



INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES SHEIKHPURA,  
PATNA – 14 – (BIHAR)

(Autonomous Institute of Govt. of Bihar)

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Letter no: - 125/EO/2021

Date: - 12/02/2021

To  
The Director  
Ministry of Environment Forest and Climate Change,  
Ranchi Regional Office (ECZ), Bungalow No. A-2,  
Shyamali Colony, Ranchi-834002

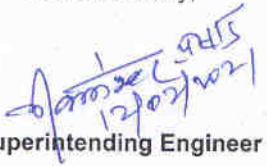
Subject: Half Yearly Compliance Report of Environmental Clearance for Medical college along with Boys Hostel , Type D & E residential at IGIMS campus

Dear Sir

With reference to our Environmental Clearance granted vide Ref. No. 57 dt: 14.04.2015. we are enclosing herewith Compliance Report of Specific & General Conditions (along with Env. Monitoring Reports) as mentioned in above referred Environmental Clearance for the period April 2020 – October 2020.

Thanking you

Yours Faithfully,

  
Superintending Engineer  
I.G.I.M.S Patna, Bihar



**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

**“COMPLIANCE REPORT”**

**Compliance of Environmental clearance condition as mentioned in the Environmental Clearance Letter Ref No. 57 dated 14/04/2015.**

<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
	<b>PART A – GENERAL CONDITIONS</b>	
<b>I.</b>	<b>Pre-Construction Phase</b>	
i.	Provision shall be made for the housing of construction labour within or close to the site with all necessary infrastructure and facilities such as fuel (kerosene/gas) for cooking, safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after completion of the project.	Complied during Construction phase of the project.
ii.	Provision of drinking water, waste water disposal, solid wastes management and primary health facilities shall be ensured for labour force. Proper sanitation facilities shall be provided at the construction site to prevent health related problems. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.	Complied during Construction phase of the project. Provision were made for safe drinking water Solid waste management primary health facilities and proper sanitation facilities.
iii.	Adequate safety measures shall be adopted for the construction workers.	Complied during Construction phase of the project.
iv.	All the labourers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.	Before issuance of work permit all the laborers were screened for health status.
v.	Fencing of the project boundary before start of construction activities.	Fencing of the project boundary has been done.
vi.	Use of energy efficient construction materials shall be ensured to achieve the desired thermal comfort.	Energy efficient construction material has been used to achieve desired thermal comfort.
vii.	Use of fly ash based bricks/blocks/tiles/products shall be explored to the maximum extent possible.	Complied as per tender document.
viii.	Lay out of proposed buildings and roads within premises etc. shall be made in such a way that it shall cause minimum disturbance to existing flora and fauna,	There were no existing flora and fauna on the project site. However adequate green belt is planned for the project premises in 33 % of the total project area.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

Sl. No.	EC Condition	Compliance
	Appropriate green belt shall be developed to compensate the habitat loss of tree cutting (if any] from competent authority as per prevailing Act/Rules. The exotic species existing within the existing premises, if any, shall be protected, The greening programme shall include plantation of both exotic and indigenous species.	
ix.	Dedicated pedestrian paths shall be provided along the proposed Buildings. Appropriate access shall be provided for physically challenged people in the Pedestrian Paths.	Dedicated pedestrian path are provided along the building. Appropriate access are provided for physically challenged people in the pedestrian path.
x.	The design of service roads and the entry and exit from the buildings shall conform to the norms & standards by the State Public Works Department.	The design of service roads and the entry and exit from the buildings conform to the norms & standards by the State Public Works Department.
xi.	The road system shall have road cross sections for general traffic, exclusive ways for public transport, exclusive ways for traffic mass transport (bus) system, pedestrian paths and ways, utility corridors and green strip.	The road system have road cross sections for general traffic, exclusive ways for public transport, exclusive ways for traffic mass transport (bus) system, pedestrian paths and ways, utility corridors and green strip.
xii.	The project proponent should advertise in at least two local newspapers 'widely circulated in the region, one of which should be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letter are available with the Bihar State Pollution Control Board and may also be seen on the website of the SEIAA,, Bihar. The advertisement should made within 10 days From the date of receipt of the clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bhubaneswar	Not Complied.
xiii.	Risk assessment study with Disaster Management Plan (DMP) shall be prepared. The mitigate measures for disaster prevention and control shall be prepared and get approval from competent authority. All other statutory clearances/licenses/permission from concerned State Government Departments Board and corporations	All other statutory clearances licenses/permission from concerned state Government Departments. Boards and Corporation are obtained for development of building complex. All direction issued by Central Govt. State Government, CPCB/SPCB are being be followed.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

Sl. No.	EC Condition	Compliance
	shall be obtained for directions issued by Central Government/ State Government, Central Pollution Control Board/ Bihar State Pollution Control Board/ Bihar State Pollution Control Board.	
<b>II.</b>	<b>Construction Phase</b>	
i.	It shall be ensured that the construction debris is properly stored on the site prior to disposal. Such requirements shall be made part of the contractor agreement.	Complied.
ii.	All the top soil excavated during construction activities shall be stored for use in horticulture/ landscape development within the project site. Proper erosion control and sediment control measures shall be adopted.	Top soil excavated during the construction activities are used in horticulture/landscape development within the project site.
iii.	Earth material generated from excavation shall be reused to the maximum possible extent as filling material during site development. The construction debris and surplus excavated material shall be disposed off by mechanical transport through the Patna Municipal Corporation.	Earth material due to excavation has been reused as filling material during site development
iv.	Disposal of muck, including excavated material during construction phase, shall not create any adverse effects on the neighbouring communities and shall be disposed off taking the necessary precaution for general safety and health aspects.	The muck including excavated material during construction were managed as per Construction and Demolition waste Management Rule 2016.
v.	Low sulphur diesel generator sets should be used during construction phase. Diesel generator sets during construction phase shall have acoustic enclosures and shall conform to Environment (Protection) Rules, 1986 prescribed for noise emission standards.	During construction phase HSD fuel in diesel generator were used. Diesel generator sets during the construction phase have acoustic enclosures in conformity to Environment (Protection) Rules, 1986 prescribed for noise emission standards.
vi.	All vehicles/ equipment deployment during construction phase be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peaking hours.	All vehicles equipment deployed during construction phase were in good working condition which conform to applicable air and noise emission standards.
vii.	Ambient noise level shall conform to the standards prescribed by MOEF&CC, Govt. of India.	Ambient noise levels conform to the standards prescribed by MoEF&CC, Govt. of India.

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<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
viii.	The protective equipment such as nose mask, earplugs etc. shall be provided to construction personnel exposed to high noise levels.	Complied during construction phase of the project.
ix.	Construction spoils, including bituminous material and other hazardous material including oil from construction equipment must not be allowed to contaminate soil/ground water. The dumpsites for such material must be secured so that they shall not leach into the ground water.	No Hazardous waste has been generated from the Site.
x.	Proper and prior planning, sequencing and scheduling of all major construction activities shall be done. Construction material shall be stored in covered sheds. Truck carrying soil, sand and other construction materials shall be duly covered to prevent spilling and dust emission. Adequate dust suppression measures shall be undertaken to control fugitive dust emission. Regular water sprinkling for dust suppression shall be ensured.	Water sprinkling tanker has been used at the site for dust suppression. Furthermore, incoming loads were covered with tarpaulin sheet to avoid loss of material in transport and also reduce the dust emissions. The construction material were stored in covered sheds.
xi.	Use of Ready-mix concrete is recommended for the project.	Ready mix Concrete has been used for construction activity also
xii.	Accumulation/ stagnation of water shall be avoided vendor control.	There is no accumulation/stagnation of water on the project site.
xiii.	Regular supervision of the above measures shall be in place all through construction phase so as to avoid disturbance to the surroundings.	To avoid disturbance to the surrounding regular supervision of the above and other measures are in place.
xiv.	Water during construction phase should be preferred from Municipal supply.	The water requirement has been met through private water tanker.
xv.	All directions of the Airport Authority, Director of Explosives and fire department etc. shall be complied.	All direction of Airport Authority, Director of Explosives and Fire Department etc. are being complied.
xvi.	Unskilled construction labourers shall be recruited from the local areas.	Complied Unskilled construction labourers has been recruited from the local areas
xvii.	Provisions shall be made for integration of solar water heating system.	Not Complied.
xviii.	Provision of vermi-composting for the biodegradable solid waste generated from the proposed extension buildings as well as the large amount of biomass that shall be available from the tree plantation shall	Possibilities of vermiculture technologies has been explored and expert organization involved in designing and development of this technique is consulted for its cost-benefit analysis and feasibility.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
	be made.	
xix.	Monitoring of ground water table and quality once in three months shall be carried out. Construction of tube wells, bore wells shall be strictly regulated.	Ground water monitoring is being conducted.
xx.	Permeable (porous) paving in the parking areas, and walkways should be used to control surface runoff by allowing storm water to infiltrate the soil and return to ground water.	To control surface runoff permeable paving in the parking areas and walkway has been provided.
xxi.	All intersections shall be designed and developed as roundabouts.	Complied as per the given plan.
xxii.	All utility lines (electricity, telephone, cable, water supply, sewage, drainage etc.) shall be laid below ground level. Ducts shall be provided along and across the roads to lay the utility lines major trunk (water/sewerage) lines are to be laid along the utility corridor.	All utility lines (electricity, telephone, cable, water supply, sewage, drainage etc.) are laid below ground level. Ducts are provided along and across the roads to lay the utility lines.
xxiii.	The road drainage shall be designed to enable quick runoff of surface water and prevent water logging.	The road drainage has been designed to enable quick runoff of surface water and prevent water logging.
xxiv.	Adequate provision shall be made to cater the parking needs. Parking spaces standard as given in “Manual on norms and standards for Environment Clearance of Large Construction Projects” issued by Ministry of Environment and Forests, Government of India shall be adopted.	Adequate parking space has been provided within the project premises. Parking spaces provided are in accordance with the MoEF&CC norms.
xxv.	Rest room facilities shall be provided for service population.	Rest room facilities has been provided for service population.
	<b>Water Body Conservation</b>	
i	Water body falling within premises (if any shall not be lined or no embankment shall be cemented. The water bodies. if any. shall be kept in natural condition without disturbing he ecological habitat.	There is no water body within the premises
ii	Improvement or rehabilitation of existing drain fit any) shall be carried out without disturbing the ecological habitat	We have improved the existing drain without disturbing the ecological habitat
<b>III</b>	<b>Post Construction/Operation Phase</b>	
i.	The environment safeguard and mitigation measures contained in the application shall be implemented in letter and spirit.	This condition are being strictly followed.
ii.	All the conditions, liabilities and legal provisions contained in the	This condition are being strictly followed.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

Sl. No.	EC Condition	Compliance
	Environmental Clearance shall be equally applicable to the successor management of the project in the event of the project proponent transferring the ownership, maintenance of management of the project to any other entity. Ground water shall not be abstracted without prior permission from the competent authority.	
iii.	The storm water management plan shall be implemented in such a manner that the storm water is discharged through an existing dedicated storm water Outfall only.	This condition is being complied.
iv.	The height of the stack of the DG sets should be as per norms of CPCB.	Adequate stack height of D.G. sets has been provided as per the stipulated guidelines of Central Pollution Control Board (CPCB) to facilitate proper dispersion of pollutants and to minimize the impact on Ambient Air Quality under the influence of local meteorology.
v.	Medical first aid facility must be provided for visitors and employee. Para medical staff should be attached as Medical facility provider	Complied.
vi.	Plantation along the side of Building & roads and in open spaces shall be developed to act as sinks of air pollutants. The plantation of trees shall be completed in the construction stage. The Plantation shall consist of mixture of available indigenous, fast growing and sturdy species of trees, shrubs and herbs. Preferential plantation of flowering trees with less timber and fruit value shall be carried out.	Plantation along the side of Building & roads and in open spaces is being developed to act as sinks of air pollutants. The Plantation consist of mixture of available indigenous, fast growing and sturdy species of trees, shrubs and herbs. Preferential plantation of flowering trees with less timber and fruit value is being carried out.
vii.	Two chambered container or two separate container (one for recyclable wastes and other for all organic and compostable wastes) shall be placed at appropriate distance on the roadsides and inside the building. Covered dustbins / garbage collector in convenient places to collect the Municipal solid wastes shall be provided.	Two separate container (one for recyclable wastes and other for all organic and compostable wastes) has been placed at appropriate distance on the roadsides and inside the building. Covered dustbins in convenient places to collect the Municipal solid wastes has been provided.
viii.	Proper composting / vermin composting of municipal solid wastes shall be carried out. All municipal solid wastes shall be	Possibilities of Vermiculture technologies has been explored and expert organization involved in designing and development of

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<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
	segregated, collected, transported, treated and disposed as per provisions of the Municipal Solid wastes (Management and Handling) Rules, 2000 (As amended)	this technique is consulted for its cost-benefit analysis and feasibility.
ix.	The use of hand gloves, shoes and safety dress for all waste collectors and sorters shall be enforced.	The use of hand gloves, shoes and safety dress for all waste collectors and sorters has been enforced.
<b>IV.</b>	<b>Entire Life of the Project</b>	
i.	The project proponent should implement Environmental Monitoring Programme as per details submitted in EMP.	Environment Monitoring Programme is being implemented as per the EMP.
ii.	No Expansion/ modification activity should be carried out obtaining prior Environmental Clearance as per EIA Notification 2006.	Complied.
<b>PART B-SPECIFIC CONDITIONS</b>		
<b>I. Pre-Construction Phase</b>		
i.	Project Proponent should obtain prior consent to establish (NOC), under Section 25 & 26 of the Water (Prevention & Control of Pollution) Act' 1974 and under Section 21 of Air (Prevention & Control of Pollution) Act' 1981 from State Pollution control Board before start of Construction activities.	Copy of CTO attached.
ii.	Project Proponent should obtain prior permission for ground water withdrawal from CGWA/CGWB.	Water requirement is being met through existing water supply system of IGIMS.
iii.	Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plan and designs including structural design, standards and specification of all construction work from competent authority.	All the construction activities are as per the requirements of local seismic regulations. We have obtained permission for the plan and designs including structural design, standards and specification of all construction work from Patna Municipal Corporation.
iv.	Use of energy efficient construction material to the desired thermal comfort shall be incorporated. The desired level of roof assembling "U" factor and insulation "R" value must be achieved. Roof assembling "U" factor for the top roof shall not exceed 0.4 watt/sq.m./degree centigrade with appropriate modification of specifications and building technologies. The provision of National Building Code	To achieve the desired thermal comfort use of energy efficient construction material have been emphasized. The provision of NBC 2005 are being followed.



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<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
	2005 shall be strictly followed.	
v.	Street corridor lighting shall be energy efficient. The High Pressure Sodium Vapour [HPSV] Lamps & Compact Fluorescent Lamps (CFL) along Building premises shall be provided, High intensity, high mast lights to be installed at few Strategic points. Solar energy may be used for outdoor lighting	Complied during construction phase of the project.
vi.	Reduce hard paving-onsite (open area surrounding buildings] and/or provide shade on hard paved surfaces to minimize heat island effect and imperviousness of the site.	Proper provision has been taken to minimize the heat island effect.
vii.	All proposed air/ conditioned buildings should follow the norms proposed in the ECBC regulations framed by the Bureau of Energy Efficiency.	We are following the norms proposed in the ECBC regulations framed by the Bureau of Energy Efficiency.
viii.	Monitoring of AAQ as per NAAQs 2009, Monitoring of Ambient Noise Level & Analysis of Ground Water Samples, Monitoring of Stack Emissions from DG sets should be conducted and reports should be submitted on monthly basis to (SPCB) Bihar	Monitoring of Ambient Noise level & Ambient Noise Level & Analysis of Ground Water were conducted by NABL accredited laboratory.
<b>II.</b>	<b>Construction Phase</b>	
i.	All the conditions laid down in NOC issued by SPCB should be strictly complied with during entire construction cycle of the project	Agreed.
ii.	The water treatment plant shall be provided for treatment of water. The treatment shall include screening, sedimentation, filtration and disinfection. Appropriate arrangement shall be made for treatment and reuse of backwash water of filtration plant.	Proper capacity of STP & ETP has been made.
iii.	Project proponent shall provide adequate measuring arrangement in the inlet point of water uptake and at the discharge point for the measurement of water utilized in different categories and monitoring daily water consumption.	Noted for action.
iv.	Regular water sprinkling shall be done all around the site to minimize fugitive dust emission during construction activities.	Regular water sprinkling has been done around the site to minimize fugitive dust emission during construction activities.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
v.	Rain water harvesting structures should be provided as per submitted Plan.	Rain Water harvesting structures are being provided as per submitted Plan.
<b>III. Post Construction/ Operation Phase</b>		
i.	Project Proponent should obtain prior Consent to Operate under Air Act' 1981 & Water Act' 1974 from State Pollution Control Board before commissioning of the project	Abide by to obey the stipulated condition
ii.	Project Proponent should obtain Bio Medical Waste Authorization from PCB as per guidelines of Bio Medical Waste (Management & Handling) Rules 1998 for generation, storing, transporting, disposing, treating or handling of bio medical waste generated from project during operation stage.	We have obtain authorization under Bio Medical Waste Management & Handling Rules) 1998 from Bihar State Pollution Control Board
iii.	Water saving practices such as usage of water saving devices/fixtures, low flushing systems, sensor based fixtures, auto control walls, pressure reducing devices etc. should be adopted.	water saving devices, fixtures, low flushing systems, sensor based fixtures, auto control wall pressure reducing devices have been installed
iv.	Water budget should be adopted as per the plan submitted in the in the supplementary Form IA & EMP.	Water budget has been adopted as per our Plan submitted in Form 1A and EMP. Commitments made in Form-1, Form- 1A, EMP and other documents submitted to SEIAA has been complied.
v.	All the generated domestic effluent should be sent to ETP/STP for Treatment & further recycling & reuse	All the generated domestic effluent is being sent to ETP/STP for Treatment. Planning are being made for further recycling & reuse.
vi.	Treated water recovered from STP would be used for flushing the toilets, gardening purpose, make up water in air conditioning systems, etc. As proposed, Fludized Bed Reactor (FBR) type sewage treatment plant should be installed. The sewage Treatment Plant shall be ensured before the completion of Building Complex.	Noted the condition.
vii.	Rainwater from open spaces shall be collected and reused for landscaping and other purposes. Rooftop rainwater harvesting shall be adopted for the proposed Building. Every building of proposed extension project shall have rainwater harvesting facilities. The storm water flowing in roadside drains shall	Not complied.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

Sl. No.	EC Condition	Compliance
	also be recycled and reused to maintain the vegetation and discharged into ground water recharging wells. Before recharging the surface runoff, pre treatment must be done to remove suspended matter and oil and grease	
viii.	Municipal solid wastes generated in the proposed extension buildings shall be managed and handled in accordance with the compliance criteria and procedure laid down in schedule-II of the Municipal Wastes Management and handling) Rules, 2000 (As amended).	Municipal solid wastes generated in the proposed extension buildings are being managed and handled in accordance with the compliance criteria and procedure laid down in schedule-II of the Municipal Wastes Management and handling) Rules, 2000 (As amended).
ix.	The standard for composting and treated leachates as mentioned in Schedule-IV of Municipal Wastes (Management and handling) Rules, 2000 shall be followed.	The standard for composting and treated leachates as mentioned in Schedule-IV of Municipal Wastes (Management and handling) Rules, 2000 are being followed.
x.	All hazardous wastes shall be segregated, collected, transported, treated and disposed as per provisions of the Hazardous Wastes (Management and Handling) Rules, 1989 (As amended).	Agreed to comply with.
xi.	Recycling of all recyclable wastes such as newspaper, aluminium cans, glass bottles, iron scarp and plastics etc. shall be encouraged through private participation. Project proponent shall take appropriate action to ensure minimum utilization of plastic carry bags and plastic small container etc., within the proposed buildings shall be ensured.	Agreed to comply with.
xii.	Project Proponent shall operate and maintain the sewage collection / conveyance system, sewage pumping system and sewage treatment system regularly to ensure the treated water quality within the standards prescribed by Ministry of Environment and Forest, Government of India	We are operating and maintaining the STP regularly to ensure the treated water quality within the standards prescribed by BSPCB
xiii.	Properly treated and disinfected (Ultra Violet Treatment) sewage shall be utilized in flushing the toilets, gardening purpose, make up water in air conditioning systems etc.	Properly treated and disinfected sewage is being utilized in flushing the toilets, gardening purpose, make up water in air conditioning systems etc.
xiv.	Non-mixing of faecal matter with the municipal solid wastes shall be strictly	It is ensured that Fecal matter does not mix with solid waste.

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<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
	ensured.	
xv.	Non-mixing of sewage/ sludge with rainwater shall be strictly ensured.	Non-mixing of sewage/sludge with rain water are strictly ensured.
xvi.	Noise barriers shall be provision led at appropriate locations so as to ensure that the noise level do not exceed the prescribed standards D.G. sets shall be provided with necessary acoustic enclosures as per Central Pollution Control Board norms.	Noise Barrier and DG set with acoustic enclosures has been provided to meet ambient noise standards.
xvii.	Back up supply shall be based on natural Gas/cleaner fuel subject to their availability.	It depends on the availability of the same in the region.
xviii.	The project proponent shall resort to solar energy at least for street lighting and water heating for proposed Building Complex, gardens/park areas.	Provision has been made to utilize solar energy.
xix.	During maintenance, energy efficient electric light fitting & lamps low power ballasts, low consumption high power luminaries, lux level limiters & timers for street lighting shall be provided.	Energy efficient electric light fitting & lamps low power ballasts, low consumption high power luminaries, lux level limiters & timers for street lighting are being provided.
xx.	A report on the energy conservation measures confirming to energy conservation norms finalized by Bureau of Energy Efficiency should be prepared incorporating details about building material & technology, "R" and "U" factors etc.	-
<b>IV.</b>	<b>Entire Life of the Project</b>	
i.	All the conditions laid down in NOC & consent to operate issued by SPCB should be strictly complied with during entire life cycle of the project.	We are going to obtain NOC and CTO from BSPCB
ii.	Monitoring of Ambient Noise Level & Analysis of Ground water Samples, Monitoring of Stack Emissions from DG sets & Testing & of untreated & treated effluent samples of STPs should be conducted and reports should be submitted on monthly basis SPCB.	Agreed.
iii.	The project authorities shall ensure the treated effluent and stack emissions from the unit are within the norms stipulated under the EPA rules or SPCB whichever is more stringent. In case of process disturbances/ failure of pollution control	All preventive measures are being adopted to ensure that the treated effluent and stack emission from the unit are within the norms stipulated under the EPA rules.

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters within existing premises of IGIMS, Patna.**

Sl. No.	EC Condition	Compliance
	equipment adopted by the unit, the respective unit shall be shut down and shall not be restarted until the control measures are rectified to achieve the desired efficiency.	
iv.	The overall noise levels in and around the project area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures, etc. on all sources of noise generation. The ambient noise level should conform to the standards prescribed under EPA Rules 1989 viz. 75 dBA (day time) and 70 dBA (night time)	The noise level in and around the project area is kept well within the standards. Noise control measures are adopted.
v.	The project authorities shall provide requisite funds for both recurring and non-recurring expenditure to implementation schedule for all the conditions stipulated herein. The funds so provide shall not be diverted for any other purpose.	The funds for implementation of EC condition has not been diverted for any other purpose.
vi.	A copy of the clearance letter shall be sent by proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban Local Body and Local NGO, if any, from whom suggestions/ representation; if any were revised while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	We are submitting the copy of EC to statutory authority.
vii.	The funds earmarked for the environmental protection measures shall be diverted for the other purposes.	The funds earmarked for the environmental protection measures has not been diverted for any other purposes.
viii.	In case of any changes in the scope of the project, the project shall require a fresh appraisal by the SEAC/SEIAA.	Noted.
ix.	The SEAC/SEIAA Bihar will have the right to amend the above conditions and add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time	Agreed

**Half Yearly EC Compliance report of Medical College, Hospital & Residential Quarters  
within existing premises of IGIMS, Patna.**

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<b>Sl. No.</b>	<b>EC Condition</b>	<b>Compliance</b>
	bound and satisfactory manner.	
x.	Any appeal against this Environmental Clearance shall lie with the National Green Tribunal (NGT), If preferred within a period of 30 days as prescribed under section-16 of the National Green Tribunal Act, 2010.	Agreed

# Annexure

# Green Belt

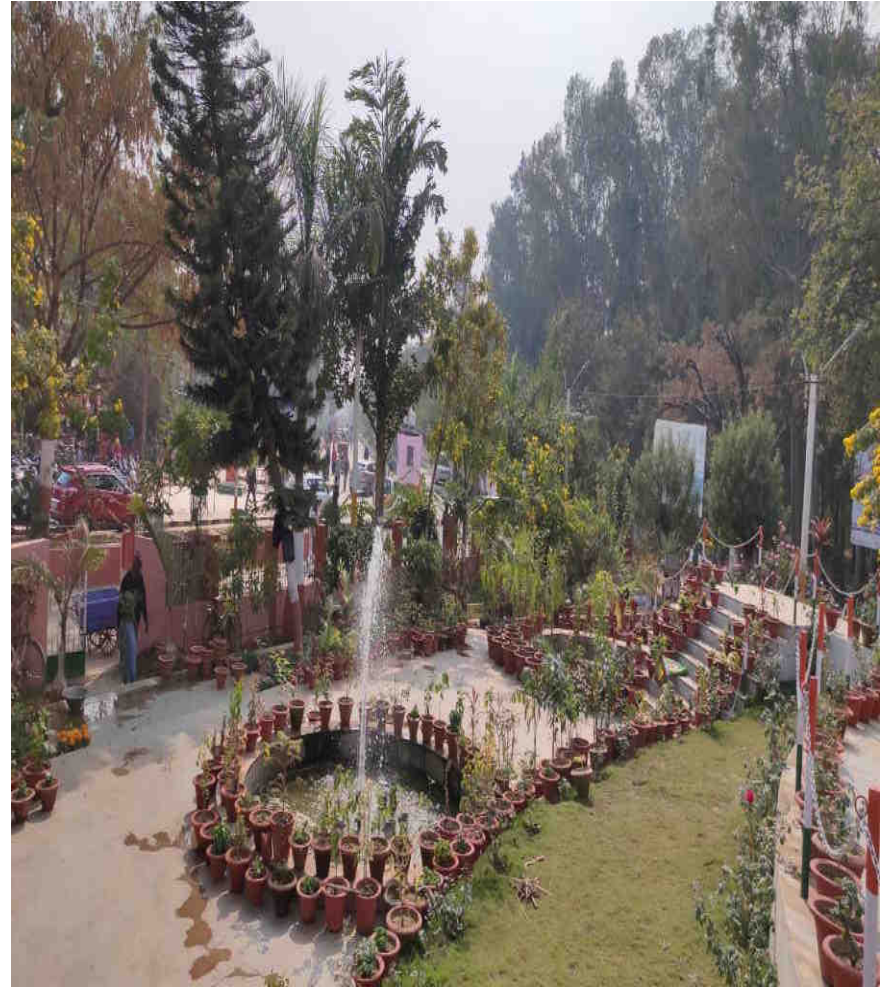
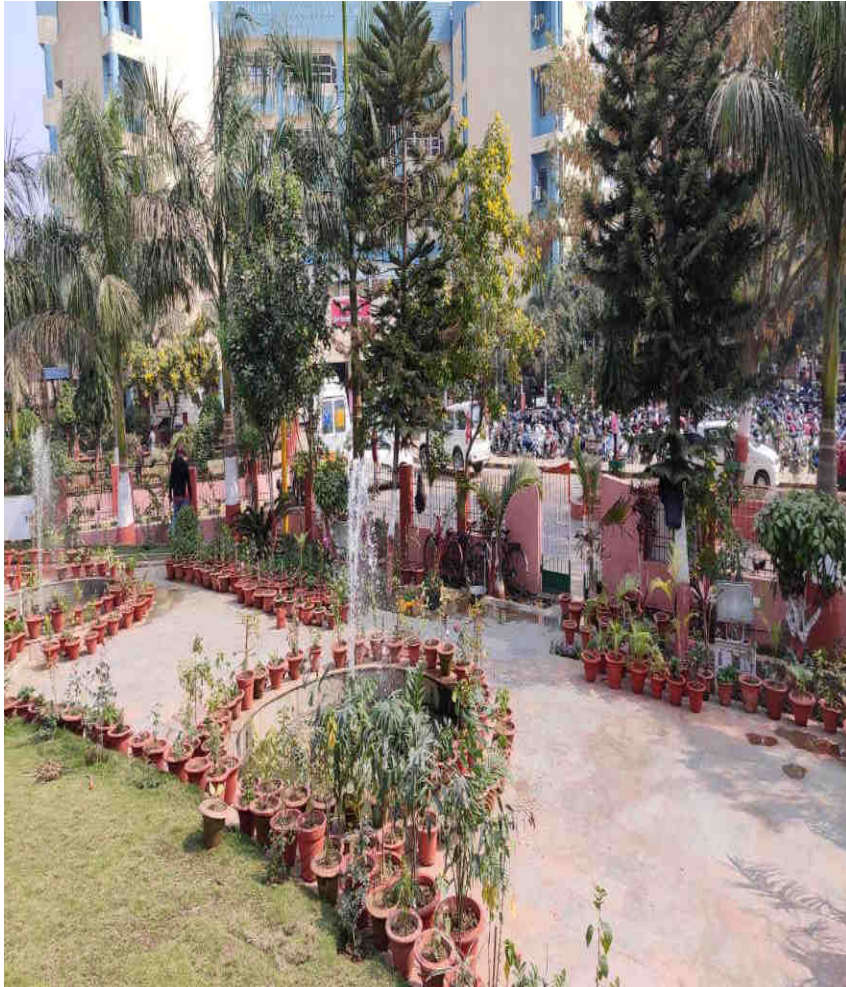




# Green Belt



# Green Belt



# Silent DG sets



# ETP



# STP



# STP

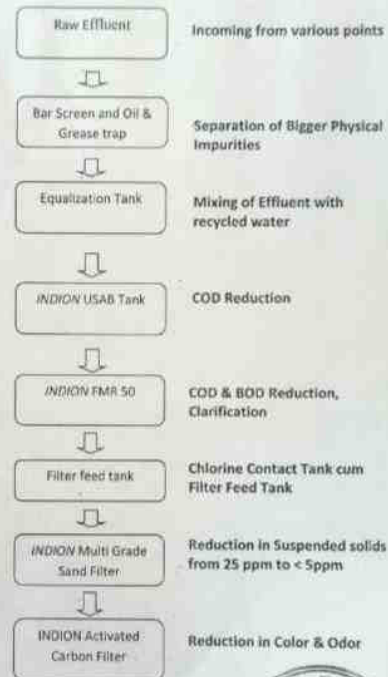


# Block Diagram ETP

ETP

## ANNEXURE - IV

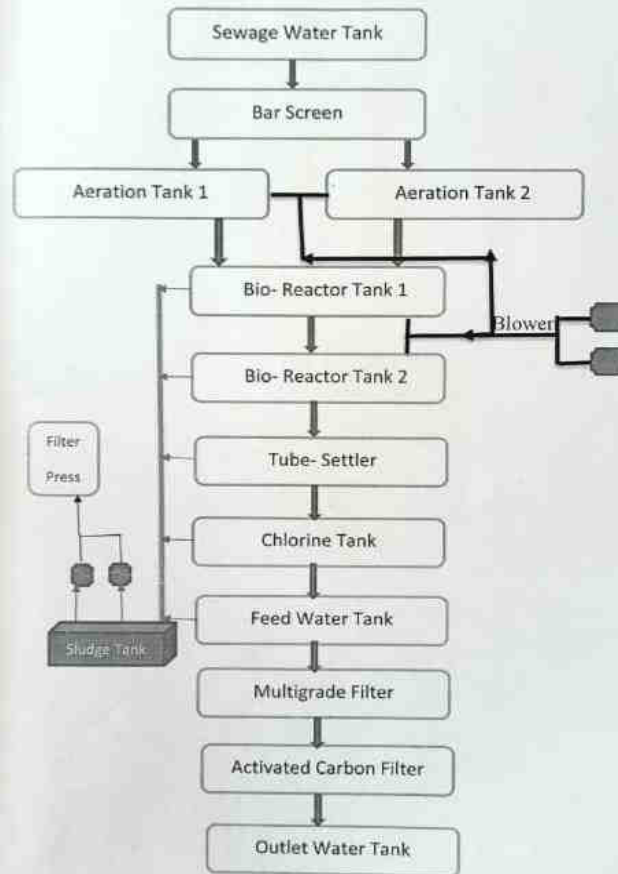
### BLOCK DIAGRAM



# Flow Diagram STP

STP

## III. FLOW CHART:

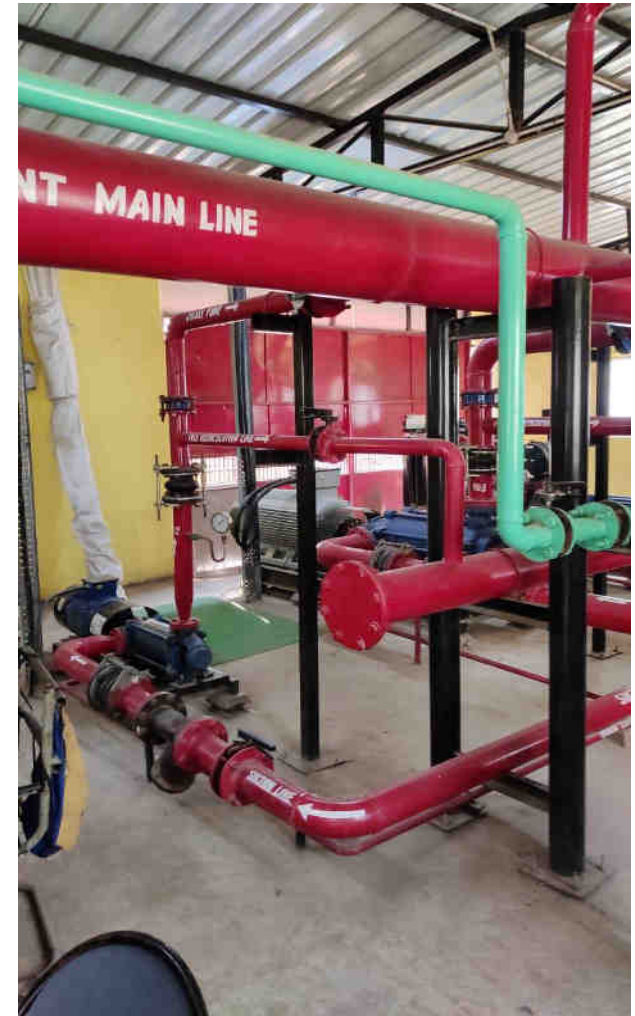




# Waste Management



# Fire Fighting



# Use of Solar Energy



# Dual Plumbing





## BIHAR STATE POLLUTION CONTROL BOARD

Parivesh Bhawan, Patliputra Industrial Area

EPABX - 0612-2261250/2262265, Fax - 0612-2261050

E-mail-bspccb@yahoo.com, Website - <http://bspccb.bih.nic>

[Authorisation under rule 10 of the Bio-Medical Waste Management Rules, 2016]  
"Form-III"

[See Rule 10]

### Regd.

(Authorisation for operating a facility for collection, reception, treatment, storage, transport and disposal of bio-medical wastes)

- 1 File number of Authorisation and date of issue: BMW/138/02/B-27 dt. 23-1-18
2. Dr. N.R. Biswas, Director, Indra Gandhi Institute of Medical Sciences an occupier or operator of the facility located at Sheikhpura, Patna - 800014 is hereby granted an authorization for;

#### Activity

- ✓ Generation, Segregation
- Collection,
- ✓ Storage
- Packaging
- Reception
- Transportation
- ✓ Treatment or Processing or conversion
- Recycling
- ✓ Disposal or Destruction
- Use
- Offering for sale, transfer
- Any other form of handling

3. M/s Indra Gandhi Institute of Medical Sciences, Sheikhpura, Patna - 800014 is hereby authorised for handling of bio-medical wastes as per the capacity given below:

(i) No. of beds of HCF -550

(ii) Quantity of bio-medical waste handled, treated or disposal:

Type of Waste Category	Quantity permitted for Handling
Yellow	: 2193 kg/month
Red	: 5300 kg/month
White (Translucent)	: 180 kg/month
Blue	: -

4. This authorisation shall be in force up to 08.01.2021 from the date of issue.
5. This Authorisation is subject to the conditions stated below and to such other conditions as may be specified in the rules for the time being in force the Environment (Protection) Act, 1986.

### Terms and Conditions of authorization

1. The authorized shall comply with the provisions of the Environment (Protection) Act, 1986 and the rules made there under.
2. The authorization or its renewal shall be produced for inspection at the request of an officer authorised by the prescribed authority.
3. The person authorized shall not rent, lend, sell, transfer or otherwise transport the bio medical wastes without obtaining prior permission of the prescribed authority.
4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. It is the duty of the authorised person to take prior permission of the prescribed authority to close down the facility and such other terms and conditions may be stipulated by the prescribed authority.
6. The occupier shall obtain Discharge Consent under the Water (Prevention and Control of Pollution) Act, 1974 and Emission Consent under the Air (Prevention and Control of Pollution) Act, 1981 from this Board.
7. It is the duty of occupier to take all necessary steps to ensure that bio-medical waste is handled without any adverse effect to human health and the environment and in accordance with these rules;
8. The Occupier shall strictly comply with the provisions of these rules and in no case they are expected to dispose of any waste on roadside or at any unauthorised place under any circumstances;

*Handwritten signature and date:*  
22/1/18

827

(2)

9. Provision shall be made within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in coloured bags or containers in the manner as specified in Schedule- I, to ensure that there shall be no secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals and the bio-medical waste from such place or premises shall be directly transported in the manner as prescribed in these rules to the common bio-medical waste treatment facility or for the appropriate treatment and disposal, as the case may be, in the manner as prescribed in Schedule- I;
10. The Occupier shall treat and dispose the bio-medical wastes through their own facility;
11. Pre-treatment of the laboratory waste, microbiological waste, blood samples and blood bags through disinfection or sterilisation on-site shall be ensured in the manner as prescribed by the World Health Organisation (WHO) or National AIDs Control Organisation (NACO) guidelines and then sent to the common bio-medical waste treatment facility for final disposal;
12. Chlorinated plastic bags, gloves and blood bags shall be phased out by the 27th of March, 2018;
13. Treated bio-medical waste shall not be given with municipal solid waste;
14. Training to all health care workers and others, involved in handling of bio medical waste at the time of induction and thereafter at least once every year shall be provided and the details of training programmes conducted, number of personnel trained and number of personnel not undergone any training shall be provided in the Annual Report;
15. All health care workers and others, involved in handling of bio-medical waste shall be immunised for protection against diseases including Hepatitis B and Tetanus that are likely to be transmitted by handling of bio-medical waste, in the manner as prescribed in the National Immunisation Policy or the guidelines of the Ministry of Health and Family Welfare issued from time to time;
16. Bar-Code System shall be established for bags or containers containing bio-medical waste to be sent out of the premises or place for any purpose.
17. Segregation of liquid chemical waste shall be ensured at source and pre-treatment or neutralisation prior to mixing with other effluent generated from health care facilities shall also be ensured;
18. Treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) shall be ensured;
19. Occupational safety of all its health care workers and others involved in handling of bio- medical waste shall be ensured by providing appropriate and adequate personal protective equipments;
20. Health check up at the time of induction and at least once in a year shall be conducted for all its health care workers and others involve in handling of bio- medical waste and records for the same shall be maintained;
21. Bio-medical waste management register shall be maintained and updated on day to day basis and monthly record of the same shall be displayed on its website according to the bio-medical waste generated, treated and disposed in terms of category and colour coding as specified in Schedule I;
22. Major accidents, if any including accidents caused by fire hazards, blasts during handling of bio-medical waste, and the remedial action taken and the records relevant there to shall be reported, (including nil report) in Format I to the prescribed authority and also along with the annual report;
23. The Annual Report in Form IV shall be submitted to the Prescribed Authority i.e. Bihar State Pollution Control Board on or before the 30th June of every year;
24. Annual report shall also be made available on the web-site of the Unit and website of the Health Care Facility shall be made latest by the 27th of March, 2018;
25. The prescribed authority shall be informed immediately in case the operator of a facility does not collect the bio-medical waste within the intended time or as per the agreed time;
26. A system shall be established to review and monitor the activities related to bio-medical waste management, either through an existing committee or by forming a new committee and the Committee shall meet once in every six months and the record of the minutes of the meetings of this committee shall be submitted along with the annual report to the prescribed authority and the health care establishments having less than thirty beds shall designate qualified person to review and monitor the activities relating to bio-medical waste management within that establishment and submit the annual report;

27. Adequate fire protection equipment (such as smoke detectors, fire extinguishers, sand buckets, fire alarm, water sprinklers etc.) at salient places within the premises even at bio-medical storage area in accordance with the fire safety regulation shall be installed. Required certificate from fire safety department shall be obtained by the occupier.
28. Proper management of mercury bearing waste in environmentally sound manner shall be ensured as per the guidelines notified for the purpose by CPCB
29. All records shall be maintained for a period of five years;

#### Other Conditions:

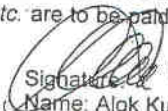
30. The general domestic solid waste generated shall be segregated and stored in three separate streams namely bio-degradable, recyclable and other wastes in suitable green, white and black coloured bins respectively;
31. Sanitary Waste like diapers, sanitary pads, etc. to be wrapped securely in the pouches provided by the manufacturers or in a suitable wrapping material before placing the same in the bin meant for dry waste or non-recyclable waste;
32. The construction and demolition waste such as building materials debris, rubble waste resulting from construction, re-modeling, repair and demolition of any civil structure, when generated shall be stored in its own premises and shall be disposed off as per the Construction and Demolition Waste Management Rules, 2016;
33. The Horticulture Waste and Garden Waste should be stored in its own premises and disposed of as per the directions of local authority time to time;
34. No Solid Waste should be thrown, burnt, or buried on streets, open public spaces outside its premises or in the drain or water bodies;
35. Recyclable material shall be handed over to either the authorised waste pickers or the authorised recyclers;
36. The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual wastes shall be given to the waste collectors or agency as directed by the local body;
37. Carry bags made of recycled plastic or products made of recycled plastic shall not be used for storing, carrying, dispensing or packaging ready to eat or drink food stuff;
38. Plastic Carry bags, plastic sheet or like less than fifty microns in thickness shall not be used;
39. All steps should be taken to minimize the generation of plastic waste, segregate plastic wastes at source in accordance with the Solid Waste Management Rules, 2016 and handover segregated waste to Urban Local Body or Gram Panchayat or agencies appointed by them or registered waste pickers, registered recyclers or waste collection agencies;
40. The unit shall ensure that e-waste generated by them is channelized through collection centre or dealer of authorized producer or dismantler or recycler or through the designated take back service provider of the producer to authorized dismantler or recycler;
41. It shall be ensured that such end-of-life electrical and electronic equipment are not admixed with e-waste containing radioactive material as covered under the provisions of the Atomic Energy Act, 1962 (33 of 1962) and rules made there under;
42. They shall maintain records of e-waste generated by them in Form-2 of the e-Waste Management Rules, 2016 and make such records available for scrutiny by the State Pollution Control Board ( *If the Health Care Facility is having a turnover of more than one crore or have more than twenty employees* );
43. They shall file annual returns in Form-3 of the e-Waste Management Rules, 2016 to the State Pollution Control Board on or before the 30th day of June following the financial year to which that return relates ( *If the Health Care Facility is having a turnover of more than one crore or have more than twenty employees* );
44. The unit may store the e-waste for a period not exceeding one hundred and eighty days and shall maintain a record of collection, sale, transfer and storage of wastes and make these records available for inspection;
45. The Unit shall ensure that used Lead Acid Batteries or components are not disposed of in any manner other than depositing with the dealer, manufacturer, importer, assembler, registered recycler, reconditioner, or at the designated collection centres. A record of which shall be maintained by the Unit;

(4)

46. The construction and demolition waste to be kept within the premise or get the waste deposited at collection centre so made by the local body or hand over it to the authorised processing facilities of construction and demolition waste; and ensure that there is no littering or deposition of construction and demolition waste so as to prevent obstruction to the traffic or the public or drains.
47. User fee / Relevant charges for the collection, transportation, processing, and disposal of general solid waste, plastic waste, construction and demolition waste, etc. are to be paid as specified by the local bodies.

Date:

To  
Dr. N.R.Biswas,  
Director,  
Indira Gandhi Institute of Medical Sciences,  
Sheikhpura, Patna – 800014

Signature:  23/1/18  
Name: Alok Kumar  
Designation: Member-Secretary

  
23/01/18

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**BY REGISTERED POST**  
**BIHAR STATE POLLUTION CONTROL BOARD**  
 Parivesh Bhawan, N.S.B.-2, Patliputra Industrial Area  
 Patliputra, Patna - 800010

Ref. No. Pt-672/... 18.12.3

Patna, Dated-10.4.17

**EMISSION CONSENT ORDER**

With reference to the application no. 201700 dated 09.01.2016 of **M/s Indira Gandhi Institute of Medical Sciences** under section 21 of the Air (Prevention & Control of Pollution) Act, 1981, he/they is/are granted consent to operate his/their Health Care Facilities at Sheikhpura, Patna-800014 **up to 08.01.2021** with the following conditions: -

- 1 That, he/they shall not make any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 22,23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and further shall extend co-operation to the Board in performing its functions entrusted under sections 24,25 and 26 of the Act;
2. That, he /they shall comply with the requirements of rule 14 of the Environment (Protection) Rules, 1986; rules 4,5,7,9,10 and 11 of the Hazardous Wastes (Management and Handling), Rules 1989; rules 4,5,7,8,10,11,12,13,15,17 and 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989; and the provisions of the Public Liability Insurance Act, 1991, whichever is applicable;
- 3 That, he/they shall monitor his/their emission(s) and the ambient air quality from representative point regularly and shall maintain its quality in conformity with Board's standards and shall produce its proof, as and when asked for;
- 4 That, he/they shall submit application for consent again 30 days before the expiration of the period of consent i.e. 07.12.2020, or within 30 days from the date of receipt of this order, whichever is applicable.
- 5 That, the occupier shall submit stack emission report every year during the period of consent order.
- 6 That, the D.G set should be provided with an integral acoustic enclosure and the maximum permissible sound pressure level for new D.G set shall be 75dB(A) at 1 meter from the enclosure surface.
- 7 That, the minimum height of stack for exhaust emission to be provided with D.G set shall be 1.0 meter more than the height of the building where it is installed.
- 8 The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body.
- 9 That, the unit shall submit Environmental Statement by Sept. every year;
- 10 That, tree plantation shall be done in space available in the complex;
11. That, the occupier/operator shall comply all the conditions as imposed in the Authorisation under the Bio-medical Waste Management Rules, 2016
- 12 That, the unit shall submit Annual Report in Form -IV under the Bio-Medical Waste Management Rules, 2016 to the Board within 30<sup>th</sup> June every year;
- 13 The unit shall comply with all above conditions and submit compliance report every year to the Board.

27/4/17  
 (S.Chandrasekar)  
 Member-Secretary

To,  
 Dr N.R.Biswas,  
 Director,  
 Indira Gandhi Institute of Medical Sciences,  
 Sheikhpura, Patna-800014

without  
 13/4/17

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**BIHAR STATE POLLUTION CONTROL BOARD**  
Parivesh Bhawan, N.S.B.-2, Patliputra Industrial Area  
Patliputra, Patna - 800010  
**BY REGISTERED POST**

Ref. No. - Pt/671/ B-118

Patna, Dated-10/4/17

**DISCHARGE CONSENT ORDER**

With reference to the application no.201700 dated 09.01.2016 of **M/s M/s Indira Gandhi Institute of Medical Sciences** for consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, he/they is/are granted consent to operate his/their Health care facility at Sheikhpura, Patna-800014 up to **08.01.2021** with the following conditions: -

1. That, he/they shall not make any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 24,31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and further shall extend co-operation to the Board in performing its functions entrusted under sections 20,21,23,30 and 32 of the Act;
2. That, he /they shall comply with the requirements of rule 14 of the Environment (Protection) Rules, 1986; rules 4,5,7,9,10 and 11 of the Hazardous Wastes (Management and Handling), Rules 1989; rules 4,5,7,8,10,11,12,13,15,17 and 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989; and the provisions of the Public Liability Insurance Act, 1991, whichever is applicable;
3. That, he/they shall monitor his/their effluents (s) regularly and maintain its quality in conformity with Board's standards and shall produce its proof, as and when asked for;
4. That, he/they shall submit application for consent again 30 days before the expiration of the period of consent i.e 07.12.2020 or within 30 days from the date of receipt of this order, whichever is applicable;
5. ***That, the occupier shall submit effluent test report from the approved laboratory every year during the consent period and it should conform the permissible limit of the CPCB ;***
6. ***That, the unit shall submit Environmental Statement by Sept. every year;***
7. ***The bio-degradable waste shall be processed, treated and disposed off through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body;***
8. ***That , this consent order is granted, subject to the condition that in the event of any information's/ documents submitted by the proponent are found false or misleading at any stage the consent order granted shall be revoked and legal action shall be initiated;***
9. ***that, The unit shall comply with all above conditions and submit compliance report every year to the Board;***
10. ***That, the Occupier shall comply all the provisions of the Bio-medical Waste Management Rules, 2016.***

This issue with the approval of the Competent Authority.

To,  
Dr N.R.Biswas,  
Director,  
Indira Gandhi Institute of Medical Sciences,  
Sheikhpura, Patna-800014

(S.Chandrasekar)  
Member-Secretary

SMBR

SA  
13/04/2017

Sushant  
13/4/17

07/4/17  
S.Chandrasekar

# Test Report

## STATE LEVEL WATER TESTING LABORATORY (SLWLT)

PHED, GOVT. OF BIHAR

CHHAJUBAGH, PATNA -800001

Technicia Consultancy by-Scientific Research Laboratory

90, Lake East (4<sup>th</sup> Road), Santoshpur, Jadavpur, Kolkata-700075

### TEST CERTIFICATE

Report No: SRL/SLWTL/BI/GW-86/2020	Date of Reporting: 15.08.2020
Name of the organization: I.G.I.M.S	Sample Received on: 09.08.2020
Ref. Memo No: Nil	Date of Sampling: 10.08.2020
Location: Sheikpura, Patna	Source of Sample: STP Outlet Water
Sample Collected By: Bhushan International, Patna	

### PHYSICO-CHEMICAL TEST REPORT

Sl No.	Parameters	Desirable Limit*	Permissible Limit* in absence of alternative sources	Method of Testing parameters	Results
1	pH Value	6.5-8.5	No relaxation	pH meter	6.4
2	Total Suspended Solid, mg/l, Max	500.0	2000.0	IS 3025:1954	120.0
3	Biological Oxygen Demand, mg/l, Max	--	<30	APHA 22 <sup>nd</sup> Ed.	40.0
4	Chemical Oxygen Demand, mg/l, Max	--	<250	APHA 22 <sup>nd</sup> Ed.	110.0
5	Oil & Grease	200	No relaxation	APHA 22 <sup>nd</sup> Ed.	2.0

Note \* (i) Drinking Water Specification Second Revision-IS 10150:2012

(ii) All the testing parameters methods are take from APHA 22<sup>nd</sup> Edition 2012

(iii) BDL means Below Detection Limit

*The results are reported based on the materials received. Sample will be destroyed after 15 days from the date of issue of the Certificate unless otherwise specified sample will be preserved according to standard method. The test report shall not be reproduced Except in full, without the written permission of the laboratory.*



**Note: This water is fit for drinking Purpose.**

Prepared by Scientific Research Laboratory

## STATE LEVEL WATER TESTING LABORATORY (SLWLT)

PHED, GOVT. OF BIHAR

CHHAJUBAGH, PATNA - 800001

Technicia Consultancy by-Scientific Research Laboratory

90, Lake East (4<sup>th</sup> Road), Santoshpur, Jadavpur, Kolkata-700075

### TEST CERTIFICATE

Report No: SRL/SLWTL/BI/GW-124/2020	Date of Reporting: 15.09.2020
Name of the organization: I.G.I.M.S	Sample Received on: 09.09.2020
Ref. Memo No: Nil	Date of Sampling: 13.09.2020
Location: Shalipura, Patna	Source of Sample: ETP Outlet Water
Sample Collected By: Bhushan International, Patna	

### PHYSICO-CHEMICAL TEST REPORT

Sl. No.	Parameters	Desirable Limit*	Permissible Limit* in absence of alternative source.	Method of Testing parameters	Results
1	pH Value	6.5-8.5	No relaxation	pH meter	7.2
2	Total Suspended Solid, mg/l, Max	500.0	2000.0	IS 3025:1954	150.0
3	Biological Oxygen Demand, mg/l, Max	--	<30	APHA 22 <sup>nd</sup> Ed.	30.0
4	Chemical Oxygen Demand, mg/l, Max	--	<250	APHA 22 <sup>nd</sup> Ed.	120.0
5	Oil & Grease	200	No relaxation	APHA 22 <sup>nd</sup> Ed.	0.3

Note: \* (i) Drinking Water Specification Second Revision IS-10150:2012

(ii) All the testing parameters methods are taken from APHA 22<sup>nd</sup> Edition 2012.

(iii) BDL means Below Detection Limit.

*The results are reported based on the materials received. Sample will be destroyed after 15 days from the date of issue of the Certificate unless otherwise specified. Sample will be preserved according to standard method. The test report shall not be reproduced except in full, without the written permission of the laboratory.*



**Note: This water is fit for drinking Purpose.**

Prepared by Scientific Research Laboratory

## STATE LEVEL WATER TESTING LABORATORY (SLWLT)

PHED, GOVT. OF BIHAR

CHHAJULBAGH, PATNA - 800001

Technica Consultancy by-Scientific Research Laboratory

90, Lake East (4<sup>th</sup> Road), Santoshpur, Jadavpur, Kolkata-700075

## TEST CERTIFICATE

Report No: SRL/SLWTL/BI/GW-85/2020	Date of Reporting: 12.08.2020
Name of the organization: I.G.I.M.S.	Sample Received on: 06.08.2020
Ref. Memo No: Nil	Date of Sampling: 10.08.2020
Location: Sheikpura, Patna	Source of Sample: ETP Outlet Water
Sample Collected By: Bhushan International, Patna	

## PHYSICO-CHEMICAL TEST REPORT

Sr No.	Parameters	Desirable Limit*	Permissible Limit* in absence of alternative source	Method of Testing parameters	Results
1	pH Value	6.5-8.5	No relaxation	pH meter	7.1
2	Total Suspended Solid, mg/l, Max	500.0	2000.0	IS 3025:1954	190.0
3	Biological Oxygen Demand, mg/l, Max	--	<30	APHA 22 <sup>nd</sup> Ed.	35.0
4	Chemical Oxygen Demand, mg/l, Max	--	<250	APHA 22 <sup>nd</sup> Ed.	100.0
5	Oil & Grease	200	No relaxation	APHA 22 <sup>nd</sup> Ed.	0.2

Note: \* (i) Drinking Water Specification Second Revision-IS-101500:2012.

(ii) All the testing parameters methods are take from APHA 22<sup>nd</sup> Edition 2012.

(iii) BDL means Below Detection Limit.

The results are reported based on the materials received. Sample will be destroyed after 15 days from the date of issue of the Certificate unless otherwise specified, sample will be preserved according to standard method. The test report shall not be reproduced Except in full, without the written permission of the laboratory.



Note: This water is fit for drinking Purpose.

Prepared by Scientific Research Laboratory

## STATE LEVEL WATER TESTING LABORATORY (SLWLT)

PHED, GOVT. OF BIHAR

CHHAJJUBAGH, PATNA -800001

Technical Consultancy by Scientific Research Laboratory

90, Lake East (4<sup>th</sup> Road), Santoshpur, Jadavpur, Kolkata-700075

## TEST CERTIFICATE

Report No: SRI/SL.WTL/BI/GW-123/2020	Date of Reporting: 15.09.2020
Name of the organization: I.G.I.M.S	Sample Received on: 08.09.2020
Ref. Memo No: Nil	Date of Sampling: 13.09.2020
Location: Sheikpura, Patna	Source of Sample: STP Outlet Water
Sample Collected By: Bhushan International, Patna	

## PHYSICO-CHEMICAL TEST REPORT

Sl No.	Parameters	Desirable Limit*	Permissible Limit* in absence of alternative source	Method of Testing parameters	Results
1	pH Value	6.5-8.5	No relaxation	pH meter	6.8
2	Total Suspended Solid, mg/l, Max	500.0	2000.0	IS 3025:1954	150.0
3	Biological Oxygen Demand, mg/l, Max	--	<30	APHA 22 <sup>nd</sup> Ed.	20.0
4	Chemical Oxygen Demand, mg/l, Max	--	<250	APHA 22 <sup>nd</sup> Ed.	80.0
5	Oil & Grease	200	No relaxation	APHA 22 <sup>nd</sup> Ed.	0.9

Note: \* (i) Drinking Water Specification Second Revision-IS: 10150:2012

(ii) All the testing parameters methods are taken from APHA-22<sup>nd</sup> Edition 2012

(iii) BDL means Below Detection Limit

The results are reported based on the materials received. Sample will be destroyed after 15 days from the date of issue of the Certificate unless otherwise specified. Sample will be preserved according to standard method. The test report shall not be reproduced Except in full, without the written permission of the laboratory.



Note: This water is fit for drinking Purpose.

Prepared by Scientific Research Laboratory



## TEST REPORT

TEST REPORT NO.: ETS/1208-10/11/2020

DATE OF REPORT:

31.10.2020

### AMBIENT AIR QUALITY MONITORING AND ANALYSIS REPORT

Name And Address of Customer : M/S INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES (IGIMS)  
PROPOSED HOSPITAL BUILDING AT INDIRA GANDHI INSTITUTE  
OF MEDICAL SCIENCE AT DISTRICT- PATNA, BIHAR

Date of Monitoring : 26.10.2020

Analysis Start Date : 29.10.2020

Analysis End Date : 31.10.2020

Duration Of Monitoring : 26.10.2020 To 27.10.2020

Time Of Monitoring : 10.10 AM To 10:05 AM

Sample ID No : 1208-10

Sampling Done By : ETS STAFF

Sampling Location : PROJECT SITE

Sampling Method : ETS/STP/AIR-01

Sampling Machine Placed At Height : 1.5 METER FROM GROUND LEVEL

Weather Condition : CLEAR Ambient Temperature: 29.0 °C

Wind Direction : E To W

Equipment Used : Respirable Dust Sampler (PM<sub>10</sub>) + Fine Particulate Sampler (PM<sub>2.5</sub>)

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Particulate Matters,(PM <sub>10</sub> )	µg/m <sup>3</sup>	105.3	For 24 Hrs.=100	IS 5182 (Part-23)
2	Particulate Matters,(PM <sub>2.5</sub> )	µg/m <sup>3</sup>	45.3	For 24 Hrs.=60	ETS/STP/AIR-03
3	Sulphur Dioxide, (SO <sub>2</sub> )	µg/m <sup>3</sup>	12.8	For 24 Hrs.=80	IS: 5182 (Part-2)
4	Nitrogen Dioxide,(NO <sub>2</sub> )	µg/m <sup>3</sup>	25.7	For 24 Hrs.=80	IS: 5182 (Partt-6)

\*\*\*\*\*End of Test Report\*\*\*\*\*



Note:-

1. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.
2. The samples received shall be destroyed after 15 days from the date of test report issued.
3. The results indicated only refer to the tested samples and listed applicable parameters.
4. Our liability is limited to invoice value only.
5. Head Office : G-232, M.G. Road Industrial Area, Hapur-Ghaziabad (U.P.) 201015





## TEST REPORT

TEST REPORT NO.: ETS/1208-11/11/2020

DATE OF REPORT: 31.10.2020

### NOISE MONITORING REPORT

Name And Address of Customer : M/S INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES (IGIMS)  
PROPOSED HOSPITAL BUILDING AT INDIRA GANDHI  
INSTITUTE OF MEDICAL SCIENCE AT DISTRICT- PATNA, BIHAR

Date of Monitoring : 26.10.2020

Monitoring Start Date : 26.10.2020

Monitoring End Date : 27.10.2020

Duration Of Monitoring : 24 HOURS

Sample ID No : 1208-11

Monitoring Done By : ETS STAFF

Sampling Location : PROJECT SITE

Sampling Method : ETS/STP/NOISE-01

Category Of Area : SILENCE AREA

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Day Time Noise Level	Leq :dB (A)	48.1	50	IS: 9989
2	Night Time Noise Level	Leq :dB (A)	36.2	40	IS: 9989

Remark: Day time is reckoned in between 06.00 A.M. and 10.00 P.M.  
Night time is reckoned in between 10.00 P.M. and 06.00 A.M.

\*\*\*\*\*End of Test Report\*\*\*\*\*

Page 1 of 1



FOR ENVIRO-TECH SERVICES

CHECKED BY

Format No ETS/LAB/TR-02, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

For Enviro-Tech Services

AUTHORIZED SIGNATORY

Md Humraj

Quality Manager

#### Note:-

1. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.
2. The samples received shall be destroyed after 15 days from the date of test report issued.
3. The results indicated only refer to the tested samples and listed applicable parameters.
4. Our liability is limited to invoice value only.
5. Head Office : G-232, M.G. Road Industrial Area, Hapur-Ghaziabad (U.P.) 201015



## TEST REPORT

TEST REPORT NO.: ETS/1208-12/11/2020

DATE OF REPORT: 31.10.2020

### SOIL SAMPLE ANALYSIS REPORT

Name And Address of Customer : M/S INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES (IGIMS)  
PROPOSED HOSPITAL BUILDING AT INDIRA GANDHI  
INSTITUTE OF MEDICAL SCIENCE AT DISTRICT- PATNA, BIHAR

Date of Sampling : 26.10.2020

Analysis Start Date : 29.10.2020

Analysis End Date : 31.10.2020

Sample ID No : 1208-12

Sampling Done By : ETS STAFF

Sampling Description : SOIL

Sampling Location : PROJECT SITE

Sampling Method : ETS/STP/SOIL-01

Sample Quantity : 2.0 Kg.

Packing Condition : SEALED

Packed In : POLY BAG

S. No.	Test Parameter	Unit	Result	Test Method
1	Texture	...	SANDY CLAY LOAM	IS 2720 (Part-4)
2	Sand	%	61.0	IS 2720 (Part-4)
3	Silt	%	15.5	IS 2720 (Part-4)
4	Clay	%	23.5	IS 2720 (Part-4)
5	pH	...	7.42	IS 2720 (Part-26)
6	Electrical Conductivity (EC)	µs/cm	324.0	IS 14767
7	Water Holding Capacity (WHC)	%	32.7	IS 2720 (Part-2)
8	Cation Exchange Capacity (CEC)	meq/100	21.4	IS 2720 (Part-24)
9	Sodium,(Na)	mg/kg	97.3	APHA-3125B
10	Potassium (K )	mg/kg	34.5	APHA-3125B
11	Magnesium,(Mg)	Mg/kg	424.5	ETS/STP/SOIL-08
12	Calcium,(Ca)	mg/kg	1076.2	APHA-3125B

\*\*\*\*\*End of Test Report\*\*\*\*\*



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For EnviroTech Services

AUTHORIZED SIGNATORY

Md Humraj

Quality Manager

Format No ETS/LAB/TR-12, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

Note:-

1. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.
2. The samples received shall be destroyed after 15 days from the date of test report issued.
3. The results indicated only refer to the tested samples and listed applicable parameters.
4. Our liability is limited to invoice value only.
5. Head Office : G-232, M.G. Road Industrial Area, Hapur-Ghaziabad (U.P.) 201015



## TEST REPORT

TEST REPORT NO.: ETS/1208-13/11/2020

DATE OF REPORT: 31.10.2020

### WATER SAMPLE ANALYSIS REPORT

Name And Address of Customer : M/S INDIRA GANDHI INSTITUTE OF MEDICAL SCIENCES (IGIMS)  
PROPOSED HOSPITAL BUILDING AT INDIRA GANDHI INSTITUTE  
OF MEDICAL SCIENCE AT DISTRICT- PATNA, BIHAR

Date of Sampling : 26.10.2020

Analysis Start Date : 29.10.2020

Analysis End Date : 31.10.2020

Sample ID No : 1208-13

Sampling Done By : ETS STAFF

Sampling Description : GROUND WATER

Sampling Location : PROJECT SITE

Sampling Method : ETS/STP/WATER-02

Sample Quantity : 2.0 + 0.5 Ltr.

Packing Condition : SEALED

Packed In : P.V.C. AND GLASS BOTTLE

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per IS:10500: 2012 )		Test Method
				Desirable	Permissible	
1	pH	...	7.36	6.5 - 8.5	No Relaxation	APHA 4500-H+
2	Turbidity	NTU	<1.0	1	5	APHA 2130-B
3	Total Dissolved Solids,(TDS)	mg/L	465.0	500	2000	APHA 2540-C
4	Chlorine (Residual)	mg/L	<0.2	0.2	1	APHA 4500:(Cl)-B
5	Fluoride,(F)	mg/L	<0.01	1	1.5	APHA 4500:(F- )-D
6	Total Alkalinity,(CaCO <sub>3</sub> )	mg/L	165.1	200	600	APHA 2320-B
7	Total Hardness,(CaCO <sub>3</sub> )	mg/L	139.6	200	600	APHA 2340-C
8	Calcium,(Ca)	mg/L	54.2	75	200	APHA 3500:(Ca)-B
9	Chloride,(Cl)	mg/L	132.3	250	1000	APHA 4500:(Cl- )-B
10	Nitrate,(NO <sub>3</sub> )	mg/L	1.32	45	No Relaxation	APHA 4500:(NO <sub>3</sub> -)-B
11	Sulphate,(SO <sub>4</sub> )	mg/L	65.6	200	400	APHA 4500:(SO <sub>4</sub> )-E
12	Conductivity	µs/cm	674.0	Not Specified	Not Specified	APHA 2510-B
13	Chromium,(Cr <sup>+6</sup> )	mg/L	<0.05	Not Specified	Not Specified	APHA 3500:(Cr)-B
14	Iron,(Fe)	mg/L	0.15	0.3	No Relaxation	APHA-3120B
15	Escherichia coli	MPN/100mL	Absent	Shall Not Be Detectable.		IS 1622

\*\*\*\*\*End of Test Report\*\*\*\*\*

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FOR ENVIRO-TECH SERVICES

CHECKED BY

Format No ETS/LAB/TR-09, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

For Enviro-Tech Services

AUTHORIZED SIGNATORY

Md Humraj

Quality Manager

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