



**BUSITEMA
UNIVERSITY**
Pursuing Excellence

**FACULTY OF ENGINEERING
DEPARTMENT OF WATER RESOURCES AND MINING ENGINEERING**

FINAL YEAR PROJECT PROPOSAL

AN AUTOMATIC GREY WATER RECYCLABLE SHOWER SYSTEM

OMARA CHARLES DICKENS

BU/UP/2016/608

E-mail: omaracharles100@gmail.com

Tel: +256781-526991

OCHOLA DISON

BU/UG/2017/81

E-mail: disonochola007@gmail.com

Tel: +256787-330309

SUPERVISOR Mr. MASERUKA BENEDICTO

A final year project proposal submitted in partial fulfilment of the requirement for the award of a Bachelor's of science in water resources engineering in Busitema University

ABSTRACT

Showered water is wastewater generated from bathroom sinks and bathtubs from a household, hotel and institutions. Due to the percentage of showered water discharged, there is a lot of greywater discharged that needs to be recycled and reused.

Frequent water shortages in some parts of Uganda have led to poor sanitation in the people's homes of residence, hospitals and institutions due to lack of enough water for showering and cleaning around the shower room. The purpose of the design project was to design and construct water recycling system for showered water that would utilize the available greywater from people's homes of residence to supplement on the only one available ground water source at the country. For the design to be done, showered water quality was determined by collecting samples and testing them using different water quality sensors like turbidity and electrical conductivity sensors, generated quantity of showered water was determined depending on the total water consumption by the students.

Design of various components of the recyclable water shower system was done using the given relevant formulas and equations. From the research, showered water being generated currently was 18 liters per day. The showered water being discharged showed poor physical chemical characteristics and thus needs treatment before reuse. Distribution pipes, collection tank were sized then treatment units where rapid sand filter, clear tank pump, storage tank and were sized.

DECLARATION

We, hereby declare to the best of our knowledge, that this project report is an outcome of our original work and that it has not been presented to any institution of learning for an academic award.

Name:

Signature:

Name:

Signature:

Date:/...../.....

APPROVAL

This final research report has been submitted to the Faculty of Engineering for examination with approval of our supervisor.

MAIN SUPERVISOR: MR. MASERUKA S BENDICTO

Signature.....

Date...../...../.....

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ACRONYMS.

PVC	-	Polyvinyl Chloride
Rpm	-	Revolutions per minute
CWF	-	Ceramic Water Filter
WHO	-	World health organization
EC	-	ELECTROCOAGULATION
UV-		ULTRA VIOLET
UNICEF-		United Nations Children's Fund
PPE	-	personal preventive equipment
NGO	-	Non -government organizations
PEAP	-	poverty eradication plan
TSS-		Totally suspended solids
EPA-		US Environmental Protection Agency
TDS-		Totally dissolved solids
Rmm-		relative molecular mass