

Ground Water District 63S – Boise Front Foothills Area

The Ground Water District 63S-Boise Front Foothills area is located about 3.5 miles to the northwest of the Downtown Boise area. There are 20 wells in an area that stretches about five miles in the northwest-southeast direction and about three miles at its widest point. Ground Water District 63S (GWD 63S) is also known as Stewart Gulch. GWD 63S was created by an order of the Idaho Department of Water Resources on December 5, 1989 in response to declining water levels. There are 12 low temperature geothermal wells within the boundaries of GWD 63S. Eight other low temperature wells are located to the north and south of GWD 63S in the Boise Front Foothills.

Some of Idaho's oldest low temperature geothermal wells are located in GWD 63S, with construction dating back to the 1920's and 1930's. The wells in the vicinity of MW #1 and MW #2 (near Hill Road) are flowing artesian with water temperatures about 115 F. The owners of these wells are highly dependent on the flowing artesian pressure for delivering water to their businesses and homes. From MW #3 to the northeast, the wells have water levels that range from 50 feet to over 200 feet below the land surface. The wells in GWD 63S are in such good hydraulic communication that withdrawals from any one of them will impact the other wells.

Water levels declined rapidly in the District from 1984 to 1994 reaching a total decline of over 20 feet in MW #1 (see MW #1 through #4 under Hydrographs and Maps on BF GWMA website). During this time, the low temperature geothermal water was used for two primary purposes: irrigation and space heating of greenhouses. Irrigation occurred in the upper (northeast) part of Stewart Gulch, from MW #3 to MW #4. Two greenhouse operations along Hill Road and one greenhouse operation in the upper part of the District used the water for space heating. A few homes throughout the District heated with the geothermal water.

Irrigation caused the ground water levels and artesian pressures to decline annually during the summer and early fall. When the irrigation withdrawals came to end each fall, the water levels and pressures recovered over the next couple months. By the time the Hill Road greenhouses needed large withdrawals of water for heating in the winter months, the artesian pressure was high enough for the water needs to be met. The artesian pressure in the Hill Road wells is protected by a court ruling that dates back to the 1930's. From 1984 to 1994, the irrigation usage caused the water levels to drop more than usual and the artesian pressures in the Hill Road wells did not recover enough to supply the flow needed to meet the space heating demands of the greenhouses. In fact, a couple wells ceased to flow, forcing the greenhouse operators to use jet pumps to withdraw the water. The conditions became progressively worse during these years, causing IDWR to designate Ground Water District 63S in an attempt to prevent further resource degradation.

In the 1990's, the GWD 63S water users came up with a two-fold solution. First, individual limits were established and agreed upon based on an estimate of the sustainable yield of the aquifer system. Second, the two irrigators began seeking alternative, cold water options. In the mid to late 1990's, both irrigators found cold water sources which greatly reduced the need to use low temperature geothermal water for irrigation. In fact, MW #4, which had been used for irrigation, was completely converted to greenhouse heating use only. MW #3 and a nearby well

are still used occasionally for irrigating the Quail Hollow Golf Course when the cold water supply is inadequate. As a result of these decisions and actions, water levels in the District recovered rapidly such that by 2001, they had returned to the levels of the early 1980's. Since 2001, the water levels have been stable except for 2013 and early 2014 when higher than normal irrigation withdrawals from MW #3 in Water Year 2013 caused a significant short-term water level decline (compare hydrographs for MW #1 and #2 with Withdrawals for Water District 63S graph).

Currently, the three main water users in GWD 63S are responsible for collecting and submitting regular monitoring data (wellhead pressures, water levels, and withdrawals) to IDWR. The District members elect a Water Master at their annual meeting in March. The Water Master compiles the data submitted by the users, writes an annual report and submits it to the District, and will administer the resources in the event of a call for water by one of the District's members.