

Pinilla drinking water treatment plant

IN SERVICE SINCE

- 1992

BACKFITTING

- 1996
 - Extension of the lifting pump to the El Chaparral tank
- 2006/07
 - Construction of refining facilities: ozone and granular activated carbon filter generation system

WATER SOURCE

- Lozoya river (Pinilla reservoir)

TREATMENT CAPACITY

- 0.416 m³/s

WATER TREATMENT

STAGES OF THE PROCESS

- Preoxidation-prechlorination
- Coagulation-flocculation
- Settling
- Fast sand filtering
- Intermediate ozonisation
- Filtering on granular carbon
- pH adjustment
- Disinfection

REAGENTS USED

- Chlorine and chlorine dioxide for preoxidation and prechlorination
- Ozone and potassium permanganate for preoxidation
- Aluminium salts in the coagulation stage
- Activated carbon in the coagulation stage
- Sodium hydroxide in the coagulation stage
- Flocculation aid in the flocculation stage
- Ozone
- Sodium hydroxide in the final pH adjustment stage
- Chloramines during the final disinfection stage

RELEVANT TECHNICAL DATA

- Two settlers for fast sludge recirculation with a diameter of 23.5 m
- Eight sand filters with a unit surface of 31.2 m², for a total surface area of 249.6 m²
- Four charcoal filters with a unit surface of 32 m², for a total surface area of 128 m²

TREATED WATER TRANSPORT CHANNEL

- Sierra Norte system



SLUDGE TREATMENT

TREATMENT CAPACITY

- 480 m³/day
 - 120 m³/day from the filter washing
 - 360 m³/day from the settler blowdown

STAGES OF THE PROCESS

- Settling
- Mechanical dewatering (belt press)
- Container storage

RELEVANT TECHNICAL DATA

- One settling tank with a diameter of 4.5 m and a capacity of 20 m³/h
- One belt press with a belt width of 2 m and a capacity of 4.0 m³/h

FINAL SLUDGE DRYNESS

- 15-20%

