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BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF MINING ENGINEERING

DESIGN AND SIMULATION OF A CONE SHAPED ALIGNMENT FISHING TOOL.

BY

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BU/UG/2017/1236

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A final year project proposal submitted in partial fulfillment of the requirement for the award of a Bachelor of Science in Mining Engineering.

March, 2022.

DECLARATION

I **NJOKA ROGERS** declare to the best of my knowledge that the work presented in this proposal report is my own and has never been presented to any University or higher institute of learning for any academic award.

Signature.....

Date.....20th/01/2023

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APPROVAL

This proposal report has been submitted to the Department of Water Resources and Mining Engineering for examination with approval from the following supervisors:

Mr. NASASIRA BAKAMA MICHAEL

Signature.....

Date.....20/1/2023.....

Mr. TUGUME WECLIFE

Signature.....

Date.....

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DEDICATION

I dedicate this report to my beloved parents in appreciation for their unconditional love and care, in supporting me since childhood, and for the spirit of hard work, courage and determination they taught me and made me able through the Lord to fight to become a complete mining engineer.

I also dedicate it to my beloved friends Ssekweyama Isaac, Mwanyi Ian, Sam, Ouma Denis, Stella, Kwikiriza Mathias among others for the motivation and courage they have always given me to focus on education.

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May the Almighty God reward you abundantly.

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1.0 CHAPTER ONE

1.1 BACKGROUND

Fishing is the process of removal of equipment that has become stuck or lost in the wellbore.

Globally, in geological survey drilling is one of the main activities carried out for exploration, appraisal and later for production in a fully developed field. Drilling constitutes of 35-50% of the total project cost. It is therefore vital to manage drilling costs and keep them low. Stuck pipe and fishing are considered non-productive and increase drilling costs by more than 15% on average, hence, should be avoided where possible (Atwa, 2018). For every stuck pipe, there is a mechanism that leads to the incidence and a corresponding procedure to free the string. The success of stuck pipe management and fishing is evaluated by the time it takes to complete the whole process. Unsuccessful fishing operations end up in loss of equipment and resources including time and sometimes lead to well abandonment.

In Uganda industry wide, 25% of drilling costs may be attributed to fishing. Operator error, equipment declines, and failure to clean the hole are the cause of many fishing jobs. Running more mud weight than necessary can cause differential (wall) sticking. When hole conditions permit, differentially stuck pipe may be freed by spotting nitrogen (Douglas & Technology, 2017). Improperly shopped tool joints may part while tripping or drilling ahead. Interior corrosion in the body of drill pipe may cause torsion failure. Fishing equipment for tubular goods includes overshot, baskets, spears taper taps, die collars, mills, wash pipe, jar-bumper subassemblies, surface bumpers, safety joints, bent joints, wall hooks, circulating subs, and cutters. Additional tools for fishing junk are the magnet and the junk shot. The cardinal rule of fishing is "Know when to quit." Close cooperation between geology, engineering, and

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reference

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