A mathematical relationship is developed for both turbidity, y_1 , and SVI, y_2 , with the critical process factors. Based on process knowledge, the main controllable process factors thought to affect the wastewater quality characteristics are flocculant dose, coagulant dose, and pH. Design of experiment is then conjucted to optimize process performance.

The weighted additive model is employed to obtain the optimal value, of process factor settings while considering the preferences of process/product ingineers. The summary of the control chart results are displayed in Takes 1 and 2 for control charts and process capability, respectively.

Table 1. Improvement summary using control charts.

Table 2. Improvement summary using capability index.

		Moving average (MA)			range (MR)		MR)	P. Cheters	Turbidity*	SVI
	Response	UCL CL I							0	50
				UCL	CL	CL	USL	30	100	
	Before	24.81	20.22	15.64	964	2.438	0.0	Mean	20.22(6.42)	79.69(72.15)
<i>Y</i> ₁	After	After 9.116 3.724	• 3.724	3	.433	0.0	Standard deviation	2.16 (1.27)	6.02 (3.39)	
								Actual capability	1.34 (5.5)	1.46 (1.93)
V ₂	Before	92.69	79.92		2.19	6.79	0.0	Capability of whole		
~ 2	After	79.34	72.15		12.48	3.82	0.0	product	1.95	(10.6)