

Notes on:

Pump Test on New Well (No. 8) of Sidney
Waterworks District, March 28, 1966

On March 27th, Mr. John Motherwell, the Consulting Engineer, phoned to say that a pumping test was to be carried out on March 28, on a recently completed well drilled by Pacific Water Wells for Sidney Waterworks District. I agreed to observe the test in return for the information.

The well was located on advice from a dowser, Mr. Lime(?). It is located on property owned by Sidney Waterworks District adjoining Airport property, owned by the Department of Transport. The log is as follows:

0 - 49' sand, medium to fine
49 - 60' till probably underlain by weathered rock
60 - 100' rock.

The static level is about 31 feet. The well is 12 inches diameter equipped with 8 feet of 12-inch nominal size .020" slot screen set from 41 feet to 49 feet. The well is in the same aquifer as all the other Sidney wells. Here the aquifer is open at the top; down the slope where most of the wells are located the aquifer is overlain by stony clay usually resting on till.

The well is about 200 feet away from an existing production well which has been in continuous use for about a year producing about 12-13 U.S. gpm. This well was to be used as an observation well but the pump was not shut down until 8:10 a.m. about two hours before the scheduled start of the test. It continued to recover until the start of the test at 2 p.m., so data from it as an observation well could not be used. An attempt was made to correct the water level readings to separate the drawdown from the recovery but this did not work out probably because the drawdown is very small. The recovery of this well was analysed and gives good results. This is discussed later.

The test was started after some trouble with the pump. A submersible pump was supplied for the test by Pacific Water Wells. The flow was regulated by means of a valve to 30 Imp. gpm as measured with a 5 gallon pail. Water was conveyed by means of plastic pipe down the slope to the north-east to a point where I thought it would be on top of the clay. It turns out that this was probably not the case as the results indicate that some recharge was probably occurring from this source.

Analysis of the recovery of the production well mentioned earlier which had been pumping for about a year indicates a transmissibility of about 8400 U.S. gallons per day per foot width.

Analysis of the recovery of the new well indicates a transmissibility of about 23,000 U.S. gallons per day per foot width. This increase of transmissibility is partly due to an increase in saturated thickness of aquifer in 8 over that found in the nearly production well where there is only 12 feet of saturated material. The increase, however, is more than one would expect from this effect alone. Increase in thickness should cause an increase to about 12,500. There may be an increase in permeability in well 8.

Permeabilities from these tests are 700 gallons per day per foot² and 1280 gallons per day per foot². The permeability at the well on McTavish Road in the same aquifer is about 450 gallons per day per foot².



E. Livingston
Chief
Groundwater Division.