

SAMANTA CHANDRASEKHAR INSTITUTE OF TECHNOLOGY AND MANAGEMENT

SEMILIGUDA, KORAPUT, ODISHA PROJECT REPORT-

ON

SMALL SCALE WASTEWATER TREATMENT PLANT

DEPARTMENT OF DIPLOMA IN CIVIL ENGINEERING SEMESTER-6TH



SAMANTA CHANDRASEKHAR INSTITUTE OF TECHNOLOGY AND MANAGEMENT
SEMILIGUDA, KORAPUT, ODISHA
2019-2022



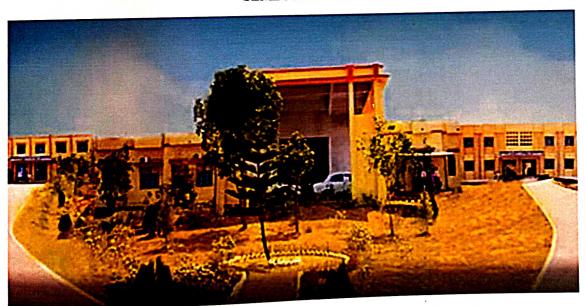
SAMANTA CHANDRASEKHAR INSTITUTE OF TECHNOLOGY AND MANAGEMENT

SEMILIGUDA, KORAPUT, ODISHA PROJECT REPORT

ON

SMALL SCALE WASTEWATER TREATMENT PLANT

DEPARTMENT OF DIPLOMA IN CIVIL ENGINEERING SEMESTER-6TH



SAMANTA CHANDRASEKHAR INSTITUTE OF TECHNOLOGY AND MANAGEMENT SEMILIGUDA, KORAPUT, ODISHA 2019-2022



This is to certify that Susmita kumari Nayak, Saktimayee Senapati, Jyoshna Krisani, Gayatri Sagar & Rama Gemel, the student of Civil Engineering Department (2019-2022) Batch of Samanta Chandrasekhar Institute of Technology And Management successfully completed the project on "SMALL SCALE WASTEWATER TREATMENT PLANT".

They have shown keen interest and sincere approach in design construction of "SMALL SCALE WASTEWATER TREATMENT PLANT" and executed with appreciable teamwork within team members.

During the period of project execution, I personally found then sincere, efficient and hard working with good moral character. I wish them all the best for their future endeavors.

Principal

(SCITM)

PRINCIPAL
SCITM, SEMILIGUDA
KORAPUT

Er. Manisha Mishra (HOD)

Civil Engineering Department (SCITM)

<u>ACKNOWLEDGEMENT</u>

It gives us an extraordinary feeling of pleasure to present the report of Diploma research project undertaken amid DIPLOMA FINAL YEAR as partial fulfillment of requirements for Diploma in Civil Engineering. We owe special obligation of gratitude to Er. Manisha Mishra (HOD), Er. Madhuri Sagar (Faculty) and Er. Binita Pradhan (Faculty) department of Civil, Samanta Chandrasekhar Institute of Technology And Management Semiliguda for her consistent backing and direction throughout our work. Her earnestness, exhaustiveness and persistence have been steady well spring of motivation for us. It is just her mindful endeavors that our attempts have seen light of the day. We additionally don't want to miss the chance to acknowledge the commitment of all professors and staff of the different department for their kind aid and collaboration amid the advancement of my project. Last but not least, I would like to show my gratitude to my family and companions for their commitment in fruition of the task.

- 1. SUSMITA KUMARI NAYAK (F19030001026)
- 2. SAKTIMAYEE SENAPATI (F19030001022)
- 3. JYOSHNA KRISANI (L20030001002)
- 4. GAYATRI SAGAR (L20030001001)
- 5. RAMA GEMEL (F19030001021)

Table of Contents

1: INTRODUCTION	
1: INTRODUCTION	3
1.1 GENERAL	3
CTEDICTICS	4

2.1 PHYSICAL CHARACTERISTICS	5
2.2 CHEMICAL CHARACTERISTICS	6
2.2 CHEMICAL CHARACTERISTICS	0
	7
3: SCOPE OF THE PROJECT	
4: SCOPE OF THIS REPORT	8
4: SCOPE OF THIS REPORT	8
5: WASTEWATER TREATMENT	
5.1 INTRODUCTION - WHAT IS WASTEN	9
WHAT IS WASTEWATER AND WHAT IS TO	
THE MALKOBIC PROCESSES!	7. 1
5.8 SLUDGE ACCUMULATION	14
5.9 ELIMINATION OF NITROGEN	14
5.11 ELIMINATION OF TOXIC SUBSTANCES.	15
5.12 REMOVAL OF PATHOGENS	15
5.13 CONCLUSION	15
	16
6: SMALL-SCALE WASTEWATER TREATMENT PLANTS CRITERIA EVALUATION	
6.1 Introduction:	17
6.2 GENERAL ASSUMPTIONS	17
6.3 EFFLUENT QUALITY	17
6.4 WATER SUPPLY	17
6.5 LAND SPACE	18
6.6 MAINTENANCE AND OPERATION	
6.7 COST	
6.8 ELECTRICAL REQUIREMENT:	
6.9 TOPOGRAPHY	19
6.10 Technology Rating Sheet	20
6.11 CONCLUSION	22
7: SMALL-SCALE TECHNOLOGIES	23
7.1 GENERAL	22
7.2 IDENT	23
IDENTIFIED TECHNOLOGIES	23
7.2.1 PRIMARY PROCESSES	23
7.2.2 SECONDARY PROCESSES	JU 41
7.2.3 TERTIARY PROCESSES	41
7.2.4 PACKAGE PLANT TYPES	73
8: REFERENCES	49

PROJECT PHASE-II EVALUATION **DIPLOMA**

Project Topic: Small Scale Wastewater Treeatment Plant

Name of the Students: Susmita Kumarci Nayak, Saktimayee Senapati, Gayatri Sagar, Tyoshna Krisani, Rama Gernel

SI.No	Performance Criteria	Division Of Marks Under Each Criteria	Marks Allotted
1	Selection of project assignment	10	10
2	Planning and execution of consideration	10	10
3	Quality of performance	10	10
4	Providing solution of the problems or production of final product	10	9
5	Sense of responsibility	10	q
6	Self expression, communication and presentation skills	15	15
7	Interpersonal skills/Human relation	10	9
8	Report writing skills	15	14
9	Viva voce	10	9
	Total Marks	100	95

Faculty Signature HDD, livil