



Phone: (O) 0755-2740395  
(R) 0755-2740396  
Website: [www.rkdf.ac.in](http://www.rkdf.ac.in)  
Email: [registrar@rkdf.ac.in](mailto:registrar@rkdf.ac.in)

# **RKDF UNIVERSITY**

**(ESTABLISHED BY AN ACT OF GOVT. OF M.P. AND APPROVED BY UGC  
UNDER SECTION 2(F) OF 1956)**

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**1.3.1: Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability.**

**Report on Environment and Sustainability**



**RKDF University**  
**Gandhi Nagar, Bhopal**

## **Green campus initiatives: Policy**

(Approved in Board of Management held on 25.6.2020  
and Governing Board Meeting held on 24.7.2020)

**(For official use)**

## **Green campus initiatives: Policy on sustainable Green, Environment and Energy usages**

In coordination with contribution towards research and teaching, higher education Institutes has a responsibility to protect and nurture the environment. By exercising proper control over all its activities the University aims to ensure sustainable use of resources and prevent wasteful or damaging practices. RKDF University Bhopal aims to manage its operations in such a way that are environmentally sustainable, economically feasible and socially responsible. The motto is to develop a Green Campus where environmental friendly practices and education combine to promote sustainable and eco-friendly practices. The University is committed to develop self-sustainable power sources, water conservation initiatives and proper cleanliness with following approved ways of waste disposal. This policy represents the important components of the University efforts on broader aspects of sustainability strategy.

This document sets out the aims and objectives of RKDF University Bhopal for safeguarding the environment, and the implementation strategy and monitoring aspects.

### **University Profile at Present**

The University campus has early 40% of buildup area and 60 % of open area. Currently RKDF University Bhopal campus has developed a medicinal garden having 29 varieties of medicinally valuable plant species. Two plantation zones have been created which are being maintained having approximately 1800 plants including decorative trees and fruiting plants. A green house has been developed for exotic plant varieties with a nursery for regular plantation activities and landscaping in the campus. Vermicompost facility has been developed using the biodegradable wastes generated by the canteen and hostels in the campus. This unit produces green fertilizer which is used in the campus plantation. University further aims to incorporate STP, ETP plant in the campus for management of non-degradable waste and effluent water. Maintaining the ground water level is also the top priorities by installing rain water harvesting and preserving rain water in recharge pond. The university has developed 20 gardens near to different institute building measuring 6,31,988 sq.ft. university from recognized authorities conducting green energy audits regularly & implementing their recommendations. The university also constituted religiously green campus monitoring committee.

**Scope:** This policy is applicable to all the staff members and students associated with RKDF University.

**Purpose:**

This policy provides the guidelines for the students, faculties and staff members associated with the RKDF University Bhopal campus guiding about conservation and protection of the environment.

**Procedure / Practices:**

- Optimal use of availed water and prevention water wastage in university campus
- Turn off the computers and other related equipment and application when not in use.
- Turn off all the electrical equipment before leaving the classroom/labs/campus.
- To reduce air and noise pollution Students residing in the neighborhood of the university are encouraged to use bicycles for conveyance.
- Vehicles are allowed in the campus with valid driving license of students driving license, insurance, etc.
- Students and Staff are advised to park their vehicles in the parking space provided by the university in campus.
- Trees are pruned; watered and appropriate care is taken for the maintenance.
- Use of plastic is banned in the campus. The university also has been declared plastic free zone. Avoid using plastics in and off the campus. Use of plastic bags are banned on University campus.
- Appropriate training is provided for both students and staff members for sanitization of on and off-campus.
- Hazardous waste is identified and disposed of appropriately.
- Environmental club, YRC and NSS of the college to undertake all possible activities relating to the environmental consciousness among students and staff.
- Regular plantation of trees in around the locality to protect from carbon emission.
- Maximus use of day light
- Electricity consumption is reduced using LED tube lights in campus.
- Solar water heaters are used in the hostels.
- Waste management is based on "Reduce, Recycle and Reuse".



**Dr. Narendra Kumar Lariya**  
M. Pharma, Ph.D.  
Registrar



Ph. : (O) 0755-2740395  
Website : www.rkdf.ac.in  
Email : registrar@rkdf.ac.in

# RKDF UNIVERSITY

(ESTABLISHED UNDER GOVT. OF M.P. AND REGISTERED UNDER UGC 2(F) 1956)

No. 419/RKDF/ 2020

Dated : 06 / 08 / 2020

## Notification

After the approval in the meeting of Board of Management dated 25.06.2020 and subsequent ratification by the Governing Body in its meeting held on 24.07.2020, the "**Green Campus Initiatives Policy**" is adopted and implemented with effect from the date of ratification by the Governing Body of the University.

A copy of the policy is enclosed herewith for kind perusal.

  
Registrar  
Registrar  
RKDF University

### **Enclosure: Green Campus Initiatives Policy**

Copy for information and for necessary action:

- 1) PA to Hon'ble Chancellor, RKDF University, Bhopal MP (for kind information)
- 2) Vice Chancellor, RKDF University, Bhopal MP
- 3) Exam Controller/CFAO/DSW, RKDF University, Bhopal MP
- 4) Dean/Institute Head, RKDF University, Bhopal MP
- 5) Notice Board, RKDF University, Bhopal MP
- 6) Website administrator, RKDF University, Bhopal MP
- 7) Office records

# **Solid waste management**

- **Solid waste management**

Solid waste management is a term that is used to refer to the process of collecting and treating solid wastes. Solid waste management refers to the collecting, treating, and disposing of solid material that is discarded or is no longer useful. Biodegradable and non-biodegradable waste materials are collected with the help of different colored dustbins separate for dry and wet waste. Dry waste mostly contains office usable objects like paper, glass, rubber, plastics, food, wood, metals, cardboard materials. Dry waste is collected daily by Bhopal municipal corporation.



**Collection of waste in University Campus**

**Laboratory waste bins and controlled waste**

All waste suitable for the Local Authority refuses collection, except recyclable paper and glass, is termed 'controlled waste'. Items in this category, including dirty paper, plastic, rubber, and wood, should generally be placed in the waste bins available in each laboratory and collected by the cleaners. However, each laboratory must also have a container for certain items which are not allowed to be put in the normal waste bins. In this special controlled waste container should be put:- all broken laboratory glassware, any sharp objects of metal or glass, all fine powders (preferably inside a bottle or jar), and dirty sample tubes or other items lightly contaminated with

chemicals (but not any syringes or needles). Laboratory-controlled waste containers must be emptied regularly and never allowed to overflow. Under no circumstances must any item of glass, sharp metal, or fine powder ever be put in a normal laboratory waste bin. The tops must be removed from all bottles put out for disposal, and there should be no detectable smell of chemicals from any bottle put for disposal

### **Disposal Procedures for Laboratory Chemicals**

It is the clear responsibility of all research workers to ensure the safe and correct disposal of all wastes produced in the course of their work. Improper and irresponsible disposal of chemical wastes down drains, to the Local Authority, refuse collection, or into the atmosphere is forbidden by law.

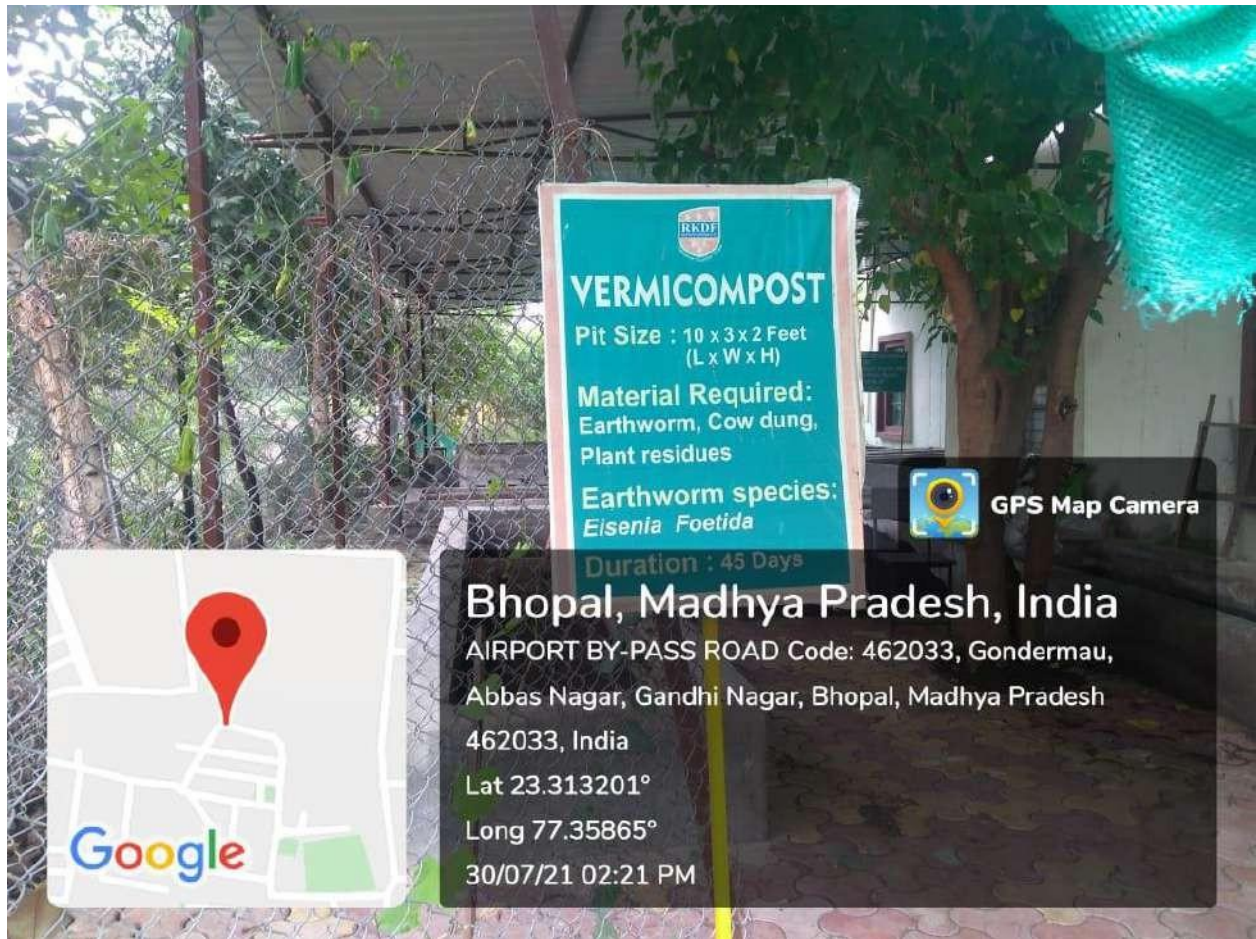
#### **Wash down drains with excess water**

- Concentrated and dilute acids and alkalis
- Harmless soluble inorganic salts (including all drying agents such as CaCl<sub>2</sub>, MgSO<sub>4</sub>, Na<sub>2</sub>SO<sub>4</sub>, P<sub>2</sub>O<sub>5</sub>)
- Alcohols containing salts (e.g. from destroying sodium)
- Hypochlorite solutions from destroying cyanides, phosphates, etc.
- Fine silica and alumina

#### **Vermicompost unit**

Biodegradable wet waste is allowed to decompose in the medium designed for the purpose. Only biodegradable waste materials are used in composting. Good quality environmentally friendly manure is formed from the compost and can be used for agricultural purposes.





**Vermicompost Unit in Campus**

**Solid Waste Recycling**  
**by**  
**Vermicomposting**

# Production Technology of Vermicompost



Compiled By **Mr. Santosh Sharma**  
**Dr. Suchi Gangwar**

Edited By **Dr. R.C. Singh**



**Faculty of Agriculture**

**Ram Krishna Dharmarth Foundation (RKDF), University**  
**Airport Bypass Road, Gandhi Nagar, BHOPAL-462036 (M.P.)**

*Santosh*  
**Faculty of Agriculture**  
**RKDF University,**  
**Airport Bypass Road, Gandhi Nagar,**  
**Bhopal (M.P.)**

*Suchi*  
**Faculty of Agriculture**  
**RKDF University**

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## INTRODUCTION

Vermicomposting is a decomposition process involving the joint action of earthworms and microorganisms. Although microorganisms are responsible for the biochemical degradation of organic matter, earthworms are crucial drivers of the process, by fragmenting and conditioning the substrate and dramatically altering its biological activity. Earthworms act as mechanical blenders and by comminuting the organic matter they modify its physical and chemical status, gradually reducing its C: N ratio, increasing the surface area exposed to micro-organisms and making it much more favourable for microbial activity and further decomposition. Greatly during passage through the earthworm gut, they move fragments and bacteria-rich excrements, thus homogenizing the organic material. The end product, or vermicompost, is a finely divided peat-like material with high porosity and water holding capacity that contains most nutrients in forms that are readily taken up by the plants. These earthworm casts are rich in organic matter and have high rates of mineralization that implicates a greatly enhanced plant availability of nutrients, particularly ammonium and nitrates.

Vermicomposting is basically a managed process of worms digesting organic matter to transform the material into a beneficial soil amendment. Vermicomposts are defined as organic matter of plant and/or animal origin consisting mainly of finely-divided earthworm castings, produced non thermophilically with bio-oxidation and stabilization of the organic material, due to interactions between aerobic microorganism and earthworms, as the materials pass through the earthworm gut.

Good quality compost production in ambient temperature can be accomplished in shorter time by the process of vermicomposting that involves use of proper species of earthworms. The native cellulase activity of earthworms and microorganisms in earthworm gut promote faster decomposition of ingested organic material. The combined effect of enzymatic activity and grinding of organic materials to fineness by earthworms produces the vermicomposting and this is not observed in compost pits without earthworm.

Vermicompost is a peat like material containing most nutrients in plant available forms such as nitrates, phosphates, calcium, potassium, magnesium etc. It has high porosity, water holding capacity and high surface area that provides abundant sites for microbial activity and for the retention of nutrients. The plant growth regulators and

  
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other plant growth influencing materials i.e. auxins, cytokinins and humic substances etc. produced by the microbes have been found in vermicomposts.

Vermicomposting technology is a suitable tool for efficient conversion of agro-industrial processing wastes, which serves as a rich source of plant nutrients. These waste materials are packed with a tremendous source of energy, protein and nutrients, which would otherwise be lost if they are disposed as such in the open dumps and landfills. Moreover, with the use of vermicompost as organic amendments in the agriculture, recycling of the nutrients back to the soil takes place, in turn, maintaining the sustainability of the ecosystem.

## **BENEFITS OF VERMICOMPOST**

Beneficial roles of vermicompost

### **Soil**

- Improves soil aeration
- Enriches soil with micro-organisms (adding enzymes such as phosphatase and cellulase)
- Microbial activity in worm castings is 10 to 20 times higher than in the soil and organic matter that the worm ingests
- Attracts deep-burrowing earthworms already present in the soil
- Improves water holding capacity

### **Plant growth**

- Enhances germination, plant growth, and crop yield
- It helps in root and plant growth
- Enriches soil with micro-organisms (adding plant hormones such as auxins and gibberellic acid)

### **Economic**

- Biowastes conversion reduces waste flow to landfills
- Elimination of biowastes from the waste stream reduces contamination of other recyclables collected in a single bin (a common problem in communities practicing single-stream recycling)

  
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- Creates low-skill jobs at local level
- Low capital investment and relatively simple technologies make vermicomposting practical for less-developed agricultural regions

  
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### Environmental

- Helps to close the "metabolic gap" through recycling waste on-site
- Large systems often use temperature control and mechanized harvesting, however other equipment is relatively simple and does not wear out quickly
- Production reduces greenhouse gas emissions such as methane and nitric oxide (produced in landfills or incinerators when not composted).

### Protection Against Disease

- Ability to Develop Biological Resistance in plants. Vermicompost contains some antibiotics and actinomycetes that help in increasing the "power of biological resistance" among the crop plants against pest and diseases. Spray of chemical pesticides was significantly reduced by over 75% where earthworms and vermicompost were used in agriculture.
- Ability to Minimize Pests Attack: There seems to be strong evidence that worm castings sometimes repel hard-bodied pests.
- Ability to Suppress Plant Disease: Studies reported that vermicompost application suppressed 20%–40% infection of insect pests i.e. aphids (*Myzus persicae*), mealy bugs (*Pseudococcus spp.*) and cabbage white caterpillars (*Peiris brassicae*) on pepper (*Capiscum annuum*), cabbage (*Brassica oleracea*) and tomato (*Lycopersicum esculentum*).

### NUTRIENT COMPOSITION IN VERMICOMPOST

Nutrient element	Nutrient (%)
Organic carbon	10-14
Nitrogen	0.51-1.6
Phosphorus	0.19-1.02
Potassium	0.15-0.73
Calcium	1.18-7.61
Magnesium	0.093-0.568

Sodium	0.06-0.16
Zinc	0.0042-0.011
Copper	0.0026-0.0048
Iron	0.2050-1.3313
Manganese	0.0105-0.2038

## REQUIREMENTS FOR VERMICOMPOSTING

- Suitable organic wastes
- Multiplication of earth worms
- Structure for composting
- Suitable method of compost

## SUITABLE ORGANIC WASTES

- Crop residues, plant litters, weeds, farm yard manure and kitchen wastes are the common organic wastes available in a typical farm.



Fig. Vermicomposting Worm Types

## MULTIPLICATION OF EARTH WORMS

About 350 species of earth worms in India with various food and burrowing habits *Eisenia fetida*, *Eudrilus eugeniae* and *Perionyx excavatus* are some of the species that are reared to convert organic wastes into manure. The worms feed on any biodegradable matter and vermicomposting units are ideally suited for locations / units with generation of considerable quantities of organic wastes. One earthworm reaching reproductive age of about six weeks lays one egg capsule every 7-10 days. Three to seven worms emerge out of each capsule. Thus, the multiplication of worms under optimum growth conditions is very fast and the worms live for about 2 years.

## FAVOURABLE CONDITIONS OF EARTH WORMS IN THE COMPOSTING MATERIAL

- **pH:** Range between 6.5 and 7.5
- **Moisture:** 60-70% of the moisture below and above range mortality of worms taking place
- **Aeration:** 50% aeration from the total pore space
- **Temperature:** Range between 18 °C to 35 °C



## STRUCTURE FOR COMPOSTING

A cement tank may be constructed to a height of 2.0- 2.5 feet and a breadth of 3 feet. The length may be fixed to any level depending upon the size of the room. The bottom of the tank is made to slope like structure to drain the excess water from vermicompost unit. A small tank is necessary to collect the drain liquid.

## METHODOLOGY FOR PRODUCTION OF VERMICOMPOST

Following steps are followed for vermicompost preparation

- Vermicomposting unit should be in a cool, moist and shady site
- Cow dung and chopped dried leafy materials are mixed in the proportion of 3: 1 and are kept for partial decomposition for 15 – 20 days.
- A layer of 15-20cm of chopped dried leaves/grasses should be kept as bedding material at the bottom of the bed.
- Each bed should contain 1.5-2.0q of raw material and the number of beds can be increased as per raw material availability and requirement.
- Red earthworm (1500-2000) should be released on the upper layer of bed.
- Water should be sprinkled with can immediately after the release of worms.
- Beds should be kept moist by sprinkling of water (daily) and by covering with gunny bags/polythene
- Bed should be turned once after 30 days for maintaining aeration and for proper decomposition.
- Compost gets ready in 45-50 days.
- The finished product is 3/4th of the raw materials used.

## PRECAUTION TAKEN

- Always use chopped and wilted organic residues
- Bed temperature should be in range of 20-30°C and protected from predators like red or white ants, centipedes and others like rats, cats, poultry birds or even dogs
- Optimum size of structure should be used for timely decomposition of materials
- After removing the earthworms from compost, mix 5 packets of *Trichoderma* or *Pseudomonas* in compost for value addition of compost in controlling pathogens.

## HARVESTING OF THE VERMICOMPOST FROM THE PIT

- Stop watering before one week of harvest.
- Sometimes the worms spread across the pit come in close and penetrate each other in the form of ball in 2 or 3 locations.
- Heap the compost by removing the balls and place them in a bucket. However, under most instances, top layer has to be disturbed manually. Earthworms move downward and compost is separated. After collection of compost from top layers, feed material is again replenished and composting process is rescheduled.
- The material is sieved in 2 mm sieve, the material passed through the sieve is called as vermicompost which is stored in a polythene bags
- Recomposing is done in the same pit or bed. Similar to the above described pit/heap method, vermicompost can be prepared in wooden box or brick column in similar way.

## HOW TO USE VERMICOMPOST?

- Vermicompost can be used for all crops: agricultural, horticultural, ornamental and vegetables at any stage of the crop.
- **For general field crops:** Around 2–3 t ha<sup>-1</sup> vermicompost is used by mixing with seed at the time of sowing or by row application when the seedlings are 12–15 cm in height. Normal irrigation is followed.
- **For fruit trees:** The amount of vermicompost ranges from 5 to 10 kg per tree depending on the age of the plant. For efficient application, a ring (15–18 cm deep) is made around the plant. A thin layer of dry cow dung and bone meal is spread along with 2–5 kg of vermicompost and water is sprayed on the surface after covering with soil.
- **For vegetables:** For raising seedlings to be transplanted, vermicompost at 1 t ha<sup>-1</sup> is applied in the nursery bed. This results in healthy and vigorous seedlings. But for transplants, vermicompost at the rate of 400–500 g per plant is applied initially at the time of planting and 45 days after planting (before irrigation).
- **For flowers:** Vermicompost is applied at 750–1000 kg ha<sup>-1</sup>.
- For vegetable and flower crops vermicompost is applied around the base of the plant. It is then covered with soil and watered regularly

## ADVANTAGE OF VERMICOMPOST

- Vermicompost is rich in all essential plant nutrients.
- Provides excellent effect on overall plant growth encourages the growth of new shoots/leaves and improves the quality and self-life of the produce.
- Increase the 'Soil Organic Matter' (SOM), soil structure and prevent soil erosion.
- Vermicompost is free flowing, easy to apply, handle and store and does not have bad odour.
- If improves soil structure, texture, aeration, water holding capacity & prevent soil erosion.
- Improve cation exchange capacity.
- Reduces bulk density of soil, prevents soil compaction and erosion.
- Vermicompost is rich in beneficial micro-flora such N-fixers, *Psolubilizers*, *cellulose* decomposing micro-flora, etc.
- Vermicompost contains earthworm cocoons and increases the population and activity of earthworm in the soil.
- Remove soil salinity and sodicity.
- It neutralizes the Soil pH.
- . Increase water-holding capacity of soil.
- It prevents nutrient losses and increases the use efficiency of chemical fertilizers.
- Vermicompost enhances the decomposition of organic matter in soil.
- Vermicompost contains valuable vitamins, enzymes and hormones like auxins, gibberellins etc.

## LIMITATION

- Moisture level in the bed should not exceed 40-50%. Water logging in the bed leads to anaerobic condition and change in pH of medium. This hampers normal activities of worms leading to weight loss and decline in worm population.
- Do not mix non degradable materials such as polythene papers etc.
- Do not mix any soil or stones with residues of crops or cowdung.

## Year wise Production of Vermicompost by Faculty of Agriculture

- Size of Vermicompost Pit was 1 x 2 x 2 ft.
- Vermicompost produced by faculty of agriculture was used in our own field of vegetable, ELP, Crop cafeteria and in Fruit Plants at RKDF campus and at Agriculture Research Farm Nonikhedi Bhopal. We mix the vermicompost with *Azotobacter*, *Pseudomonas*, Bonemeal,  $ZnSO_4$ , *Rhizobium* culture and PSB culture for value addition of Manure.
- Vermicompost it produced in 60 days

### Year wise Production of Vermicompost

S. No.	Year	No. of Pit	Addition of Pit	Total No. of Pit	Production
1	2017-18	4	-	4	60
2	2018-19	4	2	6	80
3	2019-20	36	3	9	120
4	2020-21	9	11	20	
5	2021-22	50 Proposed and shall be implemented by March 2021 at Agriculture Research Farm Nonikhedi Sehore			

### NEW EXPANSION DETAILS OF VERICOMPOST

#### Year 2020-21

- Total 50 vermicompost pits proposed for 2021 at RKDF Agriculture research farm Nonikhedi and Gondarmau, which will produce approximate 100 tonne per annum vermicompost.



*[Signature]*  
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Fig. Inaugural Ceremony of 11 Newly constructed Vermicompost in RKDF Campus by Mr. Prateek Hajela, IAS, Principal Secretary Dept. of Ayush Govt. of M.P. and Dr. Sunil Kapoor, Chairman, RKDF Group.

*[Handwritten Signature]*  
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*[Handwritten Signature]*  
Registrar  
RKDF University

## PRODUCTION TECHNOLOGY OF VERMICOMPOST

- Faculty of Agriculture, RKDF University has 20 no of vermicompost pits are available.
- The size of each pit is (1.5 x 2 x 5 fit)
- 21 vermicompost pits established in 2020-21 at Agriculture research farm Nonikhedi.
- Total 41 vermicompost pits are available in Faculty of Agriculture, RKDF University, which we have produce approximate 20 tonne per annum vermicompost.
- Vermicompost used in our own vegetable field, ELP field, Crop cafeteria field, Fruit orchard, RKDF campus, Nounikhedi farm and some quantity of vermicompost we are selling in university.
- Year 2021-22 we have produce 20 t vermicompost and sell 402 kg vermicompost during the year and rest of the vermicompost use in our different agriculture fields.

  
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**Vermicompost (2021-22)**

S. No	Date	Kg	Amount (Rs)
1	29-07-21	5	50
2	26-07-21	24	240
3	28-07-21	14	140
4	25-08-21	2	20
5	02-09-21	15	150
6	18-10-21	5	50
7	29-10-21	2	20
8	30-10-21	22	220
9	17-11-21	54	540
10	01-12-21	20	200
11	08-12-21	10	100
12	12-12-21	5	50
13	19-01-22	10	100
14	26-03-22	2	60
15	04-04-22	5	50
16	13-04-22	60	600
17	27-04-22	5	50
18	28-04-22	10	100
19	02-05-22	40	400
20	17-11-22	80	800
21	21-12-22	8	80
	<b>Total</b>	<b>402</b>	<b>4020</b>

**Vermicompost amount not received**

S.No	Date	Kg
1	31-08-21	60
2	03-09-21	20
3	28-09-21	20
4	24-04-22	15
5	20-05-22	20
6	17-08-22	300
7	29-08-22	20
8	28-09-22	80
9	29-10-22	20
10	17-11-22	30
	<b>Total</b>	<b>585</b>

*[Handwritten Signature]*  
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**Bank Receipt of Deposited Money**

  
Registrar  
RKDF University



शाखा/Branch Gondherman

दिनांक Date 31/01/2022

बत/बात/ओडी/नकद उपार/आवती जमा/आवधिक ऋण/मांगक्रम खाता संख्या/क्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.

7548002100000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_

राशि Amount 2500/- ₹

राशि शब्दों में/Amount(in words) ₹ Two thousand

Five hundred only/-

बैंक नं. एवं बैंक का नाम Cheque No. & Name of Bank	₹	₹/P.
पंजाब नेशनल बैंक	2500	
कुल/Total	2500	

Officer/Cashier/SWO राज/राज

पंजाब/PNB 154-64/2020(20)मो/BPL

शाखा/Branch Gondherman

दिनांक Date 24/01/2022

बत/बात/ओडी/नकद उपार/आवती जमा/आवधिक ऋण/मांगक्रम खाता संख्या/क्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.

7548002100000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_

राशि Amount \_\_\_\_\_ ₹

राशि शब्दों में/Amount(in words) ₹ Two

thousand two hundred only/-

बैंक नं. एवं बैंक का नाम Cheque No. & Name of Bank	₹	₹/P.
पंजाब नेशनल बैंक	2200	
कुल/Total	2200	

Officer/Cashier/SWO \_\_\_\_\_

पंजाब/PNB 154-64/2020(20)मो/BPL

GONDHERMHOW (BHOPAL)

CASH RECEIPT

7548002100000566

Customer Name

DEAN FACULTY OF AGRICULTURE

RE MISCELLANEOUS BHOPAL

Detail BY CASH

Amt Deposit 2,000.00 INR

Two Thousand Only.

Amt Received By 307300KK

on 30-12-2021 14:22:27

Txn/Sr no 4871684/54

Cashier

Punjab National Bank Welcomes You

TollFree 24 Hours Call Center :

1800 180 2222, 0124-2340000

, 18001032222

Vigilance Awareness Week- 26.10.2021 to 01.11.

2021

'Independent India @75: Self Reliance with Int

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Thankyou!

पंजाब/PNB 154-64/2020(20)मो/BPL

शाखा/Branch Gondherman Bhopal

दिनांक Date 14/12/2021

बत/बात/ओडी/नकद उपार/आवती जमा/आवधिक ऋण/मांगक्रम खाता संख्या/क्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.

7548002100000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_

राशि Amount 2700/- ₹

राशि शब्दों में/Amount(in words) ₹ Two thousand

Seven hundred only/-

बैंक नं. एवं बैंक का नाम Cheque No. & Name of Bank	₹	₹/P.
पंजाब नेशनल बैंक	2700	
कुल/Total	2700	

Officer/Cashier/SWO \_\_\_\_\_

पंजाब/PNB 154-64/2020(20)मो/BPL

शाखा/Branch Gondherman Bhopal

दिनांक Date 23/03/2022

बत/बात/ओडी/नकद उपार/आवती जमा/आवधिक ऋण/मांगक्रम खाता संख्या/क्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.

7548002100000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_

राशि Amount 2505/- ₹

राशि शब्दों में/Amount(in words) ₹ Two thousand

Five hundred five only/-

बैंक नं. एवं बैंक का नाम Cheque No. & Name of Bank	₹	₹/P.
पंजाब नेशनल बैंक	2505	
कुल/Total	2505	

Officer/Cashier/SWO \_\_\_\_\_

Faculty of Agriculture  
RKDF University,  
Airport Bypass Road, Ganchi Nagar,  
Bhopal (M.P.)



CASH RECE  
A/C 7548002100  
Customer Name  
DEAN FACULTY C  
RE MISCELLANEOUS BY  
Detail  
Amt Deposit 2,250  
Two Thousand Two Hundred

TollFree 24 Hours Call Cent  
1800 180 2222, 0124-2340000  
, 18001032222  
Vigilance Awareness Week- 24  
2021  
Independent India 075: Self Reliance with

2250/-  
3/3/2022

पंजाब नेशनल बैंक  
punjab national bank

शाखा/Branch Gandhinagar

दिनांक  
Date 12/02/2022

रकम/वात/बोटी/नकद उपार/आवर्ती जमा/आवधिक ऋण/मांगरूप खाता संख्या/  
ड्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.  
75480021000000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_ ₹ \_\_\_\_\_ प.प. \_\_\_\_\_

राशि Amount 2030/-

राशि शब्दों में/Amount(in words) ₹ two thousand thirty only

बैंक नं. एवं बैंक का नाम  
Cheque No. & Name of Bank

शाखा 2030

दिनांक 22 FEB 2022

कुल/Total 2030

नकद प्राप्त/Cash Received

Officer/Cashier/SWO \_\_\_\_\_

Punjab National Bank Toll free  
24 hours call centre 1800 180 2222 / 1800 103 2222

पनेबैं/PNB 154-64/2020(20)नो./BPL

पंजाब नेशनल बैंक  
punjab national bank

शाखा/Branch Gandhinagar

दिनांक  
Date 16/02/2022

रकम/वात/बोटी/नकद उपार/आवर्ती जमा/आवधिक ऋण/मांगरूप खाता संख्या/  
ड्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.  
75480021000000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_ ₹ \_\_\_\_\_ प.प. \_\_\_\_\_

राशि Amount 3500/-

राशि शब्दों में/Amount(in words) ₹ three thousand five hundred only

बैंक नं. एवं बैंक का नाम  
Cheque No. & Name of Bank

शाखा 3500

दिनांक 16 FEB 2022

कुल/Total 3500

नकद प्राप्त/Cash Received

Officer/Cashier/SWO \_\_\_\_\_

Punjab National Bank Toll free  
24 hours call centre 1800 180 2222 / 1800 103 2222

पनेबैं/PNB 154-64/2020(20)नो./BPL

पंजाब नेशनल बैंक  
punjab national bank

शाखा/Branch Gandhinagar

दिनांक  
Date 07/02/2022

रकम/वात/बोटी/नकद उपार/आवर्ती जमा/आवधिक ऋण/मांगरूप खाता संख्या/  
ड्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/TL/DL A/c No./Credit Card No.  
75480021000000566

नाम/Name Dean faculty of Agriculture

दूर/Tel. \_\_\_\_\_ ₹ \_\_\_\_\_ प.प. \_\_\_\_\_

राशि Amount 2800/-

राशि शब्दों में/Amount(in words) ₹ two thousand eight hundred only

बैंक नं. एवं बैंक का नाम  
Cheque No. & Name of Bank

शाखा 2800

दिनांक 07 FEB 2022

कुल/Total 2800

नकद प्राप्त/Cash Received

Officer/Cashier/SWO \_\_\_\_\_

Punjab National Bank Toll free  
24 hours call centre 1800 180 2222 / 1800 103 2222

पनेबैं/PNB 154-64/2020(20)नो./BPL

Faculty of Agriculture  
RKDF University,  
Airport Bypass Road, Gandhi Nagar,  
Bhopal (M.P.)

शाखा/Branch Gondherman

दिनांक  
Date 07/03/2022

बचत/वातु/ओडी/नकद उधार/आवृत्ती जमा/आवृत्तिक ऋण/भांगऋण खाता संख्या/  
क्रेडिट कार्ड संख्या SF/CA/OD/CC/RD/T/DL A/c No./Credit Card No.

7548002100000566

नाम/Name Dean Faculty of Agriculture

दूर/Tel. \_\_\_\_\_

राशि Amount ₹ 4360/- प.प.

राशि शब्दों में/Amount(in words) ₹ Four thousand three hundred sixty only/-

बैंक नं. एवं बैंक का नाम Cheque No. & Name of Bank			
शाखा Branch			
07 MAR 2022			
कुल/Total	<u>₹ 4360</u>		
ऑफिसर/कैशियर/SW नमूना/Stamp/Cash Recd.			

पनें/PNB 154--64/2020(20)मो/BPL

GONDHERMOW (BHOPAL)  
 CASH RECEIPT  
 A/C 7548002100000566  
 Customer Name  
 DEAN FACULTY OF AGRICULTU  
 RE MISCELLANEOUS BHOPAL  
 Detail BY CASH  
 Amt Deposit 2,500.00 INR  
 Two Thousand Five  
 Hundred Only.

Amt Received By 309169WB  
 on 10-06-2021 11:52:49  
 Txn/Sr no M435448/10  
 Cashier  
 Punjab National Bank Welcomes You  
 TollFree 24 Hours Call Center :  
 1800 180 2222, 0124-2340000  
 , 18001032222

Thankyou!

Paid [Signature]  
 10/6/2021

  
**Faculty of Agriculture**  
**RKDF University,**  
**Airport Bypass Road, Ganchi Nagar,**  
**Bhopal (M.P.)**

  
 Registrar  
 RKDF University

# **3. Liquid waste management**

- **Liquid waste management**

Liquid waste is a major problem in the world due to approximately 71% of the Earth's surface being covered in water. According to the Environmental Protection Agency (EPA), liquid waste is defined as any waste material that passes the definition of a "liquid." This means that the material must "pass through a 0.45-micron filter at a pressure differential of 75 psi," according to the EPA's provided definition of a liquid. The main producers of liquid waste are animals, and human beings as natural excretion of waste are flushed into sewage and waste lines. Unlike solid wastes, liquid wastes cannot be easily picked up and removed from an environment. Liquid wastes spread out and easily pollute other sources of liquid if brought into contact.

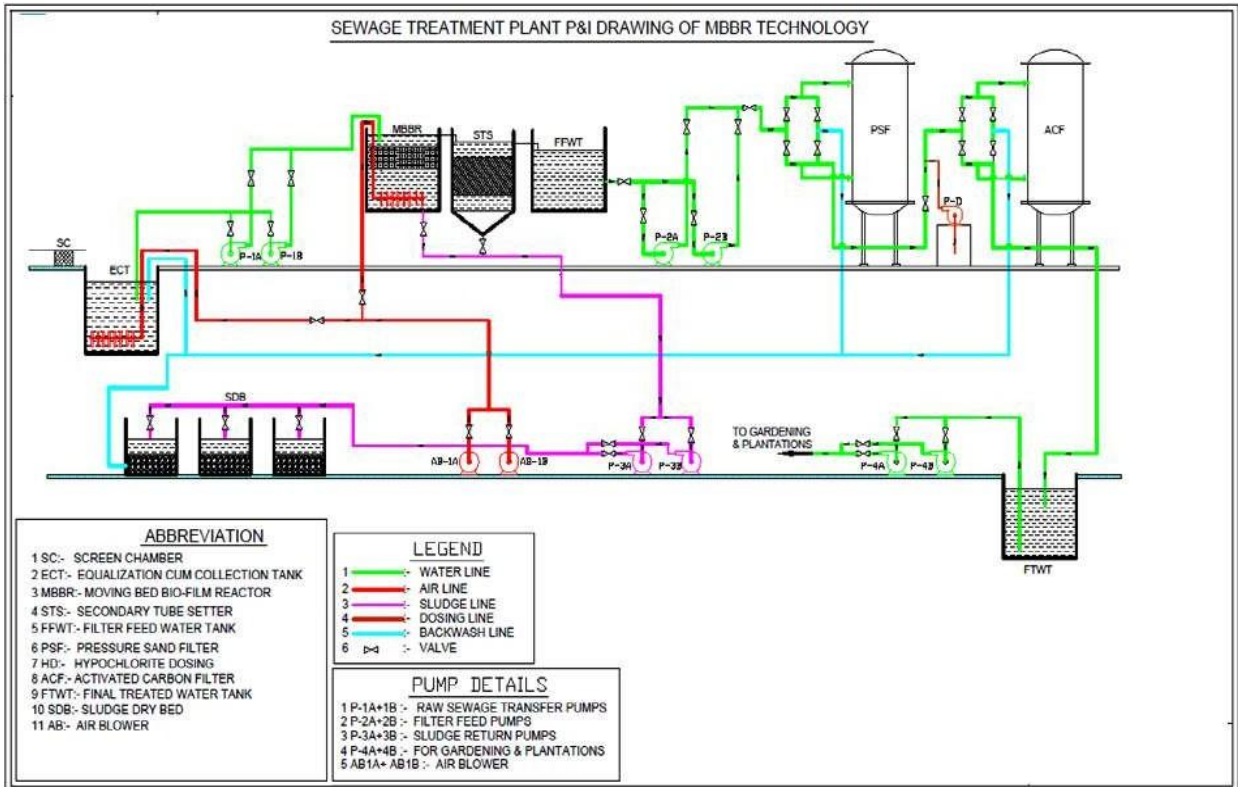
The liquid Treatment process involves physical and chemical treatment techniques to remove contaminants such as oils, dissolved metals, and solids. The water is then sent to municipal treatment plants for additional biological water treatment, resulting in clean water that is returned to the water cycle and typically to surface waters.

Three Treatment Plants are available in RKDF University, Bhopal

1. Sewage Treatment Plant of capacity 250 KLD at RKDF University, Bhopal
2. Sewage Treatment Plant of capacity 100 KLD at RKDF University, Bhopal
3. Effluent Treatment Plant of capacity 50 KLD at RKDF University, Bhopal



**STP (250 KLD + 100 KLD) & ETP (50 KLD) for Sewage and Effluent treatment respectively are operational**



## Sewage Treatment Plant 250 / 100 KLD - SCHEME



  
 Registrar  
 RKDF University





**STP 250 KLD & 100 KLD for Domestic Waste Water Treatment**



**ETP 50 KLD for Physical, Biological and Chemical impurities in Water**

*[Signature]*  
Registrar  
RKDF University

# ETP-STP Plant Commissioning



## WORK / PURCHASE ORDER

No. RKDF / GNGR / CAO / 348-B /17

Dtd. 31.05.2017

To,  
M/s "Retas Infra Solutions"

New Delhi

Subject: Job Works Contract for including civil work, Manufacturing, Supplying and Installation of  
**1. One Effluent Treatment Plant of capacity 50 KLPD 2. One Sewage treatment plant of capacity 250 KLPD and 3. One Sewage treatment plant of capacity 100 KLPD** at RKDF University, Gandhi Nagar Campus, Bhopal .  
- **Corrected as desired by you.**

Dear Mr. Ankit,

We have approved your proposals/quotations for civil work, Manufacturing, Supplying and Installation of three individual separate plants **1. One Effluent Treatment Plant of capacity 50 KLPD 2. One Sewage treatment plant of capacity 250 KLPD and 3. One Sewage treatment plant of capacity 100 KLPD** at RKDF University, Gandhi Nagar Campus, Bhopal against your quotation Ref No. RIS/R09/16-17/104 Dated 09<sup>th</sup> Mar 2017, Ref No. RIS/R09/16-17/105 Dated 09<sup>th</sup> Mar 2017 and Ref No. RIS/R09/16-17/103 Dated 09<sup>th</sup> Mar 2017.

**Name of the work:** Work contract for including Civil work, Manufacturing, Supplying and Installation of three individual separate working plants **1. One Effluent Treatment Plant of capacity 50 KLPD 2. One Sewage treatment plant of capacity 250 KLPD and 3. One Sewage treatment plant of capacity 100 KLPD** at RKDF University, Gandhi Nagar Campus, Bhopal

**After completion of work total fixed Amount :** Rupees 57.31 Lakhs + taxes

**Delivery Period:** 3 months from the date of work order/advance.

In case GST gets applicable during the work in progress then taxes will vary as per the actual.

**Payment Terms:**

1. 500000 Rupees as a Advance cheque No.174065 dated 10.05.2017.
  2. 300000 Rupees after submission of Drawings & Material Delivery of Civil Items
  3. 10% amount of civil Work on completion of 50% civil work .
  4. 15% amount on 100% completion of civil work.
  5. 35% prior to dispatch of electro mechanical items .
  6. 15% upon erection & installation.
  7. Rest amount after month of trial and successful commissioning.
- In case of GST gets applicable during the work in progress then taxes will vary as per the actual.

Attachment: Detailed special conditions and scope of work is mentioned in the following 01 to 24 pages .

Authorized Signatory,  
Chief Administrative Officer,  
RKDF University, Gandhi Nagar, Bhopal, M.P.

  
Registrar  
RKDF University



# RKDF UNIVERSITY

(Approved by Govt. of M.P. Notification No. 4437-245-bDdhl vk¼izk-½


RKDF UNIVERSITY

Phone No.: (O) 0755-2740871

Fax No.: 0755-2742871

## Special Conditions:

1	The Special Conditions shall be read in conjunction with the General Terms and Conditions and the provisions of the Special conditions shall prevail wherever there is a contradiction with the General Terms and Conditions and Special Conditions	
2	Name and address of Owner	RKDF University Gandhi Nagar Near airport bypass road Bhopal -462033
3	Details of the supplier	
	Nature of Company	Firm
	Name of the Company Firm	M/s "Retas Infra Solutions" New Delhi
	Tax Index Number (TIN)	
	Value Added Tax Sales Tax/Central Sales Tax No.	
	Permanent Account Number (PAN)	
4	Project Site	Shri R.N.Kapoor Memorial Medical College Hospital & Research Centre And RKDF UNIVERSITY Campus, Gandhi Nagar,Near airport bypass road bhopal
5	Tolerance in quantity	
	a. On the order quantity	0.0%
	b. On the dispatched quantity	0.0%
6	Unloading by	Supplier
7	Delivery and completion Date	3 months from the date of work order or advance payment
8	Terms of Payment	As Mentioned Above

13	Inspection to be carried	Jointly
14	Warranty	6 Months after the successfully implementation.
15	Whether Form C will be issued by the Owner	Yes
16	Delivery Terms	Door Delivery
17	Transportation charges	Inclusive
18	Instructions for delivery of Goods and Billing	
	Name of person to be contacted for delivery and submission of dispatch documents	Mr. Yograj Singh Chief Administrative officer  Registrar RKDF University



# RKDF UNIVERSITY

(Approved by Govt. of M.P. Notification No. 4437-245-bDdhl vk¼izk-½

RKDF UNIVERSITY

Phone No.: (O) 0755-2740871

Fax No.: 0755-2742871

	Name of the consignee	RKDF University and Shri R.N.Kapoor Memorial Medical College Hospital & Research Centre Gandhi nagar Near airport bypass road Gondermow Bhopal 462033
	Address at which the goods are to be delivered	Same as a above
	Contact no	07556455562 ,9425022845
	Email:	<a href="mailto:rkdfuniversitybpl@gmail.com">rkdfuniversitybpl@gmail.com</a> ,
	TIN (Tax index No for VAT) or Local Sales Tax No	
	CST No	
	Service Tax No	
	Excise Registration No	
	Preferable Transport if any	
20	All correspondence regarding technical matters concerning this purchase order shall be addressed to :	
	Name	Dr. B.N. Singh Registrar
	Address	RKDF University and Shri R.N.Kapoor Memorial Medical College Hospital & Research Centre Gandhi nagar Near airport bypass road Gondermow Bhopal 462033
	Contact No	07556455562
	Email	<a href="mailto:drbnsingh@rkdf.ac.in">drbnsingh@rkdf.ac.in</a> & <a href="mailto:yograj1956@rediffmail.com">yograj1956@rediffmail.com</a>
21	All correspondence regarding commercial matters and copies of all correspondences in technical and quality and inspection matters concerning this purchase order shall be addressed to:	
	Name	Dr. B.N. Singh Registrar
	Address	RKDF University and Shri R.N.Kapoor Memorial Medical College Hospital & Research Centre Gandhi nagar Near airport bypass road Gondermow Bhopal 462033
	Contact No	07556455562
	Email	<a href="mailto:drbnsingh@rkdf.ac.in">drbnsingh@rkdf.ac.in</a> & <a href="mailto:yograj1956@rediffmail.com">yograj1956@rediffmail.com</a>
22	Suppliers Representative	
	Name	Mr. Ankit Magan
	Email	
23	Service Reporting Time	
24	Any other provision (s)	All relevant norms and conditions must be as per the law & rules of the pollution control board and all works must match as per the requirements of various instructions issued by the Govt. and concerned authorities time to time.

  
 Registrar  
 RKDF University





## Detailed Scope of Work:

**Design Basis:** 1. One Effluent Treatment Plant of capacity 50 KLPD

The proposed treatment plant is for effluent water of hospital, Science labs, homoeopathy and proposed medical college at RKDF University, Gandhi Nagar Campus, Bhopal

- Source of wastewater: untreated effluent.
- Estimated quantity of effluent: 50 KLD (kilo litres per day).
- Designed influent and treated water parameters:

RAW EFFLUENT CHARACTERISTICS		
pH		4-8
BOD	ppm	2000
COD	ppm	4000
O&G	ppm	100
TSS	ppm	400

## TREATED EFFLUENT CHARACTERISTICS AFTER TREATMENT

pH		7-8
BOD	ppm	<10
COD	ppm	<50
O&G	ppm	<5.0
TSS	ppm	<50

## PROPOSED SCHEME

### Technology: Moving Bed Bio Reactor

Effluent Treatment has been divided into four major parts:

1. Preliminary Treatment: Removal of floating particles, heavy solids etc.
2. Primary Treatment: Collection and Aeration for mixing.
3. Secondary Treatment: BOD removal, and solid liquid separation.
4. Tertiary Treatment: Disinfection of water and filtration.

### Preliminary Treatment:

Raw effluent generated will be passed through Screen **Chamber**. Bars will be provided for removing any type of floatable matter in the raw effluent which will be scrapped out. From Screen Chamber, the effluent water flows to Grit Chamber where the velocity of water reduces which allows particle separation and free oil float at the top. Timely cleaning is done to remove floating oil and solids.

  
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RKDF University



## Primary Treatment:

Clear effluent will be collected in Equalization/Collection Tank for equalizing the effluent. Aeration grids will be provided for mixing purpose. Equalized effluent will be pumped to Flash Mixer for chemical addition purpose. After chemical addition, water will pass through the tube settler where solids will be separated and settled at the bottom. Clear water will be travelled to MBBR tank for further treatment.

## Secondary Treatment:

From equalization tank, effluent is pumped to MBBR Tank. The **Moving Bed Bio-film Reactor** will be filled with the specified quantity of bio media made of light weight plastic material to enhance the surface area for bio-growth. Oxygen required for the bacterial growth will be supplied through **Fine Bubble Diffuser** systems. The system envisages better oxygen transfer because of fine bubbles and increased contact with the effluent.

The overflow from MBBR tank will be gravitating to **Tube Settler**. To increase the retention time of settling tank, PVC tube settler will be provided. This unit is provided to arrest the sludge from leaving the system. The arrested sludge will be pumped back to the MBBR tank to maintain the growth of biomass in system and excess sludge will be taken to the **Sludge Holding Tank**.

Collected sludge will be pumped to the **Filter Press (optional)** for de-watering. The filtrate from filter press will be taken to the equalization cum collection tank. Clear overflow from tube settler will be gravitated to further treatment.

## Tertiary Treatment:

Overflow from the tube settler will be gravitated to **Filter Feed Tank** from where water will be pumped to **Pressure Sand** Filter followed by **Activated Carbon Filter**. Disinfectant dosing will be done via pump after ACF. Treated effluent from carbon filter will be used for gardening and flushing.

## **MBBR (Moving Bed Bio Reactor)**

The Moving Bed Bio-film Reactor or MBBR process is base on the aerobic bio-film principle and utilizes the advantages of activated sludge and other bio-films systems. The bio-films also provides

100003  
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Fax No.: 0755-2742871

a more stable “home” for the bacteria to grow, so there is less space required compared to other biological systems.

- Compact Design, Low maintenance, Easy to Operate and Control.
- Robust Bio-Film, Flexible Reactor Design.
- No Clogging of Bio-Film carriers

  
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## TECHNICAL DETAILS

### PROPOSED UNITS AND EQUIPMENTS:

- CIVIL UNITS:**

The various units are given as under:

S.No.	Name of The Unit	Quantity (in No.)	Capacity (in m3)
1	Screen Chamber	1	1
2	Grit Chamber (O&G Trap)	1	2
3	Sewage Collection Tank	1	25
4	Oil Collection Chamber	1	5
5	Sludge Drying Bed	4	1
6	Treated Water Tank	1	As Per Requirement

**Note: ANY OTHER WORK REQUIRED FOR SAFE OPERATION OF PLANT IS IN YOUR SCOPE.**

  
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Fax No.: 0755-2742871

• **MECHANICAL EQUIPMENTS (IN YOUR SCOPE COMPLETELY):**

S.No.	Equipment	Quantity	Specification	Make/MOC
1	Bar Screen	1	500mmx500mmx8mm opening	MSEP
2	Raw Effluent pumps	2	5 m <sup>3</sup> /hr @ 10 m head	Kirloskar/Crompton
3	MBBR Media	5m <sup>3</sup>	Loading rate 700- 950m <sup>2</sup> /m <sup>3</sup>	PP Aqua/MM Aqua/Cooldeck
4	Oxygen Blower	2	250 m <sup>3</sup> /hr @0.5 kg/cm <sup>2</sup> pressure	Usha/Everest/ P Sivanku
5	Fine Bubble Diffusers	Lot	90mm OD X 1000 mm long	PP Aqua/MM Aqua/P Sivanku
6	Tube Settler Media	5 m <sup>3</sup>	55 deg inclined square tube made of virgin pp	PP Aqua/MM Aqua/P Sivanku
7	Filter Feed Pumps	2	15 m <sup>3</sup> /hr @ 20 m head	Kirloskar/Crompton
8	Sand Filter	1	1100mm dia X2100 mm HOS with sand & supporting media	MSEP/FRP
9	Activated Carbon filter	1	365mm dia X700 mm HOS with carbon & supporting media	MSEP/FRP
10	Chlorine Dosing Pump	1	0-6 lph metering pump with 100 litre solution tank	Initiative/Goyal/Rainbow
11	Tube Settler pump	2	2 m <sup>3</sup> /hr @ 15 m head	Kirloskar/Crompton/Equip

**NOTE: ANY OTHER ITEM REQUIRED FOR SAFE OPERATION OF PLANT SHALL BE COMPLETELY UNDER YOUR SCOPE.**

  
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RKDF University





- **ELECTRICAL ITEMS & INSTRUMENTATIONS (YOUR SCOPE):**

- A) Control Panel : floor/wall mounted cubical type with incoming power control switch, MCB & starters
- B) Local push button starters, if any.
- C) Armoured cabling from our panel to motor starters and earth pits.
- D) Earthing as required
- E) Energy Meter

**Points of Termination:**

Civil: No civil work shall be done by us. You have to provide us the detailed working drawing of civil work. The work may be commenced only after approval of our engineer. Any changes advised by our engineer has to be incorporated without any extra cost. Effluent Inlet upto collection tank shall be in your scope.

Electrical : Inlet cable to the control panel shall be provided by us. All internal wiring, cabling, earthing shall be under your scope. Lighting in plant room and nearby area shall be provided by us. Panel should have separate electric meter.

Mechanical: Completely under your scope. No mechanical item as such shall be provided by us.

Piping & Fittings: Under your scope (to and from 10 meters of the limits of ETP).

Power: In our scope

Water: In our scope. One fresh water tap connection shall be provided by us.

  
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RKDF University



## Design Basis: 2. One Sewage treatment plant of capacity 250 KLPD

- The proposed treatment plant is for RKDF University.
- Source of wastewater: untreated sewage from household and other societal activities.
- Sewage Treatment Plant capacity = 250 KLD
- Designed influent and treated water parameters:

S.No.	Parameter	Unit	Untreated	Treated
1	Flow	KLD	250	240-250
2	pH		6.0-7.0	6.5-7.5
3	COD	ppm	350-550	<50
4	BOD	ppm	250-350	<10
5	TSS	ppm	200-300	<20
6	Oil & Grease	ppm	10-15	<5

- Use of Treated Water: Gardening, Flushing, and discharge to the municipal sewer system.

  
Registrar  
RKDF University



## PROPOSED SCHEME

### Technology: Moving Bed Bio Reactor

Sewage Treatment has been divided into four major parts:

5. Preliminary Treatment: Removal of floating particles, heavy solids etc.
6. Primary Treatment: Collection and Aeration for mixing.
7. Secondary Treatment: BOD removal, and solid liquid separation.
8. Tertiary Treatment: Disinfection of water and filtration.

### Preliminary Treatment:

Raw sewage generated will be passed through Screen **Chamber**. Bars will be provided for removing any type of floatable matter in the raw sewage which will be scrapped out and collected in drums. From Screen Chamber, the sewage water flows to Grit Chamber where the velocity of water reduces which allows particle separation and free oil float at the top. Timely cleaning is done to remove floating oil and solids.

### Primary Treatment:

Clear Sewage will be collected in Equalization/Collection Tank for equalizing the sewage. Aeration grids will be provided for mixing purpose. Equalized sewage will be pumped to MBBR tank for further treatment.

### Secondary Treatment:

From equalization tank, sewage is pumped to MBBR Tank. The **Moving Bed Bio-film Reactor** will be filled with the specified quantity of bio media made of light weight plastic material to enhance the surface area for bio-growth. Oxygen required for the bacterial growth will be supplied through **Fine Bubble Diffuser** systems. The system envisages better oxygen transfer because of fine bubbles and increased contact with the sewage.

The overflow from MBBR tank will be gravitating to **Tube Settler**. To increase the retention time of settling tank, PVC tube settler will be provided. This unit is provided to arrest the sludge from leaving the system. The arrested sludge will be pumped back to the MBBR tank to maintain the growth of biomass in system and excess sludge will be taken to the **Sludge Holding Tank**. Collected sludge will be pumped to the **Filter Press (optional)** for de-watering. The filtrate from filter press will be taken to the equalization cum collection tank. Clear overflow from tube settler will be gravitated to further treatment. Dried sludge from filter press can be used as manure or can be disposed off as per statutory norms.

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## Tertiary Treatment:

Overflow from the tube settler will be gravitated to **Filter Feed Tank** from where water will be pumped to **Pressure Sand** Filter followed by **Activated Carbon Filter**. Disinfectant dosing will be done via pump after ACF. Treated sewage from carbon filter will be used for gardening and flushing.

## **MBBR (Moving Bed Bio Reactor)**

The Moving Bed Bio-film Reactor or MBBR process is base on the aerobic bio-film principle and utilizes the advantages of activated sludge and other bio-films systems. The bio-films also provides a more stable “home” for the bacteria to grow, so there is less space required compared to other biological systems.

- Compact Design, Low maintenance, Easy to Operate and Control.
- Robust Bio-Film, Flexible Reactor Design.
- No Clogging of Bio-Film carriers.

  
Registrar  
RKDF University



## TECHNICAL DETAILS

### PROPOSED UNITS AND EQUIPMENTS:

- CIVIL UNITS:**

The various units are given as under:

S.No.	Name of The Unit	Quantity (in No.)	Dimensions (LXBXH) in mm
1	Screen Chamber	1	1000X500X500
2	Grit Chamber	1	3000X500X500
3	Sewage Collection Tank	1	100 m <sup>3</sup>
4	Platform for Equipment	1	As per site conditions
5	Treated Water Tank	1	As per requirement
6	Sludge Drying Bed	3	1000X1000X1000

**Note: ANY OTHER WORK REQUIRED FOR SAFE OPERATION OF PLANT IS IN YOUR SCOPE.**

  
Registrar  
RKDF University





• **MECHANICAL EQUIPMENTS (IN YOUR SCOPE COMPLETELY):**

S.No.	Equipment	Quantity	Specification	Make/MOC
1	Bar Screen	1	As per requirement	MSEP
2	Raw Sewage pumps	2	15 m <sup>3</sup> /hr @ 10 m head	Kirloskar
3	MBBR Media	15 m <sup>3</sup>	Loading rate 400-600m <sup>2</sup> /m <sup>3</sup>	Aquatech International
4	Oxygen Blower	2	250 m <sup>3</sup> /hr @0.3 kg/cm <sup>2</sup> pressure	P Sivanku
5	Fine Bubble Diffusers	Lot	90mm OD X 1000 mm long	Aquatech International
6	Tube Settler Media	10 m <sup>3</sup>	MOC: Virgin pp	Aquatech International
7	Filter Feed Pumps	2	15 m <sup>3</sup> /hr @ 10 m head	Kirloskar/Crompton
8	Sand Filter	1	2472 model with 40 mm MPV	Pentair/Equip
9	Activated Carbon filter	1	2472 model with 40 mm MPV	Pentair/Equip
10	Chlorine Dosing Pump	1	0-6 lph metering pump with 100 litre solution tank	Aquapro/Aquanomic
11	Tube Settler pump	2	2 m <sup>3</sup> /hr @ 15 m head	Kirloskar/Equip
12	Carbon Media	Lot	800 IV Potable grade	In Situ
13	Sand Media	Lot		Local Supplier
14	Flow meter	2	40 mm or more ISO certified	Kranti
15	Control Panel	1	As per requirement	In Situ
16	MS/GI fittings	Lot	As per requirement	All IS Grade
17	PP/PVC/UPVC/CPVC fittings	Lot	As per requirement	All IS Grade

**Pipeline: Minimum 100 meters for Sewage inlet and treated water outlet will be covered under your scope.**

  
Registrar  
RKDF University



- **ELECTRICAL ITEMS & INSTRUMENTATIONS (YOUR SCOPE):**

- F) Control Panel : floor/wall mounted cubical type with incoming power control switch, MCB & starters
- G) Local push button starters, if any.
- H) Armoured cabling from our panel to motor starters and earth pits.
- I) Earthing as required
- J) Energy Meter

**Points of Termination:**

Civil: Civil work of tank will be in scope of vendor. Bringing drain to tank will be our responsibility. The work may be commenced only after approval of our engineer. Any changes advised by our engineer has to be incorporated without any extra cost. Effluent Inlet upto collection tank shall be in your scope.

Electrical : Inlet cable to the control panel shall be provided by us. All internal wiring, cabling, earthing shall be under your scope. Lighting in plant room and nearby area shall be provided by us. Panel should have separate electric meter.

Mechanical: Completely under your scope. No mechanical item as such shall be provided by us.

Piping & Fittings: Under your scope (to and from 100 meters of the limits of ETP).

Power: In our scope

Water: In our scope. One fresh water tap connection shall be provided by us.

  
Registrar  
RKDF University



## Design Basis: 3. One Sewage treatment plant of capacity 100 KLPD

- Sewage Treatment Plant capacity = 100 KLPD
- Designed influent and treated water parameters:

S.No.	Parameter	Unit	Untreated	Treated
1	Flow	KLD	100	90-100
2	pH		6.0-7.0	6.5-7.5
3	COD	ppm	350-550	<50
4	BOD	ppm	250-350	<10
5	TSS	ppm	200-300	<20
6	Oil & Grease	ppm	10-15	<5

- Use of Treated Water: Gardening, Flushing, and discharge to the municipal sewer system.

  
Registrar  
RKDF University



## PROPOSED SCHEME

### Technology: Moving Bed Bio Reactor

Sewage Treatment has been divided into four major parts:

9. Preliminary Treatment: Removal of floating particles, heavy solids etc.
10. Primary Treatment: Collection and Aeration for mixing.
11. Secondary Treatment: BOD removal, and solid liquid separation.
12. Tertiary Treatment: Disinfection of water and filtration.

### Preliminary Treatment:

Raw sewage generated will be passed through Screen **Chamber**. Bars will be provided for removing any type of floatable matter in the raw sewage which will be scrapped out and collected in drums. From Screen Chamber, the sewage water flows to Grit Chamber where the velocity of water reduces which allows particle separation and free oil float at the top. Timely cleaning is done to remove floating oil and solids.

### Primary Treatment:

Clear Sewage will be collected in Equalization/Collection Tank for equalizing the sewage. Aeration grids will be provided for mixing purpose. Equalized sewage will be pumped to MBBR tank for further treatment.

### Secondary Treatment:

From equalization tank, sewage is pumped to MBBR Tank. The **Moving Bed Bio-film Reactor** will be filled with the specified quantity of bio media made of light weight plastic material to enhance the surface area for bio-growth. Oxygen required for the bacterial growth will be supplied through **Fine Bubble Diffuser** systems. The system envisages better oxygen transfer because of fine bubbles and increased contact with the sewage.

The overflow from MBBR tank will be gravitating to **Tube Settler**. To increase the retention time of settling tank, PVC tube settler will be provided. This unit is provided to arrest the sludge from leaving the system. The arrested sludge will be pumped back to the MBBR tank to maintain the growth of biomass in system and excess sludge will be taken to the **Sludge Holding Tank**. Collected sludge will be pumped to the **Filter Press (optional)** for de-watering. The filtrate from filter press will be taken to the equalization cum collection tank. Clear overflow from tube settler will be gravitated to further treatment. Dried sludge from filter press can be used as manure or can be disposed off as per statutory norms.



## **Tertiary Treatment:**

Overflow from the tube settler will be gravitated to **Filter Feed Tank** from where water will be pumped to **Pressure Sand** Filter followed by **Activated Carbon Filter**. Disinfectant dosing will be done via pump after ACF. Treated sewage from carbon filter will be used for gardening and flushing.

## **MBBR (Moving Bed Bio Reactor)**

The Moving Bed Bio-film Reactor or MBBR process is base on the aerobic bio-film principle and utilizes the advantages of activated sludge and other bio-films systems. The bio-films also provides a more stable “home” for the bacteria to grow, so there is less space required compared to other biological systems.

- Compact Design, Low maintenance, Easy to Operate and Control.
- Robust Bio-Film, Flexible Reactor Design.
- No Clogging of Bio-Film carriers.

  
Registrar  
RKDF University





## TECHNICAL DETAILS

### PROPOSED UNITS AND EQUIPMENTS:

- CIVIL UNITS:**

The various units are given as under:

S.No.	Name of The Unit	Quantity (in No.)	Dimensions (LXBXH) in mm
1	Screen Chamber	1	1000X500X500
2	Grit Chamber	1	3000X500X500
3	Sewage Collection Tank	1	40 m <sup>3</sup>
4	Platform for Equipment	1	As per site conditions
5	Treated Water Tank	1	As per requirement
6	Sludge Drying Bed	3	1000X1000X1000

**Note: ANY OTHER WORK REQUIRED FOR SAFE OPERATION OF PLANT IS IN YOUR SCOPE.**

  
Registrar  
RKDF University



• **MECHANICAL EQUIPMENTS (IN YOUR SCOPE COMPLETELY):**

S.No.	Equipment	Quantity	Specification	Make/MOC
1	Bar Screen	1	As per requirement	MSEP
2	Raw Sewage pumps	2	10 m <sup>3</sup> /hr @ 10 m head	Kirloskar
3	MBBR Media	15 m <sup>3</sup>	Loading rate 400-600m <sup>2</sup> /m <sup>3</sup>	Aquatech International
4	Oxygen Blower	2	200 m <sup>3</sup> /hr @0.3 kg/cm <sup>2</sup> pressure	P Sivanku
5	Fine Bubble Diffusers	Lot	90mm OD X 1000 mm long	Aquatech International
6	Tube Settler Media	10 m <sup>3</sup>	MOC: Virgin pp	Aquatech International
7	Filter Feed Pumps	2	10 m <sup>3</sup> /hr @ 10 m head	Kirloskar/Crompton
8	Sand Filter	1	2472 model with 40 mm MPV	Pentair/Equiv
9	Activated Carbon filter	1	2472 model with 40 mm MPV	Pentair/Equiv
10	Chlorine Dosing Pump	1	0-6 lph metering pump with 100 litre solution tank	Aquapro/Aquanomic
11	Tube Settler pump	2	2 m <sup>3</sup> /hr @ 15 m head	Kirloskar/Equiv
12	Carbon Media	Lot	800 IV Potable grade	Own Make
13	Sand Media	Lot		Local Supplier
14	Flow meter	2	40 mm or more ISO certified	Kranti
15	Control Panel	1	As per requirement	Own Make
16	MS/GI fittings	Lot	As per requirement	All IS Grade
17	PP/PVC/UPVC/CPVC fittings	Lot	As per requirement	All IS Grade

**Pipeline: Maximum 100 meters for Sewage inlet and treated water outlet will be covered under your scope.**



Registrar  
RKDF University



- **ELECTRICAL ITEMS & INSTRUMENTATIONS (YOUR SCOPE):**

- K) Control Panel : floor/wall mounted cubical type with incoming power control switch, MCB & starters
- L) Local push button starters, if any.
- M) Armoured cabling from our panel to motor starters and earth pits.
- N) Earthing as required
- O) Energy Meter

**Points of Termination:**

Civil: Civil work shall be done by us. The work may be commenced only after approval of our engineer. Any changes advised by our engineer has to be incorporated without any extra cost. Effluent Inlet up to collection tank shall be in your scope.

Electrical : Inlet cable to the control panel shall be provided by us. All internal wiring, cabling, earthing shall be under your scope. Lighting in plant room and nearby area shall be provided by us. Panel should have separate electric meter.

Mechanical: Completely under your scope. No mechanical item as such shall be provided by us.

Piping & Fittings: Under your scope (to and from 100 meters of the limits of ETP).

Power: In our scope

Water: In our scope. One fresh water tap connection shall be provided by us.

  
Registrar  
RKDF University

## WORK / PURCHASE ORDER

Dtd. 31.05.2017

No. RKDF / GNGR / CAO / 348-B / 17

To,  
M/s "Retas Infra Solutions"  
New Delhi

Subject: Job Works Contract for including civil work, Manufacturing, Supplying and Installation of  
1. One Effluent Treatment Plant of capacity 50 KLPD 2. One Sewage treatment plant of capacity 250 KLPD and 3. One Sewage treatment plant of capacity 100 KLPD at RKDF University, Gandhi Nagar Campus, Bhopal .  
*Corrected as desired by you.*

Dear Mr. Ankit,

We have approved your proposals/quotations for civil work, Manufacturing, Supplying and Installation of three individual separate plants 1. One Effluent Treatment Plant of capacity 50 KLPD 2. One Sewage treatment plant of capacity 250 KLPD and 3. One Sewage treatment plant of capacity 100 KLPD at RKDF University, Gandhi Nagar Campus, Bhopal against your quotation Ref No. RIS/R09/16-17/104 Dated 09<sup>th</sup> Mar 2017, Ref No. RIS/R09/16-17/105 Dated 09<sup>th</sup> Mar 2017 and Ref No. RIS/R09/16-17/103 Dated 09<sup>th</sup> Mar 2017.

**Name of the work:** Work contract for including Civil work, Manufacturing, Supplying and Installation of three individual separate working plants 1. One Effluent Treatment Plant of capacity 50 KLPD 2. One Sewage treatment plant of capacity 250 KLPD and 3. One Sewage treatment plant of capacity 100 KLPD at RKDF University, Gandhi Nagar Campus, Bhopal

**After completion of work total fixed Amount :** Rupees 57.31 Lakhs + taxes

**Delivery Period:** 3 months from the date of work order/advance.

In case GST gets applicable during the work in progress then taxes will vary as per the actual.


### Payment Terms:

1. 500000 Rupees as a Advance cheque No.174065 dated 10.05.2017. ✓
2. 300000 Rupees after submission of Drawings & Material Delivery of Civil Items
3. 10% amount of civil Work on completion of 50% civil work .
4. 15% amount on 100% completion of civil work.
5. 35% prior to dispatch of electro mechanical items .
6. 15% upon erection & installation.
7. Rest amount after month of trial and successful commissioning.

In case of GST gets applicable during the work in progress then taxes will vary as per the actual.

**Attachment:** Detailed special conditions and scope of work is mentioned in the following 01 to 24 pages .

Authorized Signatory,  
Chief Administrative Officer,  
RKDF University, Gandhi Nagar, Bhopal, M.P.

*Corrected D.F.A. please.*  
The block contains several handwritten signatures and stamps. On the left, there is a signature that appears to be 'Dishu'. In the center, there is another signature. On the right, there is a stamp that reads 'Registrar RKDF University' with a signature over it. Below the stamp, there is a date '31-5-17' and another signature.

# ETP and STP Bills



**RETAIL INVOICE**

<b>Retas Infra Solutions</b> T1, Vinay Apartment, 31 Lala Lajpat Rai Society, E-7, Arera Colony, Bhopal - 462016		Invoice No. RIS/MP/18-19/ GST / RA- 003/01	Dated : 12-04-2018			
		Delivery Note	Mode/Terms of Payment			
Consignee : <b>RKDF University</b> Gandhi Nagar, Near Airport Bypass road, Bhopal - 462033		Supplier's Ref.	Other Reference(s)			
		Buyer's Order No. RKDF / GNGR / CAO / 348-B/17	Dated : 31.05.2017			
Buyer (if other than consignee) <b>RKDF University</b>		Dispatch Document No.	Delivery Note Date			
		Dispatched through	Destination : Bhopal			
Terms of Delivery						
Sl No.	Particulars	HSN/SAC	Quantity	Rate	per	Amount
1	Work Contract as per work order (250 KLD installation and 100 KLD Material supply)					15,38,057.75
3	CGST Output					1,38,425.20
4	SGST Output					1,38,425.20
5	R/o					0.15
Total						₹ 1814908.00
Amount Chargeable (in words)		<i>Eighteen lakhs fourteen thousand nine hundred and eight rupees only.</i>				
		E. & O.E				
HSN/SAC		Taxable Value	Central Tax		State Tax	
			Rate	Amount	Rate	Amount
		1538057.75	9%	138425.20	9%	138425.20
		Total Tax		276850.40		
Tax amount (in words) : Two lakhs seventy six thousand eight hundred and fifty only / -						
Company's PAN :		AAUFR5945F				
GSTIN: 23AAUFR5945F1ZT		for Retas Infra Solutions  Priyank Jain (Authorised Signatory)				
This is a Computer Generated Invoice						

**RETAIL INVOICE**

**RETAS INFRA SOLUTIONS**  
 T1 Vinay Apartments  
 31, Lala Lajpat Rai Society,  
 E-7, Arera Colony  
 Bhopal - 462016



TIN No : **23729248291**

Bill No : **RIS/MP/17-18/RA-001** Date : **27.06.2016**

Buyer : **RKDF University**  
 Gandhi Nagar, Near Airport bypass Road  
 Bhopal - 462033  
 Madhya Pradesh- India

Date : **27.06.2017**

Sl. No	Particular / Description of Work	Unit	Quantity	Rate (in INR)	Total (in INR)
1	Iron TMT Bar12 mm	KG	1020	41.50	42330.00
2	Iron TMT Bar10 mm	KG	5560	41.50	230740.00
3	Iron TMT Bar 8 mm	KG	4570	42.50	194225.00
4	HRCT FLJ VHSTAIC 20 BIS2062	KG	2.215	48900.00	108313.50
5	Kirloskar SP2H-3C2, 50X50mm SD centrifugal pump set	Nos	2	38000.00	76000.00
6	Kirloskar SP3LM+, 80X80 mm SD, Monoblock pumpset.	Nos	2	45000.00	90000.00
7	Kirloskar SP05M, Monoblock pumpset.	Nos	2	16500.00	33000.00
8	Air Blower AB-44 model	Nos	2	78350.00	156700.00
9	Kirloskar 3.7 KW (5HP) electric motor.	Nos	2	13550.00	27100.00
<b>Sub Total</b>					<b>958408.50</b>
VAT @ 5 %					<b>46565.43</b>
VAT @ 14%					<b>3794.00</b>
Round off					<b>0.07</b>
<b>TOTAL (in INR)</b>					<b>1008768.00</b>

Amount in word:- Ten lakhs eight thousand seven hundred sixty eight rupees only.

**TERMS & CONDITIONS**

- Total Amount is inclusive of all applicable taxes.
- Subject to Bhopal Jurisdiction.
- Payment should be made within 20 days from the date of bill, if not paid.
- Return of goods is not accepted once sold.

Bank Details for - RTGS / NEFT / CHEQUE :  
 Account Number : **0012094899**  
 Kotak Bank Limited  
 IFSC Code : **KKBK0000181**  
 Plot No. 31 & 32, Block - G, Sector - 18, Noida  
 Uttar Pradesh, India.

**FOR RETAS INFRA SOLUTIONS**

(Authorize Signatory)

### RETAIL INVOICE

<b>RETAS INFRA SOLUTIONS</b> Company's GSTIN/UIN - 23AAUFR5945F1ZT	Invoice No. <b>RIS/MP/17-18/GST / RA- 001</b> Delivery Note	Dated <b>30-Nov-2017</b> Mode/Terms of Payment
Consignee <b>RKDF University</b> Gandhi Nagar, Near Airport bypass road Bhopal - 462033	Supplier's Ref.	Other Reference(s)
Buyer (if other than consignee) <b>RKDF University</b> Gandhi Nagar, Near Airport bypass road Bhopal - 462033	Buyer's Order No. <b>RKDF / GNGR / CAO / 348-B/17</b>	Dated
	Despatch Document No.	Delivery Note Date
	Despatched through	Destination
Terms of Delivery		

Sl No	Particulars	HSN/SAC	Quantity	Rate per unit	Tax Rate	Amount
1	<b>GOODS/ SERVICES HEAD</b>					
	Cement PPC25232930	25232930	700 Kg	262	14%	183400.00
	C GST Output				14%	25676.00
	S GST Output					25676.00
2	*P/L in position Reinforced cement concrete work M-20 grade. For raft, wall, slab, beams"	9954	33.8 CUM	5450		184210.00
3	Centering and shuttering for raft & wall	9954	390 SQM	289		112710.00
4	Reinforcement for RCC work including straightening, cutting, bending, placing in position and binding all complete upto pedestal top	9954	2409.15 Kg	51		122866.65
	S CST Output				9%	37780.80
	C GST Output				9%	37780.80
	R/Off					-0.25
Total						<b>₹ 730100.00</b>

Amount Chargeable (in words)

Indian Rupees Seven Lakh thirty Thousand Ninty Eight Only / -

E & O.E

HSN/SAC	Taxable Value	Central Tax		State Tax	
		Rate	Amount	Rate	Amount
	419786.00	9%	37780.80	9%	37780.80
	183400.00	14%	25676.00	14%	25676.00
Total	603186.00		63456.8		63456.8

Tax Amount (in words) :

Indian Rupees One Lakh Ten Thousand Seven Hundred Eighty Four Only

Company's PAN : **AAUFR5945F**

for Retas Infra Solutions

Authorised Signatory

This is a Computer Generated Invoice



**RETAIL INVOICE**

Retas Infra Solutions T1, Vinay Apartment, 31 Lala Lajpat Rai Society, E-7, Arera Colony, Bhopal - 462016 GSTIN : 23AAUFR5945F1ZT		Invoice No. <b>RIS/MP/17-18/GST / RA- 002</b>	Dated : 12-01-2018			
		Delivery Note	Mode/Terms of Payment			
Consignee : RKDF University Gandhi Nagar, Near Airport Bypass road, Bhopal - 462033		Supplier's Ref.	Other Reference(s)			
		Buyer's Order No. RKDF / GNGR / CAO / 348-B/17	Dated : 31.05.2017			
		Dispatch Document No.	Delivery Note Date			
Buyer (if other than consignee) RKDF University		Dispatched through	Destination : Bhopal			
		Terms of Delivery				
Sl No.	Particulars	HSN/SAC	Quantity	Rate	per	Amount
1	Suppling of Material for 250 KLD STP at RKDF University.					13,75,370.00
2	Installation of 50 KLD STP					3,89,350.00
3	C GST Output					1,58,825.00
4	S GST Output					1,58,825.00
5	R/o					
	<b>Total</b>					<b>₹ 2082370.00</b>
<i>E. B. O. E</i>						
Amount Chargeable (in words) Indian Rupees Twenty Lakhs Eighty Two Thousand Three Hundred and Seventy Rupees only.						
HSN/SAC		Taxable Value	Central Tax		State Tax	
		1764720.00	Rate 9%	Amount 158824.80	Rate 9%	Amount 158824.80
		Total Tax	317649.00			
Tax Amount (in words) : Three Lakhs Seventeen Thousand Six Hundred and FourtyNine Rupees Only.						
Company's PAN :	AAUFR5945F	for Retas Infra Solutions				
		Ankit Magan (Authorised Signatory)				
This is a Computer Generated Invoice						

RETAIL INVOICE						
Retas Infra Solutions T1, Vinay Apartment, 31 Lala Lajpat Rai Society, E-7, Arera Colony, Bhopal - 462016		Invoice No. RIS/MP/18-19/ GST / RA- 003/01	Dated : 12-04-2018			
Consignee : RKDF University Gandhi Nagar, Near Airport Bypass road, Bhopal - 462033		Delivery Note	Mode/ Terms of Payment			
		Supplier's Ref.	Other Reference(s)			
		Buyer's Order No. RKDF / GNR / CAO / 348-B/17	Dated : 31.05.2017			
Buyer (if other than consignee) RKDF University		Dispatch Document No.	Delivery Note Date			
		Dispatched through	Destination : Bhopal			
		Terms of Delivery				
Sl No.	Particulars	HSN/SAC	Quantity	Rate	per	Amount
1	Work Contract as per work order (250 KLD installation and 100 KLD Material supply)					15,38,057.75
3	CGST Output					1,38,425.20
4	SGST Output					1,38,425.20
5	R/o					0.15
Total						₹ 1814908.00
Amount Chargeable (in words)		Eighteen lakhs fourteen thousand nine hundred and eight rupees only.				
		E. & O.E				
HSN/SAC		Taxable Value	Central Tax		State Tax	
			Rate	Amount	Rate	Amount
		1538057.75	9%	138425.20	9%	138425.20
		Total Tax 276850.40				
Tax amount (in words) : Two lakhs seventy six thousand eight hundred and fifty only / -						
Company's PAN :		AAUFR5945F				
GSTIN: 23AAUFR5945F1ZT		for Retas Infra Solutions <b>For Retas Infra Solutions</b> Priyank Jain (Authorised Signatory) Partner				
This is a Computer Generated Invoice						

Balance

Total Amount to be Received against Bill

Submitted : INR 916829.00/-



## **4. Biomedical waste management**

- **Biomedical waste management**

The safe and sustainable management of biomedical waste is the social and legal responsibility of all organizations. Effective biochemical waste management is mandatory for healthy humans and a cleaner environment. Biomedical waste is any waste produced during the diagnosis, treatment, or experiment on humans or animal related to research activities pertaining thereto or in the production or testing of biological or in health camps. Biomedical waste is distinct from normal trash or general waste and mostly contains hazardous substances.


**BMW Solutions (Incinerator)**

Office : Kanda Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963  
 Plant : Gram ratna, Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

### CERTIFICATE

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as " CBMWTF "

Further certified that BMW SOLUTIONS has entered into an agreement with Ram Krishna College of Homoeopathy & Medical Sciences  
RKDF University, Gandhi Nagar, Near Airport, Bypass Road, Bhopal

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid:


For 25 (Twenty Five) Beds No. of Beds

From 01 January 2020 to 31 December 2020

This certificate is given, to enable the institution, to apply for Fresh / Renewal authorisation under Bio-medical Waste (management Rule 2016 )

is Certificate No. 12 Expires on 31 December 2020

  
 Authorised Signatory


**BMW Solutions (Incinerator)**

Office : Kanda Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963  
 Plant : Gram ratna, Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

### CERTIFICATE

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as " CBMWTF "

Further certified that BMW SOLUTIONS has entered into an agreement with Sri R.N.Kapoor Memorial Medical College Hospital and Research Center  
RKDF University, Gandhi Nagar, Near Airport, Bypass Road, Bhopal

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

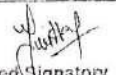
This agreement is valid:

For 450 (Four Hundred Fifty) Beds No. of Beds

From 01 January 2020 to 31 December 2020

This certificate is given, to enable the institution, to apply for Fresh / Renewal authorisation under Bio-medical Waste (management Rule 2016 )

is Certificate No. 11 Expires on 31 December 2020

  
 Authorised Signatory

**Bio- Medical Waste Certificate**

  
 Registrar  
 RKDF University

# **Bio-Medical Waste Disposal Certificate**

  
Registrar  
RKDF University



# BHOPAL INCINERATORS LIMITED

6/5, Sector-H, Industrial Area, Govindpura, Bhopal-462 023 (M.P.)  
Ph.: 2580515, E-mail: bpl\_incinerators@yahoo.com

123

## CERTIFICATE

This is to certify that Bhopal Incinerators Ltd. is running a common Bio-Medical Waste Treatment facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that Bhopal Incinerators Ltd. has entered into an agreement with Shri R. N. Kapoor Memorial Medical College Hospital & Research Centre

Airport, By-Pass Road, Gandhi Nagar Campus, Bhopal

for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 320 (Three Hundred Twenty) Beds

From 01 January 2017 to 31 Dec. 2017

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste Rules 2016.

This Certificate No.

123

Expires on 31st Dec. 2017

For Manoj Kumar  
Managing Director

Registrar  
RKDF University





# BHOPAL INCINERATORS LIMITED

6/5, Sector-H, Industrial Area, Govindpura, Bhopal-462 023 (M.P.)  
Ph.: 2580515, E-mail: bpl\_incinerators@yahoo.com

296

## CERTIFICATE

This is to certify that Bhopal Incinerators Ltd. is running a common Bio-Medical Waste Treatment facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that Bhopal Incinerators Ltd. has entered into an agreement with Shri R.N. Kapoor Memorial Medical College Hospital & Research Centre

Airport, By -Pass Road, Gandhi Nagar Campus, Bhopal

for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

**This agreement is valid :**

For 320 (Three Hundred Twenty) Beds

From 01 January 2018 to 31 Dec. 2018

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste Rules 2016.

This Certificate No. 296 Expires on 31st Dec. 2018

Managing Director

Registered  
RKDF University





# BHOPAL INCINERATORS LIMITED

6/5, Sector-H, Industrial Area, Govindpura, Bhopal-462 023 (M.P.)  
Ph.: 2580515, E-mail: bpl\_incinerators@yahoo.com

609

## CERTIFICATE

This is to certify that Bhopal Incinerators Ltd. is running a common Bio-Medical Waste Treatment facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that Bhopal Incinerators Ltd. has entered into an agreement with Ramkrishna College of Homoeopathy & Medical Sciences

RKDF University Gandhi Nagar, Near Airport By-Pass, Bhopal

for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

**This agreement is valid :**

For 25 (Twenty Five) Beds

From 01 April 2018 to 31 Dec. 2018

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste Rules 2016.

This Certificate No. **609**

Expires on **31st Dec. 2018**

Registration No. 0958

*[Signature]*  
Managing Director

Registered  
RKDF University



# BHOPAL INCINERATORS LIMITED

6/5, Sector-H, Industrial Area, Govindpura, Bhopal-462 023 (M.P.)  
Ph.: 2580515, E-mail: bpl\_incinerators@yahoo.com

121

## CERTIFICATE

This is to certify that Bhopal Incinerators Ltd. is running a common Bio-Medical Waste Treatment facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that Bhopal Incinerators Ltd. has entered into an agreement with Shri R.N. Kapoor Memorial Medical College Hospital & Research Centre

Airport By-Pass Road, Gandhi Nagar Campus, Bhopal  
for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 320 (Three Hundred Twenty) Beds

From 01 January 2019 to 31 Dec. 2019

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste Rules 2016.

This Certificate No.

121

Expires on 31st Dec. 2019

Registration No.-0625

for Managing Director  
Registrar  
RKDF University



176



**BMW**  
**Solutions** (Incinerator)

Office : Kamla Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963

Plant : Gram ratua Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

## **CERTIFICATE**

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as " CBMWTF "

Further certified that BMW SOLUTIONS has entered into an agreement with Shri R.N.Kapoor Memorial Medical College Hospital and Research Center

RKDF University, Gandhi Nagar, Near Airport, Bypass Road, Bhopal

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 450 (Four Hundred Fifty) Beds No. of Beds

From 01 December 2019 to 31 Dec. 2019

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste (management Rule 2016)

This Certificate No.

176

Expires on 31st Dec. 2019

Authorised Signatory

Registrar  
RKDF University



# BHOPAL INCINERATORS LIMITED

6/5, Sector-H, Industrial Area, Govindpura, Bhopal-462 023 (M.P.)  
Ph.: 2580515, E-mail: bpl\_incinerators@yahoo.com

100

## CERTIFICATE

This is to certify that Bhopal Incinerators Ltd. is running a common Bio-Medical Waste Treatment facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that Bhopal Incinerators Ltd. has entered into an agreement with Ramkrishna College Of Homoeopathy & Medical Sciences

RKDF University Gandhi Nagar, Near Airport By-Pass, Bhopal  
for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 25 (Twenty Five) Beds

From 01 January 2019 to 31 Dec. 2019

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste Rules 2016.

This Certificate No.

100

Expires on 31st Dec. 2019

Registration No.-0958

*Dr. Mahabul Dab*  
Managing Director

Registered  
RKDF Univer





**BMW** Solutions (Incinerator)

Office : Kamla Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963

Plant : Gram ratua Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

## **CERTIFICATE**

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as " CBMWTF "

Further certified that BMW SOLUTIONS has entered into an agreement with Shri R.N.Kapoor Memorial Medical College Hospital and Research Center

RKDF University, Gandhi Nagar, Near Airport, Bypass Road, Bhopal

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 450 (Four Hundred Fifty) Beds No. of Beds

From 01 January 2020 to 31 December 2020

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste (management Rule 2016 )

This Certificate No.

**11**

Expires on 31 December 2020

  
Authorised Signatory





**BMW** Solutions (Incinerator)

Office : Kamla Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963

Plant : Gram ratua Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

## **CERTIFICATE**

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as “ CBMWTF “

Further certified that BMW SOLUTIONS has entered into an agreement with *Ram Krishna College of Homoeopathy & Medical Sciences*

*RKDF University, Gandhi Nagar, Near Airport, Bypass Road, Bhopal*

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For *25 (Twenty Five) Beds* No. of Beds

From *01 January 2020* to *31 December 2020*

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste (management Rule 2016 )

This Certificate No.

**12**

Expires on *31 December 2020*

  
Authorised Signatory

Regis  
RKDF Uni



# INDIA WASTE MANAGEMENT PVT. LTD.

(CIN : U37200MP2015PTC034692)

• Regd. Office : 30, MLA Qtr., T.T. Nagar, Bhopal (M.P.) 462003 • Regd. Plant Add. : Plot No. E-3 Sector, New Industrial Area No. 2, (Ward 14) Manddeep, Raipur (M.P.)  
Mob. : 9926908297, E-mail : indiawastmanagement@outlook.com

## CERTIFICATE

This is to certify that India Waste Management Pvt. Ltd. is running a common Bio-Medical Waste treatment Facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that India Waste Management Pvt. Ltd. has entered into an agreement with

Shri R.N. Kapoor Memorial Medical College Hospital & Research Center

RKDF University, Airport By-pass Road, Gandhi Nagar, Bhopal

for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 450 (Four Hundred Fifty) Beds

From 01 January 2021 to 31 Dec. 2021

This certificate is given, to enable the institution, to apply for Fresh/Renewal of authorization under Bio-Medical Waste Rules 2016.

This Certificate No. 220 Expires on 31st December 2021.

Registration No 0625

  
Authorized Signatory

Regd. Office  
RKDF University





# INDIA WASTE MANAGEMENT PVT. LTD.

(CIN : U37200MP2015PTC034692)

• Regd. Office : 30, MLA Ctr., T.T. Nagar, Bhopal (M.P.) 462003 • Regd. Plant Add. : Plot No. E-3 Sector, New Industrial Area No. 2, (Ward 14) Manddeep, Raisen (M.P.)  
Mob. : 9926909297, E-mail : indiawastemanagement@outlook.com

## CERTIFICATE

This is to certify that India Waste Management Pvt. Ltd. is running a common Bio-Medical Waste treatment Facility (CBWTF). Which is authorized by M.P. Pollution Control Board as "CBWTF".

Further certified that India Waste Management Pvt. Ltd. has entered into an agreement with

Ram Krishna College Of Homoeopathy & medical Sciences

RKDF University, Airport By-Pass Road, Gandhi Nagar, Bhopal

for Collection, Reception, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :


For 25 (Twenty Five) Beds

From 01 January 2021 to 31 Dec. 2021

This certificate is given, to enable the institution, to apply for Fresh/Renewal of authorization under Bio-Medical Waste Rules 2016.

This Certificate No. **244** Expires on 31st December 2021.

Registration No 0958

  
Authorized Signatory

Registration No. 0958  
RKDF University



**BMW Solutions** (Incinerator)

Office : Kamla Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963

Plant : Gram ratua Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

## CERTIFICATE

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as " CBMWTF "

Further certified that BMW SOLUTIONS has entered into an agreement with Ram Krishna College of Ayurveda & Medical Sciences

Ram Krishna Dharmarth Foundation University, Airport Bypass Road, Gandhi Nagar, Bhopal

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 100 (One Hundred) Bed's No. of Beds

From 01 January 2022 to 31 December 2022

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste (management Rule 2016 )

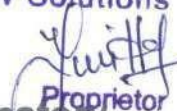
This Certificate No.

**1066**

Expires on 31 December 2022

For BMW Solutions

Authorised Signatory

  
Proprietor

Registrar  
RKDF University





**BMW Solutions** (Incinerator)

Office : Kamla Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963

Plant : Gram ratua Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

## **CERTIFICATE**

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as " CBMWTF "

Further certified that BMW SOLUTIONS has entered into an agreement with *Ram Krishna College of Homoeopathy & Medical Sciences*

*Ram Krishna Dharmarth Foundation University, Airport Bypass Road, Gandhi Nagar, Bhopal*

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 25 (Twenty Five) Bed's No. of Beds

From 01 January 2022 to 31 December 2022

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste (management Rule 2016 )

This Certificate No.

**1008**

Expires on 31 December 2022

For BMW Solutions

Authorised Signatory

*[Signature]*  
Proprietor

Registrar  
RKDF University





**BMW Solutions** (Incinerator)

Office : Kamla Devi Hospital, 61, Thana Road, Shahjahanabad, Bhopal - 462 001 (M.P.) Tel.: 0755 - 2731963

Plant : Gram ratua Ratanpur Infront of Petrol Pump, Berasia Road, Bhopal (M.P.)

## CERTIFICATE

This is to certify that BMW SOLUTIONS is running a common Bio-Medical Waste Treatment facility ( CBMWTF ). Which is authorised by M. P. Pollution Control Board as “ CBMWTF “

Further certified that BMW SOLUTIONS has entered into an agreement with Shri R.N. Kapoor Memorial Medical College Hospital And Research Centre

Ram Krishna Dharmarth Foundation University, Airport Bypass Road, Gandhi Nagar, Bhopal

for Collection, Transport, Storage, Treatment & Final disposal of Bio-Medical Waste of the above institution.

This agreement is valid :

For 450 (Four Hundred Fifty) Bed's No. of Beds

From 01 January 2022 to 31 December 2022

This certificate is given, to enable the institution, to apply for Fresh / Renewal of authorisation under Bio-medical Waste (management Rule 2016 )

This Certificate No.

**1067**

Expires on 31 December 2022

For BMW Solutions

Authorised Signatory

*[Signature]*  
Proprietor

Registrar  
RKDF University

Biomedical waste must be properly managed and disposed of to protect the environment, general public and workers, especially healthcare and sanitation workers who are at risk of exposure to biomedical waste as an occupational hazard. Steps in the management of biomedical waste include generation, accumulation, handling, storage, treatment, transport, and disposal. Collection, Packaging, Reception, and Disposal of biomedical waste is done by M/S. Bio-Medical Waste (Incinerator) Pvt. Ltd situated at 6/5 H-Sector, Industrial Area, Govindpura, Bhopal.

  
Registrar  
RKDF University

# 5. E-waste management

- **E-waste management**

Electronic waste or e-waste are discarded electrical or electronic devices. Used electronics which are destined for refurbishment, reuse, resale, salvage recycling through material recovery, or disposal are also considered as e-waste. Disposal of e-waste is an emerging global environmental and public health issue, as this waste has become the most rapidly growing segment of the formal municipal waste stream in the world. Direct impacts of e-waste includes release of acids, toxic compounds including heavy metals, carcinogenic chemicals and indirect effects such as bio magnification of heavy metals. Management of e-waste involves collection, dismantling, separation and exporting e-wastes for recyclers.



**Segregated E-Waste Material in Store**

In the RKDF University campus electronic goods are put to optimum use. The common practice in dealing nonworking electronic material are:

- Minor damage repairing are done by the staff and the Laboratory assistants
- The major repairs, are done by the professional technicians, and are reused.

  
Registrar  
RKDF University

- The damaged computers are used by the instructor in the practical sessions of the ‘Certificate Course in Computer Maintenance and Hardware.
- Finally totally non-working computers are exchanged with the local dealers.
- UPS Batteries are recharged / repaired / exchanged by the suppliers.
- The waste compact discs are used by students for decoration and participation in competitions on ‘Art from Waste’.
- When they fall out of use, they are handed over to the agent of the suppliers of electronic equipments.

The Ministry of Electronics and Information Technology (MeitY) has initiated an e-waste awareness programme under Digital India, to create awareness among the public about the hazards of e-waste recycling by the unorganised sector, and to educate them about alternate methods of disposing their e-waste. The programme stresses the need for adopting environment friendly e-waste recycling practices.

Electronic goods are put to optimum use; the minor repairs are set right by the staff and the Laboratory assistants; and the major repairs, by the professional technicians, and are reused. The damaged computers are used by the instructor in the practical sessions of the ‘Certificate Course in Computer Maintenance and Hardware. Finally they are exchanged with the local dealers. UPS Batteries are recharged / repaired / exchanged by the suppliers. The waste compact discs are used by students for decoration and participation in competitions on ‘Art from Waste’. When they fall out of use, they are handed over to the agent of the suppliers of electronic equipments. Waste compact discs are used by students for decoration and participation in competitions like ‘Best out of Waste’.



# E-Waste Disposal Details

# Certificate of Membership

Date : *.08/04/2019.....*

Registrar  
RKDF University

This is to certify that M/s *..RKDF..University, ..Airport..Road, ..Bhopal.*  
has completed formalities for taking membership of Unique Eco Recycle. We are pleased  
to acknowledge your Membership No. *.32A/uer./2019-20.....*

Now you are liable to give e-waste to our company as per schedule plan. Your membership  
comes in effect from *.08/04/2019..and..expire..07/04/2022*

Membership is granted for disposed off e-waste in scientific and eco friendly manner.



For UNIQUE ECO RECYCLE

*[Signature]*  
Authorised Signatory

# Certificate of Membership

Date : .26/.04/.2022..

This is to certify that M/s *.RKDF. University, Airport. Road, .Gandhi nagar, .Bhopal* has completed formalities for taking membership of Unique Eco Recycle. We are pleased to acknowledge your Membership No. *uer/ren/E-waste/1141/2022.....*

Now you are liable to give e-waste to our company as per schedule plan. Your membership comes in effect from *.26/.04/.2022 and. exipre .25/04/2025.*

Membership is granted for disposed off e-waste in scientific and eco friendly manner.



For UNIQUE ECO RECYCLE

  
Registrar  
RKDF University

Authorised Signatory





# Consent Order

M.P. Pollution Control Board - Indore  
Scheme No. 78, C-11, Plot-2  
Aaranya, Vijay Nagar, Indore  
Indore  
Tele : 0731- 4035618

RED-SMALL	CCA-Expansion	VALIDITY (A/W): 31/07/2022 VALIDITY (H): 31/07/2022	CONSENT NO: ***	PCB ID: 20138
-----------	---------------	--	-----------------	---------------

NO: /MPPCB/IND

To,  
**The Occupier,**  
**M/s. Unique Echo Recycle,**  
**26, Industrial Area, Palda,**  
**41, Sikh Mohalla, Kothari Market, Indore, City : Indore,**  
**Dist : Indore, Tal : Indore, SIDC : I/A Palda Indore**

**Subject:** Grant of Consent to Operate under section 25 of the Water (Prevention & Control of Pollution) Act, 1974 under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Hazardous and other Waste (Management & Transboundary movement) Rules, 2016

**Ref:** Your Consent to Operate Application Receipt No. 374366 Dt. 26/07/2017

With reference to your above application for consent to operate has been considered under the aforesaid Acts and existing rules therein. The M. P. Pollution Control Board has agreed to grant consent up to 31/07/2022 & authorization up to 31/07/2022, subject to the fulfillment of the terms & conditions, enclosed with this letter and-

### SUBJECT TO THE FOLLOWING CONDITIONS :-

- Location:** Factory-26, Industrial Area, Palda, Office- 41, Sikh Mohalla, Kothari Market, Indore.
- The capital investment in lakhs:** Rs. 180
- Product & Production Capacity:**

Product	CTE Qty	CCA Qty	Applied Qty / year
Cable Processing	5000 M.T	5000 M.T	5000 M.T
RECYCLE & REPROCESSING OF e-WASTE	6000 M.T	6000 M.T	6000 M.T

Note:- For any change in above industry shall obtain fresh consent from the board.

The Validity of the consent is up to 31/07/2022 and has to be renewed before expiry of consent validity. Online application through XGN with annual license fees in this regard shall be submitted to this office 6 months before expiry of the consent/Authorization. Board reserves the right to amend/cancel / revoke the above condition in part or whole as and when required.

### Enclosures:-

- \* Conditions under Water Act
- \* Conditions under Air Act
- \* Conditions under Hazardous Rules
- \* General conditions

**eSign**  
 Seeding from UIDAI server  
 Digitally Sign with Aadhaar

K B, NULL, NEAR VALLEY GREEN SCHOOL, GWALIOR - 474011, MADHYA PRADESH  
 Regional Officer  
 e-Signed On 11/08/2017 08:43:09  
 (Organic Authentication on AADHAR from UIDAI Server)  
 Page # 1 of 1

*Prakash*  
 Registrar  
 M.P. Pollution Control Board  
 Indore



## Madhya Pradesh Pollution Control Board

मध्यप्रदेश प्रदूषण नियंत्रण बोर्ड

Parisar, E-5, Arera Colony, Bhopal - 462 016 (M.P.)

पर्यावरण परिसर, ई-5, अरेरा कालोनी, भोपाल- 462 016 (म.प्र.)

Phone : (0755) 2466 191/ 2464 428 Fax : (0755) 2463 742 E-mail : hsmd117@gmail.com

No. 459 /HOPCB/E-Waste/ 2018

Bhopal, Date: 9-3-18

To,

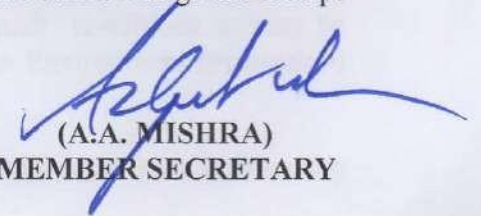
✓  
The Occupier,  
M/s. Unique Eco Recycle.  
Plot No. 26, Industrial Area,  
Palda, Indore (M.P.)

**Sub: (1) Authorization under E- Wastes (Management) Rules, 2016.  
(2) This office letter No. 252 Dt. 15.04.2013.**

:-:-:

With reference to the application, the authorization under E-Waste (Management) Rules, 2016 is hereby renewal for the five years w.e.f. 07.03.2018. The terms and conditions of the authorization are given in the enclosed authorization letter. Please acknowledge the receipt of this letter.

No. of enclosed pages : Four.

  
(A.A. MISHRA)  
MEMBER SECRETARY

Endt. No. /HOPCB/HSMD/UU-12/2010

Date:

Copy to:-

1. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Shahdra, Delhi 110 032 for information please.
2. The Regional officer, Regional Office, M.P. Pollution Control Board, Bhopal/Chhindwara/Dhar/Dewas/Guna/Gwalior/Indore/Jabalpur/Katni/Pithampur/Rewa/Sagar/Satna/ Singrauli/Shahdol/Ujjain, please ensure compliance of all the terms & conditions laid down in the authorization.
3. The In-charge, IT, M.P. Pollution Control Board, Bhopal for information.
4. The Guard File.



- 52 -  
(A.A. MISHRA)  
MEMBER SECRETARY



[See rule 19]

E-WASTE MANIFEST

No. 01/RKDF/Unw/21-22

1.	Sender's name and mailing address (including Phone No.)	RKDF University Gandhi Nagar Campus BHOPAL-0755-2740395	9907058666
2.	Sender's authorisation No, if applicable.		
3.	Manifest Document No. :	01/RKDF/Unw/21-22	
4.	Transporter's name and address : (including Phone No.)	Local 7869529401	
5.	Type of vehicle	(Truck or Tanker or Special Vehicle)	
6.	Transporter's Registration No.		
7.	Vehicle Registration No.	MP04LC/2602	
8.	Receiver's Name & Address :	Unique Eco Recycle 26, Palda Indore MP	
9.	Receiver's Authorisation No. if applicable. :	459/HO PCB/E-Waste/2018	
10.	Description of E-waste (Item, Weight/Numbers)	CEEW5-57.5/kg ITEW1-32/kg ITEW2-74/kg ITEW3-1/kg ITEW6-16/kg	
11.	Name and stamp of sender* (Manufacturer or Producer or Bulk Consumer or Collection Center or Refurbisher or Dismantler)	ITEW12-2/kg Total 182.5/kg Total-182.5/kg	
	Signature :		DAY MONTH YEAR 3   1   0   7   2   0   2   1
12.	Transporter acknowledgment of receipt of E-Wastes		
	Name and stamp : Signature		DAY MONTH YEAR 3   1   0   7   2   0   2   1
13.	Receiver* (Collection Center or Refurbisher or Dismantle or Recycler) certification of receipt of E-waste		
	Name and stamp : Signature		DAY MONTH YEAR [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

\* As applicable



First Copy

to be retained by the sender after taking signature on it from the transporter and other three copies will be carried by transporter.

Registrar  
RKDF University

**Form-6**  
[See rule 19]  
**E-WASTE MANIFEST**

No. 01/RKDF/Univ/21-2

1.	Sender's name and mailing address (including Phone No.)	RKDF University Gandhi Nagar Campus BHOPAL 733 2740395								
2.	Sender's authorisation No, if applicable.									
3.	Manifest Document No. :	01/RKDF/Univ/21-22								
4.	Transporter's name and address : (including Phone No.)	Local 78695271101								
5.	Type of vehicle	(Truck or Tanker or Special Vehicle)								
6.	Transporter's Registration No.									
7.	Vehicle Registration No.	MHCHL0/2109								
8.	Receiver's Name & Address :	Univ. Eco Recycle 20, Paldi, Indore								
9.	Receiver's Authorisation No. if applicable. :	459/110101/B-Waste/2015								
10.	Description of E-waste (Item, Weight/Numbers)	CEM-5-57.5/kg ITEM-32/1 ITEM-94/1, ITEM-11, ITEM-14								
11.	Name and stamp of sender* (Manufacturer or Producer or Bulk Consumer or Collection Center or Refurbisher or Dismantler)									
	Signature :	 <div style="text-align: right;">DAY MONTH YEAR</div> <table border="1" style="margin-left: auto; margin-right: 0;"> <tr> <td>3</td><td>1</td><td>0</td><td>7</td><td>2</td><td>0</td><td>2</td><td>1</td> </tr> </table>	3	1	0	7	2	0	2	1
3	1	0	7	2	0	2	1			
12.	Transporter acknowledgment of receipt of E-Wastes									
	Name and stamp : Signature	<div style="text-align: right;">DAY MONTH YEAR</div> <table border="1" style="margin-left: auto; margin-right: 0;"> <tr> <td>3</td><td>1</td><td>0</td><td>7</td><td>2</td><td>0</td><td>2</td><td>1</td> </tr> </table>	3	1	0	7	2	0	2	1
3	1	0	7	2	0	2	1			
13.	Receiver* (Collection Center or Refurbisher or Dismantle or Recycler) certification of receipt of E-waste									
	Name and stamp : Signature	 <div style="text-align: right;">DAY MONTH YEAR</div> <table border="1" style="margin-left: auto; margin-right: 0;"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>								

\* As applicable

Fourth Copy to be returned by the receiver with his/her signature to the sender

Registrar  
RKDF University

## **6. Waste recycling system**



Solid waste from canteen and hostel are recycled by vermicomposting as shown previously. All waste water lines from toilets, Labs, bathrooms, canteen, staff quarters, hostals, hospitals etc. are connected to the STP and ETP. Treated water is been used for garden and plantation.



Waste Water recycling system





## **Conclusion:-**

RKDF, University is very keen in operations, it always preface to have a very less impact on the environmental issues such as **Solid waste management, Liquid waste management, Biomedical waste management and E-Waste Management. It believe in** having very less impact on the environment as the University is very conscious of generating less waste and recycling it by passing it through a system that enables the used material to be reused ensuring that less natural resources are consume.

  
Registrar  
RKDF University