



MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

(UGC-AUTONOMOUS INSTITUTION)

Affiliated to JNTUA, Ananthapuramu & Approved by AICTE, New Delhi
NAAC Accredited with A+ Grade, NIRF India Rankings 2024 - Band: 201-300 (Engg.)
NBA Accredited - B.Tech. (CIVIL, CSE, ECE, EEE, MECH,CST), MBA & MCA



6 CLEAN WATER
AND SANITATION



6.4 Water reuse

Metric	Parameter
6.4.2	Water Reuse Measurement



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6 CLEAN WATER
AND SANITATION



6.3 Water usage and care

Metric	Parameter
6.3.1	Waste Water Treatment

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE



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www.mits.ac.in www.mits.edu



MITS- MATERIAL AND QUALITY TESTING LABORATORY DEPARTMENT OF CIVIL ENGINEERING

TEST REPORT

TR No: MITS-MQTL/TR/23/10/152

TR Date: 06/10/2023

1.	Name and address of the customer	Site office, MITS - Madanapalle,
2.	Job card no	MITS -MQTL/2023/09/152
3.	Sampling method & Date of sampling	NA
4.	Material identification	Ro Water
5.	Date of sample receipt	21/09/2023
6.	Date of sample testing	24/09/2023
7.	Location & Test done by	MITS - MQTL , Mrs Lipsa M and Veeresh B
8.	Method of test (IS code)	Water portability assessment as per IS 10500:2012
9.	Condition of sample when received	Good
10.	Environmental conditions	27 °Celsius
	a. Room temperature	
	b. Relative humidity	73 %

Name of the test: Water portability assessment as per IS 10500:2012

S. No	Description	Unit	Limit	Result			
				WB	EB	SB	Canteen
1.	pH		6.5-8.5	6.8	6.7	6.5	6.6
2.	Total Dissolved Salts (TDS)	mg/L	500	30	34	31	32
3.	Total Suspended solids (TSS)	mg/L	500	NIL	NIL	NIL	NIL
4.	Biological Oxygen Demand (BOD)	mg/L	2	3.8	3.4	3.3	3.5
5.	Chemical Oxygen Demand (COD)	mg/L	<250	11	13	10	12
6.	Turbidity (NTU)	NTU	1	NIL	NIL	NIL	NIL
7.	Total Hardness	mg/L	200	80	85	84	82

(Note: - Reported value approximately at 95% confidence level with coverage factor k = 2)

~~~~~ End of test report ~~~~~

#### Note:

1. WB: west block; EB: East Block; SB: South Block
2. This report can neither be used as an evidence in the court of law, nor it can be produced in part or full in any media without prior permission.
3. The result listed refer only to the tested sample and applicable parameters.
4. Perishable samples are destroyed after testing; requested samples are returned back to the customer.
5. Sample(s) not drawn by us, unless otherwise mentioned.

Reviewed by

Dr. Sudheerkumar Y  
(Technical Manager)

Head of the Department  
Civil Engineering  
Authorized by  
Dr. Dipankar Roy  
(HOD - Civil)  
MADANAPALLE - 517 325

TR No: MITS-MQTL/TR/23/10/152

TR. F.No: MITS-MQTL/QF/15d.

VERSION : 1

AMMND NO: 1

AMMND DATE: 20-01-2022

Page 1 of 1

AN ENGINEERING COLLEGE SPONSORED BY: **RATAKONDA RANGA REDDY EDUCATION ACADEMY**

P.B. No. 14, Angallu, MADANAPALLE - 517325, Annamaya Dist., Andhra Pradesh, India.

Phone : 08571 - 280255, 280706 Fax : 08571 - 280433

DATE: -31.08.2023

## Certificate on availability of Potable Water Supply in M.I.TS

This is to certify that the water from Four  
Bore wells that are bearing used in the premises of  
Madanapalle Institute of Technology & Science,  
Madanapalle, Annamayya District, Andhra Pradesh is  
potable and useful for drinking purpose.

  
5/8/2023  
AEE/2001/1036

  
5/9/23  
Dy. Executive Engineer  
RWS & S Sub Division  
Thamballapalle

# GOVERNMENT OF ANDHRAPRADESH AMARAVATHI

WQM DIVISIONAL LABORATORY :: RWS&S DIVISION MADANAPALLE (Drinking water chemical analysis report)

| S.No | Date of collection | Name&Address                                                                                                          | Bottle No | Location                | Source    | Drinking water testing parameters & permissible limit ( mg/L) as per BIS:10500-2012 |                         |                |                              |                                |                       |                          |                           |                        |                                   |                         | Remarks |                         |
|------|--------------------|-----------------------------------------------------------------------------------------------------------------------|-----------|-------------------------|-----------|-------------------------------------------------------------------------------------|-------------------------|----------------|------------------------------|--------------------------------|-----------------------|--------------------------|---------------------------|------------------------|-----------------------------------|-------------------------|---------|-------------------------|
|      |                    |                                                                                                                       |           |                         |           | PH( 6.5-8.5)                                                                        | Electrical conductivity | TDS (500-2000) | Alkalinity (As CaCo3)200-600 | TotalHardness (AsCaCo3)300-600 | Calcium (As Ca)75-200 | Magnesium (As Mg) 30-100 | Chloride (As Cl) 250-1000 | Fluoride(As F) 1.0-1.5 | Nitrate (As NO3)45- No relaxation | Sulphate(As SO4)200-400 |         | Iron (As Fe)0.3-1.0     |
| 1    | 02.09.2023         | MADANAPALLE<br>INSTITUTE OF<br>TECHNOLOGY&SCIENCE ,<br>P.B No 14,Angallu,<br>Madanapalle-517325,<br>Chittoor District | 1         | Near Office             | Bore well | 6.64                                                                                | 886                     | 567            | 300                          | 270                            | 60                    | 29                       | 70                        | 1.34                   | 3.9                               | -                       | 0.02    | Chemically satisfactory |
| 2    | 02.09.2023         |                                                                                                                       | 2         | Near Center gate        | Bore well | 6.83                                                                                | 1028                    | 658            | 340                          | 310                            | 88                    | 22                       | 119                       | 1.31                   | 5.3                               | -                       | 0.04    | Chemically satisfactory |
| 3    | 02.09.2023         |                                                                                                                       | 3         | Near ATM                | Bore well | 6.95                                                                                | 776                     | 496            | 290                          | 240                            | 52                    | 26                       | 70                        | 1.32                   | 2.6                               | -                       | 0.05    | Chemically satisfactory |
| 4    | 02.09.2023         |                                                                                                                       | 4         | compound Near Main road | Bore well | 6.75                                                                                | 861                     | 551            | 320                          | 280                            | 72                    | 24                       | 91                        | 1.35                   | 4.4                               | -                       | 0.03    | Chemically satisfactory |

S.P.Obairah  
DEB/RWS&S -Madanapalle  
Lab. Incharge

MA/ 5/9/23  
ASST. CHEMIST  
W.Q.M.LAB, RWS & S DIVISION  
MADANAPALLE

## **MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**

| <b>REVERSE OSMOSIS DETAILS</b> |                   |              |                                           |                          |
|--------------------------------|-------------------|--------------|-------------------------------------------|--------------------------|
| <b>S.no</b>                    | <b>Location</b>   | <b>Units</b> | <b>Specifications- LPH-Liter per hour</b> |                          |
| 1                              | Western Building  | 1            | 500 LPH RO System -Full Auto system       | 3000 Liters used per day |
| 2                              | Southern Building | 1            | 1000 LPH RO System -Full Auto system      | 5000 Liters used per day |
| 3                              | Eastern Building  | 1            | 1000 LPH RO System -Full Auto system      | 5000 Liters used per day |
| 4                              | Circular Building | 1            | 150 LPH RO System -Manual system          | 2000 Liters used per day |
| 5                              | Eastern Canteen   | 1            | 250 LPH RO System -Manual system          | 2000 Liters used per day |
|                                | <b>Total</b>      | <b>5</b>     |                                           |                          |

## REVERSE OSMOSIS WATER DETAILS





Latitude: 13.629918  
Longitude: 78.478101  
Elevation: 699.15m  
Accuracy: 18.8m  
Time: 03-24-2021 14:32  
Note: RO Plant Western Block-500LPH



Latitude: 13.629706  
Longitude: 78.47818  
Elevation: 698.95m  
Accuracy: 23.8m  
Time: 03-24-2021 17:07  
Note: RO Plant Circular Block -150LPH





Latitude: 13.629837  
Longitude: 78.479768  
Elevation: 687.26m  
Accuracy: 46.3m  
Time: 03-24-2021 17:03  
Note: RO Plant Eastern Canteen -150LPH





Latitude: 13.630091  
Longitude: 78.47817  
Elevation: 699.25m  
Accuracy: 22.8m  
Time: 03-24-2021 17:10  
Note: RO Water Circular Block



Latitude: 13.629447  
Longitude: 78.478659  
Elevation: 699.65m  
Accuracy: 11.5m  
Time: 03-24-2021 14:40  
Note: RO Water Southern Block

**MADANAPALLE INSTITUTE OF TECHNOLOGY &  
SCIENCE**

**DETAILS OF BOREWELL'S**

| S.no | LOCATION                                                        | DEPTH    | CAPACITY      | PIPES( 50 mm dia) |
|------|-----------------------------------------------------------------|----------|---------------|-------------------|
| 1    | Inside Compound Wall<br>Near Eastern building<br>opposite side  | 220 feet | 7.5 hp motor  | 9                 |
| 2    | Outside compound wall<br>Near Eastern building<br>opposite side | 675 feet | 12.5 hp motor | 30                |
| 3    | ATM Side near Main<br>road                                      | 720 feet | 12.5 hp motor | 35                |
| 4    | Outside compound wall<br>Near Main road                         | 850 feet | 15 hp motor   | 35                |

*Shiva Shankar*  
**SITE ENGINEER**  
**M. I. T. S.**  
**MADANAPALLE**

*Kavitha Shetty*  
**KAVITHA SHETTY**  
B.Arch  
Registered Architect  
BCC/BL-3.6/A-1662/2007-08  
COA REGN NO CA/90/13296

*Cyji*  
**PRINCIPAL**  
Madanapalle Institute of Technology & Science  
PO Box NO 14, Kadiri Road, Angaliu  
MADANAPALLE 517 325 A P



# **MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE**

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**TOTAL LAND-26.17 Acres (or) 105906.23 Sqm**

# DETAILS OF VARIOUS FACILITIES:-

- Sewage Treatment Plant
- Water Harvesting Pits
- RO Facility
- Waste Management

# SEWAGE TREATMENT PLANT:-

- \*Sewage treatment plant is a facility that removes contaminants from waste water to make it safe for reuse or discharge into the environment.
- \*STP'S are essential because they Protect the environment and Public health.
- \*Treated water using for garden and trees.
- \*20,000 to 30,000 litres per day water is being used for garden after treatment.
- \*Periodical services are being done.

# SEWAGE TREATMENT PLANT:-



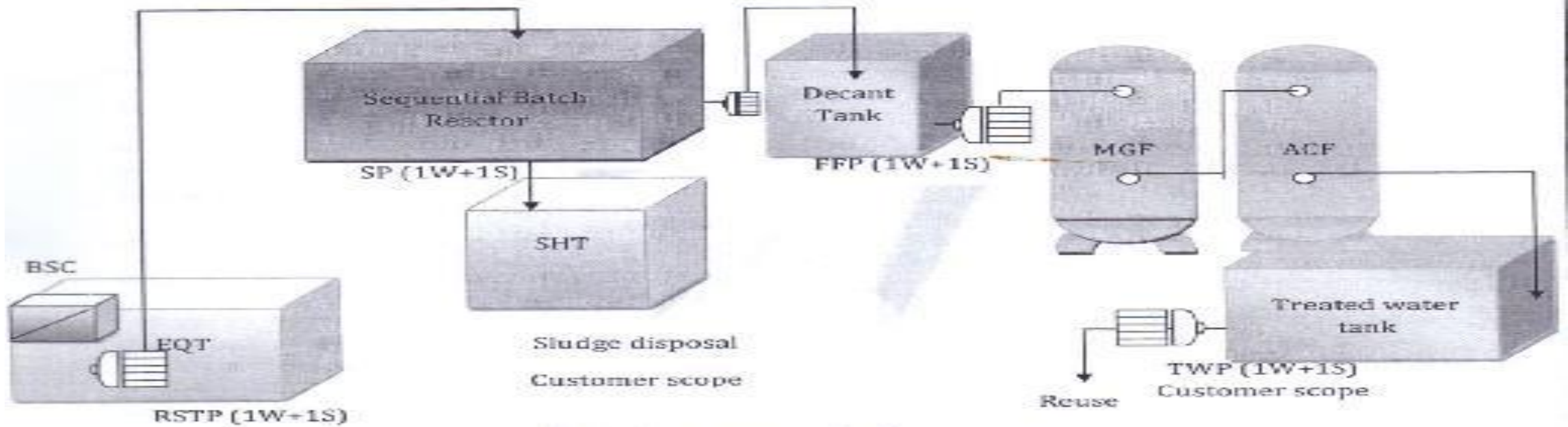
## SPECIFICATIONS:-

- Design Capacity :50KLD per day.
- Built up Area : 54.56 sqm
- Plant Started : 02.02.2018
- Operating Hours : 10
- Expenditure : Rs.8,09,500/-
- Use of treated Water:
- To treat the water for utilizes to garden.



# SEWAGE TREATMENT PLANT

## PROCESS FLOW BLOCK DIAGRAM



### Legend:



- Civil Works

- BSC - Bar screen chamber
- EQT - Equalization tank
- SBR - Sequential Batch reactor
- SHT - Sludge Holding tank
- MGF - Multi grade sand filter
- ACF - Activated carbon filter
- RSTP - Raw sewage transfer pump
- SP - Sludge pump
- FFP - Filter feed pump
- TWP - Treated water pump

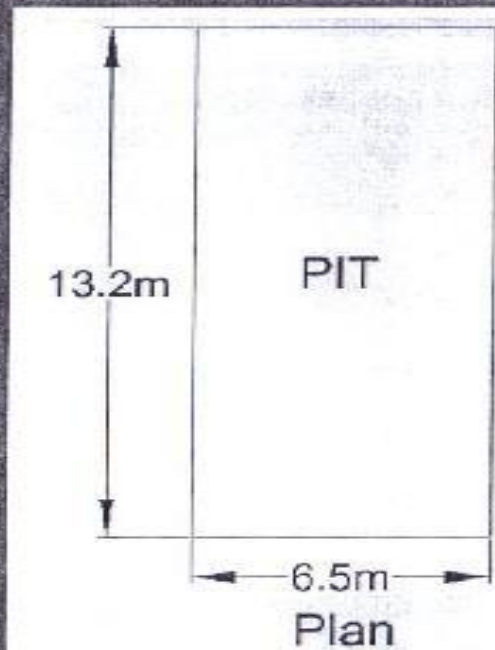
# WATER HARVESTING PITS:-

\*The use of Pits is made to store the water subsequently recharge to ground water through specially constructed recharge wells to avoid deflection of water table.

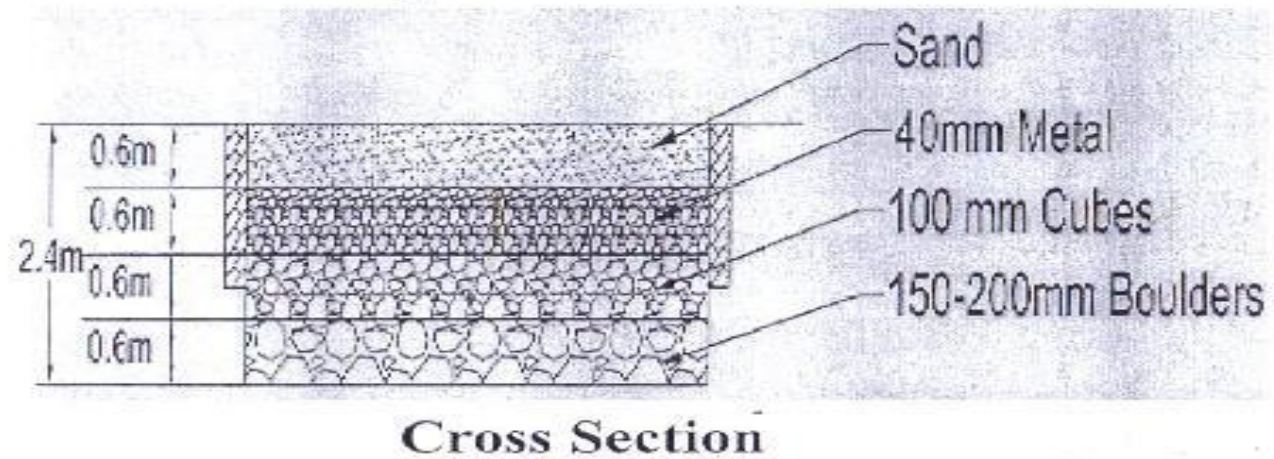
\*There are two Rain water harvesting pits in campus with a capacity of 4 Lakh liters.

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**Rainwater Harvesting Pit No-1**



Specifications: Catchment Area - 51450 m<sup>2</sup>  
Length - 13.2 m  
Width - 6.5 m  
Depth - 2.4 m



For Madanapalle Institute of Technology & Science

*Shiva Shantam*

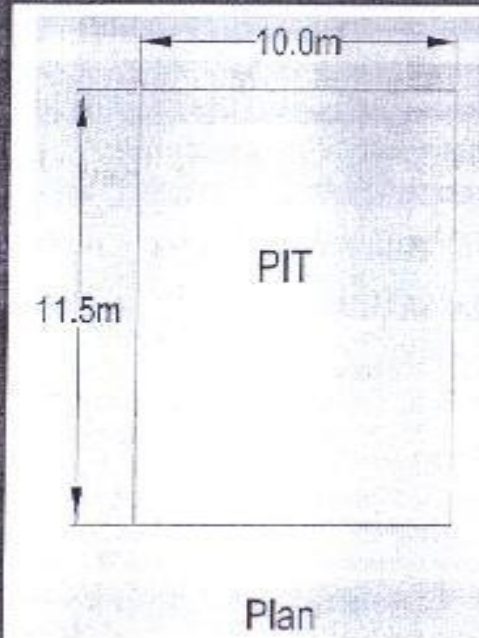
Site Engineer

*C. J. S.*  
Principal  
Madanapalle Institute of  
Technology & Science  
MADANA

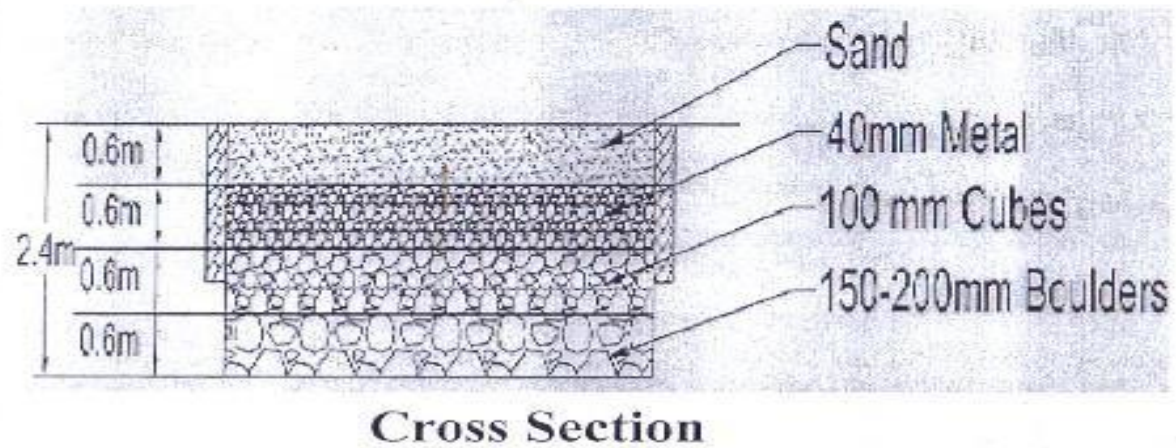


# MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE (UGC-AUTONOMOUS)

## Rainwater Harvesting Pit No-2



Specifications: Catchment Area - 13300 m<sup>2</sup>  
Length - 11.5 m  
Width - 10.0 m  
Depth - 2.4 m



For Madanapalle Institute of Technology  
& Science

*Shiva Shankar*

Site Engineer

*C. S.*  
Principal  
Madanapalle Institute of  
Technology



# REVERSE OSMOSIS PLANT:-

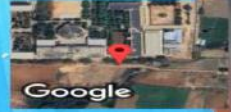
- \* A Reverse Osmosis (RO) Plant's purpose is to purify or desalinate water using a process that forces water through a semipermeable membrane. The Membrane separate pollutants from the water, producing ultra pure water.
- \* RO Plant's are often used to purify drinking water from ground water.
- \* It can remove many contaminants ,including trihalomethanes, some pesticides, solvents and other volatile organic compounds.
- \* There are 6 no's RO Plant in Campus.
- \* Periodical service of the RO Plant's are being done.

# REVERSE OSMOSIS WATER DETAILS:-



Angallu, Andhra Pradesh, India  
JFHH+W5H, Angallu, Andhra Pradesh 517352, India  
Lat 13.629818°  
Long 78.478044°  
24/06/24 04:22 PM GMT +05:30

GPS Map Camera



Angallu, Andhra Pradesh, India  
JFHH+VP2, Angallu, Andhra Pradesh 517352, India  
Lat 13.629377°  
Long 78.479225°  
24/06/24 04:29 PM GMT +05:30

GPS Map Camera



Angallu, Andhra Pradesh, India  
JFHH+V89, Angallu, Andhra Pradesh 517325, India  
Lat 13.629368°  
Long 78.478618°  
24/06/24 04:41 PM GMT +05:30

GPS Map Camera



Angallu, Andhra Pradesh, India  
JFHH+WFR, Angallu, Andhra Pradesh 517325, India  
Lat 13.629845°  
Long 78.478658°  
24/06/24 04:47 PM GMT +05:30

GPS Map Camera



Angallu, Andhra Pradesh, India  
JFHH+VP2, Angallu, Andhra Pradesh 517352, India  
Lat 13.629349°  
Long 78.479223°  
24/06/24 04:33 PM GMT +05:30

GPS Map Camera

# LOCATION AND SPECIFICATION DETAILS

| S.no | Location          | Units    | Specifications- LPH-Litter per hour  |                          |
|------|-------------------|----------|--------------------------------------|--------------------------|
| 1    | Western Building  | 1        | 500 LPH RO System -Full Auto system  | 3000 Liters used per day |
| 2    | Southern Building | 1        | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 3    | Eastern Building  | 1        | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 4    | Circular Building | 1        | 150 LPH RO System -Full Auto system  | 2000 Liters used per day |
| 5    | Eastern Canteen   | 1        | 1000 LPH RO System -Full Auto system | 5000 Liters used per day |
| 6    | Hostel            | 1        | 500 LPH RO System -Full Auto system  | 3000 Liters used per day |
|      | <b>Total</b>      | <b>6</b> |                                      |                          |



# WASTE MANGEMENT:-

\*Waste management is the collection,transport,processing,recycling or disposal ,monitoring of waste material.

\*There are four types of waste management:-

Landfills, Recycling ,Incineration, Composting

\*Approximately 5 to 6 tons of solid waste is accumulated per year in the campus.

\*The beneficial use of solid waste keeps materials out of landfills and reduces amount of raw materials used in construction.

\*Various steps are being taken for disposal of used papers, books and e-wastage. Whereever certificates are required and obtained.



**Compost Pits**

**Materials use : waste leaves and Cow dung**



Process of manufacturing  
the Natural fertilizers in  
MITS

Cow Dung  
Water  
waste leaves



# SITE OFFICE:-

- \*Site office is established in the campus with qualified faculty members for monitoring daily various engineering activities in the campus.
- \*Site office is responsible for campus cleaning ,sanitation ,gardening ,plumbing,waterlines,electrical and carpentry works.
- \*Construction and execution of new buildings as per approved plans.
- \*Monitoring of various periodical service contracts of elevators,RO Plant,STP unit etc.,
- \*Maintenance of stocks of various items related to Construction works.