

# DAFTAR ISI

	<b>Halaman</b>
<b>LEMBAR PENGESAHAN</b> .....	<b>iii</b>
<b>PERNYATAAN KEASLIAN KARYA ILMIAH</b> .....	<b>iv</b>
<b>HALAMAN PERSEMBAHAN</b> .....	<b>v</b>
<b>PRAKATA</b> .....	<b>iv</b>
<b>RINGKASAN</b> .....	<b>vii</b>
<b>ABSTRACT</b> .....	<b>viii</b>
<b>DAFTAR ISI</b> .....	<b>ix</b>
<b>DAFTAR GAMBAR</b> .....	<b>xii</b>
<b>DAFTAR TABEL</b> .....	<b>xiv</b>
<b>DAFTAR LAMPIRAN</b> .....	<b>xv</b>
<b>DAFTAR SINGKATAN DAN LAMBANG</b> .....	<b>xvi</b>
<b>BAB I. PENDAHULUAN</b> .....	<b>1</b>
I.1. Latar Belakang .....	1
I.2. Rumusan Masalah .....	1
I.3. Maksud dan Tujuan .....	2
I.4. Batasan Masalah .....	2
I.5. Metodologi .....	2
I.6. Sistematika Penulisan .....	4
<b>BAB II. TINJAUAN LAPANGAN</b> .....	<b>6</b>
II.1. Letak Geografis Sumur “SW-4” .....	6
II.2. Tinjauan Geologi Sumur “SW-4” .....	6
II.2.1. Geologi Regional Cekungan Sumatra Selatan .....	7
II.2.1.1 Sistem Tektonik.....	8
II.2.2. Stratigrafi.....	9
II.3. <i>Petroleum System</i> .....	13
<b>BAB III. DASAR TEORI</b> .....	<b>16</b>
III.1. <i>Wireline Logging</i> .....	16
III.1.1. <i>Lithology Tools</i> .....	17

## DAFTAR ISI

### (Lanjutan)

	<b>Halaman</b>
III.1.1.1. <i>Spontaneous Potential Log</i> .....	17
III.1.1.2. <i>Gamma Ray Log</i> .....	19
III.1.1.3. <i>Caliper Log</i> .....	21
III.1.2. <i>Porosity Tools</i> .....	22
III.1.2.1. <i>Density Log</i> .....	22
III.1.2.2. <i>Neutron Log</i> .....	23
III.1.2.3. <i>Sonic Log</i> .....	25
III.1.3. <i>Resistivity Tools</i> .....	27
III.1.3.1. <i>Normal Log</i> .....	28
III.1.3.2. <i>Induction Log</i> .....	29
III.1.3.3. <i>Lateral Log</i> .....	29
III.1.3.4. <i>Micro Resistivity Log</i> .....	30
III.2. Analisa Petrofisik.....	31
III.2.1. Analisa Kualitatif.....	32
III.2.2. Analisa Kuantitatif.....	32
III.2.2.1. Perhitungan Volume <i>Shale</i> .....	32
III.2.2.2. Perhitungan Porositas.....	33
III.2.2.3. Penentuan Jenis Persebaran <i>Shale</i> .....	33
III.2.2.4. Penentuan Metode Saturasi Air.....	35
III.2.2.4.1. Metode <i>Archie</i> .....	36
III.2.2.4.2. Metode <i>Simandoux</i> .....	36
III.2.2.4.3. Metode <i>Indonesian</i> .....	36
III.2.2.4.4. Metode <i>Dual Water</i> .....	37
III.3. Penentuan <i>Cut-Off</i> .....	37
III.4. <i>Pay Summary</i> .....	38
III.5. Perhitungan <i>Oil In Place</i> .....	39
III.6. <i>Software Interactive Petrophysics</i> .....	39
<b>BAB IV. ANALISA DAN HASIL PERHITUNGAN</b> .....	<b>40</b>

**DAFTAR ISI**  
**(Lanjutan)**

	<b>Halaman</b>
IV.1. Data Penelitian .....	41
IV.2. <i>Quality Control Data</i> .....	42
IV.2.1. <i>Environmental Correction</i> .....	42
IV.2.1.1. Koreksi <i>Gamma Ray Log</i> .....	43
IV.2.1.2. Koreksi <i>Density Log</i> .....	43
IV.2.1.3. Koreksi <i>Neutron Log</i> .....	44
IV.2.1.4. Koreksi <i>Resistivity Log</i> .....	45
IV.3. Analisis Kualitatif .....	45
IV.4. Analisa Kuantitatif .....	50
IV.4.1. Perhitungan Volume Shale .....	50
IV.4.2. Perhitungan Porositas .....	51
IV.4.3. Perhitungan Saturasi Air .....	55
IV.5. Penentuan <i>Cut-Off</i> .....	57
IV.6. <i>Pay Summary</i> .....	58
IV.7. Perhitungan <i>Oil In Place</i> .....	58
<b>BAB V. PEMBAHASAN .....</b>	<b>60</b>
<b>BAB VI. KESIMPULAN .....</b>	<b>66</b>
<b>DAFTAR RUJUKAN .....</b>	<b>68</b>
<b>LAMPIRAN .....</b>	<b>69</b>

## DAFTAR GAMBAR

	<b>Halaman</b>
Gambar I.1. <i>Flowchart</i> .....	4
Gambar II.1. Lokasi Sumur “SW-4” .....	6
Gambar II.2. Peta Cekungan Sumatra Selatan .....	7
Gambar II.3. Peta Tektonik Sumtra Selatan.....	8
Gambar II.4. Kolom Stratigrafi Cekungan Sumatra Selatan .....	10
Gambar III.1. Skema Rangkaian Dasar SP <i>Log</i> .....	18
Gambar III.2. Respon GR <i>Log</i> Pada Berbagai Litologi .....	20
Gambar III.3. Respon <i>Caliper Log</i> Pada Berbagai Litologi.....	21
Gambar III.4. Skema <i>Density Log</i> .....	22
Gambar III.5. Skema <i>Neutron Log</i> .....	24
Gambar III.6. Skema <i>Sonic Log</i> .....	26
Gambar III.7. Respon <i>Resistivity Log</i> Pada Fluida .....	27
Gambar III.8. Skema Rangkaian Dasar <i>Normal Log</i> .....	28
Gambar III.9. Skema Rangkaian Dasar <i>Induction Log</i> .....	29
Gambar III.10. Skema Rangkaian Dasar <i>Lateral Log</i> .....	29
Gambar III.11. <i>Borehole Environment</i> .....	31
Gambar III.12. Jenis Distribusi <i>Shale</i> Pada Reservoir .....	34
Gambar III.13. Penentuan Distribusi <i>Shale</i> Berdasarkan Metode Thomas Stieber Plot.....	35
Gambar III.14. Contoh Grafik Penentuan <i>Cut Off</i> .....	38
Gambar III.15. Contoh Tabulasi <i>Reservoir Lumping</i> .....	39
Gambar IV.1. Koreksi <i>Gamma Ray Log</i> Sumur-”SW-4”.....	43
Gambar IV.2. Koreksi <i>Density Log</i> Sumur-”SW-4” .....	44
Gambar IV.3. Koreksi <i>Neutron Log</i> Sumur-”SW-4” .....	44
Gambar IV.4. Koreksi <i>Resistivity Log</i> Sumur-”SW-4” .....	45
Gambar IV.5. Analisa Kualitatif Zona Prospek Sumur “SW-4” .....	46
Gambar IV.6. Nilai <i>Gammay Ray</i> Maksimum dan Minimum .....	50
Gambar IV.7. Perbandingan Porositas <i>Log</i> Dengan Porositas <i>Core</i> .....	52

**DAFTAR GAMBAR**  
**(Lanjutan)**

	<b>Halaman</b>
Gambar IV.8. Validasi Porositas <i>Density</i> vs Porositas <i>Core</i> .....	52
Gambar IV.9. Validasi Porositas <i>Neutron</i> vs Porositas <i>Core</i> .....	53
Gambar IV.10. Validasi Porositas <i>Neutron-Density</i> vs Porositas <i>Core</i> .....	53
Gambar IV.11. <i>Thomas Stieber Plot</i> Sumur “SW-4”.....	55
Gambar IV.12. <i>Cut-off Volume Shale</i> dan Porositas Sumur “SW-4” .....	57
Gambar IV.13. <i>Cut-off Saturasi Air</i> dan Sumur “SW-4” .....	57

## DAFTAR TABEL

	<b>Halaman</b>
Tabel IV-1. Ketersediaan Data Sumur “SW-4” .....	41
Tabel IV-2. Kedalaman <i>Top</i> dan <i>Bottom</i> Zona Prospek Sumur “SW-4” .....	49
Tabel IV-3. Hasil Perhitungan Volume <i>Shale</i> Pada Zona Prospek.....	51
Tabel IV-4. Hasil Perhitungan Porositas Pada Zona Prospek .....	54
Tabel IV-5. Validasi Sw Data <i>Test</i> Dengan Sw Data <i>Log</i> .....	56
Tabel IV-6. Hasil Perhitungan Saturasi Air Pada Zona Prospek.....	56
Tabel IV-7. <i>Reservoir Lumping</i> Sumur “SW-4” .....	58
Tabel IV-8. Perhitungan <i>Oil In Place</i> Sumur “SW-4” .....	59
Tabel VI-1. Zona Prospek Sumur “SW-4” .....	66
Tabel VI-2. OOIP Zona Prospek Sumur “SW-4” .....	66

## DAFTAR LAMPIRAN

	<b>Halaman</b>
Lampiran A <i>Header Log</i> dan <i>Well Profile</i> Sumur “SW-4”.....	69
Lampiran B <i>Chart Log</i> Sumur “SW-4” .....	71
Lampiran C Tabulasi Data Sumur “SW-4” .....	75
Lampiran D Tabulasi Hasil Analisa Sumur “SW-4” .....	79