

# Case Study

## Well Rehabilitation

### Ansonia, CT

## The Challenge

**Client:** Birmingham Utilities, Inc., Ansonia, Connecticut  
**Well ID:** Well # 4  
**Year constructed:** 1979  
**Well depth:** 132 ft bg.  
**Well diameter:** 12 inch  
**Construction:** Gravel packed  
**Aquifer:** Sand and Gravel

The original specific capacity of well # 4 was 22.2 gpm/ft with a pumping rate of 1000 gpm. By 1985 the specific capacity had declined to 8 gpm/ft with a pumping rate of 200 gpm. Since 1985 well # 4 had been rehabilitated 5 times. Each rehabilitation attempt was successful in regaining some of the lost capacity, however there had been a declining trend in specific capacity since installation. Well #4 had historically exhibited high levels of iron and manganese. In 1996 the well was modified to isolate the lower 20 ft. of well screen to prevent the upward migration of water from the lower portion of the well. Rehabilitation methods consisted of chemical treatments combined with surging.

## The Results

In April 1999 well #4 was rehabilitated using the Aqua Freed® process combined with Sonar Jet and mechanical surging. The pre-treatment video inspection revealed that the well screen was completely clogged with mineral and biological deposits.

The results of the pre and post pumping tests are as follows:

	Discharge Rate (gpm)	Specific Capacity (gpm/ft)
Pre-Treatment	160	6.2
	270	5.7
	310	5.5
Post-Treatment	160	13.1
	275	14.2
	307	13.2
	405	11.7

*Note: A specific capacity of 27.6 at 210 gpm was recorded at the completion of mechanical development. This reading was taken with the intake of the pump assembly at 107 ft bg. This data indicates that well # 4 has a higher specific capacity in the lower portion of the well and is a potential candidate for a suction flow control device. It should also be noted that the post treatment video inspection indicated the well screen was clean and the build up was completely removed.*