SELECTION OF OPTIMUM SAND CONTROL METHOD FOR A FIELD IN PCSB OPERATION

by

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Dissertation submitted in partial fulfilment of

the requirements for the

MSc. Petroleum Engineering

(MSc. PE)

JULY 2008

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CERTIFICATION OF APPROVAL

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A project dissertation submitted to the Petroleum Engineering Programme
Universiti Teknologi PETRONAS
in partial fulfilment of the requirement for the
MSc. of PETROLEUM ENGINEERING

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TRONOH, PERAK

July 2008

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

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WADAH HASSAN MOHAMED AHMED

ABESTRACT

One of the main problems that encountered in oil and gas production Industries is formation sand failure and sand production. They are spending massive resource to mitigate it.

The Objectives of the project (a) to predict sand production in the future of the Field A, (b) determine which type of sand control suitable for Field A such as passive or active sand control method, (c) also the project optimize the selection by improve the industrial guideline for sand control methods selection for Field A.

Field A at exploration stage the study required to predict sand production in the future or not?. If the sand production expected, which type of sand control is suitable for Field A?, and for maximum production, how the selection optimize?.

To predict Field A sand production in the future, the Methodology start by study Field A geology environment, reservoir descriptions, petrophysical analysis, and Field A regional experience data, the methodology also analyze the laboratory test such as sieve and LPSA analysis, and apply the industry guidelines to select suitable sand control. For improve the selection assessments for the results are applied.

The study shows that Field A is categorized as sandy formation failure with sand production, and using sand control management (passive method) not suitable. For maximum well productivity and higher performance the optimum sand control type is Weir Wrapped Screen, and that is the same as installed by the industry for Field A.

ACKNOWLEDGMENT

- ALL thanks and praises for GOD first, under whose provision and blessing this work carried out.

- To PETRONAS who give me this chance to do this work

- To my supervisor Dr. Razali for his valuable advice

- To En Bahrom, Abdula Kassim and Azrol for their help and advice

- To my family members for support and encouragement

- To all members of Petroleum Engineering Department for their valuable

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ABBREVIATIONS AND NOMENCLATURES

Symbol **Meaning**

Ø PHI ----------Grain Size Measurement
SD ----------Standard Deviation
LPSA----------Laser Particle Size Analysis
Psi ----------Pascal per Square Inch
g----------Gram
Δt----------Sonic Transit Time
µ----------Micron
m----------Meter
ESS----------Expandable Sand Screen
Č----------Uniformity Co-efficient
SAS----------Stand Alone Screen
OHGP----------Open Hole Gravel Pack
FP----------Frac-Pack
ESAS----------Expandable Stand Alone Screen

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