

ITL/TVM/FAC/SEZ/042/2020

27th Nov 2020

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 April-2020 to September-2020 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.

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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, Ling ours^haithfully Devi Padmanabhan Nair

Devi Radmanabhan 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: Ambient Sound report (internal) Annexure-7: Solar Power generated details

INFOSYS LIMITED

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Rinu Sasidharan

From: Sent: To: Subject: seiaa kerala <seacseiaakerala@gmail.com> Friday, November 27, 2020 1:22 PM Rinu Sasidharan inward NO. 2600

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[**EXTERNAL EMAIL**]

sir,

kindly see the inward no.

MoEF report for Construction Phase& Operation Phase (SEZ) Apr'20 to Sep'20.

No. 1. 2. 3.	Water requirement & sources	Water				
2.			Water			
		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.		vithin the campus.		
3.	RWH units	2 ponds have been created with a total capacity of 36118cum inside the campus with				
3.		proper side pitching and desilting				
	Facilities for liquid waste treatment	Sewage generated in the campus				
		capacity 500KLD which is based of				
		water from Sewage treatment pla	•			
		purposes. Treated water quality confirms to KSPCB prescribed standard (Annexure 1). <u>STP Outlet Report detail: Aug 2020.</u>				
		Parameter	Stipulated Limit	Results		
		рН	6.5 to 8.5	7.73		
		TSS in MG/L	20 mg/l	BDL		
		Oil and Grease	1 mg/l	BDL		
		BOD in mg/l	3 mg/l	1.9mg/l		
		E-Coli	NIL	Absent		
		Residual Chlorine	1.0 mg/l	0.8 mg/l		
		COD in mg/l	20 mg/l	10 mg/l		
		TDS in mg/l	2100 mg/l	416 mg/l		
		Odour	No Odour	No Odour		
,4.	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers	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 In addition to this, yearly desilting of Thodu is done for ensuring free flow of water.				
5.	Water quality meeting requirements	Monthly monitoring is carried out through a PCB approved external agency to ensure that the water quality meets IS 10500 requirement and reports attached for the last 6 months (Apr'20 to Sep'20) and maintained at site. (Annexure 2).				
6.	Provisions for use of recycled water	Recycled water from STP is utilized for irrigation, flushing and cooling requirements within the campus.				
		LAND				
7.	Access road to the site –Width & Condition	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				
8.	Storage of explosives/hazardous substances	All precautionary measures have been taken and also obtained valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31 st Dec 2020.				
9.	Facility for solid waste management.	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.		ored and disposed asper the		
		Type of Waste	Avg quantity (Ap	or'20 to Sep'20)		
		Food Waste	443.79kg/mont			
10.	Proneness to natural hazardous.	As per the Indian Standards Seismic Zoning Map, the campus area comes under Zone – III, moderate damage risk zone. Scheduled Mock drills are conducted so as to make the employees aware on what to do		area comes under Zone – oyees 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.				

11.	Top soil, overburden etc.	The top soil removed for construct appropriate approvals from compe		opark land after	seeking	
		AIR				
Dust emi phase		Dust emission from construction phase	Provision of GI Sheets/green shade as barrication for controlling dust. Also regular monitoring of air quality is done and report maintained. Reports attached. (Annexure 3). <u>Ambient Air Quality Report: June'20</u> <u>Ambient Air Monitoring Report</u>			
			Parameter	Stipulated Limit	esults (µg/m³)	
			Particulate Matter (PM10)	40. 100 μg/m ³ 3	34 (Near gate no 5) 35.24 (Near DG) 6.85 (Near Store) vg – 37.47 μg/m ³	
12.	Air quality meeting requirements	Emissions from combustion of fossil fuels	There is no major air pollutant generating source except DG sets and vehicular movement during construction and operation phase. It is ensured that transportation of construction materials is done only during non-peak hours. 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'20 to Sep'20) and report maintained. (Annexure 4).			
			Stack Monitoring Re) <u>(DG II PII)</u>	
			Parameter	Stipulated Limit	Results	
			Particulate Matter	75 mg/ Nm ³	-	
			Sulphur Dioxide	_	-	
			Oxides of Nitrogen	710 ppmv	24.6 ppmv	
13.	Noise level meeting requirements	 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) 	 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 nonpeak hours. Monthly noise monitoring is done and reports attached for last 6months (Apr'20 to Sep'20). (Annexure 5). 			
14.	Likely emissions effecting environment	There is no major air pollutant gen generation in case of Grid power fa	erating source. DG's	are used as back		

		emission is done and reports attached for last 6 months (Apr'20 to Sep'20) and report
		maintained. (Annexure 4).
15.	Hazardous waste generation and	Hazardous wastes generated are collected, stored and disposed through CPCB & KSPCB
	management	authorized vendors. A designated Scrap Yard available inside campus for storing the
		Hazardous and Non Hazardous waste generated.

		ENEGRY		
L6.	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'20 to Sep'20) is 510489 kwh/month i.e. 18% reduction compared to the period, Oct'19 to Mar'20.		
17.	Extent of usage of alternative energy resources	Grid connected Solar panels of 826kwp has been installed which caters to 20% of total campus power consumption for the period of (Apr'20 to Sep'20) Monthly Power generation from solar power has been attached. (Annexure 6). Average Solar power generated for (Apr'20 to Sep'20) is 104185kwh/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 native plants / trees is taken up. A dedic RET species and medicinal plants like ga pepper mint. List of RET Species Planted:	cated area of approx. 1.5 acres i	s planted with
		Plant Name	Common Name	
		Vateria indica	White Dammar	
		Aphanamixis polystachya	Chemmaram	-
		Alstonia scholaris	Indian Devil Tree	
		Calophyllum Inophyllum	Pinna	1
		Pterocarpus santalinus	Red sandal wood	Trees
		Kingiodendron pinnatum	Kodapaala	
		Vateria indica	White Dammar	
		Hopea parviflora	Thambakam	
		Hopea ponga	Kambakam	
		Mesua ferrea	Indian Rose Chestnut	
		Semecarpus auriculata	Cari	
		Humboldtia decurrens	Kunthani	
		Buchanania lanceolate	Mala Mavu	
Э.	Loss of native species and genetic diversity	As a responsible corporate large number of saplings of native fruit species like Jamun, Mosambi, Mangoes, Custard Apple, Pomegranete, Amla, Sapotta, Guava, Neem, Kadamba, Jack fruit, Soursop, Ramboottan and shrubs like Ixora, Jasmine, Teccoma, Hibiscus, Kanakambaram etc are planted inside campus so as to conserve the biodiversity.		
).	Likely displacement of fauna	Not Applicable.		
L.	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			
		 Communication Improvement - Group of two students each to record the telephonic conversation made between them on the given topic. 		

		 Collage Making - Make a collage based on the topic selected by the student. Book Review - Present the review of the book selected from the list provided in a video.
		 Learning Human Body parts Introduce the human body parts via illustration. Simple Science Experiment A short video of a simple science experiment done by the students under parental supervision. Onam Celebrations - Various competitions and games were organized on account of Onam Cartoon Drawing - Topic: Lockdown in India Book Summary - Video presentation on the summary of a library book that students read in recent past
		 Anagram - Students were given with 10 words to make anagram and were asked to find the meaning of the parent word.
24.	Environment Management plan/ Eco restoration plan (brief details)	 As part of Environment management the following measures have been taken: As part of world environment day, online quiz was conducted and awareness mailers sent across to employees. As part of water saving initiative, a webinar session was conducted to understand the cost effective models of rain water harvesting systems both at homes and community at large. An online initiative, "The Green way of Life!", started which allows employees to showcase their organic farming efforts at home. This is done basically to motivate employees to start their own organic farming at home. Considering the pandemic situation, an online initiative was organized wherein employees could send in photos of birds visiting their house. This would initially be put-up in the web gallery of "Green Team". As part of International plastic bag free day, awareness mailers were sent across to employees to reduce the usage of plastic bags. An awareness write-up on home composting was shared with employees, which basically showcased the steps to be followed on how compost can be created from kitchen waste. An online session on Aquaponics and Fish farming was organized for employees. Food waste generated is fed to Biogas plant wherein the generated biogas is used for cooking purpose. Creation of Mist chamber, enabling propagation of plants in-house. As a responsible corporate, plastic garbage bag has been replaced with biodegradable bags & gunny bags, replaced the PET drinking bottles with glass and steel bottles also replacement of Single use plastic pens with Paper pens. 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 826kWp which caters to 20% of total power consumption. Considering this pandemic situation, an effective monitoring and study of indoor air qu
25.	Biomedical waste management	Bio-medical waste generated within the campus is disposed through IMAGE. Color coded bins are placed inside Med 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 is been submitted to KSPCB through Form IV annually.	
		Bio Medical Waste Avg (Apr'20 to Sep'20)	
		5.400 kg	/month.
26.	E-waste management	E-wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors. Details on the disposal is been submitted to SPCB through Form III annually.	
27.	Litigation, if any, against the project	No.	

SPECIFIC CONDITIONS: -

<u>Sl. No.</u>	Conditions	
1.	The Emergency parking facility proposed should be ear marked.	Yes, 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. Labors are provided with labor camp facility with dedicated room, cooking area, drinking water facility and toilets.
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.	The top soil removed for construction moved to Technopark land after seeking appropriate approvals from competent authority.
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.	Construction spoils and 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.	Yes, disposed off as per applicable KSPCB rules and norms received.
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.	DG's are used as backup power generation in case of Grid power failure. DG's are located in secluded areas with proper acoustic facility and with appropriate stacks with stipulated height which acts as Air pollution control measures.
7.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	Yes, pre-mixed concrete is used.
8.	Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.	Yes, Energy Conservation Building Code is followed.

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 desillting towards collecting rain water. 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.	Avenue trees like Mimusops elengi, Ficus benjamina and Ficus panda are planted in the service roads outside campus for public environmental welfare. Trees like Neem, Kadambu, Ezhilampala, Lakshmitharu, Jack fruit, Fig, Coconut, Water apple are the avenue trees cum fruit trees and trees such as samanea saman, spathodia, Mimusops elengi are also planted inside campus which is preserved and nurtured well. Shade trees has been provided along the NH service road. The NH has been planted with flowering plant in the concern with NHAI.
(i∨)	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 826kwp has been installed which caters to 20% 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.	Yes, safety measures are implemented as directed by Department of Fire & Rescue services. Annual Renewal of the 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 fire buckets are provided at prominent places.
(vi)	STP should be installed and made functional as per KSPCB guidelines including that for solid waste management	Yes, it's installed. 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.	Yes, 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.	Yes, saplings comprising of native fruit species and shrubs has been planted inside campus, so as to conserve the biodiversity.
(ix)	Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.	Yes, 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.	Yes, obtained. Possessing valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31 st Dec 2020.
(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.	Yes, 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.	Yes, the details of EC are prominently displayed.