

Figure 2.2 – General Location of Water Supply Wells

The District also purchases water from the City of Bethany during peak months (late spring through early fall). These purchases amounted to a monthly average of 3.6 million gallons from June 2008 to October 2008 and a monthly average of 2.8 million gallons from late May 2009 to early October 2009.

2.3 Water Treatment

The existing water treatment plant (WTP) is located about ½ mile south of Coffey, Missouri on Highway 13, one to three miles east of the water supply wells. The existing WTP has a current firm capacity of 600 gpm (capacity with one unit out of service) or 600,000 gallons per day based on a 1000 minute per day operation (16.7 hours per day). As part of the current construction project, the WTP will be upgraded to a firm treatment capacity of 800 gpm.

The following is based on the unit capacities after the completion of the current construction project that adds two new wells (and associated raw water lines) and increases plant treatment capacity.

Wells	5 pumps (existing) at approximately 400 gpm total 2 pumps (under construction) at approximately 350 gpm total – to be field verified; preliminary information from Hydrogeologist Report on Phase V located in Appendix K
Aerators	1 @ 450 gpm 1 @ 400 gpm → Firm capacity = 400 gpm

- Storage/Settling Tank 1 @ 226,000 gallons (existing unit with steel walls)
(121,200 gal storage; 104,300 gal treatment)
- 1 @ 176,600 gallons (existing unit with concrete walls)
(95,100 gal storage; 81,500 gal treatment)
- Filters Four 5' Filters (existing)
Two 6' Filters (existing)
Three 9' Filters (under construction)
Using MDNR Standard of 3 gpm/sf → Firm capacity = 800 gpm
- Clearwell 500,000 gallons (under construction)
- High Service Pumps Four pumps at 625 gpm each
(two serving the east side of the District and two serving the west side)
Firm Capacity = 625 gpm to each side of the system

The plant consists of two aerators, two sedimentation/storage tanks, nine pressure filters, chlorination and ammonia feed equipment and four high service pumps. The wells, high service pumps and booster pumps are controlled by a radio telemetry system.

A supply and treatment schematic of the existing treatment process is illustrated in Figure 2.3. The 800 gpm treatment plant operates on the following process scheme:

- Raw water from wells
- Aeration
- Chlorination
- Sedimentation/Detention/Storage
- Low Service Pumping to Pressure Sand Filtration
- Chloramination/Fluoridation
- Clearwell Storage
- High Service Pumping to System Storage and Distribution System

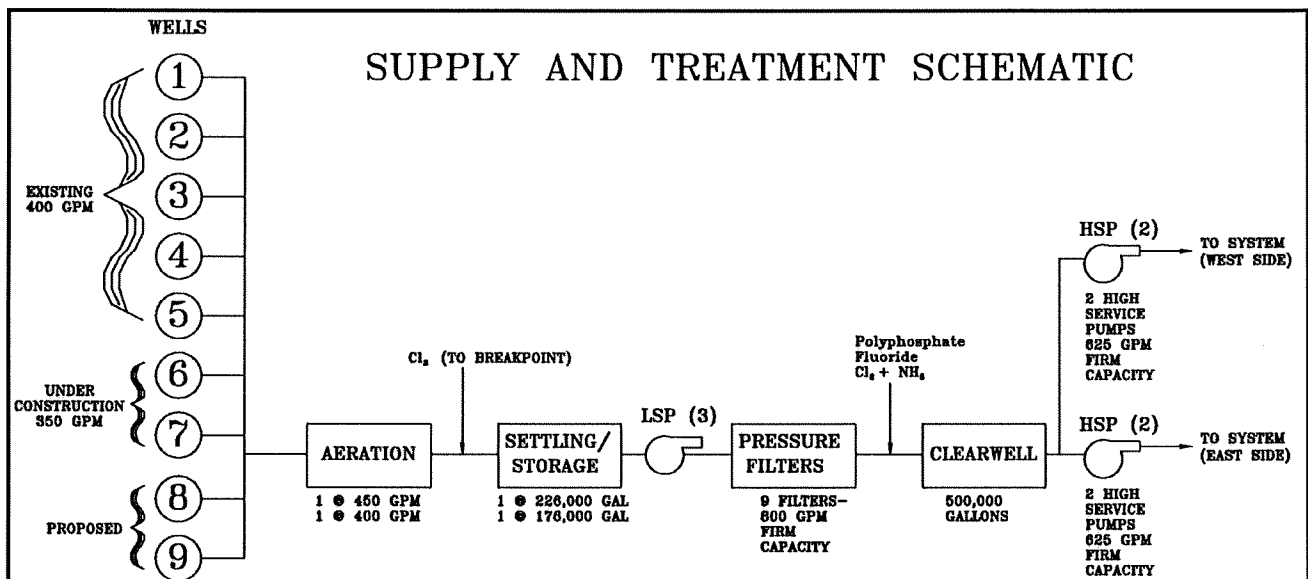


Figure 2.3 - Supply and Treatment Schematic

2.4 Distribution System

Clarke Well and Equipment, Inc.

WATER RELATED PROJECTS: Environmental - Industrial - Municipal - Agricultural

AIRPORT INDUSTRIAL COMPLEX - 8822 3rd STREET - GREAT BEND, KS 67530-9786

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Feb. 17, 2010

Rick Jones
Harrison County PWS #2
22209 E U.S. Highway 136
P.O. Box 227
Bethany, MO 64424

Re: TW1-09, TW2-09

Rick:

We reviewed the formation test logs and test pumping data from wells TW1-09 and TW2-09. After consulting with our geologist, it is our opinion that both sites TW1-09 and TW2-09 are capable of producing a satisfactory production well.

Test well 1-09 was completed 23' north of test hole 2-09. It is located approximately 1444' north and 745' east of the SW corner of Section 12, T61N, R28W in Daviess County. A well at this location should support production in the 150 to 200 gpm range. Forty feet of 10" ID stainless steel wire-wrap screen will need to be placed from 267' to 307' depth in a 30" diameter hole. The static water level at this location was 224.05' on Oct. 21, 2009.

Test well 2-09 was completed 17' north of test hole 3-09. It is located approximately 1768' north and 2123' west of the SE corner of Section 18, T61N, R27W in Daviess County. A well at this location should support production in the 100 to 250 gpm range. Forty feet of 10" ID stainless steel wire-wrap screen will need to be placed from 233' to 273' depth in a 30" diameter hole. The static water level at this location was 195.12 on Oct. 15, 2009.

Sieve analysis remains to be performed on these locations. Once this is done, a further report will be provided showing well construction with recommended well pack gradation and screen slot.

Sincerely,



Brent Clarke

File: #9056