved at source by provision of signage's, color coded bins and the same is stored and disposed asper the standards. The food waste generated is fed in to 350kg capacity digester biogas plant within the campus.
<table>
<tr><td>Type of Waste</td><td>Avg quantity (Apr'22 to Sep'22)</td></tr>
<tr><td>Food Waste</td><td>1380kg/month</td></tr>
</table></td></tr>
<tr><td>10.</td><td>Proneness to natural hazards</td><td>As per the Indian Standards Seismic Zoning Map, the campus area comes under Zone – III, moderate damage risk zone.</td></tr>
</table>

<table>
<tr><td></td><td></td><td colspan="2">Scheduled Mock drills are conducted so as to make the employees aware on what to do in case of an emergency. Safe Assembly point identified to accommodate all the employees safely in one place in case of an emergency.</td></tr>
<tr><td>11.</td><td>Topsoil, overburden etc.</td><td colspan="2">The topsoil is used for landscaping work.</td></tr>
<tr><td colspan="4">AIR</td></tr>
<tr><td rowspan="2">12.</td><td rowspan="2">Air quality meeting requirements</td><td>Dust emission from construction phase</td><td>Provision of wind breakers (GI Sheets/green shade) as barrication for controlling dust is provided.
Monthly monitoring of ambient air is done across the campus, and reports attached for last 6 months (Apr'22 to Sep'22) in (Annexure 3).</td></tr>
<tr><td>Emissions from combustion of fossil fuels</td><td>There is no major air pollutant generating source except DG sets and vehicular movement during construction and operation phase.
DG's are used as backup power generation in case of Grid power failure. Appropriate stacks with stipulated height is provided for DG's as Air pollution control measures. Monthly monitoring of stack emission is done by an MOEF approved third party Vendor and reports attached for last 6 months (Apr'22 to Sep'22) and report maintained. (Annexure 4).
<u>Stack Monitoring Report Detail – Sep'22 (DG 2 P II)</u>
<table>
<tr><th>Parameter</th><th>Stipulated Limit</th><th>Results</th></tr>
<tr><td>Particulate Matter</td><td>75mg/ Nm^3</td><td>47.82 mg/ Nm^3</td></tr>
<tr><td>Sulphur Dioxide</td><td>Nil</td><td>21.33 mg/ Nm^3</td></tr>
<tr><td>Oxides of Nitrogen as NO2</td><td>710 ppmv</td><td>16.90 ppmv</td></tr>
<tr><td>Carbon Monoxide</td><td>150 mg/ Nm^3</td><td>130.73 mg/Nm^3</td></tr>
<tr><td>Non-methane Hydrocarbon</td><td>100 mg/ Nm^3</td><td>4.21 mg/ Nm^3</td></tr>
</table></td></tr>
<tr><td>13.</td><td>Noise level meeting requirements</td><td>➢ During Construction Phase:
There will be some noise generated due to cutting of marble and other stone materials
➢ Uninterrupted movement of heavy and light vehicles at high speeds may cause increase in ambient noise levels on the project road (No significant impacts)</td><td>➢ Marble and Tiles are located far away from the operational phase, ie at designated area thereby decreasing the effect of noise pollution. Workers are equipped with Personal Protective equipment's (PPE's).
➢ It is ensured that good, conditioned vehicles are used for transporting construction materials thereby resulting in decrease of noise levels, also strictly following the speed limit of 20km/hr and securities posted to keep a check on vehicle speeding. Transportation is during non-peak hours.
➢ Monthly ambient noise monitoring is done, and reports attached for last 6 months (Apr'22 to Sep'22). (Annexure 5).</td></tr>
<tr><td>14.</td><td>Likely emissions effecting environment</td><td colspan="2">There is no major air pollutant generating source. DG's are used as backup power generation in case of Grid power failure. Appropriate stacks with stipulated height is provided for DG's as Air pollution control measures. Monthly monitoring of stack emission is done and reports attached for last 6 months (Apr'22 to Sep'22) and report maintained. (Annexure 4).</td></tr>
</table>

15.	Hazardous waste generation and management	Hazardous wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors. A designated Scrap Yard available inside campus for storing the Hazardous and Non-Hazardous waste generated.

ENEGRY		
16.	Energy requirement & source	Source of Power supplied to the campus is through Technopark. DG has been installed which is used as backup power generation in case of Grid power failure. Average Power consumption for (Apr'22 to Sep'22) is 433,577 kwh.
17.	Extent of usage of alternative energy resources	Grid connected Solar panels of 827.28kwp has been installed which caters to 23.58% of total campus power consumption for the period of (Apr'22 to Sep'22) Monthly Power generation from solar power has been attached. (Annexure 6). Average Solar power generated for (Apr'22 to Sep'22) is 102252 kwh/month. In addition to this, Solar power generated on weekends and public holidays are exported to Technopark.
BIODIVERSITY		
18.	Presence of any endangered species or red listed category	Unique initiative towards safeguarding **Rare Endangered and Threatened (RET) species** of native plants / trees and medicinal plants is taken up. A dedicated area of approx. 1.5 acres is planted with RET species and medicinal plants also.

RET Trees/Saplings
Acalypha fruticosa
Aegle marmelos
Alstonia scholaris
Aphanomixis polystachya
Barringtonia racemosa
Bridelia retusa
Calophyllum apetalum
Calophyllum inophyllum
Cinnamomum riparium
Clausena austroindica
Diospyros buxifolia
Diospyros peregrina
Ensete superba
Ficus religiosa
Flacourtia montana
Garcinia cambogia
Garcinia talbotii
Hopea parviflora
Hopea ponga
Humboltdia decurrens
Hydnocarpus pentandra
Justicia gendarussa
Lophopetalum wightii
Madhuca longifolia
Michelia champaca
Murraya paniculata

		Pterocarpus santalinus Syzygium cumini Terminalia arjuna Terminalia bellirica Vateria indica Woodfordia fruticosa Wrightea tinctoria **Medicinal Plants** Aloe vera Asparagus officinalis Chamaecostus cuspidatus Chrysopogon zizanioides Gymnema sylvestre Hemigraphis colorata Hibiscus Justicia adhatoda Lawsonia inermis Mussaenda glabrata Ocimum tenuiflorum Piper betle Piper longum Piper nigrum Plumbago zeylanica Selaginella bryopteris Stevia rebaudiana Strobulanthus heiniyanus
19.	Loss of native species and genetic diversity	As a responsible corporate large number of saplings of native fruit species like Mangosteen, Ramaphal, Seethaphal, Malasyian Jamba, Water apple, Jaathi, Anjali, Badam, Bird's cherry, Coconut tree, Fig, Kodam puli, Banana, Agasthya, Tamarind, Carambola, Pulinchikka, Jamun, Mosambi, Mangoes, Pomegranete, Amla, Sapotta, Guava, Jack fruit, Soursop and Ramboottan Native trees such as Rain tree, Elanji, Gulmohar, Banyan tree, Cassia, Areca nut, Neem, Mani marathu and Chembakam are planted and shrubs like Hibiscus, ixora, lantana, Wild jasmine, Rose, Neela koduveli, Krishna Neelam, Rangoon creeper, Phyllanthus, Kilukki, Plumeria, Bougainvilla, Nerium, Parijathakam, Jasmine, Teccoma, Kanakambaram etc are planted inside campus so as to conserve the biodiversity.
20.	Likely displacement of fauna	Not Applicable.
21.	Any introduction of alien/ invasive species	Nil.

SOCIAL ASPECTS		
22.	Proximity to nearest habitation	Campus is located within Trivandrum Corporation limits surrounded by UST, NH Bypass and Residential houses.
23.	CSR Activities	• Celebrate with Sanjeevani" gives Trinfoscion the opportunity to celebrate special occasions with the less fortunate. A total of 12 such events were conducted, impacting over 650 individuals. • A total of 20 notebook donation drive in which 7500+ students were given notebooks across the state • As part of CSR activities Blood donation drive was conducted on 14th June 2022 inside Trivandrum Infosys campus catering to 100 people. • In View of Samyam, Anti-Drug awareness session & book donation to the beneficiaries of Govt. Hospital Pala, Deaddiction Wing Ponkunnam • Bookshelf & book distribution to the beneficiaries of sub jail, Ponkunnam • Vijnana team of the academic track has provided more than 60 online sessions benefiting around 497 students of various Govt school across Trivandrum • 200 saplings have been distributed in July to Govt School, Kulathoor • Sanjeevani donated Sanitary pads to Nava Jyothi Rehabilitation center, Karyavattom • In view of Satva, Onam meals were donated to 37 organizations benefiting 1900+ individuals.
24.	Environment Management plan/ Eco restoration plan (brief details)	As part of Environment management, the following measures have been taken: • Conducting environmental quality monitoring for emissions and effluents as per the PCB standards through MOEF authorized vendor • Awareness mailers in environment protection and effective waste management circulated to employees on periodic basis • Shredder cum pulverizer had been installed in campus for shredding leaves & dry branches. The same is being used to increase soil composition and for mulching • Waste segregation done at source by implementing color coding for different types of waste • Hazardous waste segregated and stored in designated areas and disposed of through authorized vendors • Usage of green sealed chemicals for housekeeping purpose • To enhance awareness on roof top gardening during working from home, Mailers are circulated to employees on periodic basis. • Implemented collection of Covid 19 related wastes such as masks and gloves in exclusive waste bins to ensure safe handling • Sewage generated in the campus is treated through Sewage Treatment Plant (STP) which is based on Membrane Bio Reactor Technology (MBR). • As a responsible corporate, we have increased the renewable source (solar) to 827.28kWp which caters to 24% of total power consumption. • In addition to the regular checks, an effective monitoring and study of indoor air quality is done. • Food waste generated is fed to Biogas plant wherein the generated biogas is used for cooking purpose
25.	Biomedical waste management	Bio-medical waste generated within the campus is disposed through IMAGE. Color coded bins are placed inside medical center with markings for proper segregation at source. A software application "IMAGE HCE PORTAL 1.0" has been implemented for tracking the end disposal of Biomedical waste. Abiding by the Biomedical waste rule, used masks and gloves are separated from the biomedical waste and quantified and disposed through IMAGE.

		All Biomedical waste handlers has been immunized with Hepatitis B and Tetanus Vaccination. Details on the disposal has been submitted to KSPCB through Form IV annually. Bio Medical Waste: Avg (Apr'22 to Sep'22): 36.22 kg/month
26.	E-waste management	E-wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors. Details on the disposal has been submitted to SPCB through Form 3 annually.
27.	Litigation, if any, against the project	No.

SPECIFIC CONDITIONS: -

Sl. No.	Conditions	
1.	The Emergency parking facility proposed should be ear marked.	Complied, it is ear marked. In every floor of Multi level parking lot (MLPL) a designated emergency parking space is identified, and ear marked.
2.	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	Drinking water facilities are provided at construction site. Sanitary facilities are also provided and are connected to the STP.
3.	Disposal of muck during construction phase should not create any adverse effect on the neighboring 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.	No construction activity is in progress.
4.	Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate water courses and the sump sites for such materials must be secured so that they should not leach into the ground water.	Hazardous materials generated are stored in a safe and secured manner. The placement is on concrete base thereby eliminating any chance of contamination to the water courses.
5.	Any hazardous waste generated during construction phase, should be disposed of as per applicable rules and norms with necessary approvals of Kerala State Pollution Control Board.	No construction activity is in progress All hazardous waste are disposed as per applicable rules and norms with necessary approvals of Kerala State Pollution Control Board.
6.	The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environment (Protection) rules prescribed for air and noise emission standards.	No construction activity is in progress. DG's are used as backup power generation in case of Grid power failure. DG's are located in secluded areas with appropriate acoustic enclosure and stack
7.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	No construction activity is in progress.
8.	Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.	Complied, Energy Conservation Building Code is followed.

GENERAL CONDITIONS: -

Sl. No.	Conditions	
(i)	Rain water Harvesting capacity should be installed as per the prevailing provisions of KMBR/ KPMR, unless otherwise specified elsewhere.	2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desilting towards collecting rainwater. Open drains are also created along the rear periphery wall towards collecting the run-off water from the neighborhood.
(ii)	Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.	Yes, formed and functional.
(iii)	Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, inclusive of approach road and internal roads.	Trees such as Water apple, Fig, Jamun, Mango, Badam and Amla are the avenue tree cum fruit trees and trees like Raintree, Gulmohar, Spathodia, Elanji, Ficus, Japanese Fern, Wild Neem, Kadamba, Ezhilampala, Bauhunia, Cardia, Terminalia, Golden shower, Bird's cherry and Calophyllum are grown along the roads and pathways for shade. Shade trees has been provided along the NH service road like Mimusops elengi and Ficus benjamina with flowering plants like Ixora, Wild Jasmine, Lantana, Tecooma, Nikotia, Nerium, Caesalpinia and Ficus panda are planted in the service roads and median outside campus for public environmental welfare.
(iv)	The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the national grid in future.	Grid connected Solar panels of 827.28kwp has been installed which caters to 23.58% of total campus power consumption. Solar power generated on weekends and public holidays are exported to Technopark.
(v)	Safety measures should be implemented as per the Fire and Safety Regulations.	Complied, safety measures are implemented as directed by Department of Fire & Rescue services. Annual Renewal of the Fire NOC certificate is carried out by FRS after necessary site inspections. All buildings are equipped with Sprinkler systems, hose reels, wet risers, smoke & fire alarm system. External fire hydrants provided around the buildings across the campus. Exclusive fire tanks maintained atop all the high-rise buildings in addition to the fire tanks available in our Underground reservoirs. Fire extinguishers are provided as per IS 2190 standard and sand buckets are provided at prominent places.
(vi)	STP should be installed and made functional as per KSPCB guidelines including that for solid waste management	Complied, Sewage generated in the campus is treated in the Sewage Treatment Plant (STP) of capacity 500KLD. The STP is based on Membrane Bio Reactor (MBR) technology. Recycled water from Sewage treatment plant will be utilized for landscaping, flushing and cooling tower purpose. Treated water quality confirms to KSPCB required standard. Proper facilities are provided inside campus for solid waste management. The food waste generated is fed in to 350kg capacity digester biogas plant biogas. The dry waste generated is disposed through authorized dealer. Adequate number of collection bins are provided for bio-degradable waste. Have also ensured that the solid waste generated is segregated at source.
(vii)	The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.	Complied.

(viii)	The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.	Complied, saplings comprising of native fruit species and shrubs has been planted inside campus, to conserve the biodiversity.
(ix)	Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.	Complied, Consent obtained.
(x)	All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.	Complied. Possessing valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31st Dec 2030.
(xi)	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.	No change in the Scope of the proposed project.
(xii)	The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	Yes, agreed.
(xiii)	The stipulations by Statutory Authorities under different Acts and Notification should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.	Complied.
(xiv)	The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail). It shall simultaneously be sent to the respective Regional Office of MoEF, Govt.of the India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.	Half yearly report submitted to Regional Office of MOEF and to Directorate of Environment and Climate change, Govt of Kerala.
(xv)	The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft. x 3 ft. with green background and yellow letters of Times New Roman font of size of not less than 40.	Complied, the details of EC are prominently displayed.