REF-CASE-2

1 Description

REF-CASE-2 is an optimization model that was developed to maximize the net present value (NPV). Unlike CASE-2, this optimization model only considers fluid flow rates as the decision variable. The optimization model also includes some constraints, such as production constraints and injection constraints. The summary of the objective function, decision variable, and optimization parameters is given in Table 1. The goal of solving this optimization model is to prove that a better objective value may be obtained if more decision variables are considered, like in CASE-2.

Table 1: Summary of objective function, decision variable, and optimization parameters for REF-CASE-2

Objective Function	Max: NPV	
Variable	Fluid Flow Rates	Oil Production Rate (q_o)
		Gas Production Rate (q_g)
		Water Production Rate (q_w)
		Gas Injection Rate (q_{gi})
		Water Injection Rate (q_{wi})
Parameters	Drilling Schedule	Oil Producer (N_{op})
		Gas Injector (N_{gi})
		Water Injector (N_{wi})
	Recovery Mechanism	Recovery Mechanism (RM)