



BIOMEDICAL WASTE MANAGEMENT REPORT



**Guru Nanak Dev University
Amritsar
2020-2021**



राष्ट्रीय मूल्यांकन एवं प्रत्यायन परिषद

विश्वविद्यालय अनुदान आयोग का स्वायत्त संस्थान

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

An Autonomous Institution of the University Grants Commission

Certificate of Accreditation

*The Executive Committee of the
National Assessment and Accreditation Council
on the recommendation of the duly appointed
Peer Team is pleased to declare the
Guru Nanak Dev University
Amritsar, Punjab as
Accredited
with CGPA of 3.51 on four point scale
at A grade
valid up to December 09, 2021*

Date : December 10, 2014



D. Singh
Director

Preserve

Protect
Environment

Save

Er. S.K.Goyal
M.E. (Env.), FIE (India)
Sr. Env. Engineer(Retd.)
Punjab Pollution Control Board(PPCB)



EIA Co-ordinator (QCI)
Chartered Engineer,PPCB

Certificate

Certified that a team of faculty members & students, under the leadership of **Prof. Ashwani Luthra, Director IQAC** of Guru Nanak Dev University, Amritsar has conducted a detailed **Environmental Green Audit of various Green Initiatives taken by the university** covering different aspects such as Green Cover, Green Mobility, Air Quality Monitoring, Water and Wastewater Management, Green Energy Initiatives, Solid Waste Management, Bio-Medical Waste Management, and E-Waste Management, for the preservation and protection of environment in its campus. Data and credentials in the report have been scrutinised and are found **Satisfactory**.

Efforts made by the leadership, faculty and students of the University towards environment and sustainability are commendable and worth appreciating.

Dated: NOV.25,2021


(Er. Samarjit K. Goyal)
Chartered Engineer
Pb Pollution Control Board

CENTRE FOR SCIENCE AND ENVIRONMENT

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LEAVES
OF
IMPORTANT
SURVIVAL
TREES
IN
INDIA —
MAHUA,
KHEJDI,
ALDER,
PALMYRA
AND
OAK

November 29, 2021

The Coordinator
Centre for Sustainable Habitat
Guru Nanak Dev University
Amritsar

Subject: Certification for different Audits under Green Campus Initiatives

Dear Sir,

From the past six years, Centre for Science and Environment (CSE) and Guru Nanak Dev University (GNDU) Amritsar have been working together on CSE's Green Campus Initiative and audit programme. Under this engagement, CSE has supervised multiple environmental audits and trained the faculty, staff and students at GNDU as well as other universities and colleges across India. The results and outcomes of this engagement have been published by CSE in multiple reports such as 'A Green Campus Compendium: Incubation, Experimentation and Demonstration of a Green Future' and 'Green Campus Movement'. Appreciation letters have also been shared at the various stages of this programme. CSE appreciates that the faculty at GNDU has prepared the following audit reports:

1. Green Cover of GNDU
2. Green Mobility Initiatives
3. Air Quality Monitoring
4. Liquid Waste Management
5. Green Energy Initiatives
6. Solid Waste Management
7. Bio-Medical Waste Management
8. E-Waste Management

CSE commends GNDU's efforts towards realising Sustainable Development Goals and extends its full support and expertise in its future endeavours.

Yours' cordially,

Rajneesh Sareen
Programme Director
Sustainable Buildings and Habitat Programme
Centre for Science and Environment

Preface

Bio-Medical Waste (BMW) Management practices being followed at Guru Nanak Dev University Campus have been conceded for a period of five years i.e. 2016-2017 to 2020-2021. An audit of BMW has been carried out to assess the waste generated in aggregate and by its type and efforts made for its management as per the guidelines of Punjab Pollution Control Board. The report on BMW in the university is prepared by for Internal Quality Assurance Cell, GNDU by Dr. Harpreet Kaur, Chief Administrative Officer, Health Centre, GNDU. The BMW generated in yellow, red, blue and white categories is analyzed for the whole campus and the procedure being followed to handover the waste to the authorized firm is looked into to appreciate the guidelines being followed by the Health Centre of GNDU.

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GURU NANAK DEV UNIVERSITY



With the glorious history of past fifty years, Guru Nanak Dev University was established at Amritsar on November 24, 1969 to mark the Birth Quincentenary of Sri Guru Nanak Dev Ji, the apostle of universal brotherhood, truthfulness, non-violence, compassion, tolerance, harmony, humanity, strict observance of moral & ethical values in daily life, who is also revered as the founder of Sikhism. It won't be an exaggeration to state that His teachings and preaching & His own personal life are perfect examples to be emulated by the entire mankind even after about four and half a centuries and will remain so eternally. Ever since its foundation the endeavour of the university has always been to meet the objectives enshrined in the Guru Nanak Dev University Act 1969, which emphasized that the new University would make provision for imparting education and promoting research in the humanities, learned professions, sciences, especially of applied nature and technology. Studies and research on the life and teachings of Guru Nanak, in addition to working towards the promotion of Punjabi language and spreading education among educationally backward classes and communities are the other commitments. In consonance with these expectations, the university in its eventful history of 50 years has taken long strides in spreading the message of Guru Nanak Dev ji and promoting education in such fields as Science, Arts, Management, Information Technology, Industrial Technology, Environment, Planning and Architecture. To fulfil its commitment, the tuition fee charged from the students of the departments of Guru Nanak Studies and the School of Punjabi Studies has been waived. The UGC conferred this University with status of "University with Potential for Excellence" in 2012. The National Assessment and Accreditation Council (NAAC), Bangalore in November 2014 reaccredited the university in 3rd cycle with CGPA of 3.51 out of 4 point scale at "A++" grade, the highest in the region.

Guru Nanak Dev University is a high performing state public university as it has improved its ranking from 80 in 2017 to 51 in 2020 among all Central, Public and Private Universities in the country (NIRF, MHRD, GoI). It is reckoned among top 9% universities of the world and top 10 state public universities of India by Centre for World University Ranking (CWUR), a leading international agency engaged in grading the top ranking universities world-wide since 2012. QS I-GAUGE Rating System has rated the university in the Diamond Category in the field of 'research, faculty quality and infrastructure' by the. It was also shortlisted for the University of the Year Award in the 16th FICCI Higher Education Summit 2021 organized by FICCI jointly with the Ministry of Education and Ministry of Commerce & Industry, Government of India. High quality research has improved the H-index of the university from 64 to 119 with top 10 percent highly cited papers in Scopus. The university is placed among the top 4 Institutions in Punjab and 10 Institutions in North India by Nature Index,

The University today boasts of 43 teaching departments at the Campus and 149 affiliated colleges, 16 Constituent & University Colleges and 53 Associate Institutes, many of which are located in the rural areas. The university has always strived hard to make the benefits of higher education accessible to the rural masses. More than twenty thousand students, an overwhelming majority of them being women, are enrolled in various Departments at University Campus and Constituent Colleges. On-line admission, on-line counselling, on-line re-evaluation, introduction of Credit Based Continuous Evaluation Grading

System etc. are a few hallmarks of the university. All the results have been computerized and OMR (Optical Magnetic Recognition) system is being used to bring in more efficiency and transparency. This is the first University in the region to have computerized its examination and registration system. The students now have an all-time access to their results through SMS service. It acts as a model higher education institution for digital initiatives like e-office management system, digital library, Wi-Fi enabled campus, high speed online teaching modules, and smart classrooms to name a few.

Academically also, the university has carved a niche for itself in the field of Higher Education in the country. Our University is recognized as one of the leading institutions in North India in the domain of Science and Technology. Many coveted projects from the apex bodies like the DST, CSIR, BARC and other organizations worth crores of rupees have been awarded to our faculty members. One of the four Nodal Calibration Centres established by Bhabha Atomic Research Centre is set up at our campus. The Centre of Emerging Life Sciences equipped with the state-of-the-art scientific instruments worth crores of rupees, well-maintained Botanical Garden, Department of Sports Medicine & Physiotherapy are a few of the jewels in the crown of the university. To more strengthen the university infrastructure and to prepare students for employments, computer lab with the help of TCS is also established. Further, the UGC has granted the University the Centre with Potential for Excellence in Life Sciences and Centre for Advanced Study in Chemistry.

In the field of culture and sports also, the achievements of the university are noteworthy. The university has been national Champion for 10 times & the winner of the North-Zone-Inter-Varsity Cultural Championship for 13 times. The winning of the coveted Maulana Abul Kalam Azad Trophy, the highest sports award for a university in the country, for a record number of 23 times, speaks volumes about its supremacy in the field of sports. An Astro Turf for hockey, a swimming pool of international standards, a velodrome, a Gymnasium hall, shooting range & many other state-of-the art sports facilities are the prized possessions of the university. The Lifelong Learning Department of the university is successfully catering to the female folk of the region to make them self-dependent by offering various skill development programmes. The Track record of employment of our students by big business Houses and Multi-National Companies has been very satisfactory. Our students of engineering, management and commerce field are employed by companies in India and abroad. They are all contributing to the creditworthiness of the University by their hard work and diligence. In the last year alone, almost all our engineering and management students were recruited by various companies through campus placements. It goes without saying that all these achievements would not have been achieved, but for the heart and soul put in by the students, faculty members, and administration of the university. Undoubtedly, the university remains committed to achieve the lofty goals, for which it was founded after the name of Sri Guru Nanak Dev Ji.

The university is known for its GREEN CAMPUS initiatives in the field of energy, water, solid waste management, micro mobility and health and hygiene. Some of the key initiatives of the university are energy efficient buildings, rooftop solar energy plant, solar water heaters, sensor based urinals, toilets and wash basins, maintenance of lawns as water recharge systems, rooftop rainwater harvesting, on campus sewerage water treatment plant, organic waste management through bio-gas plant and vermi-compositing, natural processing to convert agro-waste into compost, involvement in recycling and reuse of paper, plastic, metal and other waste, efficient medical waste management, regular thickening of tree cover by planting tree each year, making the campus car free, facilitating the students, staff and the visitors by free of charge e-vehicle facility for micro mobility within the campus, developing lush green covered footpaths, regular sweeping of the roads and buildings at least twice a day and regular disinfectant spray to help the university bag the second cleanest State University in India awarded by the Ministry of Human Resource Development, Government of India under Swachh Campus Ranking for the last two years continuously.

1. INTRODUCTION

Higher education institutions (HEIs) are the role models for the communities and society in number of ways. Their research, practices and deeds are adopted by the people, and governments to make policies, programmes, and missions to take the nations to higher peaks. The execution of innovative techniques and technologies within their own campuses help in improving the physical, social, cultural, economic, and environmental health of the nation. Hence, responsibilities have been fixed on the HEIs to act upon to achieve the sustainable development goals (SDGs) and their targets mandated to be achieved by 2030. Amongst the seventeen SDGs suggested by the United Nations, SDG 3 (Good Health and Wellbeing), SDG 6 (Clean Water and Sanitation) and SDG 12 (Ensure Sustainable Consumption and Production Patterns) focus on waste management practices one way or the other. They stress on implementing waste treatment technologies which do not create toxic residues or emissions in their own right. SDG 12 in particular targets on reducing pollution and health impacts through environmentally sound management (ESM) of all waste, including hospital waste. It stresses on sustainable healthcare waste management technologies such as biodigestion and autoclaving to make healthcare systems more resilient to disasters. The Bio-Medical Waste Management Rules, 2016 framed under Environment (Protection) Act, 1986 are mandated to be followed in the states of India.



2. Definition of Bio-Medical Waste (BMW)

Bio-Medical waste means any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities pertaining to or in the production or testing of biologicals (any preparation made from organisms or micro-organisms or a product of metabolism and biochemical reactions). Bio-Medical Waste Management Rules are applicable to all persons who generate, collect, receive, store, transport, treat, dispose or handle BMW in any form.

3. SOURCES OF BIO-MEDICAL WASTE

Bio-Medical waste is generated in medical and dental clinics, medical laboratories, animal houses etc. At Guru Nanak Dev University, apart from the Health Centre, other departments generating bio-medical waste are Department of Biotechnology, Zoology, Pharmaceutical Sciences, Human Genetics and Microbiology. Waste generated can be in the form of hypodermic needles, scalpel blades, gloves, bandages, body fluids, human or animal tissue and organs, discarded medicine etc. According to WHO, about 85% of all waste generated by health care facilities/hospitals is general non-hazardous waste, about 10% is BMW and 5% is other waste such as radioactive or infections waste. It is important to realize that if all these types of waste are mixed together then the whole waste becomes harmful.

The key to minimize and effectively manage bio-medical waste is identification of waste and its segregation. The most appropriate way to do so is by sorting the waste based on colour. BMW has been classified into 4 categories i.e. Yellow, Red, White and Blue.

Category	Type of Bag Used	Type of Waste	Treatment/ Disposal Option
Yellow	Non Chlorinated plastic bags of yellow colour and of 50 micron	• Human anatomical waste • Animal anatomical waste • Soiled linen and beddings • Blood bags • Microbiology and medical laboratory waste • Discarded medicines and cytotoxic drugs to be disposed off in separate yellow bags with cytotoxic symbol.	Incineration or deep burial
Red	Non chlorinated plastic bag of red colour and of 50 micron (after cutting /mutilation)	Recyclable plastic waste including tubings, bottles, gloves, syringes without needles, urine bags, vacutainers, I/V tubes and sets, catheters	Send for recycling after autoclaving or microwaving
White	Translucent, puncture and leak proof containers	Waste sharps including metals such as needles, blades, scalpels, syringes with fixed needles, burnt needles	Auto or dry heat sterilization followed by shredding or mutilation
Blue	Cardboard box with blue marking	Recyclable glass waste such as broken glass, medicine vials ampoules, contaminated glass	Disinfection or Autoclaving then sent for recycling

4. UNIVERSITY HEALTH CENTRE

The University Health Centre was established in 1973 as a primary health care facility. The mission of the Health Centre is to enhance the health and wellness of University students, faculty and staff by providing access to quality health services and ensuring their wellbeing. Health Centre provides clinical (supporting health and wellbeing through care for acute and ongoing diseases and injuries) as well as ancillary services like laboratory, radiology and pharmacy services to the University community apart from supporting educational and research activities as well.



4.1. Facilities Available

The Health Centre provides the following medical facilities.

- Medical OPD
- Dental OPD
- Sports Dentistry Clinic
- Ayurveda OPD
- Physiotherapy Centre

There are no charges for doctors' consultations. The radiological/ other investigations are done at very nominal rates. The University Health Centre provides services for Medical, Dental as well as Ayurvedic O.P.D. There is also a specialized sports dentistry clinic which provides mouth guards to the sports persons for prevention of dental injuries. Attached to the Health Centre is a well-equipped Physiotherapy Centre having trained physiotherapist. These facilities remain open Monday to Saturday and even on gazzetted/ declared holidays.

Emergency services including ambulance services are available 24x7. The doctors at Health Centre provide primary health care. For services not covered at Health Centre, referral services to Government and Multispecialty hospitals for specialized treatment/hospitalization are available. Twenty Nine hospitals are on empanelment with the University at CGHS rates.

Other in house facilities available at Health Centre are:

- Fully computerized digital Electrocardiograph (ECG)
- Digital X-ray
- Bone mineral density scan (DEXA Scan)
- Mammography
- Dental X-ray (RVG)
- Orthopantomogram
- Vacuum thermoforming machine (for making mouth guards)

All X-ray equipments are registered with Atomic Energy Regulatory Board (AERB), Government of India. The rooms with X-ray equipment are built as per AERB guidelines with Lead Sheets in the walls and door. Radiation safety devices (lead aprons, lead gloves, thyroid shield, Gonadal shield, lead screens, lead glass) are available. Staff associated with use of these are provided with Personal Radiation Monitoring Devices (TLD Badges) through BARC accredited lab.

In order to manage any casualty among girl students, Health Centre has set up a medical room in the Girls' Hostel and a staff nurse is available at the hostel from 8 pm to 8 am daily including on Sundays & holidays. The medical officers of Health Centre regularly inspect the messes and canteens in boys & girls hostels. The mess & canteens workers are periodically examined and screened for any communicable diseases.

The University Health Centre has set up a sample collection unit in collaboration with NABL accredited laboratory for providing quality lab facilities at special subsidized rates. Ultrasonography facility has been provided to the university patients at discounted/CGHS rates in collaboration with three leading diagnostic centres of the city. A Medical Committee is constituted to regularly access the working of health centre and recommend programs of the benefit of university students. An emergency number 70877-07052 has been started to facilitate the faculty staff and students in case of any medical emergency. This number is operational 24x7.

An isolation room has been set up at Health Centre to separate and restrict movement of persons who are not ill but believed to have been exposed to the infection for the purpose of preventing the transmission of the disease. Being committed to the health of the faculty, staff and students of Guru Nanak Dev University and following the procedure and guidelines issued by the Punjab Government a vaccination drive against COVID-19 was started on 01-04-2021 and is still continuing at University Health Centre, 6763 doses of Covishield and Covaxin have been administered to people aged 18 years and above till 28-08-2021.



4.2. Staff Structure

Following is the detail of the staff working in the Health Centre of the University.

Sr. No.	Name of Post	Number
1.	Medical Officer	3
2.	Medical Officer (Dental)	1
3.	Staff Nurse	3
4.	Dispenser cum Pharmacist	5
5.	Radiographer	1
6.	Multipurpose Health Worker	1
7.	Attendant	5
Other Supporting Staff		
1.	CCJDEO	1
2.	Driver for Ambulance	1
3.	Safai Karamchari	1

Ayurvedic Wing (Punjab Government)

Sr. No	Name of Post	Number
1.	Medical Officer	1
2.	Ayurvedic Pharmacist	1
3.	Trained Dai	1

5. BIO-MEDICAL WASTE MANAGEMENT IN GNDU

It is well known and documented that BMW is a potential health hazard to health care workers, public as well as flora and fauna of the area. Considering the inappropriate BMW management, the Ministry of Environment and Forests implemented certain rules. In accordance with these rules, it is the duty of everyone in a health care facility to take all the steps to ensure that the generated waste is handled without any adverse effect to human health and environment. Thus the main objectives of bio-medical waste management are:

- To prevent transmission of diseases from patients to health workers and vice-versa.
- To prevent injury to health care worker while handling bio-medical waste.
- To prevent general exposure to harmful effects of toxic bio-medical waste.

Safe and effective management of bio-medical waste is not only a legal necessity but also a social responsibility. As per Bio-Medical Waste Management Rules, 2016, no hospital can establish on site treatment and disposal facility, if a service of common bio-medical treatment facility is available within a distance of 75 kilometer. Thus, BMW at Guru Nanak Dev University is outsourced to M/s. Amritsar Enviro Care (P) Ltd. for three years from the date of agreement i.e. April 1, 2020 (refer annexure I). AECS has setup a facility to collect, transport, treat and dispose off the BMW generated by the health care establishments at Ibban Kalan, Chhabal Road, Amritsar. AECS shall collect the BMW from the GNDU premises.

As per the agreement AECS is liable to meet are the rules and regulations stipulated by the Punjab Pollution Control Board (PPCB). Also, liability of violating the Environment (Protection) Act 1986 and the relevant rules made there under shall rest on AECS (Annexure II). AECS has been collecting the BMW of GNDU from 2011.

6. BIO-MEDICAL WASTE GENERATION

An account of last seven years starting from 2017, reveal that the GNDU health centre is producing little more than 500 kilograms per year BMW annually (refer figure 1). Thus, on average the university produces only 42 kilograms of BMW annually. In 2017, it was about 390 kilograms, which rose to about 510 kilograms in 2018 and remained at about 512 kilograms in 2019. Increasing footfall of patients may be attributed to the rising volume of BMW. The years

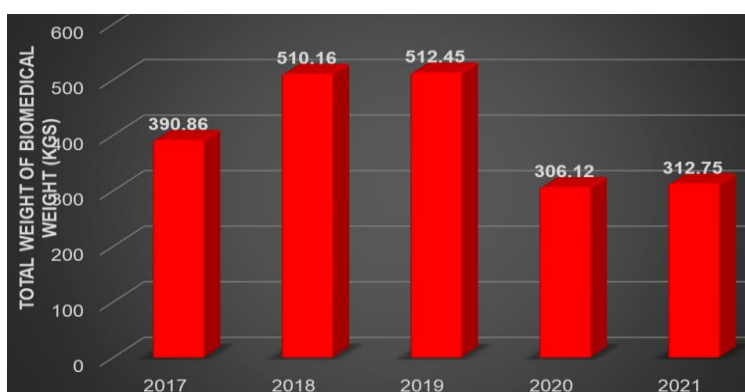


Figure 1: BMW Generation in GNDU

2020 and 2021 have been the COVID 19 effected years, Hence the patient footfall has also decreased in these years due to mandatory lockdowns. The BMW reduced to little more than 300 kilograms per year, about 25 kilograms annually. Therefore, the contribution of GNDU towards BMW is meager.

6.1. Bifurcation of Bio-Medical Waste

The BMW is collected in four types of bags viz., yellow, red, blue and white. The details of the bifurcated BMW generation by GNDU for the last five years (2017-2021) are described in annexure III. It is evident from figure 2 that the university has been generating cytotoxic waste to the tune of about 240 kilograms per year e.g. 2018 and 2019. Recyclable plastic waste such as tubings, bottles, gloves, syringes without needles, urine bags, vaccutainers, I/V tubes and sets, catheters, etc. constitute the next higher volume of BMW during the same years. Subsequent to 2019, COVID-19 conditions have reduced the volume of cytotoxic and recyclable plastic waste resulting from lowered patient footfall. But this phase appears to be short lived, to state that the cytotoxic waste and recyclable plastic waste will be about 240 kilograms and 180-200 kilograms per year respectively. Recyclable glass waste such as broken glass, medicine vials ampoules, contaminated glass, etc. constitute about 65-90 kilograms weight under normal conditions.

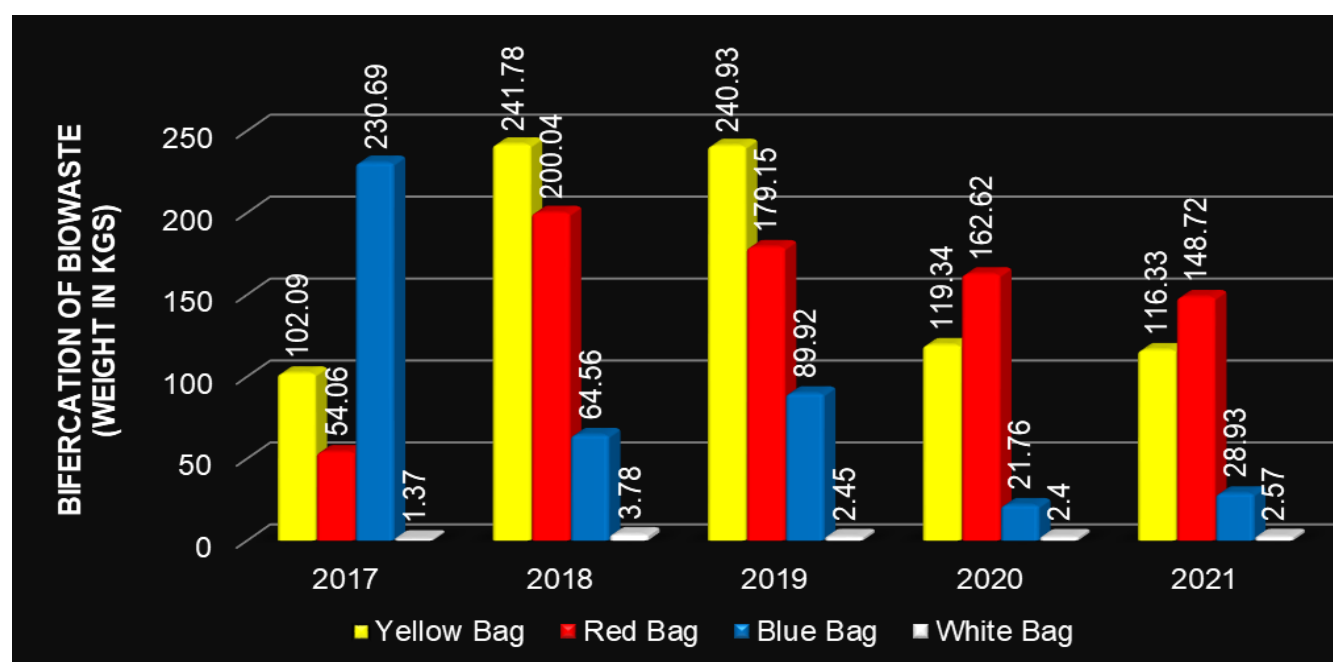


Figure 2: Bifurcation of BMW Generation at GNDU

Baring 2017, recyclable glass waste constitutes about 39-47 percent share of the total BMW in the last five years (refer figure 3). Recyclable plastic waste and recyclable glass waste share 35-53 percent and 7-18 percent of the total BMW of the university. The share of waste sharps (white bag) including metals like needles, blades, scalpels, syringes with fixed needles, burnt needles, etc. has a meagre share (largely less than 1 percent) in the total BMW in the past five years.

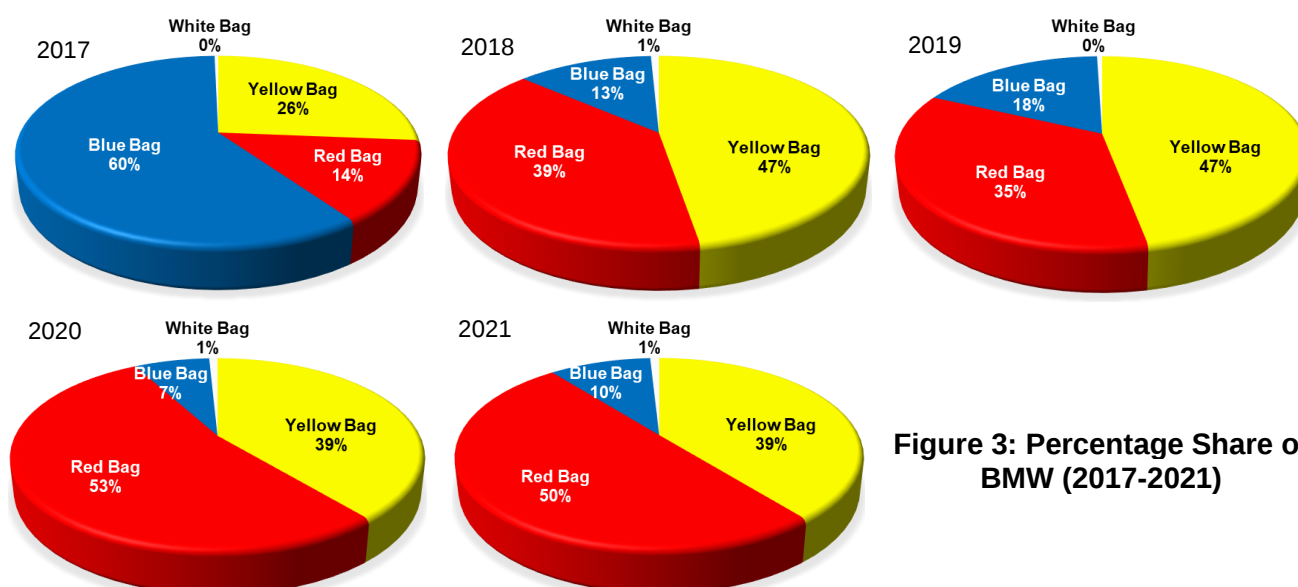


Figure 3: Percentage Share of BMW (2017-2021)

The BMW generated at the GNDU Health Centre is packed in the respective yellow, red, blue and white bags and collected by AECS to be transported to the treatment plant at Chhabal Road, Amritsar.

7. BIO-MEDICAL WASTE HANDLING AND TRANSPORTATION

The BMW is temporarily stored at the central storage area of University Health Centre and from there it is sent to the site for final disposal by the AECS. It is ensured that the bags/containers are properly sealed and labeled. Bags are not filled completely so that they can be picked up by their neck for further handling. After removing the bags, the containers including the lid is cleaned/ disinfected. No untreated BMW is kept stored beyond a period of 48 hours. Transportation from health care facility to the site of final disposal is carried out in a closed motor vehicle to prevent spillage of waste on the way.

8. DISPOSAL OF BIO-MEDICAL WASTE

Some methods of disposal of BMW are deep burial, autoclave and microwave treatment, shredding, land disposal (sanitary and secured landfills), and incineration.

9. CONCLUSIONS

The segregation and handling/collection of BMW is done by Staff Nurse and Safai Karamcharis while the transportation and final disposal (or recycling) is carried out by AECS. Furthermore, it is ensured that the staff handling BMW at the University Health Centre wears protective clothing and gloves/ masks while doing so and is immunized against tetanus and Hepatitis B. The University Health Centre believes that while proper collection and segregation of bio-medical waste are important, at the same time the quantity of waste generated is equally important. A lesser amount of BMW means a lesser burden on waste disposal work, cost saving and a more efficient waste disposal system. Hence, healthcare providers are encouraged and motivated to reduce the waste generation in their day to day work, discard waste safely and save our environment.

Annexure I

52061

Amritsar Environment Systems (P) Ltd.
Village Iban Kallan, Chahal Road,
Amritsar**AGREEMENT**The agreement entered into the 1st day of April of the year 2020 Exp. Date 31st March 2023**BETWEEN**M/s. Amritsar Environment Systems (P) Ltd., (Formerly Amritsar Healthcare Systems)
Village Iban Kallan, Chahal Road, Amritsar (hereinafter called As AECS (P) Ltd. represented
by Dr. Inderpal Singh Pasricha, Contact No. 0183-5065311. Email id-
aecs2004@rediffmail.comName of Hospital & Address: Guest House AND
Allied Teaching Department Generating Bio-Medical Waste
(hereinafter referred to as the GENERATOR) represented by Dr. Prof. Karamjeet S. Kahlon (Reg.)Tel./Mob No. 9872456834 E-Mail reg_gndu@yahoo.com

Whereas AECS (P) Ltd. has setup a common facility at Chahal Road, Village Iban Kallan, Amritsar and has setup a unit of this facility for collection, transportation, treatment and disposal of Bio-Medical Wastes (hereinafter called as BMW) generated by Health care Establishments (HCEs - Hospitals, Nursing Homes, Blood Banks, OPD Clinics, Pathological Laboratories, Diagnostic Centres, Medicine Manufacture centre, Medical Stores, Beauty Saloons etc.)

Whereas AECS (P) Ltd. offers to provide service to the GENERATOR on a user pay principle for collection Transportation, Treatment and Disposal of BMW at the Rate of Rs. 3000/- Per month (including transportation charges) per bed per day with a security advance equivalent to the payment for 60 days bag charges extra.

Whereas AECS (P) Ltd. undertakes the liability of collection, transportation, treatment and disposal of BMW, the GENERATOR shall undertake to adhere to this contract of service by AECS (P) Ltd. for a minimum period of five years from the agreement date.

Where the GENERATOR is a Hospital and agrees to avail the services being provided by AECS (P) Ltd. with the terms & conditions as listed on succeeding paras:-

RESPONSIBILITIES OF AECSPL

1. AECS (P) Ltd. shall meet all the rules and regulations stipulate by the PPCB and the GENERATOR shall not be liable for any improper handling and management.
2. AECS (P) Ltd. alone is liable for any violation of the Environment (Protection) Act 1986 and the relevant rules made there under, collection of BMW from the Generator unit as per the agreement terms & conditions.
3. AECS (P) Ltd. shall collect BMW from the Generator premises.
4. In case AECS (P) Ltd. vehicle fails to collect the BMW within 24 hours of the designated time (24 hours) due to any reason. The GENERATOR shall inform the AECS (P) Ltd. office in Amritsar, who will ensure to strictly collect the BMW within the next 24 hours. AECS (P) Ltd. shall be solely responsible for the consequences, if any, in this regard. AECS (P) Ltd. office shall maintain a register for such complaints and allot the complaint number to the GENERATOR.
5. Other complaints, if any, shall also be made to AECS (P) Ltd., Amritsar office by the GENERATOR, AECS (P) Ltd. promises to attend to all such complaints, within the shortest possible time.

[Signature][Signature][Signature]



6. AECS (P) Ltd. shall collect the segregated bio-medical waste from the identified common waste collection site in the premises of GENERATOR.
7. AECS (P) Ltd. shall provide assistance to finalize the pick-up location to the GENERATOR.
8. AECS (P) Ltd. shall transport the segregated waste in closed container vehicle to its treatment plant.
9. If the GENERATOR desires, the initial training about segregation of BMW in colour coded plastic bags and method of collection of BMW, shall be provided by AECS (P) Ltd. at no extra cost.
10. AECS (P) Ltd. shall schedule the timings the collecting the waste in consultation with the GENERATOR.
11. AECS (P) Ltd. will not be liable for Environment (Protection) Act 1986 or any similar regulations/norms set up by PPCB, Government Bodies, in the event the GENERATOR violates any of the terms and conditions.
12. AECS (P) Ltd. shall be responsible for appropriate treatment and shredding of disinfected waste in the centralized facility as per Schedule-1 of the BMW (M&H) Rules 2016.
13. AECS (P) Ltd. shall also undertake testing of treated waste to ensure safety to the environment.
14. AECS (P) Ltd. shall be responsible for the disposal of treatment waste into secured landfills or in recycling plants as applicable.

RESPONSIBILITIES OF THE GENERATOR

1. The GENERATOR shall segregate the waste at the point of generation in accordance with the BMW (M&H) Rules 2016 and in compliance with the standards prescribed there under.
2. The GENERATOR shall collect the segregate BMW in plastic bags as stipulated by Pollution Control Board (PCB) Norms.
3. The bags shall be procured by the GENERATOR at its own cost either through AECS (P) Ltd. or through PPCB approved vendor.
4. The bags used for collecting solid materials, placenta, amputated body parts etc., (required to be incinerated) shall be non-chlorinated plastic bags.
5. All the bags shall be sealed tightly by the GENERATOR and AECS (P) Ltd. will collect the sealed bags only at a secured designated point in the premises of the GENERATOR.
6. The GENERATOR shall disinfect the sharps and mutilate them and hand them over in Puncture Proof Containers to AECS (P) Ltd.
7. The GENERATOR shall take all steps to ensure that the waste is handled without adverse effects to human health and environment.
8. The GENERATOR shall furnish annual report regarding generation, collection, storage, transportation and disposal of Bio-Medical wastes in the prescribed format to Punjab Pollution Control Board.
9. The GENERATOR shall be solely responsible for the number of beds being to AECS (P) Ltd. which must be same for which the authorization is proposed to be got from Punjab Pollution Control Board. The GENERATOR shall inform AECS (P) Ltd. and about any such change in the number of beds. The total no. of beds are () at present.

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 Environment & Maintenance
 GNDU

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 Harpreet Kaur
 Assistant Engineer
 Punjab Pollution Control Board

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 Assistant Engineer
 Punjab Pollution Control Board

TERMS OF MEMBERSHIP & PAYMENT

1. The GENERATOR shall pay a Membership Registration Fee of Rs.2500/- for five year & renewal of agreement fee is Rs.500/- for one year, which are non-refundable.
2. The security advance of 60 days is refundable/adjustable upon completion of this agreement against BMW collections.
3. The GENERATOR shall pay the monthly charges of cost of disposal by 10th of every month without fail. Payments that are not made by the 10th of every month shall be charged a late fees @ Rs.50/- a day upto 22nd of the month.
4. AECS (P) Ltd. shall stop collecting BMW from GENERATOR if payments are not received by 22nd of the month.
5. Renewal of service shall be subject to a charge of Rs.500/- in addition to the amount due including the fine.
6. All payments shall be made in favour of AECS (P) Ltd. in the form of DD or A/c. payee cheques. All bounced cheques shall be charged at Rs.100/- extra in addition to the actual bank charges.
7. The GENERATOR is liable to forfeit his advance deposit, in the event of him violating the terms and conditions of this agreement.
8. The Service Charges increased by 7% every year without any prior intimation.
9. AECS (P) Ltd. has right to change the service charges time to time according to diesel prices and after Punjab Pollution Control Board, Patiala & DHS orders for revision of rates.
10. These rates are subject to mutually reviewable during this agreement period.
11. All disputes are subject to Amritsar Jurisdiction only.
12. New HCF's must obtain authorization under Bio Medical Waste Rules, 2016 from Punjab Pollution Control Board within 3 months from the date of signing agreement. If fails this agreement stands cancelled and we stop our Bio Medical Waste collection services immediately by giving notice and intimation to Punjab Pollution Control Board.

Witnesses:

1. 
Incharge
Procurement & Maintenance
Health Centre, GNDU, Amritsar

2. 
Incharge
Health Centre, GNDU, Amritsar

Amritsar University Systems Pvt. Ltd.

Director


Registrar
Guru Nanak Dev University
Amritsar

Annexure II

PUNJAB POLLUTION CONTROL BOARD
 Regional Office, Plot no. 164, Focal Point, Mehta Road, Amritsar
www.ppcb.gov.in

Office Dispatch No :	Registered/Speed Post	Date:
Registration ID: H14ASR2005639		Application No : 13841476

To,
 Karanjeet Singh Kahlon,
 Guru Nanak Dev University
 Amritsar i, Amritsar, 143005

Subject: **Renewal of Authorization under Bio-Medical Waste Management Rules, 2016 framed under Environment (Protection) Act, 1986 for [Generation, Collection, Storage] of Bio-Medical Waste.**

With reference to your application for obtaining Authorization under Bio-Medical Waste Management Rules, 2016 framed under Environment (Protection) Act, 1986, you are, hereby authorized for handling/ managing Bio-Medical Waste under Bio-Medical Waste Management Rules, 2016 as per the details specified in this authorization.

1. Particulars of Applicant (Occupier/Operator)

Name of Applicant (Occupier/Operator)	Karanjeet Singh Kahlon
Designation :	Registrar
Correspondent Address :	Karanjeet Singh Kahlon, Guru Nanak Dev University, Amritsar i, Amritsar, 143005
Mobile Number :	9872456834
Landline Number :	0183-2258855
Fax Number :	0183-2258819
Email-ID :	reg_gndu@yahoo.com

2. Particulars of HCF/CBWTF

Name of HCF/CBWTF	University health centre (hcf)
Address of HCF/CBWTF premises	University health centre (hcf) Guru nanak dev university
Mobile Number :	9872456834
Facility Type and Subtype	HCF (Govt Hospital(Bedded))
Ownership	Individual
No. of Beds (for HCF)	10.0
No. of HCF covered(for CBWTFs)	-
No. of Beds covered	-
No of Beds	10
Area and Distance Covered by CBWTF	-
Mode of Transportation of BMW	Common Facility Vehicle

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University health centre (hcf),Guru nanak dev university,Amritsar,Amritsar,143005

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3. Particulars of Authorization

Authorization No.	BMW/Renewal/ASR/2020/13841476
Previous Authorization No	BMW/Renewal/ASR/2020/13136088
Previous Authorization Date of Issue	17/08/2020
Previous Authorization Date of Expiry	30/09/2020
Date of Issue	26/10/2020
Date of Expiry	30/06/2023
Authorization Type	Renewal
Activities authorized	[Generation, Collection, Storage]

4. Particulars of Bio-Medical Waste

Waste category	Quantity permitted for handling	Unit
Yellow	0.66	kg/day
Red	0.49	kg/day
White(Translucent)	0.1	kg/day
Blue	0.24	kg/day

5. The HCE/CBWWF shall discharge its effluent after treatment as prescribed under the Rules.

6. The Authorization is subject to the Terms and Conditions as specified in this Authorization and also to such conditions as may be specified in the rules for the time being in force under the Environment (Protection) Act, 1986.

Environmental Engineer
For & on behalf
of
(Punjab Pollution Control Board)

Enclt. No.:

Dated:

A copy of the above is forwarded to the following for information and necessary action please:

Zonal Office

Environmental Engineer
For & on behalf
of
(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This authorization is issued for _____ number of beds. For any increase in number of beds, the applicant shall obtain prior permission of the Board.
2. The Medical Institution / Health Care Facility shall apply for the renewal of authorization at least 2 months before the expiry of this authorization.
3. The Medical Institution / Health Care Facility shall comply with the provisions of the Environment (Protection) Act, 1986 as amended from time to time and the rules made there under.
4. The authorization and all relevant records shall be produced for inspection on the request of an officer of prescribed authority.
5. The HCF shall 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;
6. The HCF shall make a provision within the premises for a safe, ventilated and secured location for storage of segregated biomedical waste in colored 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.
7. The HCF shall pre-treat the laboratory waste, microbiological waste, blood samples and blood bags through autoclaving/microwaving and then sent to the common bio-medical waste treatment facility for final disposal. The HCF shall maintain a logbook of operation of Autoclave.
8. The HCF shall phase out use of chlorinated plastic bags, gloves and blood bags as mentioned in the Rules;
9. In case the HCF purchase color coded bag from open market, it shall get the testing certificate from CIPET Lab, Amritsar regarding absence of chlorinated material in it. However, if it is procured from CBWTF operator, the HCF shall obtain the test certificate from CBWTF operator.
10. The HCF shall dispose of general waste other than bio-medical waste in green bin.
11. The HCF shall not dispose bio-medical waste with municipal solid waste;
12. The HCF shall provide training to all its health care workers and others, involved in handling of bio medical waste at the time of induction and thereafter at least once every year 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;
13. The HCF shall immunise all its health care workers and others, involved in handling of bio-medical waste 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;
14. The HCF shall ensure occupational safety of all its health care workers and others involved in handling of biomedical waste by providing appropriate and adequate personal protective equipments;
15. The HCF shall conduct health check up at the time of induction and at least once in a year for all its health care workers and others involved in handling of bio- medical waste and maintain the records for the same;
16. The HCF shall ensure segregation of liquid chemical waste at source and ensure pre-treatment or neutralisation prior to mixing with other effluent generated from health care facilities;
17. The HCF shall ensure treatment and disposal of liquid waste in accordance with the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974).
18. The HCF shall obtain consents under the provisions of Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981.
19. The HCF shall maintain and update on day to day basis the bio-medical waste management register and display the monthly record on its website according to the bio-medical waste generated in terms of category and colour coding as specified in Schedule I. All the record shall be subject to inspection and verification by the Prescribed Authority /authorized person at any time. The record shall be maintained for a period of 3 years.
20. The HCF shall report major accidents including accidents caused by fire hazards, blasts during handling of biomedical waste and the remedial action taken and the records relevant thereto, (including nil report) in Form I to the prescribed authority within 24 hours and also along with the annual report.

21. The HCF shall submit Annual Report in Form-IV as per Rule 13 by 30th June every year to the Board. The HCF shall make available the annual report on its web-site and all the health care facilities shall make own website within two years w.e.f 28.03.2016.
22. The HCF shall ensure that Untreated human anatomical waste, animal anatomical waste, soiled waste and biotechnology waste shall not be stored beyond a period of forty (40) eight hours: Provided that in case for any reason it becomes necessary to store such waste beyond such a period, the occupier shall take appropriate measures to ensure that the waste does not adversely affect human health and the environment and inform the prescribed authority along with the reasons for doing so.
23. The HCF shall inform the prescribed authority 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;
24. The HCF shall establish a system 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 healthcare establishments having less than thirty beds shall designate a qualified person to review and monitor the activities relating to bio-medical waste management within that establishment and submit the annual report;
25. The occupier of the HCF shall maintain proper housekeeping in the premises where the bio-medical wastes are handled.
26. The HCF is required to set up system/equipments for requisite segregation, collection, storage and pre-treatment of bio-medical waste in conformance to the provisions of Bio-Medical Waste (Management) Rules, 2016.
27. The Containers/ Bags used for segregation and disposal of waste shall be labeled in accordance with schedule- IV (Part-A).
28. The HCF shall segregate the bio-medical waste collected in the container bags at the point of generation in accordance with Schedule-I prior to storage, transportation, treatment and disposal.
29. The HCF shall hand-over segregated waste as per Schedule-I to common bio-medical waste treatment facility for treatment, processing and final disposal.
30. The HCF shall paste Bar-Code Stickers on respective color coded bags, puncture proof containers and cardboard box before disposal to CBWTF.
31. The HCF shall ensure treatment and disposal of waste in accordance with Schedule I and in compliance with the standards provided in Schedule-II.
32. The HCF shall phase-out use of mercury based instruments. The handling and disposal of all mercury waste and lead waste shall be in accordance with the respective rules and regulations.
33. The occupier of the HCF will be liable for action under section 5 and section 15 of the Environment (Protection) Act, 1986, in case of any violation.
34. The HCF shall comply with the standards and specifications as per Bio-Medical Waste Management Rules, 2016.
35. The HCF shall give its bio-medical waste only to the authorized area common bio-medical waste treatment facility who has valid authorization of the prescribed authority.
36. The HCF will have to make its own arrangement afresh in case the authorization of the common facility to whom it has entered a MOU is revoked, by the Prescribed Authority.
37. The occupier of the HCF shall not change or alter either the quality or the quantity or the rate of discharge of liquid/emission or temperature or the route of discharge without prior written permission from the Board.
38. The occupier of the HCF, its heirs, legal representatives etc., shall have no claim whatsoever to the continuation or renewal of this authorization after the expiry of the authorization.
39. The authorized person shall intimate Board prior to closing down the facility.
40. The HCF shall not rent, sell, transfer or otherwise transport the bio-medical waste without prior permission from the Board.
41. Any unauthorized change in personnel/equipment or working conditions as mentioned in the application by the person authorized shall constitute a breach of this authorization.
42. The Board reserves the right to review, impose additional condition or conditions, revoke, change or alter the terms and conditions of the authorization without any prior notice.

B. SPECIAL CONDITIONS

1. The HCF will renew its agreement time to time made with Common Bio Medical Waste Treatment Facility well before its expiry and submit the copy of same in this office.

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Page No. :- 4

Environmental Engineer
For & on behalf
of
(Punjab Pollution Control Board)



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University health centre (sic), Guru nanak dev university, Amritsar, Amritsar, 143003

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Annexure III

Name: Guru Nanak Dev University Health Centre |Sap Id:| Hno:87844| Vehicle: Amritsar 1

Plant-Amritsar Envirocare Systems |Period: 01-2017 : 12-2017 |Hospital Id:87844| Bed Capacity:10| Town: Amritsar

	Yellow Bags		Red Bags		Blue Mark Box		Whites		Cytotoxic Bags		Covid Yellow Bags		Total	
Month	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
Jan-17	6	16.03	8	8.47	0	0	0	0	0	0	0	0	14	24.5
Feb-17	8	11.17	11	10.28	2	7.24	1	0.41	0	0	0	0	22	29.09
Mar-17	8	7.74	17	50.69	0	0	1	0.82	0	0	0	0	26	59.24
Apr-17	5	14.75	20	57.6	2	1.6	0	0	0	0	0	0	27	51.67
May-17	3	1.22	1	8.72	22	40.66	0	0	1	1.58	1	1.07	28	53.25
Jun-17	4	15.09	2	9.14	12	17.4	0	0	0	0	0	0	18	41.63
Jul-17	8	26.75	0	0	14	21.48	0	0	0	0	0	0	22	48.23
Aug-17	4	8.29	1	3.19	20	31	1	0.37	0	0	0	0	26	42.84
Sep-17	11	21.43	3	14.35	26	42.54	0	0	0	0	0	0	40	78.31
Oct-17	5	9.26	0	0	12	13.31	1	0.68	0	0	0	0	18	23.25
Nov-17	4	17.86	1	13.74	23	37.86	0	0	0	0	0	0	28	69.46
Dec-17	1	1.3	1	4.92	18	24.84	1	0.32	0	0	0	0	21	31.38
Total	41	102.09	9	54.06	149	230.69	3	1.37	1	1.58	1	1.07	204	390.86

Name: Guru Nanak Dev University Health Centre |Sap Id:|Hno:87844|Vehicle:Amritsar 1

Plant-Amritsar Envirocare Systems |Period: 01-2017 : 12-2017|Hospital Id:87844|Bed Capacity:0|Town:Amritsar

	Yellow Bags		Red Bags		Blue Mark Box		Whites		Other Bags		Total	
Month	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
Jan-18	8	27.4	9	17.94	0	0	0	0	0	0	17	45.34
Feb-18	10	16.16	12	14.73	0	0	0	0	0	0	22	30.89
Mar-18	8	6.55	11	17.25	0	0	1	0.24	0	0	20	24.04
Apr-18	7	23.11	12	13	2	12.97	0	0	0	0	21	49.08
May-18	11	51.44	12	13.52	3	15.55	0	0	0	0	26	80.51
Jun-18	7	38.21	17	17.57	0	0	2	0.45	0	0	26	56.23
Jul-18	8	8.02	22	45.74	2	15.52	3	2.59	0	0	35	71.87
Aug-18	2	8.4	4	4.11	1	4.97	0	0	0	0	7	17.48
Sep-18	2	22.37	4	22.75	1	5.13	0	0	0	0	7	50.25
Oct-18	5	17.19	6	10.19	1	10.42	2	0.38	0	0	14	38.18
Nov-18	6	3.93	7	7.46	0	0	1	0.12	0	0	14	11.51
Dec-18	6	19	7	15.78	0	0	0	0	0	0	13	34.78
Total	80	241.78	123	200.04	10	64.56	9	3.78	0	0	222	510.16

Name: Guru Nanak Dev University Health Centre |Sap Id:|Hno:87844|Vehicle:Amritsar 1

Plant-Amritsar Envirocare Systems| Period: 01-2019 : 12-2019 |Hospital Id:87844| Bed Capacity:0|Town:Amritsar

	Yellow Bags		Red Bags		Blue Mark Box		Whites		Cytotoxic Bags		Covid Yellow Bags		Total	
Month	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
Jan-19	4	11.5	4	4.42	2	20.81	0	0	0	0	0	0	10	36.73
Feb-19	7	19.9	7	23.41	0	0	0	0	0	0	0	0	14	43.31
Mar-19	12	34.11	12	14.33	3	12.26	0	0	0	0	0	0	27	60.7
Apr-19	11	37.62	9	8.84	1	3.07	1	0.23	0	0	0	0	22	49.76
May-19	9	32.4	11	10.22	1	4.65	0	0	0	0	0	0	21	47.27
Jun-19	9	24.3	13	14.51	0	0	1	0.28	0	0	0	0	23	39.09
Jul-19	6	15.02	7	5.17	1	5.93	0	0	0	0	0	0	14	26.12
Aug-19	4	22.44	17	66.56	2	11.63	0	0	0	0	0	0	23	100.63
Sep-19	5	16.34	7	10.18	2	20.12	1	0.87	0	0	0	0	15	47.51
Oct-19	3	1.94	4	4.26	1	6.16	0	0	0	0	0	0	8	12.36
Nov-19	4	18.75	4	4.51	0	0	2	1.07	0	0	0	0	10	24.33
Dec-19	3	6.61	4	12.74	1	5.29	0	0	0	0	0	0	8	24.64
Total	77	240.93	99	179.15	14	89.92	5	2.45	0	0	0	0	195	512.45

Name: Guru Nanak Dev University Health Centre |Sap Id:|Hno:87844|Vehicle:Amritsar 1

Plant-Amritsar Envirocare Systems | Period: 01-01-2020 : 31-01-2020| Hospital Id:87844| Bed Capacity:0| Town: Amritsar

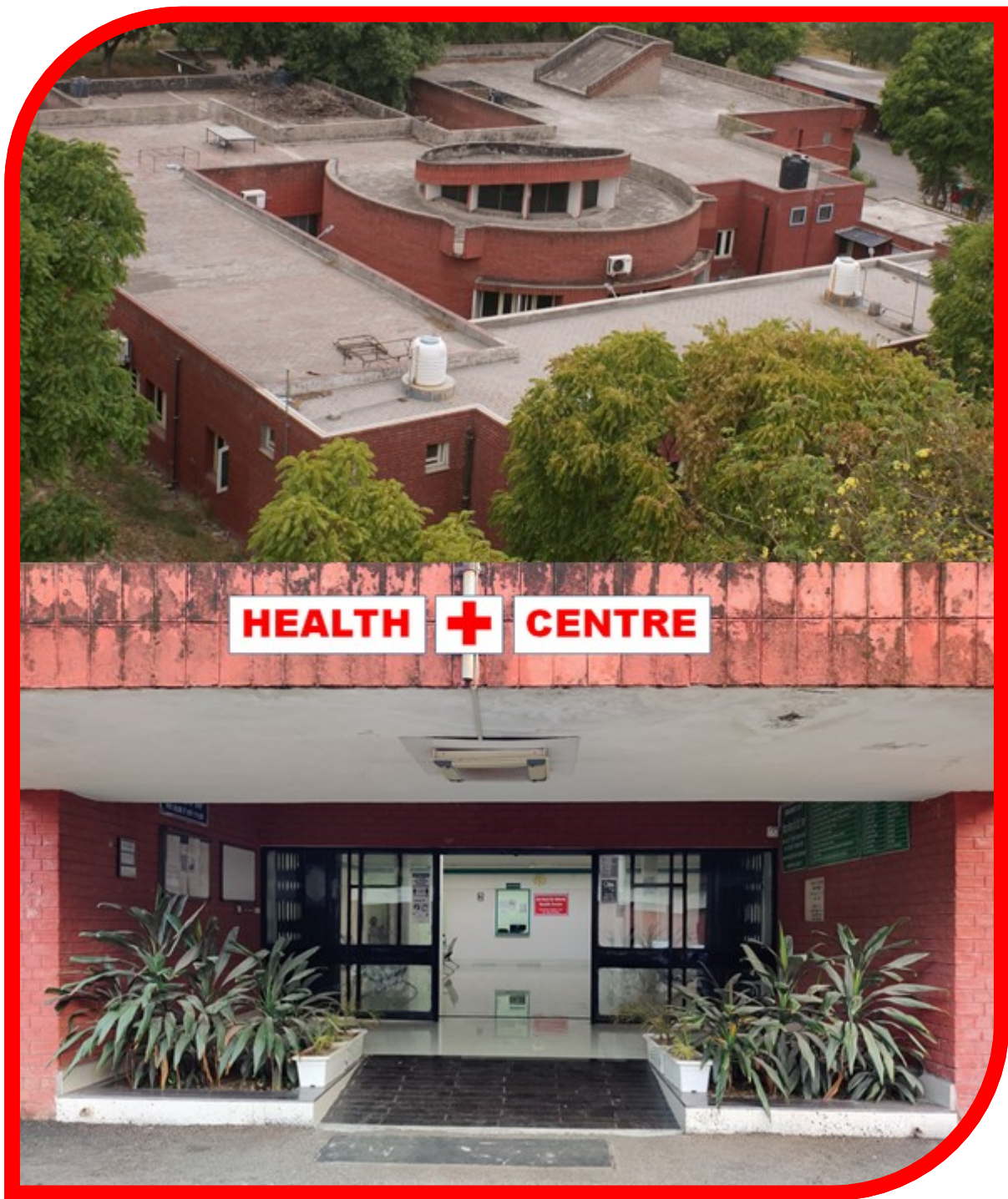
	Yellow Bags		Red Bags		Blue Mark Box		White Bags		Cytotoxic Bags		Covid Yellow Bags		Total	
Month	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
Jan-19	3	10.52	2	2.01	0	0	1	1.06	0	0	0	0	6	13.59
Feb-19	1	0.45	11	44.73	3	6.08	3	1.34	0	0	0	0	18	52.6
Mar-19	3	15.04	2	3.74	0	0	0	0	0	0	0	0	5	18.78
Apr-19	4	21.95	1	2.75	0	0	0	0	0	0	0	0	5	24.7
May-19	0	0.00	0	0	1	5.94	0	0	0	0	0	0	1	5.94
Jun-19	5	2.99	4	4.02	0	0	0	0	0	0	0	0	9	7.01
Jul-19	5	4.36	13	23.98	1	4.2	0	0	0	0	0	0	19	32.54
Aug-19	2	1.2	0	0	0	0	0	0	0	0	0	0	2	1.2
Sep-19	4	34.6	11	17.49	0	0	0	0	0	0	0	0	15	52.09
Oct-19	3	3.95	30	47.17	1	5.54	0	0	0	0	0	0	34	56.66
Nov-19	6	22.03	2	1.11	0	0	0	0	0	0	0	0	8	23.14
Dec-19	4	2.25	4	15.62	0	0	0	0	0	0	0	0	8	17.87
Total	40	119.34	80	162.62	6	21.76	4	2.4	0	0	0	0	130	306.12

Name: Guru Nanak Dev University Health Centre|Sap Id:|Hno:87844|Vehicle:Amritsar 1

Plant-Amritsar Envirocare Systems Period: 01-01-2021 : 31-08-2021|Hospital Id:87844|Bed Capacity:0|Town:Amritsar

	Yellow Bags		Red Bags		Blue Mark Box		White Bags		Cytotoxic Bags		Covid Yellow Bags		Total	
Month	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight	Count	Weight
Jan-19	4	16.41	3	4.13	2	10.23	0	0	0	0	0	0	9	30.77
Feb-19	4	15.85	8	44.39	3	15.56	0	0	0	0	0	0	15	75.8
Mar-19	5	32.4	11	21.34	0	0	0	0	0	0	0	0	16	53.74
Apr-19	4	14.87	4	20.68	0	0	1	2.57	0	0	0	0	9	38.12
May-19	3	2.71	5	6.4	1	3.14	0	0	0	0	9	16.2	18	28.45
Jun-19	4	18.97	4	26.22	0	0	0	0	0	0	0	0	8	45.19
Jul-19	2	3.05	5	11.49	0	0	0	0	0	0	0	0	7	14.54
Aug-19	5	12.07	6	14.07	0	0	0	0	0	0	0	0	11	26.14
Total	31	116.33	46	148.72	6	28.93	1	2.57	0	0	9	16.2	93	312.75





Health Centre
Guru Nanak Dev University, Amritsar, Punjab

Prepared by
Internal Quality Assurance Cell, Guru Nanak Dev University, Amritsar