



Case Study: Herreruela & Carcaboso – Cáceres



Project ID:

Company:	Herreruela & Carcaboso
Location:	Spain
Year:	2011-2012
Description:	Supply of drinking water treatment system to the cities of Herreruela and Carcaboso in the province of Cáceres, Spain
Goals:	Reduce arsenic and iron levels
Capacity:	Herreruela: 200 m ³ /day Carcaboso: 400 m ³ /day
Water Source:	Tube wells

The Problems:

The drinking water contained high levels of Arsenic and Iron above drinking water limits standards.

Herreruela Parameter	Existing Values	Required Value
Turbidity (NTU)	5	< 1
Arsenic (ug/l)	45	< 10
Iron (mg/l)	4.48	< 0.2

Carcaboso Parameter	Existing Values	Required Value
Turbidity (NTU)	5	< 1
Arsenic (ug/l)	11	< 10
Iron (mg/l)	2.3	< 0.2

Technical Solution:

The following processes were carried out:

- Aeration and Oxidation (detention time of 30-60 minutes) using air diffusers in order to blow off VOC's and raise the redox potential to >100 mv.
- MagpHlow dosing into the aeration tank in order to raise pH levels to 8.0-8.3.
- Coagulant dosing of APF into the aeration tank.
- AFM[®] filtration.
- Chlorine dosing.

Before Treatment: Iron = 4484 ug/l



After Treatment: Iron = 139 ug/l



Before Treatment: Arsenic = 11.0 ug/l



After Treatment: Arsenic = <3 ug/l



Results:

Herreruela Parameter	Required Value	Before Treatment	After Treatment
Turbidity (NTU)	< 1	5	< 0.5 ✓
Arsenic (ug/l)	< 10	45	< 10 ✓
Iron (mg/l)	< 0.2	4.48	0.14 ✓



Carcaboso Parameter	Required Value	Before Treatment	After Treatment
Turbidity (NTU)	< 1	5	< 0.3 ✓
Arsenic (ug/l)	< 10	11	< 3 ✓
Iron (mg/l)	< 0.2	2.3	< 0.12 ✓

