
TABLE OF CONTENTS

	Page
COVER	i
APPROVAL SHEET	ii
DECLARATION.....	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
SARI	vi
TABLE OF CONTENTS.....	vii
LIST OF FIGURES	xi
LIST OF TABLES	xvi
LIST OF ABBREVIATIONS	xvii
CHAPTER 1. INTRODUCTION	1
1.1. Background	1
1.2. Problem Statement	1
1.3. Purposes of Research	2
1.4. Location of Study Area	2
1.5. Scope of Research	2
1.5.1. Scope of Work	2
1.5.2. Limitation	4
1.6. Advantage of Research	4
1.7. Previous Researches and Originality of Research	4

CHAPTER 2. LITERATURE REVIEW AND HYPOTHESIS 6

2.1. Regional Geology of Study Area	6
2.1.1. Tectonic Evolution of Cuu Long Basin.....	6
2.1.2. The Structural Geology of Cuu Long Basin.....	7
2.1.3. Stratigraphy of Cuu Long Basin.....	8
2.1.4. The Structural Geology of Rong Oilfield.....	11
2.1.5. Stratigraphy of Rong Oilfield.....	12
2.2. Theoretical Background.....	17
2.2.1. Sandstone Reservoirs.....	17
2.2.2. Sedimentary Facies and Depositional Environments.....	17
2.2.3. Basic Principle of Sequence Stratigraphy	20
2.2.4. Facies Analysis from Well Log.....	24
2.2.5. Petrophysical Properties and the Factors Affecting	28
2.2.6. Petrophysical Properties Calculation.....	31
2.2.7. Theory of Geostatistics.....	36
2.3. Hypothesis.....	40

CHAPTER 3. RESEARCH METHODOLOGY 41

3.1. Data	41
3.1.1. Well Data.....	41
3.1.2. Core Data.....	41
3.1.3. Seismic Data.....	41
3.2. Requirement Materials and Tools	41
3.3. Research Procedure.....	42
3.3.1. Step 1 – Data Preparation	43
3.3.2. Step 2 – Structural Modeling.....	44
3.3.3. Step 3 – Facies Modeling	45

Petrophysical Modeling for Lower Part of “F” Sequence
Rong Oilfield, Cuu Long Basin, Viet Nam

3.3.4. Step 4 – Petrophysical Modeling.....	45
3.4. Research Stages.....	45
3.4.1. Desk Study and Literature Review	45
3.4.2. Data Collection and Preparation.....	46
3.4.3. Modeling and Writing	46
3.5. Flowchart of Research.....	47
3.6. Research Schedule	48
CHAPTER 4. DATA PROCESSING.....	49
4.1. General Well Information	49
4.2. Seismic Data.....	50
4.2.1. Top Basement	50
4.2.2. Top F-Sand	52
4.2.3. Top F (Top F-shale).....	52
4.2.4. Top E	53
4.2.5. Top D4.....	53
4.2.6. Top D.....	54
4.3. Fault Systems	54
4.4. Core Data	55
4.4.1. F Sequence in the Well R-2.....	56
4.4.2. F Sequence in the Well R-3.....	58
4.4.3. Facies Interpretation	58
4.5. Well Logs Interpretation	61
4.5.1. Sedimentary Facies and Depositional Environment.....	61
4.5.2. Porosity Calculation	72
4.6. Depositional Environment Summary	79

CHAPTER 5. MODELING PROCESS, RESULTS AND DISCUSSION..... 81

5.1. Structural Modeling	81
5.1.1. Fault Modeling	81
5.1.2. Pillar Gridding.....	82
5.1.3. Zonation.....	83
5.1.4. Layering.....	86
5.2. Facies Modeling	88
5.2.1. Scale Up Well Logs.....	88
5.2.2. Facies Modeling by Sequential Indicator Simulation (SIS)	90
5.2.3. Facies Modeling by Object Modeling	92
5.3. Petrophysical Modeling	94
5.3.1. Porosity Modeling	95
5.3.2. Permeability Modeling	103

CHAPTER 6. CONCLUSIONS AND SUGGESTIONS 107

6.1. Conclusions	107
6.2. Suggestions	107

REFERENCES..... 108