

**PREDICTION OF OIL CRITICAL RATE FOR VERTICAL
WELLS USING MEYER – GARDER CORRELATIONS FOR;
GAS CONING SYSTEM,
WATER CONING SYSTEM, AND
COMBINED GAS AND WATER CONING SYSTEM.**

BY

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CERTIFICATION

This is to certify that AHANTE ESEOGHENE PROMISE of the Petroleum and Gas Engineering Department, Delta State University, Oleh Campus carried out this project work under the supervision of ENGR. DR. JOHN OLORO.

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DEDICATION

To my family for their unconditional love and support. Family is indeed one of nature's masterpieces.

ACKNOWLEDGEMENT

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ABSTRACT

Water and/or gas coning in producing oil wells have been controlled, delayed, and managed by effective study of three important factors namely: the critical oil rate, breakthrough time and after breakthrough performance of the well.

This study examines the correlations for the critical oil rate for a vertical well in a gas coning system, water coning system, and combined gas and water coning system. A visual computer program is developed to accurately and promptly predict the critical rate for a vertical well in a reservoir system of concern.

The results obtained from the study also addresses the optimum placement for the completion interval and sensitivity analysis of some key parameters are carried out to determine the effect of various factors on the critical oil producing rate.

Reservoir parameters and fluid properties data from literatures and T-test statistical analysis were used in validating the developed program. The project result gives a quick and easy method for predicting and controlling production performance to achieve reasonable balance between coning fluids encroachment delay and producing at an economical rate.

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