Displacement calculations by Dykstra-Parson´s method

Water is being injected in a horizontal, linear, layered oil reservoir of the following properties:

layer	k (mD)	h (m)	ϕ	ΔS
1	5000	5	0.45	0.7
2	1000	7	0.25	0.55
3	300	9	0.2	0.4
4	2000	6	0.3	0.5
5	4000	3	0.4	0.65

The irreducible water saturation for each layer is: $S_{wir} = 0.2$

Use Dykstra-Parson´s method (Handout note 6) to:

1. plot water-cut vs. number of pore volumes injected
2. plot oil recovery vs. number of pore volumes injected

Assume no cross-flow between layers, piston displacement, and use a mobility ratio for all layers of *M=0.5*.

(If additional parameters are needed, make appropriate assumptions)