

Supplementary material to

**COMPARATIVE ANALYSIS OF WATER NETWORK MINIMIZATION IN INDUSTRIAL PROCESSES:
REGENERATION VS. NON-REGENERATION METHODS**

Azza Mohamed Khalifa^{1,*}, Nadia Ali Elsayed², Mostafa Awad²

¹General Authority of Import and Export, Suez, Egypt.

²Department of Refining and Petrochemical Engineering, Faculty of Petroleum and Mining Engineering, Suez University, Suez, Egypt.

Chem. Ind. Chem. Eng. Q. 31 (4) 285–293 (2025)

Table S1. Final result of example (1).

Process	Contaminant	C _{in} (ppm)	C _{out} (ppm)	Actual flow rate/t·h ⁻¹
P1	A	0	15	45
	B	0	400	
	C	0	35	
P2	A	11.26	111.26	34
	B	300	12500	
	C	26.26	26	
P _{reg}	A	76.16	76.16	53.5
	B	8089.72	8.08972	
	C	115.24	115.24	
P3	A	74.28	174.28	56
	B	8.04	33.04	
	C	197.5	9497.5	

* Email: azzakhalifa06@gmail.com

Table S2. Comparison between using regeneration method and without regeneration method.

	With using regeneration method	Without regeneration method
Fresh water(t/hr)	55.48	106.7
Outlet concentration	(76.16,8.08972,115.24)	(111.25, 12500, 161.26)

Table S3. Final result of example (2).

Processes		Inlet concentration	Outlet concentration	Actual flow rate/t.h ⁻¹
P1	A	0	15	50
	B	0	400	
	C	0	35	
P4	A	0	20	8
	B	0	60	
	C	0	20	
P2	A	15.2	115.2	34
	B	294.12	12494.12	
	C	29.2	164.2	
P5	A	15	115	8
	B	400	8000	
	C	35	95	
preg	A	85.53	85.53	59.7
	B	8309.55	8.30955	
	C	117.25	117.25	
P3	A	91.25	191.25	56

Table S4. Comparison table between using regeneration method and without regeneration method.

	With using regeneration method	Without regeneration method
Fresh water(t/hr)	59.7	112.9
Outlet concentration	(58.35,8.30955,9424.98)	(115, 8000, 91.25).