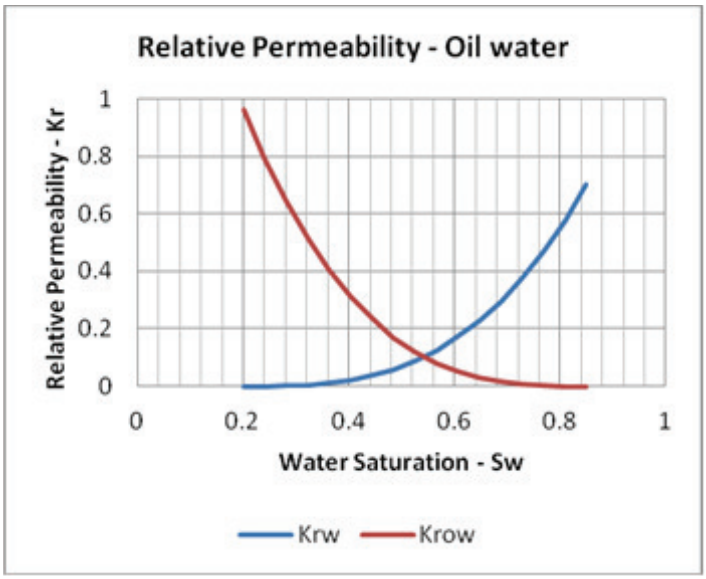
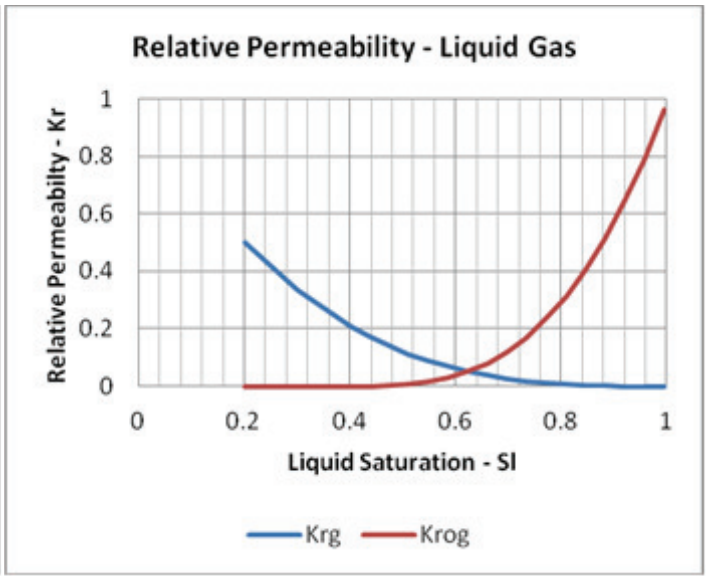
4. Reservoir Characteristics and Key Simulation Parameters

Key Simulation parameters i.e. reservoir characteristics, fluid properties and well operating parameters, which form the basis of this numerical study for the analysis and feasibility of the inventions techniques by Mr. Jason Swist are given below.

Reservoir Pressure	2000 KPa
Reservoir Temperature	10 ^{o}C
Porosity	0.34
Permeability	1 D
Kv / Kh	0.5
Initial Oil Saturation	0.85
Initial Water Saturation	0.15
Initial Gas Saturation	0
Reservoir Thickness	30 m
Reservoir width	200 m
Simulation Time	10 years

Relative Permeability – Stone Model II

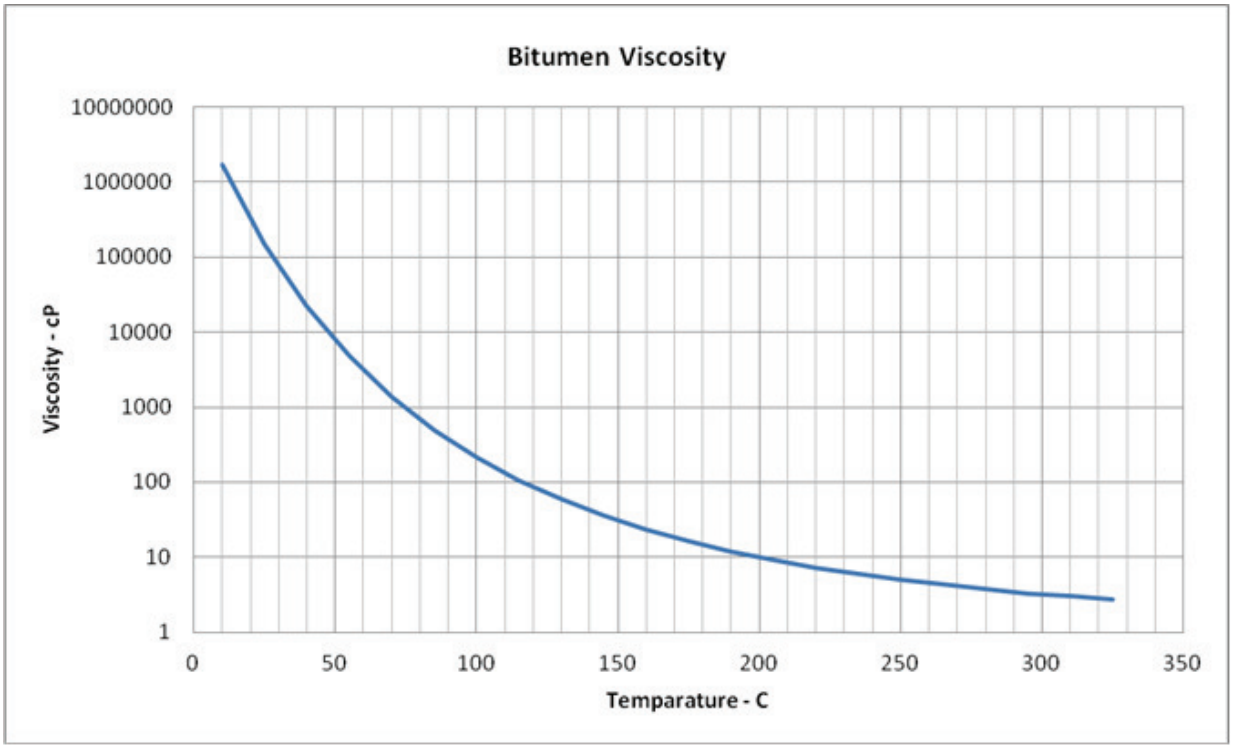




Fluid Properties

Initial Solution gas ratio for live oil, m^3/m^3	0.9
Initial Solution gas ratio for live oil, mole fraction	0.02

Viscosity Profile



Operating Parameters

Injection Pressure	1800 KPa
Steam Quality	0.9
Steam Temperature	200 ^{o}C
Well Length	700 m
Preheating Days	90 days

Injection Well Constraints

Operate Max BHP	1800 KPa
Operate Max Total Surface water injection rate	350 m^3/day (CWE)

Production Well Constraints

Operate Min BHP	800 KPa
Operate Max Steam rate	0.5 m^3/day
Operate Max Total Surface Liquid rate	700 m^3/day

Thermal Properties

Rock Volumetric Heat Capacity	2.347E+06 J/ (m^3 . ^{o}C)
Rock Thermal Conductivity	2.74E+05 J/ (m.day.^{o}C)
Oil Phase Thermal Conductivity	1.15E+04 J/ (m.day.^{o}C)
Water Phase Thermal Conductivity	5.35E+04 J/ (m.day.^{o}C)
Gas Phase Thermal Conductivity	2.50E+03 J/ (m.day.^{o}C)

Overburden / Under-burden

Volumetric Heat Capacity	2.35E+06 J/ (m^3.^{o}C)
Thermal Conductivity	1.5E+05 J/ (m.day.^{o}C)