Supplementary information

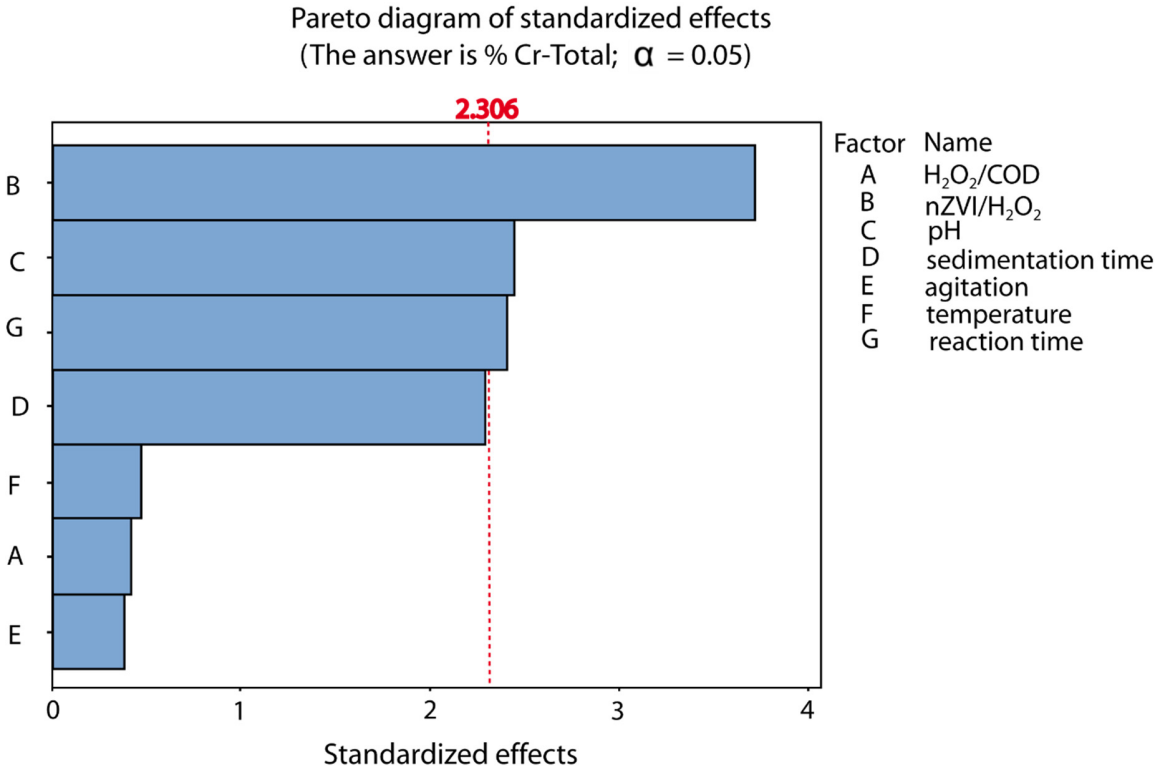


Figure S1. Pareto charts for PB-D, depicting the frequency distribution of the data presented for Cr-total removal. Red line indicates the significant variables at a 0.05.

Table S1. Analysis of variance (ANOVA) of the Plackett-Burman experimental design (PB-D) used to identify the variables that favored higher levels of Cr-total removal during Fenton-like process with commercial nZVI as catalyst.

	GL	SC Ajust.	MC Ajust.	Value F	Value p
Model	7	66,9754	9,5679	4,60	0,024
Linear	7	66,9754	9,5679	4,60	0,024
H2O2/COD	1	0,3662	0,3662	0,18	0,686
nZVI/H2O2	1	28,5193	28,5193	13,70	0,006
pH	1	12,3416	12,3416	5,93	0,041
Sedimentation	1	10,9017	10,9017	5,24	0,051
agitation	1	0,3097	0,3097	0,15	0,710
temperature	1	0,4638	0,4638	0,22	0,650
Reaction time	1	12,0792	12,0792	5,80	0,043
Error	8	16,6571	2,0821		
Lack of Fit	3	3,0478	1,0159	0,37	0,777
Pure Error	5	13,6093	2,7219		
Total	15	83,6325			

Equation S1. Linear model the PB-D

%Cr = 90,912 - 0,173 H2O2/COD + 1,474 nZVI/H2O2 - 1,054 pH + 0,935 reaction time - 0,154 agitation + 0,197 temperature + 0,932 Sedimentation

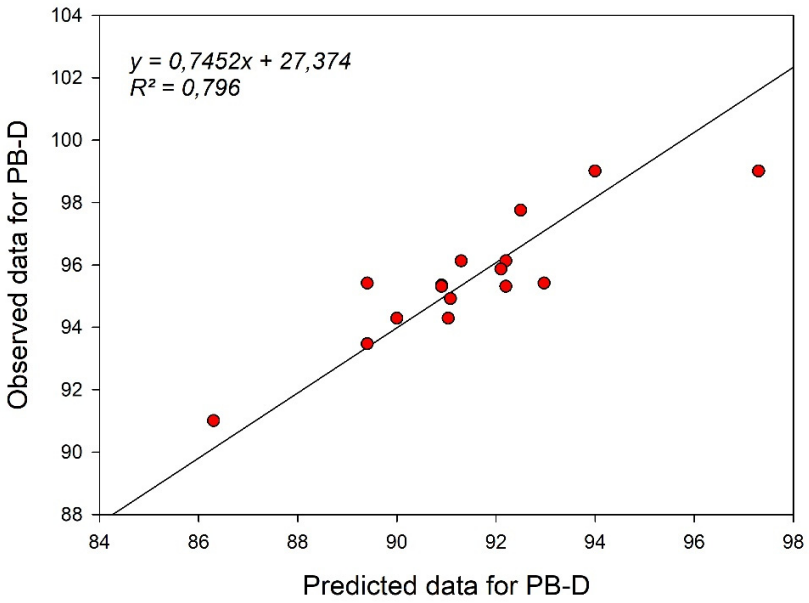


Figure S2. Validation graphs showing predicted vs Observed values for PB-D

Table S2. Analysis of variance (ANOVA) of the Plackett-Burman experimental design (PB-D) used to identify the variables that favored COD removal during Fenton-like process with commercial nZVI as catalyst.

	GL	SC Ajust.	MC Ajust.	Value F	Value p
Model	7	60,931	8,7044	0,63	0,723
Linear	7	60,931	8,7044	0,63	0,723
H2O2/COD	1	11,009	11,0090	0,79	0,423
nZVI/H2O2	1	0,105	0,1052	0,01	0,935
pH	1	36,923	36,9230	2,66	0,178
Sedimentation	1	8,941	8,9407	0,65	0,467
agitation	1	0,180	0,1799	0,01	0,915
temperature	1	1,392	1,3916	0,10	0,767
Reaction time	1	2,381	2,3814	0,17	0,700
Error	4	55,420	13,8551		
Total	11	116,351			

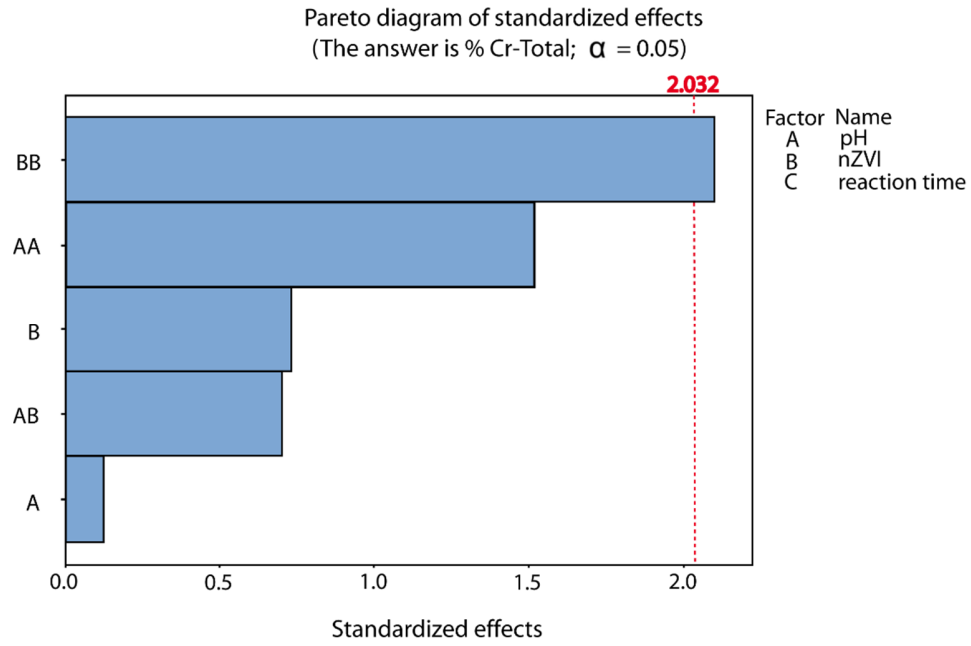


Figure S3. Pareto charts for CC-D, depicting the frequency distribution of the data presented for Cr-total removal. Red line indicates the significant variables at a 0.05.

Equation S2. The quadratic model of the response surface

$$\%Cr = 53{,}6 + 1{,}4\ pH + 75{,}1\ nZVI - 1{,}07\ pH*pH + 42{,}9\ nZVI*nZVI + 4{,}86\ pH*nZVI$$

Table S3. Analysis of variance (ANOVA) of the central composite design (CC-D) used to identify the variables that favored Cr-total removal during Fenton-like process with commercial nZVI as catalyst.

Fuente	GL	SC Ajust.	MC Ajust.	Value F	Value p
Model	5	278,84	55,768	1,17	0,344
Lineal	2	25,90	12,949	0,27	0,764
pH	1	0,70	0,700	0,01	0,904
nZVI	1	25,20	25,198	0,53	0,472
Square	2	229,33	114,664	2,40	0,106
pH*pH	1	33,26	33,264	0,70	0,072
nZVI*nZVI	1	209,27	209,266	4,39	0,044
Interaction de 2 Factors	1	23,61	23,615	0,50	0,486
pH*nZVI	1	23,61	23,615	0,50	0,486
Error	34	1621,44	47,689		
Lack of Fit	9	486,30	54,033	1,19	0,344
Pure Error	25	1135,15	45,406		
Total	39	1900,28			

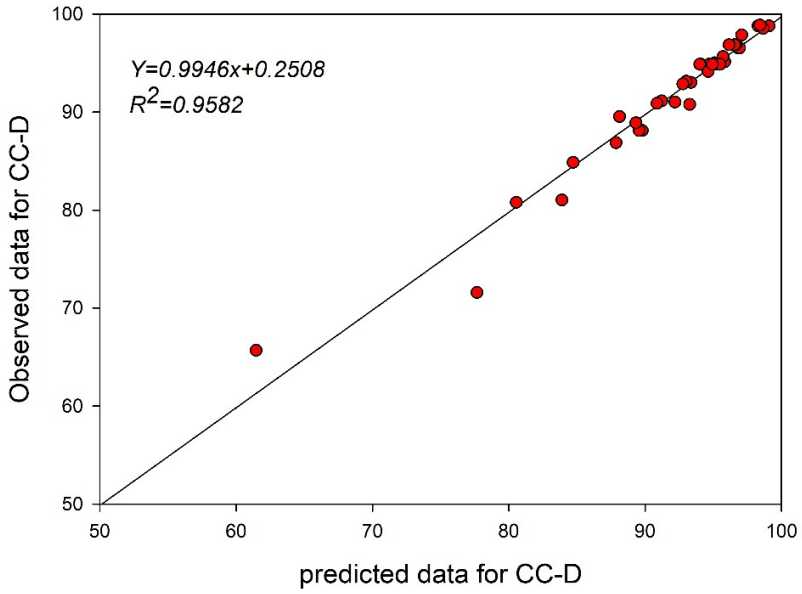


Figure S4. Validation graphs showing predicted vs Observed values for CC-D

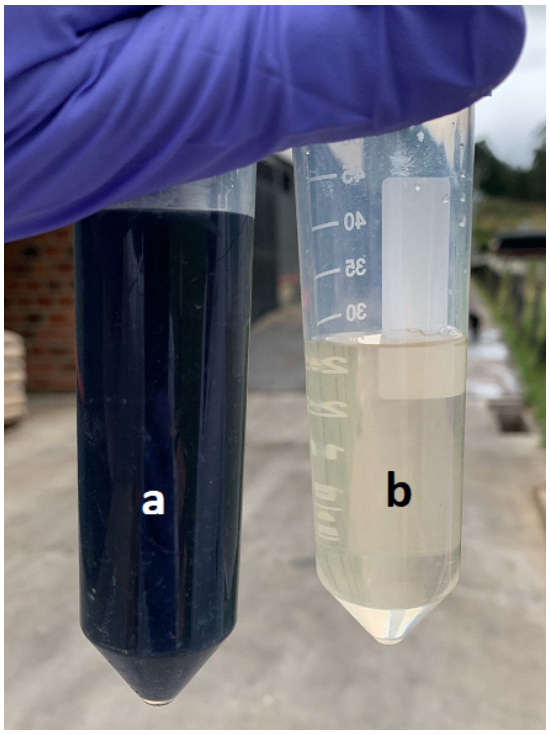


Figure 5S. (a) TWTs before Fenton-like process and (b) TWTs after Fenton-like process