



TONKA EQUIPMENT COMPANY

Project Profile

CITY OF CORCORAN, CA WATER TREATMENT PLANT

CORCORAN, CA PUBLIC WORKS

Public Works Director

Contact: Steve Kroeker
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DESIGN ENGINEER

Quad Knopf

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TONKA REPRESENTATIVE

Coombs Hopkins/ DC Frost

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APPLICATION:

Arsenic Removal
Flow: 18 MGD
Co-Precipitation with ferric chloride addition

TONKA PROCESS EQUIPMENT:

- ◆ Five 2 Cell – 12' diameter horizontal filters
- ◆ Greensand plus/anthracite dual media
- ◆ Process control panel

PROJECT:

With recent changes in arsenic MCL standards, the City of Corcoran found all of its nine groundwater wells would be out of compliance. With a rapidly approaching compliance deadline, the City explored various treatment possibilities. After conducting cost studies and running pilot tests, the city's engineering firm, Quad Knopf, designed a state-of-the-art treatment plant using arsenic co-precipitation technology. The city and engineers selected Tonka Equipment Company for a cost effective treatment plant to meet the needs of the City and comply with the more stringent EPA standards. Tonka Equipment Company manufactured the treatment equipment for the City's new treatment plant.

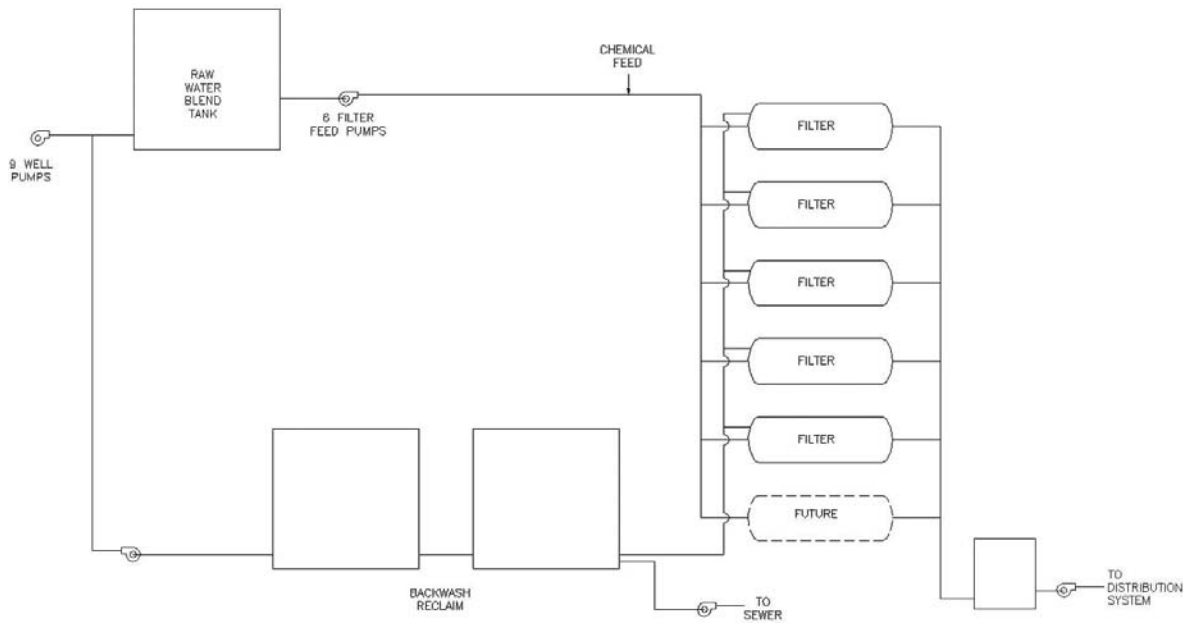
PROCESS:

The city's multiple wells are combined at the head of the plant in a raw water blend tank. This blending reduces the arsenic levels from the most contaminated wells. After chemical addition, the water is pumped by multiple feed pumps through a static mixer and through the filters and into a 2 MG finished water clearwell. Each of the five 12' diameter x 40' OAL horizontal pressure filters is comprised of two cells sharing a common underdrain. Prior to entering the filters, sodium hypochlorite, ferric chloride, and a small dose of polymer are added. The chlorine serves to oxidize any natural iron and change the valence of the arsenic from As+3 to As+5. This arsenate co-precipitates with the iron from the ferric chloride addition, forming a filterable solid. The water is evenly split between each filter cell. Within the filter cells, the water passes through the dual-media filter bed consisting of anthracite and GreensandPlus.

The filter backwash water is sent to a backwash reclaim tank and after a settling period of up to 4 hours the water is recycled back.

The system is controlled by Tonka's PLC-based automatic control panel which has been customized to automatically backwash the filters by loss of head, time, or operator initiation. The duration of the backwash and other functions is selectable and adjustable by the operator through a color touch screen interface.

TONKA'S ARSENIC REMOVAL SYSTEM



PERFORMANCE:

The raw water analysis reflects moderate to high concentrations of arsenic existing in the water. The treatment process has been highly effective in delivering quality water as indicated below.

	Raw Water	Finished Water
Arsenic	0.017-0.037 mg/L	ND to 0.005 mg/L

FOR ADDITIONAL DETAILS, PLEASE CONTACT:

Tonka Equipment Company



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